Bloomington/Monroe County
Metropolitan Planning Organization

Crash Report

Calendar Years 2008 through 2010

February 2012

BLOOMINGTON • MONROE COUNTY
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Executive Summary

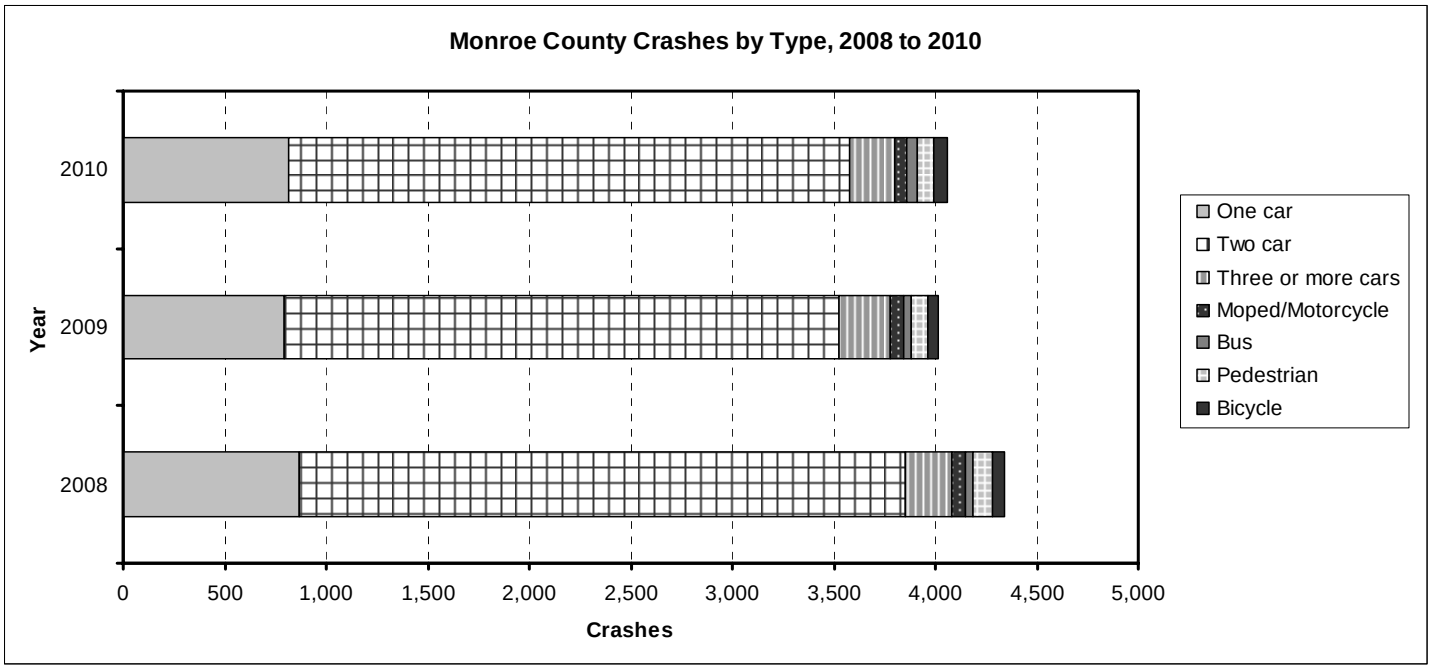
The current version of the Bloomington/Monroe County Metropolitan Planning Organization (MPO) Crash Report continues the MPO's effort to provide a thorough analysis of the causes and trends of crashes in Monroe County. This year's report includes crash data from 2008 to 2010.

This report has been compiled to provide information to the Citizen's Advisory Committee, Technical Advisory Committee, and Policy Committee of the MPO. Additionally, the report will be available to local government agencies, Indiana University, and the general public through the MPO website and the office of the Bloomington Planning Department.

A summary of the crash trends reported within Monroe County is provided below to highlight general information on crash data within Monroe County. In the following sections, detailed tables, charts, and summaries are provided to highlight information on the frequency, severity, and other related characteristics of crashes that occurred from 2008 to 2010. Additionally, the appendix contains information and analysis that may be of interest to some readers.

Summary of Crash Trends from 2008 to 2010

A total of 12,415 crashes were reported between 2008 and 2010 (Table 1). This figure is roughly the same as the three year total from 2007 to 2009, as reported in last year's crash report. Total crashes for 2010 increased 1.1% compared to 2009, but decreased 6.5% compared to 2008. Just over three quarters of the total crashes reported no injuries (property damage or unknown) and the rest reported various levels of severity in injuries sustained.



A further breakdown of the total 12,415 crashes provides useful insights into trends involving pedestrians, bicyclists, buses, mopeds/motorcycles, and crashes that resulted in fatalities. Over the course of the three years analyzed, there were 31 fatalities (Table 4), somewhat more than the 22 fatalities reported from 2007 to 2009. Of the 31 fatalities, almost half (13) were from single car crashes, six were from two-car crashes, six involved mopeds/motorcycles, and five involved a pedestrian. There were no fatalities involving a bicycle or a bus.

The time distribution of crashes continues to follow a predictable pattern. The greatest number of crashes occurred during weekday rush hours between 3:00 P.M. and 6:00 P.M., with an average slightly greater than 1 crash per hour (Figure 1). The weekend also follows a predictable pattern, but the crash rate has a more even distribution through the day and early

evening hours. Between the hours of 7pm and 4am, the weekend experiences a higher crash frequency than during the week. Friday continued to have the highest number of crashes overall, while Sunday had the lowest number of crashes (Figure 2).

State highways are prominently featured in the list of problematic intersections (Table 2). This could be attributable to several factors, but higher traffic volumes and speeds on these roads are likely factors. The intersection at College Avenue/Walnut Street and the State Road 45/46 Bypass topped the list of problematic intersections, followed by Bloomfield Road and State Road 37 and then W 3rd Street and State Road 37. Because these intersections continue to exhibit high numbers of crashes from year to year, safety improvements should be considered. Other locations that show a high number of crashes, but do not involve state managed highways, should also be considered for safety improvements through the MPO's Highway Safety Improvement Program (Table A1). Future reports would benefit from a reliable methodology to normalize crashes to volumes of traffic, road classification, and/or some other value so that ranking of problematic locations and intersections is not solely based on the total number of crashes.

The leading cause of crashes during the study period was once again failure to yield right of way with 2,470 incidents (Table 3). Other leading causes include reaction to other driver behaviors, following too closely, and unsafe backing. These causes may be reduced through law enforcement and education efforts as well as through physical improvements. Running off the right side of the road and speeding in adverse weather present opportunities for physical safety improvements, such as guard rails, rumble strips, and interactive signage. These types of improvements should be explored further to reduce crashes.

Bicycle and pedestrian crashes are an important consideration due to a relatively high number of non-motorized trips in the area, and the sensitivity to injury of individuals using these modes. It is well understood that when compared to other types of crashes, those involving bicyclists and pedestrians are much more likely to result in a fatality or incapacitating injury. Therefore, reducing the frequency of these crashes is a priority. The intersection of Dunn Street and Kirkwood Ave has the topped the list for pedestrian crashes in two consecutive crash reports, warranting further investigation.

Introduction

Mobility continues to be a defining aspect of life in the United States and around the world. Investment in transportation infrastructure has led to new opportunities for trade, travel, recreation, relocation, and economic growth. The BMCMPO receives approximately $3.1 million per year of federal transportation funding allocated from the Indiana Department of Transportation to invest in our local transportation network. Despite this continued investment, the effectiveness of our transportation system is undermined by human, economic, and financial costs attributable to motor vehicle crashes.

Motor vehicle crashes are a significant cause of death, injury, property loss and productivity loss in the United States. Data for 2008 shows that unintentional accidents were the 5th leading cause of death overall, and of the 121,902 total unintentional accidents reported, 42,709 (35.0%) are attributed to transportation.[1] While it may not be possible to completely eliminate motor vehicle crashes, gaining a better understanding of their causes can help transportation planners and engineers reduce their frequency and severity. This report attempts to characterize the motor vehicle crashes in Monroe County, Indiana, providing the basis for informed transportation policies and infrastructure investments.

