Northwest Missouri Regional Road Safety Assessment Program

US Highway 36 & Ensign Trace Intersection Cameron, Missouri

Conducted May 3, 2019



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Table of Contents

1.0	Back	ground	3
	1.1	RSA Team	4
	1.2	RSA Process	5
	1.3	RSA Report	5
	1.4	Study Area Characteristics, Operations and Safety Performance	5
2.0	Asse	ssment Findings and Suggested Solutions	9
	2.1	US Highway 36 and Ensign Trace Intersection	9
3.0	Cone	clusion	24
	Atta	chment A: Crash Data (2010 – Present)	

1.0 Background

A Roadway Safety Assessment (RSA) is a safety performance examination at a specific roadway by a multi-disciplinary team. The team reviews crash data to familiarize themselves with the types of crashes and the roadway conditions at the time the crashes occurred. Then the team visits the site to observe traffic patterns and notes safety concerns. These observations are compiled into a report and submitted to the Missouri Department of Transportation (MoDOT) and the local community or county.

Mo-Kan Regional Council, Green Hills Regional Planning Commission and the Northwest Missouri Regional Council of Governments have been funded to perform RSAs in MoDOT's Northwest District as part of the Core Activities task in the yearly work plan. Transportation Advisory Committee (TAC) members submitted potential RSA locations to Mo-Kan. MoDOT provided crash statistics and Mo-Kan provided photographs of the locations. The TAC discussed the locations at the March 6, 2019 meeting and voted to conduct the annual RSA at the US Highway 36 and Ensign Trace intersection located in the city limits of Cameron, DeKalb County.





It is a state-maintained road where US Highway 36 intersects Ensign Trace on the south and McEwlain Drive on the north. The Business 36 and Ensign Trace intersection to the south is city-maintained. The crash data pulled for the report was specifically for US Highway 36/Ensign Trace/McEwlain Drive. However, the site assessment included some aspects of Business 36 and Ensign Trace, and these will be specifically noted as such in the report.



Figure 2 – Cameron City Limits

1.1 RSA Team

The RSA team was a multi-disciplinary team composed of MoDOT staff, City of Cameron and DeKalb County officials and staff, emergency responders, highway patrol, Transportation Advisory Committee members (TAC) members and RPC staff.

The RSA team included the following individuals:

Name	Organization/Title
Gary McFee	DeKalb County Commissioner
Bill Gray	DeKalb County Road and Bridge Supervisor
Rick Bashor	Cameron Chief of Police
Mike O'Donnell	Cameron Fire Chief
Drew Bontrager	Cameron Public Works Director
Lance Newman	Missouri State Highway Patrol
Elizabeth Bowen	Intermediate Traffic Studies Specialist, MoDOT
Joseph Turner	Senior Traffic Studies Specialist, MoDOT
Adam Watson	Area Engineer, MoDOT
Jon Ecker	Executive Director, MoKan Regional Council
Rebecca Thacker	Transportation Planner, Mo-Kan Regional Council
Amy Dowis	Transportation Planner, Northwest MO Regional
	Council of Governments
Randy Railsback	Executive Director, Green Hills RPC
Mackenzie Manring	Transportation Planner, Green Hills

Figure 3 – RSA Team

1.2 RSA Process

The RSA was conducted in a manner consistent with Federal Highway Administration (FHWA) Road Safety Audit Guidelines. The RSA team convened on Tuesday, May 3, 2019 at the Public Safety Building in Cameron. Prior to the field visit, Rebecca Thacker, Mo-Kan, discussed the purpose, background and safety protocol for conducting an RSA. Elizabeth Bowen, MoDOT, reviewed the crash data she had compiled. Personal observations of the site were shared. The following information was disseminated to the RSA team to prepare for the field visit:

- Maps of the area
- Traffic volume data
- Crash history over the past five years
- Crash diagrams

After the team discussed all of the known details of the study area, they conducted a field visit. They observed driving habits, traffic flow and potential sight obstructions within the study area. Team members took photographs, made notes and evaluated signage.

After conducting a field visit, the RSA team reconvened for a post-assessment meeting. During the discussion, the RSA team shared their observations, identified particular issues, determined

prospective solutions, and rated the level of difficulty to implement each solution. Following the post-assessment meeting, Mo-Kan staff compiled all information collected during the RSA process and generated this report.







1.3 RSA Report

This report provides information on the issues identified by the assessment team. The information was deemed relevant to the stated goal of the RSA which identified opportunities for improvement of road safety within the study area.

Additionally, this report provides an assessment of the roadway as well as suggestions for improvements to the area. The suggestions should not be viewed as design or operational recommendations; they are intended to be illustrative of potential solutions to safety issues identified at the study area. The suggestions are being presented for consideration only.

