

# 2015

## Tippecanoe County Vehicle Crash Report



Prepared by The Area Plan Commission of  
Tippecanoe County  
8/4/2016

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## 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 2013 through and including 2015.

**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.

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## 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.

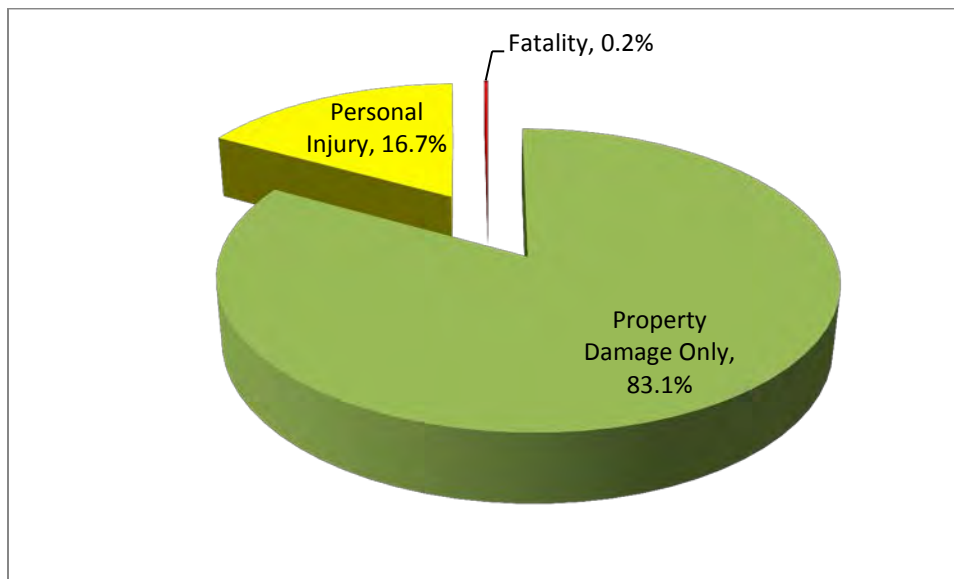
The data for this report came from the Indiana State Police (ISP) Automated Reporting Information Exchange System (ARIES) database of crash reports submitted by the police departments of Lafayette, West Lafayette, Purdue, Dayton, Battleground, the Tippecanoe County Sheriff, the Department of Natural Resources, and the Indiana State Police. The ARIES database contains general information about crashes, but in many 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. This chapter gives a general overview of crashes in 2015.

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	4814	83.1%	0	0
Personal Injury	965	16.7%	1282	0
Fatality	14	0.2%	9	18
Total	5793	100.0%	1291	18

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



Figures 2 and 3 show the locations of crashes in 2015 in Tippecanoe County.

Figure 2: Tippecanoe County Crashes

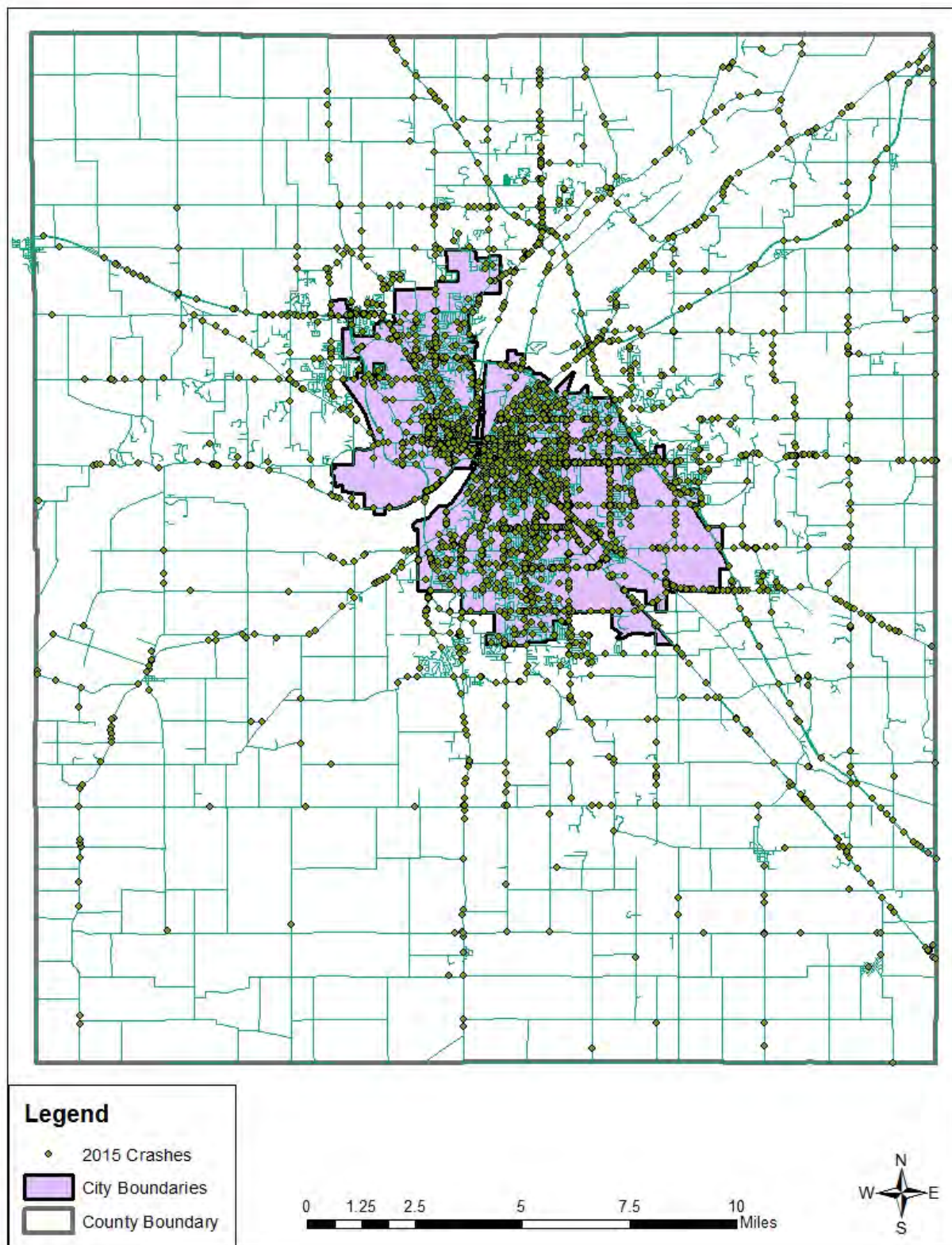




Figure 3: Lafayette and West Lafayette Crashes

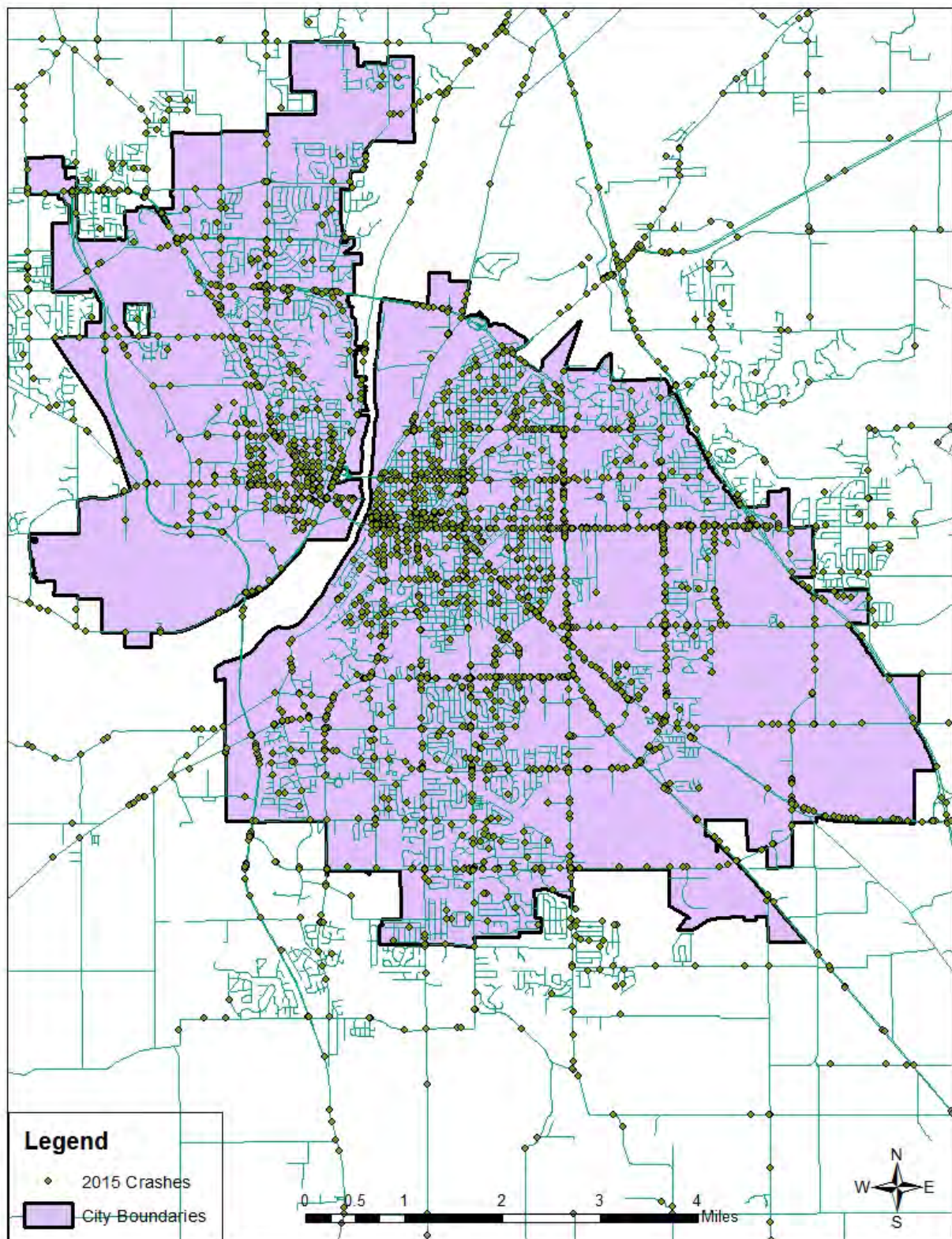


Table 2 shows that the Fairfield and Wabash townships had the most crashes in 2015.

**Table 2: Crashes by Township**

<b>Township</b>	<b>Number of Crashes</b>
<b>Fairfield</b>	2993
<b>Wabash</b>	1275
<b>Wea</b>	548
<b>Tippecanoe</b>	327
<b>Sheffield</b>	190
<b>Perry</b>	129
<b>Washington</b>	81
<b>Lauramie</b>	76
<b>Shelby</b>	57
<b>Union</b>	41
<b>Wayne</b>	39
<b>Randolph</b>	25
<b>Jackson</b>	12
<b>Total</b>	5793

In ARIES, 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**

City/Town	Crashes
<b>Battle Ground</b>	82
<b>Clarks Hill</b>	20
<b>Dayton</b>	74
<b>Lafayette</b>	4179
<b>Otterbein</b>	6
<b>Shadeland</b>	5
<b>West Lafayette</b>	1423
<b>Unlisted</b>	4
<b>Total</b>	5793

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>	Creasy Lane and South Street	72
<b>2</b>	Interstate 65 and South Street	60
<b>3</b>	Sagamore Parkway and South Street	50
<b>4</b>	Sagamore Parkway and Salisbury Street	43
<b>5</b>	Creasy Lane and State Road 38	39
<b>6</b>	Farington Ave and South Street	38
<b>7</b>	Sagamore Parkway and Union Street	36
<b>8</b>	Creasy Lane and McCarty Lane	33
<b>9</b>	River Road and State Street	30
<b>10</b>	Old US 231 and Teal Road	29
<b>11</b>	Eastland Drive and South Street	28
<b>T12</b>	Farabee Drive and South Street	27
<b>T12</b>	Interstate 65 and State Road 43	27
<b>T12</b>	18th Street and Teal Road	27
<b>15</b>	Greenbush Street and Teal Road	26
<b>16</b>	Sagamore Parkway and State Road 38	25
<b>T17</b>	Sagamore Parkway and US 231	24
<b>T17</b>	Main Street and McCarty Lane	24
<b>T19</b>	Old State Road 25 and State Road 25	23
<b>T19</b>	McCarty Lane and Sagamore Parkway	23
<b>T19</b>	Century Place and South Street	23
<b>T22</b>	Concord Road and Veterans Memorial Parkway	22
<b>T22</b>	Sagamore Parkway and Schuyler Avenue	22
<b>T24</b>	Cumberland Avenue and Sagamore Parkway	21
<b>T24</b>	Northwestern Avenue and Yeager Road	21
<b>26</b>	Sagamore Parkway and Soldiers Home Road	20
<b>T27</b>	Shenandoah Drive and South Street	19



<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-100 Feet from Intersection</b>
<b>T27</b>	Earl Avenue and Main Street	19
<b>T29</b>	State Road 38 and Veterans Memorial Parkway	18
<b>T29</b>	Brady Lane and Concord Road	18
<b>T29</b>	US 231 and Veterans Memorial Parkway	18
<b>T29</b>	River Road and US 231	18
<b>T29</b>	Northwestern Avenue and Stadium Avenue	18
<b>T34</b>	Park East Boulevard and South Street	17
<b>T34</b>	Kossuth Street and Main Street	17
<b>T34</b>	Earl Avenue and South Street	17
<b>T34</b>	Creasy Lane and Fortune Drive	17
<b>T34</b>	18th St and Brady Lane	17
<b>T39</b>	Sagamore Parkway and Yeager Road	16
<b>T39</b>	18th Street and South Street	16
<b>T39</b>	Maple Point Drive and State Road 38	16
<b>T39</b>	State Road 28 and US 52	16
<b>T43</b>	9th Street and Salem Street	15
<b>T43</b>	Creasy Lane and Sagamore Parkway	15
<b>T43</b>	Nighthawk Drive and Sagamore Parkway	15
<b>T43</b>	Teal Road and US 231	15
<b>T43</b>	Sagamore Parkway and Teal Road	15
<b>T43</b>	Northwestern Avenue and Wiggins Street	15
<b>T49</b>	9th Street and Union Street	14
<b>T49</b>	Cumberland Avenue and US 231	14
<b>T49</b>	State Street and Tapawingo Drive	14
<b>T49</b>	Kossuth Street and Sagamore Parkway	14
<b>T49</b>	Chauncey Avenue and State Street	14
<b>T49</b>	Roebuck Drive and State Street	14
<b>T27</b>	Shenandoah Drive and South Street	14

<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-100 Feet from Intersection</b>
<b>T49</b>	River Road and Wiggins Street	14
<b>T49</b>	US 52 and Veterans Memorial Parkway	14

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**

<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-250 Feet from Intersection</b>
<b>1</b>	Creasy Lane and South Street	88
<b>2</b>	Interstate 65 and South Street	60
<b>3</b>	Sagamore Parkway and South Street	59
<b>4</b>	Sagamore Parkway and Salisbury Street	47
<b>5</b>	Creasy Lane and State Road 38	45
<b>6</b>	Creasy Lane and McCarty Lane	42
<b>7</b>	Sagamore Parkway and Union Street	41
<b>8</b>	Farington Ave and South Street	40
<b>9</b>	Eastland Drive and South Street	34
<b>10</b>	Greenbush Street and Sagamore Parkway	33
<b>11</b>	River Road and State Street	30
<b>12</b>	Old US 231 and Teal Road	29
<b>T13</b>	McCarty Lane and Sagamore Parkway	27
<b>T13</b>	Farabee Drive and South Street	27
<b>T13</b>	Interstate 65 and State Road 43	27
<b>T13</b>	18th Street and Teal Road	27
<b>17</b>	Sagamore Parkway and State Road 38	26
<b>18</b>	Main Street and McCarty Lane	25
<b>T19</b>	Old State Road 25 and State Road 25	24
<b>T19</b>	Sagamore Parkway and US 231	24
<b>T19</b>	Earl Avenue and Main Street	24

<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-250 Feet from Intersection</b>
<b>T19</b>	Century Place and South Street	24
<b>T23</b>	Concord Road and Veterans Memorial Parkway	23
<b>T23</b>	Sagamore Parkway and Schuyler Avenue	23
<b>T23</b>	Cumberland Avenue and Sagamore Parkway	23
<b>T26</b>	State Road 38 and Veterans Memorial Parkway	22
<b>T26</b>	Earl Avenue and South Street	22
<b>T28</b>	US 231 and Veterans Memorial Parkway	21
<b>T28</b>	Northwestern Avenue and Yeager Road	21
<b>T30</b>	Brady Lane and Concord Road	20
<b>T30</b>	Sagamore Parkway and Soldiers Home Road	20
<b>T30</b>	Shenandoah Drive and South Street	20
<b>T30</b>	18th St and Brady Lane	20
<b>T34</b>	Park East Boulevard and South Street	19
<b>T34</b>	River Road and US 231	19
<b>T34</b>	Northwestern Avenue and Stadium Avenue	19
<b>T37</b>	Kossuth Street and Main Street	18
<b>T37</b>	Sagamore Parkway and Teal Road	18
<b>T39</b>	Sagamore Parkway and Yeager Road	17
<b>T39</b>	18th Street and South Street	17
<b>T39</b>	Creasy Lane and Fortune Drive	17
<b>T42</b>	Creasy Lane and Sagamore Parkway	16
<b>T42</b>	Nighthawk Drive and Sagamore Parkway	16
<b>T42</b>	State Street and Tapawingo Drive	16
<b>T42</b>	Maple Point Drive and State Road 38	16
<b>T42</b>	State Road 28 and US 52	16
<b>T47</b>	9th Street and Salem Street	15
<b>T47</b>	Teal Road and US 231	15
<b>T47</b>	Northwestern Avenue and Wiggins Street	15

<b>Rank</b>	<b>Intersection</b>	<b>Crashes 0-250 Feet from Intersection</b>
<b>T50</b>	9th Street and Union Street	14
<b>T50</b>	Cumberland Avenue and US 231	14
<b>T50</b>	Creasy Lane and Union Street	14
<b>T50</b>	Kossuth Street and Sagamore Parkway	14
<b>T50</b>	Chauncey Avenue and State Street	14
<b>T50</b>	Roebuck Drive and State Street	14
<b>T50</b>	Creasy Lane and Greenbush Street	14
<b>T50</b>	River Road and Wiggins Street	14
<b>T50</b>	US 52 and Veterans Memorial Parkway	14

5 intersections had more than one fatality or incapacitating injury. Table 6 gives a summary of fatalities and incapacitating injuries at those locations. More details on fatalities and incapacitating injuries are included in chapter 5.

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

<b>Intersection</b>	<b>Fatalities</b>	<b>Incapacitating Injuries</b>
<b>State Road 26 and S 900 E</b>	1	2
<b>Brady Lane and Sagamore Parkway</b>	0	3
<b>State Road 38 and Creasy Lane</b>	0	3
<b>Old State Road 25 and State Road 25</b>	0	2
<b>18<sup>th</sup> Street and Schuyler Avenue</b>	1	1
<b>Haggerty Lane and S 500 E</b>	1	1
<b>State Street and US 231</b>	0	2
<b>Cumberland Avenue and US 231</b>	0	2
<b>McCarty Lane and State Road 26</b>	0	2
<b>Covington Street and Essex Street</b>	0	2
<b>16<sup>th</sup> St and Kossuth Street</b>	0	2
<b>E 100 S and 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>Crashes</b>
<b>Following Too Closely</b>	1303
<b>Failure To Yield Right Of Way</b>	979
<b>Ran Off Road Right</b>	455
<b>Speed Too Fast For Weather Conditions</b>	440
<b>Animal/Object In Roadway</b>	343
<b>Improper Lane Usage</b>	329
<b>Unsafe Speed</b>	320
<b>Other (Driver) - Explain In Narrative</b>	302
<b>Unsafe Backing</b>	261
<b>Disregard Signal/Reg Sign</b>	259
<b>Improper Turning</b>	214
<b>Left Of Center</b>	96
<b>Roadway Surface Condition</b>	88
<b>Improper Passing</b>	79
<b>Overcorrecting/Oversteering</b>	55
<b>Unsafe Lane Movement</b>	55
<b>Driver Distracted - Explain In Narrative</b>	52
<b>Driver Asleep Or Fatigued</b>	37
<b>Pedestrian Action</b>	19
<b>Tire Failure Or Defective</b>	17
<b>Driver Illness</b>	13
<b>Other (Environmental)</b>	13
<b>Brake Failure Or Defective</b>	12

<b>Primary Factor</b>	<b>Crashes</b>
<b>Other (Vehicle) - Explain In Narrative</b>	9
<b>Insecure/Leaky Load</b>	8
<b>Obstruction Not Marked</b>	8
<b>Wrong Way On One Way</b>	8
<b>Cell Phone Usage</b>	5
<b>Steering Failure</b>	4
<b>View Obstructed</b>	3
<b>Severe Crosswinds</b>	2
<b>Accelerator Failure Or Defective</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>	5793

In this report, the term “fault” refers to the party who had the legal responsibility for causing a crash. Determining fault can be difficult because there are often complex circumstances that affect pedestrian, bicyclist, and vehicle behavior. This data is also not usually available from a vehicle owner’s private insurance provider, so it was approximated for this report using the primary factor information from ARIES. 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>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

<b>Primary Factor Category</b>	<b>Primary Factor</b>
<b>Miscellaneous Factors</b>	Other Telematics In Use
<b>Miscellaneous Factors</b>	Unknown
<b>Vehicular Factors</b>	Brake Failure Or Defective
<b>Vehicular Factors</b>	Tire Failure Or Defective
<b>Vehicular Factors</b>	Insecure/Leaky Load
<b>Vehicular Factors</b>	Other (Vehicle) - Explain In Narrative
<b>Vehicular Factors</b>	Steering Failure
<b>Vehicular Factors</b>	Engine Failure Or Defective
<b>Vehicular Factors</b>	Oversize/Overweight Load
<b>Vehicular Factors</b>	Tow Hitch Failure
<b>Vehicular Factors</b>	Accelerator Failure Or Defective
<b>Vehicular Factors</b>	Headlight Defective Or Not On

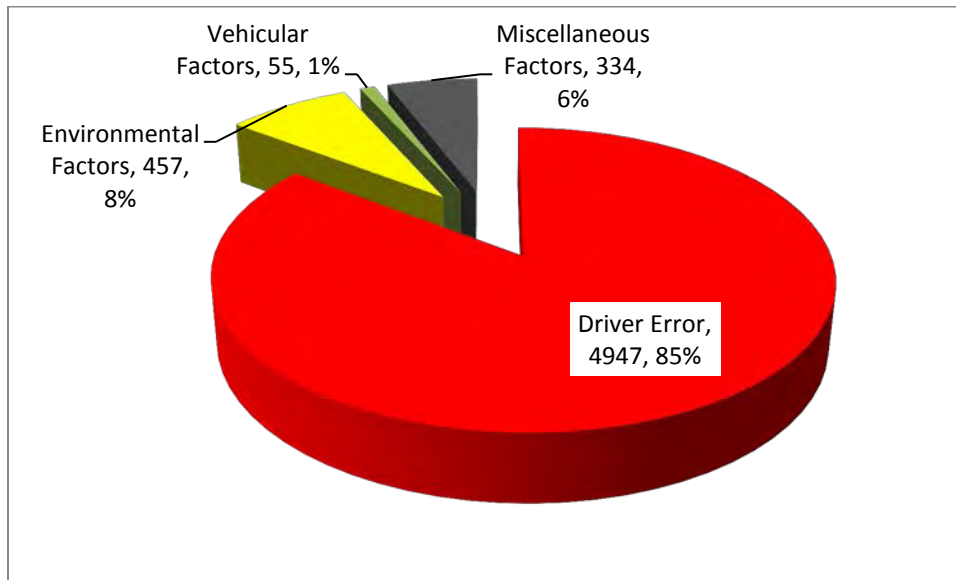
Table 9 and Figure 4 show that driver error was the primary factor category that was most common in 2014 crashes.

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

<b>Primary Factor Category</b>	<b>Crashes</b>
<b>Driver Error</b>	4947
<b>Environmental Factors</b>	457
<b>Vehicular Factors</b>	55
<b>Miscellaneous Factors</b>	334
<b>Total</b>	5793



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



The manner of collision (also referred to as crash type in this report), 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>Crash Type</b>	<b>Crashes</b>
<b>Rear End</b>	1910
<b>Right Angle</b>	832
<b>Ran Off Road</b>	817
<b>Same Direction Sideswipe</b>	712
<b>Left Turn</b>	274
<b>Collision With Deer</b>	266
<b>Backing Crash</b>	238
<b>Other - Explain In Narrative</b>	231
<b>Head On Between Two Motor Vehicles</b>	161
<b>Opposite Direction Sideswipe</b>	94
<b>Right Turn</b>	64
<b>Unknown</b>	53
<b>Non-Collision</b>	40
<b>Collision With Object In Road</b>	39
<b>Collision With Animal Other</b>	28
<b>Left/Right Turn</b>	21
<b>Rear To Rear</b>	12
<b>Head On</b>	1
<b>Total</b>	5793

## 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. This chapter analyzes trends in the age and gender of crash participants.

