

# Reported Road Casualties in Surrey 2013



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## Definition of Terms

**Collision:** Involves personal injury occurring on the public highway (including footways) in which at least one road vehicle or a vehicle in collision with a pedestrian and which becomes known to the police within 30 days of its occurrence. One collision may give rise to several casualties. "Damage-only" collisions are not generally included in published statistics or analyses conducted by the police or local authorities, as the police do not compile "damage-only" collision data. Sometimes the word "collision" or "crash" is preferred by many in the road safety field instead of "accident" because they believe the word "accident" could be taken incorrectly as absolving anyone from blame. The word collision has been used within this report.

**Fatal collision:** A collision in which at least one person is killed.

**Serious collision:** One in which at least one person is seriously injured but no person (other than a confirmed suicide) is killed.

**Slight collision:** One in which at least one person is slightly injured but no person is killed or seriously injured.

**Casualty:** A person killed or injured in a collision. Casualties are sub-divided into killed, seriously injured and slightly injured.

**Killed:** Human casualties who sustained injuries which caused death less than 30 days after the collision. Confirmed suicides are excluded.

**Serious injury:** An injury for which a person is detained in hospital as an "in-patient", or any of the following injuries whether or not they are detained in hospital: fractures, concussion, internal injuries, crushing, burns (excluding friction burns), severe cuts, severe general shock requiring medical treatment and injuries causing death 30 or more days after the collision. An injured casualty is recorded as seriously or slightly injured by the police on the basis of information available within a short time of the collision. This generally will not reflect the results of a medical examination, but may be influenced according to whether the casualty is hospitalised or not. Hospitalisation procedures will vary regionally.

**Slight injury:** An injury of a minor character such as a sprain (including neck whiplash injury), bruise or cut which are not judged to be severe, or slight shock requiring roadside attention. This definition includes injuries not requiring medical treatment.

**KSI:** Killed or seriously injured.

**Children:** Those who are aged 0 to 15 years old (under 16 years old).

**Billion vehicle miles:** The Department for Transport produces estimates of annual average daily flow (AADF) for each link of the major road network. They are produced using 12-hour manual data counts from a large number of sites and traffic profiles derived from automatic counters at about 190 sites. Traffic estimates are calculated for each link of the network by multiplying the AADF by the corresponding length of road factored up by the numbers of days in the year. Therefore, a major road link of length 2 miles with an AADF of 50,000 has a traffic figure of 100,000 vehicle miles (2\*50,000). This equates to 36.5 million vehicle miles a year. Because every major road link is counted, in principle, total traffic on major roads can be obtained by summing the traffic figures for every link. For minor roads the AADF is estimated based on a sample of traffic counts, including those projected forward from counts done in earlier years.

## Executive Summary

In recent years there has been a substantial reduction in fatal road casualties in Surrey. In 2012 and again in 2013 there were 18 fatal road casualties, whereas seven years ago in 2007 the total was 60. A similar reduction has been observed in national road casualty data. Out of 151 English local authorities in 2013, Surrey was ranked:

- 51 in terms of fatal casualties per 100,000 population
- 24 in terms of fatal casualties per billion vehicle miles travelled
- 30 in terms of reduction in fatal casualties compared to 2005 to 2009 baseline average

In 2011 Surrey County Council commissioned TRL Ltd to investigate this accelerated reduction in fatal casualties. It was concluded that there had appeared to have been a link to the economic downturn which had resulted in reduced traffic, fewer HGVs and fewer young male drivers (who tend to be over represented in collisions). There also appears to have been changes in driver behaviour (for example speed choice and drink driving) which, in turn, make drivers safer and reduces collisions, and in particular, high severity collisions. The research also speculated that drivers might behave more cautiously when uncertain about their financial future, so reducing extreme behaviour that can lead to fatal collisions. The research also highlighted the possibility that more extreme cold weather in recent years has resulted in people driving less, and more cautiously.

There are signs that the economy is improving, and sadly this appears to have corresponded with a rise in fatal casualties in Surrey and Great Britain. At the time of writing (mid October 2014), there had been 31 fatal casualties in Surrey within the calendar year, already much more than in the whole of 2013. Also, nationally there was an increase in fatal casualties of 4 per cent in the year ending March 2014 compared with the year ending March 2013.

The trend in the number of killed and seriously injured (KSI) casualties has not been as good as the trend in fatal casualties. Out of 151 English local authorities in 2013, Surrey was ranked:

- 134 in terms of KSI casualties per 100,000 population
- 91 in terms of KSI casualties per billion vehicle miles
- 135 in term of percentage reduction in KSI casualties compared to 2005 to 2009 average

Surrey is one of only 19 local authorities out of 151 to have suffered an increase in KSI casualties in 2013 compared to the baseline average for 2005 to 2009. More detailed analysis within this report highlights that serious injury to cyclists accounts for the largest part of this overall increase. The number of cycling casualty KSIs has increased by 134 per cent, from an average of 62 during 2005 to 2009, to a total of 145 in the year 2013.

The trend in the total number of casualties has also not been so good. Out of 151 English local authorities in 2013, Surrey was ranked:

- 147 in terms of total casualties per 100,000 population
- 67 in terms of total casualties per billion vehicle miles
- 105 in terms of percentage reduction in total casualties compared to 2005 to 2009 average

The analysis within this report has again highlighted that an increase in injuries to cyclists in Surrey accounts for the largest part of this comparatively poor reduction in total casualties. In addition to the 134 per cent increase in cyclist KSIs described above, there was a 36 per cent increase in slight injuries to cyclists, from an average of 354 during 2005 to 2009, to a total of 482 in 2013.

This report only provides an overview of casualty trends in Surrey, along with Surrey's casualty reduction trend compared with other local authorities. More detailed analysis reports will be completed for specific road user groups and topics to identify the behaviours and reasons as to why collisions are occurring, to help inform what could be done to prevent them.

## 1. Introduction

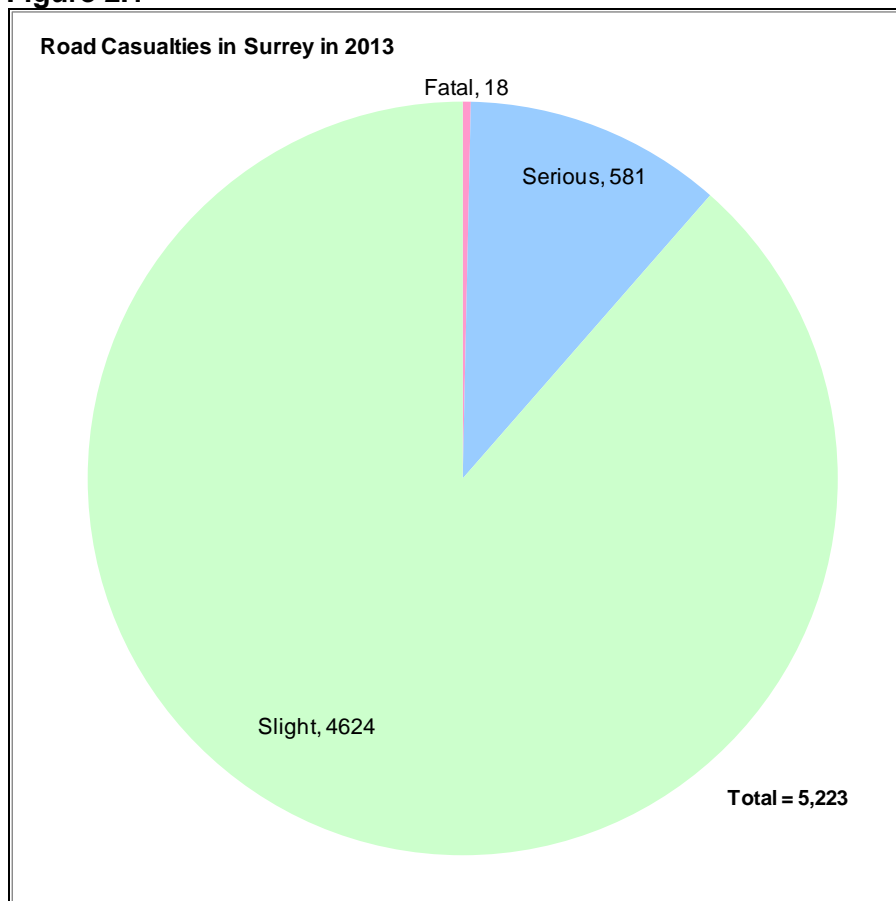
- 1.1.1. This report presents an overview of the trend in road casualties in Surrey by severity (fatal, serious, slight), followed by Surrey's overall road casualty reduction trend compared with other local authorities. This is followed by a summary of the trend in road casualties by road user age and road user type for each severity.

## 2. Road Casualties By Severity

### 2.1. Number of Fatal, Serious and Slight Road Casualties in Surrey in 2013

- 2.1.1. The chart in Figure 2.1 shows the total number of fatal, serious and slight injury casualties in Surrey in 2013. It can be seen that there were 18 fatal casualties, and these constituted 0.3 per cent of the total of 5,223 casualties. There were a total of 599 fatal and serious casualties combined, and these constituted 11 per cent of the total of 5,223 casualties.

**Figure 2.1**



## **2.2. Trend in Fatal Road Casualties**

- 2.2.1. The chart in Figure 2.2 shows the trend in fatal road casualties in Surrey since 1994. It can be seen that there was a large drop in fatal casualties between 2008 and 2012. There were 18 fatal casualties in 2013 whereas there were 60 in 2007. A similar pattern has been experienced across both the southeast of England and Great Britain.
- 2.2.2. In 2011 Surrey County Council commissioned TRL Ltd to investigate this accelerated reduction in fatal casualties. It was concluded that there had appeared to have been a link to the economic downturn which had resulted in reduced traffic, fewer HGVs and fewer young male drivers (who tend to be over represented). There also appears to have been changes in driver behaviour (for example speed choice and drink driving) which, in turn, make drivers safer and reduces collisions, and in particular, high severity collisions. The research also speculated that drivers might behave more cautiously when uncertain about their financial future, so reducing the extreme behaviour that can lead to fatal collisions. The research also highlighted the possibility that more extreme cold weather in recent years has resulted in people driving less, and more cautiously.
- 2.2.3. It should be noted that at the time of writing (September 2014) there had been 23 fatal road casualties in Surrey during 2014. Therefore, already with only three quarters of the year of 2014 elapsed there had already been an increase in fatal casualties compared to 2013.

## **2.3. Trend in Serious Road Casualties**

- 2.3.1. The chart in Figure 2.3 shows the trend in serious injury road casualties together with the trend in fatal road casualties in Surrey. It can be seen that in 2013 there was a total of 581 serious casualties, an increase of 25 compared to 2012 when there were 556. It can be seen that the numbers of serious injury casualties has remained fairly static since 2003.

## **2.4. Trend in Slight Road Casualties**

- 2.4.1. The chart in Figure 2.4 shows the trend in slight injury road casualties together with the trend in serious and fatal casualties. It can be seen that in 2013 there was a total of 4,624 slight injury casualties, a decrease of 367 compared to 2012 when there was 4,991.

