2013 Road Safety Report

March 12, 2015

Office of the City Engineer
Operations Department
Transportation Planning Division

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Executive Summary

This annual report provides statistical data on all reported collisions on roads under the jurisdiction of the City of Windsor for the 2013 calendar year. The intent of this report is to provide factual information to agencies and individuals involved in road safety in the City in order to provide a sound basis for road-safety related decisions, as well as to provide a source of data to allow the evaluation of the performance of ongoing safety-related programs, policies, and strategies.

Comparisons with provincial averages are given in cases where provincial statistics are available.

This report reflects only reported collisions on City of Windsor roads. Unreported collisions, collisions on roads under the jurisdiction of other agencies (e.g. provincial highways) and collisions on private property are not included.

Overall Trends

In 2013, there were a total of 3,798 reported collisions on roads under the jurisdiction of the City of Windsor, consisting of 4 fatal collisions, 929 injury collisions, and 2,865 property damage only collisions. The overall number of collisions on City of Windsor roads for 2013 compared with recent years is shown in Table E-1 and Figure E-1.

Collision record-keeping procedures changed beginning with the 2006 calendar year. As a result of these changes, collision database records from 2005 and earlier are not directly comparable with records from 2006 and later. Because of this, yearly totals are given beginning with 2006.

Table E-1: Number of Collisions by Year – City-wide

Year	Collisions			
	Fatality	Non-Fatal Injury	Property Damage Only	Total
2006	6	1,015	3,339	4,360
2007	4	860	3,598	4,462
2008	7	846	3,344	4,197
2009	3	809	2,760	3,572
2010	2	963	2,922	3,887
2011	3	825	2,802	3,630
2012	7	889	2,738	3,634
2013	**4**	**929**	**2,865**	**3,798**

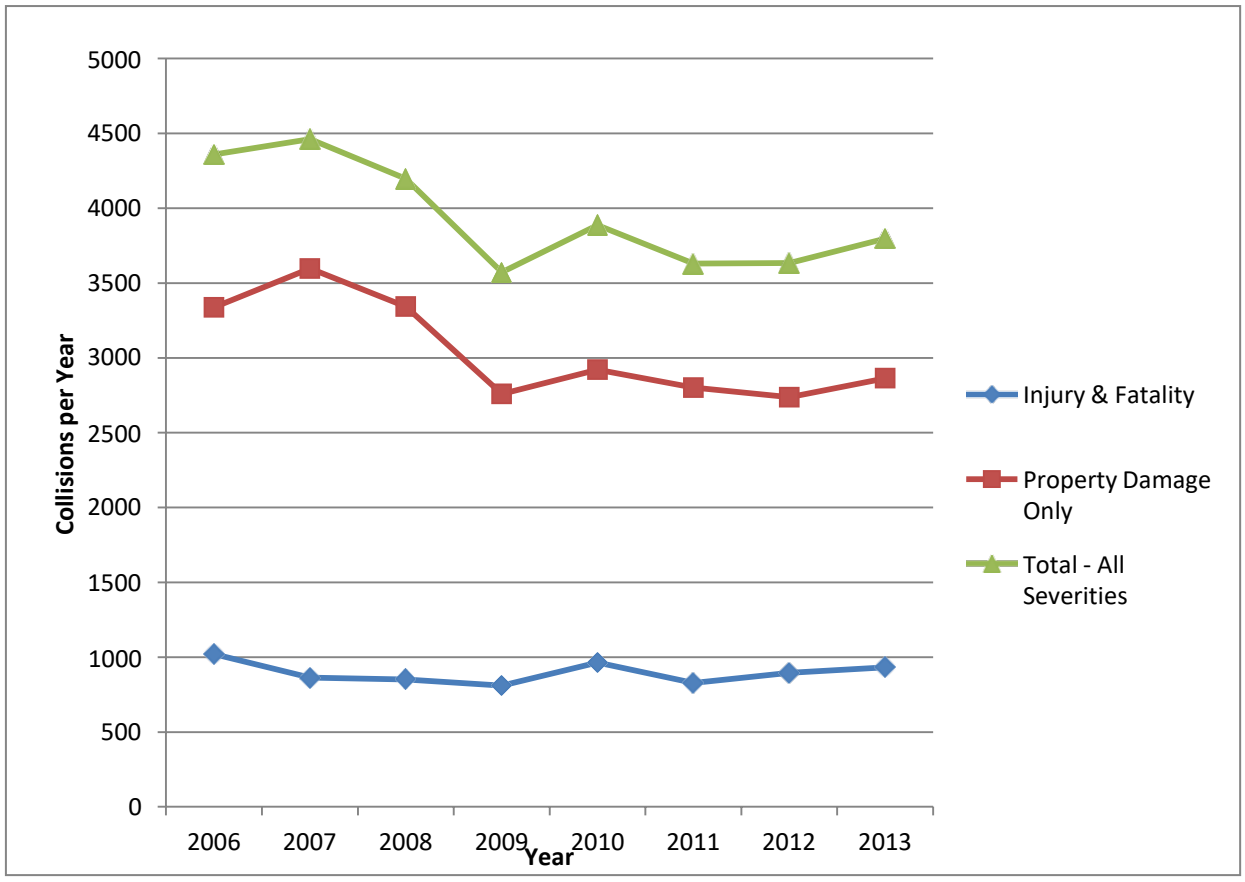

Figure E-1: Number of Collisions by Year – City-wide

Year-over-year, the total number of collisions increased by 4.5% from 2012 to 2013. The number of injury and fatality collisions increased by 4.1% over the same period.

Area of Special Focus – Alcohol Involvement

Alcohol was involved in 2.69% of City of Windsor collisions in 2013. While this is low relative to historical percentages and lower than the 2009-2013 five-year average of 2.72%, it is higher than the record low of 2.2%, which occurred in 2009.

1.23% of drivers in 2013 City of Windsor collisions were recorded as "had been drinking", "ability impaired – alcohol", or "ability impaired – alcohol over 0.08". This percentage is slightly below the provincial average of 1.7%.

In 2013, 25% of City of Windsor fatal collisions (1 collision) involved alcohol.

Area of Special Focus – Inattentive Driving

In 2013, 18.2% of drivers in City of Windsor collisions were reported with the driver condition "inattentive". The "inattentive" driver condition includes conditions that would be considered "distracted driving" under the Highway Traffic Act as well as conditions that would not be considered distracted driving.

Beginning in 2013, the Windsor Police Service changed its practices regarding when to classify a driver as "inattentive". As a result, statistics on inattentive drivers from 2013 are not directly comparable to previous years. This change in police practice appears to be the most significant reason for the marked difference between 2013 statistics and previous years.

Collisions involving inattentive drivers are summarized in Table E-2 and Figure E-2.

Table E-2: Driver Inattentiveness in Collisions

Year	Total Collisions	Total Inattentive-Related Collisions	% of Total Collisions Involving Inattentive Drivers
2006	4,360	971	22.3%
2007	4,462	1,157	25.9%
2008	4,197	1,165	27.8%
2009	3,572	1,190	33.3%
2010	3,887	1,422	36.6%
2010	3,630	1,518	41.8%
2012	3,634	1,238	34.1%
2013	3,798	692	18.2%
5-year Average – 2009 through 2013			**32.7%**

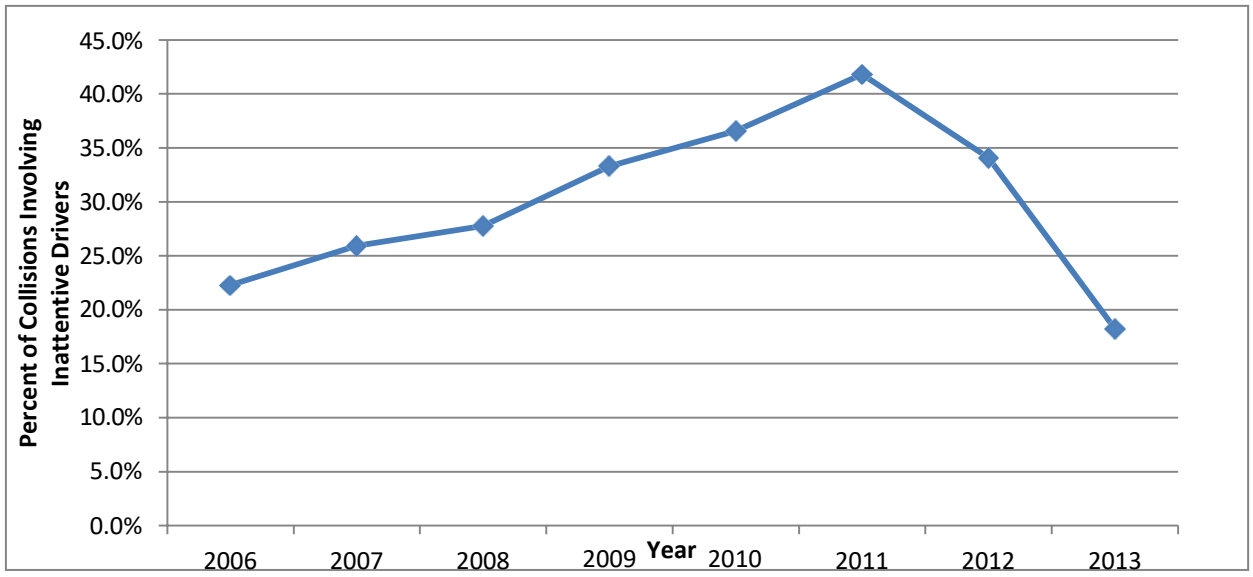

Figure E-2: Driver Inattentiveness in Collisions

High Collision Locations

Based on a five-year collision history (2009 through 2013), mid-block sections and signalized intersections were ranked based on collision rate and unsignalized intersections were ranked based on total number of collisions. The 25 locations with the highest ranking for each category are listed in Table E-4 for signalized intersections, Table E-5 for unsignalized intersections, and Table E-6 for mid-block locations.

For the 5-year period of 2009 through 2013, six signalized intersections had no reported collisions:

- College Avenue and Wellington Avenue
- McDougall Street and Pitt Street East
- McHugh Street and Mickey Renaud Way
- McKay Avenue and University Avenue West
- Richmond Street and Walker Road
- Seminole Street and Ford Entrance (west)

Table E-4: High Collision Locations – Signalized Intersections

Rank (Signalized)	Street 1	Street 2	Collisions 2009-2013	Annual Average Daily Traffic - All Legs [vehicles per day]	Collisions per Million Vehicles Entering Intersection
1	County Road 42	Lauzon Pky	68	47,900	1.56
2	Pelissier St	Wyandotte St W	57	43,100	1.45
3	Lauzon Line / McHugh St	Lauzon Rd	35	28,700	1.34
4	Banwell Rd	E C Row Expy W/B	125	105,400	1.30
5	Central Ave	E C Row E/B On Ramp	73	63,800	1.25
6	Crawford Ave	Wyandotte St W	55	53,500	1.13
7	Lauzon Pky	Tranby Ave	54	53,000	1.12
8	Campbell Ave	College Ave	31	30,900	1.10
9	Lauzon Pky	South Service Rd / Twin Oaks Dr	47	47,500	1.08
10	Provincial Rd	Sixth Concession Rd	40	41,000	1.07
11	Howard Ave	Tecumseh Rd E	94	98,000	1.05
12	Drouillard Rd	Wyandotte St E	42	45,700	1.01
13	Forest Glade Dr	Tecumseh Rd E	54	58,900	1.00
14	Central Ave	Grand Marais Rd E / Plymouth Dr	71	81,000	0.96
15	Forest Glade Dr	Lauzon Pky	81	94,000	0.94
16	Huron Church Rd	University Ave W	24	28,200	0.93
17	Central Ave	E C Row W/B On Ramp	80	94,400	0.93
18	Tecumseh Rd E	Walker Rd	97	114,900	0.93
19	McDougall St	Tecumseh Rd E	57	67,600	0.92
20	Lauzon Rd	Wyandotte St E	46	55,700	0.91
21	Division Rd	Walker Rd	79	99,500	0.87
22	Central Ave	North Service Rd / Temple Dr	65	82,100	0.87
23	Ouellette Ave	Tecumseh Rd W	86	108,900	0.87
24	Campbell Ave	Wyandotte St W	29	37,500	0.85
25	Erie St E	Goyeau St	26	34,700	0.82
		Average Collision Rate – All City of Windsor Signalized Intersections			**0.48**

Notes:
1. Intersections where the roadway geometry was substantially altered during the 5-year review period are not included in this table.

Table E-5: High Collision Locations – Unsignalized Intersections

Rank (Unsignalized)	Street 1	Street 2	Collisions 2009-2013
1	Dougall Ave	Ouellette Pl	78
2	Dougall Ave	E C Row E/B Off Ramp	21
2	Hanna St E	Ouellette Ave	21
4	9th Con Rd	County Road 42	20
5	Division Rd	Riberdy Rd	19
5	Mercer St	Wyandotte St E	19
7	Howard Ave	South Cameron Blvd	18
7	Hanna St E	McDougall St	18
7	Tecumseh Rd E	Turner Rd	18
7	Enterprise Way	Lauzon Pky	18
11	Marentette Ave	Wyandotte St E	17
11	Langlois Ave	Wyandotte St E	17
11	Jefferson St	South National St	17
14	Cabana Rd E	Holburn St	16
14	Foster Ave	Turner Rd	16
14	Caron Ave	Wyandotte St W	16
17	Ambassador Dr	Industrial Dr	15
17	Dougall Ave	South Cameron Blvd	15
17	Hildegarde St	Ouellette Ave	15
17	Conservation Dr	North Service Rd	15
17	Bruce Ave	Giles Blvd W	15
17	Giles Blvd W	Pelissier St	15
23	College Ave	Randolph Ave	14
23	Beals St W	Dougall Ave	14
23	Giles Blvd E	Langlois Ave	14

Notes:
1. Intersections where the roadway geometry was substantially altered during the 5-year review period are not included in this table.

