

Road Safety Audit for James Avenue NW and 250th Street NW, from the North Corporate Limits of Tiffin to I-380, in Johnson County, Iowa

Final Report
Novemeber 2010



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16. Abstract To address safety concerns on James Avenue NW and 250th Street NW, from the North Corporate Limits (NCL) of Tiffin, north and east to I-380 (at North Liberty), the Johnson County engineer requested a road safety audit (RSA). The audit was conducted on September 1, 2010, through a program supported by the Office of Traffic and Safety at the Iowa Department of Transportation (DOT). This road is a seal-coated roadway, about 25-ft wide, but with only about 0-1 ft of earth shoulders. According to 2006 Iowa DOT estimates, traffic volume is about 820 vehicles per day, north from Tiffin to a commercial entrance on 250 th Street, then increasing to 2,990 vehicles per day to the on-ramp of Interstate 380 (I-380). Local traffic uses this road as a short-cut to Cedar Rapids, North Liberty, and the I-380/I-80 interchange (to avoid congestion on IA 965). This report outlines the findings and recommendations of the road safety audit team for addressing the safety concerns on this roadway.			
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ROAD SAFETY AUDIT FOR JAMES AVENUE NW AND 250TH STREET NW, FROM THE NORTH CORPORATE LIMITS OF TIFFIN TO I-380, IN JOHNSON COUNTY, IOWA

**Final Report
November 2010**

Principal Investigator

Thomas J. McDonald
Safety Circuit Rider
Institute for Transportation, Iowa State University

Author

Thomas J. McDonald

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A report from
Institute for Transportation
Iowa State University
2711 South Loop Drive, Suite 4700
Ames, IA 50010-8664
Phone: 515-294-8103
Fax: 515-294-0467
www.intrans.iastate.edu

TABLE OF CONTENTS

ACKNOWLEDGMENTS	IX
INTRODUCTION	1
INITIAL MEETING.....	1
DAYLIGHT FIELD REVIEW	3
NIGHTTIME REVIEW	5
WRAP-UP MEETING.....	5
RESIDENT INPUT	6
IN-ROAD RUMBLE STRIPS.....	7
SUGGESTIONS FOR CRASH MITIGATION	7
APPENDIX A. IMAGES FROM FIELD REVIEWS	A-1
APPENDIX B. CRASH DATA.....	B-1

LIST OF FIGURES

Figure A.1. Typical reviewed roadway section	A-1
Figure A.2. Roadway section with right of way shown.....	A-1
Figure A.3. Horizontal curve at 270th Street intersection	A-2
Figure A.4. Turn warning sign.....	A-2
Figure A.5. Turn warning sign with advisory speed plaque	A-3
Figure A.6. Farmstead at initial curve north of Tiffin	A-3
Figure A.7. Large opening culvert.....	A-4
Figure A.8. Large opening culvert just north of Tiffin	A-4
Figure A.9. Advance stop warning sign with leaning support.....	A-5
Figure A.10. PCC curb and gutter section west of I-380 interchange	A-5
Figure A.11. Non-compliant sign west of I-380	A-6
Figure A.12. Guy wire brace in clear zone	A-6
Figure A.13. Review team during daylight field inspection.....	A-7
Figure B.1. 2001-2010 James Avenue NW and 250th Street NW, Johnson County, crash map by severity	B-1

LIST OF TABLES

Table B.1. 2001-2010 James Avenue, Johnson County, crashes by major cause	B-2
Table B.2. 2001-2010 James Avenue, Johnson County, crashes by manner of collision	B-2
Table B.3. 2001-2010 James Avenue, Johnson County, crashes by hour of day	B-3
Table B.4. 2001-2010 James Avenue, Johnson County, crashes by day of week and month	B-3
Table B.5. 2001-2010 James Avenue, Johnson County, crashes by hour of day and crash severity	B-4
Table B.6. 2001-2010 James Avenue, Johnson County, crashes by day of week and crash severity	B-4
Table B.7. 2001-2010 James Avenue, Johnson County, crashes by light conditions	B-5
Table B.8. 2001-2010 James Avenue, Johnson County, crashes by weather conditions	B-5
Table B.9. 2001-2010 James Avenue, Johnson County, crashes by road surface conditions	B-6
Table B.10. 2001-2010 James Avenue, Johnson County, crashes by driver condition.....	B-6
Table B.11. 2001-2010 James Avenue, Johnson County, driver-related crashes by <i>first</i> contributing circumstance in sequence of events	B-7
Table B.12. 2001-2010 James Avenue, Johnson County, driver-related crashes by <i>second</i> contributing circumstance in sequence of events	B-8
Table B.13. 2001-2010 James Avenue, Johnson County, crashes by driver age	B-9
Table B.14. 2001-2010 James Avenue, Johnson County, crashes by driver age and crash severity	B-9

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The participation and contributions of the members of the road safety audit team were invaluable in the successful completion of this activity. The audit team included the following people:

- Jerry Roche, Federal Highway Administration (FHWA) – Iowa Division
- Michael Cain, FHWA – Iowa Division
- Randy Hunefeld, Iowa Governor's Traffic Safety Bureau (GTSB)
- Bob Sperry, Institute for Transportation (InTrans)
- Tom McDonald, InTrans

Crash data for this road safety audit were developed by the Iowa Traffic Safety Data Service (ITSDS) at the Institute for Transportation.

