



US 12 Road Safety Audit

Briefing Book

May 28, 2015



Road Safety Audit Team

Brad Estochen, State Traffic Safety Engineer, MnDOT
Phone: 651-234-7011
Email: bradley.estoche@state.mn.us

Derek Leuer, Traffic Safety Engineer, MnDOT
Phone: 651-234-7372
Email: derek.leuer@state.mn.us

Scott Thompson, District 7 (Mankato) Traffic Engineer
Phone: 507-304-6156
Email: scott.m.thompson@state.mn.us

Jim Rosenow, State Design Flexibility Engineer
Phone: 651-366-4673
Email: james.rosenow@state.mn.us

Melissa Barnes, Bicycle and Pedestrian Engineer
Phone: 651-234-7376
Email: melissa.barnes@state.mn.us

Gary Kroells, Director of West Hennepin Public Safety Department /
Leader of the Highway 12 Coalition
Phone: 763-479-0500
Email: gkroells@westhennepin.com

Will Stein, FHWA Safety Engineer (MN Division)
Phone: 651-291-6122
Email: william.stein@dot.gov

Brandi Popenhagen, Engineer, HDR
Phone: 763-591-5384
Email: brandi.popenhagen@hdrinc.com

Bernie Arseneau, HDR
Phone: 763-278-5912
Email: bernard.arseneau@hdrinc.com

Natalie Lindsoe, E.I.T., HDR
Phone: 763-591-5424
Email: natalie.lindsoe@hdrinc.com

Table of Contents

A Corridor Information

Primary Focus Areas:

- Critical Areas (A1-A2)
- Coalition Concerns (A3-A4)

District 3 Updates (A5-A6)

Metro District Updates (A7)

Construction History (A8)

County Road Maps (A9-A11)

ADT Maps/Tables (A12-A18)

Wavetronics Data (A19-A22)

B Corridor-Wide Trends

Historical Trends (B1-B4)

Crash Severity (B5)

Surface Conditions (B6)

Diagram (B6)

Relation to Junction (B7)

Type of Crash (B7)

Location of Crash (B8)

Time of Crash (B9)

C Segment and Intersection Crash Data

Segment Crash Data

Segment Notes (C1-C2)

Crash Severity (C2-C3)

Crash Rates (C5)

Intersection Crash Data

Grouped by Segment (A-M):

- Intersection Notes
- Crash Severities
- Crash Rates

A: (C6-C7)	H: (C22-C23)
B: (C8-C10)	I: (C24-C25)
C: (C11-C12)	J: (C26-C28)
D: (C13-C14),	K: (C29-C31)
E: (C15-C16)	L: (C32-C34)
F: (C17-C19)	M: (C35-C36)
G: (C20-C21)	

D Crash Type Summaries (Basic Sheets)

Fatal and Severe Crash Summary – By Segment (D1-D2)

Critical Segments (D3-D9)

Critical Intersections (D10-D40)

E Aerial Shots of Focus Areas (E1-E21)

F Appendices

Safety Solutions

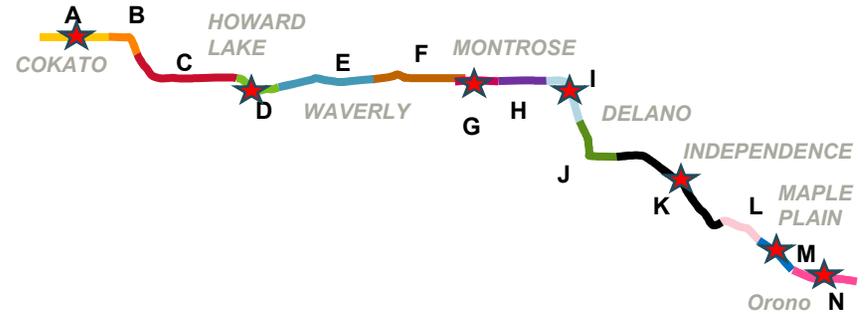
This page intentionally left blank.



A. Corridor Information

- Primary Focus Areas:
 - Critical Areas (A1-A2)
 - Coalition Concerns (A3-A4)
- District 3 Updates (A5-A6)
- Metro District Updates (A7)
- Construction History (A8)
- County Road Maps (A9-A11)
- ADT Maps/Tables (A12-A18)
- Wavetronics Data (A19-A22)

Critical Segments: A, D, G, I, K, M,N



Segment	Location	Reason Studied?	Basic Sheet Page #
A	Cokato	FAR Exceeds State Average	D3
D	Howard Lake	FAR Exceeds State Average	D4
G	Woodland	FAR Exceeds State Average	D5
I	Woodland	FAR Exceeds State Average	D6
K	Independence	FAR Exceeds State Average	D7
M	Medina/Orono	FAR Exceeds State Average	D8
N	Orono	FAR Exceeds State Average	D9

Primary RSA Focus Areas

Notes:

*The term "critical" incorporates all segments/intersections that have crash rates that exceed either state average rates or the critical rate. Intersections that had over 5 crashes during the 5-year study period were also evaluated.

** "FAR" = fatal and incapacitating crash rate.

Critical Intersections:

Seg.	Cross Street	Location	Reason Studied?	Basic Sheet Page #	Aerial Sheet #
A	Quimby Ave SW	West of Cokato	CR Exceeds State Average	D10	E1
B	Sunset Ave N	Western Cokato	CR Exceeds State Average	D11	E2
	Johnson Ave N	Western Cokato	CR Exceeds State Average	D12	E2
	Jackson Ave NW	Western Cokato	CR Exceeds State Average	D13	E2
	CSAH 3 / Broadway Ave N	Western Cokato	More than 5 crashes occurred in 2010-2014	D14	E2
D	CSAH 6 LT / 10th Ave	Western Howard Lake	CR Exceeds State Average	D15	E3
	CSAH 6 RT / 7th Ave	Central Howard Lake	CR Exceeds State Average	D16	E3
F	CSAH 8 LT/ Emerson Ave SW	Western Waverly	CR Exceeds State Average	D17	E4
	S 4th St / CSAH 62	Central Waverly	CR Exceeds State Average	D18	E4
	Clementa Ave SW	Western Montrose	CR Exceeds State Average	D19	E5
	Center Ave S	Central Montrose	CR Exceeds State Average	D20	E5
G	T.H. 25 RT / CSAH 12 / Buffalo Ave S	Central Montrose	More than 5 crashes occurred in 2010-2014	D21	E5
	Zephyr Ave	Eastern Montrose	FAR Exceeds State Average	D22	E6
I	T.H. 25 LT	East of Montrose	CR Exceeds State Average	D23	E6
	CSAH 14	West of Delano	CR Exceeds State Average	D24	E7
J	Bridge Ave E	Western Delano	More than 5 crashes occurred in 2010-2014	D25	E8
	CSAH 30 RT	Central Delano	More than 5 crashes occurred in 2010-2014	D26	E8
	5th St S	Central Delano	More than 5 crashes occurred in 2010-2014	D27	E9
	Babcock Cir	Eastern Delano	More than 5 crashes occurred in 2010-2014	D28	E9
	Tiger Dr	Eastern Delano	More than 5 crashes occurred in 2010-2014	D29	E10
	CSAH 139 / County Line Rd SE	Eastern Delano	CR Exceeds State Average	D30	E10, E11
K	Nelson Rd	Western Independence	More than 5 crashes occurred in 2010-2014	D31	E11, E12
	CSAH 92 RT / Mud Lake Rd	Central Independence	CR Exceeds State Average	D32	E15
	CSAH 92 LT / Lake Sarah Rd	Central Independence	More than 5 crashes occurred in 2010-2014	D33	E15
	Valley Rd	Central Independence	More than 5 crashes occurred in 2010-2014	D34	E16
	CSAH 90	Eastern Independence	CR Exceeds Critical Rate	D35	E17
L	CSAH 83 / Halgren Rd	Central Maple Plain	More than 5 crashes occurred in 2010-2014	D36	E18
	Pioneer Ave	Central Maple Plain	CR Exceeds State Average and FAR Exceeds Critical FAR	D37	E18
	Budd Ave N	Central Maple Plain	CR Exceeds Critical Rate	D38	E19
	CSAH 19 / Main St E	Central Maple Plain	CR Exceeds State Average	D39	E19
	CSAH 29 / Baker Park Rd / Townline Rd	Eastern Maple Plain	More than 5 crashes occurred in 2010-2014	D40	E20

Note:

*The term "critical" incorporates all segments/intersections that have crash rates that exceed either state average rates or the critical rate. Intersections that had over 5 crashes during the 5-year study period were also evaluated.

** "FAR" = fatal and incapacitating crash rate.

*** "CR" = crash rate.

Primary RSA Focus Areas

Concerns Voiced by the City of Cokato and the US 12 Coalition

Corridor-Wide

- Corridor lighting – especially at intersections.
- Speeding Issues – especially through towns where speed limits are temporarily reduced.

Cokato

- Ice issues on stretch of Highway 12 between Cokato and Dassel: Has issues with ice during the winter months. Because there is very little screening, the roadway in between the cities near the school gets very icy with wind blowing snow across the road.
- Access to the school off Highway 12: There is no signal light or other traffic control device at the intersection by the school. Passenger vehicles and school buses take chances every day trying to exit the school onto Highway 12. In addition, because it is an open stretch of flat land in either direction, the speed of the oncoming traffic on Highway 12 is also a safety concern. Motorists frequently ignore posted speed limits in this area, and the speed limits are too fast to allow cross traffic from the school to exit safely. Even a flashing light that only stops traffic during peak morning/afternoon drop off times would be helpful.
- Intersection of Highway 12 and CSAH 3: Often have issues with truck traffic turning to head north on CSAH 3. Traffic coming south on CSAH 3 are blind to traffic coming from either direction on Hwy 12 until they are nearly at the intersection because lines of sight are blocked by two existing buildings. CSAH 3 is not wide enough for large trucks to make the turn from either direction without entering into the left turn lane heading south on CSAH 3. Traffic entering the turn lane south often have to stop far short of the intersection, thus not triggering the sensor for the stoplight, or have been forced to put their vehicle into reverse and back up to avoid being hit by turning trucks. This method has worked, since there weren't cars behind them in line, but is also a safety risk, as oncoming traffic is not expecting the cars ahead to be coming in reverse.

Howard Lake

- Speed concerns: People usually ignore the speed limit drop (55 mph to 30 mph) because the stretch of road is relatively short. This especially creates risk for pedestrians/bicycles because sidewalks are located close to the street.

Montrose

- Speed concerns: Particularly around County Rd 14 and T.H. 25.

Concerns Voiced by the City of Cokato and the US 12 Coalition

Delano

- West Pointe Church at 9090 Hwy 12: The Coalition recommends adding left-hand turn lanes for entering traffic.
- Peterson's Produce: The Coalition recommends closing off West Driveway to Peterson's Produce and add a left hand turn lane into this area.

Independence

- The Coalition recommends a complete redesign/rebuild of Hwy 12 through Independence.
- County Road 92: The County Rd 92 intersection backs up to Maple Plain during rush hour and drivers will choose to detour away from US 12. Sometimes drivers will make less safe decisions regarding left hand turns because of this. Analyze the intersections at Tiger Drive and Crow River Drive.
 - The Coalition recommends realigning Hwy 12 and County Rd 92 (North and South), with a controlled intersection.
- County Road 90: The Coalition recommends installing a roundabout at Hwy 12 and County Rd 90.
- The Coalition recommends adding rumble Strips west of Highway 83.
- The Coalition recommends cutting the hill down at the frontage road from Nelson Road to County Line Road due to sight line issues.
- The Coalition recommends closing off access to Valley Road
- The Coalition recommends closing off access to Histman Lane East
- The Coalition recommends realigning Hitsman Lane West, Copeland Road, and Lake Haughey Road.

Maple Plain

- There is a dip in the road east of Maple Plain where a fatality has occurred
- Focus on the area between Blackwater and Maple Avenue, curve and access points.
- The Coalition recommends allowing businesses on Highway 12 access through Pioneer and Manchester (example Wenck). Avoid hassles with getting onto Highway 12.

Past

1996 – (8601-35) Reconstruction west of Cokato

1997 – (8601-42) Reconstruction from West limits of Montrose to West limits of Delano – includes passing lane section

1998 – (8601-47) Reconstruction Cokato to Howard Lake – includes passing lane section

1999 – (8601-50) Reconstruction in Cokato

2000 (8601-48) Reconstruction from Howard Lake to Montrose

2008-2009 (8602-40 and -44) Reconstruction in Delano (urban section built as 3 lane with wide shoulders; could be striped as a four-lane in the future if TH 12 capacity increased between Metro and Delano.)

Programmed

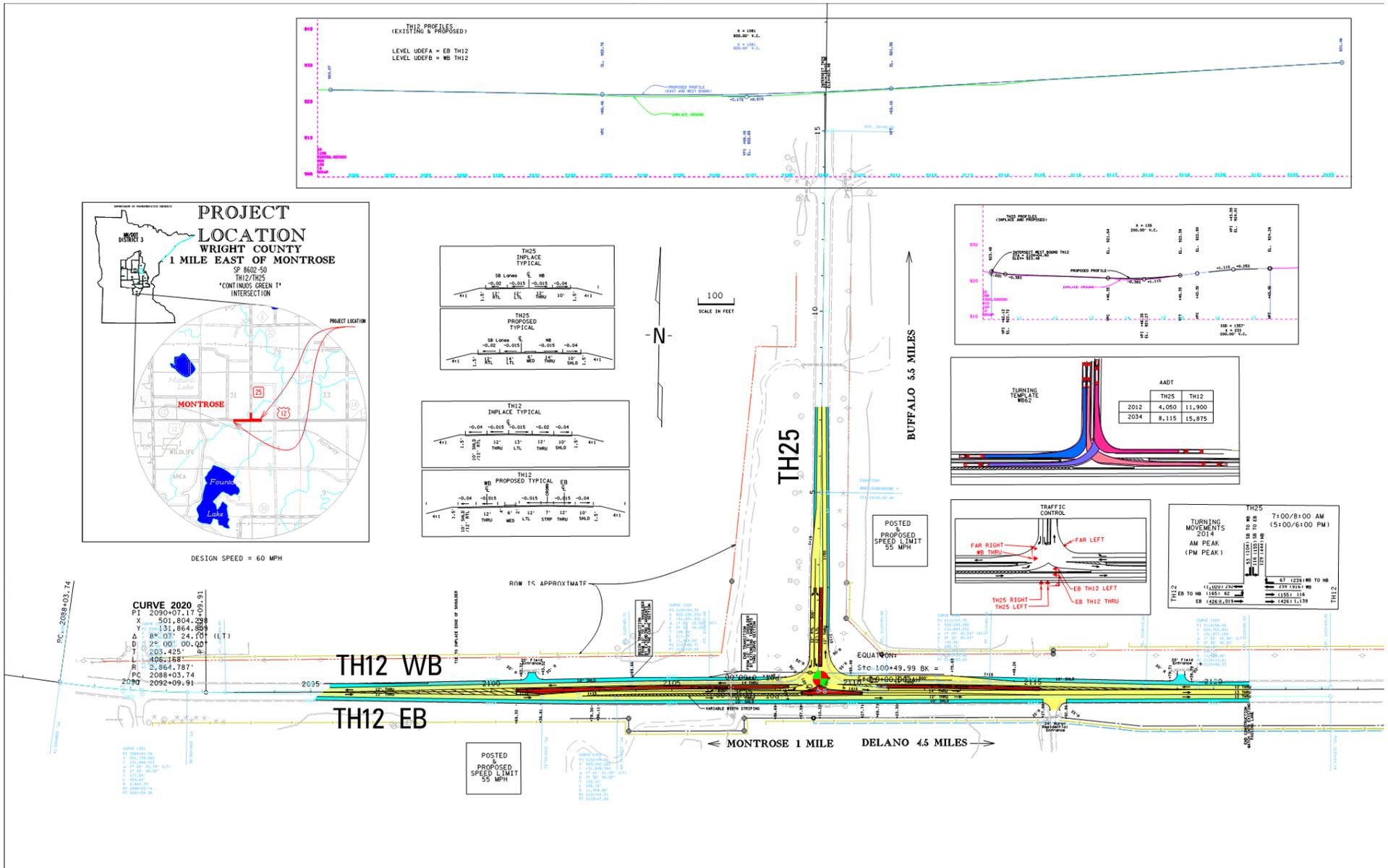
FY 2018 (8601-64) Cokato to Howard Lake Resurfacing

FY 2019 (8601-61) Meeker County Line to 7th St E in Cokato Resurfacing and ADA

Planned

FY 2021 Howard Lake to Delano – Resurfacing includes ADA in Howard Lake, Waverly and Montrose

US 12 Projects in District 3



US 12 and TH 25 2015 Construction in Montrose, MN

**T.H. 25 in Montrose is under construction and will be detoured to County Rd 12 until the end of June.

Past

2005 – (2713-90) Resurface TH 12 from CSAH 90 to Hennepin/Wright County line

2006 – (2713-77) Resurface and install median in eastern portion of Maple Plain, west of CSAH 29 to Boundary Ave

2008 – (2713-83) Construct bypass of Long Lake and Orono from CSAH 6 to CSAH 15

2010 – (2713-85) Replace BNSF RR bridge east of CSAH 90 in Maple Plain

2012 – (2713-88) Resurface and add left turn lanes in Maple Plain Boundary Ave to BNSF RR bridge (east of RR bridge location)

2014 - Centerline rumble strips installed (Diamond Surfaces Inc donation) between CSAH 6 and CSAH 29 and from CSAH 9 to County Line Road.

Programmed

2015 – (2714-124) Add auxiliary lane on EB TH 12 from CSAH 15/South CSAH 101 to I-494

Fall 2015 – (2713-116) Install intersection lighting east of CSAH 90 to County line. Includes 3 County Road intersections and 4 or 5 city roads.

Planned

2018 – Re-deck CSAH 101 bridge over TH 12 in Wayzata

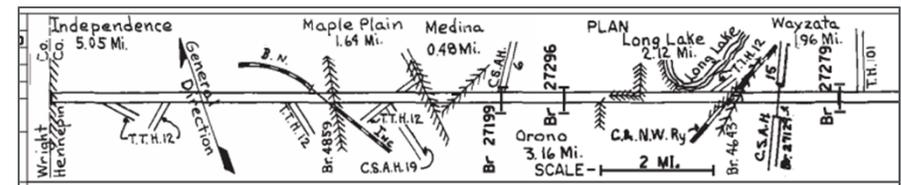
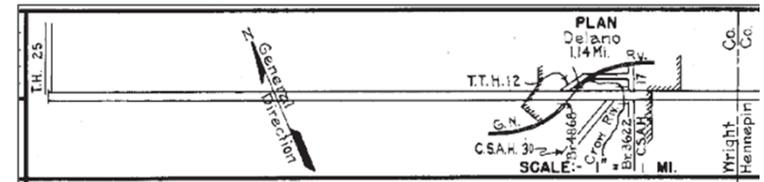
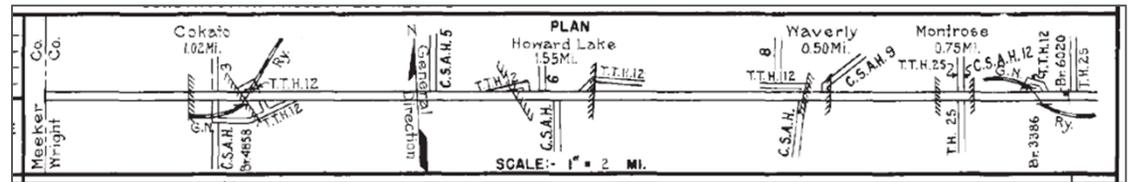
2018 – Improvement (left turn lane) was planned at CSAH 90, however, this project was placed on hold pending re-scoping after the RSA is completed.

??? – Next pavement project (CSAH 6 to CSAH 29 and CSAH 90 to County line) undetermined at this time.

??? – Interest in adding an extra auxiliary lane for eastbound traffic between the Super 2 and I-494

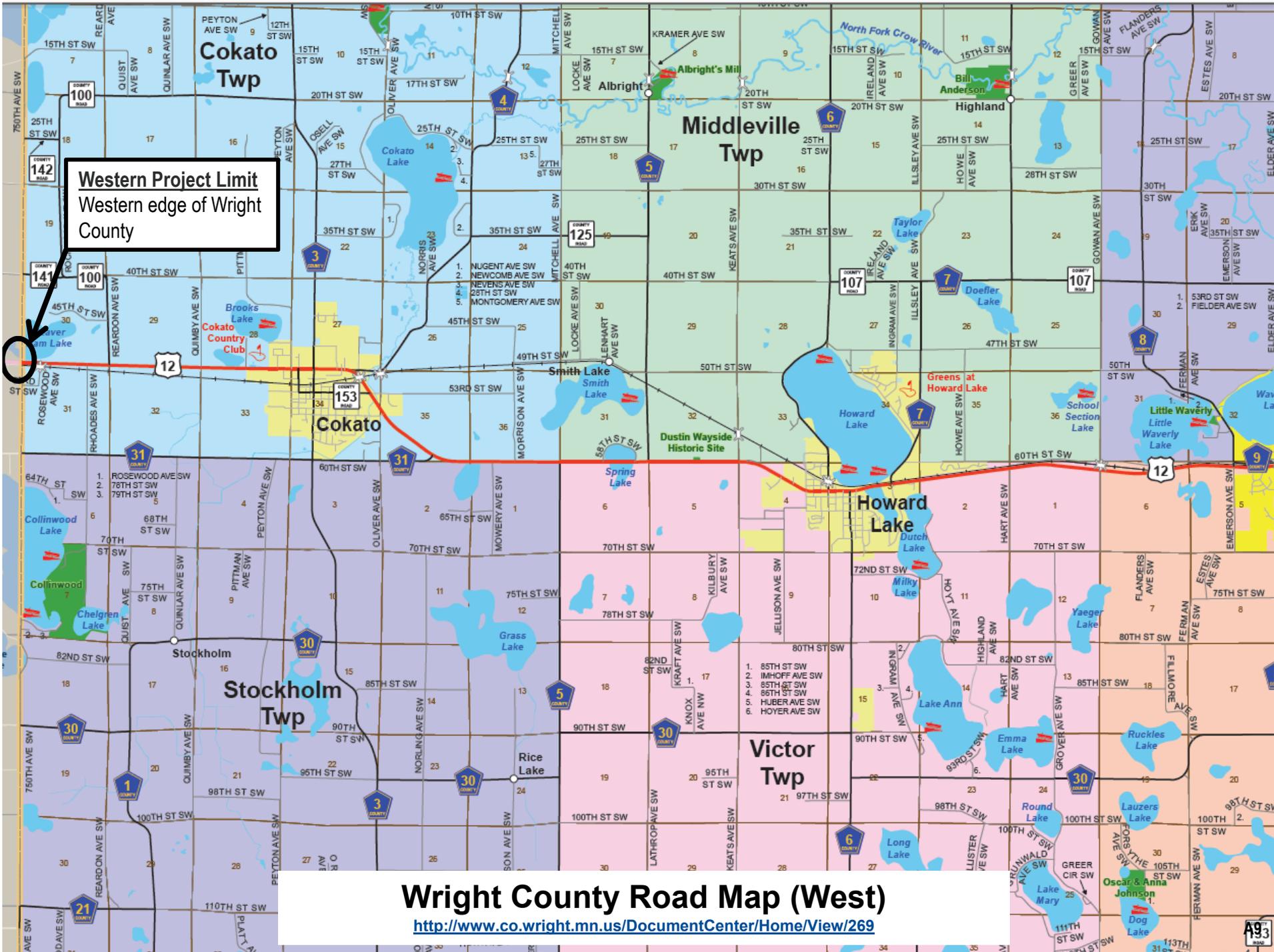
US 12 Projects in Hennepin County, MN

Construction Project Log Summary (2004-2014)



Year Built	Project No.	Length [mi]	Location	Type	Remarks
2012	2713-88	1.133	Around CSAH 19 in Maple Plain	Grading, Bituminous Mill & Overlay, Agg. Base C6	Spec 2360
2010	8823-159	4.207	Between Wright-Hennepin Co. Boundary and CSAH 90 in Maple Plain	Bituminous Seal Coat	FA-2
2010	2713-85	0.940	Around CSAH 90 in Maple Plain	Grading, Bituminous Surfacing	Change in dividedness
2009	8602-44	0.64	Delano	Grading, Bituminous Surfacing	Br. 86021
2008	8602-40	Shortens .011	Starting at Wright-Hennepin Co. Boundary, Going West into Delano	Grading, Bituminous Surfacing	Realign Intersection with CSAH 30
2008	2713-83	5.857	Medina to Wayzata	Grading, Surfacing, Const. 6 Bridges	Realignment, Bit. Overlay & Concrete Surfacing.
2006	2713-77	0.646	Around CSAH 19 in Maple Plain	Grading, Bituminous Surfacing	Spec 2360
2006	8823-89, D06080	7.121	Howard Lake, Waverly	Bituminous Seal Coat & Fog Seal	FA-3, Spec 2356
2005	2713-90	4.33	Starting at Wright-Hennepin Co. Boundary, Going East to Maple Plain	Milling & Bituminous Surfacing	Spec 2360
2004	8823-58	21.474	Cokato to 4.701 Miles East of T.H. 25 in Delano	Bituminous Seal Coat	F3

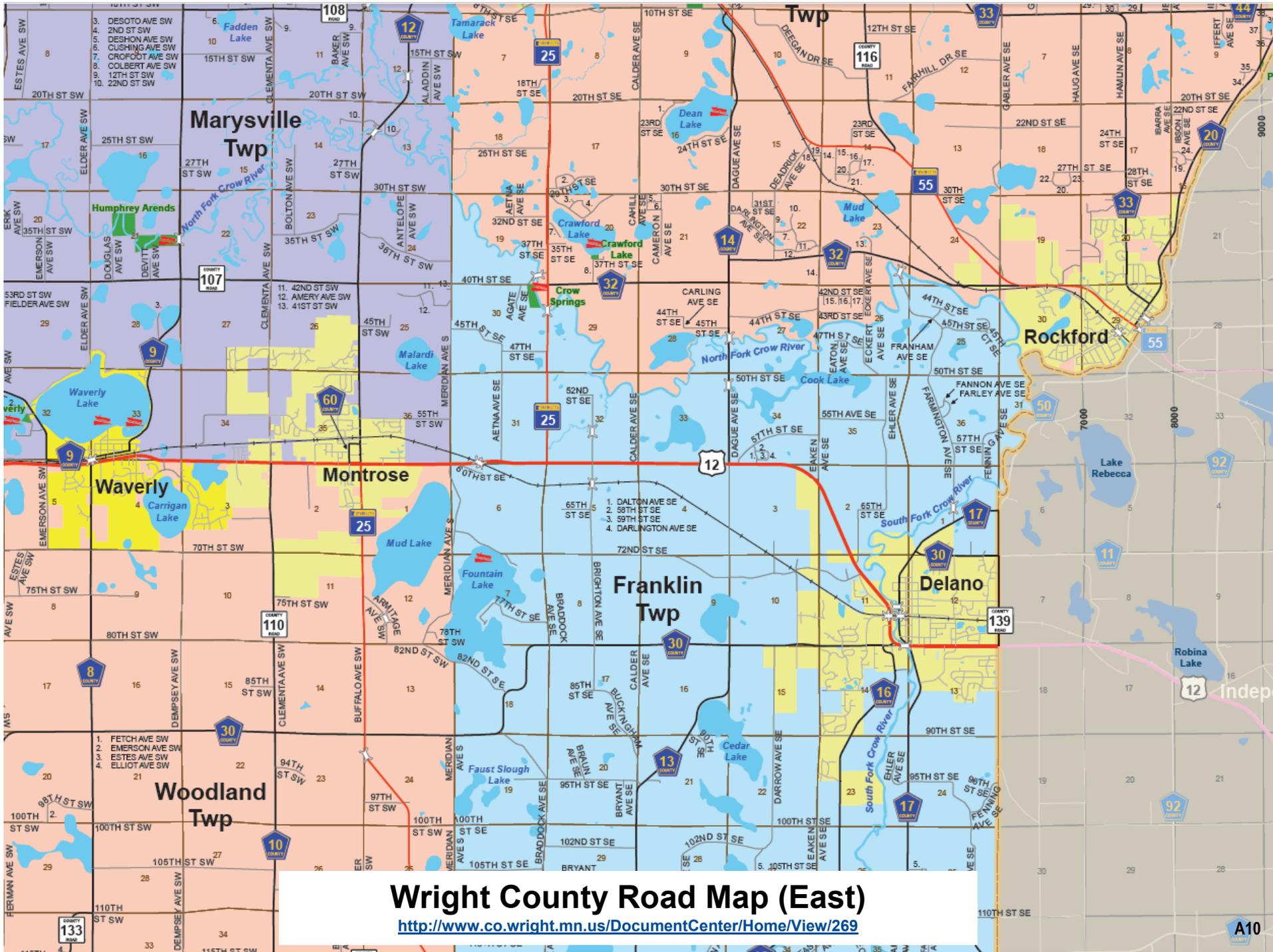
Information from Hennepin County (Metro) Log and Wright County Construction Project Logs:
<http://www.dot.state.mn.us/roadway/data/const-projlog-bydistrict.html>



Western Project Limit
 Western edge of Wright
 County

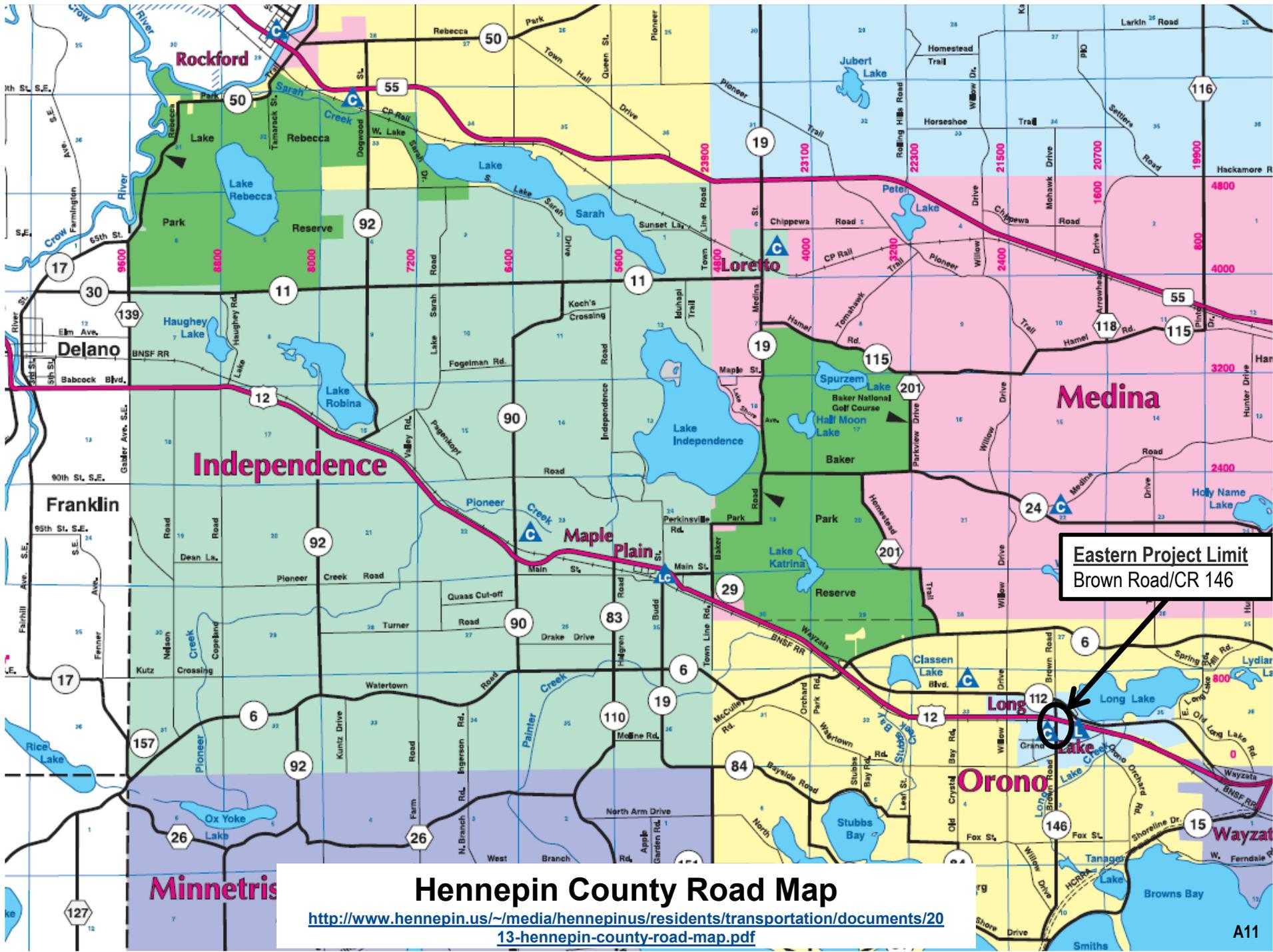
Wright County Road Map (West)

<http://www.co.wright.mn.us/DocumentCenter/Home/View/269>



Wright County Road Map (East)

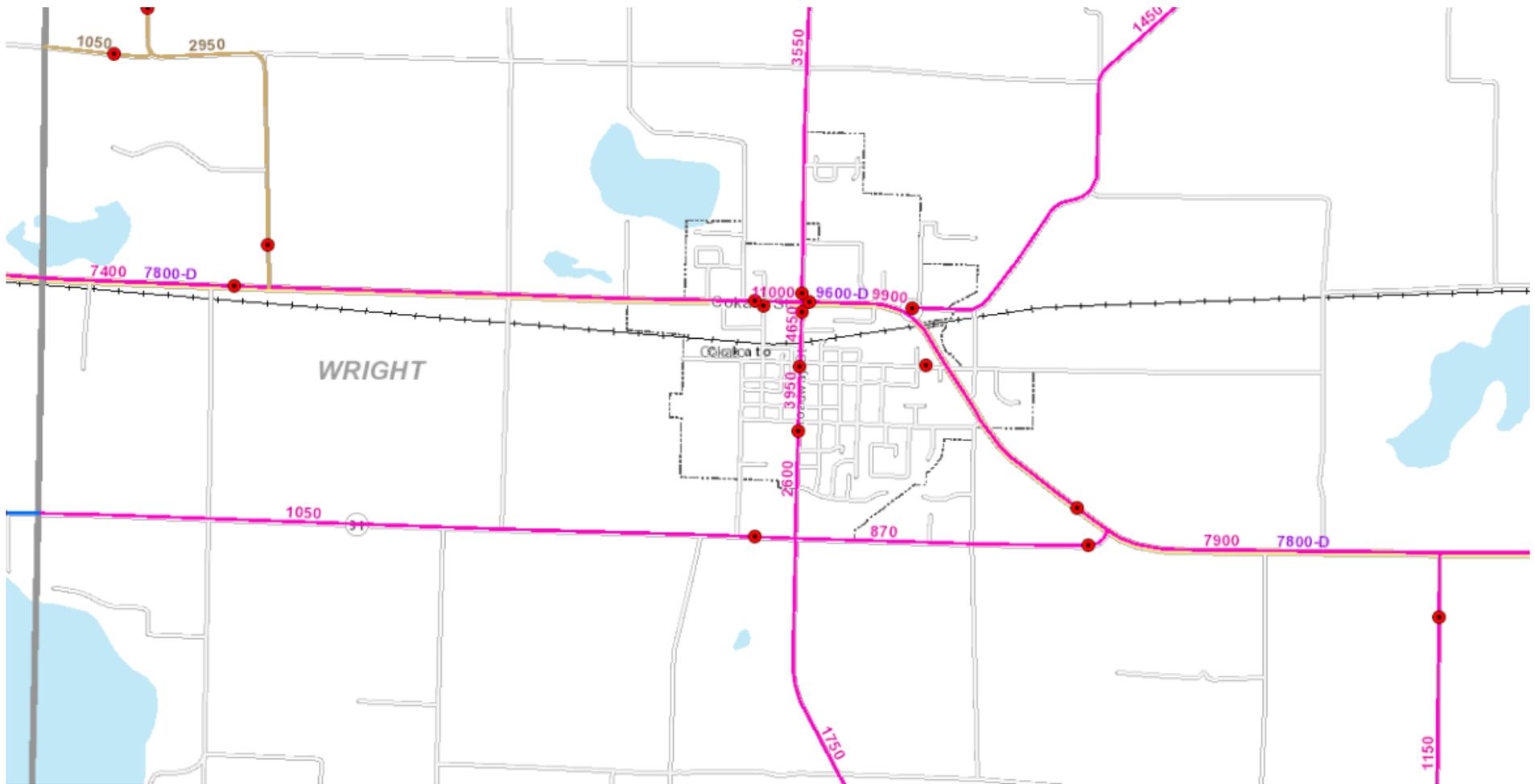
<http://www.co.wright.mn.us/DocumentCenter/Home/View/269>



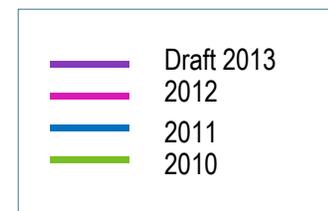
Hennepin County Road Map

<http://www.hennepin.us/~media/hennepinus/residents/transportation/documents/2013-hennepin-county-road-map.pdf>

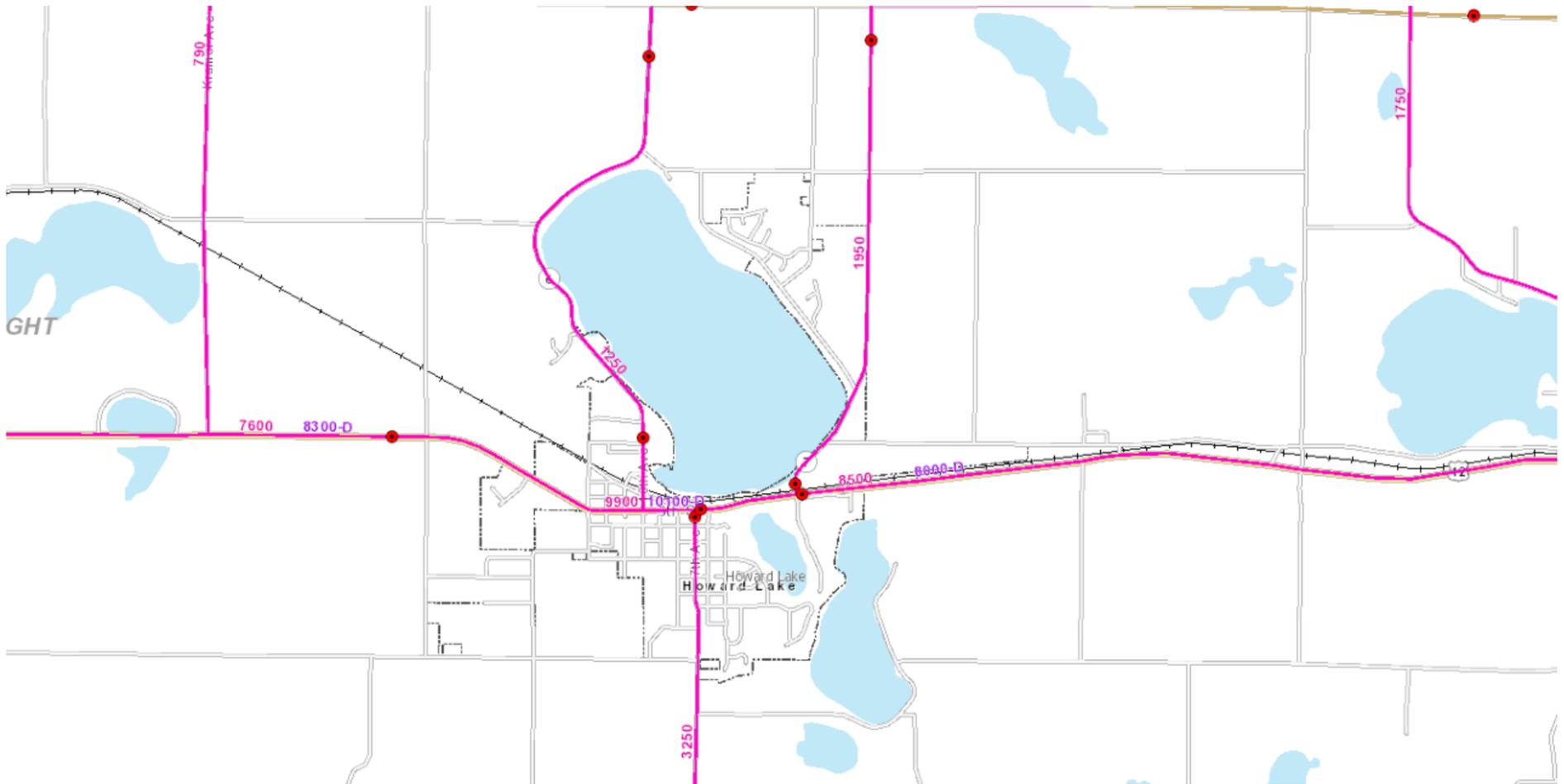
Eastern Project Limit
Brown Road/CR 146



2012 ADT Map (1 of 5)

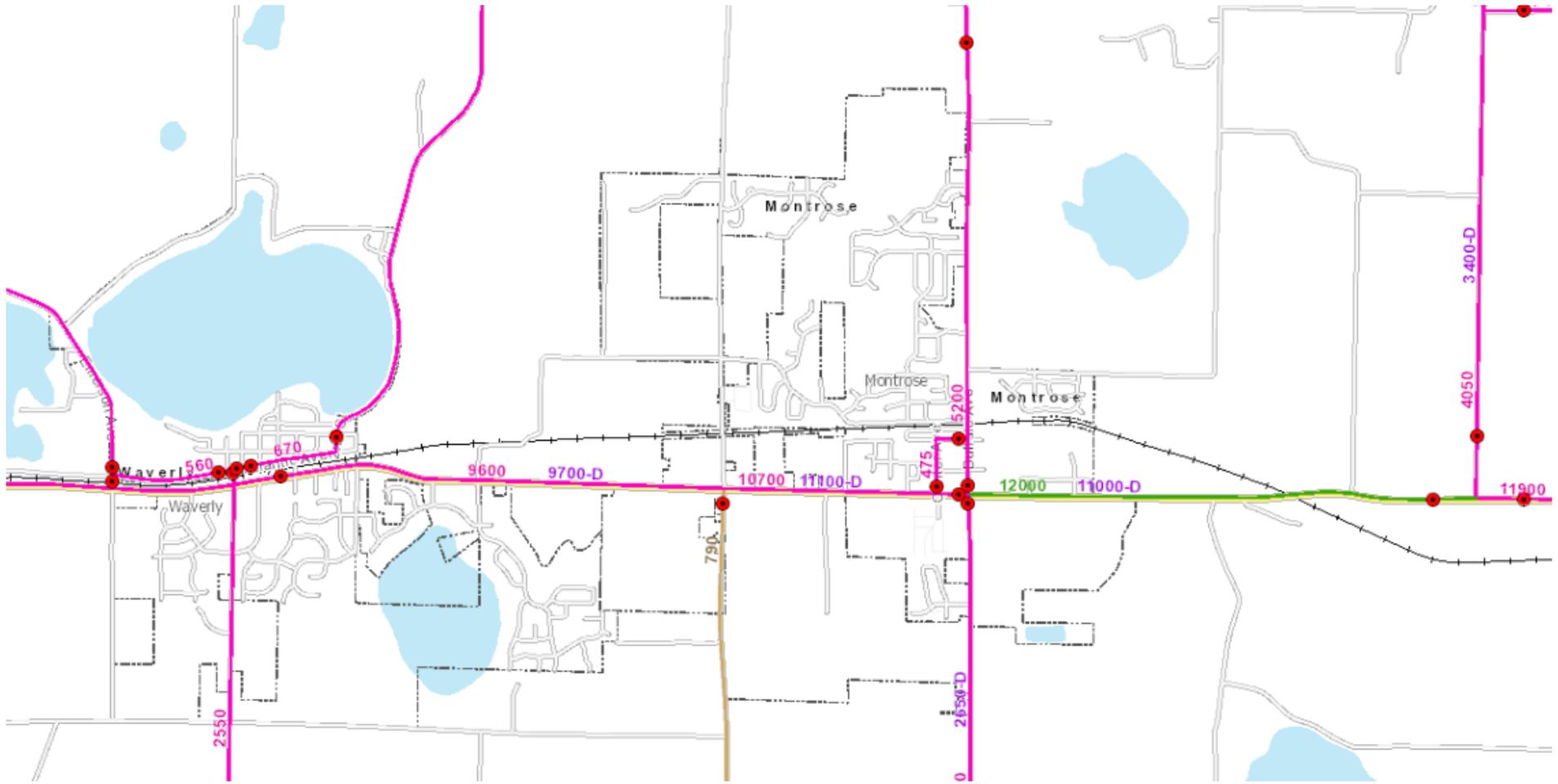


Source: MnDOT Traffic Mapping Application

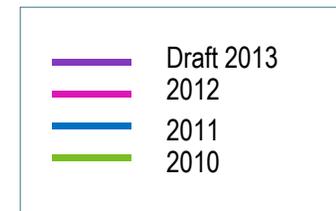


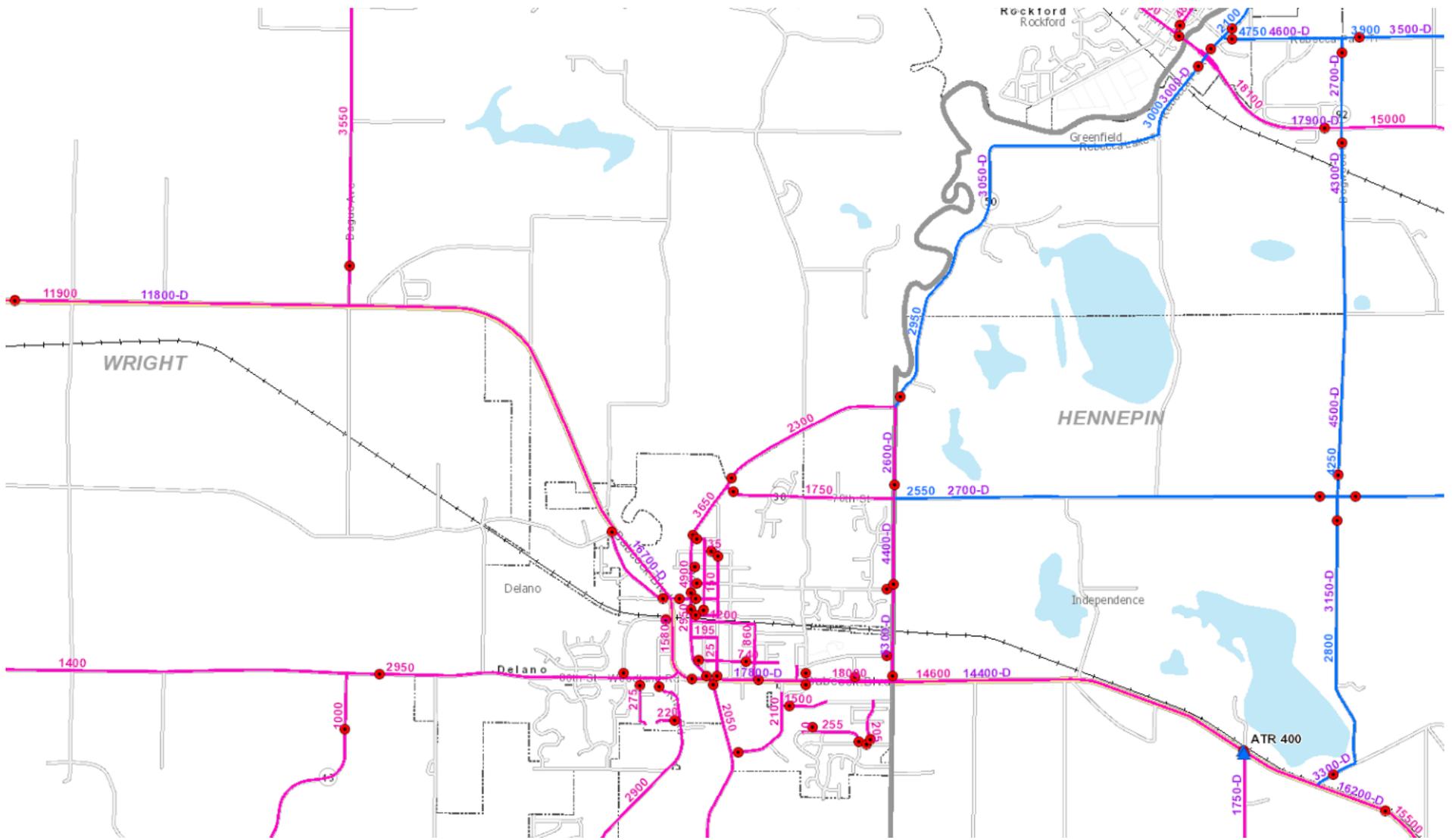
2012 ADT Map (2 of 5)

