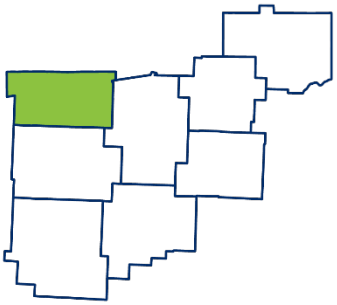
HOLMES COUNTY



The Ohio Mid-Eastern Governments Association (OMEGA) has partnered with the Ohio Department of Transportation (ODOT) to develop a Regional Safety Plan (RSP) to improve transportation safety in eastern Ohio. Holmes County is unique among the OMEGA region on the safety front as they have their own county specific safety plan. In March 2020, Holmes County developed an independent Local Road Safety Plan (LRSP) that analyzed crashes occurring between 2009 to 2018. As it relates to the OMEGA RSP, the Holmes County LRSP identifies specific emphasis areas, goal, and actions/ strategies which signify the County's contribution to improving safety in the OMEGA region.

SAFETY OVERVIEW

The OMEGA RSP has identified the reduction of fatalities and serious injuries as the primary goal of the plan. Table 1 below shows that within Holmes County, there were a total of 50 fatalities and 336 serious injuries resulting from traffic collisions from 2010-2019. Fatalities range from 2 to 9 per year. Serious injuries peaked at 40 in 2010 and reached a ten year low of 26 in 2019. Table 1 also shows that the frequency of fatalities and serious injuries that occur each year typically hovers around the ten-year annual average.

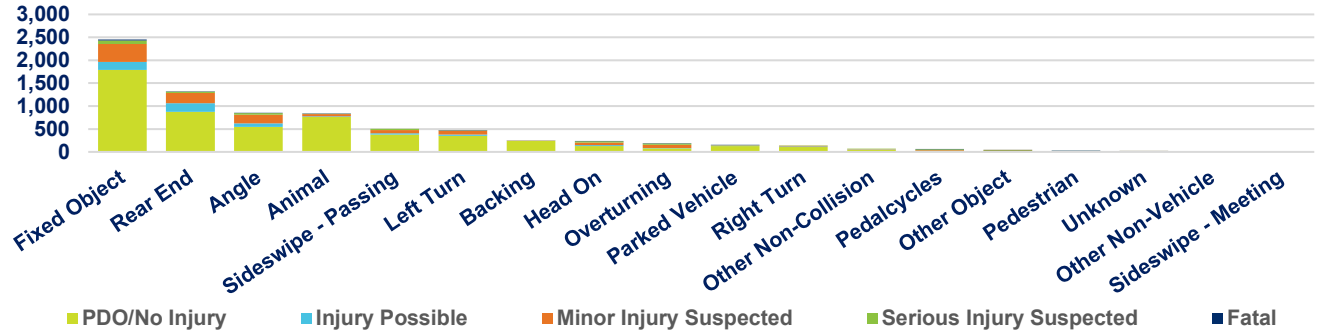
Table 1: Holmes County Fatalities and Serious Injuries, 2010-2019

YEAR	FATALITIES	SERIOUS INJURIES
2010	4	40
2011	4	39
2012	7	20
2013	6	39
2014	3	34
2015	4	37
2016	4	39
2017	7	26
2018	2	36
2019	9	26
10-YEAR TOTAL	50	336
ANNUAL AVERAGE	5	34

YEAR WITH THE HIGHEST VALUE FOR EACH RESPECTIVE COLUMN

Figure 1 shows that the leading crash types for all crash severities in Holmes County is fixed object crashes (32%) followed by rear end crashes (17%), angle crashes (11%), and animal-related crashes (11%). The Holmes County crash type distribution follows the same general trends as the OMEGA regional crash breakdown.

Figure 1: Holmes County Crashes by Type and Severity, 2010-2019



HOLMES COUNTY SAFETY STRATEGY DEVELOPMENT

The Holmes County Local Road Safety Plan was developed to address the vision and objective of a safer Holmes County by reducing the fatalities and serious injuries resulting from crashes by 2% per year. This aligned with the Toward Zero Deaths initiative to reduce road fatalities to zero per year by 2050. Crash data from 2009 to 2018 for Holmes County was analyzed to find patterns in crash trends, safety performance, crash

types, contributing factors, and crash locations. This data was used to recognize emphasis areas and specific hazardous locations that required improvement, especially focusing on active transportation, and making roadways more accessible and safer for Amish buggies.

