Dudley Cordon Survey

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Dudley Cordon Report 2004

March 2005

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Dudley Cordon Report 2004

Issue and Revision Record

Rev	Date	Originator	Checker	Approver	Description
1	27/06/05	Deb King	Barry Storey	Barry Storey	Draft

Dudley Cordon Survey

1.1 Introduction

This report is being undertaken as part of the Local Transport Plan monitoring process. The purpose of the report is to give an indication of the level of vehicular activity in Dudley Town Centre, to indicate existing and future levels of transport demand and to monitor the effects of transport policy. The manual surveys have been undertaken by Dudley Borough Council, while the automatic surveys and analysis have been undertaken by Mott MacDonald.

1.2 Methodology

The most effective method of obtaining the necessary data is to monitor traffic flows crossing a cordon around the town centre. Sites are positioned on all the main roads, with further sites on some of the minor roads so as to obtain a 'closed' cordon. The idea is to capture all vehicles entering the town centre.

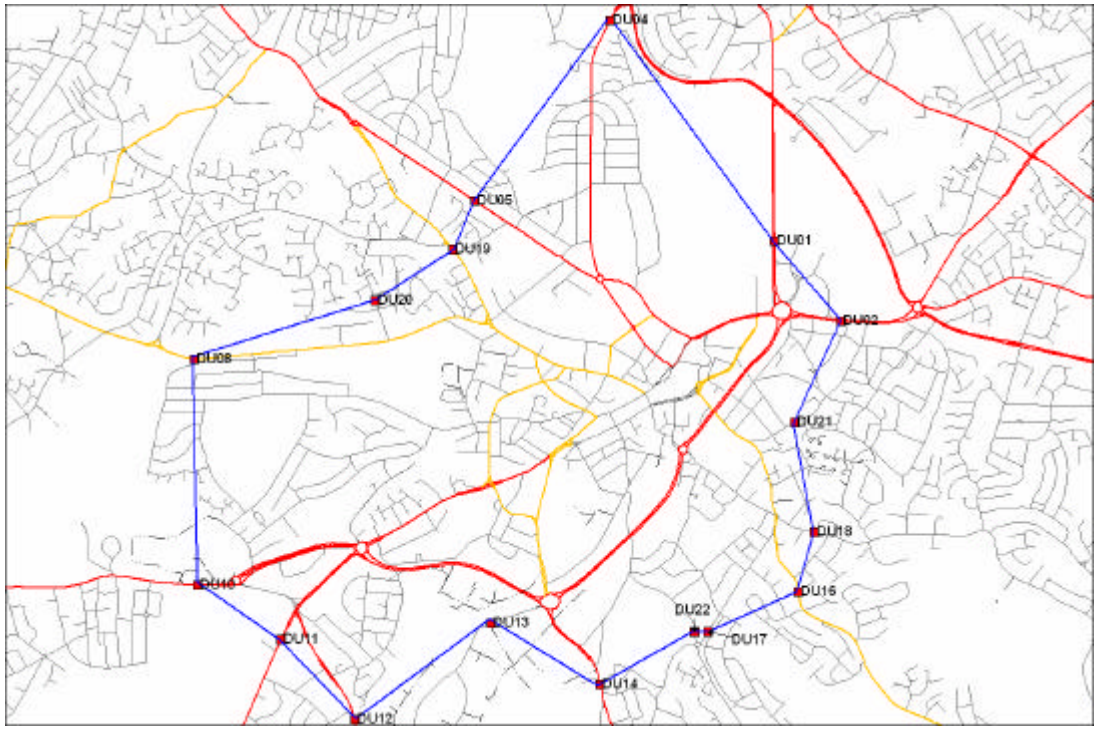
Counters are used that record the vehicles automatically (ATC's). In this way, data for a full week is collected, enabling 24 hour average weekday data to be presented.

4 sites are also surveyed manually by Dudley Borough Council staff. This data is used to estimate the modal split of the automatic data and also to estimate the number of people travelling into the town centre by private vehicle.

