

SAFETY AND MULTIMODAL CRASH ANALYSIS

INTRODUCTION

Safety is an important aspect of transportation/land use planning. According to the Federal Highway Administration (FHWA), an estimated 42,643 Americans were killed in traffic crashes in 2003. This figure does not include alternative modes fatalities. Along with the loss of life, these incidents also cost our society roughly \$231 billion or about \$830 per American. To reverse this trend, the planning process can play a key role in improving safety hazards and help reduce the number of incidents, injuries, and fatalities.

By including all aspects of transportation safety in the planning process - engineering, education, enforcement, and emergency medical response, units of government are able to make safer and more efficient transportation improvement choices. It is also important to examine safety on a comprehensive scale by including all forms of transportation (automobile, transit, bicycle, pedestrian, rail, etc.) and how they interact system-wide. By examining current conditions and trends, future hazards and incidents can be reduced, if not prevented.

The Fond du Lac MPO recognizes the importance of safety within the planning process and has conducted an in-depth analysis of multimodal crashes throughout the Urbanized Area to assist in the transportation decision-making process.

VEHICLE INTERSECTION CRASH ANALYSIS

Fond du Lac intersection crash locations (Exhibit 63 & [Exhibit 64](#)) were identified through the analysis of data provided by the Wisconsin Department of Transportation (WisDOT). Staff plotted approximately 4,500 reported accidents that occurred in the Fond du Lac Urbanized Area from 2001-2004.

Intersections were analyzed on a case by case basis, with crashes that occurred within .02 miles (105 feet) from the intersection being included in the total crashes for the intersection. A total of 20 crashes was used as the threshold for identifying these intersections, or an average of 5 crashes per year.

Important to note are the difficulties that arose with the intersections at USH 41. Isolating individual crashes to specific ramps proved to be difficult in most cases due to data constraints. A best attempt was made to describe the general deficiencies of these intersections. Intersection totals were compiled for the intersection as a whole; estimates were made in regards to specific ramps and ramp intersections. These estimates are based upon individual analysis of crashes and thus are intended only to provide a means to better understand the smaller portions of the intersection as a whole.

The following is a list of the identified intersections, in alphabetical order:

- 1. Arndt Street and Brooke Street—*City of Fond du Lac***

Of the 21 reported accidents, the primary cause of accidents at this intersection

appear to be the failure to obey traffic signs, in this case stop signs control the intersection. Seventy-six percent of accidents were reported as a failure to yield, or essentially the running of a traffic sign, while an additional 19 percent were caused by a disregard of traffic controls. This is also evident by the nature the collision, where 90 percent were reported as at an angle, where one car hits the other from the side. A total of 16 injuries occurred at this intersection.

2. Arndt Street and Hickory Street—City of Fond du Lac

With 22 reported accidents, this intersection is riddled with accidents possibly stemming from the inability to stop—be it by weather conditions or by driver failure. Stop signs are in place at this location 18 of 22 accidents (81 percent) were reported at an angle, a good indicator that a traffic signal has been ignored/missed. Forty-five percent were caused by a failure to yield, while another 41 percent were caused by a disregard for traffic controls. In terms of weather, 41 percent occurred during inclement weather, be in wet or snowy conditions. A total of 7 injuries occurred at this intersection. Two accidents involved alcohol.

3. Arndt Street and Peters Avenue—City of Fond du Lac

Twenty accidents were reported at this intersection. After analyzing the accident reports, no one factor stood out as a potential cause for the accidents. Rather, a mixed bag of conditions affected each accident on a case by case basis. Among them, 30 percent were angle crashes, 25 percent involved inattentive drivers, 25 percent had a failure to yield, 25 percent rear ends, and 20 percent sideswipes. One accident reported involvement with a pedestrian. A total of 22 injuries occurred at this intersection. One accident involved alcohol.

4. Division Street and Macy Street—City of Fond du Lac

This intersection experienced a total of 36 crashes. Macy Street runs concurrent with HWY 45-151-175 at this point. In terms of cause of crashes, they seem to be primarily centered around not obeying traffic controls, thus entering the intersection when not allowed. This was particularly evident in the evening, when the traffic signals go from fully operational to flashing. This is seen by the 69 percent of accidents classified as angle, or from the side. 39 percent of accidents involved a disregard of traffic controls, while 25 percent were caused by a failure to yield. The intersection's location in the downtown district, with its concentration of drinking establishments, had an impact on crash rates. 39 percent of crashes occurred at night, of which 14 percent of all crashes were alcohol related. Twenty-two injuries occurred at this intersection.

5. Division Street and Main Street—City of Fond du Lac

Most of the 23 accidents that occurred at this intersection could be attributed to the downtown location and its associated parallel parking, frequent traffic signals, pedestrian encounters, and alcohol establishments. Among the accidents, 35 percent were rear-ends, 30 percent were angle crashes, and 22 percent involved a failure to yield. Three crashes involved pedestrians, while 3 involved alcohol. Eleven injuries occurred at this intersection.

