



Road Crashes in Metropolitan South Australia

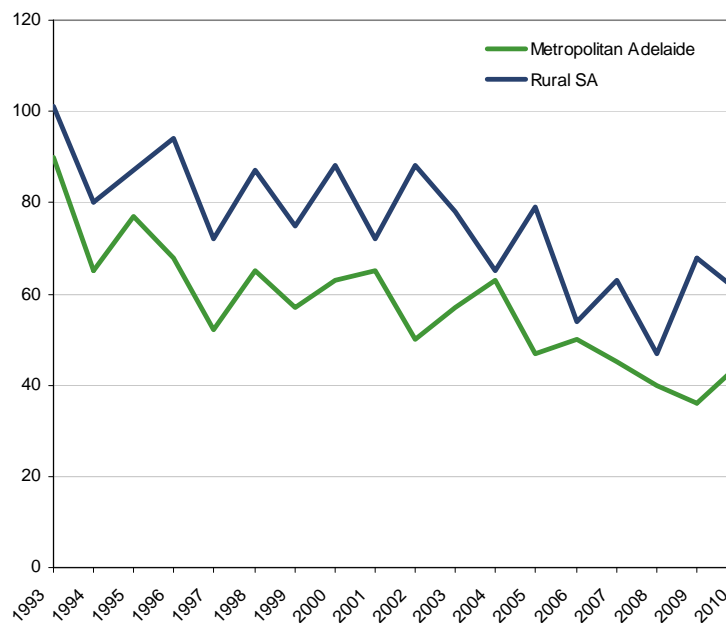
There are approximately 1.2 million people in metropolitan Adelaide. This population size represents 73% of the state's population. The majority (80%) of minor injuries resulting from less severe road crashes occur in the metropolitan area in contrast 40% of all fatalities and 52% of serious injuries occur on metropolitan Adelaide roads.

Urban driving generally involves higher volumes of traffic, numerous intersections and increased road use by pedestrians and cyclists compared to rural areas.

Collisions occurring in metropolitan Adelaide are defined as those occurring on roads in the Adelaide Statistical Division being that which extends from Gawler in the north to Sellicks Hill in the south and Bridgewater in the east.

There are a lower number of fatal crashes in the metropolitan area than in rural areas each year. This reflects the trend seen throughout Australia. The number of fatal crashes in both metropolitan and rural areas has generally declined over the period, 1993-2010.

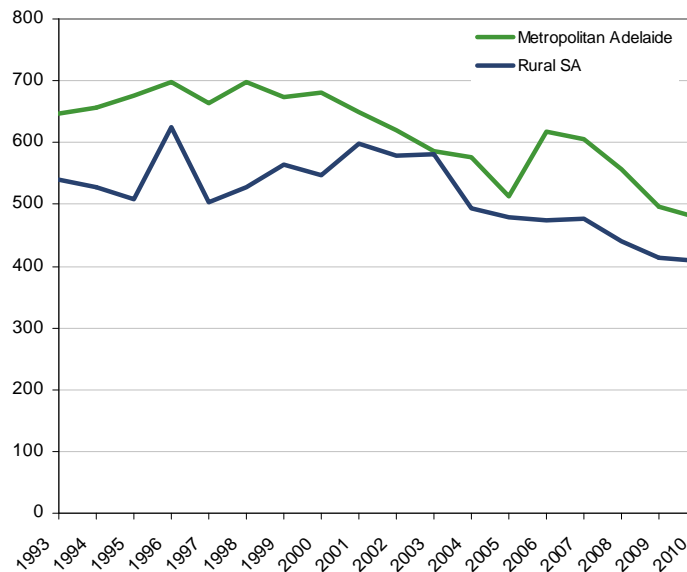
Figure 1 – Number of fatal crashes, 1993-2010, South Australia



The contrary is true for serious injury crashes, metropolitan Adelaide experiences more crashes that result in at least one serious injury than in the rural areas. Only in 2003 were crash numbers in each region nearly equal. Since 1993 the numbers of serious injury crashes in both rural and metropolitan have declined.