Table E-6: High Collision Locations - Mid-block

Rank (Mid-blocks)	Street	From	To	Collisions 2009-2013	Annual Average Daily Traffic [vehicles per day]	Length [km]	Collisions per million vehicle-km
1	Pitt St E	Ouellette Ave	Goyeau St	11	2,400	0.17	14.89
2	Pelissier St	University Ave W	Park St W	5	2,100	0.14	9.14
3	Chatham St W	Bruce Ave	Janette Ave	1	600	0.10	9.10
4	Erie St E	Pierre Ave	Hall Ave	8	4,950	0.10	8.61
5	Pitt St E	Goyeau St	McDougall St	8	2,400	0.24	7.75
6	Gladstone Ave	Riverside Dr E	Assumption St	2	700	0.24	6.46
7	Chatham St E	Ouellette Ave	Goyeau St	5	2,500	0.18	6.26
8	Grand Marais Rd W	Bruce Ave	Avondale Ave	4	3,100	0.11	6.23
9	Wyandotte St E	Parent Ave	Langlois Ave	23	17,550	0.12	5.95
10	Pelissier St	Park St W	Maiden Lane W	4	2,250	0.17	5.79
11	Pitt St W	Ouellette Ave	Ferry St	3	2,100	0.14	5.75
12	Drouillard Rd	Wyandotte St E	Edna St	4	3,500	0.11	5.70
13	Gladstone Ave	Ottawa St	Ellis St E	3	1,400	0.21	5.64
14	Gladstone Ave	Richmond St	Ontario St	5	2,550	0.20	5.31
15	Victoria Ave	University Ave W	Park St W	4	2,900	0.14	5.28
16	McDougall St	Tecumseh Rd E	Logan Ave	27	7,500	0.38	5.22
17	Gladstone Ave	Assumption St	Wyandotte St E	2	1,150	0.18	5.16
18	Grand Marais Rd W	Longfellow Ave	Dominion Blvd	3	2,800	0.11	5.13
19	Victoria Ave	Park St W	Wyandotte St W	7	2,500	0.31	4.99
20	Seminole St	Aubin Rd	George Ave	9	9,200	0.12	4.56
21	Howard Ave	Hanna St E	Tecumseh Rd E	49	18,700	0.32	4.50
22	Janette Ave	University Ave W	Park St W	2	1,700	0.14	4.46
23	Janette Ave	Pine St	Grove Ave	3	3,450	0.11	4.38
24	Dougall Ave	Tecumseh Rd W	Wear St	22	12,500	0.23	4.19
25	Erie St W	Church St	Bruce Ave	3	3,500	0.11	4.17
Average Mid-block Collision Rates by Road Classification					**Scenic Parkway**		**0.49**
					Collector		**1.03**
					Arterial		**0.86**
					Expressway		**0.46**

Notes:

1. Local streets, streets without volume information, and very short (<100 m) road sections are not included in this table.

Summary of Key Statistics

Key statistics for 2013 collisions in the City of Windsor are given in Table E-7. Up and down arrows indicate an increase or decrease, respectively, from the 2009 through 2013 five-year average. The colour of the arrow is green if the 2013 value is better than the five-year average, red if worse, and black if close in value (less than 5% difference) or is not clearly favourable or unfavourable.

Table E-7: Key Statistics with Year-Over-Year Changes

Category	Measure	City of Windsor		
		5-Year Average	Percentage Difference	2013
Overall Collisions	Total Collisions – All Severities	3,704	→ +3%	**3,798**
Injury Collisions	Total Injury Collisions	883	↑ +5%	**929**
	Total Persons Injured	1,131	↑ +7%	**1,207**
	Persons Injured per 1,000 population	5.35	↑ +7%	**5.72**
Fatal Collisions	Total Fatal Collisions	3.8	↑ +5%	**4**
	Total Fatalities	3.8	↑ +5%	**4**
	Fatalities per 100,000 population	1.80	↑ +5%	**1.90**
Alcohol	Total Alcohol-Related Collisions	101	→ +1%	**102**
	% of Collisions Involving Alcohol	2.72%	→ -1%	**2.69%**
	% of Drivers with Alcohol-Related Driver Conditions	1.33%	↓ -8%	**1.23%**
	Fatal Collisions with Alcohol-Related Driver Conditions	0.8	↑ +25%	**1**
	% of Fatal Collisions Involving Alcohol	21%	↑ +19%	**25%**

Category	Measure	City of Windsor 5-Year Average	City of Windsor Percentage Difference	City of Windsor 2013
Driver Inattention [Note 2]	Total Inattentive Drivers in Collisions	1,212	↓ -43%	**692**
	% of Collisions Involving Inattention	32.7%	↓ -44%	**18.2%**
	% of Drivers Reported as Inattentive [Note 1]	16.5%	↓ -48%	**8.6%**
Cyclist Collisions	Total Cyclist Collisions (All Severities)	97.8	↑ +16%	**113**
	Total Cyclist Injury Collisions	84.2	→ -0%	**84**
	Total Cyclist Fatal Collisions	0.2	↓ -100%	**0**
	% of Cyclists Wearing Helmets (where known)	19%	↑ +173%	**52%**
Pedestrian Collisions	Total Pedestrian Collisions (All Severities)	77.6	↑ +6%	**82**
	Total Pedestrian Injury Collisions	71.8	↑ +7%	**77**
	Total Pedestrian Fatal Collisions	0.8	↑ +275%	**3**

Notes:
1. Comparison with Provincial statistics available – see Table E-6.
2. Police reporting practices for driver condition changed significantly for 2013. Readers should use caution when comparing 2013 statistics to previous years.

Comparison – City of Windsor vs. Other Jurisdictions

A comparison of the performance of the City of Windsor relative to the Province of Ontario for the performance measures for which provincial statistics were available is shown in Table E-3. Up, down, and horizontal arrows indicate that the City of Windsor value is higher than, lower than, or within 5% of the overall value for the Province of Ontario, and the arrow is coloured green or red, respectively, if Windsor compares favourably or unfavourably with the Province overall; a black arrow indicates that the measure is either close in value or is not clearly favourable or unfavourable.

Table E-3: Comparison – City of Windsor vs. Province of Ontario Overall

Category	Measure	Province of Ontario 5-year Average	Windsor vs. Ontario	City of Windsor 5-year Average
Injury Collisions	Persons Injured per 1,000 population	4.89	↑ +9%	**5.35**
Fatal Collisions	Fatalities per 100,000 population	4.66	↓ -61%	**1.80**
Inattentive Drivers	% of Drivers Reported as Inattentive	10.2%	↑ +62%	**16.5%**
Alcohol	% of Drivers with Alcohol-Related Driver Conditions	1.68%	↓ -21%	**1.33%**
Driver Actions	% of Drivers Reported as Driving Properly	49.3%	↓ -13%	**42.9%**
	Most Common Improper Action (where known)	Following Too Close		**Following Too Close**
Driver Condition	% of Drivers Reported as Normal Condition	72.9%	↓ -23%	**56.3%**

1 Introduction

1.1 Background

This annual report provides statistical data on all reported collisions on roads under the jurisdiction of the City of Windsor. The intent of this report is to provide factual information to agencies and individuals involved in road safety in the City in order to provide a sound basis for road-safety related decisions, as well as to provide a source of data to allow the evaluation of the performance of ongoing safety-related programs, policies, and strategies.

1.2 Limitations and Disclaimer

This report is based on collision data provided by the Windsor Police Service from MVA (motor vehicle accident) reports. For this reason, the analysis and conclusions in this report are based on reported collisions only, including both self-reported collisions and collisions investigated by police at the scene. **Unreported collisions are not reflected in the analysis.**

This report examines only collisions on roads under the jurisdiction of the City of Windsor. Collisions on roads under provincial jurisdiction (e.g. King's Highways) or privately-owned roads (e.g. the Ambassador Bridge) have not been examined for this report.

As this report reflects only collision data provided by the Windsor Police Service, it does not include collisions that were investigated by or reported to other police services (e.g. collisions on boundary roads where LaSalle Police or the Ontario Provincial Police responded).

> *Traffic collisions frequently involve complex interactions between human behaviour, vehicle characteristics, and environmental conditions. The factor or factors responsible for causing a collision are not always the most obvious nor are they always readily apparent. Caution should be exercised in drawing conclusions from the statistics presented in this report and conclusions should be drawn only with appropriate qualifications and supportive information.* (Regional Municipality of Waterloo, 2012)

1.3 Population Projections

A number of statistics in this report are given on a per capita (or per 1,000 or 100,000 population) basis. To translate numbers of collisions, injuries, fatalities, etc. to per capita values, an estimate of the City of Windsor population is required.

Population estimates were provided by the City of Windsor Planning Department for census years (2006 and 2011). Populations for years 2007 through 2010 were estimated based on linear change between the two census years. Based on advice from Planning Department staff, zero population growth (0%) was assumed from 2011 to 2013. The population values used for the remainder of this report are given in Table 1.

Table 1: City of Windsor Population Estimates

Year	Population	Source
2006	216,473	Census
2007	215,357	Estimate
2008	214,240	Estimate
2009	213,124	Estimate
2010	212,007	Estimate
2011	210,891	Census
2012	210,891	Estimate
2013	210,891	Estimate

1.4 Road Network Changes

In December 2010, a number of road sections (primarily along Huron Church Road and the E. C. Row Expressway) were transferred from the City of Windsor to the Province of Ontario.

As noted in Section 1.2, this report considers only collisions on roads under the jurisdiction of the City of Windsor. With the transfer of these road sections to the Province, these road sections are reflected in statistics for years through 2010, but not in statistics given in this report for 2011 and beyond.

The effect of this change on overall statistics given is considered minor; there were 42 collisions on these transferred sections in 2013, which represent 1.1% of the total number of collisions in each year respectively.

1.5 Report Format Changes

In 2013, the Windsor Police Service changed its practices regarding the sharing of personal information from MVA reports with Transportation Planning staff. As a result, Transportation Planning did not receive information about age or gender of drivers, including cyclists, for a portion of 2013. Sections and tables that relied on this data have not been included in this report.

2 Trends in City of Windsor Collision Data

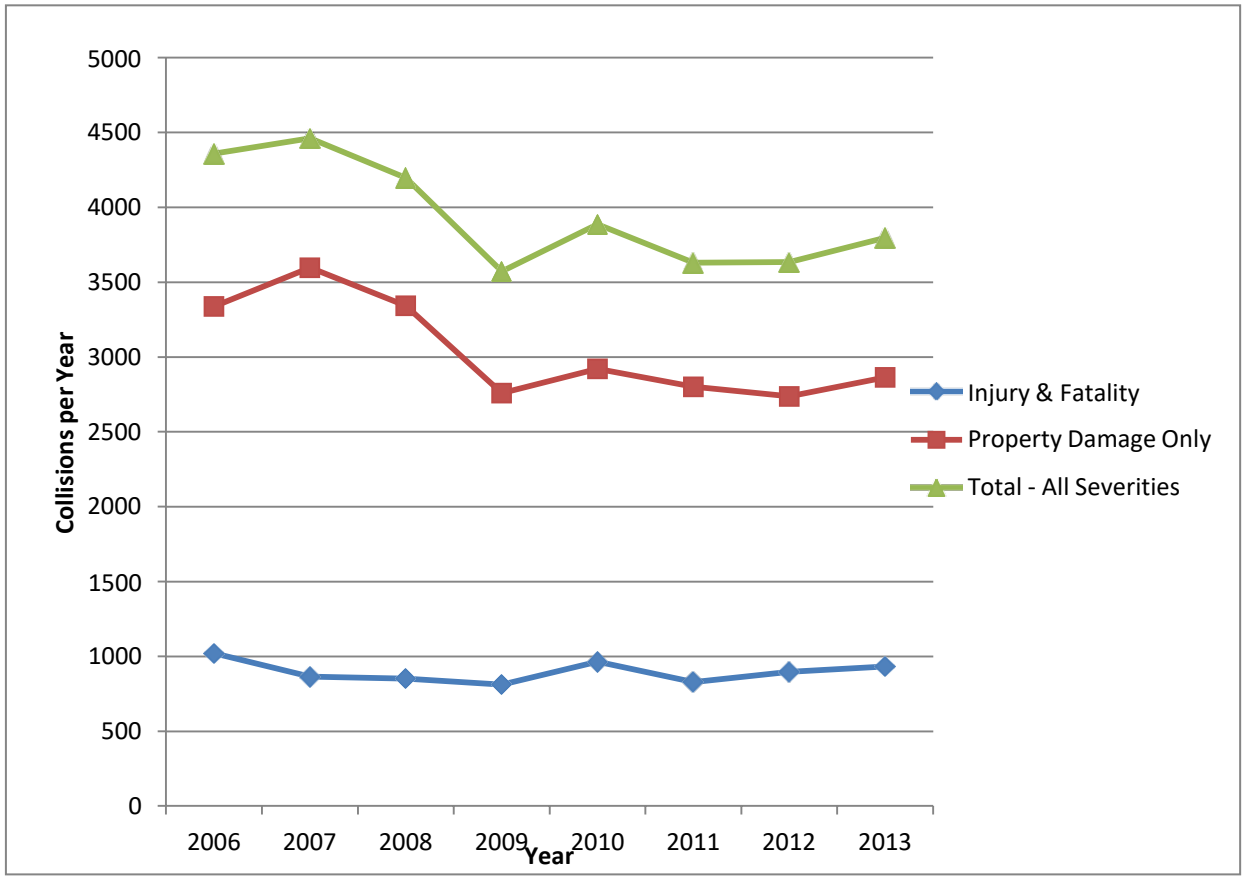

Figure 1: Number of Collisions by Year – City-wide

From 2012 to 2013, the total number of collisions increased by 4.5%, which is greater than the 5-year trend from 2009 through 2013 of a 1.6% increase per year, on average. The total number of injury and fatality collisions increased by 4.1% from 2012 to 2013, which was greater than the 5-year trend of a 3.7% increase per year, on average.

Overall, the number of collisions in 2013 was significantly below the peak occurring in 1994, the worst year recorded in City of Windsor annual collision reports (22 fatal, 1,303 injury, 4,090 PDO, 8,578 total). (City of Windsor, 2005)

2.1 Injuries and Fatalities per Capita

Rates for collision injuries and fatalities relative to the City of Windsor population are given in Table 2 and shown graphically in Figure 2.