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
Male	61	1575	1152	823	778	611	454	5454
Female	46	1357	935	599	582	453	361	4333
Total	107	2932	2087	1422	1360	1064	815	9787

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 participants 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
Driver	24	2809	2022	1393	1324	1031	710	9313
Injured Person	87	90	55	26	32	28	24	342
Pedalcyclist	8	16	4	3	4	4	1	40
Pedestrian	4	17	6	4	1	1	3	36
Total	123	2932	2087	1426	1361	1064	738	9731

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

**Table 13: Primary Factors by Age of Driver**

<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>Following Too Closely</b>	3	811	579	408	407	276	210	2694
<b>Failure To Yield Right Of Way</b>	1	554	427	255	246	197	219	1899
<b>Speed Too Fast For Weather Conditions</b>	2	250	158	102	77	65	28	682
<b>Unsafe Speed</b>	2	170	123	82	83	56	32	548
<b>Disregard Signal/Reg Sign</b>	0	119	103	74	65	69	62	492
<b>Improper Lane Usage</b>	1	126	87	77	61	60	36	448
<b>Ran Off Road Right</b>	2	145	113	46	41	29	19	395
<b>Other (Driver) - Explain In Narrative</b>	2	122	72	49	61	48	38	392
<b>Animal/Object In Roadway</b>	1	64	75	74	72	46	17	349
<b>Improper Turning</b>	0	99	69	46	49	48	32	343
<b>Unsafe Backing</b>	1	85	56	57	38	43	43	323
<b>Left Of Center</b>	1	41	28	21	23	12	8	134
<b>Improper Passing</b>	0	30	23	18	16	18	15	120
<b>Roadway Surface Condition</b>	0	48	23	17	7	10	3	108
<b>Unsafe Lane Movement</b>	8	21	19	16	21	10	7	102
<b>Driver Distracted - Explain In Narrative</b>	0	28	19	10	17	14	6	94
<b>Overcorrecting/Oversteering</b>	0	27	13	3	10	9	1	63
<b>Driver Asleep Or Fatigued</b>	0	19	10	6	3	3	3	44
<b>Tire Failure Or Defective</b>	0	7	3	5	5	2	1	23
<b>Pedestrian Action</b>	0	10	2	4	2	0	0	18
<b>Other (Environmental) - Explain In Narr</b>	0	4	3	2	6	0	0	15
<b>Insecure/Leaky Load</b>	0	2	2	5	0	3	3	15
<b>Driver Illness</b>	0	2	1	3	2	3	3	14
<b>Brake Failure Or Defective</b>	0	6	2	2	1	3	0	14

Primary Factor	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
Wrong Way On One Way	0	3	4	1	4	0	0	12
Other (Vehicle) - Explain In Narrative	0	3	2	3	1	1	0	10
Cell Phone Usage	0	5	1	2	2	0	0	10
Obstruction Not Marked	0	0	2	2	2	2	0	8
View Obstructed	0	2	3	0	1	1	0	7
Steering Failure	0	3	0	1	0	0	0	4
Severe Crosswinds	0	0	0	1	0	1	0	2
Headlight Defective Or Not On	0	2	0	0	0	0	0	2
Oversize/Overweight Load	0	0	0	0	1	1	0	2
Accelerator Failure Or Defective	0	1	0	0	0	0	0	1
Engine Failure Or Defective	0	0	0	1	0	0	0	1
Tow Hitch Failure	0	0	0	0	0	1	0	1
<b>Total</b>	24	2809	2022	1393	1324	1031	786	9389

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>	1432	1260	2692
<b>Failure To Yield Right Of Way</b>	1039	859	1898
<b>Speed Too Fast For Weather Conditions</b>	381	299	680
<b>Unsafe Speed</b>	327	219	546
<b>Disregard Signal/Reg Sign</b>	288	204	492
<b>Improper Lane Usage</b>	258	190	448
<b>Ran Off Road Right</b>	258	136	394
<b>Other (Driver) - Explain In Narrative</b>	230	160	390
<b>Animal/Object In Roadway</b>	199	149	348
<b>Improper Turning</b>	168	175	343
<b>Unsafe Backing</b>	188	134	322
<b>Left Of Center</b>	91	42	133
<b>Improper Passing</b>	75	45	120
<b>Roadway Surface Condition</b>	51	57	108
<b>Unsafe Lane Movement</b>	71	23	94
<b>Driver Distracted - Explain In Narrative</b>	46	48	94
<b>Overcorrecting/Oversteering</b>	32	31	63
<b>Driver Asleep Or Fatigued</b>	26	18	44
<b>Tire Failure Or Defective</b>	15	8	23
<b>Pedestrian Action</b>	10	8	18
<b>Other (Environmental) - Explain In Narr</b>	9	6	15
<b>Insecure/Leaky Load</b>	13	1	14
<b>Driver Illness</b>	7	7	14
<b>Brake Failure Or Defective</b>	9	5	14
<b>Wrong Way On One Way</b>	8	4	12
<b>Other (Vehicle) - Explain In Narrative</b>	6	4	10
<b>Cell Phone Usage</b>	3	7	10
<b>Obstruction Not Marked</b>	5	3	8

<b>Primary Factor</b>	<b>Male</b>	<b>Female</b>	<b>Total</b>
<b>View Obstructed</b>	6	1	7
<b>Steering Failure</b>	3	1	4
<b>Severe Crosswinds</b>	2	0	2
<b>Headlight Defective Or Not On</b>	1	1	2
<b>Oversize/Overweight Load</b>	2	0	2
<b>Accelerator Failure Or Defective</b>	1	0	1
<b>Engine Failure Or Defective</b>	0	1	1
<b>Tow Hitch Failure</b>	1	0	1
<b>Total</b>	5261	4106	9367

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>	8	1185	808	579	589	427	278	3874
<b>Right Angle</b>	0	452	370	217	208	181	178	1606
<b>Same Direction Sideswipe</b>	12	297	235	171	153	144	113	1125
<b>Ran Off Road</b>	2	317	206	87	72	57	33	774
<b>Left Turn</b>	0	162	109	83	73	40	57	524
<b>Backing Crash</b>	1	73	51	52	38	42	41	298
<b>Collision With Deer</b>	0	50	54	58	58	34	12	266
<b>Head On Between Two Motor Vehicles</b>	0	77	64	41	28	23	16	249
<b>Other - Explain In Narrative</b>	1	75	40	33	42	23	22	236
<b>Opposite Direction Sideswipe</b>	0	42	22	16	22	20	7	129
<b>Right Turn</b>	0	33	19	17	8	17	15	109
<b>Collision With Object In Road</b>	0	8	10	9	9	5	5	46
<b>Non-Collision</b>	0	9	10	7	6	4	2	38
<b>Left/Right Turn</b>	0	17	2	6	7	3	1	36
<b>Collision With Animal Other</b>	0	3	5	8	4	5	3	28
<b>Rear To Rear</b>	0	9	6	4	3	3	1	26
<b>Total</b>	24	2809	2011	1388	1320	1028	784	9364

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



Figure 5: Crashes by Gender and Type

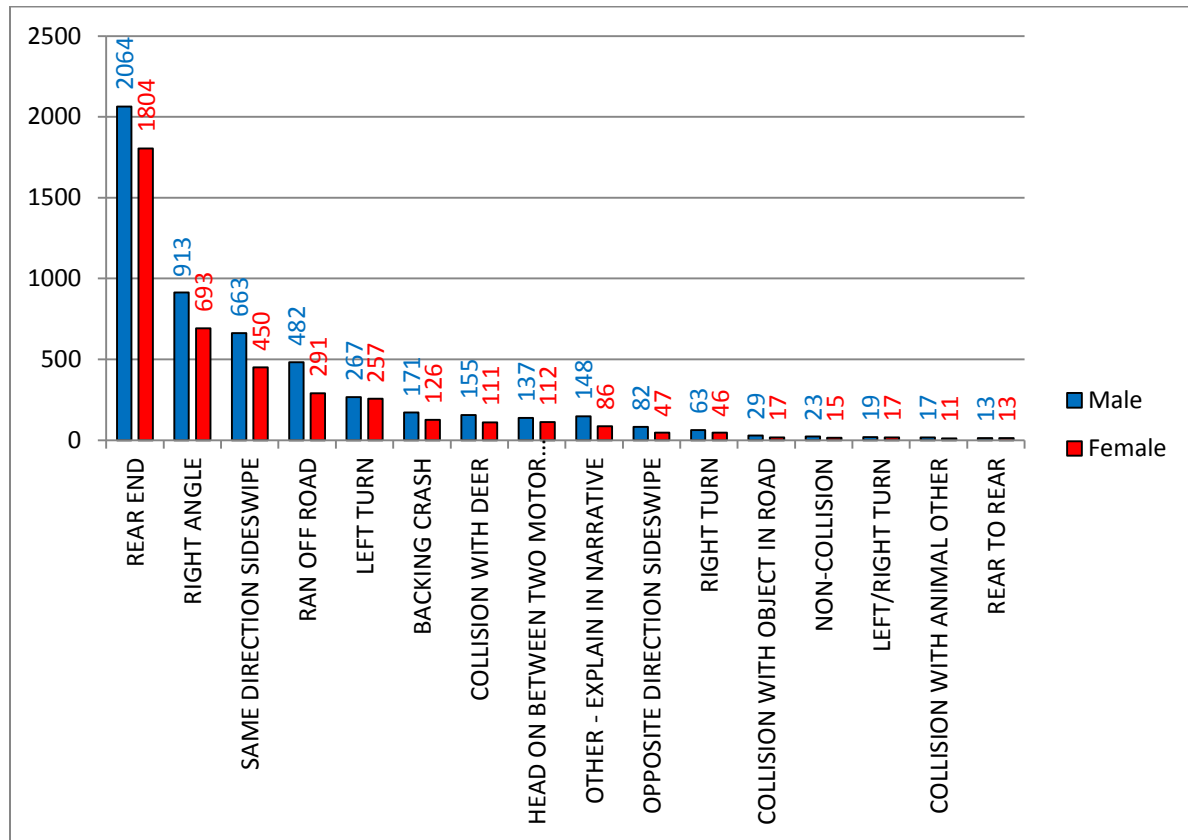


Figure 6 shows that males were the drivers in 56% of crashes.

Figure 6: Drivers in Crashes by Gender

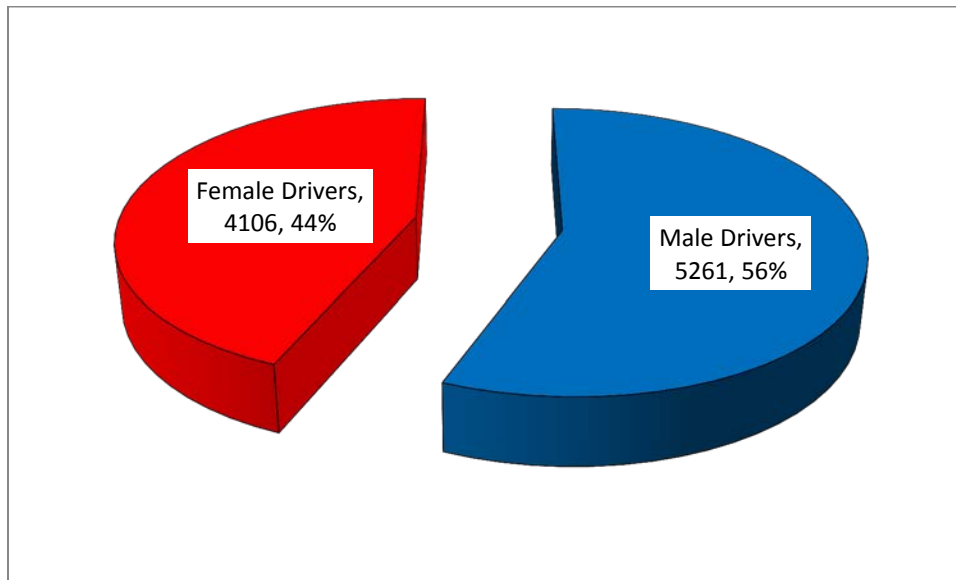
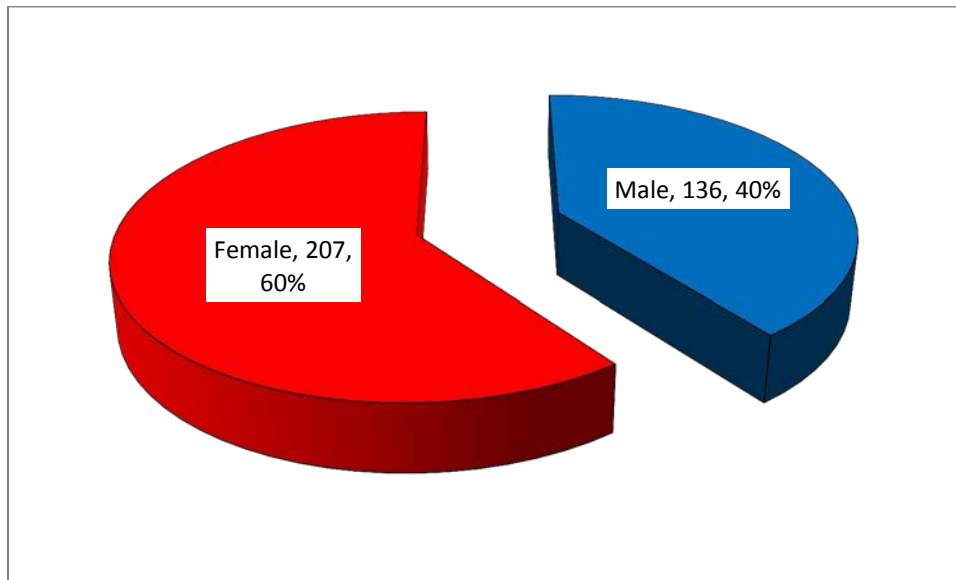


Figure 7 shows the number of passengers injured in crashes. More female passengers were injured than male passengers.

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. This chapter analyzes trends in the times when crashes occurred.

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

**Figure 8: Crashes by Month**

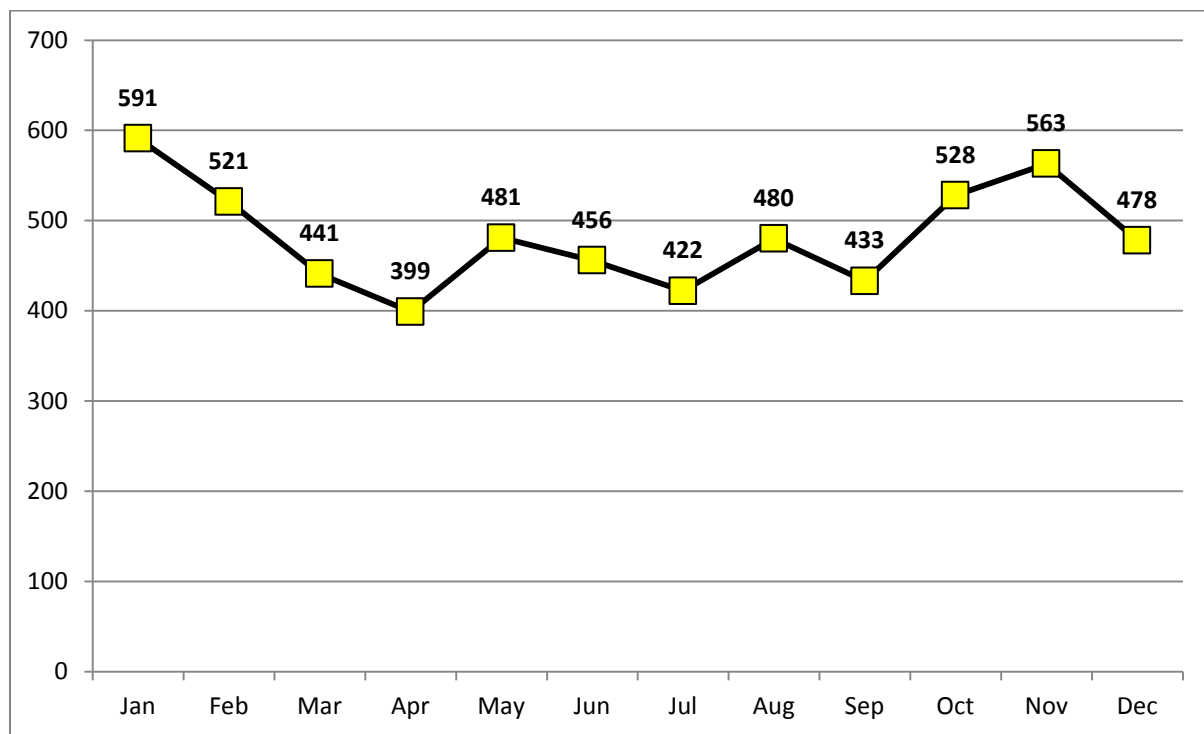


Figure 9 shows crashes by month for the three most common crash types (rear end, right angle, and ran off road).

Figure 9: 3 Most Common Crash Types by Month

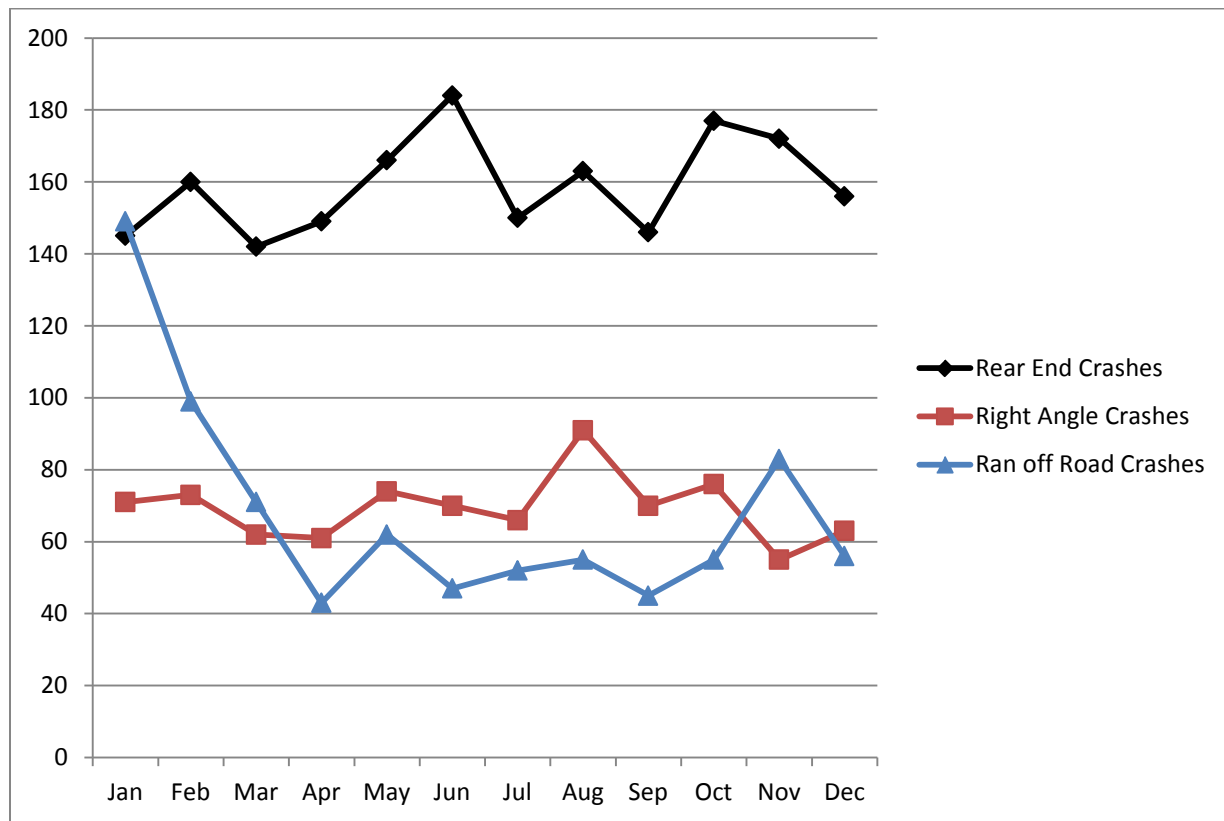


Figure 10 and Table 16 show that Friday had the highest number of crashes.

Figure 10: Crashes by Day of the Week

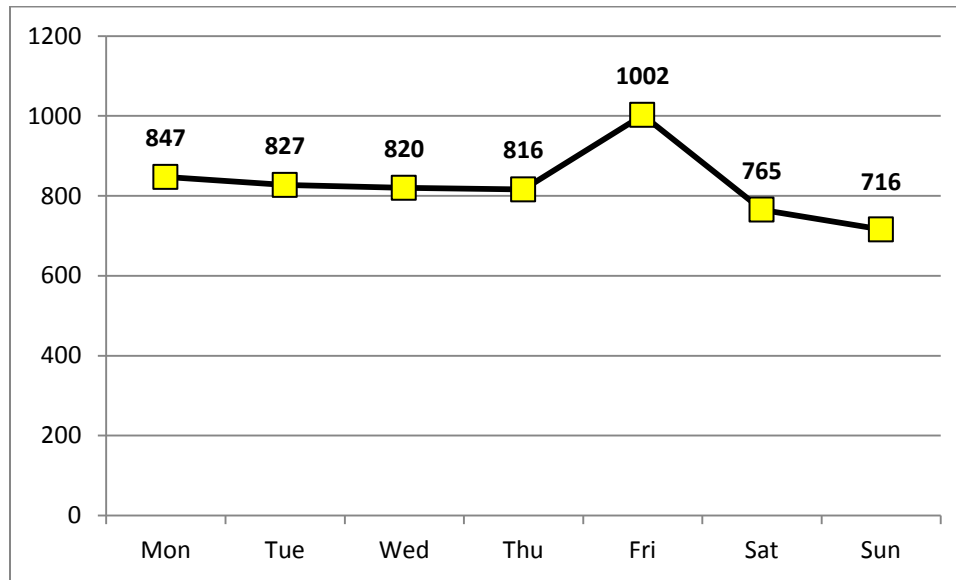


Table 16: Crash Percentages by Day of the Week

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
Crashes	847	827	820	816	1002	765	716	5793
Percentage	14.6%	14.3%	14.2%	14.1%	17.3%	13.2%	12.4%	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

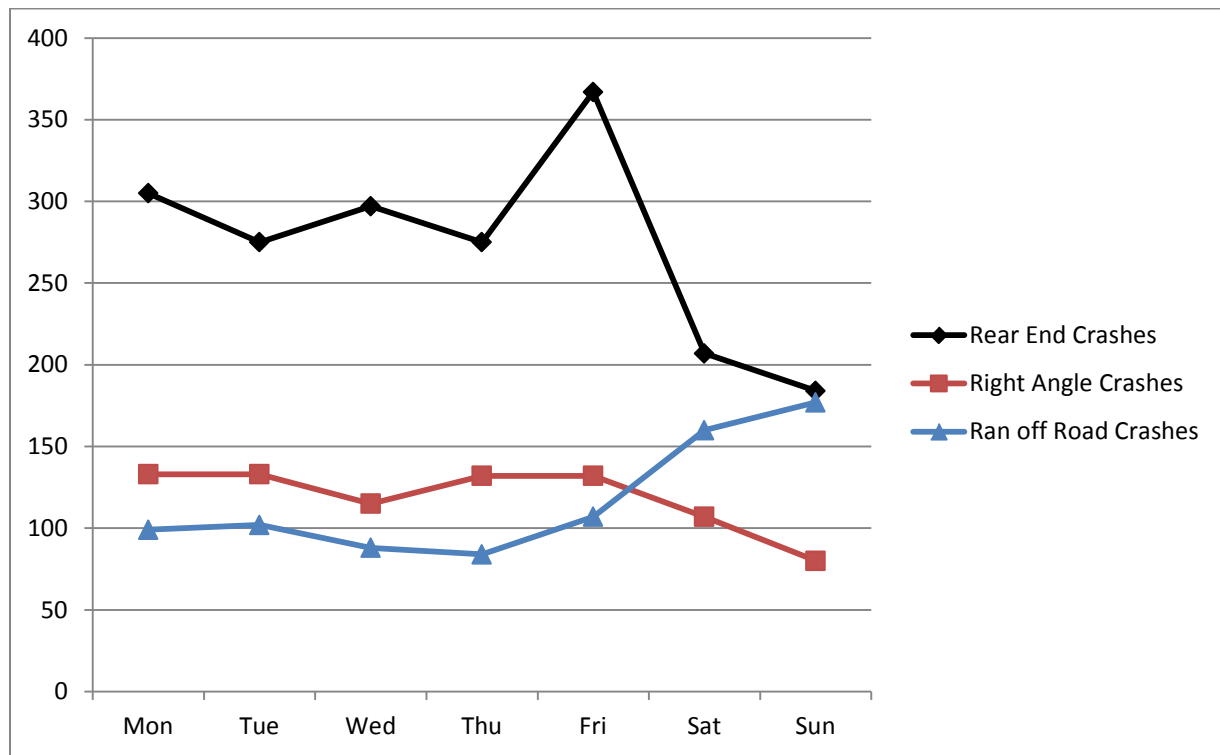


Figure 12 shows that the majority of crashes occurred during the daylight hours (from 7 a.m. to 7 p.m.).