A complementary bus cordon survey has been undertaken by Mott MacDonald on behalf of Centro, which feeds into this report.

Collection of the data took place during the week beginning Monday 29th November. The same sites are monitored during the same weeks biennially to maintain consistency in the data.

Figure 1: Location of Automatic Traffic Counters



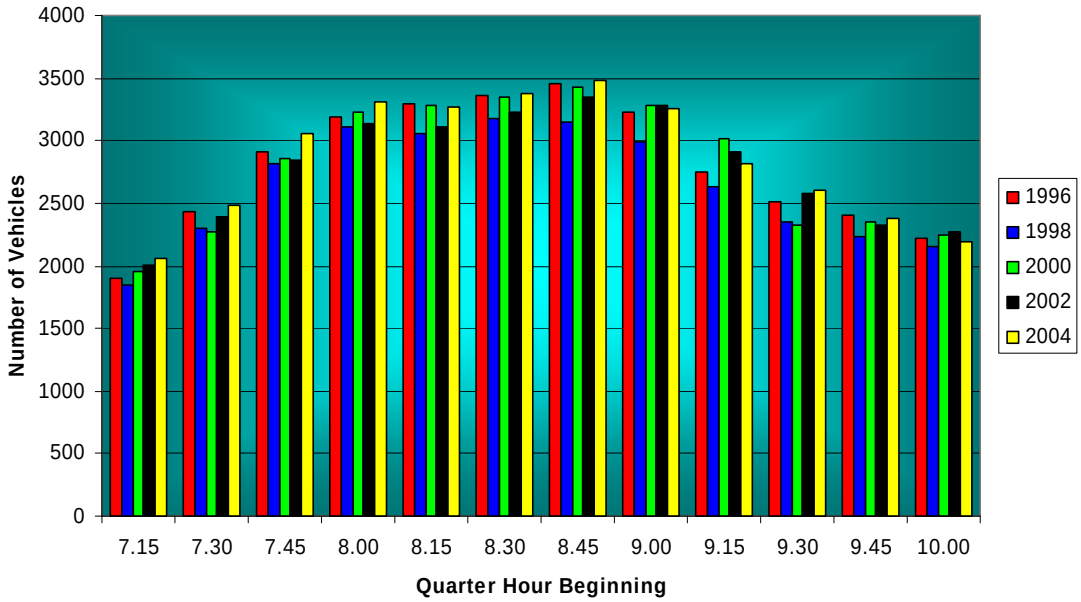
Automatic Survey Results

Table 1: Number of vehicles crossing the cordon in the Morning Peak (07.30 - 09.30)

	1996	1998	2000	2002	2004
Inbound	24,705	23,301	24,785	24,435	25,163
Total Outbound Total	18,462	18,649	19,496	20,068	20,506

- Inbound traffic during the morning peak period has remained around the same level between 1996 and 2004.
- Outbound traffic has been increasing steadily which suggests that there is now a greater amount of through traffic within the town centre.
- This is supported by figure 7 which shows a reducing amount of accumulated traffic within the town centre.

Figure 2: Inbound Vehicles by Quarter Hour (07.00-10.00)