Table 2: Injury and Fatality Rates Relative to Population

Year	Total Collisions	Persons Injured	Persons Injured per 1,000 population	Fatalities	Fatalities per 100,000 population
2006	4,360	1,382	6.38	6	2.77
2007	4,462	1,128	5.24	6	2.79
2008	4,197	1,122	5.24	7	3.27
2009	3,572	1,067	5.01	3	1.41
2010	3,887	1,210	5.71	2	0.94
2011	3,887	1,022	4.85	3	1.42
2012	3,634	1,149	5.45	7	3.32
2013	**3,796**	**1,207**	**5.72**	**4**	**1.90**
5-Year Average – 2009 to 2013			**5.35**		**1.80**

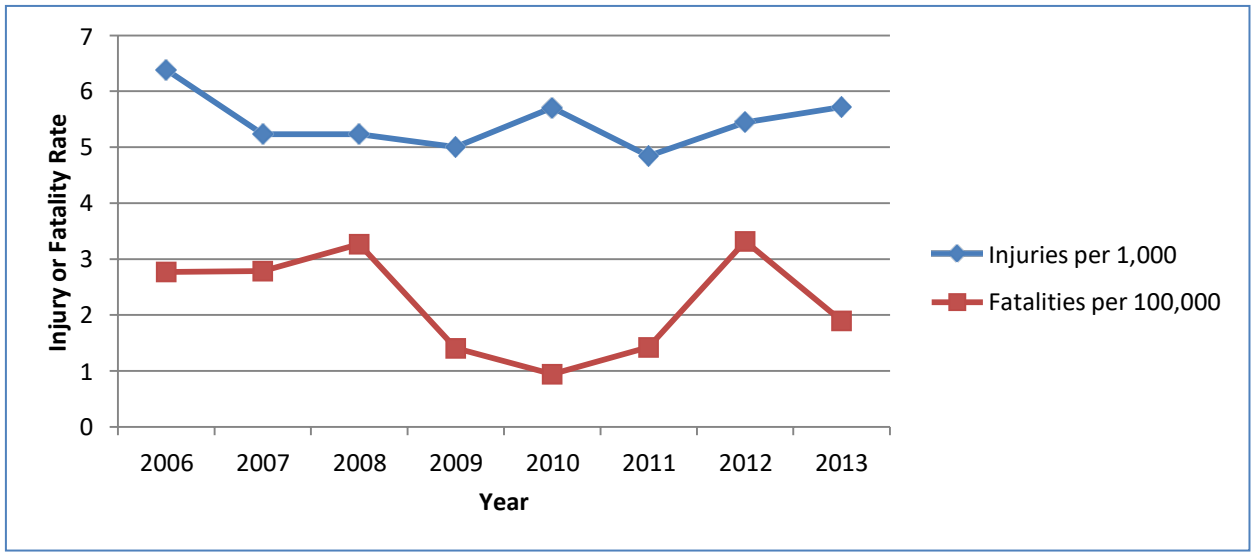

Figure 2: Injury and Fatality Rates Relative to Population

The rate of collision injuries relative to population increased from 5.45 in 2012 to 5.72 in 2013; While the rates of collision injuries relative to the population have shown both increases and decreases year-over-year, the overall trend from 2006 to present has been slightly downward; therefore, it is currently unclear whether the increase from 2011 to 2013 is the result of changes in factors affecting actual road safety or whether it is due to random variation.

For the rate of collision fatalities relative to population, there is no discernable trend in the period from 2006 to 2013. Over this period, rates ranged from as high as 3.32 collision fatalities per 100,000 population to as low as 0.94 per 100,000. Considering this lack of trend, the year-to-year variation in fatalities may be attributable to random chance rather than to factors such as physical changes to the road network or changes in driver behaviour.

The 2013 rate of 1.90 collision fatalities per 100,000 population is slightly higher than the 5-year City of Windsor average of 1.80 fatalities per 100,000; however, it is markedly lower than the provincial average of 3.75 fatalities per 100,000. (Ministry of Transportation of Ontario, 2014)

2.2 Annual and Daily Variation

2.2.1 Annual Variation by Month

The variation in collisions over the year is summarized in Table 3 and illustrated in Figure 3. In general, the collision rate was higher than average in May and June, and September through January, and lower than average in February through August with the exception of May and June.

Table 3: Monthly Variation over the Year

Month	Collisions	% of Total	% of Average Month
January	331	8.7%	105%
February	297	7.8%	94%
March	251	6.6%	79%
April	296	7.8%	94%
May	338	8.9%	107%
June	334	8.8%	106%
July	253	6.7%	80%
August	306	8.1%	97%
September	354	9.3%	112%
October	367	9.7%	116%
November	340	9.0%	107%
December	331	8.7%	105%
Total	**3,798**	**100.0%**	

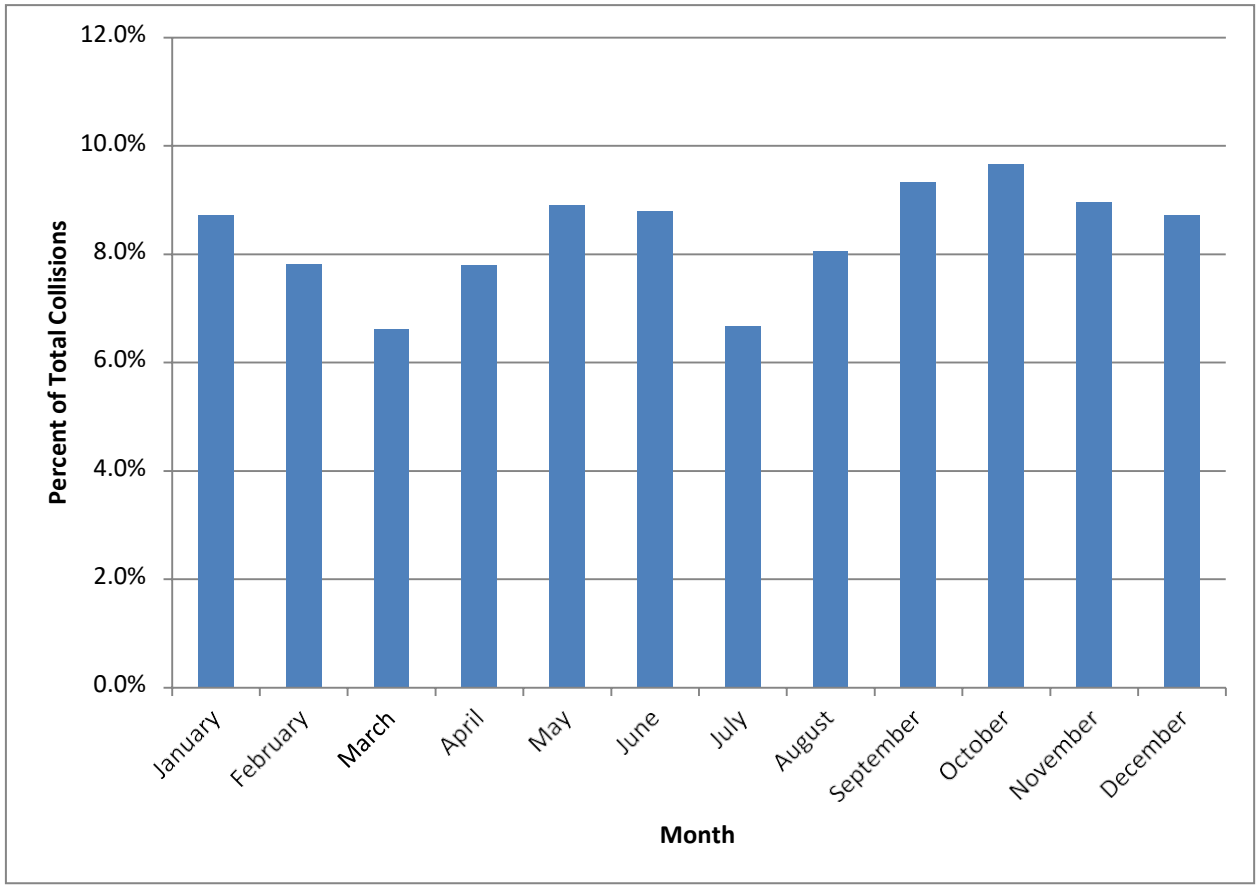

Figure 3: Monthly Variation over the Year

2.2.2 Daily Variation by Hour

A breakdown of collisions by hour of day is given in Table 4. This data is shown graphically in Figure 4, along with traffic volume variation (based on the average of the traffic patterns recorded at the detector stations along the E. C. Row Expressway) as a comparator.

Table 4: Hourly Variation over the Day

Hour	Collisions	% of Total
0:00 - 1:00	53	1.4%
1:00 - 2:00	32	0.8%
2:00 - 3:00	56	1.5%
3:00 - 4:00	35	0.9%
4:00 - 5:00	18	0.5%
5:00 - 6:00	12	0.3%
6:00 - 7:00	54	1.4%
7:00 - 8:00	83	2.2%
8:00 - 9:00	203	5.3%
9:00 - 10:00	186	4.9%
10:00 - 11:00	222	5.8%
11:00 - 12:00	233	6.1%
12:00 - 13:00	257	6.8%
13:00 - 14:00	271	7.1%
14:00 - 15:00	314	8.3%
15:00 - 16:00	372	9.8%
16:00 - 17:00	375	9.9%
17:00 - 18:00	285	7.5%
18:00 - 19:00	211	5.6%
19:00 - 20:00	147	3.9%
20:00 - 21:00	99	2.6%
21:00 - 22:00	127	3.3%
22:00 - 23:00	82	2.2%
23:00 - 0:00	71	1.9%
Total	**3,798**	**100.0%**

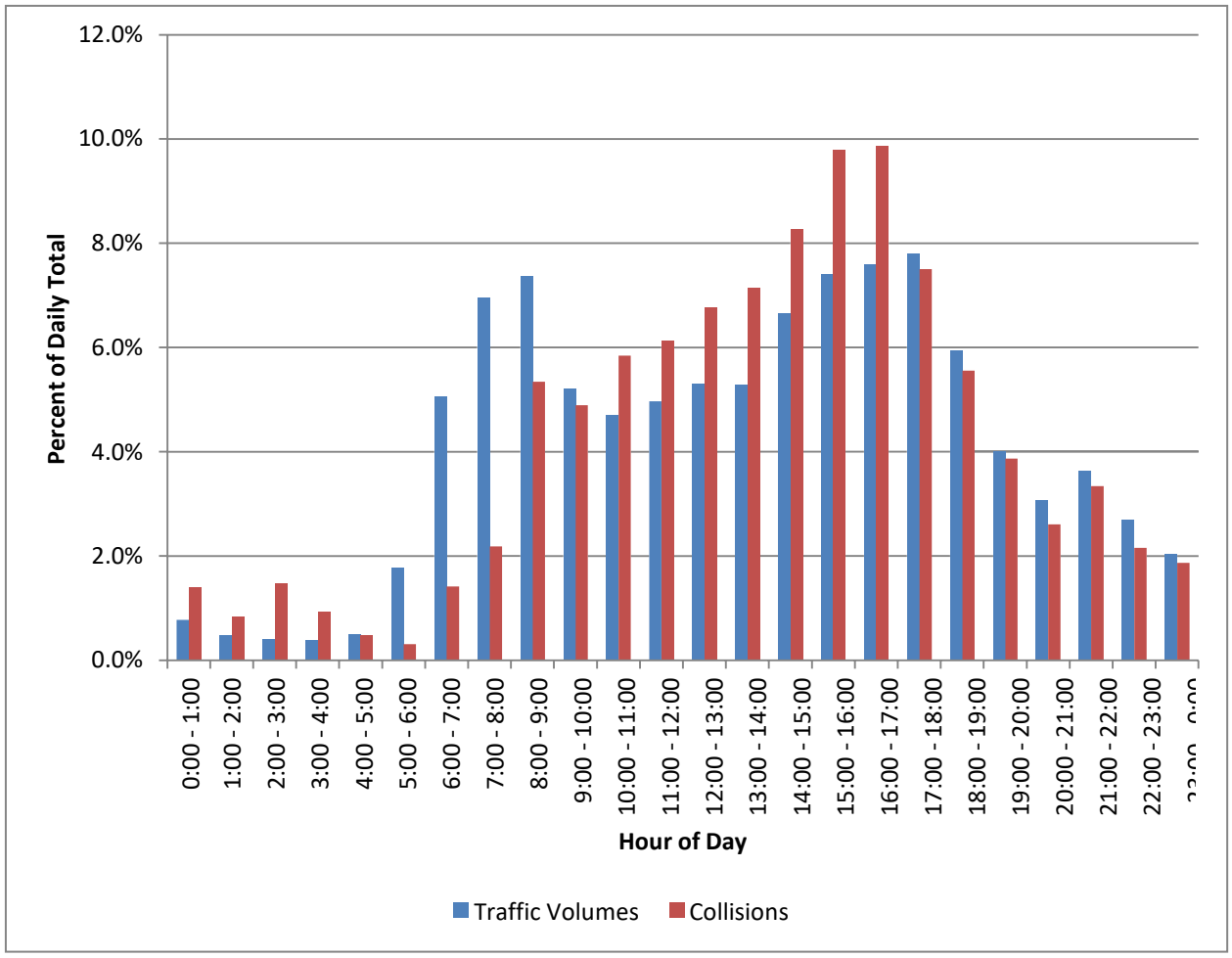

Figure 4: Hourly Variation over the Day

Over the day, the frequency of collisions generally correlates with the volume of traffic, with certain notable exceptions:

- In the AM peak period (5:00 to 9:00), the frequency of collisions is low relative to traffic volume.
- In the early morning (0:00 / midnight to 4:00) and midday through late afternoon (11:00 to 18:00), the frequency of collisions is high relative to traffic volume.

2.3 Characteristics of Collisions

2.3.1 Impact Type

The impact types for 2013 City of Windsor collisions are summarized in Table 5 and illustrated graphically in Figure 5. Rear-end collisions were the most frequent collision type (33%).

Table 5: Impact Types

Type	Collisions	% of Total
Rear End	1,268	33%
Angle	636	17%
Turning	528	14%
SMV Other	447	12%
Sideswipe	355	9%
SMV Unattended	330	9%
Approaching	185	5%
Other	46	1%
Unknown	3	0%
Total	**3,798**	**100%**

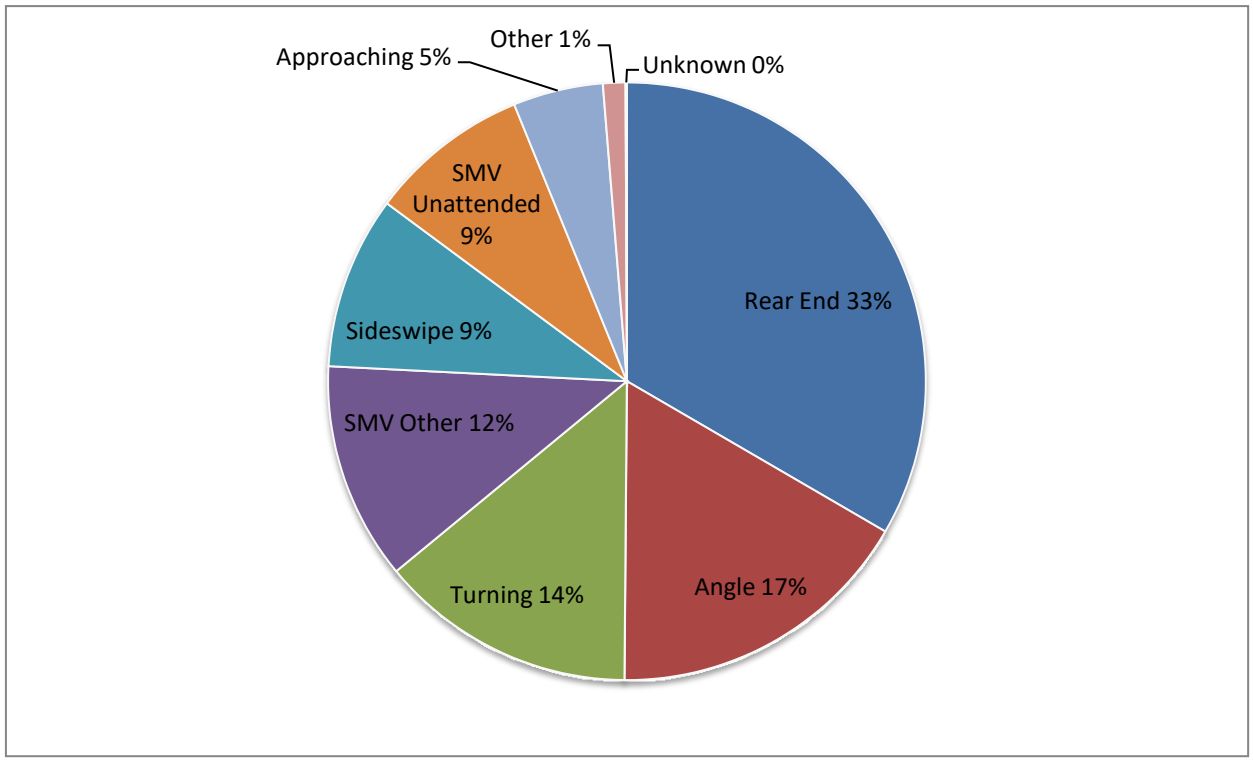

Figure 5: Impact Types

3 Areas of Special Focus

3.1 Alcohol Involvement

For 2013, alcohol was found to be involved in 2.69% of collisions. This percentage is slightly below the 5-year City of Windsor average of 2.72% and significantly below historical percentages, (City of Windsor, 2005).