Figure 12: Crashes by Time of Day

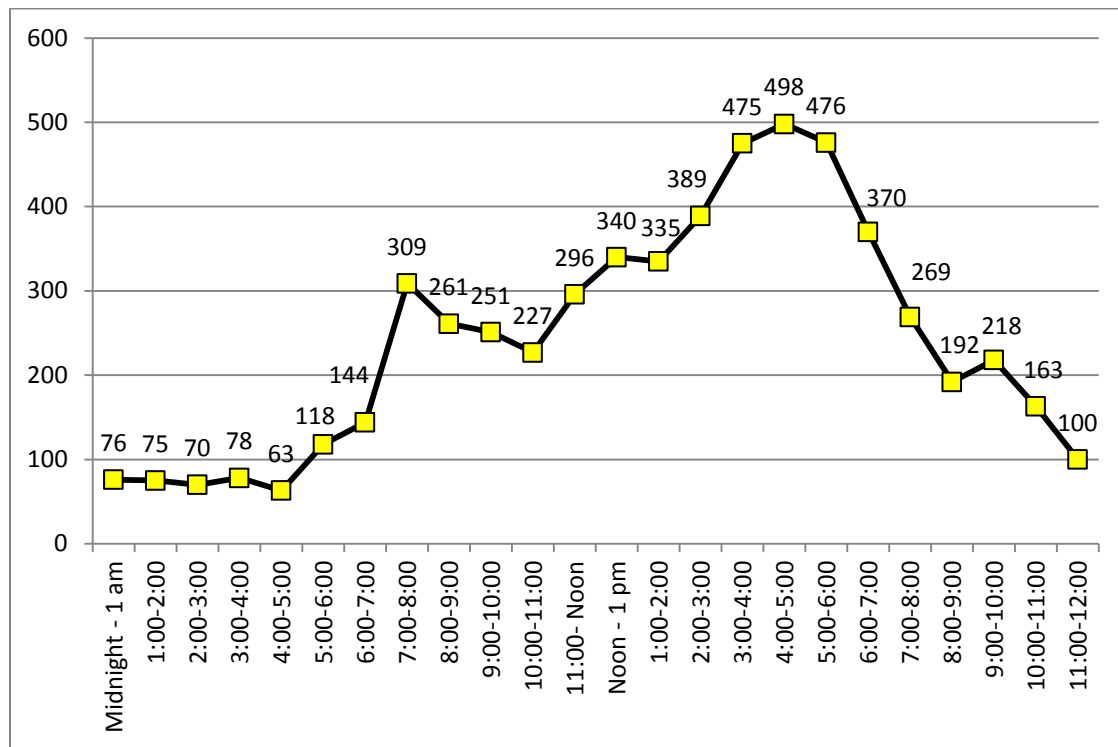
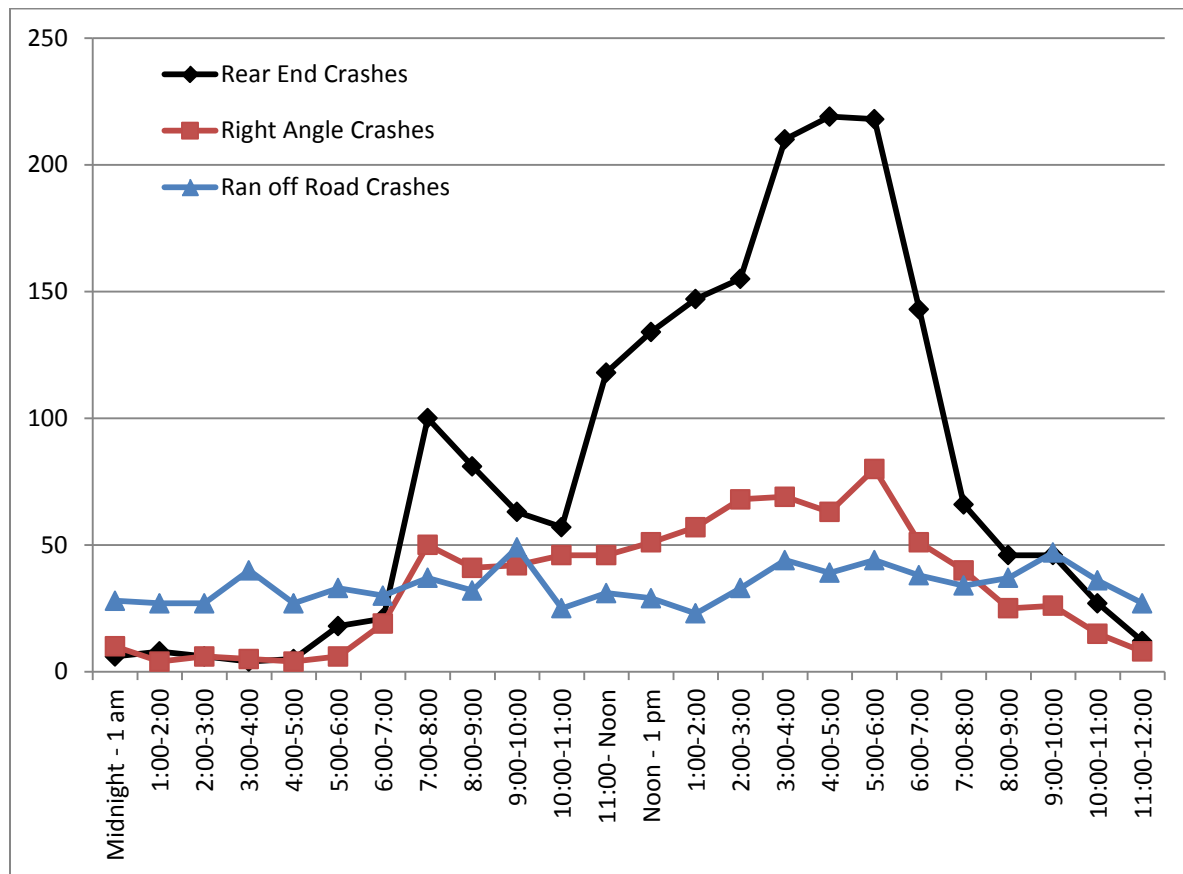


Figure 13 shows crashes by time of day for the three most common crash types.



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. This chapter analyzes trends in crashes with different weather and pavement conditions.

Table 17 shows that the highest number of 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**

Weather Conditions	Crashes
Blowing Sand/Soil/Snow	28
Clear	3495
Cloudy	1178
Fog/Smoke/Smog	31
Rain	629
Severe Cross Wind	6
Sleet/Hail/Freezing Rain	101
Snow	321
Unknown	4
Total	5793

Figure 14: Tippecanoe County Crashes in Clear Weather Conditions

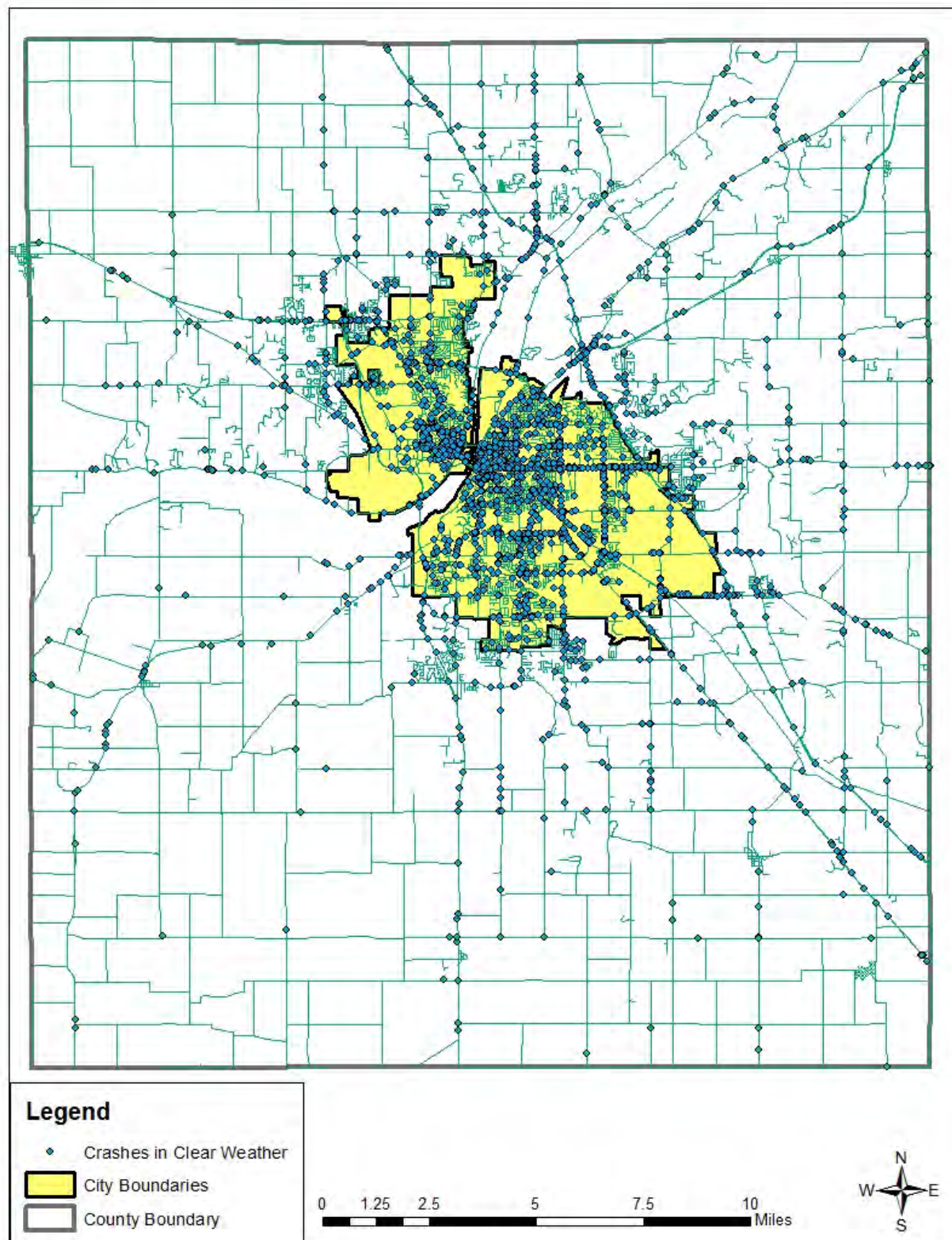
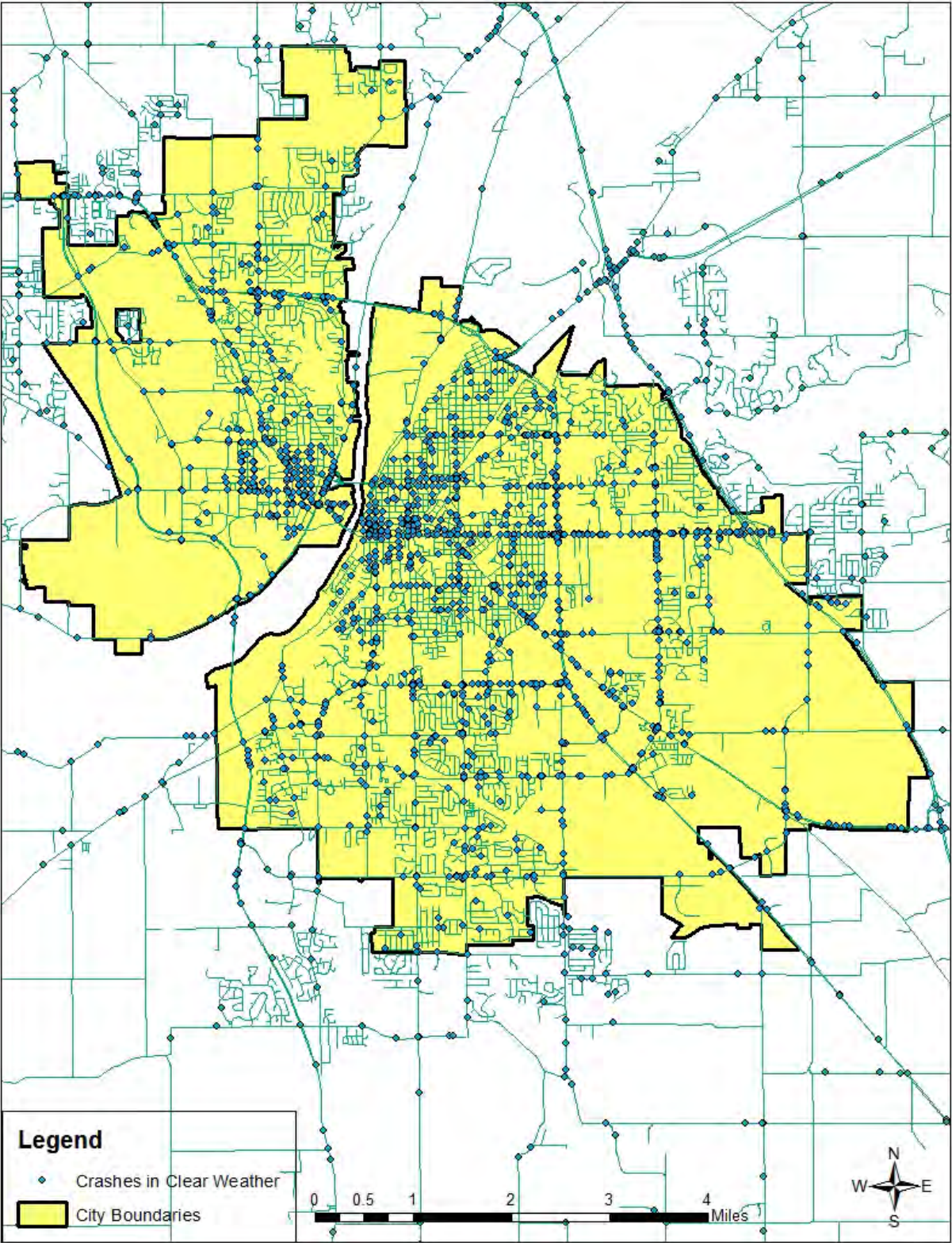




Figure 15: Lafayette and West Lafayette Crashes in Clear Weather



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**

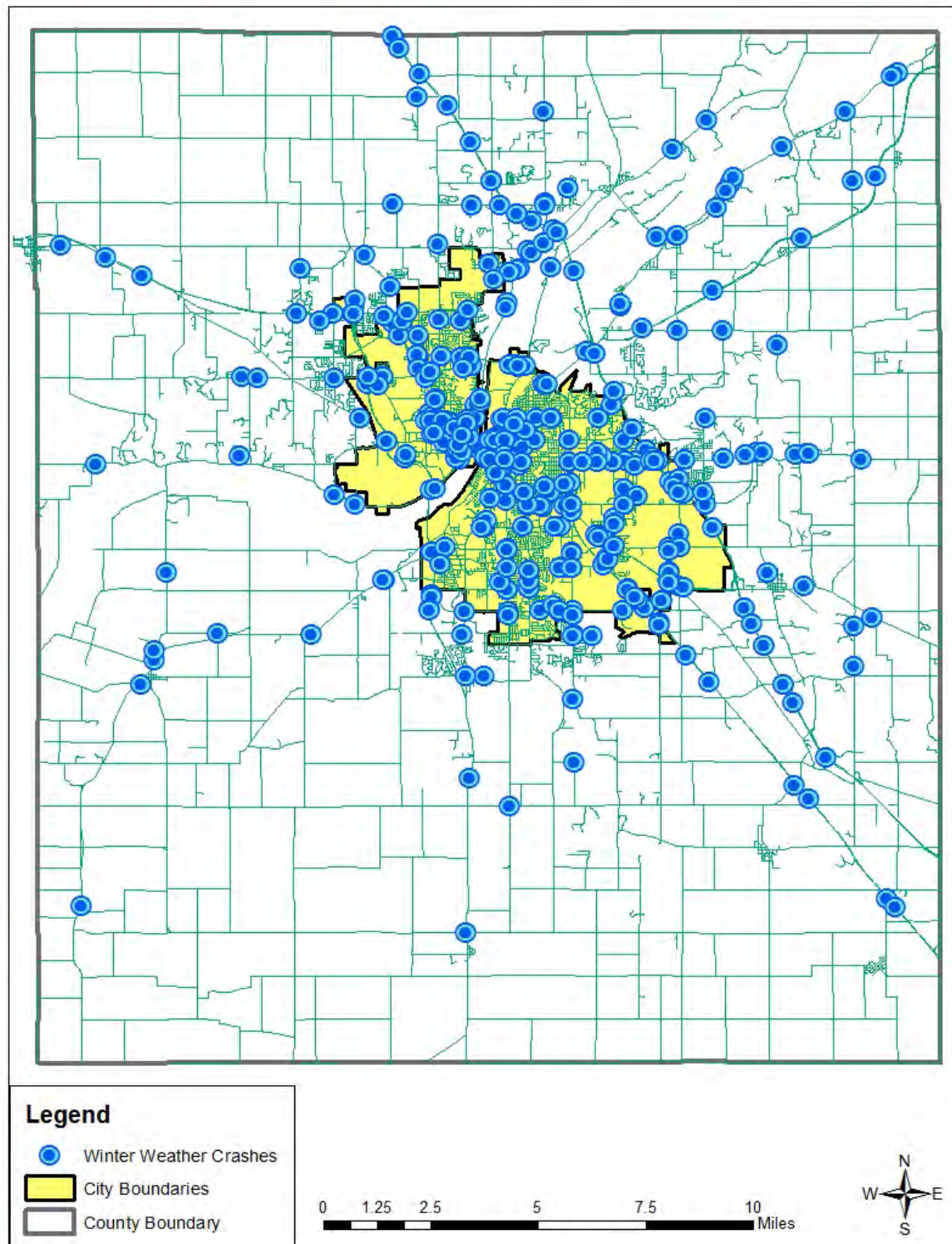




Figure 17: Lafayette and West Lafayette Winter Weather Crashes

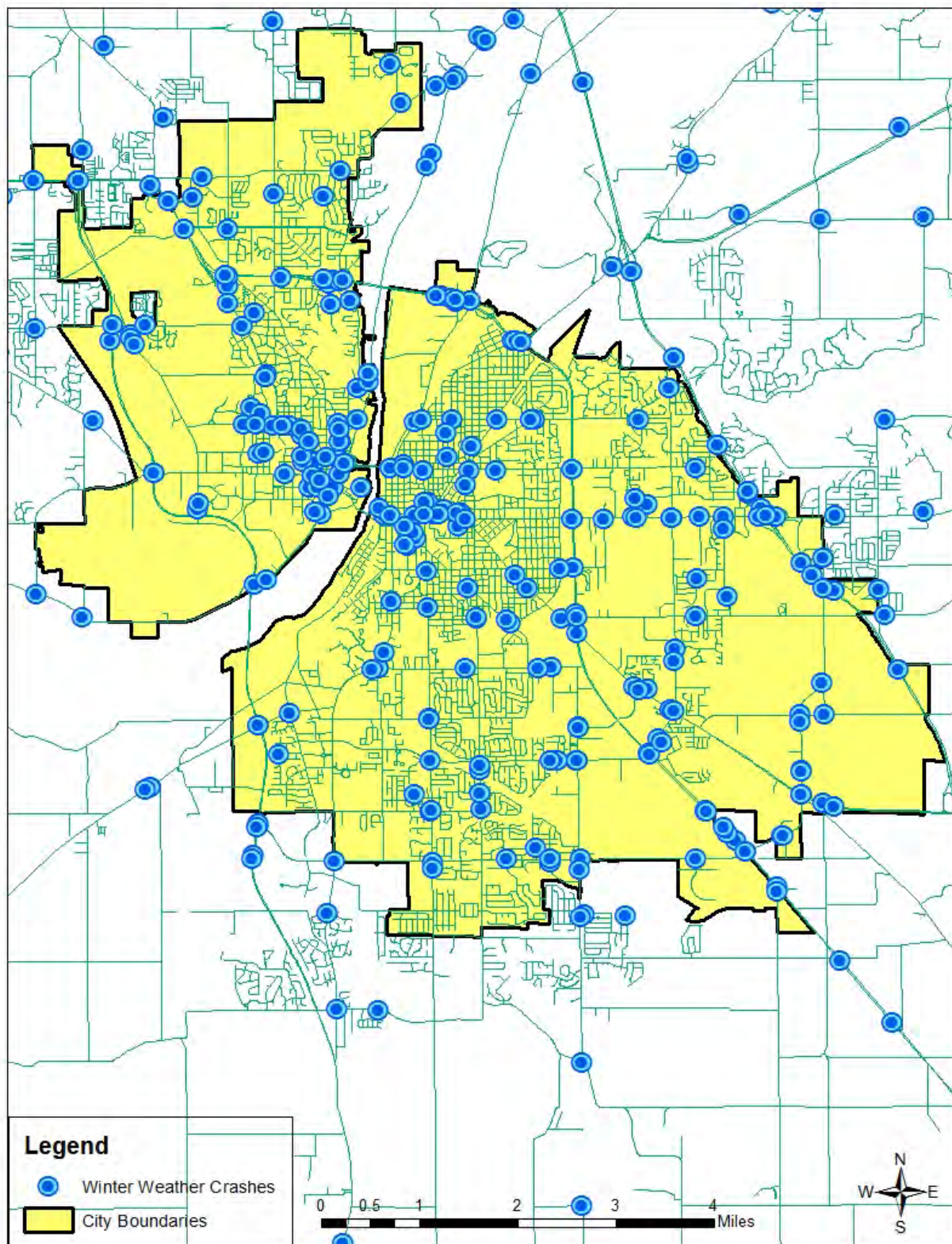


Table 18 shows that the majority of crashes occurred when pavement was dry.

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

Road Surface Conditions	Crashes
Dry	4020
Wet	1060
Snow/Slush	352
Ice	327
Loose Material On Road	13
Water (Standing Or Moving)	12
Muddy	5
Unknown	4
Total	5793

Table 19 shows that the majority of crashes occurred when there was daylight.

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

Light Condition	Crashes
Dark (Lighted)	890
Dark (Not Lighted)	684
Dawn/Dusk	292
Daylight	3885
Unknown	42
Total	5793

## Chapter 5: Injuries and Fatalities

Although the majority of 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. This chapter analyzes trends in crashes with at least one injury or fatality.

Injuries suffered range in severity. Some injuries are as minor as temporary pain, others are as major as paralysis. In ARIES, injuries are classified in two categories: non-incapacitating and incapacitating. 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. Therefore, the officer's estimate is used in this report.

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

**Table 20: Injury and Fatality Crashes**

<b>Crash Statistic</b>	<b>Number</b>
<b>Injury Crashes</b>	971
<b>Number of Injuries</b>	1291
<b>Fatality Crashes</b>	14
<b>Number of Fatalities</b>	18

Table 21 shows that failure to yield right of way was the biggest cause of injuries.



**Table 21: Injuries by Primary Factor**

<b>Primary Factor</b>	<b>Injuries</b>
<b>Failure To Yield Right Of Way</b>	339
<b>Following Too Closely</b>	234
<b>Disregard Signal/Reg Sign</b>	129
<b>Ran Off Road Right</b>	121
<b>Unsafe Speed</b>	102
<b>Speed Too Fast For Weather Conditions</b>	83
<b>Other (Driver) - Explain In Narrative</b>	60
<b>Left Of Center</b>	46
<b>Improper Lane Usage</b>	32
<b>Improper Turning</b>	22
<b>Animal/Object In Roadway</b>	17
<b>Overcorrecting/Oversteering</b>	16
<b>Pedestrian Action</b>	16
<b>Roadway Surface Condition</b>	14
<b>Driver Asleep Or Fatigued</b>	14
<b>Driver Distracted - Explain In Narrative</b>	10
<b>Driver Illness</b>	8
<b>Unsafe Lane Movement</b>	7
<b>Unsafe Backing</b>	4
<b>Improper Passing</b>	4
<b>Wrong Way On One Way</b>	3
<b>Headlight Defective Or Not On</b>	3
<b>Brake Failure Or Defective</b>	2
<b>Other (Vehicle) - Explain In Narrative</b>	2
<b>Tire Failure Or Defective</b>	1
<b>Insecure/Leaky Load</b>	1
<b>View Obstructed</b>	1
<b>Total</b>	1291

Table 22 shows that rear end crashes caused the highest number of injuries.

**Table 22: Injuries by Crash Type**

<b>Crash Type</b>	<b>Injuries</b>
<b>Rear End</b>	381
<b>Right Angle</b>	358
<b>Ran Off Road</b>	208
<b>Head On Between Two Motor Vehicles</b>	108
<b>Left Turn</b>	88
<b>Other - Explain In Narrative</b>	46
<b>Same Direction Sideswipe</b>	38
<b>Right Turn</b>	15
<b>Non-Collision</b>	15
<b>Collision With Deer</b>	8
<b>Opposite Direction Sideswipe</b>	7
<b>Unknown</b>	6
<b>Left/Right Turn</b>	5
<b>Backing Crash</b>	2
<b>Collision With Animal Other</b>	2
<b>Rear To Rear</b>	2
<b>Collision With Object In Road</b>	1
<b>Head On</b>	1
<b>Total</b>	1291

Table 23 shows that August had the highest number of injuries.

**Table 23: Injuries by Month**

<b>Month</b>	<b>Injuries</b>
<b>Jan</b>	96
<b>Feb</b>	80
<b>Mar</b>	75
<b>Apr</b>	80
<b>May</b>	143
<b>Jun</b>	105
<b>Jul</b>	133
<b>Aug</b>	148
<b>Sep</b>	122
<b>Oct</b>	126
<b>Nov</b>	93
<b>Dec</b>	90
<b>Total</b>	1291

Figure 18 shows that the highest number of injuries occurred between 4 and 5 p.m.

Figure 18: Injuries by Time of Day

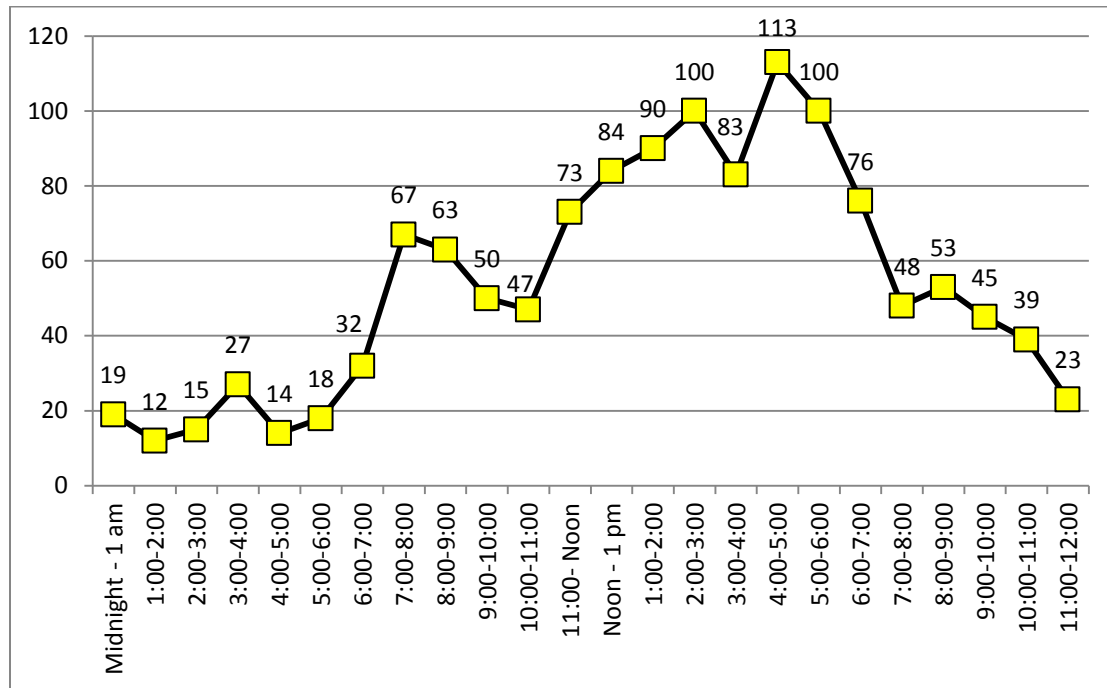


Figure 19 shows that Friday had the highest number of injuries.