The annual Crash Reports demonstrate that motor vehicle crashes contribute to a significant loss of life, property, and productivity in Monroe County. Through continued efforts in crash reporting and analysis, a better understanding of crash trends will be attained. From this information, targeted infrastructure investments should further improve safety on roads within the county. Therefore, the purpose of this report is twofold. First, the report provides a consistent and straightforward means to disseminate annual crash data which can be utilized by any interested individual or organization. Second, the report provides another tool for civil engineers, transportation planners, and local policy makers to use when considering mitigation strategies aimed to reduce the frequency and severity of transportation related crashes. Specifically, the Indiana Department of Transportation and the BMCMPO require Local Public Agencies (LPAs) to use crash data as part of the Highway Safety Improvement Program (HSIP). This program provides federal funding to target areas with high incidences of crashes. It is the overall goal of HSIP to reduce the number of fatal and incapacitating injury crashes. Through annual reporting and analysis, effective mitigation strategies can be implemented to further curtail crashes within Monroe County.

This report focuses on a three year period from 2008 to 2010. By focusing on a longer time horizon, random variations in annual crashes do not unduly influence the trends reported. For instance, annual variations in bicycle and pedestrian crashes, fatalities and incapacitating injuries, and location-specific crashes can be significant, even though there may not be an actual change in the likelihood of those crashes. By using a three-year window, identified trends are more likely to be meaningful. Results from 2010 alone are also presented in some instances to provide a snapshot of the most recent year.

[1] Centers for Disease Control, National Center for Health Statistics. National Vital Statistics Reports – Deaths: Final Data for 2008. Volume 59, Number 10. http://www.cdc.gov/nchs/data/nvsr/nvsr59/nvsr59_10.pdf. Accessed on December 8, 2011.

Methodology and Data Considerations

The data for the Bloomington/Monroe County Crash Report originates from the "Automated Report and Information Exchange System" (ARIES) of the Indiana State Police. This system contains crash data from police reports since 2003. The police report data is organized by collisions, units (vehicles), and individuals. These entities are related to one another by a field in each table (Master Record Number), but can also be analyzed independently. It is possible to retrieve information regarding collisions (e.g., where and when did the greatest number of crashes occur?), vehicles involved (e.g., how many crashes involved bicycles?), and individuals involved (e.g., how old were the crash victims?). It is also possible to perform more complex analyses using attributes from each of these entities (e.g., which location had the most elderly crash victims?).

As with any database, the validity of conclusions resulting from the data is contingent upon accurate and complete data entry. Lack of information from hit-and-run collisions, confusion surrounding alternate names of roads (e.g., Country Club Drive, Winslow Road), misspelled or mis-entered street names, GPS errors, and incomplete data entry undoubtedly introduce some error into the results of this report. Therefore, results should not be interpreted rigidly.

A significant effort was made to correct data errors and validate results. It is important to note that the methodology was improved for this report. Consequently, some minor inconsistencies will be evident when comparing crash reports from different years. Therefore, it should be understood that the most recently issued Crash Report reflects the best and most accurate crash information. For this report, data was analyzed primarily based on the reported latitude and longitude of the crash location. This methodology was determined to be more reliable than using the reported location and captured over 90% of all reported crashes. Regardless of methodological changes and slight differences between reports, the list of problematic intersections remains relatively consistent, and the overall findings of this report are consistent with those of past years.

Collisions were categorized for analysis based on the type and severity of the crash. If the crash included a moped, motorcycle, bus, bicyclist or pedestrian, it was classified as a "moped/motorcycle", "bus", "bicycle" or "pedestrian" crash, accordingly, regardless of the number of vehicles involved. If the crash involved only motor vehicles, the "crash type" classification was based on the number of cars: one car, two cars, or three or more cars. The "severity" classification of a collision was based on the most severe injury that resulted from the crash. For example, if a crash resulted in a fatality as well as a non-incapacitating injury, the severity of the crash was classified as "Fatal Injury." Most data methods used in the report are self-explanatory.

When reading the report, it is important to understand the distinction between "crashes" and "individuals." The term "crash" is used when the characteristics of the crash itself are under consideration, whereas the terms "individual" and "fatality" are used when the focal point is the people involved. For example, the "Fatal Injury" column of Table 1 ("Crash by Type and Severity, 2008-2010") shows how many crashes resulted in a fatal injury in 2010, but it would be incorrect to interpret this column as the number of fatalities in 2010, since more than one fatality can result from a single crash.

Analysis

Crash Characteristics

This section provides a summary of crash characteristics in Monroe County, including the type and severity of crashes from 2008-2010. These factors reflect trends in the overall safety of the transportation system.

In 2010, a total of 4,060 motor vehicle crashes were reported in Monroe County (Table 1). Of these, thirteen resulted in one or more fatalities, while 73 caused incapacitating injuries. For the vast majority of crashes (3,121), injuries were not reported. Two-car crashes were the most common, comprising 68% of the total. One-car crashes and those involving three or more cars were also common, accounting for 20% and 5% of total crashes reported, respectively. Crashes involving a pedestrian, cyclist, moped/motorcycle, or bus were much less frequent. However, with the exception of crashes involving a bus, these were much more likely to involve injury than vehicle crashes.

Compared with 2008 and 2009, the overall number of crashes in 2010 remained fairly constant (1.1% increase). However, the portion of crashes resulting in fatalities or incapacitating injury rose sharply to 2.1% of all crashes, from 1.5% in 2009 and 1.4% in 2008. This figure should be monitored in future years to see if this trend continues.

Table 1. Crashes by Type and Severity, 2008-2010

	Crash Type	Severity				Annual Total	Percent of Annual Total
		Fatal Injury	Incapacitating Injury	Non-incapacitating	No injury/unknown		
2008	One car	4	10	170	680	**864**	**19.9%**
	Two car	1	19	447	2523	**2990**	**68.9%**
	Three or more cars	0	4	72	149	**225**	**5.2%**
	Bus	0	0	6	63	**69**	**1.6%**
	Moped/Motorcycle	3	9	64	27	**103**	**2.4%**
	Bicycle	0	1	31	2	**34**	**0.8%**
	Pedestrian	3	4	41	8	**56**	**1.3%**
	Total	**11**	**47**	**831**	**3452**	**4341**	**100.0%**
	Percent of Annual Total	**0.3%**	**1.1%**	**19.1%**	**79.5%**	**100.0%**	
2009	One car	3	12	154	620	**789**	**19.7%**
	Two car	0	18	448	2273	**2739**	**68.2%**
	Three or more cars	1	4	94	151	**250**	**6.2%**
	Bus	0	1	5	57	**63**	**1.6%**
	Moped/Motorcycle	2	11	53	19	**85**	**2.1%**
	Bicycle	0	1	30	6	**37**	**0.9%**
	Pedestrian	1	6	41	3	**51**	**1.3%**
	Total	**7**	**53**	**825**	**3129**	**4014**	**100.0%**
	Percent of Annual Total	**0.2%**	**1.3%**	**20.6%**	**78.0%**	**100.0%**	
2010	One car	6	15	153	642	**816**	**20.1%**
	Two car	5	30	460	2265	**2760**	**68.0%**
	Three or more cars	0	3	93	125	**221**	**5.4%**
	Bus	0	0	5	57	**62**	**1.5%**
	Moped/Motorcycle	1	12	56	17	**86**	**2.1%**
	Bicycle	0	3	40	8	**51**	**1.3%**
	Pedestrian	1	10	46	7	**64**	**1.6%**
	Total	**13**	**73**	**853**	**3121**	**4060**	**100.0%**
	Percent of Annual Total	**0.3%**	**1.8%**	**21.0%**	**76.9%**	**100.0%**	
3-Year	**Total**	**31**	**173**	**2509**	**9702**	**12415**	
	Percent of 3-Year Total	**0.2%**	**1.4%**	**20.2%**	**78.1%**	**100.0%**	