Figure 2.2

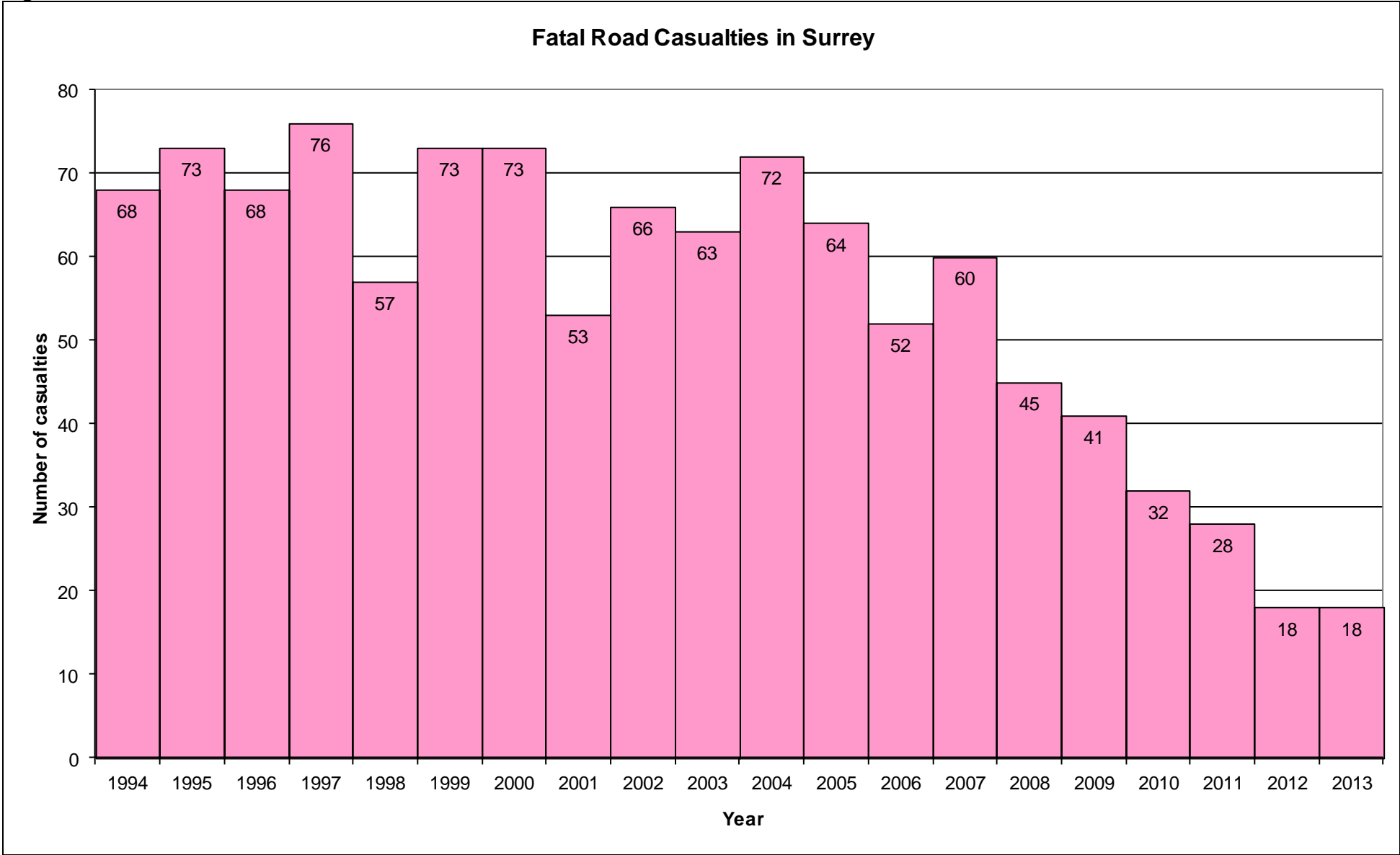


Figure 2.3

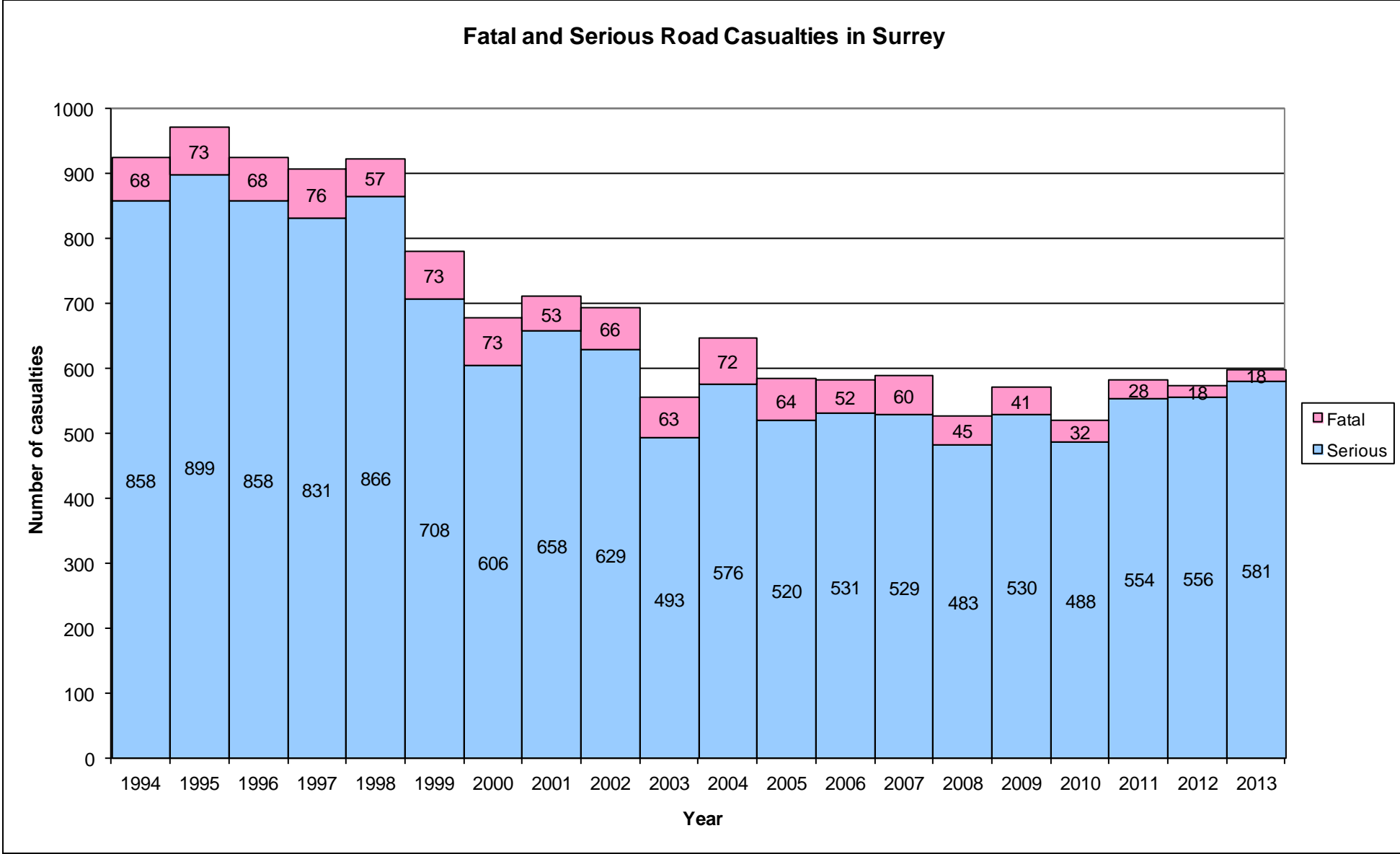
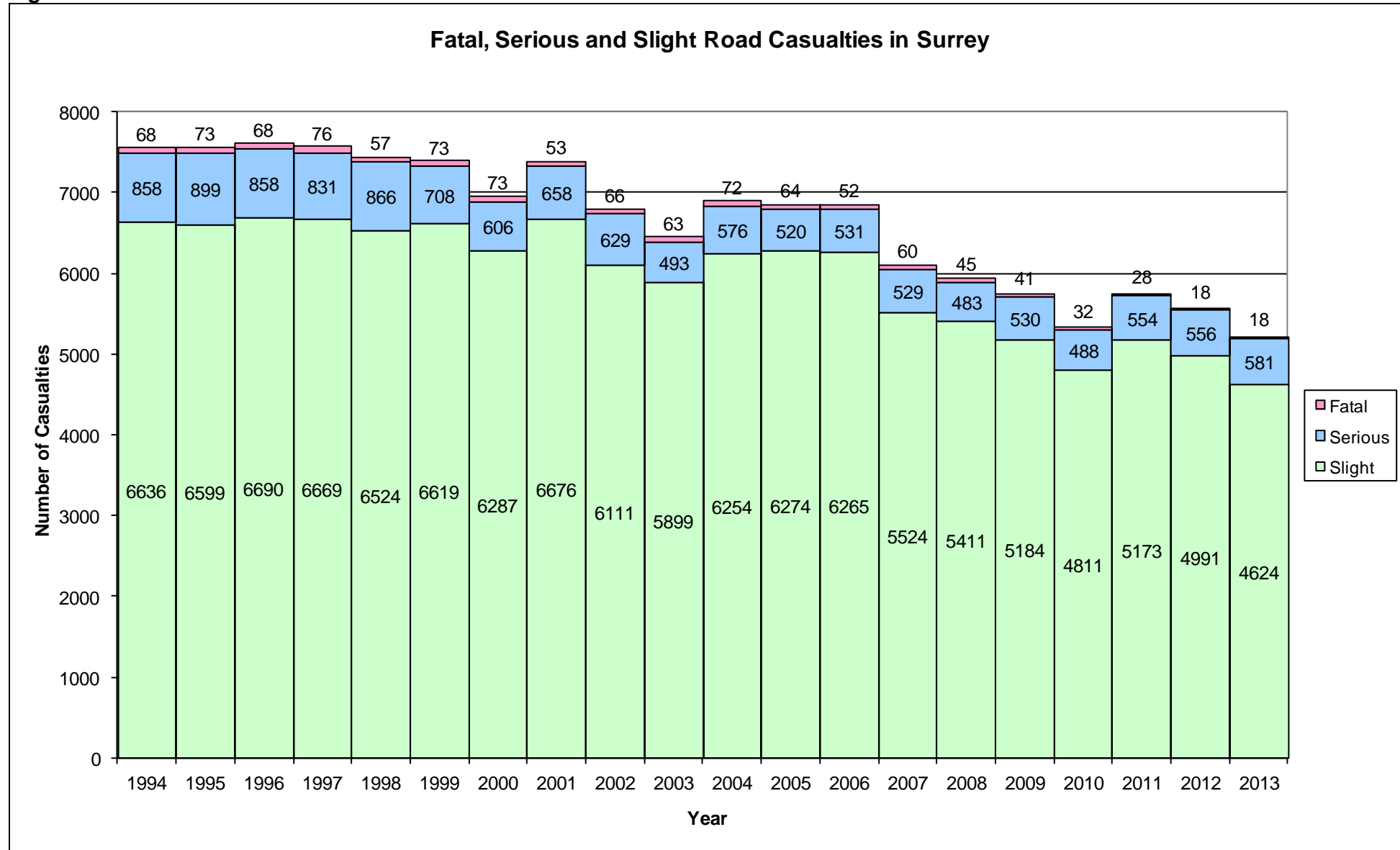




Figure 2.4



### **3. Surrey's Trends Compared to Other Local Authorities**

#### **3.1. Introduction**

- 3.1.1. There are three main ways to measure casualty reduction trends. A comparison of casualties by level of resident population within an area provides a way of comparing different local authorities taking into account how large their populations are. However this measure does not take into account the level of traffic generated by that population within the area, or the level of traffic generated by other people from elsewhere travelling through that area. A large proportion of casualties taking place in an area may also involve people travelling in that area who are not resident in that area too.
- 3.1.2. Another measure is to compare the number of casualties per vehicle miles travelled. This takes into account the amount of travel by vehicles taking place within an area (irrespective of where they are resident). It could be argued that this provides a fairer comparison as it takes into account a more accurate measure of exposure to risk of travellers within an area. However it does not take into account the distance travelled by pedestrians.
- 3.1.3. A further comparison can be made using a measure of how the number of casualties has reduced compared to a baseline. For example a 20 per cent reduction in casualties in a local authority compared to a baseline might initially be considered a good result, but not if many other local authorities have achieved a 30 per cent reduction over the same time period. The following section presents an analysis of Surrey's trends compared to all the other English Local Highway Authorities using these three measures. Within the Charts from Figure 3.1 to 3.9, a number of Surrey's neighbouring local authorities are highlighted especially.

#### **3.2. Casualties by population**

- 3.2.1. Figure 3.1 shows how Surrey compares to other local authorities in terms of the number of fatal casualties per 100,000 population in 2013. On this measure Surrey is ranked close to the top one third of local authorities (51 out of 151). It should be noted that The City of London data is excluded from the charts 3.1 to 3.3 for presentational purposes as that area has a very small resident population.
- 3.2.2. Figure 3.2 shows how Surrey compares to other local authorities in terms of the number of KSI casualties per 100,000 population in 2013. On this measure Surrey is within the bottom quartile with a ranking of 134 out of 151.
- 3.2.3. Figure 3.3 shows how Surrey compares to other local authorities in terms of the total number of casualties per 100,000 population in 2013. On this measure Surrey is one of the bottom local authorities with a ranking of 147 out of 151.

#### **3.3. Casualties by vehicle miles travelled**

- 3.3.1. Figure 3.4 shows how Surrey compares to other local authorities in terms of the number of fatal casualties per billion vehicle miles travelled. On this measure Surrey is ranked among the best local authorities (24 out of 151).
- 3.3.2. Figure 3.5 shows how Surrey compares to other local authorities in terms of the number of KSI casualties per billion vehicle miles. On this measure Surrey has a middle ranking (61 out of 151).
- 3.3.3. Figure 3.6 shows how Surrey compares to other local authorities in terms of the total number of casualties per billion vehicle miles. On this measure Surrey has a middle ranking (67 out of 151).

### **3.4. Reduction in casualties compared to 2005 to 2009 baseline average**

- 3.4.1. The Government's Strategic Framework for Road Safety uses the five year baseline from 2005 to 2009 to monitor performance in reducing casualties. Figure 3.7 shows how Surrey compares to other local authorities in terms of the percentage change in the number of fatal casualties against this baseline. On this measure Surrey is ranked within the top quartile of local authorities (30 out of 151).
- 3.4.2. Figure 3.8 shows how Surrey compares to other local authorities in terms of percentage change in the number of KSI casualties. On this measure Surrey is one of the bottom local authorities (135 out of 151) and is one of the few local authorities to have suffered a small increase in KSI casualties in recent years. The number of KSIs in Surrey has remained fairly similar over the last 10 years at just under 600 per year.
- 3.4.3. Figure 3.9 shows how Surrey compares to other local authorities in terms of percentage change in the total number of road casualties. On this measure Surrey is within the bottom one third of local authorities (105 out of 151).