Figure 19: Injuries by Day of the Week

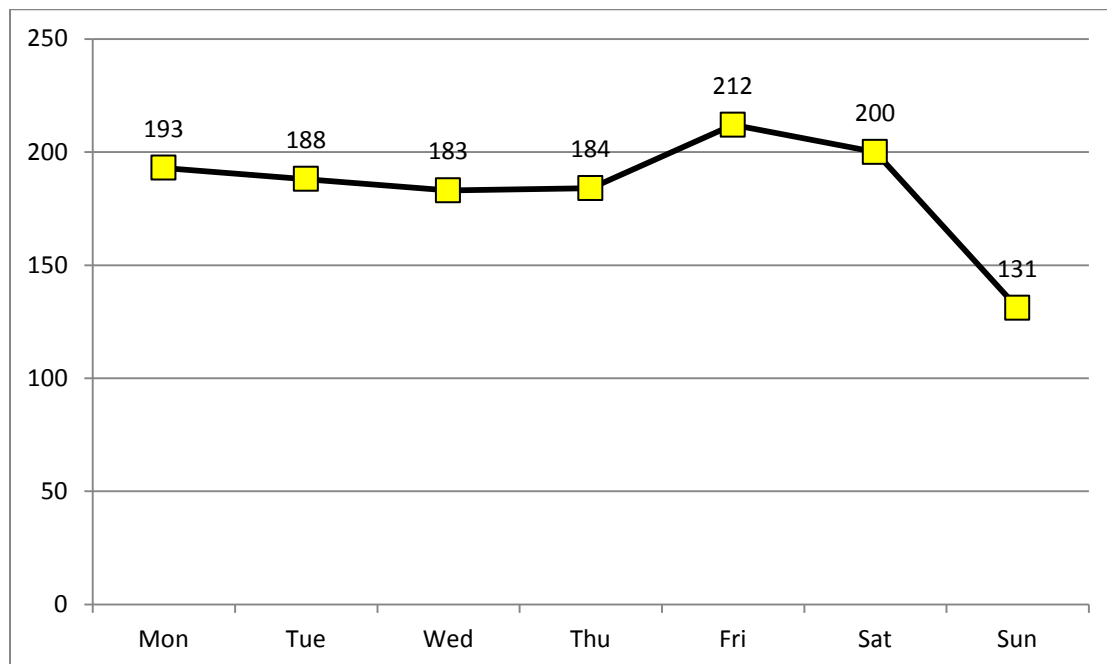


Table 24 shows that most of the injuries were to those 44 years old or younger.

**Table 24: Injuries by Age and Gender**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
<b>Male</b>	55	179	140	83	83	53	46	639
<b>Female</b>	45	192	129	70	91	71	63	661
<b>Total</b>	100	371	269	153	174	124	109	1300

Table 25 shows that most of the injuries suffered in crashes were categorized as non-incapacitating.

Crashes with fatal or incapacitating injuries are considered very severe. In 2015, there were 126 of these crashes.

**Table 25: Severity of Injuries in Crashes**

<b>Injury Type</b>	<b>Injuries</b>
<b>Fatal</b>	18
<b>Incapacitating</b>	108
<b>Non-Incapacitating</b>	1160
<b>Possible</b>	14
<b>Refused Treatment</b>	23
<b>None</b>	8483
<b>Unknown</b>	3
<b>Total</b>	9809

Figure 20 shows the locations of incapacitating injuries in the county.

Figure 20: Tippecanoe County Incapacitating Injuries

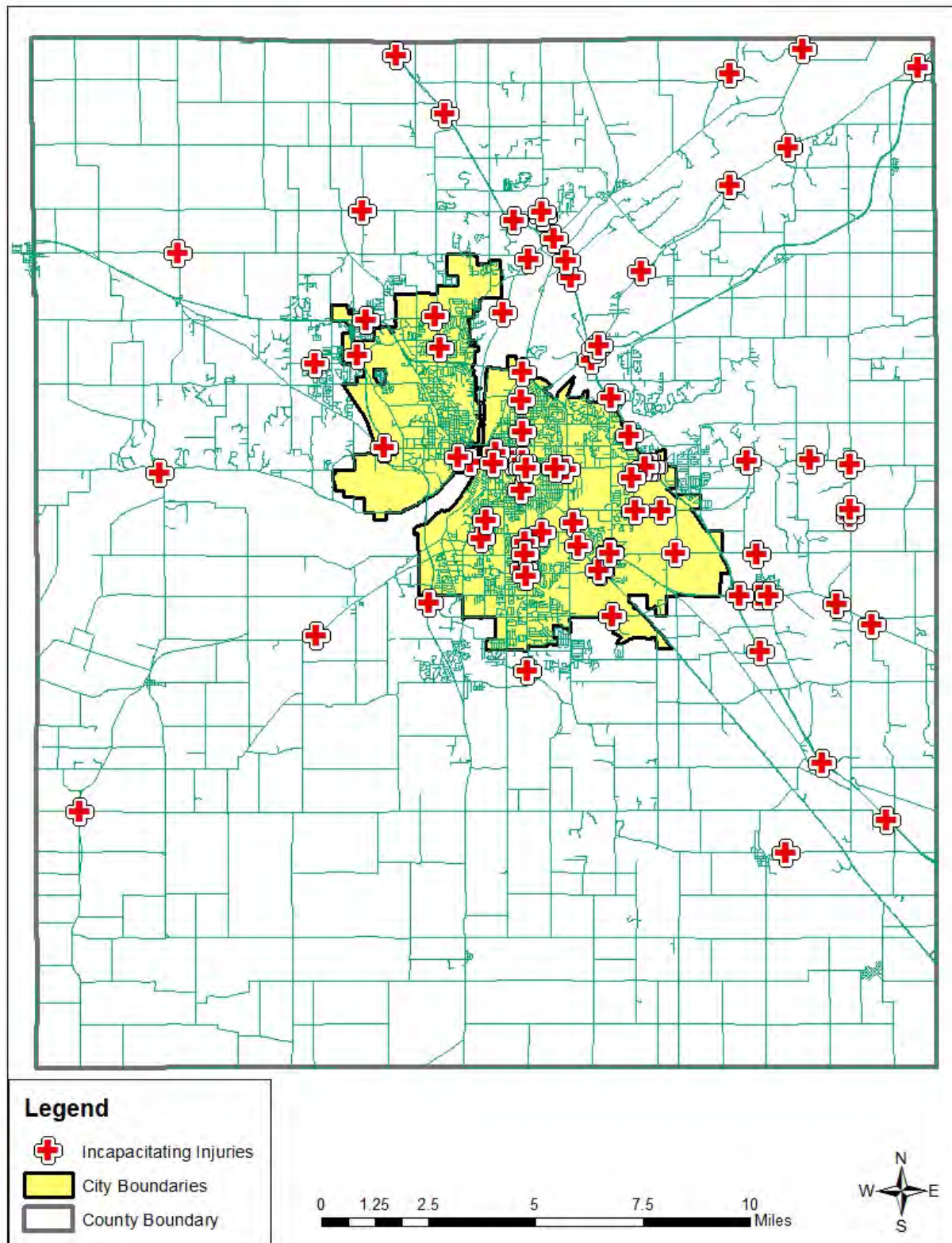


Table 26 shows that running off the road led to the highest number of incapacitating injuries.

**Table 26: Incapacitating Injuries by Primary Factor**

Primary Factor	Incapacitating Injuries
Ran Off Road Right	22
Failure To Yield Right Of Way	17
Unsafe Speed	14
Disregard Signal/Reg Sign	11
Following Too Closely	10
Speed Too Fast For Weather Conditions	6
Other (Driver) - Explain In Narrative	5
Improper Turning	5
Left Of Center	5
Unsafe Lane Movement	5
Pedestrian Action	3
Improper Lane Usage	2
Animal/Object In Roadway	1
Unsafe Backing	1
Driver Illness	1
Total	108

Table 27 shows that run off the road crashes caused the highest number of incapacitating injuries, followed closely by right angle crashes.

**Table 27: Incapacitating Injuries by Crash Type**

Crash Type	Incapacitating Injuries
Ran Off Road	35
Right Angle	26
Rear End	20
Head On Between Two Motor Vehicles	11
Other - Explain In Narrative	5
Same Direction Sideswipe	4
Non-Collision	3
Left Turn	2
Collision With Object In Road	1
Unknown	1
Total	108

Table 28 shows that younger people were more likely to suffer incapacitating injuries than older people were.

**Table 28: Incapacitating Injuries by Age and Gender**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
Male	3	19	17	8	13	2	4	66
Female	4	12	9	3	7	4	3	42
Total	7	31	26	11	20	6	7	108

Figure 21 shows that males were more likely to suffer incapacitating injuries than females were.

**Figure 21: Incapacitating Injuries by Gender**

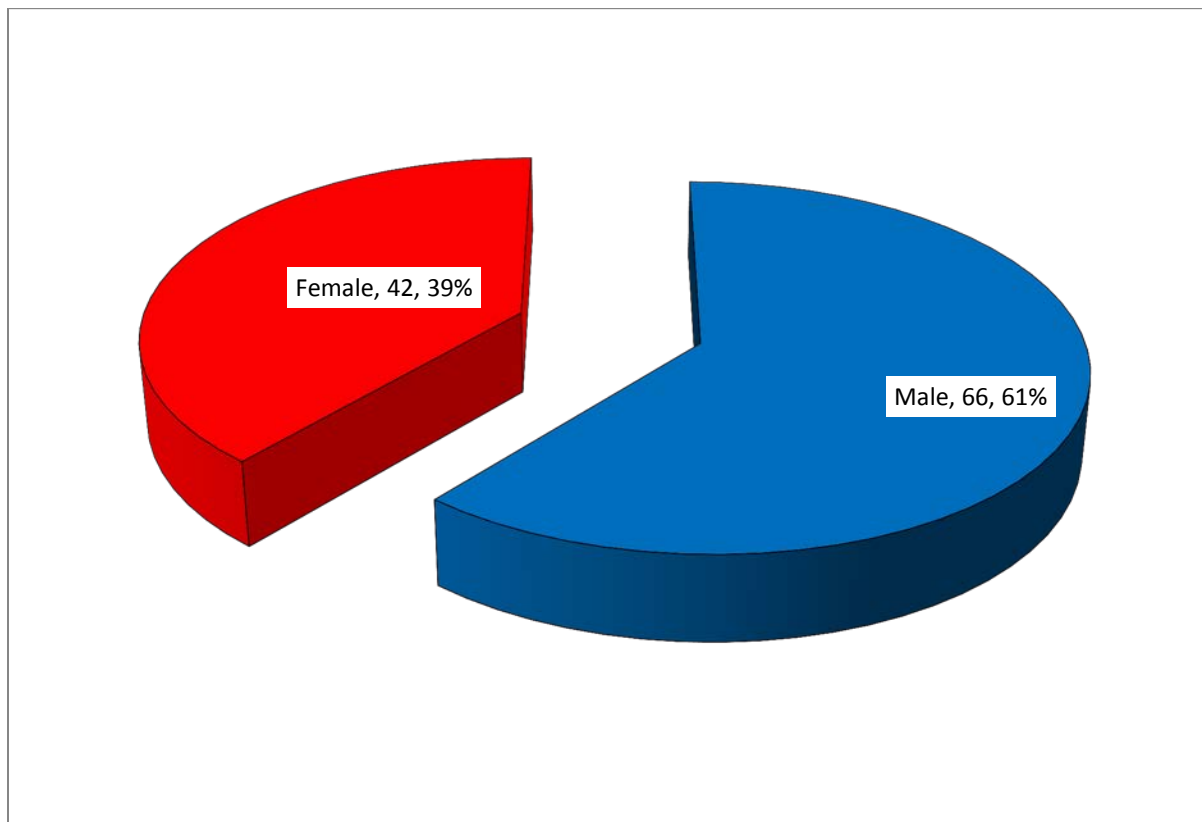


Table 29 shows that May had the most incapacitating injuries.



**Table 29: Incapacitating Injuries by Month**

<b>Month</b>	<b>Incapacitating Injuries</b>
<b>January</b>	9
<b>February</b>	7
<b>March</b>	7
<b>April</b>	6
<b>May</b>	14
<b>June</b>	12
<b>July</b>	12
<b>August</b>	12
<b>September</b>	5
<b>October</b>	10
<b>November</b>	9
<b>December</b>	5
<b>Total</b>	108

Figure 22 shows that Monday had the most incapacitating injuries.

**Figure 22: Incapacitating Injuries by Day of the Week**

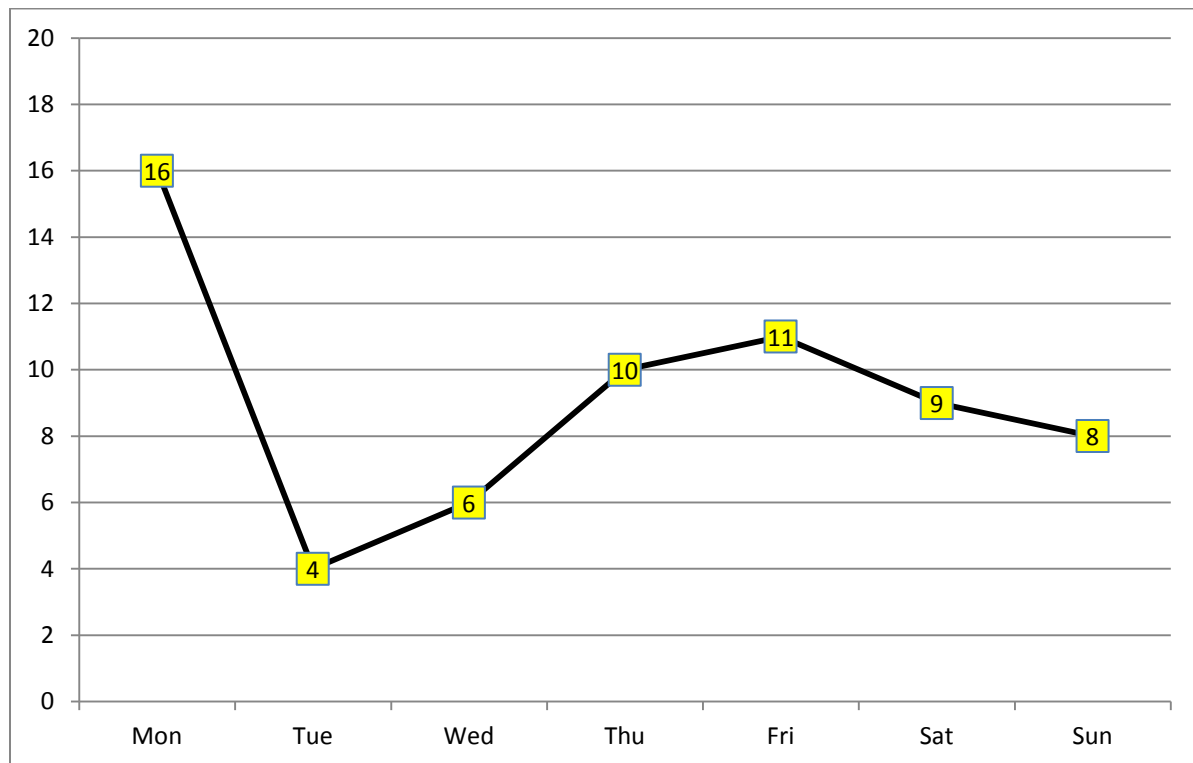


Table 30 shows that the highest number of incapacitating injuries occurred between 3 and 4 p.m.

**Table 30: Incapacitating Injuries by Time of Day**

<b>Time of Day</b>	<b>Incapacitating Injuries</b>
<b>Midnight - 1 am</b>	5
<b>1:00-2:00</b>	1
<b>2:00-3:00</b>	3
<b>3:00-4:00</b>	5
<b>4:00-5:00</b>	4
<b>5:00-6:00</b>	4
<b>6:00-7:00</b>	1
<b>7:00-8:00</b>	2
<b>8:00-9:00</b>	4
<b>9:00-10:00</b>	2
<b>10:00-11:00</b>	4
<b>11:00- Noon</b>	6
<b>Noon - 1 pm</b>	4
<b>1:00-2:00</b>	6
<b>2:00-3:00</b>	3
<b>3:00-4:00</b>	12
<b>4:00-5:00</b>	8
<b>5:00-6:00</b>	4
<b>6:00-7:00</b>	4
<b>7:00-8:00</b>	5
<b>8:00-9:00</b>	4
<b>9:00-10:00</b>	6
<b>10:00-11:00</b>	10
<b>11:00-12:00</b>	1
<b>Total</b>	108

Fatalities (and injuries that lead to fatalities) are the most severe consequences that come from crashes. Figure 23 shows that fatality crashes were spread all throughout the county. Figure 24 shows the locations of fatal crashes in Lafayette and West Lafayette.

**Figure 23: Tippecanoe County Fatality Crashes**

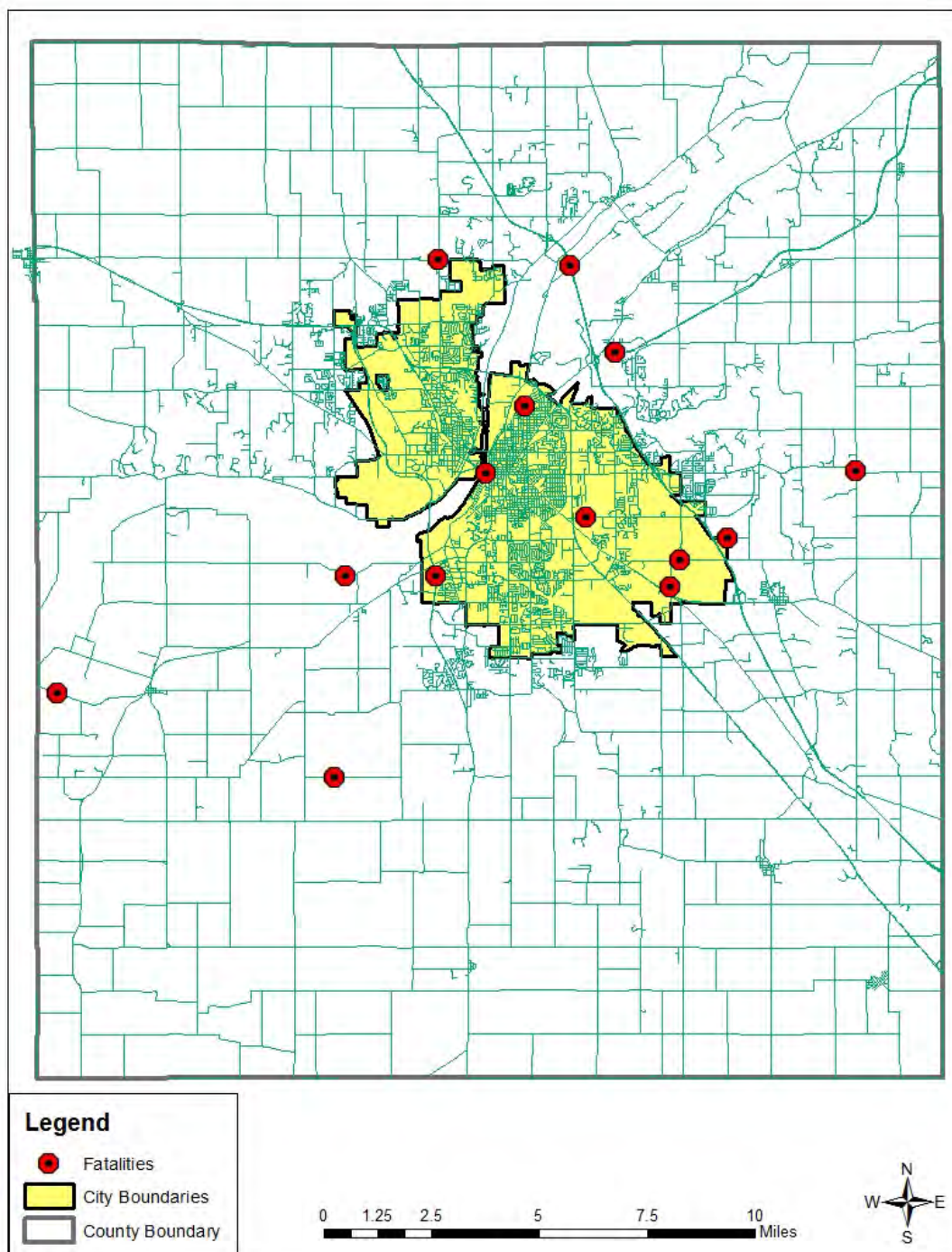


Figure 24: Lafayette and West Lafayette Fatality Crashes

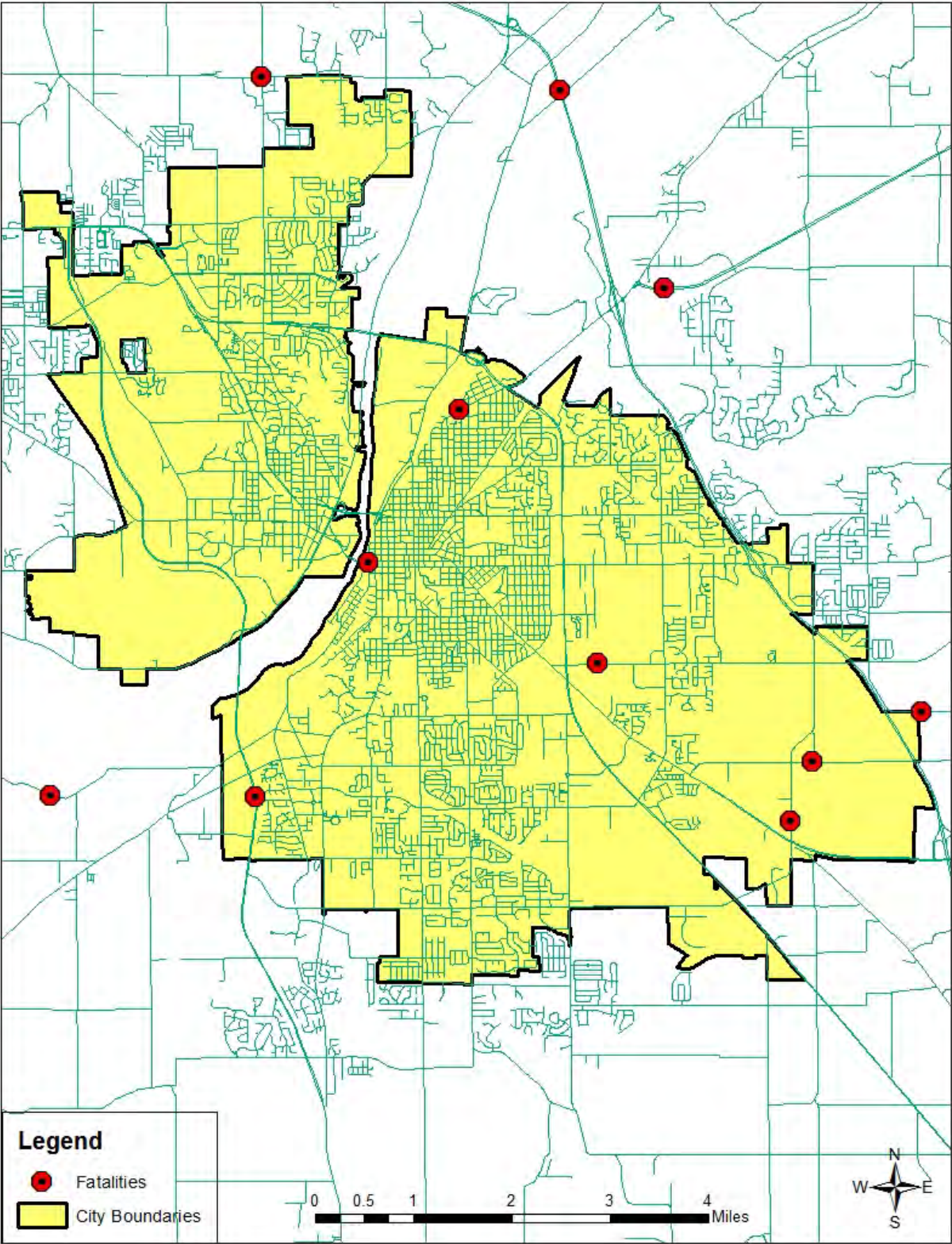


Table 31 shows that the most common cause of fatalities was unsafe speed.

**Table 31: Fatalities by Primary Factor**

Primary Factor	Fatalities
Unsafe Speed	7
Disregard Signal/Reg Sign	3
Ran Off Road Right	3
Failure To Yield Right Of Way	2
Left Of Center	1
Animal/Object In Roadway	1
Pedestrian Action	1
Total	18

Table 32 shows that running off the road, right angle, and rear end crashes were the most common causes of fatalities in 2015.

**Table 32: Fatalities by Crash Type**

Crash Type	Fatalities
Rear End	5
Right Angle	5
Ran Off Road	5
Head On Between Two Motor Vehicles	2
Collision With Animal Other	1
Total	18

Table 33 shows that people of various age groups died in crashes.

**Table 33: Fatalities by Age**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
Male	2	3	3	2	0	2	1	13
Female	0	1	1	0	2	0	1	5
Total	2	4	4	2	2	2	2	18



Figure 25 shows that more males were more likely to die in crashes than females.

**Figure 25: Fatalities by Gender**

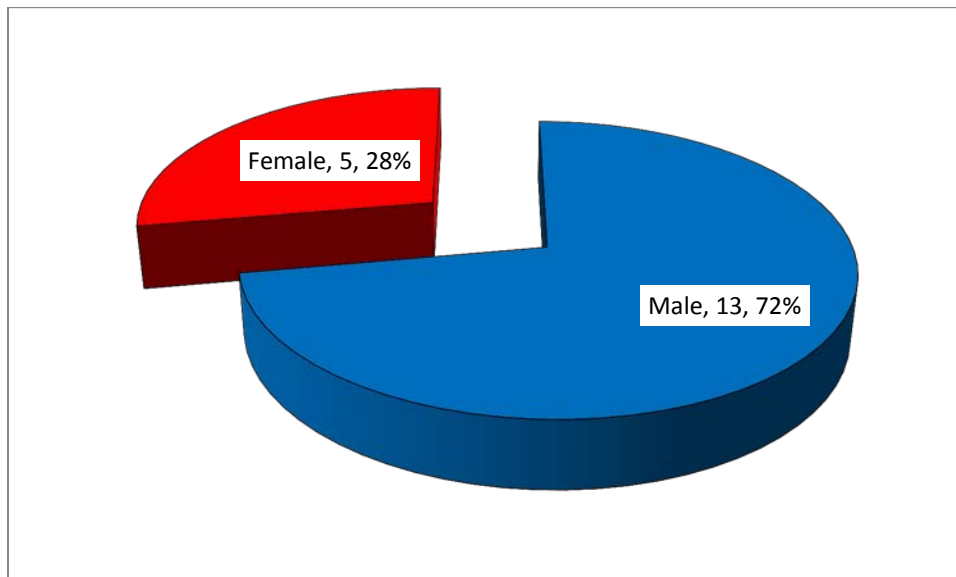


Table 34 shows that July had the most fatalities.