1.4 Study Area Characteristics, Operations and Safety Performance

US Highway 36 is a four-lane divided highway with 12-foot wide lanes. The shoulders are 10 foot paved concrete, except the turn lanes. At the intersection, the paved shoulders narrow and gravel shoulders extend beyond the paved shoulders. Immediately south of the US Highway 36 and Ensign Trace intersection is the Business 36 and Ensign Trace intersection. Although Business 36 and Ensign Trace intersection is not part of this report, several members of the RSA

team said that some of the driver confusion begins at this Business 36 and Ensign Trace intersection and carries over into the US Highway 36 intersection.

Figure 5 – RSA Assessment Location on US Highway 36/Ensign Trace/McEwain Drive

ST MC ELWAIN DR W		MEELWAIN DRIVE US 36 W	
Name	Quantity	WCEL US 36 W	
ADT	266		
AWDT	264	Name	Quantit
OTORCYCLE VOLUME	4	AADT	6461
ASSENGER CAR VOLUME	49	AAWDT	6396
U/PANEL TRUCK VOLUME US VOLUME	1/1	MOTORCYCLE VOLUME	28
US VOLUME INGLE UNIT TRUCK VOLUME		PASSENGER CAR VOLUME	3359
OMB SEMI TRAILER VOLUM		PU/PANEL TRUCK VOLUME	1597
EAK HOUR VOLUME AM	31	BUS VOLUME	51
EAK HOUR VOLUME PM	42		
	TL NO.	SINGLE UNIT TRUCK VOLUME	
			- 1136
	RSA sit	ce	. 1135
	36	The second	
	36	Le US 36 E	
	36	Le US 36 E	Quanti
	36	Le US 36 E	Quanti 6179
	36	Le US 36 E	Quanti
	36	Le US 36 E	Quanti 6179
	36	LE US 36 E US 36 E ADT AWDT MOTORCYCLE VOLUME DASSENCED CAD VOLUME	Quanti 6179 6778
	36	LE US 36 E US 36 E ADT AWDT MOTORCYCLE VOLUME DASSENCED CAD VOLUME	Quanti 6179 6778 99
	mon	LE US 36 E US 36 E ADT AWDT MOTORCYCLE VOLUME DASSENCED CAD VOLUME	Quanti 6179 6778 99 1482
	36	Le US 36 E US 36 E ADT AWDT MOTORCYCLE VOLUME PASSENGER CAR VOLUME PU/PANEL TRUCK VOLUME	Quanti 6179 6778 99 1482 2629 293

BU 36 W

Name	Quantity
AADT	1423
AAWDT	1486
MOTORCYCLE VOLUME	10
PASSENGER CAR VOLUME	880
PU/PANEL TRUCK VOLUME	451
BUS VOLUME	5
SINGLE UNIT TRUCK VOLUME	67
COMB SEMI TRAILER VOLUME	10

BU 36 E	
Name	Quantity
AADT	1423
AAWDT	1486
MOTORCYCLE VOLUME	11
PASSENGER CAR VOLUME	834
PU/PANEL TRUCK VOLUME	469
BUS VOLUME	5
SINGLE UNIT TRUCK VOLUME	82
COMB SEMI TRAILER VOLUME	23

The RSA team reviewed 2014-2018 crash data for the study area which indicated 20 reported crashes have occurred on this location. Of those crashes, 13 were property damage only (PDO), 7 were minor injury (MI), 0 were disabling injury or serious injury (DI) and there were no fatal crashes (Fatal) during this time period. The severity index is 1.7, which is relatively low and means that crashes tended to be property damage only. The severity index is determined by the following formula:

Severity Index = [PDO (1) + MI (3) + DI (6) + Fatal (12)] / (# crashes)

The crash rate of .76 is at the low end; it is the rate of crashes per 100,000,000 miles traveled on that segment of road. The crash rate is determined by the following formula:

Segment Crash Rate = <u>(No. of crashes * 100,000,000)</u> (No. of years * 365 * AADT* length of miles)

Additionally, the crashes-per-year-rate was 4 and is considered to be low. The crashes-per-year-rate is determined by the following formula:

Crashes per Year = No. of crashes/ No. of years

The most common type of crashes by far were right angle crashes (11 crashes), followed by rear end and out of control, with 3 and 2 crashes, respectively. Surface road conditions during crashes were during the day (100 percent) and on dry pavement (90 percent) with clear skies (75 percent).

MoDOT provided a crash diagram, locating where a crash occurred in the intersection from 2014 to 2018, as well as a table with additional information that corresponds with the diagram. Both disabling crashes occurred in the northbound lane, due to the driver losing control of the vehicle. Eleven of the 20 crashes were right angle crashes. Additional crash data has been included in Appendix A.

