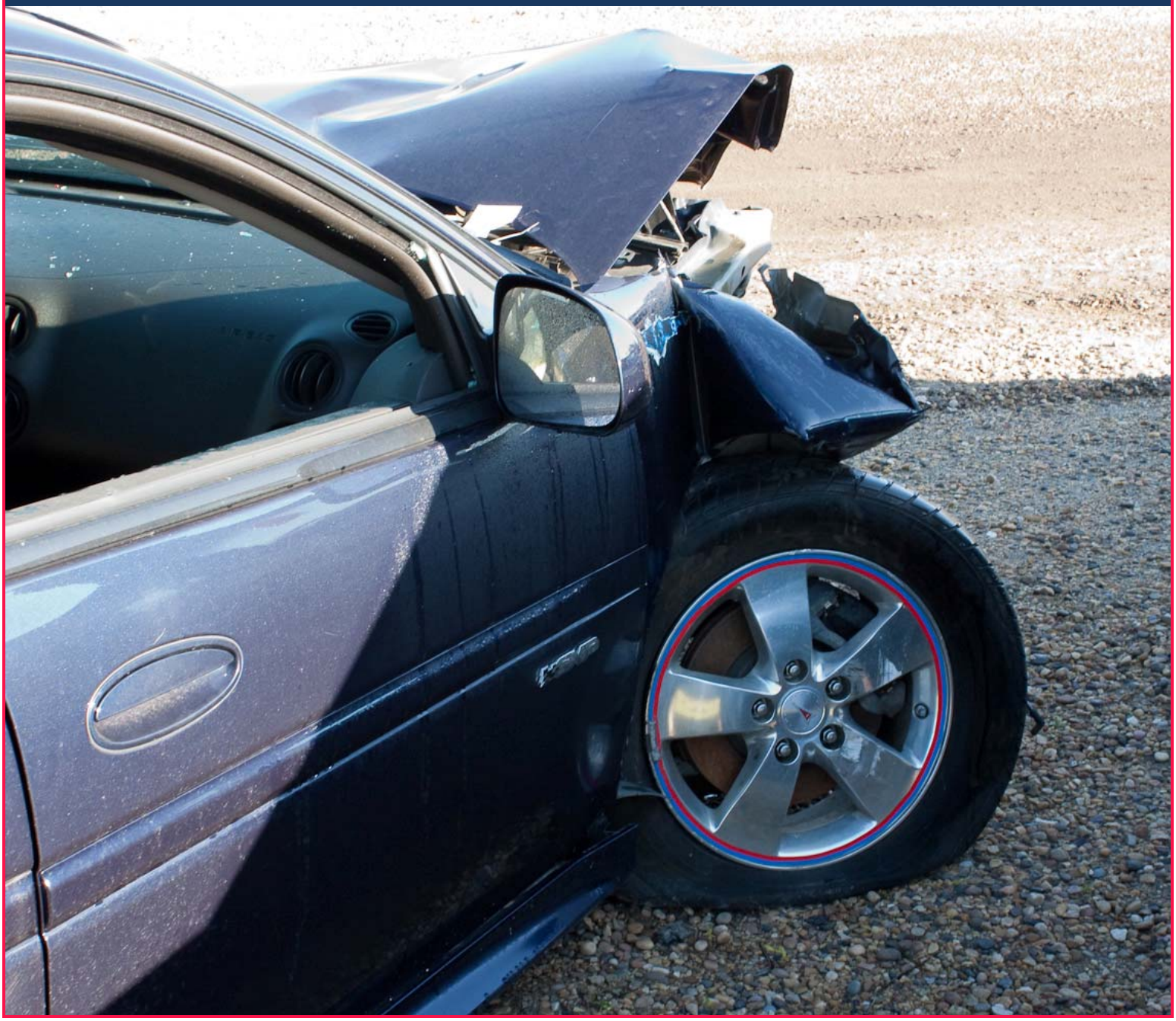
MOTOR VEHICLE COLLISIONS 2010



OFFICE of TRAFFIC SAFETY
EDMONTON, CANADA

THE CITY OF Edmonton TRANSPORTATION

PUBLISHED
APRIL 2011

Motor Vehicle Collisions

2010

Cover Photograph: damaged vehicle in the Edmonton Police Service Impound Lot. Photo Credit: Chris Neuman.

Key Facts and Figures – 2010 Collision Statistics

- There were 28,480 collisions in the City of Edmonton in 2010. This figure represents a decrease of 1.2% from 2009 and a 2.0% decrease from 2008.
- The number of collisions per capita in Edmonton decreased by 2.5% from 2009 levels, to 35.9 collisions per 1,000 population. This is the lowest per-capita collision rate since 2006, when Edmonton's population was 7% lower than it is currently.
- In 2010 there were 3,792 collisions that resulted in injury or fatality, a reduction of 5.0% from 2009 and the lowest overall total in 15 years. These injury and fatal collisions resulted in 4,419 minor injuries, 491 major injuries, and 27 fatalities.
- The 27 fatalities in 2010 included 17 vehicle occupants, 4 motorcyclists, 4 pedestrians, and 2 cyclists. Three collisions involved multiple fatalities.
- Collisions at intersections made up 47% (13,501) of the collision total, but resulted in 67% (3,314) of total injuries and 13 of the 27 fatalities sustained in 2010. Compared to 2009, the number of intersection collisions per 1,000 population increased by 1.4%.
- The most common collision causes in Edmonton were following too close (41%, 11,730 collisions), striking parked vehicles (13%, 3,574), and improper lane changes (10%, 2,716).
- The collision causes most likely to result in injury or fatality were failure to observe traffic signals (27% of collisions resulted in injury or fatality), left turns across the path of oncoming traffic (24%,), and stop or yield sign violations (19%).
- There were 306 pedestrian-involved collisions in 2010, resulting in 326 pedestrian injuries (an 8.7% decrease over 2009) and 4 fatalities, compared to 9 fatalities in 2009. Of these, 44 injuries and one fatality occurred when a pedestrian was crossing at a midblock without the right of way (jaywalking).
- There was a 16.4% decrease in the number of cyclists injured or killed, from 220 in 2009 to 184 in 2010. Most collisions involving cyclists were deemed to be caused by cyclist error or violation.
- The number of collisions involving motorcyclists increased 5% from 2009 to 2010; however, the number of motorcyclists injured decreased by 10%, to 135. There were 4 motorcyclist fatalities.
- Ranked by the total number of collisions, the top three high-collision *intersections* in the City of Edmonton in 2010 were: 137 Avenue and 97 Street, (103 collisions, 12 injuries); 118 Avenue and Groat Road (97 collisions, 13 injuries); and Yellowhead Trail and 127 Street (91 collisions, 17 injuries). The top three high-collision *midblock* segments were: the High Level Bridge (60 collisions, 12 injuries); the Quesnell Bridge (49 collisions, 2 injuries); and Whitemud Drive from 122 Street to the Terwillegar Drive interchange (48 collisions, 10 injuries).

Introduction

The City of Edmonton Office of Traffic Safety maintains the Motor Vehicle Collision Information System (MVCIS), a database of motor vehicle collisions that occur on public roads in the City of Edmonton. The information in the database is collected from the provincial Collision Report Form, which is completed by members of the Edmonton Police Service either at the scene of the collision or at the front counter of a divisional or community police station.[1] The database reflects all reported collisions on public roadways that result in property damage of $1,000 or greater, as well as any collision that results in a minor or major injury or fatality.

This report presents an overview of collisions that occurred in Edmonton from January 1 to December 31, 2010, based on causes, temporal information, and injury severity. The report also provides information on collisions involving pedestrians, cyclists, and motorcyclists.

Previous versions of this report provided intersection- and midblock-level collision detail, including ranked lists. This information is now available in spreadsheet form to facilitate end-user analysis. Pursuant to Section 10(2) of the *Traffic Safety Act* (RSA 2000), the Office of Traffic Safety is prohibited from releasing information to the public that could identify a specific person or a specific collision. As such, the data in the spreadsheet is limited to aggregated information.

[1] Until September 2010, the Collision Report Form was a paper-based document and all data entry was manual. In September 2010, the Edmonton Police Service adopted an electronic reporting system for all counter-reported collisions. This change had no material effect on the data collected in 2010.

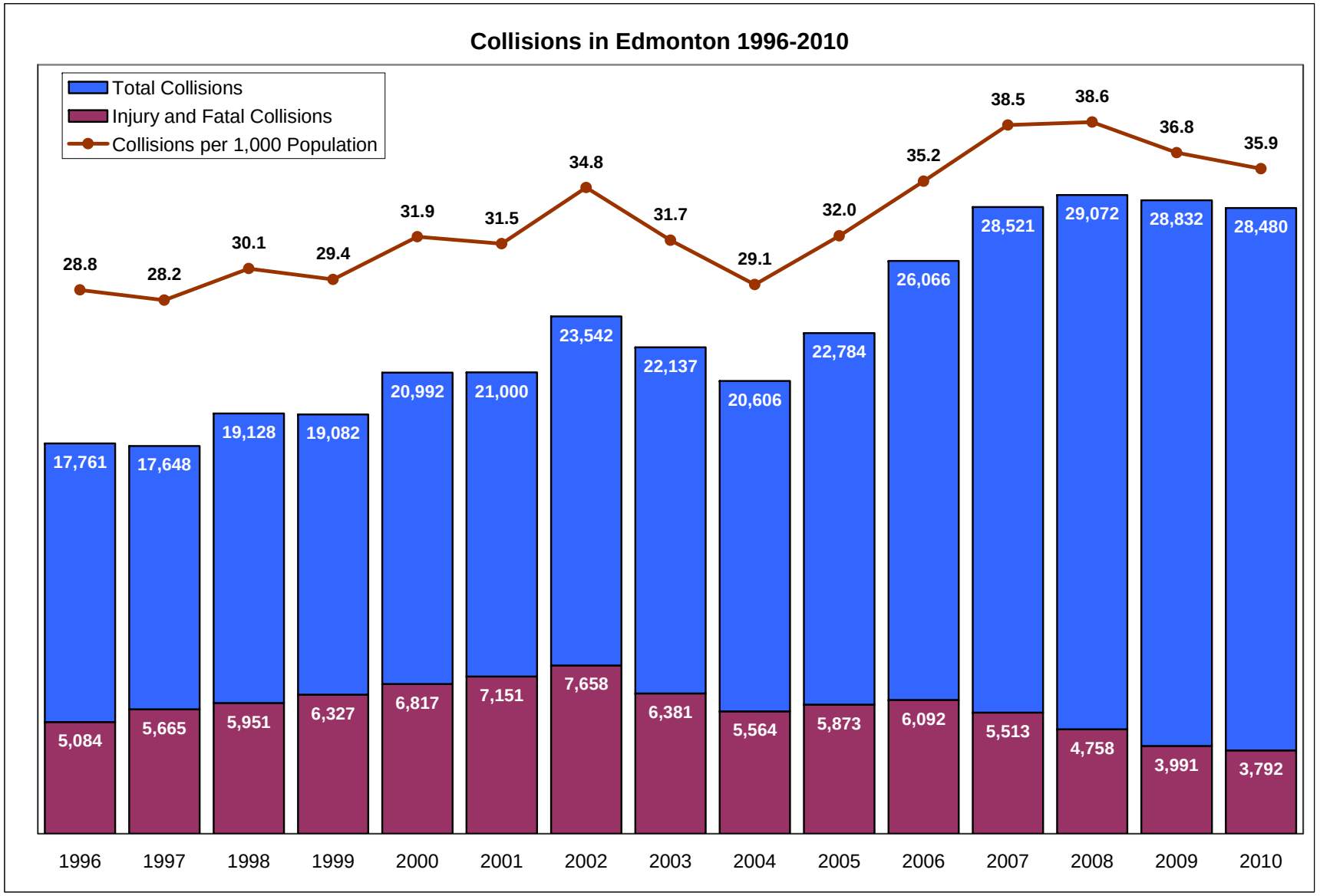


Figure 1: Historical Collision Statistics, 1996-2010

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	% Chg
Total Collisions	17,761	17,648	19,128	19,082	20,992	21,000	23,542	22,137	20,606	22,784	26,066	28,520	29,072	**28,832**	**28,480**	**-1.2 %**
Injury Collisions	5,069	5,648	5,927	6,316	6,798	7,127	7,638	6,352	5,530	5,847	6,067	5,482	4,730	**3,962**	**3,768**	**-4.9 %**
Injuries	7,469	8,319	8,756	9,173	9,805	10,284	11,013	9,083	7,686	8,006	8,221	7,445	6,270	**5,203**	**4,910**	**-5.6 %**
Fatal Collisions	15	17	24	11	19	24	20	29	34	26	25	31	28	**29**	**24**	**-17.2 %**
Fatalities	16	18	24	17	19	24	20	32	37	27	25	32	29	**32**	**27**	**-15.6 %**
Pedestrian Collisions	246	335	329	310	302	372	348	308	296	333	347	366	395	**347**	**306**	**-11.8 %**
Pedestrians Injured	264	350	318	330	310	380	365	314	308	346	364	372	395	**357**	**326**	**-8.7 %**
Pedestrians Killed	3	9	11	3	9	11	9	6	10	4	0	13	9	**9**	**4**	**-55.6 %**
Bicycle Collisions	198	239	233	249	214	227	201	181	196	221	199	184	235	**220**	**182**	**-17.3 %**
Cyclists Injured	201	241	233	247	215	230	200	181	195	221	198	181	234	**218**	**182**	**-16.5 %**
Cyclists Killed	0	1	0	1	1	0	0	0	2	1	0	4	2	**2**	**2**	**0.0 %**
Motorcycle Collisions	84	106	117	119	105	148	157	110	161	177	177	213	255	**201**	**211**	**5.0 %**
Motorcyclists Injured	82	108	115	106	98	137	144	111	137	162	144	160	184	**150**	**135**	**-10.0 %**
Motorcyclists Killed	1	1	4	0	1	2	3	1	9	2	1	4	7	**2**	**4**	**100.0 %**
Population	616,369	625,450	636,100	648,284	657,500	666,104	676,300	697,657	707,271	712,391	741,028	741,392	752,412	**782,439**	**793,000**	**1.3 %**
Private Pass. Vehicles	329,147	329,822	339,397	349,575	356,679	365,232	376,157	380,475	381,456	389,471	407,732	431,425	452,101	**470,602**	**479,194**	**1.8 %**
Private Motorcycles	4,918	4,568	5,047	5,188	5,574	6,112	6,346	7,070	8,278	8,586	9,236	10,152	12,686	**14,378**	**15,605**	**8.5 %**
Collisions/1000 Pop.	28.8	28.2	30.1	29.4	31.9	31.5	34.8	31.7	29.1	32.0	35.2	38.5	38.6	**36.8**	**35.9**	**-2.5 %**
Intersection Collisions/1000 Pop.	16.5	17.5	18.0	17.3	18.2	17.5	17.9	16.0	15.0	15.4	17.9	19.2	18.2	**16.8**	**17.0**	**1.4 %**
Injuries/1000 Pop.	12.1	13.3	13.8	14.2	14.9	15.5	16.3	13.1	10.9	11.3	11.1	10.1	8.4	**6.7**	**6.2**	**-6.9 %**
Collisions/1000 Veh.	54.0	53.5	56.4	54.6	58.9	57.5	62.6	58.2	54.0	58.5	63.9	66.1	64.3	**61.3**	**59.4**	**-3.0 %**

