



# 2012 Road Safety Report

---

*May 7, 2013*

Office of the City Engineer  
Engineering Department  
Transportation Planning Division

## Table of Contents

Executive Summary.....	vi
1 Introduction .....	1
1.1 Background .....	1
1.2 Limitations and Disclaimer.....	1
1.3 Population Projections.....	1
1.4 Road Network Changes.....	2
2 Trends in City of Windsor Collision Data.....	3
2.1 Overall Number of Collisions .....	3
2.2 Injuries and Fatalities per Capita .....	4
2.3 Annual and Daily Variation .....	5
2.3.1 Annual Variation by Month.....	5
2.3.2 Daily Variation by Hour .....	6
2.4 Characteristics of Collisions .....	9
2.4.1 Impact Type.....	9
3 Areas of Special Focus.....	10
3.1 Alcohol Involvement .....	10
3.2 Inattentive Drivers .....	12
4 Drivers.....	15
4.1 Driver Demographics .....	15
4.2 Driver Actions.....	15
4.3 Condition of Driver.....	17
5 Cyclists.....	19
5.1 Note – Data Limitations .....	19
5.2 General.....	19
5.3 Cyclist Demographics .....	19
5.4 Cyclist Actions .....	20
5.5 Driver’s Actions in Cyclist Collisions.....	21
5.6 Location of Cyclist Collisions .....	22
5.7 Helmet Use.....	23

6	Pedestrians.....	25
6.1	Note – Data Limitations .....	25
6.2	General.....	25
6.3	Pedestrian Demographics .....	25
6.4	Pedestrian Actions .....	26
6.5	Driver Actions in Pedestrian Collisions .....	27
6.6	Pedestrian Conditions .....	27
6.7	Lighting Condition .....	28
6.8	Type of Traffic Control .....	28
7	Environment.....	30
7.1	Weather and Light Conditions .....	30
7.2	Road Surface .....	32
7.2.1	Winter Weather Collisions .....	33
7.3	Pavement Markings .....	33
7.4	Road Characteristics.....	34
7.5	Traffic Control Condition.....	35
8	Location.....	36
8.1	General.....	36
8.2	Intersection .....	37
8.2.1	Signalized .....	37
8.2.2	Unsignalized .....	39
8.3	Mid-Block .....	40
9	Conclusions .....	42
10	Recommendations for Future Versions of the Report.....	46
11	Consultations .....	47
12	Works Cited.....	48

## List of Tables

Table 1: City of Windsor Population Estimates.....	2
Table 2: Number of Collisions by Year – City-wide .....	3
Table 3: Injury and Fatality Rates Relative to Population .....	4
Table 4: Monthly Variation over the Year.....	5
Table 5: Hourly Variation over the Day.....	7
Table 6: Impact Types .....	9
Table 7: Alcohol Involvement in Collisions .....	10
Table 8: Driver Conditions Involving Alcohol .....	11
Table 9: Driver Inattentiveness in Collisions .....	12
Table 10: Driver Conditions Involving Inattention .....	13
Table 11: Ages of Drivers Involved in Collisions.....	15
Table 12: Driver Actions in Collisions.....	16
Table 13: Driver Condition .....	18
Table 14: Collision Severity - Cyclist Collisions.....	19
Table 15: Demographics of Cyclists in Reported Collisions .....	20
Table 16: Reported Cyclist Action at the Time of Collision .....	21
Table 17: Reported Driver Action in Cyclist Collisions .....	22
Table 18: Collision Location - Cyclist Collisions.....	22
Table 19: Helmet use by Cyclists and Bicycle Passengers.....	23
Table 20: Collision Severity - Pedestrian Collisions.....	25
Table 21: Demographics of Pedestrians in Reported Collisions .....	26
Table 22: Reported Pedestrian Action at the Time of Collision.....	26
Table 23: Reported Driver Action in Pedestrian Collisions .....	27
Table 24: Pedestrian Condition in Reported Collisions.....	27
Table 25: Lighting Conditions in Pedestrian Collisions .....	28
Table 26: Type of Traffic Control - Pedestrian Collisions .....	29
Table 27: Environmental Conditions - 2012 Collisions .....	30
Table 28: Lighting Conditions - 2012 Collisions .....	31
Table 29: Road Surface Conditions - 2012 Collisions .....	32
Table 30: Pavement Marking Condition - 2012 Collisions .....	33
Table 31: Road Character - 2012 Collisions .....	34
Table 32: Traffic Control Condition - 2012 Collisions (Locations with Traffic Control Present) .....	35
Table 33: Collision Locations - 2012.....	36
Table 34: High Collision Locations – Signalized Intersections.....	38
Table 35: High Collision Locations – Unsignalized Intersections .....	39
Table 36: High Collision Locations – Mid-block .....	41
Table 37: Key Statistics with Comparisons to 5-Year Averages .....	42
Table 38: Summary - City of Windsor vs. Province of Ontario.....	45
Table 39: High Collision Locations .....	45

## List of Figures

Figure 1: Number of Collisions by Year – City-wide .....	3
Figure 2: Monthly Variation over the Year .....	6
Figure 3: Hourly Variation over the Day .....	8
Figure 4: Impact Types .....	9
Figure 5: Alcohol Involvement in Collisions .....	11
Figure 6: Driver Inattentiveness in Collisions.....	13
Figure 7: Driver Action in Collisions – City of Windsor vs. Province-wide .....	17
Figure 8: Impact Location - Cycling Collisions .....	23
Figure 9: Environmental Conditions - 2012 Collisions .....	30
Figure 10: Lighting Conditions - 2012 Collisions .....	31
Figure 11: Road Surface Conditions - 2012 Collisions.....	32
Figure 12: Pavement Marking Condition - 2012 Collisions.....	33
Figure 13: Road Character - 2012 Collisions .....	34
Figure 14: Traffic Control Condition - 2012 Collisions (Locations with Traffic Control Present) .....	35
Figure 15: Collision Locations – 2012.....	36

## Executive Summary

This annual report provides statistical data on all reported collisions on roads under the jurisdiction of the City of Windsor for the 2012 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 and streets. Unreported collisions and collisions on private property are not included.

### Overall Trends

In 2012, there were a total of 3,634 reported collisions on roads and streets under the jurisdiction of the City of Windsor, consisting of 7 fatal collisions, 889 injury collisions, and 2,738 property damage only collisions. The overall number of collisions on City of Windsor roads and streets for 2012 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			Total
	Fatality	Injury	Property Damage Only	
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
<b>2012</b>	<b>7</b>	<b>889</b>	<b>2,738</b>	<b>3,634</b>

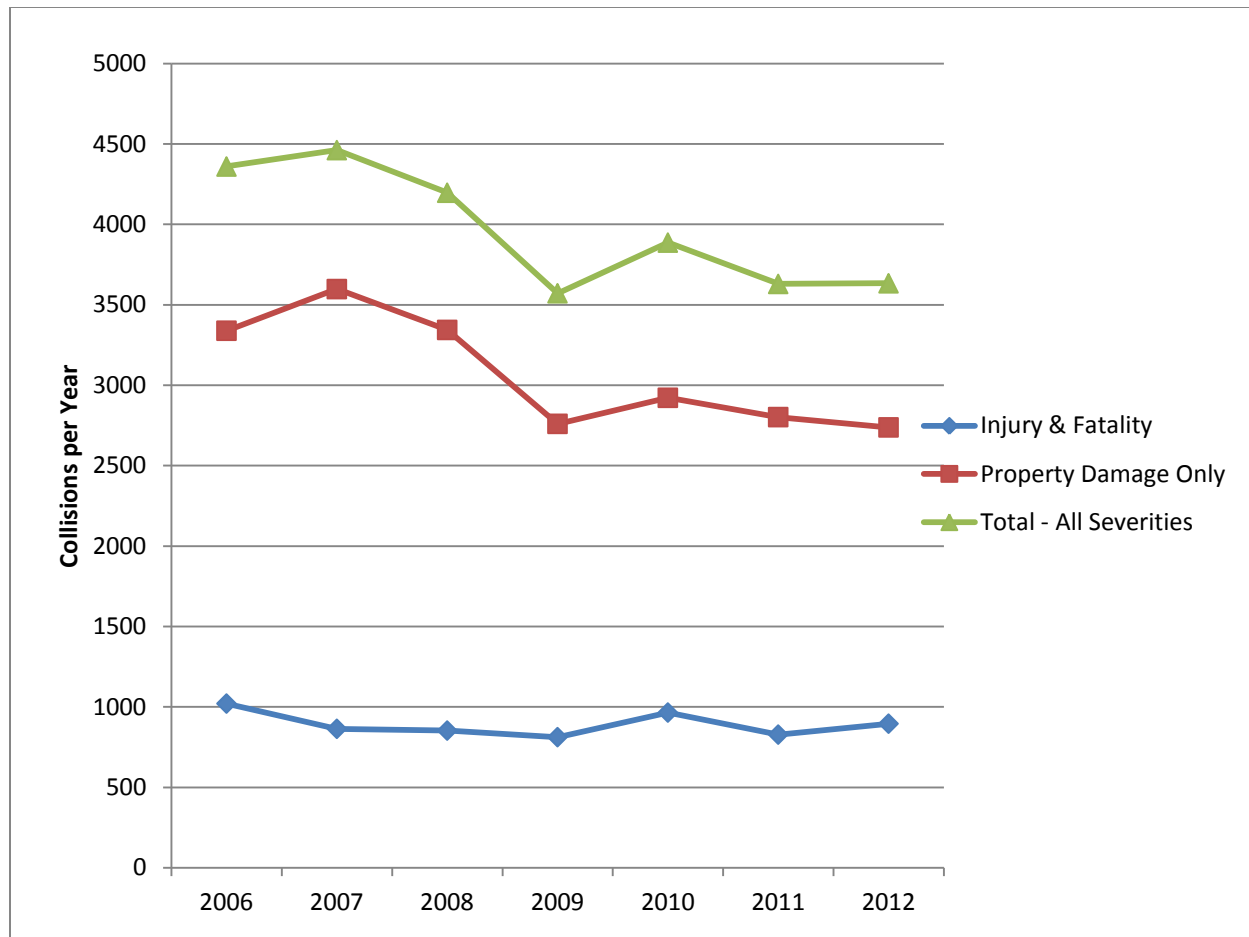


Figure E-1: Number of Collisions by Year – City-wide

Year-over-year, the total number of collisions increased by 0.1% from 2011 to 2012. The number of injury and fatality collisions increased by 8.2% over the same period.

### Area of Special Focus – Alcohol Involvement

Alcohol was involved in 2.6% of City of Windsor collisions in 2012. While this is low relative to historical percentages and lower than the 2008-2012 five-year average of 2.8%, it is higher than the record low of 2.2%, which occurred in 2009.

1.2% of drivers in 2012 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 1.5%.

In 2012, 43% (3 collisions) of City of Windsor fatal collisions involved alcohol.

### Area of Special Focus – Inattentive Driving

In 2012, 16.4% 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. Both the number and percentage of City of Windsor collisions involving driver inattention decreased from 2011 to 2012, going against the established recent trend of steady year-over-year increases. As shown in Table E-2 and Figure E-2, while collisions involving inattentive drivers have decreased year-over-year, the percentage of collisions involving driver inattention for 2012 remains more than 50% higher than for 2006.

Table E-2: Driver Inattentiveness in Collisions

Year	Total Collisions	Total Inattention-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%
2011	3,630	1,518	41.8%
<b>2012</b>	<b>3,635</b>	<b>1,238</b>	<b>34.1%</b>
<b>5-year average – 2008 to 2012</b>			<b>34.5%</b>

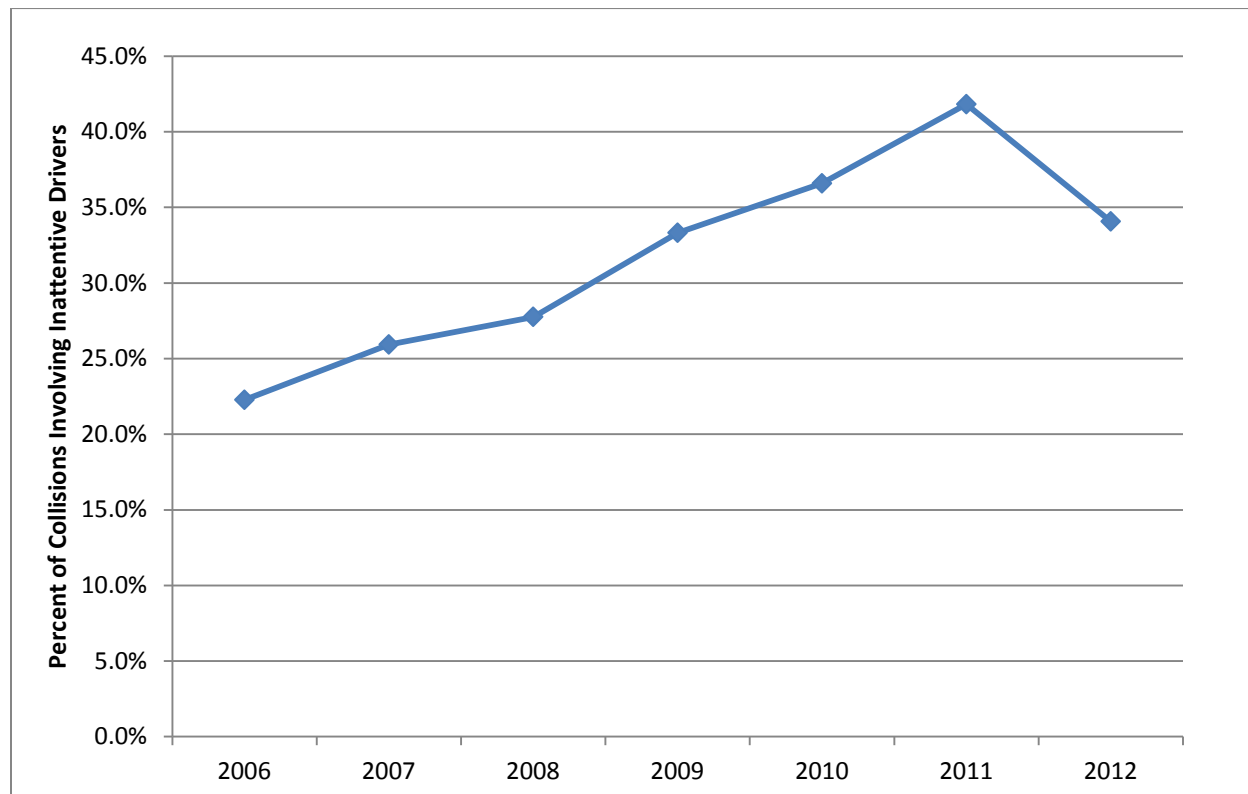


Figure E-2: Driver Inattentiveness in Collisions



### *High Collision Locations*

Based on a five-year collision history (2008 through 2012), 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 2008 through 2012, three signalized intersections had no reported collisions:

- Richmond Street and Walker Road
- College Avenue and Wellington Avenue
- Maiden Lane East and Ouellette Avenue

Table E-4: High Collision Locations – Signalized Intersections

Rank (Signalized)	Street 1	Street 2	Collisions 2008-2012	Annual Average Daily Traffic - All Legs [vehicles per day]	Collisions per Million Vehicles Entering Intersection
1	County Road 42	Lauzon Pky	69	47,900	1.58
2	Central Ave	E C Row E/B On Ramp	79	63,800	1.36
3	Pelissier St	Wyandotte St W	52	44,400	1.28
4	Goyeau St	Wyandotte St E	83	73,200	1.24
5	Banwell Rd	E C Row Expy	113	105,400	1.17
6	Crawford Ave	Wyandotte St W	57	53,500	1.17
7	Provincial Rd	Sixth Concession Rd	43	41,000	1.15
8	Lauzon Pky	Tecumseh Rd E	113	115,800	1.07
9	Howard Ave	Tecumseh Rd E	95	102,100	1.02
10	Erie St E	Ouellette Ave	44	48,800	0.99
11	Drouillard Rd	Wyandotte St E	42	47,000	0.98
12	Lauzon Pky	South Service Rd / Twin Oaks Dr	42	47,500	0.97
13	Central Ave	North Service Rd / Temple Dr	72	82,100	0.96
14	Provincial Rd	Walker Rd	65	74,300	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	Campbell Ave	College Ave	29	34,500	0.92
18	Central Ave	Grand Marais Rd E / Plymouth Dr	68	81,000	0.92
19	Cabana Rd E	Provincial Rd	52	62,000	0.92
20	Erie St E	Goyeau St	28	34,700	0.88
21	Forest Glade Dr	Tecumseh Rd E	49	61,000	0.88
22	E C Row W/B Off Ramp	Howard Ave	83	105,700	0.86
23	McDougall St	Tecumseh Rd E	53	67,600	0.86
24	Ouellette Ave	Tecumseh Rd W	85	108,900	0.86
25	Central Ave	E C Row W/B On Ramp	73	94,400	0.85
<b>Average Collision Rate – All City of Windsor Signalized Intersections</b>					<b>0.51</b>

Table E-5: High Collision Locations – Unsignalized Intersections

Rank (Unsignalized)	Street 1	Street 2	Collisions 2008-2012
1	Dougall Ave	Ouellette Pl	86
2	Division Rd	Riberdy Rd	22
2	Hanna St E	Ouellette Ave	22
2	Mercer St	Wyandotte St E	22
5	California Ave	Wyandotte St W	21
6	Giles Blvd W	Pelissier St	19
6	Howard Ave	South Cameron Blvd	19
8	Dougall Ave	South Cameron Blvd	18
8	Enterprise Way	Lauzon Pky	18
10	9th Con Rd	County Road 42	17
10	Cabana Rd E	Holburn St	17
10	Tecumseh Rd E	Turner Rd	17
13	Caron Ave	Wyandotte St W	16
13	Dougall Ave	E C Row E/B Off Ramp	16
13	Goyeau St	Tecumseh Rd E	16
13	Langlois Ave	Wyandotte St E	16
17	Cabana Rd E	Sixth Concession Rd	15
17	Olive Rd	Tecumseh Rd E	15
19	Ambassador Dr	Industrial Dr	14
19	Beals St W	Dougall Ave	14
19	Bruce Ave	Giles Blvd W	14
19	Dougall Ave	Wyandotte St W	14
19	Dougall Ave	E C Row W/B Off Ramp	14
19	Giles Blvd E	Langlois Ave	14
19	Hanna St E	McDougall St	14
19	McDougall St	Tuscarora St	14

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

Rank (Mid-blocks)	Street	From	To	Collisions 2008-2012	Annual Average Daily Traffic [vehicles per day]	Length [km]	Collisions per million vehicle-km
1	E C Row W/B Off Ramp (East-to-North Ramp)	E C Row W/B Off Ramp	Howard Ave	40	10,000	0.09	25.37
2	Chatham St W	Pelissier St	Ferry St	5	2,110	0.06	21.64
3	Pitt St E	Ouellette Ave	Goyeau St	10	2,400	0.17	13.53
4	Eugenie St E	Howard Ave	Remington Ave	3	3,700	0.04	11.75
5	Chatham St W	Ouellette Ave	Pelissier St	5	3,400	0.08	9.71
6	Chatham St W	Dougall Ave	Church St	3	2,110	0.08	9.48
7	Chatham St W	Bruce Ave	Janette Ave	1	600	0.10	9.10
8	Victoria Ave	University Ave W	Park St W	6	2,900	0.14	7.92
9	Pitt St E	Goyeau St	McDougall St	8	2,400	0.24	7.75
10	Erie St W	Church St	Bruce Ave	5	3,500	0.11	6.96
11	Park St W	Pelissier St	Victoria Ave	3	2,750	0.09	6.43
12	Park St W	Victoria Ave	Dougall Ave	3	2,750	0.09	6.36
13	Grand Marais Rd W	Bruce Ave	Avondale Ave	4	3,100	0.11	6.23
14	University Ave E	City Hall Square E	McDougall St	3	6,700	0.04	6.15
15	Park St W	Ouellette Ave	Pelissier St	3	3,200	0.09	6.00
16	Wyandotte St E	Parent Ave	Langlois Ave	24	18,900	0.12	5.77
17	Pitt St W	Ouellette Ave	Ferry St	3	2,100	0.14	5.75
18	Gladstone Ave	Ottawa St	Ellis St E	3	1,400	0.21	5.64
19	Janette Ave	Pitt St W	Chatham St W	1	1,175	0.08	5.64
20	Janette Ave	Chatham St W	University Ave W	1	1,175	0.09	5.42
21	McDougall St	Tecumseh Rd E	Logan Ave	28	7,500	0.38	5.41
22	Pelissier St	University Ave W	Park St W	5	3,700	0.14	5.19
23	Grand Marais Rd W	Longfellow Ave	Dominion Blvd	3	2,800	0.11	5.13
24	Victoria Ave	Park St W	Wyandotte St W	9	3,200	0.31	5.01
25	Chatham St E	Ouellette Ave	Goyeau St	4	2,500	0.18	5.01
<b>Average Mid-block Collision Rates by Road Classification</b>				<b>Scenic Parkway</b>			<b>0.46</b>
				<b>Collector</b>			<b>0.98</b>
				<b>Arterial</b>			<b>0.79</b>
				<b>Expressway</b>			<b>0.43</b>

Notes:











1. Local streets and streets without volume information not included in table.

### Summary of Key Statistics

Key statistics for 2012 collisions in the City of Windsor are given in Table E-7. Up and down arrows indicate an increase or decrease, respectively, from 2011 to 2012. The colour of the arrow is green if the change is beneficial, red if negative, and black if neutral or negligible (less than 5% change).

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

Category	Measure	City of Windsor		
		5-Year Average	Percentage Difference	2012
Overall Collisions	Total Collisions – All Severities	3,784	➡ -4%	3,634
	Total Injury Collisions	867	➡ +3%	889
Injury Collisions	Total Persons Injured	1,114	➡ +3%	1,150
	Persons Injured per 1,000 population	5.25	➡ +4%	5.45
Fatal Collisions	Total Fatal Collisions	4.4	⬆ +59%	7
	Total Fatalities	4.4	⬆ +59%	7
	Fatalities per 100,000 population	2.07	⬆ +60%	3.32
Alcohol	Total Alcohol-Related Collisions	105	⬇ -10%	94
	% of Collisions Involving Alcohol	2.77%	⬇ -6%	2.59%
	% of Drivers with Alcohol-Related Driver Conditions	1.40%	⬇ -14%	1.20%
	Fatal Collisions with Alcohol-Related Driver Conditions	1.0	⬆ +200%	3
	% of Fatal Collisions Involving Alcohol	23%	⬆ +87%	43%

Category	Measure	City of Windsor		
		5-Year Average	Percentage Difference	2012
<b>Driver Inattention</b>	Total Inattentive Drivers in Collisions	1,457	 -15%	<b>1,238</b>
	% of Collisions Involving Inattention	34.5%	 -1%	<b>34.1%</b>
	% of Drivers Reported as Inattentive [Note 1]	17.7%	 -7%	<b>16.4%</b>
<b>Cyclist Collisions</b>	Total Cyclist Collisions (All Severities)	96.2	 -3%	<b>93</b>
	Total Cyclist Injury Collisions	73.2	 -23%	<b>56</b>
	Total Cyclist Fatal Collisions	0.2	 +400%	<b>1</b>
	% of Cyclists Wearing Helmets (where known)	18%	 -28%	<b>13%</b>
<b>Pedestrian Collisions</b>	Total Pedestrian Collisions (All Severities)	76.0	 +16%	<b>88</b>
	Total Pedestrian Injury Collisions	70.6	 +16%	<b>82</b>
	Total Pedestrian Fatal Collisions	0.6	 +67%	<b>1</b>

### 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
<b>Injury Collisions</b>	Persons Injured per 1,000 population	5.12	➡ +3%	<b>5.25</b>
<b>Fatal Collisions</b>	Fatalities per 100,000 population	5.04	⬇️ -59%	<b>2.07</b>
<b>Inattentive Drivers</b>	% of Drivers in Collisions Reported as Inattentive	9.2%	⬆️ +92%	<b>17.7%</b>
<b>Alcohol</b>	% of Drivers in Collisions with Alcohol-Related Driver Conditions	1.72%	⬇️ -19%	<b>1.40%</b>
<b>Driver Actions</b>	% of Drivers in Collisions Reported as Driving Properly	49.1%	⬇️ -13%	<b>42.9%</b>

## 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 and streets 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.

*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 2012. 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
<b>2006</b>	216,473	Census
<b>2007</b>	215,357	Estimate
<b>2008</b>	214,240	Estimate
<b>2009</b>	213,124	Estimate
<b>2010</b>	212,007	Estimate
<b>2011</b>	210,891	Census
<b>2012</b>	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 20 collisions on these transferred sections in 2011 and 17 collisions in 2012, which represent approximately 0.5% of the total number of collisions in each year respectively.

## 2 Trends in City of Windsor Collision Data

### 2.1 Overall Number of Collisions

The total number of reported collisions in the City of Windsor in 2012 was 3,634. Of these, 7 were fatal collisions, 889 were non-fatal injury collisions, and 2,738 were property damage only (PDO) collisions.

A comparison of 2012 versus previous years is provided in Table 2 and shown graphically in Figure 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 2: Number of Collisions by Year – City-wide

Year	Collisions			Total
	Fatality	Injury	Property Damage Only	
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
<b>2012</b>	<b>7</b>	<b>889</b>	<b>2,738</b>	<b>3,634</b>

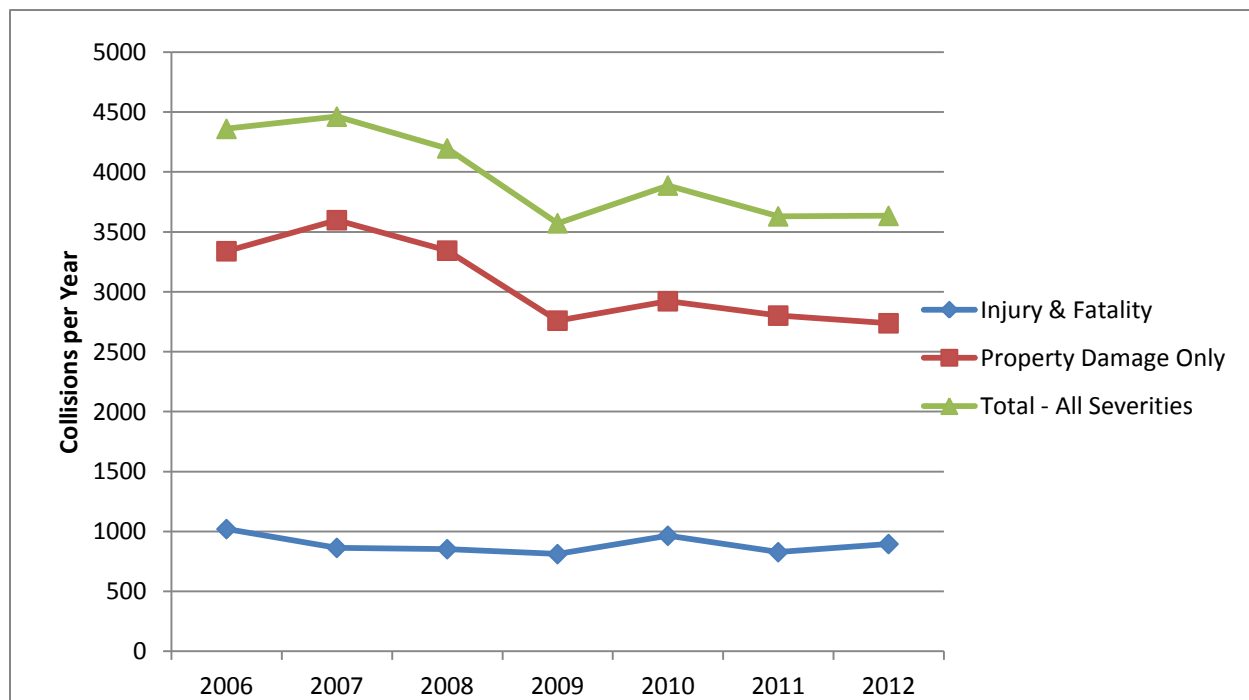


Figure 1: Number of Collisions by Year – City-wide

From 2011 to 2012, the total number of collisions increased by 0.1%, which runs counter to the 5-year trend from 2008 through 2012 of a decrease of 3.3% per year, on average. The total number of injury and fatality collisions increased by 8.2% from 2011 to 2012, which was greater than the 5-year trend of a 1.3% increase per year, on average.

Overall, the number of collisions in 2012 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)

## 2.2 Injuries and Fatalities per Capita

Rates for collision injuries and fatalities relative to the City of Windsor population are given in Table 3.