Figure 2 – Number of serious injury crashes, 1993-2010, South Australia



Speeds

The majority of traffic in the metropolitan area travel on roads with a speed limit of 60km/h as such it is to be expected that more crashes occur on these roads. In addition there is more congestion and opportunity for vehicles and other road users to come into conflict.

There are approximately 43 fatal crashes and 550 serious injury crashes per year in the metropolitan area. Over half of these serious casualty crashes are on 60km/h roads and a further 27% are on roads with a speed limit of 50km/h, as shown in Table1.

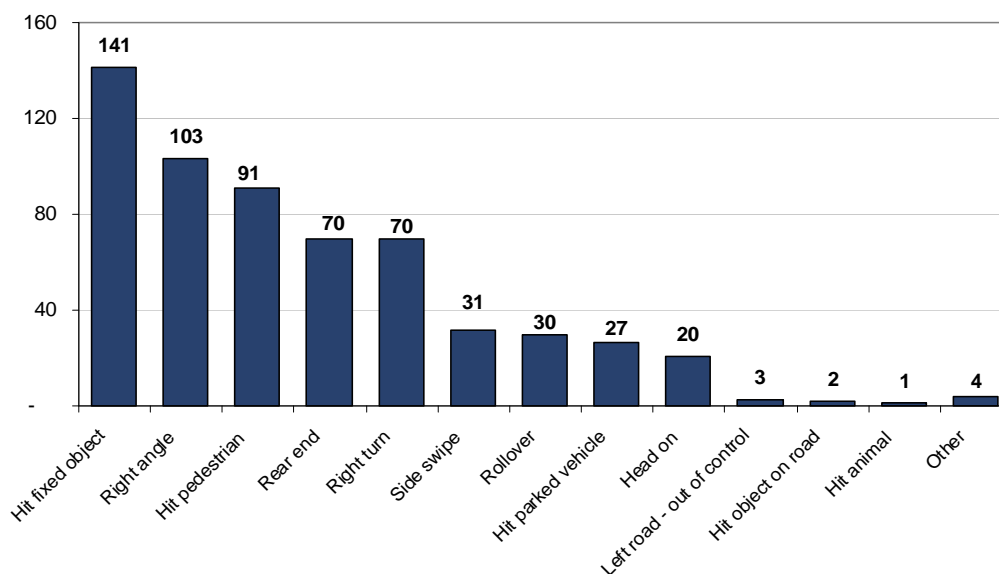
Table 1 – Serious casualty crashes in by speed limit- metropolitan Adelaide, South Australia, 2006-2010.

Speed Limit	% of serious casualty crashes
less than 50 km/h	2%
50 km/h	27%
60 km/h	53%
70-90 km/h	14%
90+ km/h	4%

Crash Types

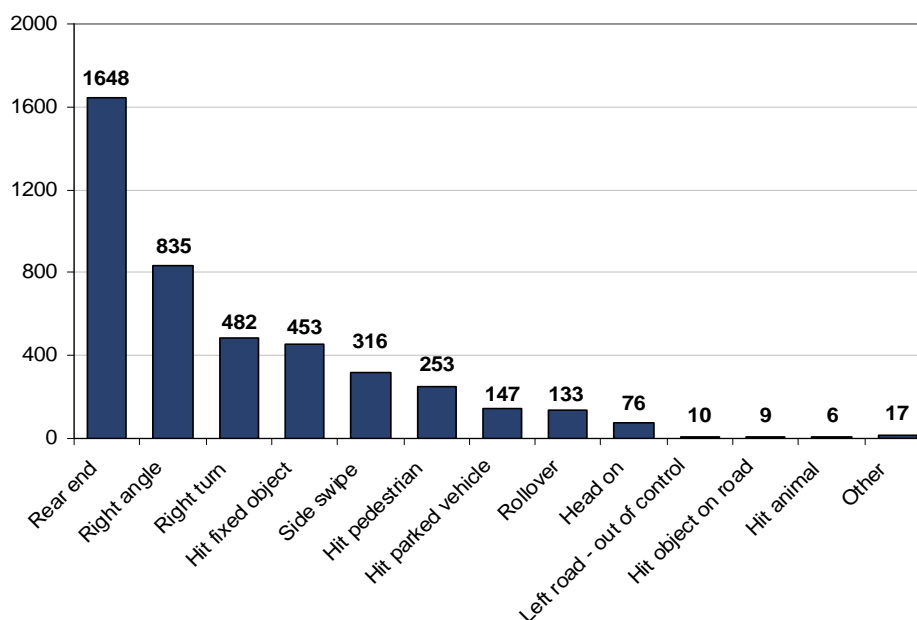
The most common type of serious crash in the metropolitan area was a vehicle colliding with a fixed object, accounting for approximately 141 serious crashes per year. The most common objects being struck were trees and poles. Right angle crashes are the next most common crash type. Nearly all of the right angle and right turn crashes occur at intersections. Hitting a pedestrian and rear end collisions are also common types of crashes in urban areas. Approximately 34% of all fatal and serious crashes in the metropolitan area are single vehicle crashes.