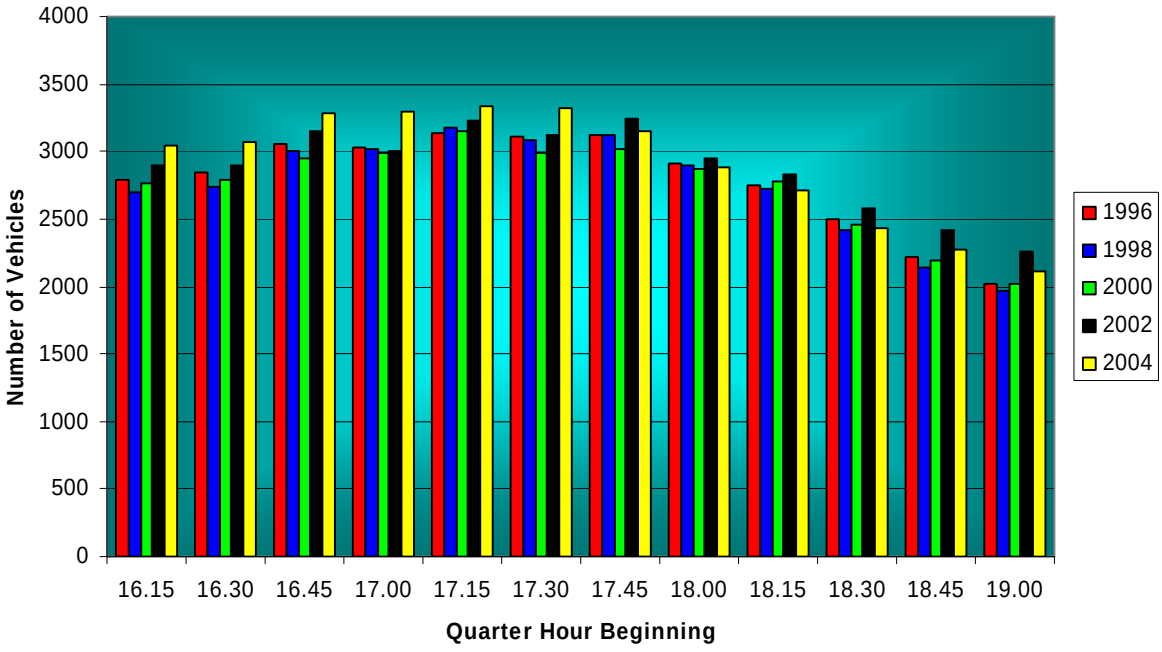
- Figure 2 shows fluctuating changes in traffic between 1996 and 2004.
- Traffic volumes were higher in the quarter hour periods between 7.00 and 9.00am during 2004 compared with 2002.

Table 2: Number of vehicles crossing the cordon in the Morning Off-Peak Period (10.00-12.00)

	1996	1998	2000	2002	2004
Inbound Total	18,217	15,530	16,760	17,000	17,189
Outbound Total	15,130	15,216	16,582	16,967	17,107

- Traffic during the off-peak period has remained at approximately the same level both inbound and outbound during 2004 compared with 2002.

Figure 3: Outbound Evening Peak Hour Flows (16.00-19.00)



- Figure 3 shows increases during the early evening peak 16.00-17.45 but slight decreases during the late peak period 17.45-19.00.