EMPHASIS AREAS

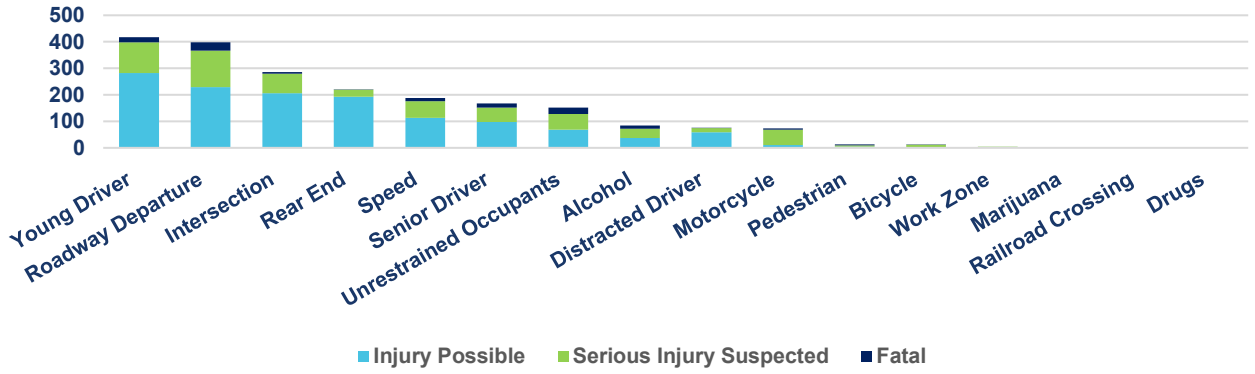
Emphasis areas are groupings of crashes related to circumstances, locations, involved persons, or crash types. One crash may fall represent several emphasis areas (i.e. an impaired younger driver who is killed in a roadway departure crashes would be represented in the young driver, roadway departure, and alcohol involvement emphasis areas). Through the development of the Holmes County LRSP, the County selected the following emphasis areas:

- Roadway departures*
- Younger driver
- Unrestrained occupants*
- Older driver
- Bicycle*
- Pedestrian*
- Motorcycle
- Amish buggy*

Note: An asterisk (*) indicates the EA is represented in the OMEGA RSP.

While these emphasis areas are not one-for-one with the emphasis areas selected for the OMEGA RSP, it's clear that the Holmes County LRSP emphasis areas have significant overlap with the RSP emphasis areas.

Figure 2: Emphasis Area Overview for Fatal, Serious Injury and Minor Injury Crashes in Holmes County, 2010-2019

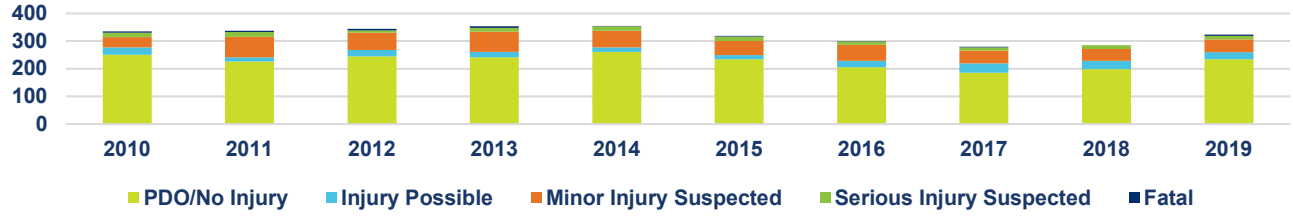


OMEGA RSP Emphasis Areas (as they relate to Holmes County)

Roadway Departure

Roadway departure crashes accounted for 42% of all crashes that occurred on all roads in the county and 38% of all crashes that occurred on roads that are off the state system in Holmes County from 2010-2019. Roadway departure fatal crashes overlapped with other emphasis area including speeding (35% of fatal roadway departure crashes), unrestrained drivers (61%), younger drivers involved (42%), and alcohol-related crashes (32%). These crashes typically resulted in collisions with fixed objects, but also included collisions with oncoming vehicles. Figure 3 shows that despite slight fluctuations overs the years, the number of roadway departure crashes has remained relatively constant over the last ten years.

