Table 2.11: Alcohol involvement of young adult driver and rider fatalities Queensland 2001

Age group	Tested	BAC 0.05% or greater	Proportion
17 - 20 years	23	5	22%
21 - 24 years	19	8	42%
Total young adults	**42**	**13**	**31%**
All drivers and riders	156	39	25%

Compared with 2000, proportional alcohol involvement amongst young adults increased by seven percentage points in 2001. The total number of young adults with alcohol involvement rose by 63 per cent compared to 2000.

Table 2.12: Young adult road user fatalities by day of week Queensland 2001

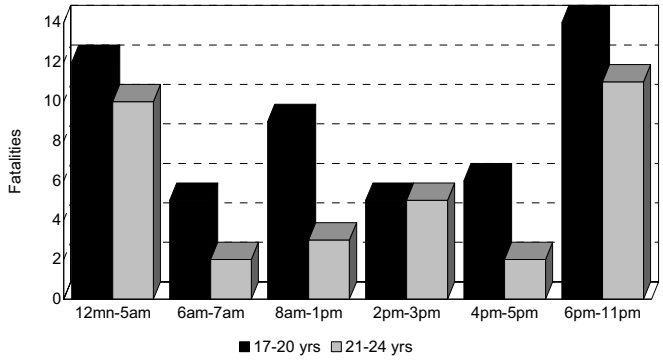
Age group	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
17 - 20 years	11	1	4	4	7	7	17	51
21 - 24 years	8	5	2	6	3	4	5	33
Total young adults	**19**	**6**	**6**	**10**	**10**	**11**	**22**	**84**

Analysis by the day of the week on which crashes occurred reveals Saturday and Sunday to be high-risk periods for young adult road users, as shown in Table 2.12. This is particularly the case for 17 to 20 year olds, where over half were killed on these two days.

The table indicates that of the 84 young adult road users killed in 2001, 52 (or 62 per cent) died on a Friday, Saturday or Sunday, down slightly from 63 percent in 2000.

Figure 2.4 illustrates that 25 (or 28 per cent) of the 84 young adult fatalities were killed between 6pm and midnight, and a further 22 (26 per cent) were killed between midnight and 6am, making those the highest risk times for young adults.

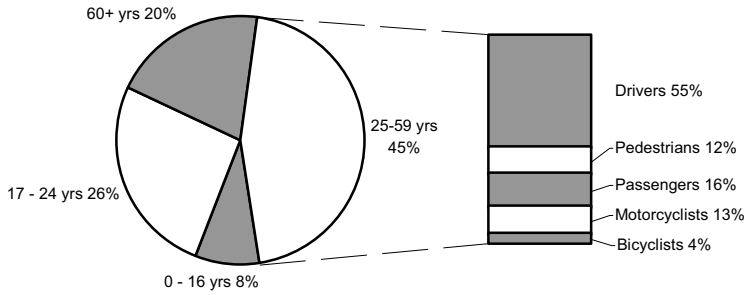
Fig. 2.4: Young adult road user fatalities by time of day Queensland 2001



2.5 Mature age road users

The majority of fatalities among mature age road users (that is, those aged 25 to 59 years) in 2001 involved crashes between intersections (84 per cent) with 69 per cent occurring during the working week and 57 percent in daylight. Sixty-seven per cent of units involved were cars. Compared with all fatalities in 2001, fatalities among mature age road users were more likely to involve vehicle defects (52 per cent) or involve a motorcycle (42 per cent more likely). In 2001 there were 147 mature age road fatalities, which accounted for 45 per cent of Queensland's road toll, similar to 2000. Within the mature age group, road users aged 30 to 39 years and 50 to 59 years were slightly under represented in fatal road crashes. These groups comprised 13 and nine per cent respectively of the population in 2001, but made up 16 and ten per cent of those killed on the roads (see Table 2.2 page 10).

Fig. 2.5: Mature age road user fatalities
Queensland 2001



Mature age road user fatalities in the four main age groups are shown in Table 2.13.

Table 2.13: Mature age road user fatalities by type and age group
Queensland 2001

Age group	Drivers	Passengers	Motorcyclists	Bicyclists	Pedestrians	Total
25 - 29 years	17	4	5	1	2	29
30 - 39 years	20	7	9	1	6	43
40 - 49 years	26	5	5	3	6	45
50 - 59 years	17	7	0	1	5	30
Total	**80**	**23**	**19**	**6**	**19**	**147**

Data presented in Table 2.13 and Figure 2.5 indicate that:

- 70 per cent of the mature age road users killed in 2001 were vehicle occupants;
- 80 (55 per cent) of the mature age road users were drivers; and
- motorcycle fatalities decreased by 27 per cent from 26 in 2000 to 19 in 2001.

Table 2.14 shows that, where restraint use was known, mature age vehicle occupant fatalities were unrestrained 29 per cent of the time which is one per cent lower than that for all road users.

Table 2.14: Non-seat belt wearing of mature age vehicle occupant fatalities
Queensland 2001

Age group	Seat belt not worn	Total vehicle occupants killed *	Proportion of occupants unrestrained
25 - 29 years	2	12	17%
30 - 39 years	8	20	40%
40 - 49 years	6	22	27%
50 - 59 years	6	21	29%
Total mature age	**22**	**75**	**29%**
All vehicle occupants	48	161	30%

* Where restraint use could be determined

The data in Table 2.14 indicate that vehicle occupant fatalities aged 30 to 39 years had the lowest seat belt wearing rates of mature age groups, with 40 per cent unrestrained.

Table 2.15 presents data on alcohol involvement of mature age driver and rider fatalities in 2001.

Table 2.15: Alcohol involvement of mature age driver and rider fatalities Queensland 2001

Age group	Tested	BAC 0.05% or greater	Proportion
25 - 29 years	21	8	38%
30 - 39 years	25	8	32%
40 - 49 years	27	5	19%
50 - 59 years	16	4	25%
Total mature age	**89**	**25**	**28%**
All drivers and motorcycle riders	156	39	25%

The table shows that:

- compared with 2000, proportional alcohol involvement amongst mature adults showed an increase;
- 28 per cent of mature age driver and rider fatalities in 2001 (25 of 89 tested) returned a BAC reading of 0.05 per cent or greater (the general adult legal drink driving limit). This was three percentage points above the proportion for all drivers and riders killed; and
- fatalities aged from 25 to 29 years had the highest incidence of illegal drink driving (38 per cent).

