Madison Police Department

Analysis of the 10 Most Dangerous Intersections in Madison for the Year 2013

July 2014
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Objective

Traffic safety and education continues to be a priority for the Madison Police Department in order to serve the community. The objective of this report is to analyze crash data from 2013 provided by the Wisconsin Traffic Operations and Safety Laboratory (TOPS Lab). Included in this report will be list of the top ten most dangerous intersections in Madison, along with pedestrian and bicycle crashes citywide.

Background

In the summer of 2010, the Traffic Enforcement Safety Team (T.E.S.T.) conducted an analysis of the ten most dangerous intersections for 2009 as reported by City of Madison Traffic Engineering (T.E.). The results were used by T.E.S.T. to identify intersections that could use increased enforcement, and it has become an annual report produced by T.E.S.T. officers and interns.

Historically, T.E. has provided a list of the top 30 most dangerous intersections which T.E.S.T. used to focus their own research. This year, however, due to personnel shortages the list of the top 30 most dangerous intersections of 2013 was not provided. T.E.S.T. worked around this by using the list of the top 30 most dangerous intersections from 2012. In addition, the team expanded their search to any high-density roads. By doing this, T.E.S.T. was still able to compile a list of the top ten most dangerous intersections of Madison.

For the purposes of this document, we have focused on three primary areas:

- Analysis – Engineering and Environmental Recommendations
- Enforcement Strategies
- Community Education Proposals
**General Information**

TOPS is a unique organization developed with a mission to, “Improve traffic operations and safety in Wisconsin and across the Midwest through a diverse balance of service partnerships, research, and training.”

The TOPS Laboratory, based at the University of Wisconsin-Madison in the College of Engineering and the Department of Civil and Environmental Engineering, is actively seeking public and private sector partners to achieve this mission. The initial, primary public sector partner, the Wisconsin Department of Transportation, (WisDOT), has been instrumental in the establishment of the TOPS Laboratory, which started in the summer of 2003.

In 2003, the University of Wisconsin-Madison, in close coordination with the WisDOT, took steps to form a laboratory to provide engineering-oriented services related to traffic operations and safety in Wisconsin and throughout the Midwest. The co-managed TOPS Laboratory represents an innovative service partnership that mutually benefits the UW System and WisDOT. TOPS Laboratory service areas include:

- Traditional Traffic Operations, Safety Engineering and Technology/Services Development
- Traffic Operations Support and Knowledge Management
- Transportation Operations Data Management

In 2013, Madison had 5,054 crashes. This is a 378 crash increase from 2012 which had 4,676 crashes. However, Madison had a five-year low in fatal car crashes. In 2013 there were seven fatal car crashes, compared to ten in 2012.
Analysis

Due to not having T.E. data from 2013, T.E.S.T. had to conduct their analysis differently from previous years. T.E.S.T. first analyzed the T.E. list of 30 most dangerous intersections from 2012 for the 2013 report. Furthermore, T.E.S.T. conducted a study to identify intersections that do not normally make the T.E. list. For the purposes of this report, we included crashes that occurred within 100 feet of each intersection. The data provided by T.E. only included crashes within the confines of each intersection. For instance, the intersection of East Washington Avenue and North Stoughton Road did not make T.E.’s list, so it was never researched during the 2012 report. It actually had 30 crashes in 2012, so it would have made T.E.S.T.’s top ten list of most dangerous intersections of 2012.

The data was analyzed and the report was constructed by T.E.S.T. Sergeant Rahim Rahaman, and interns, Michael Cypert and Thomas Erickson.

