Transport for London
Surface Transport

Fact sheet

London Road Safety Unit
LAAU topic 2008-1

December 2008

Pedal cyclist collisions and casualties in Greater London

This factsheet looks into the scale and nature of road traffic collisions resulting in injury to pedal cyclists in the Greater London area. It gives an overview of pedal cyclist (P/C) casualties for the period 1986 to 2007 and then looks in detail at the profile of the casualties and factors relating to the collisions that occurred in 2007 (the latest year for which finalised data are available at the time of writing).

It provides background information to support the Government and Mayor for London's targets to reduce road casualties by the year 2010. The targets were reviewed in 2006 and now include a 50% reduction in the number of pedal cyclists killed or seriously injured (KSI) by 2010 from a baseline of the average number of casualties for 1994-98.

The data provided is for personal injury road traffic collisions that occurred on the public highway and were reported to the police in accordance with the *Stats 19* national reporting system. The pedal cycle category applies to cycles being ridden in the carriageway or on a cycleway or pavement and also applies to toy cars and tricycles in the carriageway. The category also includes electrically assisted pedal cycles.

Key facts

- 13% of all collisions in Greater London in 2007 resulted in injury to pedal cyclists, who in turn represented 10% of all casualties.
- P/C KSI casualties accounted for 12% of all KSI casualties in 2007.
- P/C KSIs have fallen by 19% between the 1994-98 average and 2007; all P/C casualties have fallen by one third (33%).
- Over three quarters (78%) of P/C casualties in 2007 were male.
- Just over half (51%) of P/C casualties of known age injured in 2007 were aged between 25 and 39 years.
- In 2007, 66% of P/C casualties were injured in inner London boroughs.
- Between 2000 and 2007, cycling on London's main roads (TLRN) has increased by 91%..

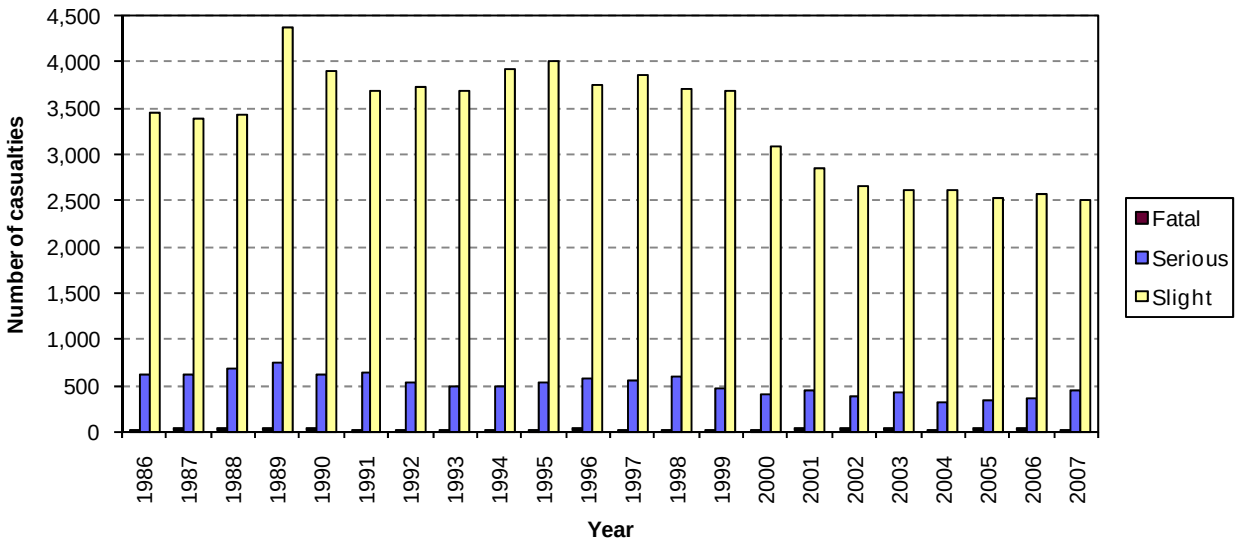
Annual Trends 1986 to 2007

Table 1 and Figure 1 show the number of P/C casualties by year and severity in Greater London from 1986 to 2007.

Table 1: Pedal cyclist casualties by year and severity in Greater London 1986 to 2007

		Severity of casualty				
Year of accident	**Collisions**	**Fatal**	**Serious**	**Slight**	**Total**	**Severity ratio**
1986	4,062	18	624	3,443	4,085	16%
1987	4,014	25	623	3,388	4,036	16%
1988	4,102	24	679	3,425	4,128	17%
1989	5,142	33	752	4,379	5,164	15%
1990	4,512	19	625	3,895	4,539	14%
1991	4,316	17	633	3,693	4,343	15%
1992	4,252	18	546	3,722	4,286	13%
1993	4,177	18	493	3,695	4,206	12%
1994	4,397	15	488	3,924	4,427	11%
1995	4,517	15	527	3,997	4,539	12%
1996	4,325	20	577	3,753	4,350	14%
1997	4,401	12	566	3,852	4,430	13%
1998	4,290	12	602	3,702	4,316	14%
1994 to 1998 average	**4,386.0**	**14.8**	**552.0**	**3,845.6**	**4,412.4**	**13%**
1999	4,147	10	482	3,682	4,174	12%
2000	3,482	14	408	3,084	3,506	12%
2001	3,300	21	444	2,857	3,322	14%
2002	3,050	20	394	2,648	3,062	14%
2003	3,039	19	421	2,616	3,056	14%
2004	2,933	8	332	2,620	2,960	11%
2005	2,881	21	351	2,523	2,895	13%
2006	2,941	19	373	2,566	2,958	13%
2007	2,953	15	446	2,509	2,970	16%
% change 1986 to 2007	**-27%**	**-17%**	**-29%**	**-27%**	**-27%**	**-**
% change 1994-98 average to 2007	**-33%**	**1%**	**-19%**	**-35%**	**-33%**	**-**
% change 2006 to 2007	**0%**	**-21%**	**20%**	**-2%**	**0%**	**-**

Fig. 1: Pedal cyclist casualties by year and severity in Greater London 1986 to 2007



P/C casualties have fluctuated throughout this period, although the overall trend has been downward since a peak of 5,164 in 1989 to a low of 2,895 in 2005 (a reduction of 44%). Numbers have begun increasing over the last two years with 2,958 in 2006 and 2,970 in 2007. Overall, P/C casualties fell by 27% between 1986 and 2007.

There were reductions in all severities of P/C casualties between 1986 and 2007, with fatalities falling by 17%, serious injuries by 29% and slight injuries by 27%. Overall, collisions resulting in injury to one or more pedal cyclist fell by 27% during this period.

Comparing 2007 with the 1994-98 average, all P/C casualties fell by one third (33%), serious injuries fell by 19% and slight by 35%. P/C fatalities rose by 1% although numbers remained relatively low (15 in 2007, compared with the 1994-98 average of 14.8). P/C KSI casualties fell by 19% overall, although increases were noted in the last three years.

Comparing 2007 with 2006, P/C fatalities fell by 21 % (from 19 to 15) and slight casualties fell by 2%. Serious injuries however increased by 20% resulting in an overall KSI casualty increase of 18%.