INTRODUCTION

To address safety concerns on James Avenue NW and 250th Street NW, from the North Corporate Limits (NCL) of Tiffin, north and east to I-380 (at North Liberty), the Johnson County engineer requested a road safety audit (RSA). (Appendix B contains a crash map for the roadway.)

The audit was conducted on September 1, 2010, through a program supported by the Office of Traffic and Safety at the Iowa Department of Transportation (DOT).

James Avenue north from Tiffin in Johnson County is a seal-coated roadway, about 25-ft wide, but with only about 0-1 ft of earth shoulders. According to 2006 Iowa DOT estimates, traffic volume is about 820 vehicles per day to a commercial entrance on 250th Street, then increasing to 2,990 vehicles per day to the on-ramp of Interstate 380 (I-380).

INITIAL MEETING

To begin the safety audit, the audit team met with Johnson County officials in the Johnson County Engineer's Office. These were the participants:

- Greg Parker, Johnson County engineer
- Lonny Pulkrabek, Johnson County sheriff
- Lt. Gary Kramer, Johnson County deputy
- Sgt. Bob Cox, Iowa State Patrol
- Jerry Roche, Federal Highway Administration (FHWA) – Iowa Division
- Michael Cain, FHWA – Iowa Division
- Randy Hunefeld, Iowa Governor's Traffic Safety Bureau (GTSB)
- Bob Sperry, Institute for Transportation (InTrans) local roads and safety liaison
- Tom McDonald, InTrans safety circuit rider

Following self introductions, Safety Circuit Rider McDonald distributed and discussed crash history records for 2001 through June of 2010. Handouts included a crash map depicting the location of recorded crashes by severity and selected summaries of crashes for the 9+ year study period.

Clusters of crashes were noted at the initial horizontal curve north of Tiffin and intersections along the route. These and other areas where crashes had been noted would be examined in a field review. A total of 45 crashes, involving 54 drivers, had been recorded during the review period. These crashes included one fatal, three major injury, eight minor injury, eight possible injury, and 25 property damage only incidents. Sheriff Pulkrabek noted that other fatal crashes have occurred on the horizontal curve north of Tiffin prior to the review period.

Major causes noted for these crashes were driving too fast for conditions, swerving/evasive action, and run-off-road. It was noted that only a single animal-related crash was recorded during the period.

Year of crash occurrence was fairly consistent, although an unusually high number was recorded in 2003. It was reported that 2003 was a flood year in Johnson County and that this road may have been used as an unofficial detour, increasing traffic volume.

Manner of collision was overwhelmingly non-collision, indicting a majority of crashes were single vehicle only. Hours of day when most crashes occurred were during morning and afternoon commutes and during the lunch hours. By day of the week, a majority of crashes were recorded on weekend days, Friday through Sunday.

Occurrence of crashes by month was fairly consistent, with no season showing notably high numbers. Most crashes were found to have occurred during daylight hours, although about 20% were noted in dark conditions. Weather conditions during crashes were mostly clear, partly cloudy, or cloudy, but about 10% occurred during rain. Road surface conditions were mostly dry, but 10 of 45 noted wet roads, which could indicate a friction issue with the road surface.

For driver contribution factors, lost control was the major issue noted. Most drivers in these crashes were judged to be apparently normal although four were found to be under the influence of drugs or alcohol. The highest number of crashes was recorded for drivers between the ages of 24 and 35, although 9 of 54 drivers were of the ages 16 through 18.

For driver related crashes the sequence of events indicated that lost control and driving too fast for conditions were the most common initial event. For the second crash event, lost control was the most common, although the second event was not reported for most driver related crashes.

Appendix B contains the crash data used for this audit.

Both Sheriff Pulkrabek and Deputy Kramer indicated that most crashes seem to involve northbound vehicles, but many crashes along this roadway are unreported for various reasons. In addition, it was reported that several crashes may not be included in the state database. It was estimated that as many as double the number shown in the crash data had actually occurred at the first curve north of Tiffin. Sheriff Pulkrabek later advised that their records indicated that a total of 14 crashes had occurred at that location between January 2006 and mid-September 2010, with 11 property damage only, 2 personal injuries, and 1 with unknown injuries.