The analysis included:
1. Accident Location
2. Accident Type
3. Driver Error
4. Driver Direction
5. Driver Action
6. Crashes Per Month
7. Crashes Per Day of Week
8. Crashes Per Hour

Our final list of Madison’s top ten most dangerous intersections in 2013 are:
1. E Washington Ave & N Stoughton Rd (42)
2. S Stoughton Rd & E Buckeye Rd (33)
3. Beltline Hwy & Midvale Blvd (30)
4. Mineral Point Rd & Pleasant View Rd (30)
5. E Washington Ave & First St (29)
6. E Washington Ave & Mendota (28)
7. S Stoughton Rd & Pflaum Rd (26)
8. Verona Rd & Atticus Way (26)
9. Verona Rd & Raymond Rd (26)
10. CTH M & Valley View Rd (25)
1) **E Washington Ave & N Stoughton Rd**

42 Crashes

13 Total Injuries

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

** Note: No member of Madison Police Department’s T.E.S.T. is an engineer. We understand that recommendations to the engineering issues of an intersection are just recommendations, and they may not be viable options in making the intersections safer. This applies to all written analyses.**

The intersection of E Washington Ave and N Stoughton Rd has a high amount of rear ending crashes. According to city traffic engineering, both E Washington Ave and N Stoughton Rd have between 26,000 to 120,000 vehicles per week travelling on the roadway. We believe that speed is not an issue for this intersection and think the number of crashes is due to the sheer volume of traffic that the intersection has. Inattentive driving and following too close are the primary faults that drivers have in this intersection and leads us to believe that the intersection is safe from a traffic engineering standpoint. The only suggestion we would have for this intersection is to adjust the light cycles during peak traffic times to hopefully improve the flow of traffic.

Some of the enforcement options The Madison Police Department could provide is a known presence in the intersection by watching for and to deter unsafe driving behaviors. This would also let the public know that the Madison Police Department cares about driver safety and takes traffic safety seriously. This intersection is also commonly used by many commuters on a daily basis to get in and out of the city. By placing signs or electronic boards prior to the intersection notifying or warning drivers of traffic delays and may prevent some crashes.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

REAR (Rear end) ........................................................................................................57% (24)

SSS (Sideswipe same direction) .................................................................19% (8)

NO (No collision with another vehicle) ..............................................17% (7)

ANGL (Angle) .........................................................................................................7% (3)
**Driver Factor Analysis**

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved*

- ID (Inattentive driving) .................................................................11
- FTC (Following too close) ..............................................................11
- No driver error found .................................................................8
- FVC (Failure to keep vehicle under control) .................................8
- IT (Improper turn) ......................................................................4
- DTC (Disregard traffic control) .....................................................1
- FTY (Failure to yield) ..................................................................1

**Driver Error**

![Bar chart showing driver error categories]
Driver Direction Analysis

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

North .......................................................... 36% (15)
East ............................................................. 29% (12)
South ......................................................... 21% (9)
West ........................................................... 14% (6)
Driver Action Analysis

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

GO STR (Going straight) .................................................................52% (22)
SL/ST (Slowing or stopped) ............................................................12% (5)
RT TRN (Right turn) .................................................................12% (5)
LT TRN (Making left turn) .........................................................7% (3)
CHG LN (Changing lanes) ...........................................................5% (2)
BLNK (Blank) .................................................................5% (2)
STOPED (Stopped in traffic) .........................................................5% (2)
NEGCRV (Negotiating curve) .....................................................2% (1)
Month, Day and Time Analysis

Number of Crashes by Month

![Number of Crashes by Month chart]

Number of Crashes by Day of Week

![Number of Crashes by Day of Week chart]

Number of Crashes by Hour

![Number of Crashes by Hour chart]
2) S Stoughton Rd & E Buckeye Rd
33 Crashes
11 Total Injuries

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

This intersection was also 2012’s second most dangerous intersection. However, in 2013 it had three less crashes than the previous year. Stoughton Rd does have heavy traffic throughout during daylight hours noting that 23 out of the 33 crashes that occurred in this intersection fell between the hours of 11 AM to 5 PM. Due to this heavy traffic volume and a speed limit of 55 MPH, traffic signals on this section of road are a hazard. We believe that 55 MPH for this stretch of road is excessive and the results of our research (specifically, two of our top ten results were found on the same stretch of road) support this claim. At 55 MPH, under good road conditions and with a one second reaction time an average car can stop within 400 ft (California Driver Handbook - Sharing the Road, 2011). With 79% of crashes being rear endings, we believe that if the speed limits cannot be lowered then the roadway needs more warnings about the upcoming lights or the roadway be engineered to accommodate the traffic flow.