Figure 3 - Average number of fatal and serious crashes per year by crash type, 2006-2010, Metropolitan Adelaide



Less severe crashes that result in minor injuries, commonly occur as a result of rear end collision. Collisions that occur at intersections such as right turn and right angle crashes are also common crash types that result in minor injury.

Figure 4 - Average number of minor crashes per year by crash type, 2006-2010, Metropolitan Adelaide



Hit fixed object crashes

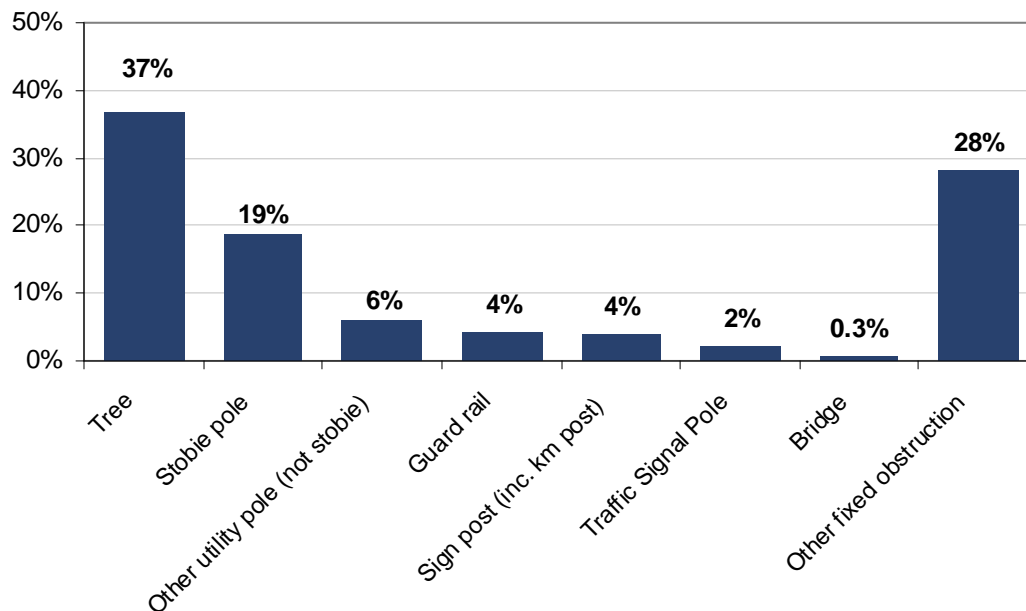
In metropolitan Adelaide, just over 2% of reported casualty crashes with roadside objects result in a fatality and 21% result in serious injury. Other high frequency serious casualty crash types are hitting a pedestrian, resulting in a serious casualty 26% of the time. Head on crashes and left road out of control are less frequent however result in serious casualty

crashes 21% and 23% of the time. Looking further into crashes involving hitting fixed objects; Contributing factors are likely to be:

- the incompatibility between the types of objects struck
- the crash worthiness of the vehicles colliding with the objects and
- the speed at which the objects are struck

As shown in the figure 5, the most common type of object struck in collisions are trees and poles (both stobie and utility poles). There are also a large number of crashes that do not identify the roadside object that is hit. This includes all objects hit in hit fixed object crashes, ie. Some crashes result in a vehicle colliding with more than one road side object.

