

# 2013

## Tippecanoe County Vehicle Crash Report



Prepared by The Area Plan Commission of  
Tippecanoe County  
8/1/2013

# Area Plan Commission of Tippecanoe County

Tim Shriner, President

Sallie Dell Fahey, Executive Director

Area Plan Commission Members:

Gerry Keen, West Lafayette City Council (Vice President)

Gary Schroeder, County Commissioner Citizen Appointment

David Byers, County Commissioner Representative

Tom Murtaugh, County Commissioner Representative

Jackson Bogan, Lafayette Mayor Citizen Appointment

Carl Griffin, West Lafayette Citizen Appointment

Roland Winger, County Council Member

Dave Williams, County Council Member

Perry Brown, Lafayette City Council Member Appointed by the Mayor

Brian Brewer, Battle Ground Town Board Appointment

John Swick, Dayton Town Board Appointment

Jerry Reynolds, Lafayette City Council Member Appointed by the Council

Clark Whitley, Clarks Hill Board Appointment

Vicki Pearl, County Commissioner Citizen Appointment

*Prepared by the Metropolitan Planning Organization Staff in cooperation with Tippecanoe County, Lafayette, West Lafayette, Battle Ground, Dayton, Clarks Hill, Indiana Department of Transportation, Federal Highway Administration and the Federal Transit Administration.*

*The preparation of this document was financed in part by funds from the Federal Highway Administration and the Federal Transit Administration. Matching funds were provided by Tippecanoe County. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.*

*Prepared by*

Tim Stroshine, Transportation Planner

And the Staff of the

Area Plan Commission of Tippecanoe County

20 N. 3<sup>rd</sup> Street, Lafayette, IN.

(765) 423-9242

E-mail: [apc@tippecanoe.in.gov](mailto:apc@tippecanoe.in.gov)

Website: <http://www.tippecanoe.in.gov/apc>

## Glossary

**Analysis Period-** The calendar years for which data was queried, studied, and analyzed while this report was being produced. For this report, the analysis period is 2011 through and including 2013.

**ARIES** – Automated Reporting Information Exchange System developed and maintained by the Indiana State Police. ARIES provides officer's an electronic way to complete and submit the Indiana Officer's Standard Crash Report form. The system also allows authorized individuals access to the Indiana State Police crash records database. ARIES was formerly known as the Vehicle Crash Record System (VCRS).

**Bicycle** – Indiana Code IC 9-13-2-14, "Bicycle" means any foot-propelled vehicle, irrespective of the number of wheels in contact with the ground.

**Curve Crash-** A crash that occurs on a segment of road with a horizontal curve.

**Fatal Injury Crash-** A crash that results in death for one or more of the vehicle(s) occupants or non-motorists. Other occupants or non-motorists may be injured in addition to the fatality.

**Motorcycle-** Indiana Code IC 9-13-2-108, "Motorcycle" means a motor vehicle with motive power that has a seat or saddle for the use of the rider, is designed to travel on not more than three wheels in contact with the ground, and satisfies the operational and equipment specifications described in 49 CFR 571 and IC 9-19.

**Pedestrian-** Any person afoot. This includes persons walking bicycles, riding skateboards, rollerblading and using other forms of non-motorized/non-pedaled forms of transportation.

**Personal Injury Crash-** A crash where at least one of the vehicle occupants or non-motorists were injured, but not fatally. Non-Fatal Injuries are classified as Incapacitating, Non-Incapacitating, or Probable.

**Property Damage Only Crash (PDO)**- A crash in which a vehicle or property is damaged and the occupant or non-motorist is not injured. A crash is required by law to be reported if the amount of the damage is \$750 or more.

**Roadway** – That portion of a highway improved, designed, or ordinarily used for vehicular travel. The roadway does not include unpaved areas, paved sidewalks, or shared use paths.

**Street, Road or Highway** – The entire width between the right-of-way lines of every way or place open to the use of the public for purposes of vehicular traffic. This includes the sidewalk.

**Vehicle** – Is any vehicle, whether it be an automobile, truck, motorcycle, moped, scooter, or bicycle.

## Contents

Glossary.....	3
Contents.....	5
List of Figures .....	6
List of Tables .....	8
Chapter 1: Introduction .....	10
Chapter 2: Age and Gender .....	27
Chapter 3: Time of Crashes.....	36
Chapter 4: Weather and Road Conditions.....	42
Chapter 5: Injuries and Fatalities .....	48
Chapter 6: Drug and Alcohol Involvement in Crashes .....	69
Chapter 7: Curve Crashes.....	79
Chapter 8: Motorcycle Crashes.....	87
Chapter 9: Bicycle Crashes.....	93
Chapter 10: Pedestrian Crashes.....	100
Chapter 11: Other Crash Types and Factors .....	107
Recommendations .....	117

## List of Figures

Figure 1: Percentage of Crashes by Crash Severity.....	11
Figure 2: Tippecanoe County Crashes.....	12
Figure 3: Lafayette and West Lafayette Crashes .....	13
Figure 4: Percentage of Crashes by Primary Factor .....	25
Figure 5: Crashes by Gender and Type .....	33
Figure 6: Drivers in Crashes by Gender.....	34
Figure 7: Injured Passengers by Gender .....	35
Figure 8: Crashes by Month .....	36
Figure 9: 3 Most Common Crash Types by Month .....	37
Figure 10: Crashes by Day of the Week .....	38
Figure 11: 3 Most Common Crash Types by Day of the Week.....	39
Figure 12: Crashes by Time of Day.....	40
Figure 13: 3 Most Common Crash Types by Time of Day .....	41
Figure 14: Tippecanoe County Crashes in Clear Weather Conditions .....	43
Figure 15: Lafayette and West Lafayette Crashes in Clear Weather .....	44
Figure 16: Tippecanoe County Winter Weather Crashes .....	45
Figure 17: Lafayette and West Lafayette Winter Weather Crashes .....	46
Figure 18: Injured Passengers by Day of the Week .....	53
Figure 19: Tippecanoe County Incapacitating Injuries.....	55
Figure 20: Incapacitating Injuries by Gender .....	58
Figure 21: Incapacitating Injuries by Day of the Week .....	60
Figure 22: Tippecanoe County Fatality Crashes.....	62
Figure 23: Lafayette and West Lafayette Fatality Crashes.....	63
Figure 24: Fatalities by Gender .....	65
Figure 25: Fatalities by Day of the Week .....	67
Figure 26: Tippecanoe County Alcohol Crashes.....	71
Figure 27: Tippecanoe County Drug Crashes.....	72
Figure 28: Incapacitating Injuries Involving Alcohol or Drugs.....	73
Figure 29: Fatalities Involving Alcohol or Drugs.....	73
Figure 30: Alcohol Crashes by Month .....	74
Figure 31: Drug Crashes by Month .....	75
Figure 32: Alcohol Crashes by Day of the Week .....	75
Figure 33: Drug Crashes by Day of the Week .....	76
Figure 34: Alcohol Crashes by Time of Day.....	76
Figure 35: Drug Crashes by Time of Day .....	77
Figure 36: Drivers in Alcohol Crashes by Gender.....	77
Figure 37: Drivers in Drug Crashes by Gender .....	78
Figure 38: Tippecanoe County Curve Crashes .....	80
Figure 39: Lafayette and West Lafayette Curve Crashes .....	81

Figure 40: Curve Crashes by Month.....	84
Figure 41: Curve Crashes by Day of the Week.....	84
Figure 42: Curve Crashes by Time of Day.....	85
Figure 43: Curve Crashes by Road Surface Condition.....	86
Figure 44: Tippecanoe County Motorcycle Crashes .....	88
Figure 45: Lafayette and West Lafayette Motorcycle Crashes .....	89
Figure 46: Motorcycle Crashes by Month.....	91
Figure 47: Motorcycle Crashes by Time of Day .....	92
Figure 48: Tippecanoe County Bicycle Crashes.....	94
Figure 49: Lafayette and West Lafayette Bicycle Crashes .....	95
Figure 50: Bicycle Crashes by Time of Day.....	98
Figure 51: Bicycle Crashes by Gender .....	99
Figure 52: Tippecanoe County Pedestrian Crashes .....	101
Figure 53: Lafayette and West Lafayette Pedestrian Crashes .....	102
Figure 54: Pedestrian Crashes by Time of Day.....	105
Figure 55: Pedestrian Crashes by Gender .....	106
Figure 56: Tippecanoe County Deer Crashes.....	108
Figure 57: Tippecanoe County Hit and Run Crashes.....	109
Figure 58: Lafayette and West Lafayette Hit and Run Crashes.....	110
Figure 59: Tippecanoe County Single Vehicle Crashes .....	112
Figure 60: Lafayette and West Lafayette Single Vehicle Crashes .....	113

## List of Tables

Table 1: Crash Severity.....	11
Table 2: Crashes by Township.....	14
Table 3: Crashes by City/Town.....	15
Table 4: Crashes 0-100 Feet from Intersection.....	16
Table 5: Crashes 0-250 Feet from Intersection.....	18
Table 6: Intersections with Multiple Fatalities/Incapacitating Injuries .....	20
Table 7: Primary Factors in Crashes.....	21
Table 8: Primary Factor Categories.....	23
Table 9: Summary of Crashes by Primary Factor Categories .....	24
Table 10: Crashes by Crash Type.....	26
Table 11: Crashes by Age and Gender .....	27
Table 12: Crash Participants by Age.....	27
Table 13: Primary Factors by Age .....	28
Table 14: Primary Factors by Gender.....	30
Table 15: Crash Type by Age .....	32
Table 16: Crash Percentages by Day of the Week .....	38
Table 17: Crashes by Weather Conditions.....	42
Table 18: Crashes by Road Surface Condition .....	47
Table 19: Crashes by Amount of Sunlight.....	47
Table 20: Injury and Fatality Crashes.....	48
Table 21: Injured Passengers by Primary Factor.....	49
Table 22: Injured Passengers by Crash Type.....	50
Table 23: Injured Passengers by Month .....	51
Table 24: Injured Passengers by Time of Day .....	52
Table 25: Injured Passengers by Age and Gender .....	53
Table 26: Severity of Injuries in Crashes .....	54
Table 27: Incapacitating Injuries by Primary Factor.....	56
Table 28: Incapacitating Injuries by Crash Type.....	57
Table 29: Incapacitating Injuries by Age and Gender .....	57
Table 30: Incapacitating Injuries by Month .....	59
Table 31: Incapacitating Injuries by Time of Day .....	61
Table 32: Fatalities by Primary Factor.....	64
Table 33: Fatalities by Crash Type.....	64
Table 34: Fatalities by Age .....	65
Table 35: Fatalities by Month .....	66
Table 36: Fatalities by Time of Day .....	68
Table 37: OWI/Drug Crash Statistics.....	69
Table 38: Alcohol and Drug Crash Data .....	70
Table 39: Crash Types for Alcohol or Drug Crashes .....	74



Table 40: Alcohol Crashes by Age and Gender .....	78
Table 41: Drug Crashes by Age and Gender.....	78
Table 42: Crashes by Road Curvature .....	79
Table 43: Curve Crash Severity .....	79
Table 44: Primary Factors for Curve Crashes.....	82
Table 45: Crash Type for Curve Crashes .....	83
Table 46: Curve Crashes by Weather Conditions.....	86
Table 47: Motorcycle Crash Injuries and Fatalities.....	87
Table 48: Crash Types for Motorcycle Crashes .....	90
Table 49: Motorcycle Crashes by Day of Week .....	91
Table 50: Bicycle Crash Injuries and Fatalities .....	93
Table 51: Crash Types for Bicycle Crashes .....	96
Table 52: Bicycle Crashes by Month .....	97
Table 53: Bicycle Crashes by Day of the Week .....	97
Table 54: Bicycle Crashes by Age .....	98
Table 55: Pedestrian Injuries and Fatalities.....	100
Table 56: Crash Types for Pedestrian Crashes .....	103
Table 57: Pedestrian Crashes by Month .....	104
Table 58: Pedestrian Crashes by Day of the Week .....	104
Table 59: Pedestrian Crashes by Age .....	105
Table 60: Summary of Number of Vehicles Involved in Crashes .....	111
Table 61: Crashes by Road Surface .....	114
Table 62: Crashes by Driver's State of Residence .....	115

## Chapter 1: Introduction

Every year, thousands of vehicle crashes occur in Tippecanoe County. Given the large number of crashes, the task of identifying specific factors that contribute to the cause of a crash can be very complex. The process of identifying contributing factors is also complicated by the seemingly random nature of vehicle crashes. A single crash can have several variables that cause it to occur. Extracting those variables from a crash report is not an exact science, but some trends can be extracted and analyzed.

The objective of this report is to analyze crashes in Tippecanoe County and identify any area wide trends and hazardous intersections. The problem areas can then receive follow-up analysis to identify specific problems. The analysis in this report includes all *Personal Injury*, *Fatal*, and *Property Damage* crashes that occurred on public streets (local as well as state maintained). Crashes that occurred in alleys, parking lots, parking garages, loading docks, and other private property were not analyzed.

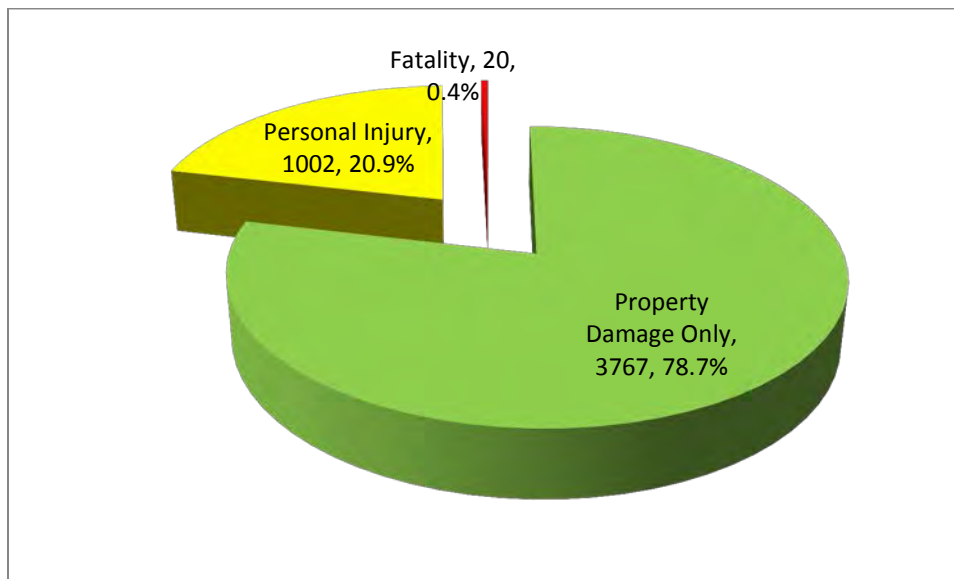
The data for this report came from the Indiana State Police (ISP) Automated Reporting Information Exchange System (ARIES) database of crash reports submitted by the police departments of Lafayette, West Lafayette, Purdue, Dayton, Battleground, the Tippecanoe County Sheriff, the Department of Natural Resources, and the ISP. The ARIES database contains general information about crashes, but in some cases, individual crash reports were reviewed in detail to get more information. This data required some quality control, because it did not always match up with the officer's crash report.

Crashes are classified according to severity as *Property Damage Only* (damage only to vehicles and objects), *Personal Injury* (one or more persons injured), and *Fatality* (one or more fatalities). Table 1 and Figure 1 show that the majority of crashes can be categorized as "property damage only." More details on injury and fatal crashes are given in chapter 5.

**Table 1: Crash Severity**

Severity of Crash	Crashes	Percentage of Total Crashes	Total Injured Persons	Total Fatalities
Property Damage Only	3767	78.7%	0	0
Personal Injury	1002	20.9%	1307	0
Fatality	20	0.4%	28	22
Total	4789	100.0%	1335	22

**Figure 1: Percentage of Crashes by Crash Severity**



Figures 2 and 3 show the locations of crashes in 2013 in Tippecanoe County.

Figure 2: Tippecanoe County Crashes

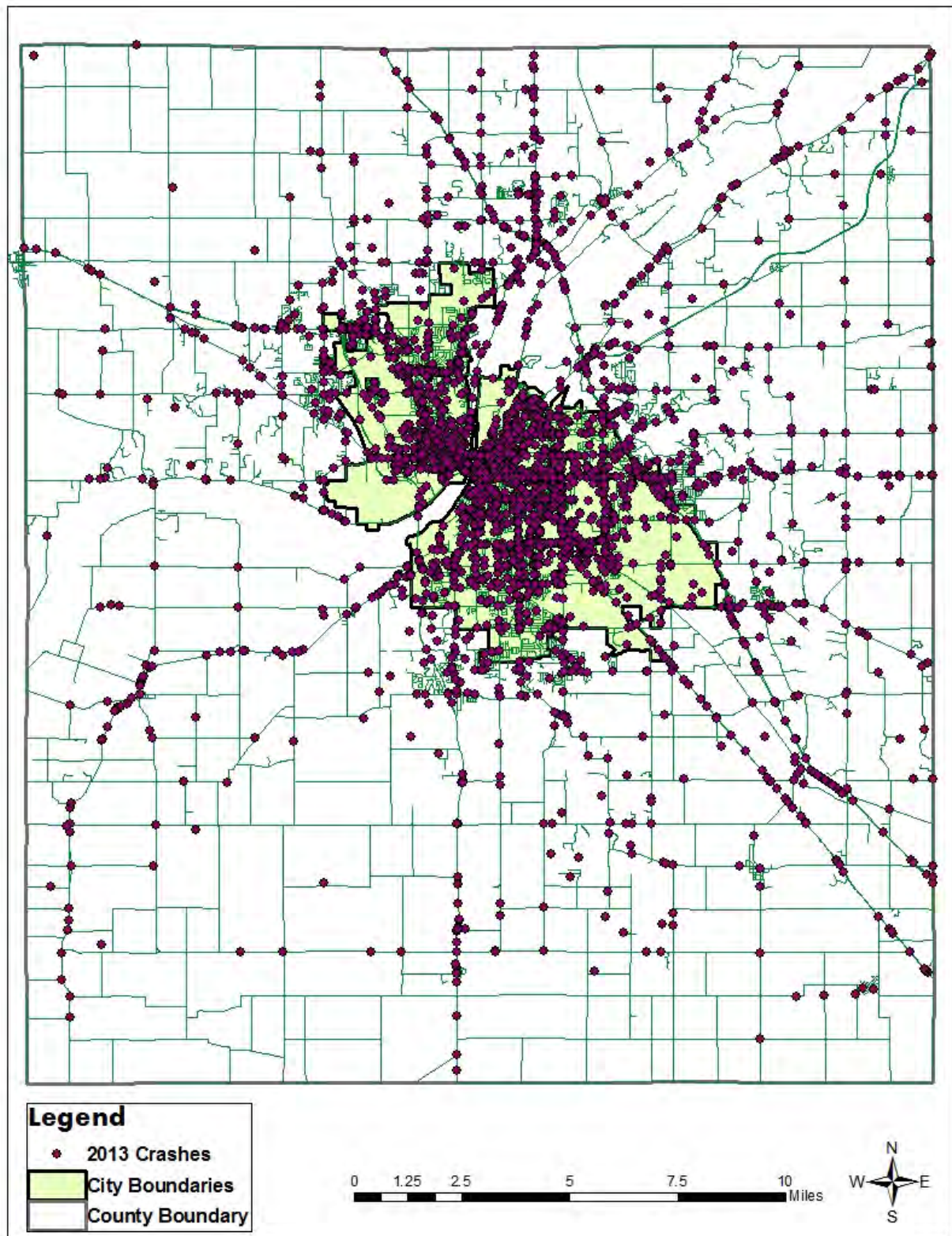




Figure 3: Lafayette and West Lafayette Crashes

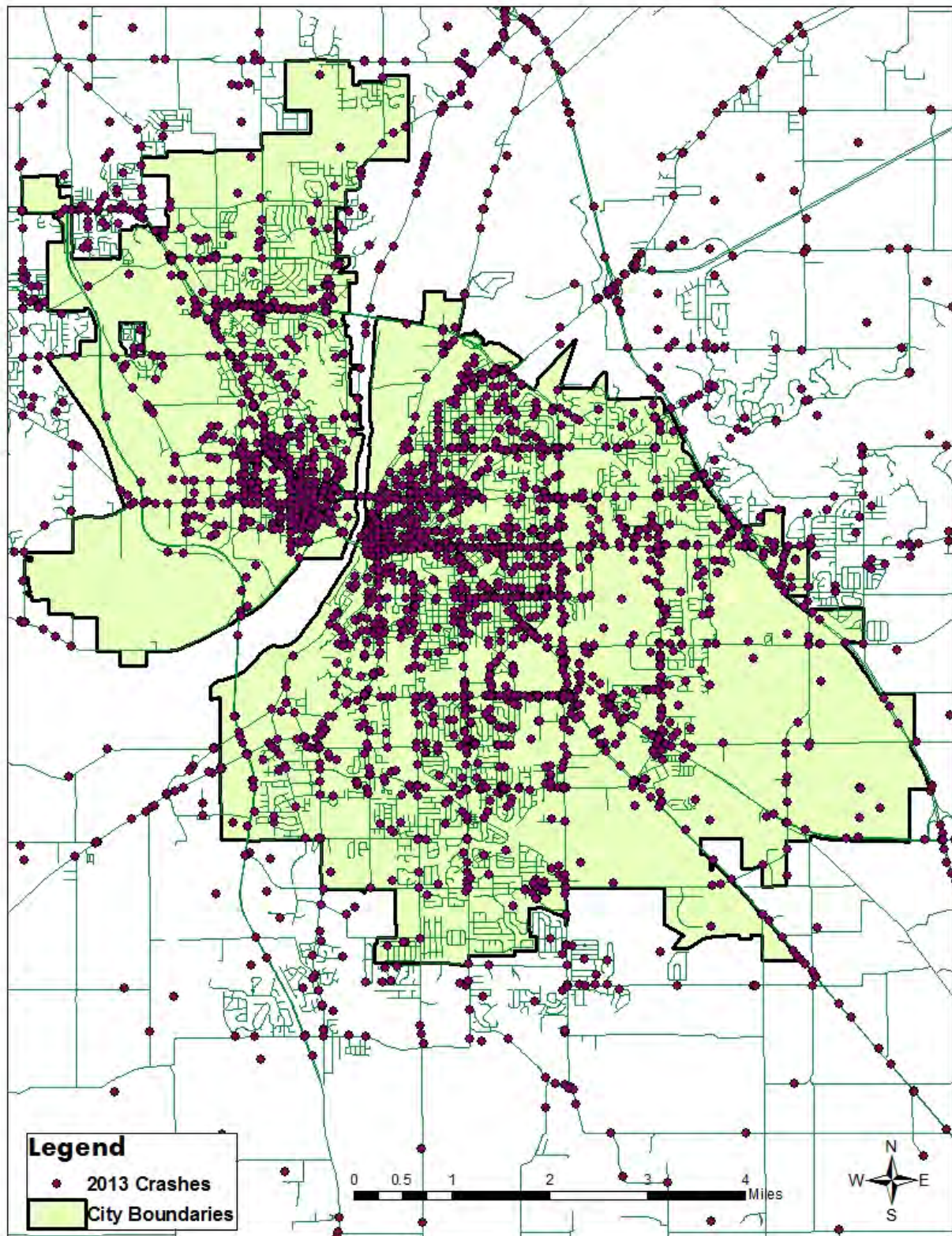


Table 2 shows that the Fairfield and Wabash townships had the most crashes in 2013.

**Table 2: Crashes by Township**

<b>Township</b>	<b>Number of Crashes</b>
<b>Fairfield</b>	2407
<b>Wabash</b>	1158
<b>Wea</b>	349
<b>Tippecanoe</b>	271
<b>Sheffield</b>	187
<b>Perry</b>	106
<b>Washington</b>	68
<b>Shelby</b>	58
<b>Lauramie</b>	56
<b>Wayne</b>	43
<b>Union</b>	37
<b>Randolph</b>	31
<b>Jackson</b>	18
<b>Total</b>	4789

Each crash was assigned to the closest city or town. Table 3 shows that Lafayette had the most crashes.

**Table 3: Crashes by City/Town**

<b>CITY/TOWN</b>	<b>CRASHES</b>	<b>PERCENTAGE</b>
<b>BATTLE GROUND</b>	74	1.5%
<b>CLARKS HILL</b>	8	0.2%
<b>DAYTON</b>	89	1.9%
<b>LAFAYETTE</b>	3253	67.9%
<b>OTTERBEIN</b>	6	0.1%
<b>SHADELAND</b>	21	0.4%
<b>WEST LAFAYETTE</b>	1335	27.9%
<b>UNLISTED</b>	3	0.1%
<b>TOTAL</b>	4789	100.0%

Crashes occurred at various locations throughout Tippecanoe County. Some occurred in the middle of an intersection, some in the approach to an intersection, and others far away from the influence of an intersection. Crashes can be put into three categories based on their distance from an intersection: 0-100 feet from the intersection, 0-250 feet from an intersection, and mid-block.

Both the 0-100 feet from intersection and 0-250 feet from intersection categories include crashes that took place inside of the intersection.

Table 4 shows the intersections with the highest number of crashes within 100 feet of that intersection.

**Table 4: Crashes 0-100 Feet from Intersection**

<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-100 Feet from Intersection</b>
<b>1</b>	Sagamore Parkway and South Street	55
<b>2</b>	Sagamore Parkway and State Road 38	35
<b>3</b>	Cumberland Avenue and Sagamore Parkway	33
<b>4</b>	Interstate 65 and State Road 26	31
<b>5</b>	Sagamore Parkway and Teal Road	30
<b>6</b>	Creasy Lane and State Road 38	29
<b>7</b>	Sagamore Parkway and Salisbury Street	28
<b>8</b>	Creasy Lane and McCarty Lane	24
<b>9</b>	Greenbush Street and Sagamore Parkway	23
<b>T10</b>	18th Street and South Street	22
<b>T10</b>	McCarty Lane and Sagamore Parkway	22
<b>T10</b>	Sagamore Parkway and Schyuler Avenue	22
<b>T10</b>	South Street and Creasy Lane	22
<b>T14</b>	Kossuth Street and Sagamore Parkway	21
<b>T14</b>	River Road and State Street	21
<b>T14</b>	Salisbury Street and State Street	21
<b>17</b>	9th Street and Salem Street	20
<b>18</b>	Northwestern Avenue and Yeager Road	19
<b>T19</b>	18th Street and Teal Road	18
<b>T19</b>	Grant Street and State Street	18
<b>T19</b>	Happy Hollow Road and River Road	18
<b>T22</b>	Creasy Lane and US 52	17
<b>T22</b>	Earl Avenue and Main Street	17
<b>T22</b>	Poland Hill Road and Teal Road	17
<b>T22</b>	22nd Street and Teal Road	16
<b>T26</b>	Brady Lane and Concord Road	16
<b>T26</b>	Park Avenue and South Street	16



<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-100 Feet from Intersection</b>
<b>T26</b>	Sagamore Parkway and Union Street	16
<b>T29</b>	4th Street and Columbia Street	15
<b>T29</b>	Cherry Lane and Northwestern Avenue	15
<b>T29</b>	Sagamore Parkway and Yeager Road	15
<b>T32</b>	18th Street and Salem Street	14
<b>T32</b>	9th Street and Union Street	14
<b>T32</b>	Northwestern Avenue and Lindberg Road	14
<b>T32</b>	Northwestern Avenue and Stadium Avenue	14
<b>T36</b>	9th Street and Teal Road	13
<b>T36</b>	River Road and Robinson Street	13
<b>T36</b>	Chauncey Avenue and State Street	13
<b>T39</b>	4th Street and South Street	12
<b>T39</b>	9th Street and Columbia Street	12
<b>T39</b>	9th Street and Main Street	12
<b>T39</b>	9th Street and South Street	12
<b>T39</b>	Earl Avenue and South Street	12
<b>T39</b>	Interstate 65 and State Road 25	12
<b>T39</b>	Northwestern Avenue and State Street	12
<b>T46</b>	2nd Street and Columbia Street	11
<b>T46</b>	4th Street and Kossuth Street	11
<b>T46</b>	Interstate 65 and River Road	11
<b>T46</b>	Main Street and 3rd Street	11
<b>T50</b>	18th Street and Brady Lane	10
<b>T50</b>	18th Street and Union Street	10
<b>T50</b>	9th and Greenbush	10
<b>T50</b>	Creasy Lane and Greenbush Street	10
<b>T50</b>	Earl Avenue and Union Street	10
<b>T50</b>	Sagamore Parkway and Paramount Drive	10

Rank	Intersection	Crashes 0-100 Feet from Intersection
<b>T50</b>	River Road and US 231	10
<b>T50</b>	State Street and University Street	10

Table 5 shows the intersections with the highest number of crashes within 250 feet of that intersection.

**Table 5: Crashes 0-250 Feet from Intersection**

Rank	Intersection	Crashes 0-250 Feet from Intersection
<b>1</b>	Sagamore Parkway and South Street	57
<b>2</b>	Sagamore Parkway and State Road 38	39
<b>3</b>	Sagamore Parkway and Salisbury Street	38
<b>4</b>	Cumberland Avenue and Sagamore Parkway	34
<b>5</b>	Sagamore Parkway and Teal Road	33
<b>6</b>	Interstate 65 and State Road 26	32
<b>7</b>	Creasy Lane and State Road 38	31
<b>8</b>	Greenbush Street and Sagamore Parkway	30
<b>9</b>	McCarty Lane and Sagamore Parkway	26
<b>10</b>	Creasy Lane and McCarty Lane	25
<b>T11</b>	South Street and Creasy Lane	24
<b>T11</b>	Earl Avenue and Main Street	24
<b>T13</b>	18th Street and South Street	22
<b>T13</b>	Sagamore Parkway and Schyuler Avenue	22
<b>T13</b>	Kossuth Street and Sagamore Parkway	22
<b>T13</b>	River Road and State Street	22
<b>T17</b>	Salisbury Street and State Street	21
<b>T17</b>	9th Street and Salem Street	21
<b>19</b>	Sagamore Parkway and Union Street	20
<b>T20</b>	Northwestern Avenue and Yeager Road	19

<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-250 Feet from Intersection</b>
<b>T20</b>	18th Street and Teal Road	19
<b>T20</b>	Grant Street and State Street	19
<b>T20</b>	Creasy Lane and US 52	19
<b>T20</b>	22nd Street and Teal Road	19
<b>T25</b>	Happy Hollow Road and River Road	18
<b>T25</b>	Poland Hill Road and Teal Road	18
<b>T25</b>	Park Avenue and South Street	18
<b>28</b>	Brady Lane and Concord Road	17
<b>T29</b>	4th Street and Columbia Street	16
<b>T29</b>	9th Street and Teal Road	16
<b>T31</b>	Cherry Lane and Northwestern Avenue	15
<b>T31</b>	Sagamore Parkway and Yeager Road	15
<b>T31</b>	Northwestern Avenue and Lindberg Road	15
<b>T31</b>	Northwestern Avenue and Stadium Avenue	15
<b>T35</b>	18th Street and Salem Street	14
<b>T35</b>	9th Street and Union Street	14
<b>T35</b>	River Road and Robinson Street	14
<b>T35</b>	Chauncey Avenue and State Street	14
<b>T35</b>	Earl Avenue and South Street	14
<b>T40</b>	9th Street and Columbia Street	13
<b>T40</b>	4th Street and Kossuth Street	13
<b>T40</b>	26th Street and Teal Road	13
<b>T43</b>	4th Street and South Street	12
<b>T43</b>	9th Street and Main Street	12
<b>T43</b>	9th Street and South Street	12
<b>T43</b>	Interstate 65 and State Road 25	12
<b>T43</b>	Northwestern Avenue and State Street	12
<b>T43</b>	Main Street and 3rd Street	12

<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-250 Feet from Intersection</b>
<b>T43</b>	River Road and US 231	12
<b>T50</b>	2nd Street and Columbia Street	11
<b>T50</b>	Interstate 65 and River Road	11
<b>T50</b>	9th and Greenbush	11
<b>T50</b>	Creasy Lane and Greenbush Street	11
<b>T50</b>	Paramount Drive and Sagamore Parkway	11

5 intersections had more than one fatality/incapacitating injury. More details on fatalities and incapacitating injuries are included in chapter 5.