Sgt. Cox was requested to review the Iowa DOT Incident Mapping Tool (IMAT) data for this route and report any interesting findings that are not included in the data from the Iowa DOT crash database.

Deputy Kramer reported that bicycle traffic on the road is significant, especially on the weekends.

Sheriff Pulkrabek advised that local traffic uses this road as a short-cut to Cedar Rapids, North Liberty, and the I-380 interchange (to avoid congestion on IA 965). County Engineer Parker stated that traveling on James Avenue in the morning could result in visibility problems due to the rising sun. He agreed to furnish northbound/southbound traffic volumes from recent counts.

Some students in North Liberty might attend high school in Tiffin, which would result in daily commutes.

The fatal crash involved a middle-aged driver commuting to work in the early morning hours on possibly wet road conditions.

It was reported that a retired military officer lives just north of the horizontal curve where numerous crashes have been recorded. County Engineer Parker furnished the contact information as Robert (Bob) Sentman, 2851 James Ave. NW, Tiffin, IA (319) 545-2480. Mr. Sentman will be requested to provide input regarding crashes that have occurred at that location.

DAYLIGHT FIELD REVIEW

Following lunch, the review team conducted an examination of the roadway by beginning in the westbound direction at a commercial entrance on 250th Street (F-28), which will be designated as milepost (mp) 0.0 for this review. Participants included Sgt. Cox, Lt. Kramer, County Engineer Parker, Jerry Roche, Michael Cain, Randy Hunefeld, Bob Sperry, and Tom McDonald. (See Appendix A for photo images from the review.)

The roadway in this area is a newer Portland Cement Concrete (PCC) pavement with curb and gutter units for drainage. Painted pavement markings appeared in poor conditions during daylight conditions. The roadway in this area is maintained by the City of North Liberty under a 28E agreement with Johnson County. Non-compliant warning signs, which state FRESH OIL-TRAVEL AT YOUR OWN RISK, are mounted on each end of the city-maintained section.

At mp 0.2, the roadway surface changes to seal coat, which has been applied in multiple layers over the years. The pavement was about 25-ft wide with 0- to 1-ft-wide earth shoulders. Right-of-way width was about 66 ft. Ditches are mostly clean and shallow, and foreslopes were recently mowed and appeared to be 2:1 or flatter in most areas.

The pavement surface is somewhat distorted and some wheel-track rutting was observed. The County renews sections of seal coat on the roadway on an as-needed basis. No pavement markings are placed on seal coat surfaces by Johnson County.

The posted speed limit in this area is 45 mph. The intersection with James Avenue is located at mp 0.5. At this point, Johnson County is responsible for the maintenance. This 4-way intersection is controlled by stop signs on the north and south James Avenue legs. The speed limit is the statutory 55 mph at this point.

The review proceeded southerly on James Avenue at this intersection. The stop sign for northbound traffic appeared in good condition, as did the stop ahead warning sign preceding the intersection; however, the warning sign support was tipped, which could hamper nighttime visibility.

At mp 1.0 is the intersection of granular-surfaced 260th Street. This is a T configuration intersection with no safety ramp opposite the T. In addition, a utility brace pole is located within the clear zone at that location.

The next intersection is 270th Street, also granular-surfaced, to the left or easterly. The advance warning sign for this intersection indicates a T configuration, although James Avenue actually continues to the right on a horizontal curve with some superelevation. Actual geometry of this intersection more resembles a Y than T. A double arrow warning sign is mounted across the intersection for southbound traffic.

At mp 1.7 is another horizontal curve to the left, or southerly. Advance turn warning signs are mounted on either side of this curve for traffic and both appear in good condition during daylight. However no advisory speed plaques or chevrons are mounted at this curve.

At mp 2.3 is a concrete culvert with no shielding or object markers.

At mp 2.5 is another horizontal curve to the right or westerly, preceded by turn warning signs and 20 mph advisory speed plaques.

At mp 2.7 is a horizontal curve to the left or southerly, preceded by turn warning signs with 15 mph advisory speed plaques. A vertical curve also exists for northbound traffic just south of this horizontal curve, significantly reducing visibility of the roadway curve ahead. At least eight crashes have occurred at this site during the review period, including two major injuries and several minor injuries. Rolling terrain exists from this location south to Tiffin.

At mp 3.0, a large opening culvert conveys Buffalo Creek under James Avenue with no shielding, but marked with Type 2 object markers.

At mp 3.3 is the Tiffin NCL, at the intersection with Ireland Avenue NW. Pavement is newer PCC with curb and gutter units for drainage. The posted speed limit is 25 mph, but no warning of reduced speed is provided.

The team then traveled the roadway northbound in returning to the starting point.