**Table 3: 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
<b>2012</b>	<b>3,634</b>	<b>1,150</b>	<b>5.45</b>	<b>7</b>	<b>3.32</b>
<b>5-Year Average – 2008 to 2012</b>			<b>5.25</b>		<b>2.07</b>

The rate of collision injuries relative to population increased from 4.85 in 2011 to 5.45 in 2012; While the rates of collision injuries relative to the population have shown both increases and decreases year-over-year, the overall trend in recent years has been downward; therefore, it is currently unclear whether the increase from 2011 to 2012 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 2012. 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 2012 rate of 3.32 collision fatalities per 100,000 population is higher than the 5-year City of Windsor average of 2.07 fatalities per 100,000; however, it is markedly lower than the provincial average of 4.31 fatalities per 100,000. (Ministry of Transportation of Ontario, 2013)

## 2.3 Annual and Daily Variation

### 2.3.1 Annual Variation by Month

The variation in collisions over the year is summarized in Table 4 and illustrated in Figure 2. In general, the collision rate was higher than average in June and October through January, and lower than average in February through September with the exception of June.

Table 4: Monthly Variation over the Year

Month	Collisions	% of Total	% of Average Month
January	334	9.2%	110%
February	276	7.6%	91%
March	273	7.5%	90%
April	252	6.9%	83%
May	290	8.0%	96%
June	336	9.2%	111%
July	291	8.0%	96%
August	292	8.0%	96%
September	284	7.8%	94%
October	342	9.4%	113%
November	316	8.7%	104%
December	348	9.6%	115%
<b>Total</b>	<b>3,634</b>	<b>100.0%</b>	

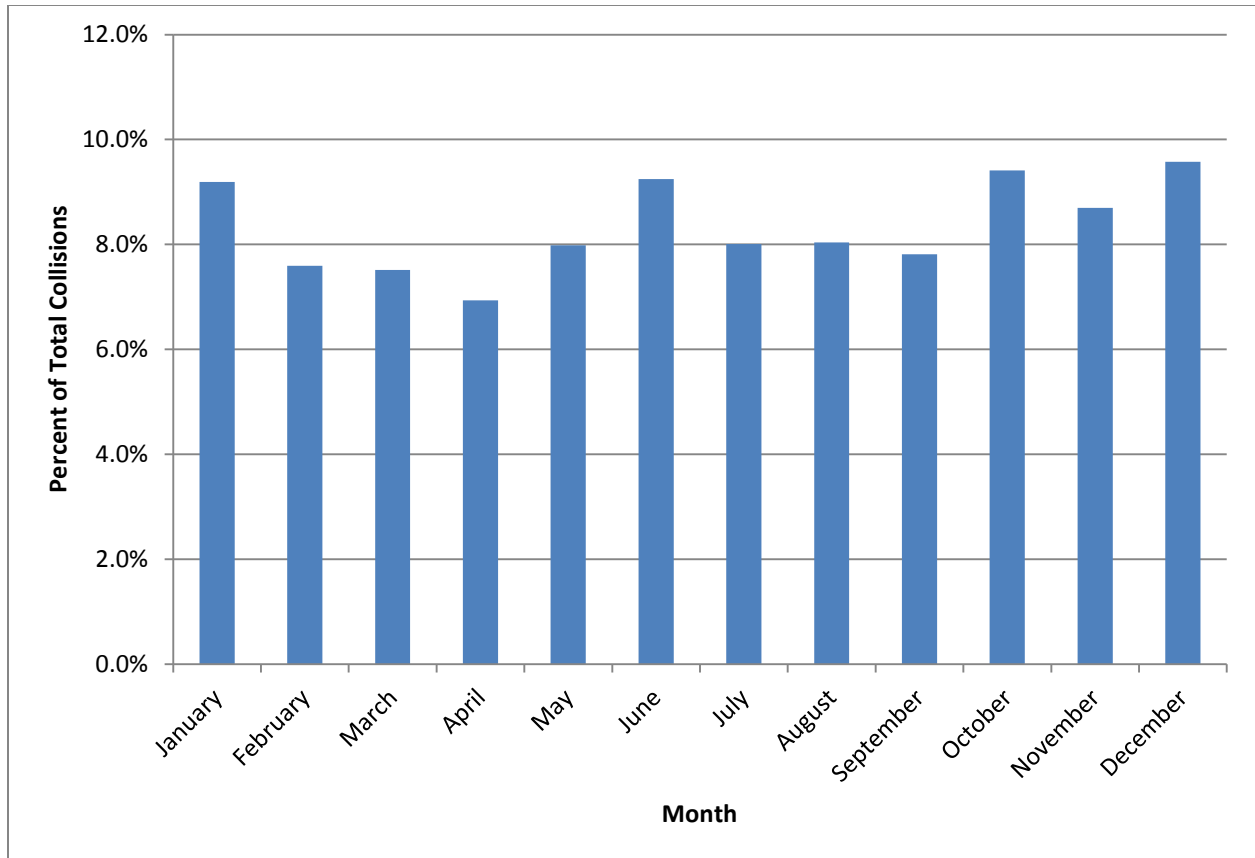


Figure 2: Monthly Variation over the Year

### 2.3.2 Daily Variation by Hour

A breakdown of collisions by hour of day is given in Table 5. This data is shown graphically in Figure 3, 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 5: Hourly Variation over the Day

Hour	Collisions	% of Total
0:00 - 1:00	46	1.3%
1:00 - 2:00	36	1.0%
2:00 - 3:00	48	1.3%
3:00 - 4:00	42	1.2%
4:00 - 5:00	14	0.4%
5:00 - 6:00	16	0.4%
6:00 - 7:00	51	1.4%
7:00 - 8:00	112	3.1%
8:00 - 9:00	218	6.0%
9:00 - 10:00	167	4.6%
10:00 - 11:00	191	5.3%
11:00 - 12:00	244	6.7%
12:00 - 13:00	268	7.4%
13:00 - 14:00	239	6.6%
14:00 - 15:00	266	7.3%
15:00 - 16:00	336	9.2%
16:00 - 17:00	326	9.0%
17:00 - 18:00	307	8.4%
18:00 - 19:00	191	5.3%
19:00 - 20:00	160	4.4%
20:00 - 21:00	111	3.1%
21:00 - 22:00	95	2.6%
22:00 - 23:00	83	2.3%
23:00 - 0:00	67	1.8%
<b>Total</b>	<b>3,634</b>	<b>100.0%</b>

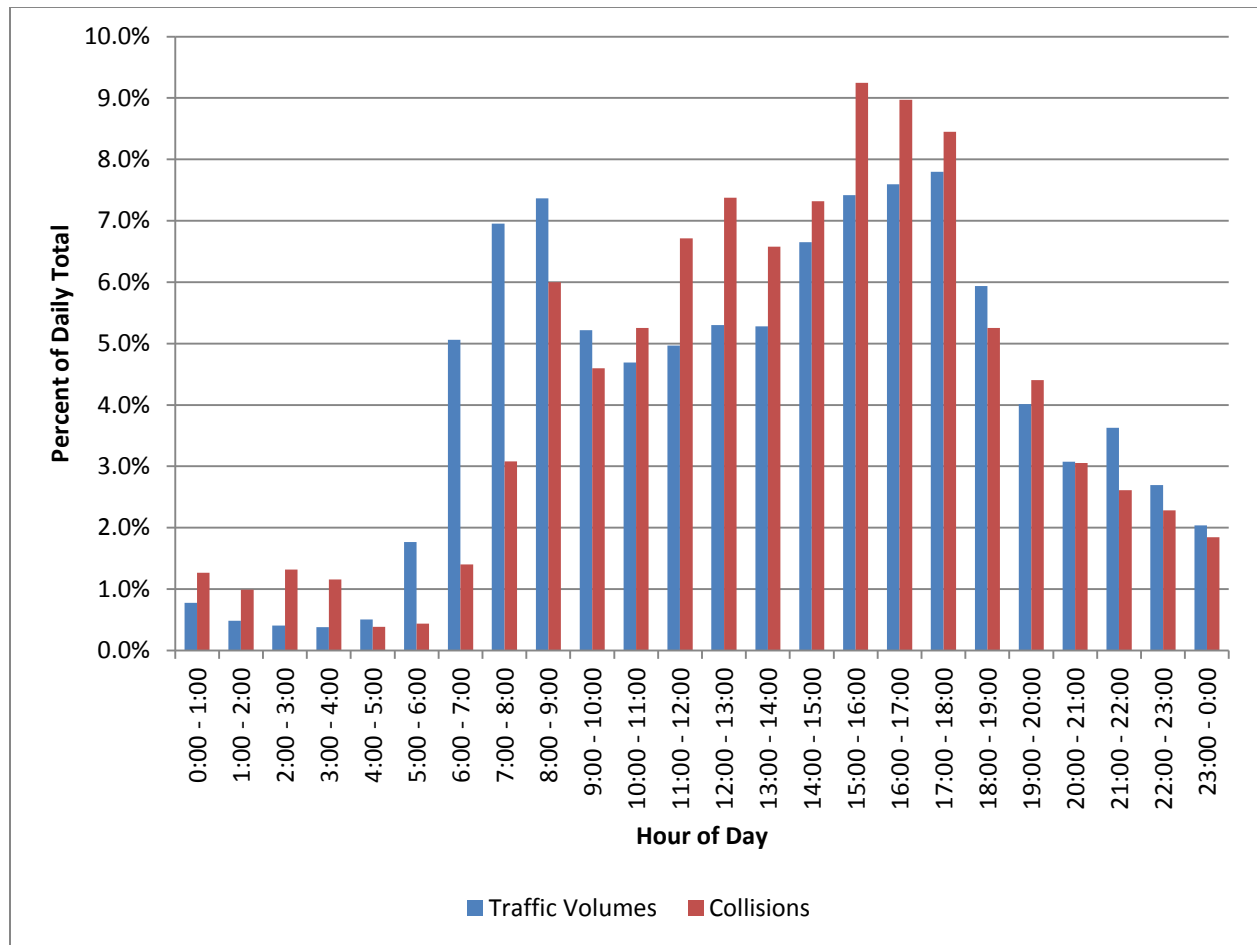


Figure 3: Hourly Variation over the Day

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.

## 2.4 Characteristics of Collisions

### 2.4.1 Impact Type

The impact types for 2012 City of Windsor collisions are summarized in Table 6 and illustrated graphically in Figure 4. Rear-end collisions were the most frequent collision type (35%).

Table 6: Impact Types

Type	Collisions	% of Total
Rear End	1,255	34.5%
Angle	568	15.6%
Turning	499	13.7%
Sideswipe	399	11.0%
Approaching	392	10.8%
SMV Other	278	7.6%
SMV Unattended	192	5.3%
Other	48	1.3%
Unknown	3	0.1%
<b>Total</b>	<b>3,634</b>	<b>100%</b>

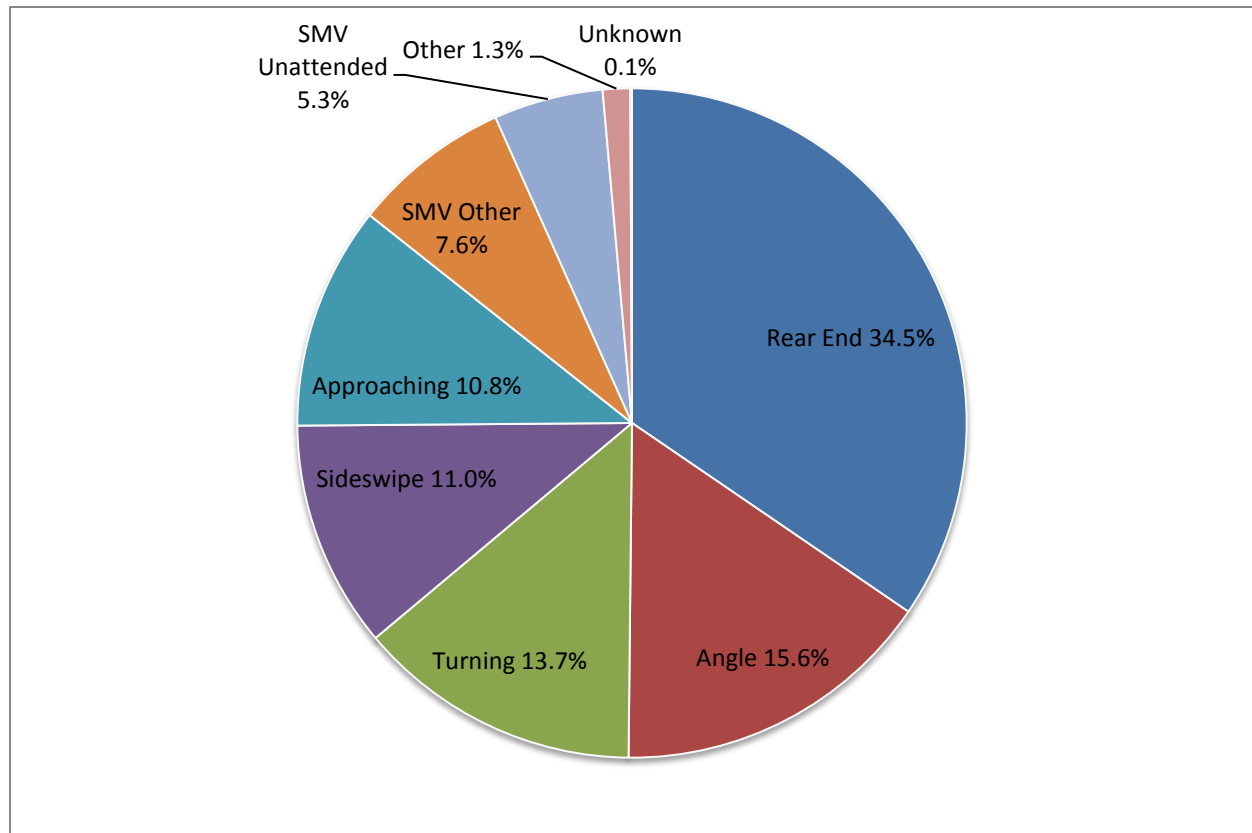


Figure 4: Impact Types



### 3 Areas of Special Focus

#### 3.1 Alcohol Involvement

For 2012, alcohol was found to be involved in 2.59% of collisions. This percentage is slightly below the 5-year City of Windsor average of 2.77% and significantly below historical percentages, (City of Windsor, 2005) and is only slightly above the City of Windsor record low of 2.18% in 2009.

43% of fatal collisions in the City of Windsor (3 collisions) involved drivers with alcohol-related driver conditions. On average, alcohol was involved in 23% percent of fatal collisions in the five-year period of 2008 through 2012.