Table 1: Summary of Selected Collision Statistics, 1996-2010

The population figure for 2010 is an estimate and was provided by the Chief Economist of the City of Edmonton. Population figures for 2009 and 2008 are based on City of Edmonton Municipal Census results. The population for 2007 is interpolated based on final 2006 Census data from Statistics Canada and 2008 Municipal Census data from the City of Edmonton. For population sources from previous years, please contact the report's author.

Data on passenger vehicle and motorcycle registrations are based on the Alberta Vehicle Registration Statistics by Vehicle Registration Classes, and reflect the number of registrations as of March 31 of each year.

Overview of 2010 Collision Statistics

A multi-year downward trend in collisions continued in 2010, in spite of continued road network growth and increases in population and vehicle ownership. While the total number of collisions in 2010 decreased only slightly compared to 2009, both the number of collisions resulting in injury and the number of people injured decreased substantially and now stand at 15-year lows. Collisions involving pedestrians and cyclists reached their lowest levels since 2004 and 2007, respectively. Measures of collisions by population and collisions by registered vehicles decreased from 2009 to 2010, as did the total estimated property damage and damage per collision.

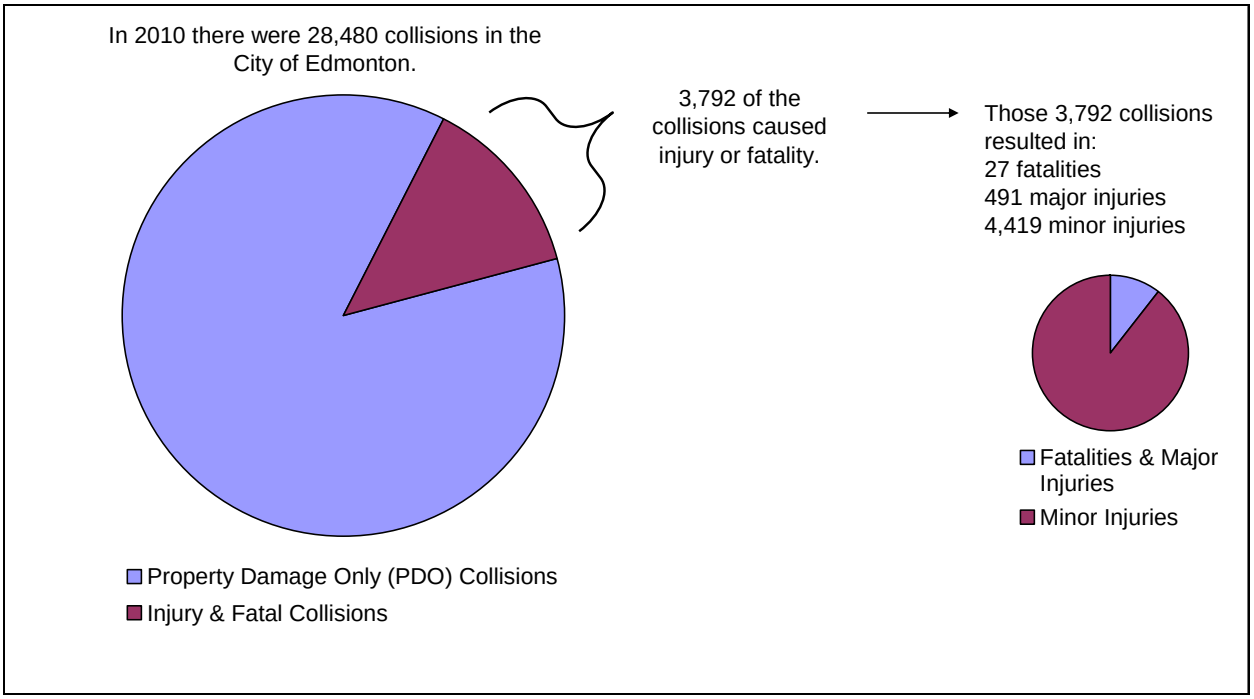


Figure 2: Collisions in 2010

In 2010, there were 28,480 reported motor vehicle collisions on the streets of Edmonton, a decrease of 1.2% from 2009. Included in this figure are 3,792 collisions that resulted in minor or major injury or death, a 5.0% reduction from the 2009 figure.

The 3,792 collisions resulting in injury or fatality caused a total of 4,910 injuries to drivers, passengers, pedestrians, cyclist, and motorcyclists. This figure is 5.6% lower compared to the total number of injuries in 2009. There were also 27 traffic fatalities in 2010, a reduction of 15.6% from 32 fatalities sustained in 2009. The fatality figure includes 12 vehicle drivers, 5 vehicle passengers, 4 pedestrians, 4 motorcyclists, and 2 cyclists.

Collisions per capita decreased 2.5% to 35.9 collisions per 1,000 people. There was also a 3.0% decrease in collisions per vehicle, to 59.4 collisions per 1,000 registered vehicles in the City of Edmonton. The total amount of reported property damage exceeded $82.5 million, a 6.5% decrease over 2009. This figure averages $2,897 per collision, though this dollar value represents

collision damage only and does not include costs related to insurance, medical treatment, police investigation, or lost work time.

Collision Causes

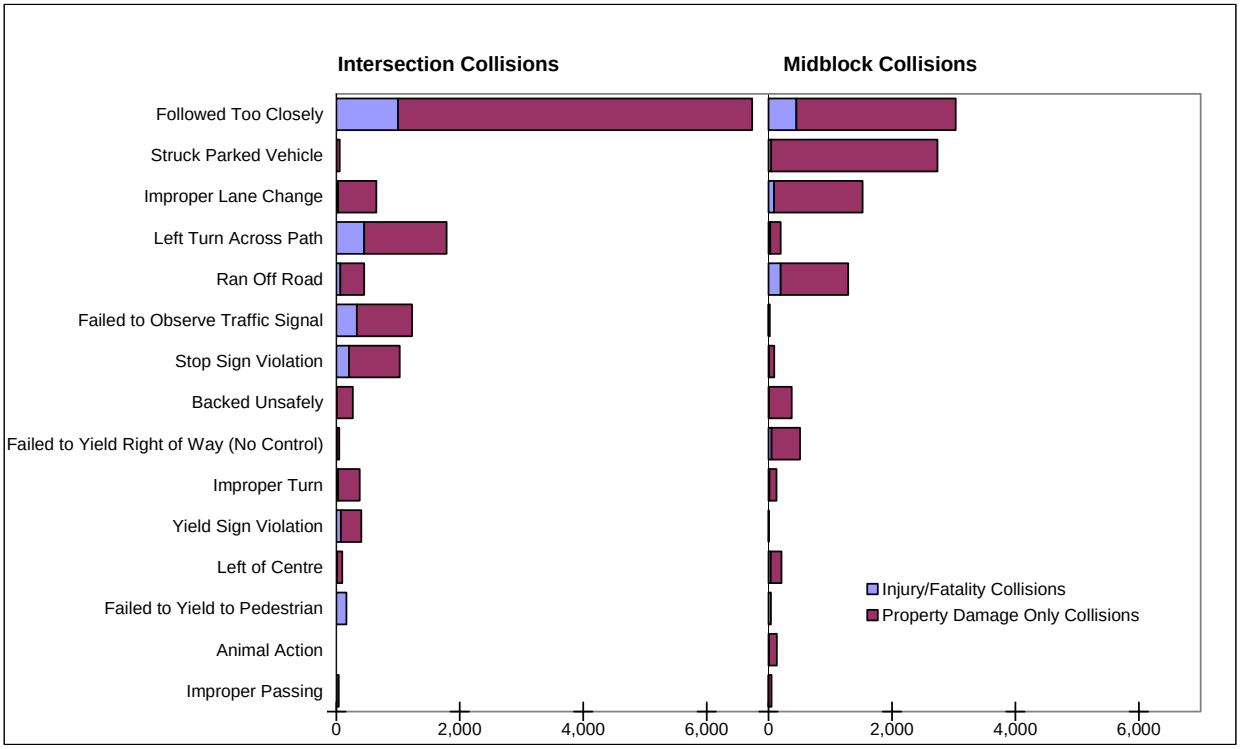


Figure 3: Collision Causes At Intersections and Midblock Segments

The most common collision cause reported was following too close, which was indicated in 41.2% (11,730) of all collisions. Other common collision causes included: striking parked vehicles (12.5%, 3,574); improper lane changes (9.5%, 2,716); left turns across the path of oncoming traffic (7.0%, 2,005); and running off the road (7.7%, 2,191).[2]

Figure 3 shows the considerable differences in the profile of collision causes at intersections versus midblock segments. At intersections, following too close was the reported cause in 49.9% (6,737) of all collisions; by comparison, following too close was the reported cause in only 28.7% (3,033) of collisions along midblocks. Of the 2,191 run off road collisions in 2010, only 20.6% (452) occurred at intersections, versus 58.9% (1,291) along midblocks.[3] Similarly, of the 2,005 left turn across path collisions, 89.1% (1,786) occurred at intersections, versus 9.8% (196) along midblock segments with vehicles turning onto private property.

[2] For an explanation of each collision cause, please refer to Appendix 2 at the end of this document.
[3] The remaining 448 collisions occurred either on side streets, in alleys, or did not specifically report a location.

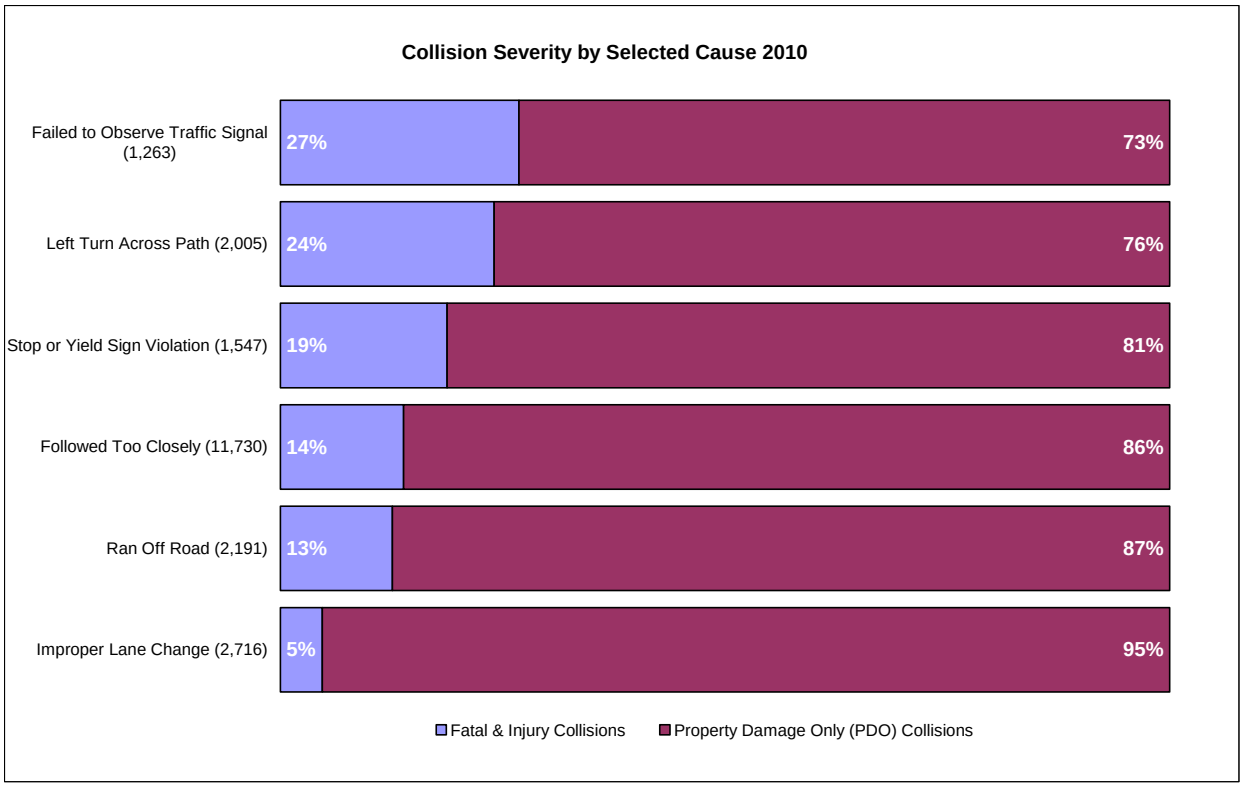


Figure 4: Proportion of Collisions Resulting in Fatality or Injury

Collisions that result in a head-on or right-angle impact are more likely to result in an injury or fatality. Figure 4 shows that in 2010, 26.8% (339) of all fail to obey traffic signal collisions resulted in injury. Similarly, 24.0% (482) of left turn cross path collisions and 18.7% (290) of stop or yield sign violation collisions resulted in injury. Sideswipe collisions (such as improper lane changes) and rear-end collisions (such as follow too close) occurred more frequently but resulted in proportionally fewer injury or fatality collisions.