6. Johnson Street and Rolling Meadows Drive—Town of Fond du Lac

This intersection contained 57 crashes in the 4 year period. As a multi-lane intersection with traffic signals, the majority of crashes appear to stem from the difficulty of navigating through the intersection with its turn lanes, traffic lights, etc. 28 percent of accidents were caused by a failure to yield, 21 percent involved an inattentive driver, 14 percent had a disregard of traffic controls, and 9 percent were caused from following too closely. In addition, the types of accidents focused primarily on two types—47 percent were angle crashes and 33 percent were rear ends. Twenty-five percent of accidents occurred in inclement weather (13 wet, 1 snow). One accident involved alcohol, and a total of 29 injuries resulted from crashes at this intersection.

7. Johnson Street and USH 41—Town & City of Fond du Lac

This intersection is a bit more complicated. USH 41, a multi-lane highway, is over passed by Johnson Street/STH 23 and accessed by four ramps. This intersection contained a total of 80 crashes. Of them, 26 percent were caused by inattentive drivers, 14 percent by disregarding traffic controls, and 8 percent due to a failure to yield. Crash types were primarily rear ends (40 percent) and angle crashes (26 percent). Two accidents involved alcohol. A total of 35 injuries occurred at this intersection.

In terms of specific ramp characteristics, there were several things that stood out. It is estimated that the southbound USH 41 ramps, as a whole, account for 65 percent of all crashes involving ramps. More specifically, the southbound USH 41 entrance ramp is estimated to account for almost 45 percent of all ramp related accidents in the intersection. In addition, the intersection of Johnson Street/STH 23 with USH 41 at the northbound ramps accounted for an estimated 15 percent of ramp related crashes at the intersection.

8. Johnson Street and Pioneer Road—City of Fond du Lac

With 90 accidents, this intersection is similar to Johnson's intersection with Rolling Meadows Drive. The multi-lane intersection with traffic signals and turn lanes coupled with the high volume of traffic is most probably responsible for the accidents at this intersection. Thirty-two percent of accidents were a failure to yield, 23 percent were caused by inattentive drivers, and 13 percent were caused by following too closely. The two most frequent accident types were rear ends and angle crashes, both with 37 percent. 23 percent occurred at nighttime or dusk, while 19 percent occurred during inclement weather (14 wet, 1 mud, 1 snow, 1 ice). Four accidents involved alcohol, and a total of 58 injuries occurred at this location.

9. Johnson Street and Peters Avenue—City of Fond du Lac

The 43 accidents that occurred at this intersection appear to be related to the traffic signals that are in place, and the subsequent stop-and-start traffic that it necessitates. Through most of 2001, the intersection was controlled by stop signs, while today stop lights are in place. 35 percent of accidents were caused by an inattentive driver, 23 percent had a failure to yield, and 14 percent involved crashes into the traffic signals themselves, as opposed to another car. Crash types were mainly rear ends, with 42 percent and angle crashes, with 35 percent. Three accidents involved alcohol. A total of 21 injuries occurred at this intersection.

10. Johnson Street and Seymour Street—*City of Fond du Lac*

A total of 27 accidents occurred at this intersection, which is controlled by traffic signals. The majority of accidents appear to be caused by mistakes made on the driver's part. For instance, 26 percent involved a failure to yield, 26 percent were caused by inattentive driving, and 19 percent were caused by a disregard of traffic controls. Accidents were primarily rear ends (22 percent) and angle crashes (41 percent). One accident involved alcohol, and 11 injuries occurred at this intersection.

11. Johnson Street and Hickory Street—*City of Fond du Lac*

Of the 42 accidents that occurred at this intersection, which is controlled by stop lights, it appears as if most were a result of driver error while navigating the intersection. This is evident from the statistics: 29 percent involved inattentive drivers, 23 percent involved following too closely, 23 percent had a failure to yield. In addition, 36 percent were angle crashes and 31 percent were rear ends. The safety of bikers and pedestrians at this intersection is in question, with 2 accidents involving bikes, and 1 involving a pedestrian. Three accidents were related to alcohol. A total of 36 injuries occurred at this intersection.

12. Johnson Street and Main Street—*City of Fond du Lac*

With 132 accidents, this intersection contains the greatest number of crashes for the entire Fond du Lac Urbanized Area. It is difficult to pinpoint one specific cause for these accidents—rather, the complexity of the intersection is to blame. High traffic volumes and multi-lane facilities of both intersecting streets, in addition to traffic signals and turning lanes make this intersection quite complicated. The statistics tell the same story. 30 percent involved a failure to yield, 20 percent involved inattentive drivers, 14 percent involved improper turns, 12 percent involved following too closely, and 8 percent had a disregard of traffic controls. In addition, the nature of the crashes were 37 percent angle crashes, 27 percent rear ends, and 10 percent side swipes. In terms of driving conditions, 21 percent occurred in inclement weather (27 wet, 8 snow), and 23 percent occurred in low light conditions. Ten accidents involved alcohol, and 1 involved a bike. A total of 54 injuries occurred at this intersection.