Table 2.16 shows the occurrence of mature age road user fatalities by day of the week.

Table 2.16: Mature age road user fatalities by day of week Queensland 2001

Age group	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total
25 - 29 years	6	2	1	3	4	8	5	29
30 - 39 years	5	5	8	5	5	3	12	43
40 - 49 years	6	3	4	7	8	10	7	45
50 - 59 years	3	5	7	4	6	2	3	30
Total Mature Age	**20**	**15**	**20**	**19**	**23**	**23**	**27**	**147**

It can be seen from the data above that fatalities were spread throughout the week, with peaks on Thursday, Friday and Saturday (16, 16 and 18 per cent respectively), and the lowest rate on Monday (10 per cent).

2.6 Older road users

The majority of fatalities among older road users (that is, those aged 60 years and over) in 2001 occurred during daylight hours (84 per cent), 70 per cent during the working week and involving vehicles moving straight ahead (79 per cent). Compared with all fatalities in 2001, fatalities among older road users were 129 per cent more likely to occur at roundabouts, at give way and stop signs (110 per cent) and 70 per cent more likely to be caused by road conditions.

Sixty-six road users aged 60 years and over were killed on Queensland roads in 2001, comprising 20 per cent of the road toll. This is four (or six per cent) more fatalities for this age group than in 2000.

Figure 2.6 presents the distribution of older road user fatalities by road user type.

Fig. 2.6: Older road user fatalities
Queensland 2001

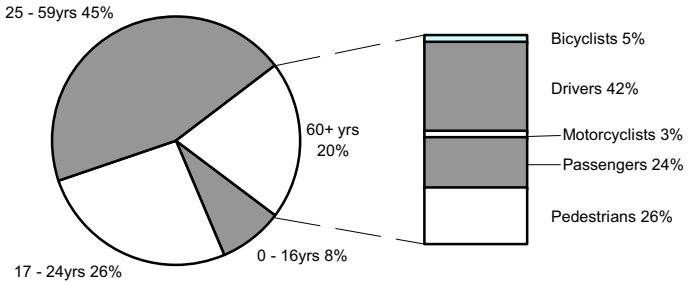


Table 2.17 groups the data by road user type and age.

Table 2.17: Older road user fatalities by type and age group
Queensland 2001

Age group	Drivers	Passengers	Motorcyclists	Bicyclists	Pedestrians	Total
60 - 69 years	16	6	1	2	5	30
70 - 79 years	8	7	1	0	5	21
80 years and over	4	3	0	1	7	15
Total	**28**	**16**	**2**	**3**	**17**	**66**

From Table 2.17, it can be seen that:

- the majority of older road users killed were vehicle occupants (67 per cent);
- 57 per cent of older drivers killed were aged 60-69 years;
- there were 16 passenger fatalities in 2001, six (or 27 per cent) less than 2000; and
- there were 17 pedestrian fatalities in 2001, a 13 per cent increase on the 2000 level. Over 70 per cent of these fatalities were aged 70 years and over.

Table 2.18 (and previous annual crash reports) indicate that older vehicle occupants fatally injured are more likely to be wearing seat belts when compared with other age groups. For vehicle occupant fatalities, 21 per cent of older road users were unrestrained, compared with 30 per cent of all vehicle occupants.

Table 2.18: Non - seat belt wearing of older vehicle occupant fatalities
Queensland 2001

Age group	Seat belt not worn	Total vehicle occupants killed *	Proportion of occupants unrestrained
60 - 69 years	4	16	25%
70 - 79 years	2	12	17%
80 years +	1	6	17%
Total older occupants	**7**	**34**	**21%**
All vehicle occupants	48	161	30%

* Where restraint use could be determined

Table 2.19 provides details of responsibility for fatal crashes involving older road users, as indicated by the reporting police officer.

Table 2.19: Responsibility for fatal crashes involving older drivers or pedestrians Queensland 2001

	Drivers			Pedestrians		
Age group	**Responsible**	**Total**	**%**	**Responsible**	**Total**	**%**
60 - 69 years	16	31	52%	2	5	40%
70 - 79 years	8	16	50%	3	5	60%
80 years and over	4	6	67%	4	7	57%
Total older age group	**28**	**53**	**53%**	**9**	**17**	**53%**
All age groups	223	391	57%	36	48	75%

Table 2.19 shows that:

- older drivers were believed to be responsible for 53 per cent of fatal crashes in which they were involved in 2001 in contrast to drivers generally, who were believed to be responsible for 57 per cent of fatal crashes in which they were involved. This was a significant proportional improvement for older drivers, down from 67 per cent in 2000;

- this allocated responsibility for drivers varied with age from 52 per cent in the 60 to 69 years group, 50 per cent for the 70 to 79 years age group and 67 per cent for the 80 years and over group; and

- older pedestrians were believed to be responsible for 53 per cent of fatal crashes in which they were involved in 2001. This is lower than the proportion of pedestrians responsible for fatal crashes across all age groups (75 per cent).

Table 2.20 shows the daily time periods during which fatal crashes involving older road users occurred in 2001.

Table 2.20: Older road user fatalities by time of day Queensland 2001

Age group	**6am - 8am**	**8am - 10am**	**10am - 12 noon**	**12 noon - 2pm**	**2pm - 4pm**	**4pm - 6pm**	**6pm - 6am**	**Total**
60 - 69 years	0	1	7	7	6	3	6	30
70 - 79 years	1	2	4	2	4	3	5	21
80 years and over	0	3	3	3	2	4	0	15
Total older age group	**1**	**6**	**14**	**12**	**12**	**10**	**11**	**66**

The data show that:

- 82 per cent of older road user fatalities (54 out of 66) occurred between 8am and 6pm;

- 36 per cent of the older road user fatalities (24) occurred between 12pm and 4pm; and

- 17 per cent of the older road user fatalities (11) occurred between 6pm and 6am.