**Table 34: Fatalities by Month**

Month	Fatalities
Jan	1
Feb	0
Mar	0
Apr	0
May	1
Jun	3
Jul	9
Aug	2
Sep	0
Oct	0
Nov	1
Dec	1
Total	18

Figure 26 shows that Thursday had the highest number of fatalities.

**Figure 26: Fatalities by Day of the Week**

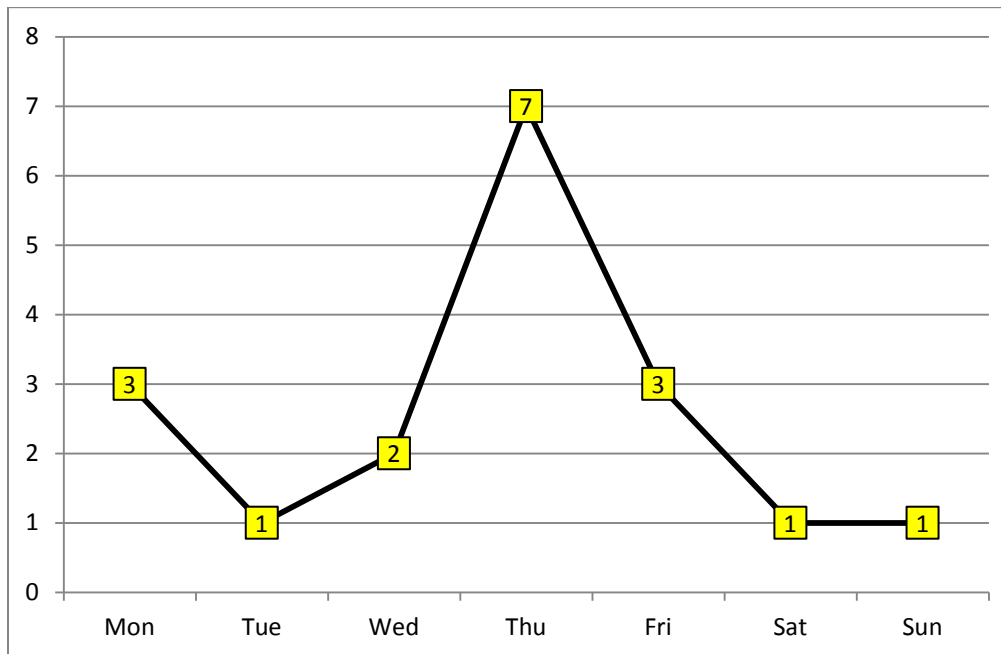
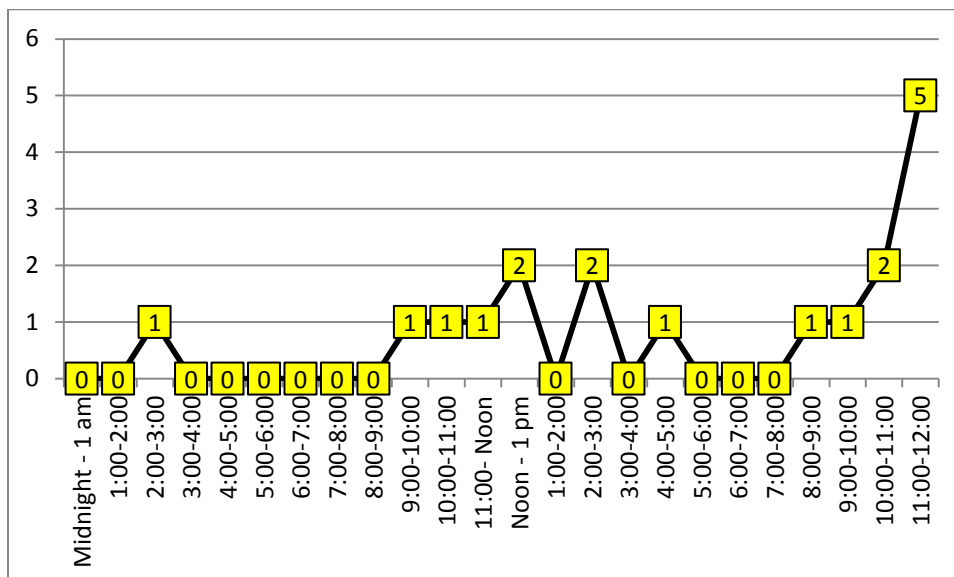


Figure 27 shows that the highest number of fatalities occurred between 11 p.m. and midnight.

**Figure 27: Fatalities by Time of Day**





## 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 the driver, 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. This chapter analyzes factors that may contribute to drug and alcohol crashes.

In 2015, there were at least 148 drivers under the influence of alcohol and 4 drivers under the influence of drugs involved in crashes. It should be noted that for some of the data used, test results were listed as “pending” for alcohol or drug use.

Tables 35 and 36 show information on alcohol and drug crashes.

**Table 35: Drug and Alcohol Crash Statistics**

<b>OWI/Drug Crash Data</b>	<b>Statistic</b>
<b>Drivers in Crashes Operating Under the Influence of Alcohol</b>	148
<b>Percentage of Drivers in Crashes Operating Under the Influence of Alcohol</b>	1.51%
<b>Maximum Recorded Blood Alcohol Content in a Crash</b>	0.45
<b>Drivers in Crashes Operating Under the Influence of Drugs</b>	4
<b>Percentage of Drivers in Crashes Operating Under the Influence of Drugs</b>	0.04%

**Table 36: Drug and Alcohol Crash Data**

<b>Statistic</b>	<b>Alcohol</b>	<b>Drugs</b>
<b>Fatality or Incapacitating Injury</b>	6	1
<b>Injury</b>	25	0
<b>Motorcycle Crashes</b>	8	0
<b>Bicycle Crashes</b>	0	0
<b>Pedestrian Crashes</b>	1	0

Figure 28 shows the location of alcohol related crashes and Figure 29 shows the location of drug crashes.

Figure 28: Tippecanoe County Alcohol Crashes

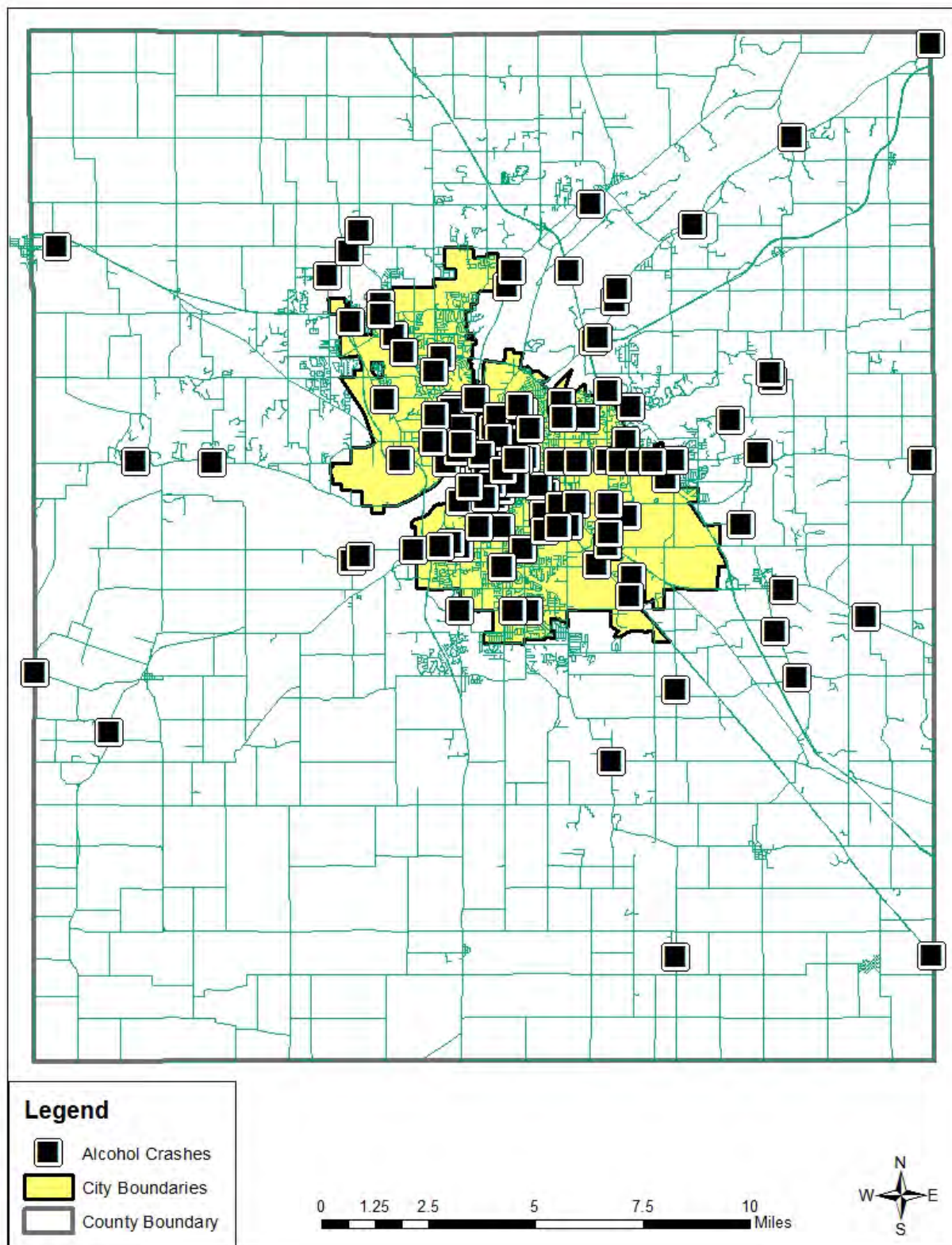


Figure 29: Tippecanoe County Drug Crashes

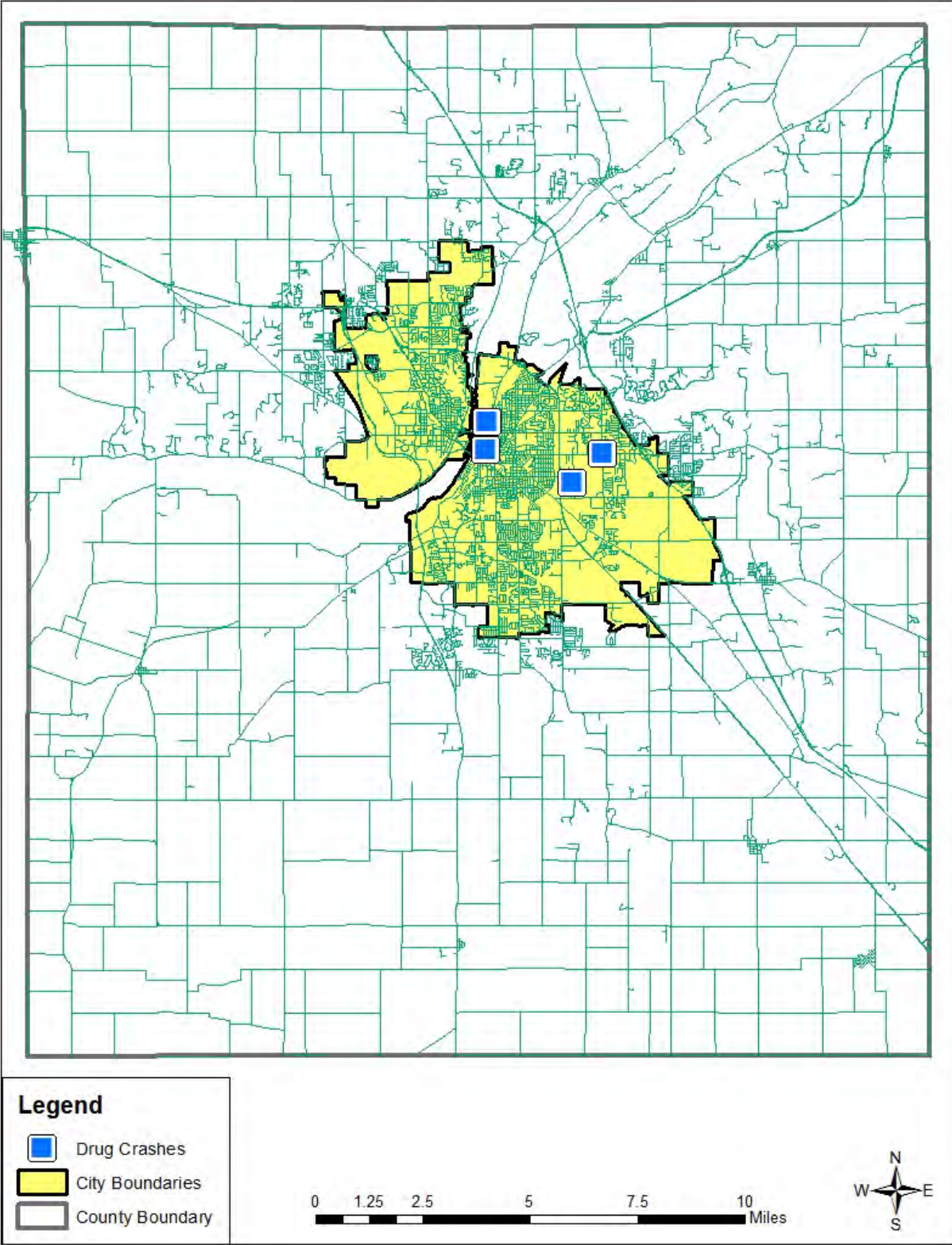


Table 37 shows that run off the road crashes were the most common type when alcohol or drugs were involved.

**Table 37: Crash Types for Drug and Alcohol Crashes**

<b>Crash Type</b>	<b>Alcohol Crashes</b>	<b>Drug Crashes</b>	<b>Total</b>
<b>Ran Off Road</b>	70	1	71
<b>Rear End</b>	22	1	23
<b>Same Direction Sideswipe</b>	12	0	12
<b>Right Angle</b>	10	0	10
<b>Unknown</b>	8	1	9
<b>Head On Between Two Motor Vehicles</b>	7	1	8
<b>Other - Explain In Narrative</b>	7	0	7
<b>Backing Crash</b>	3	0	3
<b>Non-Collision</b>	3	0	3
<b>Left Turn</b>	2	0	2
<b>Opposite Direction Sideswipe</b>	2	0	2
<b>Right Turn</b>	1	0	1
<b>Collision With Object In Road</b>	1	0	1
<b>Total</b>	148	4	152

Figure 30 shows that November had the highest number of alcohol crashes.

Figure 30: Drug and Alcohol Crashes by Month

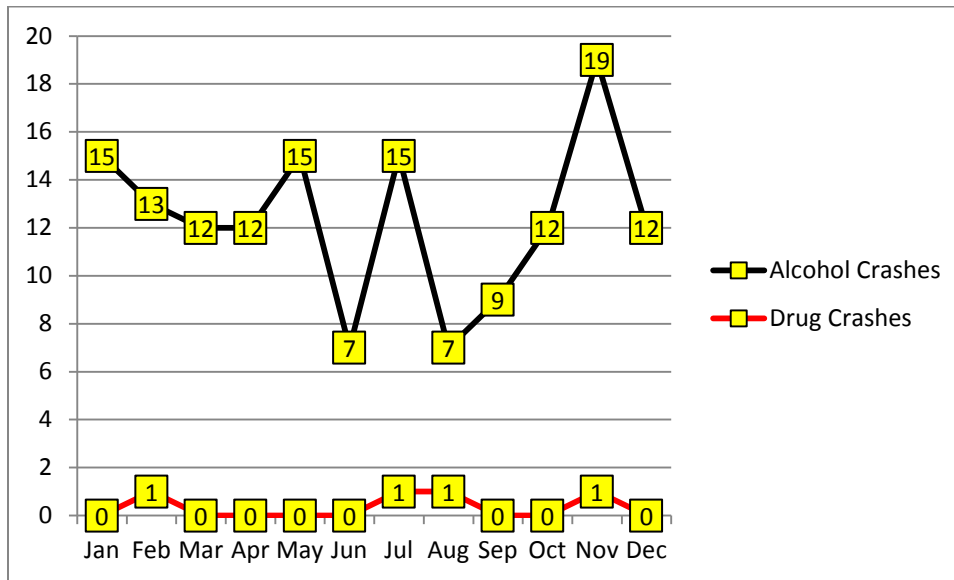


Figure 31 shows that Sunday had the highest number of drug and alcohol crashes combined.

Figure 31: Drug and Alcohol Crashes by Day of the Week

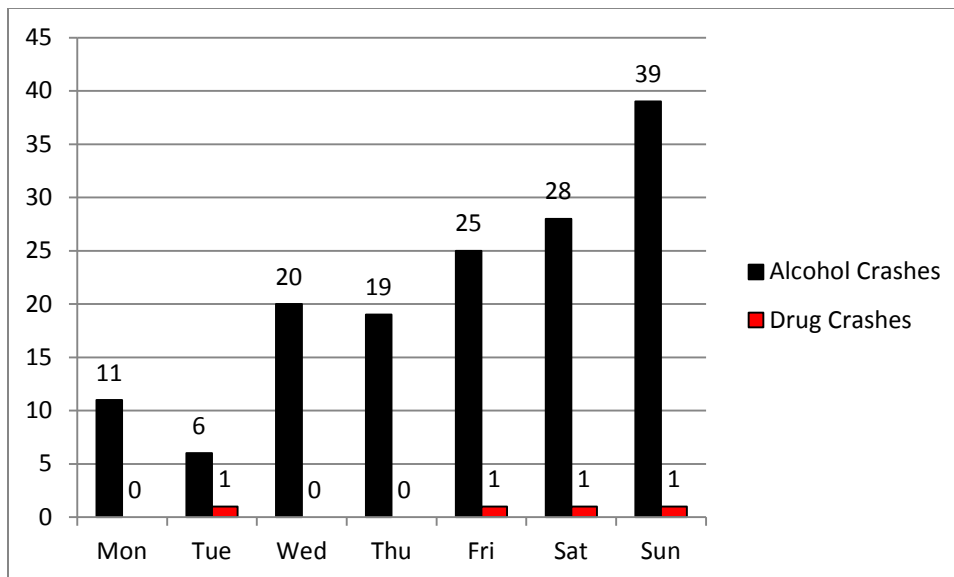


Figure 32 shows that the highest number of alcohol and drug crashes occurred in the early morning hours.



Figure 32: Drug and Alcohol Crashes by Time of Day

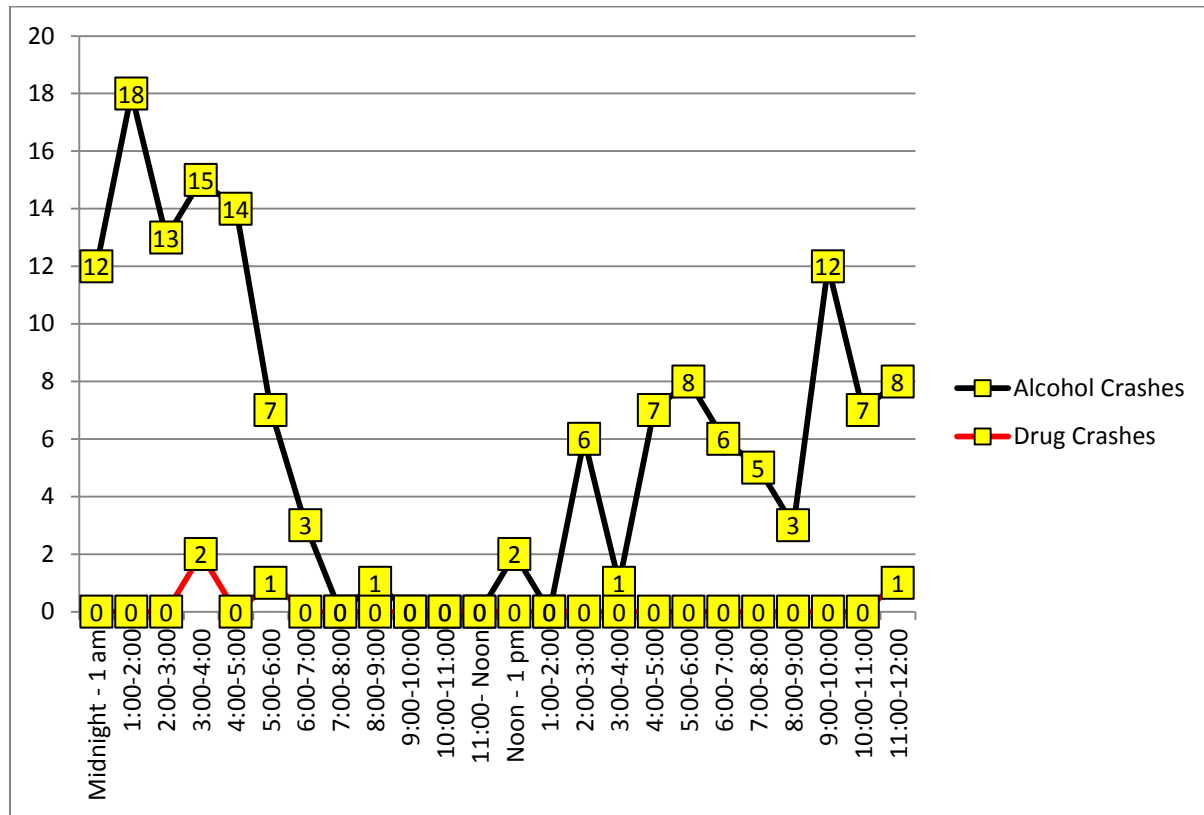


Figure 33 shows that males were more likely to be the drivers in alcohol crashes.

**Figure 33: Drivers in Drug and Alcohol Crashes by Gender**

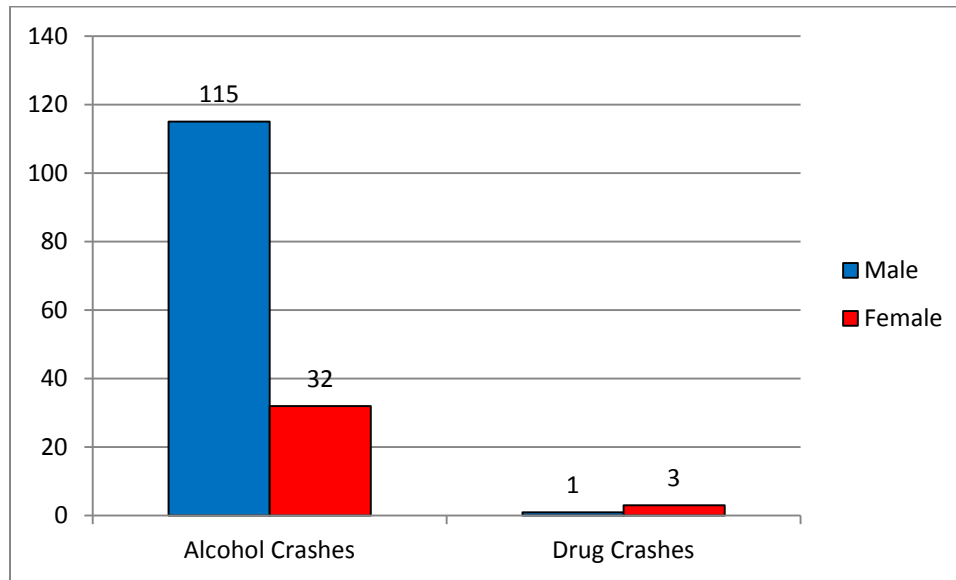


Table 38 shows that people under the age of 34 were most likely to be involved in an alcohol or drug crash.

**Table 38: Drug and Alcohol Crashes by Age and Gender**

	<16	16-24	25-34	35-44	45-54	55-64	65+	Total
Male	0	42	34	17	15	6	2	116
Female	0	5	12	5	9	4	0	35
Total	0	47	46	22	24	10	2	151

## Chapter 7: Curve Crashes

There are a variety of reasons why crashes may occur on curves. Poor pavement conditions, distracted driving, or the presence of drugs or alcohol are a few of these reasons. This chapter analyzes trends in curve crashes.

Table 39 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 40 shows that crashes on curves made up 9.5% of the total crashes. Crashes on curves made up about 9% of injuries, but 14.1% of incapacitating injuries.

**Table 39: Crashes by Road Curvature**

Road Curvature	Crashes
Curve/Grade	155
Curve/Hillcrest	25
Curve/Level	327
Non-Roadway Crash	4
Straight/Grade	537
Straight/Hillcrest	109
Straight/Level	4633
Unknown	3
Total	5793

**Table 40: Curve Crash Severity**

	Number of Crashes	Percentage of All Crashes
Curve Crashes	507	8.75%
Injuries From Curve Crashes	116	10.00%
Incapacitating Injuries From Curve Crashes	19	17.59%
Fatalities From Curve Crashes	5	27.78%

Figures 34 and 35 show the locations of curve crashes.