Enforcement strategies for Stoughton Road are also an issue. Although the road has wide shoulders where traffic stops can be safely made by an officer, the combination of the high traffic volume during peak times and the traffic stop itself can create more dangers as drivers get distracted. Also, if traffic enforcement is provided, the speed limit of 55 MPH should be enforced because even at 5 MPH over the posted speed limit is dangerous for this stretch of the roadway with traffic signals and no on/off ramps.

For educational strategies, erecting billboards for both northbound and southbound traffic notifying drivers of the speed limit and the necessary space between travelling vehicles could assist with lowering the amount of rear end crashes.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

REAR (Rear end) .........................................................79% (26)

NO (No collision with another vehicle) .....................................9% (3)

SSS (Sideswipe same direction) .............................................6% (2)

ANGL (Angle) ....................................................................6% (2)
# Driver Factor Analysis

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved

<table>
<thead>
<tr>
<th>Driver Factor</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTC (Following too close)</td>
<td>18</td>
</tr>
<tr>
<td>ID (Inattentive driving)</td>
<td>10</td>
</tr>
<tr>
<td>No driver error found</td>
<td>2</td>
</tr>
<tr>
<td>DTC (Disregard traffic control)</td>
<td>1</td>
</tr>
<tr>
<td>FTY (Failure to yield)</td>
<td>1</td>
</tr>
<tr>
<td>FVC (Failure to keep vehicle under control)</td>
<td>1</td>
</tr>
<tr>
<td>IO (Improper overtake)</td>
<td>1</td>
</tr>
<tr>
<td>SPD (Exceed speed limit)</td>
<td>1</td>
</tr>
<tr>
<td>DC (Driver condition)</td>
<td>1</td>
</tr>
<tr>
<td>TFC (Too fast for conditions)</td>
<td>1</td>
</tr>
</tbody>
</table>

![Graph showing driver error distribution](image-url)
**Driver Direction Analysis**

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

South .................................................................55% (18)
North .................................................................24% (8)
West .................................................................15% (5)
East .................................................................6% (2)
Driver Action Analysis

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

GO STR (Going straight) .................................................. 43% (14)
SL/ST (Slowing or stopped) ........................................... 31% (10)
RT TRN (Right turn) .......................................................... 18% (6)
LT TRN (Making left turn) .................................................. 6% (2)
STOPED (Stopped in traffic) ............................................. 3% (1)
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
3) Beltline Hwy & Midvale Blvd
30 Crashes
6 Total Injuries

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

In 2012, this intersection experienced 16 crashes. After a more thorough search we found that there were crashes reported on Verona Rd that actually occurred on Midvale Blvd. leading to an increase in crashes for 2013. Due to construction in the area, there is not much we can suggest to change from an engineering, enforcement, or educational standpoint. Once reconstruction is complete, the intersections within this area will be rearranged to allow traffic to navigate more easily. It is our hope that with these changes, the amount of car crashes will decrease in the future.

Currently, the rear end crashes that occur in this intersection will be hard to prevent because of a short off ramp and blind spot once you exit onto Midvale Blvd from the WB off ramp from the Beltline. The Madison Police Department could try to prevent angle crashes in this intersection by enforcing red signal violations individually or as a team, but as stated above, there is construction and providing enforcement at this time is extremely difficult.
**Type of Crash Analysis**

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

**REAR (Rear end)........................................................................................................37% (11)**

**ANGL (Angle) ........................................................................................................33% (10)**

**SSS (Sideswipe same direction) .................................................................23% (7)**

**NO (No collision with another vehicle) .........................................................7% (2)**
**Driver Factor Analysis**