Source: MnDOT Traffic Mapping Application

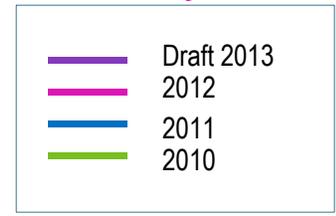


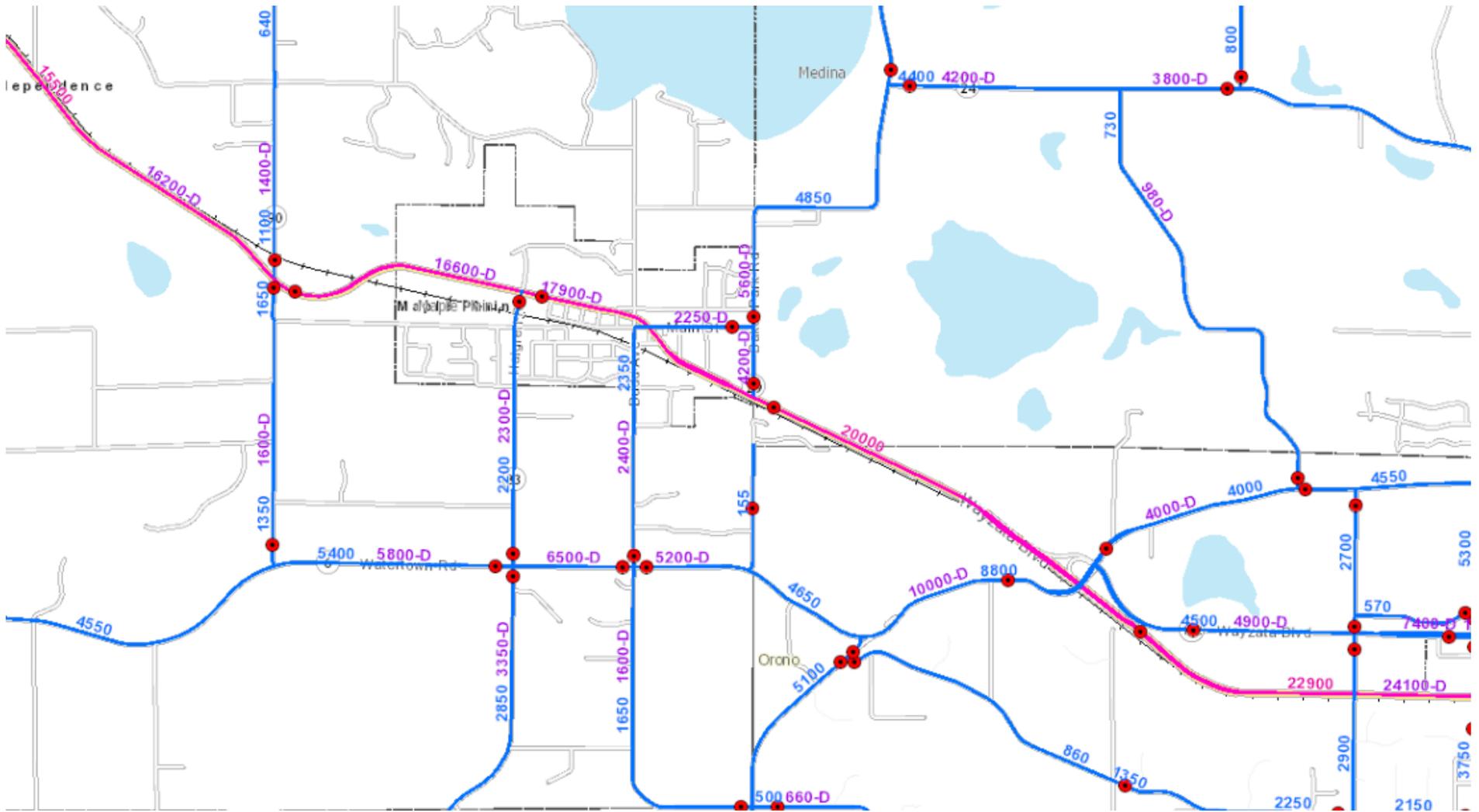
2012 ADT Map (3 of 5)



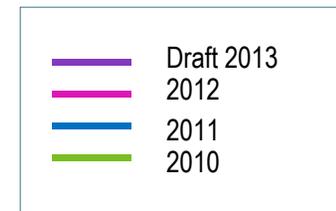


2012 ADT Map (4 of 5)





2012 ADT Map (5 of 5)



D	LOCATION DESCRIPTION	BEG MP	END MP	1992	1994	1996	1998	2000	2002	2004	2006	2008	2010	2011	2036	11 HC	36 HC	AGR	HC AGR
3	W OF CR100	112+00.641	117+00.628	5200	5400	5400	6900	6900	6700	7900	8600	8200	7700	7700	12000	570	890	2.2%	2.2%
3	W OF W JCT CSAH53 (JACKSON AV) COKATO	117+00.628	117+00.879		8100	8100	9800	9800	10400	12500	11800	11400	10800	10700	15500	900	1300	1.8%	1.8%
3	E OF CSAH3 (BROADWAY ST) IN COKATO	117+00.879	118+00.323		6100	6100	9800	9800	9400	10200	10400	10000	9700	9600	14500	800	1200	2.0%	2.0%
3	NW OF CSAH31 NEAR COKATO	118+00.323	121+00.102		5700	6200	7100	7100	6900	8100	8200	7800	7500	7400	10000	610	820	1.4%	1.4%
3	0.8 MI E OF CSAH5 (W OF HOWARD LAKE)	121+00.102	123+00.546		6500	7000	7100	7900	6500	8100	8500	8100	7800	7700	9500	630	780	0.9%	1.0%
3	E OF E JCT CSAH6 (7th AV) HOWARD LAKE	123+00.546	124+00.829		7200	7300	8400	9100	9100	10800	10600	10100	9600	9500	14000	790	1150	1.9%	1.8%
3	E OF CSAH7 IN HOWARD LAKE	124+00.829	126+00.970		6500	7000	7100	8700	7300	8700	9000	8700	8300	8200	11000	680	910	1.4%	1.4%
3	W OF CSAH62 (4th ST) IN WAVERLY	126+00.970	131+00.104		6700	7600	7300	7300	8000	9900	10900	10100	9600	9500	15000	790	1250	2.3%	2.3%
3	W OF W JCT TH12 &25 IN MONTROSE	131+00.104	132+00.095	7500	8100	8200	9000	8600	7500	11400	11000	10200	10300	10200	14000	600	820	1.5%	1.5%
3	&25 W OF THE E JCT TH12 &25	132+00.095	134+00.152	7100	8300	8400	7700	8800	7500	11800	13000	13400	12000	11900	19500	750	1250	2.6%	2.7%
3	E OF E JCT TH12 &25 (E OF MONTROSE)	134+00.152	138+00.327	6800	7700	7600	8800	9800	11000	12500	12200	12200	11500	11400	19000	700	1150	2.7%	2.6%
3	SE OF CSAH30 (WOODLAND RD)	138+00.327	139+00.457		11200	11900	11600	12000	14000	15500	15900	15900	13900	13800	20000	870	1250	1.8%	1.7%
3	E OF 5th ST IN DELANO	139+00.457	140+00.464		11200	11900	14100	13500	18000	18200	18500	18500	16900	16800	27000	1850	2950	2.4%	2.4%
5	351 ATR W OF W JCT CSAH92	140+00.464	142+00.904	10900	12200	12200	12700	14500	14500	14100	12900		12800	14000	16000	1600	1850	0.6%	0.6%
5	SE OF CSAH92 (LAKE SARAH RD) IN INDEPE	142+00.904	144+00.968		12900	12900	14100	16000	16100	16500	15100		14000	13900	15500	1600	1800	0.5%	0.5%
5	E OF CSAH90 IN INDEPENDENCE	144+00.968	146+00.062			14300	15300	17600	16000	14900	13600		13100	13000	14500	1600	1800	0.5%	0.5%
5	E OF CSAH83 (HALGREN RD) IN MAPLE PLAI	146+00.062	147+00.150			15500	17000	18500	18000	17400	16300		16100	16000	18000	1700	1900	0.5%	0.5%
5	SE OF CSAH29 (BAKER PARK RD) IN MEDINA	147+00.150	148+00.472			18500	18000	20000	18500	17700	16800		16800	16700	19000	1750	2000	0.6%	0.6%
5	E OF CSAH 6	148+00.472	152+00.905										22400	22300	25000	1400	1550	0.5%	0.4%
5	W OF CSAH 15	152+00.905	153+00.605										30000	30000	34000	1700	1950	0.5%	0.6%
5	E OF FERNDAL RD IN WAYZATA	153+00.605	154+00.724			42000	44000	44000	44000	46000	42000		44000	43500	49000	2250	2550	0.5%	0.5%
5	W OF TH101 IN WAYZATA	154+00.724	155+00.626			51000	54000	54000	55000	58000	53000		50000	49500	56000	2500	2850	0.5%	0.6%
5	E OF CSAH15 (GLEASON LAKE RD)	155+00.626	156+00.521			69000	72000	72000	74000	74000	68000		68000	68000	77000	3000	3400	0.5%	0.5%
5	W OF I-494 IN MINNETONKA	156+00.521	156+01.014			73000	76000	76000	79000	78000	71000		72000	72000	81000	3150	3550	0.5%	0.5%

Notes:

- 1 Prepared by MnDOT TDA Office on July 17, 2012.
- 2 Contains built-in county factors that reduce AADT depending on location.
- 3 Maximum growth set at 3%/year and minimum set at 0.5%/year.

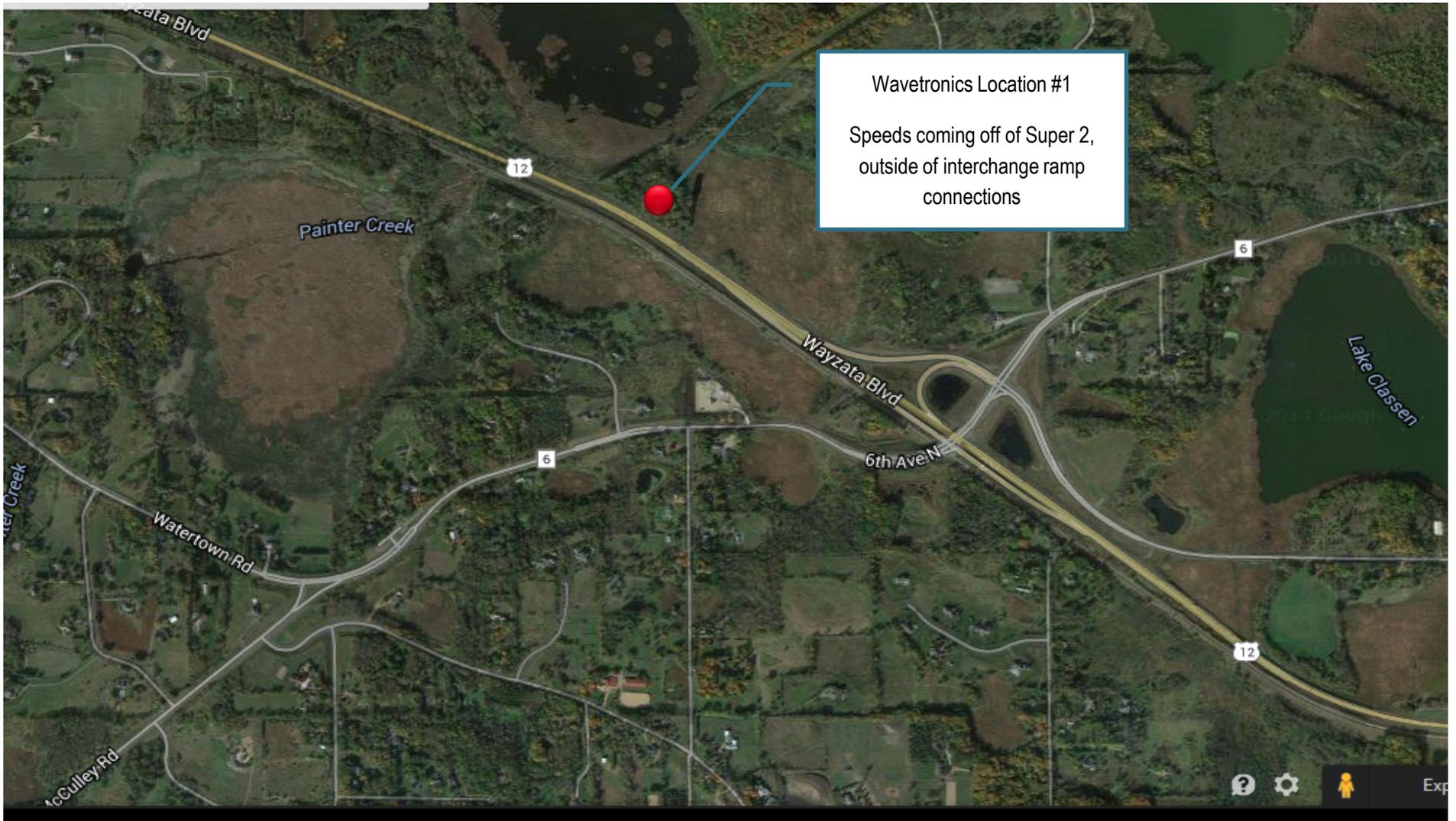
Trunk Highway Past and Projected Traffic Volumes (2011 Planning Tool for Wright County)

Start	End	2013 ¹	2012 ²	2011 ³	2010 ⁴	Average (2010-2013)
Meeker/Wright County Line	CSAH 3 / Broadway Ave N	7800	7400	7700	7700	7650
CSAH 3 / Broadway Ave N	CSAH 4 / 1st St NE	9900	9900	7600	7600	8750
CSAH 4 / 1st St NE	CSAH 5 RT	7800	7900	7500	7500	7675
CSAH 5 RT	Commerce Blvd	8330	7600	7800	7800	7882.5
Commerce Blvd	CSAH 7 / Shoreline Dr	10100	9900	9600	9600	9800
CSAH 7 / Shoreline Dr	Gowan Ave SW	8000	8500	8300	8300	8275
Gowan Ave SW	Clementa Ave SW	9700	9600	9600	9600	9625
Clementa Ave SW	T.H. 25 RT / CSAH 12 / Buffalo Ave S	11100	10700	10300	10300	10600
T.H. 25 RT / CSAH 12 / Buffalo Ave S	T.H. 25 LT	11000	12000	12000	12000	11750
T.H. 25 LT	72nd St SE	11800	11900	11500	11500	11675
72nd St SE	S River St	16700	15800	13900	13900	15075
S River St	CSAH 139 / County Line Rd SE	17800	18000	16900	16900	17400
CSAH 139 / County Line Rd SE	CSAH 92 RT / Mud Lake Rd	14400	14600	14000	15450	14612.5
CSAH 92 RT / Mud Lake Rd	CSAH 90	16200	15500	14000	14000	14925
CSAH 90	CSAH 19 / Main St E	16600	16100	13100	13100	14725
CSAH 19 / Main St E	CSAH 29 / Baker Park Rd / Townline Rd	17900	16900	16100	16100	16750
CSAH 29 / Baker Park Rd / Townline Rd	CSAH 6	24100	20000	16800	16800	19425
CSAH 6		24100	22900	22400	22400	22950

Notes:

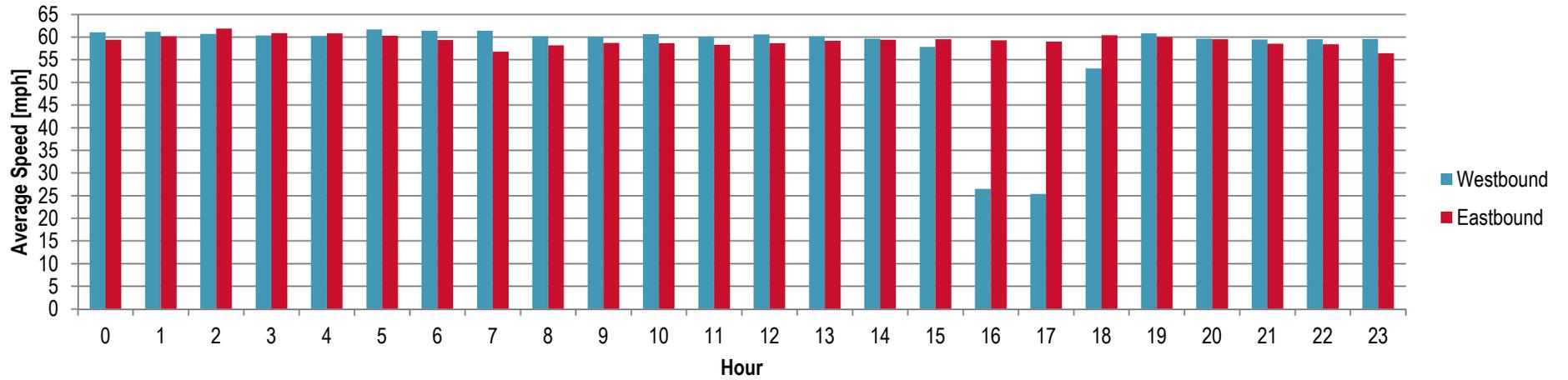
- 1 2013 Draft Values from MnDOT Traffic Mapping Application
- 2 2012 Values From MnDOT Traffic Mapping Application
- 3 From 2011 TH Traffic Volumes for Metro Street Series
- 4 From 2010 TH Traffic Volumes for Metro Street Series and Wright County

2010-2013 ADT Summary



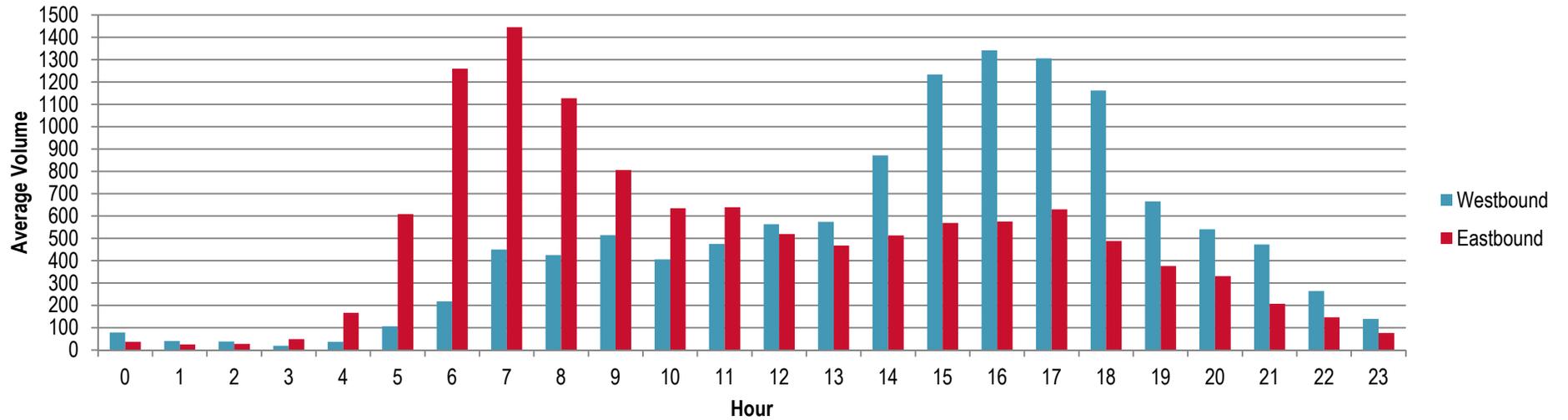
Wavetronics Data – Location #1 (Coming off Super 2)

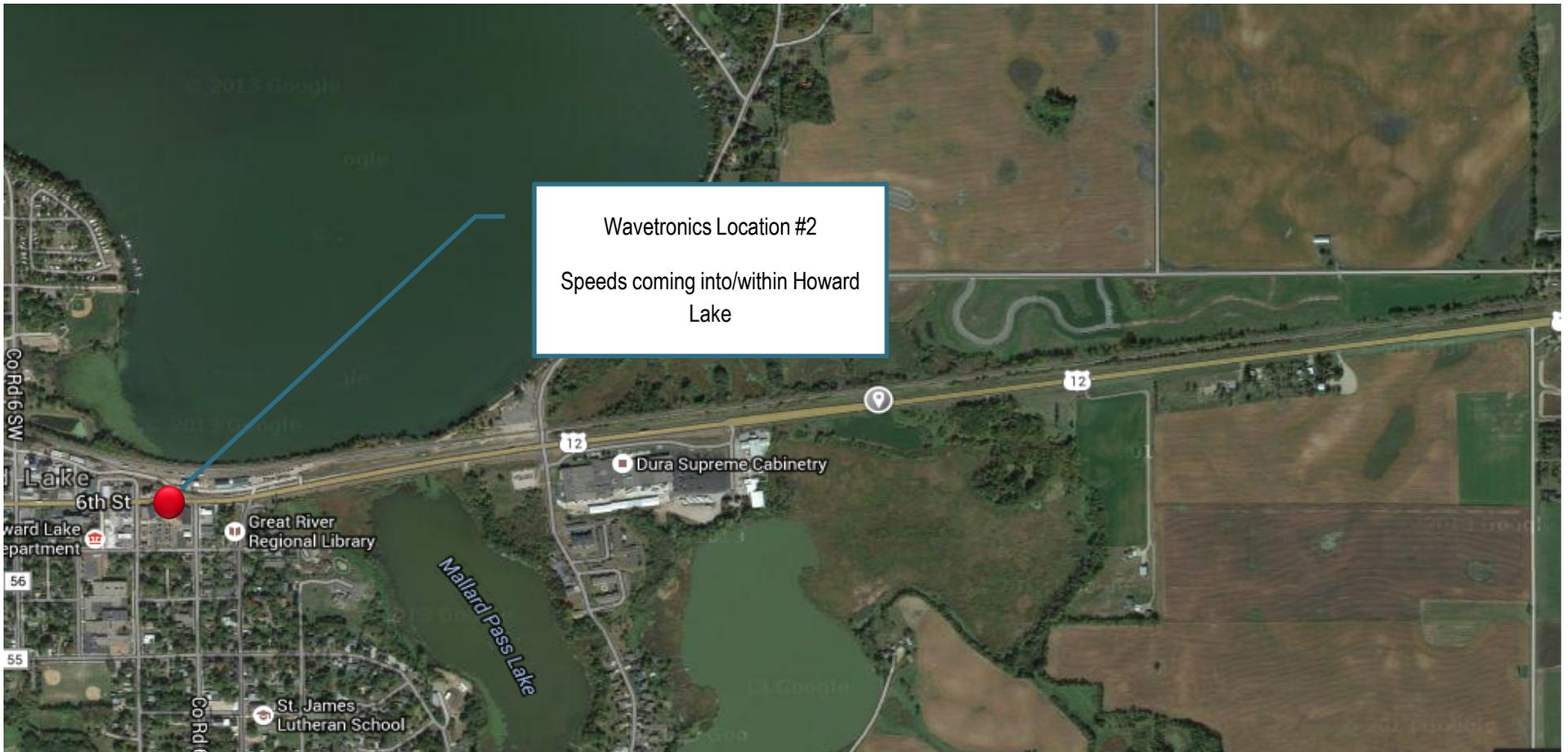
Speed vs. Hour (Wednesday, May 20, 2015)



	Westbound	Eastbound
Average Daily Speed	57 mph	59 mph

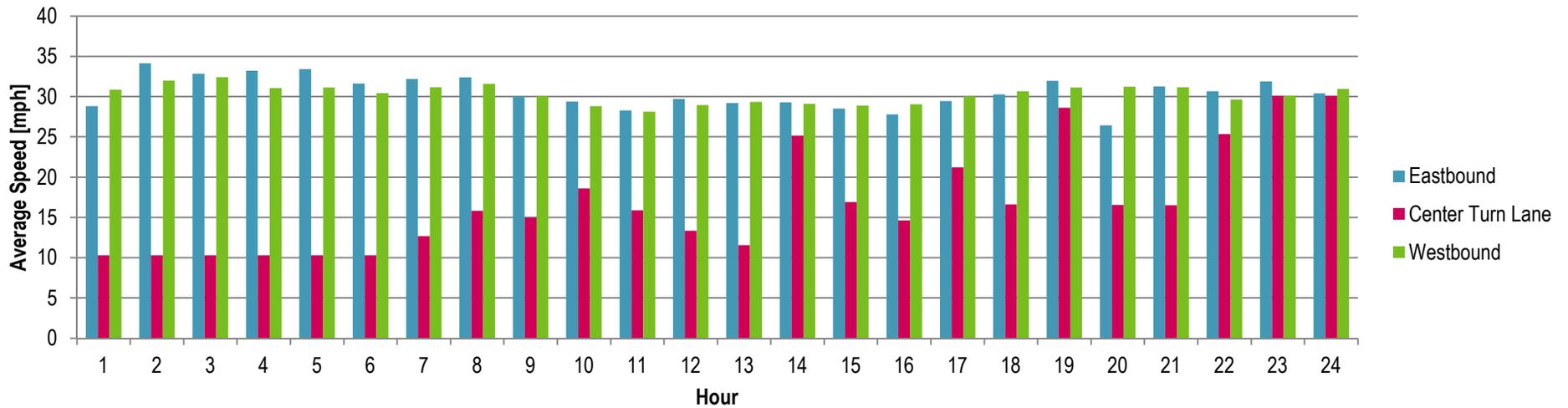
Volume vs. Hour (Wednesday, May 20, 2015)





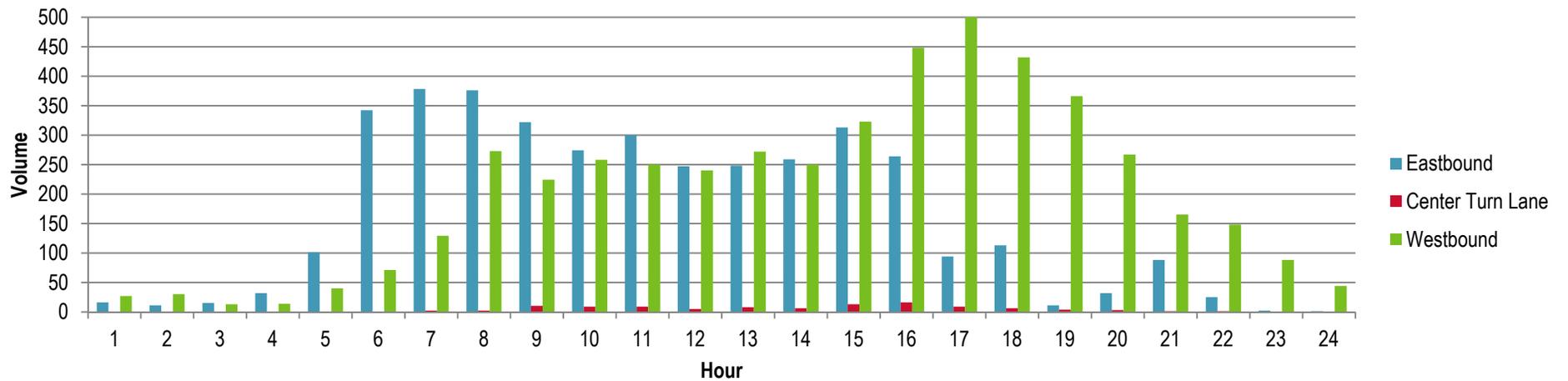
Wavetronics Data – Location #2 (West of 6th Ave N in Howard Lake)

Speed vs. Hour (Wednesday, May 20, 2015)

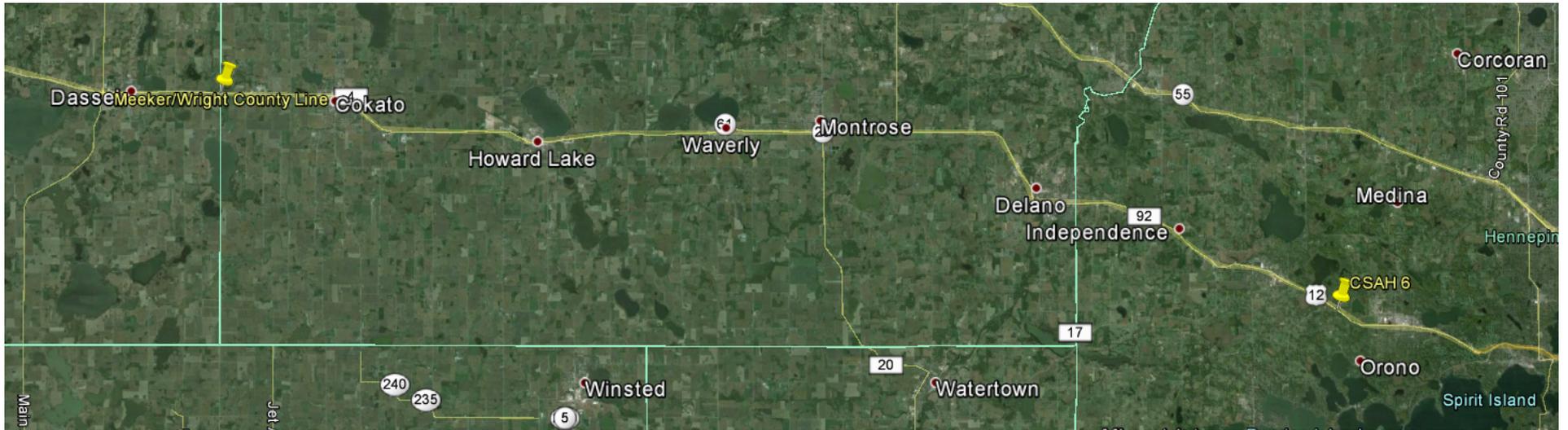


	Eastbound	Center Turn Lane	Westbound
Average Daily Speed	31 mph	17 mph	30 mph

Volume vs. Hour (Wednesday, May 20, 2015)



This page intentionally left blank.



B. Corridor-Wide Trends*

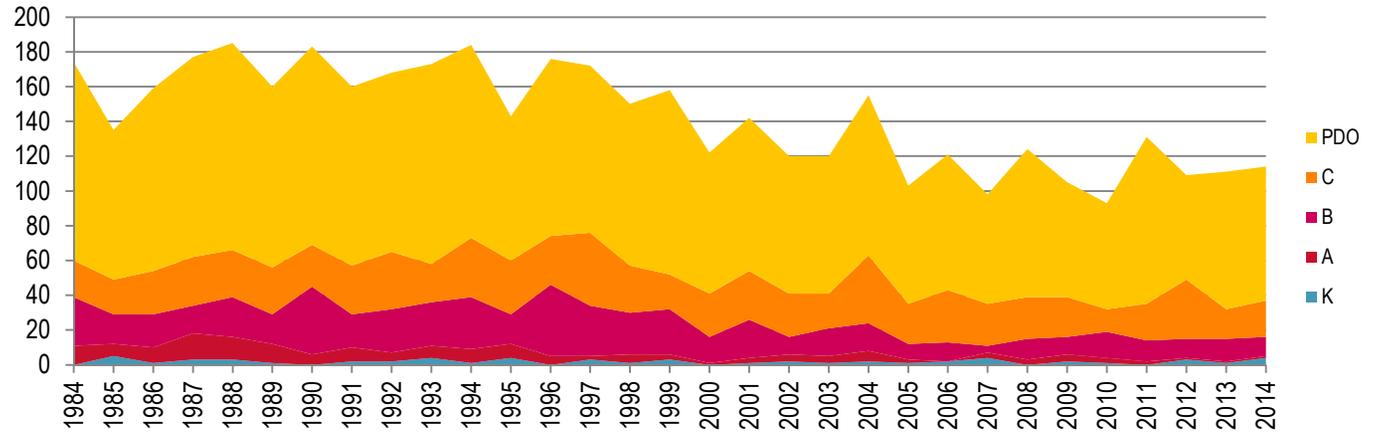
- Historical Trends (B1-B4)
- Crash Severity (B5)
- Surface Conditions (B6)
- Diagram (B6)
- Relation to Junction (B7)
- Type of Crash (B7)
- Location of Crash (B8)
- Time of Crash (B9)

Notes:

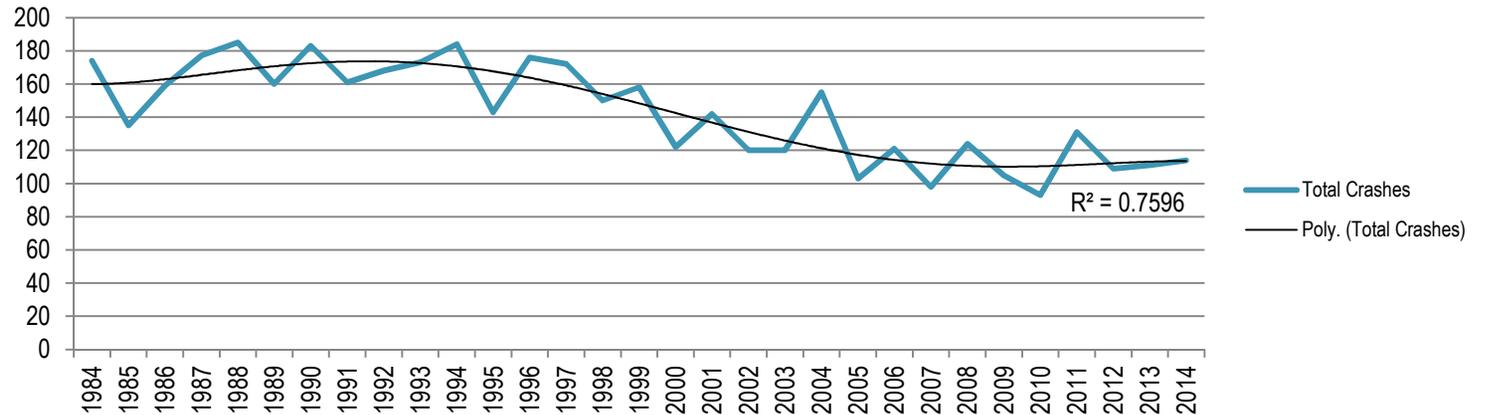
*Segment N data was studied independently and is not included in the corridor-wide analysis.