General observations included the following:

- Several sign supports appeared to be tipped and/or twisted which could hamper nighttime visibility.
- None of the several horizontal curves had chevrons in place.
- The built-up seal-coat pavement edge was severely distorted in some locations. This condition could contribute to loss of control for errant vehicles, especially when traveling on the low side of horizontal curves. Locations where rutting and distortion had occurred appeared to pond water during times of precipitation.
- A few trees were noted in the right-of-way within the clear zone.

NIGHTTIME REVIEW

Safety Circuit Rider McDonald was the lone observer in conducting the nighttime review of this roadway section on the evening of October 14, 2010. Weather conditions during the 8:00 p.m. to 8:30 p.m. review were clear and calm.

The review began at the northern city limits of Tiffin and proceeded northerly. Considerable traffic was encountered. Because the roadway has no pavement markings, guidance was provided by vehicle headlights and the warning signs described during the daylight review. Conspicuity of those signs was mostly satisfactory, although additional guidance through the horizontal curves would be beneficial.

The advance warning and stop signs for northbound traffic at the 250th Street intersection west of North Liberty were both satisfactorily visible. A southbound trip through the review area revealed similar observations on this clear weather evening. However, in adverse weather, sign visibility and lack of pavement markings would undoubtedly hamper visibility.

WRAP-UP MEETING

Following the daylight field review, a wrap-up meeting was conducted in the County Engineer's Office with the same participants as the initial meeting earlier in the day, except for Sheriff Pulkrabek. Team members shared some observations of the field review and some suggested improvements were offered and discussed.

Of major concern was the first horizontal curve north of Tiffin, where numerous crashes had occurred. During the initial meeting, Sheriff Pulkrabek had related an observation he had made during a west coast trip, where lane rumble strips had been installed in advance of horizontal curves. He suggested this treatment be considered for this curve.

County Engineer Parker suggested that chevrons could be installed on a span wire over the roadway, given that conventional placement is not possible due to a large paved residence entrance along the curve. In addition, visibility of the horizontal curvature is hampered by the vertical curve to the south. Mounting these warning devices on a span wire would increase the

chevron height significantly to provide that needed warning visibility from both approach directions.

Other advance warning techniques and devices, including fluorescent-yellow warning signs, more and larger warning signs (possibly with warning beacons), solar-powered beacons, and speed-activated sensors to trigger lighted warning signs are included in the suggestions of this final report.

Part 2 of the 2009 *Manual on Uniform Traffic Control Devices (MUTCD)* was reviewed for new recommendations regarding warning devices for horizontal curves. A ball-bank or other safe-driving speed study should also be undertaken to determine appropriate advisory speed for all four horizontal curves on this route, in accord with MUTCD recommendations.

Object markers and possibly shielding should be installed at the two large culverts.

The law enforcement officers reported that the route is difficult to patrol and apply surveillance, due to the narrow right-of-way and lack of shoulders.. No airplane markings are in place for aerial surveillance.

A speed study on this roadway might be advisable to determine actual common speeds, possibly using a speed trailer, which could collect volume data as well. Law enforcement may have speed trailers that could be used if requested by County Engineer Parker. As an alternative, InTrans staff could collect the data using NuMetrics plates.

Possible funding for needed safety improvements might be sought through the Transportation Safety Improvement Program or the High Risk Rural Roads Program.

Numerous images were obtained of roadway features during the review and selected examples are included in Appendix A.

RESIDENT INPUT

On October 14, 2010, Safety Circuit Rider McDonald met with Mr. Robert Sentman in his rural home just north of the initial horizontal curve north of Tiffin. Mr. Sentman is a retired Army officer with most recent service as a General Officer in the Iowa National Guard. Mr. Sentman has also owned and operated a farm for many years at this location with row crops and livestock.

Because Mr. Sentman's farmstead is located near the highest crash location in the reviewed area, he is quite interested in possible steps to reduce these crash occurrences. The crashes have resulted in significant damage to his property over the years, particularly to wooden and plastic fencing used to restrain some of his livestock.

Mr. Sentman has kept detailed records for most of the crashes for at least 10 years, including crash reports, notes, and pictures of damages to his property and of the vehicles involved. Most of the crashes have resulted in property damages only. However, some injuries have also occurred and Mr. Sentman expressed concerns that a fatality may occur at the location in the future if significant mitigative steps are not taken.

Mr. Sentman stated that speed and distraction were the major contributing factors in these crashes, which many times involved local drivers who should have been familiar with the road and conditions. Very few crashes occurred during adverse weather. Although Mr. Sentman did not oppose signing improvements, he did not express much confidence in significant crash reduction with those improvements alone. He suggested rumble strips be installed across the northbound lane approaching the high-crash curve, saying that such installations were in place for several years in advance of a problematic curve in Cedar County.