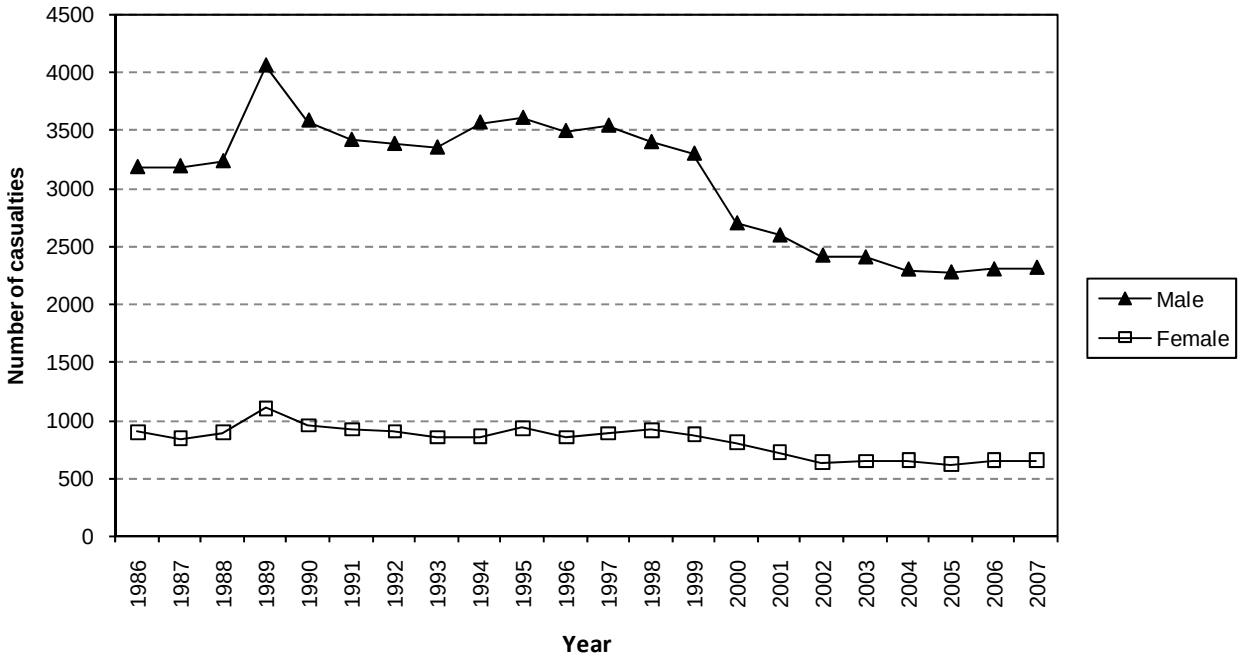
The severity ratio (the percentage of fatal and serious injuries to all injuries) has fluctuated throughout the period 1986 to 2007, peaking at 17% in 1988 and falling to 11% in 1994 and 2004. Following this low it rose to 13% in 2005 and 2006 and again to 16% in 2007.

Gender

Figure 2 shows P/C casualties by gender in Greater London from 1986 to 2007. The greatest proportion of P/C casualties was male, with an average of 79% per year over this period. The male-female split has remained quite constant during this time.

Both male and female P/C casualties have shown a downward trend since 1989, although year on year fluctuations are more marked in the male casualties. Both sexes showed similar decreases between 1986 and 2007 (male by 27% and female by 28%). Males however have shown the biggest reduction between the 1994-98 average and 2007, falling by 34%, compared to females who fell by 27%. P/C casualties of both genders showed very minor increases of less than 1% in 2007 over 2006.

Fig. 2: Pedal cyclist casualties by gender in Greater London 1986 to 2006



Age

Figure 3 and Table 2 show P/C casualties by year and age group 1986 to 2007. While the proportion of casualties over 60 years has remained constant throughout this period, the proportions in the under 16, 16-24 and 25-59 year groups have shown marked changes.

The percentage of casualties in the 60 years and over age band has remained quite constant over this period, averaging 3% per year. The number of casualties in this group has been decreasing however, falling by 52% between 1986 and 2007, by 41% between 1994-98 average and 2007 and by 8% between 2006 and 2007.

On average, 17% of P/C casualties were under the age of 16; however, numbers in this group have been decreasing steadily. In 1986 under 16s accounted for 21% of all P/C casualties compared to just 7% in 2007, with casualty numbers falling by 76% during this period. Casualties in this group decreased by 73% between the 1994-98 average and 2007, and by 4% between 2006 and 2007.

A similar pattern is apparent in the 16-24 year group, with the percentage of casualties in this age range falling from 30% (1,211 casualties) in 1986 to 13% (389 casualties) in 2007. Casualties in this group decreased by 68% between 1986 and 2007 and by 54% between the 1994-98 average and 2007. There was an increase of 3% (10 casualties) between 2006 and 2007.

The situation in the 25-59 year age group shows the opposite trend, with the percentage of casualties in this group rising from 38% in 1986 to 70% in 2007. Numbers in this group increased by 34% (1,562 to 2,089) between 1986 and 2007, but have shown a decrease of 12% between the 1994-98 average and 2007. There was a 2% increase (31 casualties) between 2006 and 2007.

Fig. 3: Pedal cyclist casualties by year and age (banded) in Greater London 1986 to 2007

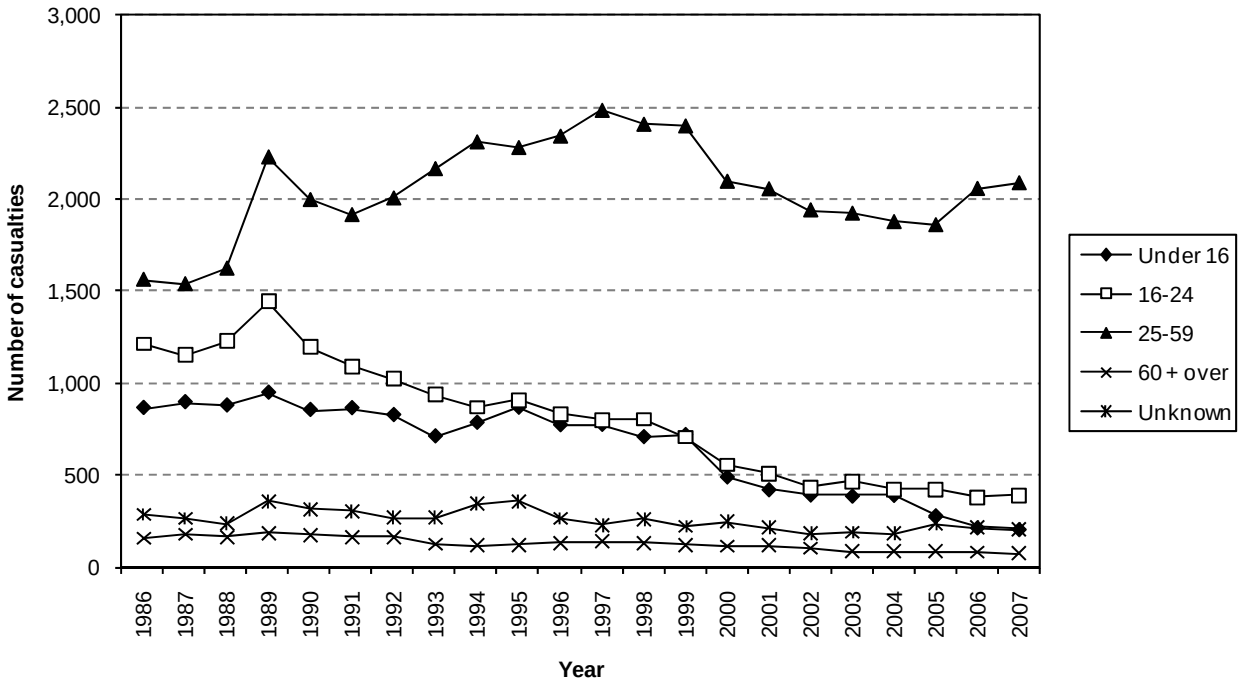


Table 2: Pedal cyclist casualties by year and age (banded) in Greater London 1986 to 2007