Historical Trends (1984-2015)

Total Crashes, By Severity

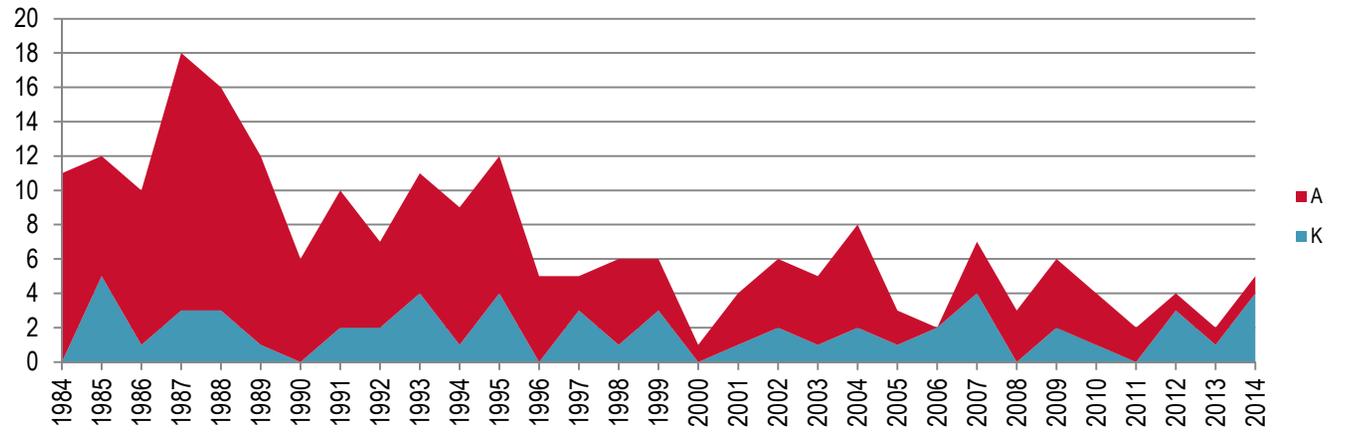


Total Crashes

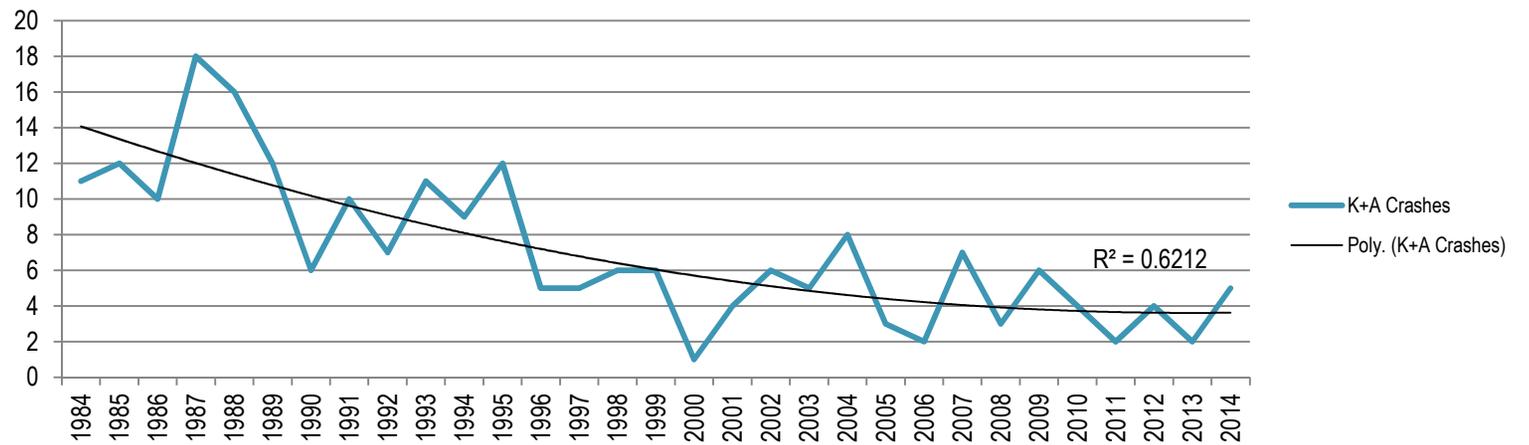


Historical Trends (1984-2015)

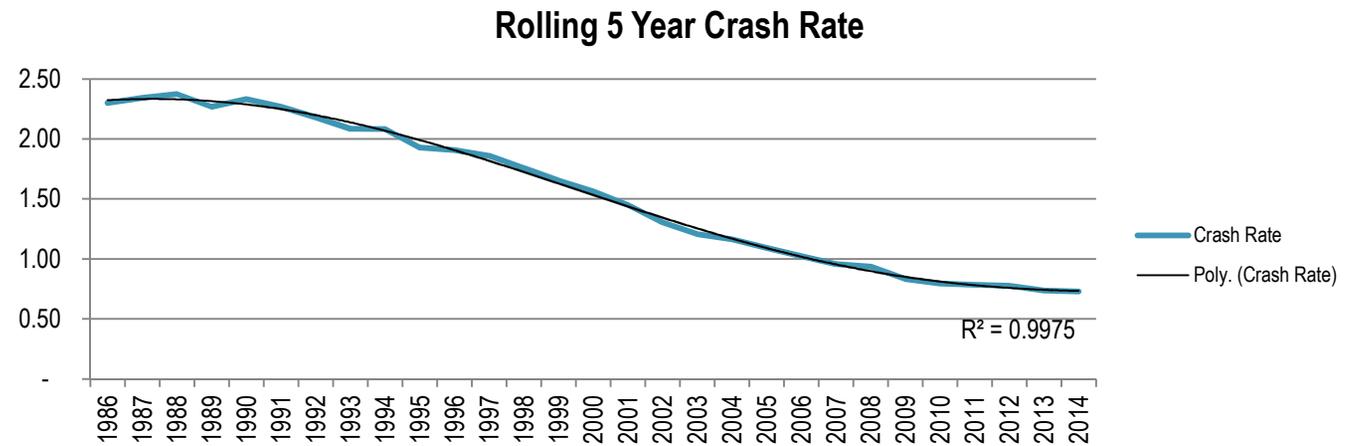
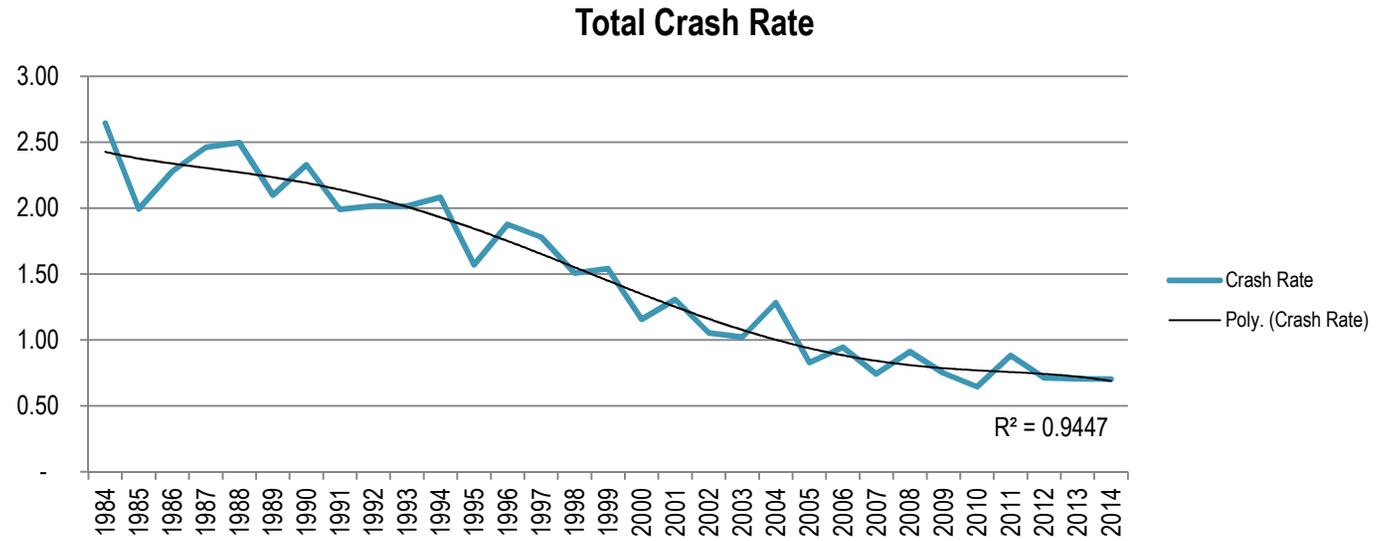
K+A Crashes, 1984-2014



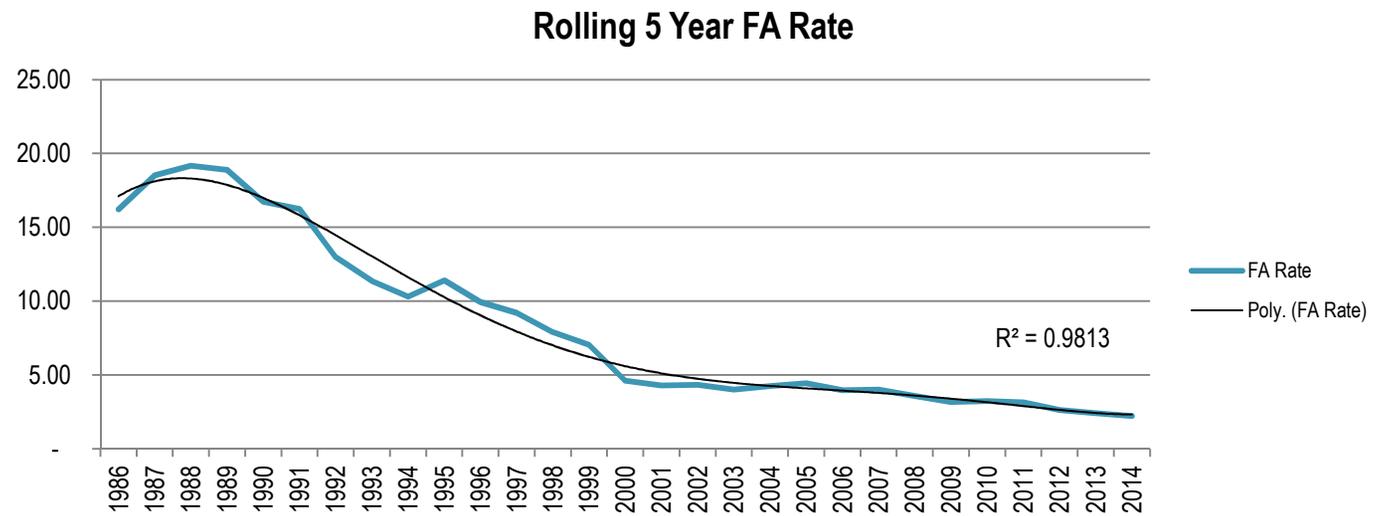
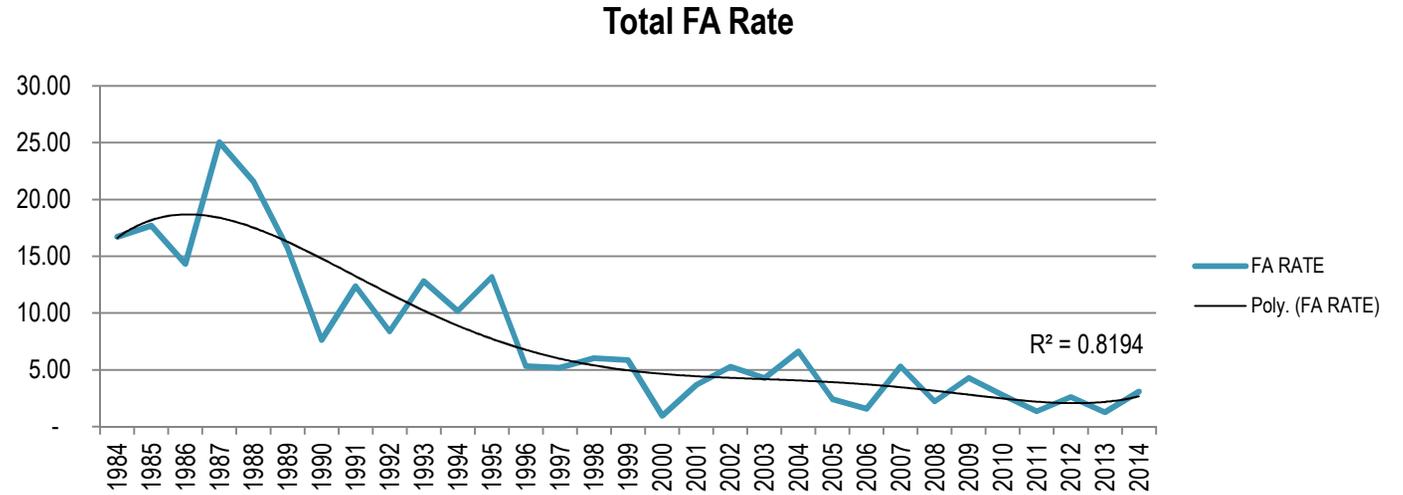
K+A Crashes



Historical Trends (1984-2015)



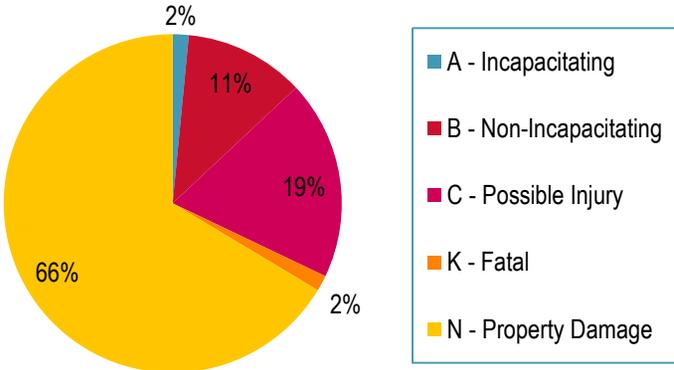
Historical Trends (1984-2015)



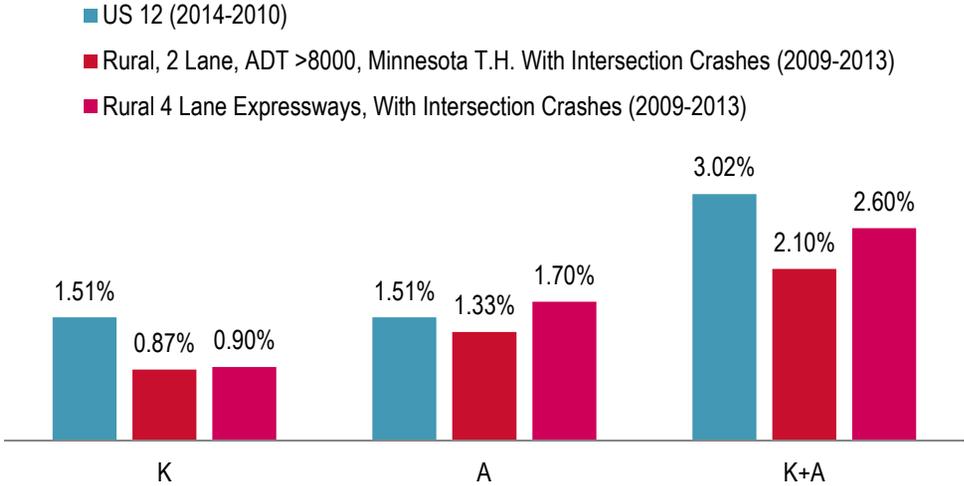
Crash Severities

Crash Severity (2010-2014)

Severity	Number	[%]
A - Incapacitating	8	2%
B - Non-Incapacitating	61	12%
C - Possible Injury	101	19%
K - Fatal	8	2%
N - Property Damage	352	66%



Percentage of Fatal (K) and Severe (A) Crashes - US 12 vs. Statewide Averages

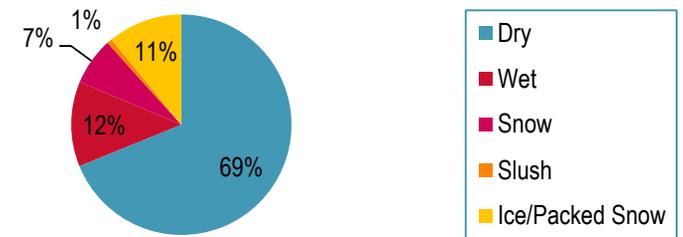


US 12 Crash Data Source: 2010-2014 Minnesota TIS Crash Data
 Statewide Averages Source: MnDOT 2013 Section Toolkit

Surface Conditions (2010-2014)

Surface Condition	All Crashes		K+A	
	Number	[%]	Number	[%]
Dry	365	69%	10	63%
Wet	66	12%	1	6%
Snow	37	7%	3	19%
Slush	4	1%	0	0%
Ice/Packed Snow	58	11%	2	13%

Surface Conditions (All Crashes)



Surface Conditions (K+A)

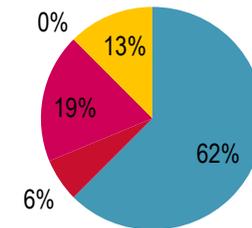


Diagram (2010-2014)

Diagram	All Crashes		K+A	
	Number	[%]	Number	[%]
Rear End	203	38%	2	13%
Sideswipe Passing	20	4%	0	0%
Left Turn into Traffic	25	5%	0	0%
Ran Off Road-Left Side	34	6%	1	6%
Right Angle	92	17%	0	0%
Right Turn into Traffic	4	1%	0	0%
Ran Off Road-Right Side	47	9%	0	0%
Head On	50	9%	10	63%
Sideswipe Opposing	13	2%	0	0%
Other	33	6%	3	19%
Not Applicable	6	1%	0	0%
Unknown	3	1%	0	0%

Diagram (All Crashes)

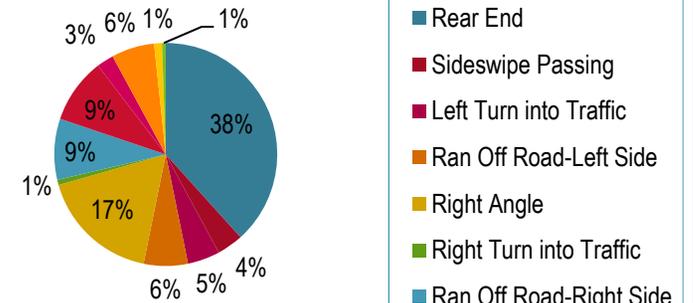
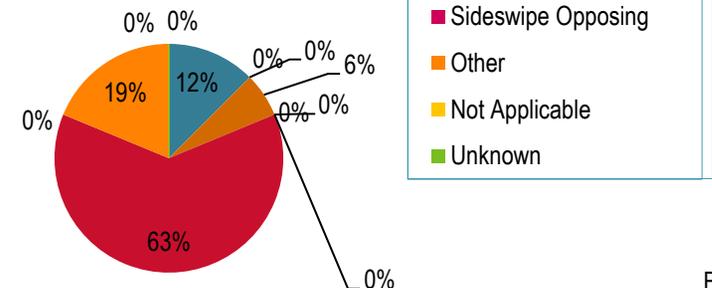


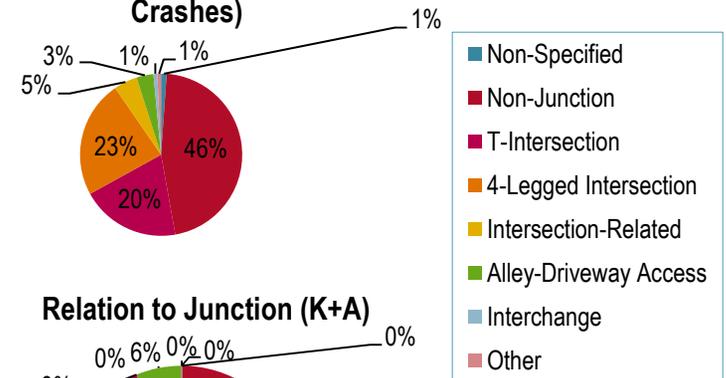
Diagram (K+A)



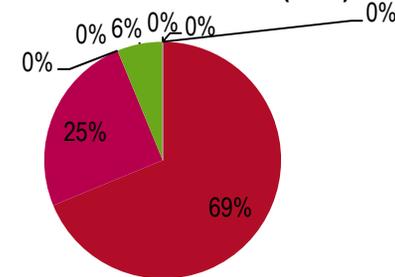
Relation to Junction (2010-2014)

Junction	All Crashes		K+A	
	Number	[%]	Number	[%]
Non-Specified	6	1%	0	0%
Non-Junction	244	46%	11	69%
T-Intersection	105	20%	4	25%
4-Legged Intersection	124	23%	0	0%
Intersection-Related	25	5%	0	0%
Alley-Driveway Access	18	3%	1	6%
Interchange	4	1%	0	0%
Other	4	1%	0	0%

Relation to Junction (All Crashes)



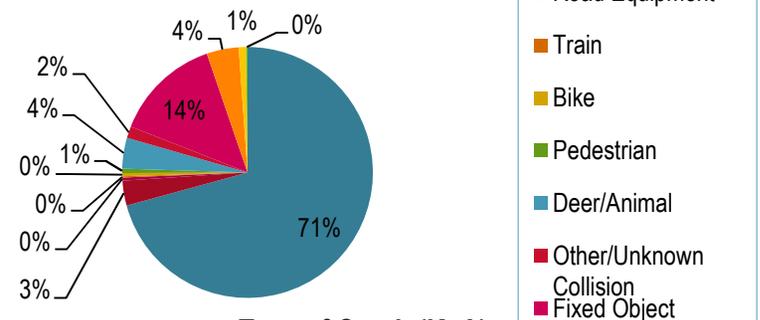
Relation to Junction (K+A)



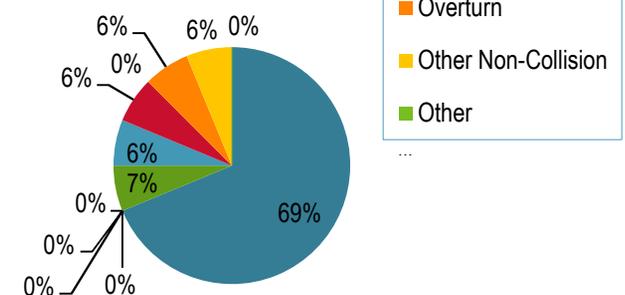
Type of Crash (2010-2014)

Crash Type	All Crashes		K+A	
	Number	[%]	Number	[%]
Motor Vehicle In Transport	375	71%	11	69%
Parked Vehicle	17	3%	0	0%
Road Equipment	2	0%	0	0%
Train	1	0%	0	0%
Bike	2	0%	0	0%
Pedestrian	3	1%	1	6%
Deer/Animal	21	4%	1	6%
Other/Unknown Collision	8	2%	1	6%
Fixed Object	73	14%	0	0%
Overturn	22	4%	1	6%
Other Non-Collision	5	1%	1	6%
Other	1	0%	0	0%

Type of Crash (All Crashes)



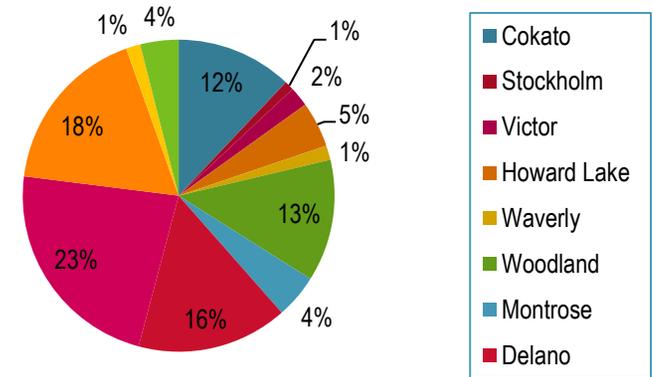
Type of Crash (K+A)



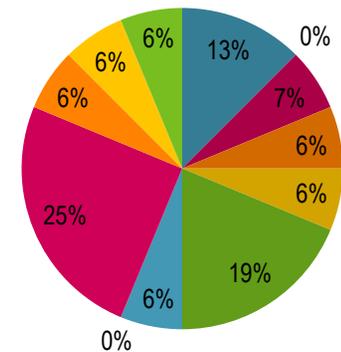
Location of Crash (2010-2014)

Location	All Crashes		K+A	
	Number	[%]	Number	[%]
Cokato	64	12%	2	13%
Stockholm	5	1%	0	0%
Victor	11	2%	1	6%
Howard Lake	25	5%	1	6%
Waverly	8	2%	1	6%
Woodland	67	13%	3	19%
Montrose	24	5%	1	6%
Delano	83	16%	0	0%
Independence	121	23%	4	25%
Maple Plain	93	18%	1	6%
Medina	8	2%	1	6%
Orono	21	4%	1	6%

Location of Crash (All Crashes)



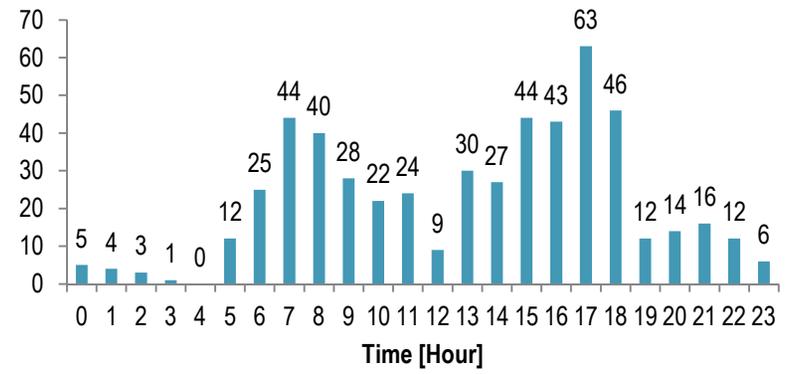
Location of Crash (K+A)



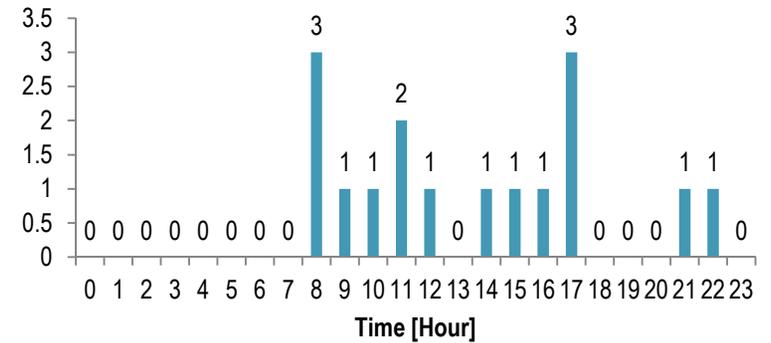
Time of Crash (2010-2014)

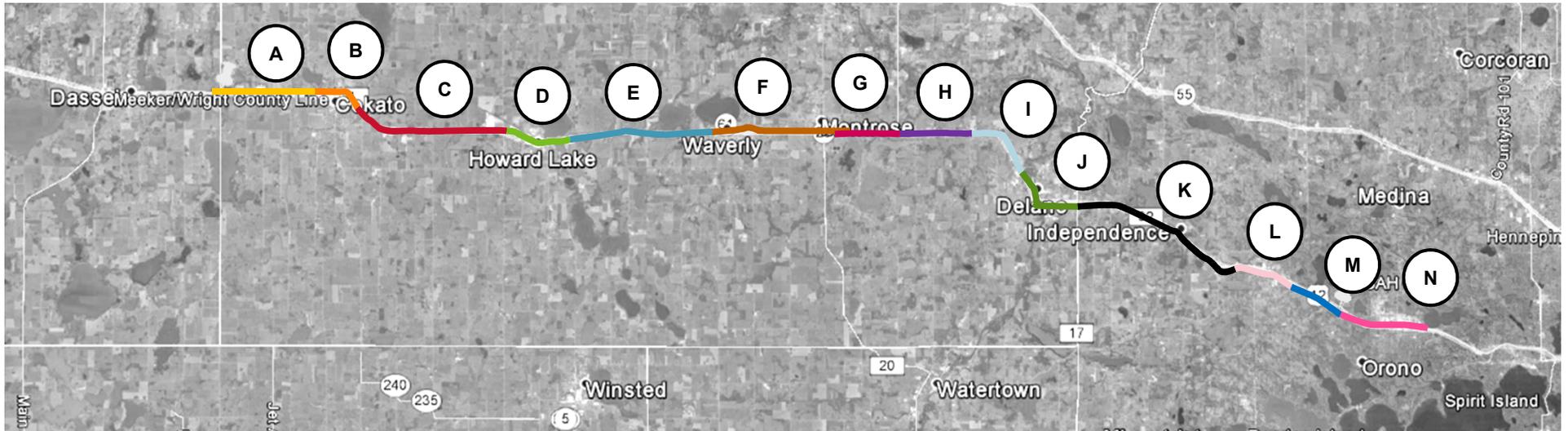
Time [hour]	All Crashes		K+A	
	Number	[%]	Number	[%]
0	5	1%	0	0%
1	4	1%	0	0%
2	3	1%	0	0%
3	1	0%	0	0%
4	0	0%	0	0%
5	12	2%	0	0%
6	25	5%	0	0%
7	44	8%	0	0%
8	40	8%	3	19%
9	28	5%	1	6%
10	22	4%	1	6%
11	24	5%	2	13%
12	9	2%	1	6%
13	30	6%	0	0%
14	27	5%	1	6%
15	44	8%	1	6%
16	43	8%	1	6%
17	63	12%	3	19%
18	46	9%	0	0%
19	12	2%	0	0%
20	14	3%	0	0%
21	16	3%	1	6%
22	12	2%	1	6%
23	6	1%	0	0%

Time of Crash (All Crashes)



Time of Crash (K+A)





Segment Crash Data

- Segment Notes (C1-C2)
- Crash Severity (C3-C4)
- Crash Rates (C5)

Intersection Crash Data

Grouped by Segment (A-M):

- Intersection Notes
- Crash Severities
- Crash Rates

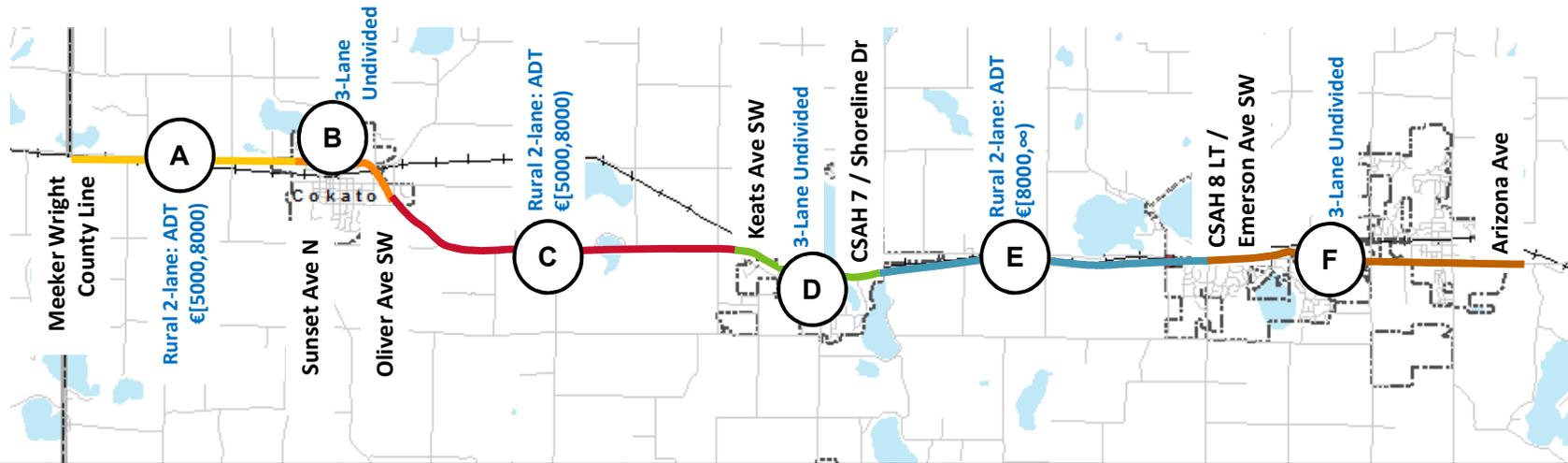
Segment: (Page Number)

A: (C6-C7)	H: (C22-C23)
B: (C8-C10)	I: (C24-C25)
C: (C11-C12)	J: (C26-C28)
D: (C13-C14),	K: (C29-C31)
E: (C15-C16)	L: (C32-C34)
F: (C17-C19)	M: (C35-C36)
G: (C20-C21)	

Notes:

*Segment N data was studied using MnDOT Crash Mapping Analysis Tool (MnCMAT) data (2010-2014). All other segments were studied using TIS Crash data (2010-2014).

*There are no at-grade intersections in segment N.

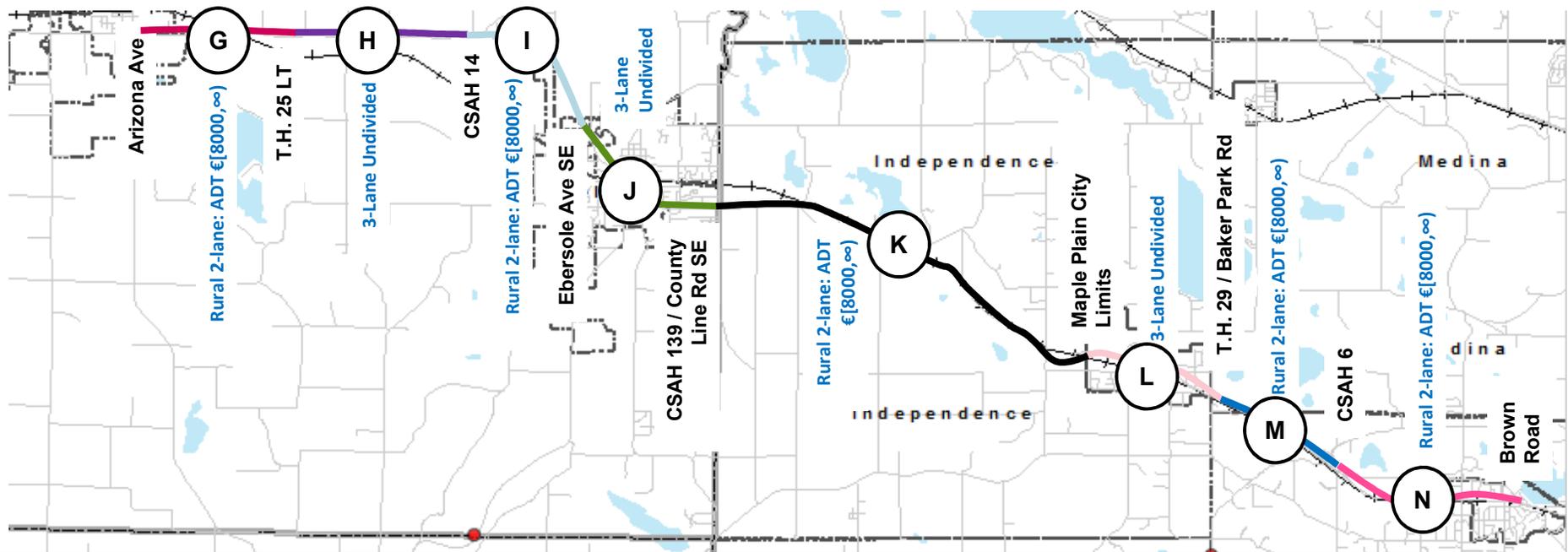


Segment	Segment From	Segment To	Length (mi)	Urban/Rural	No. Lanes	Average ADT (2010-2013) ¹	Notes
A	Meeker/Wright County Line	100' West of Sunset Ave N	2.80	Rural	2	7650	Use of flashers for presence of ice on road, and 35 mph speed limit near the school. Speed Limit 55 otherwise. Trail on North side. 1/4 mile 4-lane stretch at beginning of segment.
B	100' West of Sunset Ave N	100' East of Oliver Ave SW	1.34	Urban	3	8028	Center lanes are dual left turn. Sidewalks on both sides, wide shoulders. Speed limit 35 mph through town. Speed limit 45 mph East of town.
C	100' East of Oliver Ave SW	250' West of Keats Ave SW	4.16	Rural	2	7771	Edgeline rumble strips. Speed limit 55. 0.8 mile 4-lane stretch east of Mile 120.
D	250' West of Keats Ave SW	100' East of CSAH 7 / Shoreline Drive	1.83	Urban	3	9213	Center lanes are dual left turn.
E	100' East of CSAH 7 / Shoreline Drive	250' West of CSAH 8 LT/ Emerson Ave SW	3.74	Rural	2	8795	
F	250' West of CSAH 8 LT/ Emerson Ave SW	100' East of Arizona Ave	3.81	Urban	3	10029	Center lanes are dual left turn.

Notes:

- 1 Weighted average value computed based on segment lengths.
- 2 Segments include intersections.

Segment Notes - Segments A-F



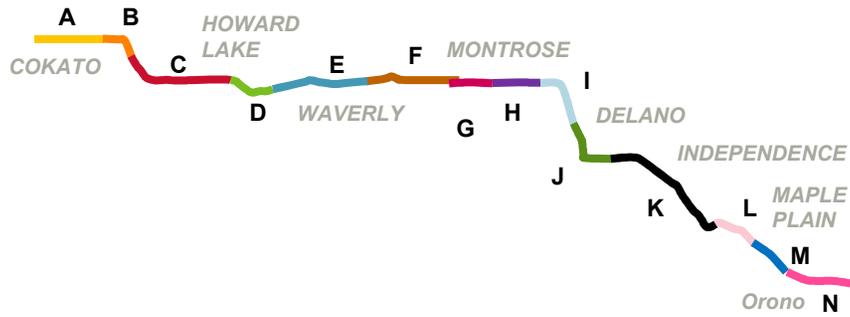
Segment	Segment From	Segment To	Length (mi)	Urban/Rural	No. Lanes	Average ADT (2010-2013) ¹	Notes
G	100' East of Arizona Ave	500' East of T.H. 25 LT	1.84	Rural	2	11748	
H	500' East of T.H. 25 LT	1000' West of CSAH 14	1.78	Rural	3 or 4	11675	Frequent geometry changes in this region.
I	1000' West of CSAH 14	100' West of Ebersole Ave SE	2.20	Rural	2	11675	
J	100' West of Ebersole Ave SE	250' East of CSAH 139 / County Line Rd SE	2.25	Urban	3	15933	Center lanes are dual left turn.
K	250' East of CSAH 139 / County Line Rd SE	Maple Plain City Limit	4.94	Rural	2	14781	A quarter of a mile stretch of centerline median barrier located on East end of segment.
L	Maple Plain City Limit	250' East of CSAH 29 / Baker Park Rd / Townline Rd	1.73	Urban	3	15404	Center lanes are dual left turn.
M	250' East of CSAH 29 / Baker Park Rd / Townline Rd	CSAH 6	1.54	Rural	2	19425	
N	CSAH 6	Brown Road	2.30	Urban/Rural	2	22950	Median barrier on West end of segment. Center and edge line rumble strips. Bounded by retaining walls, guard rail, barrier on edges.

Notes:

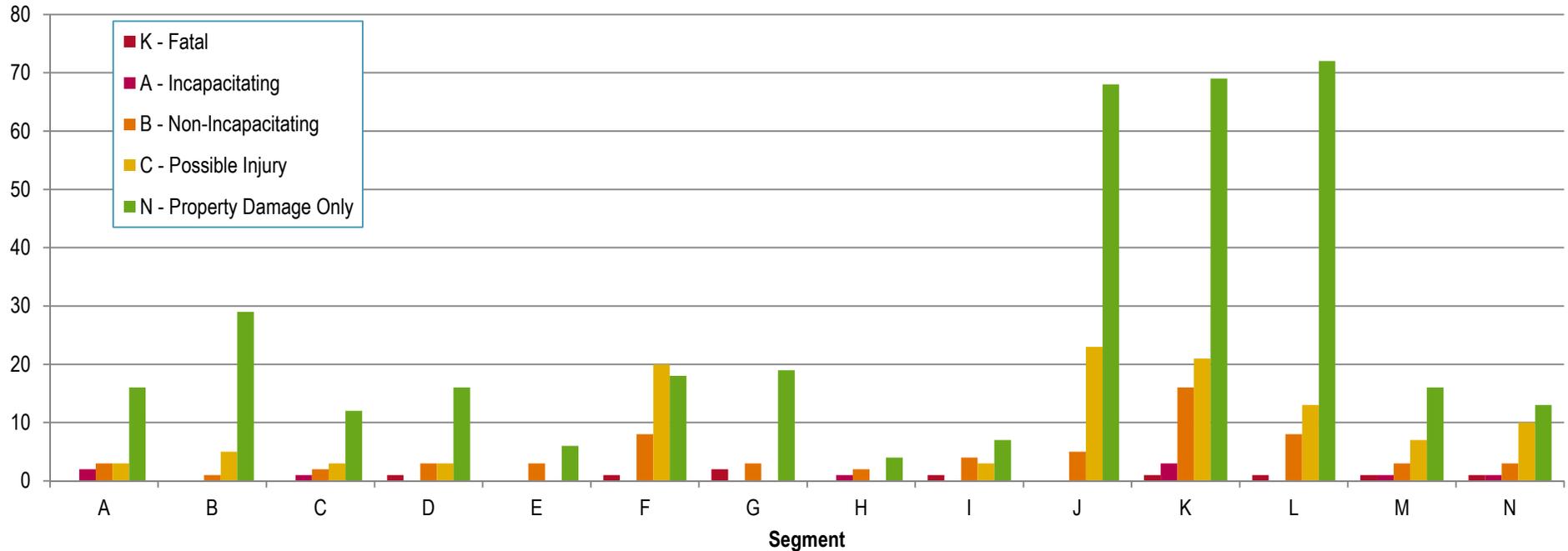
- 1 Weighted average value computed based on segment lengths.
- 2 Segments include intersections
- 3 Segment N studied independent of the rest of the project

Segment Notes - Segments G-M

Crash Severity (2010-2014)



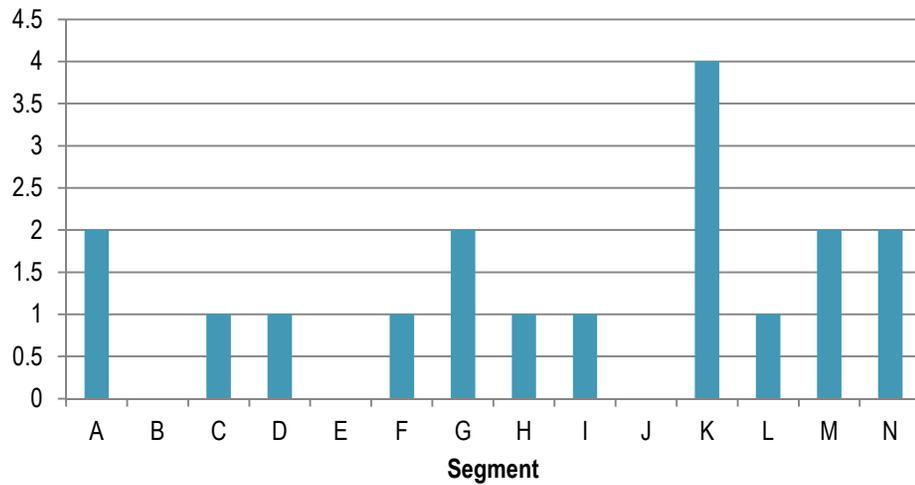
Segment	K ²	A ³	B ⁴	C ⁵	N ⁶	Total Crashes	K+A
A	0	2	3	3	16	24	2
B	0	0	1	5	29	35	0
C	0	1	2	3	12	18	1
D	1	0	3	3	16	23	1
E	0	0	3	0	6	9	0
F	1	0	8	20	18	47	1
G	2	0	3	0	19	24	2
H	0	1	2	0	4	7	1
I	1	0	4	3	7	15	1
J	0	0	5	23	68	96	0
K	1	3	16	21	69	110	4
L	1	0	8	13	72	94	1
M	1	1	3	7	16	28	2
N	1	1	3	10	13	28	2



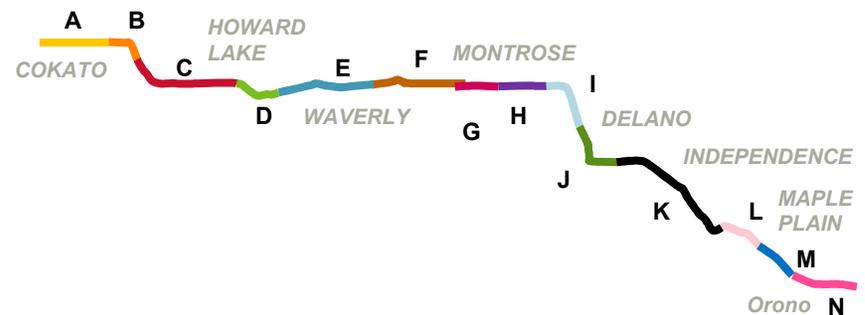
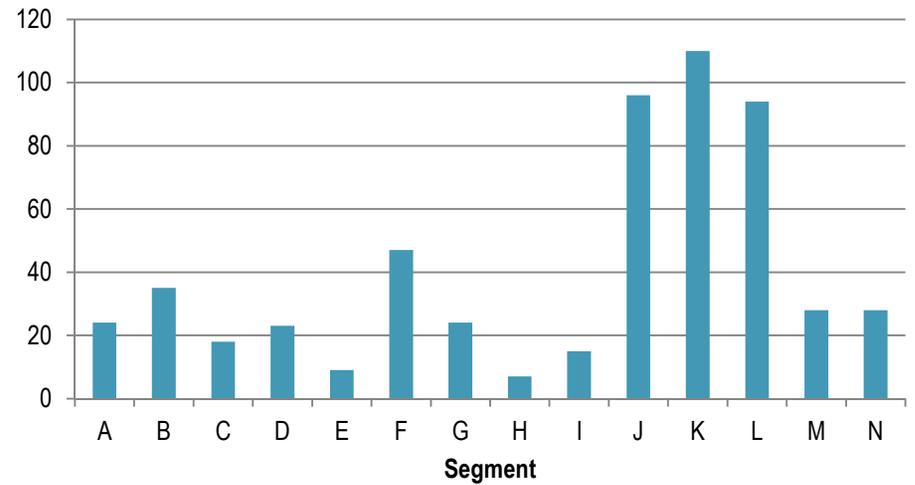
US 12 Crash Data Source: 2010-2014 Minnesota TIS Crash Data.
Segment N data from 2010-2014 MnCMAT Data.

Crash Severity (2010-2014)

K+A



Total Crashes



US 12 Crash Data Source: 2010-2014 Minnesota TIS Crash Data.
 Segment N data from 2010-2014 MnCMAT Data.

Crash Rates (2010-2014)

Segment	Roadway Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
A	Rural 2-lane: ADT €[5000,8000)	0.61	0.61	0.95	5.12	2.41	6.86
B	3-lane Undivided	1.78	2.00	2.85	0.00	2.67	3.17
C	Rural 2-lane: ADT €[5000,8000)	0.31	0.61	0.88	1.70	2.41	2.67
D	3-lane Undivided	0.75	2.00	2.67	3.25	2.67	3.07
E	Rural 2-lane: ADT €[8000,∞)	0.15	0.73	1.02	0.00	1.57	1.79
F	3-lane Undivided	0.67	2.00	2.44	1.43	2.67	2.93
G	Rural 2-lane: ADT €[8000,∞)	0.61	0.73	1.10	5.07	1.57	1.84
H	3-lane Undivided	0.18	2.00	2.60	2.64	2.67	3.03
I	Rural 2-lane: ADT €[8000,∞)	0.32	0.73	1.06	2.13	1.57	1.81
J	3-lane Undivided	1.47	2.00	2.46	0.00	2.67	2.94
K	Rural 2-lane: ADT €[8000,∞)	0.83	0.73	0.93	3.00	1.57	1.71
L	3-lane Undivided	1.93	2.00	2.53	2.06	2.67	2.98
M	Rural 2-lane: ADT €[8000,∞)	0.51	0.73	1.04	3.66	1.57	1.80
N	Rural 2-lane: ADT €[8000,∞)	0.29	0.73	0.96	2.08	1.57	1.74

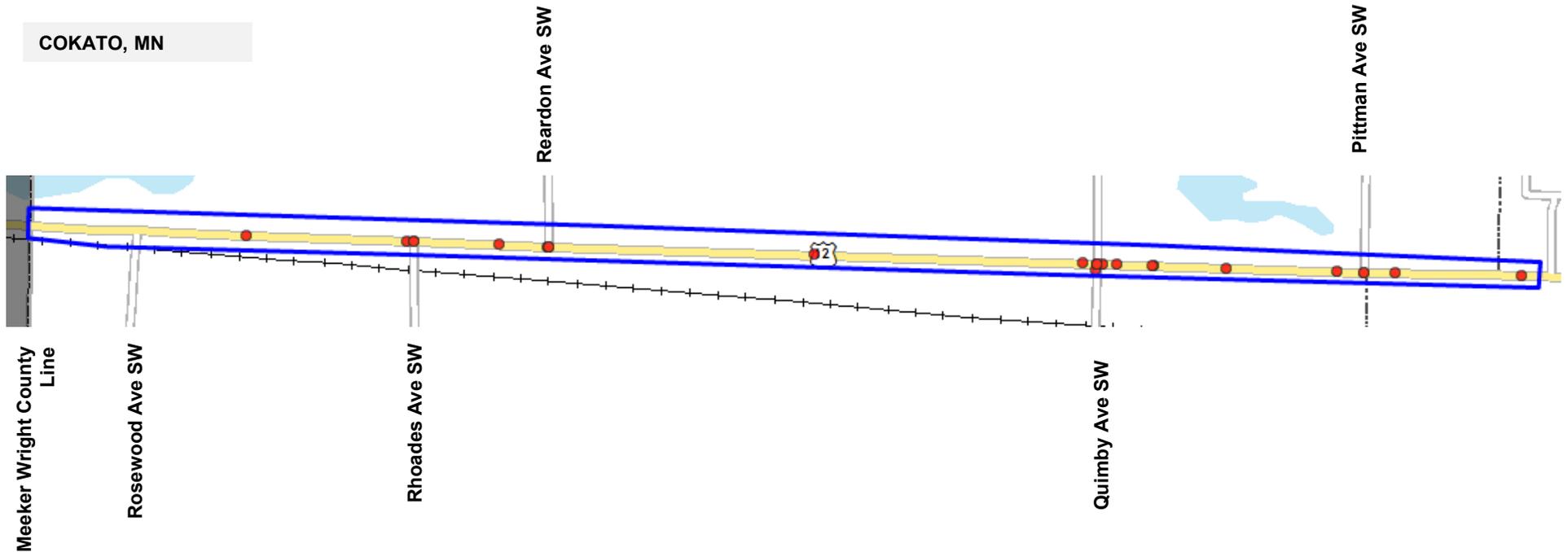
Notes:

- 1 All rates in units of crashes per MVM (Million Vehicle Miles)
US 12 Rates Computed Via Formulas From Traffic Safety
Fundamentals Handbook (2008)
- 2 Statewide Averages from MnDOT 2013 Section Toolkit
Critical Rates Computed Via Formulas From Traffic Safety
Fundamentals Handbook (2008)
- 3 All segments taken to be conventional roadways
- 4 Segments include intersection crashes
99.5% confidence interval used to compute the critical crash rate. 90%
confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate

COKATO, MN



Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume	Total Crashes (2010-2014)	Notes
Rosewood Ave SW	T	S	Thru/Stop	7750*	0	
Rhoades Ave SW	T	S	Thru/Stop	7750*	3	
Reardon Ave SW	T	N	Thru/Stop	7750*	3	
Quimby Ave SW	4-Legged	-	Thru/Stop	7793**	4	
Pittman Ave SW	4-Legged	-	Thru/Stop	7850*	0	South approach is a driveway. North approach is stop sign controlled.