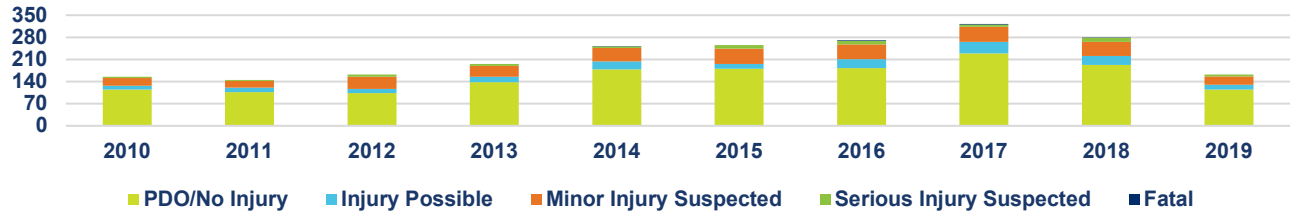
Figure 3: Roadway Departure Total Annual Crashes by Severity in Holmes County, 2010-2019



Intersections

Intersection-related crashes accounted for 28% of all crashes that occurred on all roads in the county and 30% of all crashes that occurred on roads that are off the state system in Holmes County. In terms of overlapping emphasis area crashes for intersections, crashes involving older drivers (67%), unstrained occupants (50%), and young drivers (50%) were the three most common. From 2010-2019, there was an increasing trend in total intersection-related crashes, with the five-year average increasing at 1.5 crashes per year within the county. Within Holmes County, 40% of fatal intersection-related crashes were angle crash types followed by rear-end crashes at 18%.

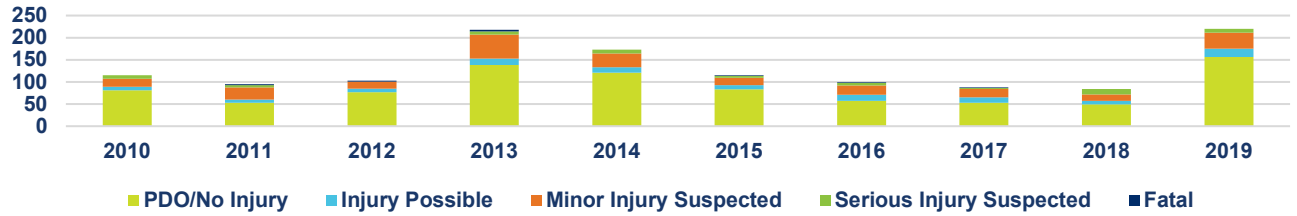
Figure 4: Intersection-Related Total Annual Crashes by Severity in Holmes County, 2010-2019



Speed

Speed related crashes accounted for 16% of the crashes that occurred on all roads in the county and 17% of the crashes that occurred on roads that are off the state system countywide. After a high of 546 crashes in 2013, speeding-related crashes saw a slight downward trend for two years but increased every year from 2015-2019. The most significant contributing factor within speeding-related crashes were roadway departure crashes (92% of fatal speeding crashes) followed by unrestrained occupants (50%) and young driver crashes (42%). 38% of fatal speeding-related crashes occurred on county (21%), township (12%), or city/ village (5%) roads.

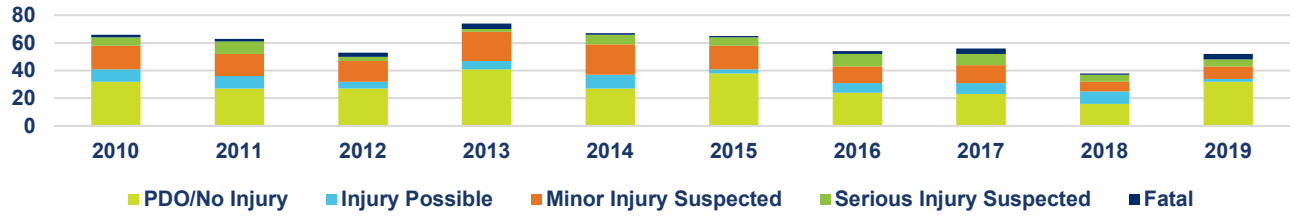
Figure 5: Speed-Related Total Annual Crashes by Severity in Holmes County, 2010-2019