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved

- DTC (Disregard traffic control) ................................................................. 9
- No driver error found............................................................................... 8
- FTC (Following too close) ........................................................................ 3
- TFC (Too fast for conditions) ................................................................. 3
- FVC (Failure to keep vehicle under control) ........................................... 3
- ID (Inattentive driving) ........................................................................... 2
- IT (Improper turn) .................................................................................. 2
- FTY (Failure to yield) ............................................................................. 1

![Driver Error Chart]
**Driver Direction Analysis**

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

- West .................................................................70% (21)
- South .................................................................27% (8)
- North .................................................................3% (1)

![Driver Direction Pie Chart]

West 70%

South 27%

North 3%
Driver Action Analysis

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

LT TRN (Making left turn) ................................................................. 47% (14)
GO STR (Going straight) ................................................................. 30% (9)
SL/ST (Slowing or stopped) ............................................................ 14% (4)
MERGING (Merging into traffic) ...................................................... 3% (1)
RT TRN (Right turn) ............................................................... 3% (1)
STOPED (Stopped in traffic) ........................................................... 3% (1)
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
4) **Mineral Point Rd & Pleasant View Rd**  
**30 Crashes**  
**3 Total Injuries**

- Backing up  
- Changing lane  
- Going straight  
- Making left turn  
- Merging into traffic  
- Negotiating curve  
- Other/Blank  
- Making right turn  
- Slowing or stopping  
- Stopped in traffic
Written Analysis

In 2012, this intersection was the number one most dangerous intersection with a total of 46 crashes. Fortunately, the amount of crashes decreased to 30 for 2013’s report showing a reduction in crashes. It appears that drivers are becoming more familiar with both using the roundabouts and the signage posted prior to entering the roundabouts. What we believe to be most effective is having the 3 main types of signs prior to the roundabout in addition to yield signs. The three signs prior to entering the roundabout are the cautionary 15 MPH signs, signs providing where side streets are, and signs explaining which lanes correspond with which turns. We also believe that the trees currently planted in the median around the roundabout will ultimately force drivers to slow down in order to see traffic approaching from their left.

Enforcement options have been limited because of the layout of roundabouts, but education regarding roundabout use can always be increased. Driver Education courses now provide drivers information on proper roundabout usage and instruct drivers how to use them. This however is new in their curriculum so more experienced drivers have received little or no education on the proper way to drive in a roundabout. Wisconsin DOT is doing a good job educating the public by providing PSA’s explaining the proper usage of roundabouts, and the recent “Take it Slow” campaign is a good example of this. Since side swipe and angle crashes make up 80% of crashes in this roundabout, education can always be taken further by stressing the importance of staying in one’s lane when travelling in a roundabout.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

SSS (Sideswipe same direction) .................................................................53% (16)

ANGL (Angle) .............................................................................................27% (8)

REAR (Rear end) .........................................................................................17% (5)

NO (No collision with another vehicle) .......................................................3% (1)
Driver Factor Analysis

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved

- FTY (Failure to yield) ................................................................. 15
- ID (Inattentive driving) ............................................................ 8
- IT (Improper turn) ................................................................. 3
- TFC (Too fast for conditions) ............................................... 2
- FTC (Following too close) .................................................. 1
- No driver error found.......................................................... 1
- DC (Driver Condition) ......................................................... 1

Driver Error
Driver Direction Analysis

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

West .................................................................27% (8)
East .................................................................27% (8)
North ..............................................................26% (8)
South ..............................................................20% (6)
**Driver Action Analysis**

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

GO STR (Going straight) .................................................................47% (14)

NEGCRV (Negotiating curve)..........................................................17% (5)

LT TRN (Making left turn)..............................................................13% (4)

MERGING (Merging into traffic) .....................................................10% (3)

RT TRN (Right turn) ......................................................................7% (2)

SL/ST (Slowing or stopped) .........................................................3% (1)

CHG LN (Changing lane) ..............................................................3% (1)
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
5) E Washington Ave & First St
29 Crashes
12 Total Injuries
1 Fatality

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

In 2013, this intersection experienced 13 more crashes than the previous year showing an increase in traffic crashes. From an engineering standpoint, this intersection appears to be well constructed and the only suggestion we can offer is to increase the amount of time for outbound traffic to make a left turn onto E Washington Ave. By doing this, this could help alleviate traffic running the red light while attempting to make the left turn.

