ASSOCIATION OF GREATER MANCHESTER AUTHORITIES
GREATER MANCHESTER TRANSPORTATION UNIT

TRANSPORT STATISTICS
GREATER MANCHESTER 2009
ROAD TRAFFIC SECTION

SUMMARY

This section presents results of GMTU's traffic and transport monitoring during 2009.

These include:

- countywide traffic growth
- daily, weekly and seasonal flow profiles on motorways and A roads
- traffic growth by district
- comparison of local and national traffic growth

GMTU Report 1580
E Ellis
L Rowland
A Castle
September 2010

ACKNOWLEDGEMENTS

We acknowledge the assistance of The Highways Agency in providing automatic traffic counter data on motorways.

Version No.	Purpose/ Changes	Author	Date Changed	Date Issued	To Whom
1	First Release	A Castle et al	23/08/2010	/09/2010	www.gmtu.gov.uk

All enquiries to:

Greater Manchester Transportation Unit
3rd Floor
Heron House
47 Lloyd Street
Manchester
M2 5LE

Telephone: 0161 455 2061
Internal Tel; 814 2061

Fax: 0161 455 2071

e-mail: e.ellis@manchester.gov.uk

website: http://www.gmtu.gov.uk/

The Greater Manchester Transportation Unit provides a strategic and local transportation service to and on behalf of the ten district councils of Greater Manchester. The unit is funded by the ten districts and attached to Manchester City Council as lead authority.

C O N T E N T S

Page

LIST OF TABLES

Page

EXECUTIVE SUMMARY

LIST OF TABLES

Page

LIST OF FIGURES

EXECUTIVE SUMMARY

ROAD TRAFFIC SECTION

EXECUTIVE SUMMARY

Road Traffic

Traffic Flow Changes on Major Roads in Greater Manchester 2008-2009

Table 1 gives a summary of percentage changes in traffic flows in Greater Manchester between 2008 and 2009.

- There was a 1% increase in traffic flows on motorways, 1% decrease on A roads and a 1% decrease on B roads between 2008 and 2009. Traffic flows remained unchanged on minor roads.
- Car flows decreased on B roads, increased on motorways and minor roads and remained unchanged on A roads. Goods traffic decreased across all road classes.
- Pedal cycle flows increased by 9% on A roads, 13% on B roads and 2% on minor roads. Note, though, that as the flows are small, measured changes are less statistically reliable than for other vehicle types.

Table 1 Percentage Changes in 12-Hour Traffic Flows on a Sample of Motorways, A Roads and B Roads between 2008 and 2009

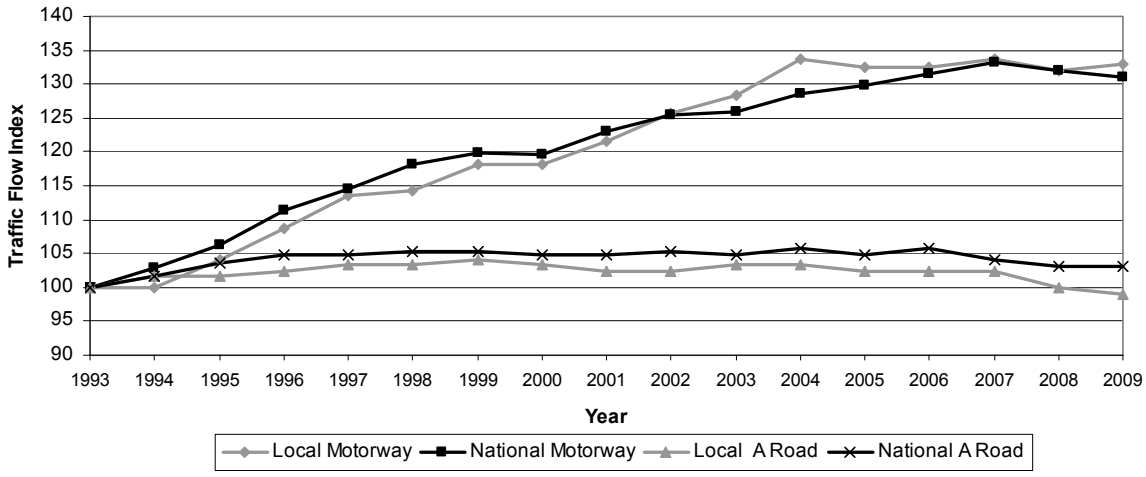
Road Class	Cars	LGV	OGV	Buses and Coaches	Motor Cycles	Pedal Cycles	All Motors
Motorways	3	-5	-8	2	9	-	1
A Roads	0	-1	-13	-3	4	9	-1
B Roads	-1	-3	-10	-10	-3	13	-1
Minor Roads*	1	-2	-16	-5	1	2	0

* Flows are small and observed changes are consequently less statistically reliable than on other roads

Longer Term National and Local Growth in Traffic Flows

- Indices of national and local growth in traffic flows on motorways and A roads since 1993 are illustrated in Figure 1.
- Traffic flows on Greater Manchester motorways showed an increase of 33% between 1993 and 2009 compared with a national increase of 31%. Nationally, motorways showed a slight fall between 2008 and 2009, while local flows increased by 1%.
- Traffic flow levels on A roads in Greater Manchester have shown less increase than they have nationally since 1993 although both have been fairly static in the last 10 years. Flows on local A roads fell slightly between 2008 and 2009 while nationally there was no change.

Figure 1 National and Local Traffic Growth 1993 - 2009



Index: 1993=100

Composition of Traffic

- In 2009 cars made up about 80% of all road traffic. The proportion of cars ranged from 76% on motorways to 84% on minor roads
- Motorways had a higher proportion of goods traffic than other roads. This relative difference increased with size of goods vehicle. Articulated heavy goods vehicles or those with more than 4 rigid axles accounted for 5.6% of traffic on motorways, 1.3% on A r oads, 0.5% on B roads and 0.4% on minor roads.

Vehicle Kilometres on Motorways, A Roads and B Roads in Greater Manchester in 2009

- Motorways made up 12% of the major road network (motorways, A and B roads) and carried 45% of traffic including 61% of goods vehicle traffic. The average annual flow per kilometre on motorways was 34.4 million vehicles.
- A roads made up 61% of the major road network and carried 44% of traffic. The average annual flow per kilometre on A roads was 6.7 million vehicles.
- B roads made up 27% of the major road network and carried 11% of traffic. The average annual flow per kilometre on B roads was 3.9 million vehicles.
- Vehicle kilometres on major roads have increased by 19% since 1993 but this overall increase reflects increases of 50% on motorways compared with 5% on A roads. It also masks an overall of 1% fall between 2008 and 2009.

Traffic Speeds

- Average morning peak hour (0800-0900) speeds are 41 mph on GM motorways and 19 mph on built-up A and B roads.
- Average inter–peak speeds (1000-1600) are 54 mph on motorways and 23 mph on built-up A and B roads.

2 ROAD TRAFFIC

MOTORWAY TRAFFIC

Traffic Growth on Motorways 2008-2009

2.1 Table 2.1 shows the percentage changes by time period, in average flows on 16 motorway links between 2008 and 2009. The links included in the analysis are:

- M6 junctions 25 to 26 and 26 to 27
- M56 junctions 2 to 3 and 6 to 7
- M60 junctions 2 to 3, 5 to 6, 16 to 17, 17 to 18, 18 to 19, 22 to 23 and A6140 to jn 24
- M61 junctions 3 to 4, 4 to 5 and 5 to 6
- M62 junction 18 to 19 and 20 to 21.

Table 2.1 Percentage Changes in Average Flows on 16 Motorway Links Between 2008 and 2009

Time Period	Cars	LGV	OGV	All Goods	Buses and Coaches	Motor Cycles	All Motors
07:00-10:00	1	-4	-8	-6	0	4	0
10:00-16:00	7	-4	-7	-6	3	11	3
16:00-19:00	0	-9	-13	-10	0	12	-2
07:00-19:00	3	-5	-8	-7	2	9	1
08:00-09:00	-2	-7	-11	-9	-11	11	-3
17:00-18:00	0	-8	-13	-10	-5	15	-2

Changes in Motorway Weekday Traffic Flow Profiles 2008-2009

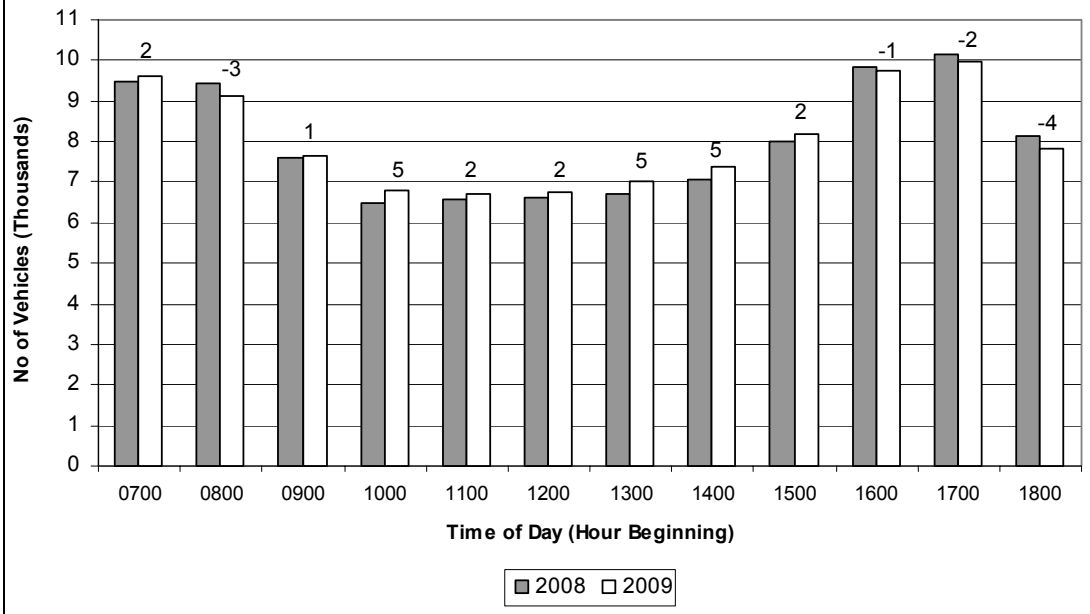
2.2 Table 2.2 shows average weekday traffic flows by hour on 16 motorway links in 2008 and 2009 together with the percentage changes in flows. The all motors and all goods profiles are illustrated in Figures 2.1 and 2.2.

Table 2.2 Average Hourly Traffic Flows on 16 Motorway Links in 2008 and 2009

	2008				2009							
Start Hour	Cars	Light Goods Vehicles	Other Goods Vehicles	All Motors	Cars		Light Goods Vehicles		Other Goods Vehicles		All Motors	
07:00	7062	1398	961	9473	7334	(4)	1361	(-3)	889	(-7)	9634	(2)
08:00	7278	1146	973	9444	7159	(-2)	1068	(-7)	863	(-11)	9137	(-3)
09:00	5492	1005	1062	7605	5621	(2)	975	(-3)	1008	(-5)	7658	(1)
10:00	4424	927	1096	6490	4805	(9)	926	(0)	1003	(-8)	6786	(5)
11:00	4443	967	1136	6584	4701	(6)	970	(0)	1017	(-10)	6727	(2)
12:00	4516	986	1098	6636	4816	(7)	946	(-4)	963	(-12)	6763	(2)
13:00	4544	1048	1073	6706	5023	(11)	949	(-9)	1017	(-5)	7032	(5)
14:00	4876	1079	1051	7048	5251	(8)	1046	(-3)	1034	(-2)	7377	(5)
15:00	5729	1265	967	8014	6049	(6)	1162	(-8)	915	(-5)	8178	(2)
16:00	7572	1409	819	9859	7664	(1)	1291	(-8)	731	(-11)	9748	(-1)
17:00	8374	1079	621	10136	8350	(0)	996	(-8)	540	(-13)	9953	(-2)
18:00	6880	705	508	8142	6733	(-2)	634	(-10)	421	(-17)	7842	(-4)
Total	71188	13013	11364	96138	73505	(3)	12323	(-5)	10400	(-8)	96835	(1)

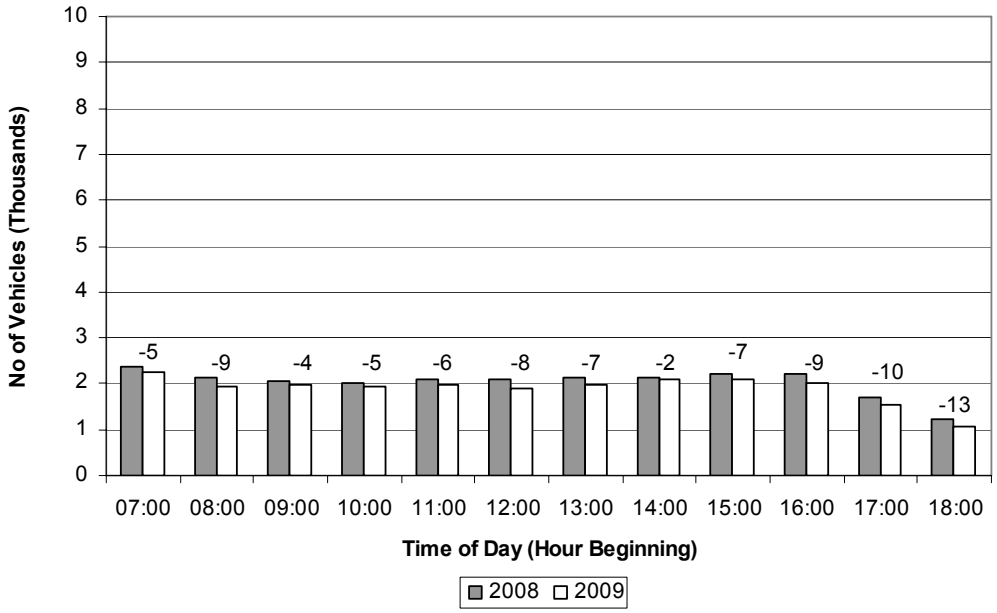
Note: The figures in brackets are the percentage changes between 2008 and 2009.
Figures may not sum due to rounding.