Figure 5 - Types of objects struck in 'hit fixed object' type serious casualty crashes in metropolitan Adelaide, 2006-2010

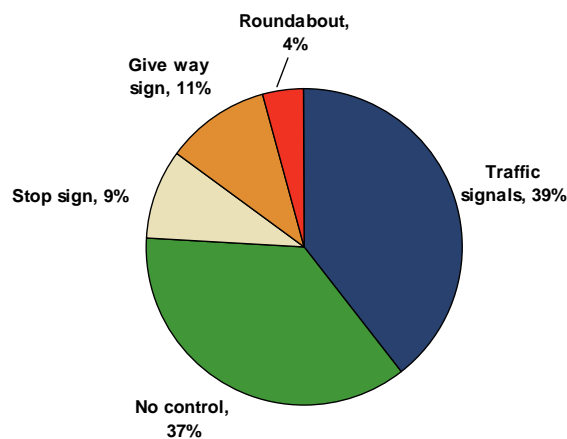


Intersections

On average, 16 fatal crashes and 268 serious crashes occur at intersections in metropolitan Adelaide each year. This is just under half of all serious casualty crashes in metropolitan Adelaide. It is not unusual that crashes are concentrated at intersections because intersections are the point on the roadway system where traffic movements most frequently conflict with one another.

Just over 37% of serious casualty crashes are at intersections with no signal or signed controls, a further 39% are controlled by traffic signals, the remaining 24% are controlled in other ways, as illustrated in figure 9

Figure 6 - Intersection crashes and the corresponding traffic control – Metropolitan Adelaide, 2006-2010

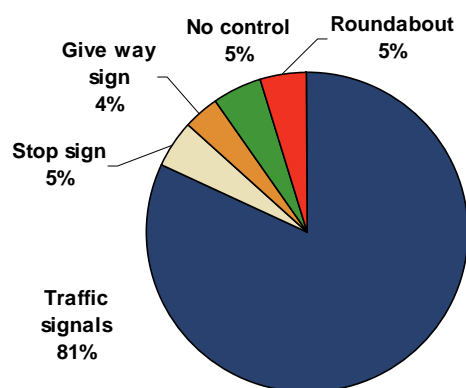


Serious casualty crashes at intersections with no control are mainly right angle (28%), hit fixed object (19%) and right turn (16%). Rear end (12%) and striking a pedestrian (11%) are less common.

Crashes at signalised intersections are mainly right turn (37%) and right angle crashes (18%), with a further 17% a result of a rear end collision, while 10% are striking a pedestrian and 8% are a result of hitting a fixed object.

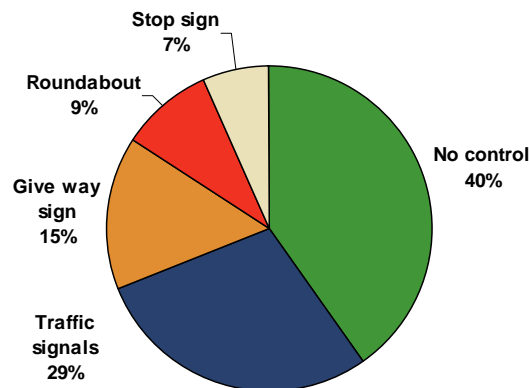
Figure 7 below isolates crashes that occurred at intersections of two arterial roads only. This shows a different picture, the majority (81%) of the intersections controlled by traffic signals. There are approximately 83 serious casualty crashes at intersections of two arterial roads per year.