Notes:

* Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*additional\ legs$. East and West approach ADT are from 2010-2014 average.

** Value obtained from MnDOT 2013 Section Toolkit.

Segment A Intersection Notes – All Crashes (2010-2014)

Segment A Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Rhoades Ave SW	0	0	0	0	3	0	3
Reardon Ave SW	0	0	1	0	2	0	3
Quimby Ave SW	0	0	1	0	3	0	4

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage
X.XX More than 5 crashes occurred in 2010-2014

Segment A Intersection Crash Rates (2010-2014)

Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Rhoades Ave SW	Rural Thru/Stop	0.21	0.26	0.64	0.00	1.06	8.11
Reardon Ave SW	Rural Thru/Stop	0.21	0.26	0.64	0.00	1.06	8.11
Quimby Ave SW	Rural Thru/Stop	0.28	0.26	0.64	0.00	1.06	8.08

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate

COKATO, MN



Segment B Intersection Notes – All Crashes (2010-2014)

Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Sunset Ave N	T	N	Thru/Stop	7750*	3	Pedestrian crossing.
Century Ave	T	S	Thru/Stop	7750*	0	
Johnson Ave N	T	N	Thru/Stop	9817**	5	
Jackson Ave NW	4-Legged	-	Thru/Stop	11377**	6	Pedestrian crossings.
CSAH 3 / Broadway Ave N	4-Legged	-	Traffic Signal	14540**	8	Signalized with pedestrian crossings.
Olson Blvd	T	N	Thru/Stop	8850*	1	
Industrial Park Rd SE	T	S	Thru/Stop	8850*	1	
Pleasant Ave	T	N	Thru/Stop	8850*	0	
CSAH 4 / 1st St NE	T	N	Thru/Stop	9491**	2	
53rd St SW / 3rd St E	4-Legged	-	Thru/Stop	9143**	1	Skewed intersection.
Oliver Ave SW LT	T	N	Thru/Stop	7775*	0	

Notes:

* Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.

** Value obtained from MnDOT 2013 Section Toolkit.

Segment B Intersection Notes – All Crashes (2010-2014)

Segment B Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Sunset Ave N	0	0	0	2	1	0	3
Johnson Ave N	0	0	0	1	4	0	5
Jackson Ave NW	0	0	0	0	6	0	6
CSAH 3 / Broadway Ave N	0	0	0	0	8	0	8
Olson Blvd	0	0	0	0	1	0	1
Industrial Park Rd SE	0	0	0	0	1	0	1
CSAH 4 / 1st St NE	0	0	0	1	1	0	2
53rd St SW / 3rd St E	0	0	0	0	1	0	1

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage

X.XX	More than 5 crashes occurred in 2010-2014
-------------	---

Segment B Intersection Crash Rates (2010-2014)

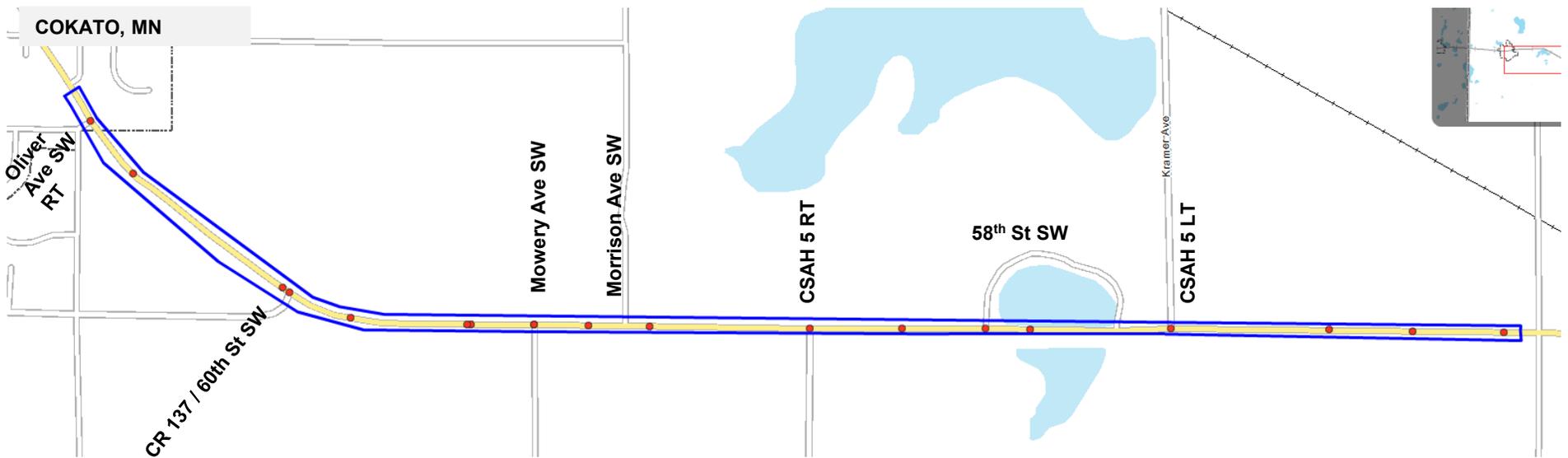
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Sunset Ave N	Urban Thru/Stop	0.21	0.18	0.51	0.00	0.31	5.73
Johnson Ave N	Urban Thru/Stop	0.28	0.18	0.47	0.00	0.31	4.78
Jackson Ave NW	Urban Thru/Stop	0.29	0.18	0.45	0.00	0.31	4.28
CSAH 3 / Broadway Ave N	Traffic Signal: Low Volume, Low Speed	0.30	0.55	0.93	0.00	0.54	4.25
Olson Blvd	Urban Thru/Stop	0.06	0.18	0.49	0.00	0.31	5.17
Industrial Park Rd SE	Urban Thru/Stop	0.06	0.18	0.49	0.00	0.31	5.17
CSAH 4 / 1st St NE	Urban Thru/Stop	0.12	0.18	0.48	0.00	0.31	4.90
53rd St SW / 3rd St E	Urban Thru/Stop	0.06	0.18	0.49	0.00	0.31	5.05

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Oliver Ave SW RT	T	S	Thru/Stop	7775*	1	
CR 137 / 60th St SW	T	S	Thru/Stop	7961**	2	
Mowery Ave SW	T	S	Thru/Stop	7775*	1	
Morrison Ave SW	T	N	Thru/Stop	7775*	0	
CSAH 5 RT	T	S	Thru/Stop	8143**	1	
58th St SW	T	N	Thru/Stop	7983*	1	
58th St SW	T	N	Thru/Stop	7983*	1	
CSAH 5 LT	T	N	Thru/Stop	8166**	1	

Notes:
 * Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*additional\ legs$. East and West approach ADT are from 2010-2014 average.
 ** Value obtained from MnDOT 2013 Section Toolkit.

Segment C Intersection Notes – All Crashes (2010-2014)

Segment C Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Oliver Ave SW RT	0	0	1	0	0	0	1
CR 137 / 60th St SW	0	0	0	0	2	0	2
Mowery Ave SW	0	0	0	0	1	0	1
CSAH 5 RT	0	0	0	0	1	0	1
58th St SW	0	0	0	1	0	0	1
58th St SW	0	0	0	1	0	0	1
CSAH 5 LT	0	0	0	0	1	0	1

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage

X.XX	More than 5 crashes occurred in 2010-2014
-------------	---

Segment C Intersection Crash Rates (2010-2014)

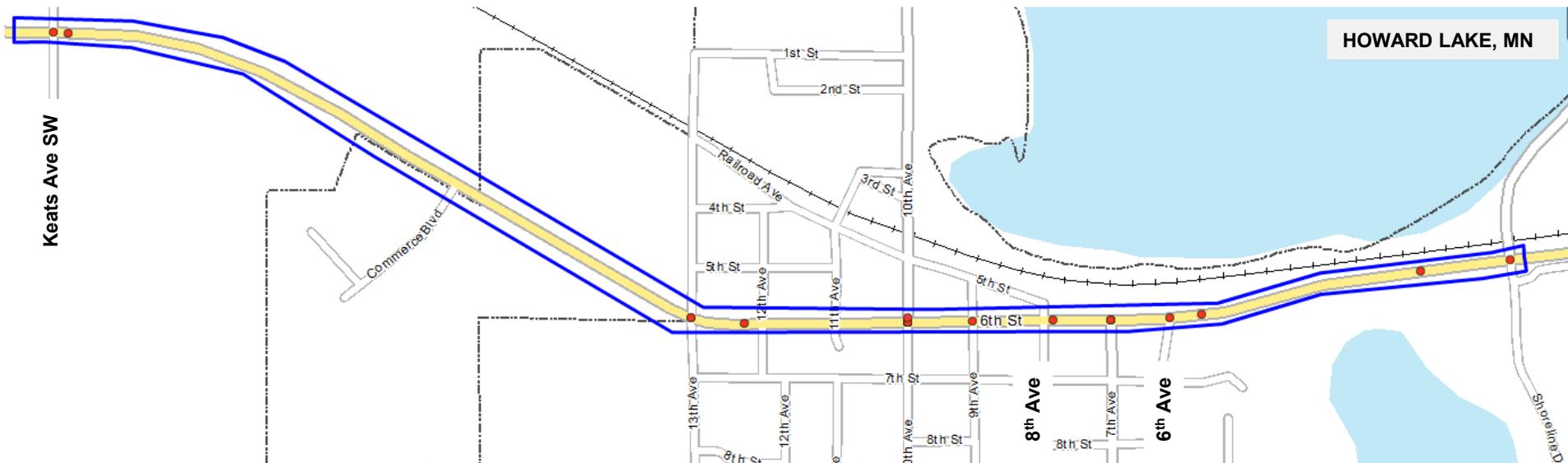
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Oliver Ave SW RT	Rural Thru/Stop	0.07	0.26	0.64	0.00	1.06	8.10
CR 137 / 60th St SW	Rural Thru/Stop	0.14	0.26	0.64	0.00	1.06	7.97
Mowery Ave SW	Rural Thru/Stop	0.07	0.26	0.64	0.00	1.06	8.10
CSAH 5 RT	Rural Thru/Stop	0.07	0.26	0.63	0.00	1.06	7.86
58th St SW	Rural Thru/Stop	0.07	0.26	0.63	0.00	1.06	7.96
58th St SW	Rural Thru/Stop	0.07	0.26	0.63	0.00	1.06	7.96
CSAH 5 LT	Rural Thru/Stop	0.07	0.26	0.63	0.00	1.06	7.84

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Keats Ave SW	4-Legged	-	Thru/Stop	8083*	2	North approach is gravel.
Commerce Blvd	T	S	Thru/Stop	10000*	0	
14th Ave	T	N	Thru/Stop	9900*	0	Loops around lot
14th Ave	T	N	Thru/Stop	9900*	0	
13th Ave	4-Legged	-	Thru/Stop	10000*	2	
12th Ave	4-Legged	-	Thru/Stop	10000*	0	
11th Ave	T	N	Thru/Stop	9900*	0	Pedestrian crossing to lot on south approach.
CSAH 6 LT / 10th Ave	4-Legged	-	Thru/Stop	10952**	8	Pedestrian crossings.
9th Ave	4-Legged	-	Thru/Stop	10000*	1	
8th Ave	4-Legged	-	Thru/Stop	10000*	1	North approach runs through a parking lot. Pedestrian crossings.
CSAH 6 RT / 7th Ave	T	S	Thru/Stop	11349**	4	
6th Ave	T	S	Thru/Stop	9900*	1	Skewed intersection
CSAH 7 / Shoreline Dr	4-Legged	-	Thru/Stop	10329**	1	

Notes:

* Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.

** Value obtained from MnDOT 2013 Section Toolkit.

Segment D Intersection Notes – All Crashes (2010-2014)

Segment D Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Keats Ave SW	0	0	0	0	2	0	2
13th Ave	0	0	0	0	2	0	2
CSAH 6 LT / 10th Ave	0	0	2	0	6	0	8
9th Ave	0	0	0	0	1	0	1
8th Ave	0	0	0	0	1	0	1
CSAH 6 RT / 7th Ave	0	0	1	2	1	0	4
6th Ave	0	0	0	1	0	0	1
CSAH 7 / Shoreline Dr	0	0	0	0	1	0	1

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage
X.XX More than 5 crashes occurred in 2010-2014

Segment D Intersection Crash Rates (2010-2014)

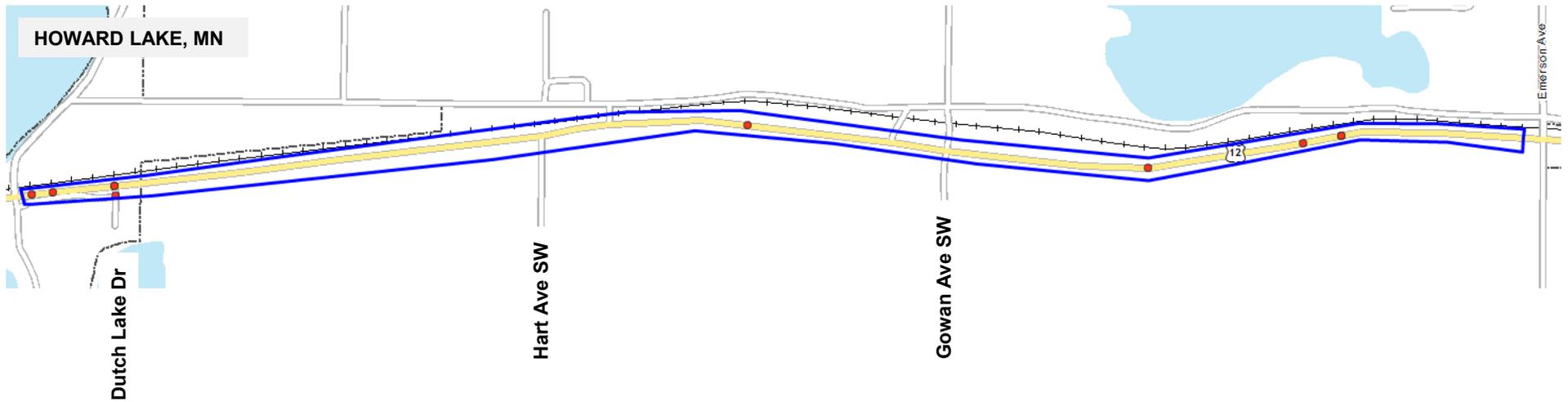
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Keats Ave SW	Urban Thru/Stop	0.14	0.18	0.51	0.00	0.31	5.55
13th Ave	Urban Thru/Stop	0.11	0.18	0.47	0.00	0.31	4.71
CSAH 6 LT / 10th Ave	Urban Thru/Stop	0.40	0.18	0.46	0.00	0.31	4.40
9th Ave	Urban Thru/Stop	0.05	0.18	0.47	0.00	0.31	4.71
8th Ave	Urban Thru/Stop	0.05	0.18	0.47	0.00	0.31	4.71
CSAH 6 RT / 7th Ave	Urban Thru/Stop	0.19	0.18	0.45	0.00	0.31	4.29
6th Ave	Urban Thru/Stop	0.06	0.18	0.47	0.00	0.31	4.75
CSAH 7 / Shoreline Dr	Urban Thru/Stop	0.05	0.18	0.47	0.00	0.31	4.60

Notes:

- 1 All rates in units of crashes per MEM (Million Entering Vehicles)
- 2 US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 3 Statewide Averages from MnDOT 2013 Section Toolkit
- 4 Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.
- 5

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Dutch Lake Dr	T	S	Thru/Stop	8375*	2	
Hart Ave SW	T	S	Thru/Stop	8375*	0	
Gowan Ave SW	4-Legged	-	Thru/Stop	10886*	0	

Notes:
 * Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.
 ** Value obtained from MnDOT 2013 Section Toolkit.

Segment E Intersection Notes – All Crashes (2010-2014)

Segment E Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Dutch Lake Dr	0	0	1	0	1	0	2

Legend:

A - Incapacitating
 B - Non-Incapacitating
 C - Possible Injury
 K - Fatal
 N - Property Damage

X.XX

More than 5 crashes occurred in 2010-2014

Segment E Intersection Crash Rates (2010-2014)

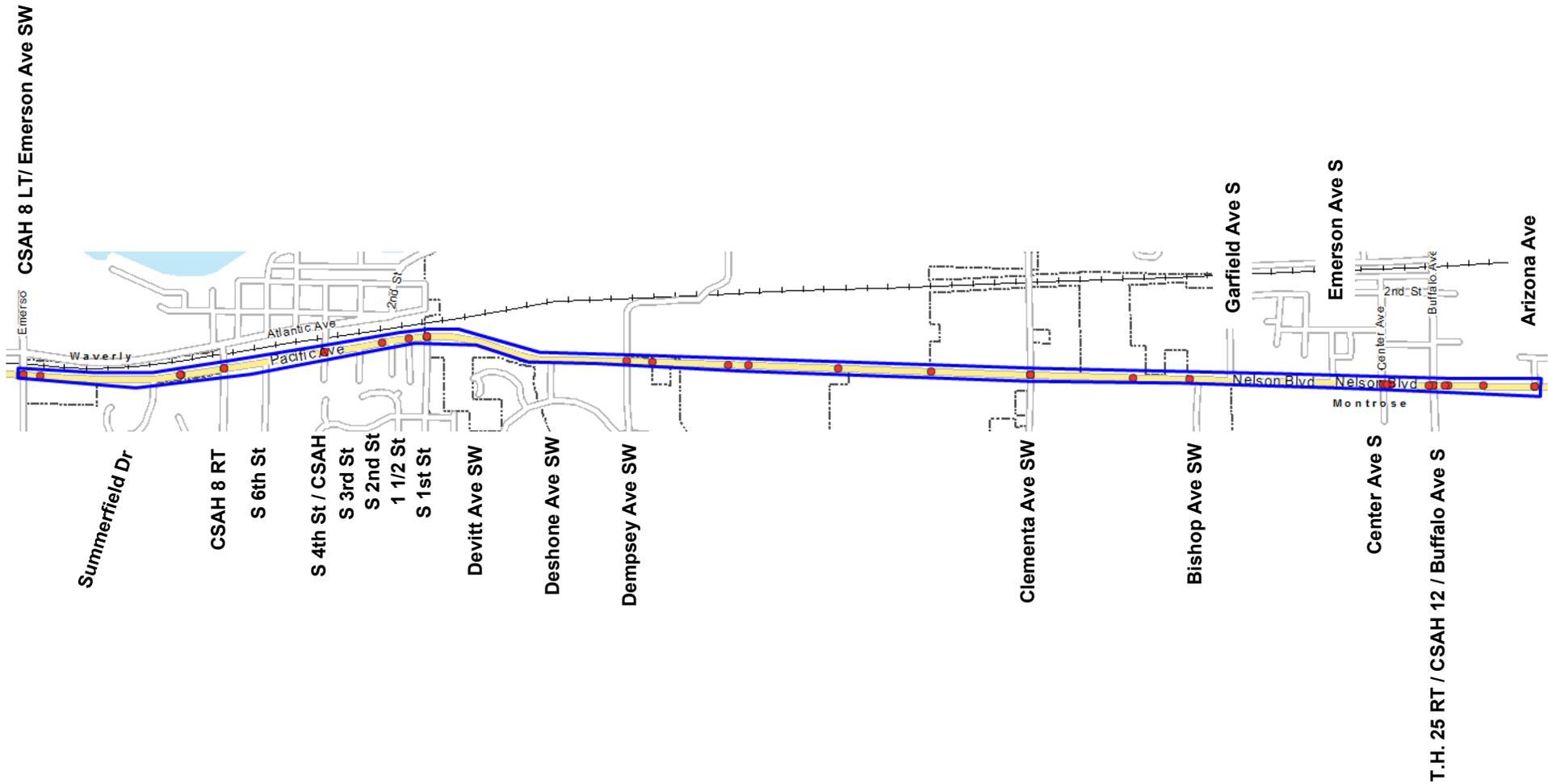
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Dutch Lake Dr	Rural Thru/Stop	0.13	0.26	0.63	0.00	1.06	7.72

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Segment F Intersection Notes – All Crashes (2010-2014)

Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
CSAH 8 LT/ Emerson Ave SW	4-Legged	-	Thru/Stop	10686**	4	Train track is 100' away from the intersection.
Summerfield Dr	T	S	Thru/Stop	9725*	0	
CSAH 8 RT	4-Legged	-	Thru/Stop	12267**	2	Pedestrian crossing.
S 6th St	T	S	Thru/Stop	9877**	0	
S 4th St / CSAH 62	4- Legged	-	Thru/Stop	10778**	4	Pedestrian crossings.
S 3rd St	T	S	Thru/Stop	9725*	0	
S 2nd St	T	S	Thru/Stop	9725*	0	
1 1/2 St	T	S	Thru/Stop	9725*	0	
S 1st St	T	S	Thru/Stop	9725*	1	
Devitt Ave SW	T	S	Thru/Stop	9725*	0	Gravel road.
Deshone Ave SW	T	S	Thru/Stop	9725*	0	
Dempsey Ave SW	4-Legged	-	Thru/Stop	9825*	1	
Clementa Ave SW	4-Legged	-	Thru/Stop	10515**	4	
Bishop Ave SW	T	S	Thru/Stop	10600*	0	
Garfield Ave S	T	N	Thru/Stop	10600*	0	
Emerson Ave S	T	N	Thru/Stop	10600*	0	
Center Ave S	4-Legged	-	Thru/Stop	10664**	5	Pedestrian crossing.
T.H. 25 RT / CSAH 12 / Buffalo Ave S	4-Legged	-	Traffic Signal	14842**	10	
Arizona Ave	T	N	Thru/Stop	11850*	2	

Notes:

* Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT \text{ of US 12 East approach}) + 1/2*(ADT \text{ of US 12 West approach}) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.

** Value obtained from MnDOT 2013 Section Toolkit.

Segment F Intersection Notes – All Crashes (2010-2014)

Segment F Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
CSAH 8 LT/ Emerson Ave SW	0	0	1	2	1	0	4
CSAH 8 RT	0	0	1	1	0	0	2
S 4th St / CSAH 62	0	0	0	3	1	0	4
S 1st St	0	0	1	0	0	0	1
Dempsey Ave SW	0	0	0	0	1	0	1
Clementa Ave SW	0	0	0	3	1	0	4
Center Ave S	0	0	1	3	1	0	5
T.H. 25 RT / CSAH 12 / Buffalo Ave S	0	0	0	7	3	0	10
Arizona Ave	0	0	0	0	2	0	2

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage
X.XX More than 5 crashes occurred in 2010-2014

Segment F Intersection Crash Rates (2010-2014)

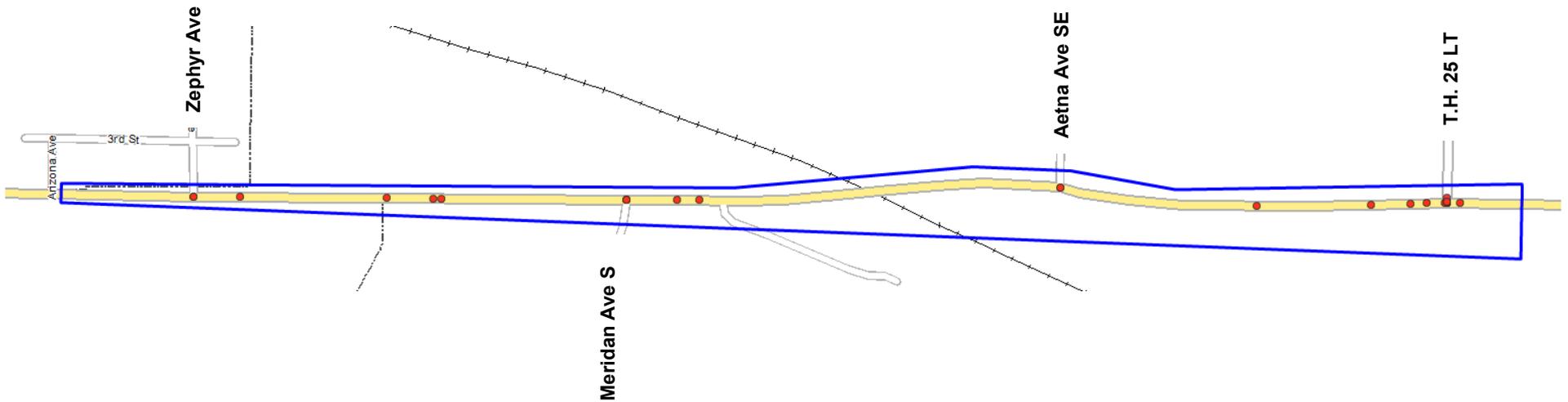
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
CSAH 8 LT/ Emerson Ave SW	Urban Thru/Stop	0.21	0.18	0.46	0.00	0.31	4.48
CSAH 8 RT	Urban Thru/Stop	0.09	0.18	0.44	0.00	0.31	4.05
S 4th St / CSAH 62	Urban Thru/Stop	0.20	0.18	0.46	0.00	0.31	4.45
S 1st St	Urban Thru/Stop	0.06	0.18	0.48	0.00	0.31	4.81
Dempsey Ave SW	Urban Thru/Stop	0.06	0.18	0.47	0.00	0.31	4.78
Clementa Ave SW	Urban Thru/Stop	0.21	0.18	0.46	0.00	0.31	4.54
Center Ave S	Urban Thru/Stop	0.26	0.18	0.46	0.00	0.31	4.49
T.H. 25 RT / CSAH 12 / Buffalo Ave S	Traffic Signal: Low Volume, Low Speed	0.37	0.55	0.93	0.00	0.54	4.20
Arizona Ave	Urban Thru/Stop	0.09	0.18	0.45	0.00	0.31	4.15

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
- Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.
- FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Zephyr Ave	T	N	Thru/Stop	11850*	2	
Meridan Ave S	T	S	Thru/Stop	11850*	3	
Aetna Ave SE	T	N	Thru/Stop	11850*	2	
T.H. 25 LT	T	N	Thru/Stop	14264**	7	

Notes:
 * Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.
 ** Value obtained from MnDOT 2013 Section Toolkit.

Segment G Intersection Notes – All Crashes (2010-2014)

Segment G Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Zephyr Ave	1	0	0	0	1	1	2
Meridan Ave S	0	0	0	0	3	0	3
Aetna Ave SE	0	0	1	0	1	0	2
T.H. 25 LT	0	0	0	0	7	0	7

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage
X.XX More than 5 crashes occurred in 2010-2014

Segment G Intersection Crash Rates (2010-2014)

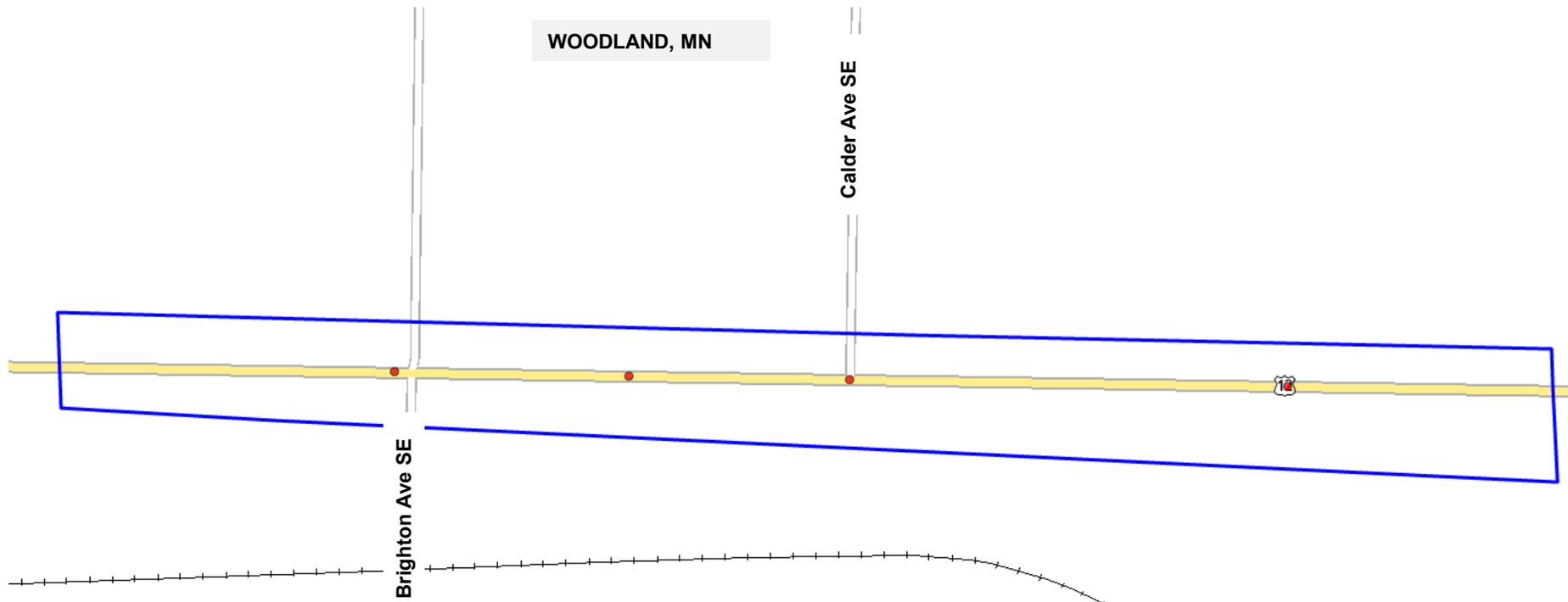
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Zephyr Ave	Rural Thru/Stop	0.09	0.26	0.56	4.62	1.06	6.22
Meridan Ave S	Rural Thru/Stop	0.14	0.26	0.56	0.00	1.06	6.22
Aetna Ave SE	Rural Thru/Stop	0.09	0.26	0.56	0.00	1.06	6.22
T.H. 25 LT	Rural Thru/Stop	0.27	0.26	0.53	0.00	1.06	5.58

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
- Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.
-

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Brighton Ave SE	4-Legged	-	Thru/Stop	11875*	1	
Calder Ave SE	T	N	Thru/Stop	11775*	1	

Notes:

* Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2 * (ADT \text{ of US 12 East approach}) + 1/2 * (ADT \text{ of US 12 West approach}) + 100 * \text{additional legs}$. East and West approach ADT are from 2010-2014 average.

** Value obtained from MnDOT 2013 Section Toolkit.

Segment H Intersection Notes – All Crashes (2010-2014)

Segment H Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Brighton Ave SE	0	0	1	0	0	0	1
Calder Ave SE	0	0	0	0	1	0	1

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage

X.XX	More than 5 crashes occurred in 2010-2014
-------------	---

Segment H Intersection Crash Rates (2010-2014)

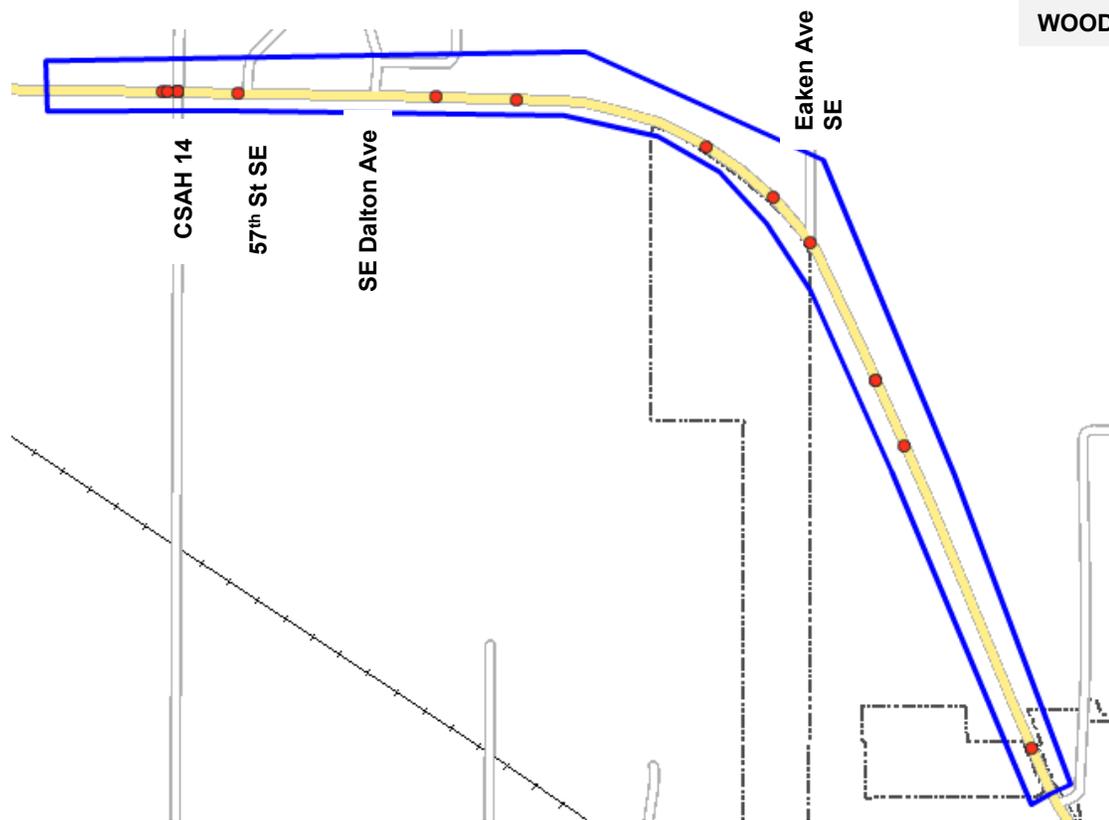
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Brighton Ave SE	Rural Thru/Stop	0.05	0.26	0.56	0.00	1.06	6.21
Calder Ave SE	Rural Thru/Stop	0.05	0.26	0.56	0.00	1.06	6.24

Notes:

- 1 All rates in units of crashes per MEM (Million Entering Vehicles)
- 2 US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 3 Statewide Averages from MnDOT 2013 Section Toolkit
- 4 Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 5 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
CSAH 14	4-Legged	-	Thru/Stop	13395**	7	
57th St SE	T	N	Thru/Stop	11775*	1	
SE Dalton Ave	T	N	Thru/Stop	11775*	0	
Eaken Ave SE	T	N	Thru/Stop	11775*	1	

Notes:
 * Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.
 ** Value obtained from MnDOT 2013 Section Toolkit.

Segment I Intersection Notes – All Crashes (2010-2014)

Segment I Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
CSAH 14	0	0	1	2	4	0	7
57th St SE	0	0	0	0	1	0	1
Eaken Ave SE	0	0	0	0	1	0	1

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage
X.XX More than 5 crashes occurred in 2010-2014

Segment I Intersection Crash Rates (2010-2014)

Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
CSAH 14	Rural Thru/Stop	0.29	0.26	0.54	0.00	1.06	5.78
57th St SE	Rural Thru/Stop	0.05	0.26	0.56	0.00	1.06	6.24
Eaken Ave SE	Rural Thru/Stop	0.05	0.26	0.56	0.00	1.06	6.24

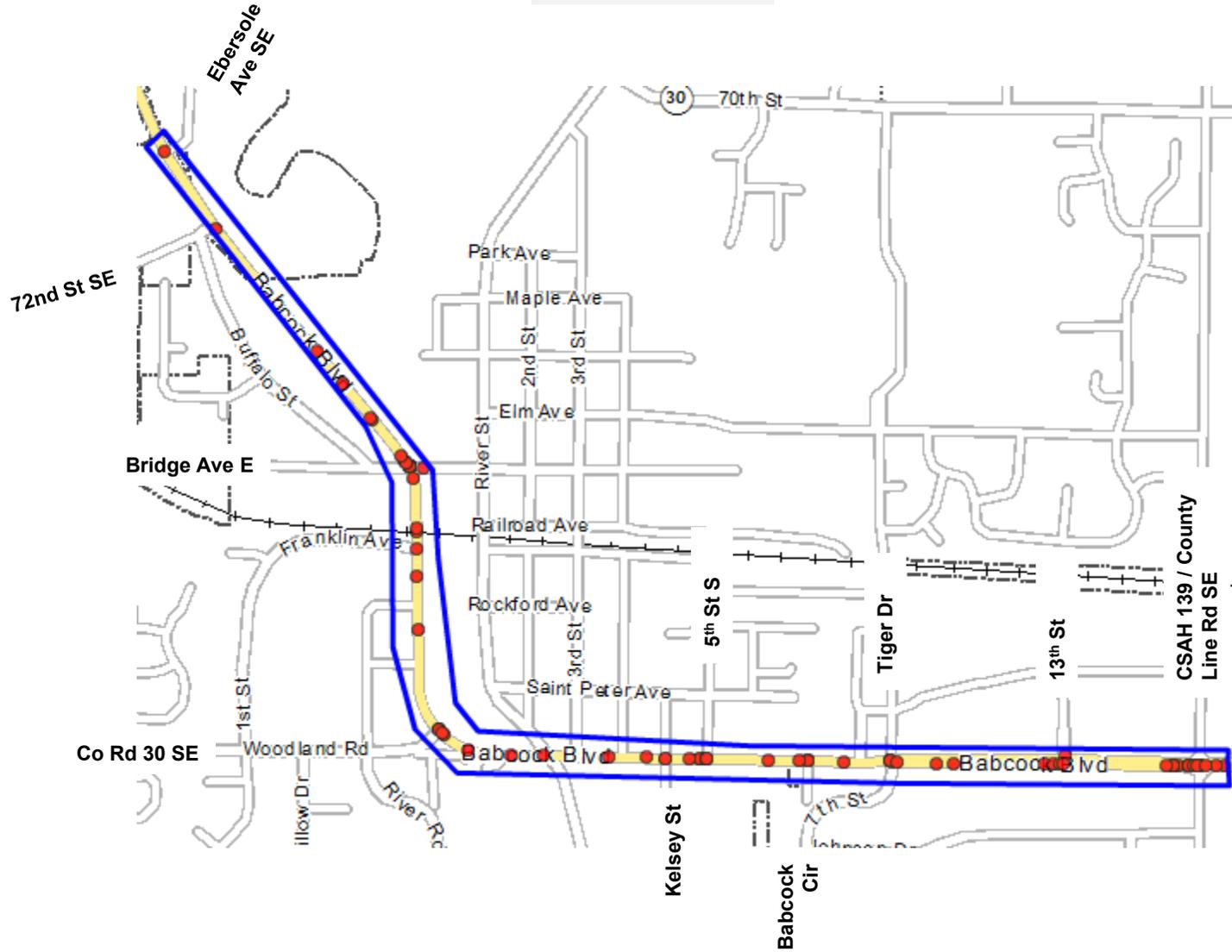
Notes:

- 1 All rates in units of crashes per MEM (Million Entering Vehicles)
- 2 US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 3 Statewide Averages from MnDOT 2013 Section Toolkit
- 4 Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 5 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate

DELANO, MN



Segment J Intersection Notes – All Crashes (2010-2014)

Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Ebersole Ave SE	T	N	Thru/Stop	11775*	1	
72nd St SE	T	S	Thru/Stop	16938*	1	North approach is a driveway
Bridge Ave	4-Legged	-	Traffic Signal	16838**	19	Skewed intersection. Pedestrian crossings.
Franklin Ave W	T	S	Thru/Stop	15175*	1	
Linden Ave	T	S	Thru/Stop	15175*	0	
CSAH 30 RT	T	W	Traffic Signal	15175*	6	Pedestrian crossings
Kelsey St	T	S	Thru/Stop	17500*	2	
5th St S	T	N	Thru/Stop	17846**	5	
Babcock Cir	T	S	Thru/Stop	17846**	5	
Crow River Dr	T	N	Thru/Stop	18073**	0	
Tiger Dr	4-Legged	-	Traffic Signal	17600*	5	Pedestrian crossings. South approach could have sightline issues from horizontal curve.
13th St	T	N	Thru/Stop	17500*	4	
CSAH 139 / County Line Rd SE	4-Legged	-	Traffic Signal	18895**	29	

Notes:

* Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.

** Value obtained from MnDOT 2013 Section Toolkit.

Segment J Intersection Notes – All Crashes (2010-2014)

Segment J Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Ebersole Ave SE	0	0	0	1	0	0	1
72nd St SE	0	0	0	1	0	0	1
Bridge Ave E	0	0	1	1	17	0	19
Franklin Ave W	0	0	0	1	0	0	1
CSAH 30 RT	0	0	1	1	4	0	6
Kelsey St	0	0	0	2	0	0	2
5th St S	0	0	1	1	3	0	5
Babcock Cir	0	0	0	1	4	0	5
Tiger Dr	0	0	0	0	5	0	5
13th St	0	0	0	0	4	0	4
CSAH 139 / County Line Rd SE	0	0	1	6	22	0	29

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage
X.XX More than 5 crashes occurred in 2010-2014

Segment J Intersection Crash Rates (2010-2014)

Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Ebersole Ave SE	Urban Thru/Stop	0.05	0.18	0.45	0.00	0.31	4.17
72nd St SE	Urban Thru/Stop	0.03	0.18	0.40	0.00	0.31	3.21
Bridge Ave E	Traffic Signal: High Volume, Low Speed	0.62	0.69	1.09	0.00	0.71	4.28
Franklin Ave W	Urban Thru/Stop	0.04	0.18	0.41	0.00	0.31	3.47
CSAH 30 RT	Traffic Signal: High Volume, Low Speed	0.22	0.69	1.11	0.00	0.71	4.57
Kelsey St	Urban Thru/Stop	0.06	0.18	0.40	0.00	0.31	3.13
5th St S	Urban Thru/Stop	0.15	0.18	0.39	0.00	0.31	3.09
Babcock Cir	Urban Thru/Stop	0.15	0.18	0.39	0.00	0.31	3.09
Tiger Dr	Traffic Signal: High Volume, Low Speed	0.16	0.69	1.08	0.00	0.71	4.17
13th St	Urban Thru/Stop	0.13	0.18	0.40	0.00	0.31	3.13
CSAH 139 / County Line Rd SE	Traffic Signal: High Volume, Low Speed	0.84	0.69	1.07	0.00	0.71	4.00

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
- US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
- Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate

INDEPENDENCE, MN



Segment K Intersection Notes – All Crashes (2010-2014)

Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Nelson Rd	T	S	Thru/Stop	14713*	5	
Dawn Heather Dr	T	N	Thru/Stop	14713*	0	
Copeland Rd	T	S	Thru/Stop	14713*	0	Gravel road
Hitsman Ln West	T	S	Thru/Stop	14713*	3	Skewed intersection. Gravel road.
Lake Haughey Rd	T	N	Thru/Stop	14713*	1	Slightly skewed intersection. Gravel road.
Hitsman Ln East	T	S	Thru/Stop	14713*	0	Skewed intersection. Gravel road.
CSAH 92 RT / Mud Lake Rd	4-Legged	-	Thru/Stop	14837**	14	Skewed intersection. North approach is gravel.
CSAH 92 LT / Lake Sarah Rd	T	N	Thru/Stop	15625**	6	Skewed intersection.
Valley Rd	T	N	Thru/Stop	15025*	6	Skewed intersection. North approach is gravel and crosses train tracks at weird angle.
CSAH 90	4-Legged	-	Thru/Stop	16049**	19	Skewed intersection.

Notes:

* Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.