25% of fatal collisions in the City of Windsor (1 collision) involved drivers with alcohol-related driver conditions. On average, alcohol was involved in 21% percent of fatal collisions in the five-year period of 2009 through 2013.

The number of fatal alcohol-related collisions has varied between 0 and 3 per year from 2006 to 2013. The lack of a discernable trend in the number of fatal alcohol-related collisions over time suggests that this variation may be a matter of random chance and not year-to-year changes in factors affecting overall road safety risk.

A comparison of 2013 with previous years is given in Table 6 and Figure 6. “Alcohol-related collisions” include collisions with driver conditions “had been drinking”, “ability impaired – alcohol”, and “ability impaired – alcohol over 0.08”.

Table 6: Alcohol Involvement in Collisions

Year	Total Collisions	Total Alcohol-Related Collisions	% of Total Collisions Involving Alcohol	Fatal Collisions	Fatal Alcohol-Related Collisions	% of Fatal Collisions Involving Alcohol
2006	4,360	159	3.65%	6	1	17%
2007	4,462	163	3.65%	4	-	0%
2008	4,197	123	2.93%	7	2	29%
2009	3,572	78	2.18%	3	-	0%
2010	3,887	118	3.04%	2	-	0%
2011	3,630	111	3.06%	3	-	0%
2012	3,635	94	2.59%	7	3	43%
2013	3,798	102	2.69%	4	1	25%
5-year Average – 2009 to 2013		**100.6**	**2.72%**		**0.8**	**19%**

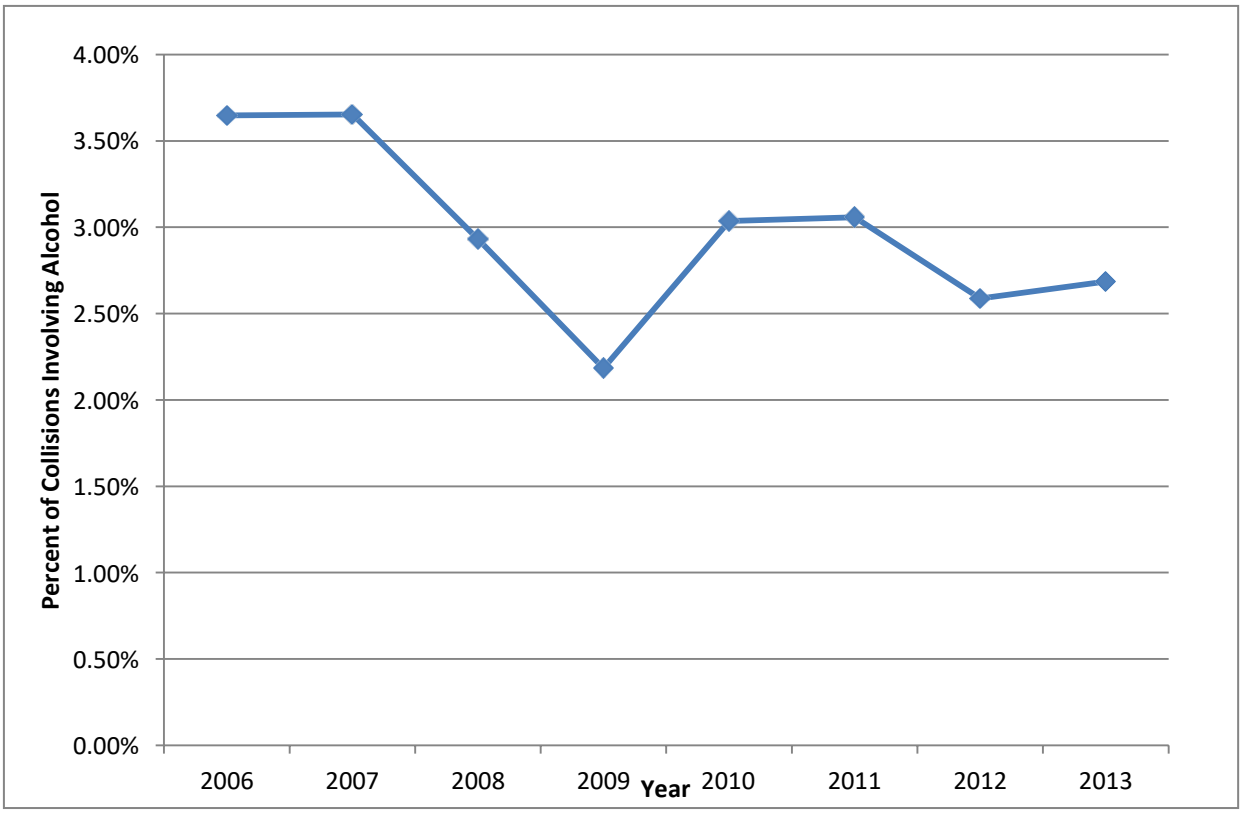

Figure 6: Alcohol Involvement in Collisions

Provincial statistics for impaired driving in collisions are given on the basis of drivers rather than collisions. In order to compare City of Windsor rates with provincial averages, impaired driving statistics were calculated on a driver basis; these are given in Table 7. (Ministry of Transportation of Ontario, 2014) Additional discussion on driver condition is provided in Section 0.

Table 7: Driver Conditions Involving Alcohol

Driver Condition	Drivers	Percent of Total - City of Windsor	Province of Ontario 2011
Had Been Drinking	31	0.38%	0.69%
Ability Impaired – Alcohol	21	0.25%	0.35%
Ability Impaired – Alcohol over 0.08	50	0.60%	0.66%
Subtotal – Alcohol Involvement	**102**	**1.23%**	**1.70%**
Total – All Driver Conditions	**8,266**		

As noted in Table 7, 1.23% of drivers involved in 2013 City of Windsor collisions had driver conditions of "had been drinking", "ability impaired – alcohol" or "ability impaired – alcohol over 0.08". This is slightly below the provincial average of 1.70%. (Ministry of Transportation of Ontario, 2014)

3.2 Inattentive Drivers

Note: for "inattentive" collisions, results from 2013 are not directly comparable to previous years – details are provided below.

In 2013, 18.2% of all City of Windsor collisions involved drivers reported as "inattentive". This represents a major decrease from historical levels, as shown in Table 8 and Figure 7.

This major change from 2012 to 2013 appears to be the result of changes in police collision reporting practices. The Windsor Police Service confirmed that, beginning in 2013, they now use stricter criteria for determining when to classify a driver as "inattentive". This change in police practice appears to be the most significant reason for the marked difference between 2013 statistics and previous years.

The "inattentive" driver condition includes conditions that would be considered "distracted driving" under the Highway Traffic Act as well as conditions that would not be considered distracted driving.

It should be noted that driver inattention in collisions is likely underreported, since drivers are unlikely to self-report that they were engaged in illegal cell phone use, texting, or other distracting activities at the time of the crash. (Whaley, 2012) Therefore, the actual rate of inattentive driving in collisions may be higher than the statistics below indicate.

Table 8: Driver Inattentiveness in Collisions

Year	Total Collisions	Total Inattentive-Related Collisions	% of Total Collisions Involving Inattentive Drivers
2006	4,360	971	22.3%
2007	4,462	1,157	25.9%
2008	4,197	1,165	27.8%
2009	3,572	1,190	33.3%
2010	3,887	1,422	36.6%
2010	3,630	1,518	41.8%
2012	3,634	1,238	34.1%
2013	3,798	692	18.2%
5-year Average – 2009 through 2013			**32.7%**

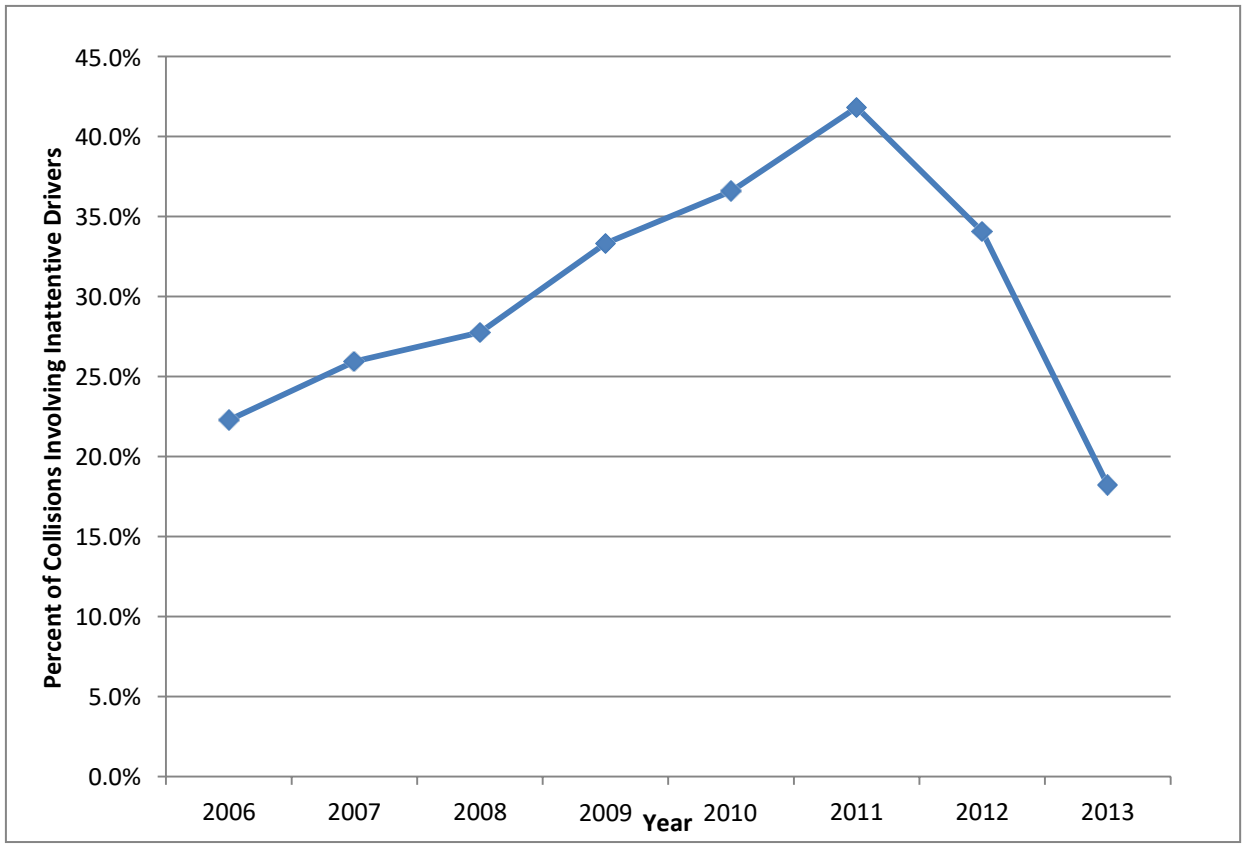

Figure 7: Driver Inattentiveness in Collisions

Provincial statistics for inattentiveness in collisions are given on the basis of drivers rather than collisions: while 692 of the 3,795 collisions on City of Windsor streets in 2013 involved driver inattention, 709 of the 8,266 drivers involved in Windsor collisions over this period were reported as inattentive. The number of inattentive drivers in collisions is somewhat larger than the number of collisions involving inattention because for a small number of collisions, more than one driver involved was reported as inattentive.

In order to compare City of Windsor rates with provincial averages, inattentive driving statistics were calculated on a driver basis; these are given in Table 9.

Table 9: Driver Conditions Involving Inattention

Driver Condition	Drivers	Percent of Total – City of Windsor	Province of Ontario 2011
Inattentive	709	8.6%	13.6%
All Other Conditions	7,557	91.4%	86.4%
Total – All Driver Conditions	**8,266**	**100.0%**	**100.0%**

The percentage of inattentive drivers involved in City of Windsor collisions in 2013 (8.6%) was approximately 37% lower than the latest available provincial average (13.6%). (Ministry of Transportation of Ontario, 2014)

In previous years, the percentage of drivers reported as “inattentive” in the City of Windsor was much higher than the provincial average. It is unclear how collision reporting practices in the City of Windsor compare to other police services in Ontario that are represented in the province-wide statistics.

Additional discussion on driver condition is provided in Section 0.

4 Drivers

4.1 Driver Actions

The apparent driver actions for all drivers involved in 2013 City of Windsor collisions are summarized in Table 10. In cases where drivers were not driving properly and information could be obtained, the category with the highest percentage of collisions was "following too close".

Table 10: Driver Actions in Collisions

Type	Collisions	Percent
Driving Properly	3,534	43%
Unknown or No Info	1,586	19%
Following Too Close	995	12%
Failed to Yield Right-of-Way	514	6%
Lost Control	433	5%
Improper Turn	308	4%
Other	270	3%
Disobeyed Traffic Control	235	3%
Improper Lane Change	200	2%
Speed Too Fast for Condition	100	1%
Improper Passing	62	1%
Exceeding Speed Limit	20	0%
Wrong Way on One-Way Road	7	0%
Speed Too Slow	2	0%
Total	**8,266**	**100%**

The information in Table 10 is displayed graphically in Figure 8 along with Ontario-wide statistics for comparison. (Ministry of Transportation of Ontario, 2014) While the categories "driving properly" and "unknown or no info" are quite different between the City of Windsor and the province overall, it is unclear whether this is caused by a meaningful difference in actual collision experience in the two regions or whether it is merely the result of different practices when preparing MVA reports in the City of Windsor versus other parts of Ontario.