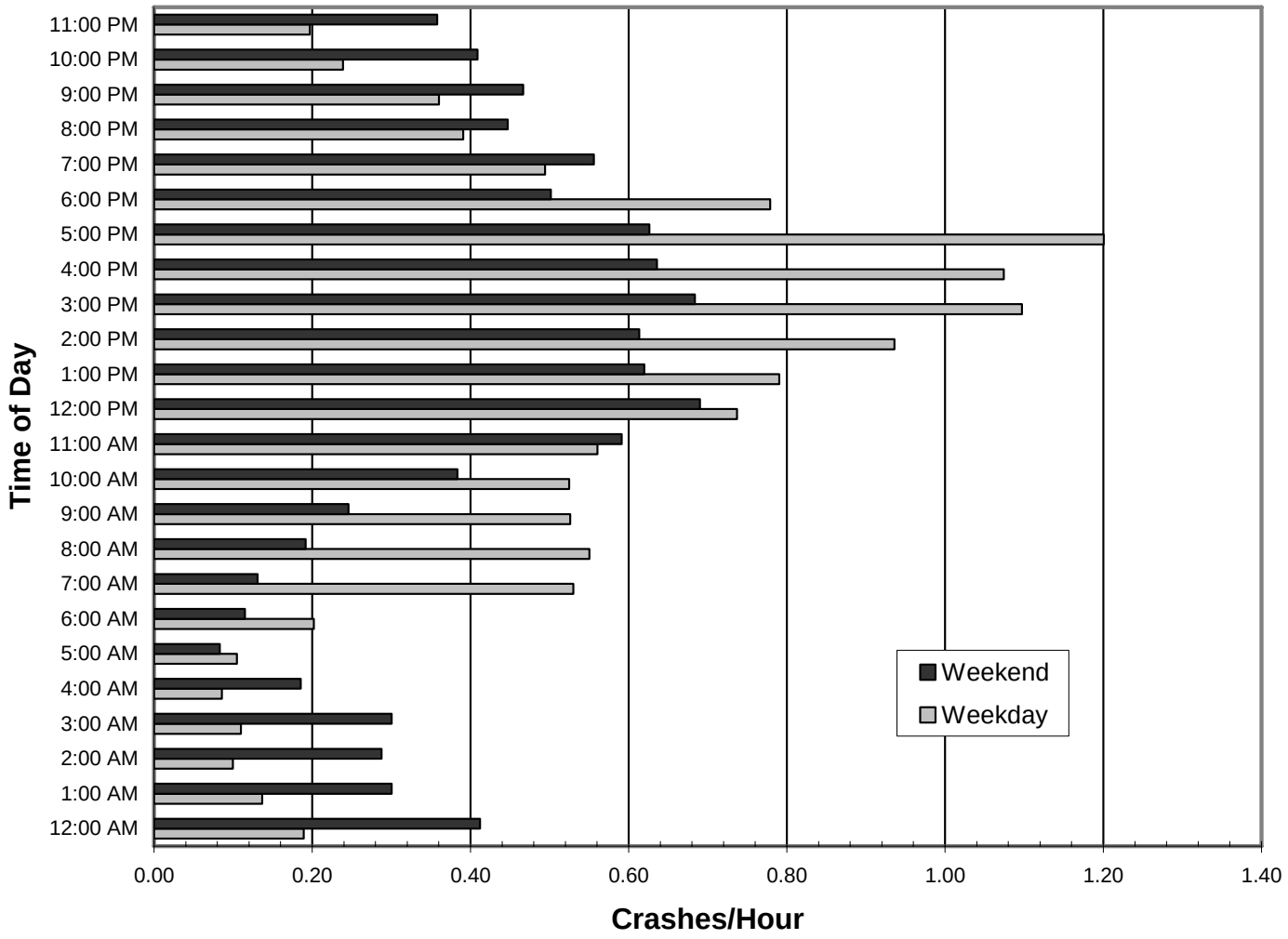
Time of Crashes

This section summarizes the number of crashes by hour and day. Information relating to the timing of crashes can be used by law enforcement agencies and emergency responders for planning purposes. Additionally, decision makers may use this information in an attempt to reduce peak crash times.

On weekdays, the number of crashes typically increased in conjunction with traffic from the morning rush hour, 7:00 AM to 9:00 AM, and then increased gradually throughout the day until the end of the waning of the evening rush hour, 5:00 PM to 7:00 PM. The late afternoon was the most likely time for a crash to occur, with more than one per hour.

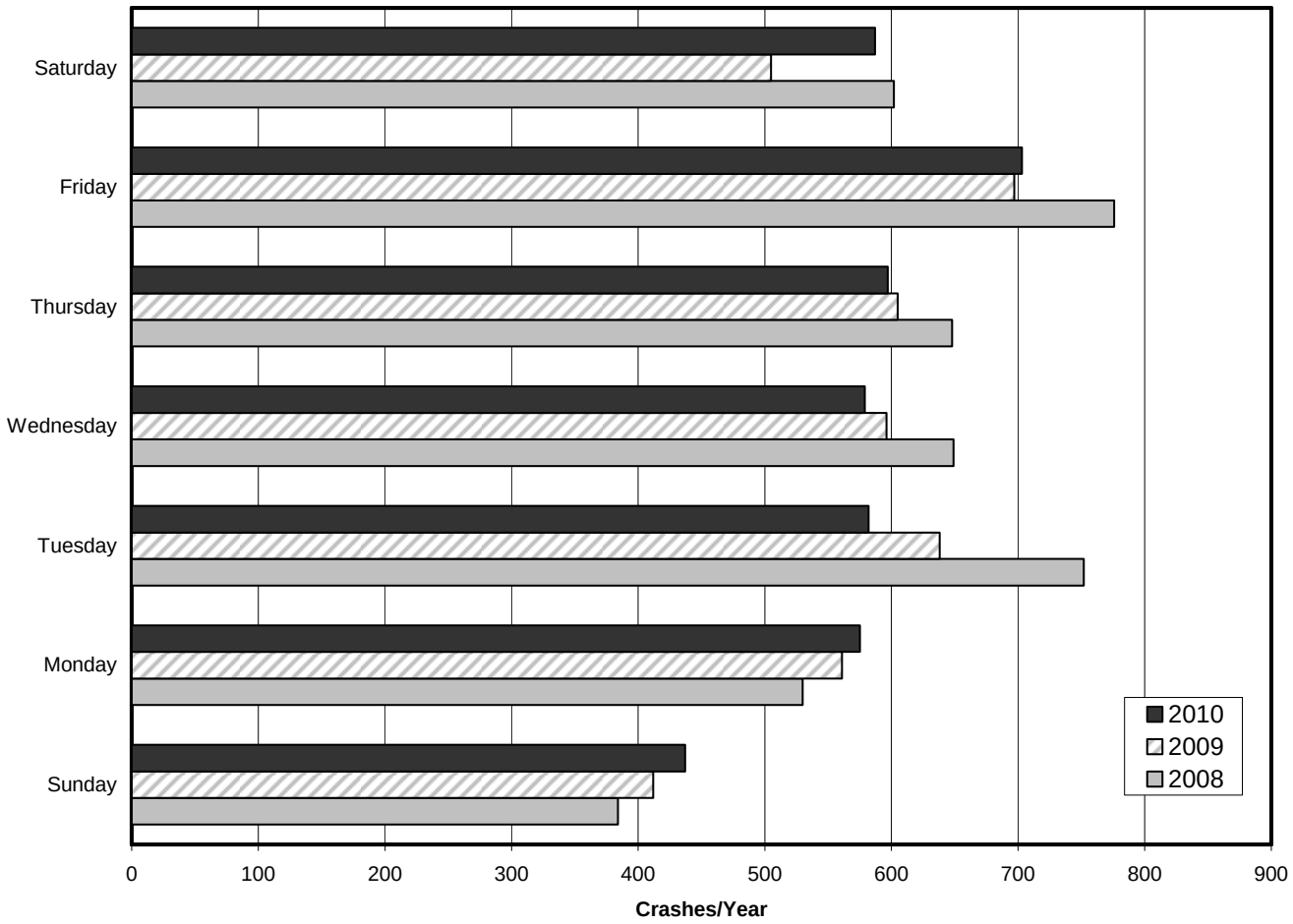
The hourly distribution of crashes for the weekend was less varied than for the work week. Crashes in the late evening and early morning were much more common during the weekend, and rush hour peaks were not as prevalent as on weekdays. During the study period, a greater number of crashes occurred on Fridays than on any other day and the fewest crashes occurred on Sundays (Figure 2).