Temporal Analysis

The profile of collisions in Edmonton by month of year, day of week, and hour of day are consistent from year to year. Fluctuations in the number of collisions can be the result of changing traffic volumes, weather and road conditions, number of daylight hours, and roadway congestion, as well as many other factors. The following charts exhibit the overall patterns of collisions during the hours, days, and months of 2010.

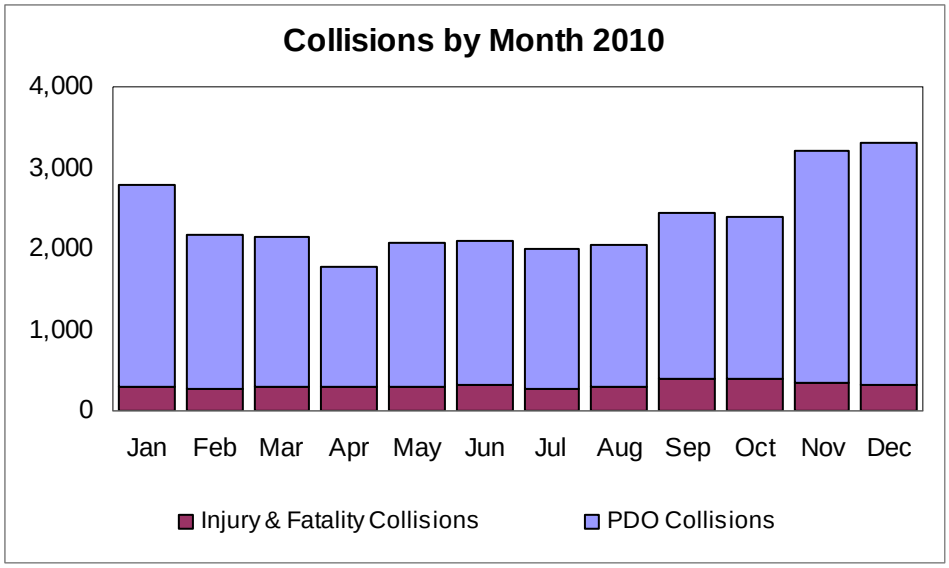


Figure 5: Collisions by Month

Figure 5 shows the breakdown of collisions by month, which in 2010 varied from a low of 1,771 in April to 3,307 in December. Overall, 56% (16,030) of collisions occurred in the fall and winter months (January – March and October – December). By contrast, the monthly totals for injury and fatality collisions varied less, ranging from 270 in February to 391 in October.

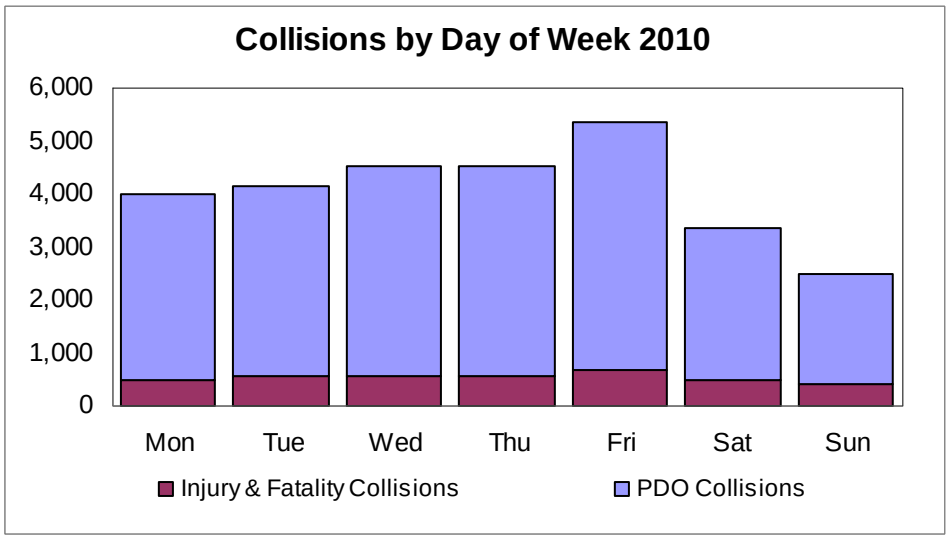


Figure 6: Collisions by Day of Week

Friday was the most common day of the week for collisions in 2010, accounting for 18.8% (5,348) collisions. Least common was Sunday, with 8.8% (2,729) of all collisions. As in previous years, there were fewer collisions on weekends than on weekdays.

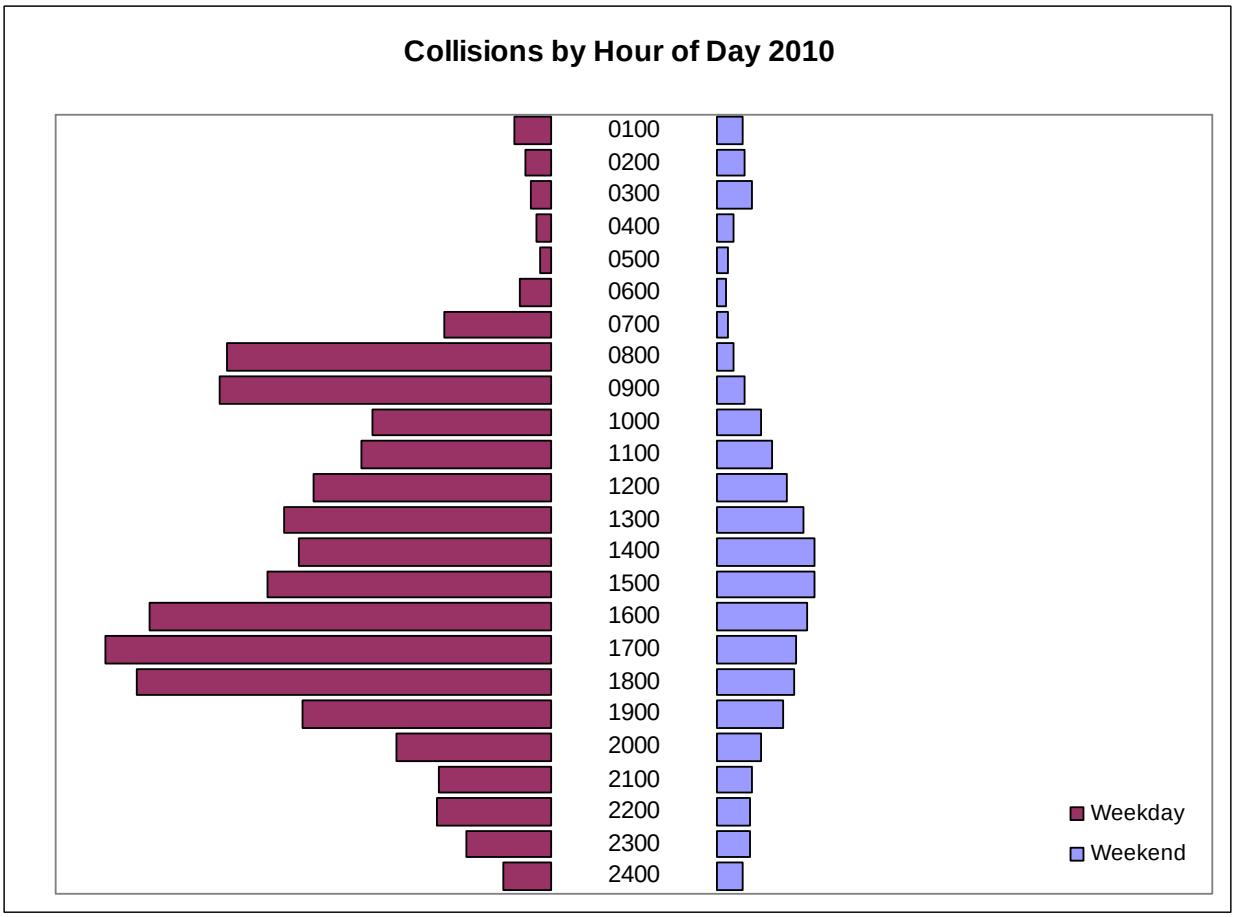


Figure 7: Collisions by Hour of Day (Weekday vs Weekend)

Figure 7 breaks down the pattern of collisions by hour of day, for both weekdays (Monday through Friday) and weekends (Saturday and Sunday). During the week, peak collision times match peak travel times; the morning peak period of 6:00 – 9:00 accounted for 17.4% (3,937) of weekday collisions, while collisions during the PM peak of 3:00 – 6:00 PM made up 28.9% (6,527) of collisions.

On weekends, collision patterns shifted in line with traffic patterns, with the number of collisions peaking at 3:00 PM. Collisions from 12:00 Noon to 6:00 PM made up 46.7% (2,741) of weekend collisions. Collisions during the overnight hours are also more prevalent during the weekend; from 12:00 midnight to 5:00 AM there were 605 collisions on weekends, representing 10.3% of all weekend collisions; by comparison, in the same time period there were 562 collisions over the five weekdays, representing 2.5% of all weekday collisions.

Objects Involved in Motor Vehicle Collisions

Object Type	Number of Objects	Number of Collisions
Automobile	53,835	28,286
Fixed Object	2,549	2,516
Truck	866	836
Other/Unknown	497	497
ETS Bus	262	261
Motorcycle	214	211
Animal	185	185
Bicycle	184	182
School Bus	130	130
Other Vehicle (Construction, Farm)	58	58
Other Transit or Private Bus	15	15
Train	5	5

Table 2: Objects Involved in Collisions

All collisions in the motor vehicle database include at least one motor vehicle; collisions between two cyclists, for example, would not be entered in the database. Most collisions in 2010 involved two motor vehicles, or a single vehicle and a fixed object.

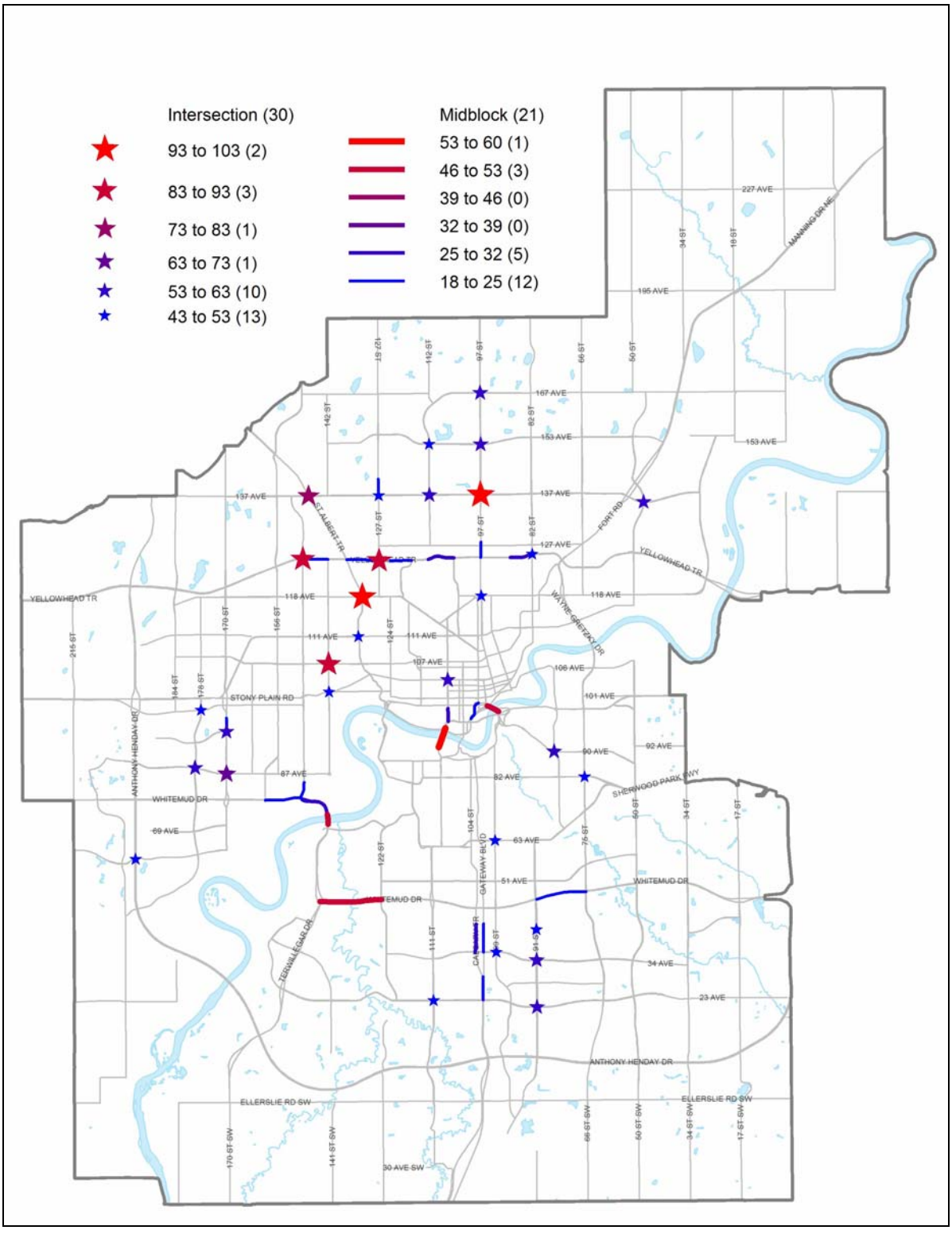
Table 2 summarizes the types of vehicles involved in collisions in 2010. Automobiles – a category that includes passenger vehicles, pickup trucks, and SUVs, but excludes large trucks over 4,500kg and buses – were involved in over 99% of all collisions. Fixed objects were involved in 8.8% (2,516) of all collisions. Other vehicle types included trucks greater than 4,500 kg (836 collisions), animals (185 collisions), ETS buses (261 collisions), and school buses (130 collisions). Five collisions in 2010 involved a train.