IN-ROAD RUMBLE STRIPS

On October 15, 2010, McDonald visited the site where in-road rumble strips had been installed in Cedar County, on Road X-40, south of Mechanicsville. According to the previous County engineer, Mark Nahra, these installations were made in the early 1990s by another engineer, Billy Connor.

Numerous run-off-road crashes had occurred at this horizontal curve location, which prompted the placement of the rumble strips. The strips were re-cut with a 2001 resurfacing project and not upgraded since then.

A series of three panels were installed for each direction of travel approaching a short radius horizontal curve. Installation appeared to have been by milling into a flexible pavement surface and, due to age, the strips had distorted, resulting in reduced effectiveness.

Run-off-road crashes were reduced following installation; however, Nahra reported that chevron warning signs were also installed through the curve, as well as improved advance warning signs and some re-grading on the side-road approaches, to better define the intersection travel paths. These other improvements may have also contributed to the reduction in recorded crashes.

The current Cedar County engineer, Robert Fangmann, reported that no problems had been noted resulting from these rumble strips, beyond a few complaints for the noise created by passing traffic.

SUGGESTIONS FOR CRASH MITIGATION

Based on the observations made during the daylight and nighttime reviews and discussions with staff from local, state, and federal agencies, the following suggestions are listed for consideration in addressing the crash history of the reviewed roadway.

1. Review all horizontal curves using the guidance in Part 2, Section 2C.07, of the 2009 edition of the *MUTCD* on the use of advance warning signs, advisory speed plaques, and chevrons. Install new fluorescent-yellow warning devices as recommended therein. Install delineators along any curves not meeting warrants for chevrons.
2. Consider oversized curve and turn warning signs and advisory speed plaques in locations of frequent crashes.
3. Install double advance warning signs for both directions of travel at the initial horizontal curve north of Tiffin. Other mitigative steps at that site might include solar-powered flashing beacons mounted over the curve warning signs or even traffic speed-activated warning messages at this location. InTrans staff is available to assist in the preliminary design of these measures and funding application.
4. Study the feasibility of mounting double facing chevrons on a span wire across the high crash horizontal curve north of Tiffin, considering both positive and negative aspects.
5. Consider the installation of a rumble strip panel near the curve warning sign for northbound traffic at the high-crash horizontal curve north of Tiffin. A PCC panel should be used for the installation, not milled-in rumbles, which deteriorate rapidly in flexible pavements.
6. Replace the advance intersection warning sign for southbound traffic approaching 270th Street with an appropriate warning message, not a T intersection sign.
7. Install appropriate speed-reduction signing at each end of the reviewed section.
8. Install appropriate object markers and possibly shielding at the large culverts under this roadway.
9. Consider application of surface treatment, such as a seal coat, through the “Sentman curve” and other curves to improve friction.
10. Contact the utility company to discuss removal or relocation of down guys in the clear zone.
11. Request periodic patrols of the roadway by the Johnson County Sherriff and/or Iowa State Patrol.
12. Conduct a speed study along the route using speed trailers, road tubes, or Numetrics plates, in conjunction with the request for more frequent patrols.
13. Visit with school officials, driver educators, and the news media about high crash occurrences on this roadway and advise them of planned safety improvements.