3. UNITS IN CRASHES

3.1 Introduction

There were 39,627 vehicles and other crash unit types involved in the 21,503 reported road traffic crashes on Queensland roads during 2001. This indicates a crash rate of 1.84 units per crash during 2001, while for the more severe crashes the number of units per crash was lower (fatal 1.72; hospitalisation 1.74). Table 3.1 illustrates the involvement of the different unit types by the severity level of crashes in 2001.

Table 3.1: Units involved in crashes by severity of crash Queensland 2001

	Fatal		Hospitalisation		All crashes	
Unit type	**No.**	**%**	**No.**	**%**	**No.**	**%**
Car	243	48%	4337	60%	27504	69%
4-wheel drive	33	6%	378	5%	2196	6%
Utility/van	59	12%	778	11%	4335	11%
Rigid truck	17	3%	152	2%	823	2%
Articulated truck	26	5%	107	1%	552	1%
Road Train/Bdouble	6	1%	28	0%	168	0%
Bus	4	1%	64	1%	323	1%
Motorcycle	29	6%	576	8%	1301	3%
Tractor	4	1%	39	1%	213	1%
Towed device	0	0%	4	0%	35	0%
Bicycle	16	3%	279	4%	881	2%
Pedestrian	65	13%	421	6%	966	2%
Animal - ridden	1	0%	1	0%	3	0%
Animal - stock *	2	0%	29	0%	159	0%
Animal - other *	2	0%	23	0%	93	0%
Railway stock	1	0%	9	0%	20	0%
Other	2	0%	8	0%	55	0%
Total units	**510**	**100%**	**7233**	**100%**	**39627**	**100%**

The data above indicates that:

- 69 per cent of units involved in all reported crashes were cars, whereas cars comprised 48 per cent of the units involved in fatal crashes;
- in fatal crashes, unprotected road users (motorcyclists, bicyclists and pedestrians) comprised 22 per cent of the units involved, whereas they comprised only seven per cent of units in all reported crashes; and
- the involvement of heavy freight vehicles (rigid, articulated and road trains/b-doubles/triples) in fatal crashes was three times the involvement of these vehicles in all heavy vehicle crashes. These vehicles comprised ten per cent of the units involved in fatal crashes in 2001, whereas they comprised four per cent of the units involved in all crashes.

Figure 3.1 illustrates the involvement of units in fatal crashes in 2001.

Fig. 3.1: Unit involvement in fatal crashes Queensland 2001

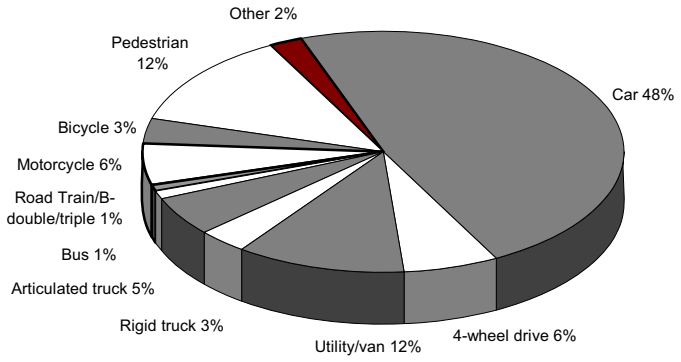


Table 3.2 lists the number of units involved in fatal crashes by unit type since 1996.

Table 3.2: Units involved in fatal crashes by year Queensland 1996-2001

Type of vehicle	1996	1997	1998	1999	2000	2001
Car	292	286	209	229	210	243
Utility/van	84	78	75	73	56	59
4-wheel drive*	N/A	N/A	N/A	N/A	37	33
Rigid truck	24	24	17	17	31	17
Articulated truck	34	31	29	34	22	26
Roadtrain/Bdouble**	N/A	N/A	N/A	N/A	8	6
Bus	6	2	7	12	5	4
Motorcycle	44	44	25	44	34	29
Tractor	7	6	3	5	3	4
Towed device	1	0	1	1	0	0
Bicycle	11	12	10	10	6	16
Pedestrian	59	61	48	52	43	65
Animal - ridden	0	0	2	0	0	1
Animal - stock	2	5	3	1	0	2
Animal - other	1	0	2	0	0	2
Railway stock	4	3	4	0	2	1
Other	0	3	2	5	0	2
Total	**569**	**555**	**437**	**483**	**457**	**510**

* Was included in 'Car' prior to 2000
** Was included in 'Articulated truck' prior to 2000

The main trends indicated in Table 3.2 are:

- overall, the number of units involved in fatal crashes during 2001 was in line with the average of the previous five years;
- motorcycle and heavy vehicle involvement both showed decreases in 2001 over 2000 (down 15 per cent and 20 per cent respectively);
- the involvement of motorcycles in fatal crashes decreased in 2001 when compared to the average of the previous five years (down 24 per cent); and
- bus involvement had a 20 per cent decrease over 2000 and a significant decrease (60 per cent) when compared to the previous five-year average.

The trend of the involvement of the major vehicle types in fatal crashes since 1986 is illustrated in Figure 3.2.

Fig. 3.2: Unit involvement trend for fatal crashes
Queensland 1986 - 2001

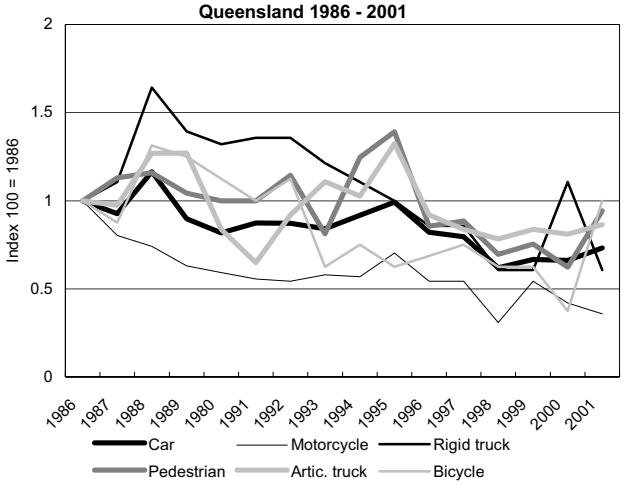


Figure 3.2 highlights the general downward trend of all units involved in fatal crashes from 1988 until 2000. In 2001, bicycle and pedestrian involvement increased markedly.