Figure 3.1

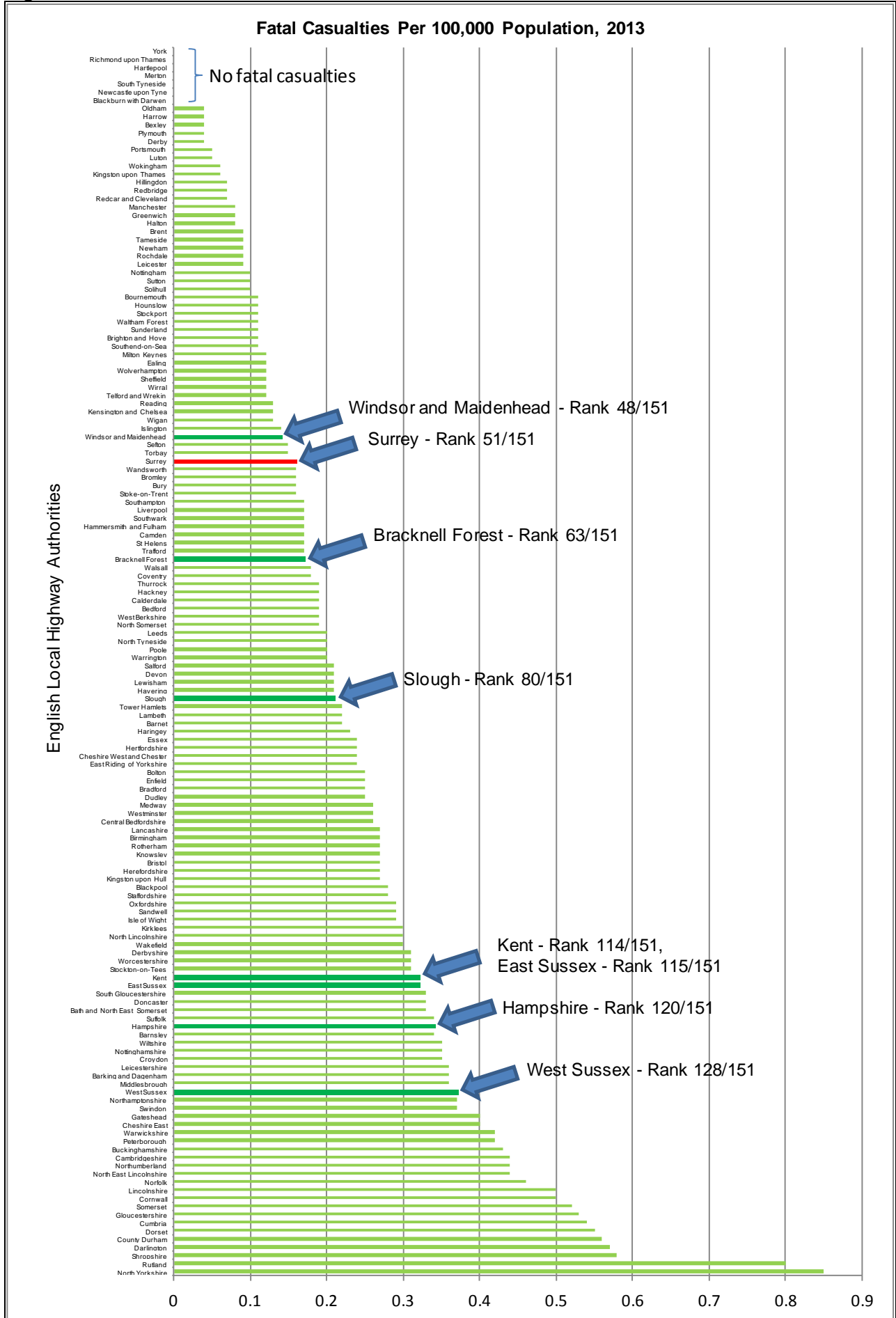


Figure 3.2

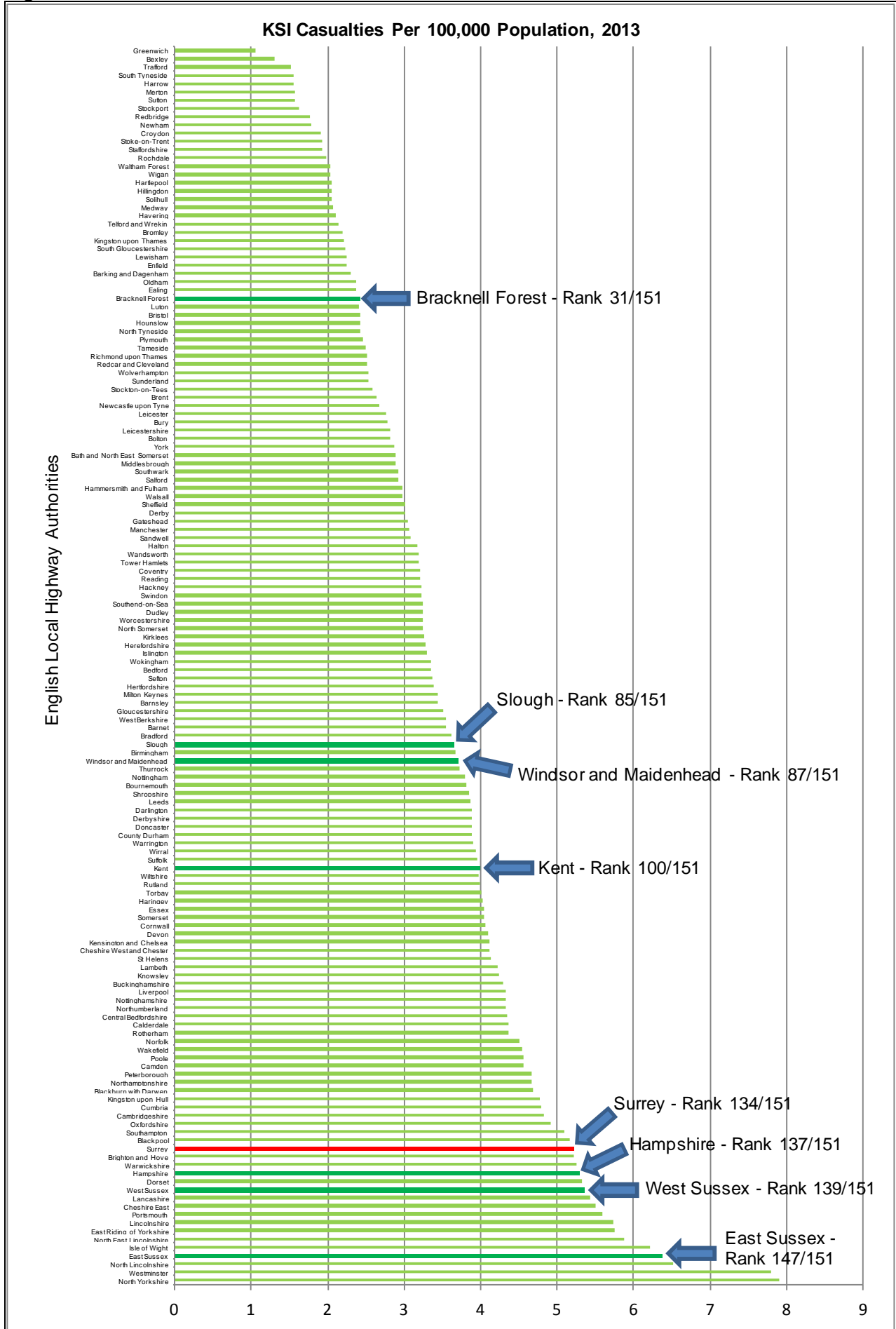


Figure 3.3

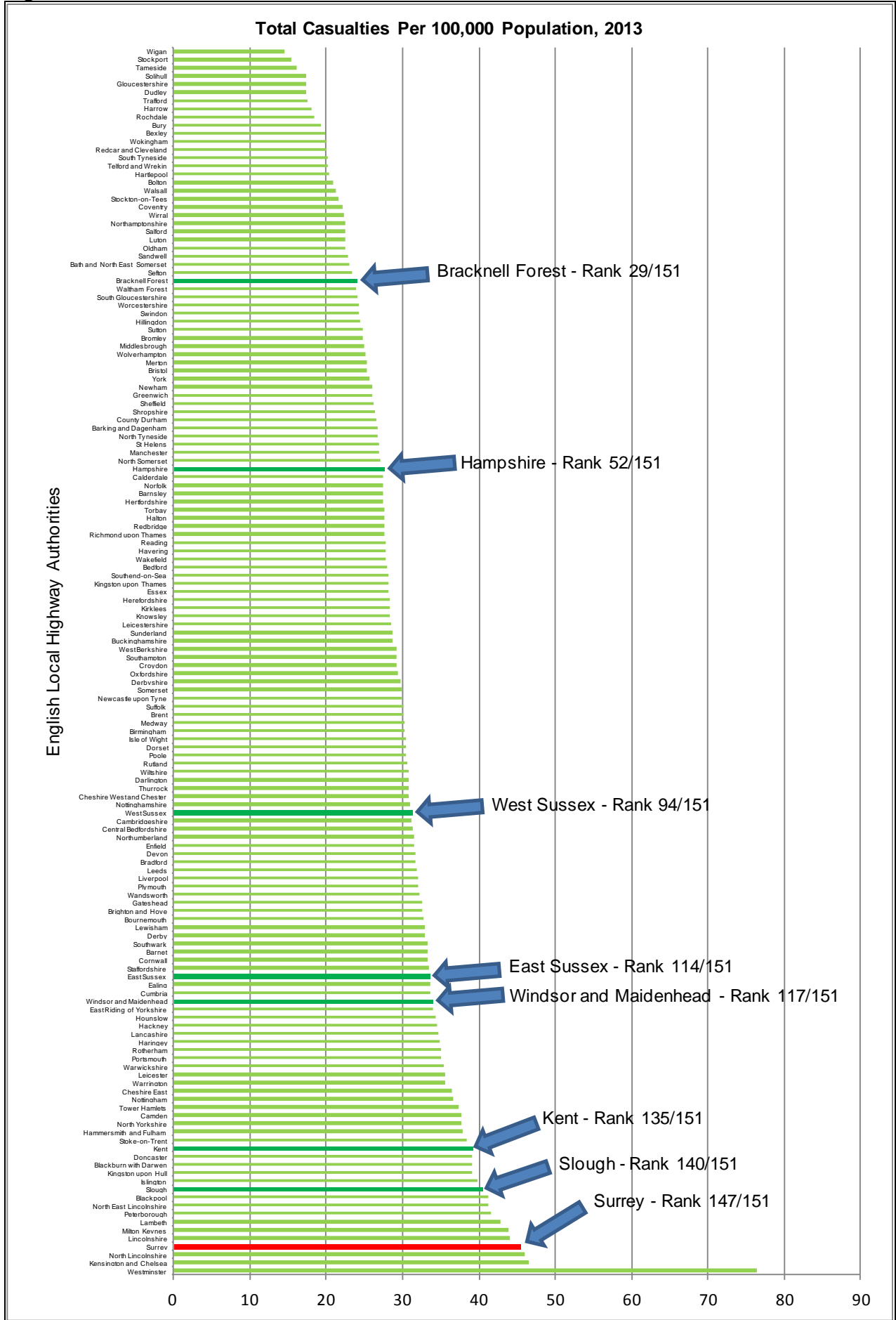


Figure 3.4

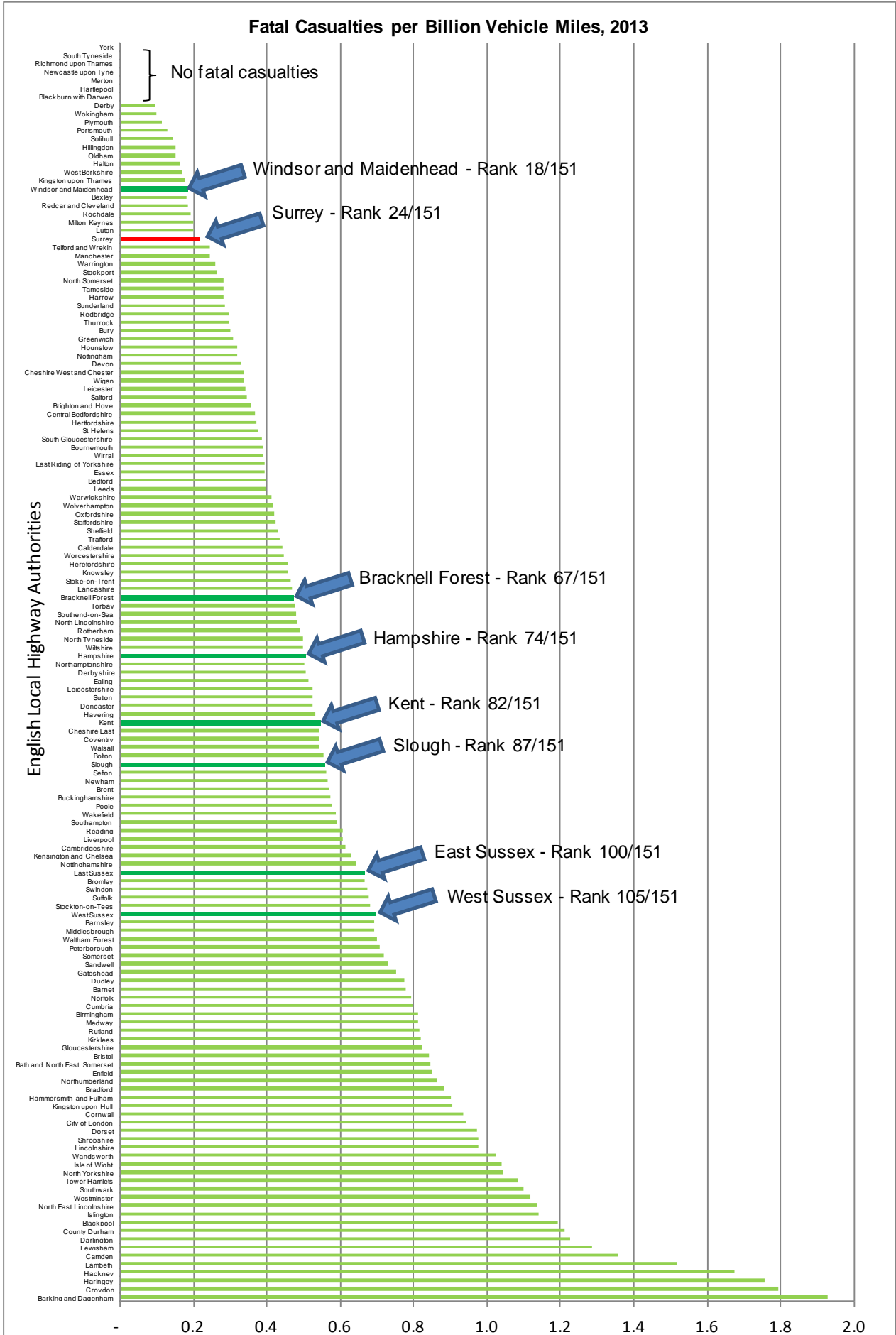


Figure 3.5

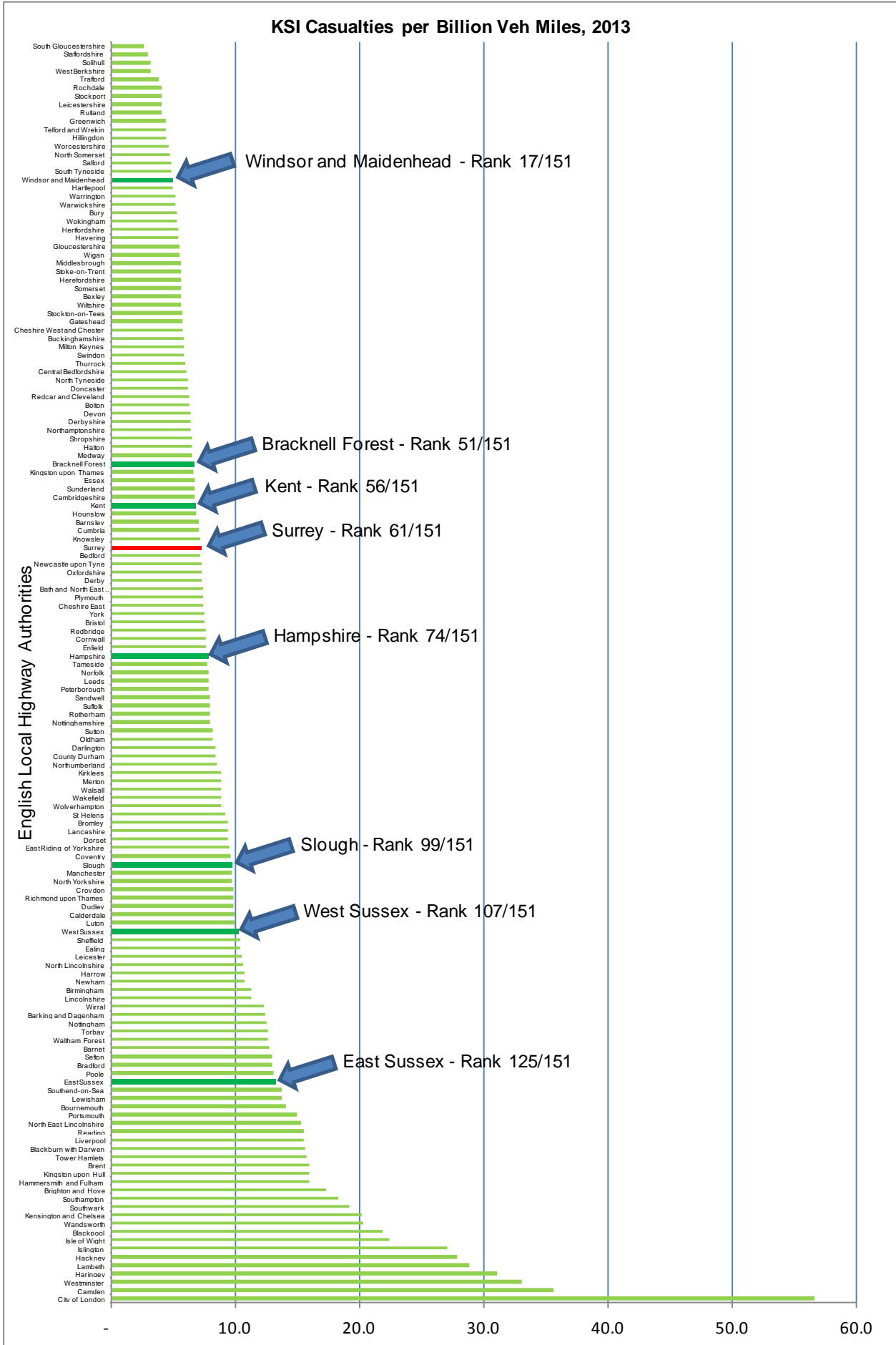




Figure 3.6

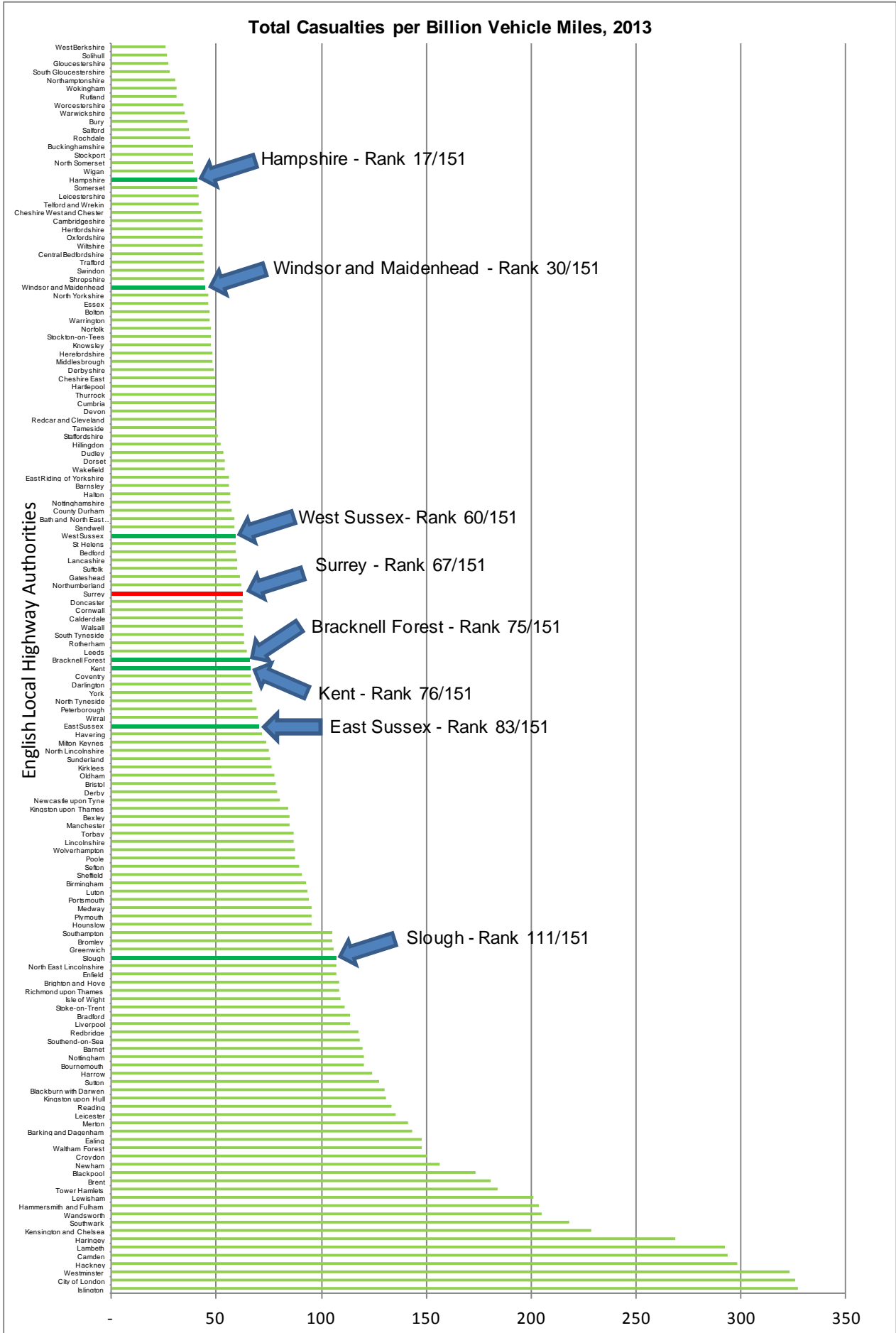


Figure 3.7

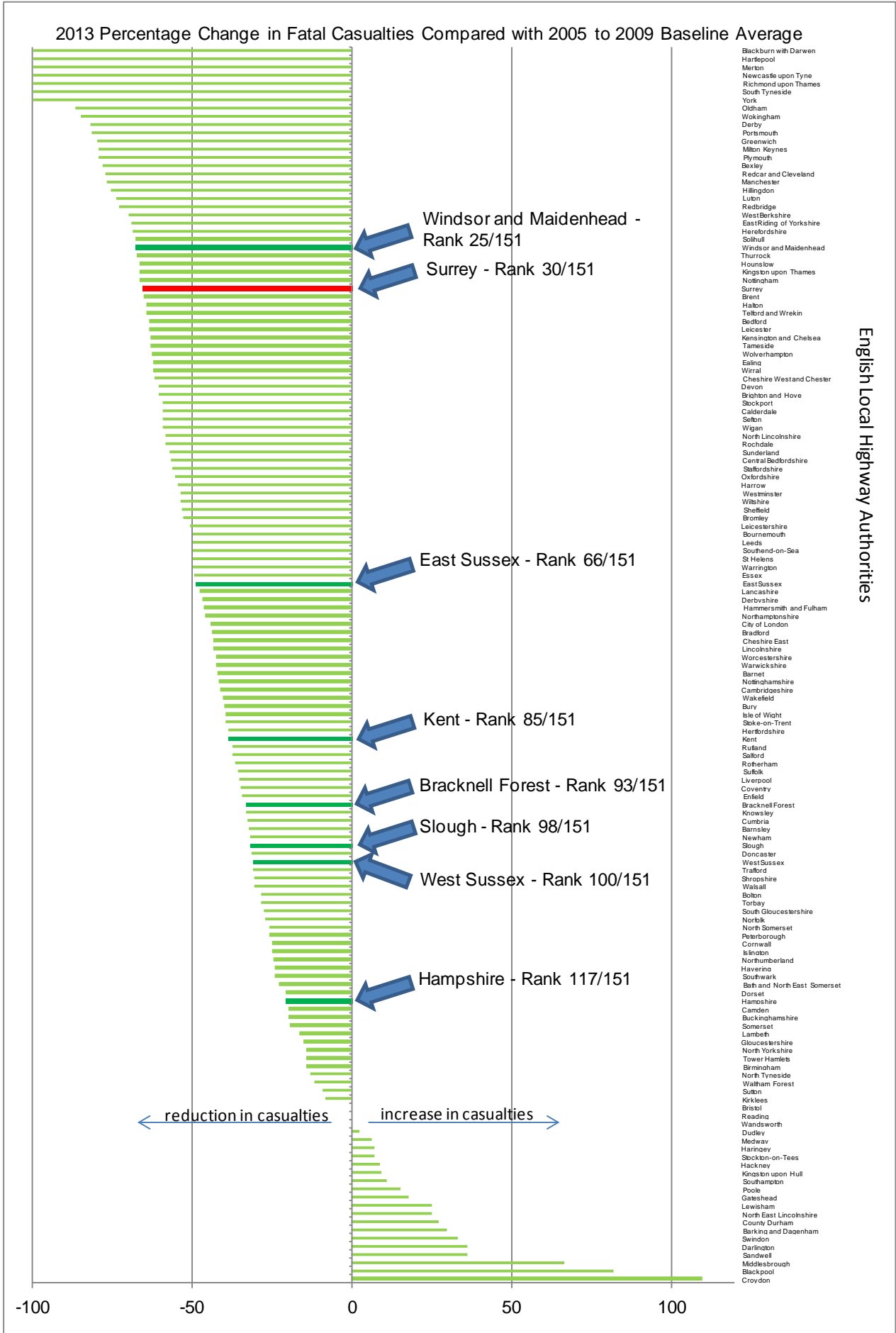


Figure 3.8

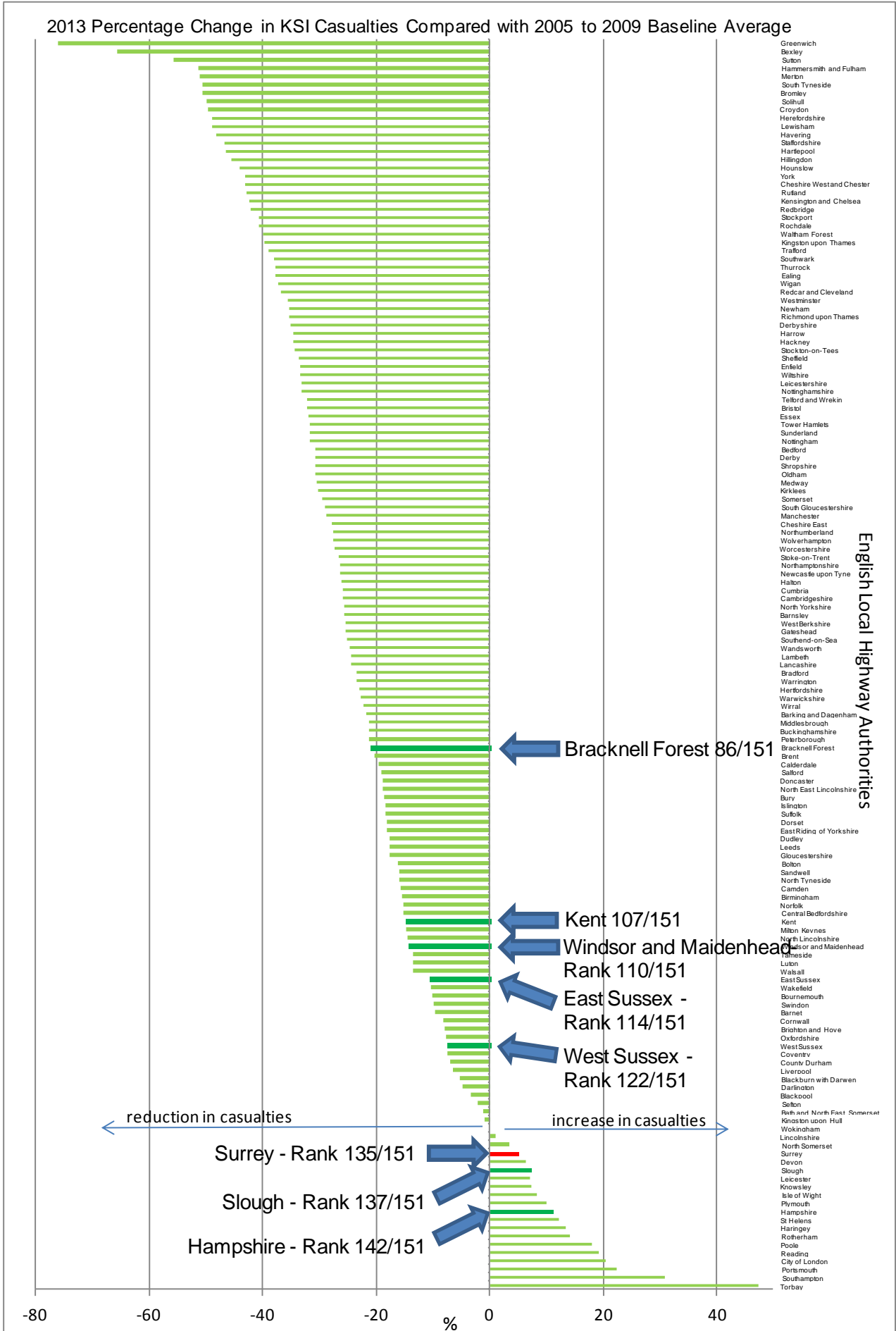
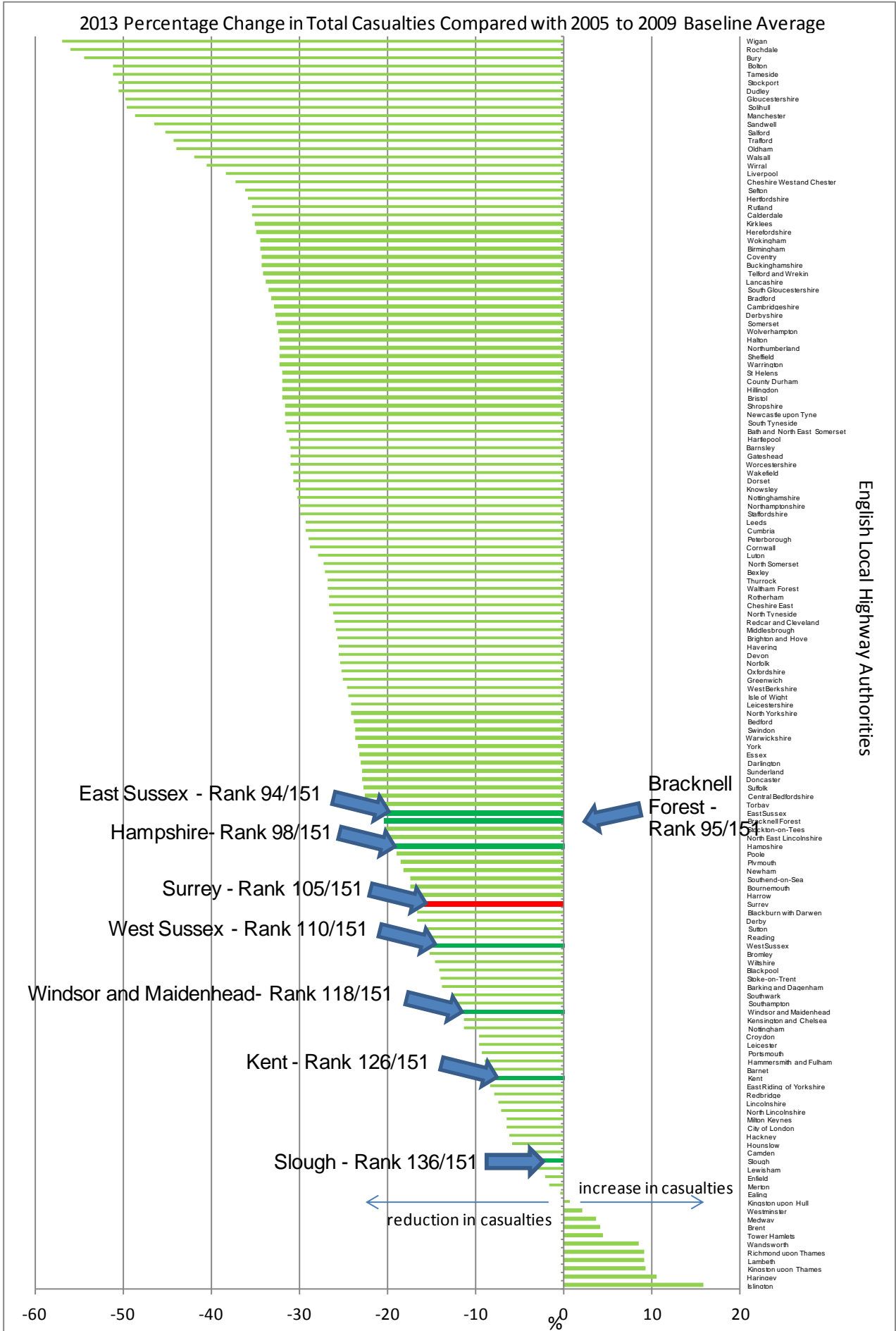


Figure 3.9



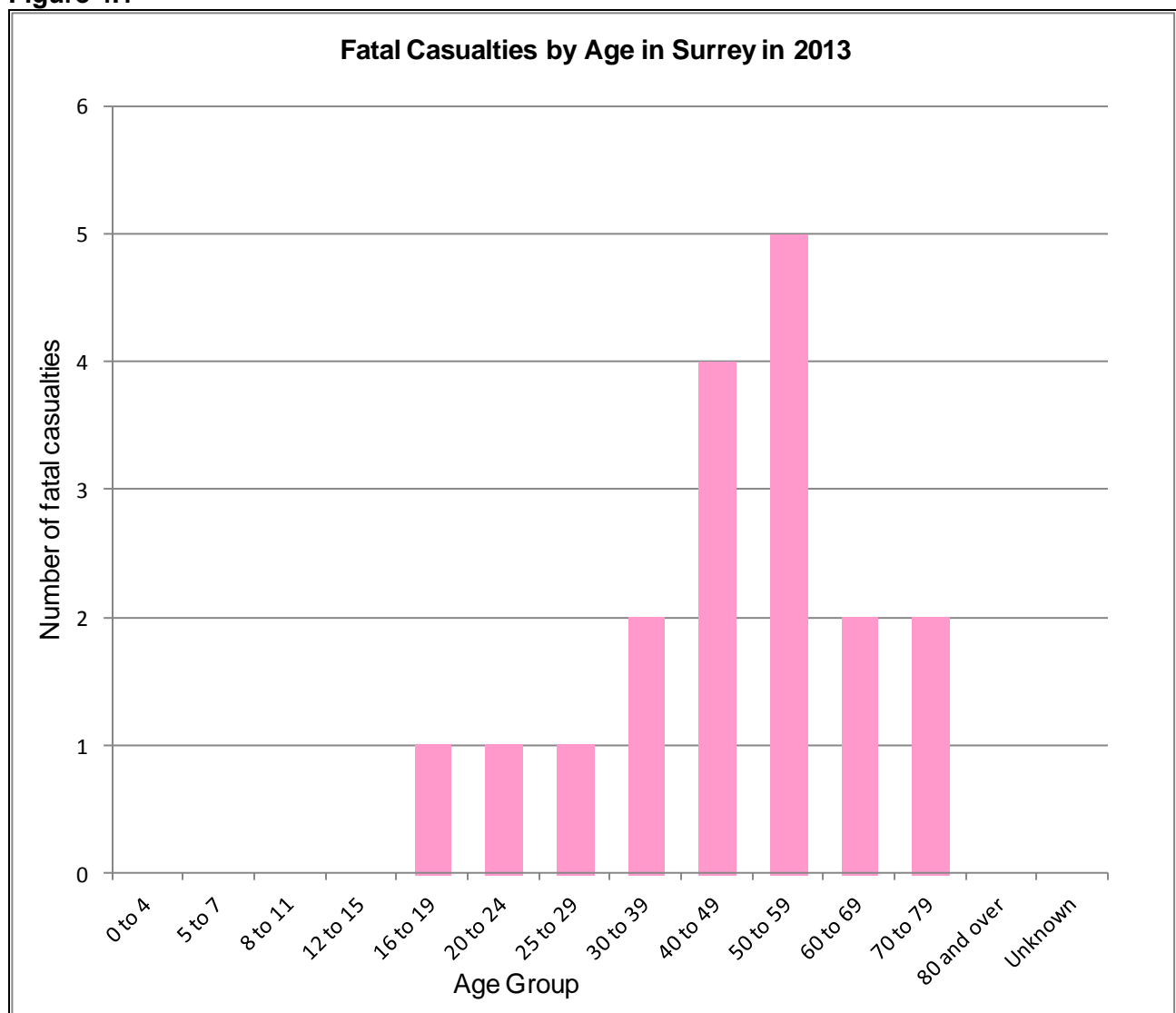
## 4. Fatal Casualties By Age and Road User Type

### 4.1. Fatal Casualties by Age

4.1.1. Figure 4.1 shows the