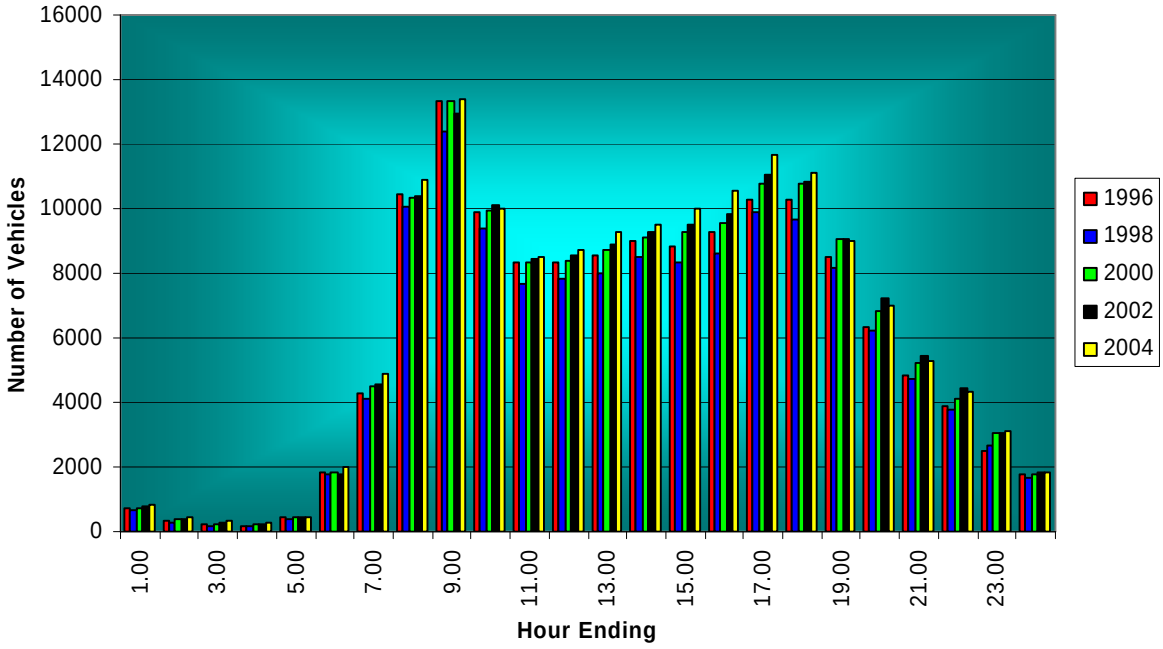
Dudley Cordon Survey

Table 3: Total Vehicles by Time Period on an Average Day

	07.30 - 09.30	10.00 - 12.00	16.00 - 18.00	07.00 – 19.00 (12 hour)	00.00 – 24.00 (24 hour)
1998					
Inbound	23,299	15,530	19,563	108,544	135,194
% of 24 hr	17.2	13.8	14.5	80.3	100
Outbound	18,645	15,216	23,726	110,654	140,135
% of 24 hr	13.3	10.9	16.9	79.0	100
NET	4,654	314	-4,163	-2,110	-4,941
2000					
Inbound	24,785	16,760	21,555	117,627	147,029
% of 24hr	16.9	11.4	14.7	80.0	100
Outbound	19,496	16,582	23,516	115,086	145,312
% of 24hr	13.4	11.4	16.2	79.2	100
NET	5,289	178	-1,961	2,541	1,717
2002					
Inbound	24,435	17,000	21,870	118,856	149,276
% of 24hr	16.4	11.4	14.7	79.6	100
Outbound	20,068	16,967	24,496	119,091	151,434
% of 24hr	13.3	11.2	16.2	78.6	100
NET	4,367	33	-2,626	-235	-2,158
2004					
Inbound	25,163	17,189	22,791	122,541	153,313
% of 24hr	16.4	11.2	14.9	79.9	100
Outbound	20,506	16,902	25,396	120,817	152,497
% of 24hr	13.4	11.1	16.7	79.2	100
NET	4,657	287	-2,605	1,724	816