The number of fatal alcohol-related collisions has varied between 0 and 3 per year from 2006 to 2012. 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 2012 with previous years is given in Table 7 and Figure 5. “Alcohol-related collisions” include collisions with driver conditions “had been drinking”, “ability impaired – alcohol”, and “ability impaired – alcohol over 0.08”.

Table 7: 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%
<b>5-year Average – 2008 to 2012</b>		<b>104</b>	<b>2.77%</b>		<b>1.0</b>	<b>23%</b>

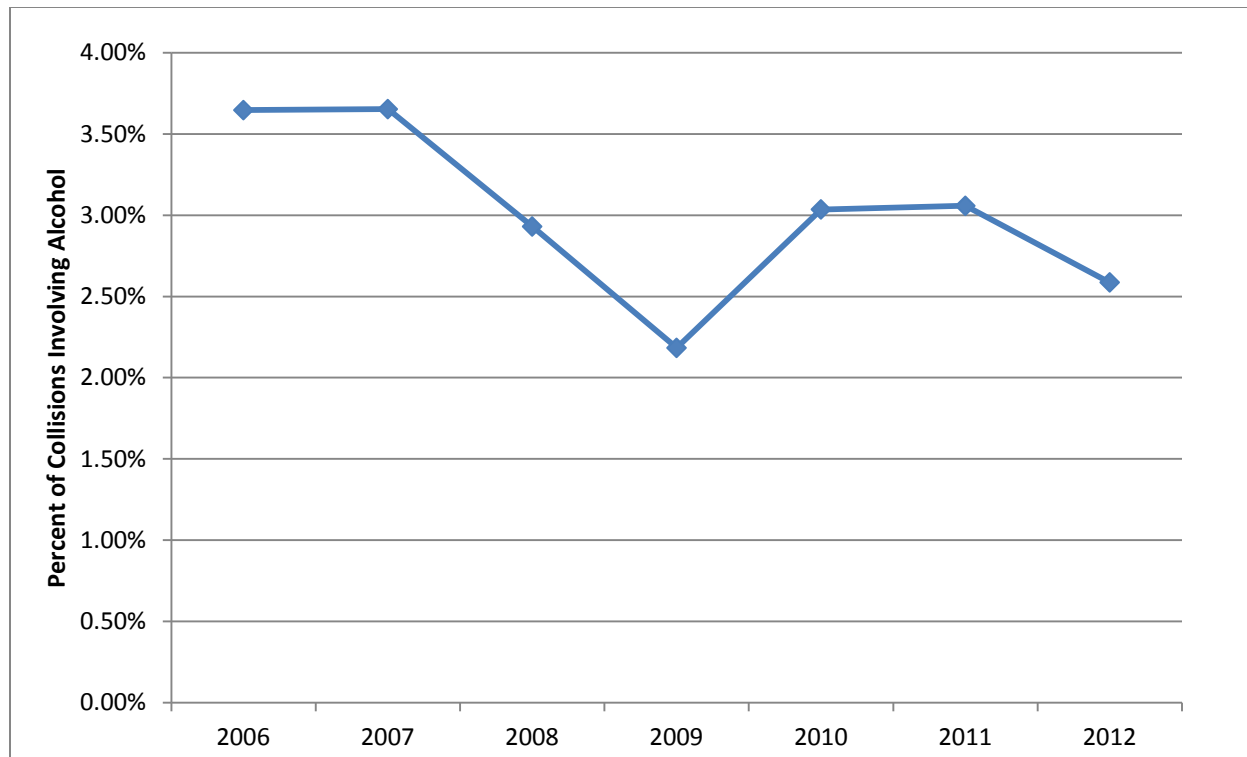


Figure 5: Alcohol Involvement in Collisions

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 8. (Ministry of Transportation of Ontario, 2013) Additional discussion on driver condition is provided in Section 4.3.

Table 8: Driver Conditions Involving Alcohol

Driver Condition	Drivers	Percent of Total - City of Windsor	Province of Ontario 2010
Had Been Drinking	31	0.39%	0.65%
Ability Impaired – Alcohol	31	0.39%	0.32%
Ability Impaired – Alcohol over 0.08	33	0.42%	0.56%
<b>Subtotal – Alcohol Involvement</b>	<b>95</b>	<b>1.20%</b>	<b>1.53%</b>
<b>Total – All Driver Conditions</b>	<b>7,914</b>		

As noted in Table 8, 1.20% of drivers involved in 2011 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 1.53%. (Ministry of Transportation of Ontario, 2013)

### 3.2 Inattentive Drivers

In 2012, 34.1% of all City of Windsor collisions involved driver inattention. This represents a major increase from historical levels. As shown in Table 9 and Figure 6, 2012 is the first time in several years that the percentage of collisions with an “inattentive” driver condition decreased. However, while the number of inattention-related collisions is lower in 2012 than 2011, the 2012 percentage is still more than 50% higher than the percentage for 2006.

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 9: 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%
2011	3,630	1,518	41.8%
<b>2012</b>	<b>3,635</b>	<b>1,238</b>	<b>34.1%</b>
<b>5-year Average – 2008 through 2012</b>			<b>34.5%</b>

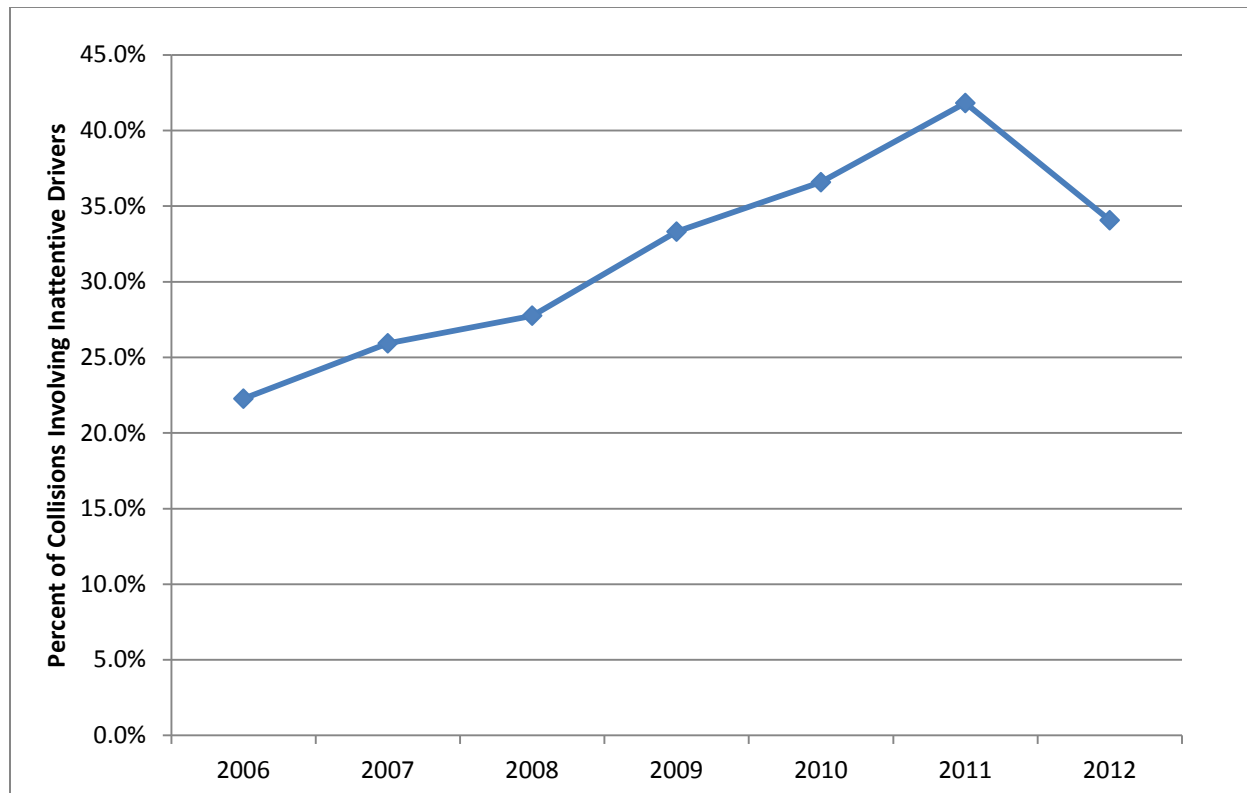


Figure 6: Driver Inattentiveness in Collisions

As indicated by the number of collisions given in Table 9, while the overall number of collisions per year has dropped by 17% from 2006 to 2012, the number of collisions per year involving inattentive drivers has increased by 27% over the same period.

Provincial statistics for inattentiveness in collisions are given on the basis of drivers rather than collisions: while 1,238 of the 3,635 collisions on City of Windsor streets in 2012 involved driver inattention, 1,297 of the 7,914 drivers involved in Windsor collisions over this period were reported as inattentive (since, in most cases, in a two-car collision involving driver inattention, one driver would be reported as “inattentive” and the other as “driving normally”). 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 10.

Table 10: Driver Conditions Involving Inattention

Driver Condition	Drivers	Percent of Total – City of Windsor	Province of Ontario 2010
Inattentive	1,297	16.4%	10.6%
All Other Conditions	6,205	83.6%	89.4%
<b>Total – All Driver Conditions</b>	<b>7,914</b>	<b>100.0%</b>	<b>100.0%</b>

The percentage of inattentive drivers involved in City of Windsor collisions in 2012 (16.4%) was more than 50% greater than the latest available provincial average (10.6%). (Ministry of Transportation of Ontario, 2013)

Additional discussion on driver condition is provided in Section 4.3.

## 4 Drivers

### 4.1 Driver Demographics

The 3,635 collisions that occurred on City of Windsor roads in 2012 involved 7,914 drivers (including cyclists). The ages of drivers involved in 2012 City of Windsor collisions is given in Table 11.

**Table 11: Ages of Drivers Involved in Collisions**

Age Range	Drivers	Percent
0-15	5	0.1%
15-24	1084	18.6%
25-34	1053	18.0%
35-44	1113	19.1%
45-54	1143	19.6%
55-64	760	13.0%
65-74	414	7.1%
75-84	212	3.6%
85-94	50	0.9%
94+	0	0.0%
Unknown	2,080	26.2%
<b>Total</b>	<b>7,914</b>	<b>100.0%</b>

### 4.2 Driver Actions

The apparent driver actions for all drivers involved in 2012 City of Windsor collisions are summarized in Table 12. 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 12: Driver Actions in Collisions

Type	Collisions	Percent
Driving Properly	3,426	43.3%
Unknown or No Info	1,408	17.8%
Following Too Close	1,017	12.9%
Failed to Yield Right-of-Way	518	6.5%
Lost Control	399	5.0%
Improper Turn	349	4.4%
Disobeyed Traffic Control	225	2.8%
Improper Lane Change	218	2.8%
Other	210	2.7%
Speed Too Fast for Condition	74	0.9%
Improper Passing	39	0.5%
Exceeding Speed Limit	28	0.4%
Wrong Way on One-Way Road	2	0.0%
Speed Too Slow	1	0.0%
<b>Total</b>	<b>7,914</b>	<b>100.0%</b>

The information in Table 12 is displayed graphically in Figure 7 along with Ontario-wide statistics for comparison. (Ministry of Transportation of Ontario, 2013) Of particular note, the category “speed too fast for condition” represents a much lower percentage of City of Windsor collisions than is typical province-wide. 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.

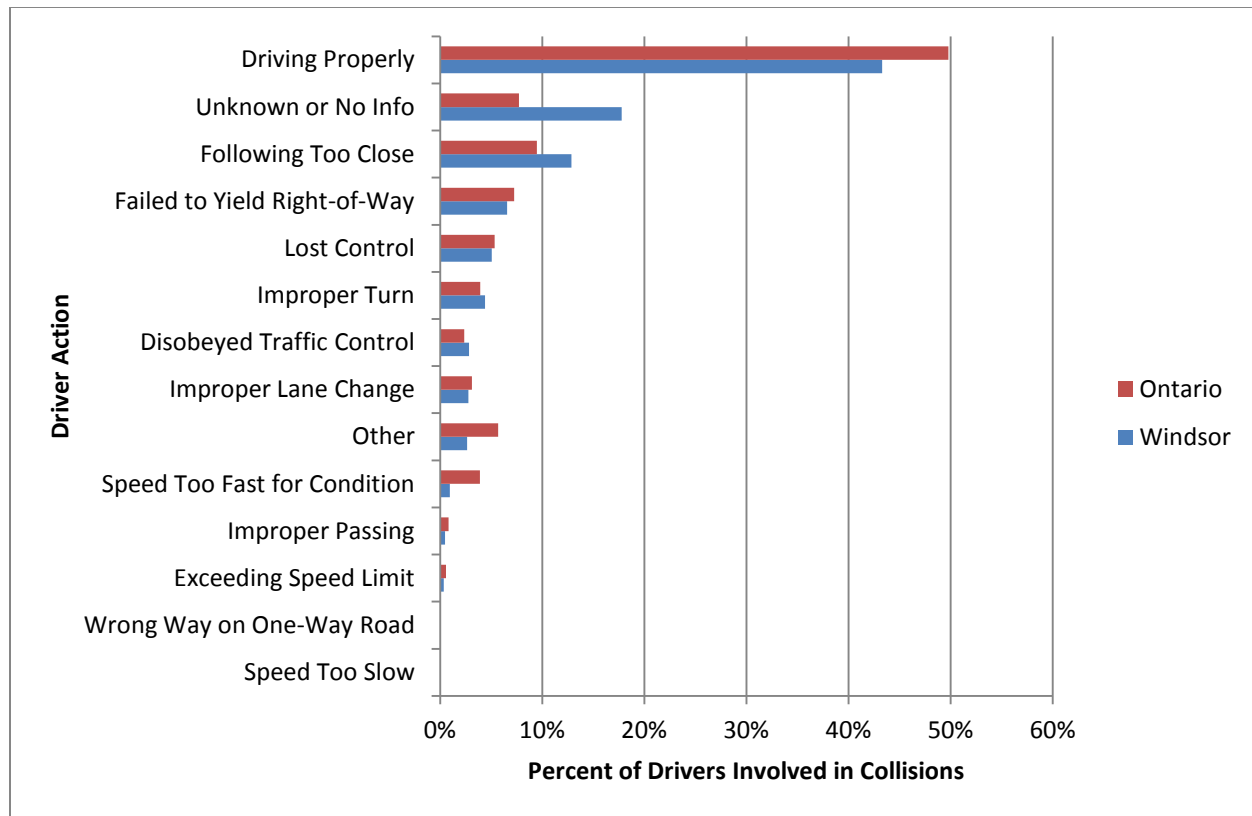


Figure 7: Driver Action in Collisions – City of Windsor vs. Province-wide

### 4.3 Condition of Driver

The reported condition of drivers in 2012 City of Windsor collisions is summarized in Table 13. The majority of drivers were classified as “normal” (60.1%); this is lower than the percentage Ontario-wide (75.7%). 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: 21.6%, Ontario: 11.1%). (Ministry of Transportation of Ontario, 2013)



Table 13: Driver Condition

Driver Condition	Collisions	Percent
Normal	4,756	60.1%
Unknown or No Info	1,709	21.6%
Inattentive	1,297	16.4%
Alcohol-Related Conditions	95	1.20%
<i>Ability Impaired, alcohol (over 0.08)</i>	33	0.42%
<i>Ability Impaired, alcohol</i>	31	0.39%
<i>Had Been Drinking</i>	31	0.39%
Medical or Physical Disability	34	0.4%
Fatigue	18	0.2%
Other	4	0.1%
Ability Impaired, drugs	1	0.0%
<b>Total</b>	<b>7,914</b>	<b>100.0%</b>

## 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 93 reported collisions involving cyclists in 2011 on City of Windsor roads and streets. These 93 collisions are broken down by severity in Table 14.