** Value obtained from MnDOT 2013 Section Toolkit.

Segment K Intersection Notes – All Crashes (2010-2014)

Segment K Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
Nelson Rd	0	0	1	1	3	0	5
Hitsman Ln West	0	0	1	1	1	0	3
Lake Haughey Rd	0	0	0	1	0	0	1
CSAH 92 RT / Mud Lake Rd	0	0	4	3	7	0	14
CSAH 92 LT / Lake Sarah Rd	0	0	4	0	2	0	6
Valley Rd	0	0	0	2	4	0	6
CSAH 90	0	0	1	2	16	0	19

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage
X.XX More than 5 crashes occurred in 2010-2014

Segment K Intersection Crash Rates (2010-2014)

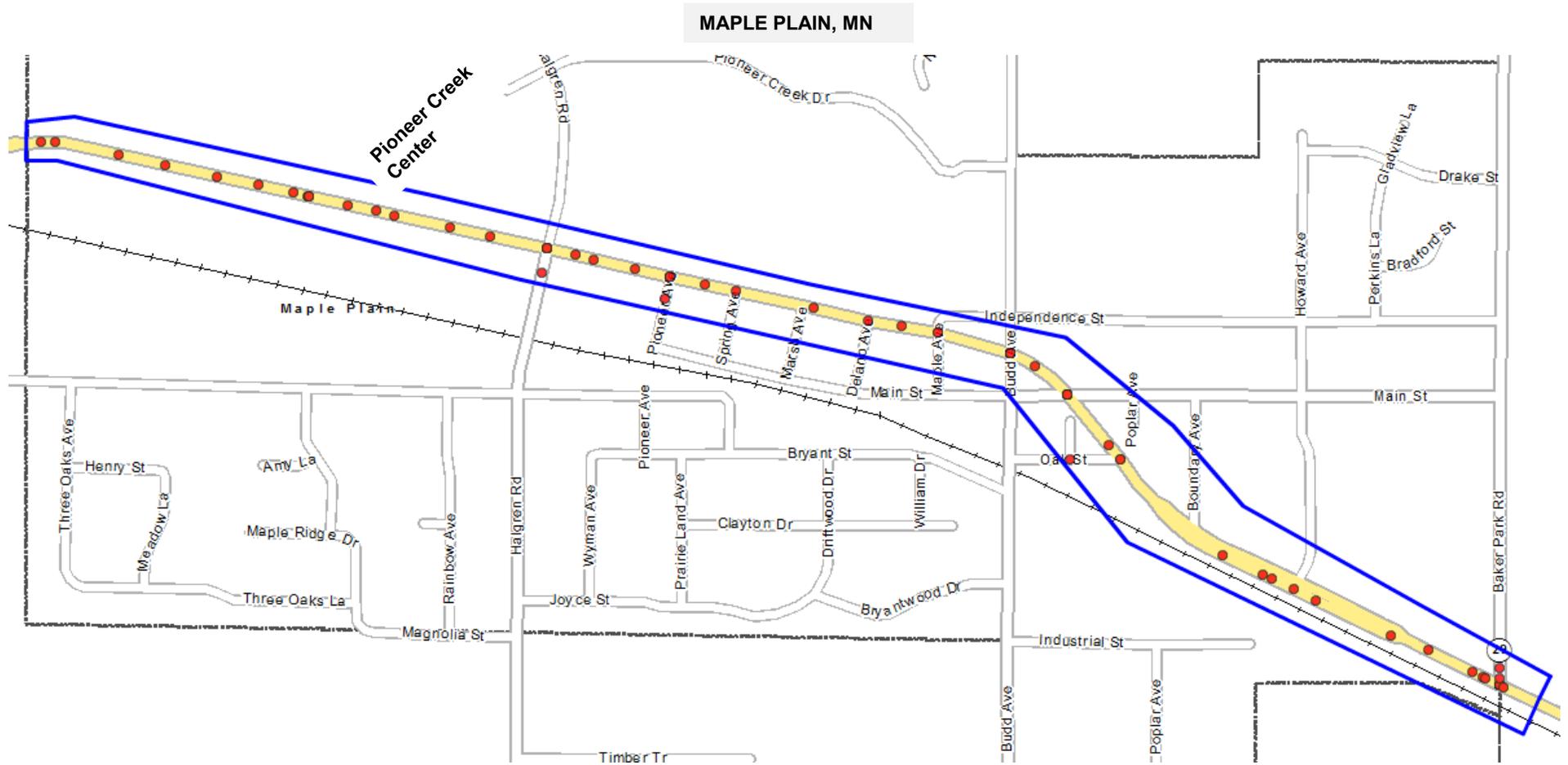
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
Nelson Rd	Rural Thru/Stop	0.19	0.26	0.53	0.00	1.06	5.48
Hitsman Ln West	Rural Thru/Stop	0.11	0.26	0.53	0.00	1.06	5.48
Lake Haughey Rd	Rural Thru/Stop	0.04	0.26	0.53	0.00	1.06	5.48
CSAH 92 RT / Mud Lake Rd	Rural Thru/Stop	0.52	0.26	0.53	0.00	1.06	5.45
CSAH 92 LT / Lake Sarah Rd	Rural Thru/Stop	0.21	0.26	0.52	0.00	1.06	5.29
Valley Rd	Rural Thru/Stop	0.22	0.26	0.53	0.00	1.06	5.41
CSAH 90	Rural Thru/Stop	0.65	0.26	0.52	0.00	1.06	5.21

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
- Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.
- FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Segment L Intersection Notes – All Crashes (2010-2014)

Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
Pioneer Creek Center	4-Legged	-	Thru/Stop	14925*	0	
CSAH 83 / Halgren Rd	4-Legged	-	Traffic Signal	17352**	9	Pedestrian crossings.
Pioneer Ave	T	S	Thru/Stop	16770**	8	
Delano Ave	T	S	Thru/Stop	16770**	1	
Independence St	T	N	Thru/Stop	14925*	0	
Maple Ave	4-Legged	-	Thru/Stop	17086**	2	North approach is a parking lot.
Budd Ave N	4-Legged	-	Thru/Stop	17086**	15	Skewed intersection.
CSAH 19 / Main St E	4-Legged	-	Thru/Stop	18669**	9	Skewed intersection.
Howard Ave	T	N	Thru/Stop	16770**	1	
CSAH 29 / Baker Park Rd / Townline Rd	4-Legged	-	Traffic Signal	19040**	14	Skewed intersection.

Notes:

- * Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2*(ADT\ of\ US\ 12\ East\ approach) + 1/2*(ADT\ of\ US\ 12\ West\ approach) + 100*$ additional legs. East and West approach ADT are from 2010-2014 average.
- ** Value obtained from MnDOT 2013 Section Toolkit.

Segment L Intersection Notes – All Crashes (2010-2014)

Segment L Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
CSAH 83 / Halgren Rd	0	0	1	5	3	0	9
Pioneer Ave	1	0	1	0	6	1	8
Delano Ave	0	0	0	0	1	0	1
Maple Ave	0	0	1	0	1	0	2
Budd Ave N	0	0	3	1	11	0	15
CSAH 19 / Main St E	0	0	0	2	7	0	9
Howard Ave	0	0	0	1	0	0	1
CSAH 29 / Baker Park Rd / Townline Rd	0	0	0	1	13	0	14

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage

X.XX	More than 5 crashes occurred in 2010-2014
-------------	---

Segment L Intersection Crash Rates (2010-2014)

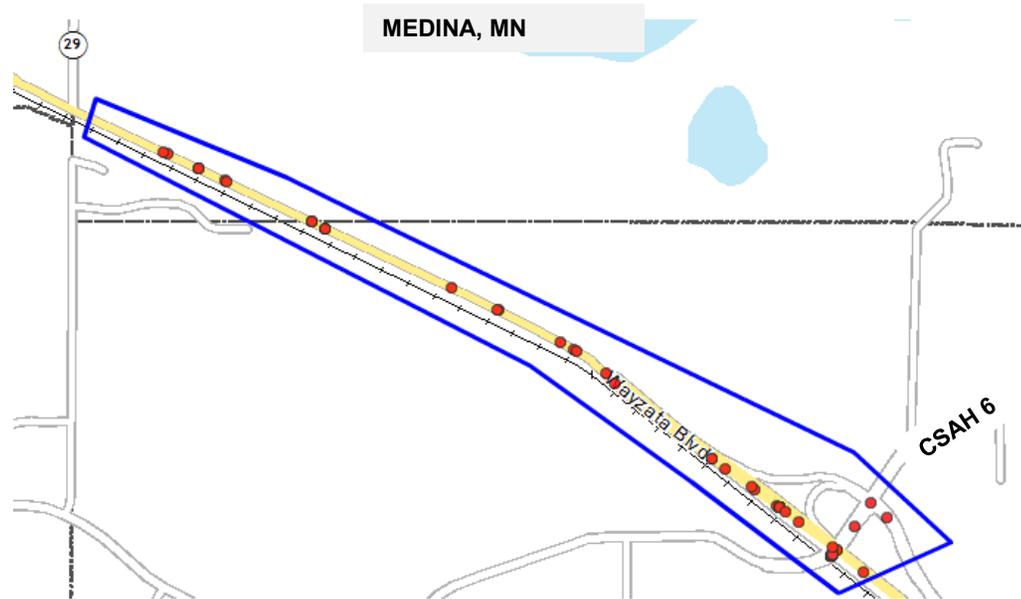
Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
CSAH 83 / Halgren Rd	Traffic Signal: High Volume, Low Speed	0.28	0.69	1.08	0.00	0.71	4.21
Pioneer Ave	Urban Thru/Stop	0.26	0.18	0.40	3.27	0.31	3.23
Delano Ave	Urban Thru/Stop	0.03	0.18	0.40	0.00	0.31	3.23
Maple Ave	Urban Thru/Stop	0.06	0.18	0.40	0.00	0.31	3.19
Budd Ave N	Urban Thru/Stop	0.48	0.18	0.40	0.00	0.31	3.19
CSAH 19 / Main St E	Urban Thru/Stop	0.26	0.18	0.39	0.00	0.31	2.99
Howard Ave	Urban Thru/Stop	0.03	0.18	0.40	0.00	0.31	3.23
CSAH 29 / Baker Park Rd / Townline Rd	Traffic Signal: High Volume, High Speed	0.40	0.41	0.71	0.00	0.51	3.50

Notes:

- All rates in units of crashes per MEM (Million Entering Vehicles)
US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- Statewide Averages from MnDOT 2013 Section Toolkit
- Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate



Cross Street	Type of Intersection	If T, which approach?	Traffic Control Device	Average Entering Volume ¹	Total Crashes (2010-2014)	Notes
CSAH 6	Overpass	-	N/A	19425**	5	

Notes:
 * Where ADT information wasn't available for cross streets, total entering volume was computed from: $1/2 * (ADT \text{ of US 12 East approach}) + 1/2 * (ADT \text{ of US 12 West approach}) + 100 * \text{additional legs}$. East and West approach ADT are from 2010-2014 average.
 ** Value obtained from MnDOT 2013 Section Toolkit.

Segment M Intersection Notes – All Crashes (2010-2014)

Segment M Intersection Severities (2010-2014)

Cross Street	K	A	B	C	N	K+A	Total
CSAH 6	0	0	0	1	4	0	5

Legend:

A - Incapacitating
B - Non-Incapacitating
C - Possible Injury
K - Fatal
N - Property Damage

X.XX	More than 5 crashes occurred in 2010-2014
------	---

Segment M Intersection Crash Rates (2010-2014)

Cross Street	Intersection Type	Crash Rate			K + A (FAR)		
		US 12	State Average	Critical	US 12	State Average	Critical
CSAH 6	Other	0.14	0.16	0.34	0.00	0.22	2.64

Notes:

- 1 All rates in units of crashes per MEM (Million Entering Vehicles)
- 2 US 12 Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 3 Statewide Averages from MnDOT 2013 Section Toolkit
- 4 Critical Rates Computed Via Formulas From Traffic Safety Fundamentals Handbook (2008)
- 5 99.5% confidence interval used to compute the critical crash rate. 90% confidence interval used to compute the FAR.

Legend:

X.XX	US 12 Exceeds the State Average Rate
X.XX	US 12 Exceeds the Critical Rate and the State Average Rate

This page intentionally left blank.

Critical Segments (2010-2014)

Segment	Location	Basic Sheet Page #
A	Cokato	D3
D	Howard Lake	D4
G	Woodland	D5
I	Woodland	D6
K	Independence	D7
M	Medina/Orono	D8
N	Orono	D9

Critical Intersections (2010-2014)

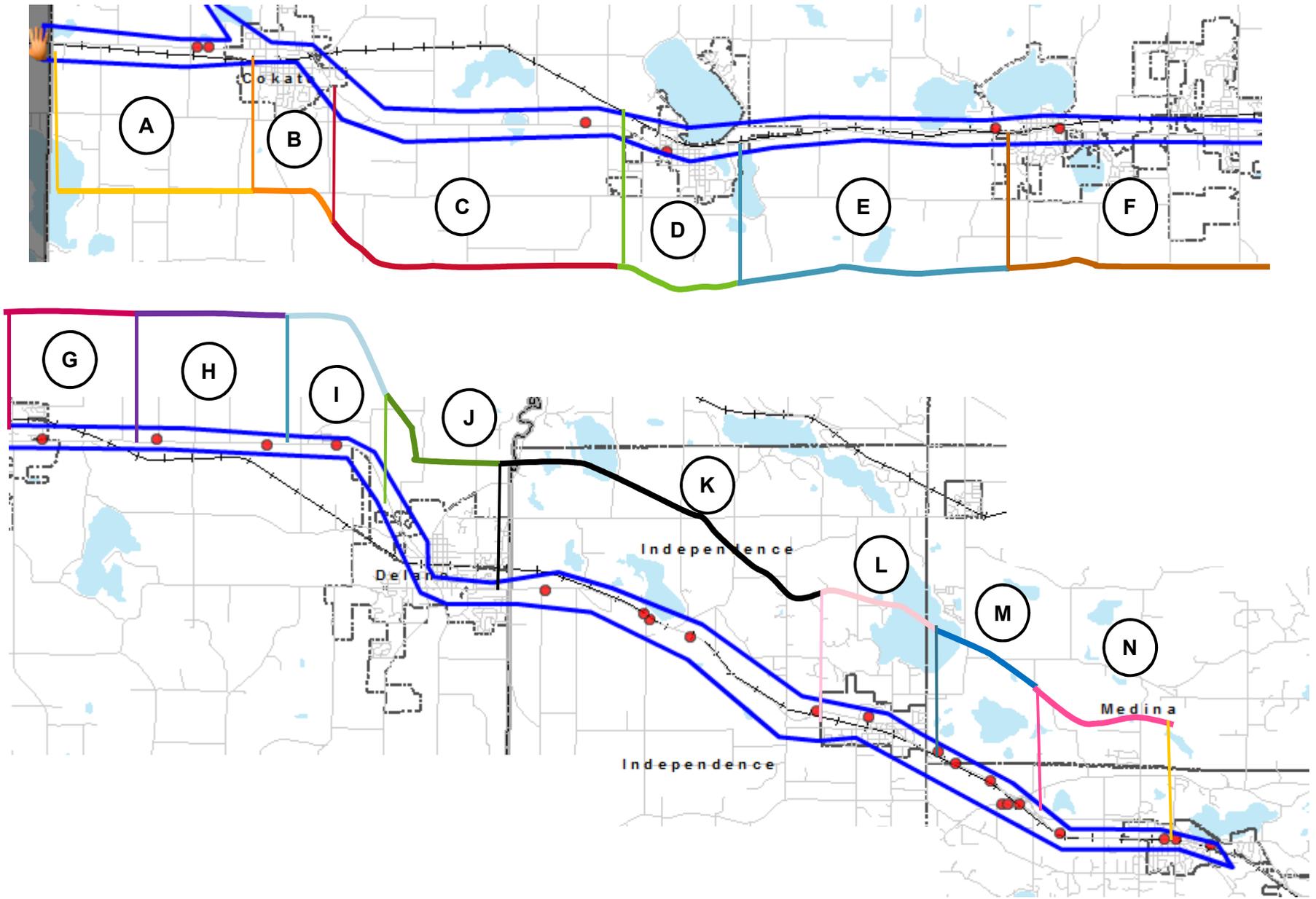
Seg.	Cross Street	Basic Sheet Page #
A	Quimby Ave SW	D10
B	Sunset Ave N	D11
	Johnson Ave N	D12
	Jackson Ave NW	D13
	CSAH 3 / Broadway Ave N	D14
D	CSAH 6 LT / 10th Ave	D15
	CSAH 6 RT / 7th Ave	D16
F	CSAH 8 LT/ Emerson Ave SW	D17
	S 4th St / CSAH 62	D18
	Clementa Ave SW	D19
	Center Ave S	D20
	T.H. 25 RT / CSAH 12 / Buffalo Ave S	D21
G	Zephyr Ave	D22
	T.H. 25 LT	D23
I	CSAH 14	D24
J	CSAH 30 LT / Bridge Ave E	D25
	CSAH 30 RT	D26
	5th St S	D27
	Babcock Cir	D28
	Tiger Dr	D29
	CSAH 139 / County Line Rd SE	D30
K	Nelson Rd	D31
	CSAH 92 RT / Mud Lake Rd	D32
	CSAH 92 LT / Lake Sarah Rd	D33
	Valley Rd	D34
	CSAH 90	D35
L	CSAH 83 / Halgren Rd	D36
	Pioneer Ave	D37
	Budd Ave N	D38
	CSAH 19 / Main St E	D39
	CSAH 29 / Baker Park Rd / Townline Rd	D40

D. Crash Type Summaries

- Fatal and Severe Crash Locations By Segment (D1-D2)
- Critical* Segments
- Critical* Intersections

Notes:

*The term "critical" incorporates all segments/intersections that have crash rates that exceed either state average rates or the critical rate. Intersections that had over 5 crashes during the 5-year study period were also evaluated.



Fatal and Severe Crash Locations - By Segment (2010-2014)

Source: MnCMAT Crash Data (2010-2014)

Seg.	Location	Junction	Sev	Diagram	Type of Crash	Light Condition	Weather	Surface Condition	Factors
A	545' East of Quimby Ave SW	Non-Junction	A	Other	Motor Vehicle In Transport	Daylight	Clear/Cloudy	Ice/Packed Snow	Illegal Speed
	1260' East of Quimby Ave SW	Non-Junction	A	Head On	Motor Vehicle In Transport	Daylight	Cloudy	Ice/Packed Snow	Illegal Speed
C	1779' West of Keats Ave	Non-Junction	A	Head On	Motor Vehicle In Transport	Daylight	Cloudy	Snow	Sleeping
D	104' West of 12th Ave	Non-Junction	K	Head On	Motor Vehicle In Transport	Daylight	Cloudy/Rain	Wet	Improper Lane/Other Human Factor
F	Jct with 1 1/2 St	T-Intersection	K	Head On	Deer/Animal	Daylight	Cloudy	Dry	Unknown
G	Jct with Zephyr Ave	T-Intersection	K	Head On	Motor Vehicle In Transport	Daylight	Clear	Dry	Distraction
	253' West of T.H. 25 LT	Non-Junction	K	Ran Off Road-Left Side	Pedestrian	Daylight	Clear	Dry	Other Human Factor
H	2623' West of Co Rd 14 SE	Non-Junction	A	Other	Overturn	Daylight	Clear	Dry	Following Too Closely
I	584' East of Dalton Ave	Non-Junction	K	Head On	Motor Vehicle In Transport	Dark (No Street Lights)	Snow	Snow	Illegal Speed
K	266' East of Nelson Rd	Non-Junction	A	Rear End	Other/Unknown Collision	Daylight	Clear	Dry	No Improper Driving
	584' East of Mud Lake Rd / CSAH 92	T-Intersection	A	Other	Other Non-Collision	Daylight	Clear	Dry	No Improper Driving
	1325' East of Lake Sarah Rd / CSAH 92	Alley-Driveway Access	A	Rear End	Motor Vehicle In Transport	Daylight	Clear	Dry	No Improper Driving
	273' West of Maple Plain City Limit	Non-Junction	K	Head On	Motor Vehicle In Transport	Daylight	Cloudy	Dry	Sleeping
L	Jct with Pioneer Ave	T-Intersection	K	Head On	Motor Vehicle In Transport	After Sunset	Clear	Dry	Distraction
M	948' East of Baker Park Rd / Townline Rd / CSAH 29	Non-Junction	K	Head On	Motor Vehicle In Transport	Dark (No Street Lights)	Cloudy	Dry	Sleeping
	2487' East of Baker Park Rd / Townline Rd / CSAH 29	Non-Junction	A	Head On	Motor Vehicle In Transport	Dark (Street Lights On)	Snow	Snow	Fail to Yield ROW
N	3750' East of CSAH 6	Non-Junction	K	Ran Off Road – Right Side	Motor Vehicle In Transport	Daylight	Cloudy	Wet	Over the Centerline
	700' West of Brown Road	Non-Junction	A	Head On	Motor Vehicle In Transport	Dark (Street Lights On)	Clear	Dry	Under the Influence/Over the Centerline

Fatal and Severe Crash Summary – By Segment (2010-2014)

This page intentionally left blank.

Segment A - Meeker/Wright County Line to 100' West of Sunset Ave N Rural Segment (Intersection Crashes Included)

County	Wright
District	3
Segment ADT	7,650
Length (mi)	2.80
Total Crashes	24
Intersection Related Crashes	10
Expected Crash Rate (per MEV)/KA	0.61/2.41

Crash Rate (per MEV)/KA	0.61/5.12
Critical Rate (per MEV)/KA	0.95/6.86
Crash Cost	\$1,941,400
State Rank	n/a
Regional Rank	n/a
Accesses	0
Access per Mile	0

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	2	8%	3%	100%
Injury - B	3	13%	13%	
Injury - C	3	13%	21%	
Property Damage	16	67%	62%	
Total	24	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	4	17%	20%	50%
2011	6	25%	20%	50%
2012	4	17%	21%	0%
2013	4	17%	18%	0%
2014	6	25%	21%	0%
Total	24	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	20	83%	63%	100%
Sunrise	0	0%	4%	0%
Sunset	1	4%	3%	0%
Dark (street lights on)	1	4%	5%	0%
Dark	2	8%	24%	0%
Other/Unknown	0	0%	1%	0%
Total	24	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	15	63%	45%	100%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	13%	0%
Fixed Object	0	0%	20%	0%
Overturn/Rollover	4	17%	16%	0%
Other/Unknown	5	21%	5%	0%
Total	24	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	6	25%	18%	0%
Sideswipe Passing	3	13%	5%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	2%	0%
Run off Road	7	29%	34%	0%
Right Angle	1	4%	14%	0%
Right Turn into Traffic	1	4%	1%	0%
Head On	4	17%	9%	50%
Other/Unknown	2	8%	14%	50%
Total	24	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	12	50%	47%	50%
Pickup	6	25%	18%	50%
Van or Minivan	2	8%	8%	0%
SUV	4	17%	17%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	6%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	24	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	10%	0%
Driver Inattention	9	38%	13%	100%
Driver Impairment	0	0%	3%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	10%	0%
Other/Unknown	15	63%	56%	0%
Total	24	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	7%	0%
No	24	100%	93%	100%
Other/Unknown	0	0%	0%	0%
Total	24	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	1	4%	5%	0%
3:00 to 5:59 am	0	0%	5%	0%
6:00 to 8:59 am	8	33%	16%	50%
9:00 to 11:59 am	5	21%	14%	50%
12:00 to 2:59 pm	2	8%	17%	0%
3:00 to 5:59 pm	6	25%	22%	0%
6:00 to 8:59 pm	2	8%	13%	0%
9:00 to 11:59 pm	0	0%	9%	0%
Total	24	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	4	17%	15%	0%
Tuesday	5	21%	14%	50%
Wednesday	5	21%	14%	50%
Thursday	5	21%	14%	0%
Friday	3	13%	17%	0%
Saturday	1	4%	14%	0%
Sunday	1	4%	12%	0%
Total	24	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	7	29%	61%	0%
Wet	3	13%	9%	0%
Snow/Slush	0	0%	10%	0%
Ice/Packed Snow	14	58%	18%	100%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	24	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	10	42%	48%	50%
Cloudy	7	29%	24%	50%
Rain	1	4%	5%	0%
Snow/Sleet/Hail/Freezing Rain	3	13%	15%	0%
Fog/Smog/Smoke	0	0%	7%	0%
Other/Unknown	3	13%	2%	0%
Total	24	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	8	33%	9%	50.0%
19 to 20	1	4%	6%	0%
21 to 29	5	21%	20%	0%
30 to 39	2	8%	16%	0%
40 to 49	3	13%	16%	50.0%
50 to 59	1	4%	16%	0%
60 to 69	3	13%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	1	4%	1%	0%
Total	24	100%	100%	100%

NOTES:

Crash Data from TIS Crash Data, 2010-2014 (all crashes).
 Expected Crash Data from MnDOT Oracle BI.
 Expected Crash Rate from MnDOT Crash Data Toolkit, 2013 (Statewide avg).
 Crash Cost Computed from MnDOT BC Analysis (2013).
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide.
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

Segment D - 250' West of Keats Ave SW to 100' East of CSAH 7 / Shoreline Dr
Urban Segment (Intersection Crashes Included)

County	Wright
District	3
Segment ADT	9,213
Length (mi)	1.83
Total Crashes	23
Intersection Related Crashes	20
Expected Crash Rate (per MEV)/KA	2.00/2.67

Crash Rate (per MEV)/KA	0.75/3.25
Critical Rate (per MEV)/KA	2.67/3.07
Crash Cost	\$1,941,400
State Rank	n/a
Regional Rank	n/a
Accesses	0
Access per Mile	0

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	1	4%	0%	100%
Injury - A	0	0%	1%	0%
Injury - B	3	13%	7%	0%
Injury - C	3	13%	21%	0%
Property Damage	16	70%	71%	0%
Total	23	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	8	35%	20%	0%
2011	5	22%	20%	0%
2012	1	4%	20%	0%
2013	7	30%	20%	100%
2014	2	9%	20%	0%
Total	23	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	14	61%	77%	100%
Sunrise	3	13%	1%	0%
Sunset	2	9%	2%	0%
Dark (street lights on)	2	9%	17%	0%
Dark	2	9%	2%	0%
Other/Unknown	0	0%	1%	0%
Total	23	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	20	87%	82%	100%
Pedestrian & Bicycle	0	0%	3%	0%
Animal	1	4%	1%	0%
Fixed Object	0	0%	7%	0%
Overturn/Rollover	1	4%	1%	0%
Other/Unknown	1	4%	6%	0%
Total	23	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	5	22%	37%	0%
Sideswipe Passing	0	0%	10%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	1	4%	8%	0%
Run off Road	1	4%	6%	0%
Right Angle	9	39%	22%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	6	26%	4%	100%
Other/Unknown	1	4%	10%	0%
Total	23	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	12	52%	54%	100%
Pickup	5	22%	13%	0%
Van or Minivan	2	9%	9%	0%
SUV	3	13%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	1	4%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	23	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	6	26%	3%	0%
Driver Inattention	0	0%	13%	0%
Driver Impairment	1	4%	1%	0%
Improper Lane Use	1	4%	10%	100%
Improper Maneuver	0	0%	15%	0%
Other/Unknown	15	65%	58%	0%
Total	23	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	3	13%	4%	0%
No	18	78%	96%	100%
Other/Unknown	2	9%	0%	100%
Total	23	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	1	4%	2%	0%
6:00 to 8:59 am	4	17%	11%	0%
9:00 to 11:59 am	2	9%	16%	0%
12:00 to 2:59 pm	4	17%	23%	100%
3:00 to 5:59 pm	7	30%	29%	0%
6:00 to 8:59 pm	2	9%	12%	0%
9:00 to 11:59 pm	3	13%	6%	0%
Total	23	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	4	17%	15%	0%
Tuesday	7	30%	15%	100%
Wednesday	2	9%	16%	0%
Thursday	2	9%	15%	0%
Friday	4	17%	19%	0%
Saturday	2	9%	12%	0%
Sunday	2	9%	9%	0%
Total	23	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	18	78%	70%	0%
Wet	2	9%	14%	100%
Snow/Slush	1	4%	7%	0%
Ice/Packed Snow	2	9%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	23	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	16	70%	59%	0%
Cloudy	5	22%	24%	100%
Rain	1	4%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	7%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	1	4%	2%	0%
Total	23	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	4	17%	8%	0%
19 to 20	1	4%	6%	0%
21 to 29	2	9%	21%	0%
30 to 39	4	17%	16%	0%
40 to 49	1	4%	15%	0%
50 to 59	4	17%	14%	0%
60 to 69	5	22%	9%	100%
70 to 79	1	4%	4%	0%
80 to 89	1	4%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	3%	0%
Total	23	100%	100%	100%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014 (all crashes).
 Expected Crash Data from MnDOT Oracle BI.
 Expected Crash Rate from MnDOT Crash Data Toolkit, 2013 (Statewide avg).
 Crash Cost Computed from MnDOT BC Analysis (2013).
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide.
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

Segment G - 100' East of Arizona Ave to 500' East of T.H. 25 LT
Rural Segment (Intersection Crashes Included)

County	Wright
District	3
Segment ADT	11,748
Length (mi)	1.84
Total Crashes	24
Intersection Related Crashes	14
Expected Crash Rate (per MEV)/KA	0.73/1.57

Crash Rate (per MEV)/KA	0.61/5.07
Critical Rate (per MEV)/KA	1.10/1.84
Crash Cost	\$2,820,600
State Rank	n/a
Regional Rank	n/a
Accesses	0
Access per Mile	0

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	2	8%	2%	100%
Injury - A	0	0%	3%	0%
Injury - B	3	13%	13%	
Injury - C	0	0%	21%	
Property Damage	19	79%	62%	
Total	24	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	1	4%	20%	0%
2011	5	21%	20%	0%
2012	5	21%	21%	50%
2013	3	13%	18%	0%
2014	10	42%	21%	50%
Total	24	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	20	83%	63%	100%
Sunrise	2	8%	4%	0%
Sunset	0	0%	3%	0%
Dark (street lights on)	1	4%	5%	0%
Dark	1	4%	24%	0%
Other/Unknown	0	0%	1%	0%
Total	24	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	17	71%	45%	50%
Pedestrian & Bicycle	1	4%	0%	50%
Animal	0	0%	13%	0%
Fixed Object	0	0%	20%	0%
Overturn/Rollover	0	0%	16%	0%
Other/Unknown	6	25%	5%	0%
Total	24	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	11	46%	18%	0%
Sideswipe Passing	1	4%	5%	0%
Sideswipe Opposing	1	4%	3%	0%
Left Turn into Traffic	0	0%	2%	0%
Run off Road	6	25%	34%	50%
Right Angle	3	13%	14%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	1	4%	9%	50%
Other/Unknown	1	4%	14%	0%
Total	24	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	11	46%	47%	100%
Pickup	6	25%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	6	25%	17%	0%
Bus	1	4%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	6%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	24	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	4	17%	10%	50%
Driver Inattention	0	0%	13%	0%
Driver Impairment	0	0%	3%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	10%	0%
Other/Unknown	20	83%	56%	50%
Total	24	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	7%	0%
No	22	92%	93%	50%
Other/Unknown	2	8%		50%
Total	24	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	5%	0%
3:00 to 5:59 am	1	4%	5%	0%
6:00 to 8:59 am	4	17%	16%	50%
9:00 to 11:59 am	2	8%	14%	50%
12:00 to 2:59 pm	5	21%	17%	0%
3:00 to 5:59 pm	7	29%	22%	0%
6:00 to 8:59 pm	5	21%	13%	0%
9:00 to 11:59 pm	0	0%	9%	0%
Total	24	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	8%	15%	0%
Tuesday	2	8%	14%	0%
Wednesday	4	17%	14%	0%
Thursday	6	25%	14%	100%
Friday	4	17%	17%	50%
Saturday	3	13%	14%	0%
Sunday	3	13%	12%	0%
Total	24	100%	100%	150%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	18	75%	61%	100%
Wet	3	13%	9%	0%
Snow/Slush	3	13%	10%	0%
Ice/Packed Snow	0	0%	18%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	24	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	17	71%	48%	100%
Cloudy	4	17%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	2	8%	15%	0%
Fog/Smog/Smoke	1	4%	7%	0%
Other/Unknown	0	0%	2%	0%
Total	24	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	4	17%	9%	50%
19 to 20	0	0%	6%	0%
21 to 29	5	21%	20%	0%
30 to 39	5	21%	16%	0%
40 to 49	3	13%	16%	50%
50 to 59	4	17%	16%	0%
60 to 69	1	4%	10%	0%
70 to 79	1	4%	5%	0%
80 to 89	1	4%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	24	100%	100%	100%

NOTES:

Crash Data from TIS Crash Data, 2010-2014 (all crashes).
 Expected Crash Data from MnDOT Oracle BI.
 Expected Crash Rate from MnDOT Crash Data Toolkit, 2013 (Statewide avg).
 Crash Cost Computed from MnDOT BC Analysis (2013)..
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide.
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

Segment I - 1000' West of CSAH 14 to 100' West of Ebersole Ave SE Rural Segment (Intersection Crashes Included)

County	Wright
District	3
Segment ADT	11,675
Length (mi)	2.20
Total Crashes	15
Intersection Related Crashes	9
Expected Crash Rate (per MEV)/KA	0.73/1.57

Crash Rate (per MEV)/KA	0.32/2.13
Critical Rate (per MEV)/KA	1.06/1.81
Crash Cost	\$2,034,800
State Rank	n/a
Regional Rank	n/a
Accesses	0
Access per Mile	0

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	1	7%	2%	100%
Injury - A	0	0%	3%	0%
Injury - B	4	27%	13%	
Injury - C	3	20%	21%	
Property Damage	7	47%	62%	
Total	15	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	3	20%	20%	0%
2011	5	33%	20%	0%
2012	5	33%	21%	100%
2013	1	7%	18%	0%
2014	1	7%	21%	0%
Total	15	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	9	60%	63%	0%
Sunrise	0	0%	4%	0%
Sunset	1	7%	3%	0%
Dark (street lights on)	0	0%	5%	0%
Dark	5	33%	24%	100%
Other/Unknown	0	0%	1%	0%
Total	15	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	13	87%	45%	100%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	13%	0%
Fixed Object	0	0%	20%	0%
Overturn/Rollover	0	0%	16%	0%
Other/Unknown	2	13%	5%	0%
Total	15	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	3	20%	18%	0%
Sideswipe Passing	1	7%	5%	0%
Sideswipe Opposing	1	7%	3%	0%
Left Turn into Traffic	1	7%	2%	0%
Run off Road	1	7%	34%	0%
Right Angle	3	20%	14%	0%
Right Turn into Traffic	1	7%	1%	0%
Head On	3	20%	9%	100%
Other/Unknown	1	7%	14%	0%
Total	15	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	8	53%	47%	100%
Pickup	3	20%	18%	0%
Van or Minivan	3	20%	8%	0%
SUV	1	7%	17%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	6%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	15	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	2	13%	10%	0%
Driver Inattention	2	13%	13%	100%
Driver Impairment	0	0%	3%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	10%	0%
Other/Unknown	11	73%	56%	0%
Total	15	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	7%	7%	0%
No	12	80%	93%	0%
Other/Unknown	2	13%		100%
Total	15	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	5%	0%
3:00 to 5:59 am	1	7%	5%	0%
6:00 to 8:59 am	2	13%	16%	0%
9:00 to 11:59 am	3	20%	14%	0%
12:00 to 2:59 pm	2	13%	17%	0%
3:00 to 5:59 pm	3	20%	22%	100%
6:00 to 8:59 pm	3	20%	13%	0%
9:00 to 11:59 pm	1	7%	9%	0%
Total	15	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	7%	15%	0%
Tuesday	5	33%	14%	0%
Wednesday	2	13%	14%	0%
Thursday	0	0%	14%	0%
Friday	3	20%	17%	100%
Saturday	1	7%	14%	0%
Sunday	3	20%	12%	0%
Total	15	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	9	60%	61%	0%
Wet	1	7%	9%	0%
Snow/Slush	4	27%	10%	100%
Ice/Packed Snow	1	7%	18%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	15	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	7	47%	48%	0%
Cloudy	3	20%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	5	33%	15%	100%
Fog/Smog/Smoke	0	0%	7%	0%
Other/Unknown	0	0%	2%	0%
Total	15	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	7%	9%	0%
19 to 20	2	13%	6%	0%
21 to 29	5	33%	20%	100%
30 to 39	1	7%	16%	0%
40 to 49	2	13%	16%	0%
50 to 59	3	20%	16%	0%
60 to 69	0	0%	10%	0%
70 to 79	1	7%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	15	100%	100%	100%

NOTES:

Crash Data from TIS Crash Data, 2010-2014 (all crashes).
 Expected Crash Data from MnDOT Oracle BI.
 Expected Crash Rate from MnDOT Crash Data Toolkit, 2013 (Statewide avg).
 Crash Cost Computed from MnDOT BC Analysis (2013)..
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide.
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

Segment K - 250' East of County Line Rd SE to Independence / Maple Plain City Line Rural Segment (Intersection Crashes Included)

County	Hennepin
District	M
Segment ADT	14,781
Length (mi)	4.94
Total Crashes	110
Intersection Related Crashes	54
Expected Crash Rate (per MEV)/KA	0.73/1.57

Crash Rate (per MEV)/KA	0.83/3.0
Critical Rate (per MEV)/KA	0.93/1.71
Crash Cost	\$7,521,600
State Rank	n/a
Regional Rank	n/a
Accesses	0
Access per Mile	0

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	1	1%	2%	25%
Injury - A	3	3%	3%	75%
Injury - B	16	15%	13%	
Injury - C	21	19%	21%	
Property Damage	69	63%	62%	
Total	110	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	16	15%	20%	25%
2011	27	25%	20%	25%
2012	25	23%	21%	50%
2013	24	22%	18%	0%
2014	18	16%	21%	0%
Total	110	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	77	70%	63%	100%
Sunrise	5	5%	4%	0%
Sunset	1	1%	3%	0%
Dark (street lights on)	6	5%	5%	0%
Dark	21	19%	24%	0%
Other/Unknown	0	0%	1%	0%
Total	110	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	72	65%	45%	50%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	6	5%	13%	0%
Fixed Object	0	0%	20%	0%
Overturn/Rollover	7	6%	16%	0%
Other/Unknown	25	23%	5%	50%
Total	110	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	27	25%	18%	50%
Sideswipe Passing	5	5%	5%	0%
Sideswipe Opposing	3	3%	3%	0%
Left Turn into Traffic	3	3%	2%	0%
Run off Road	24	22%	34%	0%
Right Angle	25	23%	14%	0%
Right Turn into Traffic	1	1%	1%	0%
Head On	12	11%	9%	25%
Other/Unknown	10	9%	14%	25%
Total	110	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	54	49%	47%	25%
Pickup	18	16%	18%	0%
Van or Minivan	10	9%	8%	25%
SUV	20	18%	17%	25%
Bus	1	1%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	6	5%	6%	25%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	1	1%	1%	0%
Total	110	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	8	7%	10%	0%
Driver Inattention	4	4%	13%	0%
Driver Impairment	2	2%	3%	0%
Improper Lane Use	1	1%	9%	0%
Improper Maneuver	6	5%	10%	0%
Other/Unknown	89	81%	56%	100%
Total	110	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	7	6%	7%	0%
No	101	92%	93%	75%
Other/Unknown	2	2%	2%	25%
Total	110	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	3	3%	5%	0%
3:00 to 5:59 am	3	3%	5%	0%
6:00 to 8:59 am	25	23%	16%	25%
9:00 to 11:59 am	22	20%	14%	25%
12:00 to 2:59 pm	13	12%	17%	0%
3:00 to 5:59 pm	24	22%	22%	50%
6:00 to 8:59 pm	15	14%	13%	0%
9:00 to 11:59 pm	5	5%	9%	0%
Total	110	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	12	11%	15%	0%
Tuesday	21	19%	14%	75%
Wednesday	15	14%	14%	0%
Thursday	19	17%	14%	0%
Friday	19	17%	17%	25%
Saturday	14	13%	14%	0%
Sunday	10	9%	12%	0%
Total	110	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	70	64%	61%	100%
Wet	16	15%	9%	0%
Snow/Slush	12	11%	10%	0%
Ice/Packed Snow	12	11%	18%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	110	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	65	59%	48%	75%
Cloudy	24	22%	24%	25%
Rain	4	4%	5%	0%
Snow/Sleet/Hail/Freezing Rain	16	15%	15%	0%
Fog/Smog/Smoke	0	0%	7%	0%
Other/Unknown	1	1%	2%	0%
Total	110	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	6	5%	9%	0%
19 to 20	7	6%	6%	25%
21 to 29	23	21%	20%	0%
30 to 39	20	18%	16%	0%
40 to 49	15	14%	16%	50%
50 to 59	22	20%	16%	25%
60 to 69	10	9%	10%	0%
70 to 79	4	4%	5%	0%
80 to 89	1	1%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	2	2%	1%	0%
Total	110	100%	100%	100%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014 (all crashes).
 Expected Crash Data from MnDOT Oracle BI.
 Expected Crash Rate from MnDOT Crash Data Toolkit, 2013 (Statewide avg).
 Crash Cost Computed from MnDOT BC Analysis (2013).
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide.
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

Segment M - 250' East of T.H. 29 / Baker Park Rd to CSAH 6
Rural Segment (Intersection Crashes Included)

County	Hennepin
District	M
Segment ADT	19,425
Length (mi)	1.54
Total Crashes	28
Intersection Related Crashes	5
Expected Crash Rate (per MEV)/KA	0.73/1.57

Crash Rate (per MEV)/KA	0.51/3.66
Critical Rate (per MEV)/KA	1.04/1.80
Crash Cost	\$2,815,400
State Rank	n/a
Regional Rank	n/a
Accesses	0
Access per Mile	0

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	1	4%	2%	50%
Injury - A	1	4%	3%	50%
Injury - B	3	11%	13%	
Injury - C	7	25%	21%	
Property Damage	16	57%	62%	
Total	28	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	5	18%	20%	0%
2011	7	25%	20%	0%
2012	5	18%	21%	0%
2013	7	25%	18%	0%
2014	4	14%	21%	100%
Total	28	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	16	57%	63%	0%
Sunrise	4	14%	4%	0%
Sunset	2	7%	3%	0%
Dark (street lights on)	3	11%	5%	50%
Dark	3	11%	24%	50%
Other/Unknown	0	0%	1%	0%
Total	28	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	18	64%	45%	100%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	4	14%	13%	0%
Fixed Object	0	0%	20%	0%
Overturn/Rollover	1	4%	16%	0%
Other/Unknown	5	18%	5%	0%
Total	28	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	15	54%	18%	0%
Sideswipe Passing	0	0%	5%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	2%	0%
Run off Road	5	18%	34%	0%
Right Angle	0	0%	14%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	3	11%	9%	100%
Other/Unknown	5	18%	14%	0%
Total	28	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	14	50%	47%	50%
Pickup	2	7%	18%	0%
Van or Minivan	5	18%	8%	0%
SUV	6	21%	17%	50%
Bus	1	4%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	6%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	28	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	6	21%	10%	0%
Driver Inattention	0	0%	13%	0%
Driver Impairment	1	4%	3%	50%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	10%	0%
Other/Unknown	21	75%	56%	50%
Total	28	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	2	7%	7%	50%
No	24	86%	93%	50%
Other/Unknown	2	7%		0%
Total	28	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	1	4%	5%	0%
3:00 to 5:59 am	1	4%	5%	0%
6:00 to 8:59 am	4	14%	16%	0%
9:00 to 11:59 am	3	11%	14%	0%
12:00 to 2:59 pm	1	4%	17%	0%
3:00 to 5:59 pm	10	36%	22%	0%
6:00 to 8:59 pm	4	14%	13%	0%
9:00 to 11:59 pm	4	14%	9%	100%
Total	28	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	4%	15%	0%
Tuesday	5	18%	14%	50%
Wednesday	5	18%	14%	0%
Thursday	9	32%	14%	0%
Friday	4	14%	17%	50%
Saturday	2	7%	14%	0%
Sunday	2	7%	12%	0%
Total	28	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	24	86%	61%	50%
Wet	1	4%	9%	0%
Snow/Slush	2	7%	10%	50%
Ice/Packed Snow	1	4%	18%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	28	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	20	71%	48%	0%
Cloudy	5	18%	24%	50%
Rain	1	4%	5%	0%
Snow/Sleet/Hail/Freezing Rain	1	4%	15%	50%
Fog/Smog/Smoke	0	0%	7%	0%
Other/Unknown	1	4%	2%	0%
Total	28	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	2	7%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	6	21%	20%	50%
30 to 39	3	11%	16%	0%
40 to 49	4	14%	16%	0%
50 to 59	7	25%	16%	50%
60 to 69	4	14%	10%	0%
70 to 79	2	7%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	28	100%	100%	100%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014 (all crashes).
 Expected Crash Data from MnDOT Oracle BI.
 Expected Crash Rate from MnDOT Crash Data Toolkit, 2013 (Statewide avg).
 Crash Cost Computed from MnDOT BC Analysis (2013)..
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide.
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

Segment N - CSAH 6 to Brown Road Rural Segment (Intersection Crashes Included)

County	Hennepin
District	M
Segment ADT	22,950
Length (mi)	2.30
Total Crashes	28
Intersection Related Crashes	0
Expected Crash Rate (per MEV)/KA	0.73/1.57

Crash Rate (per MEV)/KA	0.29/2.08
Critical Rate (per MEV)	0.96/1.74
Crash Cost	\$3,036,200
State Rank	n/a
Regional Rank	n/a
Accesses	0
Access per Mile	0