Figure 2.1 Average Hourly Traffic Flows on Motorways in 2008 & 2009 - All Motors



No. on top of column is % change since 2008

Figure 2.2 Average Hourly Traffic Flows on Motorways in 2008 and 2009 - All Goods



No. on top of column is % change since 2008

Peak Hour to Peak Period Ratios on Motorways

2.3 Table 2.3 shows peak hour and peak period traffic flow ratios for motorway links surveyed between 1990 and 2009.

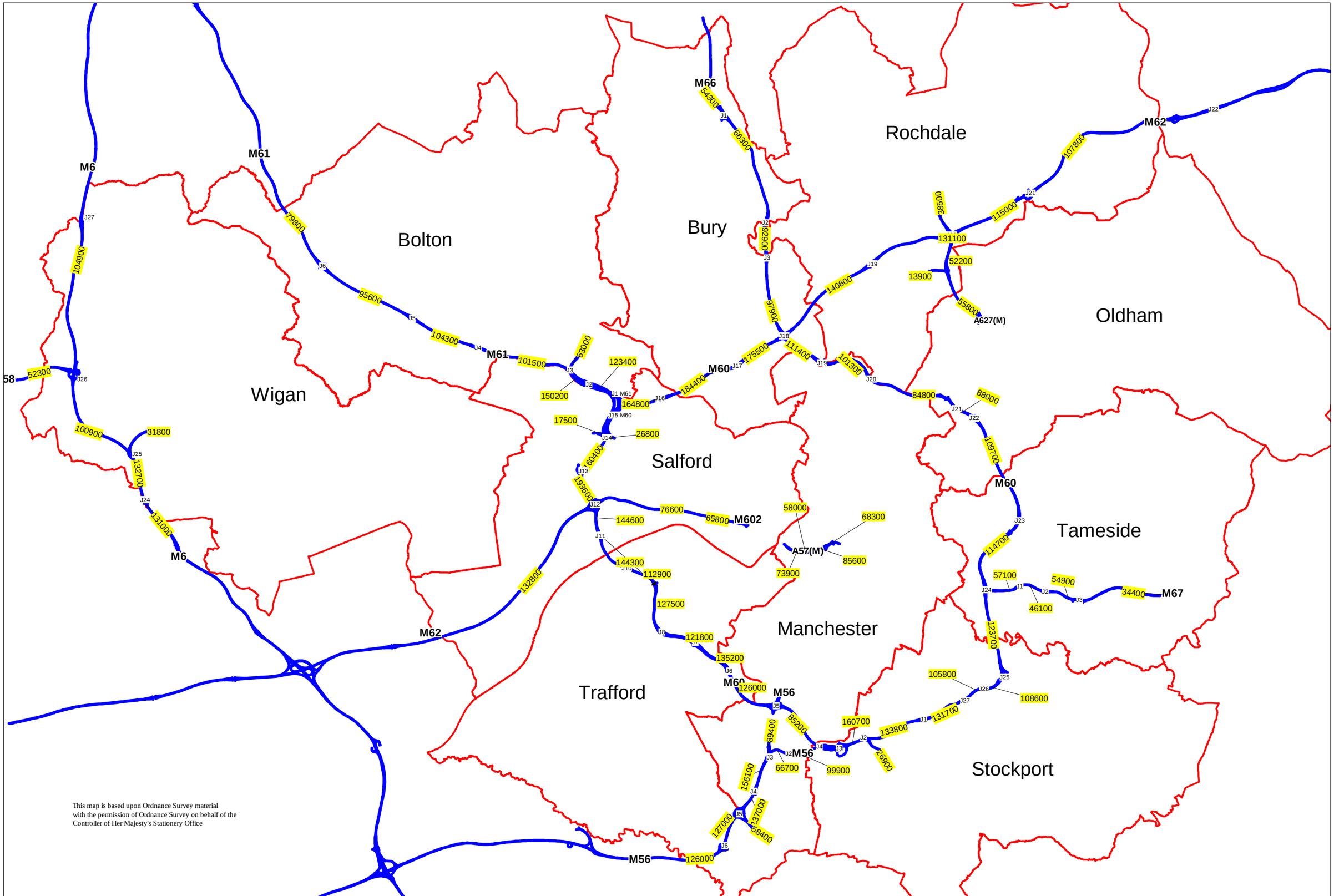
Table 2.3 Ratio of Peak Hour to Peak Period Traffic for Motorways 1990-2009

Year	Number of Sites	08:00 – 09:00 / 07:00 – 10:00	17:00 – 18:00 / 16:00 – 19:00
1990	21	0.38	0.38
1991	15	0.38	0.37
1992	19	0.37	0.37
1993	22	0.37	0.37
1994	37	0.36	0.37
1995	39	0.36	0.37
1996	40	0.36	0.37
1997	29	0.36	0.37
1998	25	0.36	0.36
1999	42	0.36	0.36
2000	48	0.35	0.36
2001	51	0.36	0.37
2002	43	0.36	0.37
2003	37	0.35	0.36
2004	36	0.35	0.35
2005	21	0.36	0.36
2006	22	0.35	0.36
2007	27	0.35	0.36
2008	24	0.36	0.36
2009	35	0.35	0.36

Note: For ease of comparison with other road classes, the morning peak hour quoted is 08:00-09:00. The true peak flow on most motorways occurs 07:00-08:00 (see Figure 2.4).

Traffic Flows on Motorways in 2009

2.4 Figure 2.3 shows the average 24-hour weekday flow of motor vehicles on each link of Greater Manchester's motorway network. The flows are either automatic traffic counts or estimates based on 12-hour manual classified counts undertaken as part of GMTU's countywide monitoring programme. The manual counts have been factored using the 12 to 24-hour factors given in Appendix 1.



This map is based upon Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationery Office

GMTU
3rd Floor Heron House
47 Lloyd Street
Manchester M2 5LE

24 Hour Annual Average Weekday Flows on Motorways in 2009

Drawn By : Elwyn Ellis		Date : 30/07/2010	Report : 1580 Figure : 2.3

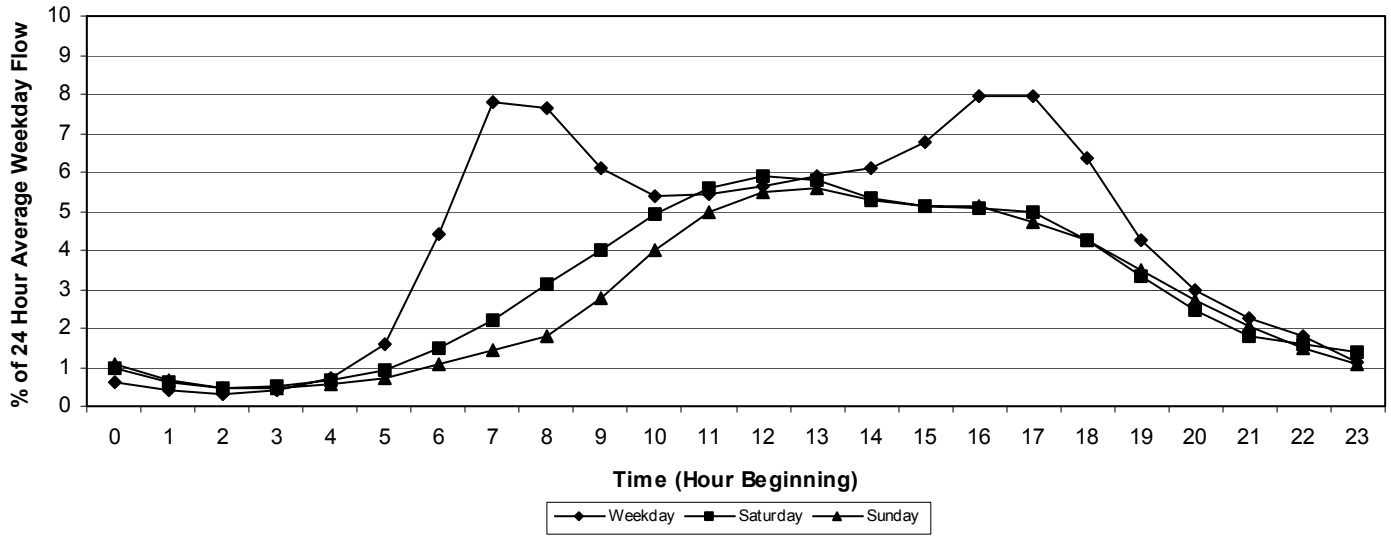
24-Hour Traffic Flow Profiles on Motorways in 2009

2.5 Data from 29 two-way continuous automatic traffic counts on motorways have been analysed to provide the daily profiles in Table 2.4. Flows affected by bank and school holidays, roadworks and unusual events were excluded from the analysis. Figure 2.4 shows the profiles expressed as a percentage of the 24-hour average weekday flow.

Table 2.4 Average Hourly Traffic Flow Indices on Motorways in 2009

Hour Beginning	% of 24 Hour Flow Weekday	% of 24 Hour Flow Saturday	% of 24 Hour Flow Sunday
00:00	0.6	1.3	1.6
01:00	0.4	0.9	1.0
02:00	0.3	0.6	0.7
03:00	0.4	0.7	0.7
04:00	0.7	0.9	0.8
05:00	1.6	1.3	1.1
06:00	4.4	2.1	1.6
07:00	7.8	3.1	2.1
08:00	7.6	4.3	2.7
09:00	6.1	5.5	4.2
10:00	5.4	6.8	6.0
11:00	5.4	7.7	7.5
12:00	5.7	8.1	8.3
13:00	5.9	8.0	8.4
14:00	6.1	7.4	8.0
15:00	6.8	7.1	7.7
16:00	8.0	7.0	7.7
17:00	8.0	6.9	7.1
18:00	6.4	5.9	6.4
19:00	4.3	4.6	5.3
20:00	3.0	3.4	4.1
21:00	2.2	2.5	3.1
22:00	1.8	2.2	2.3
23:00	1.1	1.9	1.6

Figure 2.4 Average Hourly Traffic Flow Indices on Motorways in 2009



Hourly profile based on 29 two-way sites.

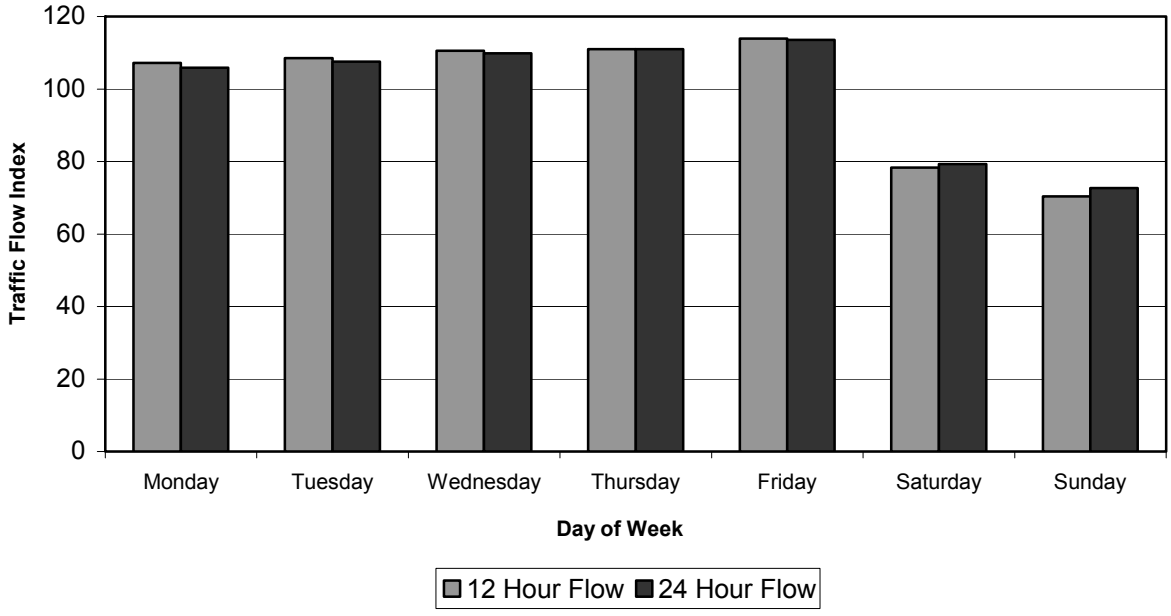
Daily Traffic Flow Indices on Motorways in 2009

2.6 Table 2.5 shows indices of motorway traffic throughout the week. These are also shown graphically in Figure 2.5 and are derived from two-way automatic traffic counts undertaken continuously on 29 links.

Table 2.5 Average Daily Traffic Flow Indices on Motorways in 2009

Day of Week	12 Hour Flow Average Weekday Index = 100	12 Hour Flow Average Day Index = 100	24 Hour Flow Average Weekday Index = 100	24 Hour Flow Average Day Index = 100
Monday	97	107	97	106
Tuesday	98	109	98	108
Wednesday	100	111	100	110
Thursday	101	111	101	111
Friday	103	114	104	114
Saturday	71	78	72	79
Sunday	64	70	66	73

Figure 2.5 Average Daily Traffic Flow Indices on Motorways in 2009



Average of 29 two-way sites. Average day = 100

Daily Variation on Motorways by Time Period

2.7 Table 2.6 gives a more detailed breakdown of the variation in traffic flows in individual time periods for each day of the week.

Table 2.6 Average Traffic Flow Indices on Motorways in 2009 by Time Period

Time of Day	Time Period	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Within the normal working day	07:00-10:00	100	100	102	101	97	44	29
	10:00-16:00	96	96	98	100	110	93	86
	16:00-19:00	97	100	102	102	99	65	64
	07:00-19:00	97	98	100	101	103	71	64
Peak periods	07:00-08:00	100	100	101	101	98	29	19
	08:00-09:00	99	100	102	101	97	42	25
	16:00-17:00	97	99	101	101	101	64	65
	17:00-18:00	99	100	102	101	97	64	61
Outside the normal working day	00:00-07:00 and 19:00-24:00	94	97	100	103	105	77	76
All Day	00:00-24:00	97	98	100	101	104	72	66

Note: Indices for each time period are based on an average weekday flow index of 100 for the time period.