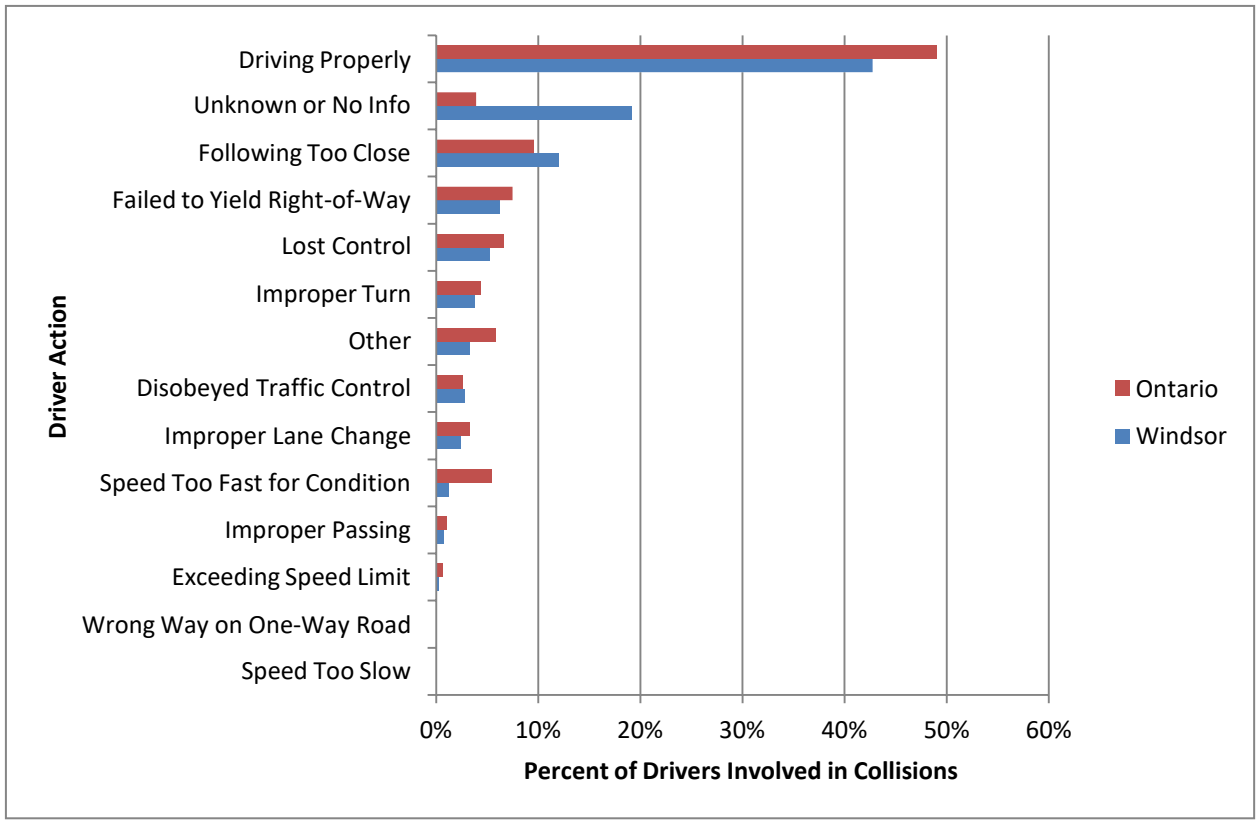

Figure 8: Driver Action in Collisions – City of Windsor vs. Province-wide

4.2 Condition of Driver

The reported condition of drivers in 2013 City of Windsor collisions is summarized in Table 11. The majority of drivers were classified as "normal" (68%); this is lower than the percentage Ontario-wide (75%). It is unclear how much of this difference between City of Windsor experience and the experience in Ontario overall can be attributed to the difference in the percentage of drivers with unknown conditions (Windsor: 21%, Ontario: 8%). (Ministry of Transportation of Ontario, 2014)

Table 11: Driver Condition

Driver Condition	Collisions	Percent
Normal	5,643	68%
Unknown or No Info	1,770	21%
Inattentive	709	9%
Alcohol-Related Conditions	102	1%
Ability Impaired, alcohol (over 0.08)	*50*	*1%*
Had Been Drinking	*31*	*0%*
Ability Impaired, alcohol	*21*	*0%*
Medical or Physical Disability	19	0%
Fatigue	11	0%
Other	8	0%
Ability Impaired, drugs	4	0%
Total	**8,266**	**100%**

5 Cyclists

5.1 Note – Data Limitations

As stated in Section 1.2, this report deals only with collisions reported via Windsor Police Service MVA report forms. Because of this, **the information in this section addresses only cyclist collisions that also involved at least one motor vehicle.** Single rider collisions or collisions between cyclists and/or electric power assisted bicycles ("e-bikes") and pedestrians would not be reported via MVA report forms and are not reflected in this report.

E-bikes are not considered motor vehicles for collision reporting purposes. Therefore, as for conventional bicycles, this section does not reflect e-bike collisions except for cases where a motor vehicle was involved.

Standard MVA report forms do not differentiate between e-bikes and conventional bicycles. Therefore, the information in this section reflects both e-bikes and conventional bicycles.

5.2 General

There were 113 reported collisions involving cyclists in 2013 on City of Windsor roads. These 113 collisions are broken down by severity in Table 12.

Table 12: Collision Severity - Cyclist Collisions

Severity	Number	Percent
Property Damage Only	17	15%
Injury	96	85%
Fatality	-	0%
Total	113	100%

For cyclist collisions, the proportion of injury collisions is significantly higher than the overall proportion of injury collisions for all vehicle types, which reaffirms cyclists' status as vulnerable road users.

The total number of cyclist collisions for 2013 is higher than the 5-year average from 2009 through 2013 of 97.8 collisions per year. The number of cyclist injury collisions for 2013 (96 collisions) is higher than the 2009 through 2013 average (84.2 collisions per year). There were no fatal cyclist collisions in 2013, which is in line with the 5-year collision history (from 2009 through 2013, 4 out of 5 years had no fatal collisions involving cyclists).

5.3 Cyclist Actions

Cyclist actions in 2013 City of Windsor collisions are summarized in Table 13. Overall, cyclists were riding properly in 46% of collisions, which is slightly lower than the provincial average of 47% (Ministry of Transportation of Ontario, 2014) and much higher than the percentage of riders for whom no

contributory action could be found (29%) in the Cycling Death Review by the Ontario Chief Coroner's Office. (Office of the Chief Coroner, 2012)

In cases where the cyclist was not riding properly, the most common cyclist action at the time of collision was "failed to yield right-of-way" (10%).

Table 13: Reported Cyclist Action at the Time of Collision

Cyclist Action	Collisions	Percent
Riding Properly	52	46%
Other	22	19%
Unknown Or No Info	12	11%
Failed To Yield Right-Of-Way	11	10%
Disobeyed Traffic Control	7	6%
Lost Control	4	4%
Speed Too Fast For Condition	2	2%
Improper Turn	1	1%
Wrong Way On One-Way Road	1	1%
Improper Lane Change	1	1%
Following Too Close	-	0%
Exceeding Speed Limit	-	0%
Speed Too Slow	-	0%
Improper Passing	-	0%
Total	**113**	**100%**

5.4 Driver's Actions in Cyclist Collisions

Drivers' actions in 2013 City of Windsor collisions involving cyclists are summarized in Table 14. Overall, 60% of drivers in cyclist collisions were driving properly, which is somewhat higher than the provincial average of 48%. (Ministry of Transportation of Ontario, 2014) In cases where the driver was not driving properly, the most common driver action was "failed to yield right of way" (14%).

Table 14: Reported Driver Action in Cyclist Collisions

Driver Action	Collisions	Percent
Driving Properly	68	60%
Unknown Or No Info	22	19%
Failed To Yield Right-Of-Way	16	14%
Improper Turn	5	4%
Disobeyed Traffic Control	2	2%
Following Too Close	-	0%
Exceeding Speed Limit	-	0%
Speed Too Fast For Condition	-	0%
Speed Too Slow	-	0%
Improper Passing	-	0%
Lost Control	-	0%
Wrong Way On One-Way Road	-	0%
Improper Lane Change	-	0%
Other	-	0%
Total	**113**	**100%**

5.5 Location of Cyclist Collisions

The locations of collisions involving cyclists are summarized in Table 15 and Figure 9. In 2013, 64% of cyclist collisions occurred either at intersections or were intersection related. When this value is considered along with the 20% of collisions that occurred at private driveways, 84% of collisions occurred at points of conflict between bicycle and motor vehicle traffic.

Table 15: Collision Location - Cyclist Collisions

Collision Location	Collisions	Percent
Intersection	64	57%
Intersection Related	8	7%
Subtotal - Intersection & Intersection Related	*72*	*64%*
Midblock - Private Driveway	23	20%
Midblock – Non-Driveway	18	16%
Subtotal - All Midblock	*41*	*36%*
Total	**113**	**100%**

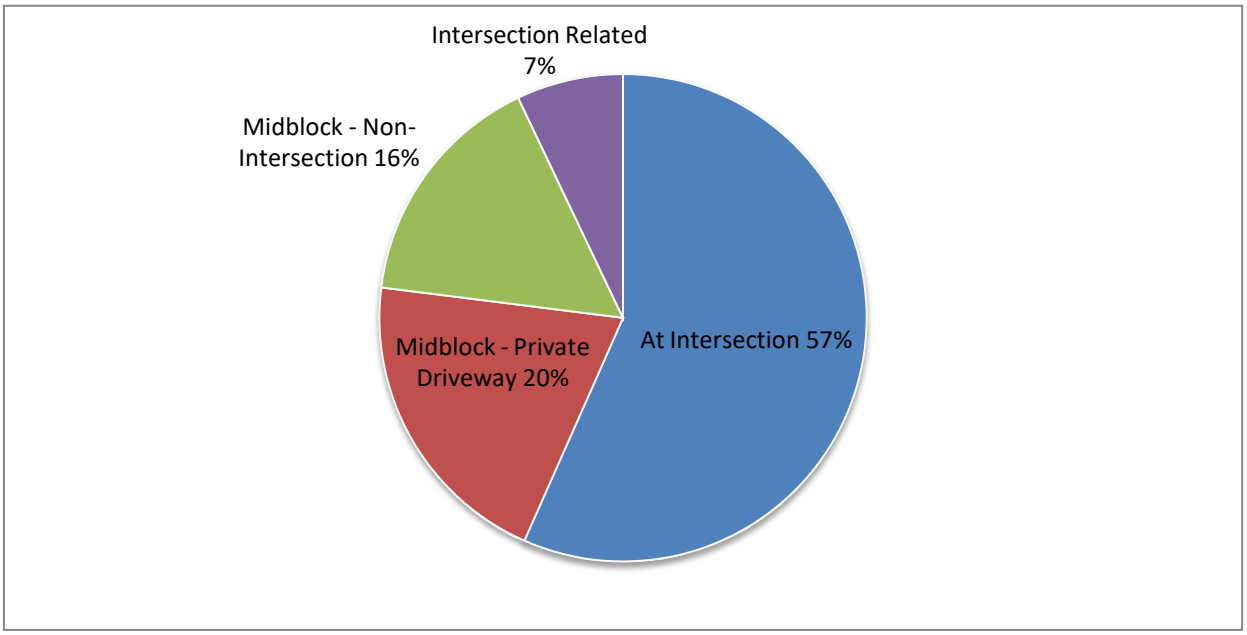

Figure 9: Impact Location - Cycling Collisions

5.6 Helmet Use

In the majority of collisions, the collision report specified that safety equipment used by the cyclist was unknown. Table 16 summarizes helmet use in cyclist collisions. Please note that the numbers given reflect both cyclists and bicycle passengers.

The total number of persons is lower than the total number of cyclist collisions, since characteristics of involved persons (including safety equipment use) are typically not reported for property damage only collisions.

Table 16: Helmet use by Cyclists and Bicycle Passengers

Safety Equipment Used	Persons	Percent	Percent (excluding unknown)
Unknown Or No Info	73	78%	--
Helmet	11	12%	52%
Equipment Not Used But Available	6	6%	29%
No Equipment Available	3	3%	14%
Other Safety Equipment Used	1	1%	5%
Total	**94**	**100%**	**100%**

The *Cycling Death Review* by the Ontario Chief Coroner's Office suggested that helmet use (or lack thereof) was a major factor in cyclist death by head injury. While the report did not determine the degree to which wearing a helmet reduces the likelihood of injury (since the review considered only fatal cycling collisions), it did find that of the cases reviewed, cyclists whose cause of death included a

head injury were three times more likely to not have been wearing a helmet than cyclists who died by other means. (Office of the Chief Coroner, 2012)

6 Pedestrians

6.1 Note – Data Limitations

As stated in Section 1.2, this report deals only with collisions reported via Windsor Police Service MVA report forms. Because of this, **the information in this section addresses only pedestrian collisions that also involved at least one motor vehicle.** Collisions between cyclists and pedestrians would not be reported via MVA report forms and are not reflected in this report.

E-bikes are not considered motor vehicles for collision reporting purposes. Therefore, as for conventional bicycles, this section does not reflect collisions between e-bikes and pedestrians except for cases where a motor vehicle was involved.

6.2 General

Overall, there were 82 reported collisions involving pedestrians on City of Windsor roads in 2013. These 82 collisions are broken down by severity in Table 17.

Table 17: Collision Severity - Pedestrian Collisions

Severity	Collisions	Percent
Property Damage Only	2	2%
Injury	77	94%
Fatality	3	4%
Total	**82**	**100%**

Similar to cyclists, the percentage of pedestrian collisions involving injuries or fatalities is significantly higher than the percentage of injury and fatality collisions overall, which reaffirms the status of pedestrians as vulnerable road users.

For 2013, the total number of pedestrian collisions and the number of pedestrian injury collisions were somewhat higher than the 2009-2013 five-year averages (total: 77.6 collisions per year; injury: 71.8 collisions per year). The annual total of 3 fatal pedestrian collisions in 2013 was markedly higher than the 5-year average (0.8 fatal pedestrian collisions per year).

6.3 Pedestrian Actions

Pedestrian actions in 2013 City of Windsor collisions are summarized in Table 18. The most frequent action was "crossing with right-of-way", which occurred in 33% of pedestrian collisions.