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	1	4%	2%	50%
Injury - A	1	4%	3%	50%
Injury - B	3	11%	13%	
Injury - C	10	36%	21%	
Property Damage	13	46%	62%	
Total	28	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	2	7%	20%	0%
2011	10	36%	20%	50%
2012	5	18%	21%	50%
2013	5	18%	18%	0%
2014	6	21%	21%	0%
Total	28	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	14	50%	63%	50%
Sunrise	3	11%	4%	0%
Sunset	1	4%	3%	0%
Dark (street lights on)	5	18%	5%	50%
Dark	5	18%	24%	0%
Other/Unknown	0	0%	1%	0%
Total	28	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	15	54%	45%	100%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	6	21%	13%	0%
Fixed Object	6	21%	20%	0%
Overturn/Rollover	1	4%	16%	0%
Other/Unknown	0	0%	5%	0%
Total	28	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	11	39%	18%	0%
Sideswipe Passing	1	4%	5%	0%
Sideswipe Opposing	1	4%	3%	0%
Left Turn into Traffic	0	0%	2%	0%
Run off Road	8	29%	34%	50%
Right Angle	0	0%	14%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	1	4%	9%	50%
Other/Unknown	6	21%	14%	0%
Total	28	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	18	64%	47%	100%
Pickup	1	4%	18%	0%
Van or Minivan	4	14%	8%	0%
SUV	4	14%	17%	0%
Bus	0	0%	0%	0%
Motorcycle	1	4%	2%	0%
Semi Truck	0	0%	6%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	28	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	3	11%	10%	0%
Driver Inattention	2	7%	13%	0%
Driver Impairment	1	4%	3%	50%
Improper Lane Use	1	4%	9%	0%
Improper Maneuver	0	0%	10%	0%
Other/Unknown	21	75%	56%	50%
Total	28	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	2	7%	7%	50%
No	23	82%	93%	0%
Other/Unknown	3	11%		50%
Total	28	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	4	14%	5%	50%
3:00 to 5:59 am	1	4%	5%	0%
6:00 to 8:59 am	10	36%	16%	50%
9:00 to 11:59 am	3	11%	14%	0%
12:00 to 2:59 pm	0	0%	17%	0%
3:00 to 5:59 pm	6	21%	22%	0%
6:00 to 8:59 pm	2	7%	13%	0%
9:00 to 11:59 pm	2	7%	9%	0%
Total	28	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	7	25%	15%	0%
Tuesday	6	21%	14%	50%
Wednesday	4	14%	14%	0%
Thursday	2	7%	14%	0%
Friday	4	14%	17%	0%
Saturday	4	14%	14%	50%
Sunday	1	4%	12%	0%
Total	28	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	17	61%	61%	50%
Wet	3	11%	9%	50%
Snow/Slush	4	14%	10%	0%
Ice/Packed Snow	4	14%	18%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	28	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	18	64%	48%	50%
Cloudy	5	18%	24%	50%
Rain	1	4%	5%	0%
Snow/Sleet/Hail/Freezing Rain	4	14%	15%	0%
Fog/Smog/Smoke	0	0%	7%	0%
Other/Unknown	0	0%	2%	0%
Total	28	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	4%	9%	0%
19 to 20	4	14%	6%	50%
21 to 29	4	14%	20%	0%
30 to 39	8	29%	16%	50%
40 to 49	4	14%	16%	0%
50 to 59	4	14%	16%	0%
60 to 69	3	11%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	28	100%	100%	100%

NOTES:

Crash Data from TIS Crash Data, 2010-2014 (all crashes).
 Expected Crash Data from MnDOT Oracle BI.
 Expected Crash Rate from MnDOT Crash Data Toolkit, 2013 (Statewide avg).
 Crash Cost Computed from MnDOT BC Analysis (2013)..
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide.
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Quimby Ave SW Rural Thru/Stop Intersection

County	Wright
District	3
Entering ADT	7,793
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.26

Crash Rate (per MEV)/KA	0.28
Critical Rate (per MEV)	0.64
Crash Cost	\$182,200
State Rank	n/a
Regional Rank	n/a
Street Lights	no

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	0	0%	3%	0%
Injury - B	1	25%	14%	
Injury - C	0	0%	22%	
Property Damage	3	75%	60%	
Total	4	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	25%	20%	0%
2011	1	25%	22%	0%
2012	1	25%	20%	0%
2013	1	25%	18%	0%
2014	0	0%	20%	0%
Total	4	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	3	75%	67%	0%
Sunrise	0	0%	3%	0%
Sunset	1	25%	2%	0%
Dark (street lights on)	0	0%	6%	0%
Dark	0	0%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	2	50%	57%	0%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	1	25%	12%	0%
Other/Unknown	1	25%	5%	0%
Total	4	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	2	50%	18%	0%
Sideswipe Passing	0	0%	7%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	0	0%	3%	0%
Run off Road	1	25%	25%	0%
Right Angle	0	0%	25%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	7%	0%
Other/Unknown	1	25%	13%	0%
Total	4	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	3	75%	49%	0%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	1	25%	1%	0%
Total	4	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	8%	0%
Driver Inattention	3	75%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	8%	0%
Improper Maneuver	0	0%	16%	0%
Other/Unknown	1	25%	54%	0%
Total	4	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	4	100%	94%	0%
Other/Unknown	0	0%	0%	0%
Total	4	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	4%	0%
3:00 to 5:59 am	0	0%	4%	0%
6:00 to 8:59 am	1	25%	15%	0%
9:00 to 11:59 am	1	25%	15%	0%
12:00 to 2:59 pm	0	0%	17%	0%
3:00 to 5:59 pm	1	25%	24%	0%
6:00 to 8:59 pm	1	25%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	4	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	25%	15%	0%
Tuesday	1	25%	15%	0%
Wednesday	0	0%	13%	0%
Thursday	0	0%	14%	0%
Friday	2	50%	17%	0%
Saturday	0	0%	14%	0%
Sunday	0	0%	12%	0%
Total	4	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	1	25%	65%	0%
Wet	0	0%	10%	0%
Snow/Slush	0	0%	9%	0%
Ice/Packed Snow	3	75%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	2	50%	50%	0%
Cloudy	1	25%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	1	25%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	0	0%	2%	0%
Total	4	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	25%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	2	50%	19%	0%
30 to 39	0	0%	16%	0%
40 to 49	0	0%	16%	0%
50 to 59	1	25%	16%	0%
60 to 69	0	0%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Sunset Ave N (Cokato) Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	7,750
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.21
Critical Rate (per MEV)	0.51
Crash Cost	\$169,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	9%	0%
Injury - C	2	67%	22%	0%
Property Damage	1	33%	67%	0%
Total	3	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	21%	0%
2011	1	33%	20%	0%
2012	2	67%	20%	0%
2013	0	0%	19%	0%
2014	0	0%	20%	0%
Total	3	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	3	100%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	3	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	3	100%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	3	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	1	33%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	1	33%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	1	33%	4%	0%
Other/Unknown	0	0%	12%	0%
Total	3	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	2	67%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	1	33%	1%	0%
Total	3	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	2	67%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	1	33%	57%	0%
Total	3	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	0%
No	2	67%	95%	0%
Other/Unknown	1	33%	0%	0%
Total	3	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	0	0%	13%	0%
9:00 to 11:59 am	0	0%	14%	0%
12:00 to 2:59 pm	3	100%	20%	0%
3:00 to 5:59 pm	0	0%	29%	0%
6:00 to 8:59 pm	0	0%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	3	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	33%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	1	33%	15%	0%
Thursday	1	33%	15%	0%
Friday	0	0%	18%	0%
Saturday	0	0%	12%	0%
Sunday	0	0%	9%	0%
Total	3	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	2	67%	72%	0%
Wet	0	0%	13%	0%
Snow/Slush	1	33%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	3	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	2	67%	58%	0%
Cloudy	1	33%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	3	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	1	33%	20%	0%
30 to 39	0	0%	16%	0%
40 to 49	0	0%	15%	0%
50 to 59	0	0%	15%	0%
60 to 69	1	33%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	1	33%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	3	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Johnson Ave N (Cokato) Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	9,817
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.28
Critical Rate (per MEV)	0.47
Crash Cost	\$110,600
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	9%	0%
Injury - C	1	20%	22%	0%
Property Damage	4	80%	67%	0%
Total	5	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	20%	21%	0%
2011	0	0%	20%	0%
2012	1	20%	20%	0%
2013	2	40%	19%	0%
2014	1	20%	20%	0%
Total	5	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	4	80%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	1	20%	1%	0%
Total	5	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	5	100%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	5	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	4	80%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	1	20%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	0%
Other/Unknown	0	0%	12%	0%
Total	5	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	4	80%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	1	20%	1%	0%
Total	5	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	5	100%	57%	0%
Total	5	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	0%
No	5	100%	95%	0%
Other/Unknown	0	0%	0%	0%
Total	5	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	1	20%	13%	0%
9:00 to 11:59 am	1	20%	14%	0%
12:00 to 2:59 pm	2	40%	20%	0%
3:00 to 5:59 pm	1	20%	29%	0%
6:00 to 8:59 pm	0	0%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	5	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	20%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	0	0%	15%	0%
Thursday	1	20%	15%	0%
Friday	1	20%	18%	0%
Saturday	1	20%	12%	0%
Sunday	1	20%	9%	0%
Total	5	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	4	80%	72%	0%
Wet	1	20%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	5	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	3	60%	58%	0%
Cloudy	2	40%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	5	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	20%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	3	60%	20%	0%
30 to 39	1	20%	16%	0%
40 to 49	0	0%	15%	0%
50 to 59	0	0%	15%	0%
60 to 69	0	0%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	5	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Jackson Ave NW (Cokato) Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	11,377
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.29
Critical Rate (per MEV)	0.45
Crash Cost	\$44,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	9%	0%
Injury - C	0	0%	22%	0%
Property Damage	6	100%	67%	0%
Total	6	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	3	50%	21%	0%
2011	1	17%	20%	0%
2012	0	0%	20%	0%
2013	2	33%	19%	0%
2014	0	0%	20%	0%
Total	6	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	6	100%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	5	83%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	1	17%	6%	0%
Total	6	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	1	17%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	1	17%	6%	0%
Run off Road	1	17%	9%	0%
Right Angle	3	50%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	0%
Other/Unknown	0	0%	12%	0%
Total	6	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	4	67%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	1	17%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	1	17%	1%	0%
Total	6	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	6	100%	57%	0%
Total	6	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	0%
No	6	100%	95%	0%
Other/Unknown	0	0%	0%	0%
Total	6	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	2	33%	13%	0%
9:00 to 11:59 am	1	17%	14%	0%
12:00 to 2:59 pm	1	17%	20%	0%
3:00 to 5:59 pm	2	33%	29%	0%
6:00 to 8:59 pm	0	0%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	6	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	17%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	1	17%	15%	0%
Thursday	3	50%	15%	0%
Friday	0	0%	18%	0%
Saturday	0	0%	12%	0%
Sunday	1	17%	9%	0%
Total	6	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	3	50%	72%	0%
Wet	1	17%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	2	33%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	4	67%	58%	0%
Cloudy	1	17%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	1	17%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	6	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	2	33%	9%	0%
19 to 20	1	17%	6%	0%
21 to 29	0	0%	20%	0%
30 to 39	1	17%	16%	0%
40 to 49	1	17%	15%	0%
50 to 59	1	17%	15%	0%
60 to 69	0	0%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	6	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 3 / Broadway Ave N (Cokato)

Urban Traffic Signal

County	Wright
District	3
Entering ADT	14,540
Intersection Type	4-Legged
Intersection Control	Traffic Signal
Expected Crash Rate (per MEV)/KA	0.55

Crash Rate (per MEV)/KA	0.30
Critical Rate (per MEV)	0.93
Crash Cost	\$59,200
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	0%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	7%	0%
Injury - C	0	0%	24%	0%
Property Damage	8	100%	67%	
Total	8	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	13%	20%	0%
2011	2	25%	20%	0%
2012	3	38%	20%	0%
2013	0	0%	20%	0%
2014	2	25%	21%	0%
Total	8	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	6	75%	76%	0%
Sunrise	0	0%	1%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	2	25%	18%	0%
Dark	0	0%	2%	0%
Other/Unknown	0	0%	0%	0%
Total	8	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	7	88%	89%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	1%	0%
Fixed Object	0	0%	5%	0%
Overturn/Rollover	0	0%	1%	0%
Other/Unknown	1	13%	3%	0%
Total	8	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	3	38%	51%	0%
Sideswipe Passing	0	0%	9%	0%
Sideswipe Opposing	0	0%	1%	0%
Left Turn into Traffic	2	25%	7%	0%
Run off Road	0	0%	3%	0%
Right Angle	1	13%	17%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	2%	0%
Other/Unknown	2	25%	8%	0%
Total	8	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	3	38%	55%	0%
Pickup	0	0%	12%	0%
Van or Minivan	0	0%	9%	0%
SUV	0	0%	18%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	5	63%	1%	0%
Total	8	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	3	38%	3%	0%
Driver Inattention	1	13%	14%	0%
Driver Impairment	0	0%	1%	0%
Improper Lane Use	0	0%	11%	0%
Improper Maneuver	0	0%	13%	0%
Other/Unknown	4	50%	58%	0%
Total	8	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	13%	4%	0%
No	7	88%	96%	0%
Other/Unknown	0	0%	0%	0%
Total	8	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	2%	0%
3:00 to 5:59 am	0	0%	2%	0%
6:00 to 8:59 am	1	13%	12%	0%
9:00 to 11:59 am	0	0%	16%	0%
12:00 to 2:59 pm	2	25%	22%	0%
3:00 to 5:59 pm	3	38%	28%	0%
6:00 to 8:59 pm	2	25%	13%	0%
9:00 to 11:59 pm	0	0%	6%	0%
Total	8	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	2	25%	16%	0%
Wednesday	2	25%	16%	0%
Thursday	1	13%	16%	0%
Friday	0	0%	18%	0%
Saturday	2	25%	12%	0%
Sunday	1	13%	9%	0%
Total	8	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	5	63%	71%	0%
Wet	1	13%	14%	0%
Snow/Slush	1	13%	7%	0%
Ice/Packed Snow	1	13%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	8	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	4	50%	58%	0%
Cloudy	2	25%	26%	0%
Rain	1	13%	6%	0%
Snow/Sleet/Hail/Freezing Rain	1	13%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	8	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	2	25%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	2	25%	21%	0%
30 to 39	1	13%	17%	0%
40 to 49	1	13%	17%	0%
50 to 59	1	13%	15%	0%
60 to 69	0	0%	9%	0%
70 to 79	1	13%	4%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	8	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide (signals based on SL and volume critical rate)
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 6 LT / 10th Ave (Howard Lake) Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	10,952
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.40
Critical Rate (per MEV)	0.46
Crash Cost	\$364,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	2	25%	9%	
Injury - C	0	0%	22%	
Property Damage	6	75%	67%	
Total	8	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	2	25%	21%	0%
2011	3	38%	20%	0%
2012	0	0%	20%	0%
2013	2	25%	19%	0%
2014	1	13%	20%	0%
Total	8	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	5	63%	75%	0%
Sunrise	1	13%	2%	0%
Sunset	1	13%	2%	0%
Dark (street lights on)	1	13%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	8	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	8	100%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	8	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	1	13%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	1	13%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	5	63%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	0%
Other/Unknown	1	13%	12%	0%
Total	8	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	3	38%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	5	63%	1%	0%
Total	8	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	8	100%	57%	0%
Total	8	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	0%
No	7	88%	95%	0%
Other/Unknown	1	13%		0%
Total	8	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	2	25%	13%	0%
9:00 to 11:59 am	1	13%	14%	0%
12:00 to 2:59 pm	0	0%	20%	0%
3:00 to 5:59 pm	4	50%	29%	0%
6:00 to 8:59 pm	0	0%	12%	0%
9:00 to 11:59 pm	1	13%	5%	0%
Total	8	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	25%	15%	0%
Tuesday	1	13%	15%	0%
Wednesday	1	13%	15%	0%
Thursday	1	13%	15%	0%
Friday	3	38%	18%	0%
Saturday	0	0%	12%	0%
Sunday	0	0%	9%	0%
Total	8	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	7	88%	72%	0%
Wet	0	0%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	1	13%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	8	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	7	88%	58%	0%
Cloudy	1	13%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	8	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	2	25%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	0	0%	20%	0%
30 to 39	1	13%	16%	0%
40 to 49	1	13%	15%	0%
50 to 59	1	13%	15%	0%
60 to 69	2	25%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	1	13%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	8	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 6 RT / 7th Ave (Howard Lake)
Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	11,349
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.19
Critical Rate (per MEV)	0.45
Crash Cost	\$329,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	1	25%	9%	
Injury - C	2	50%	22%	
Property Damage	1	25%	67%	
Total	4	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	2	50%	21%	0%
2011	0	0%	20%	0%
2012	1	25%	20%	0%
2013	1	25%	19%	0%
2014	0	0%	20%	0%
Total	4	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	4	100%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	4	100%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	4	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	1	25%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	2	50%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	1	25%	4%	0%
Other/Unknown	0	0%	12%	0%
Total	4	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	2	50%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	2	50%	1%	0%
Total	4	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	1	25%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	3	75%	57%	0%
Total	4	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	25%	5%	0%
No	3	75%	95%	0%
Other/Unknown	0	0%	0%	0%
Total	4	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	1	25%	13%	0%
9:00 to 11:59 am	0	0%	14%	0%
12:00 to 2:59 pm	2	50%	20%	0%
3:00 to 5:59 pm	1	25%	29%	0%
6:00 to 8:59 pm	0	0%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	4	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	2	50%	15%	0%
Wednesday	0	0%	15%	0%
Thursday	0	0%	15%	0%
Friday	0	0%	18%	0%
Saturday	0	0%	12%	0%
Sunday	2	50%	9%	0%
Total	4	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	4	100%	72%	0%
Wet	0	0%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	4	100%	58%	0%
Cloudy	0	0%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	4	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	25%	9%	0%
19 to 20	1	25%	6%	0%
21 to 29	1	25%	20%	0%
30 to 39	0	0%	16%	0%
40 to 49	0	0%	15%	0%
50 to 59	0	0%	15%	0%
60 to 69	1	25%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	4	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 8 LT/ Emerson Ave SW (Waverly)
Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	10,686
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.21
Critical Rate (per MEV)	0.46
Crash Cost	\$329,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	1	25%	9%	
Injury - C	2	50%	22%	
Property Damage	1	25%	67%	
Total	4	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	25%	21%	0%
2011	1	25%	20%	0%
2012	0	0%	20%	0%
2013	1	25%	19%	0%
2014	1	25%	20%	0%
Total	4	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	3	75%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	1	25%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	3	75%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	1	25%	6%	0%
Total	4	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	0	0%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	1	25%	9%	0%
Right Angle	2	50%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	1	25%	4%	0%
Other/Unknown	0	0%	12%	0%
Total	4	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	1	25%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	3	75%	1%	0%
Total	4	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	25%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	3	75%	57%	0%
Total	4	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	0%
No	4	100%	95%	0%
Other/Unknown	0	0%	0%	0%
Total	4	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	1	25%	13%	0%
9:00 to 11:59 am	0	0%	14%	0%
12:00 to 2:59 pm	1	25%	20%	0%
3:00 to 5:59 pm	1	25%	29%	0%
6:00 to 8:59 pm	1	25%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	4	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	0	0%	15%	0%
Thursday	0	0%	15%	0%
Friday	3	75%	18%	0%
Saturday	1	25%	12%	0%
Sunday	0	0%	9%	0%
Total	4	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	2	50%	72%	0%
Wet	2	50%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	0	0%	58%	0%
Cloudy	3	75%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	1	25%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	4	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	25%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	2	50%	20%	0%
30 to 39	0	0%	16%	0%
40 to 49	0	0%	15%	0%
50 to 59	1	25%	15%	0%
60 to 69	0	0%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	4	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & S 4th St / CSAH 62 (Waverly)
Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	10,778
Intersection Type	4- Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.20
Critical Rate (per MEV)	0.46
Crash Cost	\$250,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	9%	0%
Injury - C	3	75%	22%	0%
Property Damage	1	25%	67%	0%
Total	4	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	25%	21%	0%
2011	0	0%	20%	0%
2012	1	25%	20%	0%
2013	2	50%	19%	0%
2014	0	0%	20%	0%
Total	4	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	4	100%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	4	100%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	4	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	1	25%	31%	0%
Sideswipe Passing	1	25%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	2	50%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	0%
Other/Unknown	0	0%	12%	0%
Total	4	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	2	50%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	2	50%	1%	0%
Total	4	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	1	25%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	3	75%	57%	0%
Total	4	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	0%
No	4	100%	95%	0%
Other/Unknown	0	0%	0%	0%
Total	4	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	0	0%	13%	0%
9:00 to 11:59 am	0	0%	14%	0%
12:00 to 2:59 pm	2	50%	20%	0%
3:00 to 5:59 pm	1	25%	29%	0%
6:00 to 8:59 pm	1	25%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	4	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	25%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	1	25%	15%	0%
Thursday	0	0%	15%	0%
Friday	1	25%	18%	0%
Saturday	0	0%	12%	0%
Sunday	1	25%	9%	0%
Total	4	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	4	100%	72%	0%
Wet	0	0%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	2	50%	58%	0%
Cloudy	2	50%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	4	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	1	25%	20%	0%
30 to 39	0	0%	16%	0%
40 to 49	3	75%	15%	0%
50 to 59	0	0%	15%	0%
60 to 69	0	0%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	4	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Clementa Ave SW/CR 110 (Montrose) Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	10,515
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.21
Critical Rate (per MEV)	0.46
Crash Cost	\$250,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	9%	0%
Injury - C	3	75%	22%	0%
Property Damage	1	25%	67%	0%
Total	4	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	21%	0%
2011	0	0%	20%	0%
2012	2	50%	20%	0%
2013	1	25%	19%	0%
2014	1	25%	20%	0%
Total	4	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	2	50%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	15%	0%
Dark	2	50%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	2	50%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	1	25%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	1	25%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	4	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	0	0%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	1	25%	6%	0%
Run off Road	1	25%	9%	0%
Right Angle	1	25%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	0%
Other/Unknown	1	25%	12%	0%
Total	4	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	3	75%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	1	25%	1%	0%
Total	4	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	25%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	3	75%	57%	0%
Total	4	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	25%	5%	0%
No	2	50%	95%	0%
Other/Unknown	1	25%	0%	0%
Total	4	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	1	25%	13%	0%
9:00 to 11:59 am	0	0%	14%	0%
12:00 to 2:59 pm	0	0%	20%	0%
3:00 to 5:59 pm	0	0%	29%	0%
6:00 to 8:59 pm	2	50%	12%	0%
9:00 to 11:59 pm	1	25%	5%	0%
Total	4	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	25%	15%	0%
Tuesday	1	25%	15%	0%
Wednesday	0	0%	15%	0%
Thursday	0	0%	15%	0%
Friday	0	0%	18%	0%
Saturday	1	25%	12%	0%
Sunday	1	25%	9%	0%
Total	4	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	4	100%	72%	0%
Wet	0	0%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	4	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	1	25%	58%	0%
Cloudy	2	50%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	1	25%	3%	0%
Total	4	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	1	25%	20%	0%
30 to 39	0	0%	16%	0%
40 to 49	2	50%	15%	0%
50 to 59	0	0%	15%	0%
60 to 69	1	25%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	4	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Center Ave S (Montrose) Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	10,664
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.26
Critical Rate (per MEV)	0.46
Crash Cost	\$410,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	1	20%	9%	
Injury - C	3	60%	22%	
Property Damage	1	20%	67%	
Total	5	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	21%	0%
2011	0	0%	20%	0%
2012	2	40%	20%	0%
2013	1	20%	19%	0%
2014	2	40%	20%	0%
Total	5	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	5	100%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	5	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	4	80%	80%	0%
Pedestrian & Bicycle	1	20%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	5	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	4	80%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	0	0%	25%	0%
Right Turn into Traffic	1	20%	2%	0%
Head On	0	0%	4%	0%
Other/Unknown	0	0%	12%	0%
Total	5	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	3	60%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	2	40%	1%	0%
Total	5	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	20%	3%	0%
Driver Inattention	1	20%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	3	60%	57%	0%
Total	5	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	20%	5%	0%
No	4	80%	95%	0%
Other/Unknown	0	0%	0%	0%
Total	5	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	1	20%	13%	0%
9:00 to 11:59 am	0	0%	14%	0%
12:00 to 2:59 pm	2	40%	20%	0%
3:00 to 5:59 pm	2	40%	29%	0%
6:00 to 8:59 pm	0	0%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	5	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	20%	15%	0%
Tuesday	1	20%	15%	0%
Wednesday	0	0%	15%	0%
Thursday	0	0%	15%	0%
Friday	0	0%	18%	0%
Saturday	2	40%	12%	0%
Sunday	1	20%	9%	0%
Total	5	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	5	100%	72%	0%
Wet	0	0%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	5	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	3	60%	58%	0%
Cloudy	1	20%	24%	0%
Rain	1	20%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	5	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	0	0%	20%	0%
30 to 39	2	40%	16%	0%
40 to 49	0	0%	15%	0%
50 to 59	3	60%	15%	0%
60 to 69	0	0%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	5	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.

All driver/vehicle factors are for vehicle 1.

US 12 & T.H. 25 RT / CSAH 12 / Buffalo Ave S (Montrose)

Urban Traffic Signal

County	Wright
District	3
Entering ADT	14,842
Intersection Type	4-Legged
Intersection Control	Traffic Signal
Expected Crash Rate (per MEV)/KA	0.55

Crash Rate (per MEV)/KA	0.37
Critical Rate (per MEV)	0.93
Crash Cost	\$589,200
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	0%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	7%	0%
Injury - C	7	70%	24%	0%
Property Damage	3	30%	67%	0%
Total	10	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	10%	20%	0%
2011	1	10%	20%	0%
2012	5	50%	20%	0%
2013	2	20%	20%	0%
2014	1	10%	21%	0%
Total	10	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	7	70%	76%	0%
Sunrise	2	20%	1%	0%
Sunset	1	10%	2%	0%
Dark (street lights on)	0	0%	18%	0%
Dark	0	0%	2%	0%
Other/Unknown	0	0%	0%	0%
Total	10	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	10	100%	89%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	1%	0%
Fixed Object	0	0%	5%	0%
Overturn/Rollover	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	10	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	6	60%	51%	0%
Sideswipe Passing	0	0%	9%	0%
Sideswipe Opposing	0	0%	1%	0%
Left Turn into Traffic	1	10%	7%	0%
Run off Road	0	0%	3%	0%
Right Angle	1	10%	17%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	1	10%	2%	0%
Other/Unknown	1	10%	8%	0%
Total	10	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	5	50%	55%	0%
Pickup	0	0%	12%	0%
Van or Minivan	0	0%	9%	0%
SUV	0	0%	18%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	5	50%	1%	0%
Total	10	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	4	40%	3%	0%
Driver Inattention	0	0%	14%	0%
Driver Impairment	0	0%	1%	0%
Improper Lane Use	0	0%	11%	0%
Improper Maneuver	0	0%	13%	0%
Other/Unknown	6	60%	58%	0%
Total	10	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	4%	0%
No	9	90%	96%	0%
Other/Unknown	1	10%	0%	0%
Total	10	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	2%	0%
3:00 to 5:59 am	1	10%	2%	0%
6:00 to 8:59 am	4	40%	12%	0%
9:00 to 11:59 am	1	10%	16%	0%
12:00 to 2:59 pm	1	10%	22%	0%
3:00 to 5:59 pm	2	20%	28%	0%
6:00 to 8:59 pm	1	10%	13%	0%
9:00 to 11:59 pm	0	0%	6%	0%
Total	10	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	3	30%	15%	0%
Tuesday	1	10%	16%	0%
Wednesday	0	0%	16%	0%
Thursday	2	20%	16%	0%
Friday	1	10%	18%	0%
Saturday	2	20%	12%	0%
Sunday	1	10%	9%	0%
Total	10	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	10	100%	71%	0%
Wet	0	0%	14%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	10	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	10	100%	58%	0%
Cloudy	0	0%	26%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	10	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	10%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	4	40%	21%	0%
30 to 39	2	20%	17%	0%
40 to 49	2	20%	17%	0%
50 to 59	0	0%	15%	0%
60 to 69	1	10%	9%	0%
70 to 79	0	0%	4%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	10	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide (signals based on SL and volume critical rate)
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Zephyr Ave (Montrose) Rural Thru/Stop Intersection

County	Wright
District	3
Entering ADT	11,850
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.26/1.06

Crash Rate (per MEV)/KA	0.09/4.62
Critical Rate (per MEV)/KA	0.56/6.22
Crash Cost	\$1,107,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	1	50%	2%	100%
Injury - A	0	0%	3%	0%
Injury - B	0	0%	14%	0%
Injury - C	0	0%	22%	0%
Property Damage	1	50%	60%	0%
Total	2	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	20%	0%
2011	0	0%	22%	0%
2012	1	50%	20%	0%
2013	0	0%	18%	0%
2014	1	50%	20%	100%
Total	2	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	2	100%	67%	100%
Sunrise	0	0%	3%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	6%	0%
Dark	0	0%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	2	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	2	100%	57%	100%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	0	0%	12%	0%
Other/Unknown	0	0%	5%	0%
Total	2	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	0	0%	18%	0%
Sideswipe Passing	0	0%	7%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	0	0%	3%	0%
Run off Road	0	0%	25%	0%
Right Angle	1	50%	25%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	1	50%	7%	100%
Other/Unknown	0	0%	13%	0%
Total	2	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	2	100%	49%	100%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	2	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	50%	8%	0%
Driver Inattention	0	0%	12%	100%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	8%	0%
Improper Maneuver	0	0%	16%	0%
Other/Unknown	1	50%	54%	0%
Total	2	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	2	100%	94%	100%
Other/Unknown	0	0%	0%	0%
Total	2	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	4%	0%
3:00 to 5:59 am	0	0%	4%	0%
6:00 to 8:59 am	0	0%	15%	0%
9:00 to 11:59 am	1	50%	15%	100%
12:00 to 2:59 pm	0	0%	17%	0%
3:00 to 5:59 pm	1	50%	24%	0%
6:00 to 8:59 pm	0	0%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	2	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	0	0%	13%	0%
Thursday	1	50%	14%	100%
Friday	0	0%	17%	0%
Saturday	1	50%	14%	0%
Sunday	0	0%	12%	0%
Total	2	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	2	100%	65%	100%
Wet	0	0%	10%	0%
Snow/Slush	0	0%	9%	0%
Ice/Packed Snow	0	0%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	2	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	2	100%	50%	100%
Cloudy	0	0%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	0	0%	2%	0%
Total	2	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	50%	8%	100%
19 to 20	0	0%	6%	0%
21 to 29	0	0%	19%	0%
30 to 39	1	50%	16%	0%
40 to 49	0	0%	16%	0%
50 to 59	0	0%	16%	0%
60 to 69	0	0%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	2	100%	100%	100%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & T.H. 25 LT

Rural Thru/Stop Intersection

County	Wright
District	3
Entering ADT	14,264
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.46

Crash Rate (per MEV)/KA	0.27
Critical Rate (per MEV)	0.53
Crash Cost	\$51,800
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	0	0%	3%	0%
Injury - B	0	0%	14%	0%
Injury - C	0	0%	22%	0%
Property Damage	7	100%	60%	0%
Total	7	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	2	29%	20%	0%
2011	1	14%	22%	0%
2012	1	14%	20%	0%
2013	1	14%	18%	0%
2014	2	29%	20%	0%
Total	7	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	5	71%	67%	0%
Sunrise	1	14%	3%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	1	14%	6%	0%
Dark	0	0%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	7	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	3	43%	57%	0%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	1	14%	12%	0%
Other/Unknown	3	43%	5%	0%
Total	7	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	2	29%	18%	0%
Sideswipe Passing	1	14%	7%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	0	0%	3%	0%
Run off Road	3	43%	25%	0%
Right Angle	0	0%	25%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	7%	0%
Other/Unknown	1	14%	13%	0%
Total	7	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	1	14%	49%	0%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	6	86%	1%	0%
Total	7	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	8%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	8%	0%
Improper Maneuver	0	0%	16%	0%
Other/Unknown	7	100%	54%	0%
Total	7	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	6	86%	94%	0%
Other/Unknown	1	14%	0%	0%
Total	7	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	4%	0%
3:00 to 5:59 am	1	14%	4%	0%
6:00 to 8:59 am	0	0%	15%	0%
9:00 to 11:59 am	1	14%	15%	0%
12:00 to 2:59 pm	0	0%	17%	0%
3:00 to 5:59 pm	2	29%	24%	0%
6:00 to 8:59 pm	3	43%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	7	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	1	14%	13%	0%
Thursday	4	57%	14%	0%
Friday	0	0%	17%	0%
Saturday	0	0%	14%	0%
Sunday	2	29%	12%	0%
Total	7	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	5	71%	65%	0%
Wet	0	0%	10%	0%
Snow/Slush	1	14%	9%	0%
Ice/Packed Snow	1	14%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	7	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	5	71%	50%	0%
Cloudy	2	29%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	0	0%	2%	0%
Total	7	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	1	14%	19%	0%
30 to 39	2	29%	16%	0%
40 to 49	1	14%	16%	0%
50 to 59	2	29%	16%	0%
60 to 69	1	14%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	7	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 14 Rural Thru/Stop Intersection

County	Wright
District	3
Entering ADT	13,395
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.46

Crash Rate (per MEV)/KA	0.29
Critical Rate (per MEV)	0.54
Crash Cost	\$351,600
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	0	0%	3%	0%
Injury - B	1	14%	14%	
Injury - C	2	29%	22%	
Property Damage	4	57%	60%	
Total	7	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	14%	20%	0%
2011	0	0%	22%	0%
2012	2	29%	20%	0%
2013	2	29%	18%	0%
2014	2	29%	20%	0%
Total	7	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	5	71%	67%	0%
Sunrise	0	0%	3%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	6%	0%
Dark	2	29%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	7	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	6	86%	57%	0%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	1	14%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	0	0%	12%	0%
Other/Unknown	0	0%	5%	0%
Total	7	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	1	14%	18%	0%
Sideswipe Passing	0	0%	7%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	1	14%	3%	0%
Run off Road	0	0%	25%	0%
Right Angle	3	43%	25%	0%
Right Turn into Traffic	1	14%	1%	0%
Head On	0	0%	7%	0%
Other/Unknown	1	14%	13%	0%
Total	7	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	1	14%	49%	0%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	6	86%	1%	0%
Total	7	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	8%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	8%	0%
Improper Maneuver	0	0%	16%	0%
Other/Unknown	7	100%	54%	0%
Total	7	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	6	86%	94%	0%
Other/Unknown	1	14%		0%
Total	7	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	4%	0%
3:00 to 5:59 am	0	0%	4%	0%
6:00 to 8:59 am	1	14%	15%	0%
9:00 to 11:59 am	0	0%	15%	0%
12:00 to 2:59 pm	2	29%	17%	0%
3:00 to 5:59 pm	3	43%	24%	0%
6:00 to 8:59 pm	1	14%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	7	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	14%	15%	0%
Tuesday	2	29%	15%	0%
Wednesday	2	29%	13%	0%
Thursday	0	0%	14%	0%
Friday	1	14%	17%	0%
Saturday	0	0%	14%	0%
Sunday	1	14%	12%	0%
Total	7	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	5	71%	65%	0%
Wet	1	14%	10%	0%
Snow/Slush	1	14%	9%	0%
Ice/Packed Snow	0	0%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	7	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	4	57%	50%	0%
Cloudy	1	14%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	2	29%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	0	0%	2%	0%
Total	7	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	8%	0%
19 to 20	1	14%	6%	0%
21 to 29	1	14%	19%	0%
30 to 39	1	14%	16%	0%
40 to 49	1	14%	16%	0%
50 to 59	1	14%	16%	0%
60 to 69	0	0%	10%	0%
70 to 79	1	14%	5%	0%
80 to 89	1	14%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	7	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Bridge Ave (Delano)

Urban Traffic Signal

County	Wright
District	3
Entering ADT	16,838
Intersection Type	4-Legged
Intersection Control	Traffic Signal
Expected Crash Rate (per MEV)/KA	0.69

Crash Rate (per MEV)/KA	0.62
Critical Rate (per MEV)	1.09
Crash Cost	\$366,800
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	0%	0%
Injury - A	0	0%	1%	0%
Injury - B	1	5%	7%	
Injury - C	1	5%	24%	
Property Damage	17	89%	67%	
Total	19	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	2	11%	20%	0%
2011	8	42%	20%	0%
2012	3	16%	20%	0%
2013	1	5%	20%	0%
2014	5	26%	21%	0%
Total	19	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	16	84%	76%	0%
Sunrise	0	0%	1%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	3	16%	18%	0%
Dark	0	0%	2%	0%
Other/Unknown	0	0%	0%	0%
Total	19	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	16	84%	89%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	1%	0%
Fixed Object	0	0%	5%	0%
Overturn/Rollover	0	0%	1%	0%
Other/Unknown	3	16%	3%	0%
Total	19	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	14	74%	51%	0%
Sideswipe Passing	0	0%	9%	0%
Sideswipe Opposing	0	0%	1%	0%
Left Turn into Traffic	0	0%	7%	0%
Run off Road	2	11%	3%	0%
Right Angle	2	11%	17%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	2%	0%
Other/Unknown	1	5%	8%	0%
Total	19	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	9	47%	55%	0%
Pickup	0	0%	12%	0%
Van or Minivan	0	0%	9%	0%
SUV	0	0%	18%	0%
Bus	0	0%	1%	0%
Motorcycle	1	5%	1%	0%
Semi Truck	1	5%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	8	42%	1%	0%
Total	19	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	4	21%	3%	0%
Driver Inattention	2	11%	14%	0%
Driver Impairment	0	0%	1%	0%
Improper Lane Use	0	0%	11%	0%
Improper Maneuver	0	0%	13%	0%
Other/Unknown	13	68%	58%	0%
Total	19	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	5%	4%	0%
No	18	95%	96%	0%
Other/Unknown	0	0%	0%	0%
Total	19	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	2%	0%
3:00 to 5:59 am	0	0%	2%	0%
6:00 to 8:59 am	3	16%	12%	0%
9:00 to 11:59 am	8	42%	16%	0%
12:00 to 2:59 pm	2	11%	22%	0%
3:00 to 5:59 pm	4	21%	28%	0%
6:00 to 8:59 pm	1	5%	13%	0%
9:00 to 11:59 pm	1	5%	6%	0%
Total	19	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	11%	15%	0%
Tuesday	2	11%	16%	0%
Wednesday	7	37%	16%	0%
Thursday	0	0%	16%	0%
Friday	2	11%	18%	0%
Saturday	3	16%	12%	0%
Sunday	3	16%	9%	0%
Total	19	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	14	74%	71%	0%
Wet	3	16%	14%	0%
Snow/Slush	1	5%	7%	0%
Ice/Packed Snow	1	5%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	19	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	12	63%	58%	0%
Cloudy	6	32%	26%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	1	5%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	19	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	5%	8%	0%
19 to 20	3	16%	6%	0%
21 to 29	3	16%	21%	0%
30 to 39	5	26%	17%	0%
40 to 49	1	5%	17%	0%
50 to 59	2	11%	15%	0%
60 to 69	2	11%	9%	0%
70 to 79	1	5%	4%	0%
80 to 89	1	5%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	19	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide (signals based on SL and volume critical rate)
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Co Rd 30 SE (Delano)

Urban Traffic Signal

County	Wright
District	3
Entering ADT	15,175
Intersection Type	T
Intersection Control	Traffic Signal
Expected Crash Rate (per MEV)/KA	0.69

Crash Rate (per MEV)/KA	0.22
Critical Rate (per MEV)	1.11
Crash Cost	\$270,600
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	0%	0%
Injury - A	0	0%	1%	0%
Injury - B	1	17%	7%	
Injury - C	1	17%	24%	
Property Damage	4	67%	67%	
Total	6	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	17%	20%	0%
2011	1	17%	20%	0%
2012	1	17%	20%	0%
2013	1	17%	20%	0%
2014	2	33%	21%	0%
Total	6	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	6	100%	76%	0%
Sunrise	0	0%	1%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	18%	0%
Dark	0	0%	2%	0%
Other/Unknown	0	0%	0%	0%
Total	6	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	4	67%	89%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	1%	0%
Fixed Object	0	0%	5%	0%
Overturn/Rollover	1	17%	1%	0%
Other/Unknown	1	17%	3%	0%
Total	6	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	3	50%	51%	0%
Sideswipe Passing	0	0%	9%	0%
Sideswipe Opposing	0	0%	1%	0%
Left Turn into Traffic	2	33%	7%	0%
Run off Road	1	17%	3%	0%
Right Angle	0	0%	17%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	2%	0%
Other/Unknown	0	0%	8%	0%
Total	6	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	1	17%	55%	0%
Pickup	0	0%	12%	0%
Van or Minivan	0	0%	9%	0%
SUV	0	0%	18%	0%
Bus	0	0%	1%	0%
Motorcycle	1	17%	1%	0%
Semi Truck	0	0%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	4	67%	1%	0%
Total	6	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	3	50%	14%	0%
Driver Impairment	0	0%	1%	0%
Improper Lane Use	0	0%	11%	0%
Improper Maneuver	0	0%	13%	0%
Other/Unknown	3	50%	58%	0%
Total	6	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	4%	0%
No	6	100%	96%	0%
Other/Unknown	0	0%	0%	0%
Total	6	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	2%	0%
3:00 to 5:59 am	0	0%	2%	0%
6:00 to 8:59 am	0	0%	12%	0%
9:00 to 11:59 am	4	67%	16%	0%
12:00 to 2:59 pm	0	0%	22%	0%
3:00 to 5:59 pm	2	33%	28%	0%
6:00 to 8:59 pm	0	0%	13%	0%
9:00 to 11:59 pm	0	0%	6%	0%
Total	6	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	33%	15%	0%
Tuesday	0	0%	16%	0%
Wednesday	0	0%	16%	0%
Thursday	0	0%	16%	0%
Friday	2	33%	18%	0%
Saturday	2	33%	12%	0%
Sunday	0	0%	9%	0%
Total	6	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	2	33%	71%	0%
Wet	1	17%	14%	0%
Snow/Slush	2	33%	7%	0%
Ice/Packed Snow	1	17%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	2	33%	58%	0%
Cloudy	1	17%	26%	0%
Rain	1	17%	6%	0%
Snow/Sleet/Hail/Freezing Rain	2	33%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	0	0%	21%	0%
30 to 39	5	83%	17%	0%
40 to 49	0	0%	17%	0%
50 to 59	0	0%	15%	0%
60 to 69	0	0%	9%	0%
70 to 79	0	0%	4%	0%
80 to 89	1	17%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	6	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide (signals based on SL and volume critical rate)
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & 5th St S (Delano) Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	17,846
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.15
Critical Rate (per MEV)	0.39
Crash Cost	\$263,200
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	1	20%	9%	
Injury - C	1	20%	22%	
Property Damage	3	60%	67%	
Total	5	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	21%	0%
2011	0	0%	20%	0%
2012	1	20%	20%	0%
2013	2	40%	19%	0%
2014	2	40%	20%	100%
Total	5	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	4	80%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	100%
Dark (street lights on)	1	20%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	5	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	5	100%	80%	100%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	5	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	3	60%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	2	40%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	100%
Other/Unknown	0	0%	12%	0%
Total	5	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	1	20%	52%	0%
Pickup	0	0%	14%	100%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	4	80%	1%	0%
Total	5	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	12%	100%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	5	100%	57%	0%
Total	5	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	100%
No	4	80%	95%	0%
Other/Unknown	1	20%		0%
Total	5	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	1	20%	13%	0%
9:00 to 11:59 am	0	0%	14%	0%
12:00 to 2:59 pm	1	20%	20%	0%
3:00 to 5:59 pm	1	20%	29%	100%
6:00 to 8:59 pm	2	40%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	5	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	1	20%	15%	100%
Wednesday	1	20%	15%	0%
Thursday	2	40%	15%	0%
Friday	1	20%	18%	0%
Saturday	0	0%	12%	0%
Sunday	0	0%	9%	0%
Total	5	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	5	100%	72%	100%
Wet	0	0%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	5	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	5	100%	58%	100%
Cloudy	0	0%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	5	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	9%	0%
19 to 20	1	20%	6%	0%
21 to 29	0	0%	20%	0%
30 to 39	0	0%	16%	0%
40 to 49	2	40%	15%	0%
50 to 59	1	20%	15%	100%
60 to 69	0	0%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	1	20%	2%	0%
Total	5	100%	100%	100%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Babcock Cir (Delano) Urban Thru/Stop Intersection