**Table 6: Intersections with Multiple Fatalities/Incapacitating Injuries**

<b>Street 1</b>	<b>Street 2</b>	<b>Fatalities</b>	<b>Incapacitating Injuries</b>
<b>US 231</b>	<b>W 500 N</b>	1	2
<b>State Road 26</b>	<b>S 1025 E</b>	1	1
<b>Sagamore Parkway</b>	<b>Calloway Drive</b>	0	2
<b>21st Street</b>	<b>Moore Street</b>	0	2
<b>State Road 26</b>	<b>S 900 E</b>	0	2

In each crash report, officers can specify up to two “Driver”, one “Vehicle”, and one “Environmental” contributing circumstance for each vehicle. One of the contributing circumstances must be listed as the primary contributing circumstance (also called the “primary factor”) for the crash. Table 7 shows that “Following too closely” and “Failure to Yield Right of Way” were the most common primary factors in crashes.

**Table 7: Primary Factors in Crashes**

<b>PRIMARY FACTOR</b>	<b>NUMBER OF CRASHES</b>
<b>FOLLOWING TOO CLOSELY</b>	1004
<b>FAILURE TO YIELD RIGHT OF WAY</b>	801
<b>ANIMAL/OBJECT IN ROADWAY</b>	367
<b>RAN OFF ROAD RIGHT</b>	329
<b>IMPROPER LANE USAGE</b>	304
<b>SPEED TOO FAST FOR WEATHER CONDITIONS</b>	293
<b>UNSAFE BACKING</b>	259
<b>DISREGARD SIGNAL/REGULATORY SIGN</b>	241
<b>OTHER (DRIVER) - EXPLAIN IN NARRATIVE</b>	237
<b>UNSAFE SPEED</b>	207
<b>IMPROPER TURNING</b>	162
<b>ROADWAY SURFACE CONDITION</b>	78
<b>LEFT OF CENTER</b>	75
<b>DRIVER DISTRACTED - EXPLAIN IN NARRATIVE</b>	61
<b>IMPROPER PASSING</b>	59
<b>UNSAFE LANE MOVEMENT</b>	56
<b>OVERCORRECTING/OVERSTEERING</b>	51
<b>PEDESTRIAN ACTION</b>	41
<b>DRIVER ASLEEP OR FATIGUED</b>	30
<b>BRAKE FAILURE OR DEFECTIVE</b>	26
<b>OTHER (ENVIRONMENTAL) - EXPLAIN IN NARRATIVE</b>	19
<b>TIRE FAILURE OR DEFECTIVE</b>	18
<b>INSECURE/LEAKY LOAD</b>	14
<b>OTHER (VEHICLE) - EXPLAIN IN NARRATIVE</b>	14
<b>DRIVER ILLNESS</b>	8
<b>CELL PHONE USAGE</b>	7
<b>HOLES/RUTS IN SURFACE</b>	4

<b>PRIMARY FACTOR</b>	<b>NUMBER OF CRASHES</b>
<b>OBSTRUCTION NOT MARKED</b>	4
<b>WRONG WAY ON ONE WAY</b>	3
<b>ACCELERATOR FAILURE OR DEFECTIVE</b>	2
<b>OTHER TELEMATICS IN USE</b>	2
<b>SEVERE CROSSWINDS</b>	2
<b>STEERING FAILURE</b>	2
<b>VIEW OBSTRUCTED</b>	2
<b>UNKNOWN</b>	2
<b>ALCOHOLIC BEVERAGES</b>	1
<b>ENGINE FAILURE OR DEFECTIVE</b>	1
<b>HEADLIGHT DEFECTIVE OR NOT ON</b>	1
<b>OVERSIZE/OVERWEIGHT LOAD</b>	1
<b>TOW HITCH FAILURE</b>	1
<b>TOTAL</b>	4789

There is not always a direct correlation between the primary factor and the party at fault for the crash. Determining fault would require a time-consuming review of crash report narratives. To approximate fault, each of the primary factors was sorted into one of four categories: Driver Error, Environmental Factors, Vehicular Factors, and Miscellaneous Factors. Table 8 shows which primary factors were grouped into these categories.

**Table 8: Primary Factor Categories**

<b>PRIMARY FACTOR CATEGORY</b>	<b>PRIMARY FACTOR</b>
<b>Driver Error</b>	FOLLOWING TOO CLOSELY
<b>Driver Error</b>	FAILURE TO YIELD RIGHT OF WAY
<b>Driver Error</b>	RAN OFF ROAD RIGHT
<b>Driver Error</b>	IMPROPER LANE USAGE
<b>Driver Error</b>	SPEED TOO FAST FOR WEATHER CONDITIONS
<b>Driver Error</b>	UNSAFE BACKING
<b>Driver Error</b>	DISREGARD SIGNAL/REGULATORY SIGN
<b>Driver Error</b>	UNSAFE SPEED
<b>Driver Error</b>	IMPROPER TURNING
<b>Driver Error</b>	LEFT OF CENTER
<b>Driver Error</b>	DRIVER DISTRACTED - EXPLAIN IN NARRATIVE
<b>Driver Error</b>	IMPROPER PASSING
<b>Driver Error</b>	UNSAFE LANE MOVEMENT
<b>Driver Error</b>	OVERCORRECTING/OVERSTEERING
<b>Driver Error</b>	DRIVER ASLEEP OR FATIGUED
<b>Driver Error</b>	CELL PHONE USAGE
<b>Driver Error</b>	WRONG WAY ON ONE WAY
<b>Driver Error</b>	ALCOHOLIC BEVERAGES
<b>Environmental Factors</b>	ANIMAL/OBJECT IN ROADWAY
<b>Environmental Factors</b>	ROADWAY SURFACE CONDITION
<b>Environmental Factors</b>	OTHER (ENVIRONMENTAL) - EXPLAIN IN NARRATIVE
<b>Environmental Factors</b>	HOLES/RUTS IN SURFACE
<b>Environmental Factors</b>	OBSTRUCTION NOT MARKED
<b>Environmental Factors</b>	SEVERE CROSSWINDS
<b>Environmental Factors</b>	VIEW OBSTRUCTED
<b>Miscellaneous Factors</b>	OTHER (DRIVER) - EXPLAIN IN NARRATIVE
<b>Miscellaneous Factors</b>	PEDESTRIAN ACTION
<b>Miscellaneous Factors</b>	DRIVER ILLNESS

PRIMARY FACTOR CATEGORY	PRIMARY FACTOR
Miscellaneous Factors	OTHER TELEMATICS IN USE
Miscellaneous Factors	UNKNOWN
Vehicular Factors	BRAKE FAILURE OR DEFECTIVE
Vehicular Factors	TIRE FAILURE OR DEFECTIVE
Vehicular Factors	INSECURE/LEAKY LOAD
Vehicular Factors	OTHER (VEHICLE) - EXPLAIN IN NARRATIVE
Vehicular Factors	ACCELERATOR FAILURE OR DEFECTIVE
Vehicular Factors	STEERING FAILURE
Vehicular Factors	ENGINE FAILURE OR DEFECTIVE
Vehicular Factors	HEADLIGHT DEFECTIVE OR NOT ON
Vehicular Factors	OVERSIZE/OVERWEIGHT LOAD
Vehicular Factors	TOW HITCH FAILURE

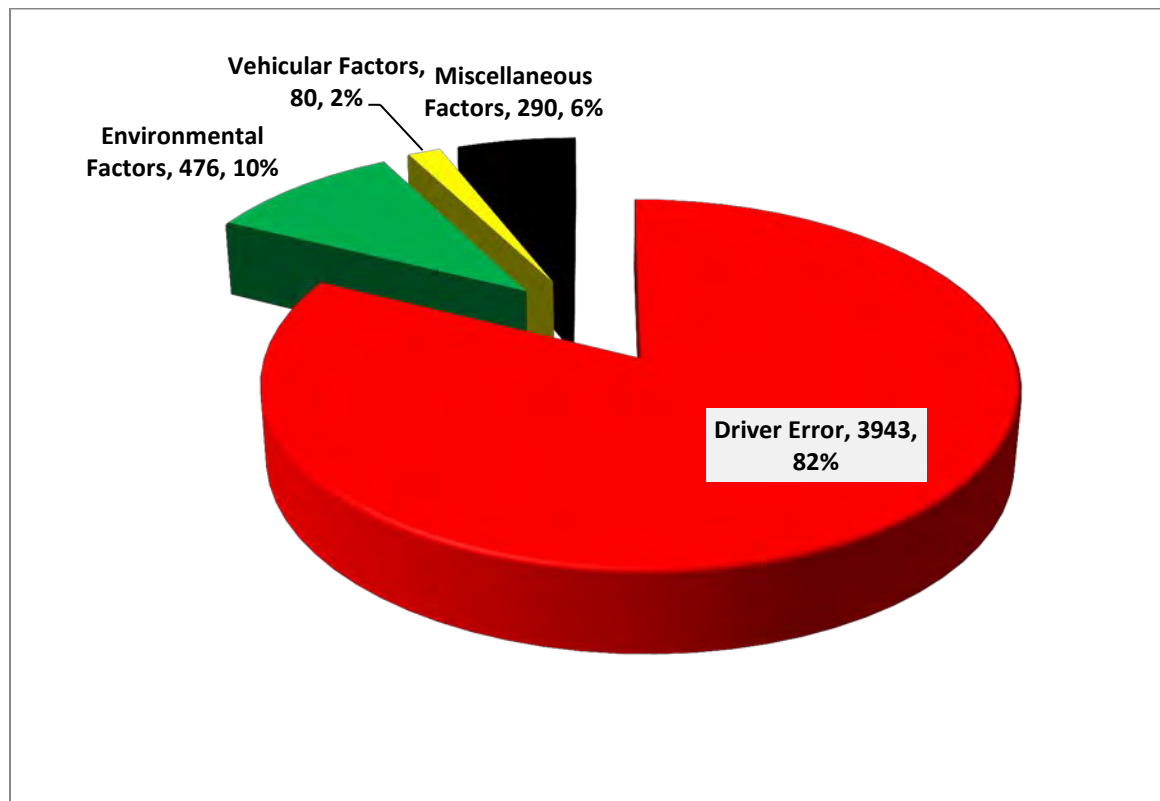
Table 9 and Figure 4 show that driver error was prevalent in the majority of crashes.

**Table 9: Summary of Crashes by Primary Factor Categories**

Primary Factor Category	Number
Driver Error	3943
Environmental Factors	476
Vehicular Factors	80
Miscellaneous Factors	290
Total	4789



**Figure 4: Percentage of Crashes by Primary Factor**



The manner of crash (also referred to as crash type), is a description of the way a collision between vehicles or objects occurs. Table 10 shows that rear end crashes were the most common crash type.

**Table 10: Crashes by Crash Type**

<b>MANNER OF CRASH</b>	<b>NUMBER OF CRASHES</b>
<b>REAR END</b>	1459
<b>RIGHT ANGLE</b>	779
<b>SAME DIRECTION SIDESWIPE</b>	604
<b>RAN OFF ROAD</b>	562
<b>HEAD ON</b>	423
<b>LEFT TURN</b>	303
<b>BACKING CRASH</b>	232
<b>OTHER - EXPLAIN IN NARRATIVE</b>	143
<b>OPPOSITE DIRECTION SIDESWIPE</b>	90
<b>RIGHT TURN</b>	88
<b>NON-COLLISION</b>	70
<b>LEFT/RIGHT TURN</b>	23
<b>UNKNOWN</b>	9
<b>REAR TO REAR</b>	4
<b>TOTAL</b>	4789

## Chapter 2: Age and Gender

Different age groups and genders may behave differently when using the road. These behavioral differences may affect how, when, and where crashes occur.

Table 11 shows that 16-24 year-old drivers were most likely to be involved in crashes.

**Table 11: Crashes by Age and Gender**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
<b>Male</b>	8	1231	812	650	646	415	352	4114
<b>Female</b>	5	1202	733	530	430	375	239	3514
<b>Total</b>	13	2433	1545	1180	1076	790	591	7628

In a crash, there are several different types of participants that can be categorized as follows: drivers, injured persons, pedalcyclists, or pedestrians. Table 12 gives a summary (by age) of people involved in crashes. In this table, “Injured Person” refers to a passenger in one of the vehicles that sustained an injury. It does not apply to a driver, pedestrian, or pedalcyclist that was injured.

**Table 12: Crash Participants by Age**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
<b>Driver</b>	18	2433	1545	1180	1076	790	592	7634
<b>Injured Person</b>	94	91	45	39	32	26	28	355
<b>Pedalcyclist</b>	11	24	6	1	2	3	0	47
<b>Pedestrian</b>	10	24	9	5	7	0	4	59
<b>Total</b>	133	2572	1605	1225	1117	819	624	8095

Table 13 shows that following too closely was the primary cause of crashes for almost every age group.

Table 13: Primary Factors by Age

PRIMARY FACTOR	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
FOLLOWING TOO CLOSELY	27	725	423	321	308	218	140	2162
FAILURE TO YIELD RIGHT OF WAY	29	537	338	232	197	156	161	1650
DISREGARD SIGNAL/REGULATORY SIGN	16	165	98	81	64	65	42	531
SPEED TOO FAST FOR WEATHER CONDITIONS	4	170	93	70	47	42	31	457
ANIMAL/OBJECT IN ROADWAY	2	73	90	65	87	35	24	376
UNSAFE SPEED	8	113	76	66	56	33	22	374
IMPROPER LANE USAGE	4	93	79	54	43	53	45	371
OTHER (DRIVER) - EXPLAIN IN NARRATIVE	1	109	64	48	61	30	24	337
RAN OFF ROAD RIGHT	9	126	65	63	33	19	17	332
UNSAFE BACKING	0	96	50	50	54	42	34	326
IMPROPER TURNING	1	72	56	41	39	31	21	261
DRIVER DISTRACTED - EXPLAIN IN NARRATIVE	2	41	23	16	22	19	4	127
LEFT OF CENTER	9	32	33	15	15	9	9	122
UNSAFE LANE MOVEMENT	2	24	18	16	20	16	10	106
IMPROPER PASSING	0	26	17	23	10	11	17	104
ROADWAY SURFACE CONDITION	0	36	21	18	13	8	1	97
PEDESTRIAN ACTION	11	30	15	7	4	4	7	78
OVERCORRECTING/OVERSTEERING	2	32	12	5	5	5	2	63
BRAKE FAILURE OR DEFECTIVE	0	15	3	6	7	4	4	39
DRIVER ASLEEP OR FATIGUED	0	16	6	3	4	2	4	35
TIRE FAILURE OR DEFECTIVE	3	5	5	8	1	4	1	27
OTHER (ENVIRONMENTAL) - EXPLAIN IN NARRATIVE	0	8	4	3	8	1	0	24
INSECURE/LEAKY LOAD	2	3	5	4	6	3	1	24

<b>PRIMARY FACTOR</b>	<b>&lt;16</b>	<b>16-24</b>	<b>25-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>65+</b>	<b>Total</b>
<b>CELL PHONE USAGE</b>	1	8	2	3	1	0	0	15
<b>OTHER (VEHICLE) - EXPLAIN IN NARRATIVE</b>	0	3	1	3	4	2	0	13
<b>DRIVER ILLNESS</b>	0	1	0	1	4	4	2	12
<b>HOLES/RUTS IN SURFACE</b>	0	0	3	0	1	0	0	4
<b>OBSTRUCTION NOT MARKED</b>	0	0	1	2	1	0	0	4
<b>WRONG WAY ON ONE WAY</b>	0	2	1	0	1	0	0	4
<b>OTHER TELEMATICS IN USE</b>	0	4	0	0	0	0	0	4
<b>ACCELERATOR FAILURE OR DEFECTIVE</b>	0	1	0	1	0	0	0	2
<b>SEVERE CROSSWINDS</b>	0	0	0	0	0	1	1	2
<b>STEERING FAILURE</b>	0	0	2	0	0	0	0	2
<b>VIEW OBSTRUCTED</b>	0	1	0	0	1	0	0	2
<b>UNKNOWN</b>	0	1	0	0	0	1	0	2
<b>ALCOHOLIC BEVERAGES</b>	0	2	0	0	0	0	0	2
<b>ENGINE FAILURE OR DEFECTIVE</b>	0	1	0	0	0	0	0	1
<b>HEADLIGHT DEFECTIVE OR NOT ON</b>	0	1	0	0	0	0	0	1
<b>OVERSIZE/OVERWEIGHT LOAD</b>	0	0	1	0	0	0	0	1
<b>TOW HITCH FAILURE</b>	0	0	0	0	0	1	0	1
<b>TOTAL</b>	133	2572	1605	1225	1117	819	624	8095

Table 14 shows that following too closely was the most common primary cause of crashes for both genders.

**Table 14: Primary Factors by Gender**

<b>PRIMARY FACTOR</b>	<b>MALE</b>	<b>FEMALE</b>	<b>TOTAL</b>
<b>FOLLOWING TOO CLOSELY</b>	1058	1103	2161
<b>FAILURE TO YIELD RIGHT OF WAY</b>	849	800	1649
<b>DISREGARD SIGNAL/REGULATORY SIGN</b>	285	246	531
<b>SPEED TOO FAST FOR WEATHER CONDITIONS</b>	236	221	457
<b>ANIMAL/OBJECT IN ROADWAY</b>	214	162	376
<b>UNSAFE SPEED</b>	219	155	374
<b>IMPROPER LANE USAGE</b>	201	169	370
<b>OTHER (DRIVER) - EXPLAIN IN NARRATIVE</b>	215	122	337
<b>RAN OFF ROAD RIGHT</b>	203	128	331
<b>UNSAFE BACKING</b>	170	156	326
<b>IMPROPER TURNING</b>	130	131	261
<b>DRIVER DISTRACTED - EXPLAIN IN NARRATIVE</b>	65	62	127
<b>LEFT OF CENTER</b>	65	57	122
<b>UNSAFE LANE MOVEMENT</b>	75	31	106
<b>IMPROPER PASSING</b>	52	52	104
<b>ROADWAY SURFACE CONDITION</b>	60	37	97
<b>PEDESTRIAN ACTION</b>	48	30	78
<b>OVERCORRECTING/OVERSTEERING</b>	38	24	62
<b>BRAKE FAILURE OR DEFECTIVE</b>	21	18	39
<b>DRIVER ASLEEP OR FATIGUED</b>	21	14	35
<b>TIRE FAILURE OR DEFECTIVE</b>	14	13	27
<b>OTHER (ENVIRONMENTAL) - EXPLAIN IN NARRATIVE</b>	10	14	24
<b>INSECURE/LEAKY LOAD</b>	18	5	23
<b>CELL PHONE USAGE</b>	8	7	15
<b>OTHER (VEHICLE) - EXPLAIN IN NARRATIVE</b>	8	5	13
<b>DRIVER ILLNESS</b>	6	6	12
<b>HOLES/RUTS IN SURFACE</b>	3	1	4

<b>PRIMARY FACTOR</b>	<b>MALE</b>	<b>FEMALE</b>	<b>TOTAL</b>
<b>OBSTRUCTION NOT MARKED</b>	2	2	4
<b>WRONG WAY ON ONE WAY</b>	3	1	4
<b>OTHER TELEMATICS IN USE</b>	3	1	4
<b>ACCELERATOR FAILURE OR DEFECTIVE</b>	2	0	2
<b>SEVERE CROSSWINDS</b>	1	1	2
<b>STEERING FAILURE</b>	1	1	2
<b>VIEW OBSTRUCTED</b>	1	1	2
<b>UNKNOWN</b>	1	1	2
<b>ALCOHOLIC BEVERAGES</b>	2	0	2
<b>ENGINE FAILURE OR DEFECTIVE</b>	0	1	1
<b>HEADLIGHT DEFECTIVE OR NOT ON</b>	1	0	1
<b>OVERSIZE/OVERWEIGHT LOAD</b>	1	0	1
<b>TOW HITCH FAILURE</b>	1	0	1
<b>TOTAL</b>	4311	3778	8089

Table 15 shows that rear end crashes were the most common crash type for every age group.

**Table 15: Crash Type by Age**

<b>CRASH TYPE</b>	<b>&lt;16</b>	<b>16-24</b>	<b>25-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>65+</b>	<b>Total</b>
<b>REAR END</b>	34	1002	605	480	429	311	206	3067
<b>RIGHT ANGLE</b>	33	460	285	219	206	152	144	1499
<b>SAME DIRECTION SIDESWIPE</b>	7	267	187	141	127	114	87	930
<b>LEFT TURN</b>	12	194	132	77	79	59	62	615
<b>RAN OFF ROAD</b>	18	236	112	88	73	37	24	588
<b>HEAD ON</b>	17	160	121	76	77	49	30	530
<b>BACKING CRASH</b>	0	85	44	48	46	34	28	285
<b>RIGHT TURN</b>	0	37	40	31	16	22	14	160
<b>OTHER - EXPLAIN IN NARRATIVE</b>	3	50	34	27	21	10	7	152
<b>OPPOSITE DIRECTION SIDESWIPE</b>	5	43	25	17	19	11	11	131
<b>NON-COLLISION</b>	4	22	12	15	18	10	5	86
<b>LEFT/RIGHT TURN</b>	0	12	8	5	6	8	5	44
<b>REAR TO REAR</b>	0	3	0	1	0	2	1	7
<b>UNKNOWN</b>	0	1	0	0	0	0	0	1
<b>TOTAL</b>	133	2572	1605	1225	1117	819	624	8095



Figure 5 shows that rear end crashes were the most common crash type for both genders.

Figure 5: Crashes by Gender and Type

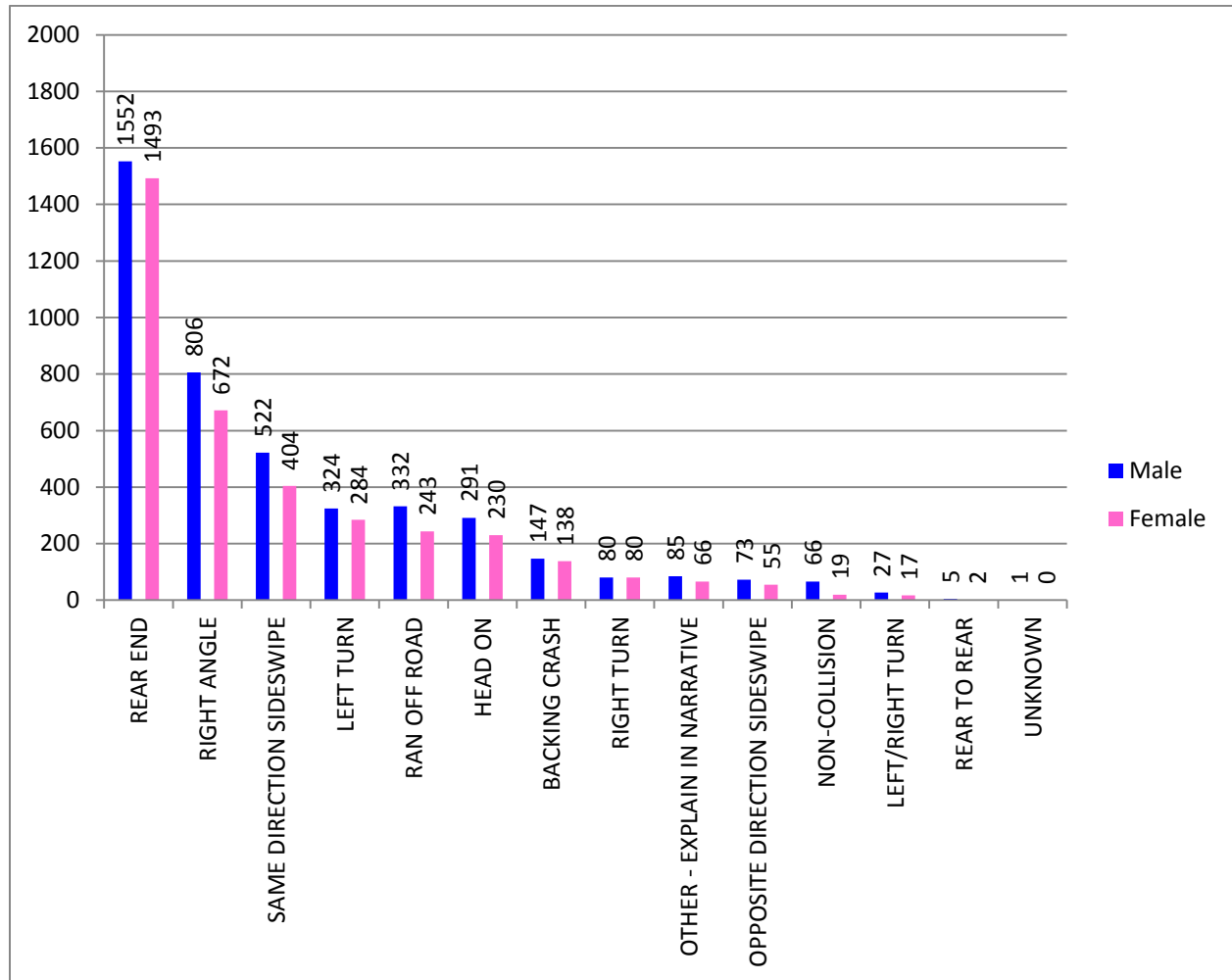


Figure 6 shows that males were the drivers in 54% of crashes.

**Figure 6: Drivers in Crashes by Gender**

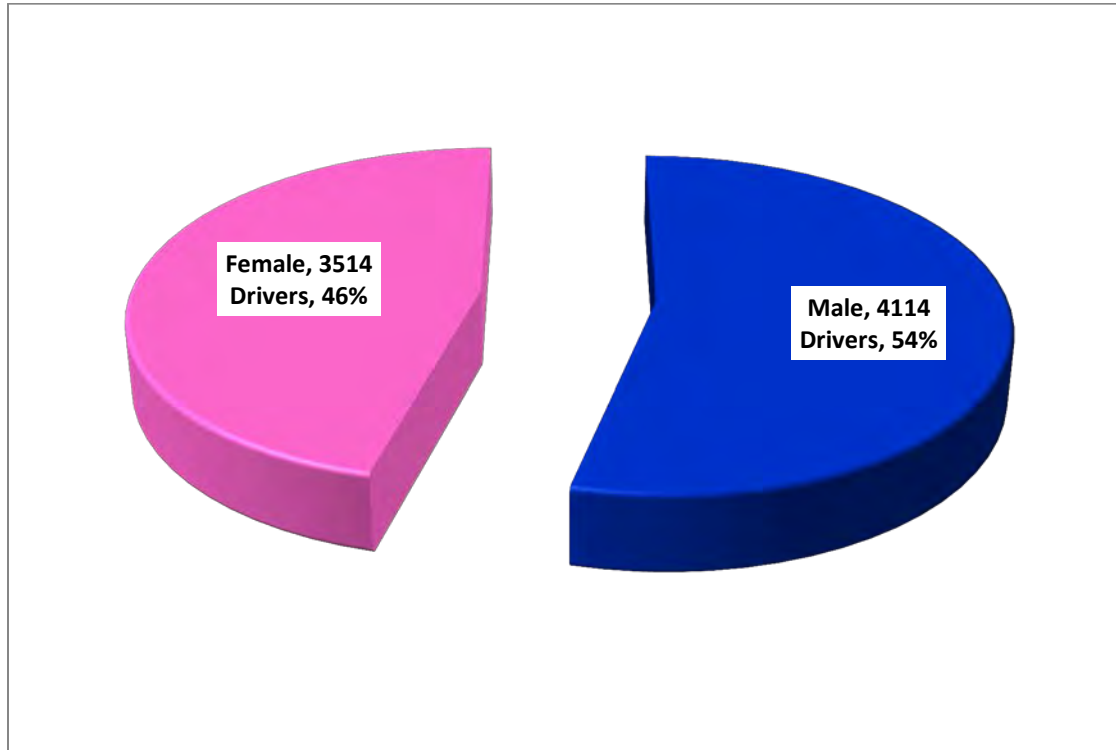
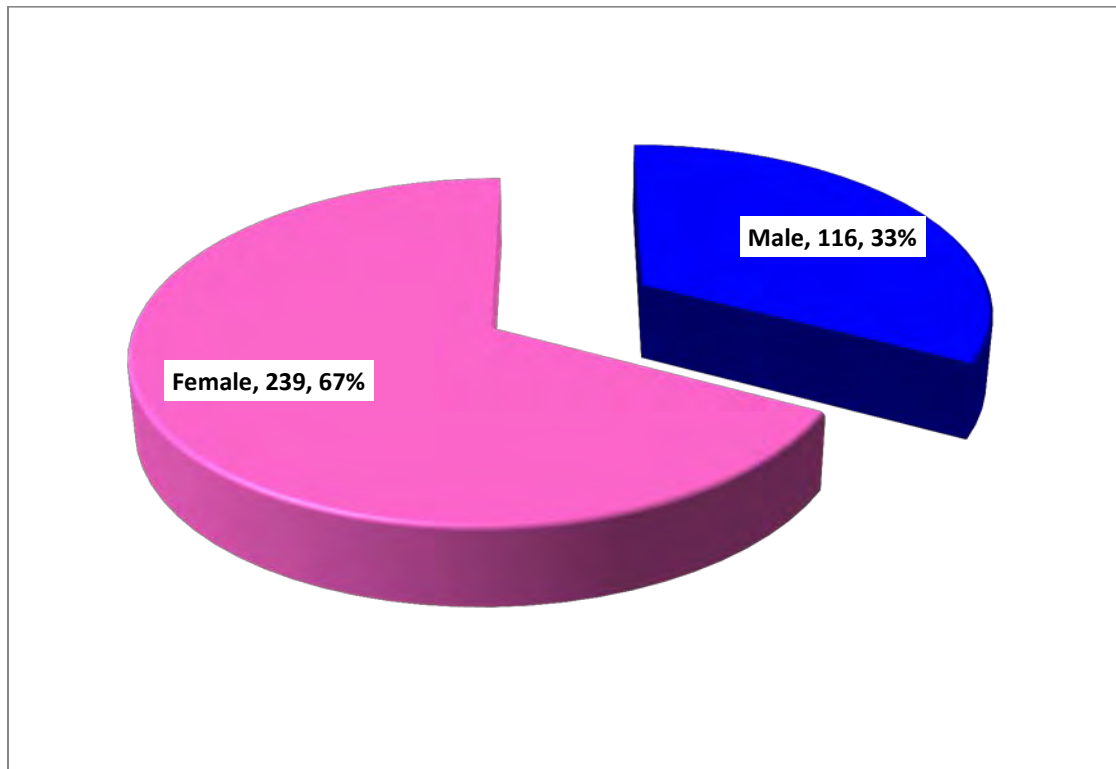


Figure 7 shows the number of passengers injured in crashes. More female passengers were injured than male passengers.

**Figure 7: Injured Passengers by Gender**



## Chapter 3: Time of Crashes

Drivers often behave differently at different times of the year, week, or day. These behavioral changes can be due to weather, increased/decreased level of distraction, fatigue, or several other factors.

Figure 8 shows that the highest number of crashes occurred in November.

**Figure 8: Crashes by Month**

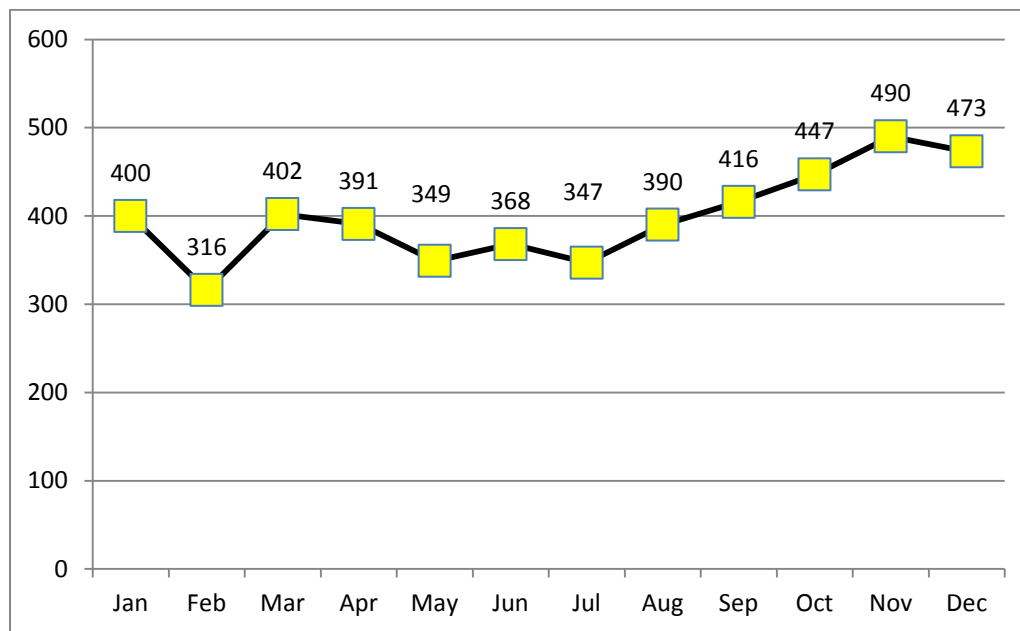


Figure 9 shows crashes by month for the three most common crash types (rear end, right angle, and same direction sideswipe).