3.2 Fatal crash involvement by unit type

Cars and variants

Fatal crash involvement of cars, utilities and panel vans have shown decreases in 2001 over the previous nine year averages, of 14 per cent and 26 per cent respectively (see Table 3.3). The majority of these crashes in 2001 involved vehicles between intersections (75 per cent), with 64 per cent occurring during the working week, 60 per cent in daylight and 60 per cent on straight roads. Compared with all fatal crashes in 2001, fatal crashes involving cars occurred in similar proportions for all descriptors.

Table 3.3: Annual trends in fatal crash involvement of cars and variants
Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Car	310	313	335	347	292	286	209	229	210	243
Utility/van	89	72	85	107	84	78	75	73	56	59
4-wheel drive	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	37	33

During 2001, 335 cars (including utilities, panel vans and 4-wheel drives) were involved in fatal crashes. Of the 335 cars, 201 (or 60 per cent) were considered “most at fault” by investigating police. Of the fatal crashes in which a car was considered most at fault, more than half (107 crashes) were single vehicle crashes. Overall, cars were considered the unit most at fault in 68 per cent of all fatal crashes.

An analysis of the relative involvement in fatal crashes of all types of cars in 2001 is provided in Table 3.4.

Table 3.4: Comparison of fatal crash involvement for cars and variants
Queensland 2001

Vehicle type	% of units in fatal crashes	% of total vehicle registrations	Fatal crash rate/10,000 vehicles
Car/Station wagon/4-wheel drive	54%	73%	1.5
Utility/van	12%	17%	1.4
Total cars	**66%**	**90%**	**1.3**

Heavy freight vehicles

Fatal crash involvement of heavy vehicles showed a significant decrease in 2001. Overall, the involvement of heavy vehicles showed a decrease in 2001 over the previous nine year average (down by 20 per cent, see Table 3.5). The majority of these crashes occurred between intersections (79 per cent) and during the working week (71 per cent), with 71 per cent during daylight and 75 per cent on straight roads. Twenty-three per cent of these crashes occurred within the Central and North Coast region. Compared with all fatal crashes in 2001, fatal crashes involving heavy vehicles were more likely to involve fatigue (64 per cent more) and less likely to involve alcohol (59 per cent less often).

Table 3.5: Annual trends in fatal crash involvement of heavy vehicles
Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Rigid Truck	38	34	31	28	24	24	17	17	31	17
Articulated Truck	34	41	38	49	34	31	29	31	22	26
Road train/Bdouble*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8	6

* Prior to 2000, road trains/bdoubles/triples were included in articulated trucks

During 2001, 49 heavy freight vehicles (rigid and articulated trucks and road trains/bdoubles) were involved in fatal crashes. Of the 49 heavy freight vehicles, 19 (or 39 per cent) were considered most at fault by investigating police. Of those fatal crashes in which a heavy freight vehicle was considered most at fault, 58 per cent were single vehicle crashes. Overall, heavy freight vehicles were considered the unit most at fault in only six per cent of all fatal crashes. An analysis of the relative involvement in fatal crashes in 2001 of heavy freight vehicles compared with cars is provided in Table 3.6.

Table 3.6: Comparison of fatal crash involvement for cars and heavy freight vehicles
Queensland 2001

Vehicle type	% of units in fatal crashes	% of total vehicle registrations	Fatal crash rate/10,000 vehicles
Total cars	66%	90%	1.3
Rigid trucks	3%	3%	2.0
Articulated trucks/bdouble/road trains	6%	1%	23.7

The data indicates that in 2001 articulated trucks had a fatal crash rate per 10,000 registered vehicles of over 18 times that for cars. Articulated trucks were involved in 23.7 fatal crashes per 10,000 registered trucks in 2001. The figure for cars was 1.3 fatal crashes per 10,000 cars registered. Rigid trucks had a total crash rate of 1.5 times that for cars.

Buses

Fatal crash involvement of buses has shown a relatively flat trend over the past ten years apart from a peak in 1999 (see Table 3.7). Bus crashes in 2001 resulted in one bus occupant killed. The majority of fatal crashes involving buses in 2001 occurred during the working week (75 per cent), in daylight (75 per cent) and on straight roads (50 per cent).

Table 3.7: Annual trends in fatal crash involvement of buses
Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Bus	4	7	7	6	6	2	7	12	5	4

During 2001, four buses were involved in fatal crashes on Queensland roads. In one of these crashes, the bus was considered most at fault by investigating police, and one bus occupant was killed in those crashes. A comparison of the relative fatal crash involvement per 10,000 vehicles of registered buses compared with cars indicates a fatal crash rate for buses of almost twice that of cars for 2001. Table 3.8 presents this comparison.

Table 3.8: Comparison of fatal crash involvement for cars and buses
Queensland 2001

Vehicle type	% of units in fatal crashes	% of total vehicle registrations	Fatal crash rate/10,000 vehicles
Total cars	66%	90%	1.3
Buses	1%	1%	2.3

Motorcycles

The trend in the involvement of motorcycles in fatal crashes was relatively flat from 1992 to 2001, except for an increase in 1995 and decreases in 1998, 2000 and 2001 (see Table 3.9). The majority of fatal motorcycle crashes in 2001 occurred during the working week (79 per cent), between intersections (83 per cent), during daylight hours (69 per cent) and on straight roads (45 per cent). Compared with all fatal crashes in 2001, fatal crashes involving motorcycles more often involved speed (126 per cent more often) but less often involved fatigue (62 per cent less often).

Table 3.9: Annual trends in fatal crash involvement of motorcycles
Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Motorcycle	44	47	46	57	44	44	25	44	34	29

During 2001, 29 motorcycles were involved in fatal crashes, in which 28 motorcycle riders and one pillion passenger died. Twenty-five of these motorcycles (or 86 per cent of motorcycles involved) were considered most at fault by investigating police. Sixteen (or 55 per cent) of motorcycles considered most at fault were involved in single vehicle crashes. Overall, motorcycles were considered the unit most at fault in eight per cent of all fatal crashes.

Table 3.10 indicates that in 2001, motorcycles had a fatal crash involvement rate, based on vehicles registered, that was almost three times that for cars.