Figure 1. Crashes by Time of Day, 2008-2010 [2]



[2] Hours shown represent the beginning of the hour. For example, "12:00 AM" represents the time period from 12:00 AM to 12:59 AM.

Figure 2. Crashes by Day of Week, 2008-2010



Crash Locations

This section addresses the spatial distribution of crashes in Monroe County, highlighting problematic intersections and corridors. The ranking method is based on the total number of crashes that occurred at each location or intersection over three years. Transportation planners and engineers can use this information to prioritize infrastructure projects for safety improvements.

In 2010, the intersection with the greatest number of total crashes was E Third Street and Pete Ellis Drive, where 47 crashes were reported, an 81% jump from 2009 (Table 2). However, the intersection of College Avenue/Walnut Street and State Road 45/46 Bypass had the most crashes during the period 2008-2010 with 122 crashes. Although traffic volume is certainly an important element, intersection design factors, such as limited visibility, topographic constraints, and awkward turning movements, may contribute to greater crash frequency at some high crash locations.

Locations and intersections that have lower traffic and/or hazardous conditions may not be identified using this ranking method because the total number of crashes is not large enough to make any reasonable sized list. However, crashes may occur at a frequent rate and increased severity level for some of these locations. Therefore, future reports should develop a methodology to normalize the data such that traffic volumes, road classifications, and/or other attributes can be used to rank problematic locations using several methods to aid transportation planners, engineers, and officials.

Table 2. Top 50 Crash Locations, 2008-2010

Rank	Intersection	2008	2009	2010	3-Year Total
1	STATE ROAD 45/46 BYPASS @ N COLLEGE AVE/N WALNUT ST	52	41	29	**122**
2	STATE ROAD 37 @ W BLOOMFIELD RD	41	30	42	**113**
3	STATE ROAD 37 @ W 3RD ST	40	37	28	**105**
4	E 3RD ST @ S PETE ELLIS DR	30	26	47	**103**
5	STATE ROAD 46 @ E 3RD ST	32	36	33	**101**
6	STATE ROAD 37 @ W VERNAL PIKE	40	33	24	**97**
7	STATE ROAD 45 @ S CURRY PIKE/S LEONARD SPRINGS RD	31	31	27	**89**
8	STATE ROAD 45 @ S LIBERTY DR	29	23	36	**88**
9	STATE ROAD 45/46 BYPASS @ E 10TH ST	32	22	30	**84**
10	W 3RD ST @ S LIBERTY DR	29	25	24	**78**
11	W 3RD ST @ S GATES DR	23	22	21	**66**
12	E 3RD ST @ S KINGSTON DR	22	24	19	**65**
13	STATE ROAD 45 46 BYPASS @ N KINSER PIKE	21	19	19	**59**
14	E 10TH ST @ N FEE LN	17	15	24	**56**
15	W 10TH ST @ N COLLEGE AVE	18	15	22	**55**
16	E 10TH ST @ N JORDAN AVE	19	16	16	**51**
17	W 2ND ST @ S COLLEGE AVE	12	23	15	**50**
18	E 3RD ST @ S SMITH RD	15	20	14	**49**
18	W 7TH ST @ N WALNUT ST	16	15	18	**49**
20	E 3RD ST @ S WASHINGTON ST	8	24	16	**48**
20	S WALNUT STREET PIKE @ E WINSLOW RD	20	16	12	**48**
22	E 3RD ST @ S JORDAN AVE	17	11	18	**46**
23	W 3RD ST @ N WALNUT ST	16	18	11	**45**
23	STATE ROAD 37 @ W TAPP RD	11	11	23	**45**
23	E 10TH ST @ N PETE ELLIS DR/N RANGE RD	12	21	12	**45**
26	W 3RD ST @ S COLLEGE AVE	14	12	18	**44**
26	STATE ROAD 46 @ STATE ROAD 446	20	15	9	**44**
28	W GRIMES LN @ S WALNUT ST	17	12	13	**42**
28	W 2ND ST @ S ROGERS ST	15	10	17	**42**
28	W KIRKWOOD AVE @ N WALNUT ST	16	14	12	**42**
28	STATE ROAD 46 @ E EASTGATE LN	11	14	17	**42**
32	W 17TH ST @ N KINSER PIKE/N MADISON ST	13	14	14	**41**
33	E 3RD ST @ S WOODSCREST DR	16	21	3	**40**
33	E 17TH ST @ N FESS AVE	13	17	10	**40**
35	W 7TH ST @ N COLLEGE AVE	11	14	14	**39**
36	E RHORER RD @ S WALNUT STREET PIKE	16	9	13	**38**
36	W 3RD ST @ S CORY LN	6	9	23	**38**
36	W 3RD ST @ S CURRY PIKE	20	14	4	**38**
36	E 10TH ST @ N SUNRISE DR	11	13	14	**38**
36	E 13TH ST @ N INDIANA AVE	17	10	11	**38**
41	E ATWATER AVE @ S HENDERSON ST	17	10	10	**37**
41	STATE ROAD 45/46 BYPASS @ N DUNN ST	12	13	12	**37**
43	E 3RD ST @ S WOODLAWN AVE	16	7	13	**36**
43	E 3RD ST @ S FESS AVE	13	10	13	**36**
43	E 4TH ST @ S WALNUT ST	16	6	14	**36**
43	N INDIANA AVE @ E KIRKWOOD AVE	13	11	12	**36**
47	E 10TH ST @ N UNION ST	12	10	13	**35**
47	N JORDAN AVE @ E LAW LN	16	6	13	**35**
47	W 17TH ST/W ARLINGTON RD @ N MONROE ST	17	11	7	**35**
50	S BASSWOOD DR @ W BLOOMFIELD RD	16	8	10	**34**
50	E 3RD ST @ S PARK RIDGE RD	9	13	12	**34**

Crash Factors

This section summarizes the primary crash factors from 2008 to 2010. An understanding of these causes informs infrastructure investments, enforcement activities, and educational efforts. For instance, unsafe speeds can be addressed by traffic enforcement and road design, while the tendency of motorists to drive off the road can be mitigated with a guardrail or rumble strips. Similarly, enforcement and education could reduce the number of crashes attributable to alcohol.

Failure to yield right of way was the most common cause of crashes during the study period, contributing to over 2,500 crashes from 2008 to 2010. Other driver errors, following too closely, and unsafe backing were also significant crash factors. Table 3 shows the top 10 primary crash factors for 2008-2010, which account for over three-quarters of total crashes. Driving under the influence of alcohol (ranked 14th with 252 total crashes) or driving left of center (ranked 16th with 219 crashes) do not contribute to as many crashes overall, but such crashes tend to be more severe.

Table 3. Top 10 Primary Crash Factors by Severity, 2008-2010

Rank	Primary Factor	Severity				3-Year Total
		Fatal Injury	Incapacitating Injury	Non-Incapacitating Injury	No Injury/ Unknown	
1	Failure to yield right of way	2	36	621	1,811	**2,470**
2	Other driver errors	2	12	253	1,282	**1,549**
3	Following too closely	0	11	384	1,119	**1,514**
4	Unsafe backing	0	1	23	1,170	**1,194**
5	Ran off road right	6	14	167	438	**625**
6	Speed too fast for weather conditions	0	4	105	439	**548**
7	Driver distracted	1	3	140	386	**530**
8	Disregard signal/reg sign	0	10	155	288	**453**
9	Roadway surface condition	0	7	56	387	**450**
10	Animal/object in roadway	1	8	43	372	**424**

Fatalities

This section provides a focused look at motor vehicle fatalities in Monroe County from 2008 to 2010. As with previous sections, the material presented here can be useful for enforcement, education, and decision-making.