Unrestrained Occupants

Unrestrained occupants were the third highest contributor to fatalities, following roadway departures and speed-related crashes. As shown in Figure 6, unrestrained occupant crashes accounted for 24 fatalities in Holmes County from 2010-2019. Restraint use is a cross cutting emphasis area as proper restraint use by all occupants is one way to reduce the severity of crashes across almost all other emphasis areas. Unlike other emphasis areas where crashes typically follow hourly traffic trends, unrestrained occupant fatalities and serious injuries occur throughout the day and night with no discernable tie to traffic trends.

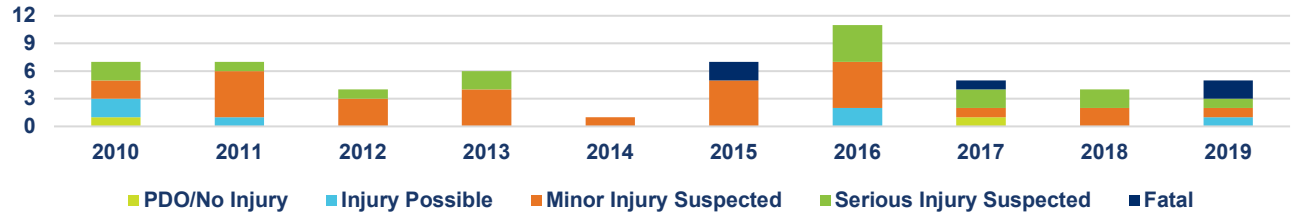
Figure 6: Unrestrained Occupants Total Annual Crashes by Severity in Holmes County, 2010-2019



Non-Motorists Crashes (Bicycle/Pedestrian/ Buggies/ Other Non-Motorists)

Non-Motorist Crashes was added as an emphasis area to the OMEGA RSP based on the feedback from representatives across the region and the higher severity of crashes involving active transportation, as shown in Figure 7. Throughout the region and throughout Holmes County, pedestrians, bicyclists, riders on animals, or animal-drawn buggies represent a wide array of challenges. From developing bike and pedestrian facilities in larger urban/ suburban areas to accommodating Amish communities and alerting motorists to potential buggies/ pedestrians on rural/ remote roadways, this emphasis area includes many scenarios that can be classified as rare but high risk. Unlike other emphasis areas, active transportation crashes are more likely to result in an injury than property damage only.

Figure 7: Active Transportation Total Annual Crashes by Severity in Holmes County, 2010-2019



Equivalent Property Damage Only Crash Frequency

An important aspect of reducing fatalities and serious injuries is the improvement of targeted locations through the deployment of crash countermeasures. Identification of high crash and high risk segments allow agencies to effectively target both infrastructure and behavioral countermeasures. While there are many ways to screen a roadway network, the equivalent property damage only (EPDO) crash frequency is a way to quantify and compare crash frequencies and severities of crashes by relating them to property damage only (no injury) crashes. Crashes are assigned to roadway segments in the county. Property damage only crashes are assigned a value of 1 then each subsequent severity is given a relatively higher weighted value. The sum of the weighted crashes for each segment is the EPDO score. This method shows a better relationship between crash trends as locations with higher frequency and higher severity of crashes have a higher EPDO score. The 'High Crash Location' map and table use these scores to highlight road segments that are more susceptible to more frequent crashes or those that result in more serious injuries. An example EPDO crash rate calculation for a segment in Holmes County with the highest EPDO crash frequency are as follows:

CR-160 from MP 1.76 to MP 2.20:

Crash Severity	2015-2019 Observed Crashes	ODOT Severity Crash Weighting	EPDO Total Value
Fatal and Serious Injury (KA)	1	37.93	37.93
Minor Injury (B)	2	6.55	13.10.
Possible Injury (C)	2	4.44	8.88
Property Damage Only (O)	3	1	3.00
Total	8		62.91

To calculate the EPDO crash rate the following formula is used:

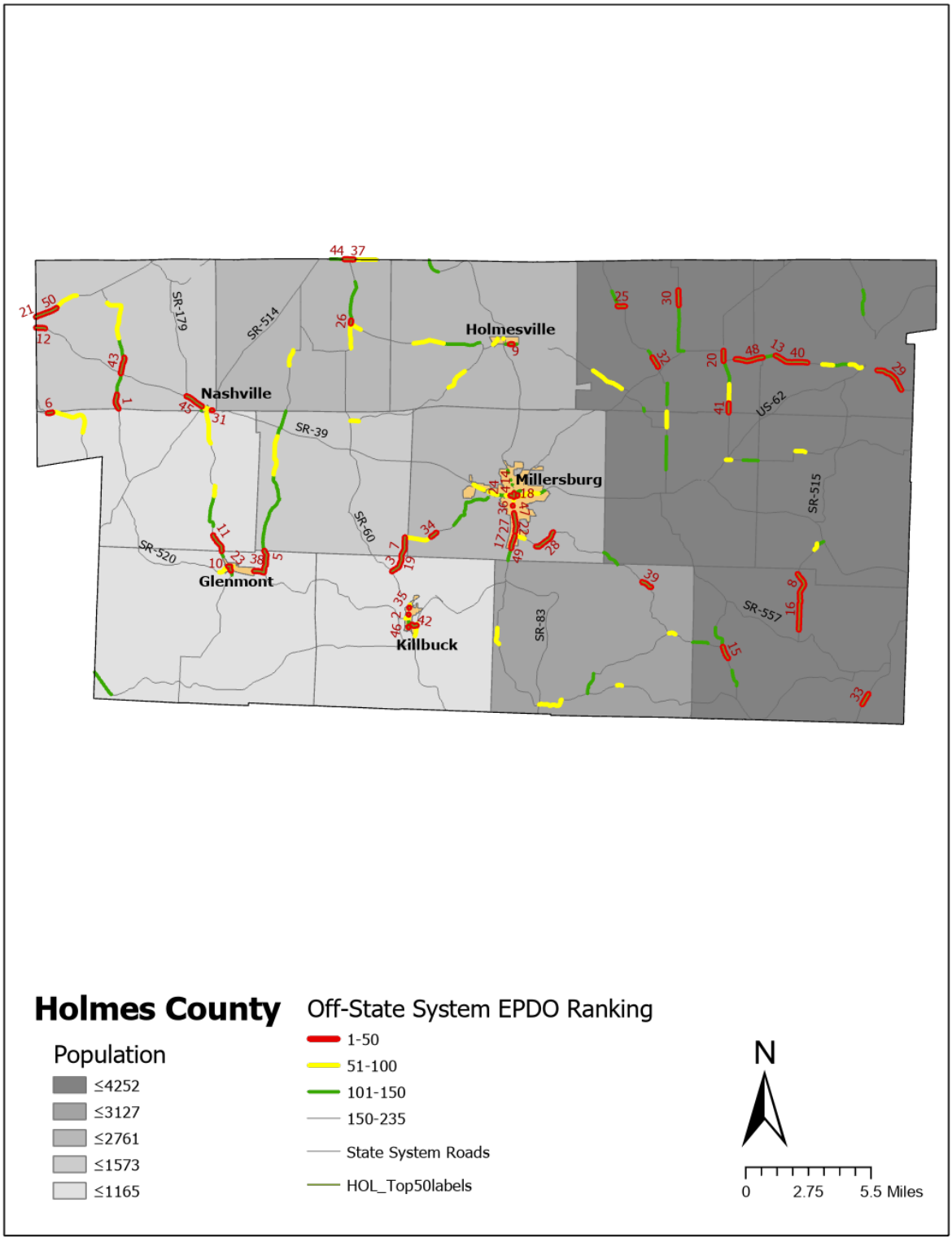
$$EPDO\ Crash\ Rate = \frac{C\ x\ 1{,}000{,}000}{N\ x\ V\ x\ 365\ x\ L} = \frac{62.91\ x\ 1{,}000{,}000}{5\ x\ 2227\ x\ 365\ x\ 0.436} = 35.50$$

Where:

- C = EPDO Total Value from the table above (62.91)
- N = Number of years of crash data used (5 years)
- V = Streetlight estimated daily traffic volume (2227 vpd)
- 365 = days in a year
- L = Length of the corridor in miles (0.436)

HIGH CRASH SEGMENTS

The following segments represent the top crash rate segments by crash severity in Carroll County. The road segment with the highest frequency and severity of crashes in Holmes County is CR-22 between the mile points 4.70 and 5.20. Safety improvements and infrastructure projects at these locations will address the areas in the county with the highest history of crashes.