**Figure 9: 3 Most Common Crash Types by Month**

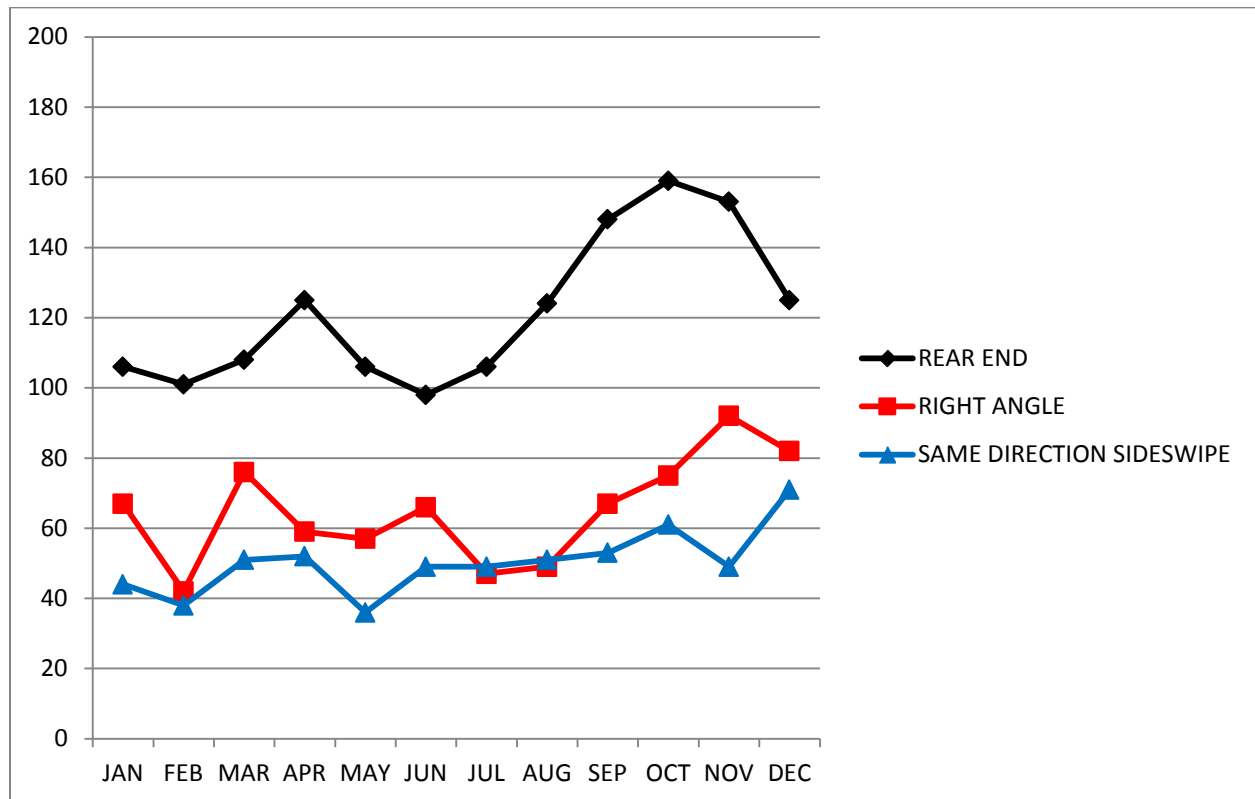
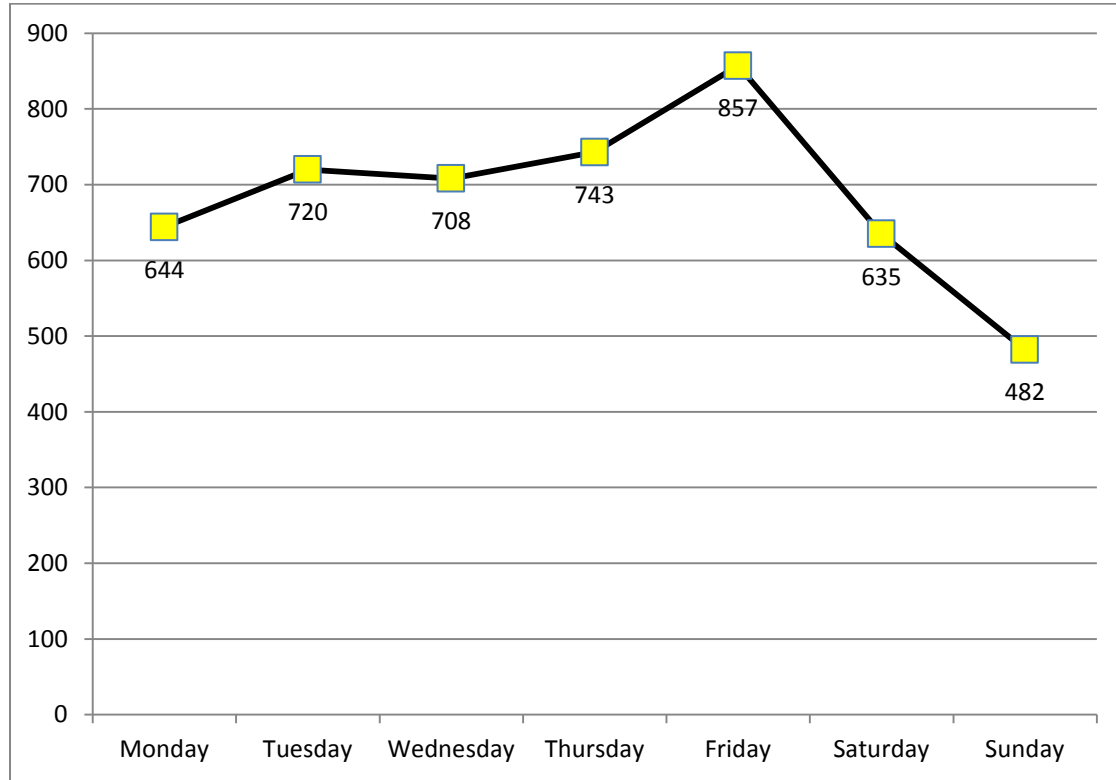


Figure 10 and Table 16 show that Friday had the highest number of crashes.

**Figure 10: Crashes by Day of the Week**



**Table 16: Crash Percentages by Day of the Week**

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Crashes	644	720	708	743	857	635	482	4789
Percentage	13.4%	15.0%	14.8%	15.5%	17.9%	13.3%	10.1%	100.0%

Figure 11 shows crashes by day of the week for the three most common crash types

**Figure 11: 3 Most Common Crash Types by Day of the Week**

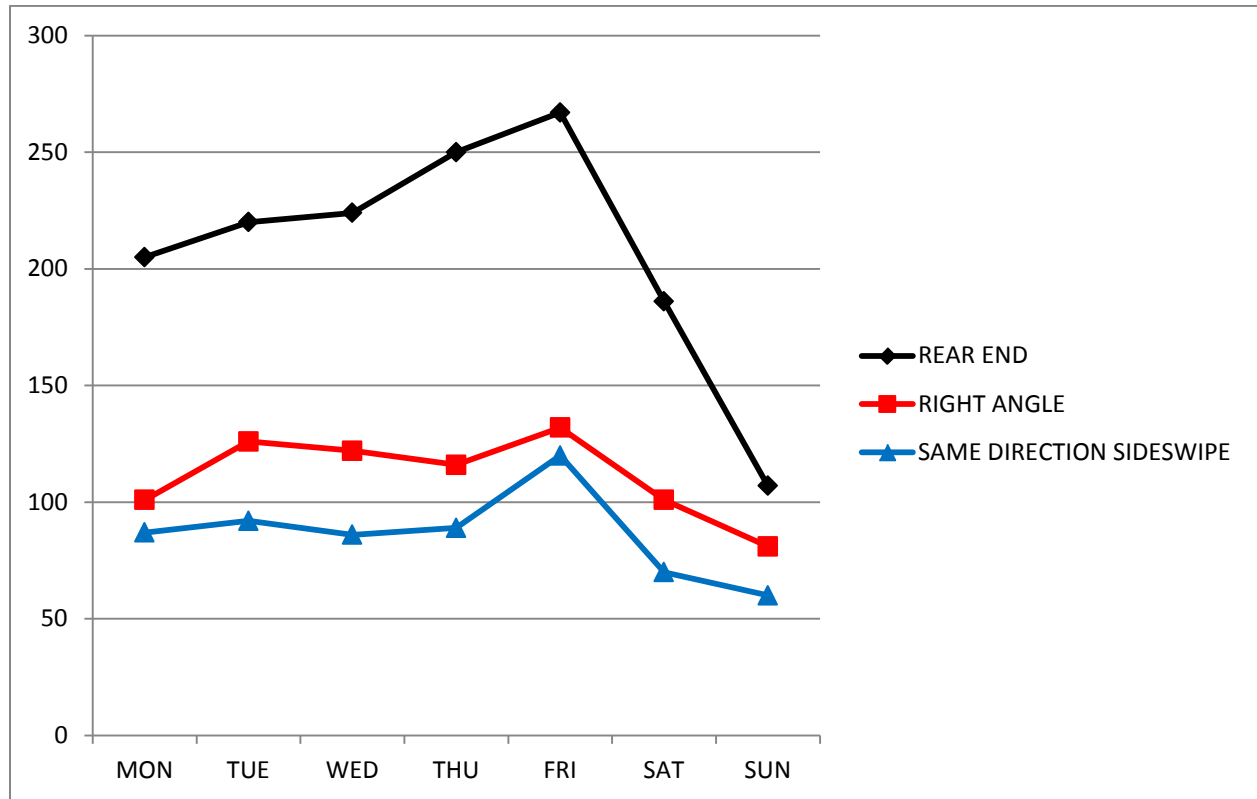


Figure 12 shows that the majority of crashes occurred during the daylight hours.

Figure 12: Crashes by Time of Day

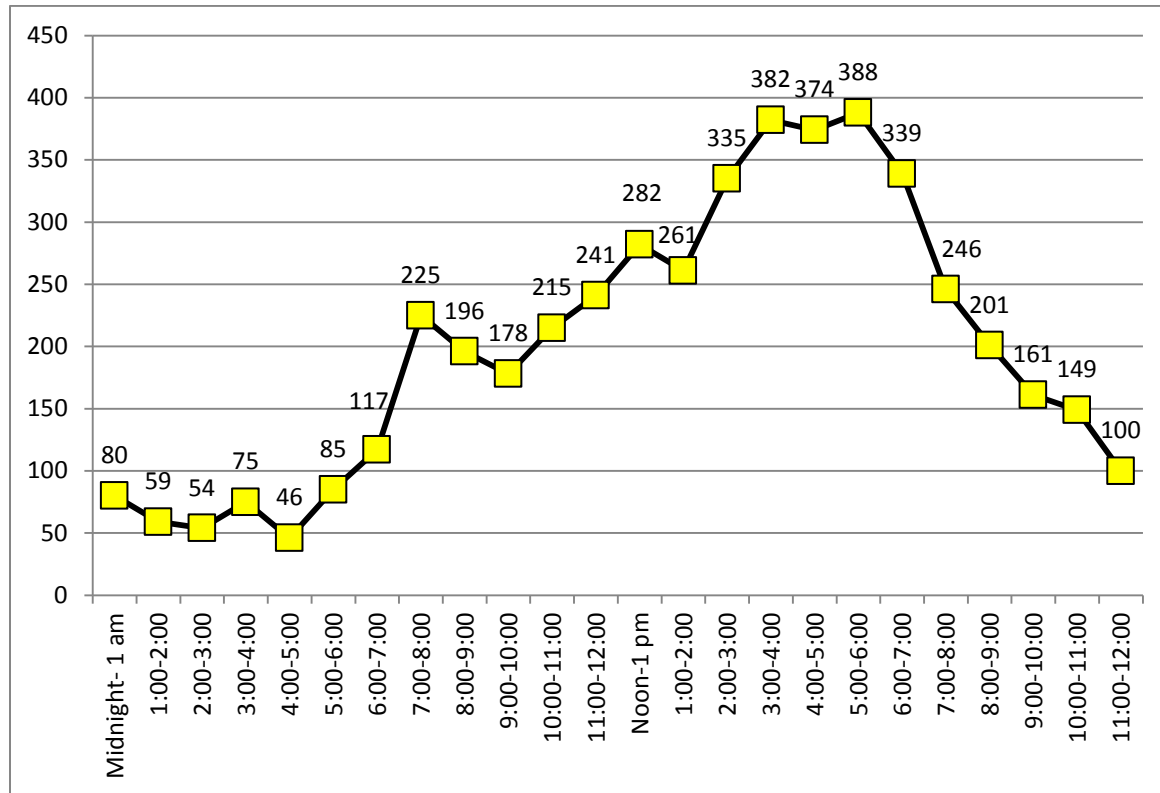
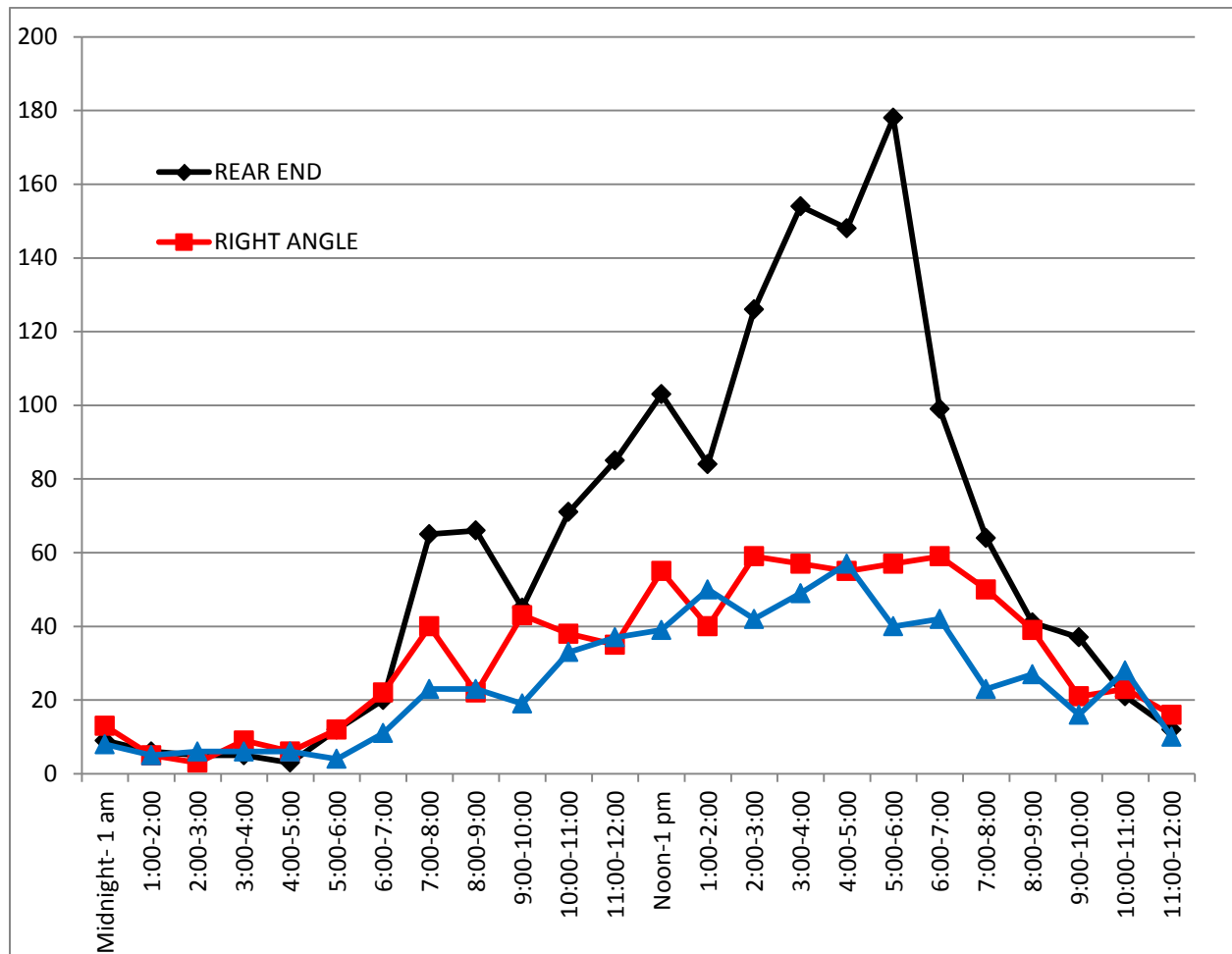




Figure 13 shows crashes by time of day for the three most common crash types.

Figure 13: 3 Most Common Crash Types by Time of Day



## Chapter 4: Weather and Road Conditions

Weather and road conditions can contribute to crashes. Decreased visibility, slick pavement, and other weather/road factors increase the chances for crashes.

Table 17 shows that more crashes occurred when weather conditions were clear. A large number of crashes also occurred when weather conditions were cloudy. Figures 14 and 15 show the location of crashes in clear weather conditions.

**Table 17: Crashes by Weather Conditions**

<b>WEATHER CONDITON</b>	<b>CRASHES</b>
<b>BLOWING SAND/SOIL/SNOW</b>	24
<b>CLEAR</b>	2829
<b>CLOUDY</b>	1066
<b>FOG/SMOKE/SMOG</b>	12
<b>RAIN</b>	523
<b>SEVERE CROSS WIND</b>	5
<b>SLEET/HAIL/FREEZING RAIN</b>	59
<b>SNOW</b>	261
<b>UNKNOWN</b>	10
<b>TOTAL</b>	4789

Figure 14: Tippecanoe County Crashes in Clear Weather Conditions

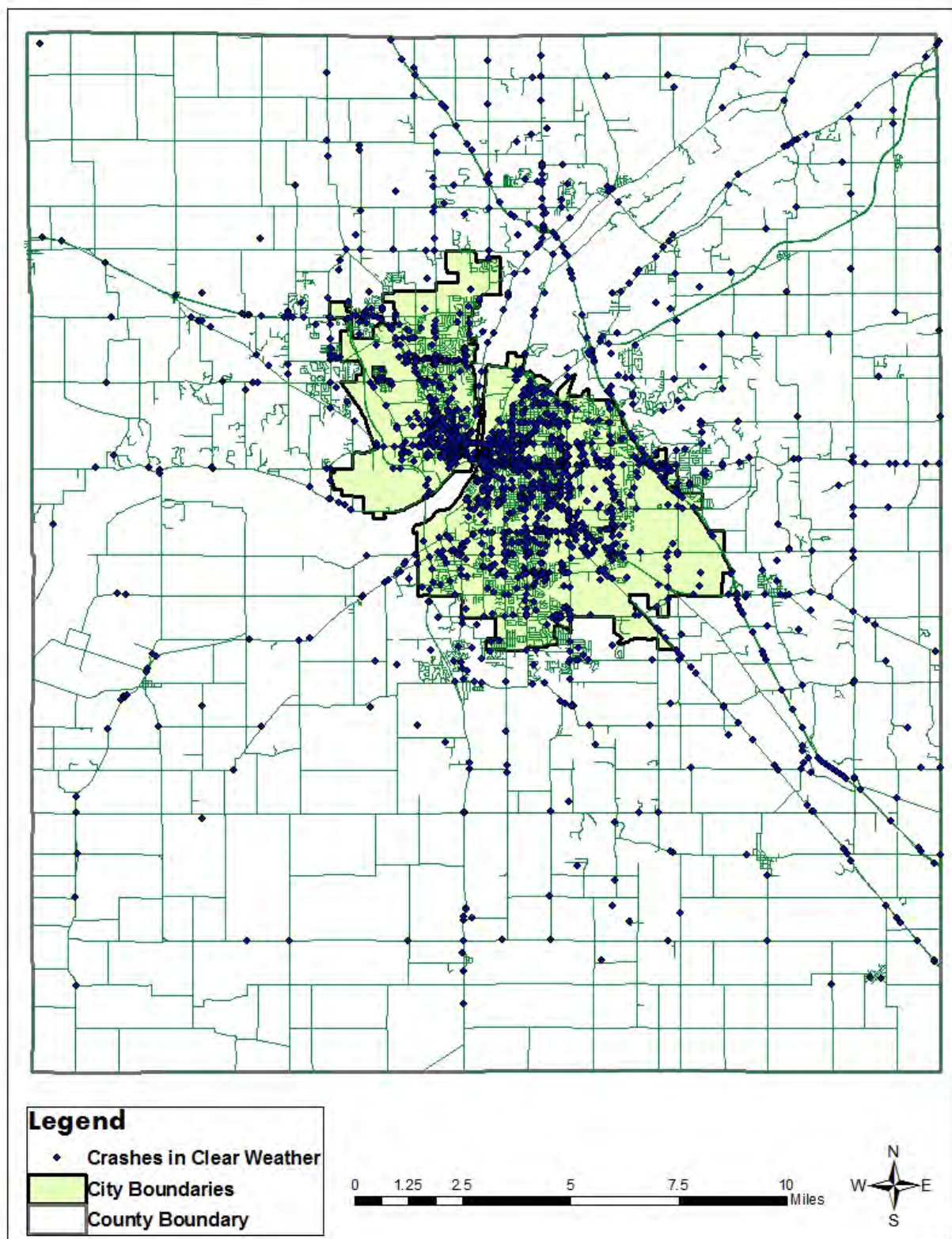
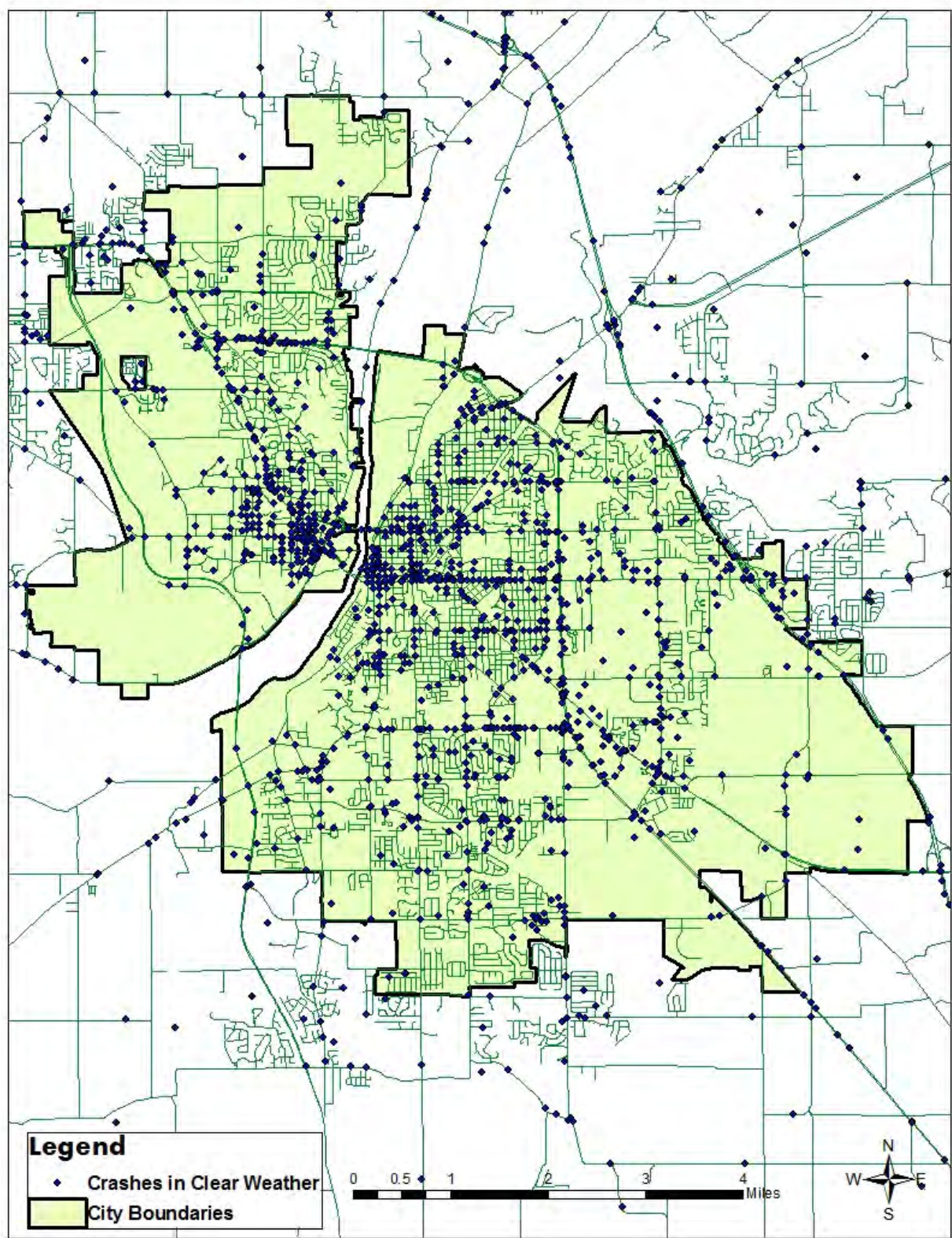




Figure 15: Lafayette and West Lafayette Crashes in Clear Weather



Figures 16 and 17 show the location of winter weather crashes (where the road surface had snow, ice, or slush on it).

**Figure 16: Tippecanoe County Winter Weather Crashes**

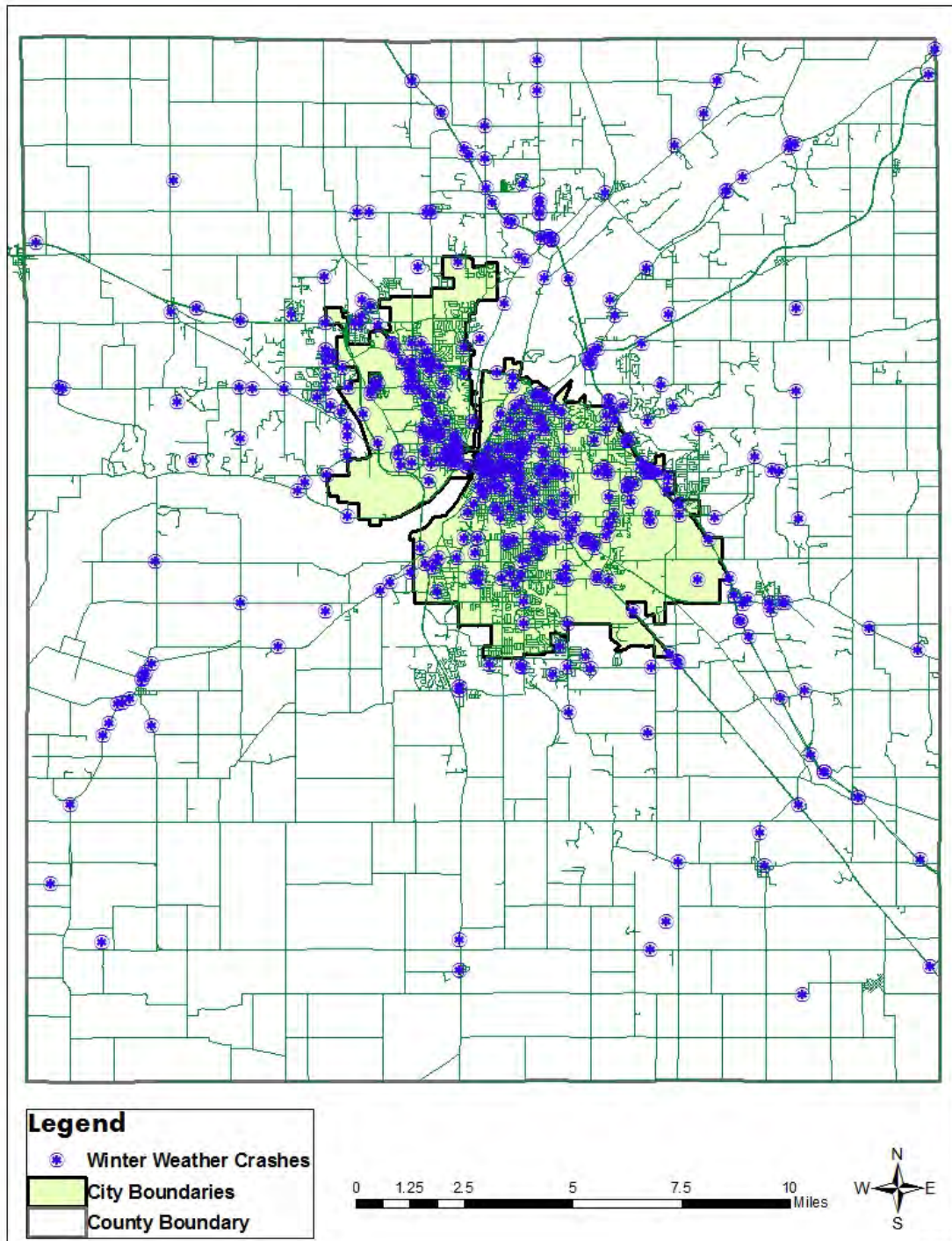




Figure 17: Lafayette and West Lafayette Winter Weather Crashes

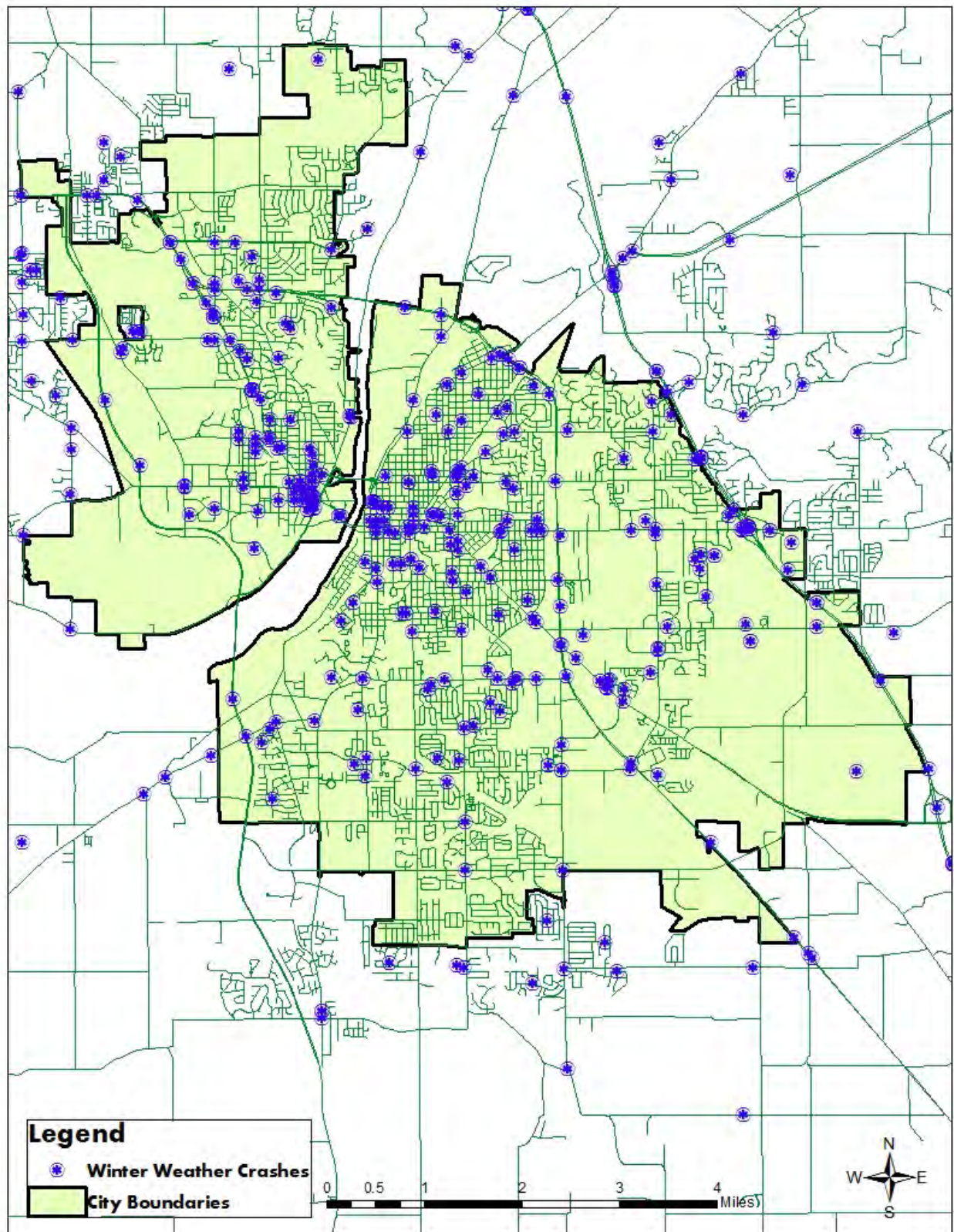


Table 18 shows that the majority of crashes occurred when the road was dry.