In 2010, there were thirteen fatalities in Monroe County (Table 4). Of these, six resulted from single-car crashes, five from two-car crashes, one from a crash involving a moped or motorcycle, and one from a crash involving a pedestrian. Over the period from 2008 to 2010, the average annual number of fatalities per 100,000 residents was 7.8 for Monroe County. This figure is below the U.S. average of 11.01 for 2009.[3]

Table 4. Fatalities by Crash Type, 2008-2010

Year	Crash Type						Total	Fatalities per 100,000 Population
	One car	Two cars	Three cars or more	Moped and Motorcycle	Bicycle	Pedestrian		
2008	4	1	0	3	0	3	**11**	**8.5**
2009	3	0	1	2	0	1	**7**	**5.4**
2010	6	5	0	1	0	1	**13**	**9.4**
Total	**13**	**6**	**1**	**6**	**0**	**5**	**31**	**7.8**

[3] U.S. Department of Transportation, National Center for Statistics & Analysis. Fatality Analysis Reporting System, Web-Based Encyclopedia. http://www-fars.nhtsa.dot.gov/ Accessed on December 29, 2011.

Fatal Crash Locations

This section summarizes the locations for crashes that resulted in fatalities. From 2008 to 2010, there were 31 fatal crashes, which resulted in 31 fatalities. The locations of these fatal crashes are identified in Table 5. Location information will aid transportation planners and engineers to identify problematic locations. Fatalities are a major factor in determining HSIP funding eligibility (see the Table A1 in the appendix for more information).

Table 5. Fatal Crashes by Type and Location, 2008-2010

Location	Crash Type				
	One Car	Two Cars	Three or More Cars	Moped or Motorcycle	Pedestrian
AIRPORT RD from CAVE RD to KIRBY DR	1	0	0	0	0
ANDERSON RD from DORA RD to LYDY RD	0	0	0	1	0
ARLINGTON RD & CANTERBURY CT	1	0	0	0	0
COCKRELL RD from ROCKPORT RD to SWEEETWATER LN	0	0	0	0	1
CURRY PIKE & BEASLEY DR	1	0	0	0	0
CURRY PIKE & PROFILE PKWY	0	0	0	0	1
E 13TH & N FEE LN	0	0	0	0	1
E ELLIS RD & N SHOWERS RD**	0	0	0	1	0
LEONARD SPRINGS RD & STAPLETON	0	1	0	0	0
MONROE COUNTY (exact location unknown)	0	0	0	1	0
MONROE DAM RD from STRAIN RIDGE RD to FOGGY MORNING RD	1	0	0	0	0
N THOMAS RD & W VERNAL PIKE	1	0	0	0	0
NORTH DR & WALNUT ST	0	1	0	0	0
OLD STATE ROAD 37 from GOURLEY PIKE to CLUB HOUSE DR	0	0	0	1	0
PIONEER LN & WOODYARD DR	1	0	0	0	0
S JOHNSON AVE & BEAUMONT LN	0	0	0	0	1
STATE ROAD 45 & OLD STATE ROAD 45	0	1	0	0	0
STATE ROAD 37 & SAMPLE RD	0	1	0	0	0
STATE ROAD 37 & WAYPORT RD	0	1	0	0	0
STATE ROAD 37 from ELLIS RD to WYLIE RD	1	0	0	0	0
STATE ROAD 446 from OLD RICHARDSON RD to MERRITT DR	0	1	0	0	0
STATE ROAD 446 from CHAPEL HILL RD to ALLENS CREEK RD	1	0	0	0	0
STATE ROAD 46 & KINGS RD	1	0	0	0	0
STATE ROAD 46 & TRAILWAY DR	1	0	0	0	0
STATE ROAD 45 from AIRPORT RD to LEONARD SPRINGS RD	0	0	0	0	1
STATE ROAD 46 from FLATWOODS RD to RED HILL RD	0	0	1	0	0
W 3RD ST & S PATTERSON DR	0	0	0	1	0
W ELLER RD & S GARRISON CHAPEL	0	0	0	1	0
W HOWARD RD & N STARNES RD	1	0	0	0	0
W PROSPECT ST & S ROGERS ST	1	0	0	0	0
W VERNAL PIKE from STATE ROAD 48 to OARD RD	1	0	0	0	0

Bicycle and Pedestrian Crashes

This section reports on the number of bicycle and pedestrian crashes in Monroe County from 2008 to 2010. Such crashes are an important consideration in Bloomington and Monroe County due to a relatively high number of non-motorized trips in the area. For instance, the 2005-2009 American Community Survey (5-Year Estimate) reported that 2.6% of commuters in Bloomington use a bicycle as their primary mode of transportation, while 10.8% walked. By comparison, 0.6% of US commuters reported bicycling and 2.9% reported walking as their primary modes in 2009. Individuals using these modes of transportation are particularly vulnerable to injury.

In 2010, there were 51 reported crashes involving a cyclist and 64 involving a pedestrian (Table 1). Of these, one pedestrian was killed. There were also ten pedestrian and three bicycle crashes in 2010 that resulted in incapacitating injuries. During the period from 2008 to 2010, 293 pedestrian and bicycle crashes were reported, resulting in five pedestrian fatalities. It is well understood that bicycle and pedestrian crashes more often result in injury when compared with other crash types, thus there is a need to reduce the frequency and severity of these crashes.

Table 6. Top 14 Bicycle and Pedestrian Crash Locations, 2008-2010

Intersection	Crash Type		Total
	Bicycle	Pedestrian	
N DUNN ST @ E KIRKWOOD AVE	0	7	7
E 4TH ST @ S WASHINGTON ST	0	4	4
E 7TH ST @ N WALNUT ST	0	4	4
E 10TH ST @ N JORDAN AVE	2	2	4
S COLLEGE MALL RD @ EASTLAND PLAZA	2	1	3
E 3RD ST @ S WALNUT ST	1	2	3
E 3RD ST @ S WOODSCREST DR	2	1	3
W 6TH ST @ N ROGERS ST	1	2	3
W 7TH ST @ N COLLEGE AVE	1	2	3
STATE ROAD 45 46 BYPASS @ E 10TH ST	0	3	3
E 10TH ST @ N FEE LN	2	1	3
N FEE LN @ E LAW LN	1	2	3
E 15TH ST @ N WALNUT ST	3	0	3
E 17TH ST @ N FEE LN	0	3	3

Conclusion

This report has demonstrated a number of meaningful trends relating to motor vehicle crashes in Monroe County. The information should inform transportation decision-making and, ultimately, lead to a safer, more efficient transportation system.

Some problem areas noted in this and past reports have already been improved or are in the process of being addressed. For example, the City of Bloomington completed improvements to the intersection of 17th Street and Fee Lane in 2009, and improvements to the intersection of Atwater Avenue and Henderson Street in 2011. Additionally in 2009, Monroe County finished improvements to the dangerous curve at Rogers Road and Smith Road. These projects are expected to reduce the frequency and severity of crashes and we will highlight crash data for these locations in future reports.

There are many additional locations that will require further study to see if physical improvements could be implemented to improve safety. Several intersections along State Roads (37, 45, 46, Bypass) continue to be problematic due to the sheer frequency of crashes. Due to jurisdictional boundaries at these locations, state and local officials, engineers, and staff will need to coordinate targeted safety improvements and reach agreements before any improvements can occur.