	Casualty age banded						% aged	% aged	% aged	% aged
	Under 16	16-24	25-59	60 + over	Unknown	Total	< 16	16-24	25-59	60+
1986	866	1,211	1,562	157	289	4,085	21%	30%	38%	4%
1987	897	1,154	1,538	179	268	4,036	22%	29%	38%	4%
1988	879	1,225	1,623	163	238	4,128	21%	30%	39%	4%
1989	948	1,442	2,230	185	359	5,164	18%	28%	43%	4%
1990	855	1,196	1,997	175	316	4,539	19%	26%	44%	4%
1991	865	1,090	1,915	166	307	4,343	20%	25%	44%	4%
1992	828	1,021	2,006	161	270	4,286	19%	24%	47%	4%
1993	713	934	2,166	124	269	4,206	17%	22%	51%	3%
1994	786	867	2,312	118	344	4,427	18%	20%	52%	3%
1995	867	908	2,281	123	360	4,539	19%	20%	50%	3%
1996	773	833	2,343	133	268	4,350	18%	19%	54%	3%
1997	775	800	2,484	140	231	4,430	17%	18%	56%	3%
1998	709	802	2,408	134	263	4,316	16%	19%	56%	3%
1994 to 1998 average	**782**	**842**	**2,365.6**	**129.6**	**293.2**	**4,412.4**	**18%**	**19%**	**54%**	**3%**
1999	720	708	2,399	122	225	4,174	17%	17%	57%	3%
2000	492	556	2,097	114	247	3,506	14%	16%	60%	3%
2001	423	510	2,056	118	215	3,322	13%	15%	62%	4%
2002	395	433	1,941	105	188	3,062	13%	14%	63%	3%
2003	389	463	1,923	90	191	3,056	13%	15%	63%	3%
2004	393	421	1,877	85	184	2,960	13%	14%	63%	3%
2005	283	426	1,860	88	238	2,895	10%	15%	64%	3%
2006	218	379	2,058	83	220	2,958	7%	13%	70%	3%
2007	209	389	2,089	76	207	2,970	7%	13%	70%	3%
% change 1986 to 2007	**-76%**	**-68%**	**34%**	**-52%**	**-28%**	**-27%**	**-**	**-**	**-**	**-**
% change 1994-98 average to 2007	**-73%**	**-54%**	**-12%**	**-41%**	**-29%**	**-33%**	**-**	**-**	**-**	**-**
% change 2006 to 2007	**-4%**	**3%**	**2%**	**-8%**	**-6%**	**0%**	**-**	**-**	**-**	**-**

Pedal cycle usage in Greater London

In order to gain a clearer picture of the extent of the P/C collision problem in London, it is important to look at casualty numbers in relation to pedal cycle usage. Regular surveys of radial traffic movements in London are carried out which give useful indicators of the change in travel over time. These surveys measure 24-hour radial traffic flows crossing the Greater London boundary and inner and central London cordons.

Map 1: Location of London traffic cordons

Fig. 4: Radial 24 hour pedal cycle movements in London, both directions combined, 1980-2007

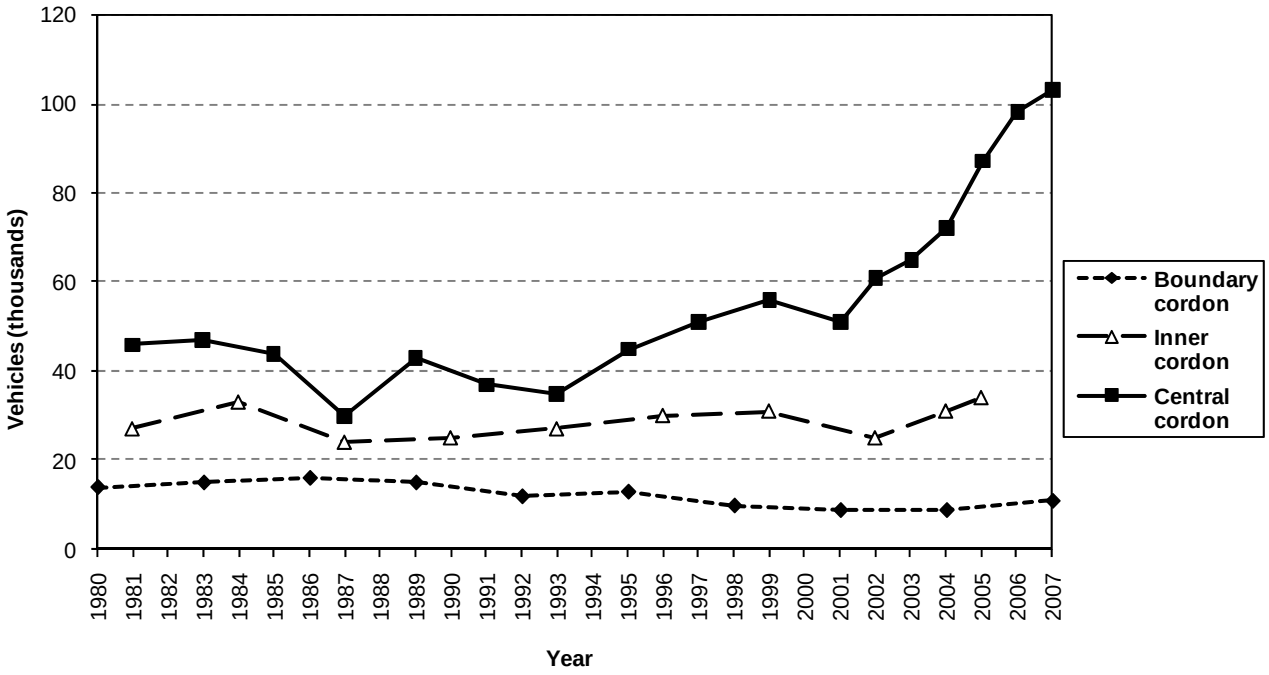


Figure 4 shows the radial cordons, combined direction, 24-hour pedal cycle movements between 1980 and 2007. Numbers across the boundary cordon have fallen by 21% between 1980 and 2007. Flows across this cordon reached a peak of 16,000 in 1986 and then fell quite steadily to a low of 9,000 in 2001, rising again to 11,000 in 2007.

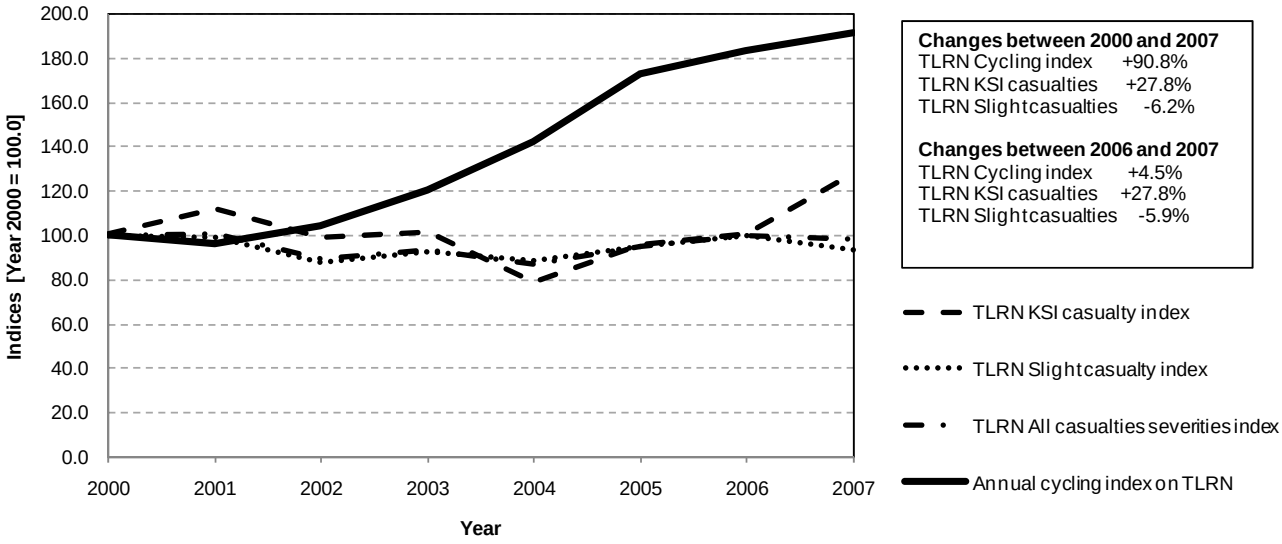
Pedal cycle movements have increased across the inner cordon by 26% between 1981 and 2005. Following a steady rise from a low of 24,000 in 1987 to a peak of 31,000 in 1999, numbers fell to 25,000 in 2002 before rising again to a peak of 34,000 in 2005.

The most dramatic change in pedal cycle movements has been across the central London cordon, with an increase of 124% between 1981 and 2007. This rise in usage has been particularly marked over the last seven years with numbers increasing by 102% from 51,000 in 2001 to 103,000 in 2007.