Table 3.10: Comparison of fatal crash involvement for cars and motorcycles
Queensland 2001

Vehicle type	% of units in fatal crashes	% of total vehicle registrations	Fatal crash rate/10,000 vehicles
Total cars	66%	90%	1.3
Motorcycles	6%	3%	3.6

Cars comprised 66 per cent of units involved in fatal crashes, while motorcycles comprised six per cent. However, based on vehicle registrations, motorcycles were involved in 3.6 fatal crashes per 10,000 registered motorcycles compared to the car fatal crash rate of 1.3 fatal crashes per 10,000 registered cars.

Bicycles

The trend in fatal bicycle crashes was relatively flat during 1992 to 2001, with a high in 1992 and low in 2000. The majority of crashes in 2001 occurred during the working week (80 per cent), during daylight hours (67 per cent), between intersections (67 per cent) and on straight roads (73 per cent).

Table 3.11: Annual trends in fatal crash involvement of bicycles
Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Bicycle	18	10	12	10	11	12	10	10	6	16

During 2001, 16 bicycles were involved in 15 fatal crashes on Queensland roads. In 12 of these fatal crashes (or 80 per cent), the cyclist was considered most at fault. Overall, bicycles were considered the unit most at fault in four per cent of all fatal crashes.

Pedestrians

The trend in pedestrian crashes increased from 1992 to 1995. The trend then declined from 1996 to 2000 but increased again in 2001 (see Table 3.12). Pedestrian fatal crash involvement showed a 51 per cent increase from 2000 and a one per cent increase compared with the previous nine year average. The majority of crashes in 2001 occurred between intersections (67 per cent), on straight roads (73 per cent), during the working week (53 per cent) and during daylight hours (55 per cent).

Table 3.12: Annual trends in fatal crash involvement of pedestrians
Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Pedestrian	79	56	86	96	59	61	48	52	43	65

During 2001, 65 pedestrians were involved in fatal crashes which resulted in 51 pedestrian fatalities. As indicated in Table 3.13, 29 (or 57 per cent) of the pedestrian fatalities in 2001 occurred while the pedestrian was attempting to cross a road. Of these, 21 (or 72 per cent) were killed on roads with no traffic controls, while six were killed at traffic lights.

Table 3.13: Attempted action of pedestrians killed in fatal crashes
Queensland 2001

Attempted action	No. of fatalities	% involvement in fatal pedestrian crashes
Crossing carriageway - Traffic lights	6	12%
Crossing carriageway - Pedestrian Crossing	2	4%
Crossing carriageway - No traffic control	21	41%
Crossing carriageway - Other	1	2%
Remain stationary	10	20%
Walk against traffic	4	8%
Walk with traffic	6	12%
Playing	1	2%

Of the pedestrians involved in fatal crashes, 34 (or 52 per cent) were considered by police to be most at fault. Eighty-five per cent of these most at fault pedestrians were crossing where no traffic control was present.

4. CHARACTERISTICS OF CRASHES

4.1 Introduction

Of the 21,503 road crashes reported in Queensland in 2001, by far the majority (13,253 or 62 per cent) were multi-vehicle crashes. Single vehicle crashes made up 6,976 crashes or 32 per cent of all crashes in 2001.

4.2 Comparative trends

The long-term trends in the nature of fatal crashes are shown in Table 4.1. This table shows that, while there have been no dramatic changes in these trends over the past ten years, the hit object and hit pedestrian categories showed significant increases in 2001 compared with the previous year. Compared to 2000, head-on, overturned and fall from vehicle recorded slight decreases, while hit parked vehicle recorded no fatalities. Compared to the previous nine year average, sideswipe showed a 48 per cent increase.

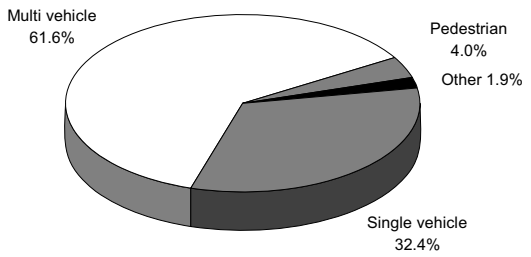
Table 4.1: Annual trends in the nature of fatal crashes: Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Hit object	82	101	93	105	93	95	80	65	79	89
Hit pedestrian	73	44	73	88	55	55	46	47	37	47
Head-on	67	55	62	70	46	48	23	47	47	44
Angle	53	71	60	50	60	54	44	36	34	37
Overturned	39	53	35	47	45	25	24	27	40	38
Rear-end	17	7	11	16	10	8	8	12	6	10
Fall from vehicle	20	9	10	11	13	11	8	12	12	8
Sideswipe	9	7	10	10	9	16	11	19	13	17
Hit parked vehicle	1	2	6	7	4	3	6	5	6	0
Hit animal	2	7	4	3	3	5	6	1	0	4
Other	0	1	4	1	0	1	1	2	1	2

* Vehicle includes motor or pedal cycle

Figure 4.1 illustrates the proportion of each of the major road crash types for 2001.

Fig. 4.1: Type of road crashes Queensland 2001



The relative occurrence of single vehicle crashes increases as the crash severity increases. Of the 296 fatal crashes in 2001, 135 crashes (or 46 per cent) were single vehicle crashes, while multi-vehicle crashes accounted for 108 crashes (or 36 per cent).

Figure 4.2 shows how the nature of crashes changed in relation to the severity of the crash.

Fig. 4.2: Type of road crash by severity
Queensland 2001

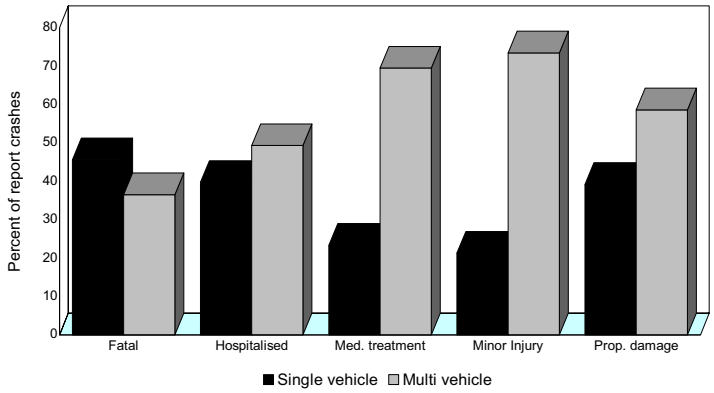


Table 4.2 provides a more detailed analysis of the nature of crashes in Queensland in 2001 grouped by the severity of crash.