Figure 6 – Crash Diagram

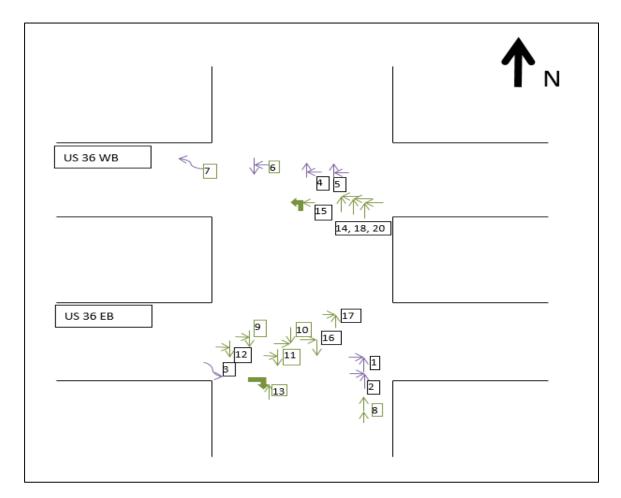


Figure 7 – Crash Data

	Location	Type of Crash	Damage	Date	Time
1	US 36 E	Right Angle	Minor Injury	07/07/2018	1100
2	US 36 E	Right Angle	Minor Injury	05/04/2017	1328
3	US 36 E	Out of Control	Minor Injury	11/22/2016	1030
4	US 36 W	Right Angle	Minor Injury	6/16/2017	1505
5	US 36 W	Right Angle	Minor Injury	10/23/2018	1605
6	US 36 W	Right Angle	Minor Injury	10/22/2018	1850
7	US 36 W	Other	Minor Injury	03/30/2018	1903
8	BU 36 E	Rear End	PDO	07/31/2018	1645
9	US 36 E	Right Angle	PDO	06/17/2015	1512
10	US 36 E	Left Turn	PDO	05/06/2016	1513
11	US 36 E	Right Angle	PDO	06/02/2015	1646

12	US 36 E	Right Angle	PDO	06/26/2017	1635	
13	US 36 E	Out of Control	PDO	04/10/2014	1517	
14	US 36 W	Right Angle	PDO	02/22/2017	1100	
15	US 36 W	Left Turn Right	PDO	08/28/2018	1400	
		Angle Collision				
16	US 36 W	Rear End	PDO	11/23/2018	1208	
17	US 36 W	Rear End	PDO	05/10/2017	1640	
18	US 36 W	Right Angle	PDO	11/12/2016	1504	
19	US 36 W	Passing	PDO	01/21/2016	1240	
20	US 36 W	Right Angle	PDO	07/06/2018	1514	

A fatality had also occurred at the location prior to 2014, with the cause of the crash due to excessive speed.

2.0 Assessment Findings and Suggested Solutions

The RSA team has included their findings in this report, which contains a list of the potential strategies to remedy the problems. The team also rated the cost and difficulty to implement the suggested solutions.

2.1 US Highway 36 and Ensign Trace Intersection

Westbound US Highway 36 at the RSA location has two lanes, plus there are left and right turning lanes to separate decelerating traffic from traffic maintaining a normal speed.



Figure 8 – View of Westbound US Highway 36 at RSA location

Eastbound US Highway 36 is similar to westbound. It also has two lanes, plus left and right turning lanes to separate slowing traffic. Past the intersection, there is a lane for traffic turning off of Ensign Trace onto eastbound US Highway 36, as indicated by an arrow.



Figure 9 – View of Eastbound US Highway 36 at RSA location

Below is a view of US Highway 36 intersection from north of the median, looking south to Ensign Trace. North to south traffic, as well as turning traffic, must traverse the median.



Figure 10 – US Highway 36 Median, Looking South Towards Ensign Trace

The image below is a view of US Highway 36 intersection, looking north towards McEwlain Drive. Included in the image is part of the Business 36 intersection which traffic must cross before reaching US Highway 36. There is a turn lane for eastbound US Highway 36 traffic.



Figure 11 – US Highway 36 Median, Looking North

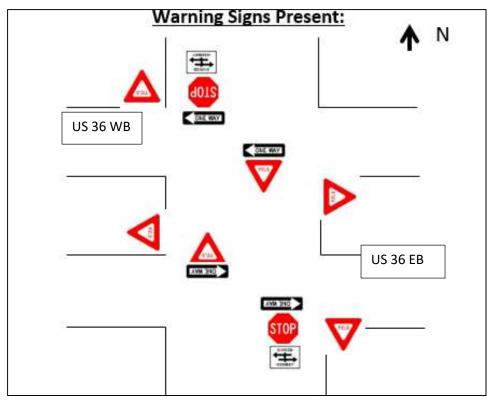
The signage at the intersection includes stop and yield warning signs, as well as one way and divided highway signs.





Figure 12 – Signage at US Highway 36 and Ensign Trace

The diagram below shows where regulatory signs are present at the intersection.





Key Findings and Suggestions

Observations were divided into ten categories, which include key findings and suggestions.

 Line of Sight – The RSA team agreed that the line of sight was sufficient but there is a lot for motorist to keep track of since cars are approaching from multiple directions at different speeds. It is possible that vehicles seem to be further away than what they actually are.



Figure 14 – Multiple Vehicles in the Median at the Intersection

No remedies suggested. However, remedies were suggested in several other categories that would make moving through the intersection easier for motorists.

2) **Pavement** - Several potholes and shoulder drop-offs were observed.