APPENDIX A. IMAGES FROM FIELD REVIEWS



Figure A.1. Typical reviewed roadway section



Figure A.2. Roadway section with right of way shown



Figure A.3. Horizontal curve at 270th Street intersection



Figure A.4. Turn warning sign



Figure A.5. Turn warning sign with advisory speed plaque



Figure A.6. Farmstead at initial curve north of Tiffin



Figure A.7. Large opening culvert



Figure A.8. Large opening culvert just north of Tiffin



Figure A.9. Advance stop warning sign with leaning support



Figure A.10. PCC curb and gutter section west of I-380 interchange



Figure A.11. Non-compliant sign west of I-380

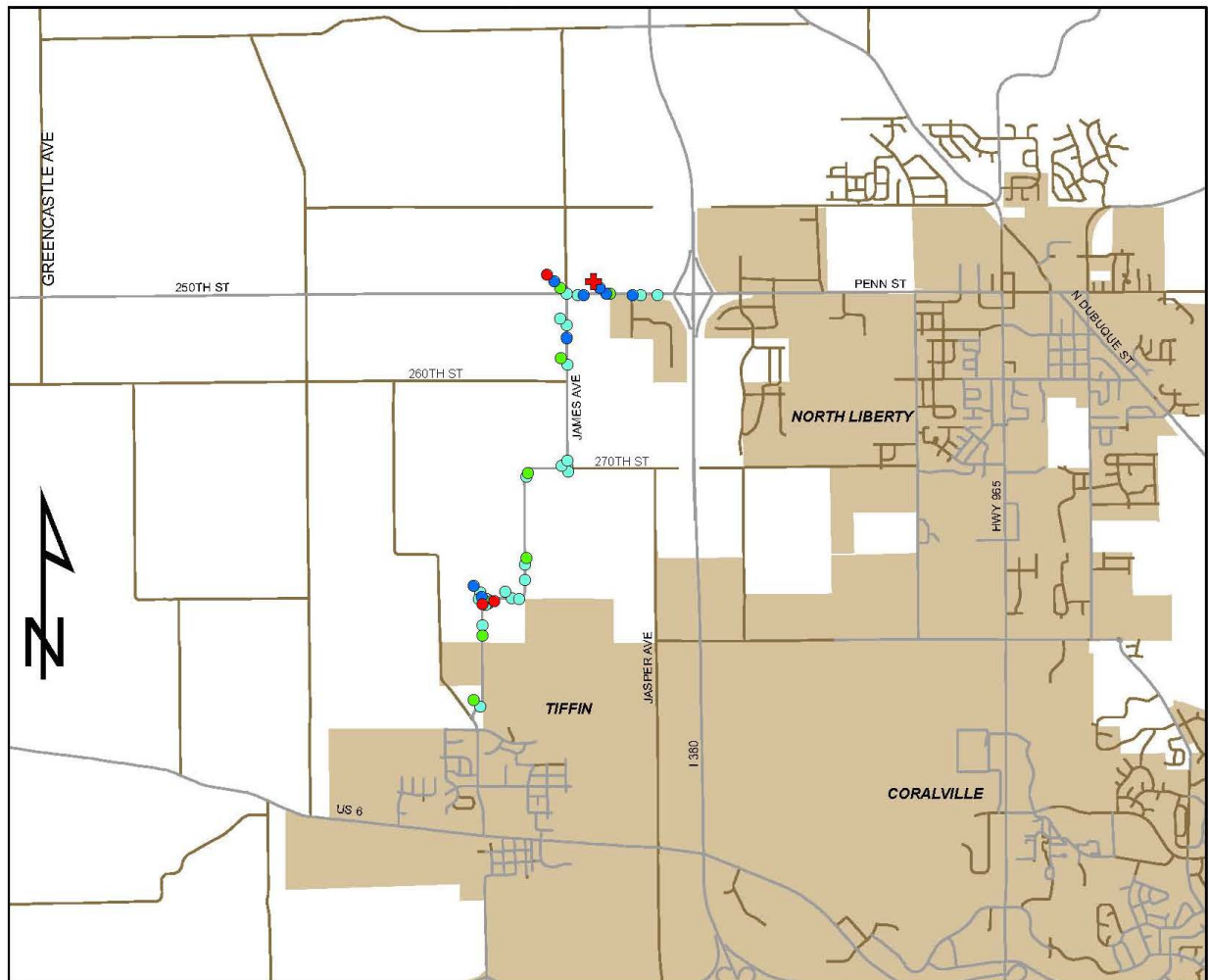


Figure A.12. Guy wire brace in clear zone

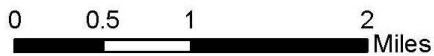


Figure A.13. Review team during daylight field inspection

APPENDIX B. CRASH DATA



*2010 data are preliminary and continually being updated. Data may not contain all 2010 crashes.



IOWA STATE UNIVERSITY

Legend

- + Fatal (1)
- Major Injury (3)
- Minor Injury (8)
- Possible/Unknown (8)
- Property Damage Only (25)
- Paved Roads
- Unpaved Roads
- County Boundaries
- Corporate Boundaries

Disclaimer:

The information contained in this report was derived from the August 9, 2010, Iowa Department of Transportation crash database. If errors or odd cases are found, please communicate the case number or send a printed crash report to Michael Pawlovich, Iowa DOT, Office of Traffic and Safety, Michael.Pawlovich@dot.iowa.gov, (515.239.1428). Since the database is actively being updated, edited, and reviewed, some of the fatality totals may differ from the Fatality Analysis Reporting System (FARS). If fatal crash/fatality errors or odd cases are found, please contact Scott Falb, Iowa DOT, Office of Driver Services, (Scott.Falb@dot.iowa.gov, 515.237.3154).