**Table 18: Crashes by Road Surface Condition**

<b>SURFACE CONDITION</b>	<b>CRASHES</b>
<b>DRY</b>	3512
<b>ICE</b>	145
<b>LOOSE MATERIAL ON ROAD</b>	5
<b>MUDDY</b>	1
<b>SNOW/SLUSH</b>	268
<b>WATER (STANDING OR MOVING)</b>	3
<b>WET</b>	848
<b>UNKNOWN</b>	7
<b>TOTAL</b>	4789

Table 19 shows that the majority of crashes occurred in the daylight.

**Table 19: Crashes by Amount of Sunlight**

<b>LIGHT CONDITION</b>	<b>CRASHES</b>
<b>DARK (LIGHTED)</b>	723
<b>DARK (NOT LIGHTED)</b>	631
<b>DAWN/DUSK</b>	237
<b>DAYLIGHT</b>	3142
<b>UNKNOWN</b>	56
<b>TOTAL</b>	4789

## Chapter 5: Injuries and Fatalities

Although most crashes only cause property damage, some crashes result in injury or fatality for a driver or passenger. Crashes with injuries or fatalities are much more costly to those involved than property damage crashes are. The costs of a severe injury or fatality include high medical costs, lost income, and emotional distress.

Injuries suffered range in severity. Some injuries are as minor as temporary pain, others are as major as paralysis. A crash with an injury is categorized as either a personal injury crash or incapacitating injury crash. This information is not always 100% reliable. The responding officer marks down an estimate of the category of the severity of the injury at the scene of the crash. This estimate does not have the same accuracy as medical records would. However, it is very difficult to obtain medical records to verify the severity of an injury in a crash after the crash has happened.

Table 20 shows data about injury and fatality crashes in Tippecanoe County.

**Table 20: Injury and Fatality Crashes**

<b>Crash Statistic</b>	<b>Crashes</b>
Injury Crashes	1002
Number of Injuries	1335
Fatality Crashes	20
Number of Fatalities	22



Table 21 shows that following too closely was the biggest cause of injured passengers.

**Table 21: Injured Passengers by Primary Factor**

<b>PRIMARY FACTOR</b>	<b>NUMBER OF INJURED PASSENGERS</b>
<b>FOLLOWING TOO CLOSELY</b>	84
<b>FAILURE TO YIELD RIGHT OF WAY</b>	69
<b>DISREGARD SIGNAL/REG SIGN</b>	52
<b>UNSAFE SPEED</b>	22
<b>RAN OFF ROAD RIGHT</b>	20
<b>SPEED TOO FAST FOR WEATHER CONDITIONS</b>	16
<b>LEFT OF CENTER</b>	15
<b>DRIVER DISTRACTED - EXPLAIN IN NARRATIVE</b>	13
<b>OTHER (DRIVER) - EXPLAIN IN NARRATIVE</b>	10
<b>OVERCORRECTING/OVERSTEERING</b>	8
<b>IMPROPER LANE USAGE</b>	8
<b>TIRE FAILURE OR DEFECTIVE</b>	6
<b>ROADWAY SURFACE CONDITION</b>	6
<b>IMPROPER TURNING</b>	5
<b>ANIMAL/OBJECT IN ROADWAY</b>	4
<b>UNSAFE LANE MOVEMENT</b>	4
<b>CELL PHONE USAGE</b>	3
<b>OTHER (ENVIRONMENTAL) - EXPLAIN IN NARR</b>	3
<b>UNSAFE BACKING</b>	3
<b>BRAKE FAILURE OR DEFECTIVE</b>	2
<b>DRIVER ASLEEP OR FATIGUED</b>	1
<b>IMPROPER PASSING</b>	1
<b>TOTAL</b>	355

Table 22 shows that rear end collisions caused the highest number of injured passengers.

**Table 22: Injured Passengers by Crash Type**

<b>MANNER OF CRASH</b>	<b>NUMBER OF INJURED PASSENGERS</b>
<b>REAR END</b>	128
<b>RIGHT ANGLE</b>	81
<b>RAN OFF ROAD</b>	45
<b>HEAD ON</b>	33
<b>LEFT TURN</b>	28
<b>SAME DIRECTION SIDESWIPE</b>	10
<b>OTHER - EXPLAIN IN NARRATIVE</b>	9
<b>NON-COLLISION</b>	8
<b>OPPOSITE DIRECTION SIDESWIPE</b>	8
<b>RIGHT TURN</b>	3
<b>BACKING CRASH</b>	2
<b>TOTAL</b>	355

Table 23 shows that August had the highest number of injured passengers.

**Table 23: Injured Passengers by Month**

<b>Month</b>	<b>Number of Injuries</b>
<b>Jan</b>	20
<b>Feb</b>	18
<b>Mar</b>	24
<b>Apr</b>	19
<b>May</b>	22
<b>Jun</b>	33
<b>Jul</b>	23
<b>Aug</b>	69
<b>Sep</b>	34
<b>Oct</b>	32
<b>Nov</b>	29
<b>Dec</b>	32
<b>Total</b>	355

Table 24 shows that the highest number of injured passengers occurred between 4 and 5 p.m.

**Table 24: Injured Passengers by Time of Day**

<b>Time</b>	<b>Number of Injuries</b>
<b>Midnight- 1 am</b>	4
<b>1:00-2:00</b>	1
<b>2:00-3:00</b>	3
<b>3:00-4:00</b>	2
<b>4:00-5:00</b>	5
<b>5:00-6:00</b>	4
<b>6:00-7:00</b>	2
<b>7:00-8:00</b>	11
<b>8:00-9:00</b>	8
<b>9:00-10:00</b>	11
<b>10:00-11:00</b>	14
<b>11:00-12:00</b>	10
<b>Noon-1 pm</b>	26
<b>1:00-2:00</b>	15
<b>2:00-3:00</b>	35
<b>3:00-4:00</b>	33
<b>4:00-5:00</b>	39
<b>5:00-6:00</b>	24
<b>6:00-7:00</b>	36
<b>7:00-8:00</b>	26
<b>8:00-9:00</b>	15
<b>9:00-10:00</b>	11
<b>10:00-11:00</b>	10
<b>11:00-12:00</b>	10
<b>Total</b>	355

Figure 18 shows that Saturday had the highest number of injured passengers.

**Figure 18: Injured Passengers by Day of the Week**

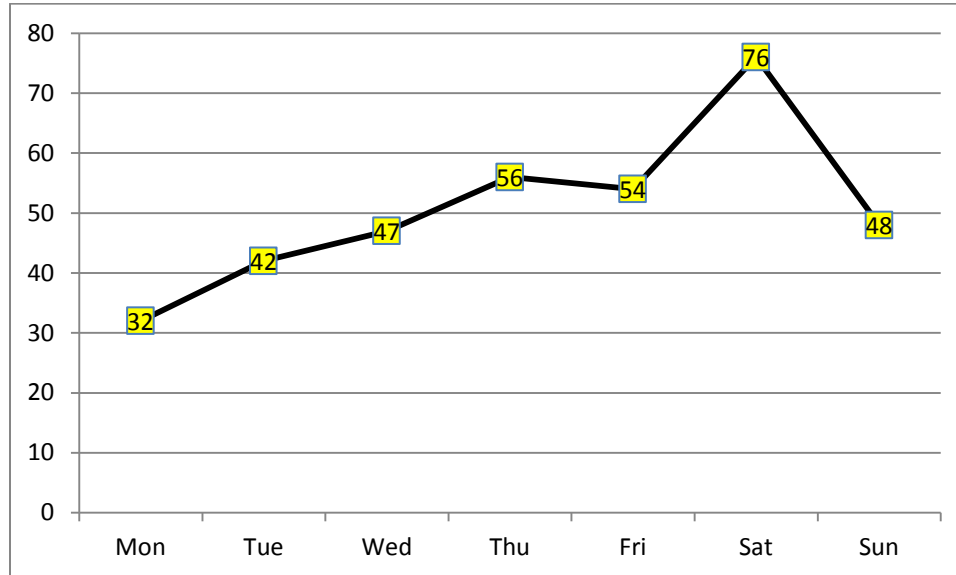


Table 25 shows that most of the injured passengers were 24 years old or younger.

**Table 25: Injured Passengers by Age and Gender**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
Male	29	42	18	10	10	5	2	116
Female	65	49	27	29	22	21	26	239
Total	94	91	45	39	32	26	28	355

Table 26 shows that most of the injuries suffered in crashes were categorized as non-incapacitating. However, when analyzing the severity of injury crashes, crashes with fatal or incapacitating injuries are considered very severe. In 2013, there were 87 of these crashes.

**Table 26: Severity of Injuries in Crashes**

<b>Injury Type</b>	<b>Number Of Injuries</b>
<b>Fatal</b>	22
<b>Incapacitating</b>	65
<b>Non-Incapacitating</b>	1227
<b>Refused Treatment</b>	7
<b>Possible/Unknown</b>	40
<b>None</b>	6734
<b>Total</b>	8095

Figure 19 shows the locations of incapacitating injuries in the county.

Figure 19: Tippecanoe County Incapacitating Injuries

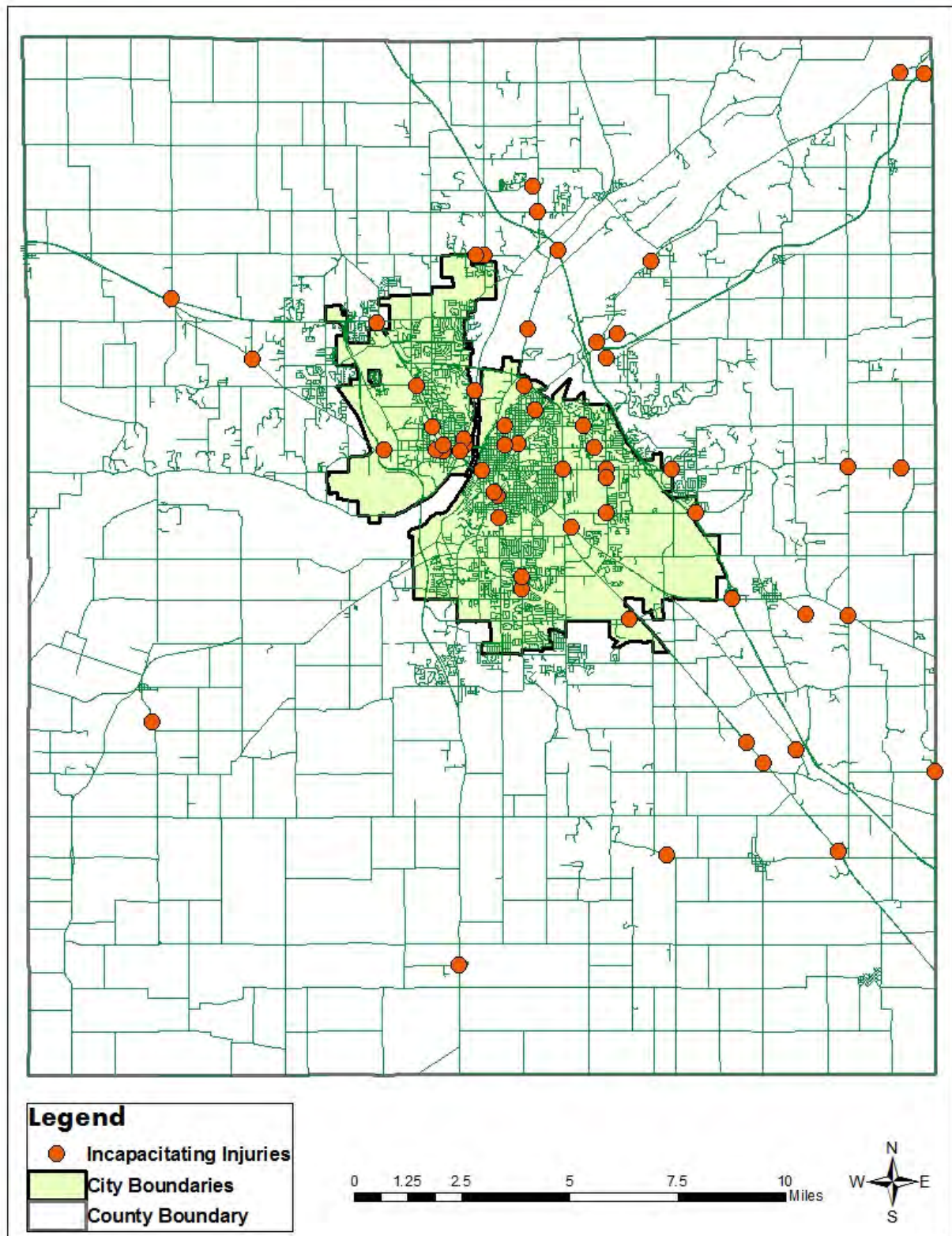


Table 27 shows that failing to yield the right of way led to the highest number of incapacitating injuries.

**Table 27: Incapacitating Injuries by Primary Factor**

<b>PRIMARY FACTOR</b>	<b>NUMBER OF INCAPACITATING INJURIES</b>
<b>FAILURE TO YIELD RIGHT OF WAY</b>	14
<b>RAN OFF ROAD RIGHT</b>	8
<b>DISREGARD SIGNAL/REG SIGN</b>	6
<b>FOLLOWING TOO CLOSELY</b>	6
<b>PEDESTRIAN ACTION</b>	5
<b>LEFT OF CENTER</b>	4
<b>UNSAFE SPEED</b>	4
<b>IMPROPER LANE USAGE</b>	3
<b>OTHER (DRIVER)</b>	3
<b>IMPROPER TURNING</b>	2
<b>OVERCORRECTING/OVERSTEERING</b>	2
<b>ROADWAY SURFACE CONDITION</b>	2
<b>UNSAFE LANE MOVEMENT</b>	2
<b>CELL PHONE USAGE</b>	1
<b>DRIVER DISTRACTED</b>	1
<b>DRIVER ILLNESS</b>	1
<b>SPEED TOO FAST FOR WEATHER CONDITIONS</b>	1
<b>TOTAL</b>	65



Table 28 shows that right angle crashes caused the highest number of incapacitating injuries.

**Table 28: Incapacitating Injuries by Crash Type**

<b>MANNER OF CRASH</b>	<b>NUMBER OF INCAPACITATING INJURIES</b>
<b>RIGHT ANGLE</b>	18
<b>HEAD ON</b>	11
<b>RAN OFF ROAD</b>	11
<b>REAR END</b>	10
<b>OTHER - EXPLAIN IN NARRATIVE</b>	6
<b>LEFT TURN</b>	5
<b>SAME DIRECTION SIDESWIPE</b>	2
<b>NON-COLLISION</b>	1
<b>OPPOSITE DIRECTION SIDESWIPE</b>	1
<b>TOTAL</b>	65

Table 29 shows that young people were most likely to suffer incapacitating injuries.

**Table 29: Incapacitating Injuries by Age and Gender**

	<b>&lt;16</b>	<b>16-24</b>	<b>25-34</b>	<b>35-44</b>	<b>45-54</b>	<b>55-64</b>	<b>65+</b>	<b>Total</b>
<b>Male</b>	2	15	5	4	2	4	3	35
<b>Female</b>	3	9	1	5	3	4	5	30
<b>Total</b>	5	24	6	9	5	8	8	65

Figure 20 shows that males were slightly more likely to suffer incapacitating injuries than females were.

**Figure 20: Incapacitating Injuries by Gender**

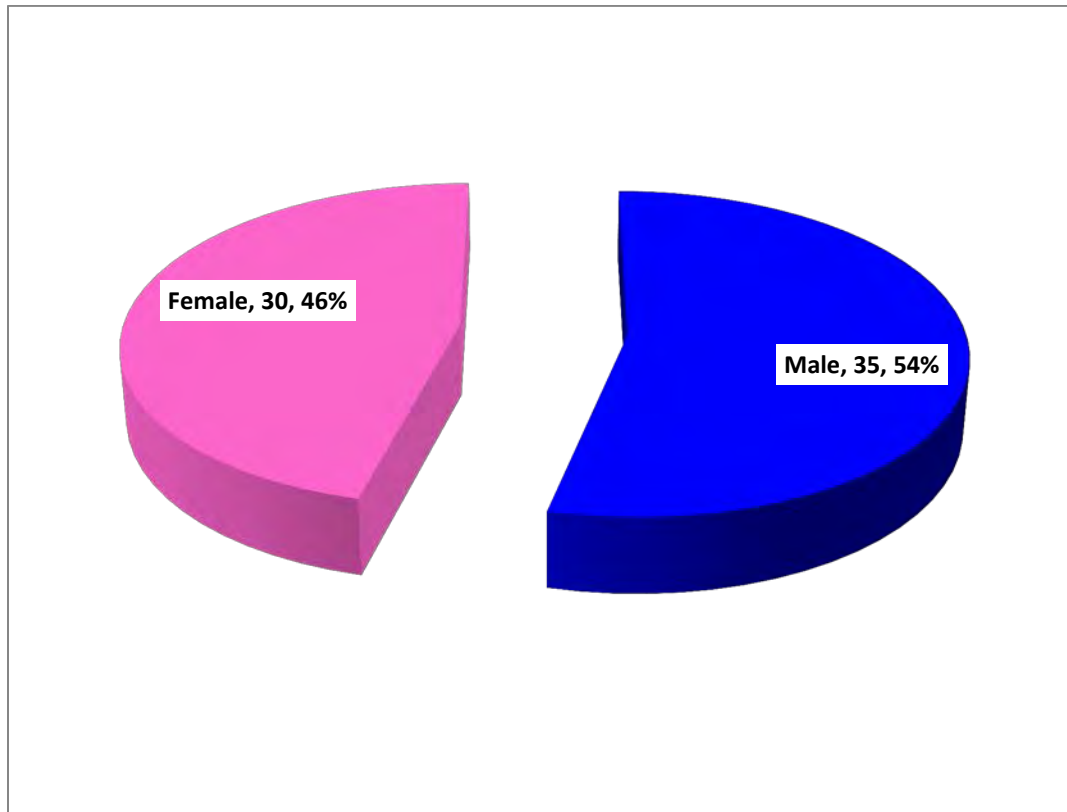


Table 30 shows that November had the most incapacitating injuries.

**Table 30: Incapacitating Injuries by Month**

<b>Month</b>	<b>Number of Incapacitating Injuries</b>
<b>Jan</b>	2
<b>Feb</b>	4
<b>Mar</b>	2
<b>Apr</b>	5
<b>May</b>	5
<b>Jun</b>	3
<b>Jul</b>	3
<b>Aug</b>	7
<b>Sep</b>	6
<b>Oct</b>	11
<b>Nov</b>	12
<b>Dec</b>	5
<b>Total</b>	65

Figure 21 shows that Thursday and Saturday had the most incapacitating injuries.

**Figure 21: Incapacitating Injuries by Day of the Week**

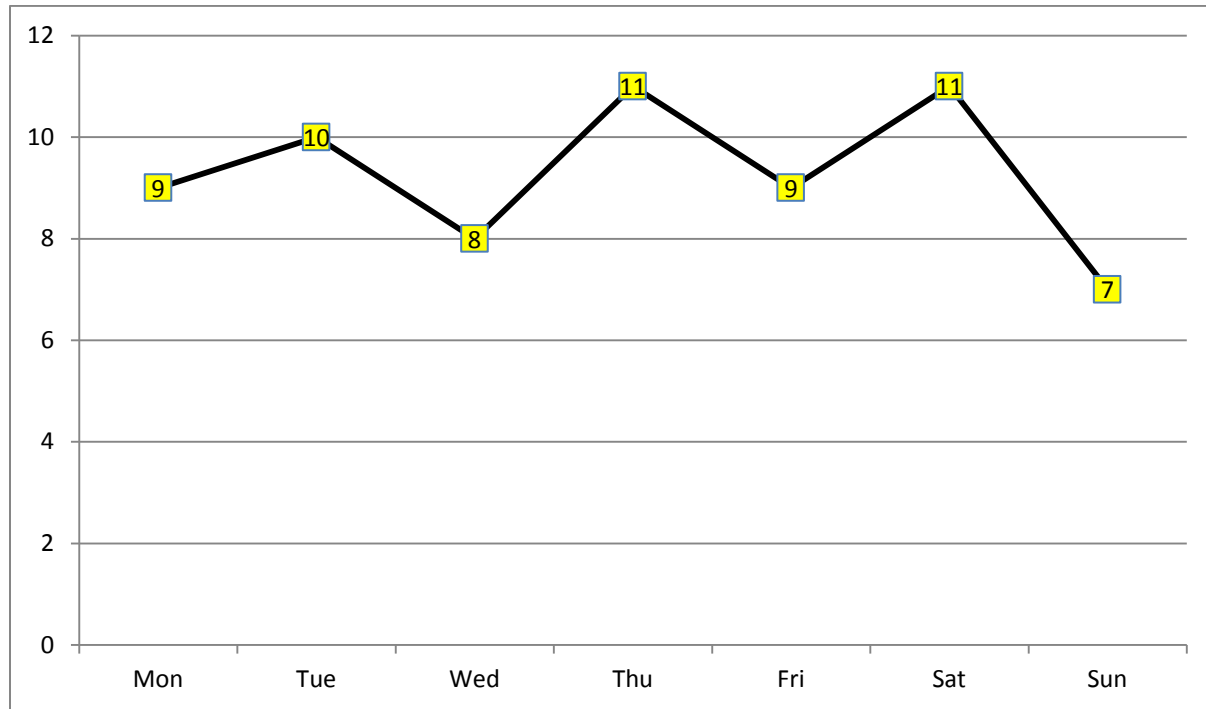


Table 31 shows that the highest number of incapacitating injuries occurred between 7 and 8 p.m.

**Table 31: Incapacitating Injuries by Time of Day**

<b>Time</b>	<b>Number of Incapacitating Injuries</b>
<b>Midnight- 1 am</b>	0
<b>1:00-2:00</b>	0
<b>2:00-3:00</b>	2
<b>3:00-4:00</b>	4
<b>4:00-5:00</b>	2
<b>5:00-6:00</b>	0
<b>6:00-7:00</b>	2
<b>7:00-8:00</b>	2
<b>8:00-9:00</b>	0
<b>9:00-10:00</b>	1
<b>10:00-11:00</b>	0
<b>11:00-12:00</b>	3
<b>Noon-1 pm</b>	1
<b>1:00-2:00</b>	2
<b>2:00-3:00</b>	3
<b>3:00-4:00</b>	5
<b>4:00-5:00</b>	7
<b>5:00-6:00</b>	5
<b>6:00-7:00</b>	5
<b>7:00-8:00</b>	9
<b>8:00-9:00</b>	3
<b>9:00-10:00</b>	4
<b>10:00-11:00</b>	4
<b>11:00-12:00</b>	1
<b>Total</b>	65

Fatalities (or injuries that lead to fatalities) are the most severe consequences that come from crashes. Figure 22 shows that fatality crashes were spread all throughout the county. Figure 23 shows the locations of fatal crashes in Lafayette and West Lafayette.

**Figure 22: Tippecanoe County Fatality Crashes**

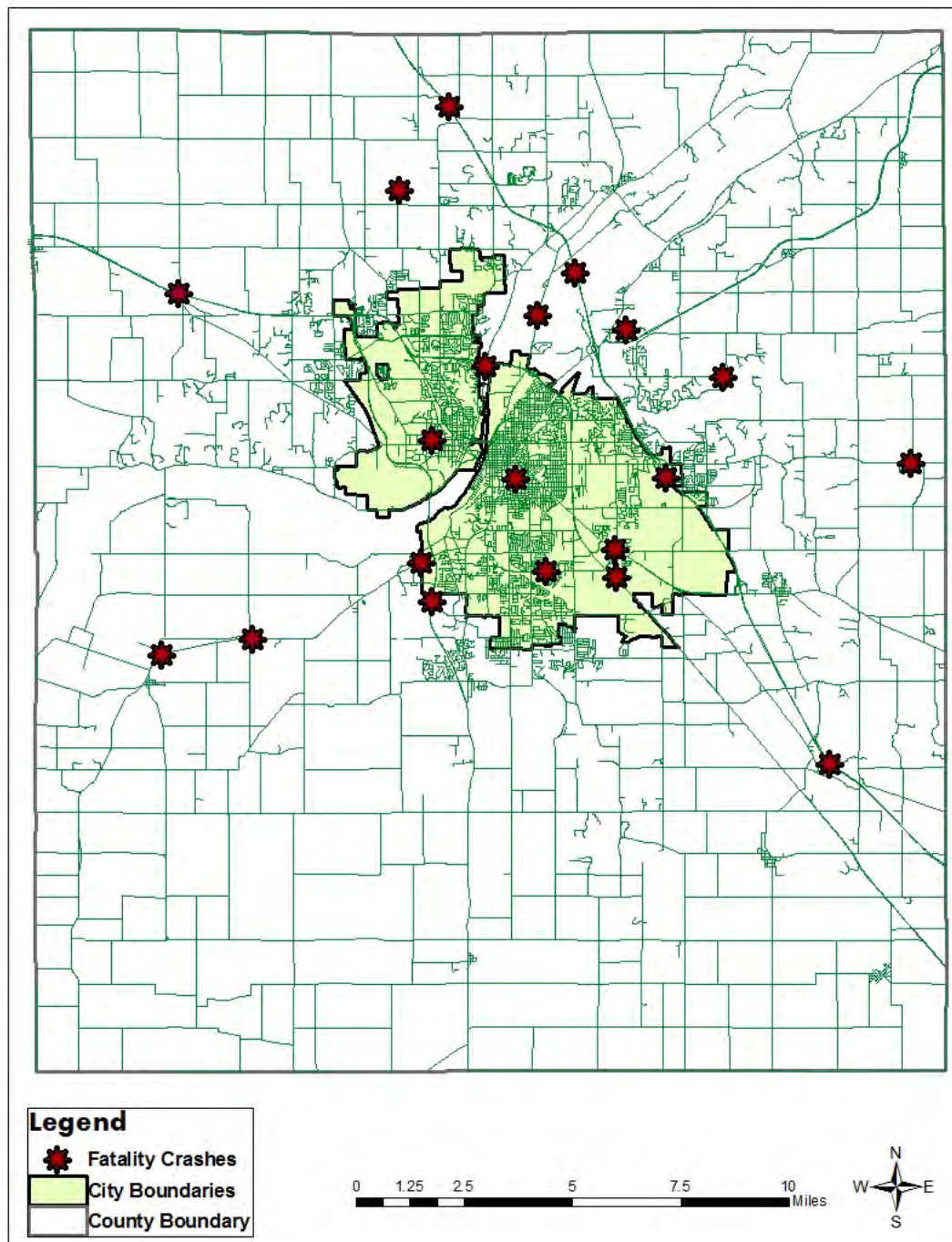




Figure 23: Lafayette and West Lafayette Fatality Crashes

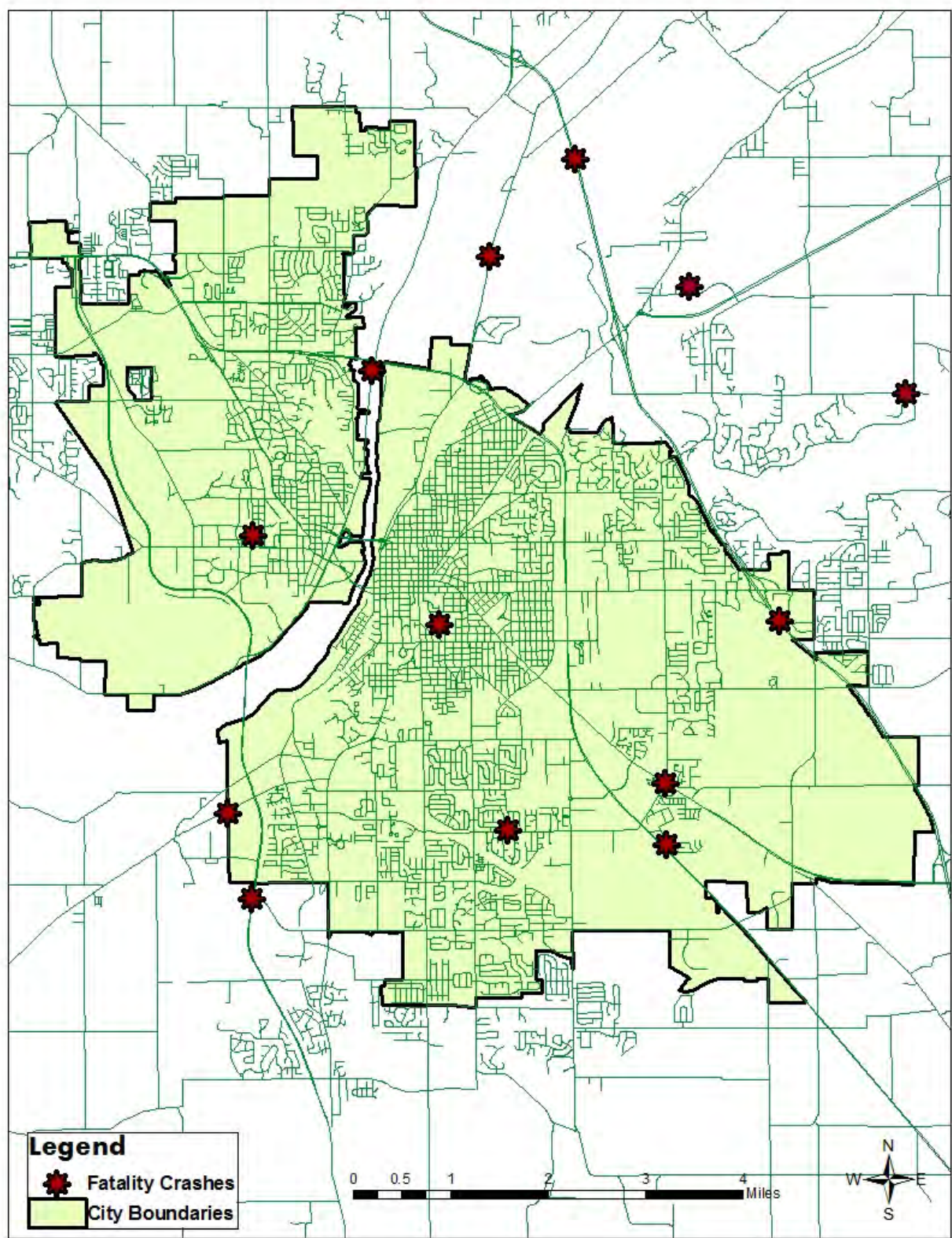


Table 32 shows that the most common cause of fatalities was running off the road.