Monthly Traffic Flow Indices on Motorways in 2009

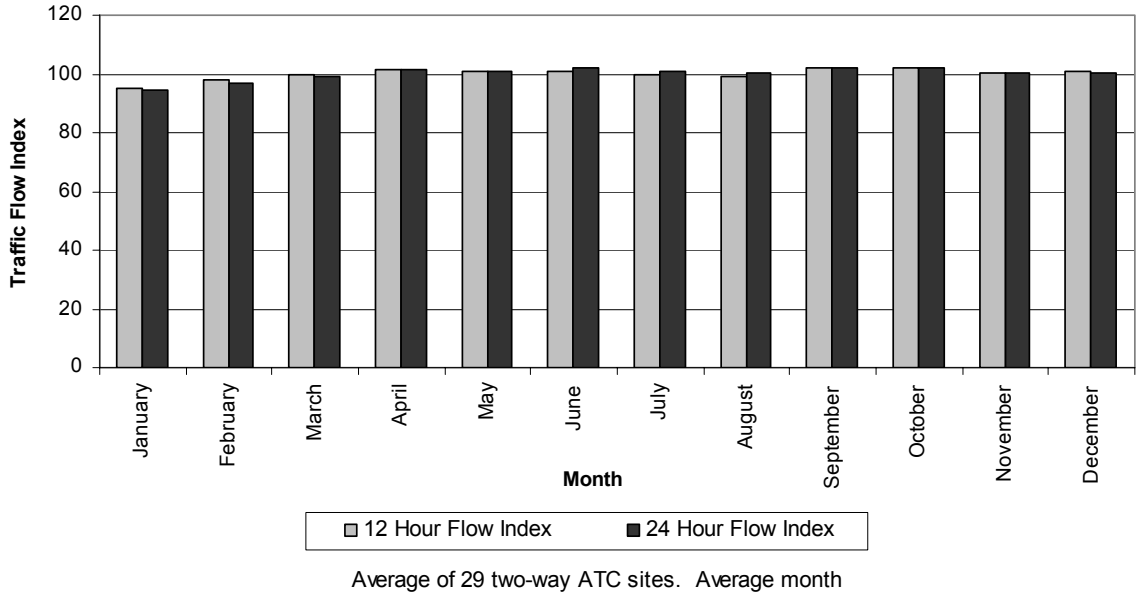
2.8 Monthly indices of 12 and 24-hour flows based on average monthly weekday flows at 29 two-way motorway sites are given in Table 2.7 and illustrated in Figure 2.6.

Table 2.7 Average Monthly Traffic Flow Indices on Motorways in 2009

Month	12 Hour Flow Average Month Index = 100	24 Hour Flow Average Month Index = 100
January	95	94
February	98	97
March	100	99
April	101	101
May	101	101
June	101	102
July	100	101
August	99	100
September	102	102
October	102	102
November	100	100
December	101	101

Note: Based on ATC data from 29 two-way motorway sites in 2009.

Figure 2.6 Average Monthly Traffic Flow Indices on Motorways in 2009



A ROAD TRAFFIC

Traffic Growth on A Roads 2008-2009

2.9 Table 2.8 shows the percentage changes, by time period, in average flows on 97 A road links throughout the county between 2008 and 2009. The figures are based on manual classified counts.

Table 2.8 Percentage Changes in Average Flows on 97 A Road Links Between 2008 and 2009

Time Period	Cars	LGV	OGV	Buses and Coaches	Motor Cycles	Pedal Cycles	All Motors
07:00-10:00	0	-2	-12	-1	3	3	0
10:00-16:00	0	0	-12	-3	2	6	-1
16:00-19:00	0	-2	-18	-1	6	17	0
07:00-19:00	0	-1	-13	-3	4	9	-1
08:00-09:00	0	-2	-14	3	7	8	0
17:00-18:00	1	-2	-20	-4	5	21	0

Changes in A Road Weekday Traffic Flow Profiles 2008-2009

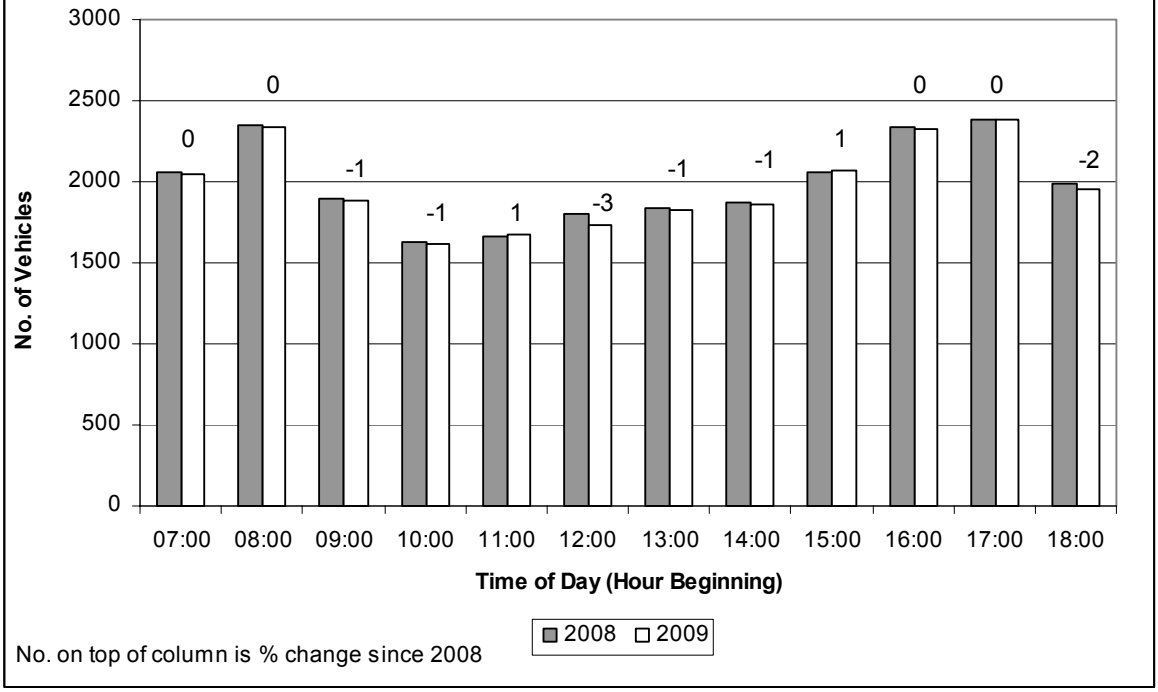
2.10 Table 2.9 shows average weekday traffic flows by hour on 97 A road links in 2008 and 2009 together with the percentage change in flow since 2008. The all motors and all goods profiles are illustrated in Figures 2.7 and 2.8.

Table 2.9 Average Hourly Traffic Flows on 97 A Road Links in 2008 and 2009

	2008				2009							
Start Hour	Cars	Light Goods Vehicles	Other Goods Vehicles	All Motors	Cars		Light Goods Vehicles		Other Goods Vehicles		All Motors	
07:00	1657	264	91	2057	1670	(1)	258	(-2)	80	(-12)	2050	(0)
08:00	1955	248	100	2347	1961	(0)	243	(-2)	86	(-14)	2336	(0)
09:00	1495	252	112	1897	1501	(0)	247	(-2)	101	(-10)	1886	(-1)
10:00	1236	248	115	1633	1235	(0)	249	(0)	101	(-12)	1617	(-1)
11:00	1265	250	113	1659	1296	(2)	247	(-1)	105	(-7)	1679	(1)
12:00	1420	239	106	1798	1386	(-2)	231	(-3)	90	(-15)	1738	(-3)
13:00	1468	235	107	1843	1456	(-1)	239	(2)	93	(-13)	1820	(-1)
14:00	1478	252	107	1874	1474	(0)	251	(0)	95	(-11)	1859	(-1)
15:00	1657	261	96	2053	1690	(2)	263	(1)	81	(-16)	2074	(1)
16:00	1952	266	71	2334	1958	(0)	265	(0)	60	(-15)	2329	(0)
17:00	2093	195	46	2378	2113	(1)	192	(-2)	37	(-20)	2387	(0)
18:00	1787	135	31	1988	1771	(-1)	127	(-6)	24	(-23)	1958	(-2)
Total	19461	2846	1095	23863	19511	(0)	2811	(-1)	954	(-13)	23735	(-1)

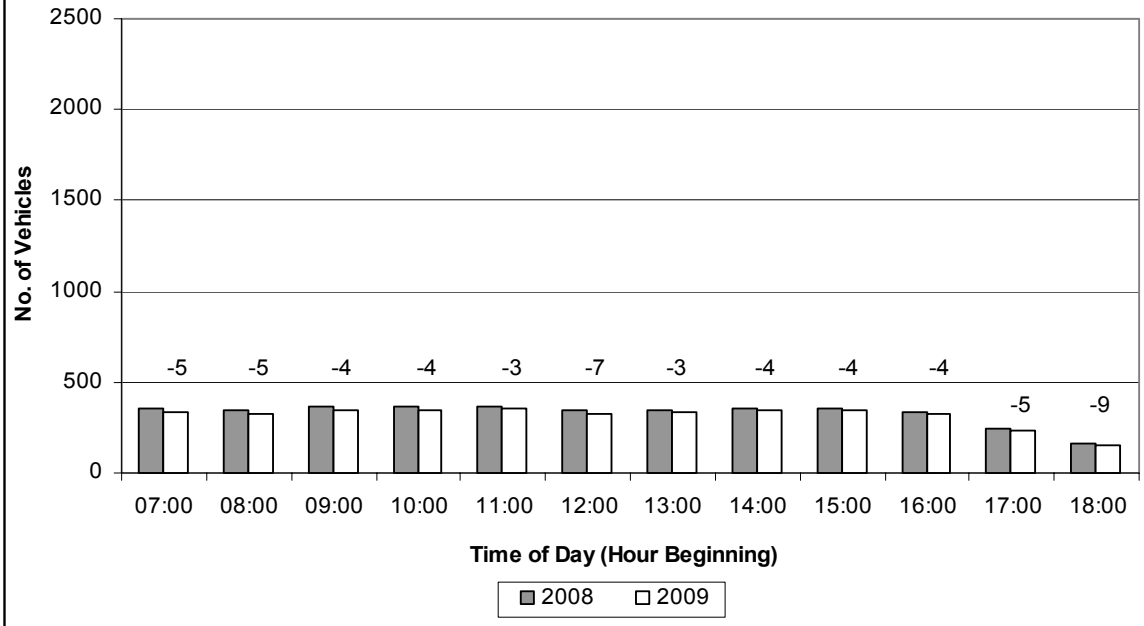
Note: The figures in brackets are the percentage changes between 2008 and 2009.

Figure 2.7 Average Hourly Traffic Flows on A Roads in 2008 and 2009 - All Motors



No. on top of column is % change since 2008

Figure 2.8 Average Hourly Traffic Flows on A Roads in 2008 and 2009 - All Goods



No. on top of column is % change since 2008

Peak Hour to Peak Period Ratios on A Roads

2.11 Table 2.10 shows peak hour to peak period traffic flow ratios for A Road links surveyed between 1990 and 2009.

Table 2.10 Ratio of Peak Hour to Peak Period Traffic for A Road Links 1990-2009

Year	Number of Sites	08:00 – 09:00 07:00 – 10:00	17:00 – 18:00 16:00 – 19:00
1990	185	0.39	0.37
1991	173	0.39	0.37
1992	180	0.40	0.37
1993	205	0.39	0.35
1994	196	0.39	0.37
1995	289	0.39	0.37
1996	185	0.39	0.37
1997	192	0.39	0.36
1998	225	0.38	0.36
1999	246	0.39	0.36
2000	239	0.38	0.37
2001	287	0.38	0.36
2002	255	0.38	0.36
2003	229	0.38	0.36
2004	204	0.37	0.36
2005	213	0.38	0.36
2006	135	0.37	0.36
2007	198	0.37	0.36
2008	198	0.37	0.36
2009	220	0.37	0.36

24-Hour Traffic Flow Profiles on A Roads in 2009

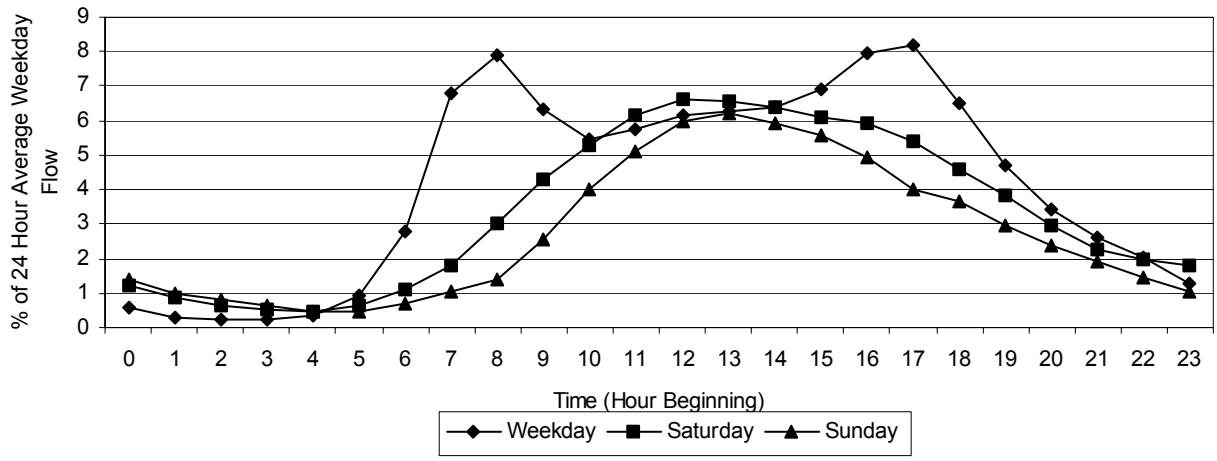
2.12 Table 2.11 gives profiles of hourly traffic flow based on automatic traffic counter data. Flows affected by bank and school holidays, roadworks and unusual events have been excluded from this analysis. Figure 2.9 shows the profiles expressed as a percentage of the 24-hour average weekday flow.