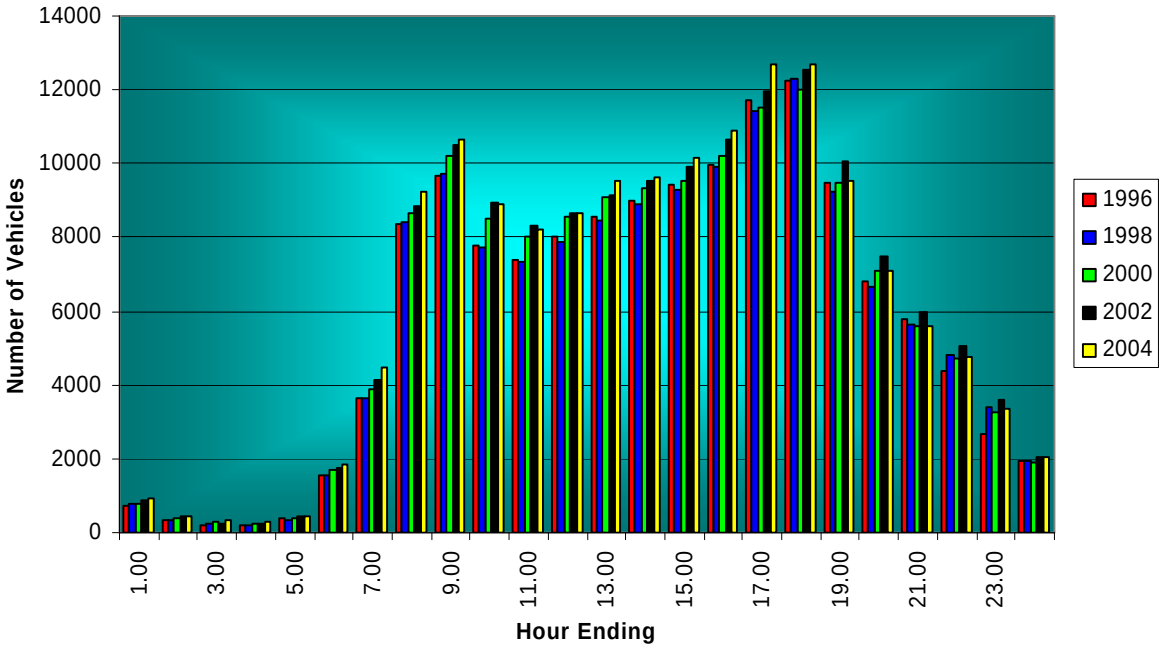
- 16.4% of traffic flowing into the town centre on a typical weekday crossed the cordon line between the hours of 7.30a.m.and 9.30a.m.
- 16.7% of outbound traffic crossed the cordon line between 1600-1800.
- 11.2% of the daily traffic into the city centre occurred during the off peak time period (1000-1200).
- Around 80% of average daily inbound traffic crossed the cordon during the main 12hr day (0700-1900).
- 79% of outbound traffic crossed the cordon within the same period.
- The number of vehicles counted in 2004 were slightly more inbound than those counted in 2002 (2.7%), and almost the same outbound (+0.7%).

Figure 4: 24 Hour Flows Inbound



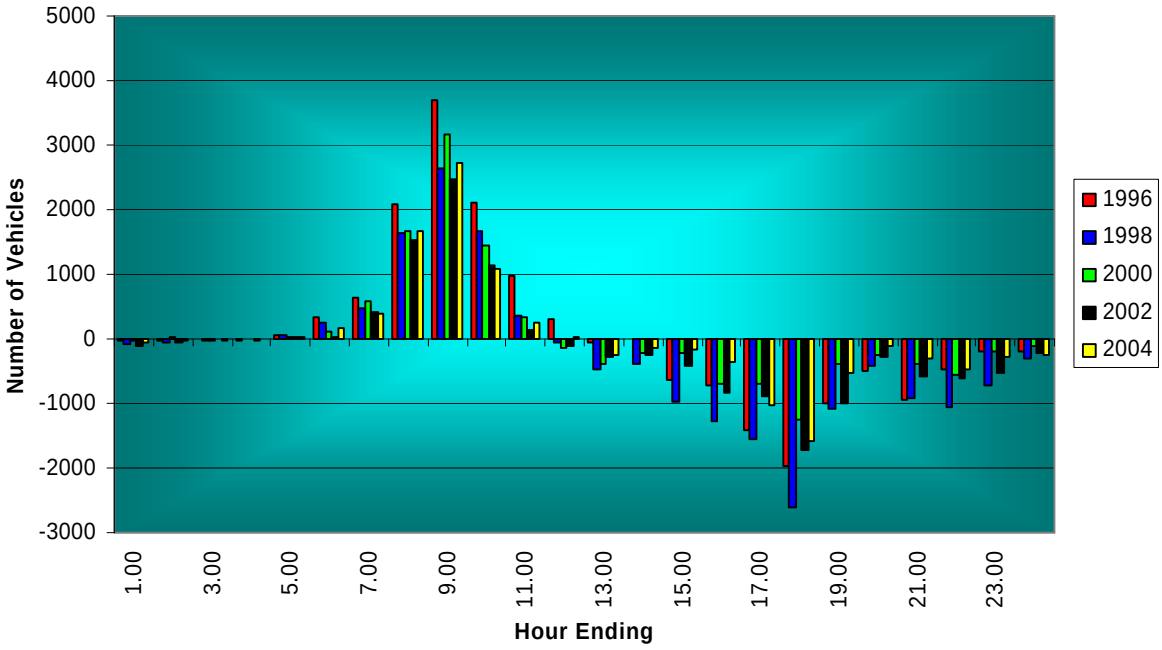
- Figure 4 shows the distribution of vehicles entering Dudley Town Centre by hour over the 24 hour period.
- Traffic has increased in most periods during the day especially during the afternoon period.