Fixed Object Type	# Objects	Percent
Pole	423	16.6%
Post, Sign, Parking Meter	410	16.1%
Curb	362	14.2%
Other Fixed Object	331	13.0%
Restraining Barrier	309	12.1%
Tree / Brush / Hedge	218	8.6%
Fence	137	5.4%
Snowbank / Drift	122	4.8%
Ditch	93	3.6%
Fire Hydrant	53	2.1%
Building	35	1.4%
Bus Shelter	31	1.2%
Bridge Support	20	0.8%
Culvert	2	0.1%
Utility Box	2	0.1%
Telephone Booth	1	0.0%
Total	**2,549**	

Table 3: Fixed Objects Involved in Collisions, 2010

Fixed objects are routinely involved in collisions, and Table 3 summarizes the type and number of these objects involved in collisions in 2010. The most common fixed object involved in collisions were poles, a category that includes street lights, overhead power poles, signal light poles, and trolley line catenary poles. In 2010, 423 poles – more than one a day on average – were struck.

Other fixed objects involved in collisions included 410 signs and parking meters, 309 restraining barriers, 218 trees or hedges, 53 fire hydrants, 31 bus shelters, and one telephone booth.



Map 1: Top Intersection and Midblock Segments by Number of Collisions 2010

Many of the high-collision intersections in 2010 were north and northwest of the downtown core, as indicated in Map 1. High-collision midblock segments included sections of Whitemud Drive and Yellowhead Trail, as well as the High Level and Low Level Bridges.

Demographic Analysis

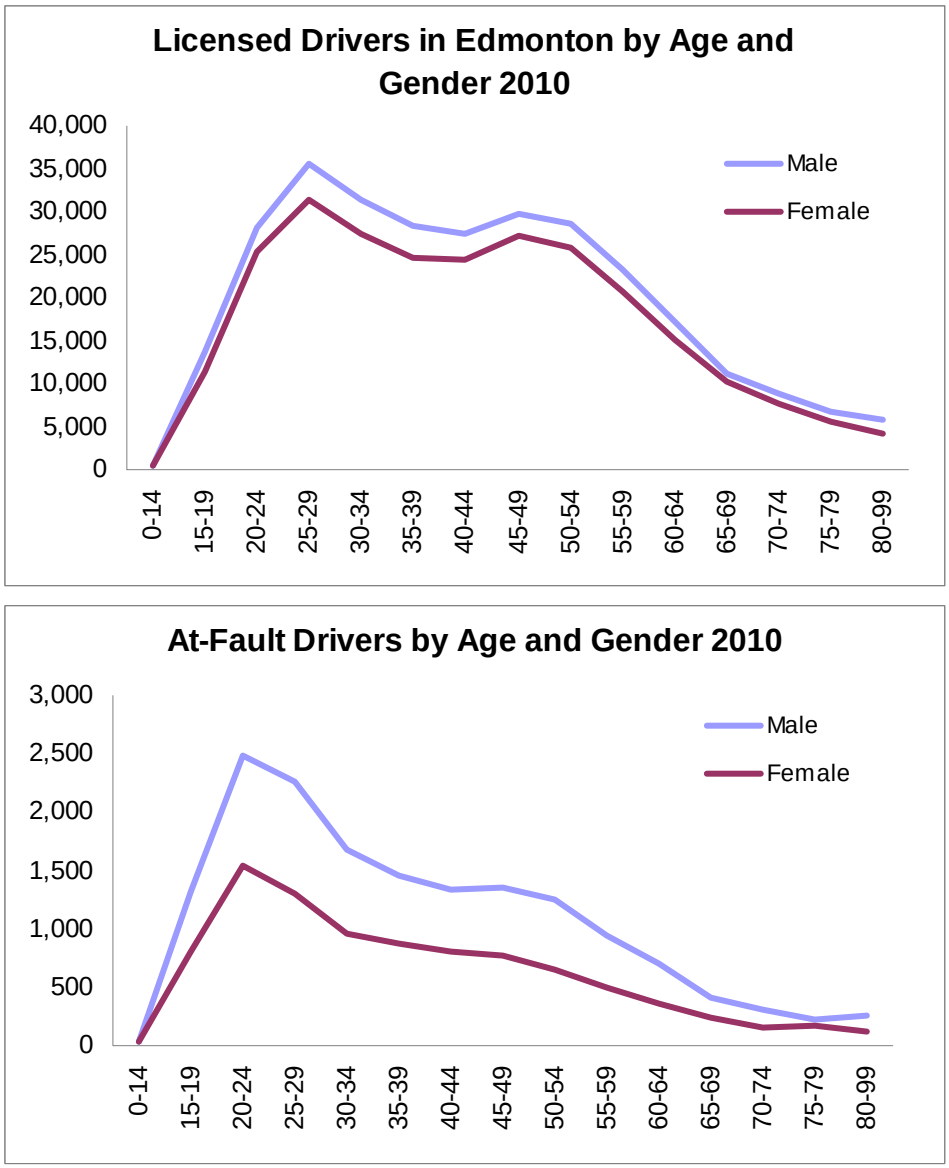


Figure 8: Age and Gender Breakdowns of Licensed Drivers and At-Fault Drivers

There were several key demographic differences between the cohort of licensed Edmonton drivers and those who were deemed to be the at-fault driver in collisions in 2010.

Young drivers were more likely to be involved in (and deemed at fault for) collisions. Drivers aged 15-24 made up 14.1% of Edmonton's licensed drivers in 2010, but were responsible for 24.3% of collisions. By comparison, drivers aged 30-49 constituted 39.5% of all licensed drivers, but were deemed at fault in 36.5% of collisions. Males made up 53% of licensed drivers in Edmonton, but accounted for 63% of at-fault parties. When accounting for both age and gender, 7.5% of all licensed drivers in Edmonton were males aged 15-24, but accounted for 15% of all at-fault drivers in collisions in 2010.

The demographic breakdown of collision figures and at-fault drivers also reveals that 1 in 10 licensed males aged 15-19 were involved in a collision for which they were deemed at fault in 2010. By comparison, 1 in 14 female drivers aged 15-19 were at-fault in a collision, while the ratio for all licensed drivers was 1 in 22.

Injury and Fatality Collisions in 2010

In 2010 there were 3,793 collisions which resulted in 4,910 injuries and 27 fatalities. The following section displays key information about injury and fatality collisions in 2010.

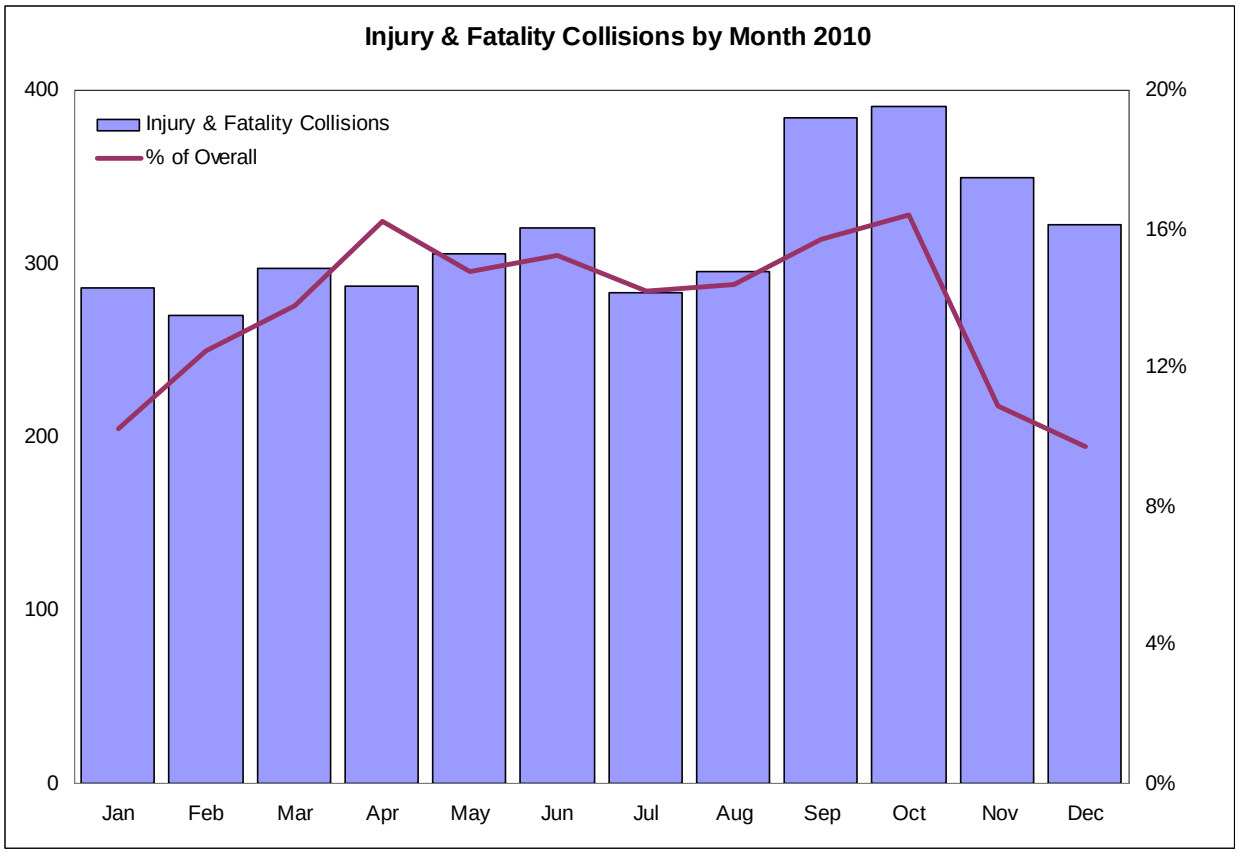


Figure 9: Injury and Fatality Collisions by Month

The number of injury and fatality collisions by month varied from a low of 270 collisions in February to a high of 391 collisions in October. The pattern of injury and fatality collisions did not follow that of collisions overall; Figure 9 indicates that collisions in April, which had the lowest overall collision count of all months in 2010, had a greater proportion of injury and fatality collisions than December, which had the most overall collisions.

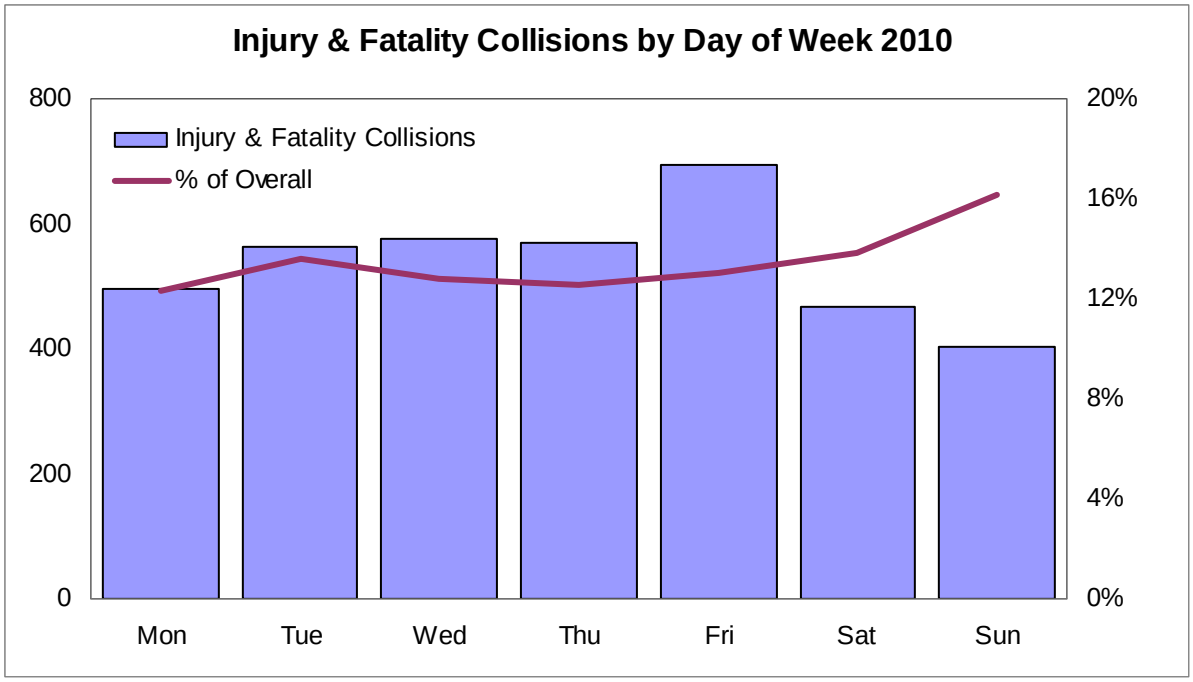


Figure 10: Injury and Fatality Collisions by Day of Week

Figure 10 shows that Fridays had the most injury and fatality collisions, with 18.5% (696) of all injury or fatality collisions occurring on the last day of the workweek. By contrast, only 10.7% of injury or fatality collisions occurred on Sunday. The pattern of injury and fatality collisions by day of week generally followed that of overall collisions, with an increase in collisions from Monday to Friday and a decrease on the weekends. However, as the line in Figure 10 indicates, the proportion of injury and fatality collisions to all collisions was higher on Sunday than other days of the week.