County Rank	Route Type	Route Number	Begin Mile Point	End Mile Point	Street Name	Jurisdiction	EPDO Crash Rate
1	CR	22	4.70	5.20	CR 22	County	88.4
2	SR	60	3.87	4.00	MAIN ST	Municipal	87.2
3	CR	292	0.00	0.51	CR 292	County	81.7
4	SR	241	0.00	0.14	CRAWFORD ST	Municipal	75.4
5	CR	51	0.00	0.77	CR 51	County	66.1
6	CR	23	2.55	2.70	CR 23	County	61.7
7	CR	292	0.66	1.31	CR 292	County	59.9
8	CR	70	3.06	4.06	CR 114	County	54.1
9	CR	189	0.14	0.31	BENTON AVE	County	47.4
10	SR	520	5.32	5.46	MAIN ST	Municipal	45.6
11	CR	52	0.56	1.19	CR 52	County	37.1
12	SR	39	0.00	0.31	MAIN ST	Municipal	36.1
13	CR	160	1.76	2.20	CR 160	County	35.5
14	US	62	19.60	19.71	CLAY ST	Municipal	34.0
15	CR	600	2.31	2.74	CR 600	County	31.6
16	CR	114	1.75	2.74	CR 114	County	29.7
17	US	62	18.13	18.30	WASHINGTON ST	Municipal	29.7
18	SR	39	17.26	17.38	JACKSON ST	Municipal	29.1
19	CR	292	0.51	0.66	CR 292	County	25.4
20	CR	77	4.69	5.04	CR 77	County	24.9
21	SR	3	0.00	0.51	WOOSTER RD	Municipal	24.9
22	US	62	18.75	19.03	WASHINGTON ST	Municipal	24.7
23	CR	25	4.79	4.94	CLIFTON ST	Municipal	24.3
24	SR	83	9.02	9.17	CLAY ST	Municipal	23.8
25	CR	201	6.85	7.11	CR 201	County	21.7
26	CR	318	1.03	1.14	CR 318	County	21.5
27	US	62	18.43	18.75	WASHINGTON ST	Municipal	19.8
28	CR	68	0.00	0.80	CR 68	County	19.5
29	CR	160	5.33	6.45	CR 160	County	19.3
30	CR	235	1.72	2.23	CR 235	County	19.1
31	SR	39	6.70	7.06	MILLERSBURG	Municipal	19.0
32	CR	201	4.36	4.73	CR 201	County	18.7
33	SR	93	0.65	1.05	SR-93	Municipal	18.6
34	CR	292	2.23	2.46	CR 292	County	18.5
35	SR	60	4.10	4.22	MAIN ST	Municipal	18.1
36	US	62	19.30	19.49	CLAY ST	Municipal	17.9
37	CR	1	1.00	1.15	CR 1	County	16.7
38	SR	520	6.28	6.62	SR-520	Municipal	16.4
39	CR	68	4.62	4.99	CR 68	County	16.3
40	CR	160	2.20	2.89	CR 160	County	16.2
41	CR	77	2.94	3.25	CR 77	County	15.7
42	CR	35	0.18	0.36	CR 35	Municipal	15.7
43	CR	22	5.92	6.48	CR 22	County	15.7
44	CR	1	0.83	1.00	CR 1	County	15.5
45	SR	39	5.72	6.35	SR-39	Municipal	15.1
46	SR	60	3.45	3.58	MAIN ST	Municipal	14.5
47	US	62	19.03	19.30	WASHINGTON ST	Municipal	14.5
48	CR	160	0.40	1.33	CR 160	County	13.9
49	US	62	17.86	18.13	WASHINGTON ST	Municipal	13.7
50	SR	3	0.51	0.74	WOOSTER RD	Municipal	13.7

HIGH RISK SEGMENTS

The following segments represent locations most at risk for a fatal and serious injury crash based on risk factors determined for the OMEGA Region and are not based on crash history. Safety improvements and infrastructure projects at these locations will address potential safety challenges proactively, potentially preventing or reducing the severity of crashes.