number of fatal casualties in Surrey by age group. It can be seen that the 40 to 49 and 50 to 59 age groups together constituted half of the fatal casualties in 2013. There were no child (under the age of 16) fatal casualties in 2013.

4.1.2. The data Table 4.1 and the chart in Figure 4.2 describe the trend in fatal casualties in Surrey by age of casualty. It can be seen that the total number of fatal casualties in Surrey in 2013 was 18. This is a 66 per cent reduction compared with the average for 2005 to 2009. Caution should be exercised before drawing any strong conclusions from trends within the numbers of fatal casualties because the numbers are small and subject to random fluctuation from year to year.

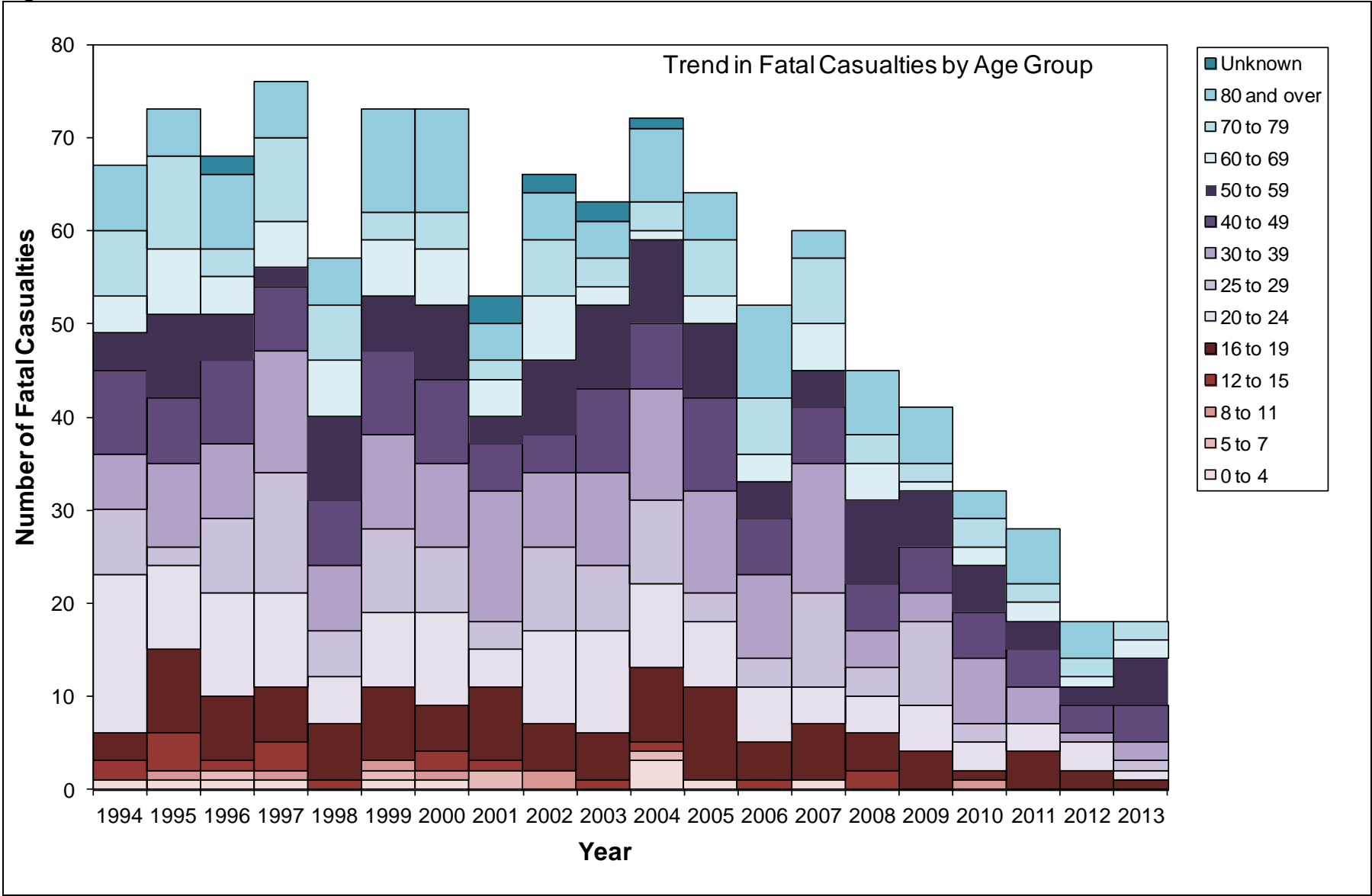
**Figure 4.1**



**Table 4.1: Fatal Casualties by Age of Casualty**

Age band	2005-2009 average	2010	2011	2012	2013	2013 percentage change over 2005- 2009 average
0 to 4	0.4	0	0	0	0	-100
5 to 7	0.0	0	0	0	0	0
8 to 11	0.0	1	0	0	0	0
12 to 15	0.6	0	0	0	0	-100
16 to 19	5.6	1	4	2	1	-82
20 to 24	5.2	3	3	3	1	-81
25 to 29	5.6	2	0	0	1	-82
30 to 39	8.2	7	4	1	2	-76
40 to 49	6.4	5	4	3	4	-38
50 to 59	6.2	5	3	2	5	-19
60 to 69	3.2	2	2	1	2	-38
70 to 79	4.8	3	2	2	2	-58
80 and over	6.2	3	6	4	0	-100
Unknown	0.0	0	0	0	0	0
Total	52.4	32	28	18	18	-66

Figure 4.2:

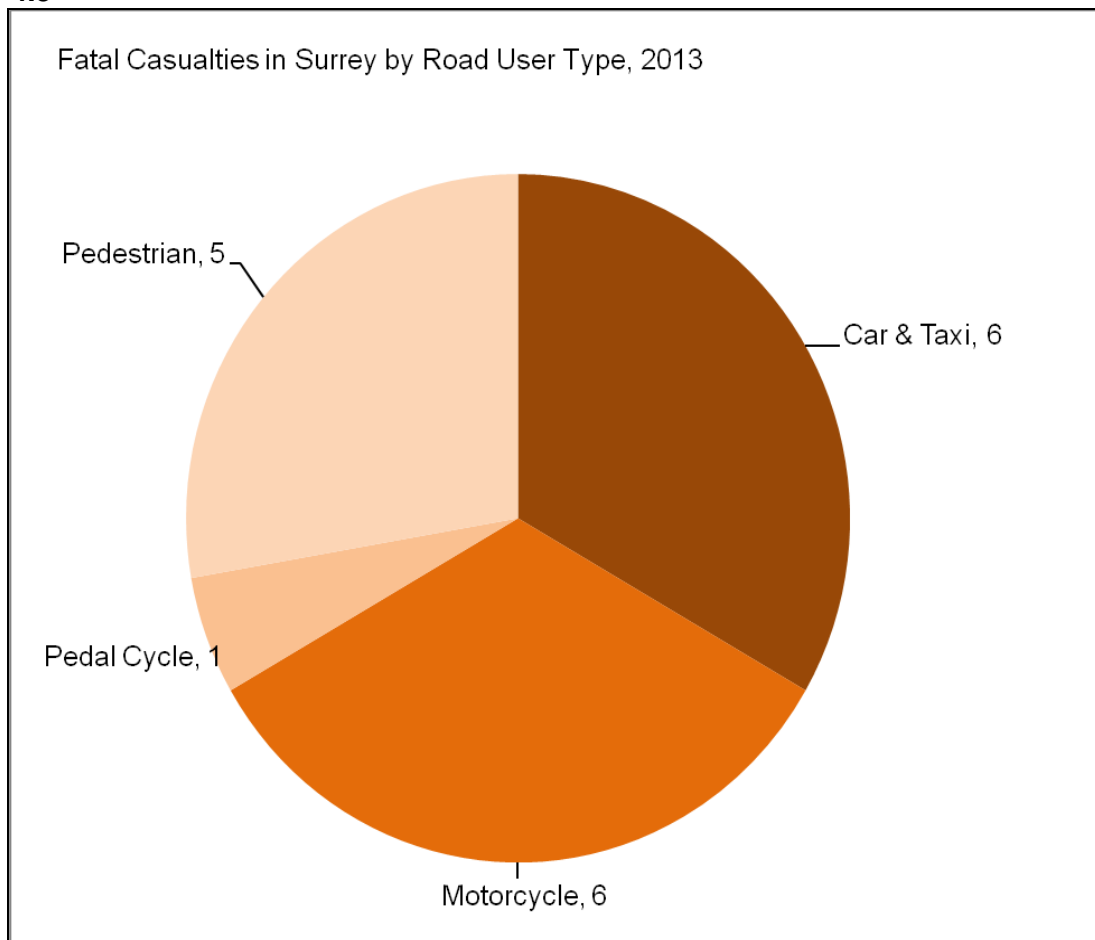


## 4.2. Fatal Casualties by Road User Type

4.2.1. The chart in Figure 4.3 shows the number of fatal casualties in Surrey in 2013 by road user type. It can be seen that one third of fatal casualties were car occupants and one third were motorcyclists. Just under a third were pedestrians, and there was one cyclist fatal casualty.

4.2.2. Figure 4.4 and the data in Table 4.2 show the trend in the numbers of fatal casualties by road user type. Although there have been reductions in fatalities for all the main road user categories including pedestrians, motorcyclists and car occupants, the reduction in car occupant fatal casualties appears to have contributed the most to the overall reduction in fatal casualties. Caution should be exercised before drawing any strong conclusions from trends within the numbers of fatal casualties because the numbers are small and subject to random fluctuation from year to year.

**Figure 4.3**

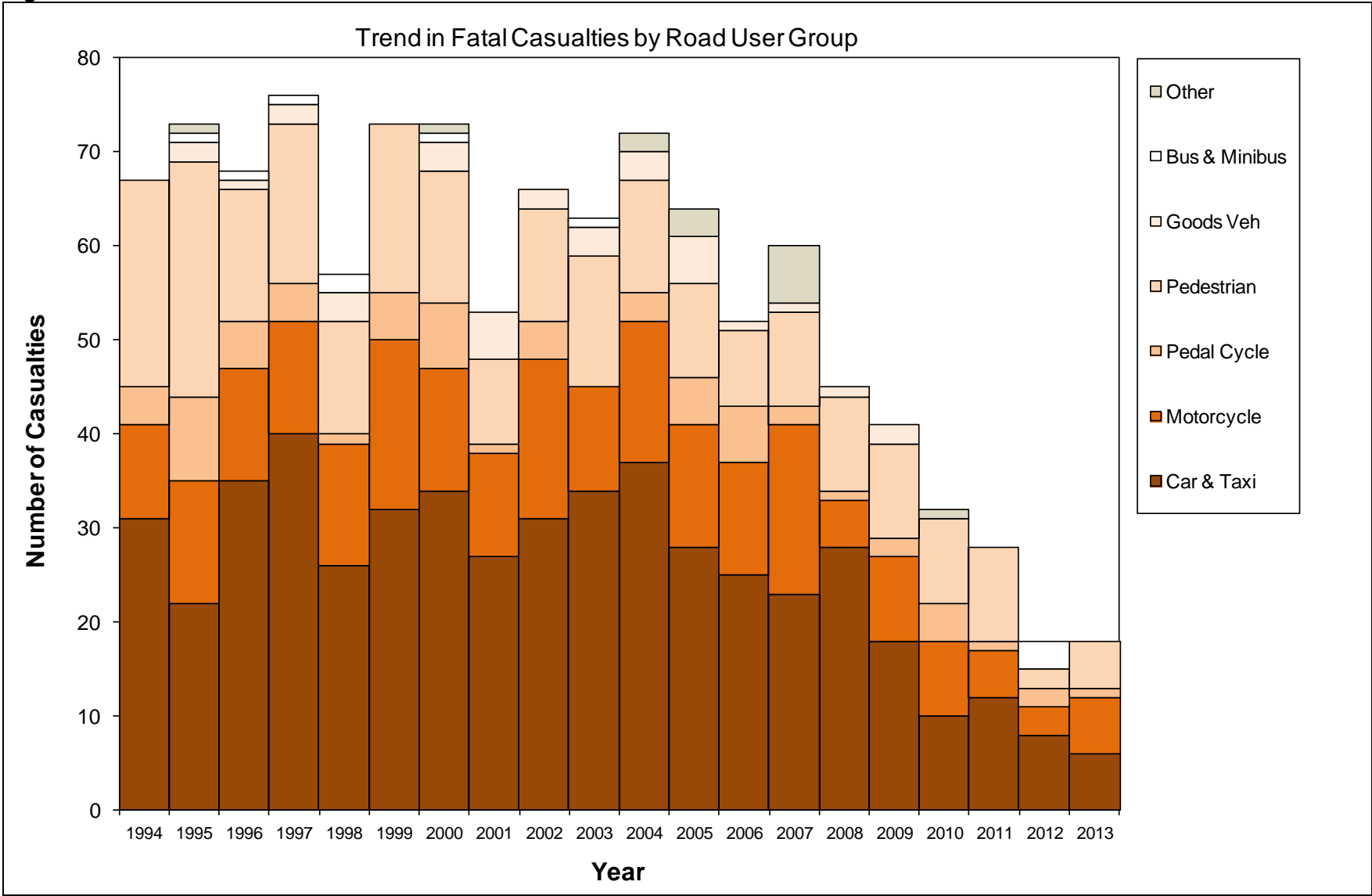


**Table 4.2: Fatal Casualties by Road User Type**

Road User Type	2005-2009 average	2010	2011	2012	2013	2013 Percentage change over 2005-2009 average
Pedestrian	9.6	9	10	2	5	-48
Pedal Cycle	3.2	4	1	2	1	-69
Motorcycle	11.4	8	5	3	6	-47
Car & Taxi	24.4	10	12	8	6	-75
Bus & Minibus	0.0	0	0	3	0	0
Goods Veh	2.0	0	0	0	0	-100
Other	1.8	1	0	0	0	-100
Total	52.4	32	28	18	18	-66



Figure 4.4

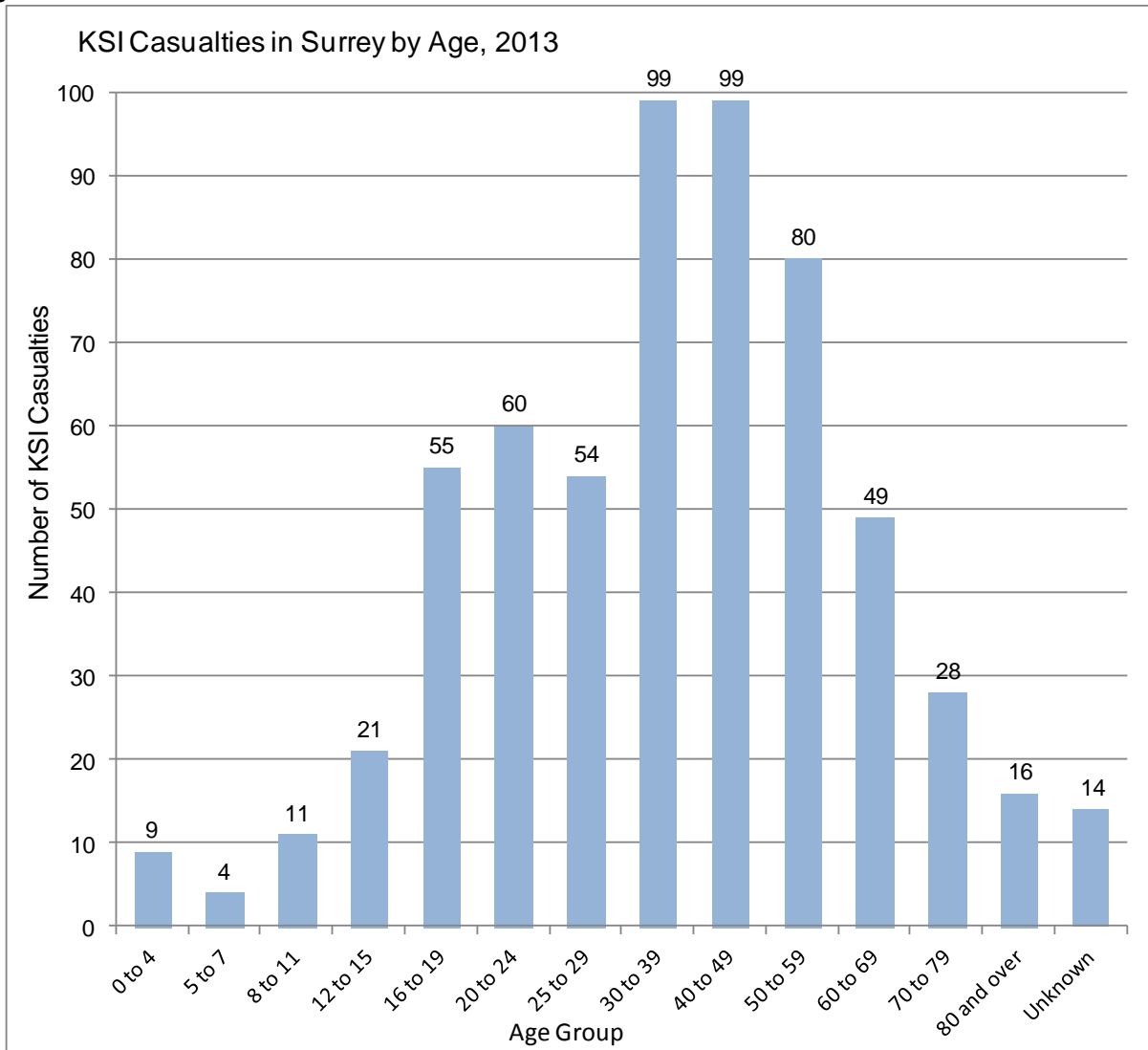


## 5. Casualties Killed and Seriously Injured by Age and Road User Type

### 5.1. Casualties Killed or Seriously Injured by Age

- 5.1.1. The chart in Figure 5.1 shows the number of KSI casualties in Surrey by age of casualty in 2013. It can be seen that the total number of children (under the age of 16) KSIs was 45, which is 8 per cent of the total of 599.
- 5.1.2. The Table 5.1 and the chart in Figure 5.2 shows the trend in the numbers of KSI in Surrey by age. It can be seen that the total of 599 KSIs in 2013 was an increase of 4 per cent compared with 2012, and an increase of 5 per cent compared with the average for 2005 to 2009.
- 5.1.3. The number of children (under the age of 16) KSIs was 45 which is a 36 per cent increase compared to 2012 (33 child KSIs) and a 31 per cent increase compared to the 2005 to 2009 average (34.4 child KSIs).
- 5.1.4. It can be seen that the age groups from 30 to 59 have the greatest number of KSI casualties and these age groups have suffered some of the biggest increases in casualties compared with previous years.