13. Johnson Street and Park Avenue—*City of Fond du Lac*

This intersection experienced 38 crashes. Two causes seem to be the root of the accidents—the first being driver error and the other being weather conditions. In terms of driver error, 26 percent of accidents were caused by a failure to yield, 18 percent involved inattentive driver(s), and 11 percent involved a disregard of traffic controls. Accident types were primarily rear ends (37 percent) and angle crashes (34 percent). Eleven percent of accidents involved a crash with a traffic sign, and not another vehicle. In terms of weather, 34 percent happened during inclement weather (9 wet, 4 snow), and 11 percent of accidents involved driving too fast for conditions. Four accidents involved alcohol, 2 involved bikes, and 20 injuries occurred at this intersection.

14. Johnson Street and National Avenue—*City of Fond du Lac*

The majority of the 24 accidents that occurred at this intersection appear to be associated with driver difficulties in traversing the signalized intersection, primarily

- through driver error. Forty-six percent of crashes were caused by a failure to yield, 17 percent from inattentive drivers, 8 percent listed a disregard for traffic controls, while 8 percent were driving too fast for conditions. Twenty-one percent occurred during inclement weather (5 wet, 3 snow), and 25 percent occurred at night. Two crashes involved alcohol, and a total of 8 people were injured at this intersection.
- 15. Johnson Street and Prairie Road—*City of Fond du Lac***
The 25 crashes of this intersection appear to be related to the failure of the stop signs to control traffic. With 84 percent of crashes involving a failure to yield. Eighty-four percent of crashes occurred at an angle. Fifteen injuries occurred at this intersection.
- 16. Johnson Street and CTH K—*City of Fond du Lac***
Of the 24 crashes that occurred at this location, most seem to be associated with two things—the inability of stop signs to control traffic and the increased use of the roadways during commuting times. Specifically, 54 percent were caused by failures to yield, while the nature of the crashes was primarily angle (50 percent) or head on (21 percent). Thirty-three percent of crashes occurred between 6-8 a.m. and 21 percent of crashes occurred between 4-6 p.m., the prime commuting hours. Two accidents involved alcohol, and a total of 22 injuries occurred.
- 17. Macy Street and Western Avenue—*City of Fond du Lac***
The 18 crashes that occurred here, although slightly under the threshold, are still notable. The main cause of crashes appears to be from driver error while negotiating the intersection. Thirty-nine percent of crashes involved an inattentive driver, another 39 percent involved a disregard for traffic controls. Sixty-one percent of incidents were angle crashes. One crash involved alcohol, and 7 injuries resulted from crashes at this intersection.
- 18. Macy Street and Second Street—*City of Fond du Lac***
Driver error appears to be the cause for most of the 22 crashes that occurred at this intersection, and the statistics support this statement. 36 percent of crashes involved a disregard of traffic controls, which at this intersection are traffic signals, 25 percent were caused by an inattentive driver, and finally 17 percent were caused by a failure to yield. Seventy-one percent of incidents were angle crashes. Seven injuries resulted from collisions at this intersection.
- 19. Main Street and Merrill Avenue—*City of Fond du Lac***
Twenty collisions occurred at this intersection, which provides access to the historic downtown district. Fifty percent of the accidents occurred at night. Alcohol related crashes accounted for 20 percent at this intersection, a relatively high amount when compared with other intersections. Prevalent crash types were rear ends (45 percent) and side swipes (25 percent). Six injuries occurred at this intersection.
- 20. Main Street and Arndt Street—*City of Fond du Lac***
Of the 34 accidents that occur at this intersection, it seems a good deal of them result from the difficulty in crossing Main Street, where traffic does not stop, from Arndt Street. This is seen in the statistics: 65 percent caused by a failure to yield and 12 percent caused by inattentive drivers. In terms of crash types, 82 percent were angle crashes, while 15 percent were rear end.