Figure 15 – Pavement Conditions

Suggested remedies include:

- Repair the potholes and the drop-offs on the edge of the shoulder.



Figure 16 – Potholes and Drop Offs

3) **Shoulders** – There are 10-foot wide paved shoulders until the turn lanes begin for the intersection. At the intersection the paved shoulders narrow to and there are gravel shoulders extending beyond the narrower paved shoulders. The gravel shoulders appear worn and, as mentioned under the previous category, there are shoulder drop-offs.

Figure 17 – Gravel Shoulders



Suggested remedies include:

- Perform shoulder maintenance and replace gravel shoulders with concrete.



Figure 18 – Replace Gravel Shoulders with Concrete

- Westbound US Highway 36 turn lane shoulder was specifically identified as needing a wider concrete shoulder.



Figure 19 – Westbound US Highway 36 Shoulder

4) **Rumble Strips, Guard Rails, Islands** – Rumble strips are present on both east and west bound US Highway 36, which stop at turning lanes. There are no guard rails and there was no mention of guard rails being needed at this location. There are six islands in the intersection creating a physical separation for vehicles traveling in different directions. It

was observed that the paint on the islands has faded and that some of the bases are crumbling.



Figure 20– Six Islands in the Intersection

- Paint and repair the crumbling islands to improve visibility.



Figure 21 – Intersection Island

5) **Lighting** – The RSA team concluded that the street lamps lining both sides of US Highway 36 provided sufficient illumination at the intersection, as well as approaching the intersection.



Figure 22– Street Lighting at Intersection

No remedies suggested.

6) **Signage** – Signage at the intersection was listed on pages 11 and 12. It was observed that the yield signs at the intersection were 48", not 60" and the divided highway stub should be placed on the sign. There is additional signage informing motorists of an intersection ahead on both east and westbound US Highway 36. The signage in both directions consists of two "intersection ahead" signs, with one having a flashing yellow light above the sign.



Figure 23 – Location of "Intersection Ahead" Signs

Suggested remedies include:

- Add another flashing sign on both westbound and eastbound lanes.

Figure 24 – "Intersection Ahead" Signage on Westbound Highway US 36



Figure 25 – "Intersection Ahead" Signage on Eastbound US Highway 36



- There was a suggestion for the signs to be interactive, which only flashes when a car approaches. It has been shown that the more a light flashes the less attention it receives.

- A "reduced speed ahead" sign located further east
- Signalize the intersection
- Add post delineators

-Correct the size of the yield sign and place a divided highway sign stub on it

Figure 26 – Yield Sign



- Add stop bars and sharks teeth to direct motorists where to stop and how to better navigate where to turn



Figure 27 – Stop Bar Example

(Image:https://twitter.com/springdale_ar/status/77931623266 7426816)





(Image: <u>https://www.colourbox.com/image/shark-teeth-sign-on-the-road-image-1178538</u>)

7) Turning and Acceleration Lanes – There are several turning lanes and acceleration lanes at the intersection, and the restrictive turning movements seemed to be causing the most problems. The median didn't appear to have a lot of room when there were several cars or a semi-truck needing to turn. This category received the most focus and several of the suggestions included closing some of the turning lanes at the intersection and opening up turning lanes at a nearby location. However, there was concern about emergency vehicles losing the ability to cross over at this intersection, and the possibility of traffic backing up.



Figure 29 – Semi Navigating Through the Intersection

Suggested remedies include:

- Add a yellow marking in the center of the median to keep motorists on the right for north traffic on Ensign Trace that will turn left on westbound US Highway 36.



Figure 30 – Median of US Highway 36 Intersection

- Extend out the eastbound US 36 turning lane. This would allow traffic more time to accelerate before merging with traffic.



Figure 31 – Extend Turning Lane on East Bound US 36

- Prohibit left turns from Business 36/Ensign Trace onto westbound US 36. Traffic would be rerouted to Hwy 69/Walnut Street.

Figure 32 – Rerouting Traffic onto Highway 69/Walnut Street



- Acquire additional right-of-way and partner with MoDOT to create an overpass at Reservoir Road to separate traffic.



Figure 33 – SE Reservoir Road Overpass for US Highway 36

- Open Harris Road for right hand turns off Eastbound US Highway 36



Figure 34 – Open Harris Road for Southbound Traffic from US Highway 36

8) Adjacent Land Use/ Driveways – The adjacent land use wasn't considered to impact the intersection. There are no driveways near the intersection.

No remedies suggested.

9) Cross Slopes – There was no cross slope that was thought to impact the intersection.

No remedies suggested.

10) **Speed Limits/ Zones** – The speed limit is 55 mph at the intersection and stopped traffic is expecting oncoming traffic to be traveling at the posted speed. However, traffic is often traveling at a higher speed.

No remedies suggested.

11) **Other Observations** – When there are multiple vehicles turning, motorists may not understand which vehicle has the right-of-way.