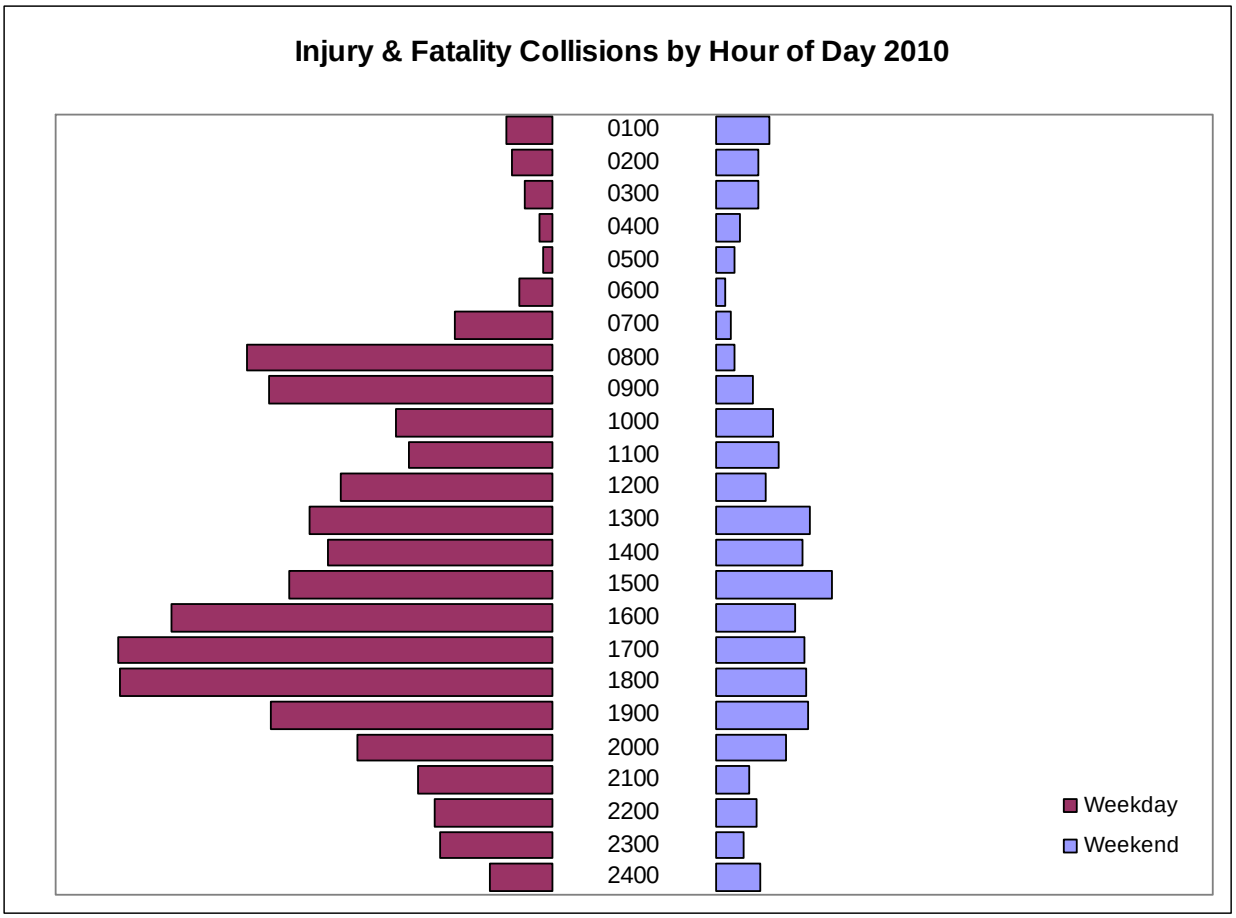


Figure 11: Injury Collisions by Hour of Day

The profile of injury and fatality collisions by hour of day was similar to the profile of overall collisions. On weekdays, the same morning and evening spikes occurred with injury and fatality collisions; collisions during the morning peak (6:00- 9:00 AM) made up 16.2% (472) of all injury and fatality collisions on weekdays, while the evening peak (3:00 – 6:00 PM) accounted for 20.2% (857) of all injury and fatality collisions.

The profile of injury and fatality collisions on weekends was generally the same as the profile of overall collisions, with a gradual increase during the day and a peak at 3:00 PM. Injury and fatality collisions from noon to 6:00 PM made up 43.2% (379) of weekend collisions.

On both weekdays and weekends, both the number and proportion of injury and fatality collisions to collisions overall was higher in the late evening and overnight hours. Whereas 12.9% of all collisions on weekdays resulted in injury or fatality, the proportion increases to 16% between midnight and 5:00 AM. On weekends, injury and fatality collisions from midnight to 5:00 AM made up 20.2% (122) of all weekend collisions, compared to the overall proportion of 15% injury and fatal collisions to overall collisions. As with collisions overall, injury and fatal collisions during the overnight hours on weekends exceeds that of weekdays both in absolute value and in relationship to other hours of the day.

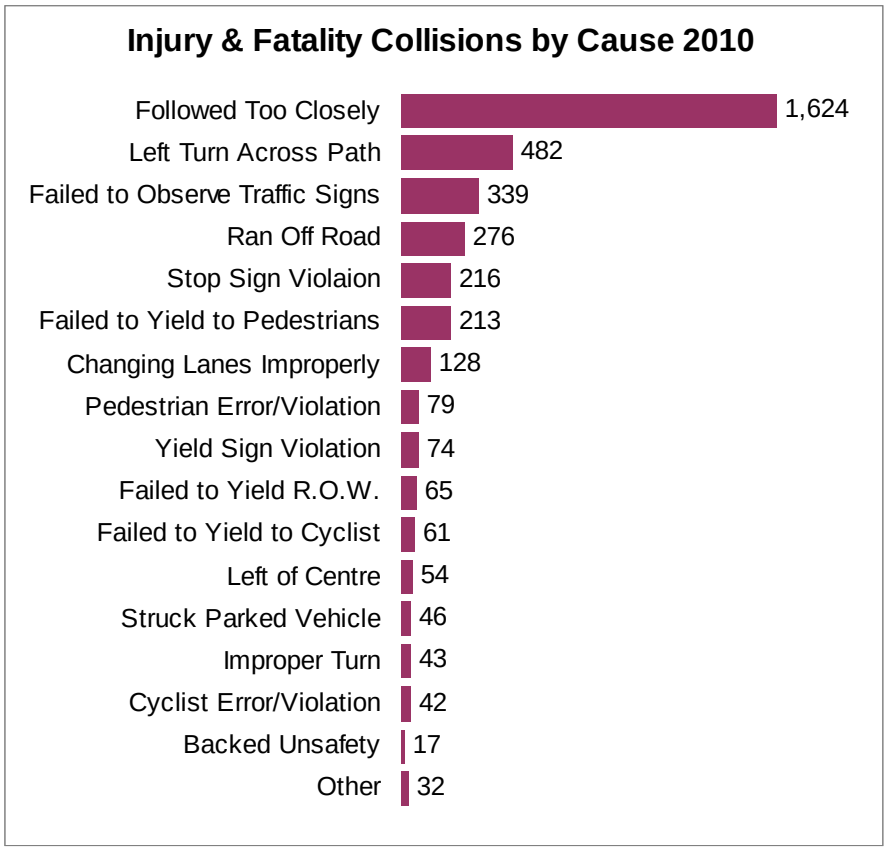


Figure 12: Injury and Fatal Collisions by Cause

Collisions with the reported cause of “following too close” made up 43% (1,624) of all injury and fatal collisions. Other collision causes with significant injury counts included left turns across path (13%, 482), failure to observe traffic signals (9%, 339), and run off road (7%, 276).

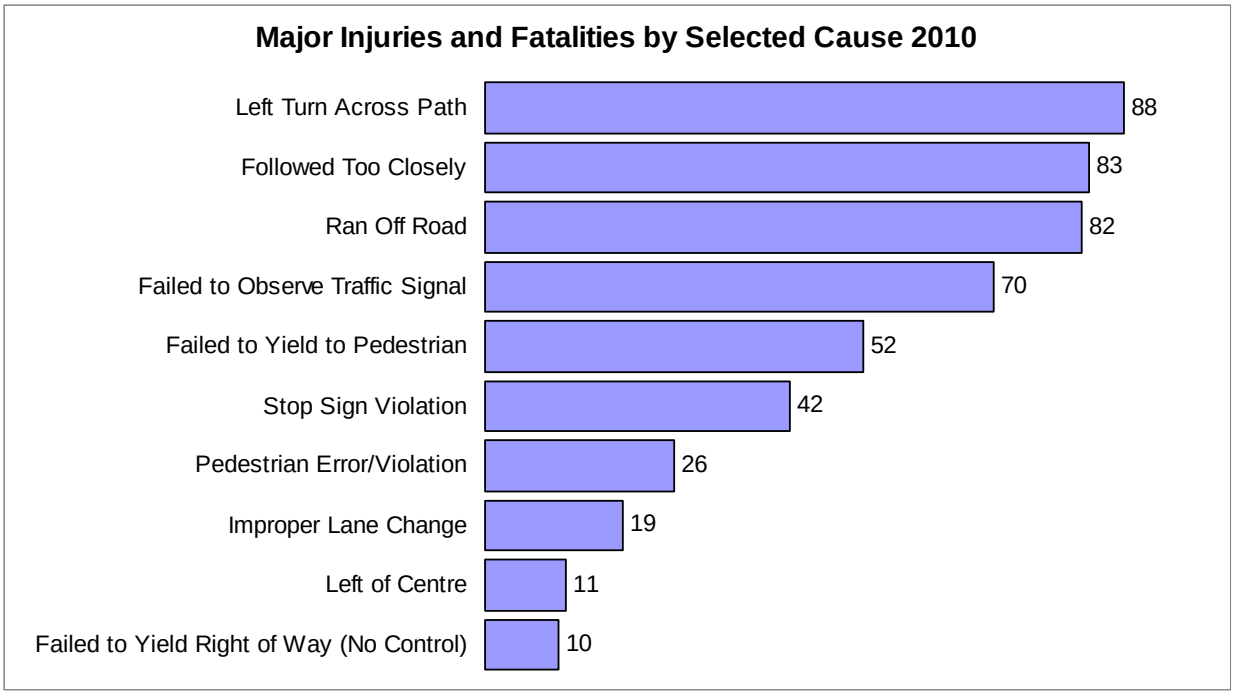


Figure 13: Major Injuries and Fatalities by Cause

A single collision can result in multiple injuries and/or fatalities. Injuries are classified as minor or major depending on the level of treatment required.[4] Figure 13 displays the number of major injuries and fatalities for a number of collision causes.

Left turn across path collisions contributed 17.0% (88) of all major injuries and fatalities. Other common causes of major injury and fatality included follow too close (16.0%, 83), ran off road (15.8%, 82), and failure to observe traffic signals (13.5%, 70).

Certain collision causes result in proportionately more major injuries or fatalities when compared to minor injuries. Of the 82 injuries or fatalities resulting from pedestrian error or violation, 31.7% (26) were either a major injury or fatality. Major injury or fatality made up 25.6% (82) of the total number of run off road collisions. By comparison, while there were 83 major injuries or fatalities resulting from follow too close collisions, this represents only 3.9% of all follow too close injuries.

[4] For a definition of minor and major injuries, please refer to Appendix 1.