Table 18: Reported Pedestrian Action at the Time of Collision

Pedestrian Action	Collisions	Percent
Crossing with Right-Of-Way	27	33%
Crossing without Right-Of-Way	10	12%
On Sidewalk or Shoulder	7	9%
Running onto Roadway	7	9%
Unknown or No Info	6	7%
Crossing - No Traffic Control	6	7%
Coming from Behind Parked Vehicle or Object	5	6%
Crossing Marked Crosswalk Without Right-Of-Way	3	4%
Other	3	4%
Crossing Pedestrian Crossover	2	2%
Walking on Roadway with Traffic	2	2%
Walking on Roadway Against Traffic	2	2%
Playing or Working on Highway	1	1%
Person Getting On/Off Vehicle	1	1%
Person Getting On/Off School Bus	-	0%
Pushing/Working on Vehicle	-	0%
Total	**82**	**100%**

6.4 Driver Actions in Pedestrian Collisions

Driver actions in 2013 City of Windsor collisions involving pedestrians are summarized in Table 19. In cases where the driver was not driving properly, the most common driver action was "failed to yield right-of-way".

Table 19: Reported Driver Action in Pedestrian Collisions

Driver Action	Collisions	Percent
Driving Properly	32	39%
Failed to Yield Right-of-Way	20	24%
Unknown or No Info	16	20%
Improper Turn	4	5%
Lost Control	4	5%
Following Too Close	2	2%
Disobeyed Traffic Control	2	2%
Other	2	2%
Exceeding Speed Limit	-	0%
Speed Too Fast for Condition	-	0%
Speed Too Slow	-	0%
Improper Passing	-	0%
Wrong Way on One-Way Road	-	0%
Improper Lane Change	-	0%
Total	**82**	**100%**

6.5 Pedestrian Conditions

The condition of the pedestrians at the time of the collision is summarized in Table 20. The condition of the majority of the pedestrians was reported as "normal".

Table 20: Pedestrian Condition in Reported Collisions

Pedestrian Condition	Collisions	Percent
Normal	56	68%
Inattentive	9	11%
Unknown or No Info	8	10%
Had Been Drinking	5	6%
Medical or Physical Disability	2	2%
Ability Impaired, alcohol	1	1%
Ability Impaired, drugs	1	1%
Ability Impaired, alcohol (over .08)	-	0%
Fatigue	-	0%
Other	-	0%
Total	**82**	**100%**

6.6 Lighting Condition

As shown in Table 21, in 2013, 29% of City of Windsor collisions involving pedestrians occurred during night or twilight hours (note: the one collision with "unknown" lighting conditions occurred at approximately 1:00 pm in summer). Of the three fatal pedestrian collisions in 2013, only one occurred under night or twilight conditions. These results run counter to the experience province-wide: a recent review by the Ontario Coroner's Office of all pedestrian fatalities in Ontario for a one-year period found that the majority of pedestrian fatalities occurred during night time or twilight conditions. (Office of the Chief Coroner, 2012)

In the table below, "artificial" refers to artificial lighting (typically streetlights).

Table 21: Lighting Conditions in Pedestrian Collisions

Lighting Condition	Collisions	Percent
Daylight	55	67%
Dark - Artificial	13	16%
Dark	8	10%
Daylight - Artificial	2	2%
Unknown	1	1%
Dawn - Artificial	1	1%
Dusk	1	1%
Dusk - Artificial	1	1%
Dawn	-	0%
Other	-	0%
Total	**82**	**100%**

6.7 Type of Traffic Control

The type of traffic control for 2013 City of Windsor pedestrian collisions is summarized in Table 22. 39% of pedestrian collisions were at traffic signals, the category of control with the largest number of collisions. 13% of pedestrian collisions occurred at locations with no control (e.g. mid-block locations).

Table 22: Type of Traffic Control - Pedestrian Collisions

Traffic Control	Collisions	Percent
Traffic Signal	32	39%
Unknown	23	28%
Stop Sign	12	15%
No Control	11	13%
Yield Sign	1	1%
Pedestrian Crossover	1	1%
School Guard	1	1%
Traffic Controller	1	1%
Police Control	-	0%
School Bus	-	0%
Traffic Gate	-	0%
Other	-	0%
Total	**82**	**100%**

7 Environment

7.1 Weather and Light Conditions

Environmental conditions for 2013 City of Windsor collisions are summarized in Table 23 and Figure 10. Overall, the majority of 2013 City of Windsor collisions (79%) occurred in clear conditions.

Table 23: Environmental Conditions

Environmental Condition	Collisions	Percent
Clear	3,005	79%
Rain	424	11%
Snow	282	7%
Unknown or No Info	36	1%
Drifting Snow	18	0%
Freezing Rain	13	0%
Other	12	0%
Fog, mist, smoke, dust	5	0%
Strong Wind	3	0%
Total	**3,798**	**100%**

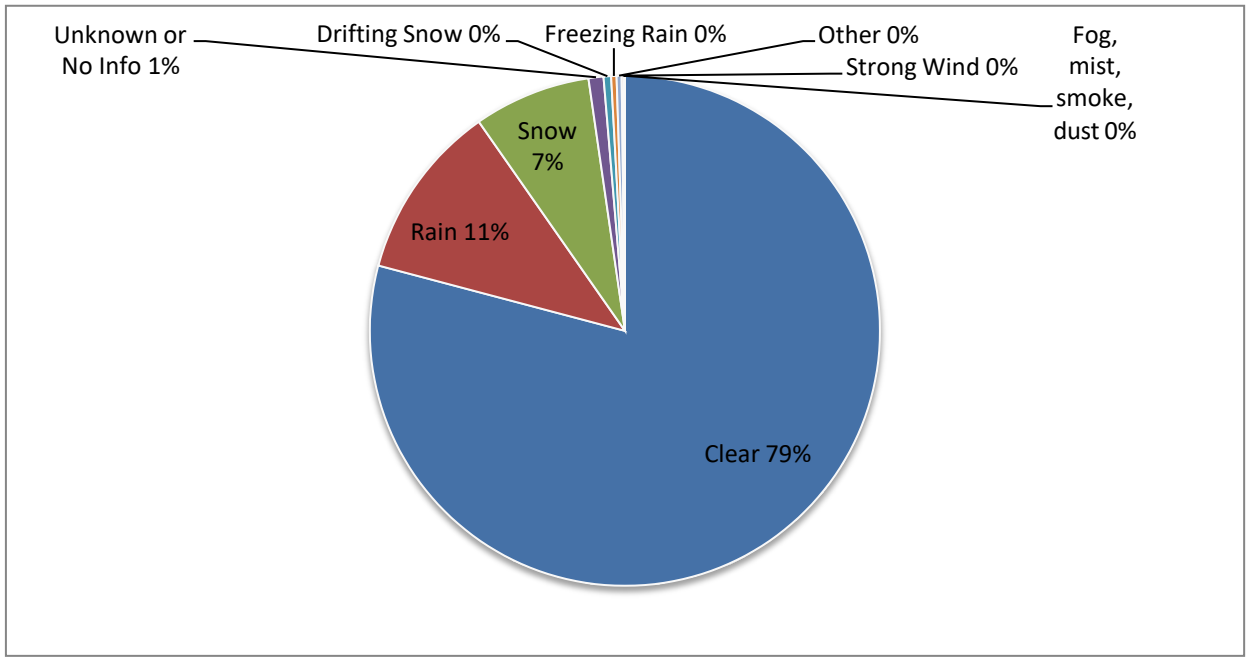

Figure 10: Environmental Conditions

Lighting conditions for 2013 City of Windsor collisions are summarized in Table 24 and Figure 11. The majority of collisions (77%) occurred during daylight. In the table below, “artificial” refers to artificial lighting (typically streetlights).

Table 24: Lighting Conditions

Lighting Condition	Collisions	Percent
Daylight	2,908	77%
Dark - Artificial	448	12%
Dark	231	6%
Unknown	54	1%
Daylight - Artificial	48	1%
Dusk - Artificial	42	1%
Dusk	36	1%
Dawn - Artificial	16	0%
Dawn	12	0%
Other	3	0%
Total	**3,798**	**100%**

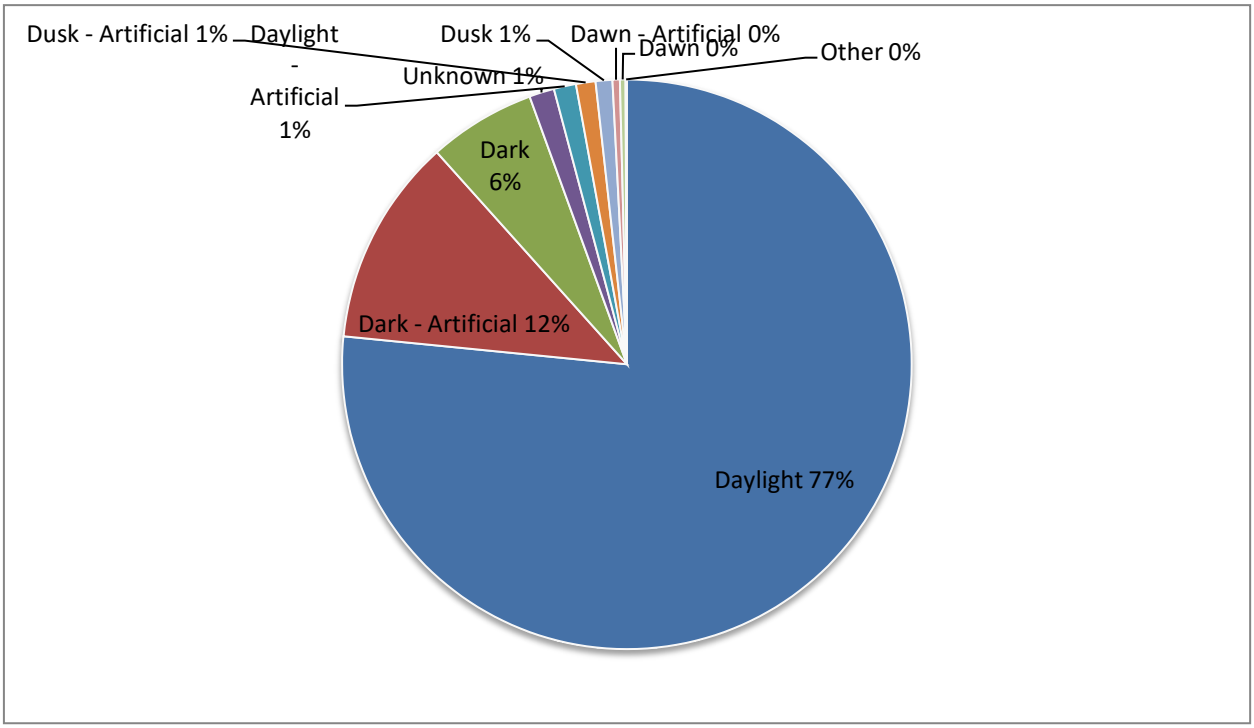

Figure 11: Lighting Conditions

7.2 Road Surface

Road surface conditions for 2013 City of Windsor collisions are given in Table 25 and Figure 12. Overall, the majority of collisions (76%) occurred on a dry road surface.

Table 25: Road Surface Conditions

Surface Condition	Collisions	Percent
Dry	2,882	76%
Wet	560	15%
Ice	120	3%
Loose Snow	109	3%
Packed Snow	60	2%
Slush	35	1%
Unknown or No Info	24	1%
Other	4	0%
Loose Sand or Gravel	3	0%
Spilled Liquid	1	0%
Mud	-	0%
Total	3,798	100%

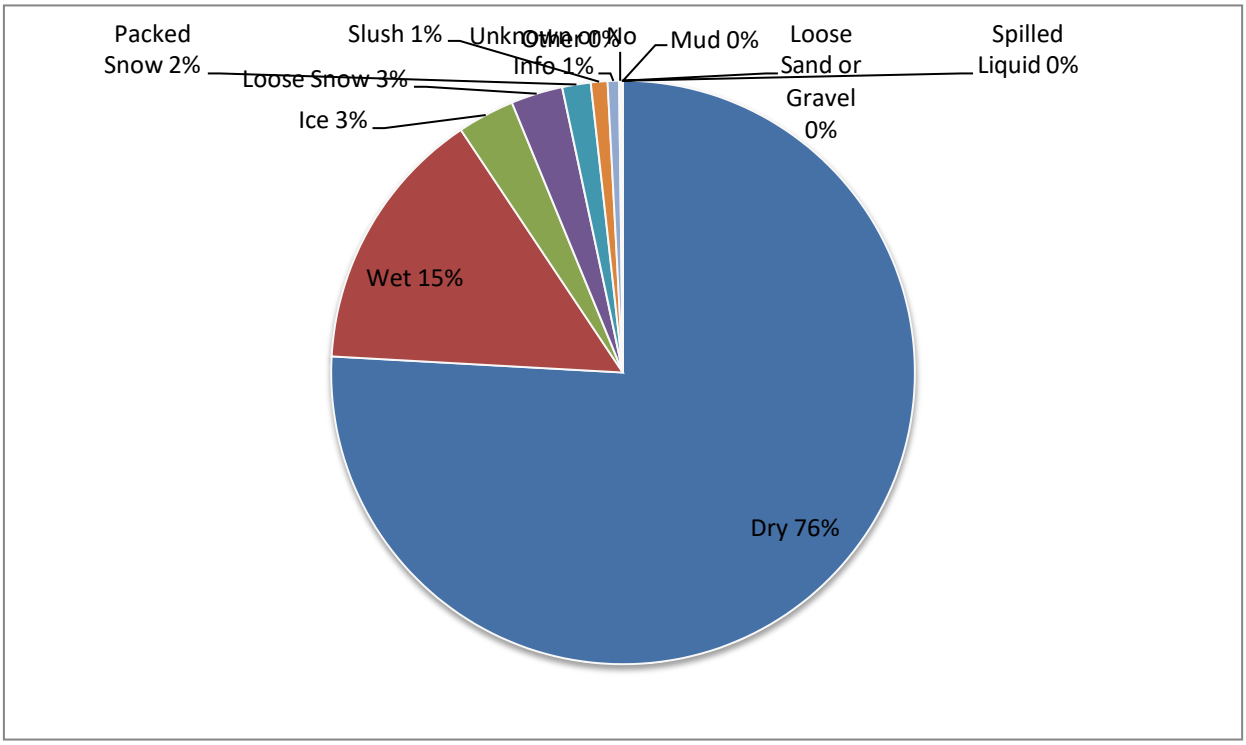

Figure 12: Road Surface Conditions

7.3 Winter Weather Collisions

For reporting purposes, "weather-related winter collisions" are defined as collisions that occur during winter months (defined for Windsor as November through March) during winter weather conditions, defined as follows:

- Environmental Condition at the time of the collision (as noted in the MVA report for the collision) is not "clear", or
- Road Surface Condition at the time of collision (as noted in the MVA report) is "wet", "loose snow", "slush", "packed snow", or "ice"

Based on these criteria, City of Windsor winter weather-related collisions by year are summarized in Table 26:

Table 26: Winter Weather-Related Collisions

Year	Total Weather-Related Winter Collisions	Fatal Weather-Related Winter Collisions	*Number of Days with Winter Weather Events [Note 1]*
2006	580	2	*81*
2007	788	2	*92*
2008	872	-	*103*
2009	586	1	*83*
2010	617	1	*80*
2011	636	-	*80*
2012	490	-	*77*
2013	**637**	**1**	***93***

Notes:
1: Days with winter weather events were determined based on publicly available weather records. (Weather Underground, 2014) *Days were counted if they were recorded as having experienced rain, snow, or fog within the time period for "winter weather" (November through March).*

7.4 Pavement Markings

Pavement marking conditions for 2013 City of Windsor collisions are summarized in Table 27 and Figure 13. In the majority of cases, pavement markings were either present and visible (80%) or were on roadways where pavement markings were not provided (15%).