Suggestions include:

- Improve driver education to eliminate the confusion about which vehicle has the right-of-way.
- Launch a 10-4 campaign, where drivers are encouraged to stop for 10 seconds and look both ways twice.

The table below lists potential improvements provided by the RSA team, regardless of difficulty or cost to implement. These are not ranked by preference; they only serve as suggestions to increase the safety at this location.

		Cost
Site-Specific Issue	Potential Improvement Strategy	to Implement
Geometric	Extending out the eastbound US Highway 36 turning lane	Medium
	Prohibiting left turns from Business 36/Ensign Trace onto westbound US	
Geometric	Highway 36. Traffic would be rerouted to Highway 69.	High
	Acquire additional right of way and partner with MoDOT to create an	
Geometric	overpass at Reservoir Road to separate traffic	High
Geometric	Open Harris Road for right hand turns off of eastbound US Highway 36	High
Paint	Repaint lines and islands	Low
Paint	Paint sharks teeth and stop bars	Low

Figure 35 – List of Suggested Improvements

	Paint yellow marking in the center median to keep left turning traffic to	
Paint	the right	Low
Signage	Add a second interactive flashing sign on westbound US Highway 36	High
Signage	Add a second interactive flashing sign on eastbound US Highway 36	High
Signage	Add reduce speed ahead sign located further east	Low
Signage	Signalize intersection	High
Signage	Correct size of yield sign and add divided highway stub	Low
Maintenance	Repair potholes and shoulder drop offs	Low
Maintenance	Shoulder maintenance and concreting the gravel shoulder area	Medium-Low
Maintenance	Concreting the turn lane for westbound US 36	Medium-Low
Education	Educational campaign 10 - 4	
Euucauon		
Education	Driver's education to understand who has the right-of-way	

3.0 Conclusion

This assessment has been prepared to aid the responsible road authorities in the identification and actualization of prospects to improve safety within the study area. The assessment is based on information available at the time of the field review. The suggestions it contains are for consideration only, and are in no way intended to serve as design or operational recommendations. Some improvement strategies, such as repainting the lines are part of routine maintenance and would be implemented regardless of an RSA. Other strategies, mainly the geometric category, are expensive to implement and may be considered after less expensive strategies, such as signage, have been tried.

This report does not rule out the identification of additional issues pertaining to safety by the responsible road authorities, or the emergence of new issues over time. It is recommended that the responsible agencies review this report, document their responses to the issues identified in a formal response report, and track their progress toward the implementation of safety improvements prompted by the assessment.

Attachment A: 2014 - 2018 Crash Data (Source: Elizabeth Bowen, MoDOT)

Crash Data 2014-2018 US 36 @ Ensign Trace Elizabeth.Bowen@modot.mo.gov

YEAR	2014	2015	2016	2017	2018	2019	TOTA
Property Damage Only (PDO)	1	3	3	3	3	0	13
Minor Injury (MI)	0	0	1	2	4	0	7
Disabling Injury (DI or serious injury)	0	0	0	0	0	0	0
Fatal (Fatality)	0	0	0	0	0	0	0
TOTAL	1	3	4	5	7	0	20
ANIMAL DRAWN VEH/RIDDEN ANIMAL	0	0	0	0	0	0	0
ANIMAL NOT DEER/DOG/FARM ANIMAL	0	0	0	0	0	0	0
ANIMAL OTHER THAN DEER	0	0	0	0	0	0	0
AVOIDING	0	0	0	0	0	0	0
BACKING	0	0	0	0	0	0	0
CHANGING LANES	0	0	0	0	0	0	0
CROSS MEDIAN	0	0	0	0	0	0	0
DEER	0	0	0	0	0	0	0
DOG	0	0	0	0	0	0	0
DUAL LEFTS COLLIDE	0	0	0	0	0	0	0
DUAL RIGHTS COLLIDE	0	0	0	0	0	0	0
FARM ANIMAL	0	0	0	0	0	0	0
FIXED OBJECT	0	0	0	0	0	0	0
HEAD ON	0	0	0	0	0	0	0
JACKKNIFE	0	0	0	0	0	0	0
LEFT TURN	0	0	1	0	0	0	1
LEFT TURN RIGHT ANGLE COLLISON	0	0	0	0	1	0	1
OTHER	0	0	0	0	1	0	1
OUT OF CONTROL	1	0	1	0	0	0	2
PARKING OR PARKED CAR	0	0	0	0	0	0	0
PASSING	0	0	1	0	0	0	1
PEDESTRIAN	0	0	0	0	0	0	0
PEDACYCLE	0	0	0	0	0	0	0
REAR END	0	1	0	1	1	0	3
RIGHT ANGLE	0	2	1	4	4	0	11
RIGHT TURN	0	0	0	0	0	0	0
RIGHT TURN RIGHT ANGLE COLLISION	0	0	0	0	0	0	0
SIDESWIPE	0	0	0	0	0	0	0
U-TURN	0	0	0	0	0	0	0
TOTAL	1	3	4	5	7	0	20

Crashes

<u> Fatal: (0)</u>

Serious: (0)