**Table 32: Fatalities by Primary Factor**

PRIMARY FACTOR	NUMBER OF FATALITIES
RAN OFF ROAD RIGHT	6
UNSAFE SPEED	4
OVERCORRECTING/OVERSTEERING	3
DISREGARD SIGNAL/REG SIGN	2
OTHER (DRIVER)	2
SPEED TOO FAST FOR WEATHER CONDITIONS	2
FAILURE TO YIELD RIGHT OF WAY	1
LEFT OF CENTER	1
TIRE FAILURE OR DEFECTIVE	1
TOTAL	22

Table 33 shows that running off the road and right angle crashes caused the highest number of fatalities.

**Table 33: Fatalities by Crash Type**

MANNER OF CRASH	NUMBER OF FATALITIES
RAN OFF ROAD	5
RIGHT ANGLE	5
SAME DIRECTION SIDESWIPE	4
REAR END	3
OTHER - EXPLAIN IN NARRATIVE	2
HEAD ON	1
NON-COLLISION	1
OPPOSITE DIRECTION SIDESWIPE	1
TOTAL	22



Table 34 shows that people of all age groups died in crashes.

**Table 34: Fatalities by Age**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
<b>Male</b>	0	4	2	2	2	3	1	14
<b>Female</b>	0	1	2	0	0	3	2	8
<b>Total</b>	0	5	4	2	2	6	3	22

Figure 24 shows that more males died in crashes than females.

**Figure 24: Fatalities by Gender**

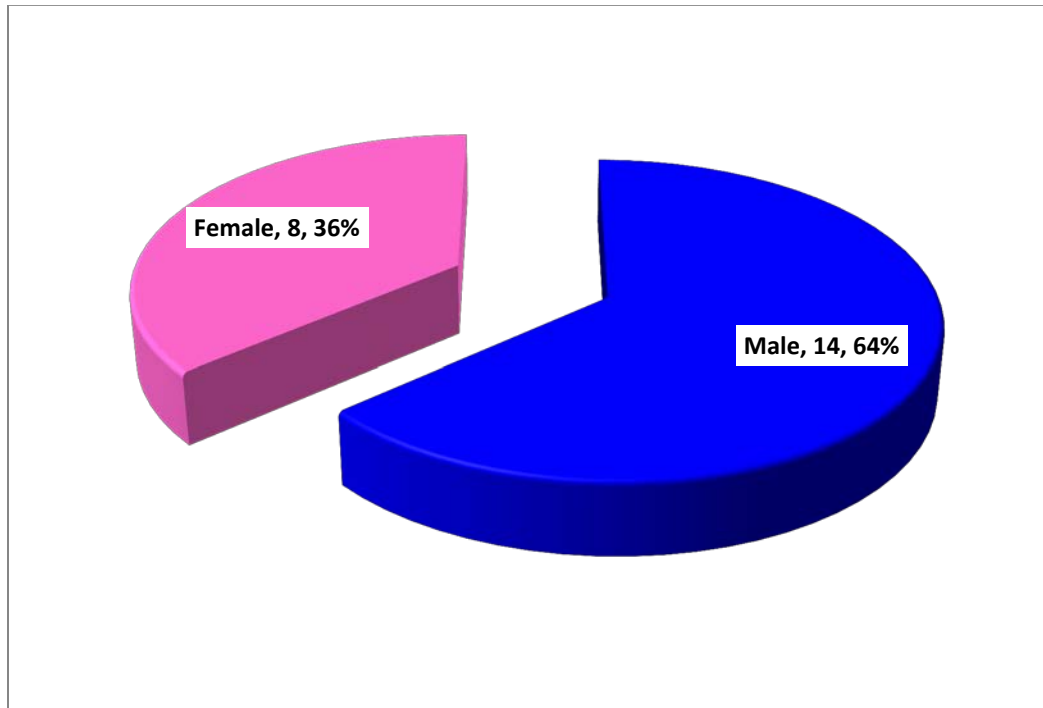


Table 35 shows that August had the highest number of fatalities.

**Table 35: Fatalities by Month**

Month	Number of Fatalities
Jan	2
Feb	1
Mar	2
Apr	1
May	4
Jun	4
Jul	1
Aug	5
Sep	2
Oct	0
Nov	0
Dec	0
Total	22

Figure 25 shows that Monday, Wednesday, and Sunday had the highest number of fatalities.

**Figure 25: Fatalities by Day of the Week**

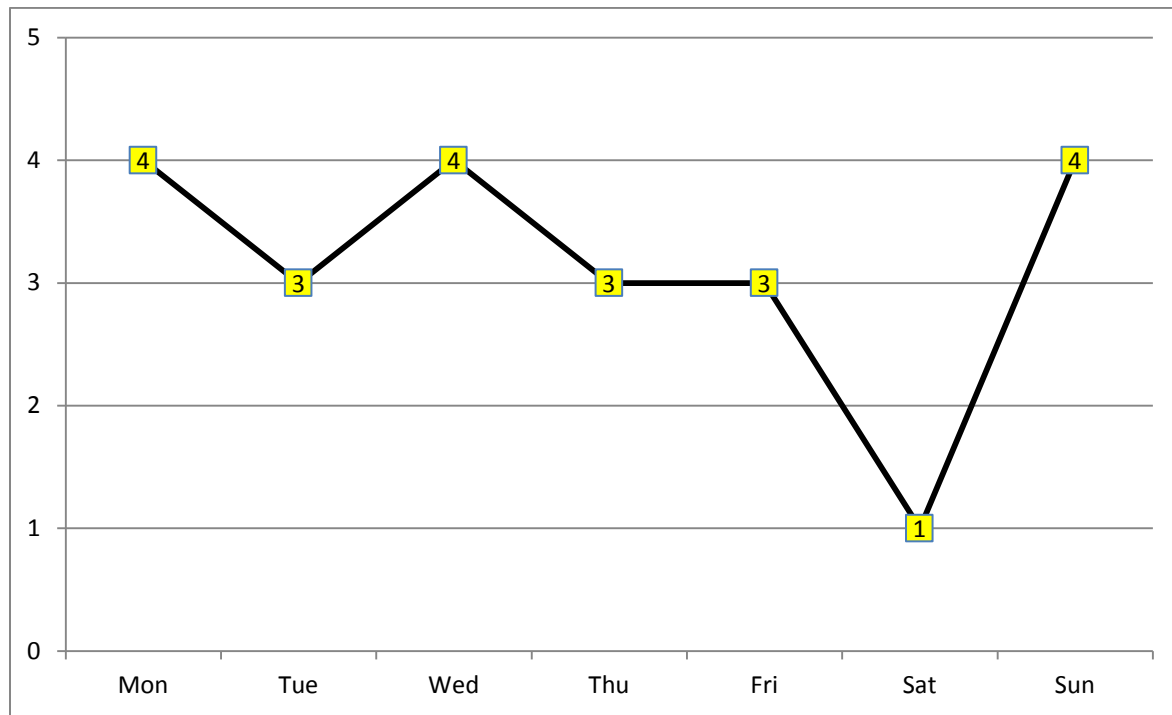


Table 36 shows that the highest number of fatalities occurred between 7 and 8 p.m.

**Table 36: Fatalities by Time of Day**

<b>Time</b>	<b>Number of Fatalities</b>
<b>Midnight- 1 am</b>	1
<b>1:00-2:00</b>	0
<b>2:00-3:00</b>	0
<b>3:00-4:00</b>	0
<b>4:00-5:00</b>	0
<b>5:00-6:00</b>	1
<b>6:00-7:00</b>	1
<b>7:00-8:00</b>	3
<b>8:00-9:00</b>	1
<b>9:00-10:00</b>	2
<b>10:00-11:00</b>	0
<b>11:00-12:00</b>	1
<b>Noon-1 pm</b>	1
<b>1:00-2:00</b>	0
<b>2:00-3:00</b>	1
<b>3:00-4:00</b>	0
<b>4:00-5:00</b>	1
<b>5:00-6:00</b>	0
<b>6:00-7:00</b>	3
<b>7:00-8:00</b>	4
<b>8:00-9:00</b>	1
<b>9:00-10:00</b>	0
<b>10:00-11:00</b>	1
<b>11:00-12:00</b>	0
<b>Total</b>	22

## Chapter 6: Drug and Alcohol Involvement in Crashes

When drivers operate a vehicle in an impaired state, it hinders their ability to safely use the road. Not only does this endanger themselves, but also others around them. Some drivers operating in an impaired state may not end up in a crash, but they increase their risk of being involved in a crash when they drive impaired.

Driver education, vehicle safety improvements, improved road design, and law enforcement activities all have the potential to reduce the damage done by drivers operating in an impaired state. As improvements are made in all these areas, the rate at which alcohol and drug-related crashes occur will decrease.

In 2013, there were at least 53 drivers under the influence of alcohol and 9 drivers under the influence of drugs involved in crashes. There were 2 drivers under the influence of both alcohol and drugs. It should be noted that for some of the data used, test results were listed as “pending” for alcohol or drug use.

Tables 37 and 38 show information on alcohol and drug crashes.

**Table 37: OWI/Drug Crash Statistics**

<b>OWI/Drug Crash Data</b>	<b>Statistic</b>
<b>Number of Crashes with OWI</b>	39
<b>Percentage of Crashes with OWI</b>	0.81%
<b>Maximum BAC</b>	0.28
<b>Number of Crashes with Drugs</b>	9
<b>Percentage of Crashes with Drugs</b>	0.19%

**Table 38: Alcohol and Drug Crash Data**

<b>Statistic</b>	<b>Alcohol</b>	<b>Drugs</b>
<b>Fatality or Incapacitating Injury</b>	1	2
<b>Injury</b>	13	6
<b>Motorcycle Crashes</b>	6	0
<b>Bicycle Crashes</b>	0	0
<b>Pedestrian Crashes</b>	0	1

Figure 26 shows the location of alcohol related crashes and Figure 27 shows the location of drug crashes.

Figure 26: Tippecanoe County Alcohol Crashes

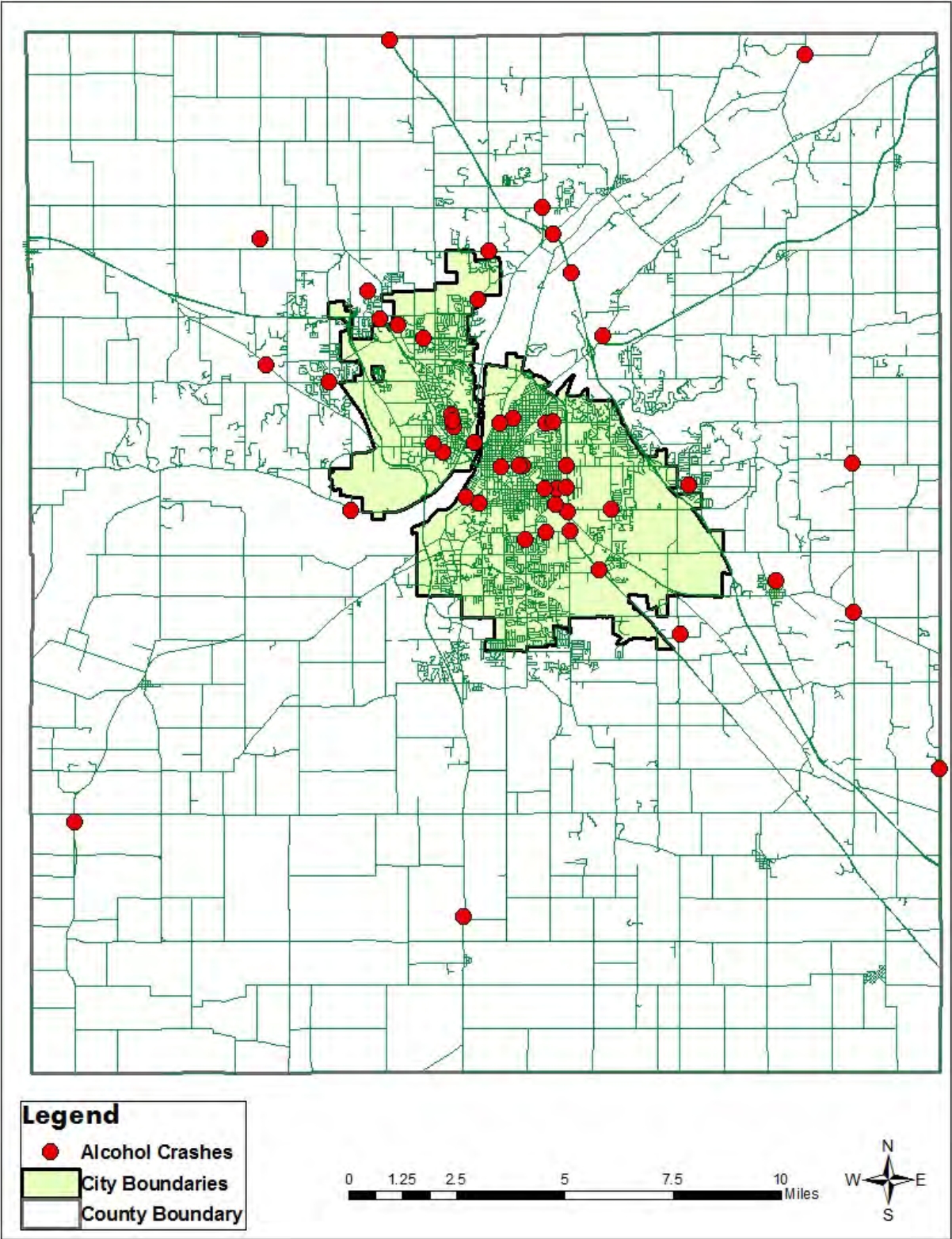




Figure 27: Tippecanoe County Drug Crashes

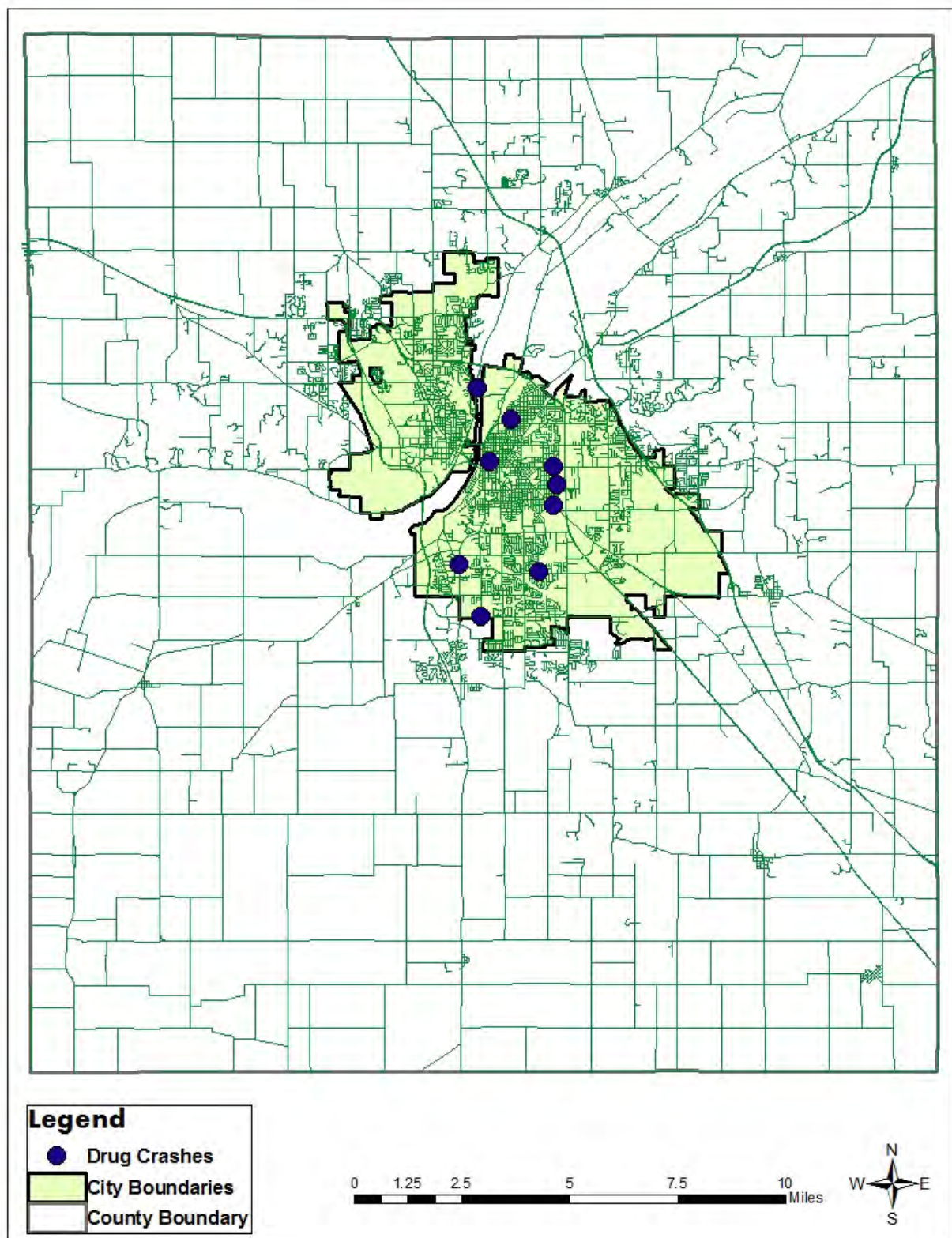




Figure 28 shows that there was 1 incapacitating injury caused by alcohol and 1 caused by drugs.

**Figure 28: Incapacitating Injuries Involving Alcohol or Drugs**

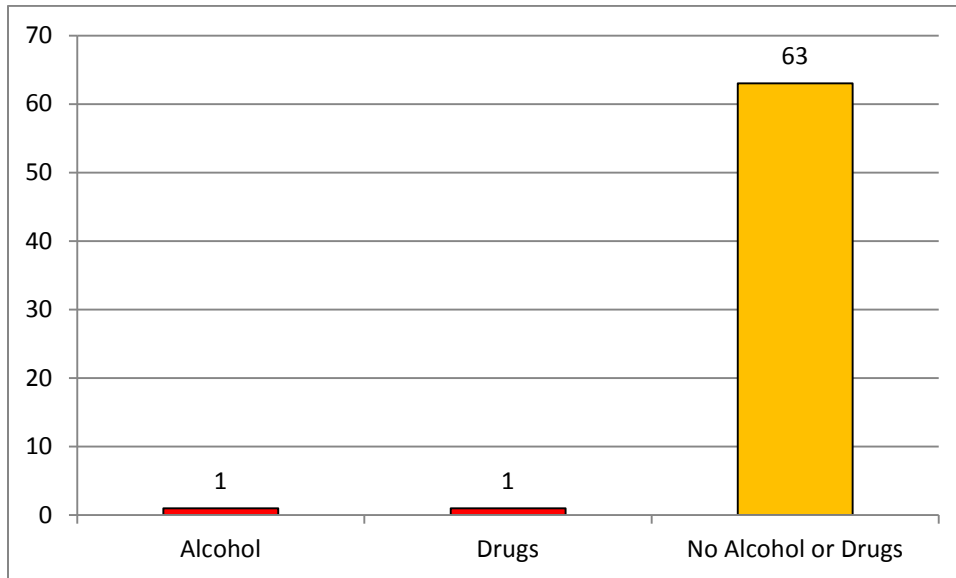


Figure 29 shows that 1 fatality crash involved drugs.

**Figure 29: Fatalities Involving Alcohol or Drugs**

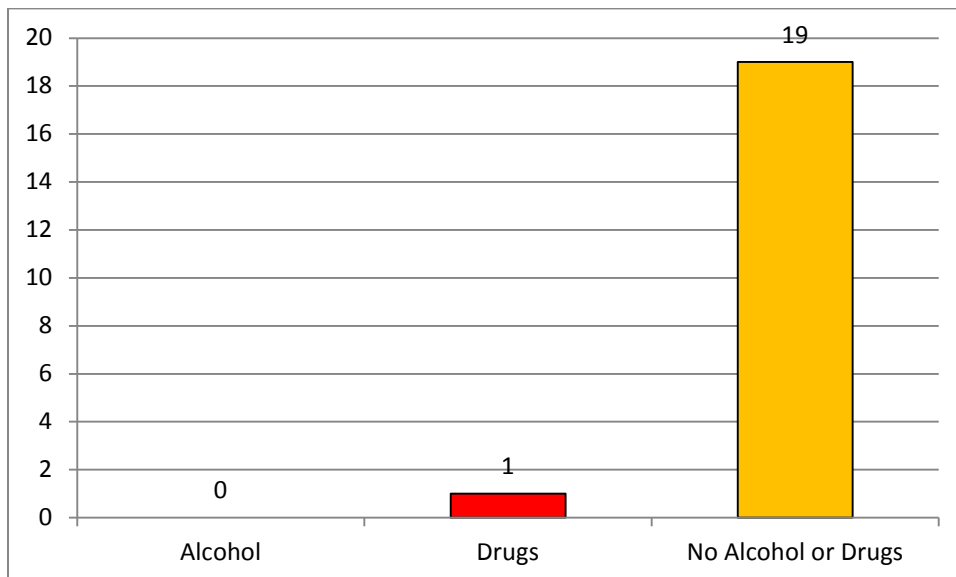


Table 39 shows that run off the road crashes were the most common type when alcohol or drugs were involved.

**Table 39: Crash Types for Alcohol or Drug Crashes**

MANNER OF CRASH	ALCOHOL CRASHES	DRUG CRASHES	TOTAL
RAN OFF ROAD	18	4	22
REAR END	14	1	15
HEAD ON	8	4	12
RIGHT ANGLE	7	0	7
SAME DIRECTION SIDESWIPE	3	0	3
LEFT TURN	2	0	2
NON-COLLISION	1	0	1
TOTAL	53	9	62

Figure 30 shows that August and September had the highest number of alcohol crashes.

**Figure 30: Alcohol Crashes by Month**

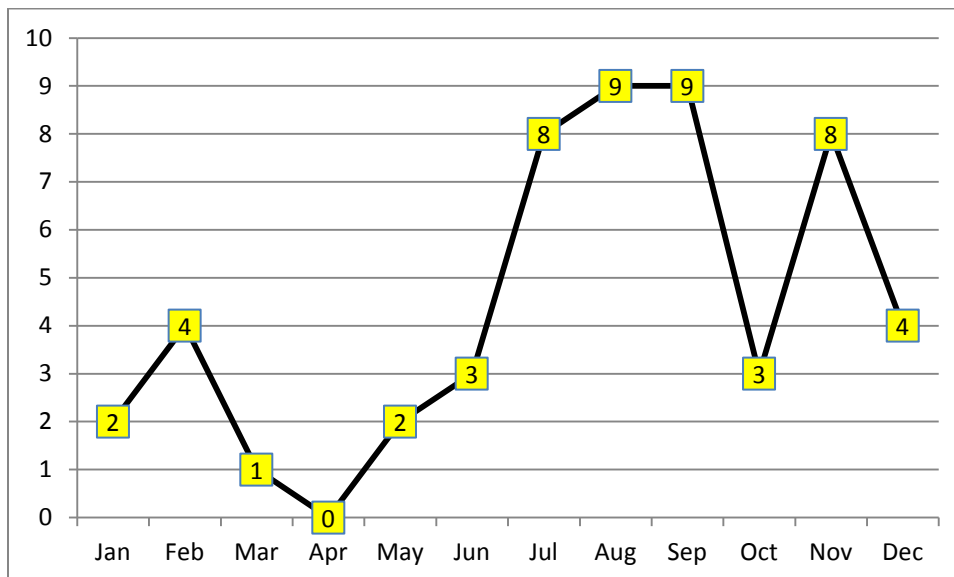


Figure 31 shows that drug crashes were evenly distributed throughout the year.

**Figure 31: Drug Crashes by Month**

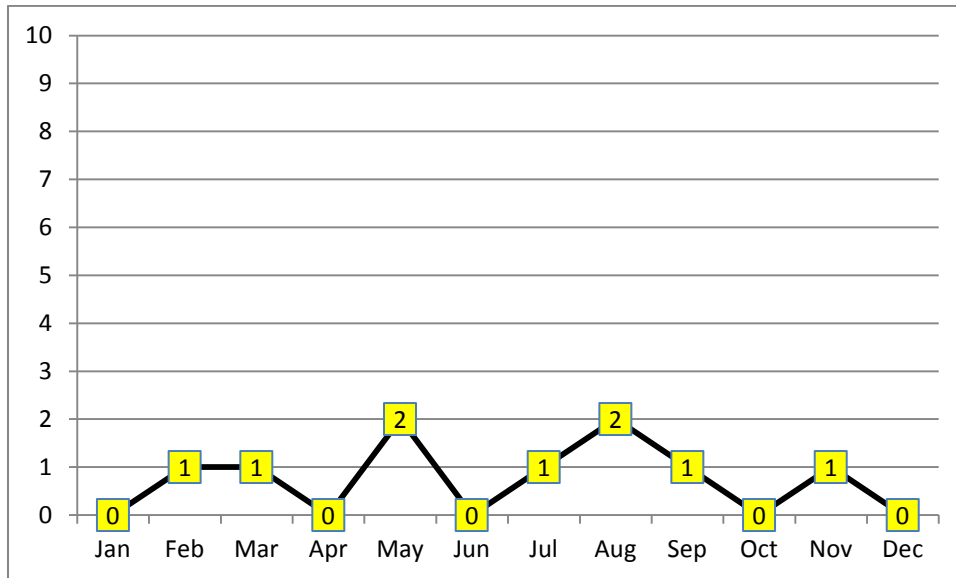


Figure 32 shows that Saturday had the highest number of alcohol crashes.

**Figure 32: Alcohol Crashes by Day of the Week**

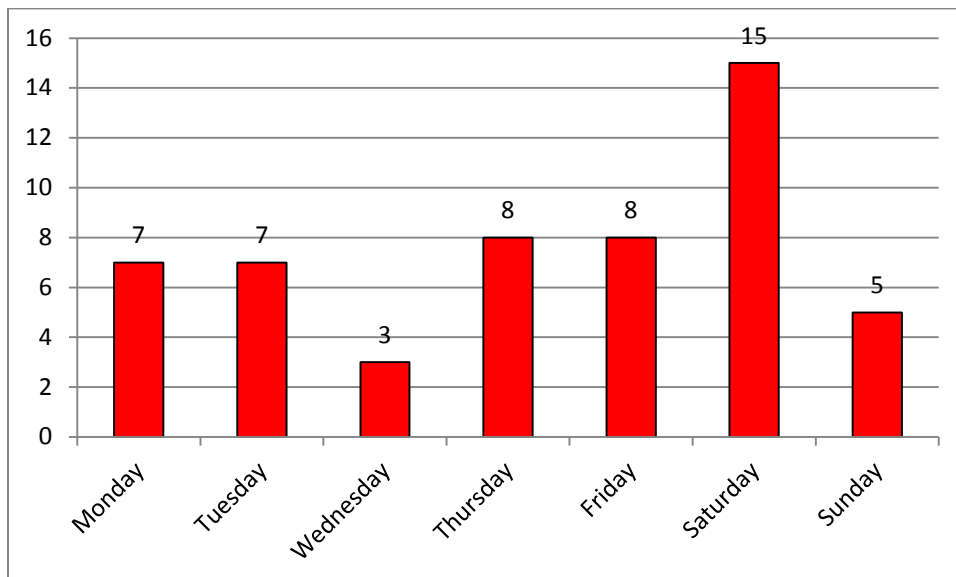


Figure 33 shows that Sunday had the highest number of drug crashes.

**Figure 33: Drug Crashes by Day of the Week**

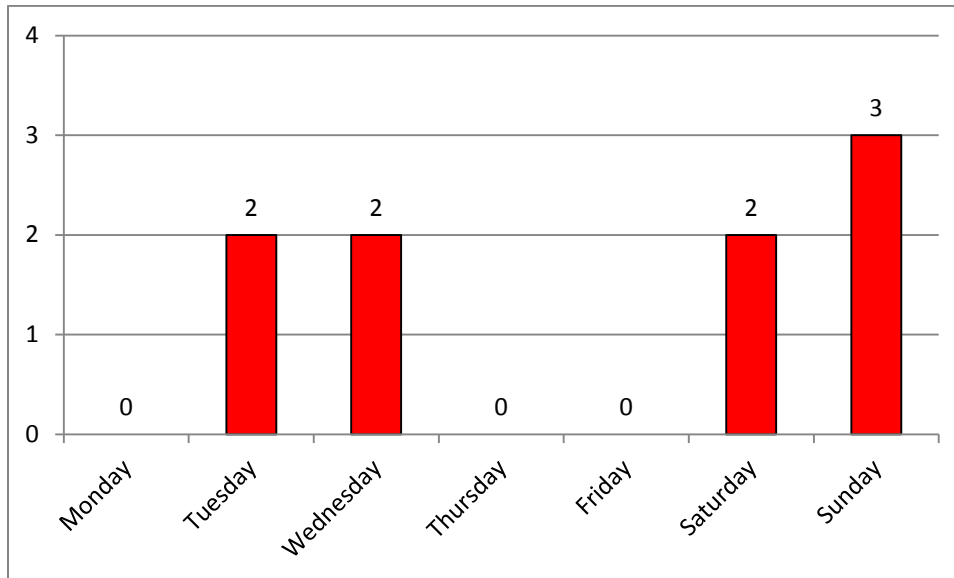


Figure 34 shows that the highest number of alcohol crashes occurred between 3 and 4 a.m.

**Figure 34: Alcohol Crashes by Time of Day**

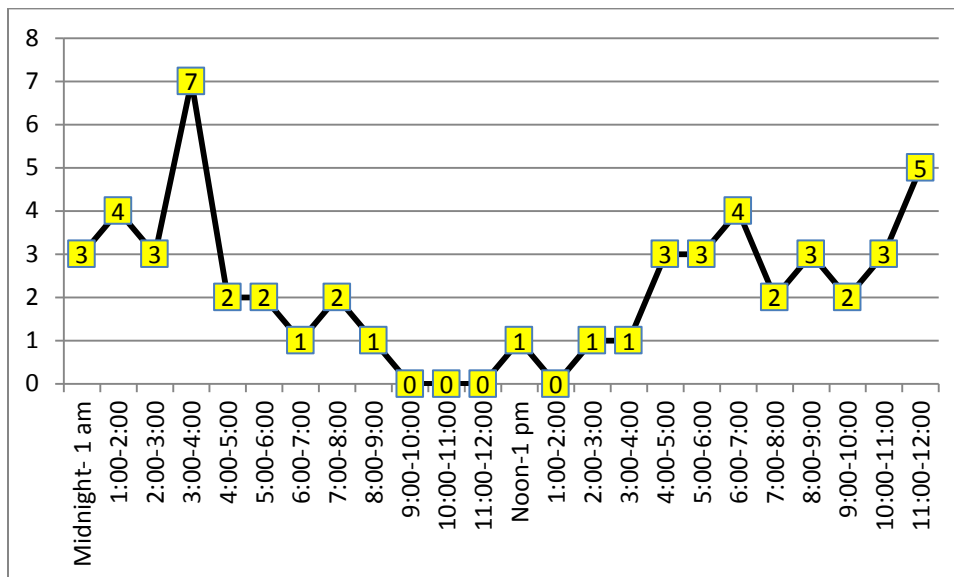


Figure 35 shows that the highest number of drug crashes occurred between 3 and 4 a.m.

**Figure 35: Drug Crashes by Time of Day**

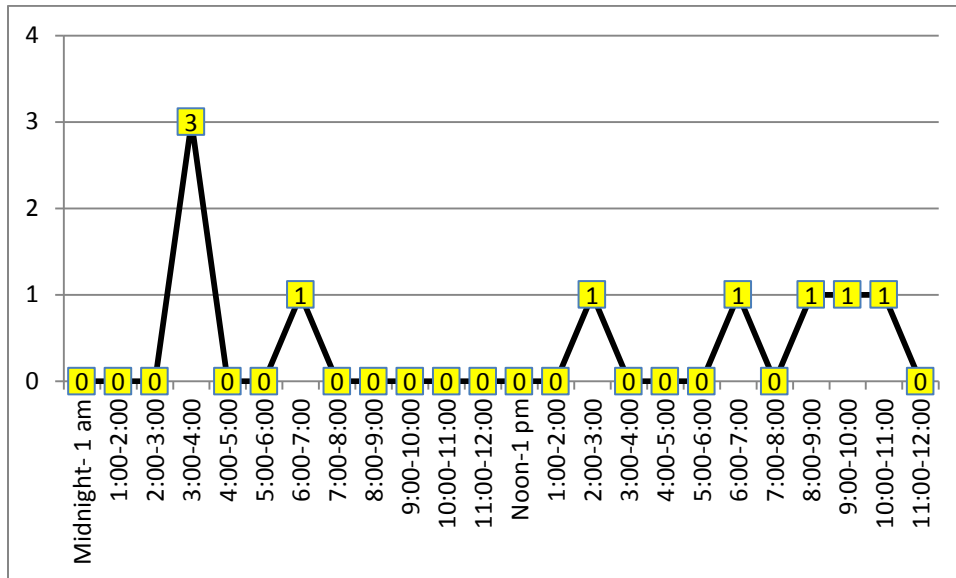


Figure 36 shows that males were more likely to be the drivers in alcohol crashes.