- 21. Main Street and Scott Street—*City of Fond du Lac***
The 42 accidents that occurred at this intersection most likely result from heavy traffic volumes and driver error, as well as adverse conditions. Forty-three percent of accidents involved inattentive drivers, 21 percent involved a failure to yield, and 12 percent involved driving too fast for conditions, which may be associated with the 26 percent of crashes occurring in wet conditions. Crash types were primarily rear ends (43 percent) and angle crashes (29 percent). Five accidents involved collisions with traffic signs, and 1 involved a collision with a bike. Two alcohol related crashes occurred. A total of 25 injuries occurred at this intersection.
- 22. Marr Street and Fourth Street—*City of Fond du Lac***
This intersection experienced 48 crashes over the four year period. It appears as if this high number is a result of the inability of the stop signs to control traffic. Forty-four percent of accidents are attributed to a failure to yield and 17 percent are caused by inattentive drivers. In terms of crash type, 73 percent are angle crashes, while 13 percent are side swipes. One accident involved a bike, 1 involved a pedestrian, and 2 involved alcohol. Twenty-one injuries resulted from accidents at this location.
- 23. Marr Street and Division Street—*City of Fond du Lac***
This intersection, controlled by traffic signals, contained 29 crashes, the majority of which can be attributed to driver error as the statistics support. Forty-one percent of accidents had a disregard for traffic control, 21 percent had an improper turn, and 17 percent had a failure to yield. Crash types were primarily angle crashes (41 percent) and sideswipes (31 percent). Seventeen injuries occurred at this intersection.
- 24. Park Avenue and Division Street—*City of Fond du Lac***
The 22 crashes at this intersection can reasonably be attributed to driver error. Of all crashes, 55 percent were from a disregard of traffic controls, 27 percent from an improper turn, and 23 percent from a failure to yield. Crash types were 41 percent side swipes and 55 percent angle crashes, respectively. In addition, 36 percent of crashes occurred at night. One crash is attributed to alcohol, and a total of 6 injuries occurred at this intersection.
- 25. Pioneer Road and Military Road—*City of Fond du Lac***
Many of the 30 crashes occurring at this intersection are attributed to driver error and/or difficulty in managing the intersection. Specifically, it appears as if making left turns, be it from Pioneer Road or Military Road, is quite difficult, with 47 percent of crashes involving left turns. Fifty-seven percent of crashes are attributed to failures to yield and 17 percent to inattentive drivers. Crash types are primarily angle crashes (57 percent), with rear ends (20 percent) and head on (13 percent) also rather prevalent. Eighteen injuries can be ascribed to crashes occurring at this intersection.
- 26. Pioneer Road and Hickory Street—*City & Town of Fond du Lac***
The 23 crashes at this intersection are most likely caused by a combination of driver error and an intersection that is difficult to navigate under current traffic levels.

Thirty percent of accidents are caused by a disregard of traffic controls, while another 26 percent are caused by a failure to yield. In addition, 26 percent of crashes occurred in adverse weather conditions (5 wet, 1 snow). Crash types were primarily angle crashes (65 percent) and rear ends (22 percent). Three crashes were related to alcohol. A total of 13 injuries resulted from crashes at this intersection.

27. Pioneer Road and Main Street—*City of Fond du Lac*

Of the 32 accidents that occurred at this intersection, the most prominent troubled area is left turns. Fifty percent of crashes involved at least one vehicle attempting to make a left turn. In addition, 41 percent of accidents are attributed to inattentive drivers, while another 22 percent were a failure to yield. Crash types were primarily rear end (47 percent) and angle crashes (25 percent). Twenty-five percent of crashes occurred at night. At this intersection, 2 crashes were related to alcohol, and 17 injuries occurred.

28. Rolling Meadows Drive and Military Road—*City of Fond du Lac*

Thirty-two accidents occurred at this intersection, of which most seem to be caused by driver error and/or difficulty navigating the intersection. For instance, 38 percent of crashes are attributed to a failure to yield, in addition to the 28 percent from following too close. Left turns appear to be an issue, with 53 percent of all crashes involving at least one vehicle attempting a left turn. Crash types are primarily angle crashes (53 percent) and rear ends (31 percent). Twenty-eight injuries occurred at this intersection.

29. Scott Street and Hickory Street—*City of Fond du Lac*

The majority of the 20 accidents at this intersection may be attributed to driver error and bad driving conditions. In terms of driver error, 45 percent of crashes were due to inattentive driving, in addition to 20 percent due to driving too fast for conditions, which ties into driving conditions. Thirty-five percent of crashes occurred in wet conditions, in addition to the 25 percent that occurred at nighttime. One alcohol related accident occurred. Fourteen injuries can be attributed to this intersection.

30. Scott Street and USH 45—*City of Fond du Lac*

This intersection had 28 collisions associated with it. With stoplights and railroad signals at this intersection, it proves to be a rather difficult one to navigate, and driver error may be due to the confusion that can result at this location. Thirty-two percent of accidents result from inattentive drivers, and 13 percent from driving too fast for conditions. Twenty-five percent of crashes occurred in wet conditions. In terms of crash type, 54 percent were rear ends, and 25 percent were angle crashes. Two accidents were associated with alcohol. Fourteen injuries occurred at this intersection.

31. Scott Street and Brooke Street—*City of Fond du Lac*

It appears as if a good amount of the 34 crashes that occurred at this intersection result from the traffic levels and subsequent congestion on the road way. The statistics illustrate this: 24 percent of accidents are caused by a failure to yield, while another 24 percent are caused by following too closely. This goes hand in hand with the 44 percent of crashes that are rear ends; another 26 percent are angle crashes. Two crashes involved alcohol, and a total of 23 injuries occurred at this intersection.