Table 14: Collision Severity - Cyclist Collisions

Severity	Number	Percent
Property Damage Only	36	39%
Injury	56	60%
Fatality	1	1%
<b>Total</b>	<b>93</b>	<b>100%</b>

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 2012 is slightly lower than the 5-year average from 2008 through 2012 of 96.2 collisions per year, and the number of cyclist injury collisions for 2012 is markedly below the 2008 through 2012 average (73.2 collisions per year). The 1 fatal cyclist collision in 2012 is more than previous years; for 2006 through 2011, no fatal cyclist collisions were recorded.

### 5.3 Cyclist Demographics

The ages of cyclists in 2012 City of Windsor collisions are summarized in Table 15. In cases where the cyclist’s age was known, the largest category was 40-49 years old.

Table 15: Demographics of Cyclists in Reported Collisions

Cyclist Age	Collisions	Percent
Unknown	21	23%
0-9	1	1%
10-19	15	16%
20-29	12	13%
30-39	12	13%
40-49	16	17%
50-59	8	9%
60-69	6	6%
70-79	2	2%
80+	0	0%
<b>Total</b>	<b>93</b>	<b>100%</b>

## 5.4 Cyclist Actions

Cyclist actions in 2012 City of Windsor collisions are summarized in Table 16. Overall, cyclists were riding properly in 43% of collisions, which is slightly lower than the provincial average of 47% (Ministry of Transportation of Ontario, 2013) 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 the 40-49 age range that made up the largest segment of cyclists involved in collisions, 44% were riding properly at the time of the collision.

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” (22%).

Table 16: Reported Cyclist Action at the Time of Collision

Cyclist Action	Cyclist Age										Total	Percent
	Age Unknown	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80+		
Riding Properly	9	0	3	6	9	7	3	2	1	0	<b>40</b>	43%
Failed to Yield Right-of-Way	4	1	6	0	0	4	3	2	0	0	<b>20</b>	22%
Disobeyed Traffic Control	1	0	2	3	1	2	2	1	1	0	<b>13</b>	14%
Other	2	0	3	3	1	1	0	0	0	0	<b>10</b>	11%
Lost Control	1	0	1	0	1	1	0	0	0	0	<b>4</b>	4%
Unknown or No Info	2	0	0	0	0	0	0	0	0	0	<b>2</b>	2%
Speed Too Fast for Condition	1	0	0	0	0	0	0	0	0	0	<b>1</b>	1%
Improper Passing	0	0	0	0	0	1	0	0	0	0	<b>1</b>	1%
Wrong Way on One-Way Road	1	0	0	0	0	0	0	0	0	0	<b>1</b>	1%
Improper Lane Change	0	0	0	0	0	0	0	1	0	0	<b>1</b>	1%
Following Too Close	0	0	0	0	0	0	0	0	0	0	<b>0</b>	0%
Exceeding Speed Limit	0	0	0	0	0	0	0	0	0	0	<b>0</b>	0%
Speed Too Slow	0	0	0	0	0	0	0	0	0	0	<b>0</b>	0%
Improper Turn	0	0	0	0	0	0	0	0	0	0	<b>0</b>	0%
<b>Total</b>	<b>21</b>	<b>1</b>	<b>15</b>	<b>12</b>	<b>12</b>	<b>16</b>	<b>8</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>93</b>	100%
Percent	23%	1%	16%	13%	13%	17%	9%	6%	2%	0%	100%	
<i>Percent Riding Properly by Age</i>	43%	0%	20%	50%	75%	44%	38%	33%	50%	N/A	43%	

## 5.5 Driver's Actions in Cyclist Collisions

Drivers' actions in 2012 City of Windsor collisions involving cyclists are summarized in Table 17. Overall, 61% of drivers in cyclist collisions were driving properly, which is somewhat higher than the provincial average of 48%. (Ministry of Transportation of Ontario, 2013) In cases where the driver was not driving properly, the most common driver action was "failed to yield right of way" (10%).

Table 17: Reported Driver Action in Cyclist Collisions

Driver Action	Collisions	Percent
Driving Properly	57	61%
Unknown or No Info	17	18%
Failed to Yield Right-of-Way	9	10%
Improper Turn	8	9%
Disobeyed Traffic Control	1	1%
Other	1	1%
Following Too Close	0	0%
Exceeding Speed Limit	0	0%
Speed Too Fast for Condition	0	0%
Speed Too Slow	0	0%
Improper Passing	0	0%
Lost Control	0	0%
Wrong Way on One-Way Road	0	0%
Improper Lane Change	0	0%
<b>Total</b>	<b>93</b>	<b>100%</b>

## 5.6 Location of Cyclist Collisions

The locations of collisions involving cyclists are summarized in Table 18 and Figure 8. In 2012, 63% of cyclist collisions occurred either at intersections or were intersection related. When this value is considered along with the 19% of collisions that occurred at private driveways, 83% of collisions occurred at points of conflict between bicycle and motor vehicle traffic.

Table 18: Collision Location - Cyclist Collisions

Collision Location	Collisions	Percent
Intersection	51	55%
Intersection Related	8	9%
<i>Subtotal - Intersection &amp; Intersection Related</i>	<i>59</i>	<i>63%</i>
Midblock - Private Driveway	18	19%
Midblock	16	17%
<i>Subtotal - All Midblock</i>	<i>34</i>	<i>17%</i>
<b>Total</b>	<b>93</b>	<b>100%</b>

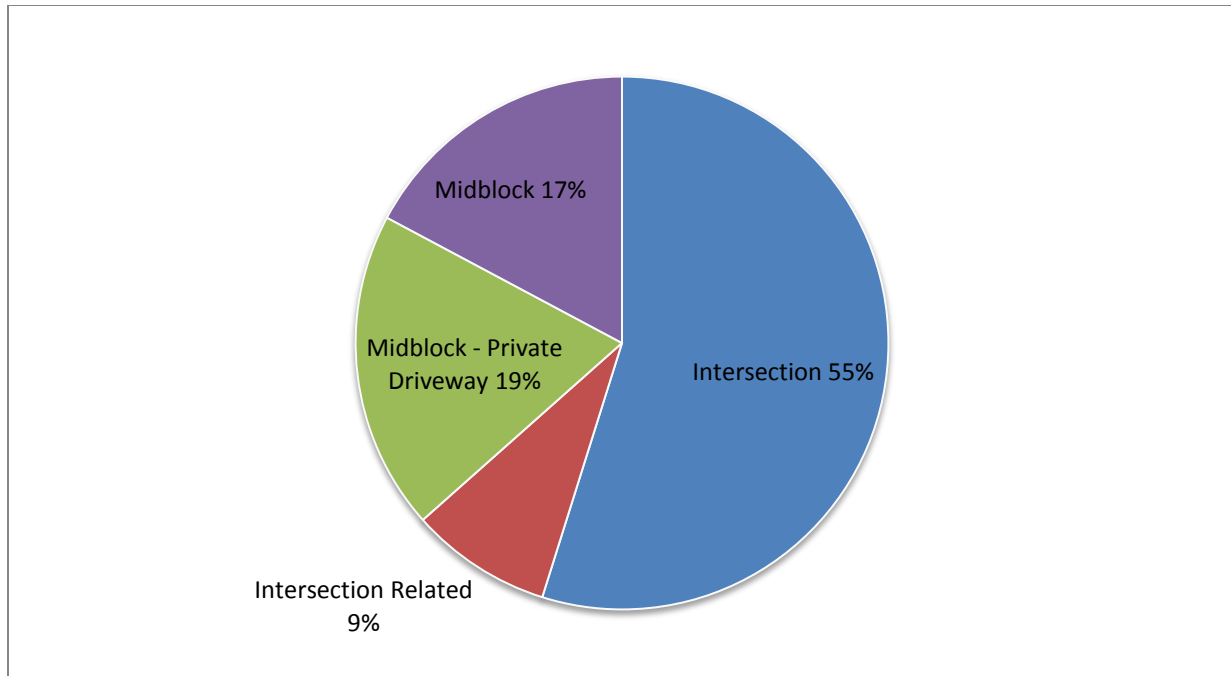


Figure 8: Impact Location - Cycling Collisions

## 5.7 Helmet Use

In the majority of collisions, the collision report specified that safety equipment used by the cyclist was unknown. Table 19 summarizes helmet use in cyclist collisions. Please note that the numbers given reflect both cyclists and bicycle passengers, and do not include collisions where the safety equipment used by the cyclist was unknown.

Table 19: Helmet use by Cyclists and Bicycle Passengers

Age	Helmet Used	No Helmet Present	Helmet Present but not Used	Percentage Using Helmet
Unknown	0	0	0	--
0-9	0	0	0	--
10-19	0	3	3	0%
20-29	0	2	2	0%
30-39	0	1	1	0%
40-49	2	3	3	25%
50-59	0	2	1	0%
60-69	1	2	3	17%
70-79	1	0	0	100%
80+	0	1	0	0%
<b>Total</b>	<b>4</b>	<b>14</b>	<b>13</b>	<b>13%</b>

Overall, as noted in the table above, in the cases where helmet use could be ascertained, only 13% of cyclists and passengers involved in collisions were wearing helmets. Of particular note is the fact that for youths and young adults in the 10-19-year-old age range, half of cyclists and bicycle passengers had helmets present but were not wearing them at the time of the collision.

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 88 reported collisions involving pedestrians on City of Windsor roads and streets in 2012. These 88 collisions are broken down by severity in Table 20.

Table 20: Collision Severity - Pedestrian Collisions

Severity	Collisions	Percent
Property Damage Only	5	6%
Injury	82	93%
Fatality	1	1%
<b>Total</b>	<b>88</b>	<b>100%</b>

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 2012, the total number of pedestrian collisions and the number of pedestrian injury collisions were somewhat higher than the 2008-2012 five-year averages (total: 76.0 collisions per year; injury: 70.6 collisions per year). The one fatal pedestrian collision in 2012 does represent a higher rate the 2008 to 2012 average of 0.6 collisions per year; however, this difference may be caused by random chance and not changes in behaviour or the physical environment affecting pedestrian safety.

### 6.3 Pedestrian Demographics

The ages of pedestrians in 2012 City of Windsor collisions are summarized in Table 21. The age category with the largest number of pedestrian collisions was 10 – 19 years old (19%).



Table 21: Demographics of Pedestrians in Reported Collisions

Pedestrian Age	Collisions	Percent
Unknown	13	15%
0 - 9	3	3%
10 - 19	17	19%
20 - 29	13	15%
30 - 39	7	8%
40 - 49	11	13%
50 - 59	8	9%
60 - 69	5	6%
70 - 79	7	8%
80+	4	5%
<b>Total</b>	<b>88</b>	<b>100%</b>

## 6.4 Pedestrian Actions

Pedestrian actions in 2012 City of Windsor collisions are summarized in Table 22. The most frequent action was “crossing with right-of-way”, which occurred in 24% of pedestrian collisions.

Table 22: Reported Pedestrian Action at the Time of Collision

Pedestrian Action	Collisions	Percent
Crossing with Right-Of-Way	21	24%
Crossing without Right-Of-Way	15	17%
Unknown or No Info	13	15%
On Sidewalk or Shoulder	9	10%
Crossing - No Traffic Control	7	8%
Other	7	8%
Coming from Behind Parked Vehicle or Object	6	7%
Running onto Roadway	4	5%
Walking on Roadway with Traffic	3	3%
Crossing Pedestrian Crossover	2	2%
Crossing Marked Crosswalk Without Right-Of-Way	1	1%
Walking on Roadway Against Traffic	0	0%
Playing or Working on Highway	0	0%
Person Getting On/Off School Bus	0	0%
Person Getting On/Off Vehicle	0	0%
Pushing/Working on Vehicle	0	0%
<b>Total</b>	<b>88</b>	<b>100%</b>

## 6.5 Driver Actions in Pedestrian Collisions

Driver actions in 2012 City of Windsor collisions involving pedestrians are summarized in Table 23. In cases where the driver was not driving properly, the most common driver action was “failed to yield right-of-way”.

**Table 23: Reported Driver Action in Pedestrian Collisions**

Driver Action	Collisions	Percent
Driving Properly	38	43%
Failed to Yield Right-of-Way	19	22%
Unknown or No Info	14	16%
Other	7	8%
Improper Turn	4	5%
Disobeyed Traffic Control	2	2%
Lost Control	2	2%
Exceeding Speed Limit	1	1%
Speed Too Fast for Condition	1	1%
Following Too Close	0	0%
Speed Too Slow	0	0%
Improper Passing	0	0%
Wrong Way on One-Way Road	0	0%
Improper Lane Change	0	0%
<b>Total</b>	<b>88</b>	<b>100%</b>

## 6.6 Pedestrian Conditions

The condition of the pedestrians at the time of the collision is summarized in Table 24. The condition of the majority of the pedestrians was reported as “normal”.