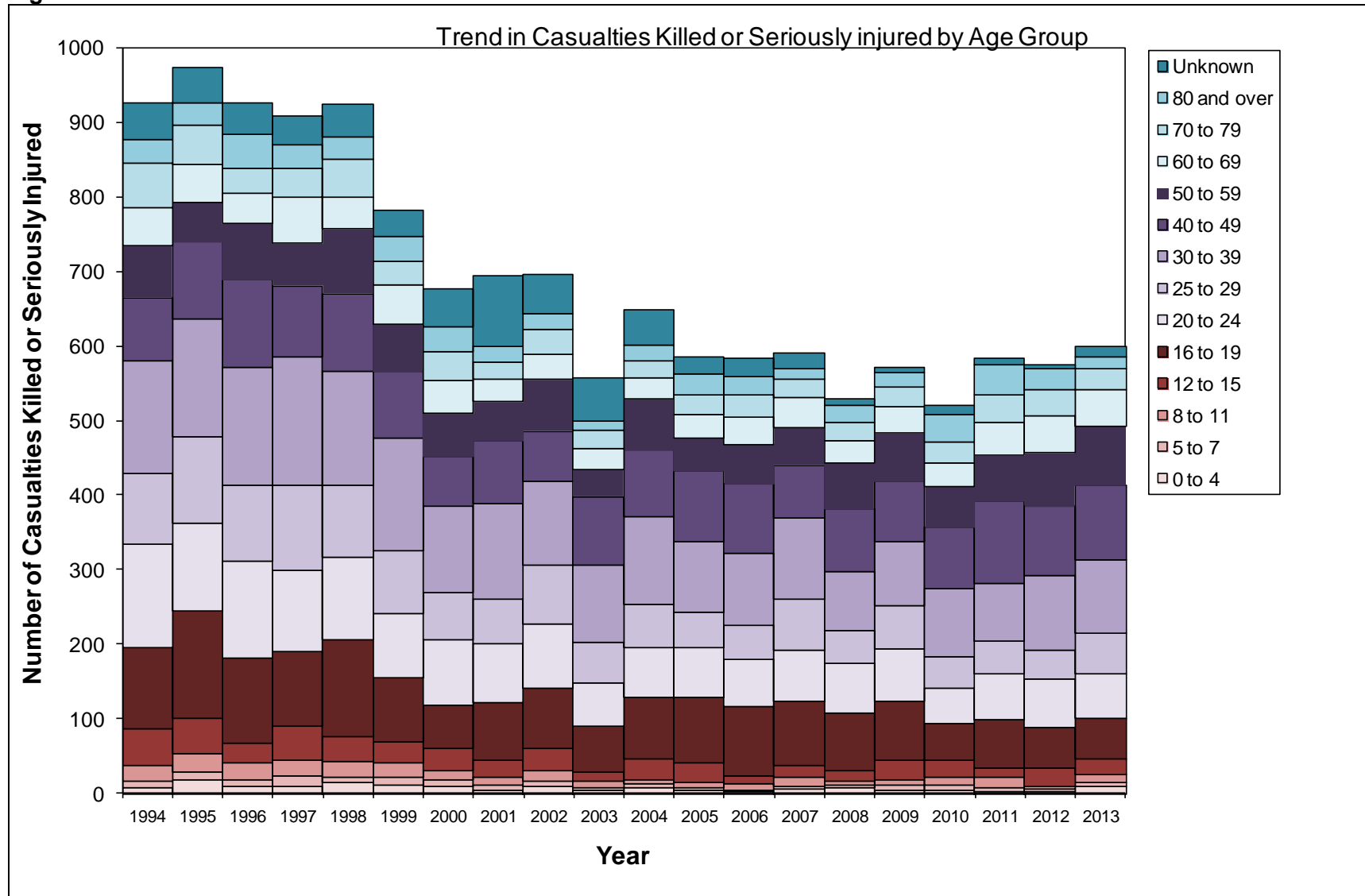
**Figure 5.1**



**Table 5.1: Casualties Killed or Seriously Injured by Age of Casualty**

Age band	2005-09 average	2010	2011	2012	2013	2013 Percentage change over 2005-09 average
0 to 4	3.8	4	1	1	9	137
5 to 7	4.2	7	5	4	4	-5
8 to 11	7.8	10	14	4	11	41
12 to 15	18.6	22	13	24	21	13
16 to 19	84.6	50	65	54	55	-35
20 to 24	66.6	48	62	65	60	-10
25 to 29	53.4	42	44	39	54	1
30 to 39	93.0	90	77	100	99	6
40 to 49	84.2	83	110	93	99	18
50 to 59	55.4	55	61	72	80	44
60 to 69	34.8	31	45	50	49	41
70 to 79	26.2	28	36	35	28	7
80 and over	21.8	37	41	28	16	-27
Unknown	16.6	13	8	5	14	-16
Total	571.0	520	582	574	599	5

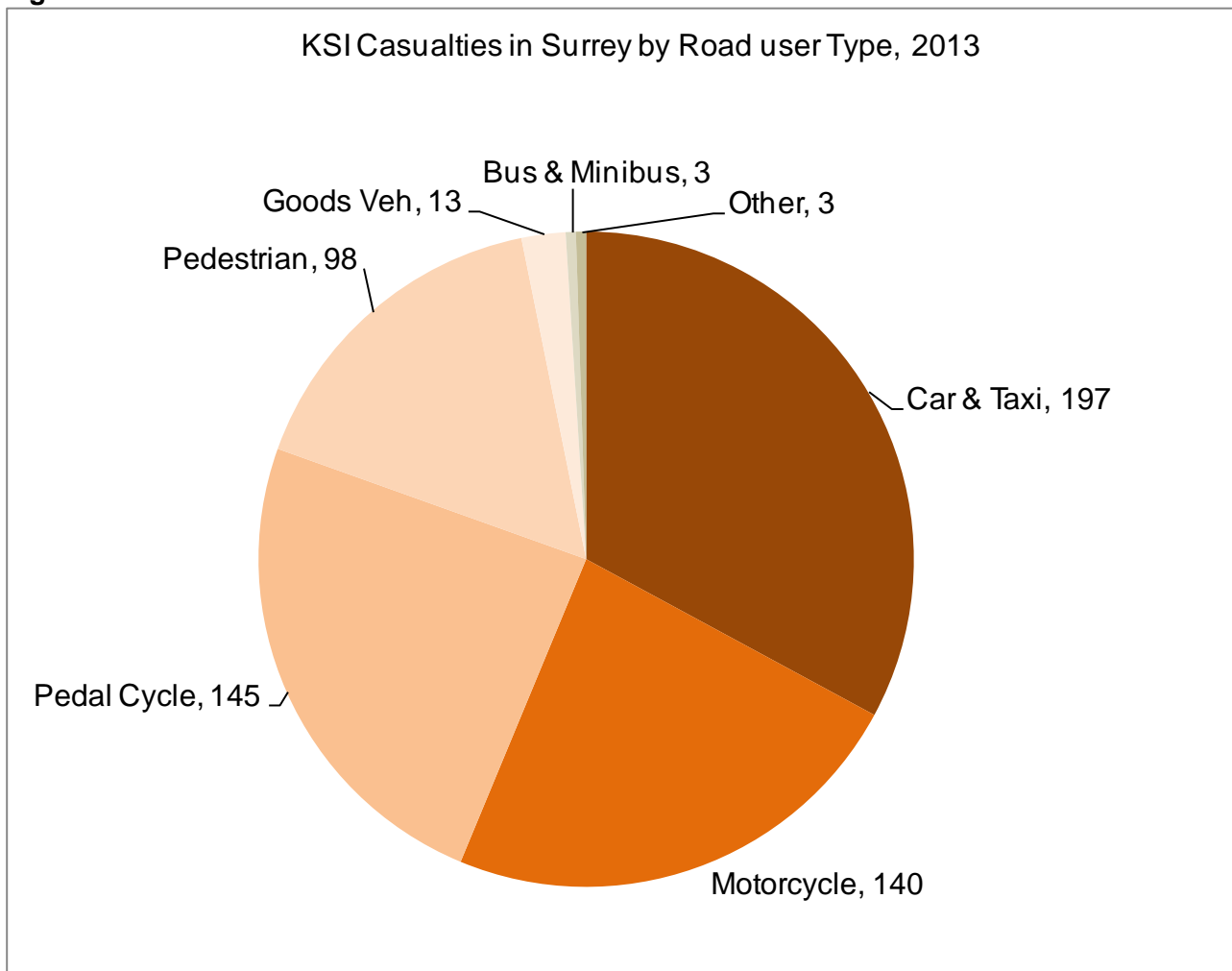
Figure 5.2



## 5.2. Casualties Killed or Seriously Injured by Road User Type

- 5.2.1. The chart in Figure 5.3 shows the number of KSI casualties in Surrey by road user type in 2013. It can be seen that car occupants constitute one third of the total KSIs, and pedal cyclists and motorcyclists constitute about one quarter each of the total KSIs.
- 5.2.2. The data in Table 5.2 and Chart 5.4 shows the trend in the numbers of KSIs by different types of road user. There has been a large increase (137 per cent) in pedal cycling KSI casualties in 2013 (144 casualties) compared to the average for 2005 to 2009 (62 casualties). It is likely that this is due to an increase in the amount of cycling. Increased cycling is something that Surrey County Council wish to encourage, as this is a sustainable mode of transport and can help to improve the health of those taking part. However care will be needed to improve the safety of cycling at the same time as promoting this mode of transport.
- 5.2.3. There has been a small increase of 17 per cent in pedestrian KSI casualties in 2013 (98 casualties) compared with the average for 2005 to 2009 (83.6 casualties). The number of motorcyclist KSI casualties has remained fairly similar over recent years (140 in 2013).
- 5.2.4. The number of car occupant KSIs has reduced by nearly a quarter in recent years, (from an average of 258.6 from 2005 to 2009, to 197 in 2013).

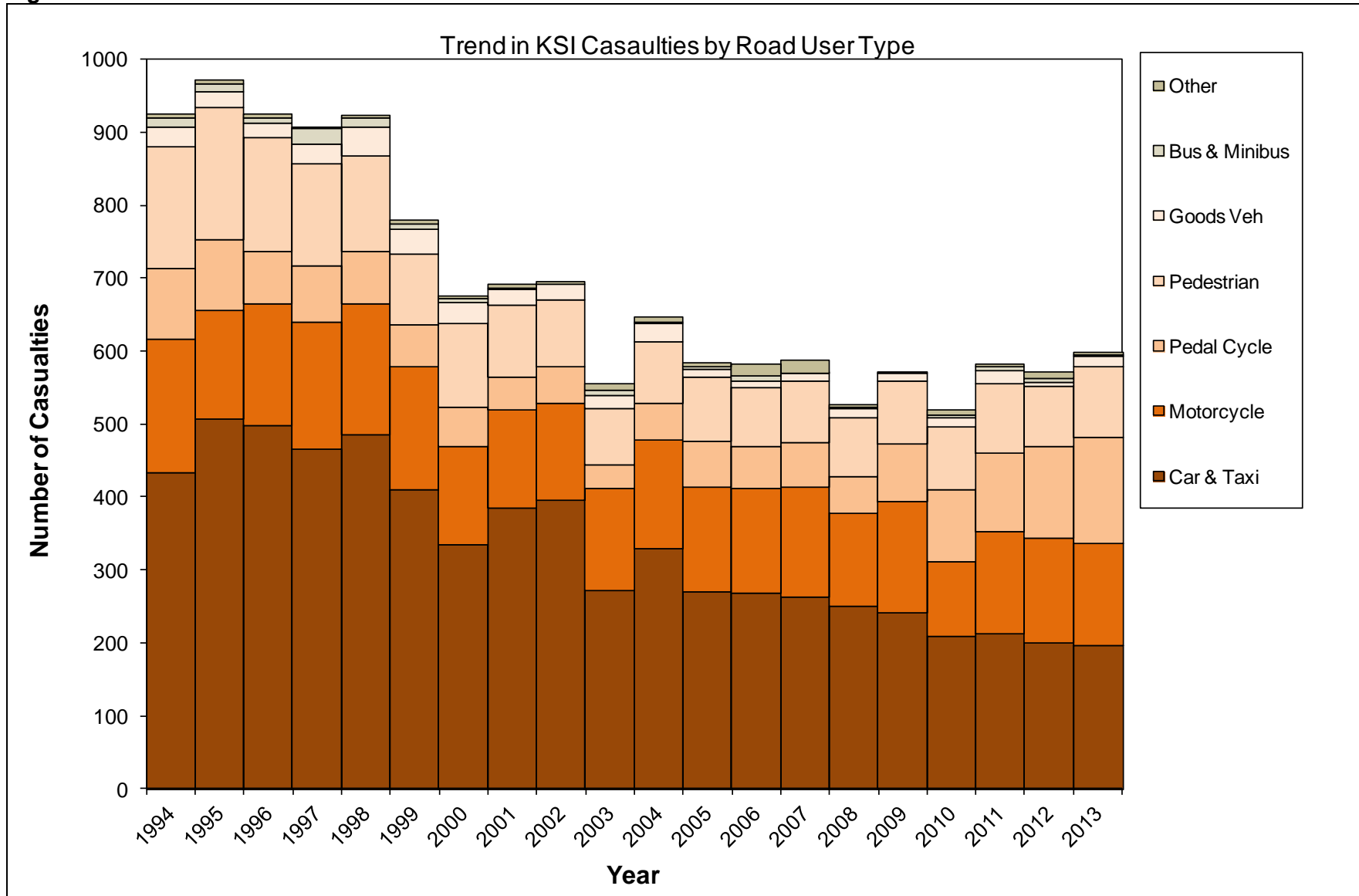
**Figure 5.3**



**Table 5.2: Casualties Killed or Seriously Injured by Road User Type**

Road User Type	2005-09 average	2010	2011	2012	2013	2013 Percentage change over 2005-09 average
Pedestrian	83.6	87	95	84	98	17
Pedal Cycle	62.0	98	107	124	145	134
Motorcycle	144.2	102	141	144	140	-3
Car & Taxi	258.6	210	213	201	197	-24
Bus & Minibus	2.8	2	5	6	3	7
Goods Veh	10.6	13	18	4	13	23
Other	9.2	8	3	9	3	-67
Total	571.0	520	582	572	599	5