Figure 34: Tippecanoe County Curve Crashes

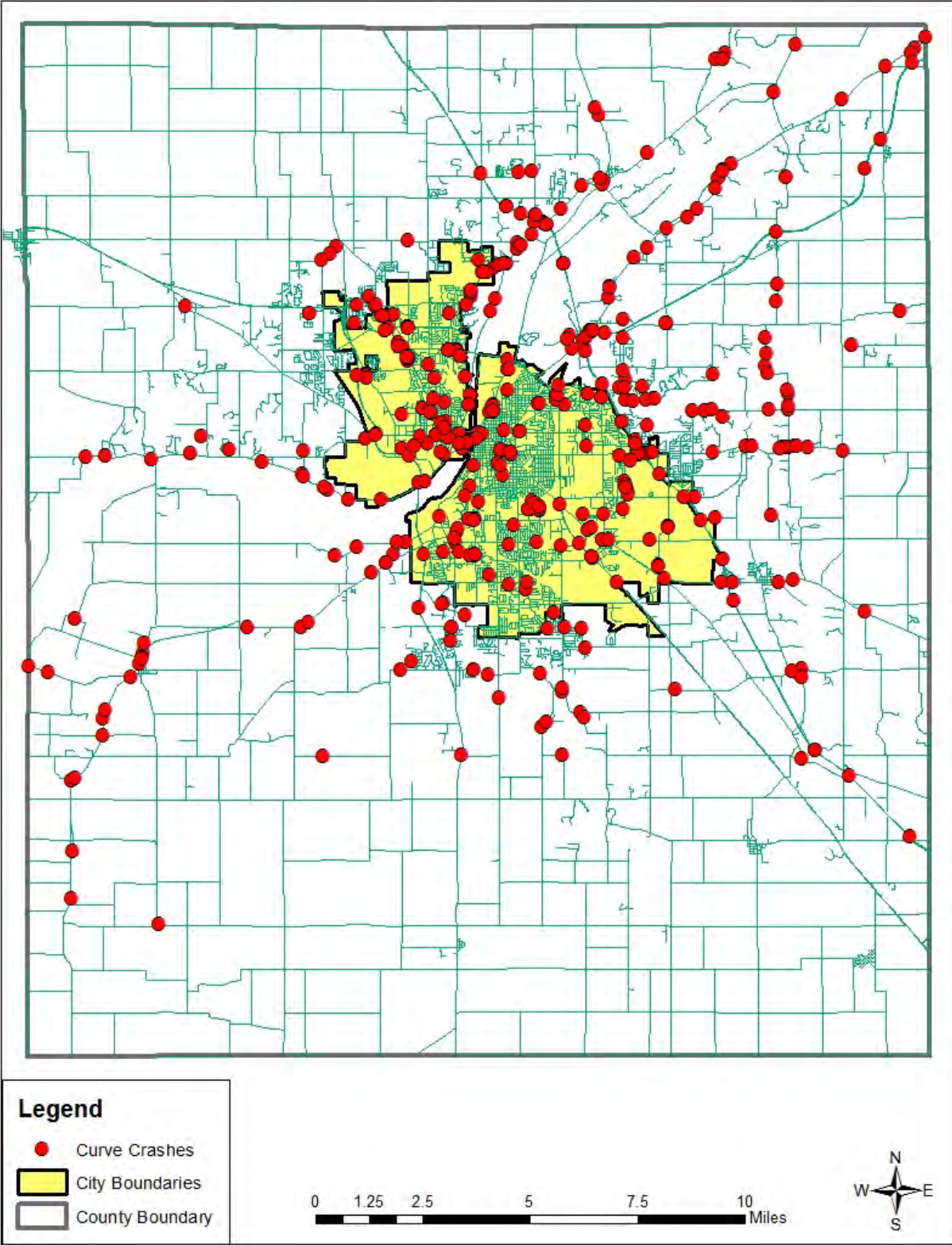


Figure 35: Lafayette and West Lafayette Curve Crashes

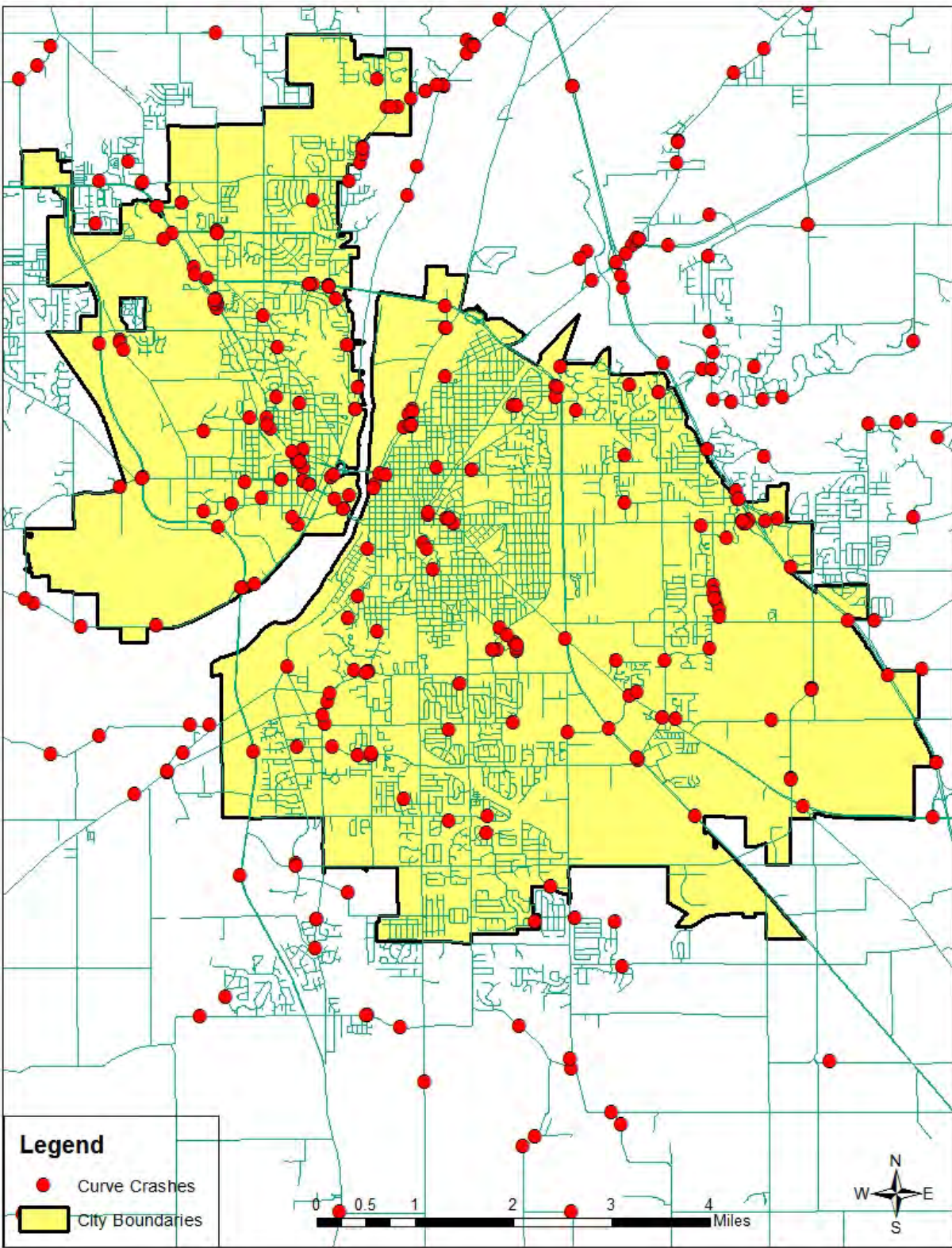




Table 41 shows that running off the road was the most common primary factor in curve crashes.

**Table 41: Primary Factors for Curve Crashes**

<b>Primary Factor</b>	<b>Crashes</b>
<b>Ran Off Road Right</b>	104
<b>Speed Too Fast For Weather Conditions</b>	81
<b>Following Too Closely</b>	62
<b>Failure To Yield Right Of Way</b>	48
<b>Unsafe Speed</b>	38
<b>Animal/Object In Roadway</b>	25
<b>Left Of Center</b>	25
<b>Other (Driver) - Explain In Narrative</b>	24
<b>Roadway Surface Condition</b>	21
<b>Improper Lane Usage</b>	17
<b>Improper Turning</b>	12
<b>Unsafe Backing</b>	9
<b>Overcorrecting/Oversteering</b>	7
<b>Unsafe Lane Movement</b>	7
<b>Driver Asleep Or Fatigued</b>	7
<b>Other (Environmental) - Explain In Narr</b>	5
<b>Driver Distracted - Explain In Narrative</b>	3
<b>Disregard Signal/Reg Sign</b>	2
<b>Improper Passing</b>	2
<b>Brake Failure Or Defective</b>	2
<b>Pedestrian Action</b>	1
<b>Tire Failure Or Defective</b>	1
<b>Driver Illness</b>	1
<b>Wrong Way On One Way</b>	1
<b>Steering Failure</b>	1
<b>Severe Crosswinds</b>	1
<b>Total</b>	507

Table 42 shows that run off the road crashes were the most common crash type for curve crashes.

**Table 42: Crash Type for Curve Crashes**

<b>Manner of Crash</b>	<b>Crashes</b>
<b>Ran Off Road</b>	201
<b>Rear End</b>	88
<b>Same Direction Sideswipe</b>	58
<b>Right Angle</b>	35
<b>Other - Explain In Narrative</b>	28
<b>Head On Between Two Motor Vehicles</b>	22
<b>Collision With Deer</b>	20
<b>Opposite Direction Sideswipe</b>	20
<b>Unknown</b>	9
<b>Backing Crash</b>	8
<b>Left Turn</b>	5
<b>Non-Collision</b>	5
<b>Collision With Object In Road</b>	4
<b>Collision With Animal Other</b>	1
<b>Left/Right Turn</b>	1
<b>Rear To Rear</b>	1
<b>Right Turn</b>	1
<b>Total</b>	507

Figure 36 shows that the highest number of curve crashes occurred in January.

**Figure 36: Curve Crashes by Month**

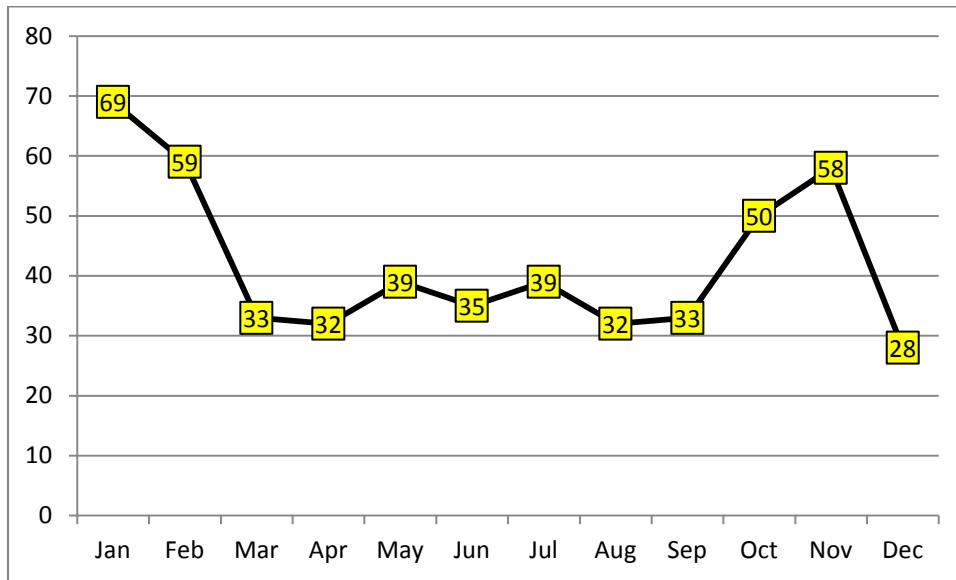


Figure 37 shows that the highest number of curve crashes occurred on Sunday.

**Figure 37: Curve Crashes by Day of the Week**

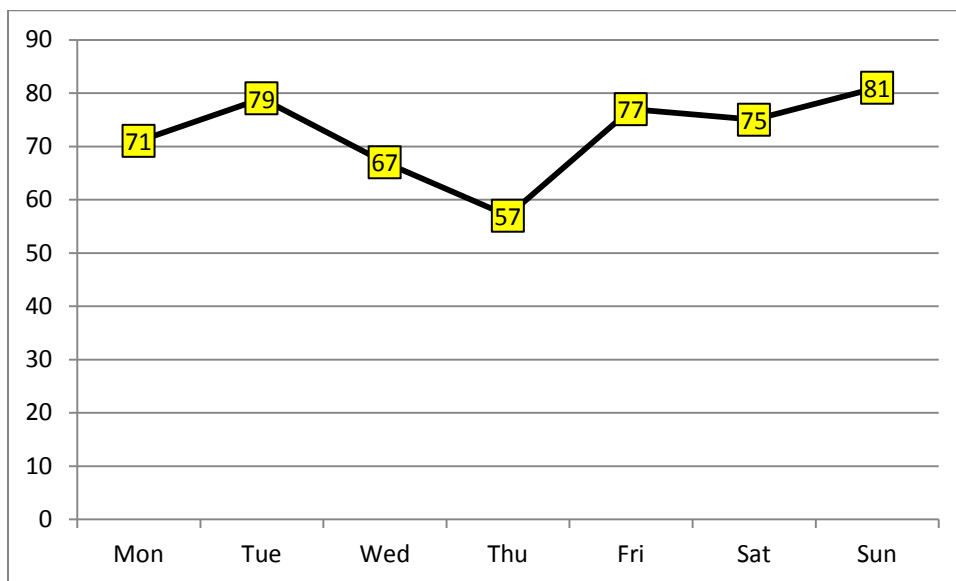


Figure 38 shows that the highest number of curve crashes occurred between 5 and 7 p.m.

Figure 38: Curve Crashes by Time of Day

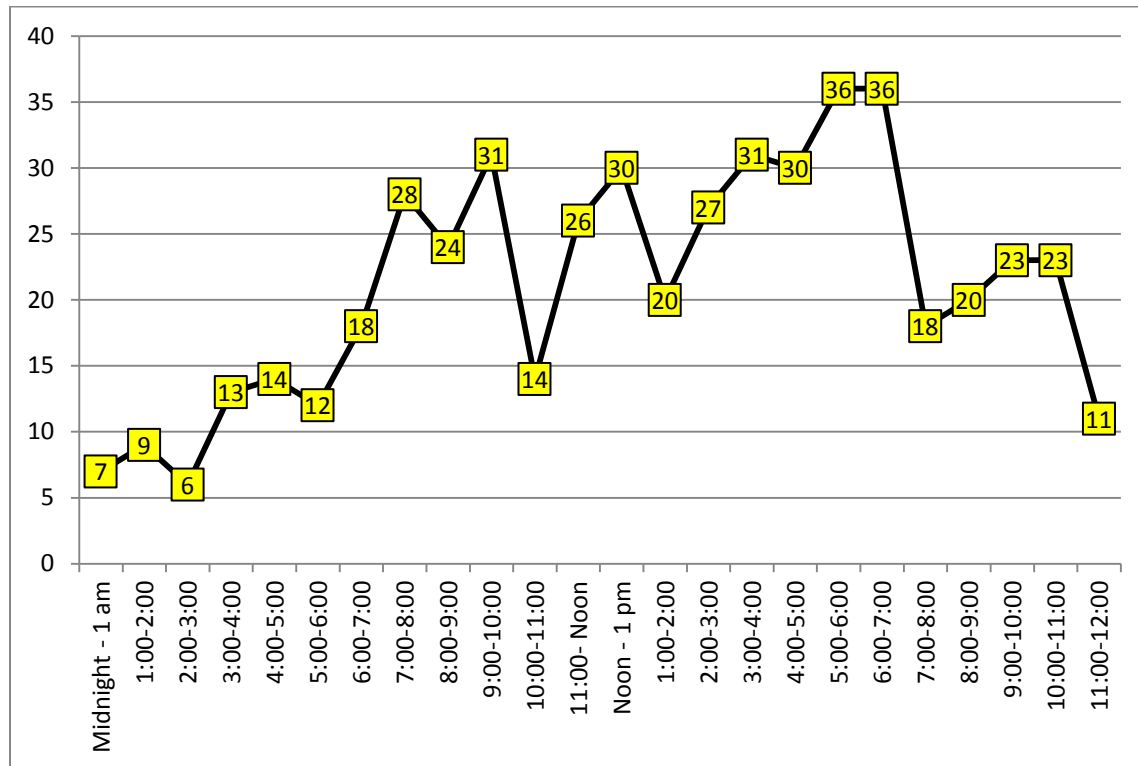


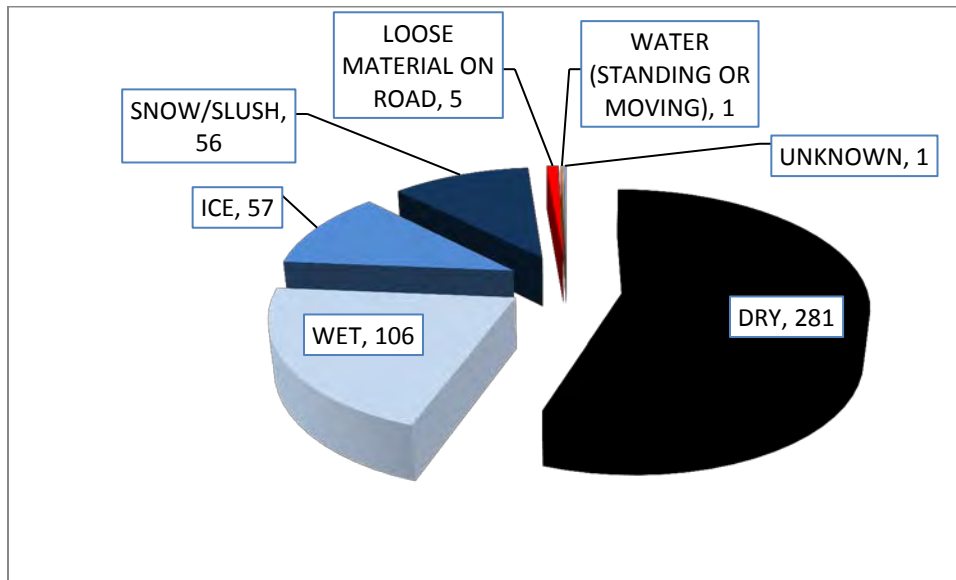
Table 43 shows that the majority of curve crashes occur when weather conditions are clear.

Table 43: Curve Crashes by Weather Conditions

Weather Conditions	Crashes
CLEAR	281
CLOUDY	91
RAIN	64
SNOW	49
SLEET/HAIL/FREEZING RAIN	13
BLOWING SAND/SOIL/SNOW	5
SEVERE CROSS WIND	3
UNKNOWN	1
<b>TOTAL</b>	<b>507</b>

Figure 39 shows that the majority of curve crashes occur when the road is dry.

Figure 39: Curve Crashes by Road Surface Condition



## Chapter 8: Motorcycle Crashes

In 2015, there were 94 crashes involving motorcycles or mopeds. Of those crashes, 58 had at least one injury and 5 had a fatality. There were 64 injuries and 5 fatality in those crashes. This chapter further analyzes trends in this data.

Table 44 shows how 2015 motorcycle crash data compares to data from 2013 and 2014.

**Table 44: Motorcycle Crash Injuries and Fatalities**

<b>MOTORCYCLE CRASH STATISTIC</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>
<b>CRASHES WITH INJURIES</b>	58	92	108
<b>NUMBER OF INJURIES</b>	64	109	132
<b>CRASHES WITH FATALITIES</b>	5	1	4
<b>NUMBER OF FATALITIES</b>	5	1	4

Most of the motorcycle crashes in 2015 occurred within the city limits of Lafayette or West Lafayette. There were no areas outside of the city limits where crashes were concentrated (Figures 40 and 41).



Figure 40: Tippecanoe County Motorcycle Crashes

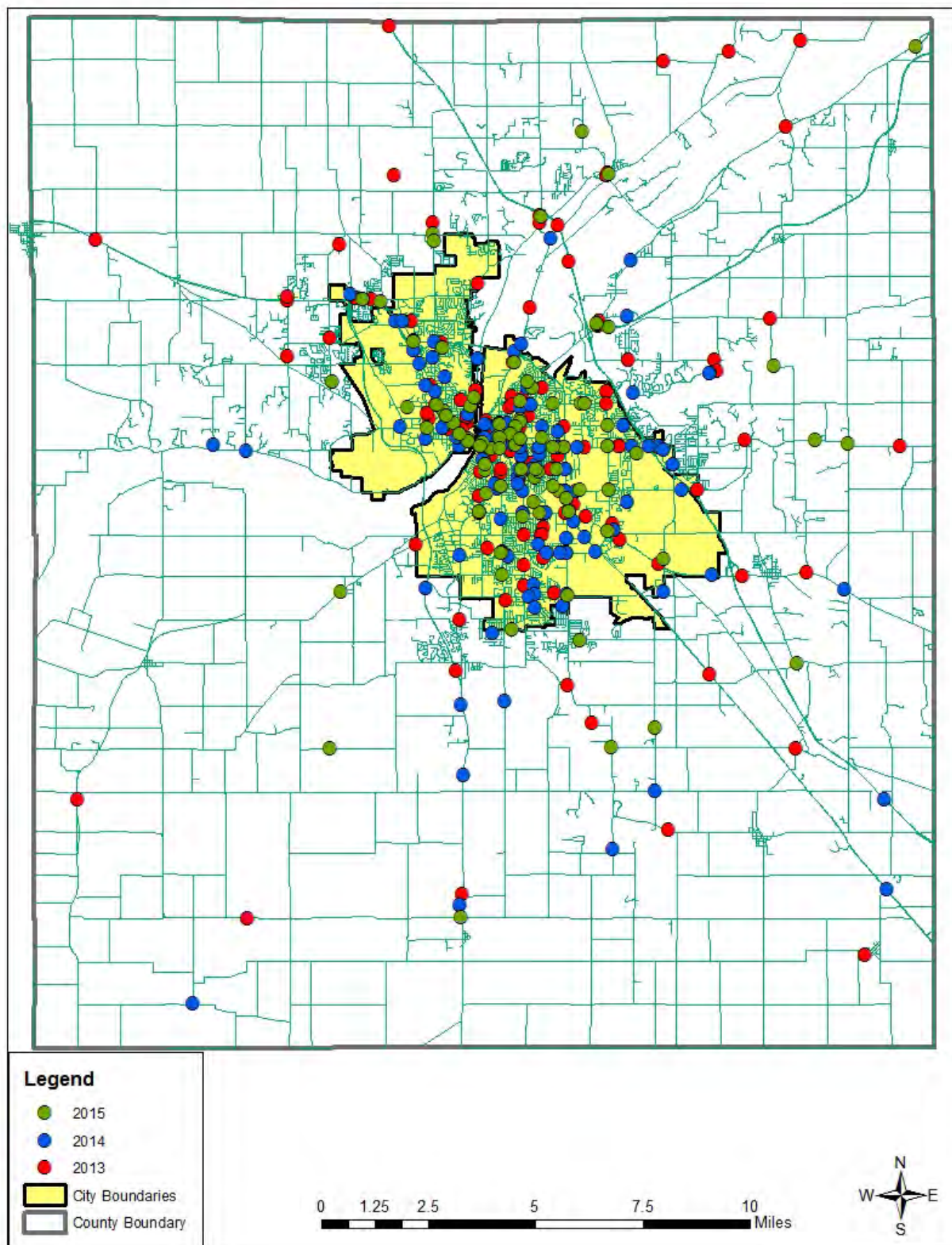
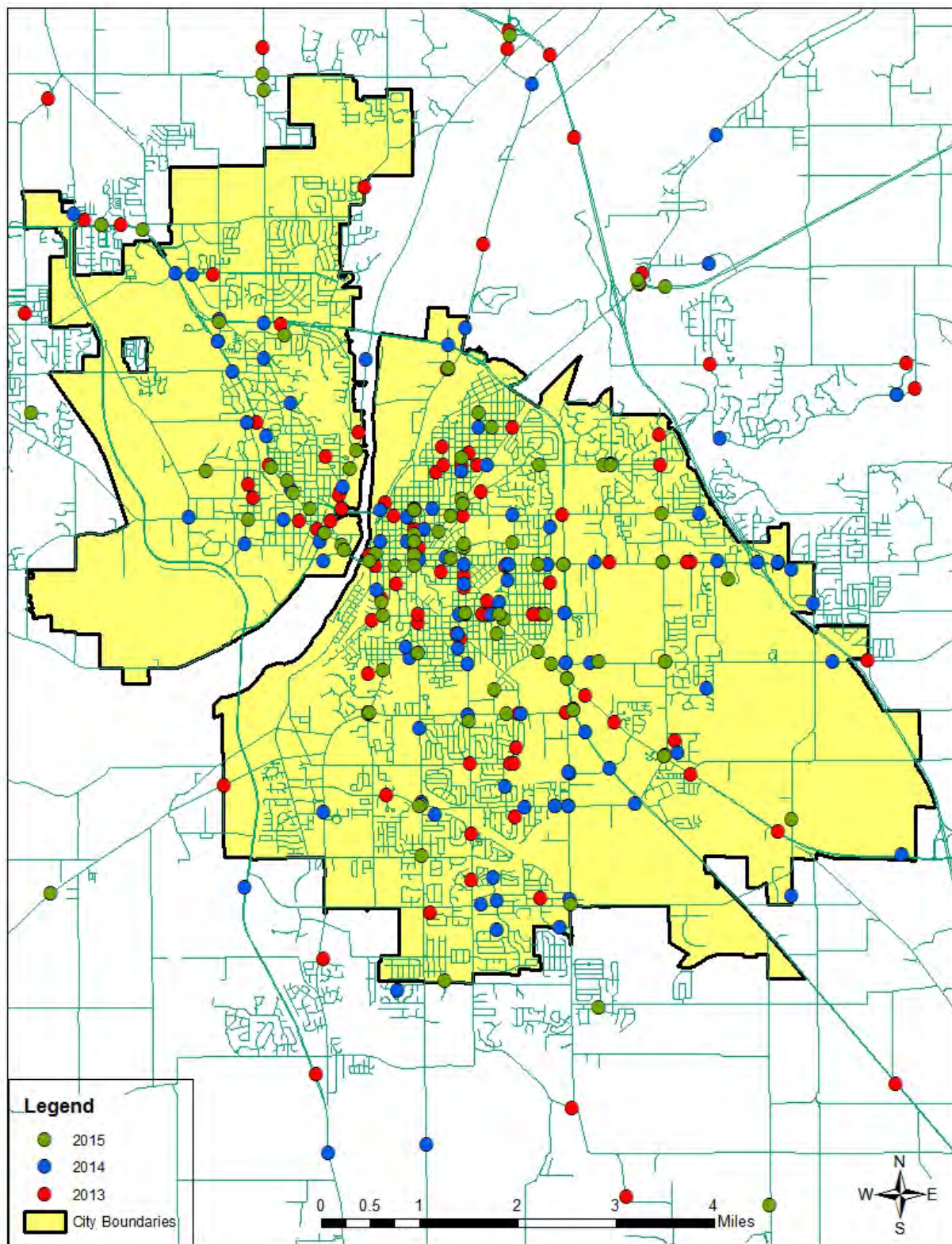


Figure 41: Lafayette and West Lafayette Motorcycle Crashes





Single vehicle crashes were the most common type of motorcycle crashes. Table 45 shows that in 2015 “rear end” and “right angle” were the two most common types. There were a total of 30 motorcycle crashes in 2015, 52 motorcycle crashes in 2014, and 61 motorcycle crashes in 2013 that did not involve another vehicle.

