There are approximately 1.3 million people living in metropolitan Adelaide. This population size represents 77% of the state’s population. 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.

The majority (83%) of minor injuries resulting from less severe road crashes occur in the metropolitan area. In contrast 40% of all fatalities and 55% of serious injuries occur on metropolitan Adelaide roads.

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 last 20 years.

**Figure 1 – Number of fatal crashes by area, 1994-2013, South Australia**

![Graph showing the number of fatal crashes in metropolitan Adelaide and rural SA from 1994 to 2013. The number of fatal crashes in the metropolitan area is generally higher than in rural areas, with a decline in both areas over the 20-year period.](image-url)
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 serious crash numbers in each region nearly equal. Since 1994 the numbers of serious injury crashes in both rural and metropolitan have declined.

**Figure 2 – Number of serious injury crashes by area, 1994-2013, 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 37 fatal crashes and 419 serious injury crashes per year, over the last 5 years in the metropolitan area. Over half of these serious casualty crashes are on 60km/h roads and a further 25% are on roads with a speed limit of 50km/h, as shown in Table1.

**Table 1 – Serious casualty crashes by speed limit- metropolitan Adelaide, South Australia, 2009-2013**

<table>
<thead>
<tr>
<th>Speed Limit</th>
<th>% of serious casualty crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 50 km/h</td>
<td>1%</td>
</tr>
<tr>
<td>50 km/h</td>
<td>25%</td>
</tr>
<tr>
<td>60 km/h</td>
<td>53%</td>
</tr>
<tr>
<td>70-90 km/h</td>
<td>16%</td>
</tr>
<tr>
<td>100 km/h</td>
<td>4%</td>
</tr>
<tr>
<td>110 km/h</td>
<td>1%</td>
</tr>
</tbody>
</table>
Crash Types

The most common type of serious crash in the metropolitan area was a vehicle colliding with a fixed object, accounting for approximately 98 serious casualty crashes per year. The most common objects being struck were trees and poles. Right angle crashes are the next most common crash type. Around 90% 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 metro areas. Approximately 32% of all fatal and serious crashes in the metropolitan area are single vehicle type crashes.

Figure 3 - Average number of fatal and serious crashes by crash type, 2009-2013, Metropolitan Adelaide

Less severe crashes that result in minor injuries, commonly occur as a result of a rear end collision.

Figure 4 - Average number of minor crashes per year by crash type, 2009-2013, Metropolitan Adelaide
**Hit fixed object crashes**

In metropolitan Adelaide, 20% of reported casualty crashes with roadside objects result in a fatality or a serious injury. Other high frequency casualty crash types are hitting a pedestrian and head on crashes, resulting in a serious casualty 26% of the time. Left road-out of control crashes are less frequent, however result in serious casualty crashes 19% 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 figure 5, the most common type of object struck in serious casualty 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 roadside object.

**Figure 5 - Types of objects struck in ‘hit fixed object’ type serious casualty crashes in metropolitan Adelaide, 2009-2013**
Intersections

On average, 13 fatal crashes and 202 serious injury 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 conflict with one another. Of the serious casualty crashes at intersections in the metropolitan area 35% occur at intersections with no signal or signed controls, a further 37% are controlled by traffic signals, the remaining 28% are controlled in other ways, as illustrated in figure 6

Figure 6 - Intersection serious casualty crashes and the corresponding traffic control – Metropolitan Adelaide, 2009-2013

Serious casualty crashes at intersections with no control are primarily right angle (29%) and hit fixed object (18%), other crash types include right turn (17%) rear end (10%), and hit pedestrian (10%). Crashes at signalised intersections are largely right turn (36%) and right angle crashes (20%), with a further 14% a result of a rear end collision, while 13% are hit pedestrian.

Time

Most metro crashes occur in the afternoon or early evening hours. On average 39% of fatal and serious crashes occur between midday and 6pm, another 24% occur between 6pm and midnight. While a smaller percentage of serious injury crashes (11%) occur between midnight and 6am, a greater proportion (16%) of fatal urban crashes occur during these late night, early morning hours.
Pedestrians

Pedestrian deaths and injuries are most prevalent in metro settings. On average 67% per cent of pedestrian deaths in the state occur in metropolitan Adelaide. The highest number of pedestrian collisions (all casualty types) is in the Adelaide City Council when comparing to other local government areas in metropolitan Adelaide. There are on average 8 pedestrian fatalities and 70 pedestrians seriously injured in metropolitan Adelaide each year.

The majority (70%) of crashes where a pedestrian is fatally or seriously injured occur in mid block sections of the road rather than at intersections. Of the crashes where at least one pedestrian was fatally or seriously injured in metropolitan Adelaide during 2009-2013, 73% occurred where there was no traffic control.

On 1 March 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 crashes. (These crash numbers include both metropolitan Adelaide roads and rural roads.)

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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
The number of ‘hit pedestrian’ serious casualty crashes

**Figure 8** - The number of hit pedestrian crashes resulting in a fatality or serious injury on metropolitan Adelaide local government roads, 2002-2013\(^2\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of ('hit pedestrian) serious casualty crashes</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>30</td>
</tr>
<tr>
<td>2003</td>
<td>35</td>
</tr>
<tr>
<td>2004</td>
<td>30</td>
</tr>
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<td>2005</td>
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<td>2006</td>
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<td>2007</td>
<td>30</td>
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<td>2008</td>
<td>30</td>
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<td>2009</td>
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<td>2010</td>
<td>30</td>
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<td>2011</td>
<td>30</td>
</tr>
<tr>
<td>2012</td>
<td>30</td>
</tr>
<tr>
<td>2013</td>
<td>30</td>
</tr>
</tbody>
</table>

Default 50km/h urban speed limit introduced 1 March 2003

The highest frequency of fatal and serious crashes involving pedestrians occurred on Saturday between 6pm and midnight. 36 per cent of all crashes occur between Midday and 6 pm (across all days), the highest frequency day was a Wednesday with 17% of crashes occurring on that day.

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\(^2\) 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.
Cyclists

Cyclist deaths and injuries are also more prevalent in urban areas. On average 80% of cyclist deaths and serious injuries reported occur on metropolitan roads.

There are approximately 2 cyclist death and 55 cyclists seriously injured in the metropolitan area reported to police each year.

The majority of serious and fatal cycling crashes reported occur at intersections (52%). Of these 57% occurred at a T-junction and 42% at cross roads the remaining 1% occurred at roads with multiple intersections.

**Figure 10 - Number of reported cycling collisions that result in a fatality or serious injury in metropolitan Adelaide by time of day and day of week, 2009-2013**

The highest number of fatal and serious cycling collisions occurred on Saturday 6am to midday, see figure 10. The majority of cycling collisions occur during relatively daylight hours between 6am and 6pm.
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 of Planning, Transport 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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