Figure 5.4



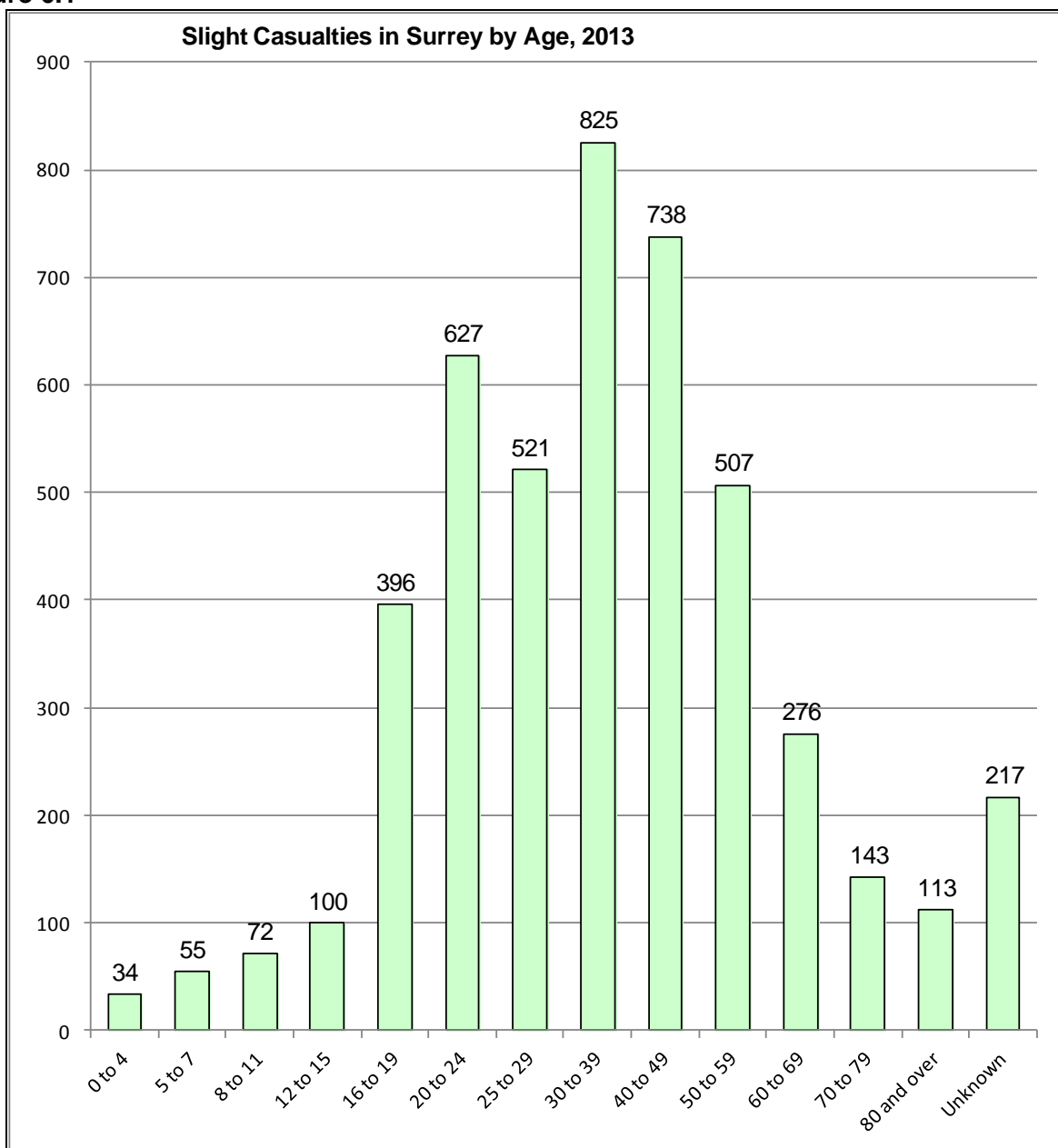
## 6. Slight Injury Casualties by Age and Road User Type

### 6.1. Casualties Slightly Injured by Age

6.1.1. The data in Table 6.1 and the charts in Figures 6.1 and 6.2 describe the trend in casualties slightly injured in Surrey by age of casualty. It can be seen that there were a total of 4,624 casualties slightly injured in 2013, which is a decrease of 7 per cent compared with 2012, and a decrease of 19 per cent compared with the average for 2005 to 2009.

6.1.2. It can be seen that the greatest reductions in slight injury casualties in 2013 compared to the 2005 to 2009 average have occurred for the 16 to 19 age group (a 48 per cent reduction from 757 to 396). There have been reductions of a third or more in other young age groups 0 to 4, 8 to 11 and 12 to 15.

Figure 6.1

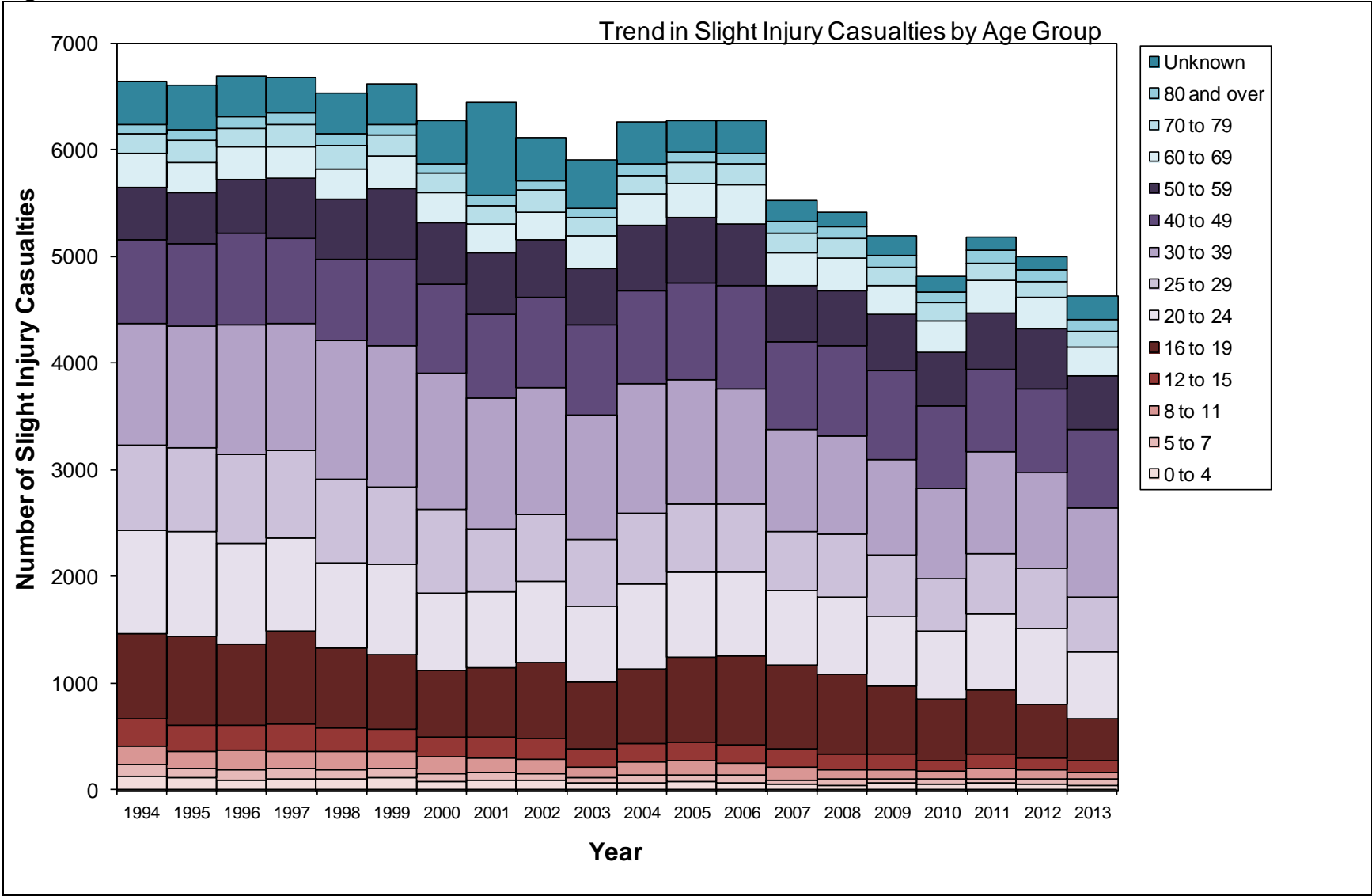




**Table 6.1: Casualties Slightly Injured by Age of Casualty**

Age band	2005-09 average	2010	2011	2012	2013	2013 percentage change over 2005-2009 average
0 to 4	53.0	45	55	41	34	-36
5 to 7	56.4	44	43	48	55	-2
8 to 11	106.8	78	96	88	72	-33
12 to 15	164.4	102	133	114	100	-39
16 to 19	757.0	578	597	509	396	-48
20 to 24	732.6	629	720	705	627	-14
25 to 29	600.8	495	563	570	521	-13
30 to 39	1001.0	854	959	889	825	-18
40 to 49	875.8	769	775	789	738	-16
50 to 59	554.8	502	519	567	507	-9
60 to 69	313.4	292	317	294	276	-12
70 to 79	183.0	173	158	149	143	-22
80 and over	109.6	105	116	102	113	3
Unknown	222.8	145	122	126	217	-3
Total	5731.4	4811	5173	4991	4624	-19

Figure 6.2

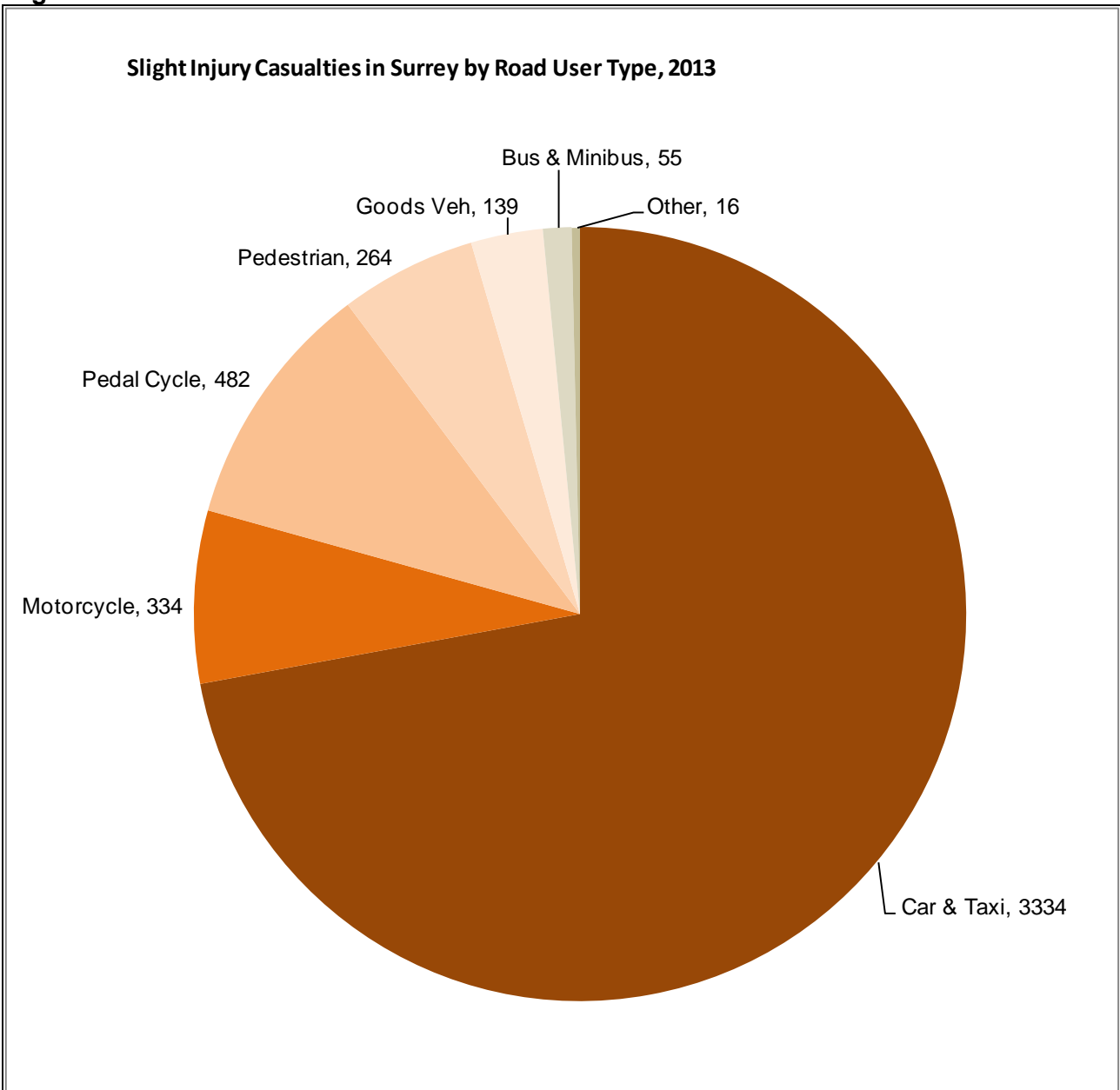


**6.2. Slight Injury Casualties by Road User Type**

6.2.1. The data in Table 6.2 and the charts in Figures 6.3 and 6.4 describe the trend in casualties slightly injured in Surrey by road user type. It can be seen that car & taxi users constitute the majority of slight injury casualties (72 per cent of the total in 2013). The number of car & taxi user slight injury casualties has reduced by 23 per cent in 2013 compared with the average for 2005 to 2009.

6.2.2. Pedal cyclists constitute about 10 per cent of the total number of slightly injured casualties in 2013. Pedal cyclists are the only road user type for which there has been an increase in casualties. There was an increase of 36 per cent in 2013 (482 casualties) compared to the average for 2005 to 2009 (354.2 casualties).

**Figure 6.3**



**Table 6.2: Casualties Slightly Injured by Road User Type**

Road User Type	2005-09 average	2010	2011	2012	2013	2013 Percentage change over 2005-09 average
Pedestrian	317.2	306	295	261	264	-17
Pedal Cycle	354.2	355	422	438	482	36
Motorcycle	421.0	330	343	363	334	-21
Car & Taxi	4,349.2	3,584	3,843	3,653	3,334	-23
Bus & Minibus	59.0	50	56	64	55	-7
Goods Veh	149.8	161	200	196	139	-7
Other	81.0	25	14	16	16	-80
Total	5,731.4	4811	5,173	4,991	4,624	-19

Figure 6.4