**Table 45: Crash Types for Motorcycle Crashes**

<b>CRASH TYPE</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>Total</b>
<b>REAR END</b>	26	22	15	63
<b>NON-COLLISION</b>	7	27	27	61
<b>RIGHT ANGLE</b>	14	17	16	47
<b>RAN OFF ROAD</b>	10	8	19	37
<b>OTHER - EXPLAIN IN NARRATIVE</b>	13	12	7	32
<b>LEFT TURN</b>	5	7	19	31
<b>SAME DIRECTION SIDESWIPE</b>	4	11	10	25
<b>OPPOSITE DIRECTION SIDESWIPE</b>	2	8	5	15
<b>HEAD ON</b>	0	3	9	12
<b>RIGHT TURN</b>	2	5	3	10
<b>HEAD ON BETWEEN TWO MOTOR VEHICLES</b>	6	4	0	10
<b>BACKING CRASH</b>	2	1	3	6
<b>LEFT/RIGHT TURN</b>	1	0	0	1
<b>REAR TO REAR</b>	0	0	1	1
<b>COLLISION WITH DEER</b>	1	0	0	1
<b>COLLISION WITH ANIMAL OTHER</b>	1	0	0	1
<b>Total</b>	94	125	134	353

Figure 42 shows that the months of June, July, August, and September had the highest number of motorcycle crashes, and January and February had the lowest.

**Figure 42: Motorcycle Crashes by Month**

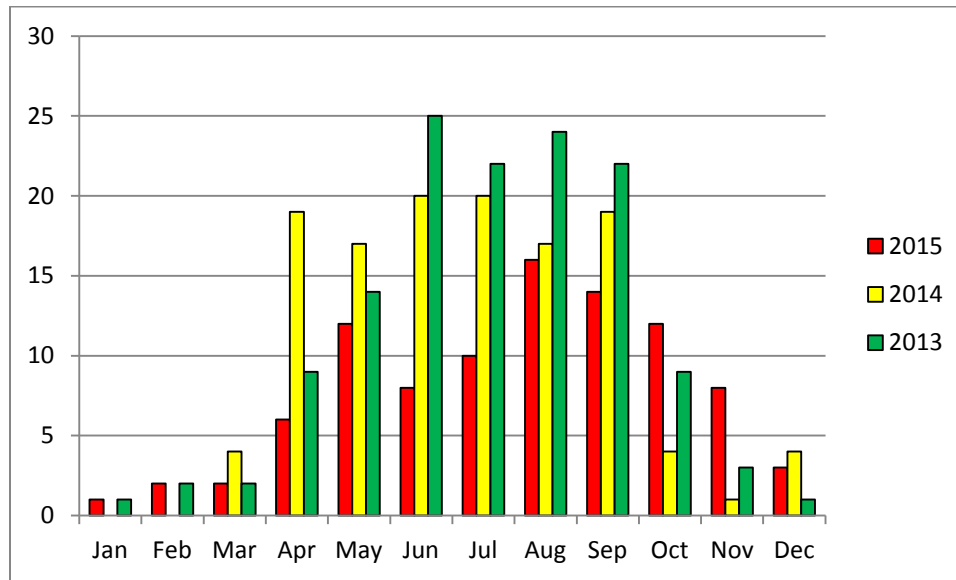


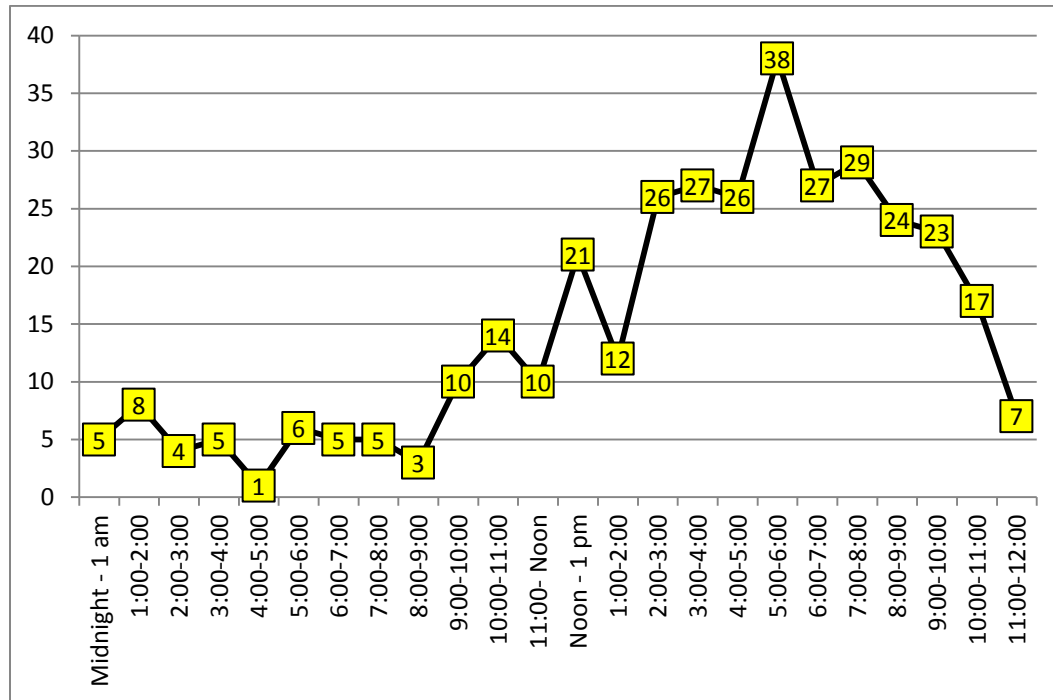
Table 46 shows that Wednesday had the highest number of motorcycle crashes, but crashes were relatively high every day of the week.

**Table 46: Motorcycle Crashes by Day of Week**

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	TOTAL
<b>2015</b>	11	9	19	9	12	20	14	94
<b>2014</b>	16	18	21	18	21	18	13	125
<b>2013</b>	14	11	23	22	25	24	15	134
<b>Total</b>	41	38	63	49	58	62	42	353

Figure 43 shows that the highest number of crashes (38) occurred from 5-6 p.m.

**Figure 43: Motorcycle Crashes by Time of Day**



## Chapter 9: Bicycle Crashes

In 2015, there were 36 crashes involving bicyclists that occurred on public right of way (crashes on private property are removed from this analysis). Of those crashes, 28 had at least one injury. There were 29 total injuries in those crashes. This chapter further analyzes bicycle crashes in 2015.

Table 47 compares bicycle crash statistics from 2013 to 2015.

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

<b>BICYCLE CRASH STATISTIC</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>TOTAL</b>
<b>CRASHES WITH INJURIES</b>	28	23	43	94
<b>NUMBER OF INJURIES</b>	29	25	43	97
<b>CRASHES WITH FATALITIES</b>	0	0	1	1
<b>NUMBER OF FATALITIES</b>	0	0	1	1

Figures 44 and 45 show the locations of bicycle crashes.

Figure 44: Tippecanoe County Bicycle Crashes

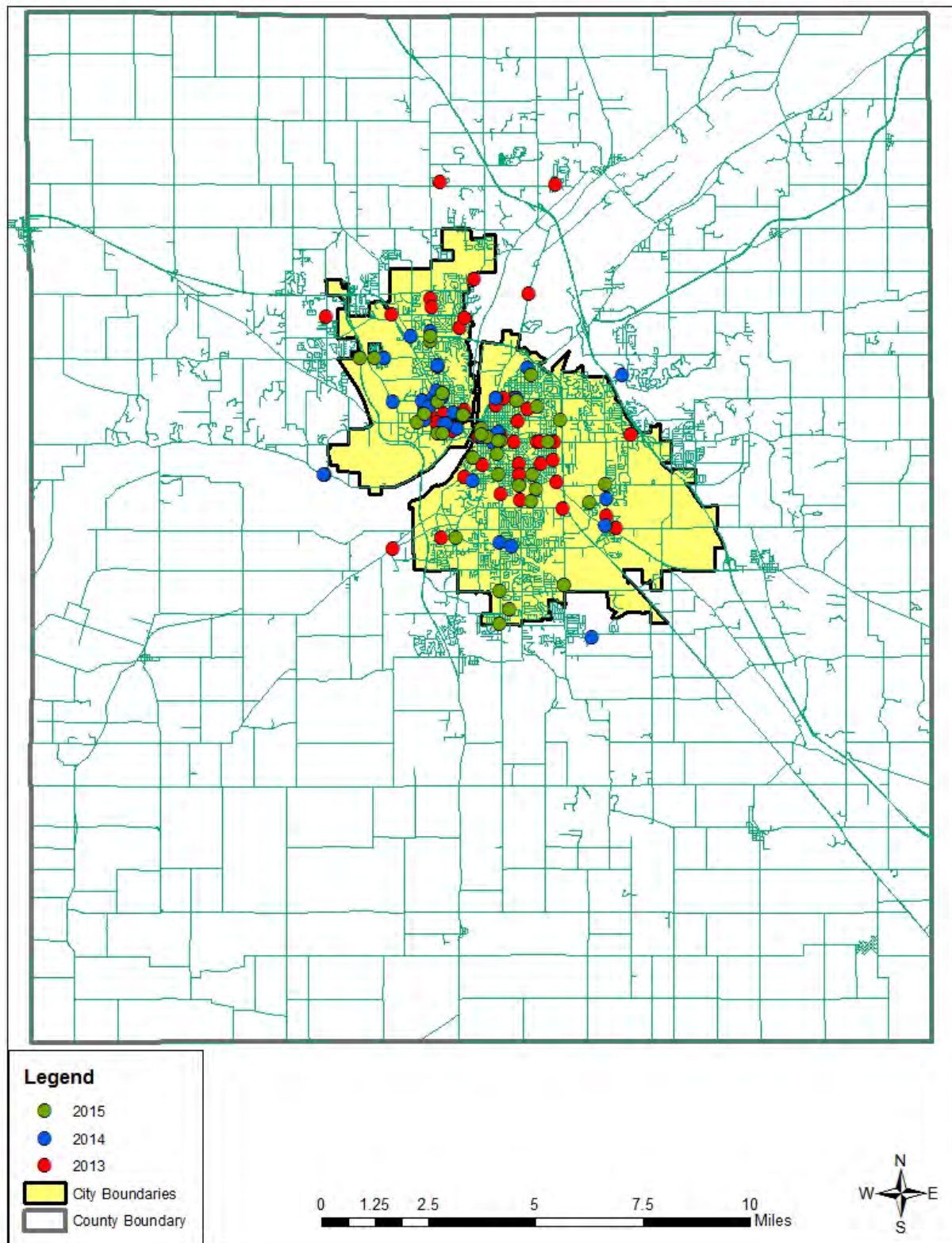




Figure 45: Lafayette and West Lafayette Bicycle Crashes

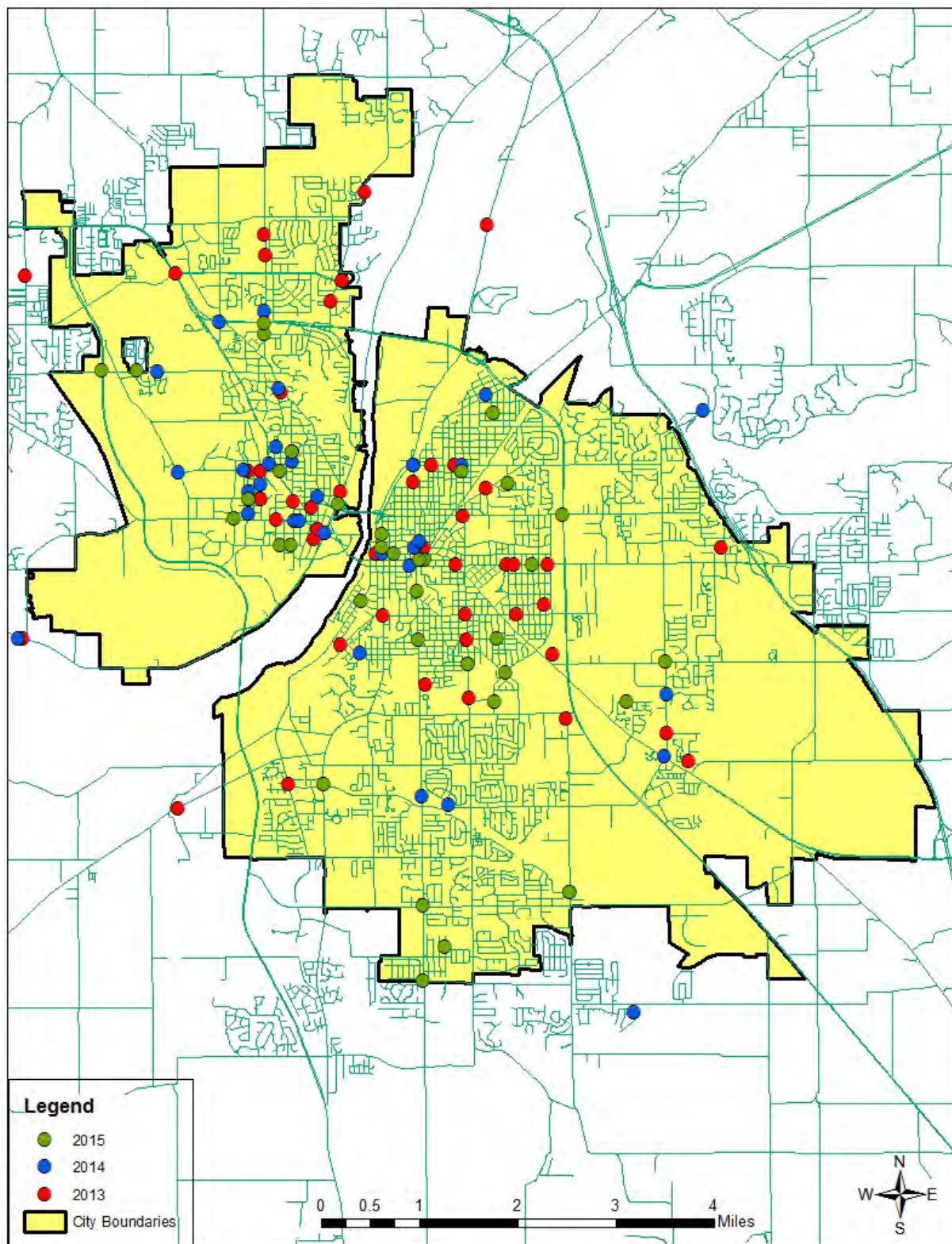




Table 48 shows that right angle crashes were the most common type of bicycle crashes.

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

<b>Crash Type</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>Total</b>
<b>Right Angle</b>	21	23	26	72
<b>Left Turn</b>	2	1	6	11
<b>Right Turn</b>	2	2	3	10
<b>Same Direction Sideswipe</b>	3	2	2	9
<b>Rear End</b>	4	1	4	8
<b>Head On</b>	0	0	5	7
<b>Other - Explain In Narrative</b>	1	3	2	6
<b>Opposite Direction Sideswipe</b>	0	3	1	5
<b>Ran Off Road</b>	0	1	0	1
<b>Head On Between Two Motor Vehicles</b>	1	1	0	1
<b>Left/Right Turn</b>	1	0	0	1
<b>Backing Crash</b>	1	0	0	0
<b>Total</b>	36	37	49	131

Table 49 shows that September had the highest number of bicycle crashes.

**Table 49: Bicycle Crashes by Month**

	2015	2014	2013	Total
<b>January</b>	0	1	0	1
<b>February</b>	0	0	2	2
<b>March</b>	1	0	2	3
<b>April</b>	2	1	4	7
<b>May</b>	2	3	7	12
<b>June</b>	5	2	2	9
<b>July</b>	8	3	4	15
<b>August</b>	5	7	3	15
<b>September</b>	5	11	7	23
<b>October</b>	7	4	11	22
<b>November</b>	1	2	5	8
<b>December</b>	0	3	2	5
<b>Total</b>	36	37	49	122

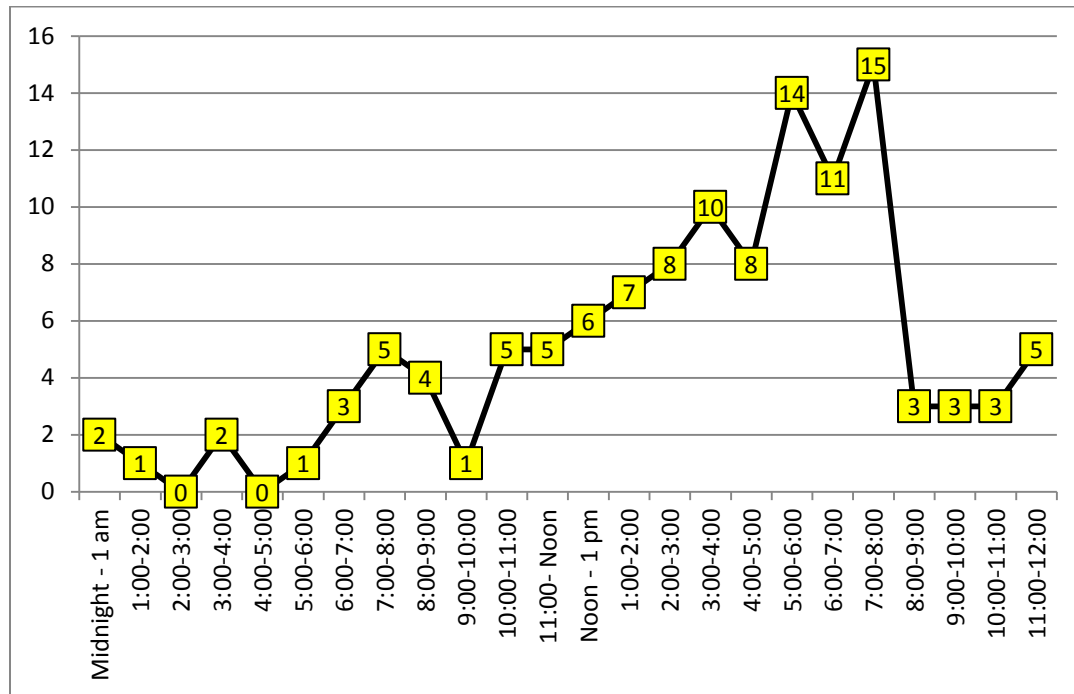
Table 50 shows that Monday through Thursday had the highest number of bicycle crashes.

**Table 50: Bicycle Crashes by Day of the Week**

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Total
<b>2015</b>	5	5	8	7	4	5	2	36
<b>2014</b>	9	7	3	6	6	3	3	37
<b>2013</b>	8	7	10	7	7	5	5	49
<b>Total</b>	22	19	21	20	17	13	10	122

Figure 46 shows the peak period for bicycle crashes occurred between 4 and 8 p.m.

Figure 46: Bicycle Crashes by Time of Day



## Chapter 10: Pedestrian Crashes

In 2015, there were 24 crashes involving pedestrians. Of those crashes, 23 had at least one injury and 1 had at least one fatality. There were 24 injuries and 1 fatality in those crashes. This chapter further analyzes pedestrian crashes.

Table 51 compares pedestrian crash statistics from 2013 to 2015.

**Table 51: Pedestrian Injuries and Fatalities**

PEDESTRIAN CRASH STATISTIC	2015	2014	2013	TOTAL
CRASHES WITH INJURIES	23	36	43	102
NUMBER OF INJURIES	24	37	49	110
CRASHES WITH FATALITIES	1	1	3	5
NUMBER OF FATALITIES	1	1	4	6

Most of the pedestrian crashes in 2015 occurred within the city limits of Lafayette or West Lafayette. There were no areas outside of the city limits where crashes were concentrated. Figures 47 and 48 show the locations of these crashes.

Figure 47: Tippecanoe County Pedestrian Crashes

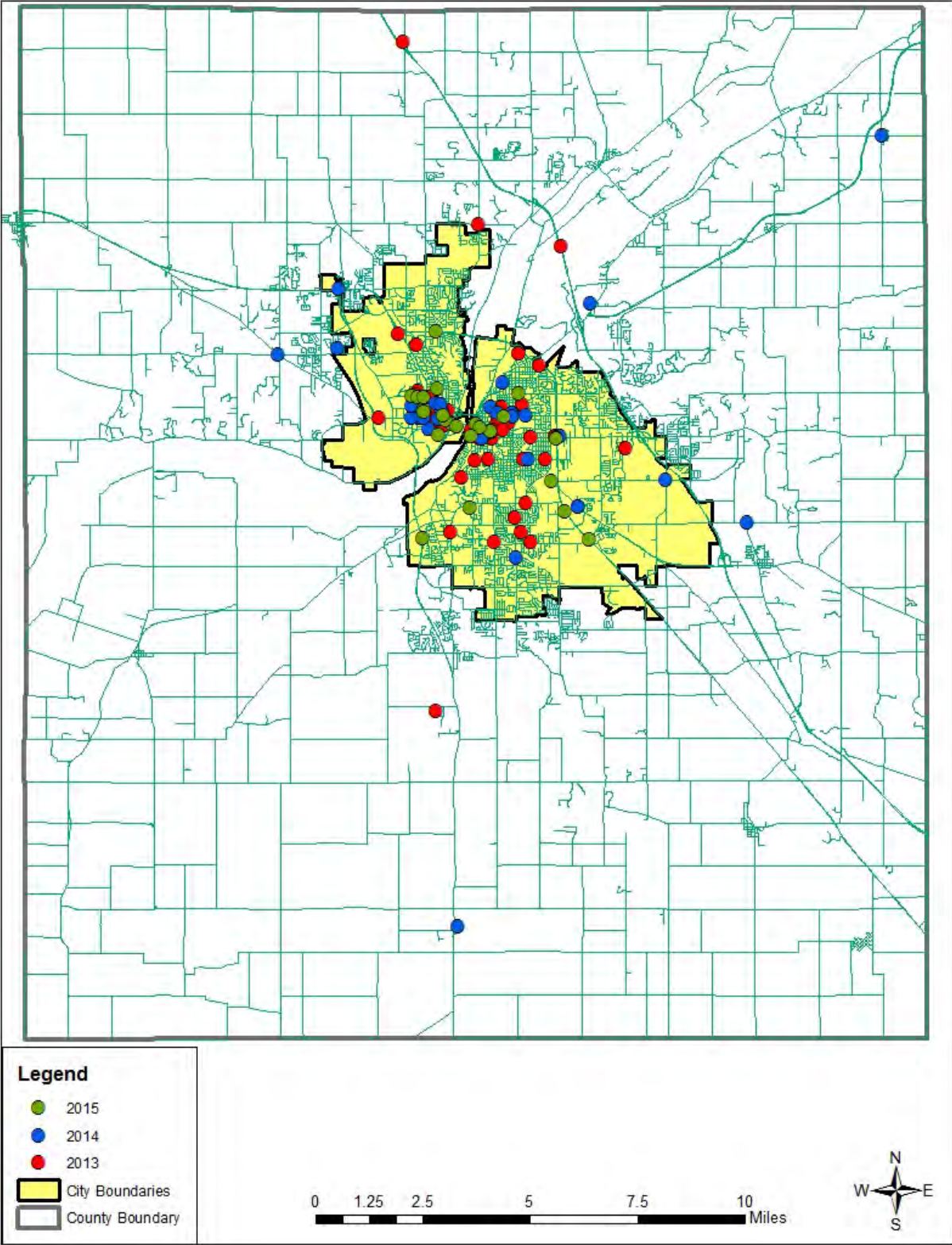




Figure 48: Lafayette and West Lafayette Pedestrian Crashes

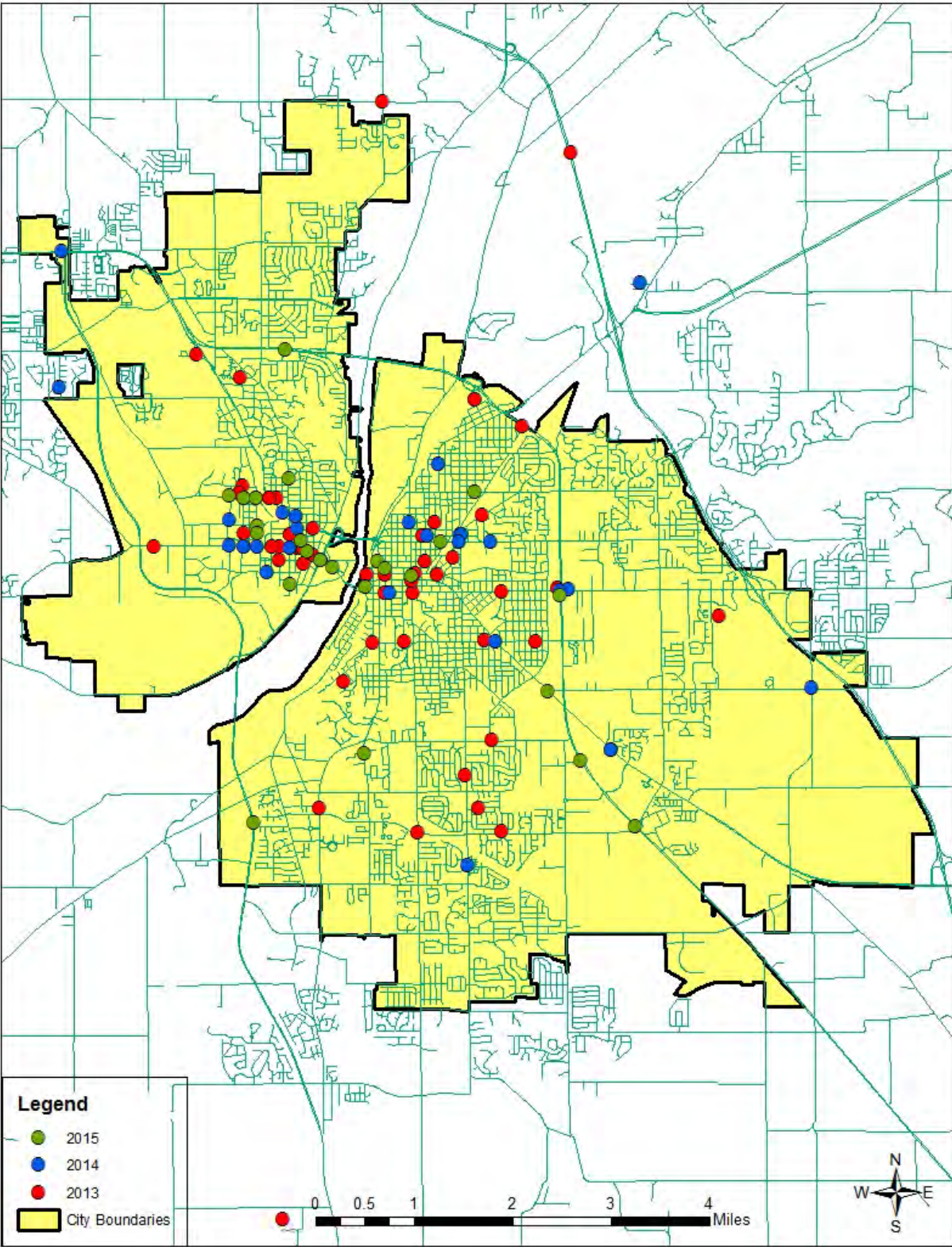


Table 52 shows that “Left Turn” was the most common type of pedestrian crash to occur.