Table 27: Pavement Marking Condition

Marking Condition	Collisions	Percent
Exists	3,045	80%
Non-Existent	570	15%
Unknown or No Info	106	3%
Obscured	57	2%
Faded	20	1%
Total	**3,798**	**100%**

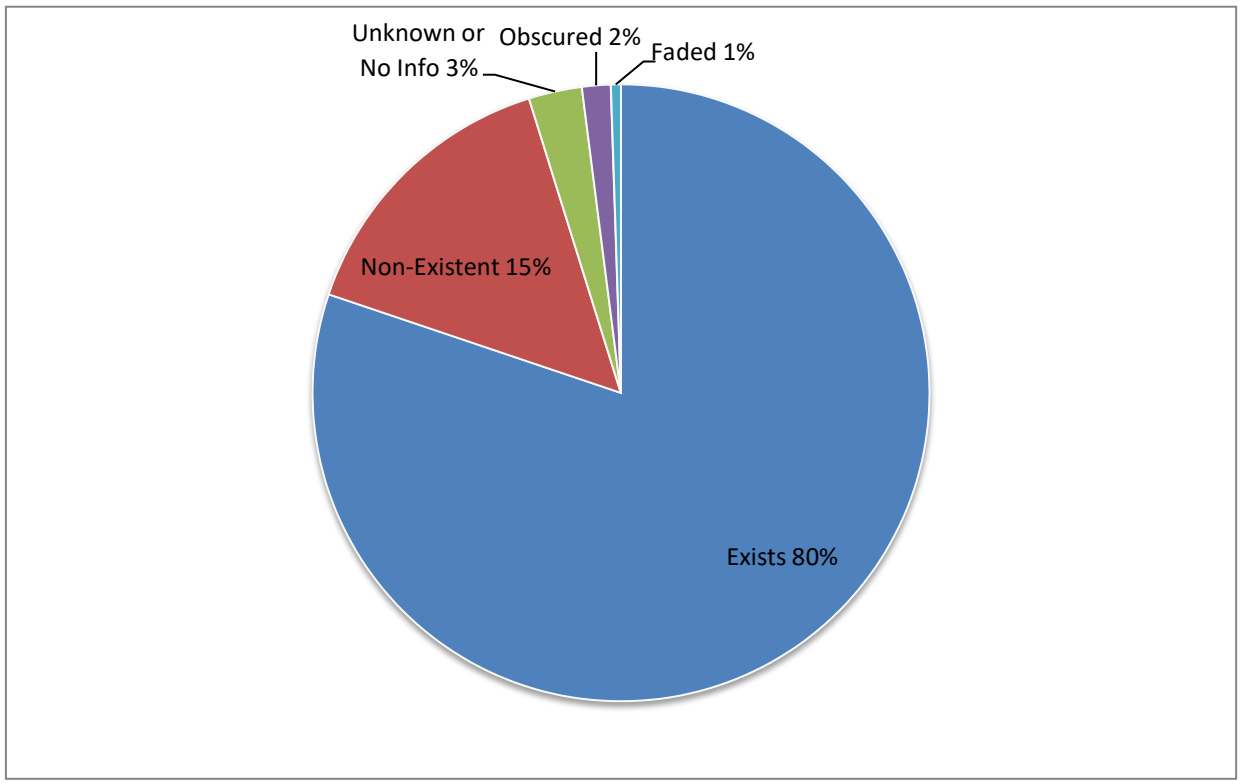

Figure 13: Pavement Marking Condition

7.5 Road Characteristics

Roadway characteristics for 2013 City of Windsor collisions are summarized in Table 28 and Figure 14. The majority of collisions (67%) occurred on undivided two-way roads.

Table 28: Road Character

Road Character	Collisions	Percent
Undivided - Two Way	2,539	67%
Undivided - One Way	625	16%
Divided with Restraining Barrier	264	7%
Divided - No Barrier	250	7%
Unknown or No Info	66	2%
Ramp	39	1%
Express Lane	11	0%
Collector Lane	3	0%
Transfer Lane	1	0%
Total	**3,798**	**100%**

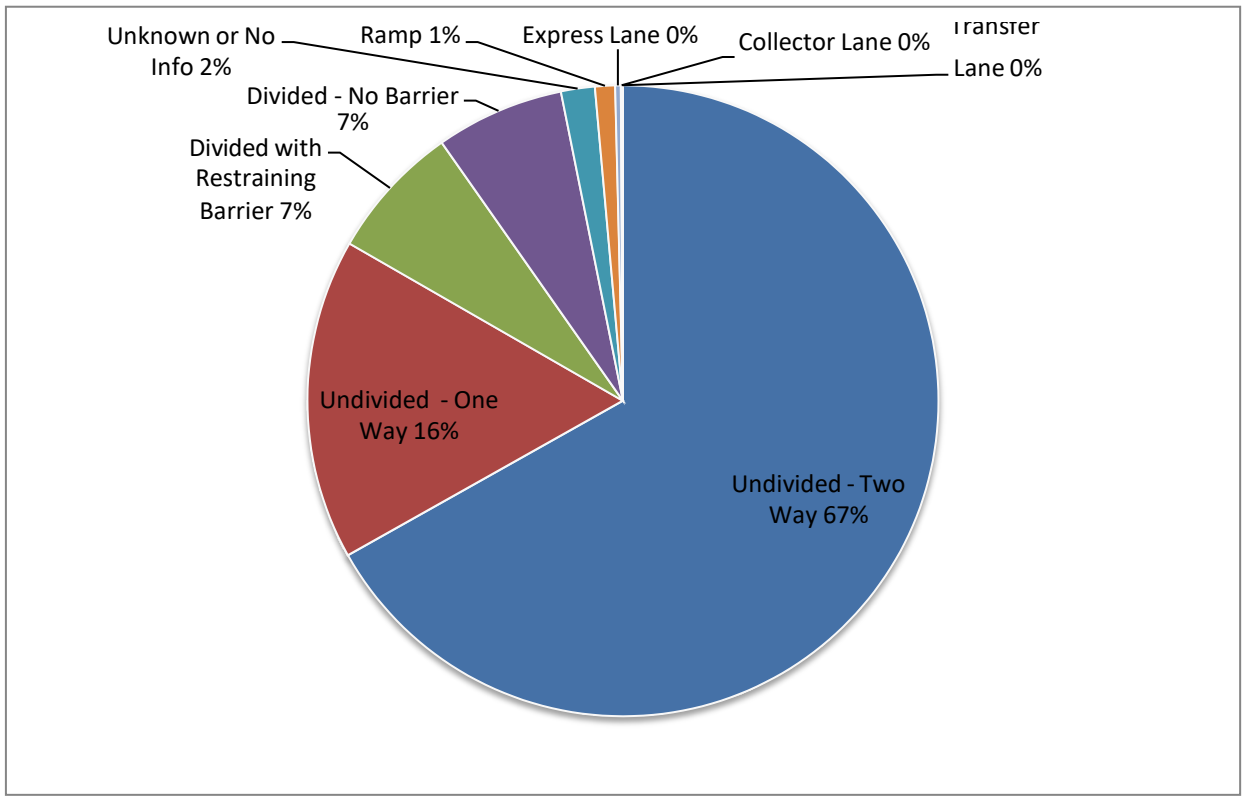

Figure 14: Road Character

7.6 Traffic Control Condition

In 2013, 3,332 collisions on City of Windsor roads occurred where some form of traffic control (e.g. signals, stop sign, or crossing guard) was present. The condition of the traffic control for these collisions is summarized in Table 29 and Figure 15. In the majority of cases (58%), the traffic control was reported as functioning. In a large number of cases (42%), the condition of the traffic control was unknown; the reason for this high percentage is unclear.

Table 29: Traffic Control Condition (Locations with Traffic Control Present)

Traffic Control Condition	Collisions	Percent
Functioning	1,927	58%
Unknown or No Info	1,392	42%
Not Functioning	11	0%
Missing/Damaged	2	0%
Obscured	-	0%
Total	**3,332**	**100%**

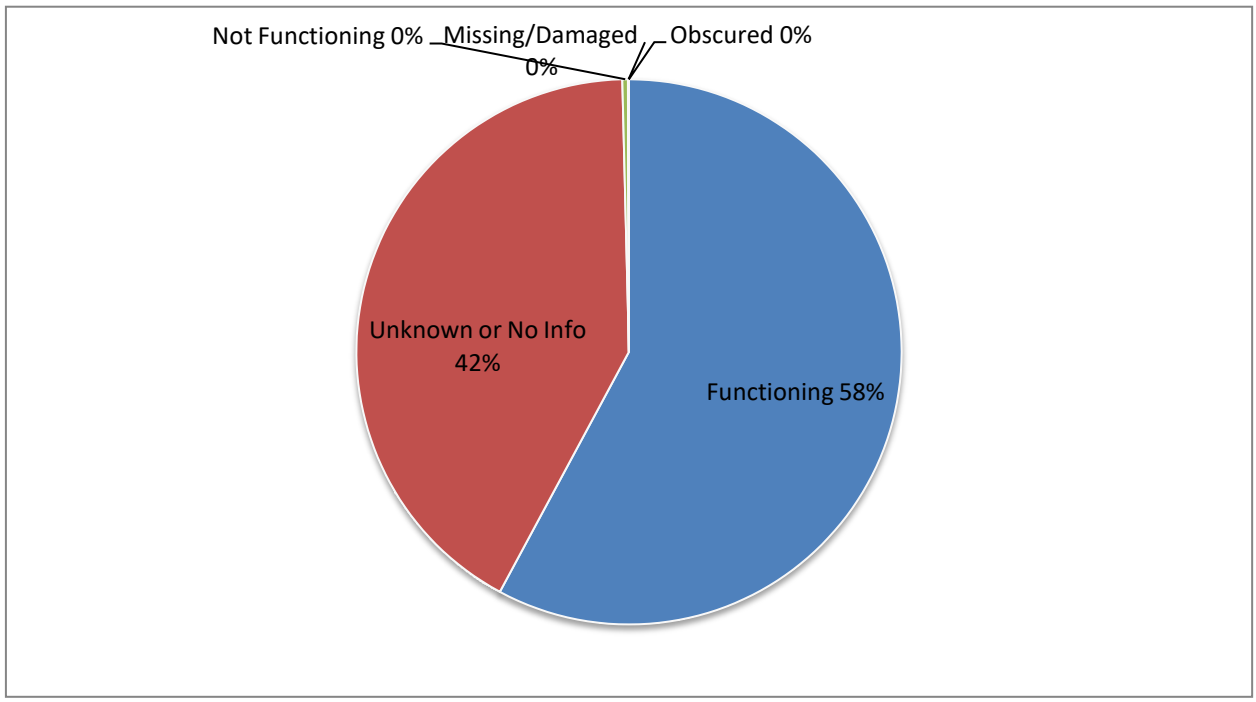

Figure 15: Traffic Control Condition (Locations with Traffic Control Present)

8 Location

8.1 General

A summary of the general classes of locations for 2013 City of Windsor collisions is given in Table 30 and Figure 16. The majority of collisions (57%) were at intersections or were intersection-related.

Table 30: Collision Locations

Location	Collisions	Percent
Intersection	1,011	27%
Intersection Related	1,170	31%
Subtotal - Intersection & Intersection-Related	*2,181*	*57%*
Midblock	1,037	27%
Midblock - Private Driveway	551	15%
Subtotal - All Midblock	*1,588*	*42%*
Railway	19	1%
Overpass/Bridge	5	0%
Underpass/Tunnel	-	0%
Other	5	0%
Total	**3,798**	**100%**

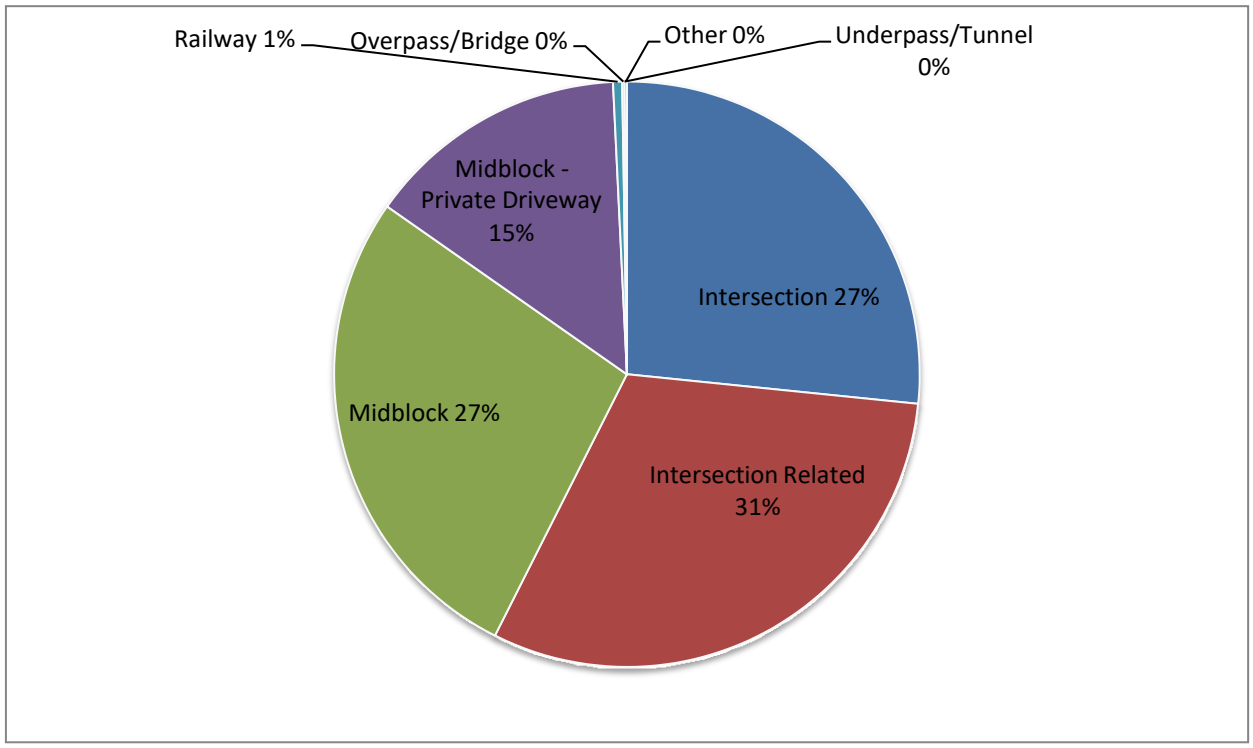

Figure 16: Collision Locations

8.2 Intersection

Five years of collision data (January 1, 2009 through December 31, 2013) were reviewed for each intersection City-wide.