**Figure 36: Drivers in Alcohol Crashes by Gender**

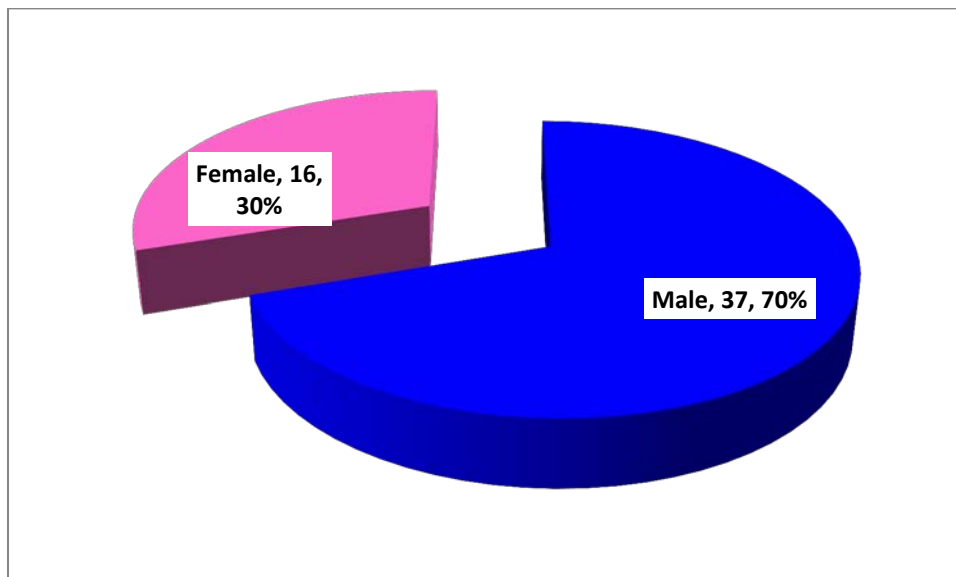


Figure 37 shows that males were more likely to be the drivers in drug crashes.

**Figure 37: Drivers in Drug Crashes by Gender**

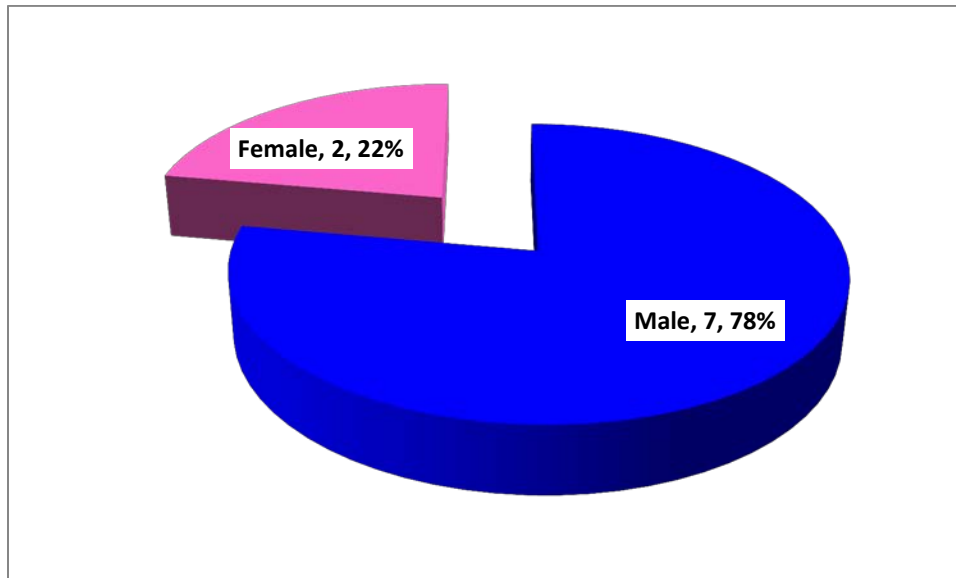


Table 40 shows that people below the age of 34 were most likely to be involved in an alcohol crash.

**Table 40: Alcohol Crashes by Age and Gender**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
<b>Male</b>	0	11	9	7	8	2	0	37
<b>Female</b>	0	6	7	0	1	1	1	16
<b>Total</b>	0	17	16	7	9	3	1	53

Table 41 shows that people below the age of 24 were most likely to be involved in a drug crash.

**Table 41: Drug Crashes by Age and Gender**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
<b>Male</b>	0	3	1	1	2	0	0	7
<b>Female</b>	0	1	0	0	0	1	0	2
<b>Total</b>	0	4	1	1	2	1	0	9

## Chapter 7: Curve Crashes

Table 42 shows that the majority of crashes occur on segments of roadway that are straight or level. However, crashes that occur on curves can often be dangerous. Table 43 shows that crashes on curves made up 10% of the total crashes. Crashes on curves made up about 11% of both injuries and incapacitating injuries. However, crashes on curves were responsible for 18% of fatalities.

**Table 42: Crashes by Road Curvature**

Road Curvature	Number of Crashes
CURVE/GRADE	165
CURVE/HILLCREST	12
CURVE/LEVEL	300
NON-ROADWAY CRASH	11
STRAIGHT/GRADE	419
STRAIGHT/HILLCREST	95
STRAIGHT/LEVEL	3786
UNKNOWN	1
TOTAL	4789

**Table 43: Curve Crash Severity**

	Number of Crashes	% of Crash Type
Curve Crashes	477	10.0%
Injuries	134	10.9%
Incapacitating Injuries	7	10.8%
Fatalities	4	18.2%

Figures 38 and 39 show the locations of curve crashes.

Figure 38: Tippecanoe County Curve Crashes

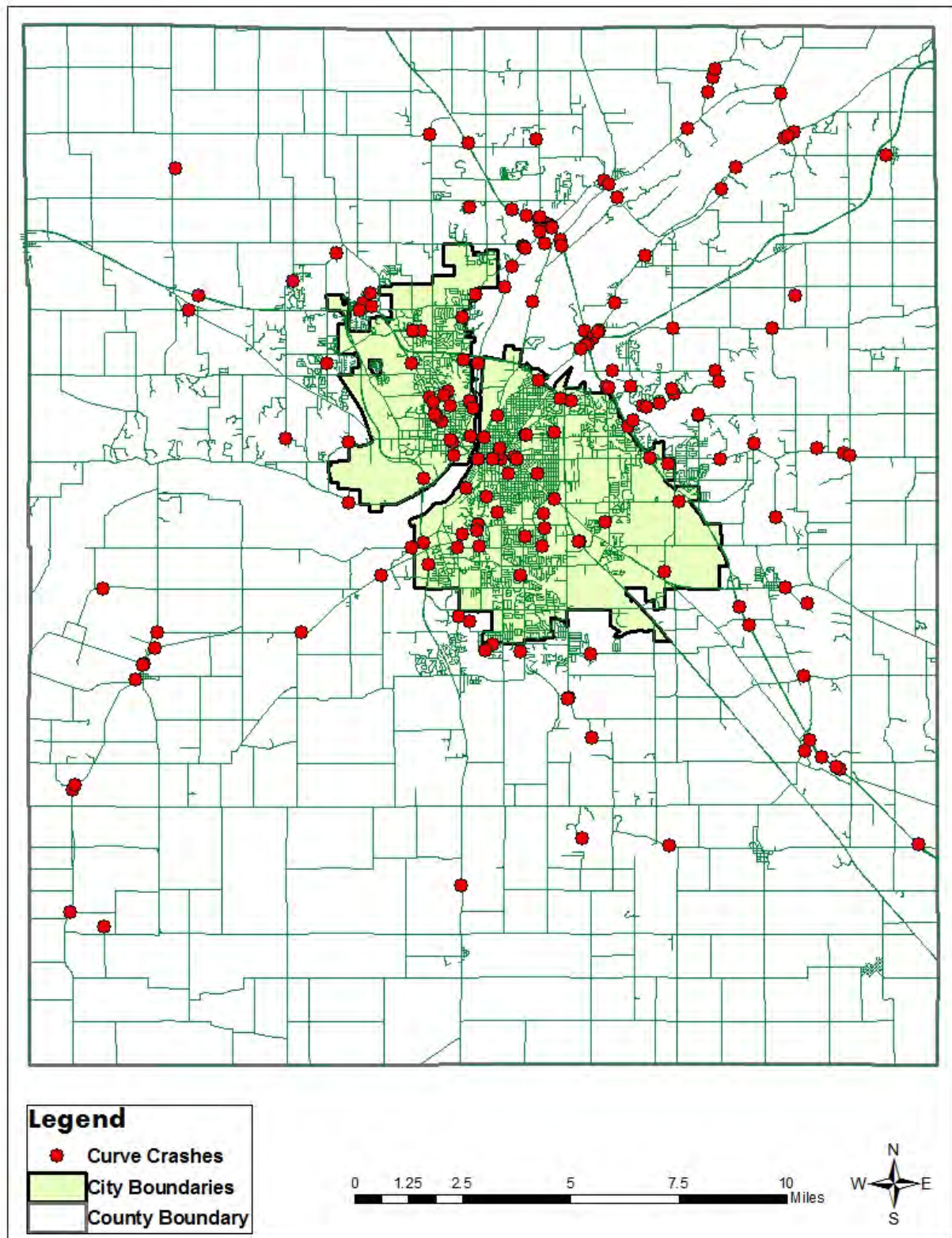




Figure 39: Lafayette and West Lafayette Curve Crashes

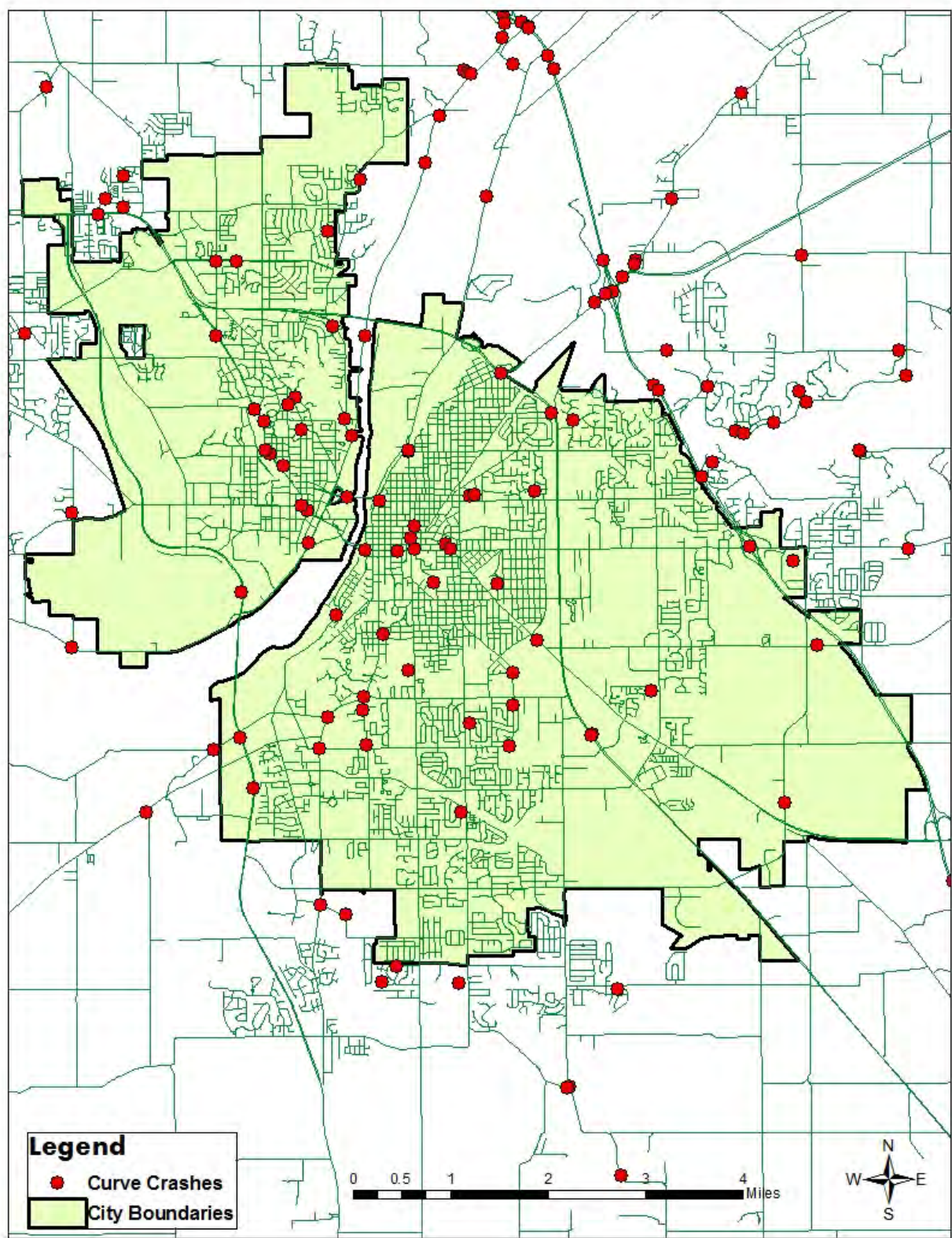


Table 44 shows that running off the road was the most common primary factor in curve crashes.

**Table 44: Primary Factors for Curve Crashes**

<b>PRIMARY FACTOR</b>	<b>NUMBER OF CRASHES</b>
<b>RAN OFF ROAD RIGHT</b>	87
<b>SPEED TOO FAST FOR WEATHER CONDITIONS</b>	76
<b>FOLLOWING TOO CLOSELY</b>	44
<b>UNSAFE SPEED</b>	41
<b>ANIMAL/OBJECT IN ROADWAY</b>	32
<b>FAILURE TO YIELD RIGHT OF WAY</b>	32
<b>OTHER (DRIVER) - EXPLAIN IN NARRATIVE</b>	29
<b>ROADWAY SURFACE CONDITION</b>	21
<b>LEFT OF CENTER</b>	18
<b>IMPROPER LANE USAGE</b>	15
<b>UNSAFE BACKING</b>	14
<b>UNSAFE LANE MOVEMENT</b>	13
<b>OVERCORRECTING/OVERSTEERING</b>	12
<b>IMPROPER TURNING</b>	10
<b>DRIVER ASLEEP OR FATIGUED</b>	6
<b>DRIVER DISTRACTED - EXPLAIN IN NARRATIVE</b>	5
<b>IMPROPER PASSING</b>	3
<b>INSECURE/LEAKY LOAD</b>	3
<b>CELL PHONE USAGE</b>	2
<b>DISREGARD SIGNAL/REG SIGN</b>	2
<b>OBSTRUCTION NOT MARKED</b>	2
<b>OTHER (VEHICLE) - EXPLAIN IN NARRATIVE</b>	2
<b>PEDESTRIAN ACTION</b>	2
<b>TIRE FAILURE OR DEFECTIVE</b>	2

PRIMARY FACTOR	NUMBER OF CRASHES
ACCELERATOR FAILURE OR DEFECTIVE	1
BRAKE FAILURE OR DEFECTIVE	1
TOW HITCH FAILURE	1
WRONG WAY ON ONE WAY	1
TOTAL	477

Table 45 shows that run off the road crashes were the most common crash type for curve crashes.

**Table 45: Crash Type for Curve Crashes**

MANNER OF COLLISION	NUMBER OF CRASHES
RAN OFF ROAD	178
REAR END	74
HEAD ON	61
SAME DIRECTION SIDESWIPE	61
RIGHT ANGLE	35
NON-COLLISION	18
OPPOSITE DIRECTION SIDESWIPE	18
OTHER - EXPLAIN IN NARRATIVE	13
BACKING CRASH	11
LEFT TURN	8
TOTAL	477

Figure 40 shows that the highest number of curve crashes occurred in December.

**Figure 40: Curve Crashes by Month**

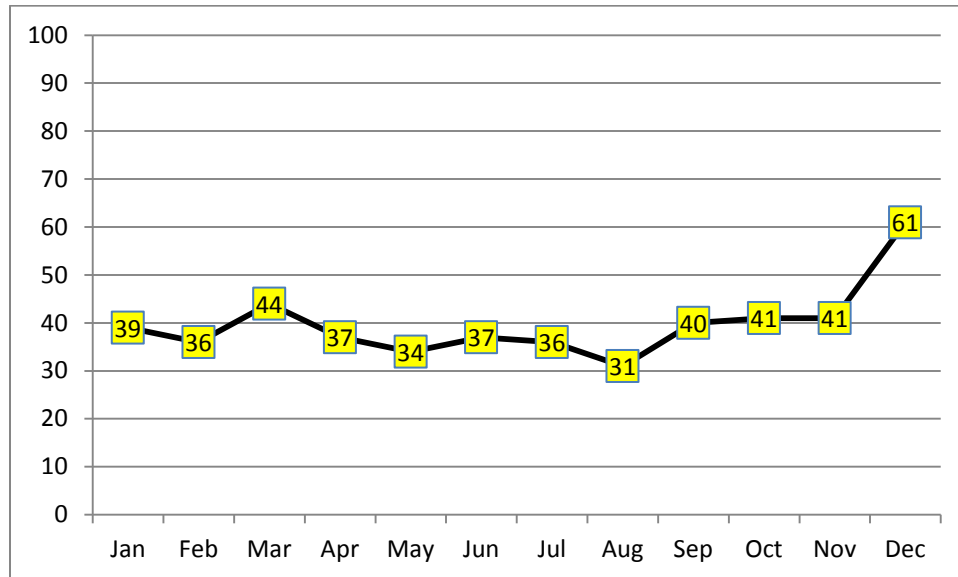


Figure 41 shows that the highest number of curve crashes occurred on Saturday.

**Figure 41: Curve Crashes by Day of the Week**

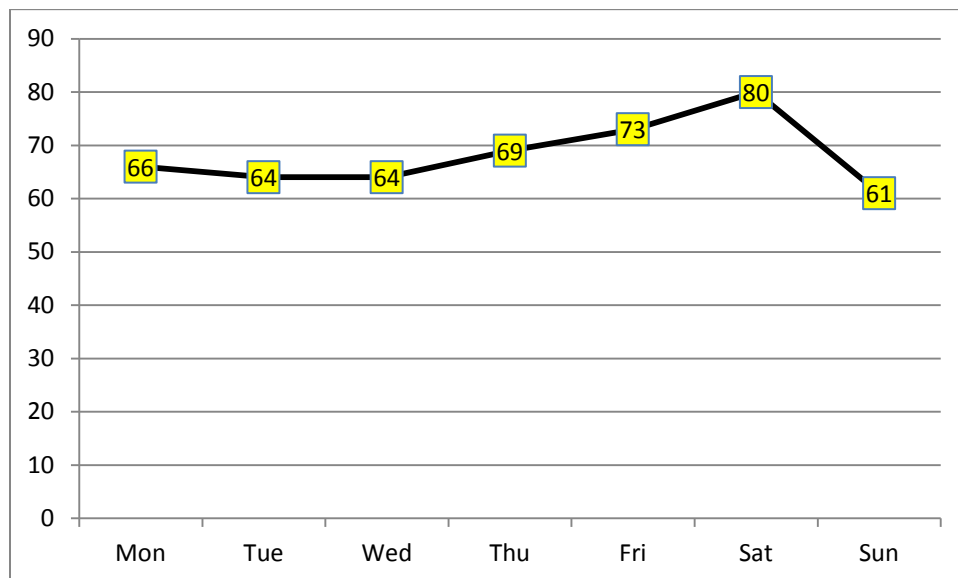


Figure 42 shows that the highest number of curve crashes occurred between 4 and 5 p.m.

**Figure 42: Curve Crashes by Time of Day**

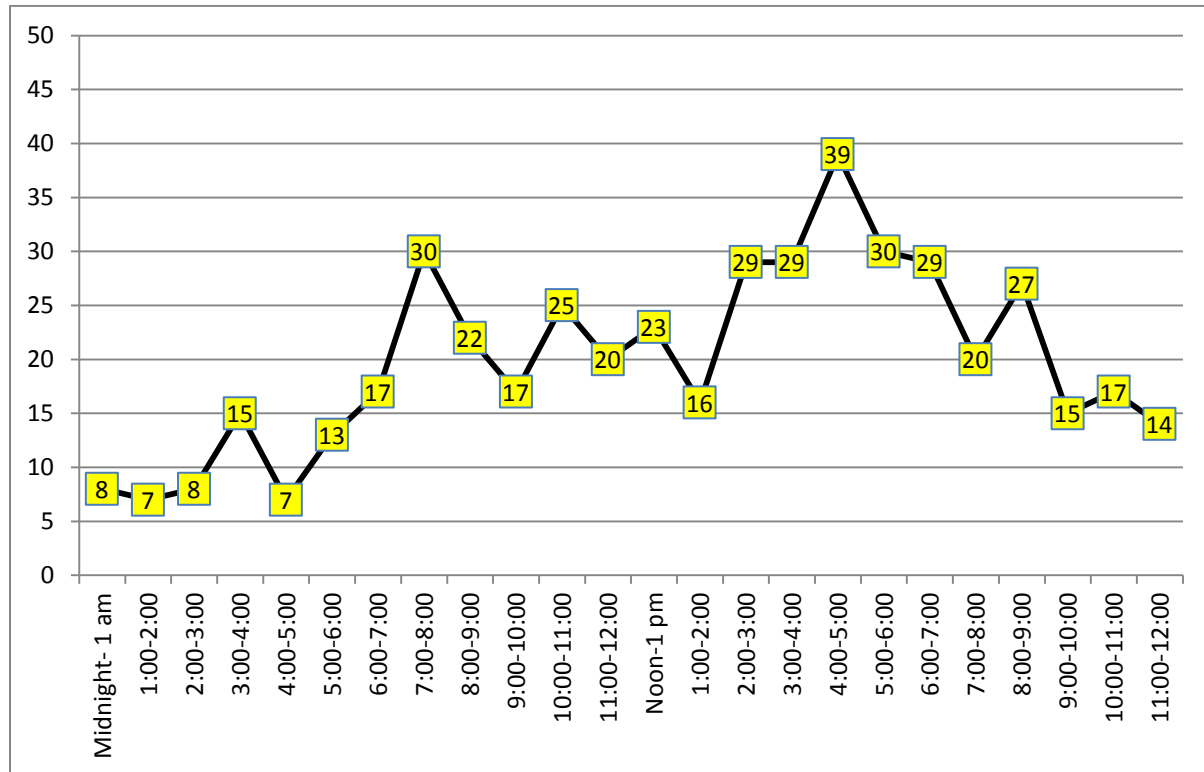


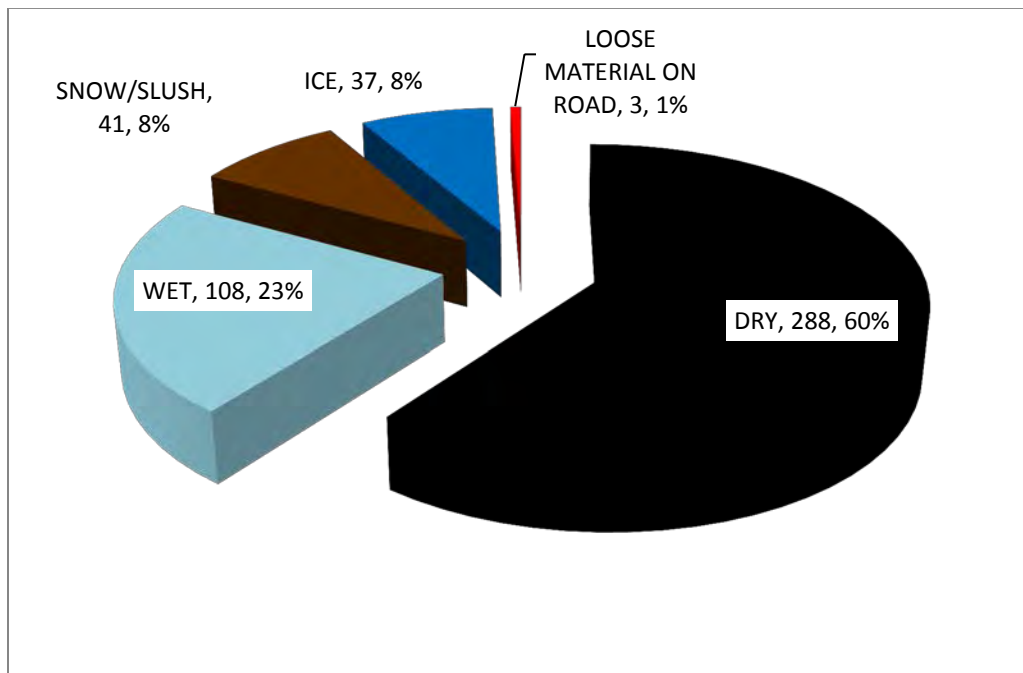
Table 46 shows that the majority of curve crashes occur when weather conditions are clear.

**Table 46: Curve Crashes by Weather Conditions**

WEATHER CONDITIONS	NUMBER OF CRASHES
CLEAR	245
CLOUDY	105
RAIN	67
SNOW	44
SLEET/HAIL/FREEZING RAIN	9
BLOWING SAND/SOIL/SNOW	6
FOG/SMOKE/SMOG	1
TOTAL	477

Figure 43 shows that the majority of curve crashes occur when the road is dry.

**Figure 43: Curve Crashes by Road Surface Condition**



## Chapter 8: Motorcycle Crashes

In 2013, there were 134 crashes involving motorcycles or mopeds that occurred on public right of way (crashes on private property are removed from this analysis). Of those crashes, 108 had at least one injury and 4 had at least one fatality. There were 132 injuries and 4 fatalities in those crashes. Of the 4 fatalities, 3 were motorcycle drivers and 1 was a motorcycle passenger. Table 47 gives this breakdown.

**Table 47: Motorcycle Crash Injuries and Fatalities**

<b>Motorcycle Crash Statistic</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>Crashes with injuries</b>	108	87	92
<b>Number of injuries</b>	132	98	103
<b>Crashes with fatalities</b>	4	4	4
<b>Number of fatalities</b>	4	4	4

Most of the motorcycle crashes in 2013 occurred within the city limits of Lafayette or West Lafayette. There were no areas outside of the city limits where crashes were concentrated (Figures 44 and 45).



Figure 44: Tippecanoe County Motorcycle Crashes

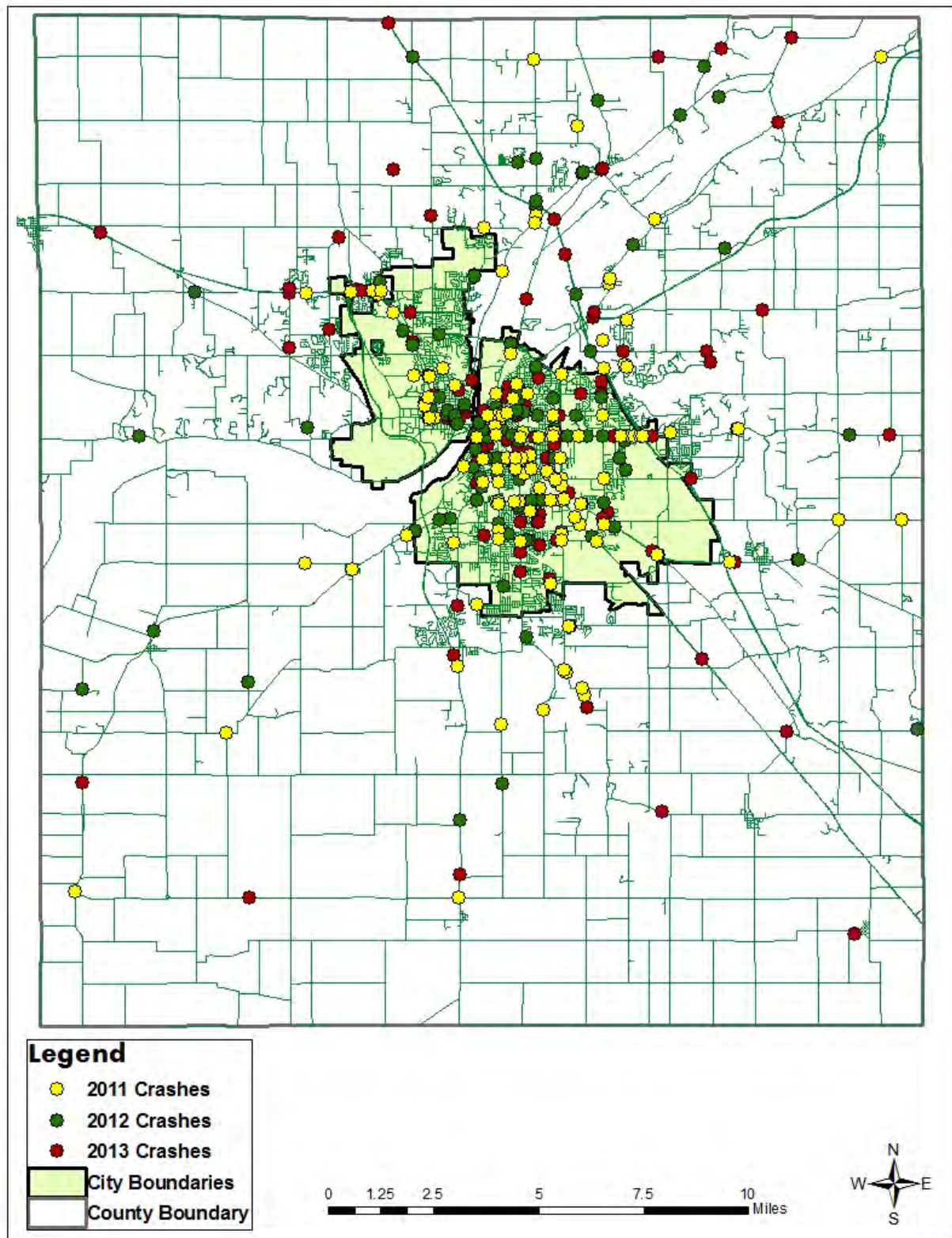
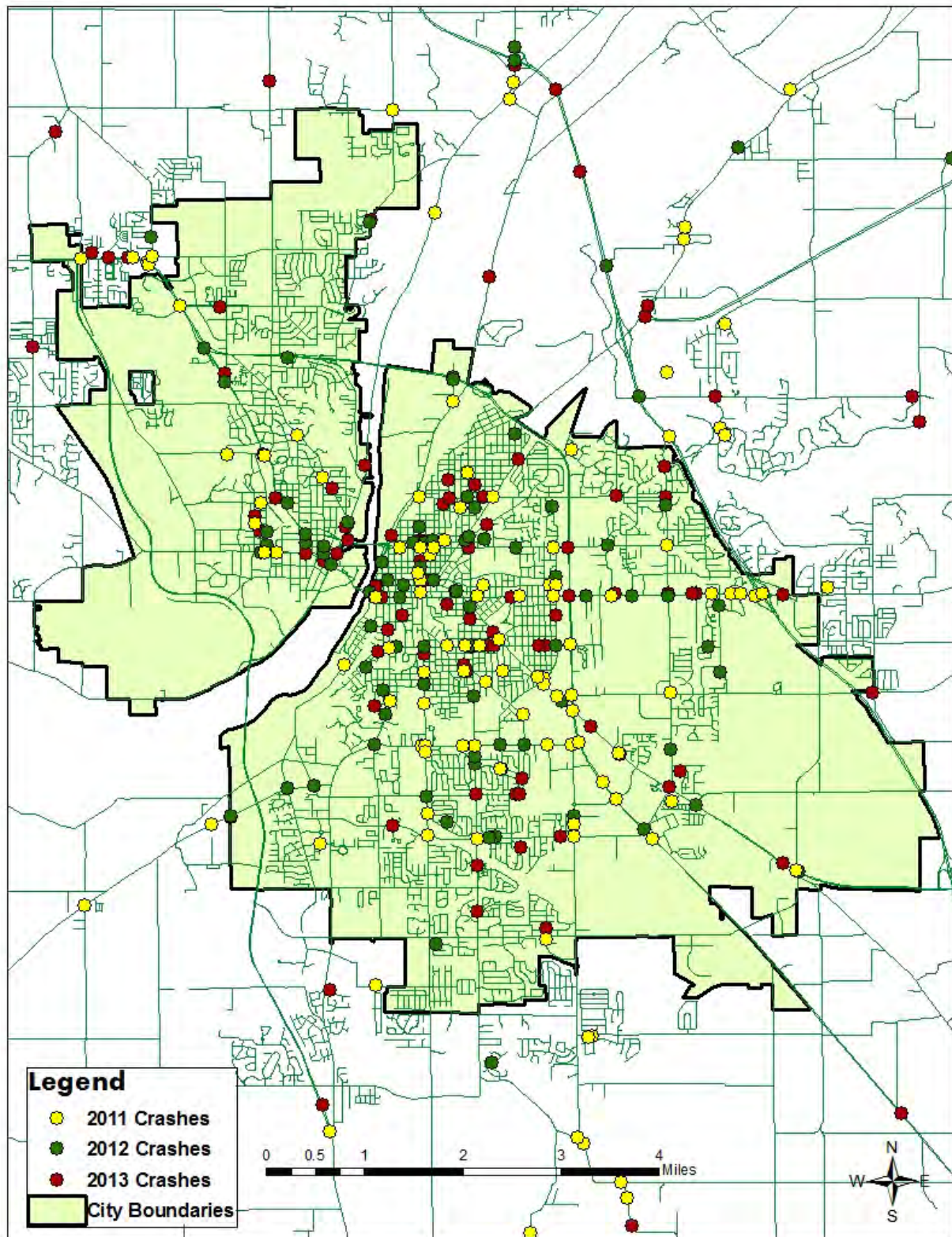