32. Scott Street and Macy Street—City of Fond du Lac

Twenty crashes occurred at this intersection, of which a good deal could be associated with the driver's inability to adjust their driving to road conditions. Forty percent of crashes occurred in wet conditions, with 20 percent of crashes attributed to driving too fast for conditions. Fifty-five percent are attributed to a failure to yield. Crash types are primarily angle crashes (50 percent). Thirteen injuries occurred at this location.

33. Scott Street and Doty Street—City of Fond du Lac

This intersection had 24 crashes, of which most were related to the difficulty involved in accessing and/or crossing Scott Street from Doty Street. Traffic from Scott Street does not stop, while traffic at Doty does. For example, 54 percent of crashes involved making a left turn for at least one vehicle. Sixty-three percent of crashes were associated with a failure to yield. Crash types were mainly rear ends (29 percent) and angles (50 percent). Thirteen injuries are associated with this intersection.

34. USH 41 and CTH 00—Towns of Fond du Lac & Friendship

This intersection is a bit more complicated. USH 41, a multilane highway, is over passed by CTH 00 and accessed by four ramps, arranged in a diamond pattern. A total of 41 crashes occurred in relation to this intersection. Causes of crashes varied. For instance, 22 percent from driving too fast for conditions. In addition, 20 percent occurred in inclement weather conditions (5 wet, 3 ice). One crash involved alcohol. A total of 10 injuries resulted from collisions at this intersection, and 2 fatalities.

In terms of ramps, the southbound USH 41 off ramp is estimated to account for 40 percent of all ramp related crashes, while the northbound USH 41 off ramp accounts for another 40 percent. Data for this was limited, and thus the fact that this is merely an estimate must be stressed.

35. USH 41 and Military Road—Town of Fond du Lac

USH 41 is over passed by Military Road/USH 151 and accessed by eight ramps, arranged in a cloverleaf pattern. Eighty-two crashes occurred at this intersection. The crashes appear to be associated with the difficulties in managing this complicated intersection, especially the sharply curved on and off ramps. Specifically, 30 percent of crashes were associated with negotiating curves, 34 percent with driving too fast for conditions, 17 percent with inattentive drivers, and 16 percent involved crashing into traffic signs. Crash types, when involving more than one vehicle, were primarily rear ends, accounting for 34 percent of all crashes. Twenty-six percent of crashes occurred in inclement weather, with 15 in wet conditions and 6 in snow. Forty-five injuries occurred at this intersection, and 1 fatality.

In terms of the ramps, some general observations must be mentioned. The ramp system for this interchange is rather complicated and difficult to traverse. Ramps providing access and exit from USH 41 southbound are estimated to account for 42 percent of ramp related accidents, while those northbound account for approximately 58 percent.

- 36. USH 41 and Hickory Street—*City & Town of Fond du Lac***
USH 41 is over passed by Hickory Street and accessed by four ramps, arranged in a trumpet pattern. This intersection experienced 29 crashes within its bounds. It appears as if a major factor to these accidents is improper driving for road conditions. Thirty-four percent were caused by driving too fast for conditions, and another 41 percent were directly associated with inclement weather (9 wet, 3 snow). Accident types involving more than one vehicle were primarily rear ends, representing 24 percent of all crashes. Three accidents involved deer, and 5 injuries occurred at this intersection. Southbound ramps accounted for approximately 40 percent of ramp related crashes, while northbound accounted for an estimated 60 percent.
- 37. USH 41 and Main Street—*City & Town of Fond du Lac***
USH 41 is over passed by Main Street/HWY 175 with two separate bridges, one for north and southbound traffic. It is accessed by four ramps, two off and two on. Seventy-six crashes occurred that were associated with this intersection. Statistics indicate that this intersection is difficult to navigate for drivers, especially under inclement weather. Twenty-five percent of crashes involved negotiating a curve, while 17 percent occurred while merging. Thirty-three percent of crashes involved driving too fast for conditions, while 46 percent of all crashes occurred during inclement weather (12 wet, 17 snow, 6 ice). 12 percent of crashes were with the median barrier, 8 percent were overturns, and 8 percent were with the guardrail fence. 6 crashes involved alcohol. 31 injuries occurred at this location, and 1 fatality. This interchange was permanently closed as part of the USH 151 bypass project.
- 38. Western Avenue and Hickory Street—*City of Fond du Lac***
This intersection had 21 crashes, of which most were associated either with inclement weather or the difficulty for drivers to manage a busy 4-way stop. Thirty-three percent of crashes occurred in inclement weather (3 wet, 2 snow, 2 ice). 52 percent were associated with a failure to yield. The most prominent crash type was angle crashes, with 67 percent. Two crashes involved alcohol. Ten injuries resulted from crashes at this intersection.
- 39. Western Avenue and Military Road—*City of Fond du Lac***
Twenty-three crashes occurred at this intersection. It appears as if the flashing signals used at night may not be enough to control traffic, with 45 percent of crashes occurring at night. Twenty-six percent of crashes were associated with a failure to yield, which becomes more of an issue when the stop lights are only flashing. Thirty-eight percent of crashes were angle. Ten injuries occurred at this intersection.
- 40. Winnebago Drive and Park Avenue—*City of Fond du Lac***
Of the 31 accidents that occurred at this intersection, many of them may be attributed to driver error and the difficulties associated with making left turns. Thirty-nine percent of accidents involve at least one vehicle attempting to make a left turn. Thirty-two percent are associated with a failure to yield, with an additional 26 percent associated with a disregard for traffic controls. Crash types were primarily angle (61 percent) and rear ends (16 percent). One crash involved alcohol. Ten injuries occurred at this intersection.