Injury Mode	Class	< 14	14 - 15	16 - 18	19 - 24	25 - 34	35 - 44	45 - 54	55 - 64	65 - 74	75+	N/A	Total
Vehicle Driver	Minor	1	2	75	417	682	549	536	314	103	73	5	**2,757**
	Major	0	0	8	36	57	52	39	38	17	6	0	**253**
	Fatal	0	0	1	3	1	2	2	0	3	0	0	**12**
Vehicle Passenger	Minor	185	46	96	192	195	122	123	65	47	32	37	**1,140**
	Major	6	2	9	17	17	10	9	12	4	8	4	**98**
	Fatal	3	0	0	2	0	0	0	0	0	0	0	**5**
Pedestrian	Minor	32	8	14	46	45	27	26	21	11	9	6	**245**
	Major	5	4	7	13	10	12	16	5	4	5	0	**81**
	Fatal	0	0	0	0	0	2	0	1	0	1	0	**4**
Cyclist	Minor	16	7	9	29	29	21	30	6	1	0	12	**160**
	Major	0	2	0	5	5	4	3	2	1	0	0	**22**
	Fatal	0	0	0	0	1	0	1	0	0	0	0	**2**
Motorcyclist	Minor	2	0	0	19	28	15	23	12	1	0	0	**100**
	Major	0	0	1	6	10	6	7	5	0	0	0	**35**
	Fatal	0	0	0	0	2	1	1	0	0	0	0	**4**
Unknown	Minor	0	1	3	1	1	1	1	2	0	3	4	**17**
	Major	0	0	0	2	0	0	0	0	0	0	0	**2**
All Modes	**Minor**	**236**	**64**	**197**	**704**	**980**	**735**	**739**	**420**	**163**	**117**	**64**	**4,419**
	Major	**11**	**8**	**25**	**79**	**99**	**84**	**74**	**62**	**26**	**19**	**4**	**491**
	Fatal	**3**	**0**	**1**	**5**	**4**	**5**	**4**	**1**	**3**	**1**	**0**	**27**

Table 4: Breakout of Injuries by Mode, Class, and Age

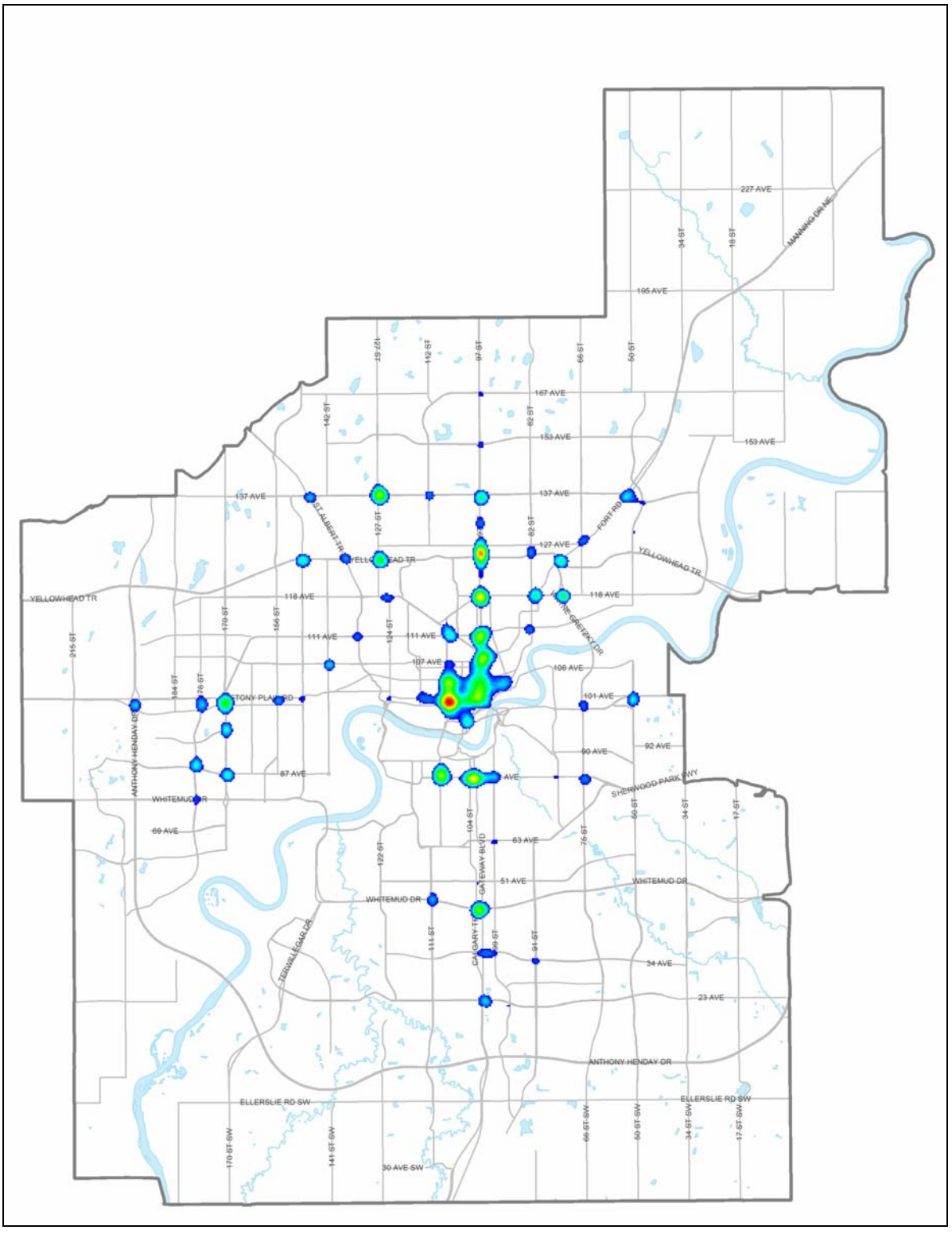
A summary of all injuries and fatalities is presented in Table 4, broken out by age group and injury class. The most injuries and fatalities were sustained by vehicle drivers, followed by vehicle passengers. Most injuries and fatalities to children 15 and under were sustained while they were passengers in a vehicle.

Among vehicle drivers, there were 5.4 injuries or fatalities per 1,000 licensed drivers in Edmonton, and 0.47 major injuries or fatalities per 1,000 licensed driver. However, these figures increase to 7.5 injuries or fatalities per 1,000 licensed drivers and 0.64 major injuries or fatalities per 1,000 licensed drivers aged 19-24. Among those aged 65-74, the 3.2 injuries or fatalities per 1,000 licensed drivers is lower than the overall rate but the 0.52 major injuries or fatalities per 1,000 licensed drivers is higher than the overall rate.

	Vehicle Driver	Vehicle Passenger	Pedestrian	Bicyclist	Motorcyclist	Unknown	Total
Signal Light	1,218	570	113	66	33	5	2,005
No Control	1,019	358	97	52	80	9	1,615
Stop Sign	266	104	10	43	8	4	435
Yield Sign	301	114	3	5	6	1	430
Marked Ped Crosswalk	58	36	67	11	5	0	177
Ped-Actuated Signal	87	30	15	4	4	0	140
Construction	33	8	2	0	0	0	43
Ped Amber Flasher	12	6	22	1	1	0	42
Rail Crossing / ROW	9	6	0	1	0	1	17
Police Control	5	4	1	0	1	0	11
One Way Sign	6	3	0	1	0	0	10
Merge Sign	5	1	0	0	0	0	6
Warning / Advance Light	2	2	0	0	0	0	4
Flagperson Control	1	0	0	0	1	0	2
Total	**3,022**	**1,242**	**330**	**184**	**139**	**20**	**4,937**

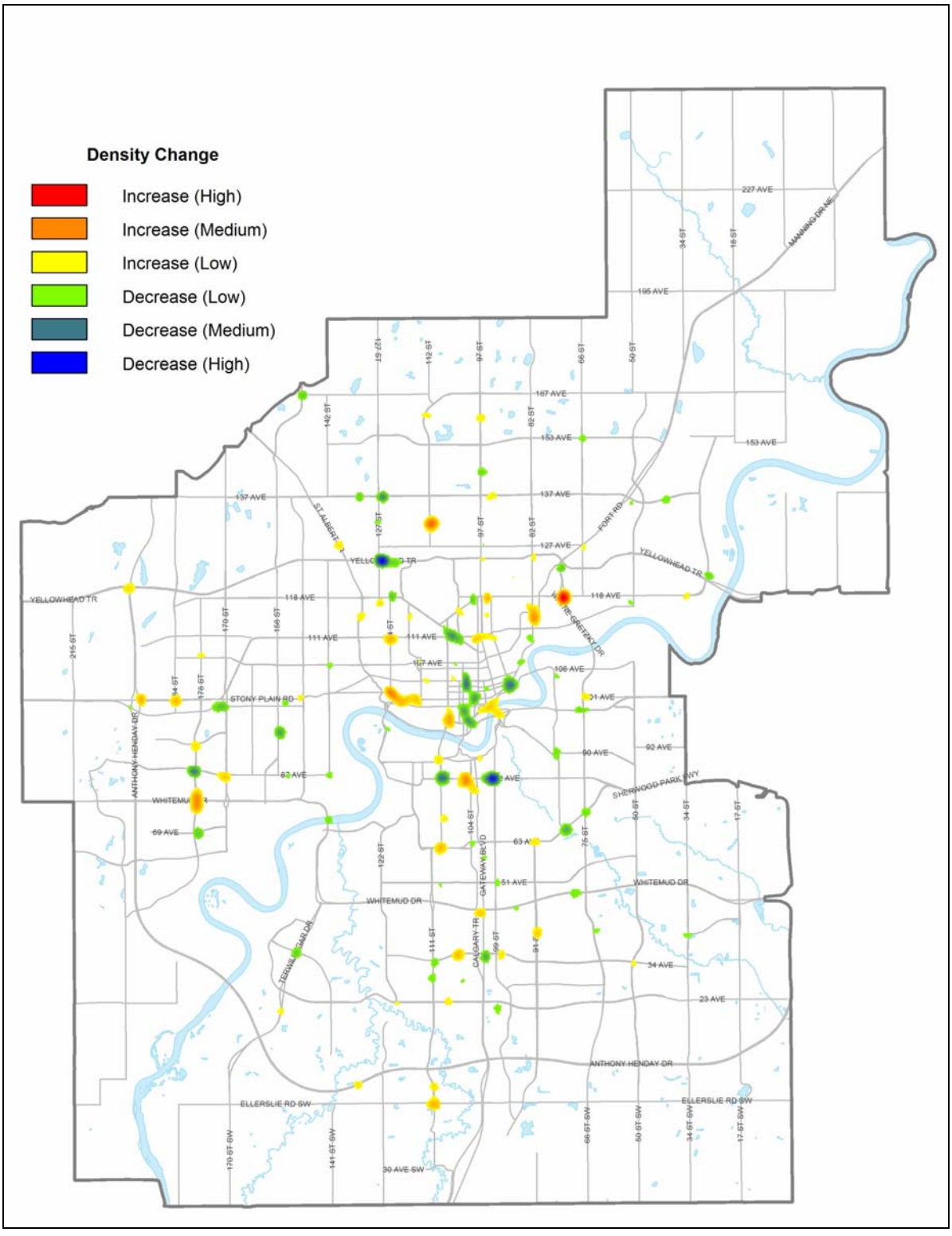
Table 5: Injuries by Mode and Traffic Control

Table 5 breaks down injuries and fatalities by the type of traffic control present at the collision. Collisions where the traffic control was a signal light made up 40.6% (2,005) of all injuries and fatalities, followed by no control, which includes both intersections that have no traffic control and midblock segments (32.7%, 1,615) and stop signs (8.8%, 435). Among the three types of pedestrian crosswalks, the fewest injuries and fatalities occurred at crosswalks with amber crossing signals, and the most at crosswalks with markings but no signals. Seventeen injuries occurred at rail crossings.



Map 2: Injury and Fatal Collision Locations 2006-2010

Map 2 highlights locations with large numbers of injury and fatal collisions using data from 2006 to 2010. Injury and fatal collisions were most prevalent in the downtown core, the Whyte Avenue entertainment area, and along 97 Street on the north side of Edmonton.



Map 3: Changes in Injury and Fatality Collisions, 2009 to 2010

Map 4 shows where the largest increase or decrease in injury and fatal collisions occurred between 2009 and 2010. The intersection of 118 Avenue and Wayne Gretzky Drive saw the largest increase, while the largest decrease was at Yellowhead Trail and 127 Street.

Pedestrian Collisions in 2010

In 2010 there were 306 collisions involving pedestrians, resulting in 326 pedestrian injuries and 4 fatalities.

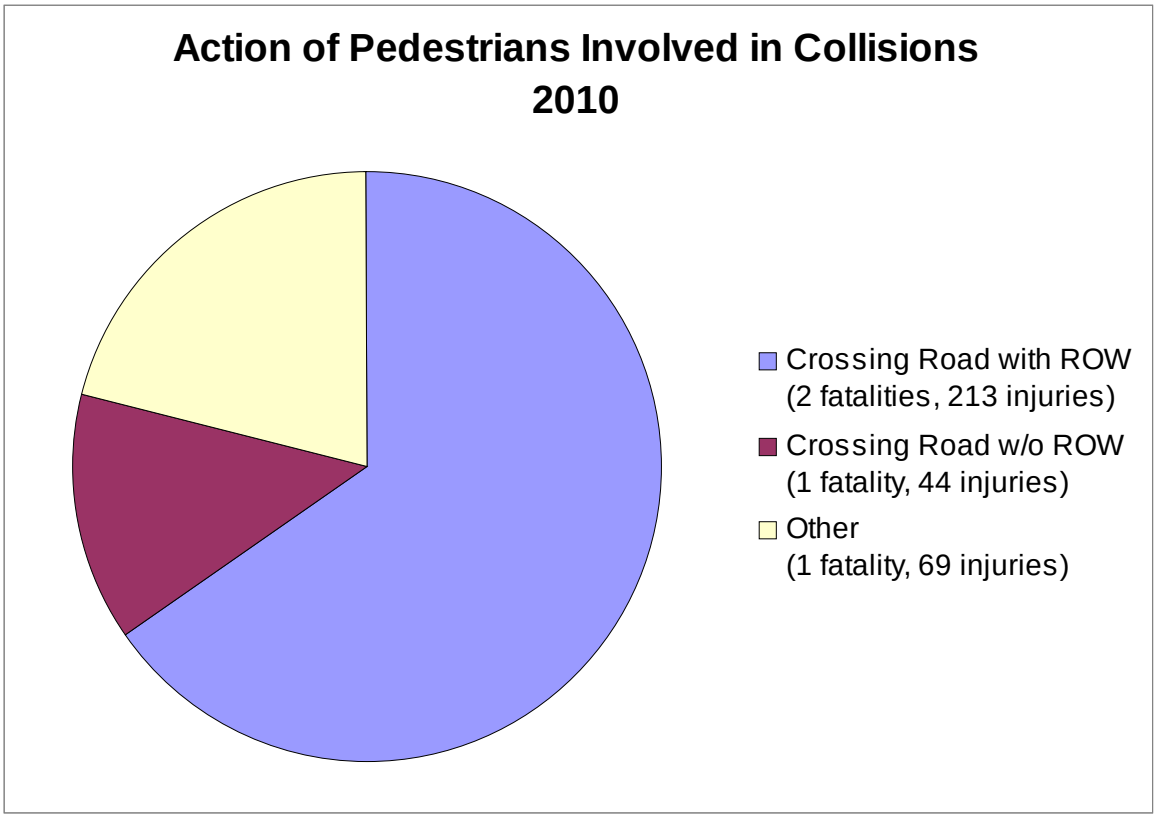


Figure 14: Action of Pedestrians Involved in Collisions

Pedestrians crossing the road with the right of way – either at a marked crosswalk, an unmarked crossing at an intersection, or at a signalized intersection with a walk sign – made up 65% (215) of all pedestrian injuries and fatalities. Pedestrians crossing without the right of way, either crossing at a midblock without a marked crosswalk or crossing against the flow of traffic at a signalized intersection, accounted for 14% (45) injuries or fatalities. Other actions – including running on the roadway, working on the roadway and entering or exiting vehicles – made up 21% (70) of pedestrian injuries.