Figure 45: Lafayette and West Lafayette Motorcycle Crashes



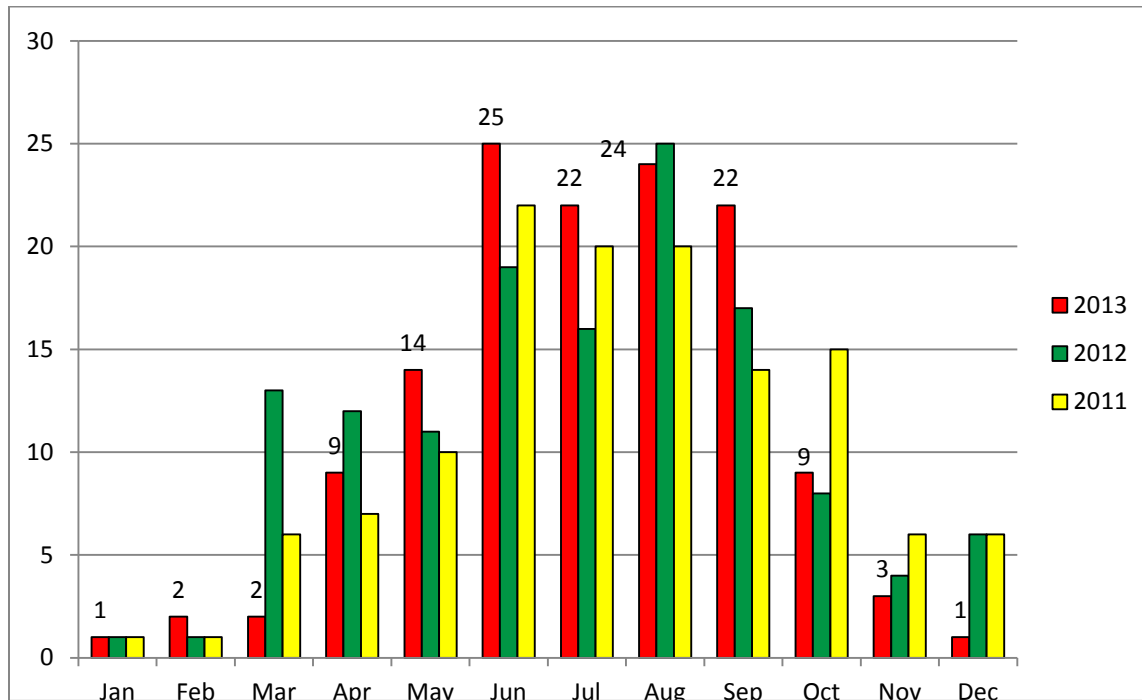
Single vehicle crashes were the most common type of motorcycle crashes. Table 48 shows that in 2013 “non-collision” and “ran off road” were the two most common types. There were a total of 61 crashes in 2013, 61 crashes in 2012, and 52 crashes in 2011 that did not involve another vehicle.

**Table 48: Crash Types for Motorcycle Crashes**

<b>MANNER OF CRASH</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>NON-COLLISION</b>	27	11	15
<b>RAN OFF ROAD</b>	19	32	23
<b>LEFT TURN</b>	19	11	21
<b>RIGHT ANGLE</b>	16	18	20
<b>REAR END</b>	15	23	22
<b>SAME DIRECTION SIDESWIPE</b>	10	7	8
<b>HEAD ON</b>	9	6	6
<b>OTHER - EXPLAIN IN NARRATIVE</b>	7	15	6
<b>OPPOSITE DIRECTION SIDESWIPE</b>	5	1	2
<b>BACKING CRASH</b>	3	6	3
<b>RIGHT TURN</b>	3	2	2
<b>REAR TO REAR</b>	1	0	0
<b>LEFT/RIGHT TURN</b>	0	1	0
<b>TOTAL</b>	134	133	128

The months of June, July, August, and September had the highest number of motorcycle crashes, and January and February had the lowest.

**Figure 46: Motorcycle Crashes by Month**



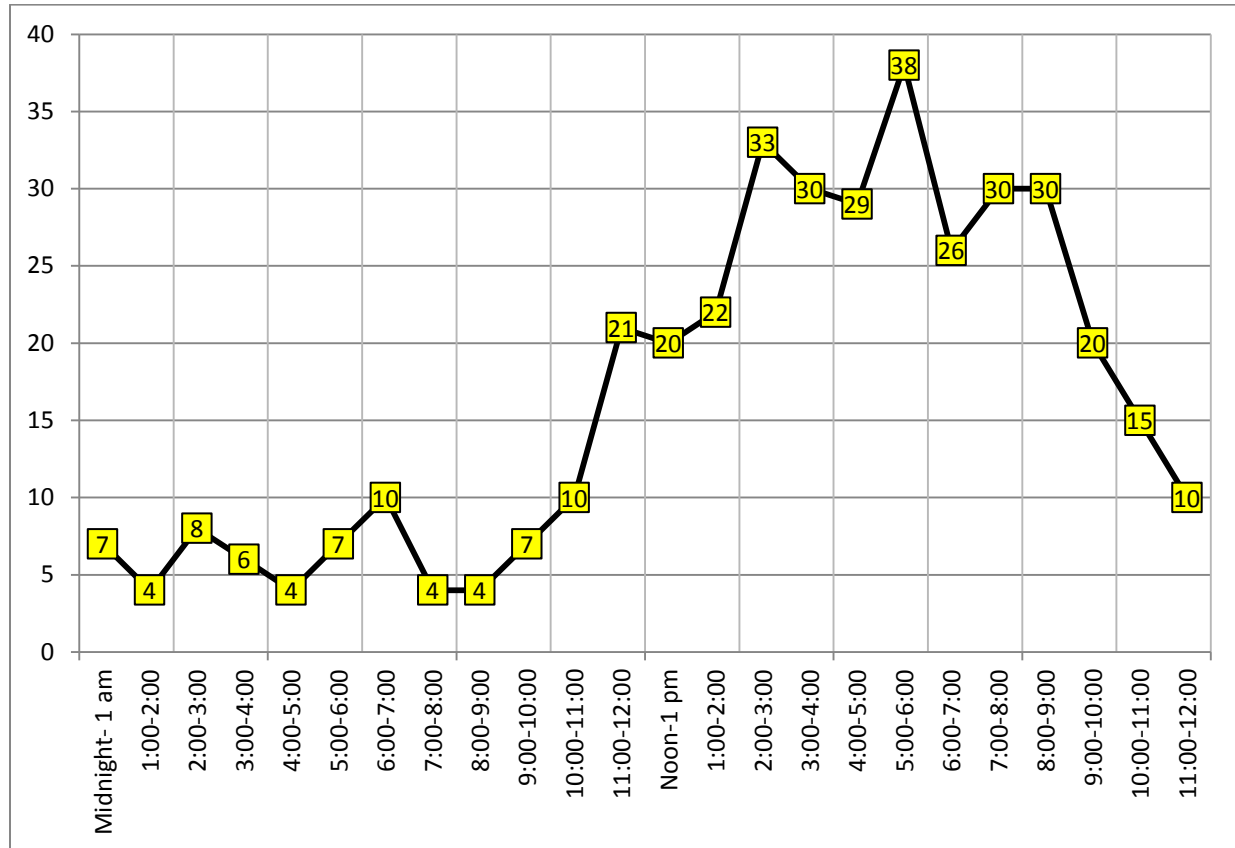
Friday and Saturday had the highest number of motorcycle crashes, but crashes were relatively high every day of the week.

**Table 49: Motorcycle Crashes by Day of Week**

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
<b>2013</b>	14	11	23	22	25	24	15	134
<b>2012</b>	14	23	16	12	28	22	18	133
<b>2011</b>	24	14	15	21	16	29	9	128

The highest number of crashes occurred from 5-6 p.m. (38) with a high number of crashes between 2:00 p.m. and 9:00 p.m. The number of crashes was lowest in the early morning hours.

**Figure 47: Motorcycle Crashes by Time of Day**



## Chapter 9: Bicycle Crashes

In 2013, there were 49 crashes involving bicyclists that occurred on public right of way (crashes on private property are removed from this analysis). Of those crashes, 43 had at least one injury and 1 had at least one fatality. There were 43 injuries and 1 fatality in those crashes. Table 50 gives this breakdown.

**Table 50: Bicycle Crash Injuries and Fatalities**

<b>Bicycle Crash Statistic</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>Crashes with injuries</b>	43	38	30
<b>Number of injuries</b>	43	38	30
<b>Crashes with fatalities</b>	1	0	0
<b>Number of fatalities</b>	1	0	0

Figures 48 and 49 show the locations of bicycle crashes.



Figure 48: Tippecanoe County Bicycle Crashes

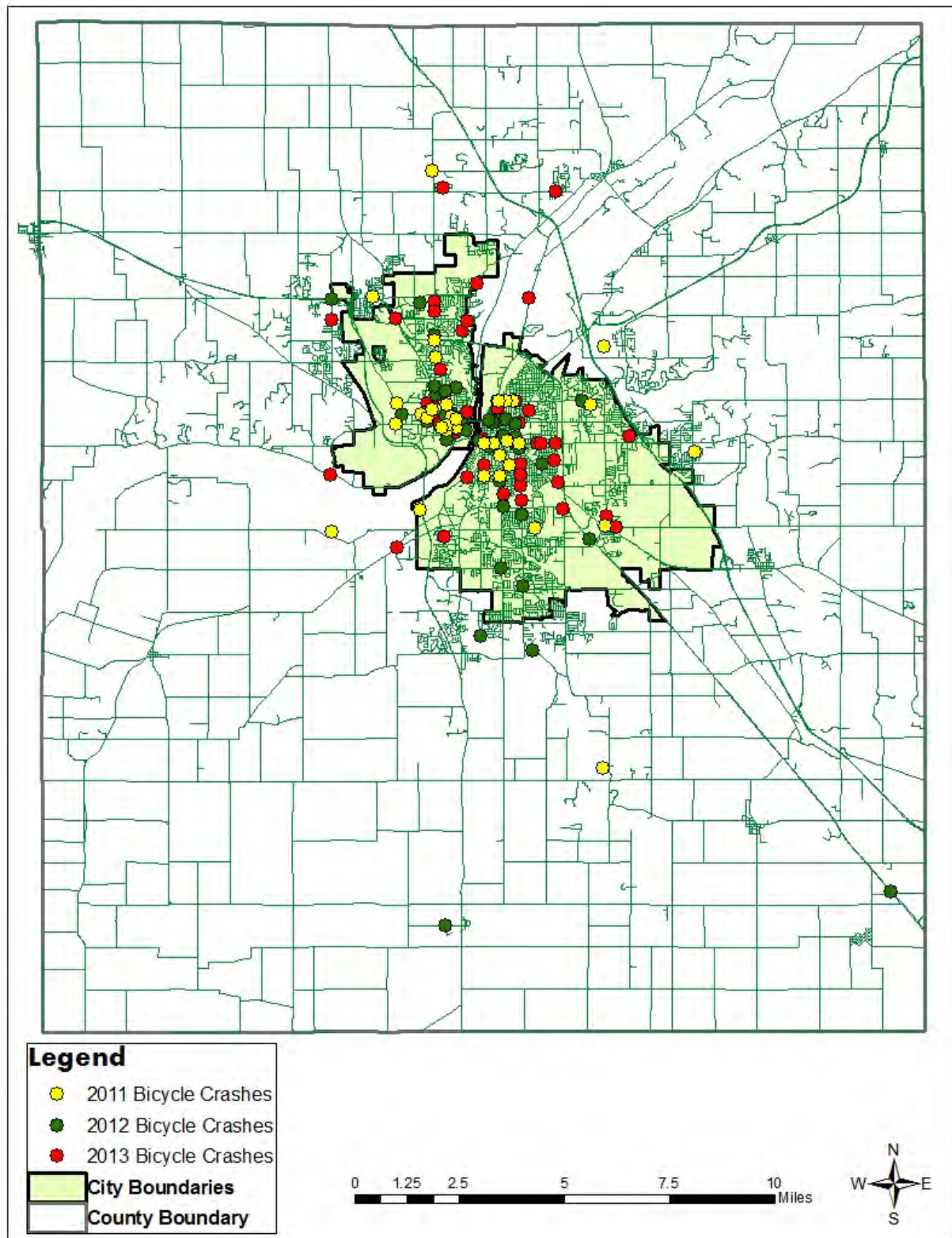
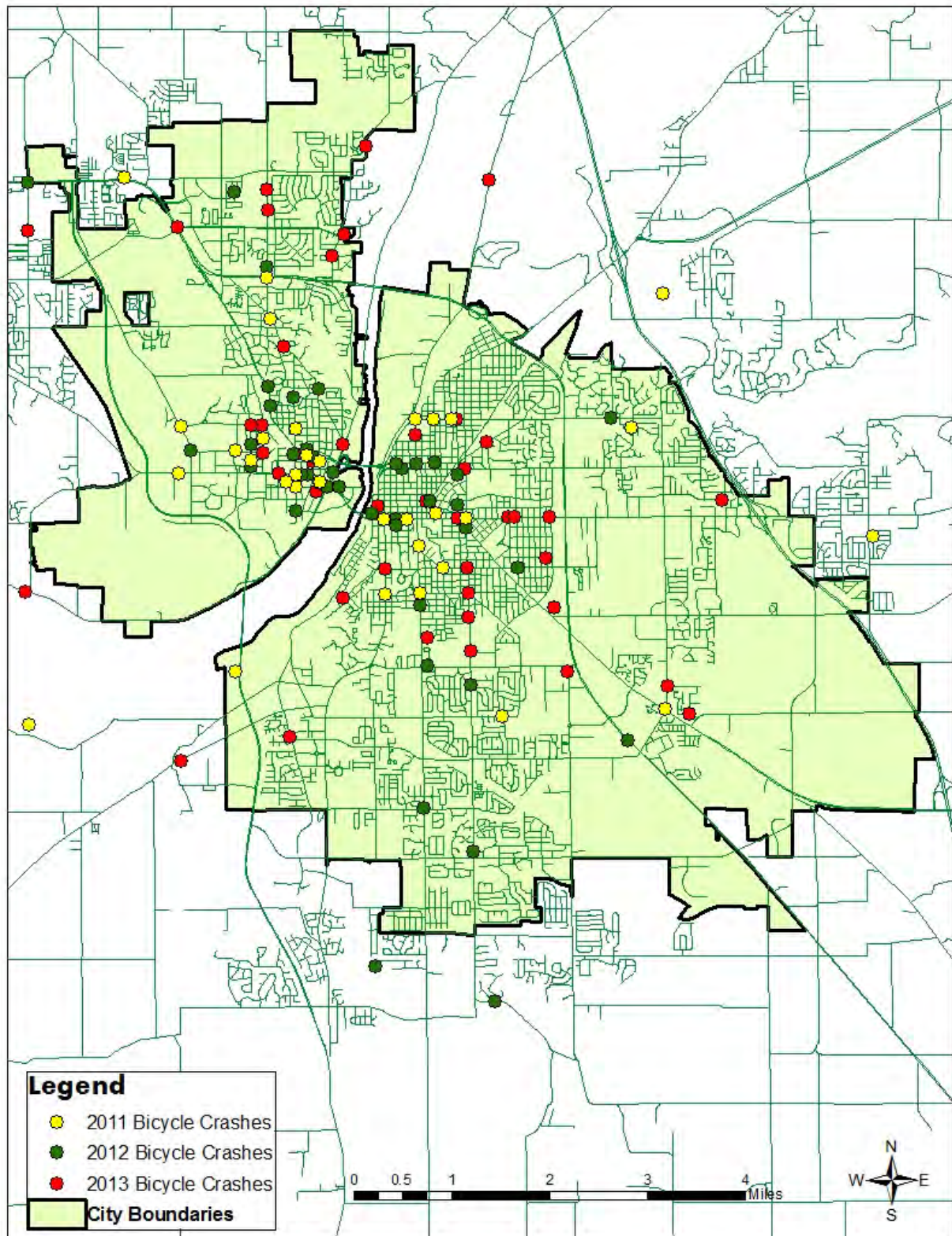


Figure 49: Lafayette and West Lafayette Bicycle Crashes





Right angle crashes were the most common type of bicycle crashes.

**Table 51: Crash Types for Bicycle Crashes**

<b>Manner of Crash</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>Total</b>
<b>NON-COLLISION</b>	0	0	0	0
<b>RAN OFF ROAD</b>	0	0	0	0
<b>LEFT TURN</b>	6	4	3	13
<b>RIGHT ANGLE</b>	26	23	17	66
<b>REAR END</b>	4	3	2	9
<b>SAME DIRECTION SIDESWIPE</b>	2	5	3	10
<b>HEAD ON</b>	5	2	5	12
<b>OTHER - EXPLAIN IN NARRATIVE</b>	2	1	2	5
<b>OPPOSITE DIRECTION SIDESWIPE</b>	1	1	0	2
<b>BACKING CRASH</b>	0	0	1	1
<b>RIGHT TURN</b>	3	5	5	13
<b>REAR TO REAR</b>	0	0	0	0
<b>LEFT/RIGHT TURN</b>	0	1	0	1
<b>TOTAL</b>	49	45	38	132



September and October had the highest number of bicycle crashes.

**Table 52: Bicycle Crashes by Month**

Month	2013	2012	2011	Total
Jan	0	0	0	0
Feb	2	3	2	7
Mar	2	6	1	9
Apr	4	2	1	7
May	7	2	1	10
Jun	2	0	4	6
Jul	4	3	2	9
Aug	3	10	6	19
Sep	7	6	9	22
Oct	11	5	6	22
Nov	5	6	4	15
Dec	2	2	2	6
<b>Total</b>	49	45	38	132

Tuesday and Wednesday had the highest number of bicycle crashes.

**Table 53: Bicycle Crashes by Day of the Week**

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
<b>2013</b>	8	7	10	7	7	5	5	49
<b>2012</b>	5	8	9	9	5	7	2	45
<b>2011</b>	7	9	10	2	2	3	5	38
<b>Total</b>	20	24	29	18	14	15	12	132

The peak period for bicycle crashes occurred between 4 and 7 p.m.

**Figure 50: Bicycle Crashes by Time of Day**

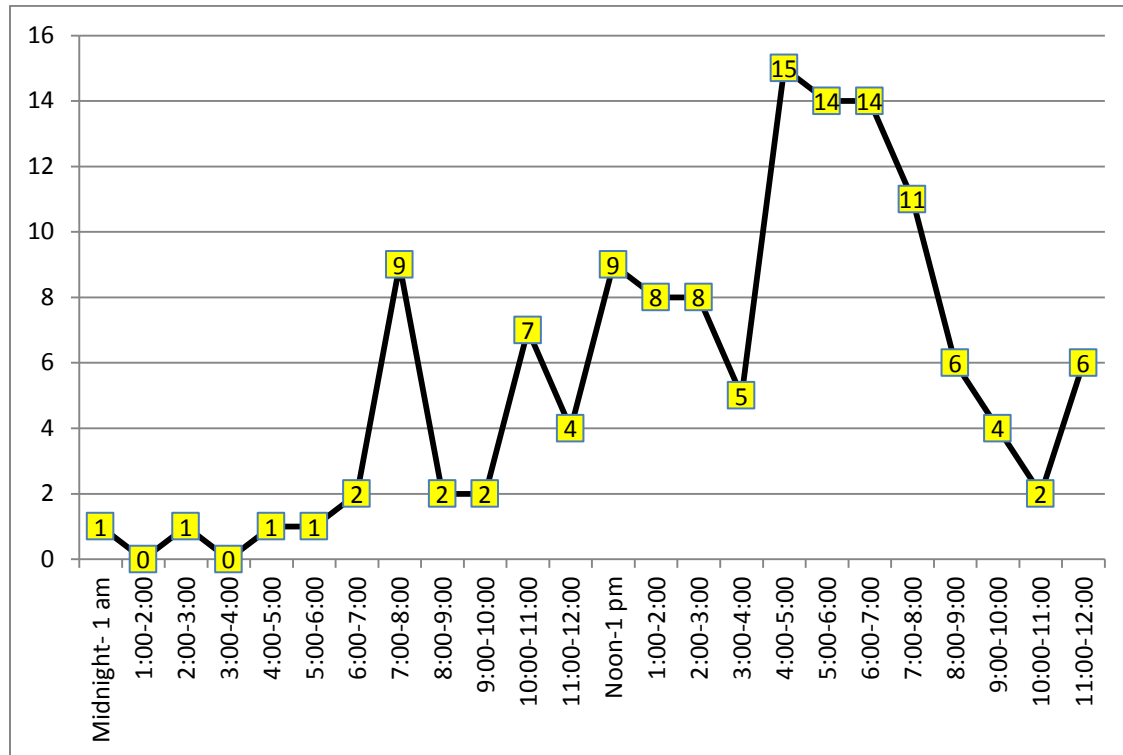


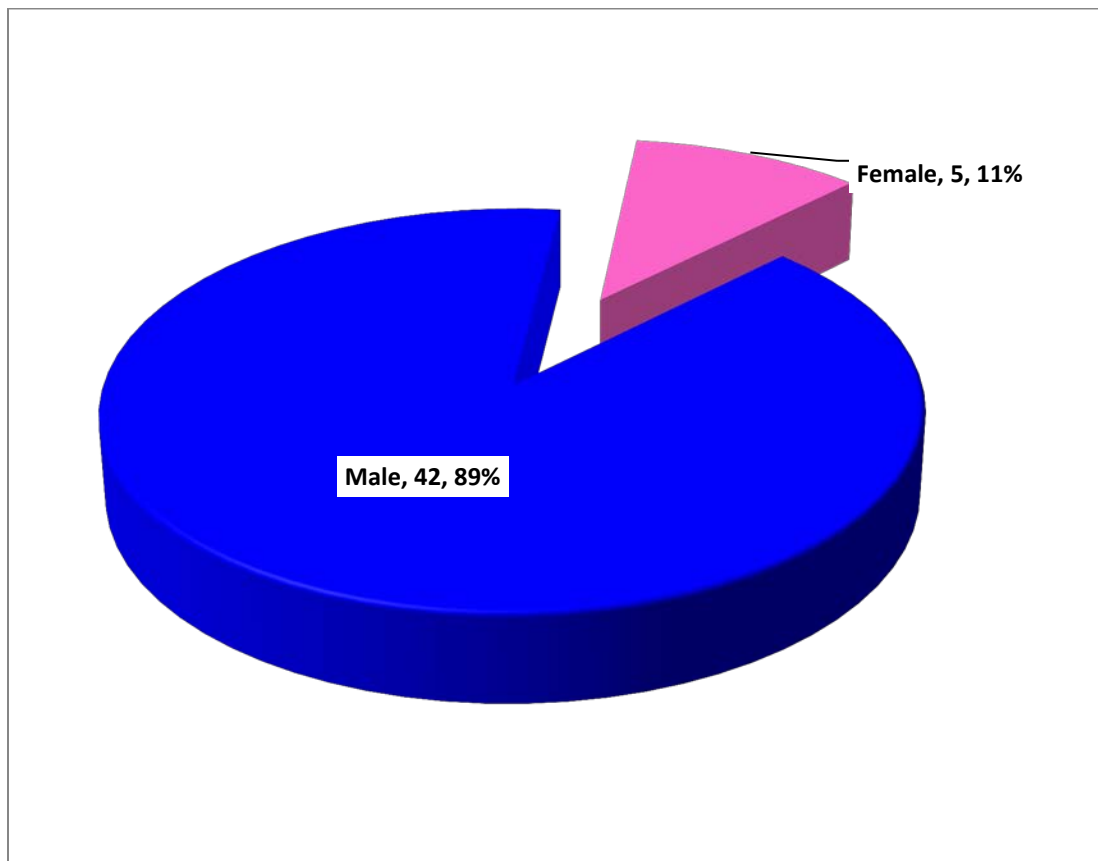
Table 54 shows that young bicyclists (24 and younger) were most likely to be involved in crashes.

**Table 54: Bicycle Crashes by Age**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
<b>Male</b>	8	22	6	1	2	3	0	42
<b>Female</b>	3	2	0	0	0	0	0	5
<b>Total</b>	11	24	6	1	2	3	0	47

Figure 51 shows that male bicyclists were more likely to be involved in crashes than female bicyclists.

Figure 51: Bicycle Crashes by Gender



## Chapter 10: Pedestrian Crashes

In 2013, there were 48 crashes involving pedestrians that occurred on public right of way (crashes on private property are removed from this analysis). Of those crashes, 43 had at least one injury and 3 had at least one fatality. There were 49 injuries and 4 fatalities in those crashes. Table 55 gives this breakdown.

**Table 55: Pedestrian Injuries and Fatalities**

<b>Pedestrian Crash Statistic</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>
<b>Crashes with injuries</b>	43	35	44
<b>Number of injuries</b>	49	37	44
<b>Crashes with fatalities</b>	3	1	1
<b>Number of fatalities</b>	4	1	1

Most of the pedestrian crashes in 2013 occurred within the city limits of Lafayette or West Lafayette. There were no areas outside of the city limits where crashes were concentrated.

Figure 52: Tippecanoe County Pedestrian Crashes

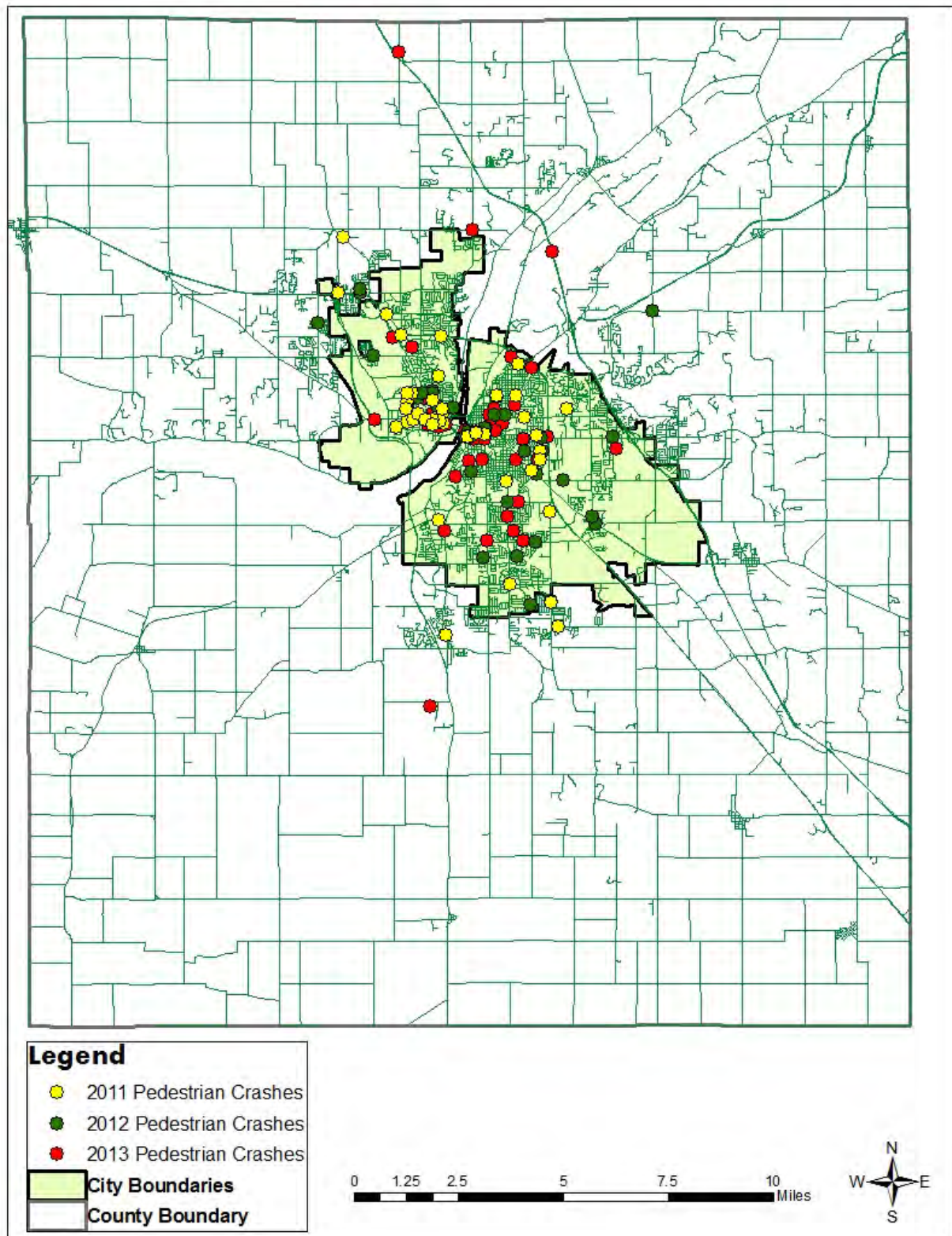




Figure 53: Lafayette and West Lafayette Pedestrian Crashes

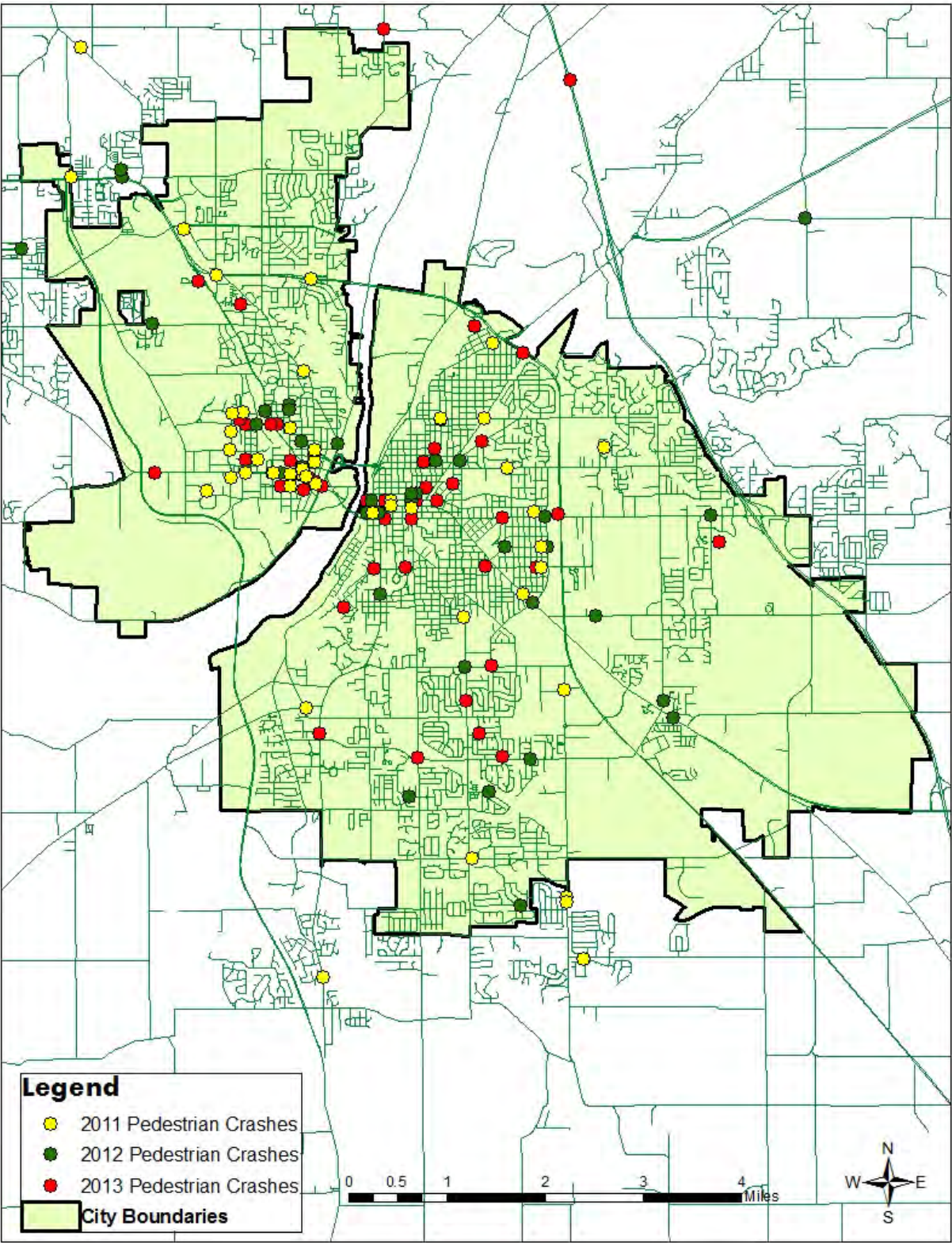


Table 56 shows that “Left Turn” and “Head On” were the most common types of pedestrian crashes.