<u> Minor: (7)</u>

- 1) Right Angle: Driver Two pulled off of Ensign Trace NB and failed to yield to driver one on US 36 EB.
- 2) Right Angle: Driver one failed to yield to driver two NB on Ensign Trace
- 3) Out of Control: Vehicle1 turning right off of US 36 EB failed to negotiate the corner drove off the road and struck a ditch.
- 4) Right Angle: Vehicle 1 was stopped at the yield sign in median and thought vehicle 2 was turning left from US 36. Vehicle 2 struck Vehicle one.
- 5) Right Angle: Vehicle 1 was driving across US 36 to McElwain Dr, failed to yield in median to vehicle 2. Vehicle 2 struck vehicle 1.
- 6) Right Angle: Vehicle 1 failed to yield to vehicle 2 when pulling off of SB McElwain Drive onto US 36.
- 7) Other: Motorcyclist lost control while negotiating a corner due to gravel.

Property Damage Only: (13)

- 8) Rear End: Both Vehicles were on Ensign Trace NB, Vehicle 1 stopped at stop sign Vehicle 2 fell in behind. Vehicle 1 began to back up and hit Vehicle 2.
- 9) Right Angle: Vehicle 2 was EB on US 36 and was struck by Vehicle 1, SB on McElwain Dr. Vehicle 2 was thought to have been turning right.
- 10) Left Turn: Vehicle 1 was traveling on WB US 36, and was turning onto Ensign Trace, failed to yield to Vehicle 2 who was EB on US 36.
- 11) Right Angle: Vehicle 1 was SB on McElwain and failed to yield to Vehicle 2 who was EB on US 36.
- 12) Right Angle: Vehicle 1 was traveling EB on US 36 and Vehicle 2 was traveling SB onto Ensign trace SB. Vehicle 2 failed to yield to vehicle 1.
- Out of Control: Vehicle 1 was sitting NB on Ensign Trace at the stop sign. Vehicle 2 failed to negotiate the corner and hit vehicle 1
- 14) Right Angle: Vehicle 1 was SB crossing US 36 and failed to yield to Vehicle 2 was EB on US 36.
- 15) Left Turn Right Angle Collision: Driver 1 was traveling NB across US 36 and failed to yield to driver 2 who was WB on US 36
- 16) Rear End: (Right Angle): Vehicle 2 failed to yield to Vehicle 1. Vehicle 1 was EB on US 36 and Vehicle 2 was crossing US 36 going SB onto Ensign Trace.
- 17) Rear End: Vehicle one was waiting in the left turn lane on NB Ensign Trace when driver 2 fell asleep and ran into the back of Vehicle 1.
- 18) Right Angle: Vehicle 1 was EB on US 36 and vehicle 2 was NB on Ensign Trace when Vehicle 2 failed to yield to vehicle 1.
- 19) Passing: Vehicle 1 was WB on 36 and Vehicle 2 made a left turn on 36 WB in front of Vehicle 1.
- 20) Right Angle: Vehicle 1 was on US 36 when Vehicle 2 failed to yield turning off of McElwain.

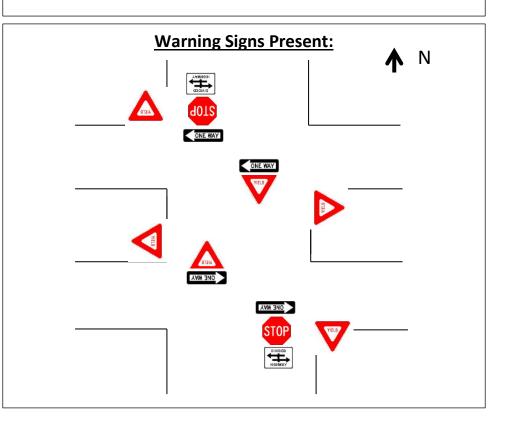
Roadway Features

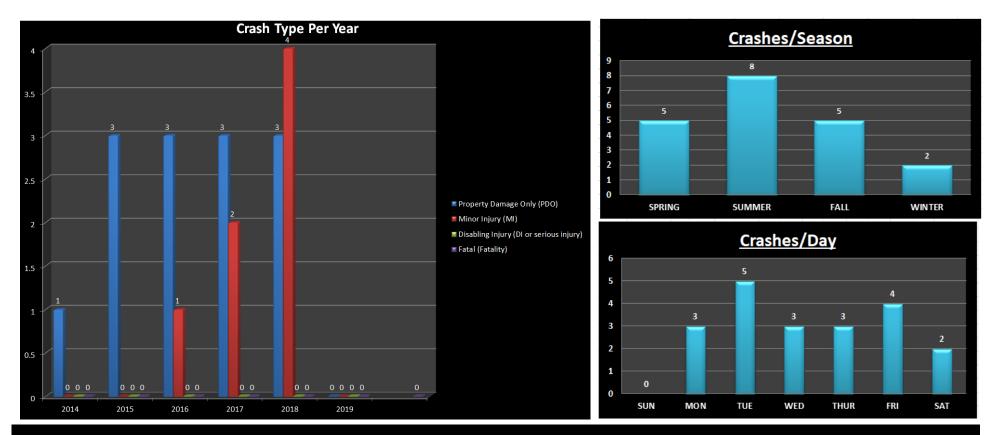
AADT: US 36 EB/WB: 11537 Ensign Trace: 2846
Sight Distance: Sufficient in both directions
Lane Width: 12 feet
Shoulders: 10 feet
Lighting: Present on WB direction
Stop Bar and Striping: Stop bar not present NB/ Present SB
Rumble Strips and Edge line: Edge Line Present