Figure 5 shows indices of cycling flow and P/C casualties on the Transport for London Road Network (TLRN) 2000 to 2007. The index for each of the data variables has been set to 100 for whatever their values were in the year 2000 so that the year on year change can be measured on a comparable basis.

This chart clearly illustrates the rapid growth in cycle flow on the TLRN, particularly during the last five years, while P/C casualties overall have remained quite constant. The rise in P/C KSIs on the TLRN (63% increase) apparent over the last three years is much larger than the increase in cycle flow on TLRN over the same period (35% increase).

Fig. 5: Indices of TLRN cycling flow and TLRN cyclist casualties in Greater London (2000 to 2007) [Year 2000 = 100.0]



Pedal cyclist casualties in Greater London in 2007

The following section provides a more detailed analysis of P/C casualties in Greater London in 2007. This is the most recent year for which finalised data are available.

How many and who?

During 2007 there were 23,210 personal injury road traffic collisions reported to the police in the Greater London area. Of these collisions, 2,953 (13%) involved injury to pedal cyclists and resulted in 2,970 P/C casualties. Pedal cyclists represented 10% of the total casualties in Greater London in 2007. By comparison, in Great Britain as a whole, P/C casualties accounted for 6.5% of all casualties in 2007. This difference may reflect the importance of cycling as a mode of travel in London.

Severity and gender

Table 3 shows P/C casualties by severity and gender in Greater London in 2007. The majority (84.5%) of P/C casualties were slightly injured, with 15% suffering serious injury and less than 1% being killed. P/C casualties killed or seriously injured accounted for 12% of all road user KSIs in Greater London in 2007.

Over three quarters (78%) of P/C casualties were male compared with 22% female. This ratio was consistent for serious and slight casualties; however the proportion of female fatalities was slightly higher at 27% compared to 73% for males.

Table 3: Pedal cyclist casualties by gender, severity & severity ratio in Greater London 2007

	Severity of casualty				
	Fatal	**Serious**	**Slight**	**Total**	**Severity ratio**
Male	11	353	1,953	2,317	16%
Female	4	93	556	653	15%
Total	**15**	**446**	**2,509**	**2,970**	**16%**

Age and gender

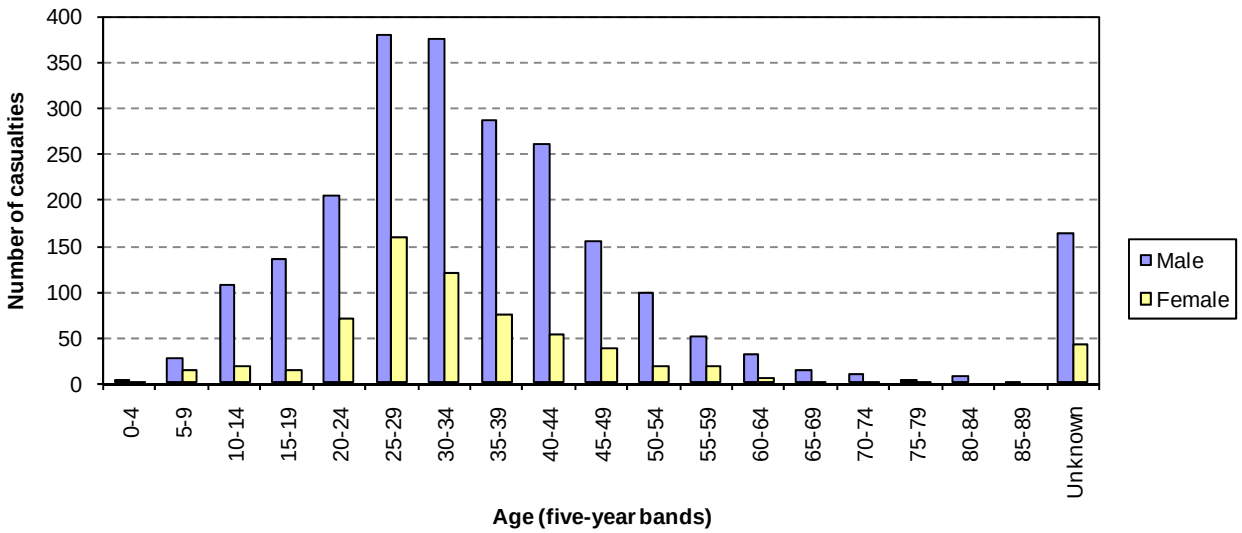
Table 4 and Figure 6 show the number of P/C casualties by five-year age groups, gender and severity in Greater London in 2007. 72% of P/C casualties of known age were aged between 20 and 44 years, with just over half (51%) between the ages of 25 and 39 years. The highest numbers for both male and female P/C casualties occurred in the 25-29 and 30-34 year age bands, which together accounted for more than one third (37%) of P/C casualties of known age. There were more male than female casualties in all age bands.

The highest severity ratios were found in the older age groups (43% in the 80-84, 27% in the 70-74 and 25% in the 65-69 year groups). This is likely due in part to the low numbers of casualties in these groups (each less than 1% of known age), but also highlights the vulnerability of older cyclists to serious injury.

Table 4: Pedal cyclist casualties by age-band, gender, severity and severity ratio in Greater London 2007

	Casualty gender		Severity of casualty				% of	Severity
Casualty age	**Male**	**Female**	**Fatal**	**Serious**	**Slight**	**Total**	**known age**	**ratio**
0-4	4	1	0	0	5	5	0.2%	0%
5-9	28	13	0	4	37	41	1.5%	10%
10-14	108	19	0	15	112	127	4.6%	12%
15-19	136	15	0	16	135	151	5.5%	11%
20-24	204	70	1	34	239	274	9.9%	13%
25-29	380	160	3	85	452	540	19.5%	16%
30-34	376	120	1	70	425	496	18.0%	14%
35-39	288	74	1	62	299	362	13.1%	17%
40-44	262	52	4	57	253	314	11.4%	19%
45-49	154	38	1	33	158	192	6.9%	18%
50-54	98	19	1	16	100	117	4.2%	15%
55-59	50	18	1	13	54	68	2.5%	21%
60-64	31	6	0	3	34	37	1.3%	8%
65-69	14	2	0	4	12	16	0.6%	25%
70-74	9	2	0	3	8	11	0.4%	27%
75-79	3	1	0	0	4	4	0.1%	0%
80-84	7	0	1	2	4	7	0.3%	43%
85-89	1	0	0	0	1	1	0.0%	0%
Total (age known)	**2,153**	**610**	**14**	**417**	**2,332**	**2,763**	**100%**	**16%**
Total (age unknown)	164	43	1	29	177	207	-	14%
Total	**2,317**	**653**	**15**	**446**	**2,509**	**2,970**	**-**	**16%**

Fig. 6: Pedal cyclist casualties by age-band and gender in Greater London 2007



Where?

Table 5 shows the number of P/C casualties by borough, severity and percentage change in KSI casualties in 2007 over the 1994-98 average.

Approximately two thirds (66%) of P/C casualties were injured on roads in inner London. This included 60% of fatalities, 68% of serious injuries and 66% of slight. The severity ratio was however similar for both inner (16%) and outer (15%) London.

Regarding progress towards the 2010 P/C casualty reduction target, KSI casualties in outer London showed the greatest reduction between 2007 and the 1994-98 average, falling by 46% compared with a fall of just 7% in inner London. This may be a reflection of the larger growth in cycling in central and inner London.