**Table 56: Crash Types for Pedestrian Crashes**

<b>MANNER OF CRASH</b>	<b>2013</b>	<b>2012</b>	<b>2011</b>	<b>TOTAL</b>
<b>LEFT TURN</b>	12	9	10	31
<b>HEAD ON</b>	11	11	8	30
<b>OTHER - EXPLAIN IN NARRATIVE</b>	11	4	6	21
<b>RIGHT ANGLE</b>	4	8	8	20
<b>SAME DIRECTION SIDESWIPE</b>	4	2	3	9
<b>REAR END</b>	1	2	5	8
<b>NON-COLLISION</b>	2	0	1	3
<b>RAN OFF ROAD</b>	1	1	1	3
<b>OPPOSITE DIRECTION SIDESWIPE</b>	0	1	2	3
<b>BACKING CRASH</b>	0	1	1	2
<b>RIGHT TURN</b>	0	1	1	2
<b>LEFT/RIGHT TURN</b>	2	0	0	2
<b>TOTAL</b>	48	40	46	134

April and December had the highest number of pedestrian crashes.

**Table 57: Pedestrian Crashes by Month**

Month	2013	2012	2011	Total
Jan	5	1	3	9
Feb	3	3	3	9
Mar	2	1	2	5
Apr	9	5	8	22
May	4	5	3	12
Jun	1	4	3	8
Jul	4	4	3	11
Aug	3	1	1	5
Sep	4	6	3	13
Oct	3	5	7	15
Nov	6	2	8	16
Dec	4	3	2	9
<b>Total</b>	48	40	46	134

Wednesday and Friday had the highest number of pedestrian crashes.

**Table 58: Pedestrian Crashes by Day of the Week**

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
<b>2013</b>	9	3	12	8	9	3	4	48
<b>2012</b>	5	7	9	7	4	3	5	40
<b>2011</b>	6	5	7	3	9	10	6	46
<b>Total</b>	20	15	28	18	22	16	15	134



The peak period for pedestrian crashes was from 3-4 p.m.

**Figure 54: Pedestrian Crashes by Time of Day**

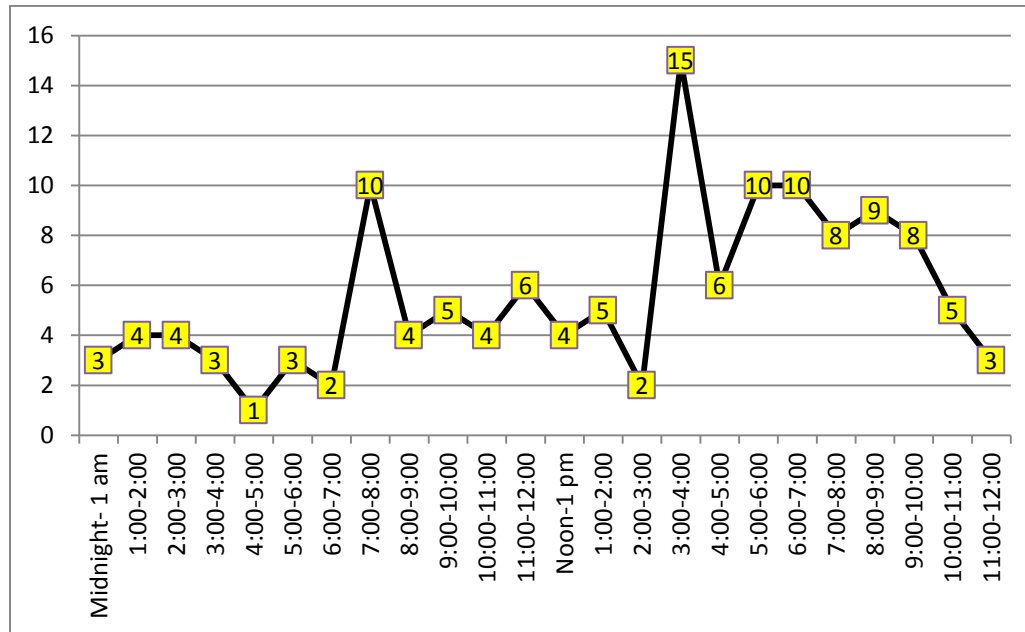


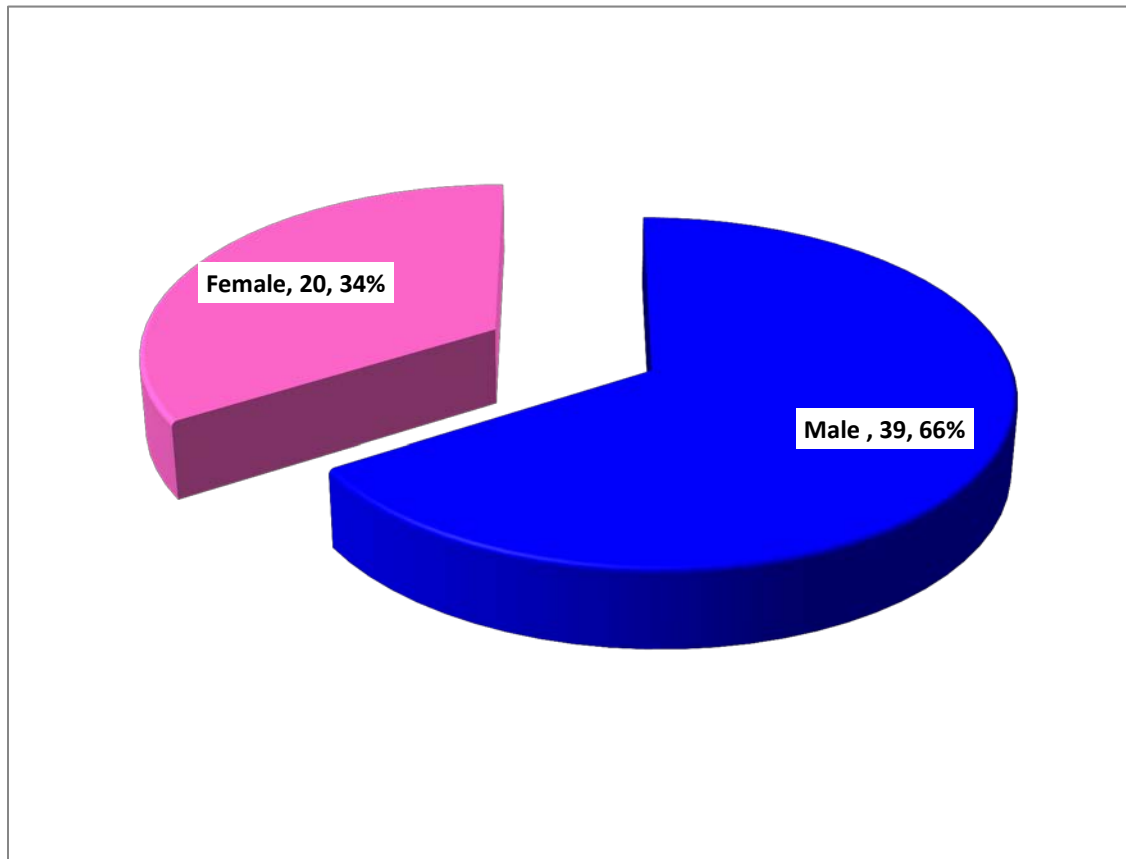
Table 59 shows that young pedestrians (24 and younger) were more likely to be involved in crashes than older pedestrians.

**Table 59: Pedestrian Crashes by Age**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
<b>Male</b>	8	13	8	2	5	0	3	39
<b>Female</b>	2	11	1	3	2	0	1	20
<b>Total</b>	10	24	9	5	7	0	4	59

Figure 55 shows that male pedestrians were more likely to be involved in crashes than female pedestrians.

**Figure 55: Pedestrian Crashes by Gender**

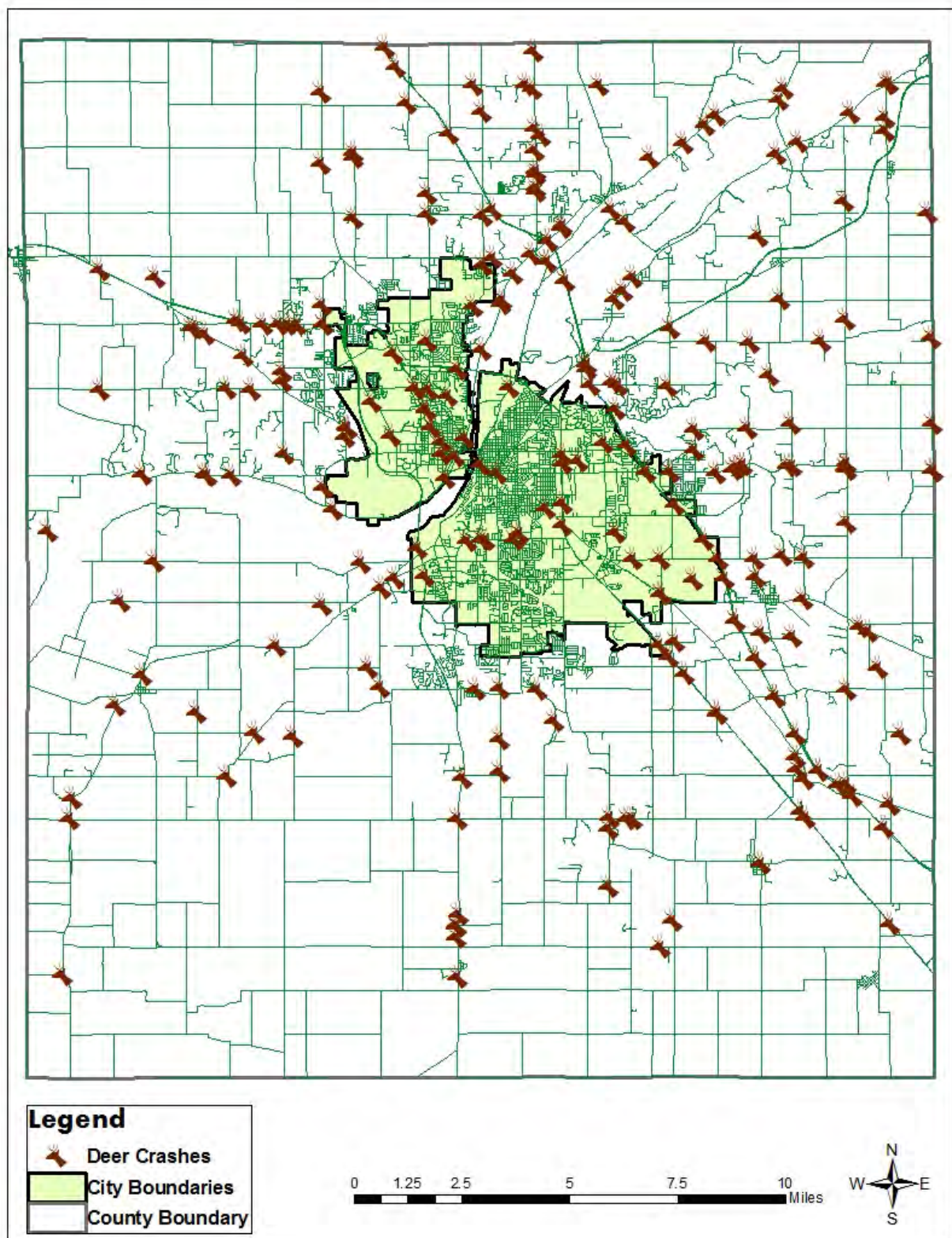


## **Chapter 11: Other Crash Types and Factors**

There were several other crash types and a few additional factors to analyze in 2013 crashes. These crash types and factors are not as prevalent as other crash types and factors. Therefore, the analysis for these crash types and factors is not as in-depth as some of the previous analysis in this report. However, these crash types and factors are still important to consider.

Figure 56 shows that deer crashes are distributed throughout Tippecanoe County.

Figure 56: Tippecanoe County Deer Crashes



Figures 57 and 58 show that most hit and run crashes occur inside the city limits of Lafayette and West Lafayette.

**Figure 57: Tippecanoe County Hit and Run Crashes**

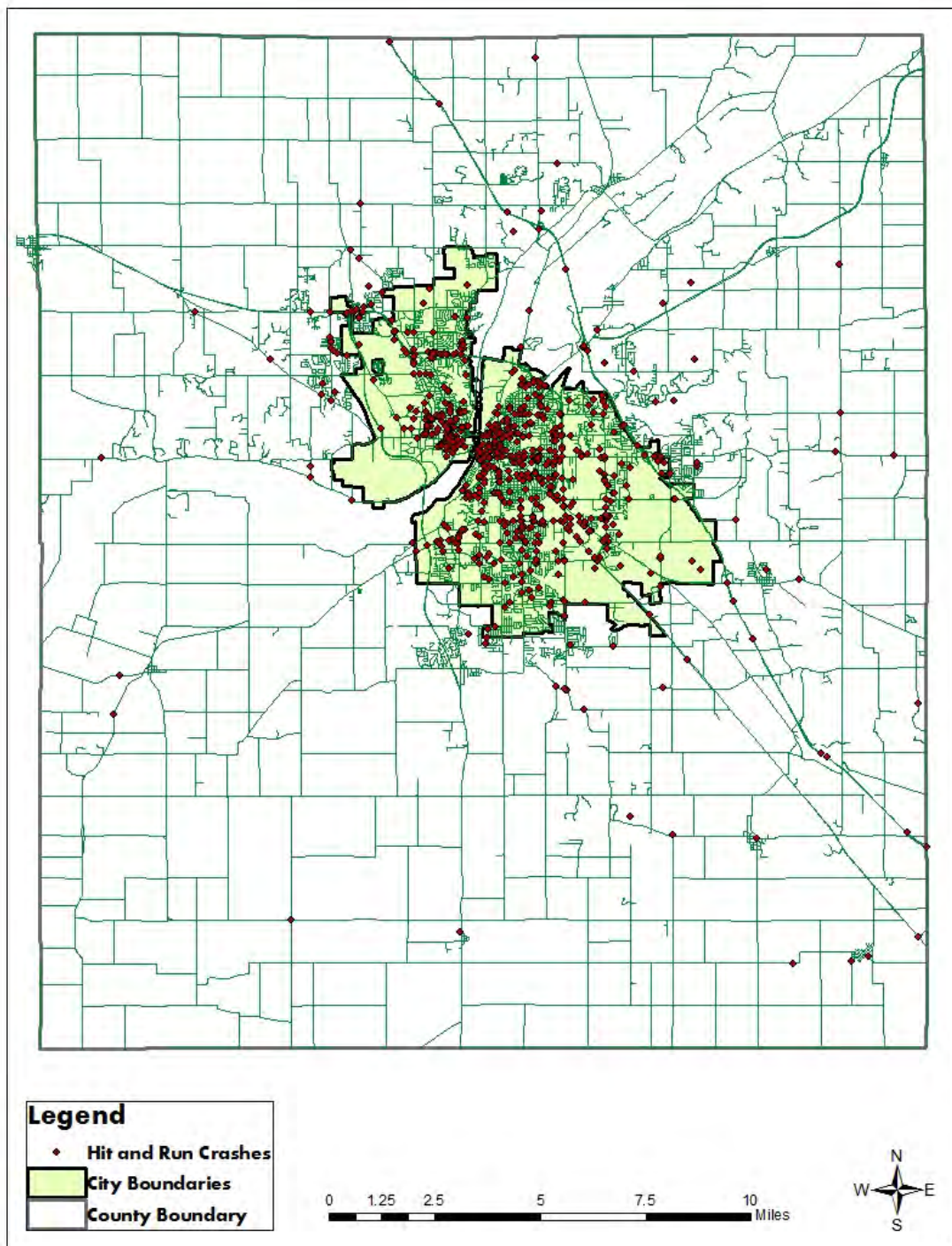




Figure 58: Lafayette and West Lafayette Hit and Run Crashes

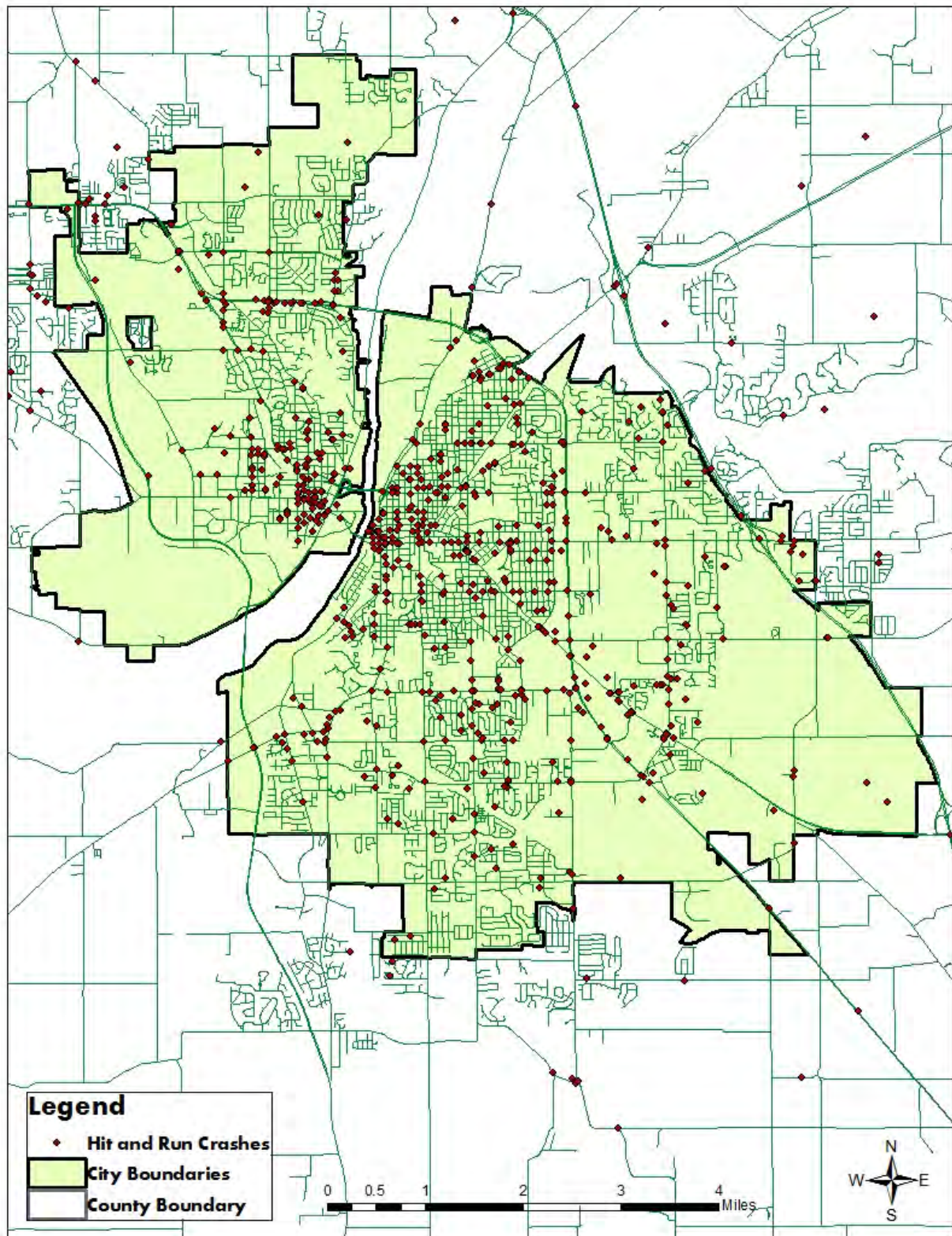


Table 60 shows that most of the crashes involved two vehicles.

**Table 60: Summary of Number of Vehicles Involved in Crashes**

<b>Number of Vehicles Involved</b>	<b>Number of Crashes</b>
<b>6</b>	1
<b>5</b>	3
<b>4</b>	23
<b>3</b>	221
<b>2</b>	3228
<b>1</b>	1313
<b>Total</b>	4789

Although crashes with two vehicles were the most common type, there was also a large amount of single vehicle crashes. Single vehicle crashes can happen for a variety of reasons. Some of those reasons include driver confusion or unfamiliarity with a segment of road. If a road has dangerous or non-intuitive geometry, it may lead to a high number of crashes. Figures 59 and 60 show the locations of single vehicle crashes in 2013.



Figure 59: Tippecanoe County Single Vehicle Crashes

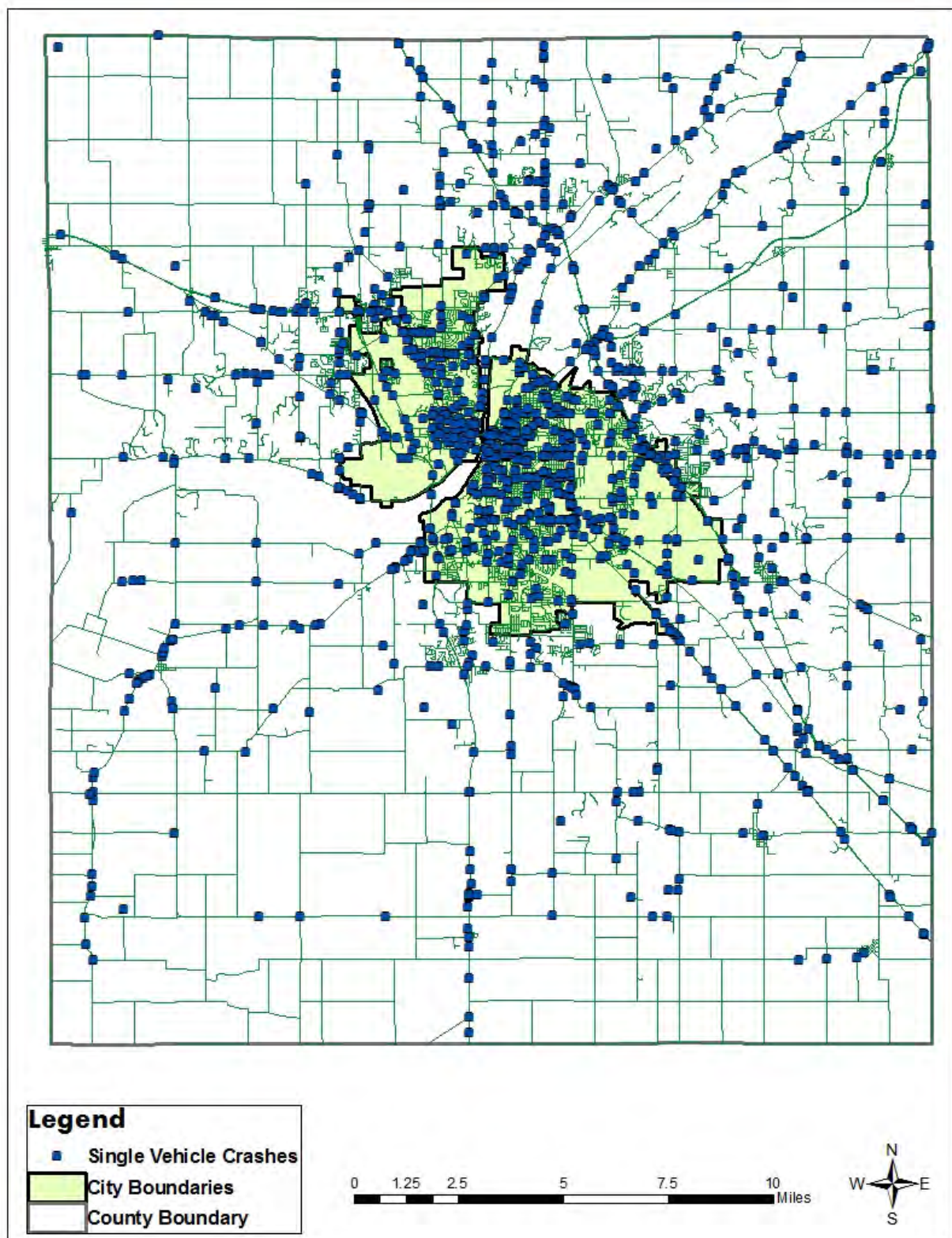




Figure 60: Lafayette and West Lafayette Single Vehicle Crashes

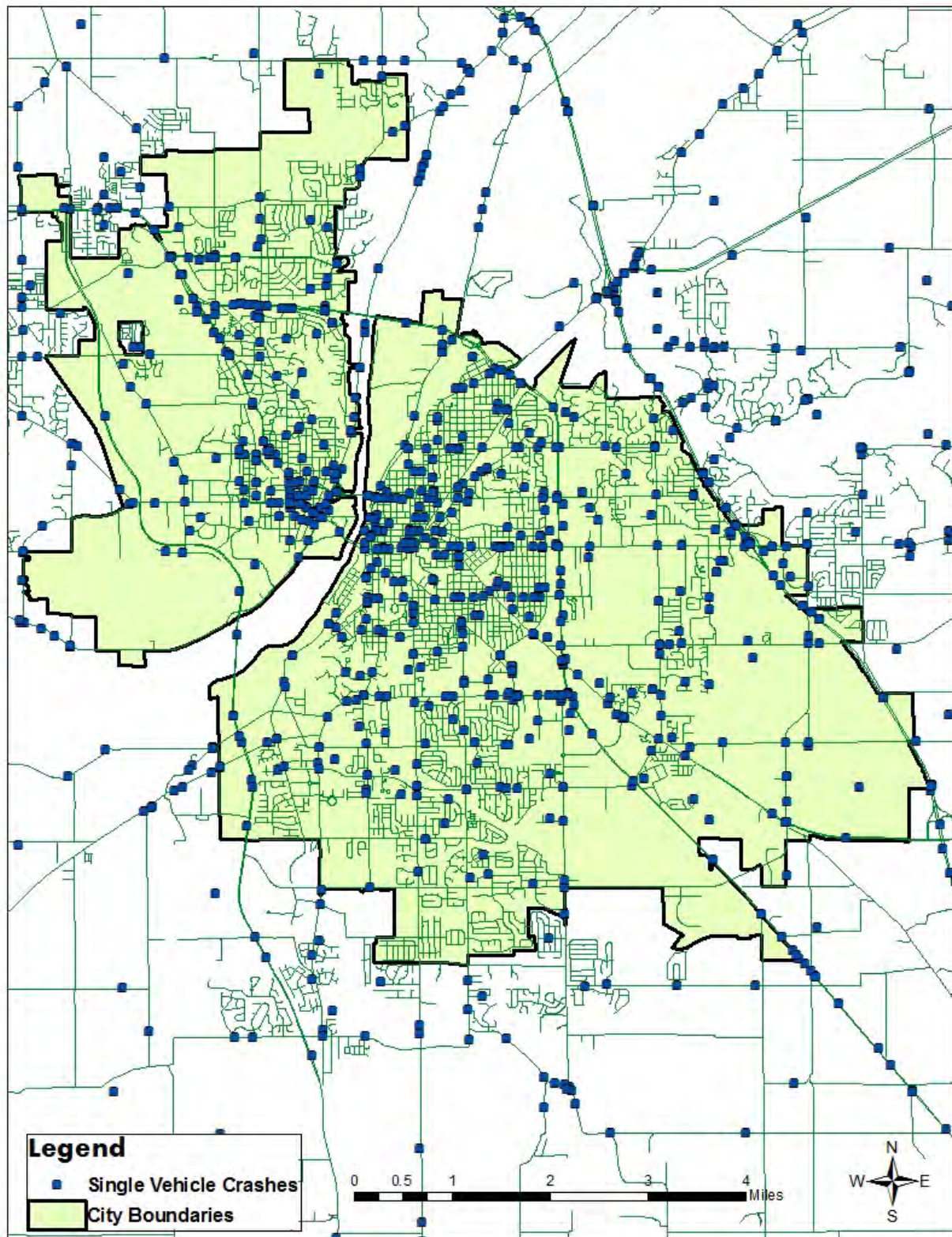


Table 61 shows that the majority of crashes occur on roads with an asphalt surface.

**Table 61: Crashes by Road Surface**

Road Surface	Number of Crashes
ASPHALT	4155
CONCRETE	608
GRAVEL	6
OTHER	19
UNKNOWN	1
TOTAL	4789

Table 62 shows that aside from Indiana, Illinois had the highest number of licensed drivers involved in crashes in Tippecanoe County.

**Table 62: Crashes by Driver's State of Residence**

<b>State</b>	<b>Number of Drivers</b>
<b>AL</b>	4
<b>AR</b>	1
<b>AZ</b>	1
<b>CA</b>	11
<b>CO</b>	4
<b>CT</b>	2
<b>FL</b>	16
<b>GA</b>	14
<b>IA</b>	2
<b>IL</b>	183
<b>IN</b>	7167
<b>KS</b>	3
<b>KY</b>	19
<b>LA</b>	1
<b>MA</b>	3
<b>MD</b>	3
<b>MI</b>	31
<b>MN</b>	8
<b>MO</b>	4
<b>MS</b>	4
<b>NC</b>	6
<b>NE</b>	2
<b>NJ</b>	8
<b>NV</b>	1
<b>NY</b>	7

State	Number of Drivers
OH	42
OK	1
OR	2
PA	8
RI	1
SC	4
SD	1
TN	12
TX	8
UT	2
VA	4
WA	1
WI	24
WV	1
<b>Total</b>	7616

## Recommendations

Based on the analysis in this report, the following safety improvement measures are recommended:

1. Review findings with local Technical Transportation Committee and Local Public Agencies to develop safety improvement projects.
2. Identify locations where constructing sidewalks and/or trails may improve connectivity and give non-motorized road users a more continuous route to safely travel on.
3. Evaluate signage and pavement markings in high crash locations.
4. Evaluate signalization/intersection control at high crash intersections.
5. Continue to evaluate crashes in future years to look at trends in crashes. These trends can continue to inform future safety decisions.