Severity Index	Crashes/Year	Crash Rate
1.7	4	.76

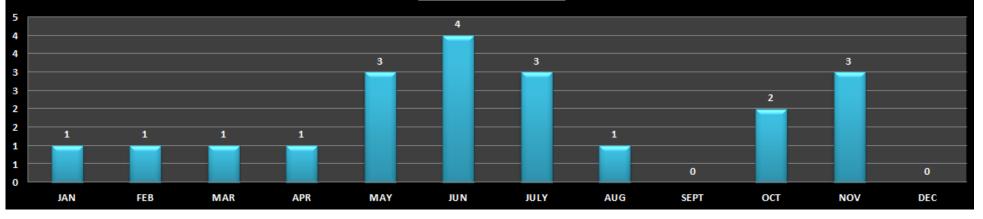
SI= [PDO (1) + MI (3) + DI (6) + Fatal (12)]/#Crashes

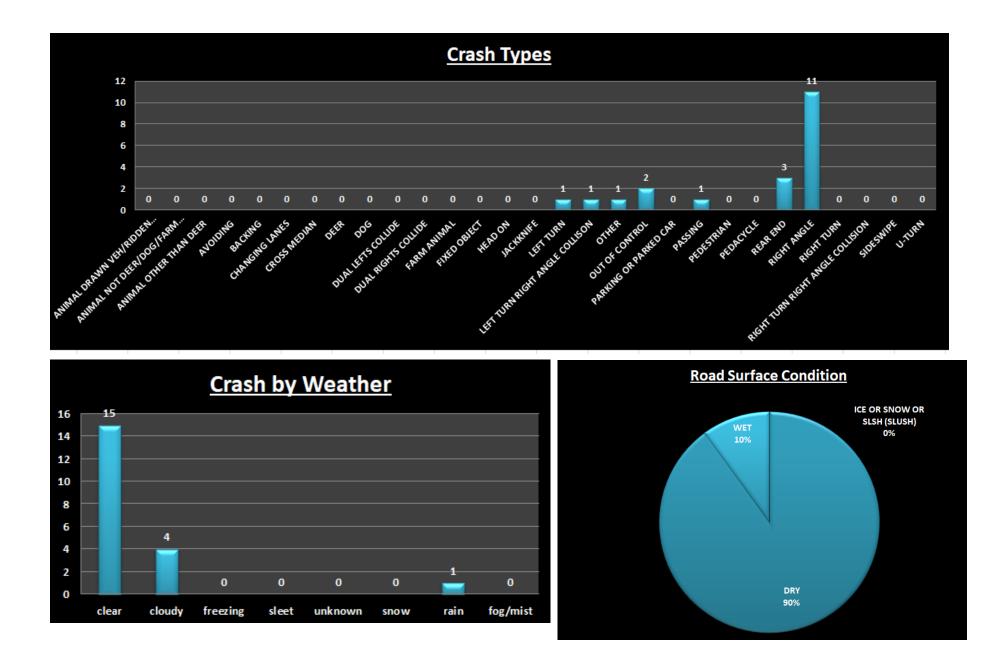
Rate= No. of crashes * 1,000,000 / No. of years * 365 * Entering AADT