From an enforcement standpoint, rear end crashes and angle crashes in the left turning lanes appear to be the most common types of crashes. Traffic enforcement efforts focusing on both red and yellow signal violations in this intersection would not only provide a police presence at the intersection but would deter red and yellow signal violations.

We believe that combining enforcement efforts with press releases or in conjunction with a national traffic initiative such as the Stop on Red Campaign, we could bring public awareness to red signal violations at major intersections in the city.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

REAR (Rear end) .........................................................................................41% (12)
ANGL (Angle) ............................................................................................31% (9)
SSS (Sideswipe same direction) .................................................................14% (4)
NO (No collision with another vehicle) ......................................................10% (3)
SSOP (Sideswipe opposite direction) .........................................................4% (1)
**Driver Factor Analysis**

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved*

- FTC (Following too close) .................................................. 8
- FTY (Failure to yield) ...................................................... 7
- ID (Inattentive driving) .................................................... 5
- No driver error found ..................................................... 5
- DTC (Disregard traffic control) ........................................... 3
- IT (Improper turn) ........................................................... 2
- FVC (Failure to keep vehicle under control) ....................... 2
- TFC (Too fast for conditions) ............................................ 2

![Bar Graph](image-url)
**Driver Direction Analysis**

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

East .......................................................... .............. 28% (8)
North .......................................................... ................ 24% (7)
South .......................................................... ................ 24% (7)
West .......................................................... ................ 24% (7)
Driver Action Analysis

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

GO STR (Going straight) .......................................................... 52% (15)
LT TRN (Making left turn) ................................................. 38% (11)
RT TRN (Right turn) ................................................................. 4% (1)
SL/ST (Slowing or stopped) ............................................... 3% (1)
CHG LN (Changing lanes) ...................................................... 3% (1)

Driver Action
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
6) E Washington Ave & Mendota St
28 Crashes
5 Total Injuries

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

In 2012, this intersection had 17 crashes compared to 28 crashes in 2013, displaying a significant increase in traffic crashes. This intersection has a lot of traffic travelling both inbound and outbound on East Washington Ave. Since this intersection is within close proximity of the Stoughton Rd/ E Washington Ave intersection and having a major chain grocery store on Mendota St., traffic gets backed up at this light causing traffic congestion during peak travel times. With the congestion, unsafe lane changes in order to make a right turn onto Mendota Ave. causes this intersection to experience a lot of crashes. A suggestion from an engineering standpoint would be to increase the Mendota St. intersection lights so that outbound vehicles can flow through more easily and vehicles turning left from inbound E Washington Ave. onto Mendota St. have more time to complete their turns.

From an enforcement point of view, traffic signal enforcement should be done in all directions in this intersection.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

REAR (Rear end) ................................................................. 43% (12)
ANGL (Angle) ................................................................. 29% (8)
SSS (Sideswipe same direction) ................................. 21% (6)
SSOP (Sideswipe opposite direction) ...................... 4% (1)
NO (No collision with another vehicle) ...................... 3% (1)
Driver Factor Analysis

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved

ID (Inattentive driving) ................................................................. 7
No driver error found ................................................................. 6
FTY (Failure to yield) ................................................................. 5
FTC (Following too close) ......................................................... 5
IT (Improper turn) ................................................................. 3
DTC (Disregard traffic control) .................................................. 1
FVC (Failure to keep vehicle under control) ........................... 1
TFC (Too fast for conditions) .................................................... 1
Driver Direction Analysis

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

East .................................................................57% (16)
West .................................................................21% (6)
South .................................................................18% (5)
North .................................................................4% (1)
**Driver Action Analysis**