Table 4.2: Crashes by nature of crash and severity
Queensland 2001

	Fatal		Hospitalisation		All crashes**	
Nature of crash	**No.**	**%**	**No.**	**%**	**No.**	**%**
Hit object	89	30%	1052	25%	4591	21%
Hit pedestrian	47	16%	374	9%	861	4%
Head-on	44	15%	137	3%	388	2%
Overturned	38	13%	368	9%	1366	6%
Angle	37	13%	1223	29%	6728	31%
Sideswipe	17	6%	169	4%	1007	5%
Rear-end	10	3%	518	12%	5130	24%
Fall from vehicle *	8	3%	159	4%	355	2%
Hit animal	4	1%	52	1%	253	1%
Other	2	1%	31	1%	160	1%
Hit parked vehicle	0	0%	71	2%	664	3%
Total	**296**	**100%**	**4154**	**100%**	**21503**	**100%**

* Vehicle includes motor or pedal cycle

** Including casualty and property damage only

Table 4.2 indicates that in 2001:

- 89 fatal crashes (or 30 per cent of all fatal crashes) occurred as the result of a vehicle hitting an object, whilst 21 per cent of all crashes were of this nature;
- vehicles involved in head-on crashes (44 fatal crashes or 15 per cent of fatal crashes), and vehicles hitting a pedestrian (47 fatal crashes or 16 per cent of fatal crashes) were also markedly over-represented in fatal crashes compared with all reported crashes;
- the majority of hospitalisation crashes resulted from vehicles colliding at intersections, i.e. angle crashes (29 per cent), or colliding with an object, e.g. trees or power poles (25 per cent); and
- intersection collisions and rear end crashes, both multi-vehicle type crashes, made up over half (55 per cent) of all reported crashes.

4.3 Multi-vehicle crashes

The trend in fatal multi-vehicle crashes has been relatively stable over the period 1996 to 2001 and, in line with fatal crashes overall, the number of fatal multi-vehicle crashes has trended downwards from 1996 to 2001. The majority of these crashes in 2001 occurred between Monday and Friday (75 per cent), in daylight (76 per cent) and at non-intersections (68 per cent). Compared with all fatal crashes in 2001, fatal multi-vehicle crashes occurred proportionally more often where a unit was not moving straight ahead (86 per cent more often), at Give Way/Stop signs (118 per cent more often) and were 112 per cent more likely to result from disobeying traffic rules. Similarly, multi-vehicle fatal crashes were 71 per cent less likely to involve alcohol, 68 per cent less likely to involve fatigue and 50 per cent less likely to involve speed.

In 2001, 108 fatal multi-vehicle crashes were reported. This figure is two per cent below the average for the last five years. Table 4.3 presents multi-vehicle fatal crash data for 1996 to 2001 by the nature of the crash.

Table 4.3: Multi-vehicle fatal crashes by nature of crash
Queensland 1996-2001

Nature of crash	1996		1997		1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Angle	60	48%	54	43%	44	51%	36	32%	34	34%	37	34%
Head-on	46	37%	48	38%	23	27%	47	41%	47	47%	44	41%
Rear-end	10	8%	8	6%	8	9%	12	11%	6	6%	10	9%
Sideswipe	9	7%	16	13%	11	13%	19	17%	13	13%	17	16%
Total	**125**	**100%**	**126**	**100%**	**86**	**100%**	**114**	**100%**	**100**	**100%**	**108**	**100%**

Table 4.3 indicates that:

- angle crashes represented 34 per cent of fatal multi-vehicle crashes in 2001, which is less than the 1996 to 2000 average of 42 per cent;
- head-on crashes represented 41 per cent of fatal multi-vehicle crashes in 2001 which is above the 1996 to 2000 average of 38 per cent; and
- rear-end crashes contributed a slightly higher proportion of fatal multi-vehicle crashes (nine per cent), compared with the previous five-year average (eight per cent), whereas the proportion of sideswipe crashes is 27 per cent above the previous five-year proportional average.

Multi-vehicle crashes in which at least one road user was hospitalised but no road user was killed totalled 2,047 in 2001. This figure is an increase on the 2000 total (1,810) and 359 above the average of the 1996 to 2000 period. Table 4.4 presents multi-vehicle crash data involving hospitalisation for 1996 to 2001 by the nature of the crash.

Table 4.4: Multi-vehicle crashes involving hospitalisation by nature of crash
Queensland 1996-2001

Nature of crash	1996		1997		1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Angle	1035	61%	976	63%	999	61%	1039	60%	1124	62%	1223	60%
Head-on	224	13%	165	11%	178	11%	166	10%	141	8%	137	7%
Rear-end	297	17%	279	18%	325	20%	368	21%	381	21%	518	25%
Sideswipe	146	9%	141	9%	145	9%	147	9%	164	9%	169	8%
Total	**1702**	**100%**	**1561**	**100%**	**1647**	**100%**	**1720**	**100%**	**1810**	**100%**	**2047**	**100%**

Table 4.4 indicates that:

- the majority (60 per cent) of multi-vehicle crashes involving hospitalisation in 2001 were angle crashes (i.e. intersection collisions). This proportion has remained relatively constant over the last six-year period and is almost twice that for fatal angle crashes which accounted for 34 per cent of multi-vehicle fatal crashes;

- the proportion of head-on crashes involving hospitalisation has gradually decreased over the last six-year period;

- the proportion of rear-end crashes involving hospitalisation has gradually increased over the last six-year period; and

- the proportion of sideswipe crashes involving hospitalisation has remained relatively constant over the last six-year period.

4.4 Single vehicle crashes

The trend in fatal single vehicle crashes over the last six years had been tending downward only to have the trend reversed in the last two years (see Table 4.5). The majority of these crashes in 2001 involved moving straight ahead (92 per cent), occurred between intersections (86 per cent) with 71 per cent involving cars. Compared with all fatal crashes in 2001, fatal single vehicle crashes were proportionally more likely to involve alcohol (106 per cent more likely), speed (76 per cent more likely), fatigue (60 per cent more likely) and 86 per cent more likely to involve motorcycles. Similarly, fatal single vehicle crashes were less likely to occur at Give Way/Stop signs (68 per cent less likely), at operating traffic lights (48 per cent less likely), and were 84 per cent less likely to result from disobeying traffic rules.