Data and analysis on other attributes are included within the report (e.g. bus, moped, motorcycle, fatalities, causes, locations, severity of crashes), providing additional information to identify trends and/or areas of concern. Future versions of this report may consider a more detailed analysis of the circumstances of fatal crashes and the characteristics of individuals involved in fatal crashes. An improved understanding of these factors would help the community to better focus its efforts on reducing motor vehicle fatalities, which is one of the primary purposes of this report.

Beginning with the next Crash Report, covering the period from 2009 to 2011, future reports will evaluate locations that have implemented safety improvements. As mentioned above, this will include the 17th Street and Fee Lane intersection, the Rogers Road and Smith Road curve, and the Atwater Avenue and Henderson Street intersection. Evaluation of past and future crash data at these, and other, locations will further aid in implementing appropriate and effective mitigation strategies to reduce crashes. Agencies receiving funding through the HSIP will also be required to analyze crash trends before and after road improvements. This report has taken the first step by identifying problematic locations. It is expected that transportation planners, engineers, and officials together will use this information to prioritize locations that need immediate attention, and possibly seek Highway Safety Improvement Program funding or other means (enforcement, education) to improve safety.

Appendix

Figure A1. Top 50 Total Crash Locations, 2008-2010

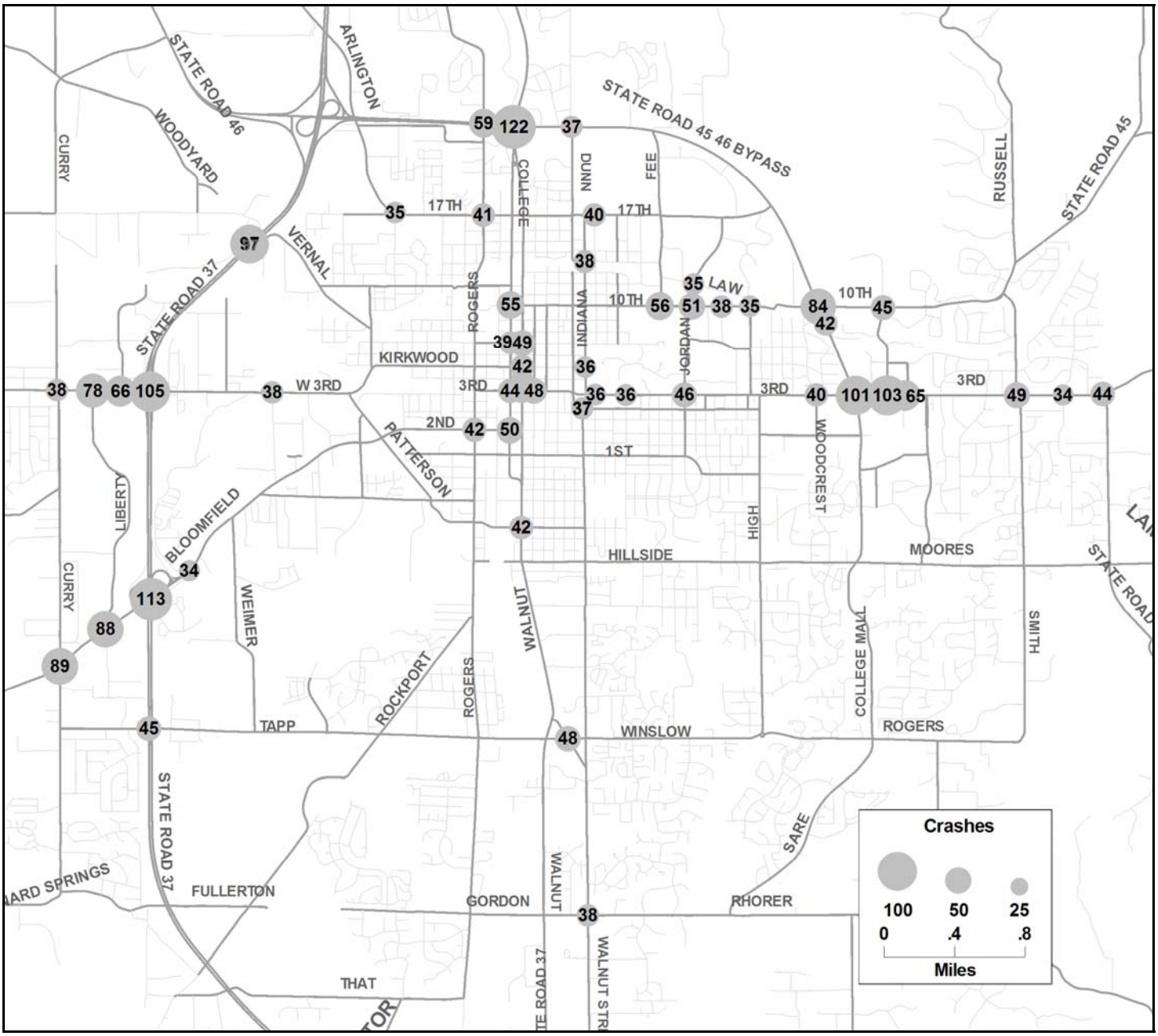


Figure A2. Intersections with Three or More Bicycle and Pedestrian Crashes, 2008-2010