41. Winnebago Drive and USH 151 Bypass/STH 149—Town of Taycheedah

Twenty-one crashes occurred at this intersection, which at the time was rather difficult to discern, but has since been reconstructed. The majority of crashes were possibly due to the difficulty in determining who had right of way to enter the intersection and proceed onward. Thirty-three percent of accidents were associated with a failure to yield. Twenty-nine percent involved deer. Crash types were rear ends (29 percent) and angle crashes (33 percent). Fifteen injuries occurred at this intersection.

EXHIBIT 63

VEHICLE CRASH SUMMARY TABLE

INTERSECTION ID #	INTERSECTING ROADWAYS		# OF CRASHES
1	Arndt Street	Brooke Street	21
2	Arndt Street	Hickory Street	22
3	Arndt Street	Peters Avenue	20
4	Division Street	Macy Street 45-151-175	36
5	Division Street	Main Street	23
6	Johnson Street 23	Rolling Meadows Drive	57
7	Johnson Street 23	USH 41	80
8	Johnson Street 23	Pioneer Road	90
9	Johnson Street 23	Peters Avenue	43
10	Johnson Street 23	Seymour Street	27
11	Johnson Street 23	Hickory Street	42
12	Johnson Street 23	Main Street 45-151-175	132
13	Johnson Street 23	Park Avenue	38
14	Johnson Street 23	National Avenue	24
15	Johnson Street 23	Prairie Road	27
16	Johnson Street 23	CTH K	24
17	Macy Street 45-151-175	Second Street	22
18	Main Street 175	Ninth Street	28
19	Main Street 45-151-175	Merrill Avenue 45-151-175	20
20	Main Street 45-151-175	Arndt Street	34
21	Main Street 45-151-175	Scott Street 45-175	42
22	Marr Street 45-151-175	Fourth Street	48
23	Marr Street 45-151-175	Division Street	29
24	Park Avenue	Division Street	22
25	Pioneer Road	Military Road 151	30
26	Pioneer Road	Hickory Street	23
27	Pioneer Road	Main Street 175	32
28	Rolling Meadows Drive	Military Road 151	32
29	Scott Street 175	Hickory Street	20
30	Scott Street	USH 45	28
31	Scott Street 45, 175	Brooke Street N	34
32	Scott Street 45-175	Macy Street	20
33	Scott Street 45-175	Doty Street	24
34	USH 41	CTH OO	41
35	USH 41	Military Road 151	82
36	USH 41	Hickory Street	21
37	USH 41	Main Street 175	76
38	Western Avenue	Hickory Street	21
39	Western Avenue	Military Road 151	23
40	Winnebago Drive 151	Park Avenue	31
41	Winnebago Drive 151	USH 151 Bypass, STH 149	21

Source: ECWRPC 2005, WisDOT 2001-2004.

BICYCLE CRASH ANALYSIS

There were 56 bicycle related incidents in Fond du Lac from 2001 – 2004. All of the incidents resulted in at least one injury; there were no fatalities. With the exception of one incident, all of the incidents occurred in the City of Fond du Lac. The one exception occurred on Golf Course Drive and at Winnebago Drive (Town of Taycheedah).

The Johnson Street corridor had the greatest number of incidents with a total of 15. Three incidents occurred on Johnson Street and at National Avenue with the possible contributing circumstance of either the driver's or the bicyclist's failure to yield.

Eighty-two percent of the incidents had a possible contributing circumstance of either the driver's or the bicyclist's failure to yield, inattentive driving, failure to keep vehicle under control, disregard for traffic control, unsafe backing, or driver condition. The remaining 18 percent were either not documented or stated as "other." Bicycle crashes by intersection are listed in Exhibit 65.