Table 2.11 Average Hourly Traffic Flow Indices on A Roads in 2009

Hour Beginning	% of 24-Hour Flow Weekday	% of 24-Hour Flow Saturday	% of 24-Hour Flow Sunday
00:00	0.6	1.5	2.1
01:00	0.3	1.1	1.5
02:00	0.2	0.8	1.2
03:00	0.2	0.7	1.0
04:00	0.3	0.6	0.7
05:00	0.9	0.8	0.7
06:00	2.8	1.3	1.1
07:00	6.8	2.2	1.6
08:00	7.9	3.8	2.2
09:00	6.3	5.3	3.9
10:00	5.5	6.5	6.1
11:00	5.7	7.7	7.8
12:00	6.1	8.2	9.1
13:00	6.3	8.1	9.5
14:00	6.4	7.9	9.1
15:00	6.9	7.6	8.5
16:00	7.9	7.3	7.5
17:00	8.2	6.7	6.1
18:00	6.5	5.7	5.5
19:00	4.7	4.8	4.5
20:00	3.4	3.7	3.6
21:00	2.6	2.8	2.9
22:00	2.0	2.5	2.2
23:00	1.3	2.2	1.6

Notes:
Traffic flows are based on data from 33 two-way ATC sites on A roads throughout the county in 2009.
Percentages may not sum to 100 due to rounding.

Figure 2.9 Average Hourly Traffic Flow Indices on A Roads in 2009



Hourly profile based on 33 tw o-w ay sites.

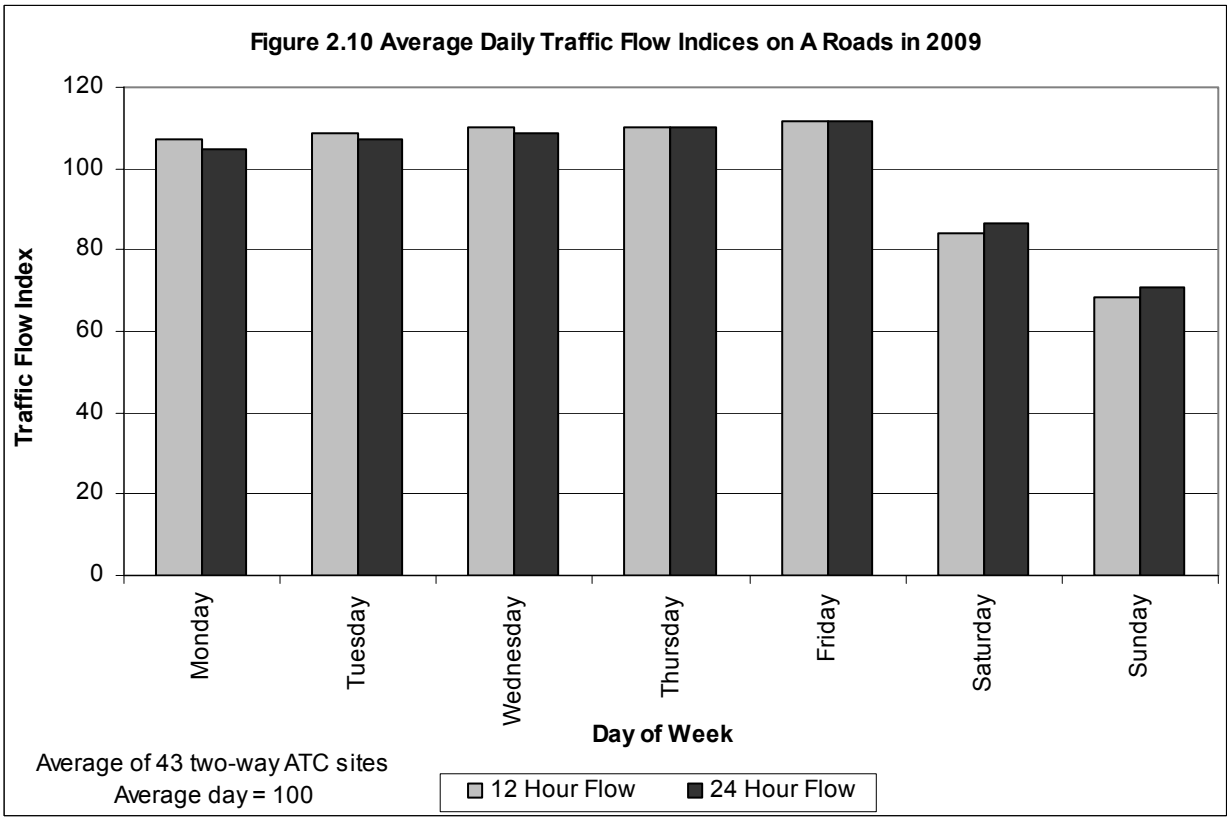
Daily Traffic Flow Indices on A Roads in 2009

2.13 Table 2.12 and Figure 2.10 show average daily traffic profiles on A roads.

Table 2.12 Average Daily Traffic Flow Indices on A Roads in 2009

Day of Week	12-Hour Flow Average Weekday Index = 100	12-Hour Flow Average Day Index = 100	24-Hour Flow Average Weekday Index = 100	24-Hour Flow Average Day Index = 100
Monday	98	107	97	105
Tuesday	99	109	99	107
Wednesday	100	110	100	109
Thursday	101	110	101	110
Friday	102	112	103	111
Saturday	77	84	80	87
Sunday	63	68	66	71

Note: Indices are based on average flows at 33 two-way ATC sites on A roads throughout the county in 2009.



Daily Variation on A Roads by Time Period

2.14 Table 2.13 gives a more detailed breakdown of the variation in weekday flow in individual time periods.

Table 2.13 Average Traffic Flow Indices on A Roads in 2009 by Time Period

Time of Day	Time Period	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Within the normal working day	07:00-10:00	99	101	101	101	98	45	24
	10:00-16:00	97	98	99	100	107	100	89
	16:00-19:00	98	100	101	102	98	72	57
	07:00-19:00	98	99	100	101	102	77	63
Peak periods	07:00-08:00	99	101	101	101	98	28	16
	08:00-09:00	99	101	101	101	98	40	19
	16:00-17:00	98	99	100	101	101	76	64
	17:00-18:00	100	101	101	101	96	69	51
Outside the normal working day	00:00-07:00 and 19:00-24:00	92	97	100	105	106	92	77
All Day	00:00-24:00	97	99	100	101	103	80	66

Note: Indices for each time period are relative to an average weekday flow index of 100 for the time period.

Indices are based on average flows at 33 two-way ATC sites on A roads throughout the county in 2009.

Monthly Traffic Flow Indices on A Roads in 2009

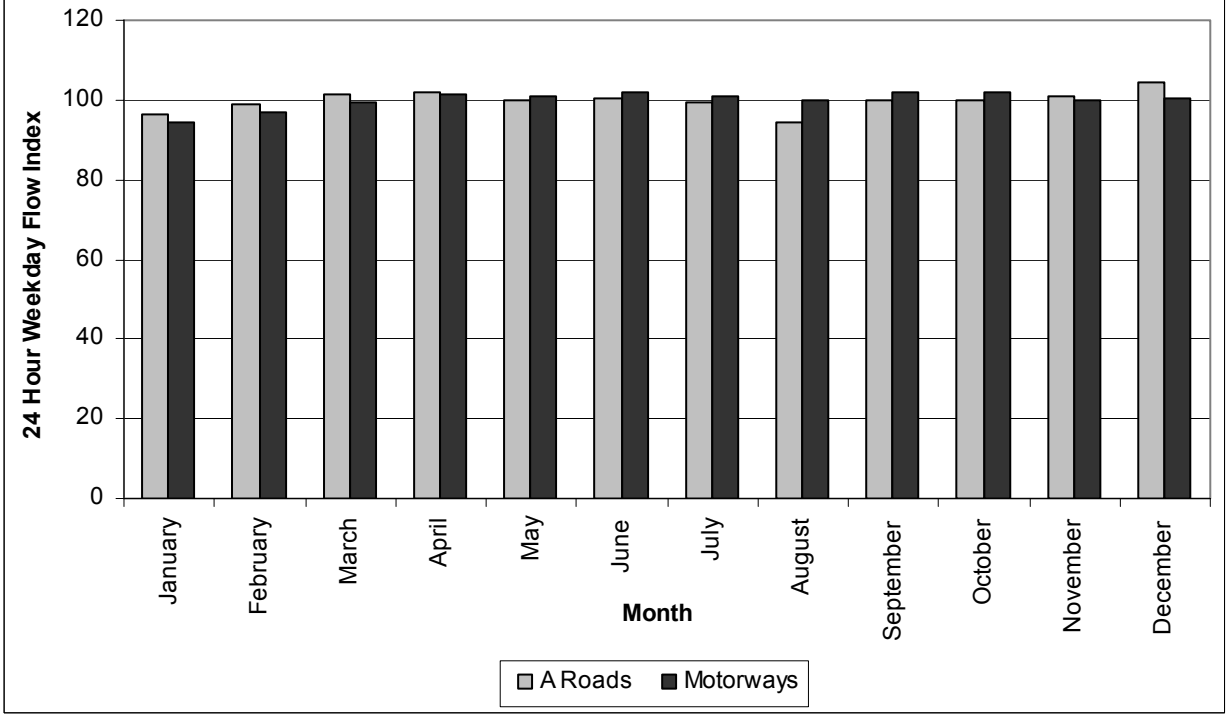
2.15 Table 2.14 shows monthly traffic indices on A roads. Figure 2.11 compares 24-hour weekday monthly traffic profiles for motorways and A roads.

Table 2.14 Average Monthly Flow Indices on A Roads in 2009

Month	12-Hour Flow Index Average Month = 100	24-Hour Flow Index Average Month = 100
January	98	97
February	100	99
March	102	101
April	101	102
May	100	100
June	99	100
July	98	99
August	95	94
September	100	100
October	100	100
November	101	101
December	104	105

Note: Indices are based on average monthly flows at 33 two-way ATC sites on A roads throughout the county.

Figure 2.11 Average Monthly Traffic Flow Indices on A Roads and Motorways in 2009



B ROAD TRAFFIC

Traffic Growth on B Roads 2008-2009

2.16 Table 2.15 shows the percentage changes by time period, in average traffic flows on 75 B road links between 2008 and 2009. The figures are based on manual classified counts undertaken throughout the county.

Table 2.15 Percentage Changes in Average Flows on 75 B Road Links Between 2008 and 2009

Time Period	Cars	LGV	OGV	Buses and Coaches	Motor Cycles	Pedal Cycles	All Motors
07:00-10:00	-1	-6	-11	-6	-6	17	-2
10:00-16:00	0	-3	-10	-12	0	12	-1
16:00-19:00	-2	-1	-12	-9	-10	7	-2
07:00-19:00	-1	-3	-10	-10	-3	13	-1
08:00-09:00	0	-4	-12	-11	-17	22	-1
17:00-18:00	-2	-2	-13	-13	-13	9	-2

Changes in B Road Weekday Traffic Profiles 2008-2009

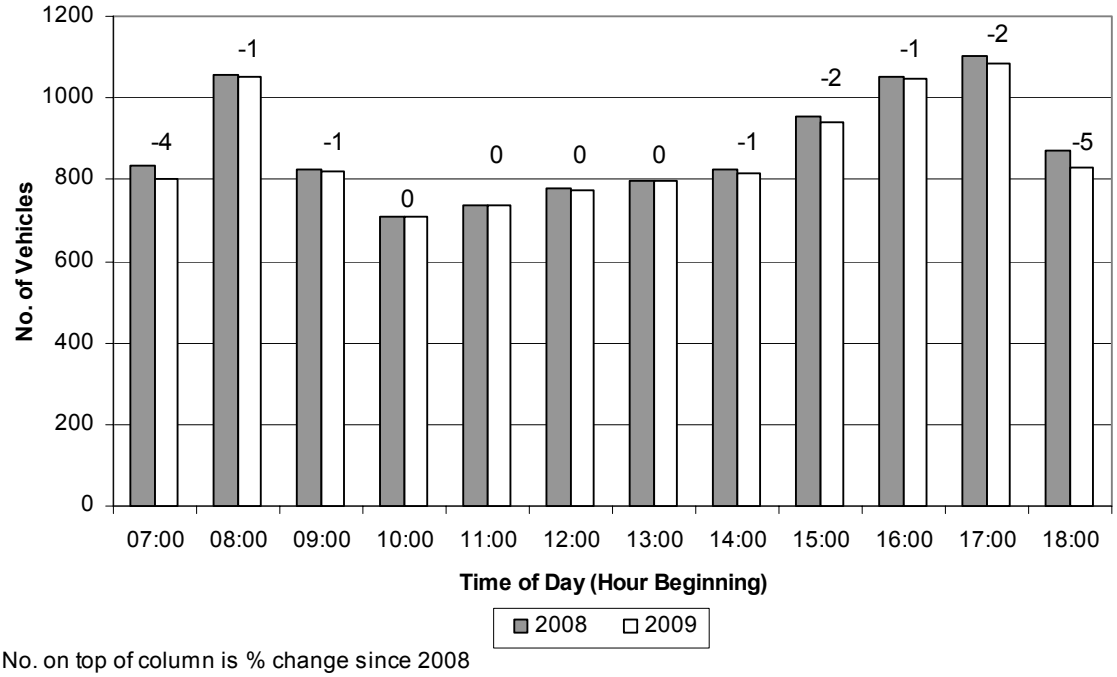
2.17 Table 2.16 shows average hourly traffic flows on 75 B road links in 2008 and 2009 together with the percentage change in flow since 2008. The all motors and all goods profiles are illustrated in Figures 2.12 and 2.13.