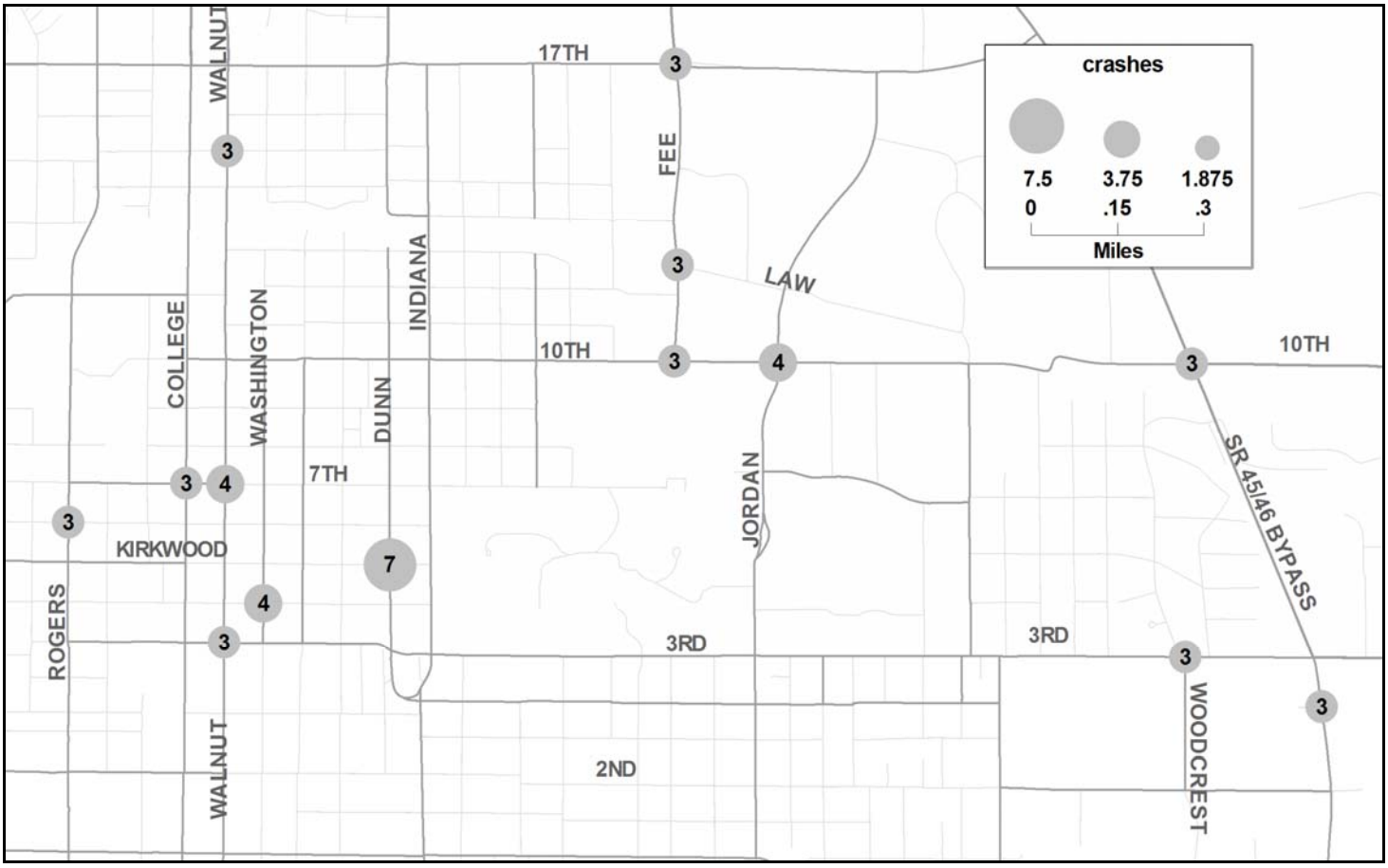


Figure A3. Fatal Crashes in Monroe County, 2008-2010

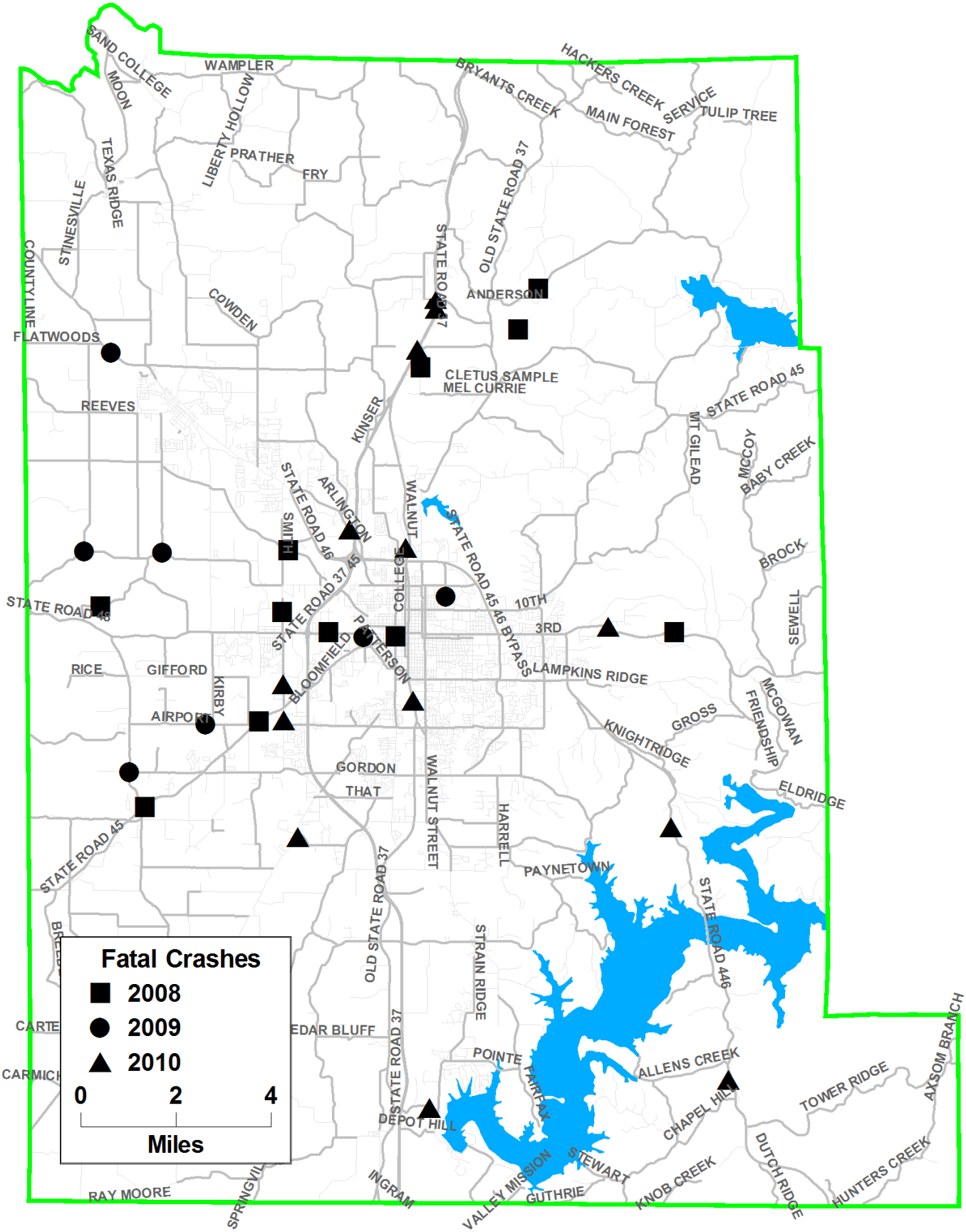


Figure A4. Fatalities by Gender and Crash Type, 2008-2010

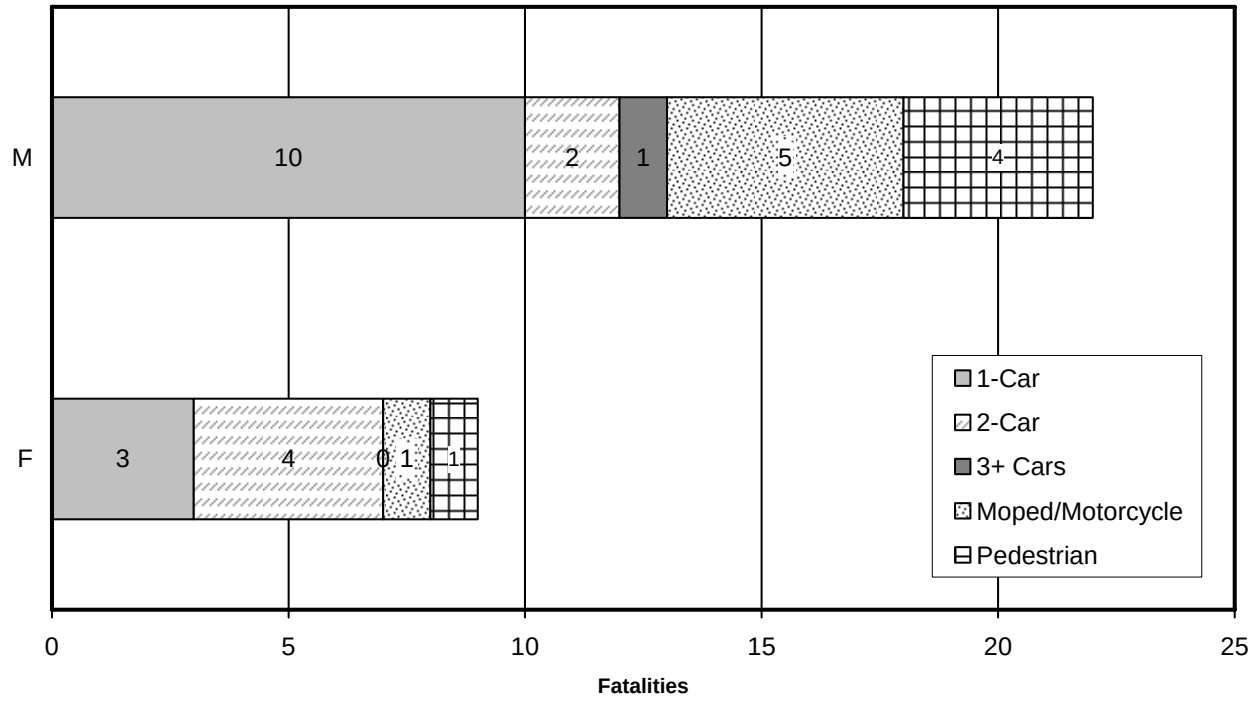
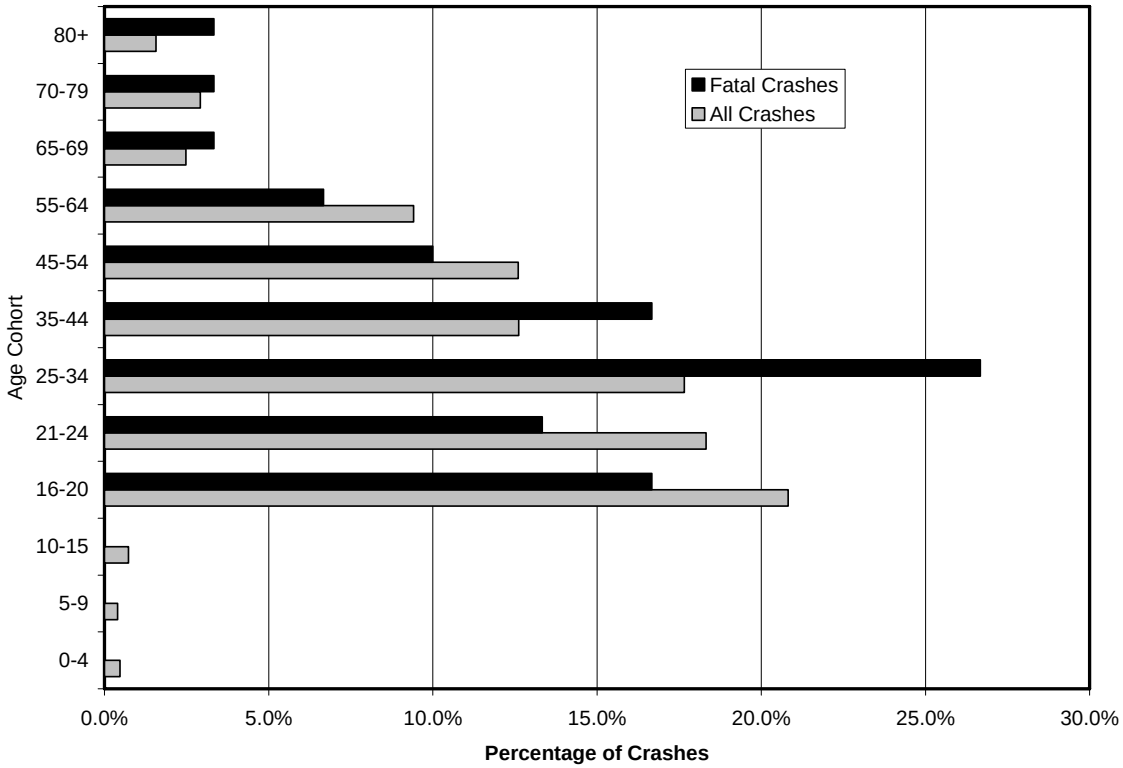