Table 5: Pedal cyclist casualties by borough, severity and KSI percentage change in 2007 over 1994-98 average in Greater London

	Severity of casualty				Severity	1994-98 KSI	2007 KSI	% change 1994-98
Borough	**Fatal**	**Serious**	**Slight**	**Total**	**ratio**	**average**	**total**	**average to 2007**
City of London	1	16	75	92	18%	7.4	17	130%
Westminster	0	47	231	278	17%	38.4	47	22%
Camden	1	21	132	154	14%	31.0	22	-29%
Islington	1	22	137	160	14%	26.0	23	-12%
Hackney	2	21	125	148	16%	18.8	23	22%
Tower Hamlets	0	21	103	124	17%	14.4	21	46%
Greenwich	1	10	55	66	17%	9.8	11	12%
Lewisham	0	14	93	107	13%	14.2	14	-1%
Southwark	1	21	191	213	10%	24.6	22	-11%
Lambeth	1	37	140	178	21%	36.4	38	4%
Wandsworth	0	38	129	167	23%	32.8	38	16%
Hammersmith & Fulham	1	14	127	142	11%	20.2	15	-26%
Kensington & Chelsea	0	22	124	146	15%	18.0	22	22%
Total inner London	**9**	**304**	**1,662**	**1,975**	**16%**	**292.0**	**313**	**7%**
% of Greater London	**60%**	**68%**	**66%**	**66%**	**-**	**-**	**-**	**-**
Waltham Forest	1	5	60	66	9%	12.0	6	-50%
Redbridge	0	4	22	26	15%	12.4	4	-68%
Havering	0	4	27	31	13%	11.4	4	-65%
Barking & Dagenham	0	3	18	21	14%	7.6	3	-61%
Newham	1	6	57	64	11%	10.8	7	-35%
Bexley	0	6	27	33	18%	9.0	6	-33%
Bromley	0	13	32	45	29%	18.0	13	-28%
Croydon	0	9	49	58	16%	13.0	9	-31%
Sutton	0	5	34	39	13%	10.0	5	-50%
Merton	0	9	50	59	15%	11.6	9	-22%
Kingston	0	8	47	55	15%	14.0	8	-43%
Richmond	0	15	66	81	19%	21.4	15	-30%
Hounslow	1	11	64	76	16%	19.2	12	-38%
Hillingdon	0	10	33	43	23%	19.6	10	-49%
Ealing	2	9	67	78	14%	20.6	11	-47%
Brent	0	6	48	54	11%	17.6	6	-66%
Harrow	0	1	18	19	5%	7.4	1	-86%
Barnet	0	11	56	67	16%	14.4	11	-24%
Haringey	0	5	42	47	11%	11.8	5	-58%
Enfield	1	2	30	33	9%	13.0	3	-77%
Total outer London	**6**	**142**	**847**	**995**	**15%**	**274.8**	**148**	**-46%**
% of Greater London	**40%**	**32%**	**34%**	**34%**	**-**	**-**	**-**	**-**
Total Greater London	**15**	**446**	**2,509**	**2,970**	**16%**	**566.8**	**461**	**-19%**

Table 6 shows P/C casualties by borough, gender and age group in Greater London in 2007. Nearly three quarters (73%) of female and just under two thirds (65%) of male P/C casualties were injured on roads in inner London.

With regard to age, 59% of 16-24 year olds and 72% of 25-59 year olds were injured in inner London boroughs, while more casualties in the youngest (under 16 years) and oldest (60 years and over) age groups were injured in outer London boroughs (65% and 59% respectively).

Table 6: Pedal cyclist casualties by borough, gender and age group in Greater London 2007

	Gender		Casualty age (banded)					
Borough	**Male**	**Female**	**Under 16**	**16-24**	**25-59**	**60 + over**	**Unknown**	**Total**
City of London	68	24	0	7	78	1	6	92
Westminster	204	74	7	30	211	5	25	278
Camden	108	46	2	18	117	3	14	154
Islington	115	45	5	14	129	2	10	160
Hackney	111	37	7	12	115	1	13	148
Tower Hamlets	99	25	3	16	91	2	12	124
Greenwich	60	6	11	12	38	1	4	66
Lewisham	93	14	5	15	81	2	4	107
Southwark	170	43	9	31	165	2	6	213
Lambeth	129	49	9	14	140	3	12	178
Wandsworth	122	45	9	18	128	2	10	167
Hammersmith & Fulham	105	37	5	21	104	3	9	142
Kensington & Chelsea	114	32	2	22	110	4	8	146
Total inner London	**1,498**	**477**	**74**	**230**	**1,507**	**31**	**133**	**1,975**
% of Greater London	**65%**	**73%**	**35%**	**59%**	**72%**	**41%**	**64%**	**66%**
Waltham Forest	54	12	8	12	35	2	9	66
Redbridge	22	4	7	4	13	0	2	26
Havering	30	1	8	4	15	4	0	31
Barking & Dagenham	19	2	6	4	7	0	4	21
Newham	54	10	8	12	41	1	2	64
Bexley	30	3	10	4	16	0	3	33
Bromley	35	10	6	7	30	2	0	45
Croydon	48	10	10	11	28	6	3	58
Sutton	31	8	8	5	21	2	3	39
Merton	47	12	8	11	33	3	4	59
Kingston	46	9	5	9	34	2	5	55
Richmond	56	25	9	9	57	5	1	81
Hounslow	63	13	9	12	47	2	6	76
Hillingdon	34	9	8	6	19	2	8	43
Ealing	58	20	4	16	46	7	5	78
Brent	45	9	3	11	34	0	6	54
Harrow	16	3	1	3	11	1	3	19
Barnet	55	12	7	11	43	2	4	67
Haringey	44	3	2	7	33	2	3	47
Enfield	32	1	8	1	19	2	3	33
Total outer London	**819**	**176**	**135**	**159**	**582**	**45**	**74**	**995**
% Greater London	**35%**	**27%**	**65%**	**41%**	**28%**	**59%**	**36%**	**34%**
Total Greater London	**2,317**	**653**	**209**	**389**	**2,089**	**76**	**207**	**2,970**

Table 7 shows P/C casualties by highway authority and severity. More than two thirds (71%) of P/C injuries occurred on borough roads. These accounted for 67% of fatalities, 68% of serious injuries and 72% of slight. 29% of pedal cyclists were injured on the TLRN. The severity ratio was higher on the TLRN (17%) than on borough roads (15%).

Table 7: Pedal cyclist casualties by highway authority, severity and severity ratio in Greater London 2007

	Severity of casualty					
Highway authority	**Fatal**	**Serious**	**Slight**	**Total**	**% of total**	**Severity ratio**
TLRN	5	142	712	859	29%	17%
Borough Road	10	304	1,797	2,111	71%	15%
Total	**15**	**446**	**2,509**	**2,970**	**100%**	**16%**

Table 8 shows P/C casualties by road class and severity. 63% were injured on 'A' class roads, 28% on 'C' class or unclassified roads and 10% on 'B' class roads. The highest severity ratio (16%) was recorded for casualties injured on 'A' class roads. The vast majority (98.7%) of P/C casualties occurred on roads subject to a 30mph speed limit.

Table 8: Pedal cyclist casualties by road class, severity and severity ratio in Greater London 2007

	Severity of casualty					
Road class	**Fatal**	**Serious**	**Slight**	**Total**	**% of total**	**Severity ratio**
A	12	290	1,564	1,866	63%	16%
B	1	42	244	287	10%	15%
C	1	44	311	356	12%	13%
Unclassified	1	70	390	461	16%	15%
Total	**15**	**446**	**2,509**	**2,970**	**100%**	**16%**

Table 9 shows P/C casualties by junction detail and junction control. 79% of P/C casualties were injured at or within 20m of a junction, which is higher than the 70% for all casualties in Greater London in 2007, highlighting the vulnerability of pedal cyclists at junctions. Of those cyclists injured at a junction, 59% occurred at a 'T' or staggered junction and a further 19% at a crossroads, 9% were injured at a roundabout. In terms of junction control, just over three quarters (76%) of P/C casualties injured at a junction were where the junction control was 'Give Way' or uncontrolled and 23% were at a junction controlled by automatic traffic signals.

Table 9: Pedal cyclist casualties by junction control and junction detail in Greater London 2007

		Junction control				
Junction detail	**Not applicable**	**Authorised Person**	**Automatic Traffic Signals**	**Stop Sign**	**Give Way or Uncontrolled**	**Total**
Roundabout	0	0	22	0	148	170
Mini-Roundabout	0	0	1	1	50	52
T & Staggered Junction	0	6	191	7	1,185	1,389
Slip Road	0	0	1	0	14	15
Crossroads	0	0	257	2	196	455
Multi Junction	0	0	49	1	29	79
Private Drive	0	0	1	1	95	97
Other Junction	0	3	16	1	81	101
Total at junctions	**0**	**9**	**538**	**13**	**1,798**	**2,358**
No junction within 20m	612	0	0	0	0	612
Total	**612**	**9**	**538**	**13**	**1,798**	**2,970**

Road surface and weather

The majority of P/C casualties (86.7%) were injured in collisions on a dry road surface, with 13% on a wet surface and just 0.3% on frost or ice. The severity ratio on a dry road was slightly higher at 16% than on a wet road (14%).