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

- **GO STR (Going straight)** ................................................................. 43% (12)
- **LT TRN (Making left turn)** ............................................................... 29% (8)
- **CHG LN (Changing lanes)** ............................................................... 11% (3)
- **SL/ST (Slowing or stopped)** ............................................................ 7% (2)
- **STOPED (Stopped in traffic)** ............................................................ 7% (2)
- **RT TRN (Right turn)** ...................................................................... 3% (1)
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
7) S Stoughton Rd & Pflaum Rd
26 Crashes
17 Total Injuries

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

This intersection is very similar to the S Stoughton Rd/Buckeye Rd intersection as they both have traffic lights controlling the intersections. This stretch of Stoughton Rd is 55 MPH when it intersects with Pflaum Rd, and due to the large amount of traffic in both directions we believe that the speed limit should be lowered for this intersection as well as the Buckeye Rd intersection.

Along with reduced speeds, for engineering purposes, signs warning about the speed limit and the intersections could be placed more frequently. By placing a few more signs reminding drivers of the speed limit and intersections ahead could prepare drivers for what lies ahead and prepare them to slow down or drive more cautiously. From an enforcement standpoint, red signal violations and speed limit violations could be enforced.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

REAR (Rear end) ................................................................................................................. 81% (21)

NO (No collision with another vehicle) ................................................................. 11% (3)

SSS (Sideswipe same direction) ............................................................................... 4% (1)

ANGL (Angle) .................................................................................................................. 4% (1)
**Driver Factor Analysis**

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved*

- FTC (Following too close) .......................................................... 11
- ID (Inattentive driving) .............................................................. 9
- No driver error found ................................................................. 2
- DC (Driver condition) ................................................................. 1
- DTC (Disregard traffic control) .................................................... 1
- FVC (Failure to keep vehicle under control) .............................. 1
- IO (Improper overtake) .............................................................. 1
- SPD (Exceed speed limit) .......................................................... 1

![Driver Error Graph](image)

<table>
<thead>
<tr>
<th>Driver Error</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTC</td>
<td>11</td>
</tr>
<tr>
<td>ID</td>
<td>9</td>
</tr>
<tr>
<td>No Driver Error Found</td>
<td>2</td>
</tr>
<tr>
<td>DC</td>
<td>1</td>
</tr>
<tr>
<td>DTC</td>
<td>1</td>
</tr>
<tr>
<td>FVC</td>
<td>1</td>
</tr>
<tr>
<td>IO</td>
<td>1</td>
</tr>
<tr>
<td>SPD</td>
<td>1</td>
</tr>
</tbody>
</table>
Driver Direction Analysis

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

North ................................................................. 42% (11)
South ................................................................. 27% (7)
East ................................................................. 23% (6)
West ................................................................. 8% (2)

Driver Direction
Driver Action Analysis

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

GO STR (Going straight) .................................................................46% (12)

RT TRN (Right turn) .................................................................31% (8)

SL/ST (Slowing or stopped) ......................................................15% (4)

STOPED (Stopped in traffic) ......................................................8% (2)
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
8) Verona Rd & Atticus Way
26 Crashes
8 Total Injuries

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

As mentioned earlier, the Verona Rd, Midvale Blvd, and Beltline interchange are currently all under heavy construction. There is not much we can suggest to change from an engineering, enforcement, or educational standpoint until this reconstruction project is complete. Once this roadway is complete, traffic will no longer be able to turn left onto Verona Rd from Atticus Way, and traffic will be diverted to a roundabout south of the intersection and under Verona Rd. Similar to the intersection of the Beltline and Midvale Blvd, rear end crashes are extremely high, and it is our hope that these changes being made will help reduce the amount of intersection related crashes.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

REAR (Rear end) ........................................................................69% (18)

ANGL (Angle) ........................................................................15% (4)

SSS (Sideswipe same direction) .............................................12% (3)

NO (No collision with another vehicle) .................................4% (1)
Driver Factor Analysis