**Table 24: Pedestrian Condition in Reported Collisions**

Pedestrian Condition	Collisions	Percent
Normal	47	53%
Unknown or No Info	14	16%
Inattentive	12	14%
Medical or Physical Disability	7	8%
Had Been Drinking	5	6%
Ability Impaired, alcohol	1	1%
Ability Impaired, drugs	1	1%
Other	1	1%
Ability Impaired, alcohol (over .08)	0	0%
Fatigue	0	0%
<b>Total</b>	<b>88</b>	<b>100%</b>

## 6.7 Lighting Condition

As shown in Table 25, in 2012, 26% of City of Windsor collisions involving pedestrians occurred during night or twilight hours (note: the one collision with “unknown” lighting conditions occurred at 8:00 AM in summer). 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)

**Table 25: Lighting Conditions in Pedestrian Collisions**

Lighting Condition	Collisions	Percent
Daylight	62	70%
Dark - Artificial	12	14%
Dark	10	11%
Daylight - Artificial	2	2%
Dusk - Artificial	1	1%
Unknown	1	1%
Dawn	0	0%
Dawn - Artificial	0	0%
Dusk	0	0%
Other	0	0%
<b>Total</b>	<b>88</b>	<b>100%</b>

## 6.8 Type of Traffic Control

The type of traffic control for 2012 City of Windsor pedestrian collisions is summarized in Table 26. 33% of pedestrian collisions were at traffic signals, the category of control with the largest number of collisions. 23% of pedestrian collisions occurred at locations with no control (e.g. mid-block locations).

Table 26: Type of Traffic Control - Pedestrian Collisions

Traffic Control	Collisions	Percent
Traffic Signal	29	33%
No Control	20	23%
Unknown	19	22%
Stop Sign	15	17%
Traffic Controller	2	2%
Other	1	1%
Pedestrian Crossover	1	1%
School Bus	1	1%
Police Control	0	0%
School Guard	0	0%
Traffic Gate	0	0%
Yield Sign	0	0%
<b>Total</b>	<b>88</b>	<b>100%</b>

## 7 Environment

### 7.1 Weather and Light Conditions

Environmental conditions for 2012 City of Windsor collisions are summarized in Table 27 and Figure 9. Overall, the majority of 2012 City of Windsor collisions (83%) occurred in clear conditions.

Table 27: Environmental Conditions - 2012 Collisions

Environmental Condition	Collisions	Percent
Clear	3,004	82.7%
Rain	377	10.4%
Snow	183	5.0%
Unknown or No Info	23	0.6%
Fog, mist, smoke, dust	17	0.5%
Drifting Snow	15	0.4%
Freezing Rain	12	0.3%
Strong Wind	2	0.1%
Other	1	0.0%
<b>Total</b>	<b>3,634</b>	<b>100.0%</b>

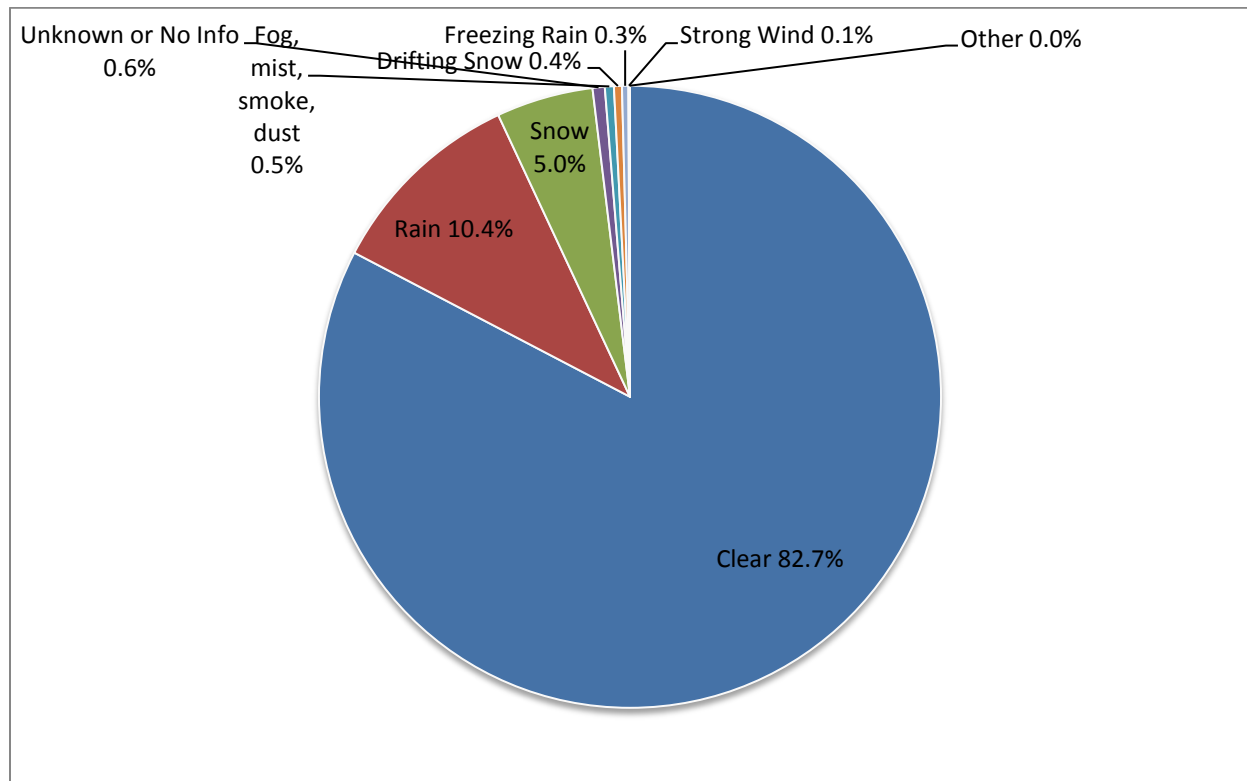


Figure 9: Environmental Conditions - 2012 Collisions

Lighting conditions for 2012 City of Windsor collisions are summarized in Table 28 and Figure 10. The majority of collisions (77%) occurred during daylight.

Table 28: Lighting Conditions - 2012 Collisions

Lighting Condition	Collisions	Percent
Daylight	2,798	77.0%
Dark - Artificial	382	10.5%
Dark	262	7.2%
Dusk - Artificial	56	1.5%
Daylight - Artificial	51	1.4%
Dusk	38	1.0%
Unknown	18	0.5%
Dawn	16	0.4%
Dawn - Artificial	9	0.2%
Other	4	0.1%
<b>Total</b>	<b>3,634</b>	<b>100.0%</b>

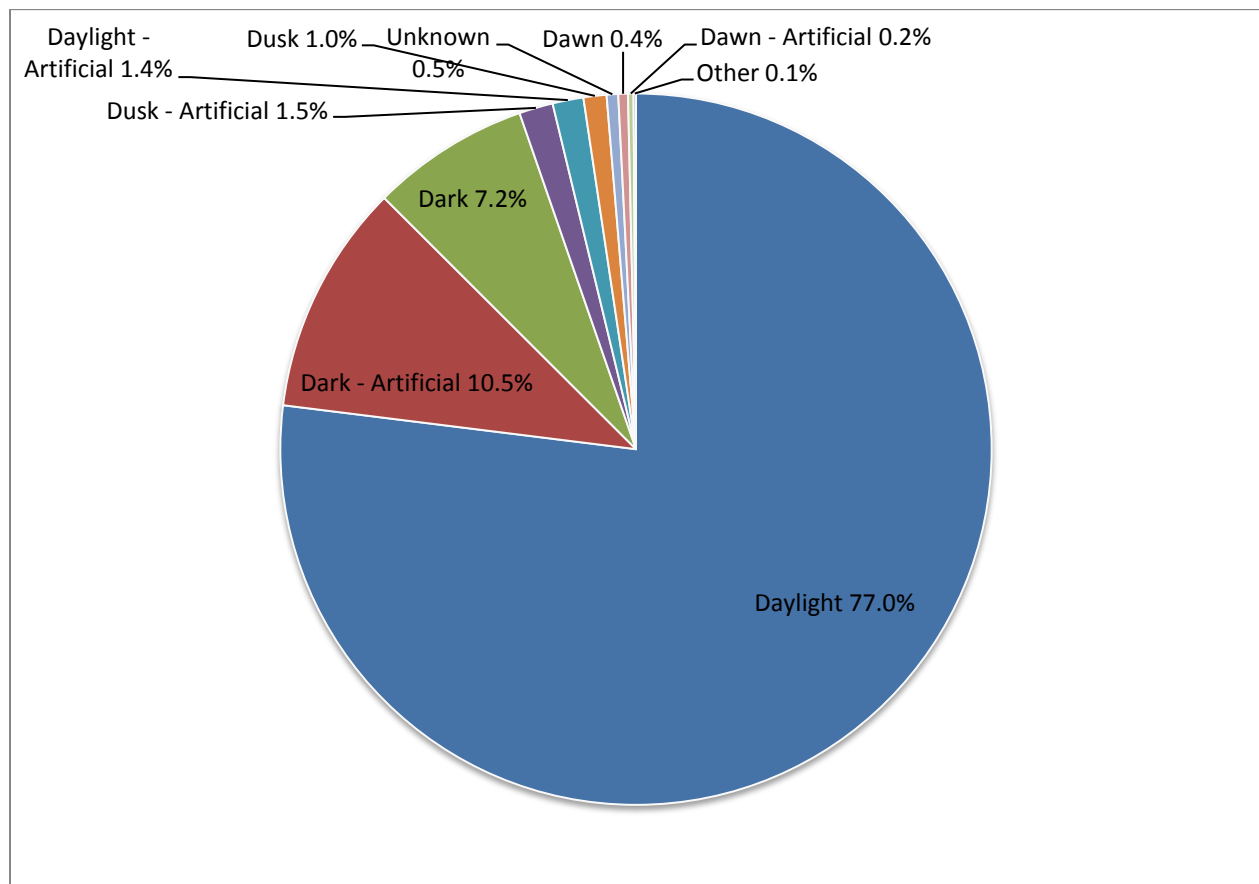


Figure 10: Lighting Conditions - 2012 Collisions

## 7.2 Road Surface

Road surface conditions for 2012 City of Windsor collisions are given in Table 29 and Figure 11. Overall, the majority of collisions (80%) occurred on a dry road surface.

Table 29: Road Surface Conditions - 2012 Collisions

Surface Condition	Collisions	Percent
Dry	2,916	80.2%
Wet	489	13.5%
Ice	86	2.4%
Loose Snow	63	1.7%
Packed Snow	28	0.8%
Unknown or No Info	25	0.7%
Slush	17	0.5%
Loose Sand or Gravel	5	0.1%
Other	4	0.1%
Spilled Liquid	1	0.0%
Mud	-	0.0%
<b>Total</b>	<b>3,634</b>	<b>100.0%</b>

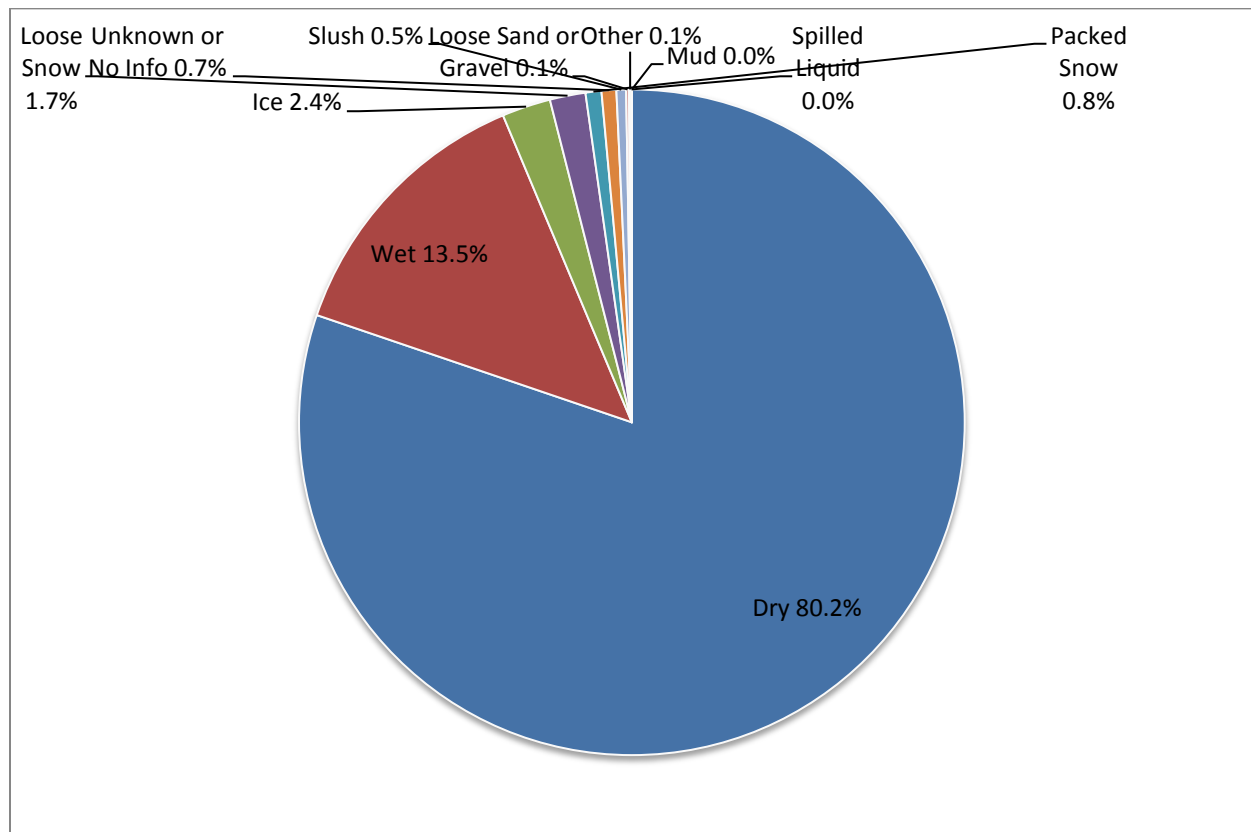


Figure 11: Road Surface Conditions - 2012 Collisions

### 7.2.1 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), and
- Involve winter-related road surface conditions (loose snow, slush, packed snow, or ice)

Based on these criteria, for 2012, City of Windsor roads and streets experienced:

- 194 total weather-related winter collisions
- 0 (zero) fatal weather-related winter collisions

## 7.3 Pavement Markings

Pavement marking conditions for 2012 City of Windsor collisions are summarized in Table 30 and Figure 12. In the majority of cases, pavement markings were either present and visible (86%) or were on roadways where pavement markings were not provided (10%).