County	Wright
District	3
Entering ADT	17,846
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.15
Critical Rate (per MEV)	0.39
Crash Cost	\$110,600
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	9%	0%
Injury - C	1	20%	22%	0%
Property Damage	4	80%	67%	0%
Total	5	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	20%	21%	0%
2011	2	40%	20%	0%
2012	1	20%	20%	0%
2013	0	0%	19%	0%
2014	1	20%	20%	100%
Total	5	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	4	80%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	100%
Dark (street lights on)	1	20%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	5	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	5	100%	80%	100%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	5	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	3	60%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	2	40%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	100%
Other/Unknown	0	0%	12%	0%
Total	5	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	1	20%	52%	0%
Pickup	0	0%	14%	100%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	4	80%	1%	0%
Total	5	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	20%	3%	0%
Driver Inattention	0	0%	12%	100%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	4	80%	57%	0%
Total	5	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	100%
No	5	100%	95%	0%
Other/Unknown	0	0%	0%	0%
Total	5	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	0	0%	13%	0%
9:00 to 11:59 am	3	60%	14%	0%
12:00 to 2:59 pm	0	0%	20%	0%
3:00 to 5:59 pm	2	40%	29%	100%
6:00 to 8:59 pm	0	0%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	5	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	40%	15%	0%
Tuesday	2	40%	15%	100%
Wednesday	0	0%	15%	0%
Thursday	0	0%	15%	0%
Friday	0	0%	18%	0%
Saturday	1	20%	12%	0%
Sunday	0	0%	9%	0%
Total	5	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	3	60%	72%	100%
Wet	1	20%	13%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	1	20%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	5	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	2	40%	58%	100%
Cloudy	2	40%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	1	20%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	5	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	20%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	1	20%	20%	0%
30 to 39	1	20%	16%	0%
40 to 49	0	0%	15%	0%
50 to 59	1	20%	15%	100%
60 to 69	0	0%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	1	20%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	5	100%	100%	100%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Tiger Dr (Delano)

Urban Traffic Signal

County	Wright
District	3
Entering ADT	17,600
Intersection Type	4-Legged
Intersection Control	Traffic Signal
Expected Crash Rate (per MEV)/KA	0.69

Crash Rate (per MEV)/KA	0.16
Critical Rate (per MEV)	1.08
Crash Cost	\$37,000
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	0%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	7%	0%
Injury - C	0	0%	24%	0%
Property Damage	5	100%	67%	0%
Total	5	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	20%	0%
2011	1	20%	20%	0%
2012	0	0%	20%	0%
2013	4	80%	20%	0%
2014	0	0%	21%	0%
Total	5	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	4	80%	76%	0%
Sunrise	0	0%	1%	0%
Sunset	1	20%	2%	0%
Dark (street lights on)	0	0%	18%	0%
Dark	0	0%	2%	0%
Other/Unknown	0	0%	0%	0%
Total	5	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	5	100%	89%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	1%	0%
Fixed Object	0	0%	5%	0%
Overturn/Rollover	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	5	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	4	80%	51%	0%
Sideswipe Passing	1	20%	9%	0%
Sideswipe Opposing	0	0%	1%	0%
Left Turn into Traffic	0	0%	7%	0%
Run off Road	0	0%	3%	0%
Right Angle	0	0%	17%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	2%	0%
Other/Unknown	0	0%	8%	0%
Total	5	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	2	40%	55%	0%
Pickup	0	0%	12%	0%
Van or Minivan	0	0%	9%	0%
SUV	0	0%	18%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	2	40%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	1	20%	1%	0%
Total	5	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	20%	3%	0%
Driver Inattention	0	0%	14%	0%
Driver Impairment	0	0%	1%	0%
Improper Lane Use	0	0%	11%	0%
Improper Maneuver	0	0%	13%	0%
Other/Unknown	4	80%	58%	0%
Total	5	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	4%	0%
No	5	100%	96%	0%
Other/Unknown	0	0%	0%	0%
Total	5	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	2%	0%
3:00 to 5:59 am	0	0%	2%	0%
6:00 to 8:59 am	1	20%	12%	0%
9:00 to 11:59 am	1	20%	16%	0%
12:00 to 2:59 pm	1	20%	22%	0%
3:00 to 5:59 pm	2	40%	28%	0%
6:00 to 8:59 pm	0	0%	13%	0%
9:00 to 11:59 pm	0	0%	6%	0%
Total	5	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	40%	15%	0%
Tuesday	0	0%	16%	0%
Wednesday	0	0%	16%	0%
Thursday	1	20%	16%	0%
Friday	2	40%	18%	0%
Saturday	0	0%	12%	0%
Sunday	0	0%	9%	0%
Total	5	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	2	40%	71%	0%
Wet	1	20%	14%	0%
Snow/Slush	1	20%	7%	0%
Ice/Packed Snow	1	20%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	5	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	2	40%	58%	0%
Cloudy	0	0%	26%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	3	60%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	5	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	20%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	0	0%	21%	0%
30 to 39	3	60%	17%	0%
40 to 49	0	0%	17%	0%
50 to 59	0	0%	15%	0%
60 to 69	1	20%	9%	0%
70 to 79	0	0%	4%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	5	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide (signals based on SL and volume critical rate)
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 139 / County Line Rd SE (Delano)

Urban Traffic Signal

County	Wright
District	3
Entering ADT	18,895
Intersection Type	4-Legged
Intersection Control	Traffic Signal
Expected Crash Rate (per MEV)/KA	0.69

Crash Rate (per MEV)/KA	0.84
Critical Rate (per MEV)	1.07
Crash Cost	\$808,800
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	0%	0%
Injury - A	0	0%	1%	0%
Injury - B	1	3%	7%	
Injury - C	6	21%	24%	
Property Damage	22	76%	67%	
Total	29	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	5	17%	20%	0%
2011	6	21%	20%	0%
2012	8	28%	20%	0%
2013	3	10%	20%	0%
2014	7	24%	21%	0%
Total	29	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	21	72%	76%	0%
Sunrise	1	3%	1%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	7	24%	18%	0%
Dark	0	0%	2%	0%
Other/Unknown	0	0%	0%	0%
Total	29	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	27	93%	89%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	1%	0%
Fixed Object	0	0%	5%	0%
Overturn/Rollover	0	0%	1%	0%
Other/Unknown	2	7%	3%	0%
Total	29	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	15	52%	51%	0%
Sideswipe Passing	2	7%	9%	0%
Sideswipe Opposing	0	0%	1%	0%
Left Turn into Traffic	5	17%	7%	0%
Run off Road	2	7%	3%	0%
Right Angle	2	7%	17%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	3	10%	2%	0%
Other/Unknown	0	0%	8%	0%
Total	29	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	11	38%	55%	0%
Pickup	0	0%	12%	0%
Van or Minivan	0	0%	9%	0%
SUV	0	0%	18%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	1	3%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	17	59%	1%	0%
Total	29	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	6	21%	3%	0%
Driver Inattention	1	3%	14%	0%
Driver Impairment	0	0%	1%	0%
Improper Lane Use	0	0%	11%	0%
Improper Maneuver	0	0%	13%	0%
Other/Unknown	22	76%	58%	0%
Total	29	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	3%	4%	0%
No	28	97%	96%	0%
Other/Unknown	0	0%	0%	0%
Total	29	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	1	3%	2%	0%
3:00 to 5:59 am	0	0%	2%	0%
6:00 to 8:59 am	9	31%	12%	0%
9:00 to 11:59 am	1	3%	16%	0%
12:00 to 2:59 pm	2	7%	22%	0%
3:00 to 5:59 pm	9	31%	28%	0%
6:00 to 8:59 pm	6	21%	13%	0%
9:00 to 11:59 pm	1	3%	6%	0%
Total	29	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	5	17%	15%	0%
Tuesday	3	10%	16%	0%
Wednesday	1	3%	16%	0%
Thursday	6	21%	16%	0%
Friday	8	28%	18%	0%
Saturday	3	10%	12%	0%
Sunday	3	10%	9%	0%
Total	29	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	21	72%	71%	0%
Wet	2	7%	14%	0%
Snow/Slush	4	14%	7%	0%
Ice/Packed Snow	2	7%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	29	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	16	55%	58%	0%
Cloudy	8	28%	26%	0%
Rain	1	3%	6%	0%
Snow/Sleet/Hail/Freezing Rain	4	14%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	29	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	3	10%	8%	0%
19 to 20	1	3%	6%	0%
21 to 29	6	21%	21%	0%
30 to 39	5	17%	17%	0%
40 to 49	6	21%	17%	0%
50 to 59	4	14%	15%	0%
60 to 69	2	7%	9%	0%
70 to 79	1	3%	4%	0%
80 to 89	1	3%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	29	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide (signals based on SL and volume critical rate)
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Nelson Rd Rural Thru/Stop Intersection

County	Hennepin
District	M
Entering ADT	14,713
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.26

Crash Rate (per MEV)/KA	0.19
Critical Rate (per MEV)	0.53
Crash Cost	\$263,200
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	0	0%	3%	0%
Injury - B	1	20%	14%	
Injury - C	1	20%	22%	
Property Damage	3	60%	60%	
Total	5	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	20%	0%
2011	1	20%	22%	0%
2012	1	20%	20%	0%
2013	2	40%	18%	0%
2014	1	20%	20%	0%
Total	5	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	4	80%	67%	0%
Sunrise	0	0%	3%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	1	20%	6%	0%
Dark	0	0%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	5	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	2	40%	57%	0%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	1	20%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	1	20%	12%	0%
Other/Unknown	1	20%	5%	0%
Total	5	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	1	20%	18%	0%
Sideswipe Passing	0	0%	7%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	0	0%	3%	0%
Run off Road	1	20%	25%	0%
Right Angle	1	20%	25%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	7%	0%
Other/Unknown	2	40%	13%	0%
Total	5	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	3	60%	49%	0%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	2	40%	1%	0%
Total	5	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	20%	8%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	8%	0%
Improper Maneuver	0	0%	16%	0%
Other/Unknown	4	80%	54%	0%
Total	5	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	5	100%	94%	0%
Other/Unknown	0	0%	0%	0%
Total	5	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	4%	0%
3:00 to 5:59 am	0	0%	4%	0%
6:00 to 8:59 am	2	40%	15%	0%
9:00 to 11:59 am	0	0%	15%	0%
12:00 to 2:59 pm	1	20%	17%	0%
3:00 to 5:59 pm	2	40%	24%	0%
6:00 to 8:59 pm	0	0%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	5	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	20%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	1	20%	13%	0%
Thursday	1	20%	14%	0%
Friday	0	0%	17%	0%
Saturday	1	20%	14%	0%
Sunday	1	20%	12%	0%
Total	5	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	5	100%	65%	0%
Wet	0	0%	10%	0%
Snow/Slush	0	0%	9%	0%
Ice/Packed Snow	0	0%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	5	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	5	100%	50%	0%
Cloudy	0	0%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	0	0%	2%	0%
Total	5	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	8%	0%
19 to 20	1	20%	6%	0%
21 to 29	0	0%	19%	0%
30 to 39	1	20%	16%	0%
40 to 49	3	60%	16%	0%
50 to 59	0	0%	16%	0%
60 to 69	0	0%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	5	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 92 RT / Mud Lake Rd Rural Thru/Stop Intersection

County	Hennepin
District	M
Entering ADT	14,837
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.26

Crash Rate (per MEV)/KA	0.52
Critical Rate (per MEV)	0.53
Crash Cost	\$934,800
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	0	0%	3%	0%
Injury - B	4	29%	14%	
Injury - C	3	21%	22%	
Property Damage	7	50%	60%	
Total	14	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	20%	0%
2011	5	36%	22%	0%
2012	3	21%	20%	0%
2013	2	14%	18%	0%
2014	4	29%	20%	0%
Total	14	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	11	79%	67%	0%
Sunrise	2	14%	3%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	6%	0%
Dark	1	7%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	14	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	12	86%	57%	0%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	1	7%	12%	0%
Other/Unknown	1	7%	5%	0%
Total	14	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	4	29%	18%	0%
Sideswipe Passing	1	7%	7%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	2	14%	3%	0%
Run off Road	0	0%	25%	0%
Right Angle	6	43%	25%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	7%	0%
Other/Unknown	1	7%	13%	0%
Total	14	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	7	50%	49%	0%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	7	50%	1%	0%
Total	14	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	8%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	1	7%	8%	0%
Improper Maneuver	1	7%	16%	0%
Other/Unknown	12	86%	54%	0%
Total	14	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	14	100%	94%	0%
Other/Unknown	0	0%	0%	0%
Total	14	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	4%	0%
3:00 to 5:59 am	0	0%	4%	0%
6:00 to 8:59 am	7	50%	15%	0%
9:00 to 11:59 am	2	14%	15%	0%
12:00 to 2:59 pm	3	21%	17%	0%
3:00 to 5:59 pm	2	14%	24%	0%
6:00 to 8:59 pm	0	0%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	14	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	1	7%	15%	0%
Tuesday	5	36%	15%	0%
Wednesday	1	7%	13%	0%
Thursday	1	7%	14%	0%
Friday	4	29%	17%	0%
Saturday	1	7%	14%	0%
Sunday	1	7%	12%	0%
Total	14	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	12	86%	65%	0%
Wet	1	7%	10%	0%
Snow/Slush	1	7%	9%	0%
Ice/Packed Snow	0	0%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	14	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	10	71%	50%	0%
Cloudy	2	14%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	1	7%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	1	7%	2%	0%
Total	14	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	7%	8%	0%
19 to 20	2	14%	6%	0%
21 to 29	3	21%	19%	0%
30 to 39	2	14%	16%	0%
40 to 49	3	21%	16%	0%
50 to 59	2	14%	16%	0%
60 to 69	1	7%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	14	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 92 LT / Lake Sarah Rd (Independence)

Rural Thru/Stop Intersection

County	Hennepin
District	M
Entering ADT	15,625
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.26

Crash Rate (per MEV)/KA	0.21
Critical Rate (per MEV)	0.52
Crash Cost	\$654,800
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	0	0%	3%	0%
Injury - B	4	67%	14%	
Injury - C	0	0%	22%	
Property Damage	2	33%	60%	
Total	6	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	20%	0%
2011	3	50%	22%	0%
2012	1	17%	20%	0%
2013	1	17%	18%	0%
2014	1	17%	20%	0%
Total	6	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	4	67%	67%	0%
Sunrise	0	0%	3%	0%
Sunset	1	17%	2%	0%
Dark (street lights on)	1	17%	6%	0%
Dark	0	0%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	6	100%	57%	0%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	0	0%	12%	0%
Other/Unknown	0	0%	5%	0%
Total	6	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	3	50%	18%	0%
Sideswipe Passing	0	0%	7%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	0	0%	3%	0%
Run off Road	0	0%	25%	0%
Right Angle	3	50%	25%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	7%	0%
Other/Unknown	0	0%	13%	0%
Total	6	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	6	100%	49%	0%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	0	0%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	8%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	8%	0%
Improper Maneuver	0	0%	16%	0%
Other/Unknown	6	100%	54%	0%
Total	6	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	6	100%	94%	0%
Other/Unknown	0	0%	0%	0%
Total	6	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	4%	0%
3:00 to 5:59 am	0	0%	4%	0%
6:00 to 8:59 am	0	0%	15%	0%
9:00 to 11:59 am	1	17%	15%	0%
12:00 to 2:59 pm	1	17%	17%	0%
3:00 to 5:59 pm	3	50%	24%	0%
6:00 to 8:59 pm	1	17%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	6	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	0	0%	15%	0%
Wednesday	2	33%	13%	0%
Thursday	3	50%	14%	0%
Friday	0	0%	17%	0%
Saturday	0	0%	14%	0%
Sunday	1	17%	12%	0%
Total	6	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	3	50%	65%	0%
Wet	3	50%	10%	0%
Snow/Slush	0	0%	9%	0%
Ice/Packed Snow	0	0%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	3	50%	50%	0%
Cloudy	3	50%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	0	0%	2%	0%
Total	6	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	8%	0%
19 to 20	1	17%	6%	0%
21 to 29	3	50%	19%	0%
30 to 39	2	33%	16%	0%
40 to 49	0	0%	16%	0%
50 to 59	0	0%	16%	0%
60 to 69	0	0%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Valley Rd (Independence)

Rural Thru/Stop Intersection

County	Hennepin
District	M
Entering ADT	15,025
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.26

Crash Rate (per MEV)/KA	0.22
Critical Rate (per MEV)	0.53
Crash Cost	\$191,600
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	0	0%	3%	0%
Injury - B	0	0%	14%	0%
Injury - C	2	33%	22%	0%
Property Damage	4	67%	60%	0%
Total	6	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	17%	20%	0%
2011	1	17%	22%	0%
2012	3	50%	20%	0%
2013	0	0%	18%	0%
2014	1	17%	20%	0%
Total	6	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	6	100%	67%	0%
Sunrise	0	0%	3%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	6%	0%
Dark	0	0%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	3	50%	57%	0%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	2	33%	12%	0%
Other/Unknown	1	17%	5%	0%
Total	6	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	2	33%	18%	0%
Sideswipe Passing	0	0%	7%	0%
Sideswipe Opposing	0	0%	2%	0%
Left Turn into Traffic	0	0%	3%	0%
Run off Road	3	50%	25%	0%
Right Angle	1	17%	25%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	7%	0%
Other/Unknown	0	0%	13%	0%
Total	6	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	1	17%	49%	0%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	1	17%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	4	67%	1%	0%
Total	6	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	17%	8%	0%
Driver Inattention	1	17%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	8%	0%
Improper Maneuver	0	0%	16%	0%
Other/Unknown	4	67%	54%	0%
Total	6	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	6	100%	94%	0%
Other/Unknown	0	0%	0%	0%
Total	6	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	4%	0%
3:00 to 5:59 am	0	0%	4%	0%
6:00 to 8:59 am	2	33%	15%	0%
9:00 to 11:59 am	2	33%	15%	0%
12:00 to 2:59 pm	1	17%	17%	0%
3:00 to 5:59 pm	1	17%	24%	0%
6:00 to 8:59 pm	0	0%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	6	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	2	33%	15%	0%
Wednesday	2	33%	13%	0%
Thursday	1	17%	14%	0%
Friday	1	17%	17%	0%
Saturday	0	0%	14%	0%
Sunday	0	0%	12%	0%
Total	6	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	2	33%	65%	0%
Wet	2	33%	10%	0%
Snow/Slush	0	0%	9%	0%
Ice/Packed Snow	2	33%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	3	50%	50%	0%
Cloudy	3	50%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	0	0%	2%	0%
Total	6	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	8%	0%
19 to 20	1	17%	6%	0%
21 to 29	1	17%	19%	0%
30 to 39	2	33%	16%	0%
40 to 49	0	0%	16%	0%
50 to 59	2	33%	16%	0%
60 to 69	0	0%	10%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	6	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 90 (Independence)

Rural Thru/Stop Intersection

County	Hennepin
District	M
Entering ADT	16,049
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.26

Crash Rate (per MEV)/KA	0.65
Critical Rate (per MEV)	0.52
Crash Cost	\$440,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	2%	0%
Injury - A	0	0%	3%	0%
Injury - B	1	5%	14%	0%
Injury - C	2	11%	22%	0%
Property Damage	16	84%	60%	0%
Total	19	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	3	16%	20%	0%
2011	10	53%	22%	0%
2012	1	5%	20%	0%
2013	2	11%	18%	0%
2014	3	16%	20%	0%
Total	19	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	13	68%	67%	0%
Sunrise	2	11%	3%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	2	11%	6%	0%
Dark	2	11%	21%	0%
Other/Unknown	0	0%	1%	0%
Total	19	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	18	95%	57%	0%
Pedestrian & Bicycle	0	0%	0%	0%
Animal	0	0%	10%	0%
Fixed Object	0	0%	16%	0%
Overturn/Rollover	0	0%	12%	0%
Other/Unknown	1	5%	5%	0%
Total	19	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	2	11%	18%	0%
Sideswipe Passing	1	5%	7%	0%
Sideswipe Opposing	1	5%	2%	0%
Left Turn into Traffic	0	0%	3%	0%
Run off Road	1	5%	25%	0%
Right Angle	14	74%	25%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	7%	0%
Other/Unknown	0	0%	13%	0%
Total	19	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	9	47%	49%	0%
Pickup	0	0%	18%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	15%	0%
Bus	0	0%	0%	0%
Motorcycle	0	0%	2%	0%
Semi Truck	3	16%	7%	0%
Bicycle	0	0%	0%	0%
Pedestrian	0	0%	0%	0%
Other/Unknown	7	37%	1%	0%
Total	19	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	1	5%	8%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	8%	0%
Improper Maneuver	0	0%	16%	0%
Other/Unknown	18	95%	54%	0%
Total	19	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	6%	0%
No	19	100%	94%	0%
Other/Unknown	0	0%	0%	0%
Total	19	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	1	5%	4%	0%
3:00 to 5:59 am	1	5%	4%	0%
6:00 to 8:59 am	4	21%	15%	0%
9:00 to 11:59 am	4	21%	15%	0%
12:00 to 2:59 pm	2	11%	17%	0%
3:00 to 5:59 pm	3	16%	24%	0%
6:00 to 8:59 pm	4	21%	13%	0%
9:00 to 11:59 pm	0	0%	8%	0%
Total	19	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	6	32%	15%	0%
Tuesday	3	16%	15%	0%
Wednesday	3	16%	13%	0%
Thursday	2	11%	14%	0%
Friday	2	11%	17%	0%
Saturday	2	11%	14%	0%
Sunday	1	5%	12%	0%
Total	19	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	12	63%	65%	0%
Wet	3	16%	10%	0%
Snow/Slush	2	11%	9%	0%
Ice/Packed Snow	2	11%	15%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	19	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	14	74%	50%	0%
Cloudy	2	11%	24%	0%
Rain	0	0%	5%	0%
Snow/Sleet/Hail/Freezing Rain	3	16%	14%	0%
Fog/Smog/Smoke	0	0%	5%	0%
Other/Unknown	0	0%	2%	0%
Total	19	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	5	26%	19%	0%
30 to 39	1	5%	16%	0%
40 to 49	2	11%	16%	0%
50 to 59	8	42%	16%	0%
60 to 69	1	5%	10%	0%
70 to 79	1	5%	5%	0%
80 to 89	1	5%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	1%	0%
Total	19	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 83 / Halgren Rd (Maple Plain)

Urban Traffic Signal

County	Hennepin
District	M
Entering ADT	17,352
Intersection Type	4-Legged
Intersection Control	Traffic Signal
Expected Crash Rate (per MEV)/KA	0.69

Crash Rate (per MEV)/KA	0.28
Critical Rate (per MEV)	1.08
Crash Cost	\$587,200
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	0%	0%
Injury - A	0	0%	1%	0%
Injury - B	1	11%	7%	
Injury - C	5	56%	24%	
Property Damage	3	33%	67%	
Total	9	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	20%	0%
2011	2	22%	20%	0%
2012	0	0%	20%	0%
2013	1	11%	20%	0%
2014	6	67%	21%	0%
Total	9	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	6	67%	76%	0%
Sunrise	0	0%	1%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	2	22%	18%	0%
Dark	1	11%	2%	0%
Other/Unknown	0	0%	0%	0%
Total	9	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	9	100%	89%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	1%	0%
Fixed Object	0	0%	5%	0%
Overturn/Rollover	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	9	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	5	56%	51%	0%
Sideswipe Passing	1	11%	9%	0%
Sideswipe Opposing	0	0%	1%	0%
Left Turn into Traffic	0	0%	7%	0%
Run off Road	0	0%	3%	0%
Right Angle	2	22%	17%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	1	11%	2%	0%
Other/Unknown	0	0%	8%	0%
Total	9	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	4	44%	55%	0%
Pickup	0	0%	12%	0%
Van or Minivan	0	0%	9%	0%
SUV	0	0%	18%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	5	56%	1%	0%
Total	9	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	2	22%	3%	0%
Driver Inattention	2	22%	14%	0%
Driver Impairment	0	0%	1%	0%
Improper Lane Use	0	0%	11%	0%
Improper Maneuver	0	0%	13%	0%
Other/Unknown	5	56%	58%	0%
Total	9	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	4%	0%
No	9	100%	96%	0%
Other/Unknown	0	0%	0%	0%
Total	9	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	2%	0%
3:00 to 5:59 am	0	0%	2%	0%
6:00 to 8:59 am	2	22%	12%	0%
9:00 to 11:59 am	1	11%	16%	0%
12:00 to 2:59 pm	1	11%	22%	0%
3:00 to 5:59 pm	2	22%	28%	0%
6:00 to 8:59 pm	2	22%	13%	0%
9:00 to 11:59 pm	1	11%	6%	0%
Total	9	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	0	0%	15%	0%
Tuesday	1	11%	16%	0%
Wednesday	2	22%	16%	0%
Thursday	1	11%	16%	0%
Friday	2	22%	18%	0%
Saturday	2	22%	12%	0%
Sunday	1	11%	9%	0%
Total	9	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	7	78%	71%	0%
Wet	2	22%	14%	0%
Snow/Slush	0	0%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	9	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	6	67%	58%	0%
Cloudy	2	22%	26%	0%
Rain	1	11%	6%	0%
Snow/Sleet/Hail/Freezing Rain	0	0%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	9	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	11%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	3	33%	21%	0%
30 to 39	0	0%	17%	0%
40 to 49	0	0%	17%	0%
50 to 59	3	33%	15%	0%
60 to 69	2	22%	9%	0%
70 to 79	0	0%	4%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	9	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide (signals based on SL and volume critical rate)
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Pioneer Ave Urban Thru/Stop Intersection

County	Hennepin
District	M
Entering ADT	16,770
Intersection Type	T
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18/0.31

Crash Rate (per MEV)/KA	0.26/3.27
Critical Rate (per MEV)/KA	0.40/3.23
Crash Cost	\$1,304,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	1	13%	1%	100%
Injury - A	0	0%	1%	0%
Injury - B	1	13%	9%	
Injury - C	0	0%	22%	
Property Damage	6	75%	67%	
Total	8	100%	100%	100%

Year	Freq.	Observed %	Expected %	KA%
2010	1	13%	21%	0%
2011	5	63%	20%	0%
2012	0	0%	20%	0%
2013	1	13%	19%	0%
2014	1	13%	20%	100%
Total	8	100%	100%	100%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	5	63%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	1	13%	2%	100%
Dark (street lights on)	1	13%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	1	13%	1%	0%
Total	8	100%	100%	100%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	7	88%	80%	100%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	1	13%	6%	0%
Total	8	100%	100%	100%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	6	75%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	1	13%	9%	0%
Right Angle	0	0%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	1	13%	4%	100%
Other/Unknown	0	0%	12%	0%
Total	8	100%	100%	100%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	6	75%	52%	0%
Pickup	0	0%	14%	100%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	2	25%	1%	0%
Total	8	100%	100%	100%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	2	25%	3%	0%
Driver Inattention	0	0%	12%	100%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	6	75%	57%	0%
Total	8	100%	100%	100%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	13%	5%	100%
No	6	75%	95%	0%
Other/Unknown	1	13%		0%
Total	8	100%	100%	100%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	1	13%	13%	0%
9:00 to 11:59 am	0	0%	14%	0%
12:00 to 2:59 pm	0	0%	20%	0%
3:00 to 5:59 pm	5	63%	29%	100%
6:00 to 8:59 pm	2	25%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	8	100%	100%	100%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	25%	15%	0%
Tuesday	2	25%	15%	100%
Wednesday	4	50%	15%	0%
Thursday	0	0%	15%	0%
Friday	0	0%	18%	0%
Saturday	0	0%	12%	0%
Sunday	0	0%	9%	0%
Total	8	100%	100%	100%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	7	88%	72%	100%
Wet	0	0%	13%	0%
Snow/Slush	1	13%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	8	100%	100%	100%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	6	75%	58%	100%
Cloudy	1	13%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	1	13%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	8	100%	100%	100%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	2	25%	20%	0%
30 to 39	1	13%	16%	0%
40 to 49	3	38%	15%	0%
50 to 59	1	13%	15%	100%
60 to 69	1	13%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	8	100%	100%	100%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & Budd Ave N (Maple Plain) Urban Thru/Stop Intersection

County	Hennepin
District	M
Entering ADT	17,086
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.48
Critical Rate (per MEV)	0.40
Crash Cost	\$642,400
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	3	20%	9%	
Injury - C	1	7%	22%	
Property Damage	11	73%	67%	
Total	15	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	4	27%	21%	0%
2011	2	13%	20%	0%
2012	3	20%	20%	0%
2013	4	27%	19%	0%
2014	2	13%	20%	0%
Total	15	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	13	87%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	1	7%	2%	0%
Dark (street lights on)	1	7%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	15	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	15	100%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	0	0%	6%	0%
Total	15	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	4	27%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	1	7%	3%	0%
Left Turn into Traffic	0	0%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	10	67%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	0%
Other/Unknown	0	0%	12%	0%
Total	15	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	9	60%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	1	7%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	5	33%	1%	0%
Total	15	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	0	0%	17%	0%
Other/Unknown	15	100%	57%	0%
Total	15	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	5%	0%
No	14	93%	95%	0%
Other/Unknown	1	7%		0%
Total	15	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	3%	0%
3:00 to 5:59 am	1	7%	3%	0%
6:00 to 8:59 am	1	7%	13%	0%
9:00 to 11:59 am	2	13%	14%	0%
12:00 to 2:59 pm	2	13%	20%	0%
3:00 to 5:59 pm	7	47%	29%	0%
6:00 to 8:59 pm	2	13%	12%	0%
9:00 to 11:59 pm	0	0%	5%	0%
Total	15	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	13%	15%	0%
Tuesday	2	13%	15%	0%
Wednesday	3	20%	15%	0%
Thursday	2	13%	15%	0%
Friday	1	7%	18%	0%
Saturday	2	13%	12%	0%
Sunday	3	20%	9%	0%
Total	15	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	11	73%	72%	0%
Wet	0	0%	13%	0%
Snow/Slush	1	7%	7%	0%
Ice/Packed Snow	3	20%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	15	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	9	60%	58%	0%
Cloudy	4	27%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	2	13%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	15	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	3	20%	20%	0%
30 to 39	3	20%	16%	0%
40 to 49	3	20%	15%	0%
50 to 59	3	20%	15%	0%
60 to 69	2	13%	9%	0%
70 to 79	1	7%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	15	100%	100%	0%

NOTES:
 Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 19 / Main St E (Maple Plain) Urban Thru/Stop Intersection

County	Hennepin
District	M
Entering ADT	18,669
Intersection Type	4-Legged
Intersection Control	Thru/Stop
Expected Crash Rate (per MEV)/KA	0.18

Crash Rate (per MEV)/KA	0.26
Critical Rate (per MEV)	0.39
Crash Cost	\$213,800
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	1%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	9%	0%
Injury - C	2	22%	22%	0%
Property Damage	7	78%	67%	0%
Total	9	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	0	0%	21%	0%
2011	1	11%	20%	0%
2012	1	11%	20%	0%
2013	7	78%	19%	0%
2014	0	0%	20%	0%
Total	9	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	5	56%	75%	0%
Sunrise	0	0%	2%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	4	44%	15%	0%
Dark	0	0%	5%	0%
Other/Unknown	0	0%	1%	0%
Total	9	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	8	89%	80%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	3%	0%
Fixed Object	0	0%	6%	0%
Overturn/Rollover	0	0%	2%	0%
Other/Unknown	1	11%	6%	0%
Total	9	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	0	0%	31%	0%
Sideswipe Passing	0	0%	8%	0%
Sideswipe Opposing	0	0%	3%	0%
Left Turn into Traffic	1	11%	6%	0%
Run off Road	0	0%	9%	0%
Right Angle	7	78%	25%	0%
Right Turn into Traffic	0	0%	2%	0%
Head On	0	0%	4%	0%
Other/Unknown	1	11%	12%	0%
Total	9	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	4	44%	52%	0%
Pickup	0	0%	14%	0%
Van or Minivan	0	0%	8%	0%
SUV	0	0%	17%	0%
Bus	0	0%	1%	0%
Motorcycle	1	11%	1%	0%
Semi Truck	0	0%	4%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	4	44%	1%	0%
Total	9	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	12%	0%
Driver Impairment	0	0%	2%	0%
Improper Lane Use	0	0%	9%	0%
Improper Maneuver	1	11%	17%	0%
Other/Unknown	8	89%	57%	0%
Total	9	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	1	11%	5%	0%
No	8	89%	95%	0%
Other/Unknown	0	0%	0%	0%
Total	9	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	1	11%	3%	0%
3:00 to 5:59 am	0	0%	3%	0%
6:00 to 8:59 am	0	0%	13%	0%
9:00 to 11:59 am	1	11%	14%	0%
12:00 to 2:59 pm	0	0%	20%	0%
3:00 to 5:59 pm	3	33%	29%	0%
6:00 to 8:59 pm	2	22%	12%	0%
9:00 to 11:59 pm	2	22%	5%	0%
Total	9	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	3	33%	15%	0%
Tuesday	2	22%	15%	0%
Wednesday	1	11%	15%	0%
Thursday	0	0%	15%	0%
Friday	2	22%	18%	0%
Saturday	1	11%	12%	0%
Sunday	0	0%	9%	0%
Total	9	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	5	56%	72%	0%
Wet	2	22%	13%	0%
Snow/Slush	2	22%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	9	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	5	56%	58%	0%
Cloudy	2	22%	24%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	2	22%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	9	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	1	11%	9%	0%
19 to 20	0	0%	6%	0%
21 to 29	3	33%	20%	0%
30 to 39	1	11%	16%	0%
40 to 49	2	22%	15%	0%
50 to 59	1	11%	15%	0%
60 to 69	1	11%	9%	0%
70 to 79	0	0%	5%	0%
80 to 89	0	0%	3%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	9	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide, (Thru/Stop critical rate).
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

US 12 & CSAH 29 / Baker Park Rd / Townline Rd (Maple Plain)

Urban Traffic Signal

County	Hennepin
District	M
Entering ADT	19,040
Intersection Type	4-Legged
Intersection Control	Traffic Signal
Expected Crash Rate (per MEV)/KA	0.41

Crash Rate (per MEV)/KA	0.40
Critical Rate (per MEV)	0.71
Crash Cost	\$177,200
State Rank	n/a
Regional Rank	n/a
Street Lights	yes

Crash Severity	Freq.	Observed %	Expected %	KA%
Fatal	0	0%	0%	0%
Injury - A	0	0%	1%	0%
Injury - B	0	0%	7%	0%
Injury - C	1	7%	24%	0%
Property Damage	13	93%	67%	0%
Total	14	100%	100%	0%

Year	Freq.	Observed %	Expected %	KA%
2010	1	7%	20%	0%
2011	6	43%	20%	0%
2012	3	21%	20%	0%
2013	1	7%	20%	0%
2014	3	21%	21%	0%
Total	14	100%	100%	0%

Light Condition	Freq.	Observed %	Expected %	KA%
Daylight	14	100%	76%	0%
Sunrise	0	0%	1%	0%
Sunset	0	0%	2%	0%
Dark (street lights on)	0	0%	18%	0%
Dark	0	0%	2%	0%
Other/Unknown	0	0%	0%	0%
Total	14	100%	100%	0%

Collision Type	Freq.	Observed %	Expected %	KA%
Motor Vehicle	14	100%	89%	0%
Pedestrian & Bicycle	0	0%	2%	0%
Animal	0	0%	1%	0%
Fixed Object	0	0%	5%	0%
Overturn/Rollover	0	0%	1%	0%
Other/Unknown	0	0%	3%	0%
Total	14	100%	100%	0%

Collision Diagram	Freq.	Observed %	Expected %	KA%
Rear End	10	71%	51%	0%
Sideswipe Passing	0	0%	9%	0%
Sideswipe Opposing	2	14%	1%	0%
Left Turn into Traffic	1	7%	7%	0%
Run off Road	0	0%	3%	0%
Right Angle	1	7%	17%	0%
Right Turn into Traffic	0	0%	1%	0%
Head On	0	0%	2%	0%
Other/Unknown	0	0%	8%	0%
Total	14	100%	100%	0%

Vehicle Type	Freq.	Observed %	Expected %	KA%
Passenger Car	9	64%	55%	0%
Pickup	0	0%	12%	0%
Van or Minivan	0	0%	9%	0%
SUV	0	0%	18%	0%
Bus	0	0%	1%	0%
Motorcycle	0	0%	1%	0%
Semi Truck	0	0%	3%	0%
Bicycle	0	0%	1%	0%
Pedestrian	0	0%	1%	0%
Other/Unknown	5	36%	1%	0%
Total	14	100%	100%	0%

Contributing Factor	Freq.	Observed %	Expected %	KA%
Illegal/Unsafe Speed	0	0%	3%	0%
Driver Inattention	0	0%	14%	0%
Driver Impairment	0	0%	1%	0%
Improper Lane Use	0	0%	11%	0%
Improper Maneuver	0	0%	13%	0%
Other/Unknown	14	100%	58%	0%
Total	14	100%	100%	0%

Alcohol/Chemical Use	Freq.	Observed %	Expected %	KA%
Yes	0	0%	4%	0%
No	14	100%	96%	0%
Other/Unknown	0	0%	0%	0%
Total	14	100%	100%	0%

Time of Day	Freq.	Observed %	Expected %	KA%
12:00 to 2:59 am	0	0%	2%	0%
3:00 to 5:59 am	0	0%	2%	0%
6:00 to 8:59 am	3	21%	12%	0%
9:00 to 11:59 am	2	14%	16%	0%
12:00 to 2:59 pm	2	14%	22%	0%
3:00 to 5:59 pm	6	43%	28%	0%
6:00 to 8:59 pm	1	7%	13%	0%
9:00 to 11:59 pm	0	0%	6%	0%
Total	14	100%	100%	0%

Day of Week	Freq.	Observed %	Expected %	KA%
Monday	2	14%	15%	0%
Tuesday	3	21%	16%	0%
Wednesday	3	21%	16%	0%
Thursday	1	7%	16%	0%
Friday	5	36%	18%	0%
Saturday	0	0%	12%	0%
Sunday	0	0%	9%	0%
Total	14	100%	100%	0%

Road Surface Condition	Freq.	Observed %	Expected %	KA%
Dry	11	79%	71%	0%
Wet	2	14%	14%	0%
Snow/Slush	1	7%	7%	0%
Ice/Packed Snow	0	0%	8%	0%
Sand/Mud/Dirt	0	0%	0%	0%
Unknown	0	0%	1%	0%
Total	14	100%	100%	0%

Weather Condition	Freq.	Observed %	Expected %	KA%
Clear	11	79%	58%	0%
Cloudy	2	14%	26%	0%
Rain	0	0%	6%	0%
Snow/Sleet/Hail/Freezing Rain	1	7%	8%	0%
Fog/Smog/Smoke	0	0%	1%	0%
Other/Unknown	0	0%	1%	0%
Total	14	100%	100%	0%

Age	Freq.	Observed %	Expected %	KA%
15 or younger	0	0%	0%	0%
16 to 18	0	0%	8%	0%
19 to 20	0	0%	6%	0%
21 to 29	2	14%	21%	0%
30 to 39	2	14%	17%	0%
40 to 49	4	29%	17%	0%
50 to 59	4	29%	15%	0%
60 to 69	2	14%	9%	0%
70 to 79	0	0%	4%	0%
80 to 89	0	0%	2%	0%
90 or older	0	0%	0%	0%
Other/Unknown	0	0%	2%	0%
Total	14	100%	100%	0%

NOTES:

Crash Data from TIS Crash Data, 2010-2014.
 Expected Crash Data from MnDOT Oracle BI.
 Expected System Crash Rate from MnDOT Crash Data Toolkit, 2013.
 Expected/Critical Crash Rates are statewide (signals based on SL and volume critical rate)
 MnCMAT does not output pedestrian/bicycle data.
 All driver/vehicle factors are for vehicle 1.

E. Aerial Photos

- From Western Project Limits to Eastern Project Limits
- Includes critical intersections as well as other areas of concern brought up by the City of Cokato, the Coalition, District 3, and Metro District.

Notes:

**The term "critical" incorporates all segments/intersections that have crash rates that exceed either state average rates or the critical rate. Intersections that had over 5 crashes during the 5-year study period were also evaluated.*

This page intentionally left blank.



Notes:

- Located west of Cokato (Segment A)*
- CR exceeds state average at Quimby Ave S*
- Ice issues occur on Highway 12 between Cokato and Dassel.*
- Traffic exiting the school nearby have difficulty turning onto Hwy 12 due to high speeds of thru traffic.*



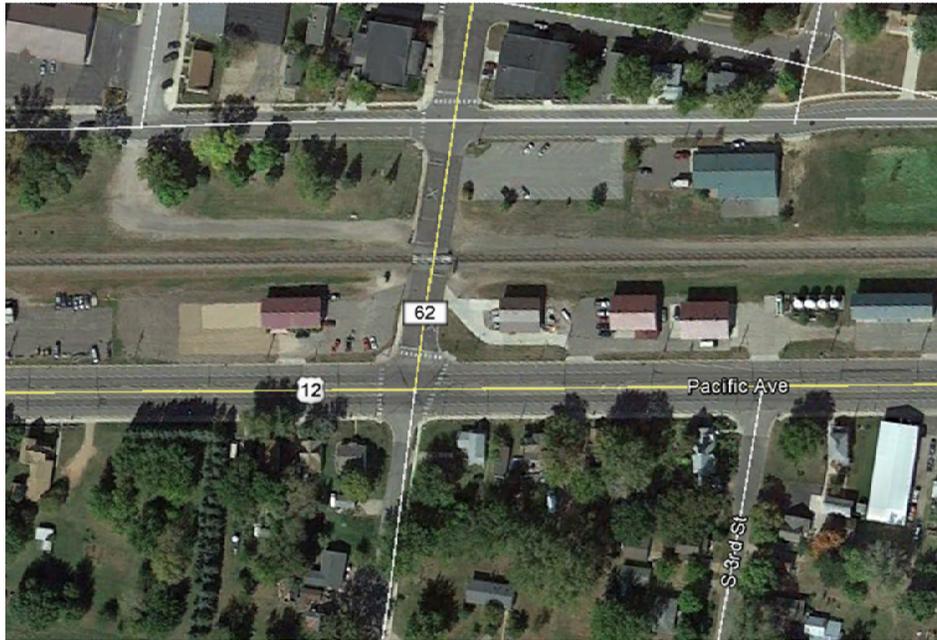
Notes:

- Located in Western Cokato (Segment B)*
- CR exceeds state average at Sunset Ave N, Johnson Ave N, and Jackson Ave N. There were more than 5 crashes at Broadway Ave N (CSAH 3) from 2010-2014.*
- Often have issues with truck traffic turning to head north on CSAH 3.*
- SB traffic on CSAH 3 have sight issues.*

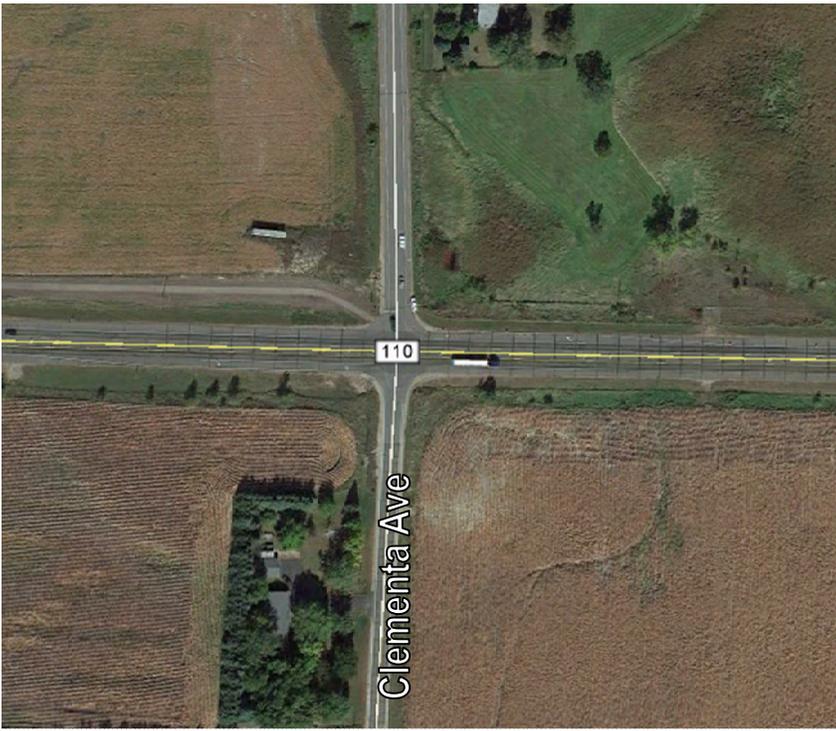


Notes:

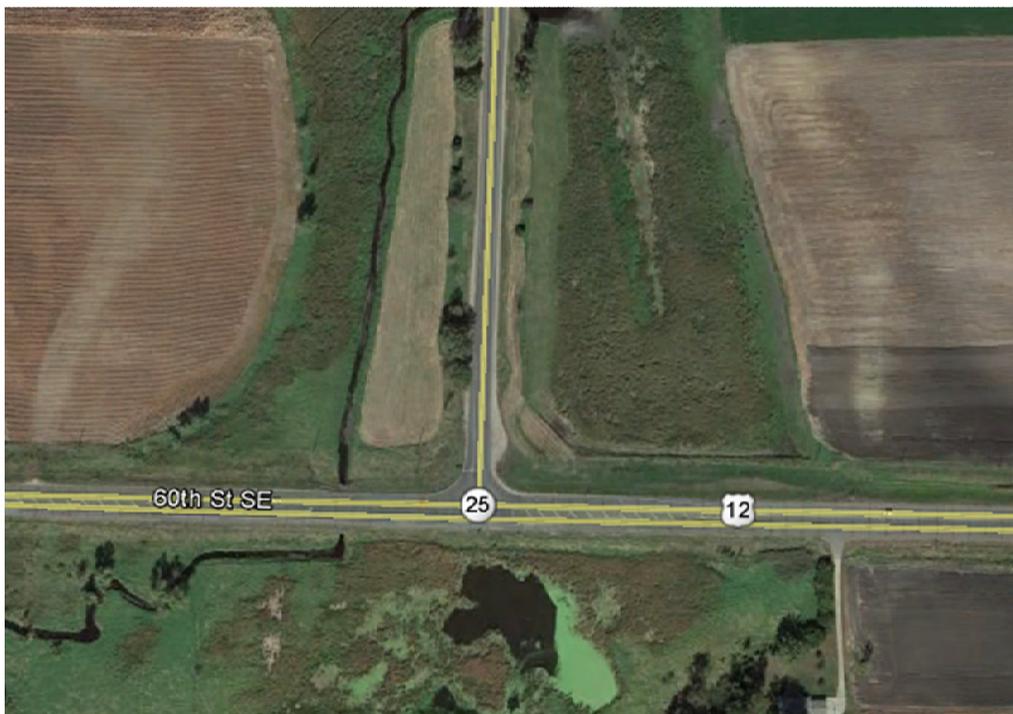
- Located in Howard Lake (Segment D)*
- CR exceeds state average at 10th and 7th Avenue (CSAH 6 LT and RT)*
- There are speed concerns in Howard Lake, especially pertaining to pedestrian/bike safety.*



Notes:
-Located in Waverly (Segment F)
-CR exceeds state average at Emerson Ave SW (CSAH 8 LT) and
CSAH 62 (4th Street).