EXHIBIT 65

BICYCLE CRASH SUMMARY TABLE

2001- 2004 BICYCLE RELATED CRASHES			
ON HWY/STREET	AT HWY/STREET	CRASHES	INJURIES
4th Street	Ellis Street	1	1
4th Street	Main Street	2	2
4th Street	Marr Street	1	1
9th Street	Marr Street	1	1
9th Street	Sherman Street	1	1
9th Street	Center Street	1	1
9th Street	Martin Avenue	1	1
Arndt Street	Grand Court	1	1
Division Street	Champion Avenue	1	1
Division Street	Cottage Avenue	1	1
Division Street	Everett Street	1	1
Johnson Street	Chestnut Street	1	1
Johnson Street	Doty Street	1	1
Johnson Street	Hickory Street	2	2
Johnson Street	Main Street	2	2
Johnson Street	Military Road	2	2
Johnson Street	National Avenue	3	3
Johnson Street	Park Avenue	1	1
Johnson Street	Pioneer Road	1	1
Johnson Street	CTH K	1	1
Forest Avenue	Hickory Street	1	1
Golf Course Drive	Winnebago Drive	1	1
Hickory Street	Western Avenue	1	1
Luco Road	Scott Street	1	1
Main Street	Forest Avenue	1	1
Main Street	Harbor View Drive	1	1
Main Street	William Avenue	1	1
Main Street	1st Street	1	1
Main Street	2nd Street	1	1
Main Street	11th Street	1	1
Main Street	Western Avenue	1	1
Marr Street	4th Street	1	1
Marr Street	15th Street	1	1
Martin Road	Pioneer Road	1	1
Military Road	Hickory Street	1	1
National Avenue	Marshall Avenue	1	1
National Avenue	2nd Street	2	2
Park Avenue	Bischoff Street	1	1
Park Avenue	Johnson Street	1	1
Park Avenue	Ledgeview Avenue	1	1
Park Avenue	Sheboygan Street	1	1
Peters Avenue	Forest Avenue	1	1
Peters Avenue	Scott Street	1	1
Western Avenue	Hickory Street	1	1
Winnebago Drive	Bechaud Boulevard	2	3
Winnebago Drive	Northgate Street	1	1
USH 45	CTH K	1	1
USH 151	USH 45	1	1

Source: ECWRPC 2005, WisDOT 2001-2004.

PEDESTRIAN RELATED INCIDENTS

There were 42 pedestrian related incidents in the Fond du Lac Urbanized Area from 2001 – 2004. All of the incidents resulted in at least one injury; one being a fatality. With the exception of three incidents, all occurred in the City of Fond du Lac. The three exceptions occurred on Winnebago Drive and at County Highway K (Town of Taycheedah), on U.S. Highway 41 and at County Highway OO (Town of Friendship), and on U.S. Highway 45 and at County Highway H (Town of Empire). The Main Street corridor had the greatest number of incidents with a total of 10. Three incidents occurred at the intersection of Main Street and Division Street. Sixty percent of the incidents had a possible contributing circumstance of either the driver's or the bicyclist's failure to yield, inattentive driving, failure to keep vehicle under control, disregard for traffic control, unsafe backing, or driver condition. The remaining 40 percent were either not documented or stated as "other." Pedestrian crashes by intersection are listed in Exhibit 66.

EXHIBIT 66

PEDESTRIAN RELATED CRASHES SUMMARY TABLE

2001 - 2004 PEDESTRIAN RELATED CRASHES				
ON HWY/STREET	AT HWY/STREET	CRASHES	INJURIES	FATALITIES
4th Street	National Avenue	1	1	0
4th Street	Marr Street	1	1	0
4th Street	National Avenue	1	1	0
6th Street	Park Avenue	1	1	0
9th Street	Military Road	1	1	0
Arndt Street	Doty Street	1	1	0
Arndt Street	Hickory Street	1	1	0
Division Street	STH 175	1	1	0
Division Street	Main Street	1	1	0
Johnson Street	Main Street	2	1	0
Johnson Street	Marquette Street	1	1	0
Forest Avenue	Sophia Street	1	1	0
Hickory Street	Johnson Street	2	3	0
Hickory Street	Portage Street	1	1	0
Main Street	Bank Street	1	1	0
Main Street	Division Street	3	2	0
Main Street	Follett Street	1	1	0
Main Street	Forest Avenue	1	1	0
Main Street	Promen Drive	1	1	0
Main Street	6th Street	1	1	0
Main Street	12th Street	1	1	0
Main Street	21st Street	1	1	0
Military Road	Johnson Street	1	1	0
National Avenue	2nd Street	1	1	0
Park Avenue	Division Street	1	1	0
Peters Avenue	Arndt Street	1	1	0
Peters Avenue	Berger Parkway	1	2	0
Pioneer Road	Military Road	1	1	0
Scott Street	Brooke Street	1	1	0
Scott Street	Monmouth Street	1	1	0
Scott Street	Thorp Street	1	1	0
Winnebago Drive	CTH K	1	1	0
STH 23	Park Avenue	1	1	0
STH 23	Townline Road	1	1	0
STH 23	CTH WV	1	2	0
USH 41	CTH OO	1	0	1
USH 45	CTH H	1	1	0
USH 151	Brooke Street	1	1	0

Source: ECWRPC 2005, WisDOT 2001-2004.