Produced By: Drew Inhelder
Date Produced: August 30, 2010

Figure B.1. 2001-2010 James Avenue NW and 250th Street NW, Johnson County, crash map by severity

Table B.1. 2001-2010 James Avenue, Johnson County, crashes by major cause

Year	Major Cause														Total	
	Animal	Ran stop sign	Crossed centerline	FTYROW: From stop sign traveling wrong way or on wrong side of road	Driving too fast for conditions	Exceeded authorized speed	Operating vehicle ¹	Swerving/evasive action	Over correcting/Over steering	Ran off road - right	Ran off road - straight	Ran off road - left	Lost control	Unknown		
2001					3					1	1	1			6	
2002					1			1							2	
2003		3	1					2		2	1	1		1	11	
2004						1		1							2	
2005	1							1						1	3	
2006				1		1	1		1	1		2			7	
2007			1		1								1		3	
2008					2			1							3	
2009								1		2				1	4	
2010*					2	1						1			4	
Total	1	3	1	1	1	9	3	1	7	1	6	2	5	1	3	45

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

¹ Operating vehicle in an erratic/reckless/careless/negligent/aggressive manner

Table B.2. 2001-2010 James Avenue, Johnson County, crashes by manner of collision

Year	Manner of Collision							Total
	Non-collision	Rear-end	Angle, oncoming left turn	Broadside	Sideswipe, opposite direction	Unknown	Not Reported	
2001	6							6
2002	2							2
2003	7	1	1	2				11
2004	1				1			2
2005	2						1	3
2006	6			1				7
2007	2					1		3
2008	2					1		3
2009	3			1				4
2010*	4							4
Total	35	1	1	4	1	2	1	45

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.3. 2001-2010 James Avenue, Johnson County, crashes by hour of day

Year	Hour of Day																							Total	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		23
2001					1				1						1		1	1	1						6
2002		1																1							2
2003						1		1	2			1	2				1		1					2	11
2004											1				1										2
2005												1				1		1							3
2006								1	1			1		1		1				1				1	7
2007													1	1									1		3
2008						1																1	1		3
2009												1	1						1		1				4
2010*	1																		1	1					4
Total	1	1	0	0	1	2	0	2	5	0	1	4	4	2	2	2	2	5	3	2	0	1	2	3	45

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.4. 2001-2010 James Avenue, Johnson County, crashes by day of week and month

Year	Day of Week							Month												Total				
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	January	February	March	April	May	June	July	August	September	October	November	December					
2001	3			1	1	1								1	1	1	1						2	6
2002	1	1						1															1	2
2003	1	1		1	2	2	4					2		3			2	4						11
2004	1						1		1				1											2
2005	1		1				1		2			1												3
2006	1			2		1	3	1		2				1				1	1	1			1	7
2007			1	1		1		1	1					1										3
2008					1	1	1						1						1				1	3
2009			1		1	2		1	1						1	1								4
2010*		1				1	2			2					2									4
Total	8	3	3	5	5	9	12	4	5	4	2	2	6	5	2	3	6	1	5	45				

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.5. 2001-2010 James Avenue, Johnson County, crashes by hour of day and crash severity

Crash Severity	Hour of Day																							Total	
	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22		23
Fatal						1																			1
Major Injury													2											1	3
Minor Injury		1							3			1	1						1	1					8
Possible/Unknown									1			2					1		1		1			1	8
PDO	1				1	1		2	1		1	1	1	2	2	1	2	4	2				1		25
Total	1	1	0	0	1	2	0	2	5	0	1	4	4	2	2	2	2	2	5	3	2	0	1	2	45

Through June of 2010 as of the August 9, 2010 Iowa DOT crash database
 PDO = Property Damage Only

Table B.6. 2001-2010 James Avenue, Johnson County, crashes by day of week and crash severity

Crash Severity	Day of Week							Total
	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
Fatal					1			1
Major Injury					2		1	3
Minor Injury	2		1	1	1		3	8
Possible/Unknown	2					4	2	8
PDO	4	3	2	4	1	5	6	25
Total	8	3	3	5	5	9	12	45

Through June of 2010 as of the August 9, 2010 Iowa DOT crash database
 PDO = Property Damage Only

Table B.7. 2001-2010 James Avenue, Johnson County, crashes by light conditions

Year	Light Conditions						Total
	Daylight	Dusk	Dawn	Dark - roadway not lighted	Unknown	Not reported	
2001	4			1	1		6
2002		1		1			2
2003	7		1	2		1	11
2004	2						2
2005	1					2	3
2006	6			1			7
2007	2			1			3
2008				3			3
2009	2	1		1			4
2010*	2	1		1			4
Total	26	3	1	11	1	3	45

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.8. 2001-2010 James Avenue, Johnson County, crashes by weather conditions

Year	Weather Conditions									Total
	Clear	Partly cloudy	Cloudy	Mist	Rain	Sleet/hail/freezing rain	Snow	Not reported	Unknown	
2001	2		1	1	1				1	6
2002	2									2
2003	4	2	2		2			1		11
2004		1	1							2
2005		1						2		3
2006	3	1	1	1		1				7
2007	2	1								3
2008	2			1						3
2009	1	1	1				1			4
2010*	1	2			1					4
Total	17	9	6	3	4	1	1	3	1	45

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.9. 2001-2010 James Avenue, Johnson County, crashes by road surface conditions