Figure 7 - Intersection crashes and the corresponding traffic control – intersections of two arterial roads, 2006-2010



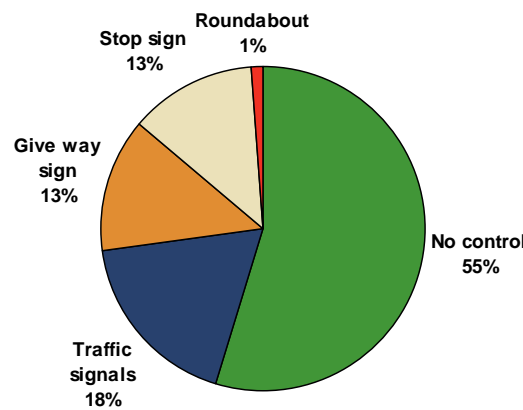
In contrast figure 8 shows 36% of all crashes at intersections of two local government roads have no control. These crashes mainly occur at T-junctions (94%). On average 71 serious casualty crashes occur at the intersections of two local government roads per year.

Figure 8 - Intersection crashes and the corresponding traffic control – intersections of two local government roads, 2006-2010



There are approximately 130 serious casualty crashes per year at intersections where local government roads intersect with arterial roads (see figure 9). More crashes occur at the intersection of a local road and an arterial road compared to locations where only arterial roads intersect or only local government roads are intersecting. The majority of the intersections of local government and arterial roads have no signalised or signed controls.

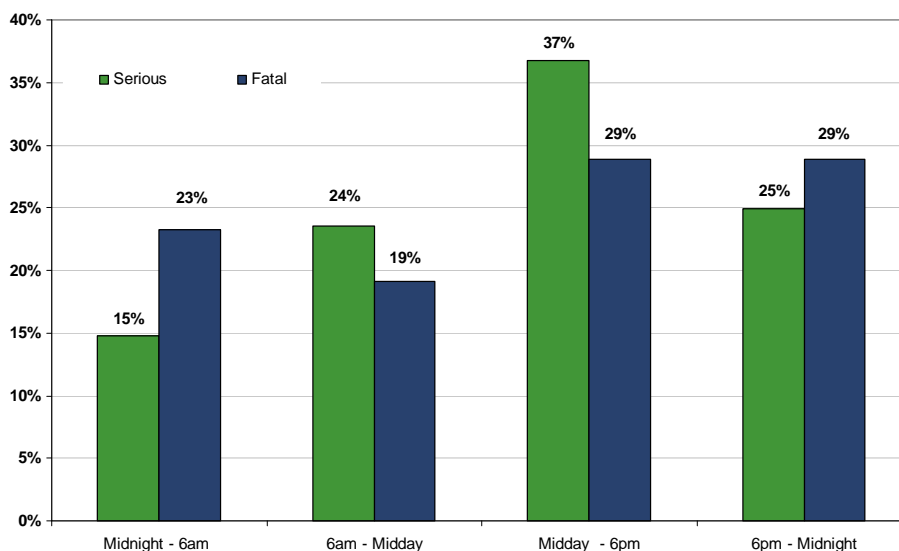
Figure 9 - Intersection crashes and the corresponding traffic control – intersections an arterial and a local government road, 2006-2010



Time

Most urban crashes occur in the afternoon or early evening hours. On average 36% of fatal and serious crashes occur between midday and 6pm, another 25% occur between 6pm and midnight. While a smaller percentage of serious injury crashes (15%) occur between midnight and 6am, a greater proportion (23%) of fatal urban crashes occur during these late night, early morning hours.

Figure 10 - Time of day when fatal and serious crashes occur, metropolitan Adelaide 2006-2010



Pedestrians

Pedestrian deaths and injuries are most prevalent in urban settings. On average 81 percent of pedestrian deaths in the state occur in metropolitan Adelaide. The highest rate of pedestrian collisions (all casualty types) is in the Adelaide City Council.