88% of P/C casualties were injured in fine weather conditions, while 8% were injured in the rain.

The low numbers of P/C casualties injured in the wet may reflect the fact that some cyclists are less inclined to ride in adverse weather conditions.

What is the cost?

Based on the average cost of P/C casualties at June 2006 prices, as detailed in Department for Transport Highways Economics Note No. 1, the cost to the community of P/C casualties in 2007 is estimated at around £139 million. P/C casualties averaged 8 per day in Greater London in 2007, with a subsequent cost to the community of approximately £374,000 per day.

When?

Figures 7, 8 and 9 show the number of P/C casualties by time of day, day of week and month in Greater London in 2007. They also indicate the proportions occurring in daylight or during the hours of darkness.

Time of day

Over three quarters (79%) of P/C casualties were injured in the 12 hour period between 7am and 7pm. There were two clear peaks during this period which coincided with the traditional morning and evening peak traffic periods. 29% of all P/C casualties were injured between 7am and 10am, with the single highest hour between 8am and 9am (13% - 392 casualties). A further 32% of cyclists were injured between 4pm and 8pm.

The low period for P/C casualties was between midnight and 6am which accounted for just 2% of the total. 79% of P/C casualties were injured during daylight hours.

Day of week

84% of P/C casualties were injured on a weekday, an average of 17% per weekday, with 9% on a Saturday and 7% on a Sunday. The highest proportion of cyclists injured in the dark (24%) occurred on a Sunday.

Month

Just under one third (31%) of P/C casualties were injured in the period May to July, with numbers peaking at 315 (11%) in June. There was just one casualty less in both May and September. Numbers fell to their lowest in the winter months, with 148 (5%) in December and 167 and 169 (6%) in January and February respectively. 40% or more of casualties injured in January and December were injured in the dark.

This trend may well relate to the increase in cycling during the summer months with the relatively warmer weather and longer hours of daylight.

Fig. 7: Pedal cyclist casualties by time of day and light conditions in Greater London 2007

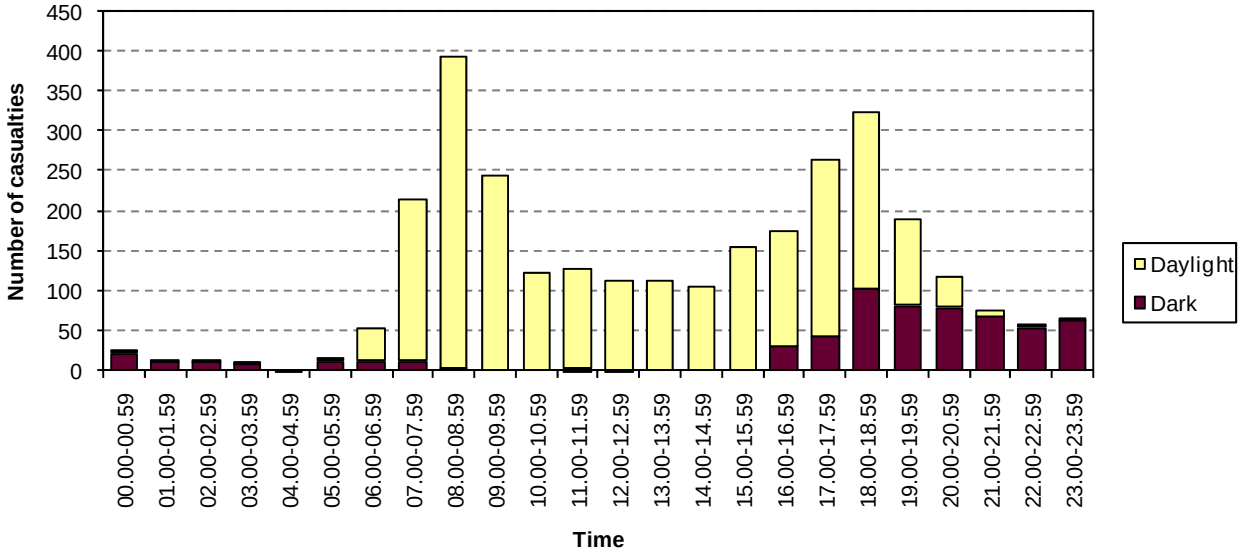


Fig. 8: Pedal cyclist casualties by day and light conditions in Greater London 2007

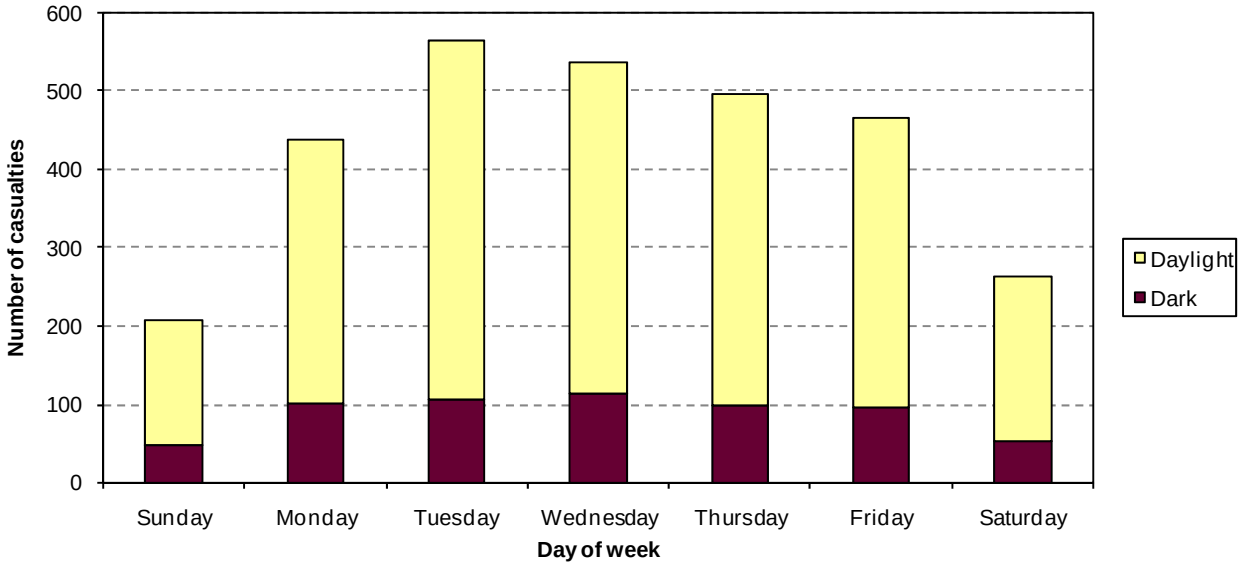
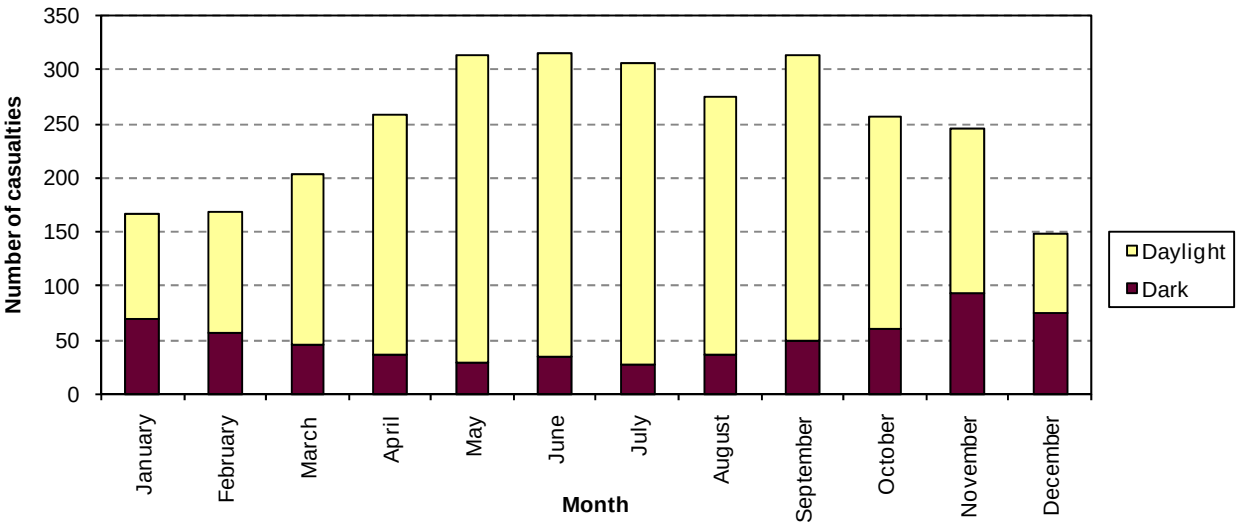