Table 2.16 Average Hourly Traffic Flows on 75 B Road Links in 2008 and 2009

Start Hour	2008				2009							
	Cars	Light Goods Vehicles	Other Goods Vehicles	All Motors	Cars		Light Goods Vehicles		Other Goods Vehicles		All Motors	
07:00	674	116	20	833	659	(-2)	104	(-10)	18	(-10)	802	(-4)
08:00	893	117	25	1058	894	(0)	112	(-4)	22	(-12)	1050	(-1)
09:00	661	118	28	827	660	(0)	114	(-3)	25	(-11)	818	(-1)
10:00	549	113	28	708	555	(1)	109	(-4)	27	(-4)	707	(0)
11:00	580	112	27	737	581	(0)	112	(0)	26	(-4)	735	(0)
12:00	630	106	24	778	631	(0)	105	(-1)	22	(-8)	776	(0)
13:00	642	108	26	797	648	(1)	106	(-2)	23	(-12)	795	(0)
14:00	663	112	25	823	667	(1)	108	(-4)	22	(-12)	816	(-1)
15:00	791	119	21	956	787	(-1)	113	(-5)	18	(-14)	940	(-2)
16:00	891	122	15	1052	891	(0)	119	(-2)	13	(-13)	1045	(-1)
17:00	977	95	8	1102	962	(-2)	93	(-2)	7	(-13)	1082	(-2)
18:00	792	59	4	872	752	(-5)	60	(2)	4	(0)	830	(-5)
Total	8744	1297	251	10542	8685	(-1)	1255	(-3)	225	(-10)	10395	(-1)

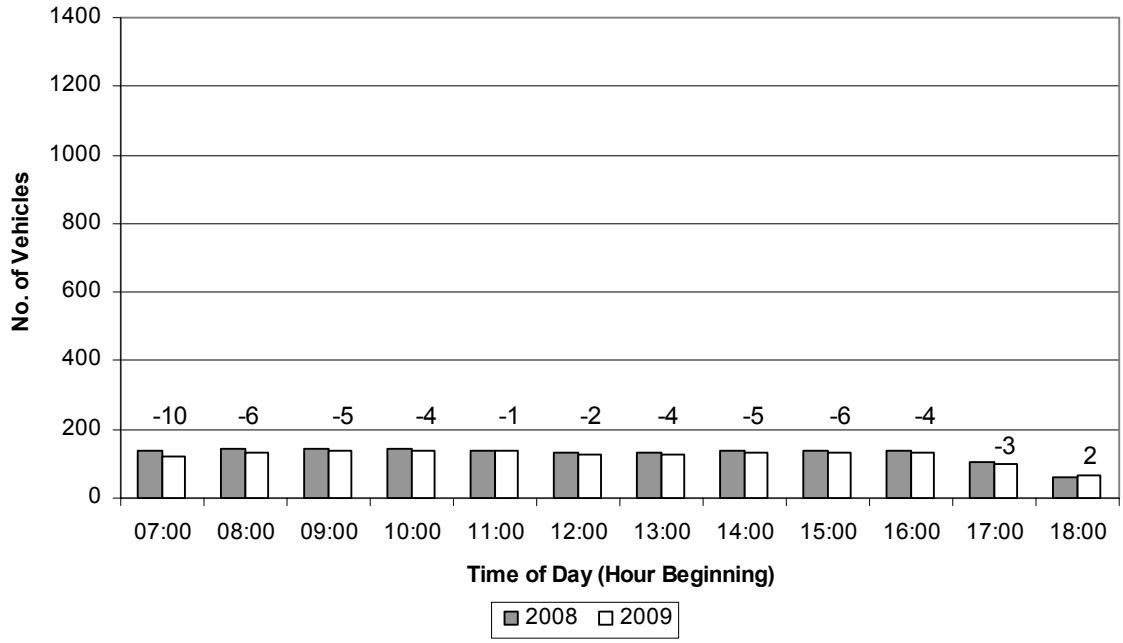
Note: The figures in brackets are the percentage changes between 2008 and 2009.

Figure 2.12 Average Hourly Traffic Flows on B Roads in 2008 and 2009 - All Motors



No. on top of column is % change since 2008

Figure 2.13 Average Hourly Traffic Flows on B Roads in 2008 and 2009 - All Goods



No. on top of column is % change since 2008

Peak Hour to Peak Period Ratios on B Roads

2.18 Table 2.17 shows peak hour and peak period traffic flow ratios for all B road links surveyed between 1990 and 2009.

Table 2.17 Ratio of Peak Hour to Peak Period Traffic for B Road Links 1990-2009

Year	Number of Sites	08:00 – 09:00 / 07:00 – 10:00	17:00 – 18:00 / 16:00 – 19:00
1990	85	0.41	0.37
1991	100	0.41	0.37
1992	76	0.42	0.37
1993	84	0.41	0.35
1994	102	0.42	0.37
1995	75	0.41	0.37
1996	83	0.41	0.37
1997	94	0.41	0.37
1998	71	0.42	0.37
1999	87	0.41	0.37
2000	53	0.40	0.37
2001	76	0.40	0.37
2002	104	0.40	0.37
2003	101	0.40	0.36
2004	97	0.40	0.37
2005	68	0.39	0.36
2006	85	0.40	0.37
2007	116	0.40	0.37
2008	124	0.39	0.36
2009	123	0.40	0.37

MINOR ROAD TRAFFIC

Traffic Growth on Minor Roads 2008-2009

2.19 Table 2.18 shows the average percentage changes by time period, in average traffic flows on 140 minor roads between 2008 and 2009. The percentage change in vehicle flows other than car and LGV should be treated with caution since they are based on very low flows, which are subject to greater percentage variability than higher flows.

Table 2.18 Percentage Changes in Average Flows on 140 Minor Road Links Between 2008 and 2009

Time Period	Cars	LGV	OGV	Buses and Coaches	Motor Cycles	Pedal Cycles	All Motors
07:00-10:00	-2	-6	-3	-4	-6	3	-2
10:00-16:00	2	0	-16	-5	3	3	1
16:00-19:00	1	-4	-21	-4	-5	-1	0
07:00-19:00	1	-2	-16	-5	1	2	0
08:00-09:00	2	-7	-16	-1	3	10	1
17:00-18:00	0	-3	4	-4	1	7	0

Changes in Minor Road Weekday Traffic Profiles 2008-2009

2.20 Table 2.19 shows average hourly traffic flows on 140 minor road links in 2008 and 2009 together with the percentage change in flow since 2008.

Table 2.19 Average Hourly Traffic Flows on 140 Minor Road Links in 2008 and 2009

	2008				2009							
Start Hour	Cars	Light Goods Vehicles	Other Goods Vehicles	All Motors	Cars		Light Goods Vehicles		Other Goods Vehicles		All Motors	
07:00	250	39	6	303	240	(-4)	37	(-6)	6	(-11)	290	(-4)
08:00	381	45	8	443	387	(2)	42	(-7)	7	(-16)	445	(1)
09:00	264	41	9	322	256	(-3)	39	(-4)	8	(-14)	310	(-4)
10:00	211	36	9	262	215	(2)	37	(1)	8	(-9)	266	(1)
11:00	221	37	9	273	227	(3)	38	(3)	8	(-12)	279	(2)
12:00	245	38	8	297	251	(3)	38	(1)	6	(-22)	303	(2)
13:00	251	36	9	303	256	(2)	35	(-2)	7	(-20)	305	(1)
14:00	258	37	9	312	260	(1)	37	(1)	7	(-17)	312	(0)
15:00	331	42	7	390	343	(4)	41	(-1)	6	(-13)	400	(2)
16:00	364	46	6	425	370	(1)	44	(-3)	4	(-24)	427	(1)
17:00	410	38	3	459	400	(-2)	36	(-4)	3	(-11)	447	(-3)
18:00	303	23	2	334	313	(3)	22	(-3)	1	(-30)	342	(3)
Total	3488	457	85	4123	3518	(1)	447	(-2)	71	(-16)	4125	(0)

Note: The figures in brackets are the percentage changes between 2008 and 2009. Unrounded values have been used in calculations due to very low flows.

COMPARISONS OF TRAFFIC AND GROWTH

Comparison of National and Local Growth in Traffic Flows 1993-2009

2.21 Indices of local and national growth in traffic flows are given in Table 2.20 and illustrated in Figures 2.14 and 2.15.

Table 2.20 Traffic Flow Indices for Local and National Motorways and A Roads, 1993-2009

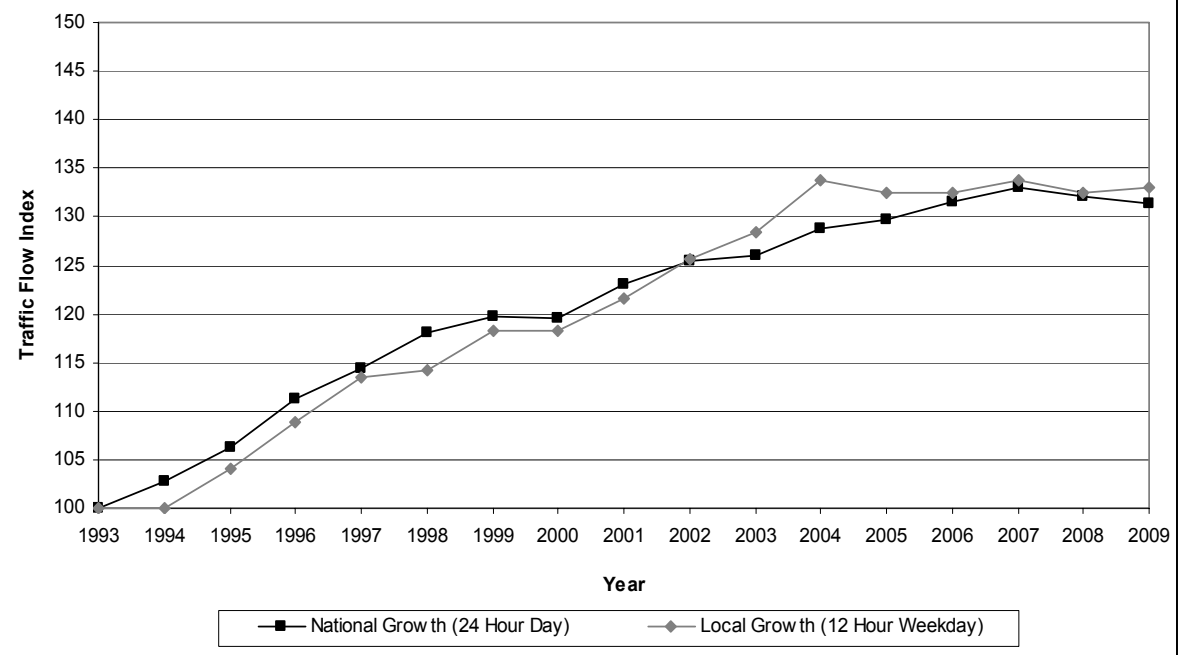
Year	Motorways		A Roads	
	Local	National	Local	National
1993	100	100	100	100
1994	100	103	102	102
1995	104	106	102	104
1996	109	111	102	105
1997	114	114	103	105
1998	114	118	103	105
1999	118	120	104	105
2000	118	120	103	105
2001	122	123	102	105
2002	126	125	102	105
2003	128	126	103	105
2004	134	129	103	106
2005	132	130	102	105
2006	132	132	102	106
2007	134	133	102	104
2008	132	132	100	103
2009	133	131	99	103

Notes:

1993-2009 National Data based on average 24-hour daily traffic flow data for motorway and urban A Roads published in Table 2.1 Road Traffic Statistics 2009, Traffic, Speeds and Congestion.

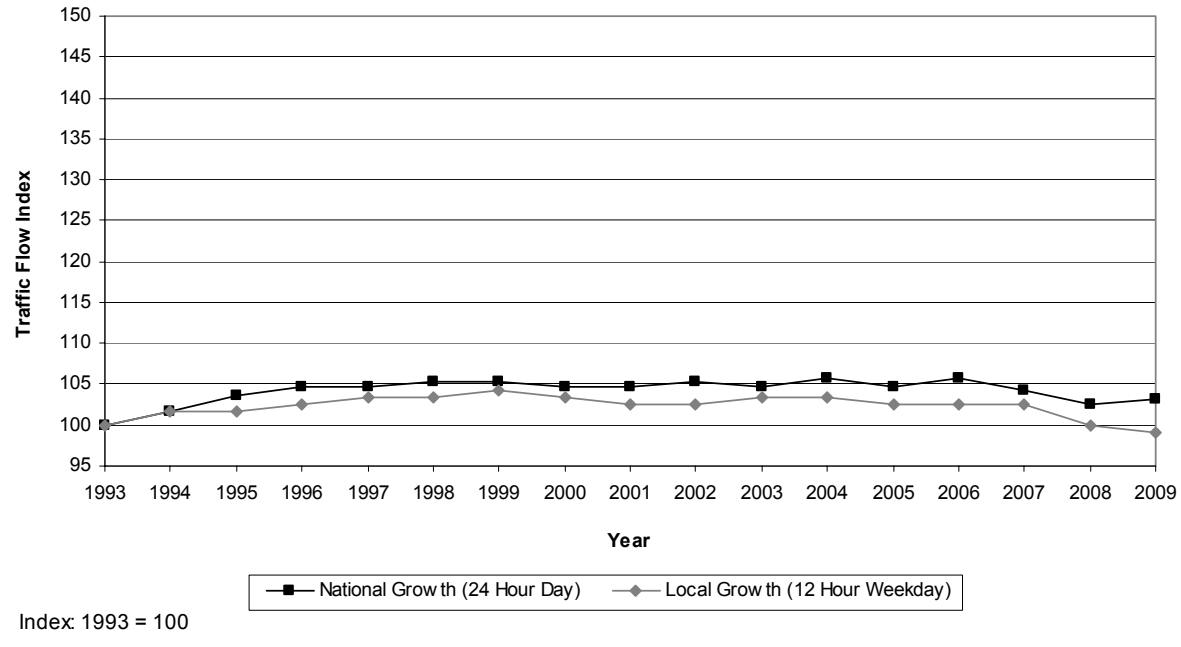
Local figures are based on 12-hour average weekday flows on a sample of links throughout Greater Manchester.