**Table 52: Crash Types for Pedestrian Crashes**

<b>Crash Type</b>	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>Total</b>
<b>Left Turn</b>	6	10	12	28
<b>Other - Explain In Narrative</b>	3	6	11	20
<b>Head On</b>	0	5	11	16
<b>Same Direction Sideswipe</b>	0	7	4	11
<b>Right Angle</b>	2	3	4	9
<b>Head On Between Two Motor Vehicles</b>	6	3	0	9
<b>Non-Collision</b>	1	2	2	5
<b>Backing Crash</b>	0	4	0	4
<b>Rear End</b>	1	1	1	3
<b>Left/Right Turn</b>	1	0	2	3
<b>Right Turn</b>	2	0	0	2
<b>Ran Off Road</b>	1	0	1	2
<b>Unknown</b>	1	0	0	1
<b>Total</b>	24	41	48	113

Table 53 shows that November had the highest number of pedestrian crashes.

**Table 53: Pedestrian Crashes by Month**

	<b>2015</b>	<b>2014</b>	<b>2013</b>	<b>TOTAL</b>
<b>JAN</b>	1	4	5	10
<b>FEB</b>	1	5	3	9
<b>MAR</b>	3	2	2	7
<b>APR</b>	0	3	9	12
<b>MAY</b>	3	2	4	9
<b>JUN</b>	1	2	1	4
<b>JUL</b>	1	3	4	8
<b>AUG</b>	1	3	3	7
<b>SEP</b>	5	2	4	11
<b>OCT</b>	3	2	3	8
<b>NOV</b>	3	8	6	17
<b>DEC</b>	2	5	4	11
<b>TOTAL</b>	24	41	48	113

Table 54 shows that Wednesday and Friday had the highest number of pedestrian crashes.

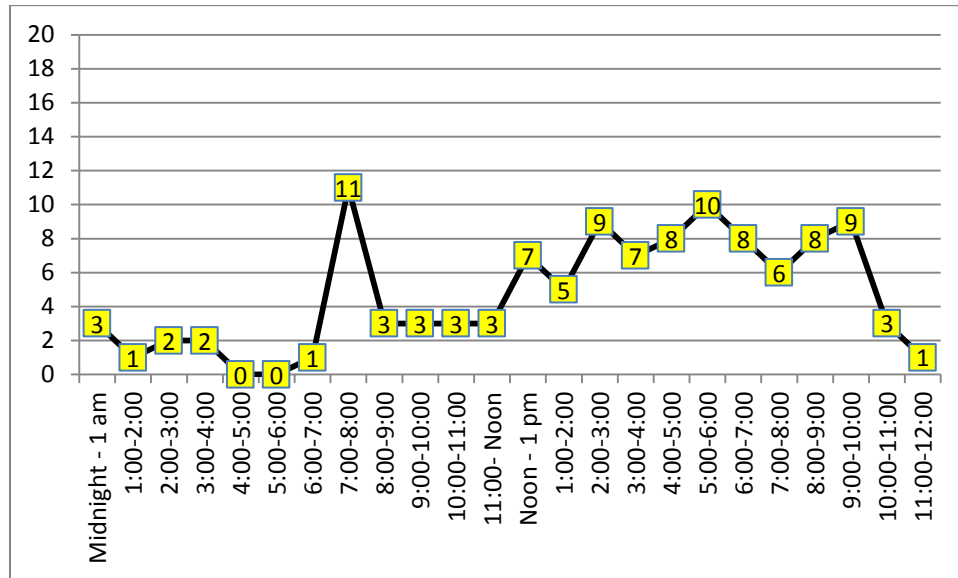
**Table 54: Pedestrian Crashes by Day of the Week**

	<b>Mon</b>	<b>Tue</b>	<b>Wed</b>	<b>Thu</b>	<b>Fri</b>	<b>Sat</b>	<b>Sun</b>	<b>Total</b>
<b>2015</b>	3	2	5	4	5	2	3	24
<b>2014</b>	4	6	6	10	9	2	4	41
<b>2013</b>	9	3	12	8	9	3	4	48
<b>Total</b>	16	11	23	22	23	7	11	113



Figure 49 shows that the highest number of pedestrian crashes occurred from 7-8 a.m.

**Figure 49: Pedestrian Crashes by Time of Day**

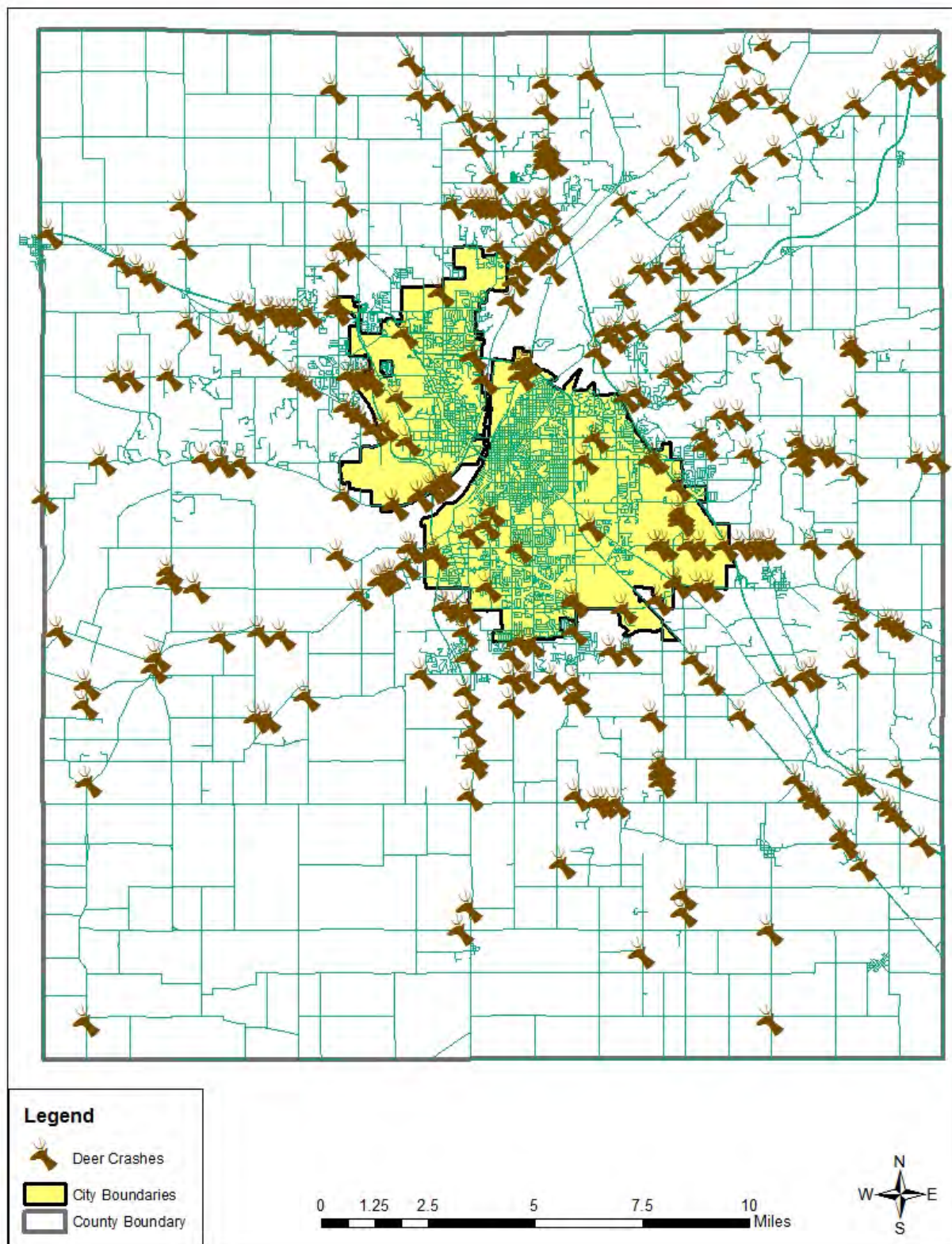


## Chapter 11: Other Crash Types and Factors

There were several other crash types and a few additional factors to analyze in 2015 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, so this chapter analyzes them.

Figure 50 shows that deer crashes are distributed throughout Tippecanoe County.

Figure 50: Tippecanoe County Deer Crashes



Figures 51 and 52 show that most hit and run crashes occur inside the city limits of Lafayette and West Lafayette.

**Figure 51: Tippecanoe County Hit and Run Crashes**

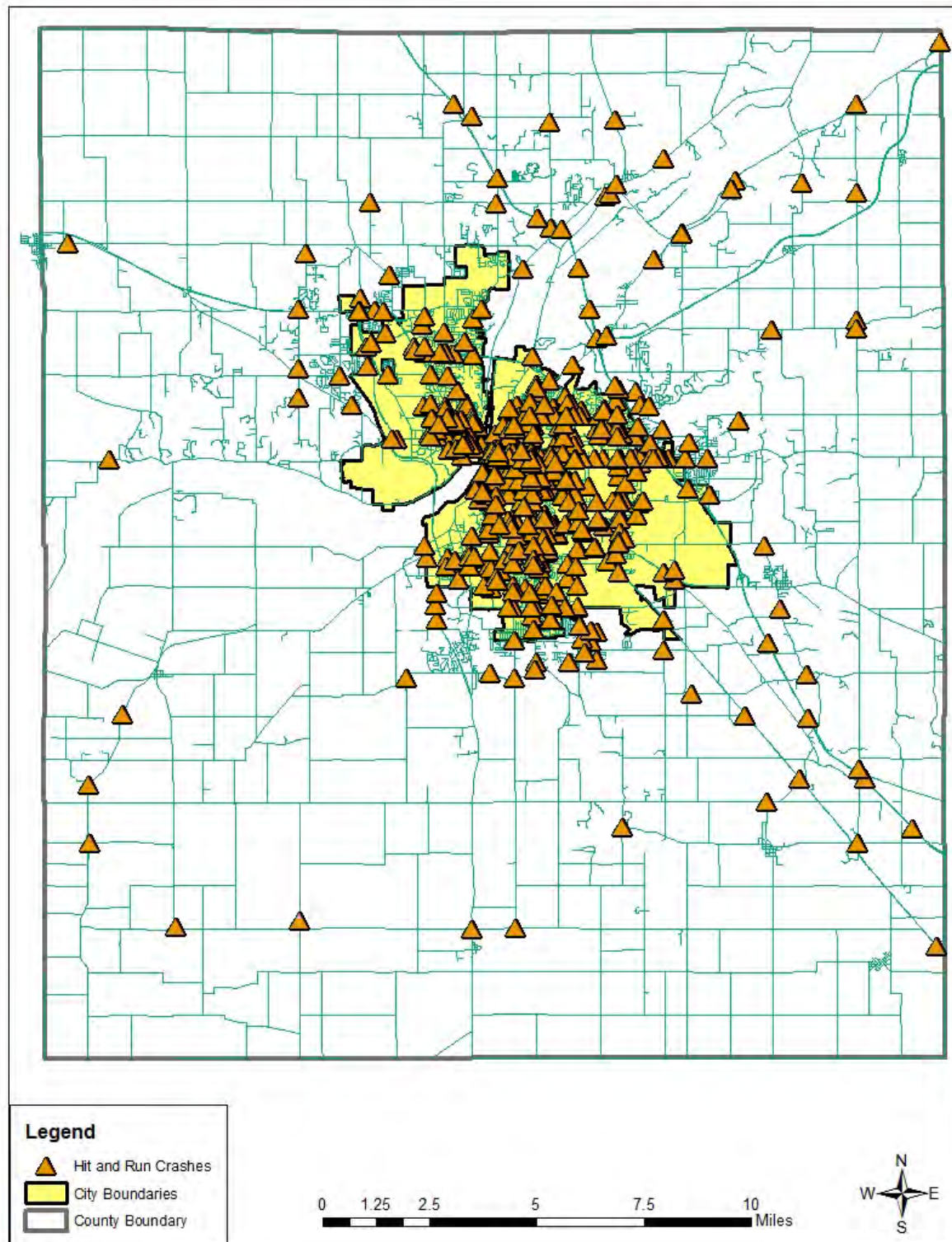




Figure 52: Lafayette and West Lafayette Hit and Run Crashes

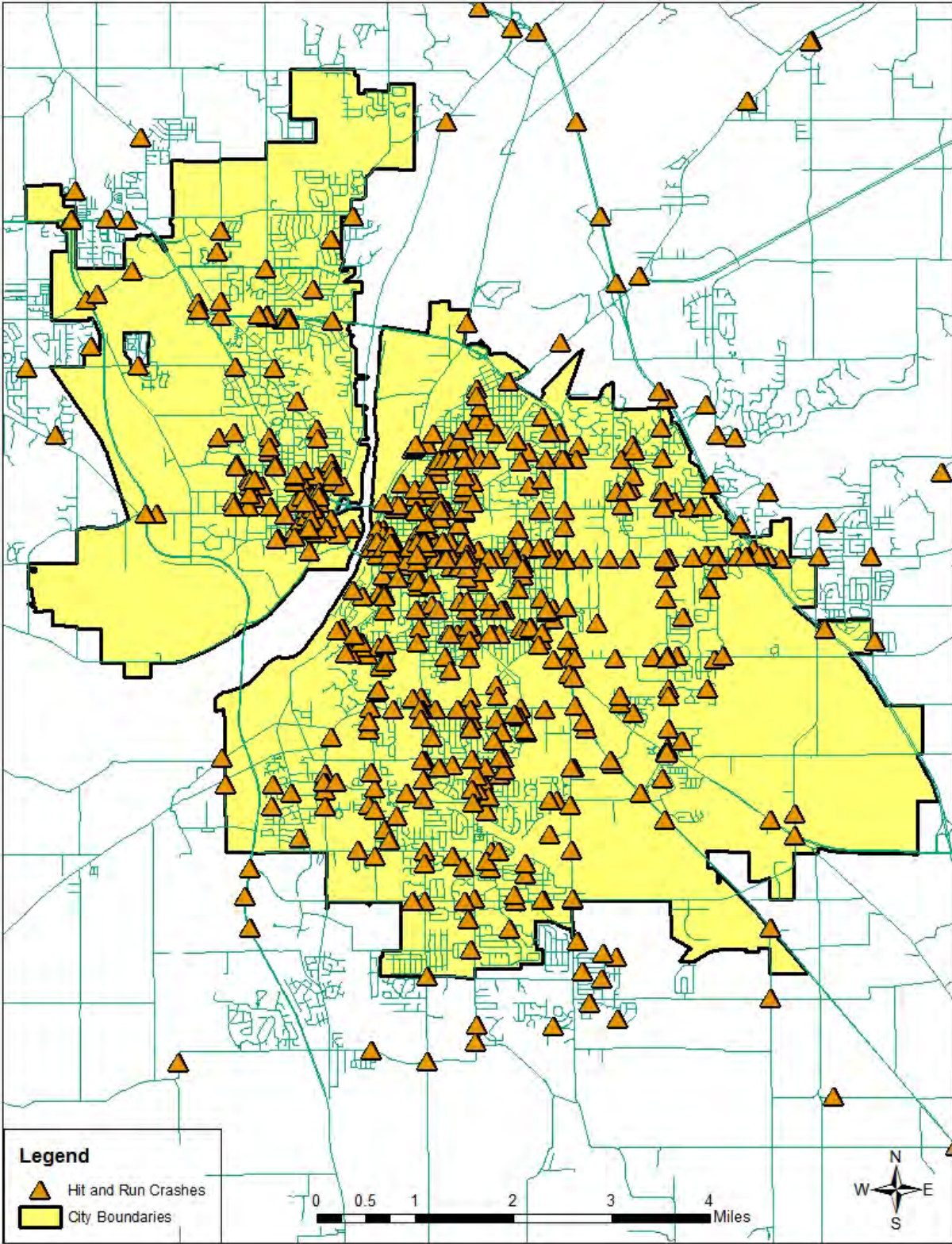


Table 55 shows that most of the crashes in 2015 involved two vehicles.

**Table 55: Summary of Number of Vehicles Involved in Crashes**

<b>Number of Vehicles Involved</b>	<b>Crashes</b>
<b>1</b>	1502
<b>2</b>	3974
<b>3</b>	274
<b>4</b>	37
<b>5</b>	3
<b>6</b>	1
<b>7</b>	1
<b>8</b>	1
<b>Total</b>	5793

Although crashes with two vehicles were the most common type, the amount of single vehicle crashes was also significant. 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 53 and 54 show the locations of single vehicle crashes in 2015.



Figure 53: Tippecanoe County Single Vehicle Crashes

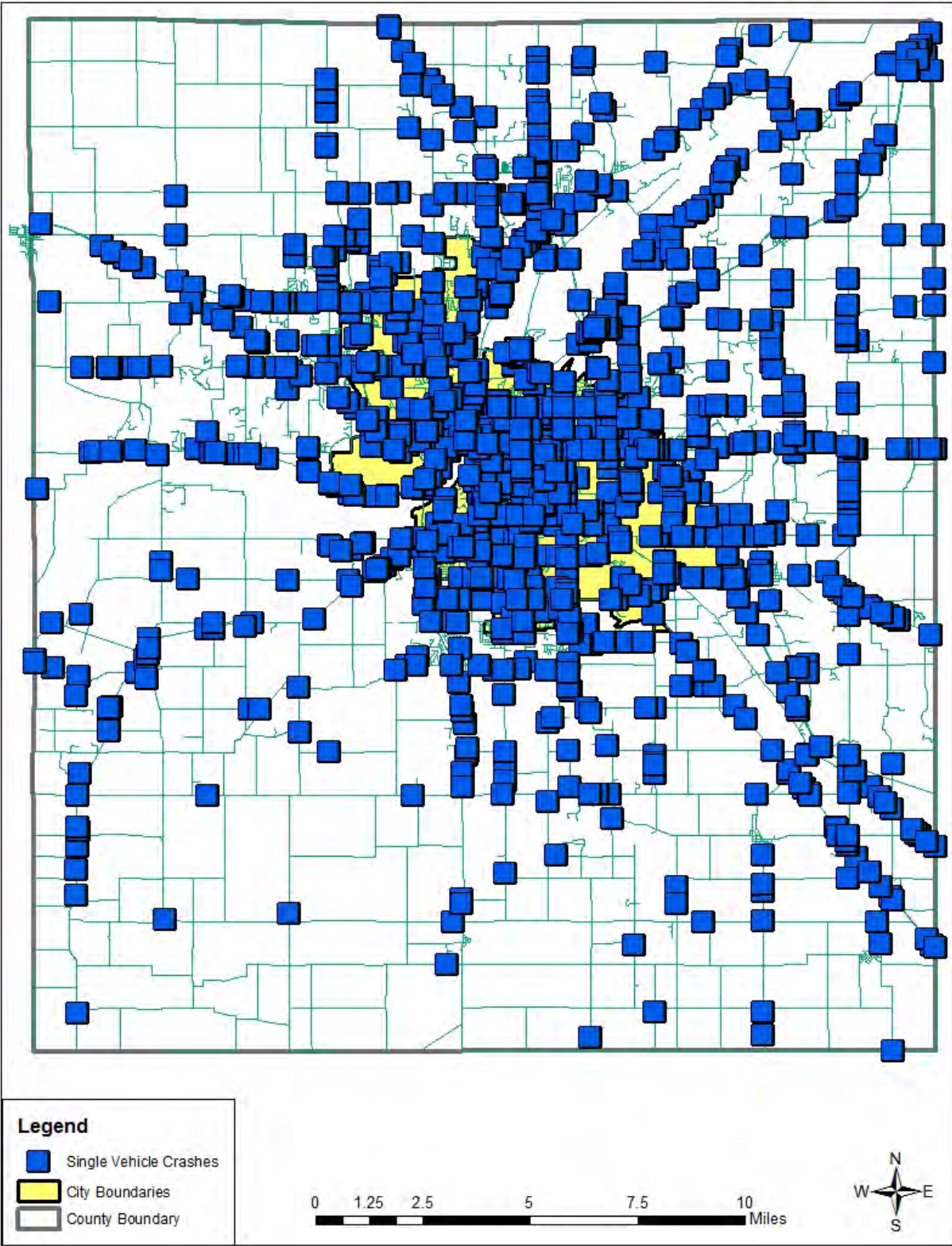




Figure 54: Lafayette and West Lafayette Single Vehicle Crashes

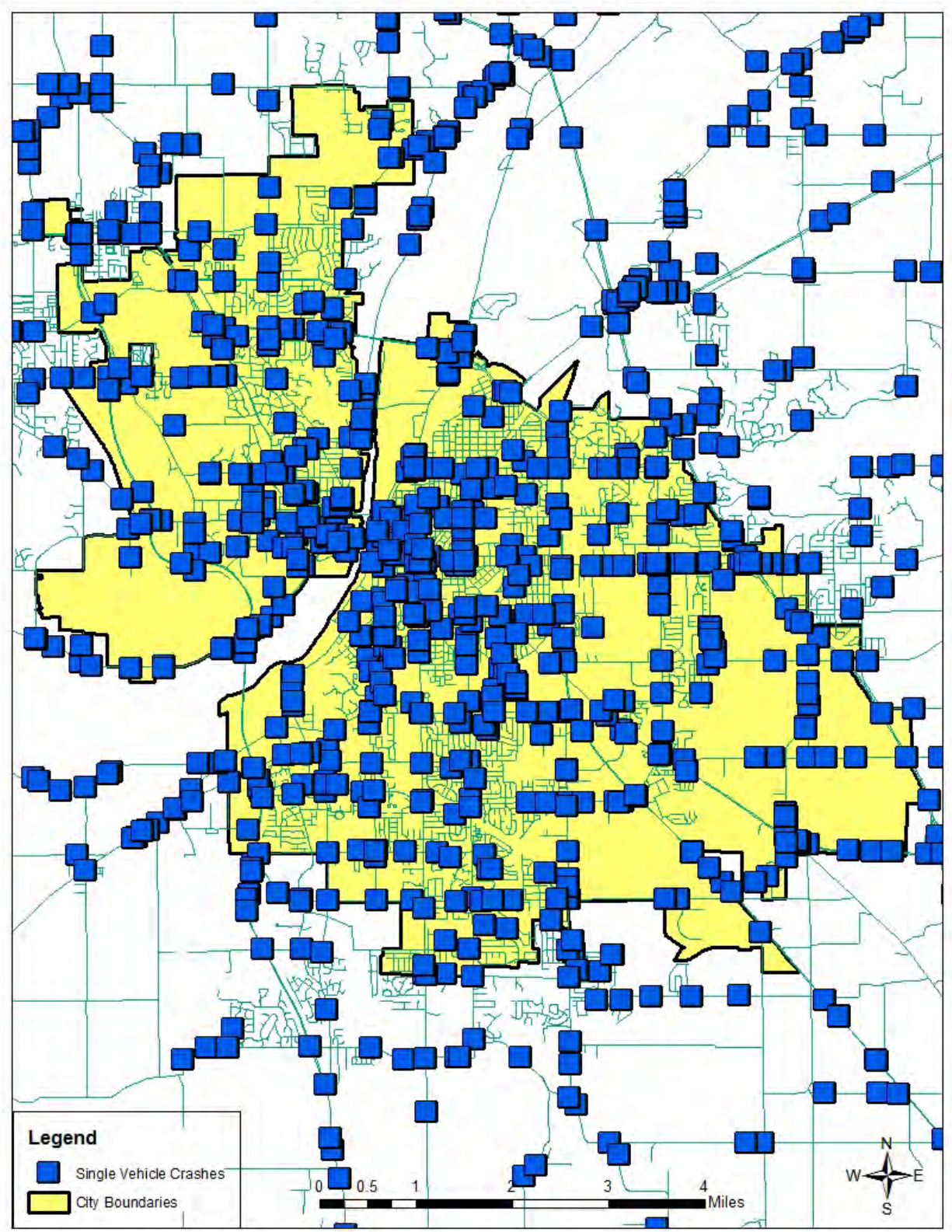




Table 56 shows that the majority of crashes occur on roads with an asphalt surface.

**Table 56: Crashes by Road Surface**

Road Surface	Crashes
Asphalt	5035
Concrete	719
Gravel	22
Other	14
Unknown	3
Total	5793

Table 57 shows that aside from Indiana, Illinois had the highest number of licensed drivers involved in crashes in Tippecanoe County.

**Table 57: Crashes by Driver's State of Residence**

State	Drivers
AL	6
AR	1
AZ	5
CA	11
CO	4
CT	1
FL	24
GA	17
HI	1
IA	4
IL	231
IN	8770
KS	5
KY	39
LA	3
MA	2
MD	6
ME	1
MI	32
MN	9
MO	9
MS	4
NC	10
NH	1
NJ	4

State	Drivers
NM	2
NY	10
OH	53
OK	1
PA	6
PR	1
SC	6
SD	1
TN	17
TX	21
UT	1
VA	4
VT	1
WA	3
WI	29
WV	1

## 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.