Table 30: Pavement Marking Condition - 2012 Collisions

Marking Condition	Collisions	Percent
Exists	3,126	86.0%
Non-Existent	380	10.5%
Unknown or No Info	78	2.1%
Obscured	31	0.9%
Faded	19	0.5%
<b>Total</b>	<b>3,634</b>	<b>100.0%</b>

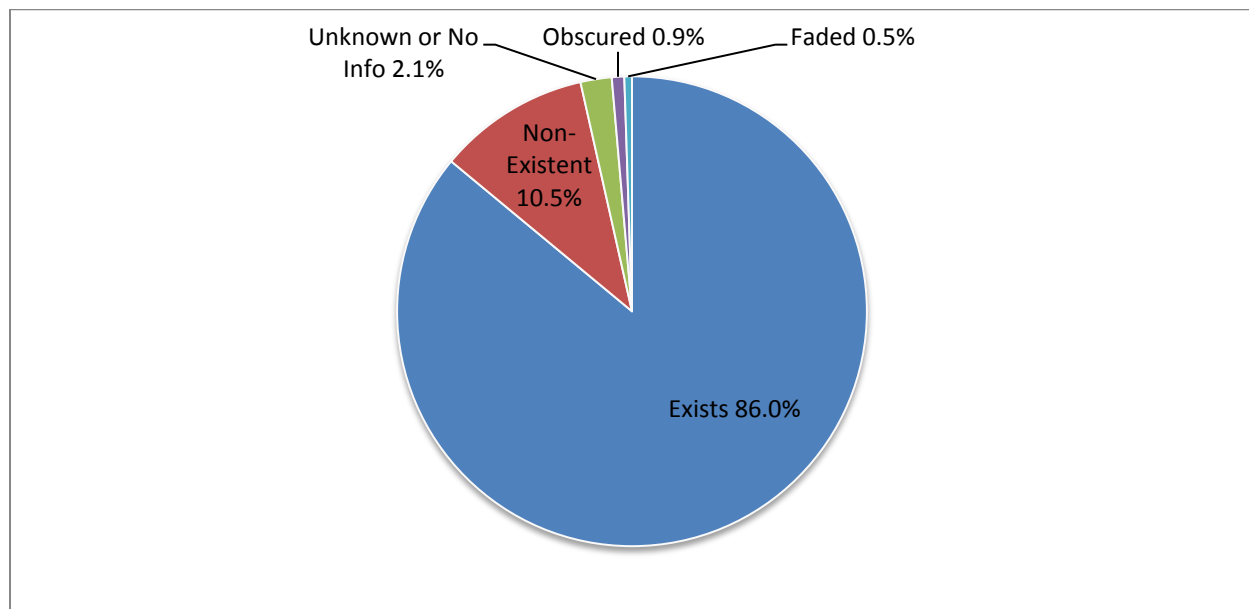


Figure 12: Pavement Marking Condition - 2012 Collisions



## 7.4 Road Characteristics

Roadway characteristics for 2012 City of Windsor collisions are summarized in Table 31 and Figure 13. The majority of collisions (66%) occurred on undivided two-way roads.

Table 31: Road Character - 2012 Collisions

Road Character	Collisions	Percent
Undivided - Two Way	2,412	66.4%
Undivided - One Way	566	15.6%
Divided - No Barrier	295	8.1%
Divided with Restraining Barrier	263	7.2%
Unknown or No Info	46	1.3%
Ramp	38	1.0%
Express Lane	10	0.3%
Transfer Lane	3	0.1%
Collector Lane	1	0.0%
<b>Total</b>	<b>3,634</b>	<b>100.0%</b>

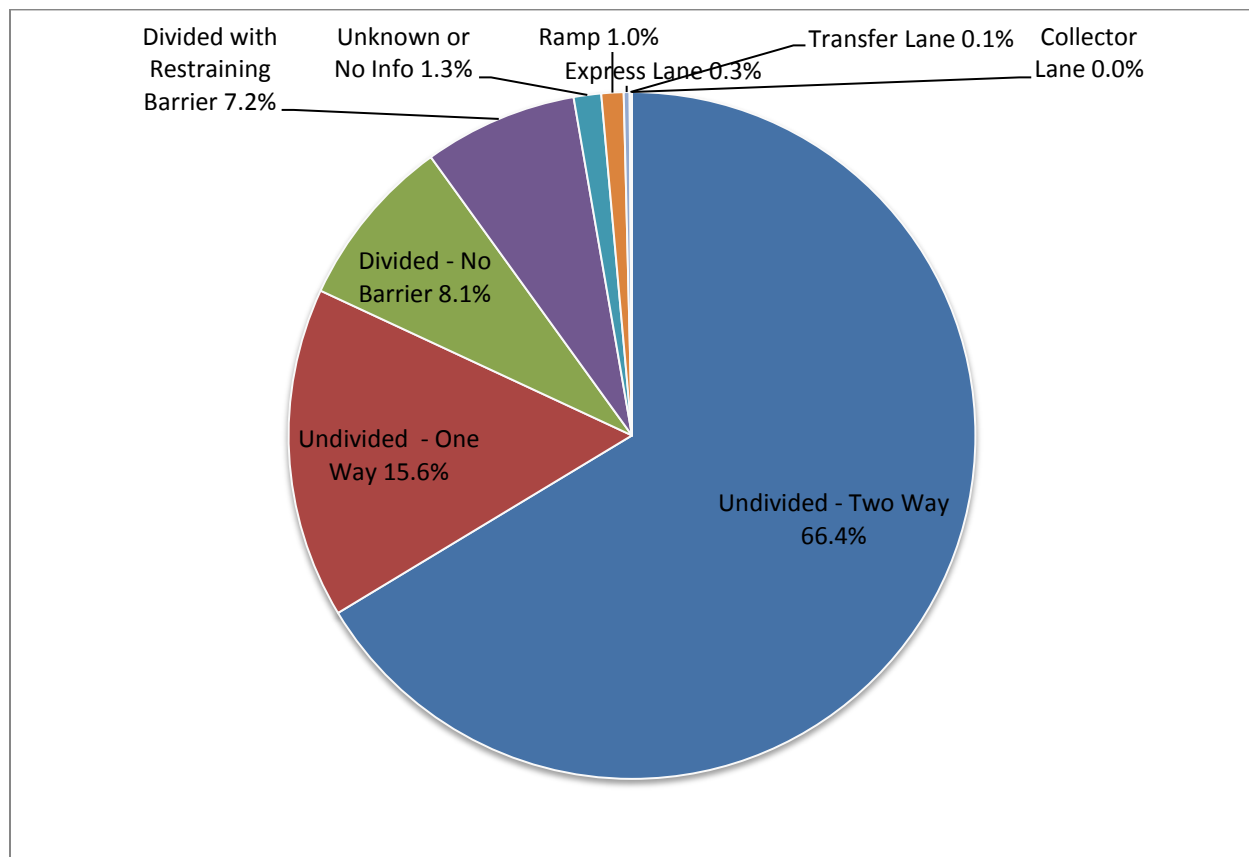


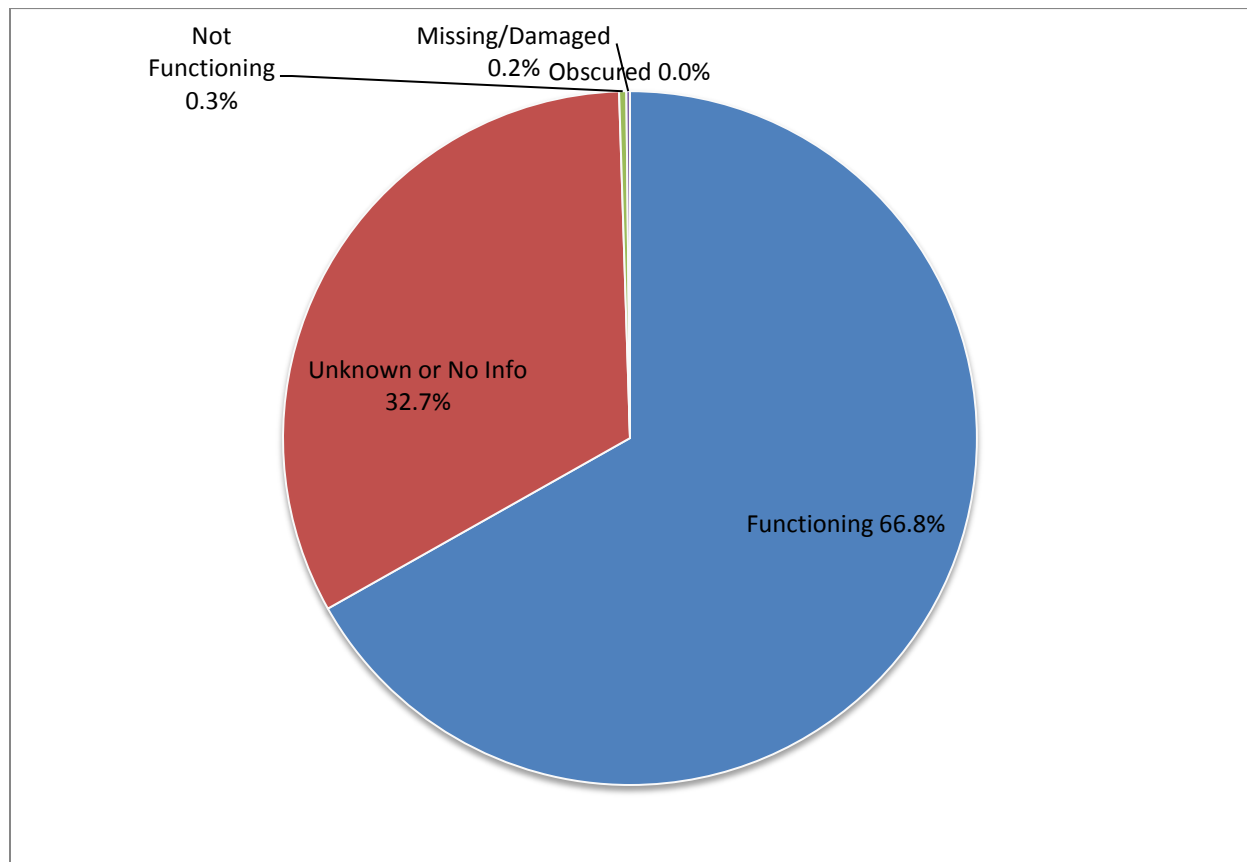
Figure 13: Road Character - 2012 Collisions

## 7.5 Traffic Control Condition

In 2012, 2,983 collisions on City of Windsor roads and streets 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 32 and Figure 14. In the majority of cases (67%), the traffic control was reported as functioning. In a large number of cases (33%), the condition of the traffic control was unknown; the reason for this high percentage is unclear.

**Table 32: Traffic Control Condition - 2012 Collisions (Locations with Traffic Control Present)**

Traffic Control Condition	Collisions	Percent
Functioning	1,994	66.8%
Unknown or No Info	974	32.7%
Not Functioning	10	0.3%
Missing/Damaged	5	0.2%
Obscured	-	0.0%
<b>Total</b>	<b>2,983</b>	<b>100.0%</b>



**Figure 14: Traffic Control Condition - 2012 Collisions (Locations with Traffic Control Present)**

## 8 Location

### 8.1 General

A summary of the general classes of locations for 2012 City of Windsor collisions is given in Table 33 and Figure 15. The majority of collisions (57%) were at intersections or were intersection-related.

Table 33: Collision Locations - 2012

Location	Collisions	Percent
Intersection	939	25.8%
Intersection Related	1,127	31.0%
<i>Subtotal – Intersection &amp; Intersection Related</i>	<i>2,066</i>	<i>56.9%</i>
Midblock	994	27.4%
Midblock - Private Driveway	545	15.0%
<i>Subtotal – All Midblock</i>	<i>1,539</i>	<i>42.3%</i>
Railway	18	0.5%
Overpass/Bridge	8	0.2%
Underpass/Tunnel	2	0.1%
Other	1	0.0%
<b>Total</b>	<b>3,634</b>	<b>100.0%</b>

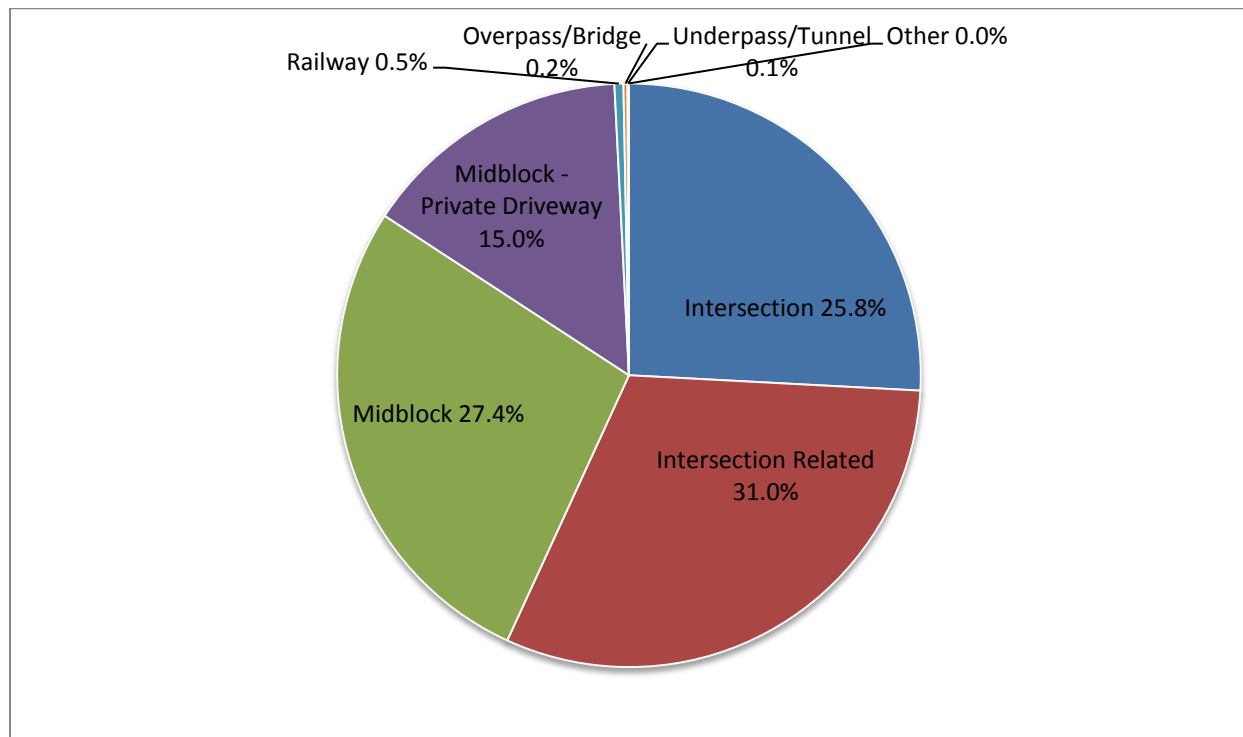


Figure 15: Collision Locations – 2012

## 8.2 Intersection

Five years of collision data (January 1, 2008 through December 31, 2012) 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.