Figure 2.14 National and Local Growth in Traffic Flows on Motorways 1993 - 2009



Index: 1993 = 100

Figure 2.15 National and Local Growth in Traffic Flows on A Roads 1993 - 2009



Index: 1993 = 100

Composition of Motorway, A Road, B Road and Minor Road Traffic 1999-2009

2.22 Table 2.21 shows the percentage composition of traffic on motorway, A road, B road and minor road links between 2001 and 2009. The percentage composition for 2009 is illustrated in Figure 2.16.

Table 2.21 Percentage Composition of Traffic on Motorway, A Road, B Road and Minor Road Links 07:00-19:00 Hours, 2001- 2009

	Vehicle Type						
	Cars	LGV	OGV1	OGV2	Buses & Coaches	Motor Cycles	Pedal Cycles
Motorways							
2001	75.3	13.0	4.9 (45)	6.0 (55)	0.4	0.3	-
2002	75.3	13.3	4.7 (44)	6.0 (56)	0.4	0.3	-
2003	75.9	13.1	4.4 (43)	5.9 (57)	0.4	0.1	-
2004	74.4	13.8	4.6 (42)	6.5 (58)	0.4	0.1	-
2005	75.4	13.0	4.5 (41)	6.5 (59)	0.4	0.3	-
2006	73.7	14.8	4.4 (41)	6.4 (59)	0.4	0.3	-
2007	74.1	14.6	4.4 (41)	6.3 (59)	0.3	0.3	-
2008	75.0	13.7	5.2 (49)	5.5 (51)	0.3	0.3	-
2009	76.4	12.3	5.0 (47)	5.6 (53)	0.3	0.3	-
A Roads							
2001	80.4	11.8	3.0 (68)	1.4 (32)	2.2	0.7	0.5
2002	80.8	11.8	2.9 (68)	1.4 (32)	1.9	0.7	0.5
2003	81.2	11.7	2.8 (66)	1.4 (34)	1.7	0.7	0.4
2004	80.9	12.0	2.8 (65)	1.5 (35)	1.8	0.6	0.4
2005	80.7	12.2	2.8 (66)	1.4 (34)	1.8	0.6	0.4
2006	80.8	12.3	2.6 (66)	1.3 (34)	1.9	0.6	0.5
2007	80.7	12.8	2.5 (65)	1.4 (35)	1.6	0.6	0.5
2008	80.9	12.2	2.9 (67)	1.4 (33)	1.6	0.6	0.5
2009	81.5	11.9	2.9 (68)	1.3 (32)	1.3	0.6	0.5
B Roads							
2001	82.3	11.2	2.3 (77)	0.7 (23)	2.2	0.7	0.8
2002	83.1	10.8	2.0 (75)	0.7 (25)	2.0	0.7	0.8
2003	82.5	11.3	2.0 (74)	0.7 (26)	2.1	0.7	0.7
2004	82.2	11.4	2.1 (76)	0.7 (24)	2.3	0.6	0.7
2005	82.3	11.6	2.1 (72)	0.8 (28)	2.0	0.6	0.7
2006	82.2	11.8	2.0 (75)	0.7 (25)	2.1	0.5	0.8
2007	82.6	12.0	1.7 (75)	0.6 (25)	1.8	0.5	0.8
2008	82.8	11.7	1.6 (73)	0.6 (27)	1.8	0.5	0.9
2009	82.8	11.9	1.6 (75)	0.5 (25)	1.7	0.6	0.9
Minor Roads							
2001	82.8	10.8	2.1 (78)	0.6 (22)	1.8	0.6	1.2
2002	83.4	10.7	2.0 (75)	0.7 (25)	1.5	0.6	1.2
2003	84.3	10.3	1.8 (74)	0.6 (26)	1.4	0.6	1.0
2004	83.6	10.9	1.8 (74)	0.6 (26)	1.4	0.6	1.0
2005	84.1	10.7	1.7 (75)	0.6 (25)	1.4	0.6	1.0
2006	83.8	10.9	1.5 (76)	0.5 (24)	1.8	0.6	1.0
2007	84.0	11.1	1.4 (76)	0.5 (24)	1.7	0.5	0.8
2008	83.8	11.0	1.5 (76)	0.5 (24)	1.7	0.5	1.0
2009	84.4	10.7	1.3 (75)	0.4 (25)	1.6	0.5	1.0

Notes:

LGV = Light Goods Vehicles with 2 axles

OGV1 = Medium Goods Vehicles with 2 axles and Rigid Heavy Goods Vehicles with 3 axles

OGV2 = Articulated Heavy Goods Vehicles and Rigid HGV with 4 axles

Figures in parentheses are the percentage splits between OGV1 and OGV2.

OGV1 and OGV2 split is used in the DfT's cost benefit analysis program (COBA) and the Transport Economics Note (TEN). Definition of OGV1 and OGV2 has changed slightly in recent years but percentages have not been affected in 2009. Consequently figures before 2009 have not been amended.

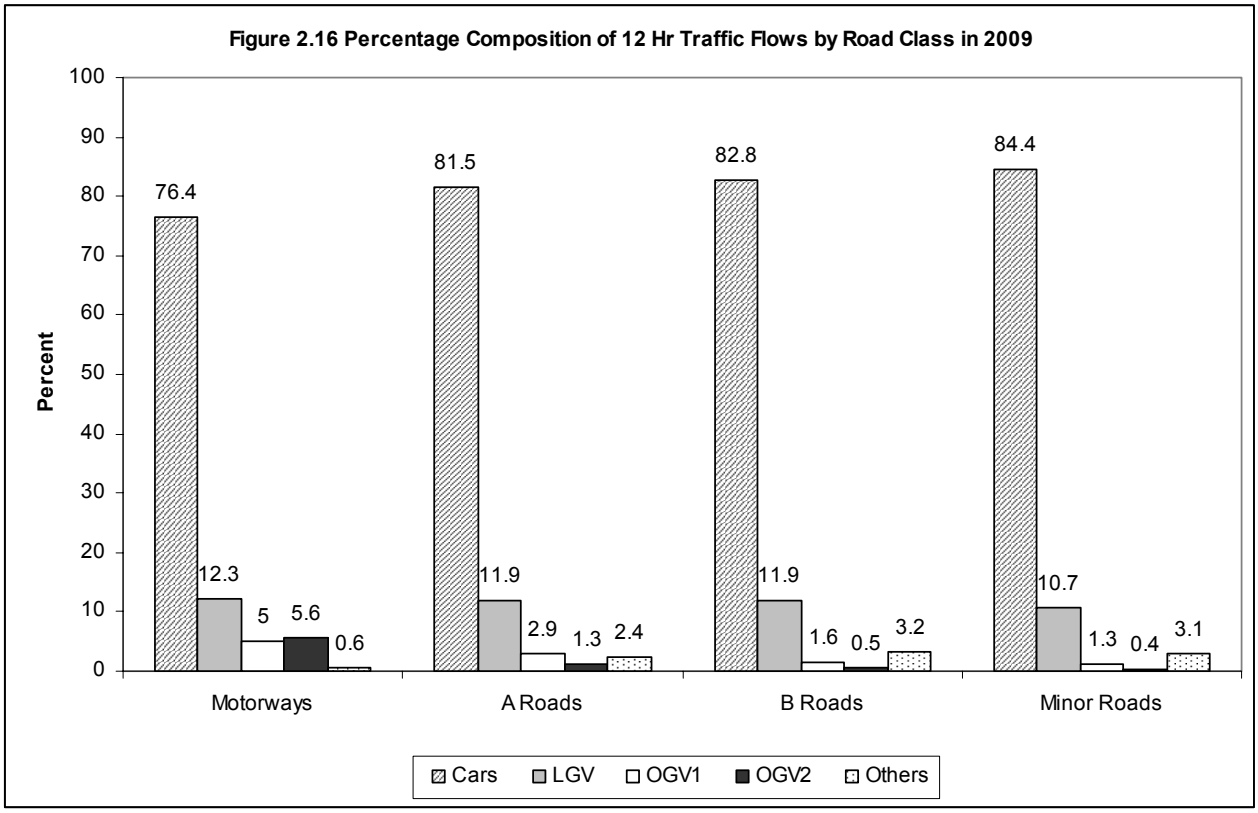


Figure 2.16 Percentage Composition of 12 Hr Traffic Flows by Road Class in 2009
Percent
100
90
80
70
60
50
40
30
20
10
0
76.4
12.3
5
5.6
0.6
81.5
11.9
2.9
1.3
2.4
82.8
11.9
1.6
0.5
3.2
84.4
10.7
1.3
0.4
3.1
Motorways
A Roads
B Roads
Minor Roads
Cars
LGV
OGV1
OGV2
Others

Average Hourly Flows on Motorways, A, B and Minor Roads in 2009

2.23 Table 2.22 shows average hourly flows in 2009 on 35 motorway, 220 A road, 123 B and 144 minor road links that were unaffected by roadworks. Table 2.23 shows the hourly traffic flows as a percentage of the 12-hour flow. All motors and all goods flows are illustrated in Figure 2.17 and 2.18.

Table 2.22 Average Hourly Traffic Flows on 35 Motorway, 220 A Road, 123 B Road and 144 Minor Road Links in 2009

Start Hour	Motorways			A Roads			B Roads			Minor Roads		
	Cars	Goods	All Motors	Cars	Goods	All Motors	Cars	Goods	All Motors	Cars	Goods	All Motors
07:00	7057	2109	9216	1531	315	1887	605	115	740	238	42	287
08:00	7030	1825	8904	1819	312	2174	839	127	988	384	48	441
09:00	5482	1867	7398	1401	333	1770	621	130	770	254	47	308
10:00	4622	1846	6514	1161	334	1526	531	127	675	213	44	264
11:00	4535	1920	6494	1205	336	1570	561	127	705	225	45	277
12:00	4715	1834	6587	1294	306	1631	610	120	748	250	44	300
13:00	4971	1884	6894	1360	316	1707	620	123	761	254	42	303
14:00	5194	1987	7228	1382	330	1750	641	123	783	258	44	309
15:00	6013	2018	8081	1561	327	1927	762	123	908	340	47	396
16:00	7488	1912	9462	1820	309	2173	852	124	1000	367	48	425
17:00	8118	1419	9599	1964	218	2224	924	94	1038	397	39	444
18:00	6713	985	7749	1647	145	1825	724	60	800	311	24	340
Total	**71937**	**21608**	**94126**	**18146**	**3583**	**22164**	**8291**	**1394**	**9915**	**3492**	**513**	**4093**

Table 2.23 Average Hourly Traffic Flows on 35 Motorway, 220 A Road, 123 B Road and 144 Minor Road Links in 2009 as a Percentage of 12-Hour Flow

Start Hour	Motorways			A Roads			B Roads			Minor Roads		
	Cars	Goods	All Motors	Cars	Goods	All Motors	Cars	Goods	All Motors	Cars	Goods	All Motors
07:00	9.8	9.8	9.8	8.4	8.8	8.5	7.3	8.2	7.5	6.8	8.2	7.0
08:00	9.8	8.4	9.5	10.0	8.7	9.8	10.1	9.1	10.0	11.0	9.4	10.8
09:00	7.6	8.6	7.9	7.7	9.3	8.0	7.5	9.3	7.8	7.3	9.2	7.5
10:00	6.4	8.5	6.9	6.4	9.3	6.9	6.4	9.1	6.8	6.1	8.6	6.5
11:00	6.3	8.9	6.9	6.6	9.4	7.1	6.8	9.1	7.1	6.4	8.8	6.8
12:00	6.6	8.5	7.0	7.1	8.5	7.4	7.4	8.6	7.5	7.2	8.6	7.3
13:00	6.9	8.7	7.3	7.5	8.8	7.7	7.5	8.8	7.7	7.3	8.2	7.4
14:00	7.2	9.2	7.7	7.6	9.2	7.9	7.7	8.8	7.9	7.4	8.6	7.5
15:00	8.4	9.3	8.6	8.6	9.1	8.7	9.2	8.8	9.2	9.7	9.2	9.7
16:00	10.4	8.8	10.1	10.0	8.6	9.8	10.3	8.9	10.1	10.5	9.4	10.4
17:00	11.3	6.6	10.2	10.8	6.1	10.0	11.1	6.7	10.5	11.4	7.6	10.8
18:00	9.3	4.6	8.2	9.1	4.0	8.2	8.7	4.3	8.1	8.9	4.7	8.3
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Figure 2.17 Average Hourly All Motor Traffic Flows on Motorways, A Roads, B Roads and Minor Roads in 2009