FREIGHT RELATED CRASHES

Identifying current safety concerns in regards to freight will help achieve the overriding goal of this plan to increase the safety of the transportation system. The following is data describing current safety concerns of truck freight in the Fond du Lac Urbanized Area. Crashes occurred primarily in Fond du Lac. It must be noted that this includes the municipalities at the Town and City level, as the data source did not differentiate between the two. Crashes for the other municipalities are listed in the following table.

EXHIBIT 67

TRUCK CRASHES BY MUNICIPALITY (2000-2004)

Municipalities	Crashes	Percent
Fond du Lac**	116	73%
Byron	19	12%
Empire	8	5%
North Fond du Lac	7	4%
Taycheedah	6	4%
Friendship	3	2%
Total	159	100%

**Fond du Lac represents City and Town. Data did not differentiate between the two and could not be separated.
Source: FMCSA 2004

Not surprisingly, the highway with the greatest number of crashes is USH 41, with 33.7 percent. Exhibit 68 shows crashes for other streets and highways in the Urbanized Area. Note that Johnson Street and STH 23 were recorded separately in the table. If combined, they account for 19.6 percent of truck crashes. The same can be said for Fond du Lac Street and USH 45, accounting for 9.6 percent of crashes.

EXHIBIT 68

TRUCK CRASHES ON MAJOR HIGHWAYS (2000-2004)

Location	Crashes	Percent*
Fond du Lac St.**	9	5.1%
Johnson St.***	17	9.5%
Main St.	9	5.1%
Scott St.	5	2.8%
STH 23	18	10.1%
STH 26	13	7.3%
USH 41	60	33.7%
USH 45	8	4.5%
USH 151	32	18.0%
STH 175	7	3.9%
Total	178	100.0%

* % adjusted to exclude crashes where HWY not specified

** Portions of Fond du Lac Street run concurrent with USH 45 in the City of Fond du Lac

*** STH 23 is Johnson Street in the City of Fond du Lac

Source: FMCSA 2004

Truck crash types are illustrated in Exhibit 69. The majority of crashes occurred with other motorized vehicles (71.7 percent). Among all other crash types, running off the road accounted for the next greatest percentage, with 8.6 percent.

EXHIBIT 69

CRASH TYPE—COLLISION AND NONCOLLISION (2000-2004)

Accident Type	Count	Percent
Collision - Motor Vehicle	200	71.7%
Collision - Fixed Object	6	2.2%
Collision - Cargo Loss/Shift	6	2.2%
Collision - Motor Vehicle	3	1.1%
Collision - Pedestrian	3	1.1%
Collision - Other Movable Object	2	0.7%
Collision - Pedestrian Bicyclist	1	0.3%
Collision - Train	1	0.3%
Noncollision - Ran Off Road	24	8.6%
Noncollision - Jackknife	6	2.2%
Noncollision - Overturn	5	1.7%
Noncollision - Downhill Runaway	3	1.1%
Noncollision - Explosion or Fire	2	0.7%
Other	10	3.6%
NA	7	2.5%
Total	279	100%

Source: FMCSA 2004

It appears as if the heaviest trucks, those 70,001 pounds and up are involved in the greatest number accidents, as is evident in Exhibit 70. This could be attributed to the fact that it takes these trucks longer to speed up and slow down, and turns may be more difficult as well.

EXHIBIT 70

TRUCK WEIGHT FOR TRUCKS INVOLVED IN CRASHES (2000-2004)*

Weight (pounds)	Crashes	Percent*
10,000-20,000	8	9.8%
20,001-30,000	9	10.9%
30,001-40,000	5	6.1%
40,001-50,000	3	3.7%
50,001-60,000	5	6.1%
60,001-70,000	5	6.1%
70,001-80,000	47	57.3%
Total	82	100%

*% adjusted to exclude crashes where weight not specified

Source: FMCSA 2004

A variety of truck types exist, as is evident from Exhibit 71. It appears as if most truck related crashes occur with semi-trailers, perhaps because of their size and unique turning and driving requirements.

EXHIBIT 71

CRASHES BY TRUCK TYPE
2000-2004

Truck Type	Crashes	Percent
Tractor/ Semi-Trailer	135	48.4%
Single Unit Truck (2-Axle/6-Tire)	53	19%
Single Unit Truck (> 3 Axles)	35	12.6%
Bus (Seats >15 w/Driver)	18	6.4%
Truck/Tractor (Bobtail)	9	3.2%
Truck/Trailer	9	3.2%
Unknown Heavy Truck	7	2.5%
NA	7	2.5%
Tractor/Double	6	2.2%
Total	279	100.0%

Source: FMCSA 2004