Signalized intersections were ranked by collision rate, expressed in units of collisions per million vehicles entering the intersection. Due to a general lack of traffic volume data for lower-volume intersections, unsignalized intersections were ranked by total number of collisions.

Locations where the roadway geometry was substantially altered during the review period (e.g. new road construction or reconstruction of an existing road or intersection) were excluded from the results.

8.2.1 Signalized

The 25 signalized intersections with the highest collision rates (based on collisions from 2009 through 2013) are listed in Table 31. For this period, the average collision rate for signalized intersections was found to be 0.48 collisions per million vehicles entering.

For the 5-year period of 2009 through 2013, six signalized intersections had no reported collisions:

- College Avenue and Wellington Avenue
- McDougall Street and Pitt Street East
- McHugh Street and Mickey Renaud Way
- McKay Avenue and University Avenue West
- Richmond Street and Walker Road
- Seminole Street and Ford Entrance (west)

Table 31: High Collision Locations – Signalized Intersections

Rank (Signalized)	Street 1	Street 2	Collisions 2009-2013	Annual Average Daily Traffic - All Legs [vehicles per day]	Collisions per Million Vehicles Entering Intersection
1	County Road 42	Lauzon Pky	68	47,900	1.56
2	Pelissier St	Wyandotte St W	57	43,100	1.45
3	Lauzon Line / McHugh St	Lauzon Rd	35	28,700	1.34
4	Banwell Rd	E C Row Expy W/B	125	105,400	1.30
5	Central Ave	E C Row E/B On Ramp	73	63,800	1.25
6	Crawford Ave	Wyandotte St W	55	53,500	1.13
7	Lauzon Pky	Tranby Ave	54	53,000	1.12
8	Campbell Ave	College Ave	31	30,900	1.10
9	Lauzon Pky	South Service Rd / Twin Oaks Dr	47	47,500	1.08
10	Provincial Rd	Sixth Concession Rd	40	41,000	1.07
11	Howard Ave	Tecumseh Rd E	94	98,000	1.05
12	Drouillard Rd	Wyandotte St E	42	45,700	1.01
13	Forest Glade Dr	Tecumseh Rd E	54	58,900	1.00
14	Central Ave	Grand Marais Rd E / Plymouth Dr	71	81,000	0.96
15	Forest Glade Dr	Lauzon Pky	81	94,000	0.94
16	Huron Church Rd	University Ave W	24	28,200	0.93
17	Central Ave	E C Row W/B On Ramp	80	94,400	0.93
18	Tecumseh Rd E	Walker Rd	97	114,900	0.93
19	McDougall St	Tecumseh Rd E	57	67,600	0.92
20	Lauzon Rd	Wyandotte St E	46	55,700	0.91
21	Division Rd	Walker Rd	79	99,500	0.87
22	Central Ave	North Service Rd / Temple Dr	65	82,100	0.87
23	Ouellette Ave	Tecumseh Rd W	86	108,900	0.87
24	Campbell Ave	Wyandotte St W	29	37,500	0.85
25	Erie St E	Goyeau St	26	34,700	0.82
		Average Collision Rate – All City of Windsor Signalized Intersections			**0.48**

Notes:
1. Intersections where the roadway geometry was substantially altered during the 5-year review period are not included in this table.

8.2.2 Unsignalized

The 25 unsignalized intersections with the highest number of collisions (based on collisions from 2009 through 2013) are listed in Table 32. Due to an absence of traffic volume data at unsignalized intersections, an average collision rate for unsignalized intersections could not be calculated.

Table 32: High Collision Locations – Unsignalized Intersections

Rank (Unsignalized)	Street 1	Street 2	Collisions 2009-2013
1	Dougall Ave	Ouellette Pl	78
2	Dougall Ave	E C Row E/B Off Ramp	21
2	Hanna St E	Ouellette Ave	21
4	9th Con Rd	County Road 42	20
5	Division Rd	Riberdy Rd	19
5	Mercer St	Wyandotte St E	19
7	Howard Ave	South Cameron Blvd	18
7	Hanna St E	McDougall St	18
7	Tecumseh Rd E	Turner Rd	18
7	Enterprise Way	Lauzon Pky	18
11	Marentette Ave	Wyandotte St E	17
11	Langlois Ave	Wyandotte St E	17
11	Jefferson St	South National St	17
14	Cabana Rd E	Holburn St	16
14	Foster Ave	Turner Rd	16
14	Caron Ave	Wyandotte St W	16
17	Ambassador Dr	Industrial Dr	15
17	Dougall Ave	South Cameron Blvd	15
17	Hildegarde St	Ouellette Ave	15
17	Conservation Dr	North Service Rd	15
17	Bruce Ave	Giles Blvd W	15
17	Giles Blvd W	Pelissier St	15
23	College Ave	Randolph Ave	14
23	Beals St W	Dougall Ave	14
23	Giles Blvd E	Langlois Ave	14

Notes:
1. Intersections where the roadway geometry was substantially altered during the 5-year review period are not included in this table.

8.3 Mid-Block

Five years of collision data (January 1, 2009 through December 31, 2013) were reviewed for each road section City-wide. Where traffic volumes were available, mid-block sections were ranked by collision rate, expressed in units of collisions per million vehicle-kilometres travelled. Average collision rates are given by road classification; an average rate could not be calculated for local streets due to a lack of traffic volume data for these streets.

For very short road sections, a small number of collisions can artificially cause a very high collision rate that is not representative of the roadway as a whole. To address this, midblock sections less than 100 metres in length have not been included in Table 33.

Table 33: High Collision Locations – Mid-block

Rank (Mid-blocks)	Street	From	To	Collisions 2009-2013	Annual Average Daily Traffic [vehicles per day]	Length [km]	Collisions per million vehicle-km
1	Pitt St E	Ouellette Ave	Goyeau St	11	2,400	0.17	14.89
2	Pelissier St	University Ave W	Park St W	5	2,100	0.14	9.14
3	Chatham St W	Bruce Ave	Janette Ave	1	600	0.10	9.10
4	Erie St E	Pierre Ave	Hall Ave	8	4,950	0.10	8.61
5	Pitt St E	Goyeau St	McDougall St	8	2,400	0.24	7.75
6	Gladstone Ave	Riverside Dr E	Assumption St	2	700	0.24	6.46
7	Chatham St E	Ouellette Ave	Goyeau St	5	2,500	0.18	6.26
8	Grand Marais Rd W	Bruce Ave	Avondale Ave	4	3,100	0.11	6.23
9	Wyandotte St E	Parent Ave	Langlois Ave	23	17,550	0.12	5.95
10	Pelissier St	Park St W	Maiden Lane W	4	2,250	0.17	5.79
11	Pitt St W	Ouellette Ave	Ferry St	3	2,100	0.14	5.75
12	Drouillard Rd	Wyandotte St E	Edna St	4	3,500	0.11	5.70
13	Gladstone Ave	Ottawa St	Ellis St E	3	1,400	0.21	5.64
14	Gladstone Ave	Richmond St	Ontario St	5	2,550	0.20	5.31
15	Victoria Ave	University Ave W	Park St W	4	2,900	0.14	5.28
16	McDougall St	Tecumseh Rd E	Logan Ave	27	7,500	0.38	5.22
17	Gladstone Ave	Assumption St	Wyandotte St E	2	1,150	0.18	5.16
18	Grand Marais Rd W	Longfellow Ave	Dominion Blvd	3	2,800	0.11	5.13
19	Victoria Ave	Park St W	Wyandotte St W	7	2,500	0.31	4.99
20	Seminole St	Aubin Rd	George Ave	9	9,200	0.12	4.56
21	Howard Ave	Hanna St E	Tecumseh Rd E	49	18,700	0.32	4.50
22	Janette Ave	University Ave W	Park St W	2	1,700	0.14	4.46
23	Janette Ave	Pine St	Grove Ave	3	3,450	0.11	4.38
24	Dougall Ave	Tecumseh Rd W	Wear St	22	12,500	0.23	4.19
25	Erie St W	Church St	Bruce Ave	3	3,500	0.11	4.17
Average Mid-block Collision Rates by Road Classification					**Scenic Parkway**		**0.49**
					Collector		**1.03**
					Arterial		**0.86**
					Expressway		**0.46**

Notes:
1. Local streets, streets without volume information, and very short (<100 m) road sections are not included in this table.

9 Conclusions

The key findings of the report are summarized in Table 34 below. Up and down arrows indicate an increase or decrease, respectively, from the 2009 through 2013 five-year average. The colour of the arrow is green if the 2013 value is better than the five-year average, red if worse, and black if close in value (less than 5% difference) or is not clearly favourable or unfavourable.

Table 34: Key Statistics with Comparisons to 5-Year Averages

Category	Measure	City of Windsor		
		5-Year Average	Percentage Difference	2013
Overall Collisions	Total Collisions – All Severities	3,704	→ +3%	**3,798**
Injury Collisions	Total Injury Collisions	883	↑ +5%	**929**
	Total Persons Injured	1,131	↑ +7%	**1,207**
	Persons Injured per 1,000 population [Note 1]	5.35	↑ +7%	**5.72**
Fatal Collisions	Total Fatal Collisions	3.8	↑ +5%	**4**
	Total Fatalities	3.8	↑ +5%	**4**
	Fatalities per 100,000 population [Note 1]	1.80	↑ +5%	**1.90**
Alcohol	Total Alcohol-Related Collisions	101	→ +1%	**102**
	% of Collisions Involving Alcohol	2.72%	→ -1%	**2.69%**
	% of Drivers with Alcohol-Related Driver Conditions [Note 1]	1.33%	↓ -8%	**1.23%**
	Fatal Collisions with Alcohol-Related Driver Conditions	0.8	↑ +25%	**1**
	% of Fatal Collisions Involving Alcohol	21%	↑ +19%	**25%**

Category	Measure	City of Windsor		
		5-Year Average	Percentage Difference	2013
Driver Inattention [Note 2]	Total Inattentive Drivers in Collisions	1,212	↓ -43%	**692**
	% of Collisions Involving Inattention	32.7%	↓ -44%	**18.2%**
	% of Drivers Reported as Inattentive [Note 1]	16.5%	↓ -48%	**8.6%**
Driver Actions	% of Drivers Reported as Driving Properly [Note 1]	42.9%	→ -0%	**42.8%**
	Most Common Improper Action (where known) [Note 1]	Following Too Close		**Following Too Close**
Driver Condition [Note 2]	% of Drivers Reported as Normal Condition [Note 1]	56.3%	↑ 21%	**68.3%**
Cyclist Collisions	Total Cyclist Collisions (All Severities)	97.8	↑ +16%	**113**
	Total Cyclist Injury Collisions	84.2	→ -0%	**84**
	Total Cyclist Fatal Collisions	0.2	↓ -100%	**0**
	% of Cyclists Reported as Riding Properly	40%	↑ +15%	**46%**
	% of Cyclists Wearing Helmets (where known)	19%	↑ +173%	**52%**
	Most Common Improper Action – Cyclist (where known)	Failed to Yield Right-of-Way		**Failed to Yield Right-of-Way**
	Most Common Improper Action – Driver (where known)	Failed to Yield Right-of-Way		**Failed to Yield Right-of-Way**

Category	Measure	City of Windsor		
		5-Year Average	Percentage Difference	2013
Pedestrian Collisions	Total Pedestrian Collisions (All Severities)	77.6	↑ +6%	**82**
	Total Pedestrian Injury Collisions	71.8	↑ +7%	**77**
	Total Pedestrian Fatal Collisions	0.8	↑ +275%	**3**
	Most Common Improper Action – Driver	Failed to Yield Right-of-Way		**Failed to Yield Right-of-Way**

Notes:
1. Comparison with Provincial statistics available – see Table 35.
2. Police reporting practices for driver condition changed significantly for 2013. Readers should use caution when comparing 2013 statistics to previous years.

Table 35 gives a summary of the performance of the City of Windsor compared to the Province of Ontario for measures where provincial statistics were available. Up, down, and horizontal arrows indicate that the City of Windsor value is higher than, lower than, or within 5% of the overall value for the Province of Ontario, and the arrow is coloured green or red, respectively, if Windsor compares favourably or unfavourably with the Province overall; a black arrow indicates that the measure is either close in value or is not clearly favourable or unfavourable. The most recent year of statistics available for Ontario is 2011; five-year provincial averages were based on 2007 through 2011.

Table 35: Summary - City of Windsor vs. Province of Ontario

Category	Measure	Province of Ontario 5-year Average	Windsor vs. Ontario	City of Windsor 5-year Average
Injury Collisions	Persons Injured per 1,000 population	4.89	↑ +9%	**5.35**
Fatal Collisions	Fatalities per 100,000 population	4.66	↓ -61%	**1.80**
Inattentive Drivers	% of Drivers Reported as Inattentive	10.2%	↑ +62%	**16.5%**
Alcohol	% of Drivers with Alcohol-Related Driver Conditions	1.68%	↓ -21%	**1.33%**
Driver Actions	% of Drivers Reported as Driving Properly	49.3%	↓ -13%	**42.9%**
	Most Common Improper Action (where known)	Following Too Close		**Following Too Close**
Driver Condition	% of Drivers Reported as Normal Condition	72.9%	↓ -23%	**56.3%**

The majority of 2013 City of Windsor collisions (57%) occurred at intersections or were intersection related. The worst locations for each category are given in Table 36.

Table 36: High Collision Locations

Category	Location	Collisions (2009 – 2013)	Collision Rate
Signalized Intersections	County Road 42 & Lauzon Pky.	68	1.56 collisions per million vehicles entering
Unsignalized Intersections	Dougall Ave. & Ouellette Pl.	78	N/A
Mid-Block Sections	Pitt St. E (Ouellette Ave. to Goyeau St.)	11	14.89 collisions per million vehicle-kilometres

10 Consultations

The following agencies and City departments/divisions were consulted in the preparation of this report and are thanked for their cooperation and assistance:

- Windsor Police Service
- Office of the City Solicitor – Risk Management
- Office of the City Engineer – Planning
- Office of the City Engineer – Traffic Operations
- Office of the City Engineer – Engineering

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