### 8.2.1 Signalized

The 25 signalized intersections with the highest collision rates (based on collisions from 2008 through 2012) are listed in Table 34. For this period, the average collision rate for signalized intersections was found to be 0.51 collisions per million vehicles entering.

For the 5-year period of 2008 through 2012, three signalized intersections had no reported collisions:

- Richmond Street and Walker Road
- College Avenue and Wellington Avenue
- Maiden Lane East and Ouellette Avenue

Table 34: High Collision Locations – Signalized Intersections

Rank (Signalized)	Street 1	Street 2	Collisions 2008-2012	Annual Average Daily Traffic - All Legs [vehicles per day]	Collisions per Million Vehicles Entering Intersection
1	County Road 42	Lauzon Pky	69	47,900	1.58
2	Central Ave	E C Row E/B On Ramp	79	63,800	1.36
3	Pelissier St	Wyandotte St W	52	44,400	1.28
4	Goyeau St	Wyandotte St E	83	73,200	1.24
5	Banwell Rd	E C Row Expy	113	105,400	1.17
6	Crawford Ave	Wyandotte St W	57	53,500	1.17
7	Provincial Rd	Sixth Concession Rd	43	41,000	1.15
8	Lauzon Pky	Tecumseh Rd E	113	115,800	1.07
9	Howard Ave	Tecumseh Rd E	95	102,100	1.02
10	Erie St E	Ouellette Ave	44	48,800	0.99
11	Drouillard Rd	Wyandotte St E	42	47,000	0.98
12	Lauzon Pky	South Service Rd / Twin Oaks Dr	42	47,500	0.97
13	Central Ave	North Service Rd / Temple Dr	72	82,100	0.96
14	Provincial Rd	Walker Rd	65	74,300	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	Campbell Ave	College Ave	29	34,500	0.92
18	Central Ave	Grand Marais Rd E / Plymouth Dr	68	81,000	0.92
19	Cabana Rd E	Provincial Rd	52	62,000	0.92
20	Erie St E	Goyeau St	28	34,700	0.88
21	Forest Glade Dr	Tecumseh Rd E	49	61,000	0.88
22	E C Row W/B Off Ramp	Howard Ave	83	105,700	0.86
23	McDougall St	Tecumseh Rd E	53	67,600	0.86
24	Ouellette Ave	Tecumseh Rd W	85	108,900	0.86
25	Central Ave	E C Row W/B On Ramp	73	94,400	0.85
<b>Average Collision Rate – All City of Windsor Signalized Intersections</b>					<b>0.51</b>

### 8.2.2 Unsignalized

The 25 unsignalized intersections with the highest number of collisions (based on collisions from 2008 through 2012) are listed in Table 35. Due to an absence of traffic volume data at unsignalized intersections, an average collision rate for unsignalized intersections could not be calculated.

**Table 35: High Collision Locations – Unsignalized Intersections**

Rank (Unsignalized)	Street 1	Street 2	Collisions 2008-2012
1	Dougall Ave	Ouellette Pl	86
2	Division Rd	Riberdy Rd	22
2	Hanna St E	Ouellette Ave	22
2	Mercer St	Wyandotte St E	22
5	California Ave	Wyandotte St W	21
6	Giles Blvd W	Pelissier St	19
6	Howard Ave	South Cameron Blvd	19
8	Dougall Ave	South Cameron Blvd	18
8	Enterprise Way	Lauzon Pky	18
10	9th Con Rd	County Road 42	17
10	Cabana Rd E	Holburn St	17
10	Tecumseh Rd E	Turner Rd	17
13	Caron Ave	Wyandotte St W	16
13	Dougall Ave	E C Row E/B Off Ramp	16
13	Goyeau St	Tecumseh Rd E	16
13	Langlois Ave	Wyandotte St E	16
17	Cabana Rd E	Sixth Concession Rd	15
17	Olive Rd	Tecumseh Rd E	15
19	Ambassador Dr	Industrial Dr	14
19	Beals St W	Dougall Ave	14
19	Bruce Ave	Giles Blvd W	14
19	Dougall Ave	Wyandotte St W	14
19	Dougall Ave	E C Row W/B Off Ramp	14
19	Giles Blvd E	Langlois Ave	14
19	Hanna St E	McDougall St	14
19	McDougall St	Tuscarora St	14

### 8.3 Mid-Block

Five years of collision data (January 1, 2008 through December 31, 2012) 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. Since traffic volumes were not available for all road sections, in cases where volumes were not available, mid-block sections were ranked by total number of collisions.

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.

Table 36: High Collision Locations – Mid-block

Rank (Mid-blocks)	Street	From	To	Collisions 2008-2012	Annual Average Daily Traffic [vehicles per day]	Length [km]	Collisions per million vehicle-km
1	E C Row W/B Off Ramp (East-to-North Ramp)	E C Row W/B Off Ramp	Howard Ave	40	10,000	0.09	25.37
2	Chatham St W	Pelissier St	Ferry St	5	2,110	0.06	21.64
3	Pitt St E	Ouellette Ave	Goyeau St	10	2,400	0.17	13.53
4	Eugenie St E	Howard Ave	Remington Ave	3	3,700	0.04	11.75
5	Chatham St W	Ouellette Ave	Pelissier St	5	3,400	0.08	9.71
6	Chatham St W	Dougall Ave	Church St	3	2,110	0.08	9.48
7	Chatham St W	Bruce Ave	Janette Ave	1	600	0.10	9.10
8	Victoria Ave	University Ave W	Park St W	6	2,900	0.14	7.92
9	Pitt St E	Goyeau St	McDougall St	8	2,400	0.24	7.75
10	Erie St W	Church St	Bruce Ave	5	3,500	0.11	6.96
11	Park St W	Pelissier St	Victoria Ave	3	2,750	0.09	6.43
12	Park St W	Victoria Ave	Dougall Ave	3	2,750	0.09	6.36
13	Grand Marais Rd W	Bruce Ave	Avondale Ave	4	3,100	0.11	6.23
14	University Ave E	City Hall Square E	McDougall St	3	6,700	0.04	6.15
15	Park St W	Ouellette Ave	Pelissier St	3	3,200	0.09	6.00
16	Wyandotte St E	Parent Ave	Langlois Ave	24	18,900	0.12	5.77
17	Pitt St W	Ouellette Ave	Ferry St	3	2,100	0.14	5.75
18	Gladstone Ave	Ottawa St	Ellis St E	3	1,400	0.21	5.64
19	Janette Ave	Pitt St W	Chatham St W	1	1,175	0.08	5.64
20	Janette Ave	Chatham St W	University Ave W	1	1,175	0.09	5.42
21	McDougall St	Tecumseh Rd E	Logan Ave	28	7,500	0.38	5.41
22	Pelissier St	University Ave W	Park St W	5	3,700	0.14	5.19
23	Grand Marais Rd W	Longfellow Ave	Dominion Blvd	3	2,800	0.11	5.13
24	Victoria Ave	Park St W	Wyandotte St W	9	3,200	0.31	5.01
25	Chatham St E	Ouellette Ave	Goyeau St	4	2,500	0.18	5.01
Average Mid-block Collision Rates by Road Classification				Scenic Parkway			0.46
				Collector			0.98
				Arterial			0.79
				Expressway			0.43

Notes:

1. Local streets and streets without volume information not included in table.
















## 9 Conclusions

The key findings of the report are summarized in Table 37 below. Up and down arrows indicate an increase or decrease, respectively, from the 2008 through 2012 five-year average. The colour of the arrow is green if the 2012 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 37: Key Statistics with Comparisons to 5-Year Averages

Category	Measure	City of Windsor		
		5-Year Average	Percentage Difference	2012
Overall Collisions	Total Collisions – All Severities	3,784	➡ -4%	3,634
	Total Injury Collisions	867	➡ +3%	889
Injury Collisions	Total Persons Injured	1,114	➡ +3%	1,150
	Persons Injured per 1,000 population [Note 1]	5.25	➡ +4%	5.45
Fatal Collisions	Total Fatal Collisions	4.4	⬆ +59%	7
	Total Fatalities	4.4	⬆ +59%	7
	Fatalities per 100,000 population [Note 1]	2.07	⬆ +60%	3.32
Alcohol	Total Alcohol-Related Collisions	105	⬇ -10%	94
	% of Collisions Involving Alcohol	2.77%	⬇ -6%	2.59%
	% of Drivers with Alcohol-Related Driver Conditions [Note 1]	1.40%	⬇ -14%	1.20%
	Fatal Collisions with Alcohol-Related Driver Conditions	1.0	⬆ +200%	3
	% of Fatal Collisions Involving Alcohol	23%	⬆ +87%	43%

Category	Measure	City of Windsor		
		5-Year Average	Percentage Difference	2012
Driver Inattention	Total Inattentive Drivers in Collisions	1,457	 -15%	1,238
	% of Collisions Involving Inattention	34.5%	 -1%	34.1%
	% of Drivers Reported as Inattentive [Note 1]	17.7%	 -7%	16.4%
Driver Actions	% of Drivers Reported as Driving Properly [Note 1]	42.9%	 -3%	41.8%
	Most Common Improper Action (where known) [Note 1]	Following Too Close		Following Too Close
Driver Condition	% of Drivers Reported as Normal Condition [Note 1]	52.4%	 -1%	51.7%
Cyclist Collisions	Total Cyclist Collisions (All Severities)	96.2	 -3%	93
	Total Cyclist Injury Collisions	73.2	 -23%	56
	Total Cyclist Fatal Collisions	0.2	 +400%	1
	% of Cyclists Reported as Riding Properly	38%	 +13%	43%
	% of Cyclists Wearing Helmets (where known)	18%	 -28%	13%
	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	2012
<b>Pedestrian Collisions</b>	Total Pedestrian Collisions (All Severities)	76.0	 +16%	<b>88</b>
	Total Pedestrian Injury Collisions	70.6	 +16%	<b>82</b>
	Total Pedestrian Fatal Collisions	0.6	 +67%	<b>1</b>
	Most Common Improper Action (Driver)	Failed to Yield Right-of-Way		<b>Failed to Yield Right-of-Way</b>

Notes:

1. Comparison with Provincial statistics available – see Table 38.

Table 38 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 2010; five-year provincial averages were based on 2006 through 2010.

Table 38: 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
<b>Injury Collisions</b>	Persons Injured per 1,000 population	5.12	➡ +3%	<b>5.25</b>
<b>Fatal Collisions</b>	Fatalities per 100,000 population	5.04	⬇ -59%	<b>2.07</b>
<b>Inattentive Drivers</b>	% of Drivers Reported as Inattentive	9.2%	⬆ +92%	<b>17.7%</b>
<b>Alcohol</b>	% of Drivers with Alcohol-Related Driver Conditions	1.72%	⬇ -19%	<b>1.40%</b>
<b>Driver Actions</b>	% of Drivers Reported as Driving Properly	49.1%	⬇ -13%	<b>42.9%</b>
	Most Common Improper Action (where known)	Following Too Close		<b>Following Too Close</b>
<b>Driver Condition</b>	% of Drivers Reported as Normal Condition	76.2%	⬇ -31%	<b>52.4%</b>

The majority of 2012 City of Windsor collisions (57%) occurred at intersections or were intersection related. The worst locations for each category are given in Table 39.

Table 39: High Collision Locations

Category	Location	Collisions (2008 – 2012)	Collision Rate
<b>Signalized Intersections</b>	County Road 42 & Lauzon Pkwy.	69	1.58 collisions per million vehicles entering
<b>Unsignalized Intersections</b>	Dougall Ave. & Ouellette Pl.	86	N/A
<b>Mid-Block Sections</b>	E. C. Row Howard Ave. Westbound Off-Ramp (East-to-North Ramp)	40	25.37 collisions per million vehicle-kilometres

## 10 Recommendations for Future Versions of the Report

These recommendations are intended to address issues related to the preparation of the Road Safety Report itself. Issues related to road safety directly are expected to be the subject of further detailed review and are not addressed in this section.

- Traffic volume data was unavailable for a large number of road sections and intersections. While it is likely impractical in terms of cost and effort to collect recent traffic volume data on every City of Windsor road and street, any additional traffic volume data will improve the quality of the network screening process used to identify collision “hot spot” locations. For this reason, **consideration should be given to expanding the City’s traffic count program in future years.**
- Questions have arisen regarding e-bikes (electric power assisted bicycles) and the safety issues surrounding them, both for e-bike riders and for other road users; however, the data currently available is not conducive to an analysis of e-bike collisions. Currently, the provincially-mandated motor vehicle collision reporting form used by the Windsor Police Service does not distinguish between e-bikes and conventional bicycles, and under provincial rules, e-bikes are not considered to be motor vehicles for collision reporting purposes. Because of this, e-bike collisions are not reported as collisions (and are therefore not included in the City of Windsor collision database) unless they also involve a motor vehicle such as a car or truck. For these reasons, it is currently impractical for e-bikes to be examined specifically in the annual Road Safety Report. Therefore, **it is recommended that a request be made to the Government of Ontario to revise collision reporting procedures so that e-bikes are considered “motor vehicles” for collision reporting purposes, and to provide a separate vehicle class code for e-bikes on the standard MVA report form rather than classifying them with conventional bicycles.**
- Several indicators (e.g. driver condition, safety equipment used for cyclists, traffic control condition) had a large proportion of results categorized as “unknown or no info”. **The reasons for this lack of data should be examined and, if possible, corrected.**

## 11 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 – Planning
- Office of the City Solicitor – Risk Management
- Office of the City Engineer – Traffic Operations

## 12 Works Cited

City of Windsor. (2005). *2004 Collision Report*. Windsor.

Ministry of Transportation of Ontario. (2013). *Ontario Road Safety Annual Report 2010*. Toronto.

Office of the Chief Coroner. (2012). *Cycling Death Review*. Toronto.

Office of the Chief Coroner. (2012). *Pedestrian Death Review*. Toronto.

Regional Municipality of Waterloo. (2012). *2011 Collision Report*. Waterloo.

Whaley, C. (2012). "Enforcement Experience" (Not by Accident Conference presentation). London: Ontario Provincial Police.