Figure A5. Portion of Individuals in All Crashes and Individuals Fatally Injured, by Age Class, 2008-2010 [4]



[4] For the purposes here, individuals whose age was not reported were excluded from the total number of individuals.

HSIP Eligibility List

The Highway Safety Improvement Program (HSIP) is a program that provides federal funding for areas with a high incidence of crashes, as identified through the annual crash reports. Emphasis is paid to locations which have high frequencies of fatal and incapacitating crashes. The intent of the funding is to leverage effective safety improvements in a timely fashion to reduce the severity and frequency of crashes. Below is the list of eligible locations for HSIP funding located along local roads. Other locations not listed below may be eligible for HSIP funding and additional information can be found within the detailed HSIP application and procedures.

Table A1. Eligible HSIP Locations, 2008 – 2010

Rank	Location	Fatal & Incapacitating Injury Crashes	Total Crashes	Fatal	Incapacitating	Non-incapacitating	Property Damage
1	W 2ND ST @ S WALKER ST	3	11	0	3	5	3
2	W 3RD ST @ S PATTERSON DR	2	20	1	1	3	15
3	S CURRY PIKE @ W GIFFORD RD	2	13	0	2	3	8
4	N CURRY PIKE @ W JONATHAN DR	2	9	0	2	4	3
5	E 7TH ST @ W 7TH ST @ N WALNUT ST	1	49	0	1	9	39
6	S WALNUT STREET PIKE @ E WINSLOW RD	1	48	0	1	9	38
7	E 3RD ST @ S WALNUT ST	1	47	0	1	7	39
8	E 3RD ST @ S JORDAN AVE	1	46	0	1	8	37
9	W 2ND ST @ S ROGERS ST	1	42	0	1	8	33
10	W 17TH ST @ N KINSER PIKE @ N MADISON ST	1	41	0	1	10	30
11	E 10TH ST @ N SUNRISE DR	1	38	0	1	4	33
12	E 4TH ST @ S WALNUT ST	1	36	0	1	4	31
13	N JORDAN AVE @ E LAW LN	1	35	0	1	4	30
14	W GORDON PIKE @ S OLD STATE ROAD 37 @ S WALNUT ST @	1	30	0	1	6	23
15	N DUNN ST @ N OLD STATE ROAD 37	1	27	0	1	11	15
16	E 3RD ST @ S SWAIN AVE	1	26	0	1	1	24
17	E 13TH ST @ N FEE LN	1	21	1	0	4	16
18	E 15TH ST @ N WALNUT ST	1	20	0	1	5	14
19	E 17TH ST @ N LINCOLN ST	1	18	0	1	4	13
20	S FAIRFAX RD @ S WALNUT STREET PIKE	1	17	0	1	8	8
21	E 3RD ST @ S BALLANTINE RD	1	16	0	1	2	13
22	W 3RD ST @ S YANCY LN	1	16	0	1	4	11
23	E DILLMAN RD @ S OLD STATE ROAD 37	1	15	0	1	3	11
24	E 10TH ST @ N FESS AVE	1	15	0	1	1	13
25	W 15TH ST @ N COLLEGE AVE	1	15	0	1	0	14
26	E 18TH ST @ N DUNN ST	1	14	0	1	1	12
27	S CURRY PIKE @ W ROLL AVE	1	13	0	1	2	10
28	S COLLEGE MALL RD @ E DRIVE TO EASTLAND PLAZA	1	13	0	1	4	8
29	N GRANT ST @ S GRANT ST @ E KIRKWOOD AVE	1	12	0	1	2	9
30	N THOMAS RD @ W VERNAL PIKE	1	11	1	0	2	8
31	S WALNUT ST @ S WALNUT STREET PIKE	1	11	0	1	0	10
32	E ATWATER AVE @ S PARK AVE	1	11	0	1	2	8
33	S FAIRFAX RD @ E SCHACHT RD	1	10	0	1	4	5
34	N ELM ST @ W KIRKWOOD AVE	1	9	0	1	0	8
35	W 11TH ST @ N MORTON ST	1	8	0	1	0	7
36	W ALLEN ST @ S PATTERSON DR	1	8	0	1	2	5
37	W FULLERTON PIKE @ S ROCKPORT RD	1	7	0	1	1	5
38	S FAIRFAX RD @ E RAMP CREEK RD @ E SMITHVILLE RD	1	6	0	1	2	3
39	S ROGERS ST @ W THAT RD	1	6	0	1	1	4
40	S CURRY PIKE @ W DOYLE AVE	1	6	0	1	1	4
41	W HOWE ST @ S ROGERS ST	1	6	0	1	1	4
42	N OLD STATE ROAD 37 @ E ROBINSON RD	1	5	0	1	2	2
43	E NORTH DR @ S WALNUT ST	1	5	1	0	1	3
44	W BEASLEY DR @ S CURRY PIKE	1	5	1	0	1	3
45	E 11TH ST @ N INDIANA AVE	1	5	0	1	1	3
47	E INVERNESS WOODS RD @ S KNIGHTRIDGE RD	1	4	0	1	1	2
48	N CURRY PIKE @ S CURRY PIKE @ W GRAND AVE	1	4	0	1	1	2
49	N FRITZ DR @ N WALNUT ST	1	4	0	1	1	2