In 2001, 135 fatal single vehicle crashes were reported. This figure is two crashes (or one per cent) less than the 2000 total and 18 per cent greater than the average of the 1996 to 2000 period. In Table 4.5 single vehicle fatal crash data are presented for 1996 to 2001 by the nature of the crash.

Table 4.5: Single vehicle fatal crashes by nature of crash
Queensland 1996-2001

Nature of crash	1996		1997		1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Hit object	93	60%	95	71%	80	68%	65	60%	79	58%	89	66%
Overturned	45	29%	25	19%	24	20%	27	25%	40	29%	38	28%
Hit parked vehicle	**4**	3%	3	2%	6	5%	5	5%	6	4%	0	0%
Fall from vehicle *	13	8%	11	8%	8	7%	12	11%	12	9%	8	6%
Total	**155**	**100%**	**134**	**100%**	**118**	**100%**	**109**	**100%**	**137**	**100%**	**135**	**100%**

* Vehicle include motor or pedal cycle

Table 4.5 indicates that:

- 89 single vehicle fatal crashes in 2001 (66 per cent) involved vehicles hitting objects (such as trees or power poles). This is above the 1996 to 2000 proportional average (63 per cent); and

- the other major category in 2001, vehicle overturning, represents 28 per cent of the total number of fatal single vehicle crashes for that year. The number of overturning fatal crashes was six (or 18 per cent) higher than the average for the previous five years of 32 fatal crashes.

In 2001, there were 1,664 single vehicle crashes in which a road user was hospitalised. This figure is 122 above the figure for 2000 and 229 (or 16 per cent) above the average for the 1996 to 2000 period. In Table 4.6, the data represents single vehicle crashes involving hospitalisation for the period 1996 to 2001 by the nature of crash.

Table 4.6: Single vehicle crashes involving hospitalisation by nature of crash
Queensland 1996-2001

Nature of crash	1996		1997		1998		1999		2000		2001	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Hit object	840	60%	861	64%	902	62%	906	64%	915	59%	1059	64%
Overturned	346	25%	313	23%	327	22%	291	21%	386	25%	372	22%
Hit parked vehicle	80	6%	61	5%	87	6%	86	6%	96	6%	72	4%
Fall from vehicle *	139	10%	120	9%	142	10%	133	9%	145	9%	161	10%
Total	**1405**	**100%**	**1355**	**100%**	**1458**	**100%**	**1416**	**100%**	**1542**	**100%**	**1664**	**100%**

* Vehicle includes motor or pedal cycle

Table 4.6 indicates that:

- 64 per cent of the single vehicle crashes involving hospitalisation in 2001 (1,059 of a total 1,664) resulted from a vehicle hitting an object. This proportion is above the 2000 level of 59 per cent, and two percentage points above the 1996 to 2000 proportional average of 62 per cent;

- vehicles overturning represented 22 per cent of single vehicle crashes involving hospitalisation in 2001. This proportion is one percentage point lower than the 1996 to 2000 average of 23 per cent; and

- in 2001, motorcyclists, bicyclists or other vehicle occupants falling from their vehicles represented ten per cent of single vehicle crashes involving hospitalisation. The number of this crash type in 2001 (161 hospitalisation crashes) is 19 per cent higher than the 1996 to 2000 average of 136.

4.5 Crashes by time of day

The long term trend in the proportion of fatal crashes occurring after dark has remained relatively stable from 1992 to 2001 as shown in Table 4.7.

Table 4.7: Annual trends in the nature of fatal crashes occuring after dark
Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Fatal crashes after dark	161	150	154	171	142	152	102	124	111	118
All fatal crashes	363	357	368	408	338	321	257	273	275	296
% after dark	44%	42%	42%	42%	42%	47%	40%	45%	40%	40%

Different patterns appear when looking at high-risk periods of the day for multi-vehicle and single vehicle fatal crashes. Generally speaking, multi-vehicle fatal crashes occurred most frequently during daytime periods, while single vehicle crashes occurred more often after dark. Figure 4.3 demonstrates this occurrence for crashes in 2001.

Fig. 4.3: Fatal crashes by time of day
Queensland 2001

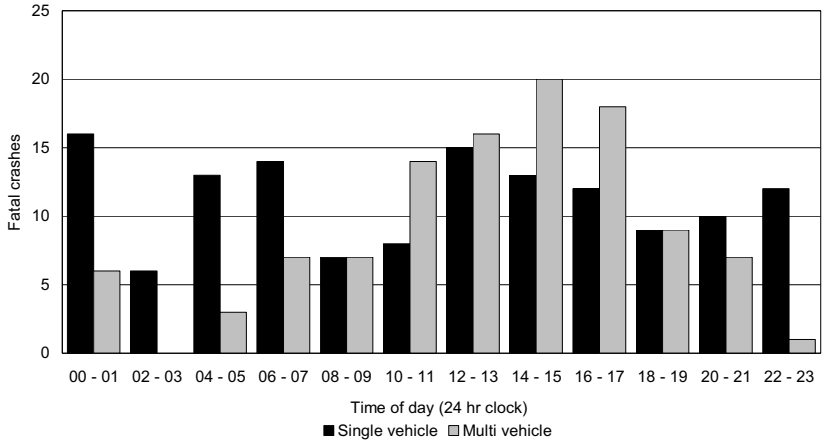


Figure 4.3 indicates that:

- during morning and afternoon commuting periods (6 to 10am and 4 to 6pm), 30 per cent of multi-vehicle fatal crashes occurred with a similar percentage (24 per cent) for single vehicle fatal crashes;

- during the balance of daylight hours (10am to 4pm), 46 per cent of multi-vehicle fatal crashes occurred, in contrast to 27 per cent of single vehicle fatal crashes; and

- during the after dark periods (6pm to 6am), the trend was reversed; 24 per cent of fatal multi-vehicle crashes occurred, in contrast to 49 per cent of fatal single vehicle crashes.