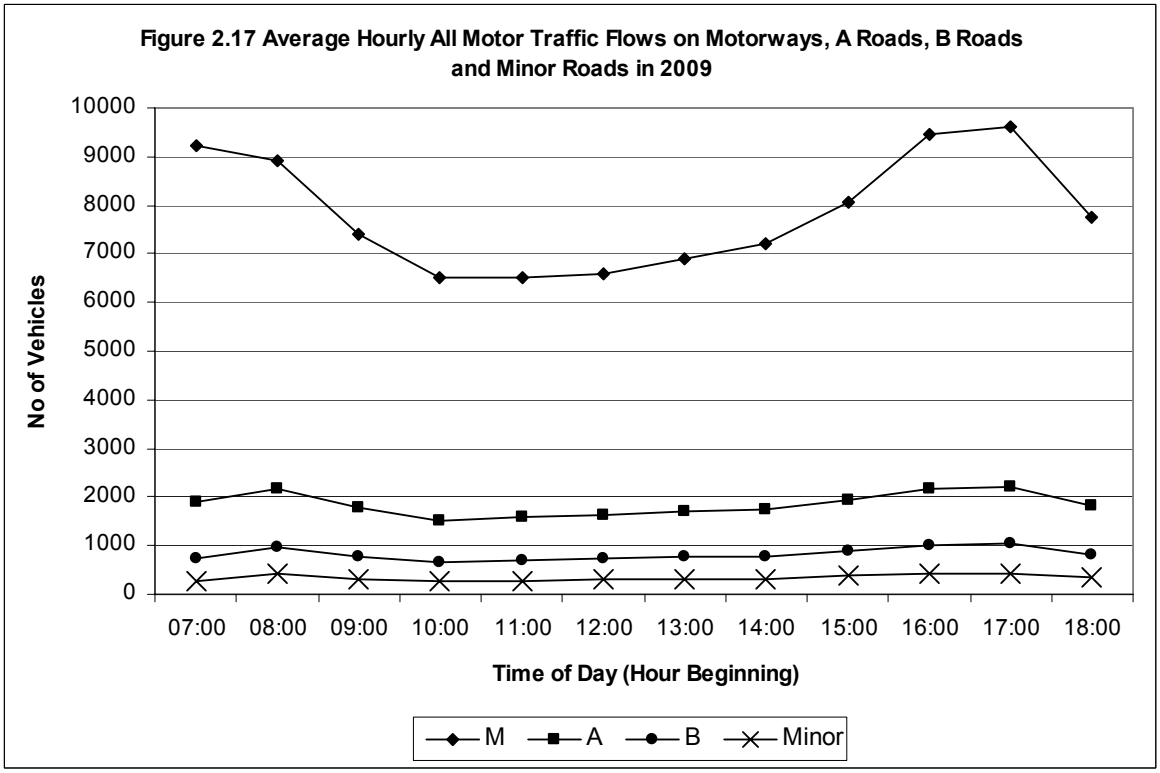
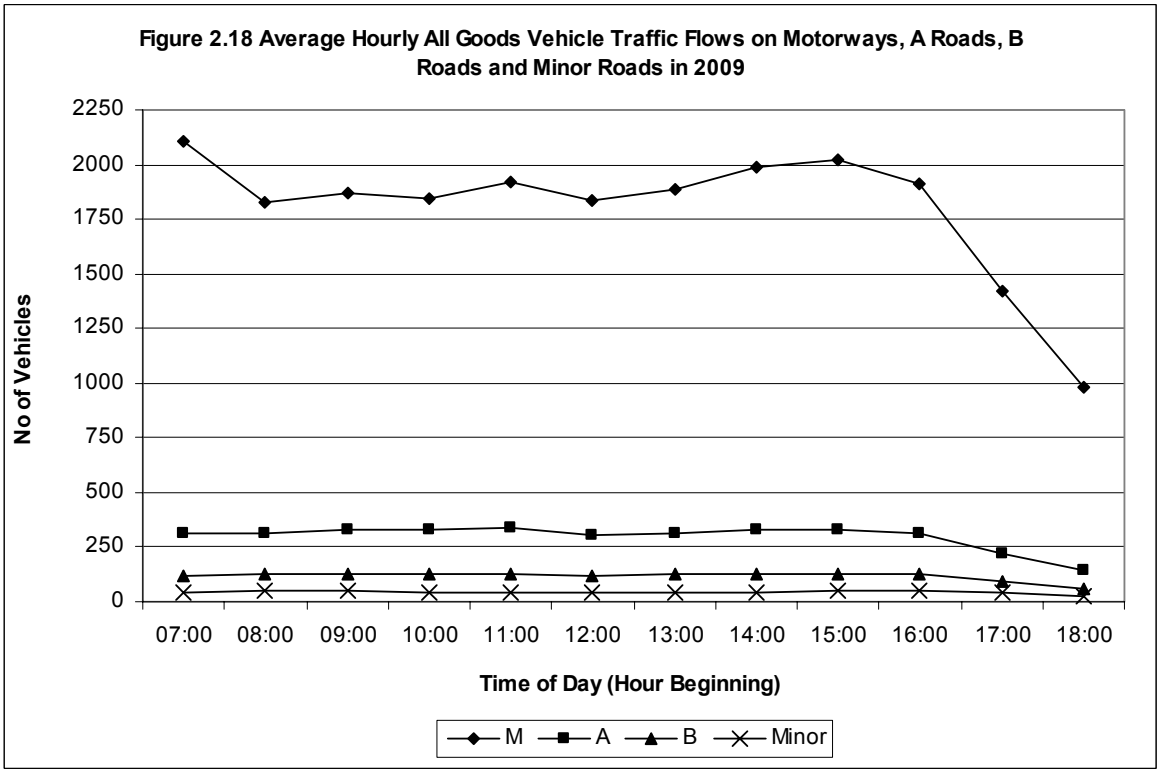


Figure 2.18 Average Hourly All Goods Vehicle Traffic Flows on Motorways, A Roads, B Roads and Minor Roads in 2009



Traffic Growth on A Roads and B Roads Combined 2008-2009

2.24 Table 2.24 shows the average traffic flows for cars, light goods, other goods and all motors in 2008 and 2009 for different time periods. The flows are based on a sample of 172 A and B road links throughout the county. The percentage changes between years are also shown.

Table 2.24 Percentage Changes in Average Flows on 172 A and B Road Links Between 2008 and 2009

	2008				2009							
Time Period	Cars	LGV	OGV	All Motors	Cars		LGV		OGV		All Motors	
07:00-10:00	3851	584	203	4739	3859	(0)	566	(-3)	179	(-12)	4701	(-1)
10:00-16:00	6488	1130	429	8217	6501	(0)	1120	(-1)	379	(-12)	8164	(-1)
16:00-19:00	4449	457	95	5099	4431	(0)	448	(-2)	79	(-17)	5053	(-1)
07:00-19:00	14788	2171	727	18054	14790	(0)	2133	(-2)	636	(-13)	17918	(-1)
08:00-09:00	1492	191	67	1785	1496	(0)	186	(-3)	58	(-13)	1775	(-1)
17:00-18:00	1606	152	29	1822	1611	(0)	149	(-2)	24	(-17)	1818	(0)

Note: Percentage changes between 2008 and 2009 are shown in parentheses.

Traffic Growth on A Roads and B Roads by District 2008-2009

2.25 Average traffic flows by district on A and B roads combined are shown in Table 2.25.

Table 2.25 12-Hour Average Traffic Flows in 2008 and 2009 on A Roads and B Roads by District

District and No. of Links Counted		2008				2009							
		Cars	LGV	OGV	All Motors	Cars		LGV		OGV		All Motors	
Bolton	17	13997	2245	657	17220	14069	(1)	2150	(-4)	601	(-9)	17131	(-1)
Bury	13	13143	1819	415	15697	13237	(1)	1776	(-2)	361	(-13)	15682	(0)
Manchester	25	18527	2212	682	22056	18809	(2)	2145	(-3)	607	(-11)	22225	(1)
Oldham	18	12518	2043	622	15503	12601	(1)	2006	(-2)	581	(-7)	15498	(0)
Rochdale	16	11531	1703	498	14022	11676	(1)	1773	(4)	396	(-20)	14102	(1)
Salford	20	18578	2779	1106	22839	18537	(0)	2722	(-2)	932	(-16)	22552	(-1)
Stockport	18	18704	2466	966	22538	18014	(-4)	2450	(-1)	805	(-17)	21628	(-4)
Tameside	14	9262	1682	518	11678	9223	(0)	1662	(-1)	448	(-14)	11532	(-1)
Trafford	14	12847	1837	702	15627	12677	(-1)	1790	(-3)	595	(-15)	15307	(-2)
Wigan	17	9420	1726	668	12080	9631	(2)	1686	(-2)	653	(-2)	12224	(1)
GM Ave	172	14788	2171	727	18054	14790	(0)	2133	(-2)	636	(-13)	17918	(-1)

Note: Percentage changes between 2008 and 2009 are shown in parentheses.

Annual Vehicle Kilometres on Motorways, A Roads and B Roads in 2009

2.26 Table 2.26 and Figure 2.19 show annual vehicle kilometres in Greater Manchester in 2009 by road class and vehicle type.

Table 2.26 Annual Vehicle Kilometres in 2009

Road Type	Length	Vehicle Kilometres (Millions)					Annual Flow/Km (Millions)
		Car	LGV	OGV	All Goods	All Motors	
Motorway (incl A627(M))	171	4477	748	616	1364	5878	34.4
A Roads	863	4956	543	164	707	5767	6.7
B Roads	375	1285	130	23	154	1467	3.9
Motorways and A Roads	1034	9433	1291	780	2071	11645	11.3
Motorways, A and B Roads	1409	10718	1421	803	2225	13112	9.3

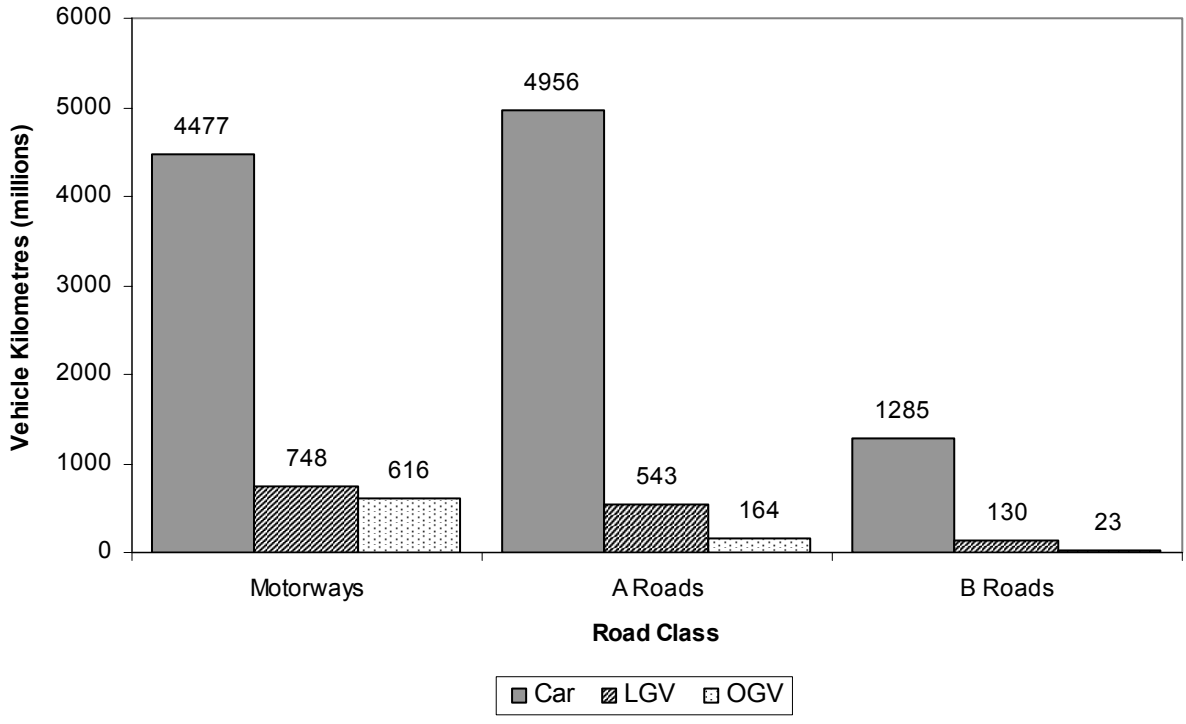
Notes:

These figures are based on manual classified link counts undertaken on each link of the network, factored to the current year (2009) where appropriate.

Road lengths are based on the link lengths of a model road network and may differ slightly from other sources, e.g. Greater Manchester Network Information System (GMNIS) and as quoted by DfT form R199b.

Minor roads are not included.

Figure 2.19 Annual Vehicle Kilometres by Vehicle and Road Type in 2009



Annual Vehicle Kilometres on A Roads and B Roads by District in 2009

2.27 Tables 2.27 and 2.28 show annual vehicle kilometres and average daily flows per link on the A and B road network by district.

Table 2.27 Vehicle Kilometres on A Roads by District in 2009

District	Length	Vehicle Kilometres (Millions)					Average Annual Daily Flow/Km
		Car	LGV	OGV	All Goods	All Motors	
Bolton	101	610	67	19	86	707	19100
Bury	55	314	30	8	38	358	17800
Manchester	116	866	84	24	107	998	23500
Oldham	98	387	47	13	60	455	12700
Rochdale	80	375	43	11	53	437	15000
Salford	87	586	69	24	93	690	21600
Stockport	84	549	54	17	71	629	20500
Tameside	66	312	39	11	50	369	15300
Trafford	58	361	37	11	49	415	19500
Wigan	117	598	72	26	99	710	16700
GM	863	4956	543	164	707	5767	**18300**

Note: The vehicle kilometres are based on 12-hour manual classified traffic counts that have been factored to give annual average daily flows on each link of the network. Figures for Oldham and Rochdale exclude A627(M).