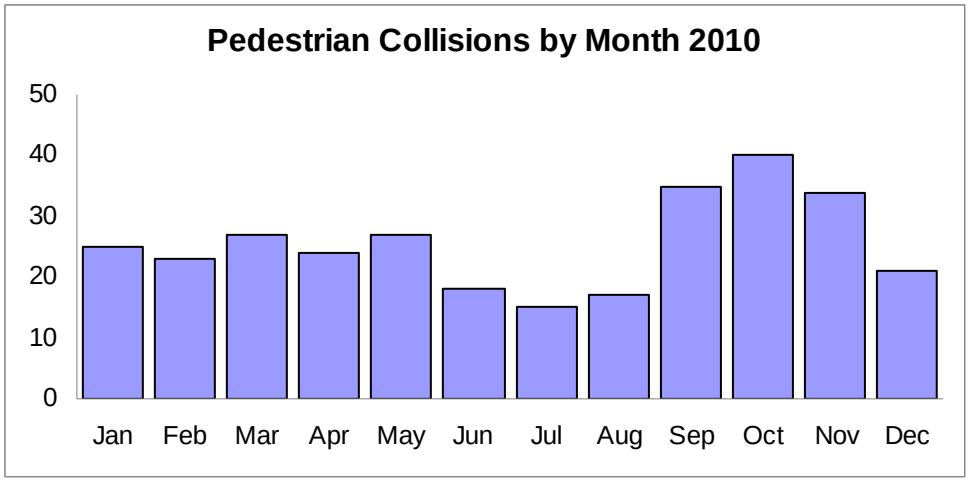


Figure 15: Pedestrian Collisions by Month

Pedestrian collisions occurred throughout the year but were most prevalent in the fall months, with 35 collisions in September, 40 collisions in October, and 34 collisions in November. Fewer collisions occurred in the summer months, with July's 15 pedestrian collisions being the lowest monthly total of the year.

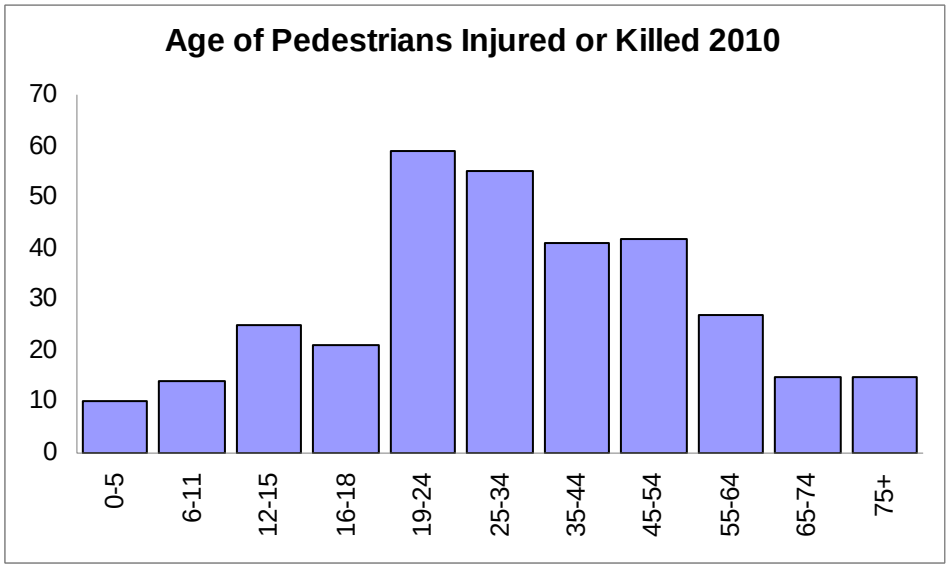


Figure 16: Age of Pedestrians Injured or Killed

A total of 35% (114) of pedestrians involved in collisions were between the ages of 19 and 34. Children 18 and younger made up 21% (70) of pedestrians involved in collisions while those aged 65 and older constituted 11% (36) of pedestrians involved in collisions.

Cyclist Collisions in 2010

In 2010 there were 182 collisions involving cyclists, which resulted in 182 injuries and 2 fatalities.

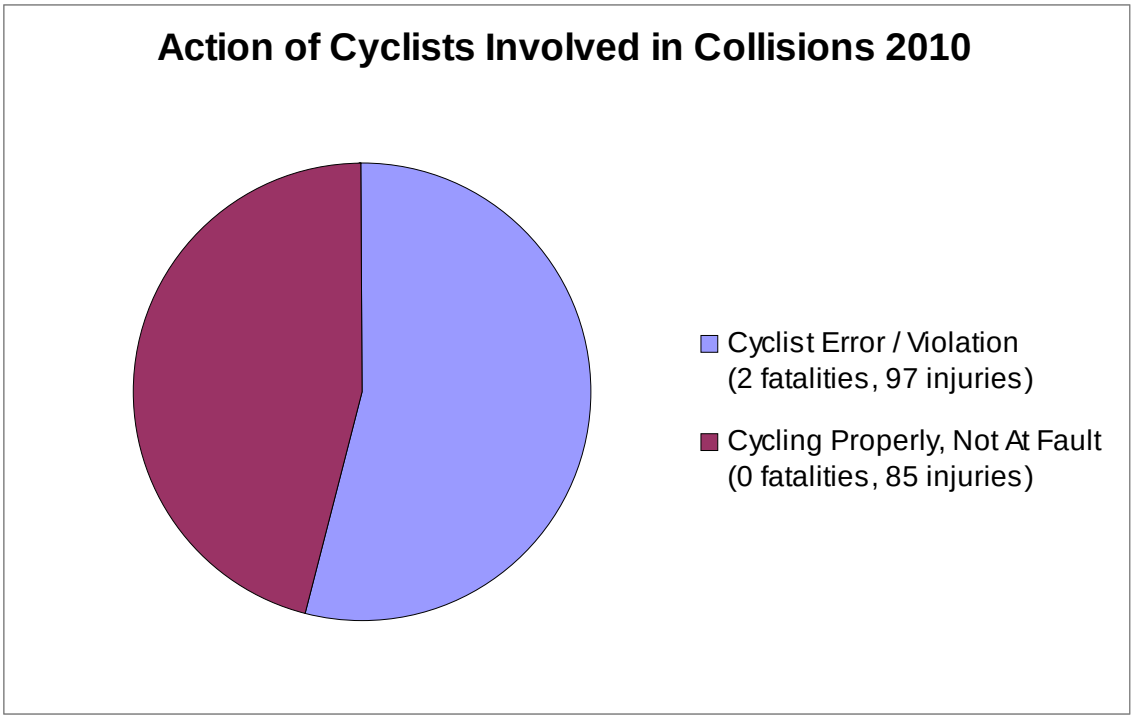


Figure 17: Action of Cyclists Involved in Collisions

Of the 184 cyclists involved in collisions, 46% (85) were deemed to be not at fault in the collision. Cyclists who were deemed to have committed errors or violations made up 54% (99) of collisions. In both fatal collisions, which occurred at intersections, the cyclist was deemed at fault.

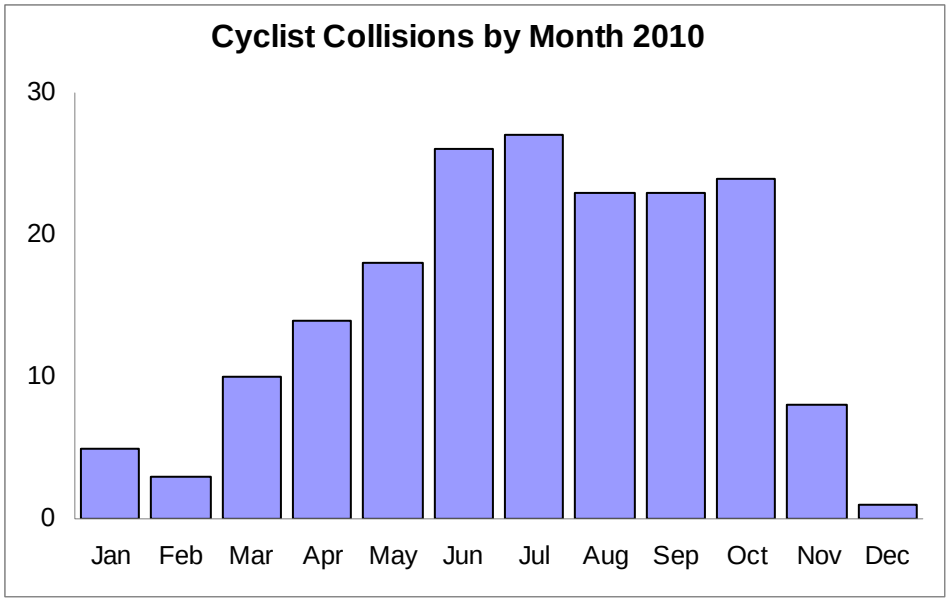


Figure 18: Cyclist Collisions by Month

There were collisions involving cyclists in every month of 2010, although most collisions occurred in the spring, summer, and fall months when more cyclists are on the road. The number of collisions peaked at 23 in July, compared to a single collision in December.

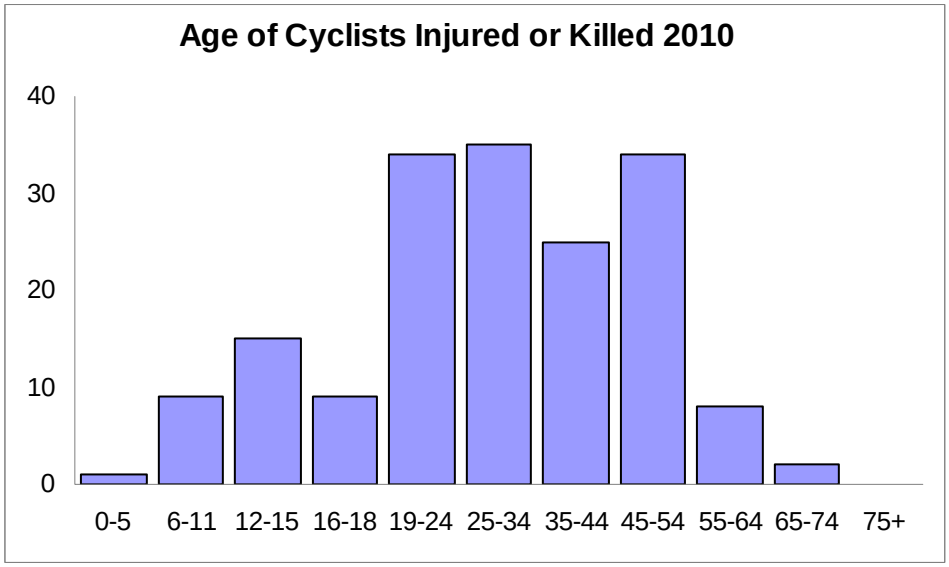


Figure 19: Age of Cyclists Injured or Killed

A total of 18% (34) of cyclists involved in collisions were 18 or younger, while the 25-34 year old age group was involved in 19% (35) of collisions. Both fatal collisions involved cyclists over the age of 25.

Motorcyclist Collisions in 2010

In 2010 there were 211 collisions involving motorcycles[5], resulting in 135 injuries and 4 fatalities. The following information relates to the 13 collisions in which motorcyclists were injured or killed.