Year	Road Surface Condition						Total
	Dry	Wet	Ice	Snow	Sand/mud/dirt/ oil/gravel	Not reported	
2001	3	2	1				6
2002	2						2
2003	7	3				1	11
2004	2						2
2005	1					2	3
2006	4	3					7
2007	3						3
2008	1	1				1	3
2009	2			1	1		4
2010*	3	1					4
Total	28	10	1	1	1	4	45

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.10. 2001-2010 James Avenue, Johnson County, crashes by driver condition

Year	Driver Condition						Total
	Apparently normal	Emotional (e.g. depressed/ angry/disturbed)	Under the influence of alcohol/drugs/medications	Other	Unknown	Not reported	
2001	4				2		6
2002	1		1				2
2003	12				1	2	15
2004	2				1		3
2005		1				3	4
2006	7		1				8
2007	3				1		4
2008	1		1	1			3
2009	4					1	5
2010*	3		1				4
Total	37	1	4	1	5	6	54

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.11. 2001-2010 James Avenue, Johnson County, driver-related crashes by *first* contributing circumstance in sequence of events

Year	First Contributing Circumstance										Total	
	Ran stop sign	Exceeded authorized speed	Driving too fast for conditions	Made improper turn	Traveling wrong way or on wrong side of road	Crossed centerline	Lost control	Inattentive/distracted by: use of phone or other device	Other: No improper action	Not reported		Unknown
2001			3				1			1	1	6
2002			1				1					2
2003	3					1	6		3	2		15
2004		1					1		1			3
2005							1			3		4
2006		1			1		5		1			8
2007			1	1			1		1			4
2008			2				1					3
2009							1	1	1		2	5
2010*		1	2				1					4
Total	3	3	9	1	1	1	19	1	7	6	3	54

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.12. 2001-2010 James Avenue, Johnson County, driver-related crashes by *second* contributing circumstance in sequence of events

Year	Second Contributing Circumstance									Total
	Exceeded authorized speed	Lost control	Over correcting/Over steering	Operating vehicle ¹	FTYROW: From stop sign	Other: Vision obstructed	Other: Other improper action	Not reported	Unknown	
2001		1						4	1	6
2002								2		2
2003	1	1					1	12		15
2004		1						2		3
2005								4		4
2006		1	1	1		1		4		8
2007		1			1			2		4
2008				1				2		3
2009								5		5
2010*		3						1		4
Total	1	8	1	2	1	1	1	38	1	54

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database
¹ Operating vehicle in an erratic/reckless/careless/negligent/aggressive manner

Table B.13. 2001-2010 James Avenue, Johnson County, crashes by driver age

Year	Driver Age																	Total								
	Under 14	14	15	16	17	18	19	20	21-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64		65-69	70-74	75-79	80-84	85-89	90-94	95-98	Unknown
2001					1					1		1	1		1										1	6
2002						1				1																2
2003				1					1	1	3	1	1	2	1	1		1							2	15
2004									1	2																3
2005					1						1			1						1						4
2006					1						3	2	2													8
2007				1					1	1															1	4
2008						2			1																	3
2009						1		1						2		1										5
2010*									1	1	1	1														4
Total	0	0	0	2	3	4	0	1	5	7	8	5	4	5	2	2	0	1	0	1	0	0	0	0	4	54

* Through June of 2010 as of the August 9, 2010 Iowa DOT crash database

Table B.14. 2001-2010 James Avenue, Johnson County, crashes by driver age and crash severity

Crash Severity	Driver Age																	Total									
	Under 14	14	15	16	17	18	19	20	21-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64		65-69	70-74	75-79	80-84	85-89	90-94	95-98	Unknown	
Fatal															1											1	
Major Injury							1				1	2														4	
Minor Injury									1		1	2		1		2	1		1							9	
Possible/Unknown					1	1			1			1	1	4						1						2	12
PDO				2	2	2			4	5	4	4	2			1										2	28
Total	0	0	0	2	3	4	0	1	5	7	8	5	4	5	2	2	0	1	0	1	0	0	0	0	4	54	

Through June of 2010 as of the August 9, 2010 Iowa DOT crash database
 PDO = Property Damage Only

Disclaimer: The information contained in this report was derived from the August 9, 2010 Iowa DOT crash database. If errors or odd cases are found, please communicate the case number, or send a printed crash report, to Michael Pawlovich, Iowa DOT, Office of Traffic and Safety, (Michael.Pawlovich@dot.iowa.gov or 515-239-1428). Since the database is actively being updated, edited, and reviewed, some of the fatality totals may differ from the Fatality Analysis Reporting System (FARS). If fatal crash/fatality errors, or odd cases, are found, please contact Scott Falb, Iowa DOT, Office of Driver Services (Scott.Falb@dot.iowa.gov or 515-237-3154).