Table 2.28 Vehicle Kilometres on B Roads by District in 2009

District	Length	Vehicle Kilometres (Millions)					Average Daily Flow/Km (7 day 24-hour)
		Car	LGV	OGV	All Goods	All Motors	
Bolton	46	145	15	3	18	166	10000
Bury	33	91	9	1	10	103	8700
Manchester	36	145	14	2	16	167	12700
Oldham	30	80	10	2	12	93	8500
Rochdale	24	86	9	1	10	98	11000
Salford	29	103	10	2	12	117	11100
Stockport	36	146	15	2	17	166	12500
Tameside	32	101	11	2	14	118	9900
Trafford	52	188	17	3	20	211	11100
Wigan	56	200	21	4	25	229	11200
GM	375	1285	130	23	154	1467	**10700**

Trends in Greater Manchester Vehicle Kilometres on Motorways, A and B Roads 1993-2009

2.28 Table 2.29 shows trends in vehicle kilometres between 1993 and 2009

Table 2.29 Trends in Vehicle Kilometres (millions) 1993-2009 by Vehicle Type and Road Class

	All					Motorways					
Year	Car	LGV	OGV	All	Index	Year	Car	LGV	OGV	All	Index
1993	8784	1009	1016	10994	100	1993	2843	418	637	3925	100
1994	8904	1028	1052	11162	102	1994	2900	433	673	4025	103
1995	9160	1049	1038	11432	104	1995	3076	463	677	4245	108
1996	9362	1075	1013	11632	106	1996	3164	488	654	4335	110
1997	9482	1087	1038	11777	107	1997	3293	503	685	4510	115
1998	9554	1111	1002	11840	108	1998	3394	528	668	4620	118
1999	9720	1203	887	11997	109	1999	3449	577	611	4672	119
2000	9723	1270	857	12043	110	2000	3473	611	595	4716	120
2001	10104	1313	864	12482	114	2001	3909	678	621	5246	134
2002	10332	1364	853	12747	116	2002	4096	720	628	5482	140
2003	10409	1372	834	12807	116	2003	4133	721	612	5505	140
2004	10489	1434	867	12978	118	2004	4231	763	633	5665	144
2005	10662	1437	823	13113	119	2005	4361	759	604	5763	147
2006	10615	1515	827	13144	120	2006	4322	820	613	5795	148
2007	10733	1559	818	13282	121	2007	4409	844	612	5899	150
2008	10629	1517	862	13180	120	2008	4373	822	651	5882	150
2009	10718	1421	803	13112	119	2009	4477	748	616	5878	150
	A Roads					B Roads					
1993	4695	475	321	5618	100	1993	1246	116	58	1451	100
1994	4730	477	321	5655	101	1994	1274	118	58	1482	102
1995	4788	471	306	5687	101	1995	1296	115	55	1500	103
1996	4882	474	305	5780	103	1996	1316	113	54	1517	105
1997	4873	469	300	5751	102	1997	1316	115	53	1516	104
1998	4853	468	283	5715	102	1998	1307	115	51	1505	104
1999	4949	505	233	5804	103	1999	1322	121	43	1521	105
2000	4941	536	220	5819	104	2000	1309	123	42	1508	104
2001	4927	519	206	5779	103	2001	1268	116	37	1457	100
2002	4958	526	191	5800	103	2002	1279	118	34	1465	101
2003	4993	530	191	5834	104	2003	1282	121	32	1468	101
2004	4972	546	201	5834	104	2004	1287	126	33	1479	102
2005	5002	550	188	5858	104	2005	1299	128	31	1492	103
2006	5003	565	184	5867	104	2006	1290	130	30	1482	102
2007	5022	580	179	5890	105	2007	1302	134	27	1494	103
2008	4967	561	184	5819	104	2008	1289	134	27	1479	102
2009	4956	543	164	5767	103	2009	1285	130	23	1467	101

National and Local Vehicle Kilometres 1993 – 2009

2.29 Table 2.30 and Figure 2.20 show national and local vehicle kilometres by road class from 1993 to 2009

Table 2.30 National and Local Vehicle Kilometres (millions) by Road Class 1993-2009

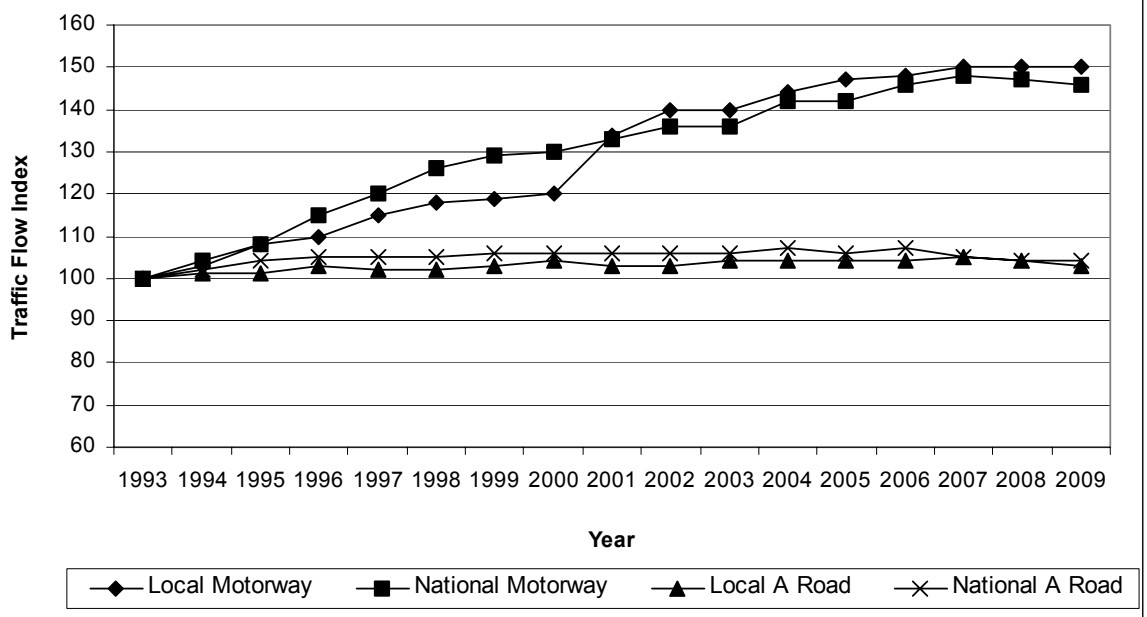
	National Motorways	Index	National Major Urban Roads	Index	GM Motorways	Index	GM A Roads	Index
1993	68200	100	77300	100	3925	100	5618	100
1994	70700	104	78500	102	4025	103	5655	101
1995	73900	108	80100	104	4245	108	5687	101
1996	78300	115	80900	105	4335	110	5780	103
1997	82100	120	80900	105	4510	115	5751	102
1998	85700	126	81300	105	4620	118	5715	102
1999	87800	129	81900	106	4672	119	5804	103
2000	88400	130	81700	106	4716	120	5819	104
2001	90800	133	81800	106	5246	134	5779	103
2002	92600	136	82200	106	5482	140	5796	103
2003	93000	136	81700	106	5505	140	5834	104
2004	96600	142	82800	107	5665	144	5834	104
2005	97000	142	81700	106	5763	147	5858	104
2006	99400	146	82500	107	5795	148	5867	104
2007	100600	148	81300	105	5899	150	5890	105
2008	100100	147	80100	104	5882	150	5819	104
2009	99500	146	80400	104	5878	150	5767	103

Notes:
DfT 1993-2009 National Data based on Table 1.2b Road Statistics 2009, Traffic, Speeds and Congestion.

The indices in this table differ from traffic flow indices quoted elsewhere due to:

1. Different measurement methods i.e. local traffic flow indices are derived from a sample of 12-hour average weekday counts whereas local vehicle kilometre estimates are based on 24-hour AADT estimates on all links.
2. Increases in road length due to road building, which affects motorways in particular.

Figure 2.20 Indices of National and Local Vehicle Kilometres by Road Class 1993 - 2009



Index: 1993 = 100

Congestion Monitoring: Average Journey Time Rates 2004/05 – 2008/09

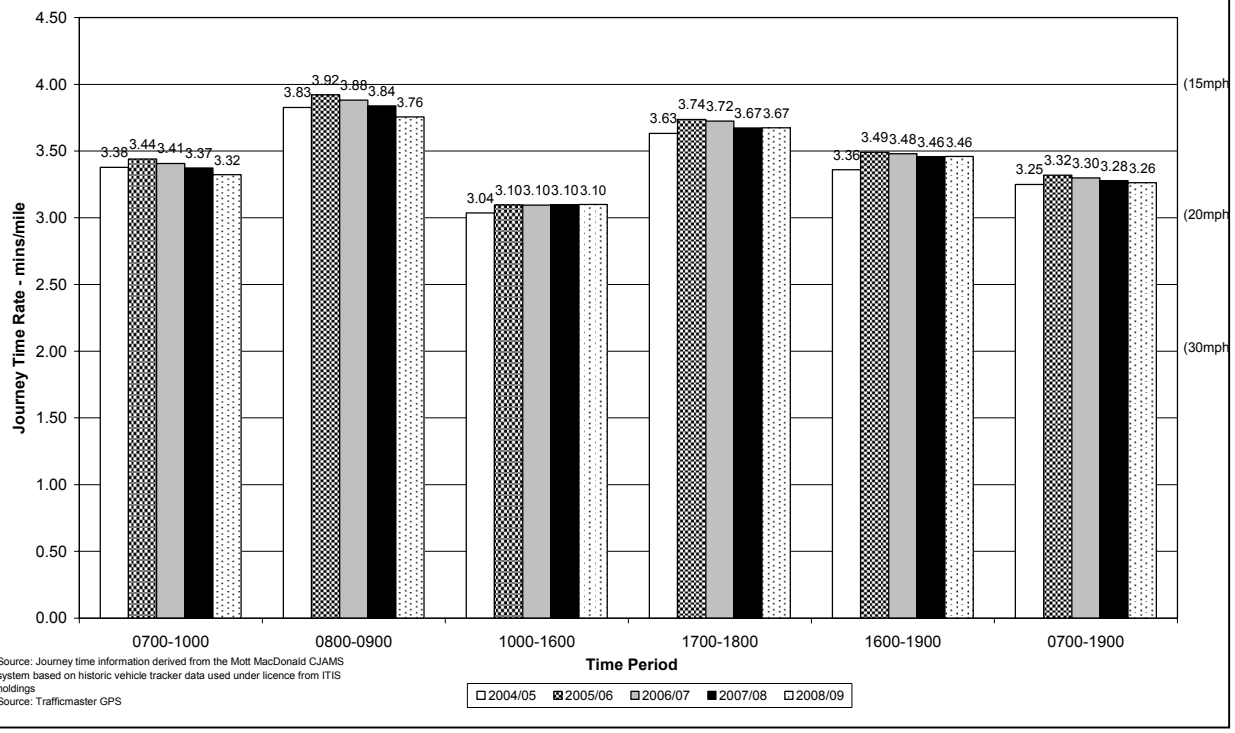
2.30 Table 2.31 shows average journey time rates and average speeds on motorways and on A and B roads in Greater Manchester for 2008/09. Rates are given separately for Motorways and A & B roads and are given for six time periods. Data is from Trafficmaster GPS. Figures are the average for the 12-month period running from September 2008 to August 2009.

Table 2.31 Average Journey Time Rates Greater Manchester 2008/09

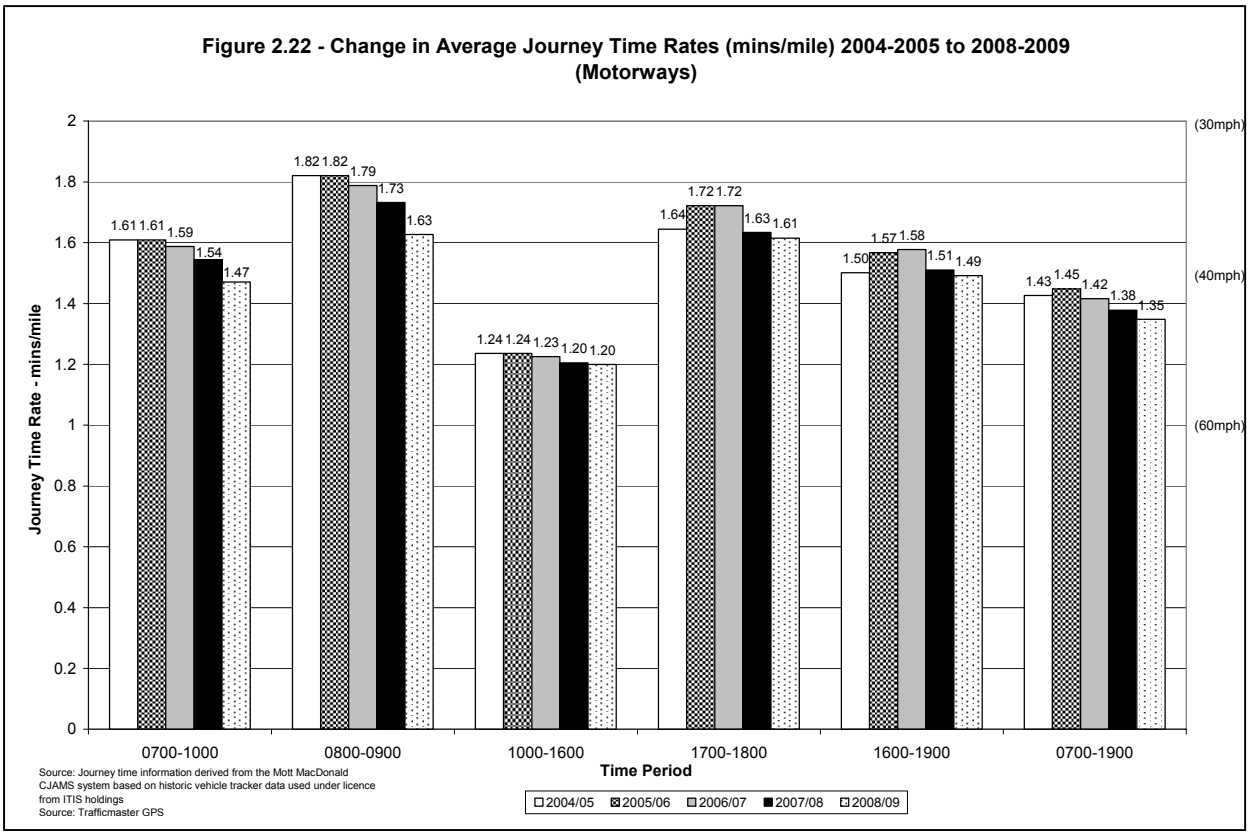
	Motorways		A & Roads (30 mph)	
Time Period	mins/mile	(mph)	mins/mile	(mph)
0700-1000	1.47	(41)	3.32	(18)
0800-0900	1.63	(36)	3.76	(16)
1000-1600	1.20	(50)	3.10	(19)
1700-1800	1.61	(37)	3.67	(16)
1600-1900	1.49	(40)	3.46	(17)
0700-1900	1.35	(44)	3.26	(18)

2.31 Figures 2.21 – 2.22 present a historical trend of this journey time data from 2004/05 – 2008/09 for A & B roads and motorways respectively. Data from 2004/05 to 2006/07 is derived from the Mott MacDonald CJAMS System based on vehicle tracker data used under licence from ITIS Holdings. Adjustments have been made to historical data based on the differences between ITIS and Trafficmaster data in 2006/07 as data is available from both sources.

Figure 2.21 - Change in Average Journey Time Rate (mins/mile) 2004-2005 to 2008-2009 (A & B Roads)



Source: Journey time information derived from the Mott MacDonald CJAMS system based on historic vehicle tracker data used under licence from ITIS holdings
Source: Trafficmaster GPS



2.32 Figure 2.23 shows a daily (07:00-19:00) profile of average journey time rates by motorway and A & B roads for 2006/07, 2007/08 and 2008/09.