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved

FTC (Following too close) ................................................................. 10

No driver error found................................................................. 5

FTY (Failure to yield) ................................................................. 4

ID (Inattentive driving)............................................................... 3

IT (Improper turn) ................................................................. 2

TFC (Too fast for conditions)....................................................... 2

FVC (Failure to keep vehicle under control)............................... 1

OTHR (Other) ........................................................................... 1
Driver Direction Analysis

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

South .................................................................................................................. 48% (12)
North ................................................................................................................. 44% (11)
West ................................................................................................................ 8% (2)

Driver Direction

![Pie chart showing driver direction analysis]
Driver Action Analysis

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

GO STR (Going straight) ..........................................................50% (13)
SL/ST (Slowing or stopped) .........................................................23% (6)
LT TRN (Making left turn) .........................................................11% (3)
RT TRN (Right turn) ..........................................................8% (2)
CHG LN (Changing lanes) .........................................................4% (1)
OTHR (Other) ........................................................................4% (1)
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
9) Verona Rd & Raymond Rd
26 Crashes
6 Total Injuries

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

Since Raymond Rd is part of the major reconstruction of the Verona Rd interchange, there is not much we can suggest to change from an engineering, enforcement, or educational standpoint at this time. Since rear end crashes are the primary type of crash, once these roads are complete, we will hopefully see a reduction in traffic crashes in this intersection.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

REAR (Rear end) ............................................................................................. 85% (22)

SSS (Sideswipe same direction) ................................................................. 11% (3)

NO (No collision with another vehicle) ............................................ 4% (1)
Driver Factor Analysis

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved

FTC (Following too close) ................................................................. 13

ID (Inattentive driving) ................................................................. 9

No driver error found ................................................................. 5

![Driver Error Chart]
Driver Direction Analysis

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

North .................................................................81% (21)

South .................................................................11% (3)

East .................................................................8% (2)

Driver Direction
Driver Action Analysis

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

GO STR (Going straight) .............................................................77% (20)

SL/ST (Slowing or stopped) .........................................................11% (3)

CHG LN (Changing lanes) ...........................................................8% (2)

MERGING (Merging into traffic) .................................................4% (1)
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
10) CTH M & Valley View Rd
25 Crashes
1 Total Injury

- Backing up
- Changing lane
- Going straight
- Making left turn
- Merging into traffic
- Negotiating curve
- Other/Blank
- Making right turn
- Slowing or stopping
- Stopped in traffic
Written Analysis

In 2012, this intersection was the fourth most dangerous intersection with 22 crashes. In 2013, the amount of traffic crashes increased slightly to 25 crashes. Because this increase is so small, we believe it is still safe to say that drivers are becoming more familiar with using roundabouts, and the signage prior to entering the intersection is for the most part effective. Again, what we believe to be most effective is having 3 main types of signs in addition to yield signs. These three signs are the cautionary 15 MPH signs, signs explaining which roads go to which exits, and signs explaining which lanes correspond with which turns. Also, we believe that the planting of trees in each median around the roundabout will force drivers to slow down in order to see traffic coming from their left.

As stated in the write up section of Mineral Point Rd and Pleasant View Rd, enforcement is difficult within roundabouts because of the nature of their layout, but in an attempt to reduce sideswipe type of crashes, warnings for drivers to stay in their lane while in the roundabout may reduce these types of crashes.

Driver Education courses now teach drivers how to properly use roundabouts. Since this is fairly new in their curriculum, many older drivers have received no to little official education on correct use of roundabouts. Wisconsin DOT is doing a good job educating the public with PSA’s explaining the usage of roundabouts and their recent “Take it Slow” campaign is a good example of this. Since 72% of crashes in this intersection are angle or sideswipe type of crashes, we believe that education can be taken further by stressing the importance of drivers staying within one’s lane could decrease the amount of these types of crashes.
Type of Crash Analysis

Below is a pie graph of the type of crash (in regards to first harmful event) as reported by the TOPS Lab.