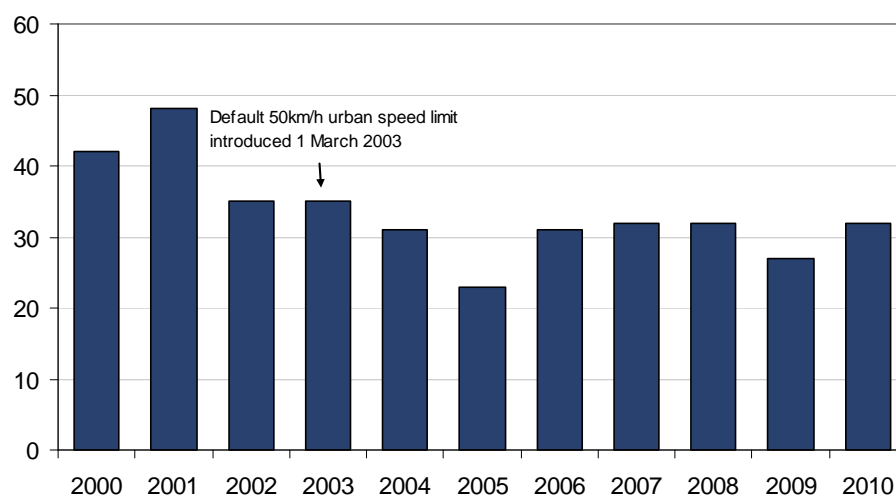
There are on average 11 pedestrian fatalities and 87 pedestrians seriously injured in metropolitan Adelaide each year.

The majority (71%) of serious casualty crashes where a pedestrian is struck occur in mid block sections of the road rather than at intersections. Of the serious and fatal crashes where at least one pedestrian was struck in metropolitan Adelaide during 2006-2010, 77% occurred where there was no traffic control.

On March 1 2003 the default urban speed limit in South Australia was reduced from 60km/h to 50km/h. Studies into the effects of this drop in speed limit found that on roads where the speed limit was reduced, the number of hit pedestrian casualty crashes significantly decreased by 21% in the first 3 years after implementation. There has also been a significant effect on roads that remained at 60km/h, an 18% decrease in hit pedestrian casualty crashes¹. (These crash numbers include both metropolitan Adelaide roads and rural roads.)

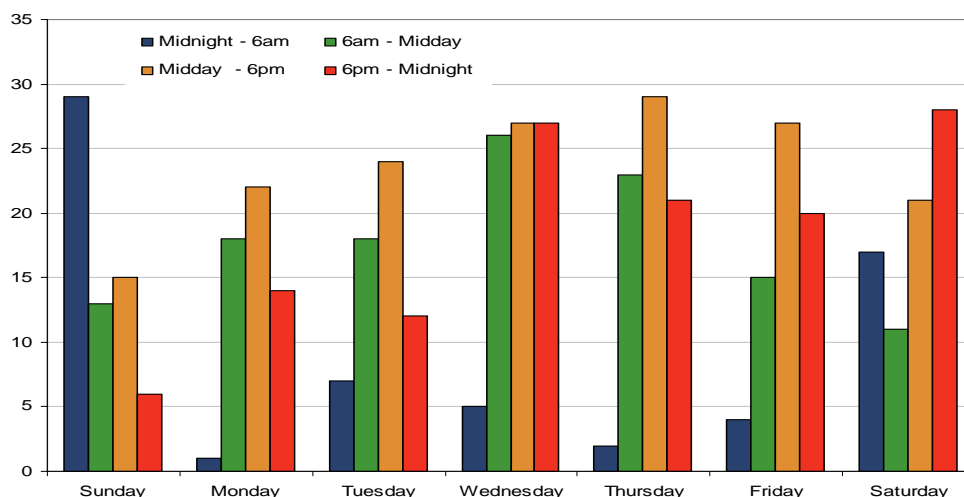
¹ From the report 'Further evaluation of the South Australian default 50km/h speed limit' CN Kloeden, JE Woolley, AJ McLean CASR report series CASR034, December 2006

Figure 11 - The number of hit pedestrian crashes resulting in a fatality or serious injury on metropolitan Adelaide local government roads, 2000-2010²



The highest frequency of fatal and serious crashes involving pedestrians occurred on Saturday between 6pm. This could be considered relatively high considering the exposure at this time of the day is likely to be low. This is also more likely to be a time when there are more pedestrians affected by alcohol or drugs.

Figure 12 - Number of crashes that result in a fatality or serious injury of a pedestrian in metropolitan Adelaide by time of day and day of week, 2006-2010



Cyclists

Cyclist deaths and injuries are also more prevalent in urban areas. On average 78% percent of cyclist deaths and serious injuries reported occur on metropolitan roads.