Fig. 9: Pedal cyclist casualties by month and light conditions in Greater London 2007



Manoeuvre

Table 10 shows P/C casualties by manoeuvre and severity. Three quarters (75%) of cyclists were injured while 'going ahead'. The next most common manoeuvre (10%) involved the pedal cyclist performing an overtaking manoeuvre. 5% of P/C casualties were turning right and 3% turning left.

Table 10: Pedal cyclist casualties by vehicle manoeuvre, severity and severity ratio in Greater London 2007

	Severity of casualty					
Vehicle manoeuvre	**Fatal**	**Serious**	**Slight**	**Total**	**% of total**	**Severity ratio**
Reversing	0	0	2	2	0%	0%
Parked	0	0	6	6	0%	0%
Going Ahead But Held Up	0	6	47	53	2%	11%
Slowing or Stopping	0	8	37	45	2%	18%
Moving Off	3	6	58	67	2%	13%
Turning Left	0	18	56	74	2%	24%
Waiting to Turn Left	0	0	3	3	0%	0%
Turning Right	0	16	125	141	5%	11%
Waiting to Turn Right	0	0	18	18	1%	0%
Changing Lane To Left	0	0	10	10	0%	0%
Changing Lane To Right	0	2	23	25	1%	8%
Overtaking Moving Veh Offside	0	6	37	43	1%	14%
Overtaking Stat Veh Offside	0	20	85	105	4%	19%
Overtaking Nearside	0	18	121	139	5%	13%
Going Ahead Left Bend	0	8	27	35	1%	23%
Going Ahead Right Bend	1	11	59	71	2%	17%
Going Ahead Other	11	327	1,795	2,133	72%	16%
Total	**15**	**446**	**2,509**	**2,970**	**100%**	**16%**

Common conflicts in pedal cycle KSI collisions

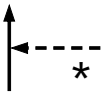
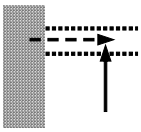
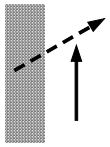
Tables 11 and 12 show a listing of the main types of conflicts that occurred in collisions which resulted in fatal or serious injury to a pedal cyclist in 2007. The tables include a simple sketch representation of the conflict between the pedal cyclist (shown as a broken line) and the other vehicle involved (shown as a solid line). The information included in the tables was compiled from a manual analysis of the details of each P/C KSI collision.

Table 11 – Fatal summary

The most common conflict in fatal P/C collisions (5 out of 15 or 33%) involved the other vehicle turning left across the path of the P/C. 20% (3 out of 15) involved the other vehicle running into the rear of the pedal cyclist, and a further 13% (2 out of 15) involved a head on collision between the cyclist and other vehicle.

In 53% of fatal collisions the pedal cyclist was in collision with a goods vehicle – 13% with a medium goods vehicle (MGV) 3.5 to 7.5t and 40% with a heavy goods vehicle (HGV) over 7.5t. Cars were involved in 40% of collisions in which a pedal cyclist was killed.

Table 11: Ranked analysis of the conflicts between vehicles in collisions resulting in a pedal cyclist being fatally injured in London, 2007

Conflict	Description	Conflict between pedal cycle and:											Total	%
		Pedal cycle	Powered 2 wheeler	Car	Taxi	Goods under 3.5t	Goods 3.5 to 7.5t	Goods over 7.5t	Bus or coach	Other vehicle	No other vehicle	*Multiple vehicle **		
	Other vehicle turns left across the path of P/C	0	0	0	0	0	1	4	0	0	0	*0*	**5**	33%
	Other vehicle runs into rear of P/C	0	0	2	0	0	1	0	0	0	0	*0*	**3**	20%
	Head on collision between P/C and other vehicle	1	0	1	0	0	0	0	0	0	0	*0*	**2**	13%
	P/C fails to give way or disobeys junction control & collides with other vehicle	0	0	1	0	0	0	0	0	0	0	*0*	**1**	7%
	Other vehicle changes lane to left across the path of P/C	0	0	0	0	0	0	1	0	0	0	*0*	**1**	7%
	P/C and other vehicle travelling alongside each other.	0	0	0	0	0	0	1	0	0	0	*0*	**1**	7%
	P/C rides across road at pedestrian crossing into path of other vehicle.	0	0	1	0	0	0	0	0	0	0	*0*	**1**	7%
	P/C rides off footway into path of other vehicle	0	0	1	0	0	0	0	0	0	0	*0*	**1**	7%
	TOTAL	**1**	**0**	**6**	**0**	**0**	**2**	**6**	**0**	**0**	**0**	***0***	**15**	100%

* collisions involving three or more vehicles - the main vehicle in such collisions is recorded in the relevant column

Table 12 – Serious summary

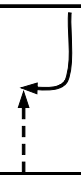
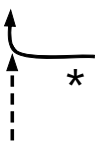
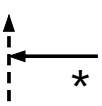
The most common conflict in collisions which resulted in serious injury to a pedal cyclist involved the pedal cyclist and other vehicle travelling alongside each other in close proximity. This accounted for 12% (54 out of 445) of the serious collisions.

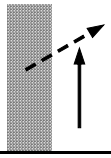
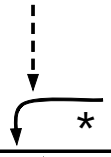
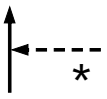
The second most common conflict (53 out of 445) involved the other vehicle turning right across the path of the pedal cyclist. A further 9% (38 collisions) involved the other vehicle turning left across the path of the cyclist. 35 serious collisions (8%) involved the door of the other vehicle being opened into the path of the pedal cyclist and the cyclist either hitting it or being injured when swerving to avoid it.

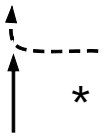
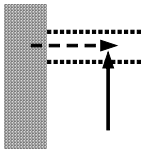
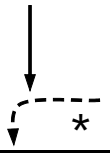
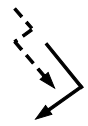
A total of 78 serious collisions (18%) involved the other vehicle disobeying the junction control and either turning right into the path of the P/C (7%), going straight across the path of the P/C (6%) or turning left into the path of the P/C (4%).

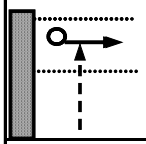
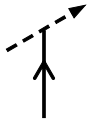
In nearly two thirds (66%) of serious P/C collisions the main conflict was between the pedal cyclist and a car. Goods vehicles were involved in 15% of collisions resulting in serious injury to a pedal cyclist.