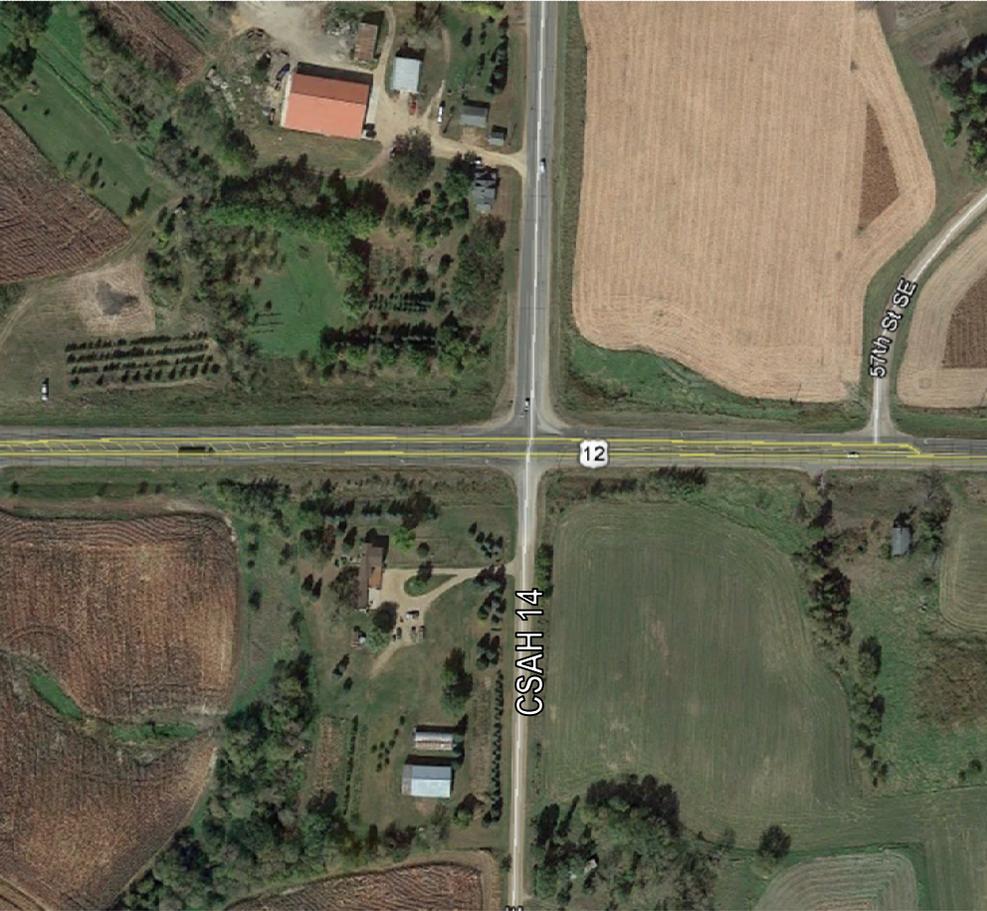


Notes:
-Located in Waverly (Segment F)
-CR exceeds state average at Clementa Ave SW and Center Ave S. There were more than 5 crashes at Buffalo Ave S (T.H. 25 RT).



Notes:

- Located in Eastern Montrose (Segment G)*
- FAR exceeds state average at Zephyr Ave. CR exceeds state average for T.H. 25 LT.*
- There are speed concerns in Montrose, particularly around CSAH 14 and TH 25.*



Notes:

- Located west of Delano (Segment I)*
- CR exceeds state average at CSAH 14.*



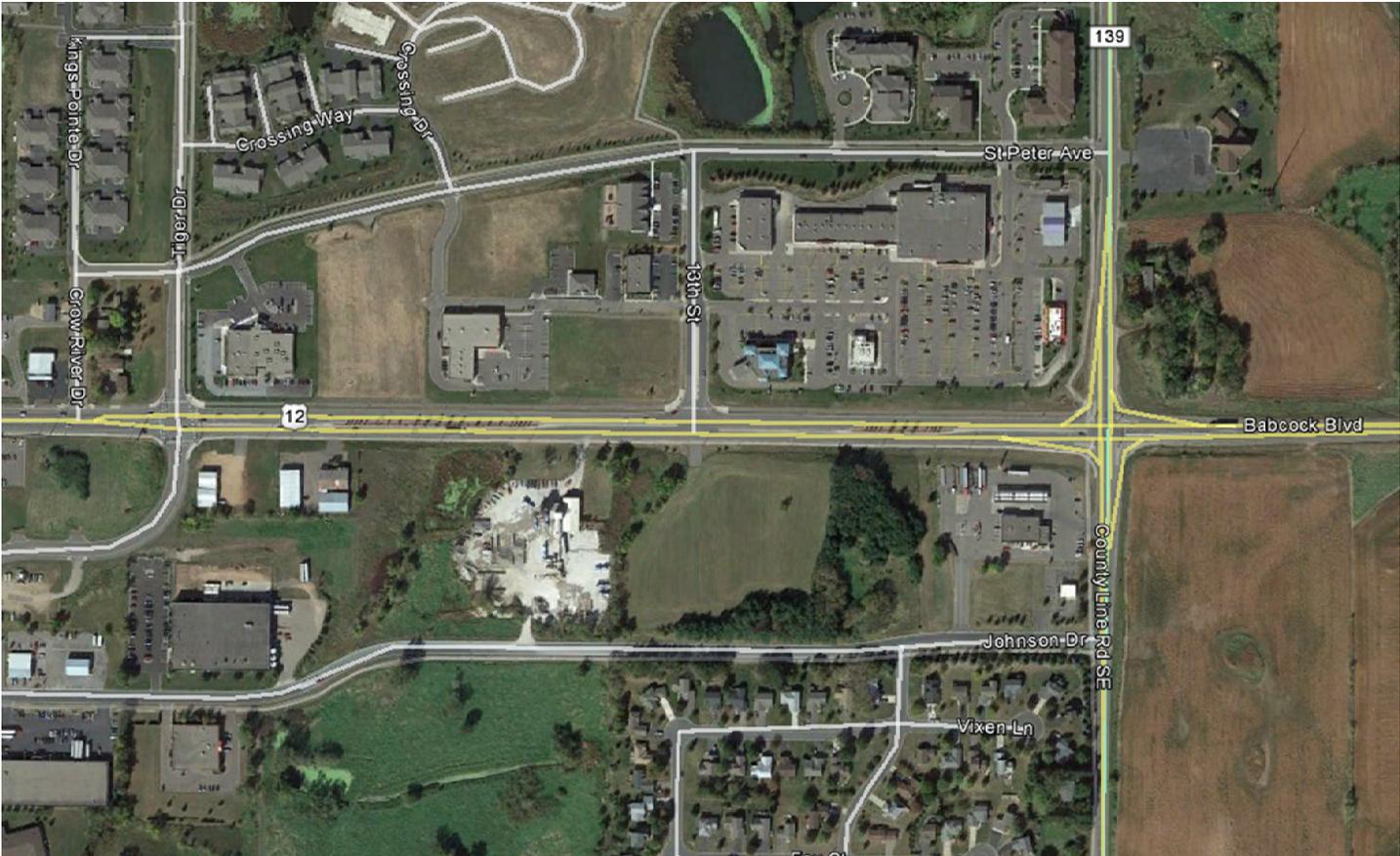
Notes:

- Located in Delano (Segment J)
- More than 5 crashes occurred at CSAH 30 LT (Bride Ave W) and at CSAH 30 RT from 2010-2014..



Notes:

- Located in Delano (Segment J)*
- More than 5 crashes occurred at 5th St S and Babcock Cir from 2010-2014..*

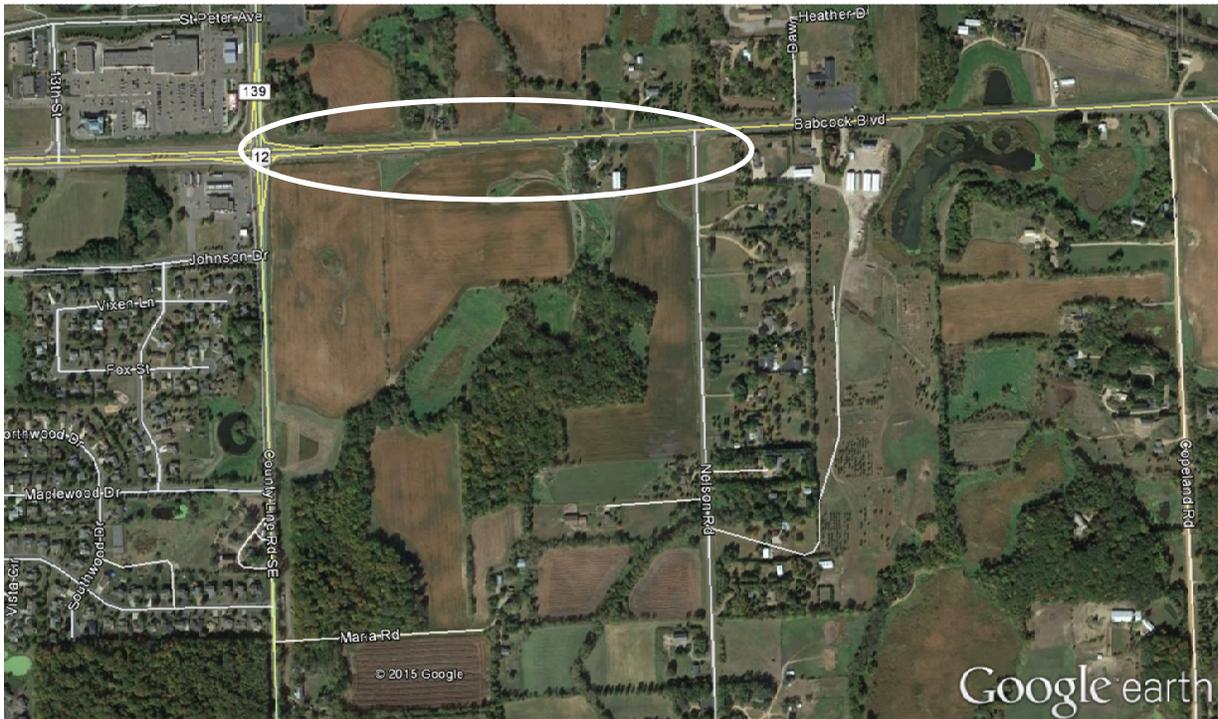


Notes:

- Located in eastern Delano (Segment J)
- More than 5 crashes occurred at Tiger Dr from 2010-2014. CR exceeds state average at CSAH 139 (County Line Rd SE).

Nelson Road to County Line Road in Independence, MN

(Coalition Requesting to add a frontage road and cut down the hill due to sight lines)





Notes:

- Located in western Independence (Segment K)*
- More than 5 crashes occurred at Nelson Rd from 2010-2014.*

West Pointe Church in Independence, MN

(Requesting left turn lanes)



Peter's Produce in Independence, MN

(Requesting closure of driveway and addition of a left turn lane into the area)



US 12 and Hitsman Lane in Independence, MN

(Requesting for closure of Hitsman Lane East and the realignment of Hitsman Lane West, Copeland Road, and Lake Haughey Road)



US 12 and County Road 92 in Independence, MN

(Requesting Realignment of Hwy 12 and County Road 92 North and South with a controlled intersection)



Notes:

- Located in Independence (Segment K)
- CR exceeds state average at CSAH 92 RT (Mud Lake Rd). More than 5 crashes occurred at CSAH 92 LT (Lake Sarah Rd) from 2010-2014.

US 12 and Valley Road in Independence, MN

(Requesting closure of Valley Road)



Notes:

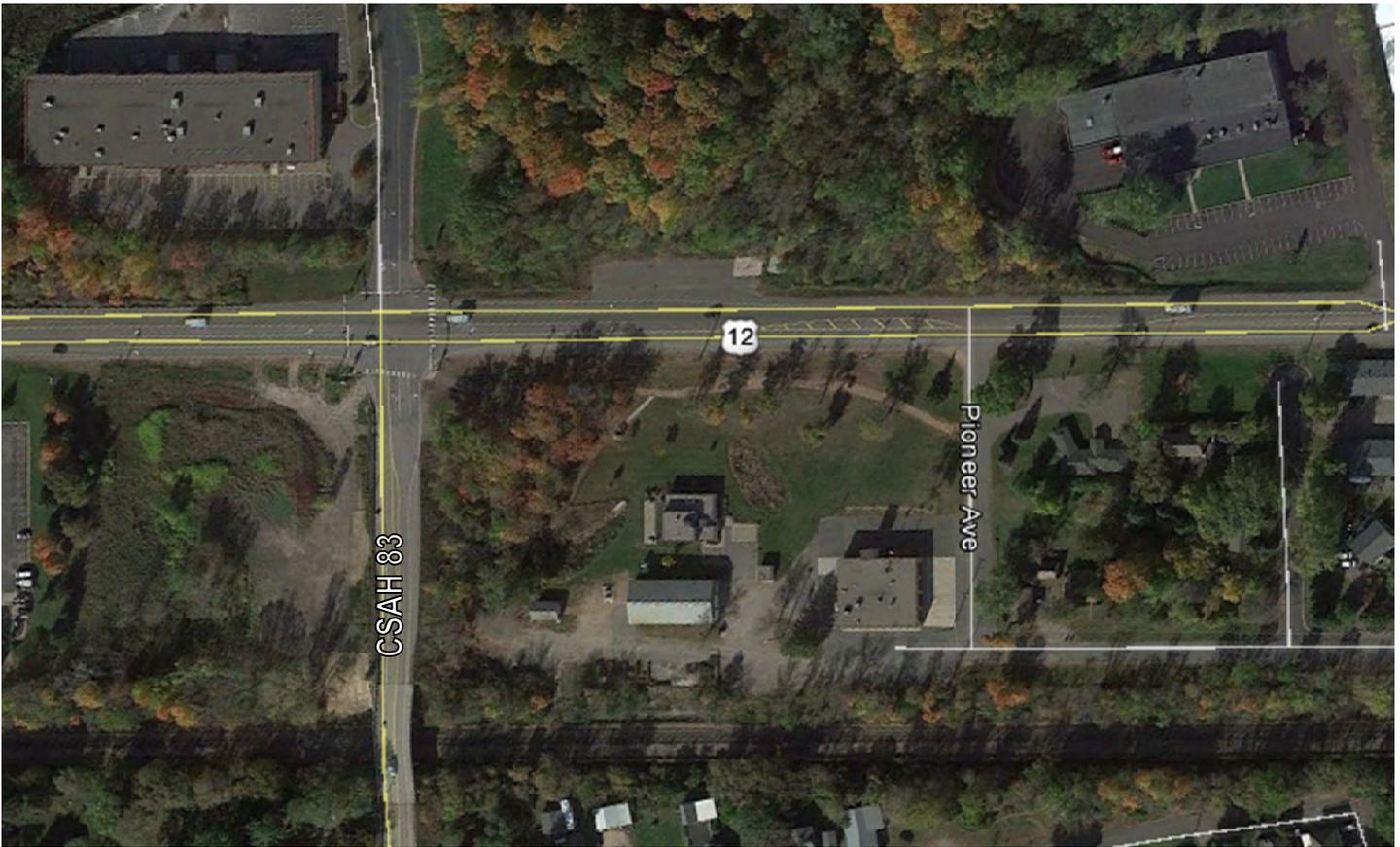
- Located in Independence (Segment K)
- More than 5 crashes occurred at Valley Rd from 2010-2014.

US 12 and County Road 90 in Independence, MN (Requesting a roundabout)



Notes:

- Located in Independence (Segment K)
- CR exceeds state average at CSAH 90.
- The Coalition is requesting a roundabout at CSAH 90.



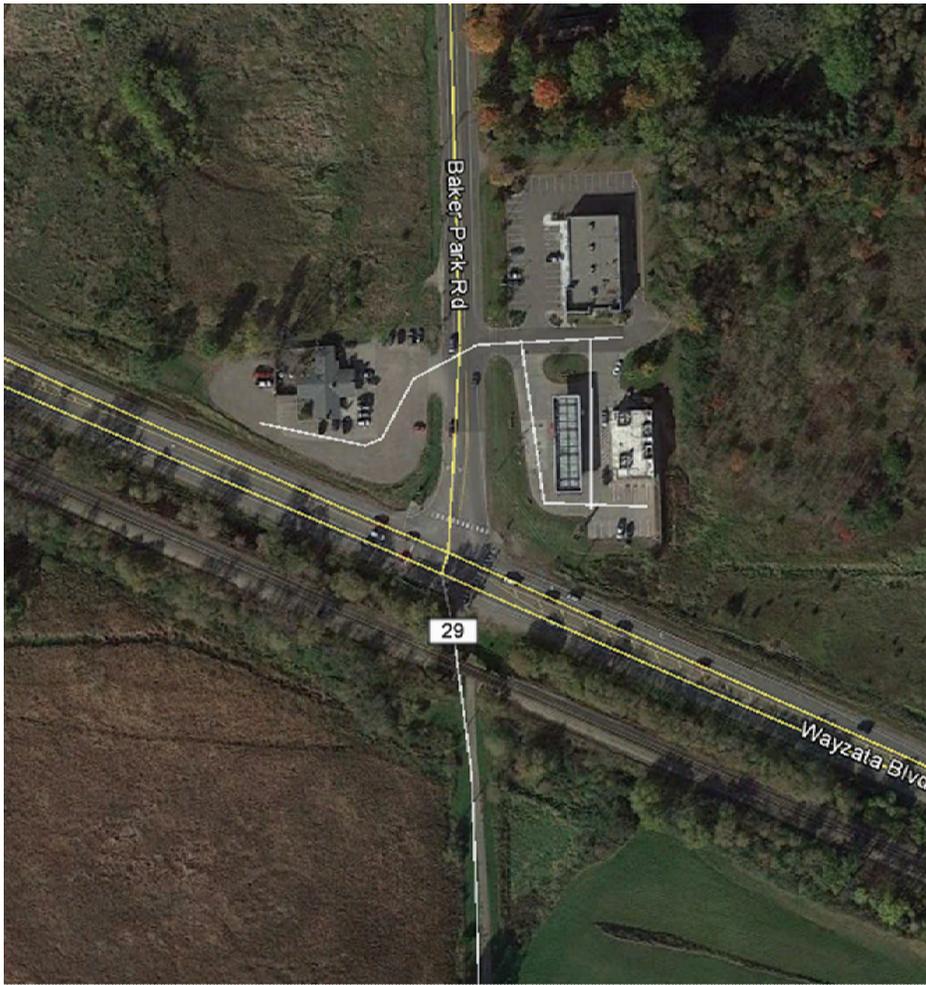
Notes:

- Located in Maple Plain (Segment L)*
- More than 5 crashes occurred at CSAH 83 (Halgren Rd) from 2010-2014. CR exceeds state average and FAR exceeds critical FAR at Pioneer Ave.*
- The Coalition is recommending adding rumble strips west of Highway 83.*
- The Coalition is recommending allowing businesses on Hwy 12 access through Pioneer and Manchester.*



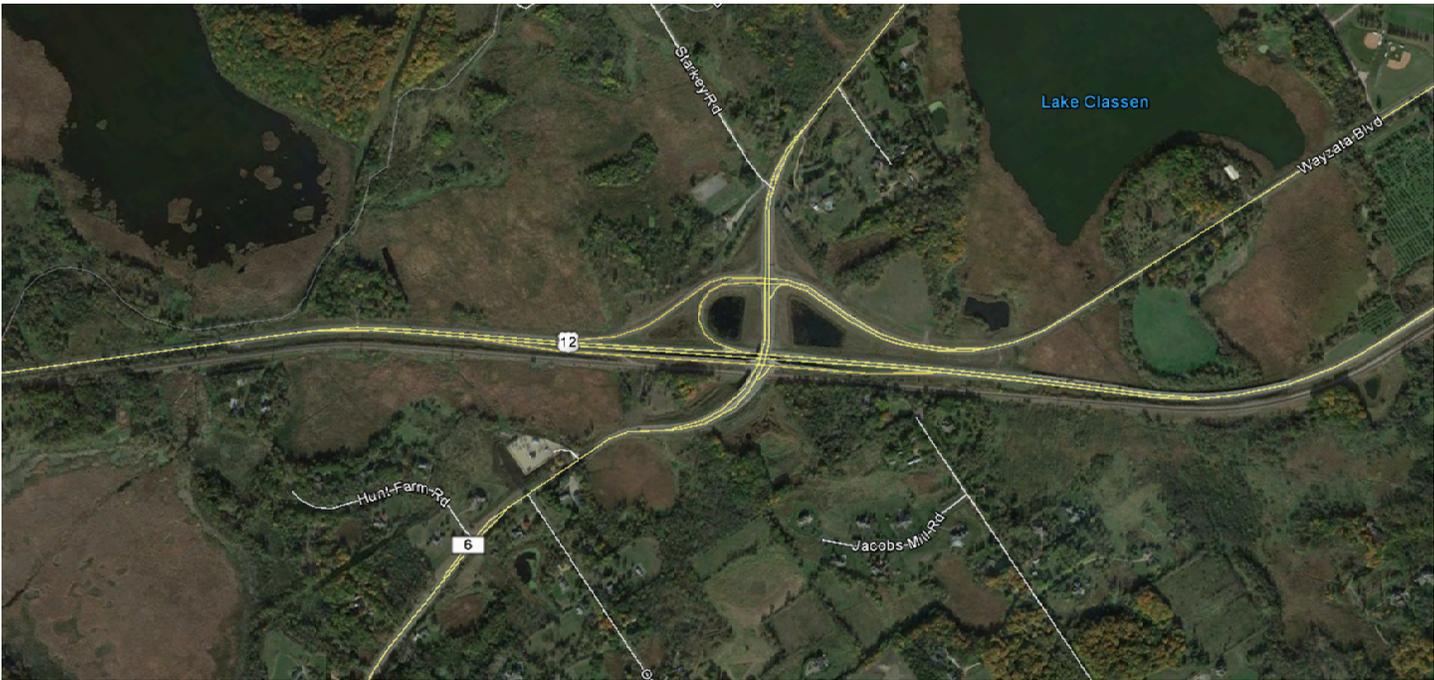
Notes:

- Located in Maple Plain (Segment L)
- More than 5 crashes occurred at CSAH 83 (Halgren Rd) from 2010-2014. CR exceeds critical rate at Budd Ave N and exceeds state average at CSAH 19 (Main Street).
- The Coalition recommends focusing on curve and access points between Blackwater and Maple Avenue.



Notes:

- Located in Maple Plain (Segment L)*
- More than 5 crashes occurred at CSAH 29 (Baker Park Rd/Townline Rd) from 2010-2014.*



Notes:

-Located in Orono (Segment M)

-More than 5 crashes occurred at CSAH 6 from 2010-2014.

This page intentionally left blank.



F. Appendices

- **Safety Solutions**

This page intentionally left blank.

List of Strategies

Rural Segments

- Centerline Rumble Strip
- Buffers Between Opposing Lanes
- Shoulder/Edgeline Rumble Strips
- Safety Edge
- Enhanced Edgeline (6" & 8")
- Shoulder Paving (2', 4', 6')
- Clear Zone Maintenance/Enhancements
- Ditch/embankment Improvements

Rural Curves

- Chevrons
- Delineators
- High Friction Surface Treatment (HFST)
-
- Dynamic Curve Signing
- Lighting
- Clear Zone Maintenance/Enhancements
- Reconstruct [TT to a Single T intersection]

Rural Intersections

- Upgrade Signs and Pavement Markings
- Streetlights (and approaches)
- All-Way Stop/Yield
- Restricted Crossing U-Turn (RCUT) Intersection
- Rural Intersection Conflict Warning System (RICWS)
- Offset T-Intersection
- Roundabout
- Turn Lanes (Offset, Channelized)

Urban Segments

- Road diet [3- & 5-Lane Conversions]
- Road Diet during Reconstruction
- ¾-Intersection
- Divided Roadway
- Access Management
- Bike Lane/Boulevard
- Urbanization (make it feel urban)
- Dynamic Speed Feedback Sign

Urban Intersections

- Echelon
- Continuous Flow Intersection (CFI)
- Signalized RCUT
- Confirmation Lights
- Traffic Enforcement Cameras (D3 Example)
- Pedestrian Countdown Timers
- Leading Pedestrian Intervals
- Curb Extensions
- Center Island Medians
- Roundabout (including Mini Roundabout)
- Urbanization (make it feel urban)
- Rectangular Rapid Flash Beacon (RRFB)
- High-Intensity Activated crossWalk Beacon (HAWK)
- Flashing Yellow Arrow (FYA)
- Turn Lanes (Offset, Channelized)

Interchange Typess

- Grade Separated T-Intersection
- Single Quadrant
- Two Quadrant
- Diverging Diamond Interchange (DDI)
- Single Point Urban Interchange (SPUI)
- Offset SPUI (Hwy 36 & Rice Street)
- Roundabout terminals
- Fully Directional
- Single Quadrant

Rural Segments

Strategy	Crash Reduction Factor*	Typical Installation Costs
Centerline Rumble Strip	40% head-on/sideswipe crashes	\$3,600 per mile
Buffers Between Opposing Lanes	50% for all crashes & 100% for head-on crashes [based on TH 5 in Lake Elmo, MN]	\$150,000 to \$500,000 per mile
Shoulder/Edgeline Rumble Strip	20% run off road crashes	\$5,850 per mile
Safety Edge	5% to 10% [§]	
Enhanced Edgeline (6" & 8")	10% to 45% all rural serious crashes (6")	\$1,980 per mile
Shoulder Paving (2', 4', 6')	20% to 30% run-off-the-road crashes (with shoulder rumble) (2' only)	\$54,000 per mile +\$5,850 per mile (for Edge Rumble)
Clear Zone Maintenance/Enhancements		
Ditch/Embankment Improvements		\$500,000 to \$1M per mile
Notes: * - Crash reduction factors based on review of CMF Clearinghouse and other published research § - For all crashes		



Centerline Rumble Strips
 Source: Mitigation Strategies for Design Exceptions (FHWA, FHWA-SA-07-011)



Buffers Between Opposing Lanes
 TH 14 in District 7
 Source: MnDOT Presentation @ 2014 TZD Conference



Shoulder Rumble Strips
Source: Mitigation Strategies for Design Exceptions (FHWA, FHWA-SA-07-011)



Edgeline Rumble Strips
Source: Proven Countermeasures, Longitudinal Rumble Strips and Stripes on 2-Lane Roads (FHWA)



Roadway with 4-in edge line



Roadway with 8-in edge line

Enhanced Edgeline
Source: Low-Cost Treatments for Horizontal Curve Safety (FHWA, FHWA-SA-07-002)



Safety Edge
Source: FHWA Public Roads (Sept/Oct 2014; Vol. 78 No. 2)

Rural Curves

Strategy	Crash Reduction Factor*	Typical Installation Costs
Chevrons	20% to 30%	\$3,960 per curve
Delineators	18% to 34%†	
High Friction Surface Treatment (HFST)		
Dynamic Curve Signing		\$50,000 per curve
Lighting		
Clear Zone Maintenance/Enhancements		
Reconstruct → TT to Single T Intersection		
Notes:		
* - Crash reduction factors based on review of CMF Clearinghouse and other published research		
† - Non-intersection, head-on, run-off-road, sideswipe, Nighttime crash types		



Chevrons

Source: Low Cost Traffic Engineering Improvements: A Primer (FHWA, FHWA-OP-03-078)



Delineators

Source: Low-Cost Treatments for Horizontal Curve Safety (FHWA, FHWA-SA-07-002)



High Friction Surface Treatment

Source: Minnesota LTAP Technology Exchange (Fall 2014, Vo. 22 No. 4)

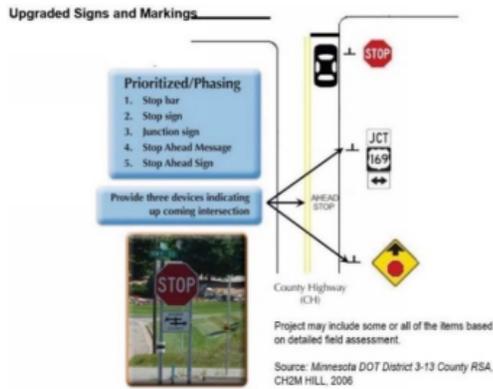


Dynamic Curve Signing

Source: FHWA, Sequential Dynamic Curve Warning System: Product Safety Performance Evaluation (2011)

Rural Intersection

Strategy	Crash Reduction Factor*	Typical Installation Costs
Upgrade Signs and Pavement Markings	40% upgrade of all signs and pavement markings/ 15% for STOP AHEAD pavement marking	\$2,640 per approach†
Streetlights (and approaches)		
All-Way Stop/Yield		
Restricted Crossing U-Turn (RCUT) Intersection	17% all crashes/ 100% angle crashes	\$1,080,000 per intersection
Rural Intersection Conflict Warning System (RICWS)		
Offset T-Intersection		
Roundabout	20% to 50% all crashes/ 60% to 90% right-angle crashes	\$4,200,000 per intersection
Turn Lanes (Offset, Channelized)		
Notes: * - Crash reduction factors based on review of CMF Clearinghouse and other published research † - Includes \$540 per STOP sign, \$540 per junction sign assembly, \$600 per STOP AHEAD sign, \$600 per STOP AHEAD pavement marking message, and \$360 per stop bar		



Upgrade Signs and Pavement Markings
Source: Minnesota CRSP



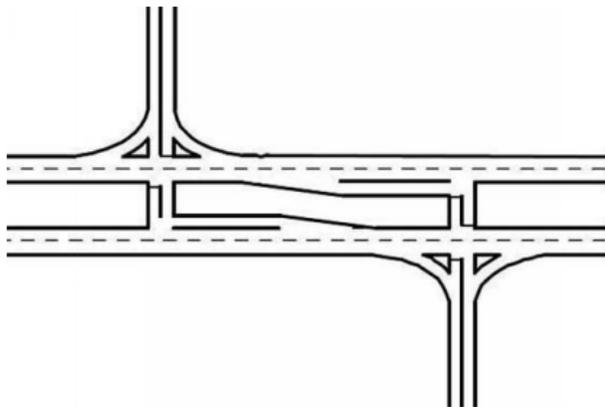
Street Lights
Source: Mitigation Strategies for Design Exceptions (FHWA, FHWA-SA-07-011)



Restricted Crossing U-Turn Intersections
Source: Field Evaluation of a Restricted Crossing U-turn Intersection (FHWA, FHWA-HRT-11-067)



Rural Intersection Conflict Warning System
Source: MnDOT Traffic Engineering (<http://www.dot.state.mn.us/trafficeng/signals/conflictwarning.html>)



Offset T-Intersection
Source: Alternative Intersections/Interchanges: Informational Report (FHWA, FHWA-HRT-09-060)



Roundabout
Source: Innovative Intersection Safety Improvement Strategies and Management Practices: A Domestic Scan (FHWA, FHWA-SA-06-016)



Offset Right Turn Lane

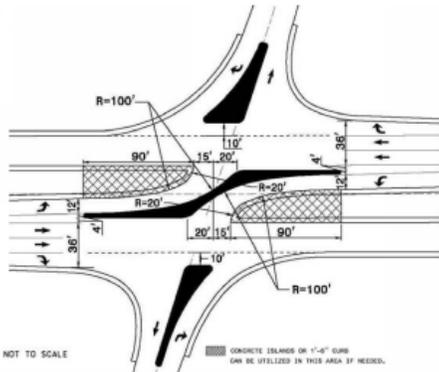
Source: Review of Iowa's Rural Intersection Crashes: Application of Methodology for Identifying Intersections for IDS (MnDOT, MN/RC 2007-27)

Urban Segments

Strategy	Crash Reduction Factor*	Typical Installation Costs
Road Diet [3- & 5-Lane Conversions]	30% to 50%	\$48,000 per mile [three-lane] \$54,000 per mile [five-lane]+\$36,000 per signalized intersection for updates (for example, loop and signal head placement)
Road Diet during Reconstruction		
³ / ₄ -Intersection	25%	
Divided Roadway	22% (HSM §13.4.2.6)	\$5M to \$10M per mile
Access Mgmt (Access Mgmt Plan)	5% to 31%	\$360,000 per mile [§]
Bike Lane/Boulevard	Approximately 60% (Some studies have noted increases)	
Urbanization (make it feel urban)		
Dynamic Speed Feedback Sign		
Notes: * - Crash reduction factors based on review of CMF Clearinghouse and other published research § - For management of unsignalized intersection movements within a corridor that has a divided median. Typical project may include minor street diverters, signed turn restrictions, and median closings.		



Road Diet
 Source: Bike Walk Twin Cities



3/4 Intersection

Source: Alternative Intersections/Interchanges: Informational Report (FHWA, FHWA-HRT-09-060)



Divided Roadway

Source: Flexibility in Design (FHWA)



Before



After

Access Management

Source: Mitigation Strategies for Design Exceptions (FHWA, FHWA-SA-07-011)



Bicycle Boulevard

Source: Minnesota's Best Practices for Pedestrian/Bicycle Safety (MnDOT, Report 2013-22)



Bike Lane

Source: Minnesota's Best Practices for Pedestrian/Bicycle Safety (MnDOT, Report 2013-22)



Rural Design - TH 2 Approaching Floodwood, MN



Urban Design - TH 2 in Floodwood, MN

Urbanization

Source: Google Street View

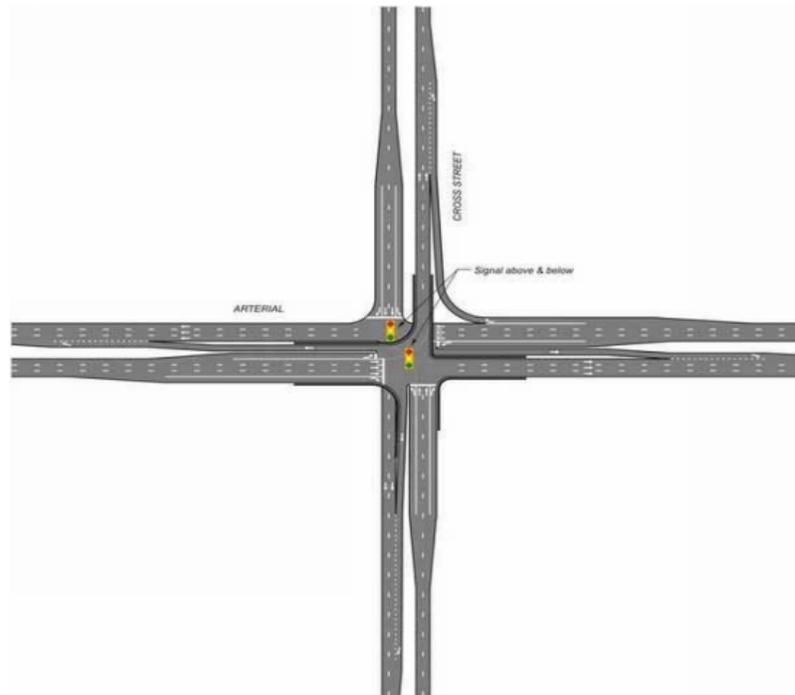


Dynamic Speed Feedback Sign

Source: <http://1x57.com/wp-content/uploads/2011/06/25-mph-regulatory-speed-limit-sign-with-radar-sign1-173x300.jpg>

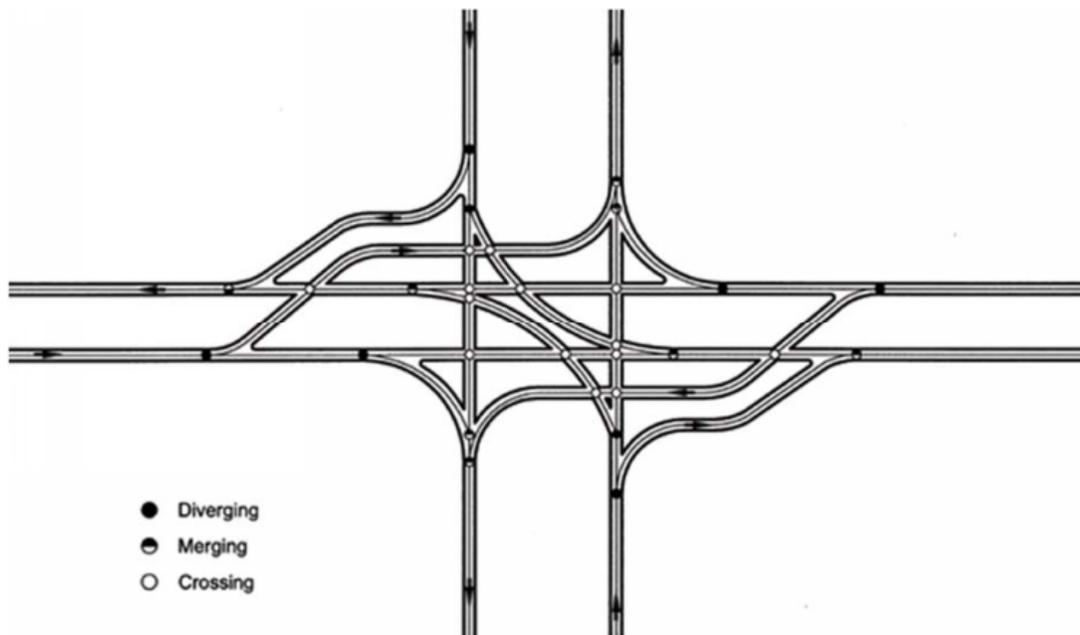
Urban Intersections

Strategy	Crash Reduction Factor*	Typical Installation Costs
Echelon		
Continuous Flow Intersection (CFI)		
Signalized RCUT		
Confirmation Lights	25% to 84% reduction in violations	\$1,200 per two approaches
Traffic Enforcement Cameras (D3 Example)		
Pedestrian Countdown Times	25% vehicle/pedestrian crashes	\$12,000 per intersection
Leading Pedestrian Intervals	Up to 60% pedestrian/vehicle crashes	\$600 per intersection
Curb Extensions	Increase in vehicles yielding to pedestrians	\$36,000 per corner
Center Island Medians	46% in vehicle/pedestrian crashes	\$24,000 per approach
Roundabout (including Mini Roundabout)	20% to 50% all crashes/ 60% to 90% right-angle crashes	\$4,200,000 per intersection
Urbanization (make it feel urban)		
Rectangular Rapid Flash Beacon (RRFB)	75% of drivers yield to pedestrians	\$15,000
High-Intensity Activated crossWalk Beacon (HAWK)	69% Vehicle/Pedestrian	\$50,000 to \$120,000
Flashing Yellow Arrow (FYA) --> Note: Permitted to FYA	19.4% left turn crashes	
Turn Lanes (Offset, Channelized)	27%	\$150,000 to \$500,000
Notes:		
* - Crash reduction factors based on review of CMF Clearinghouse and other published research		



Echelon Intersection

Source: http://www.fhwa.dot.gov/publications/research/safety/09060/images/09060_img_222.jpg



Continuous Flow Intersection

Source: <http://www.fhwa.dot.gov/publications/research/safety/04091/images/fig096.gif>



Signalized RCUT

Source: Kentucky Transportation Cabinet; Congestion Toolbox



Pedestrian Countdown Timer

Source: Oakland MTC; Bicycle/Pedestrian Safety Toolbox



Curb Extensions

Source: <http://www.fhwa.dot.gov/publications/research/safety/pedbike/05085/images/fig205.jpg>



Center Island Medians

Source: http://safety.fhwa.dot.gov/provencountermeasures/images/sa12_011.jpg



Roundabout

Source: Innovative Intersection Safety Improvement Strategies and Management Practices: A Domestic Scan (FHWA, FHWA-SA-06-016)



Rectangular Rapid Flash Beacon

Source: <http://www.fhwa.dot.gov/publications/publicroads/11mayjun/images/do1.jpg>

Michael Frederick, City of St. Petersburg, FL



HAWK

Source: http://www.fhwa.dot.gov/publications/research/safety/10045/images/hawk_027.jpg



Flashing Yellow Arrow

Source: <http://safety.fhwa.dot.gov/newsletter/safetycompass/2012/winter/images/rrb.png>



Channelized Right Turn Lane

Source: <http://www.ops.fhwa.dot.gov/publications/fhwahop12004/images/c4b.jpg>

Interchange Types

Strategy	Relative Safety Performance [*]	Typical Installation Costs ⁺
Grade Separated T-Intersection	★ ★	\$
Single Quadrant	★ ★	\$
Two Quadrant	★ ★	\$\$
Diverging Diamond Interchange (DDI)	★ ★ ★	\$\$
Single Point Urban Interchange (SPUI)	★ ★ ★ ★	\$\$\$\$
Offset SPUI (Hwy 36 & Rice Street)	★ ★ ★ ★	\$\$\$\$\$
Roundabout Terminals	★ ★	\$\$\$
Fully Directional	★	\$\$\$\$\$
Unconventional (US52 and CSAH 9)		

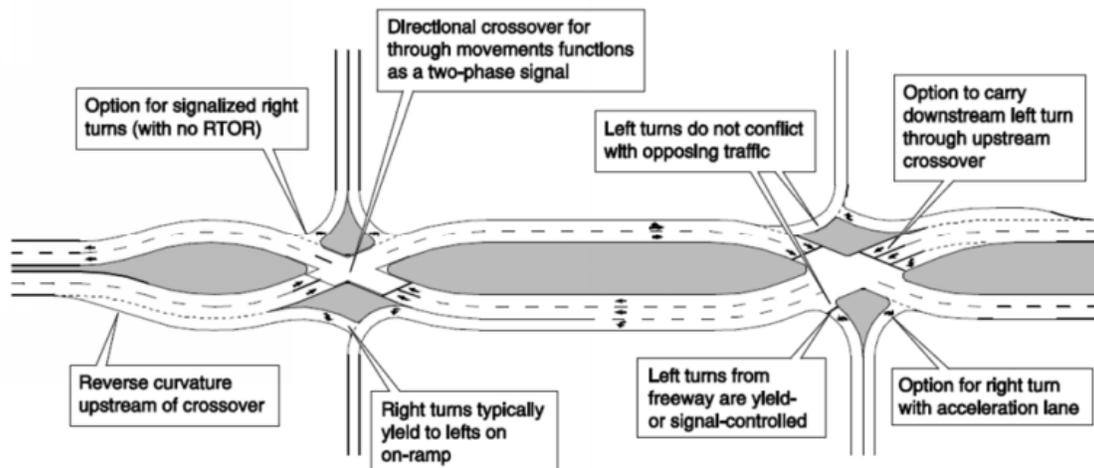
Notes:
^{*} - Expected relative safety performance: 1 ★ = Highest Performance; 5 ★ = Lowest Performance
⁺ - Expected relative construction cost: 1\$ = Lowest Costs; 5\$ = Highest Cost



Grade Separated T-Intersection
 TH 13; Savage, MN
 Source: Google Earth Pro



Single Quadrant Interchange
 US 14 & TH 23; Florence, MN
 Source: Google Earth Pro



Diverging Diamond Interchange
 Source: Diverging Diamond Interchange Informational Guide (FHWA, FHWA-SA-14-067)



Single Point Urban Interchange
I-494 & Penn Ave; Bloomington, MN
Source: Google Earth Pro



Offset SPUI
TH 36 & Rice Street; Bloomington, MN
Source: Google Earth Pro



Interchange with Roundabout Terminals
I-35 & CR 12; Medford, MN
Source: Google Earth Pro



Fully Directional Interchange
Source: Missouri DOT Engineering Policy Guide