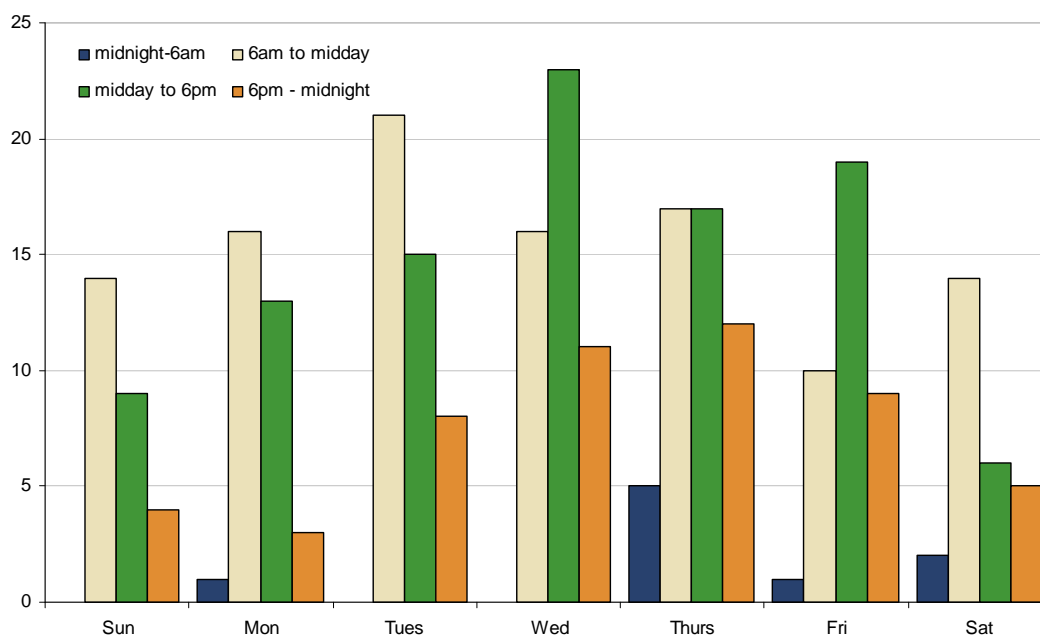
There are approximately 1 cyclist death and 53 cyclists seriously injured due to a collision with another vehicle in the metropolitan area reported to police each year.

² Please note that these local government roads include roads that had their speed limit changed from 60km/h to 50km/h and roads that kept the speed limit of 60km/h.

The majority of serious and fatal cycling crashes reported occur at intersections (57%). Of these 58% occurred at a T-junction and 40% at cross roads the remaining 2% occur at roads with multiple intersections.

The highest number of fatal and serious cycling collisions occurred on Wednesday midday to 6pm, see figure 13. The majority of cycling collisions occur during relatively daylight hours between 6am and 6pm.

Figure 13 - Number of reported cycling collisions that result in a fatality or serious injury by time of day and day of week, 2006-2010



Definitions of police reported casualty types:

Casualty Crash - A crash where at least one fatality, serious injury or minor injury occurs.

Casualty – A fatality, serious injury or minor injury.

Fatal Crash - A crash for which there is at least one fatality.

Fatality - A person who dies within 30 days of a crash as a result of injuries sustained in that crash.

Serious Casualty Crash - A crash where at least one fatality or serious injury occurs

Serious Casualty – A fatality or serious injury.

Serious Injury Crash - A non-fatal crash in which at least one person is seriously injured.

Serious Injury - A person who sustains injuries and is admitted to hospital as a result of a road crash and who does not die as a result of those injuries within 30 days of the crash.

Minor Injury Crash - A crash for at least one person sustains injury but no person is admitted to hospital or dies within 30 days of the crash.

Minor Injury – A person who sustains injuries requiring medical treatment, either by a doctor or in a hospital, as a result of a road crash and who does not die as a result of those injuries with 30 days of the crash.

Data sources

The data presented in this report was obtained from the Department for Transport, Energy and Infrastructure Road Crash Database. The information was compiled from police reported road casualty crashes only.

Figures relating to the current year are preliminary and are subject to revision.

Enquiries

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