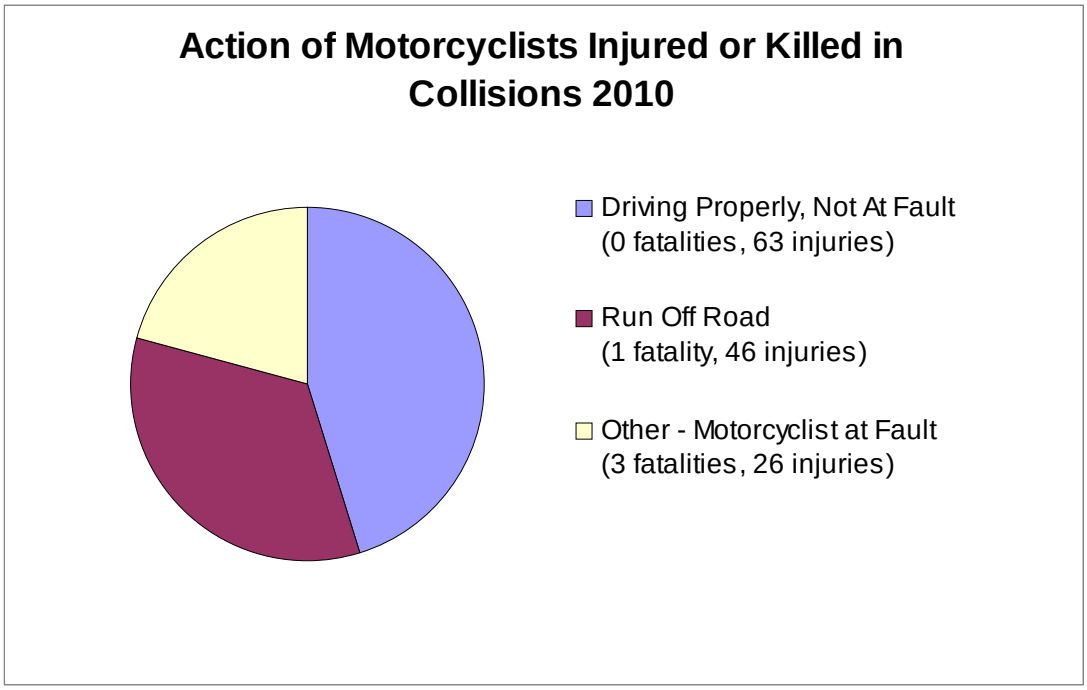


Figure 20: Action of Motorcyclists Injured or Killed in Collisions

Motorcyclists who were driving properly and deemed not at fault made up 45% (63) of motorcyclist injuries. The remaining 55% (77) of injuries, as well as all 4 fatalities, occurred in collisions where the motorcyclist was deemed to be at fault. Among these at-fault collisions, the most common collision cause was run off road, which was the reported cause for 34% (47) of all motorcyclist injuries and fatalities.

[5] The figure of 211 collisions includes 6 collisions where the motorcycle was struck while legally parked and unattended.

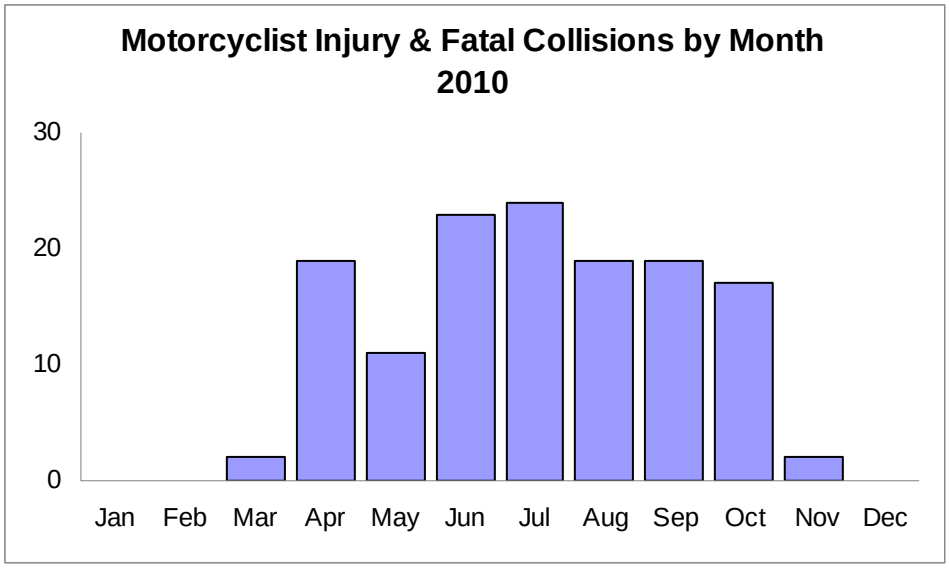


Figure 21: Motorcyclist Injury and Fatal Collisions by Month

There were no collisions resulting in motorcyclist injury or fatality in January, February, or December, and only 2 such collisions in March and November. The most common month for injury or fatality collisions was July (18%, 24).

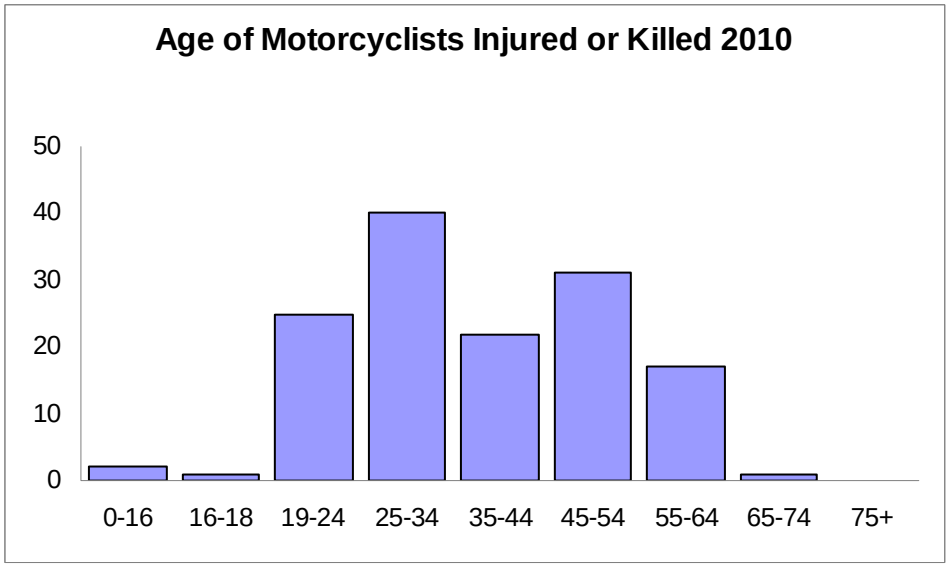
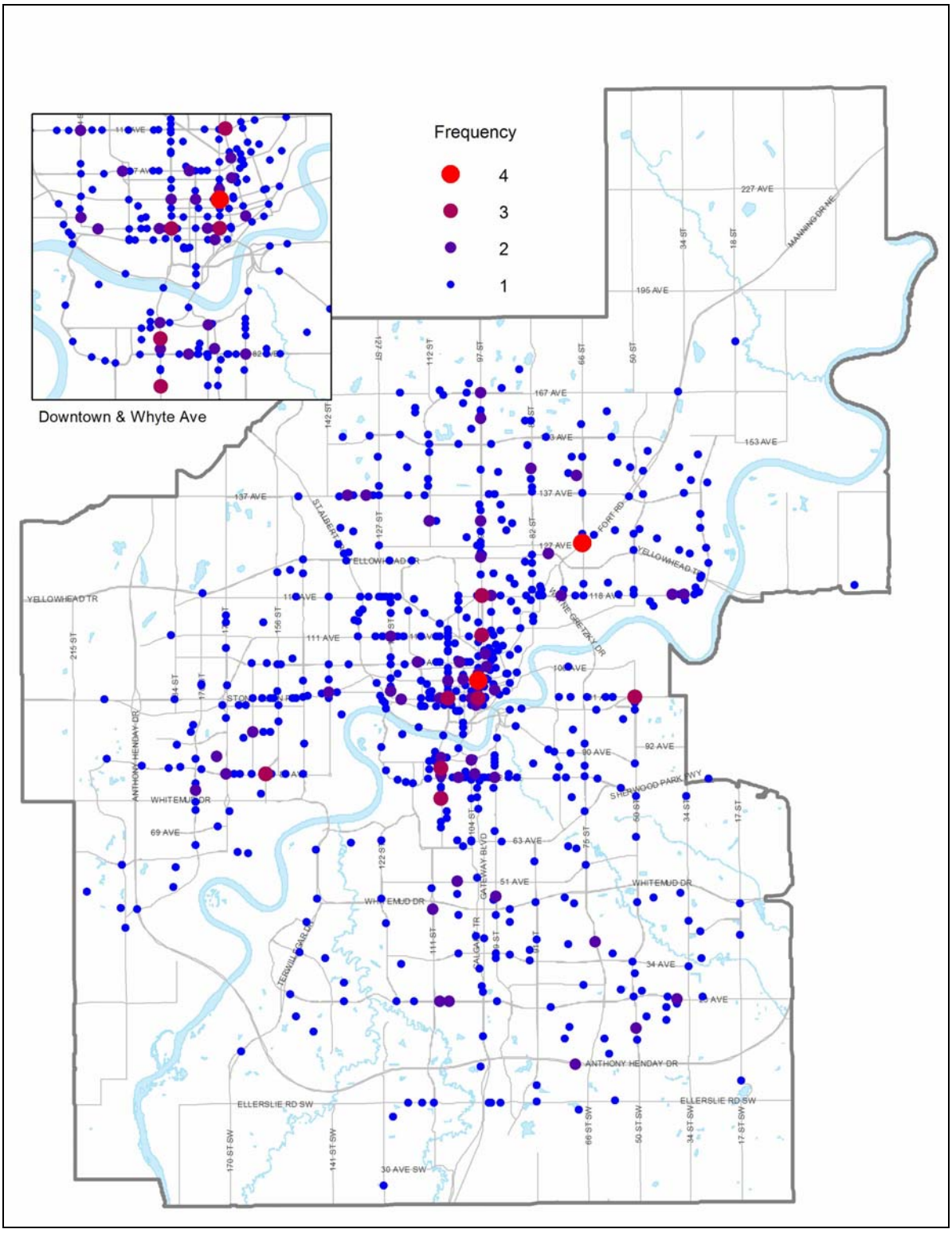


Figure 22: Age of Motorcyclists Injured or Killed

Riders aged 25-34 made up 29% (40) of all motorcyclists injured or killed in 2010, followed by the 45-54 age group (22%, 31). The 4 motorcyclist fatalities in 2010 ranged in age from 26 to 53.



Map 4: Vulnerable Road User (Pedestrian, Cyclist, Motorcyclist) Collision Locations 2010

Vulnerable road user collisions occured in all areas of the city but, as Map 4 shows, two intersections – Fort Road and 66 Street, and 104 Avenue and 101 Street – saw four vulnerable road user collisions, more than anywhere else in the city.

Appendix 1: Glossary of Terms

The following terms are used throughout this report.

Collision	Police-reported collisions occurring on public roadways in the City of Edmonton which result in a minimum of $1,000 property damage or which result in injury or fatality. The collision must include at least one (1) motor vehicle. This report includes all collisions where data was received by the Office of Traffic Safety from the Edmonton Police Service as of February 23, 2011. Non-vehicular collisions and collisions on private roadways are not included in this report.
Injury	Injuries noted by police on the collision report form. Injuries are classified as minor (treated but not admitted to hospital – may include treatment at an emergency department) or major (result in admission to hospital).
Fatality	On-scene fatalities, as well as any fatalities occurring within 30 days of and which are related to the collision.
Automobile	Cars, pickup trucks, SUVs, and vans under 4,500 kg.
Truck	Tractor-trailers, trucks, and vans 4,500 kg and over.
Intersection	Defined as extending 10 m past the legally defined limits of the outer crosswalk lines of an intersecting roadway.
Midblock	A section of roadway between two intersections. Bridges are also included as midblock segments.
Bridge	One of the 10 vehicle bridges over the North Saskatchewan River: Beverly, Capilano, Dawson, Low Level, James MacDonald, Walterdale, High Level, Groat, Quesnell, and Anthony Henday.

Appendix 2: Glossary of Collision Causes

The collision causes used throughout this report are derived from the provincial Collision Report Form. The following table provides an explanation of each of these causes.

Followed Too Closely	A vehicle rear-ends another vehicle due to a number of possible reasons, such as driver inattention, failure to maintain a safe distance between the vehicle and the one ahead, or failing to account for road conditions.
Struck Parked Vehicle	A moving vehicle collides with a legally parked or unattended vehicle.
Ran Off Road	The vehicle leaves the roadway.
Improper Lane Change	A vehicle is involved in a collision while changing lanes.
Left Turn Across Path	A driver makes a left turn and is struck by an oncoming vehicle with the right of way.
Failed to Observe Traffic Signal	At a signalized intersection, the driver fails to obey a signal and collides with another vehicle with the right of way.
Stop Sign Violation	A driver fails to stop at a stop sign, or fails to proceed safely after stopping, and collides with a vehicle with the right of way.
Backed Unsafely	A driver strikes another vehicle while backing.
Failed to Yield ROW (No Control)	A driver fails to yield the right of way at an uncontrolled intersection, striking or being struck by another vehicle.
Improper Turn	A vehicle either turns from or to an incorrect lane (for example, turning from the inside lane to an outside lane) and causes a collision.
Left of Centre	A vehicle driving left of the centre line on a roadway collides with another vehicle.
Yield Sign Violation	A driver fails to stop at a yield sign and strikes a vehicle with the right of way.
Failed to Yield to Pedestrian	A vehicle fails to yield to a pedestrian who has the right of way.
Animal Action	An animal on the roadway causes a collision with a vehicle.

Pedestrian Error / Violation	A pedestrian is involved in a collision after failing to cross at an intersection or marked crosswalk, or after crossing against a “don’t walk” sign.
Improper Passing	A driver causes a collision while attempting to pass another vehicle.
Failed to Yield to Cyclist	A vehicle fails to yield to a cyclist.
Cyclist Error / Violation	A cyclist commits an error or violation and is struck. (This code is typically used for cyclist actions such as entering the road improperly; collisions involving cyclists which can be classified as a vehicle-related cause are also used.)
Driverless Vehicle	A vehicle not being controlled by a driver causes a collision.
Signed Forced Turn Violation	A vehicle in a lane signed for specific turns disobeys the sign and causes a collision.
Improper Loading	An improperly-secured or unstable load causes a collision.
One Way Violation	A vehicle causes a collision by driving the wrong way down a one-way street.
Oversize Vehicle	A vehicle causes a collision after entering a roadway and exceeding posted height restriction.

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Acknowledgements

The author gratefully acknowledges the following individuals who contributed time and expertise to this report:

Dae-Won Kwon
Deb Lakusta
Lynda Schmeichel
Laura Thue
Liza Wood