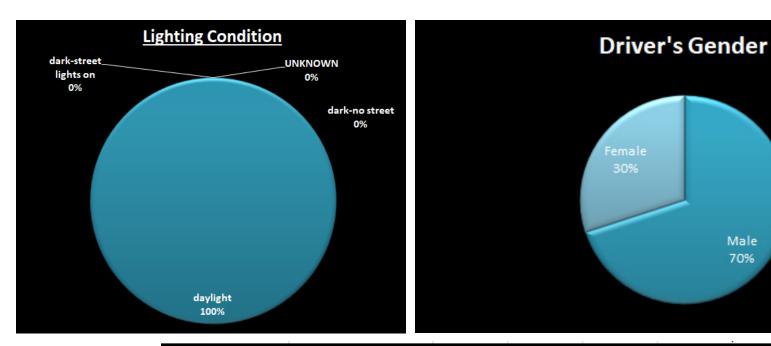


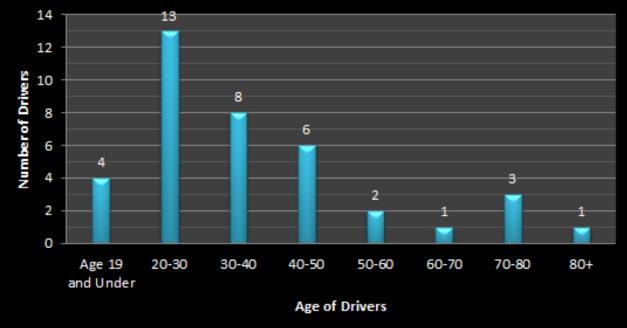


Crashes/Month

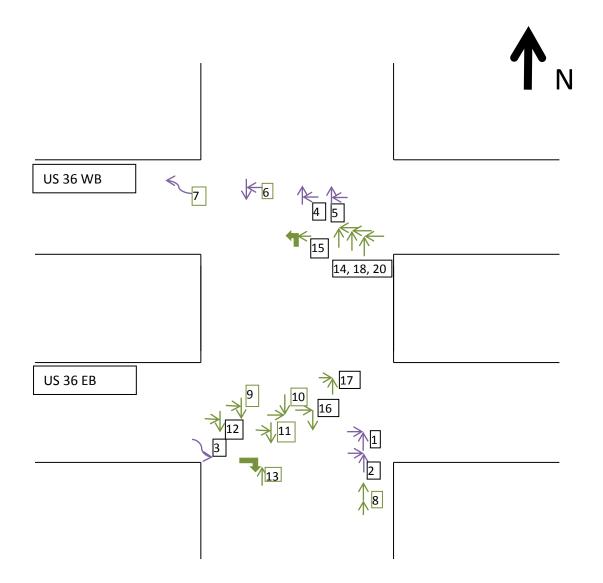








Male 70%



1	DEKALB	US 36 E	RIGHT ANGLE	7/7/2018	MINOR INJURY	DAYLIGHT	DRY	CLEAR	3560	SAT	1100
2	DEKALB	US 36 E	RIGHT ANGLE	5/4/2017	MINOR INJURY	DAYLIGHT	DRY	CLOUDY	3560	THU	1328
3	DEKALB	US 36 E	OUT OF CONTROL	11/22/201 6	MINOR INJURY	DAYLIGHT	WET	RAIN	3560	TUE	1030
4	DEKALB	US 36 W	RIGHT ANGLE	6/16/2017	MINOR INJURY	DAYLIGHT	DRY	CLEAR	3561	FRI	1505
5	DEKALB	US 36 W	RIGHT ANGLE	10/23/201 8	MINOR INJURY	DAYLIGHT	DRY	CLEAR	3561	TUE	1605
6	DEKALB	US 36 W	RIGHT ANGLE	10/22/201 8	MINOR INJURY	DAYLIGHT	DRY	CLEAR	3561	MON	1850
7	DEKALB	US 36 W	OTHER	3/30/2018	MINOR INJURY	DAYLIGHT	DRY	CLEAR	3561	FRI	1903
8	DEKALB	BU 36 E	REAR END	7/31/2018	PDO	DAYLIGHT	DRY	CLEAR	5191	TUE	1645
9	DEKALB	US 36 E	RIGHT ANGLE	6/17/2015	PDO	DAYLIGHT	DRY	CLEAR	3560	WED	1512
10	DEKALB	US 36 E	LEFT TURN	5/6/2016	PDO	DAYLIGHT	DRY	CLEAR	3560	FRI	1513
11	DEKALB	US 36 E	RIGHT ANGLE	6/2/2015	PDO	DAYLIGHT	DRY	CLEAR	3560	TUE	1646
12	DEKALB	US 36 E	RIGHT ANGLE	6/26/2017	PDO	DAYLIGHT	DRY	CLOUDY	3560	MON	1635
13	DEKALB	US 36 E	OUT OF CONTROL	4/10/2014	PDO	DAYLIGHT	DRY	CLOUDY	3560	THU	1517
14	DEKALB	US 36 W	RIGHT ANGLE	2/22/2017	PDO	DAYLIGHT	DRY	CLEAR	3561	WED	1100
15	DEKALB	US 36 W	LEFT TURN RIGHT ANGLE COLLISION	8/28/2018	PDO	DAYLIGHT	DRY	CLEAR	3561	TUE	1400
16	DEKALB	US 36 W	REAR END	11/23/201 5	PDO	DAYLIGHT	DRY	CLEAR	3561	MON	1208
17	DEKALB	US 36 W	REAR END	5/10/2017	PDO	DAYLIGHT	DRY	CLEAR	3561	WED	1640
18	DEKALB	US 36 W	RIGHT ANGLE	11/12/201 6	PDO	DAYLIGHT	DRY	CLEAR	3561	SAT	1504
19	DEKALB	US 36 W	PASSING	1/21/2016	PDO	DAYLIGHT	WET	CLOUDY	3561	THU	1240
20	DEKALB	US 36 W	RIGHT ANGLE	7/6/2018	PDO	DAYLIGHT	DRY	CLEAR	3561	FRI	1514