Table 12: Ranked analysis of the most commonly occurring conflicts between vehicles in collisions resulting in a pedal cyclist being seriously injured in London, 2007

Conflict	Description	Conflict between pedal cycle and:											Total	%
		Pedal cycle	Powered 2 wheeler	Car	Taxi	Goods under 3.5t	Goods 3.5 to 7.5t	Goods over 7.5t	Bus or coach	Other vehicle	No other vehicle	*Multiple vehicle* *		
	P/C and other vehicle travelling alongside each other.	2	2	31	2	2	1	5	6	3	0	*0*	**54**	12%
	Other vehicle turns right across path of P/C	1	1	40	3	4	0	1	1	2	0	*2*	**53**	12%
	Other vehicle turns left across the path of P/C	1	0	22	1	4	3	3	3	1	0	*0*	**38**	9%
	P/C hits open door / swerves to avoid open door of other vehicle.	0	0	27	3	2	0	1	1	1	0	*0*	**35**	8%
	Other vehicle disobeys junction control & turns right into path of P/C	0	0	28	0	3	0	2	0	0	0	*0*	**33**	7%
	Other vehicle fails to give way or disobeys junction control & collides with P/C	0	1	21	0	3	0	0	1	2	0	*0*	**28**	6%

Conflict	Description	Conflict between pedal cycle and:											Total	%
		Pedal cycle	Powered 2 wheeler	Car	Taxi	Goods under 3.5t	Goods 3.5 to 7.5t	Goods over 7.5t	Bus or coach	Other vehicle	No other vehicle	*Multiple vehicle **		
	Other vehicle runs into rear of P/C	0	3	15	1	4	0	0	0	1	0	*0*	**24**	5%
	P/C rides off footway into path of other vehicle.	0	0	15	0	1	0	1	0	0	0	*2*	**17**	4%
	Other vehicle disobeys junction control & turns left into path of P/C	0	0	13	0	3	0	1	0	0	0	*0*	**17**	4%
	P/C runs into rear of other vehicle.	0	0	7	1	3	0	0	4	1	0	*1*	**16**	4%
	No other vehicle hit by P/C (although may be involved). Various manouvres or loss of control.	0	0	3	0	0	0	0	0	0	11	*0*	**14**	3%
	Head on collision between P/C and other vehicle	0	1	11	1	1	0	0	0	0	0	*2*	**14**	3%
	P/C fails to give way or disobeys junction control & collides with other vehicle	0	0	12	0	1	0	0	0	0	0	*2*	**13**	3%
	Other vehicle changes lane to left across the path of P/C	0	0	7	0	3	0	1	1	0	0	*1*	**12**	3%
	P/C and other vehicle collide when both turning left	0	0	2	0	1	1	3	0	2	0	*0*	**9**	2%
	P/C hits parked vehicle	0	0	9	0	0	0	0	0	0	0	*1*	**9**	2%

Conflict	Description	Conflict between pedal cycle and:											Total	%
		Pedal cycle	Powered 2 wheeler	Car	Taxi	Goods under 3.5t	Goods 3.5 to 7.5t	Goods over 7.5t	Bus or coach	Other vehicle	No other vehicle	*Multiple vehicle **		
	Not known how collision occurred	0	1	5	0	1	0	0	0	1	1	*3*	**9**	2%
	Other vehicle starts off or pulls out into path of P/C	0	0	5	1	0	0	0	1	0	0	*0*	**7**	2%
	P/C disobeys junction control & turns right into path of other vehicle	0	0	3	1	1	0	0	0	0	0	*0*	**5**	1%
	P/C turns right across path of other vehicle	0	1	2	1	0	0	0	0	0	0	*0*	**4**	1%
	P/C rides across road at pedestrian crossing into path of other vehicle.	0	0	2	0	0	0	0	1	1	0	*0*	**4**	1%
	P/C loses control & hits other vehicle - various manoeuvres	0	0	1	0	1	0	0	2	0	0	*0*	**4**	1%
	P/C disobeys junction control & turns left into path of other vehicle	0	0	2	0	1	0	0	1	0	0	*0*	**4**	1%
	Other vehicle changes lane to right across the path of P/C	0	1	1	0	2	0	0	0	0	0	*0*	**4**	1%
	P/C strikes ped crossing road not at or within 50m of a formal ped crossing	0	0	0	0	0	0	0	0	0	4	*0*	**4**	1%
	P/C performs overtaking manoeuvre into path of right turning vehicle	0	0	3	0	1	0	0	0	0	0	*0*	**4**	1%

Conflict	Description	Conflict between pedal cycle and:											Total	%
		Pedal cycle	Powered 2 wheeler	Car	Taxi	Goods under 3.5t	Goods 3.5 to 7.5t	Goods over 7.5t	Bus or coach	Other vehicle	No other vehicle	*Multiple vehicle **		
	Other vehicle U-turns into path of P/C	0	0	2	1	0	0	0	0	0	0	*0*	**3**	1%
	P/C changes lane to right across path of other vehicle.	0	1	1	0	0	0	0	0	0	0	*0*	**2**	0%
	P/C in collision with pedestrian on crossing	0	0	1	0	0	0	0	0	0	1	*0*	**2**	0%
	Other vehicle reverses into P/C	0	0	1	0	0	0	0	0	0	0	*0*	**1**	0%
	P/C changes lane to left across the path of other vehicle	0	0	1	0	0	0	0	0	0	0	*0*	**1**	0%
	P/C and other vehicle collide when both turning right	0	0	1	0	0	0	0	0	0	0	*0*	**1**	0%
	TOTAL	**4**	**12**	**294**	**16**	**42**	**5**	**18**	**22**	**15**	**17**	***14***	**445**	**100%**

* collisions involving three or more vehicles - the main vehicle in such collisions is recorded in the relevant column

All vehicles involved in collisions in which a pedal cyclist was injured

Table 13 shows all the vehicles involved in collisions resulting in injury to one or more pedal cyclist in Greater London in 2007. It must be emphasised that the pedal cyclist may not have been in direct conflict with each of the vehicle types listed.

Cars were by far the most common vehicle involved in collisions where a pedal cyclist was injured, representing 74% of other vehicles involved overall. This was the case for all severities and for male and female, with the exception of female fatalities where heavy goods vehicles (greater than 7.5t) were the most common vehicle involved (100% of other vehicles). Goods vehicles represented 21% of other vehicles involved in collisions where female P/C casualties were seriously injured (11% light goods vehicles, 2% medium goods vehicles and 8% heavy goods vehicles).

After cars, the second most common vehicle involved in male P/C fatalities were medium goods vehicles and heavy goods vehicles, with each representing 20% of other vehicles involved.

Table 13: All vehicles involved in collisions where one or more pedal cyclist was injured - Greater London 2007

	Number of each type of vehicle involved in collisions resulting in male pedal cyclist casualties			Number of each type of vehicle involved in collisions resulting in female pedal cyclist casualties		
Vehicles involved	**Fatal**	**Serious**	**Slight**	**Fatal**	**Serious**	**Slight**
Pedal Cycle	12	358	1,963	4	95	561
M/C <= 50cc	0	3	6	0	2	3
M/C 50-125cc	0	2	21	0	0	6
M/C 125-500cc	0	2	6	0	0	3
M/C > 500cc	0	3	18	0	1	3
Private Hire - Licensed	0	5	6	0	0	3
Private Hire - Unlicensed	0	0	1	0	0	0
Taxi	0	13	88	0	4	24
Car	6	245	1,483	0	55	400
Minibus (8-16 Passengers)	0	2	4	0	1	2
Bus/Coach	0	18	86	0	5	33
Other Motor Vehicle	0	5	20	0	2	7
Other Non Motor Vehicle	0	0	1	0	0	0
Agricultural Vehicle	0	1	1	0	0	1
Light Goods (=< 3.5t MGW)	0	34	172	0	10	44
Medium Goods (3.5-7.5t MGW)	2	3	17	0	2	11
Heavy Goods(=> 7.5t MGW)	2	11	12	4	7	13
Total	**22**	**705**	**3,905**	**8**	**184**	**1,114**

Background documents

1. Road Casualties in Great Britain: Main Results 2007
   http:// www.dft.gov.uk/pgr/statistics/datatablespublications/accidents/casualtiesmr/rcgbmainresults2007
2. Highways Economics Note No. 1 2005 – Department for Transport (Jan 2007)
   http://www.dft.gov.uk/stellent/groups/dft_rdsafety/documents/page/dft_rdsafety_614125.pdf
3. Radial Traffic Movements in London 1971-2007 TfL (unpublished)
4. P/C flow data from TfL annual cycle counts

Copies of reports and research published by LRSU can be found at – www.tfl.gov.uk/roadsafetyreports

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