An analysis of the data in Table 4.8 reveals that crashes which occurred after dark are more likely to result in a fatality than daytime crashes.

Table 4.8: Crashes by time of day by severity
Queensland 2001

	Fatal		Hospitalisation		All crashes	
Time period	**No.**	**%**	**No.**	**%**	**No.**	**%**
Midnight - 6 am	56	19%	426	10%	1833	9%
6 am - 10 am	38	13%	697	17%	4049	19%
10 am - 4 pm	100	34%	1484	36%	7874	37%
4 pm - 6 pm	40	14%	649	16%	3535	16%
6 pm - midnight	62	21%	898	22%	4212	20%
Total	**296**	**100%**	**4154**	**463%**	**21503**	**100%**

Table 4.8 indicates that:

- 40 per cent of fatal crashes occurred after dark (i.e. 6pm to 6am) compared with 29 per cent for all crashes. Between midnight and 6am the proportion of fatal crashes at 19 per cent was more than double that of all crashes (nine per cent); and

- the reverse trend applied during the middle of the day (between 10am and 4pm) when 37 per cent of all reported crashes occurred while 34 per cent of fatal crashes occurred during this period.

4.6 Crashes by day of week

The long-term trend in the fatal crashes by day of week has remained stable over the period 1992 to 2001 (see Table 4.9). In 2001, fatal crashes on Monday, Friday and Sunday showed the biggest decreases of 21, 20 and 17 per cent respectively when compared to the previous nine year average.

Table 4.9: Annual trends in fatal crashes by day of week
Queensland 1992-2001

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Monday	53	41	42	45	36	30	31	33	31	30
Tuesday	36	41	43	43	48	44	25	24	36	39
Wednesday	46	45	54	58	34	45	32	29	35	36
Thursday	44	45	50	52	46	42	36	35	41	42
Friday	69	59	65	74	53	56	39	57	46	46
Saturday	67	65	59	67	60	64	55	50	49	61
Sunday	48	61	55	69	61	40	39	45	37	42

During 2001 the number of crashes generally increased as the week progressed, with most categories of crashes peaking on Friday or Saturday.

Table 4.10 presents the number of crashes by the day of week grouped by the severity of the crash.

Table 4.10: Crashes by day of week by severity
Queensland 2001

	Fatal		Hospitalisation		All crashes*	
Day of week	**No.**	**%**	**No.**	**%**	**No.**	**%**
Monday	30	10%	528	13%	2838	13%
Tuesday	39	13%	563	14%	2943	14%
Wednesday	36	12%	592	14%	3172	15%
Thursday	42	14%	589	14%	3281	15%
Friday	46	16%	704	17%	3750	17%
Saturday	61	21%	657	16%	3089	14%
Sunday	42	14%	521	13%	2430	11%
Total	**296**	**100%**	**4154**	**100%**	**21503**	**100%**

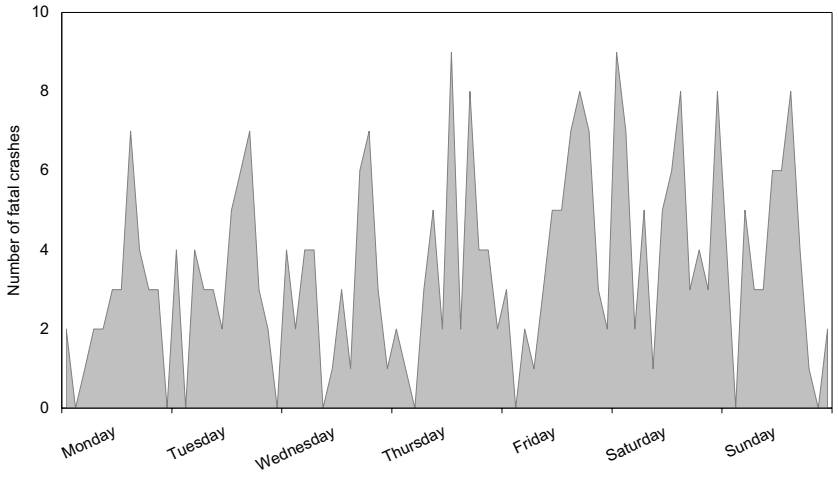
* Including casualty and property damage only

As indicated in Table 4.10, in 2001:

- Friday and Saturday were the days on which the most severe crashes were more likely to occur. Approximately 37 per cent of fatal crashes and 33 per cent of hospitalisation crashes occurred on these days;
- the day least likely to have fatal crashes was Monday (10 per cent); and
- Sunday recorded the lowest number of both hospitalisation crashes and all crashes.

Combining the fatal crash trends for day of week with time of day, it is seen that the numbers of crashes generally peak in the late afternoon hours each day. Figure 4.4 shows these trends for 2001.

Fig. 4.4: Fatal crashes by time of day* & day of week
Queensland 2001



* For each day, time begins at midnight

4.7 Spatial location of crashes

Forty-seven per cent of Queensland's reported road crashes in 2001 occurred in the greater Brisbane urban area (Brisbane City and Rest of Brisbane Statistical Division). Some 10,133 crashes occurred in this area during 2001. A further 6,472 crashes (or 30 per cent) occurred in Queensland provincial cities in 2001. Fatal crashes are more likely to occur outside of urban areas (shown in Table 4.11 as "rest of state") than crashes of lower severity.

Table 4.11: Location of crashes by severity
Queensland 2001

	Fatal		Hospitalisation		All crashes	
Location	**No.**	**%**	**No.**	**%**	**No.**	**%**
Brisbane City	39	13%	1029	25%	6304	29%
Rest of BSD*	41	14%	692	17%	3829	18%
Provincial cities	74	25%	1250	30%	6472	30%
Rest of state	142	48%	1183	28%	4898	23%
Total	**296**	**100%**	**4154**	**100%**	**21503**	**100%**

* Brisbane Statistical Division

As indicated in Table 4.11:

- during 2001, 29 per cent of all reported crashes in Queensland occurred in Brisbane City, but only 13 per cent of fatal crashes occurred in the metropolitan area; and

- while 23 per cent of Queensland's reported crashes occurred outside urban areas, 48 per cent of fatal crashes occurred in these non-urban areas.

Table 4.12 shows the location of fatal crashes.