SSS (Sideswipe same direction) .................................................................40% (10)
ANGL (Angle)..................................................................................................32% (8)
REAR (Rear end)............................................................................................16% (4)
NO (No collision with another vehicle) .........................................................12% (3)
Driver Factor Analysis

The graph below shows the driver factor that was a possible contributing circumstance to the crash as reported by the TOPS Lab.

*Note: A crash may have more than one driver factor involved

FTY (Failure to yield) ................................................................. 16

No driver error found................................................................. 3

ID (Inattentive driving).............................................................. 3

UB (Unsafe backing)................................................................. 1

FTC (Following too close)......................................................... 1

TFC (Too fast for conditions)..................................................... 1
Driver Direction Analysis

Below is a pie graph for the direction of travel of the at-fault driver as reported by the TOPS Lab.

West ........................................................................................................................................36% (9)
South .........................................................................................................................................32% (8)
North .........................................................................................................................................20% (5)
East ...........................................................................................................................................12% (3)
Driver Action Analysis

The pie graph below represents the action taken by the at-fault driver as reported by the TOPS Lab.

GO STR (Going straight) .................................................................35% (8)
NEGCRV (Negotiating curve) ...........................................................18% (4)
MERGING (Merging into traffic) .........................................................17% (4)
RT TRN (Right turn) .........................................................................13% (3)
CHG LN (Changing lanes) .................................................................13% (3)
BACKING (Backing up) .....................................................................4% (1)
Month, Day and Time Analysis

Number of Crashes by Month

Number of Crashes by Day of Week

Number of Crashes by Hour
Crashes Involving Pedestrians

For this year’s report, T.E.S.T. also took a look at crashes involving pedestrians to see if any areas could use more enforcement or education. In 2013, there were 91 motor vehicle crashes involving pedestrians. Four of the seven fatal crashes that occurred in Madison involved pedestrians, which is alarming. Looking further into the 91 pedestrian involved crashes, 63 occurred within an intersection, 21 crashes were midblock, and the other seven occurred midblock within a crosswalk. It is apparent that crashes increase during rush hour. Enforcement efforts can be focused not only on vehicular traffic but also pedestrian traffic at intersections that are both controlled by signals and in uncontrolled intersections in hopes of reducing pedestrian crashes. There were only six places within the city limits that multiple crashes occurred and they are:

- University Ave and N. Frances St 3x
- Wright St and Anderson St 2x (midblock)
- Northport and N Sherman 2x (midblock)
- N Frances St and W. Johnson St 2x
- N Mills St. and University Ave 2x
- Northport Dr and Kennedy Rd 2x

Pedestrian Crashes by Month

Pedestrian Crashes by Hour
At Fault - All Crashes

- Car: 55%
- Ped: 42%
- Other: 3%

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Map of Madison area with Lake Mendota and Lake Monona.
Crashes Involving Bicycles

T.E.S.T. also took a look at crashes involving bicycles for the year 2013 and found that there were 111 crashes involving bicycles during the year. Two of the seven fatal crashes on city roads involved bicycles. These crashes were at E Washington Ave & N First St. and Mineral Point Rd/ S. Yellowstone Dr. Of the 111 crashes, only 17 occurred outside 100 ft. of an intersection. Madison Police Officers can enforce both vehicle and bicycle traffic during the rush hour periods in order to hopefully reduce bicycle crashes. Also, there was only nine intersections that had multiple crashes in 2013, they are:

- University Ave and Randall Ave. 3x
- University Ave and Park St. 3x
- University Ave and Babcock Dr 2x
- Dayton St and Park St 2x
- Johnson St and Franklin St 2x
- Eastwood Dr and Division St 2x
- McKenna Blvd and Raymond Rd 2x
- Frances St and University Ave 2x

Bicycle Crashes by Month

Bicycles Crashes by Hour
At Fault - All Crashes

- Bike: 32%
- Car: 68%
Works Cited


Other data was collected through MV4000 reports provided by T.E. and crash data provided by TOPS.