Figure 5: 24 Hour Flows Outbound



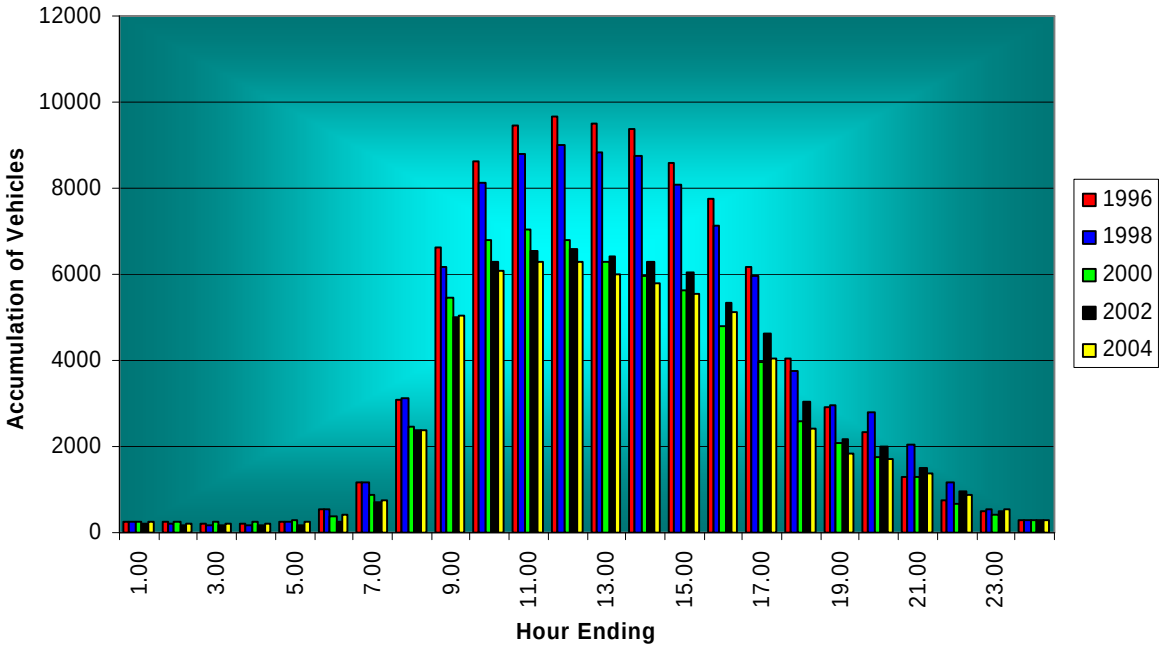
- Figure 5 shows the corresponding outbound flow by hour over the 24 hour period.
- The outbound figures follow a similar pattern to the inbound figures with increases being seen in most time periods except during the evening.

Figure 6: Net Loss/Gain in Vehicles over 24 hour Period



- Figure 6 shows the net gain in vehicles to the cordon by hour from 1996 to 2004.
- In 2004 the highest single hour was 08.00-09.00 when 2,733 more vehicles entered the town centre than left it.
- Correspondingly, the highest hour in the evening was 17.00-18.00 when 1,571 more vehicles left the town centre than entered it.

Figure 7: Accumulation of Vehicles in Dudley Town Centre 1996-2004

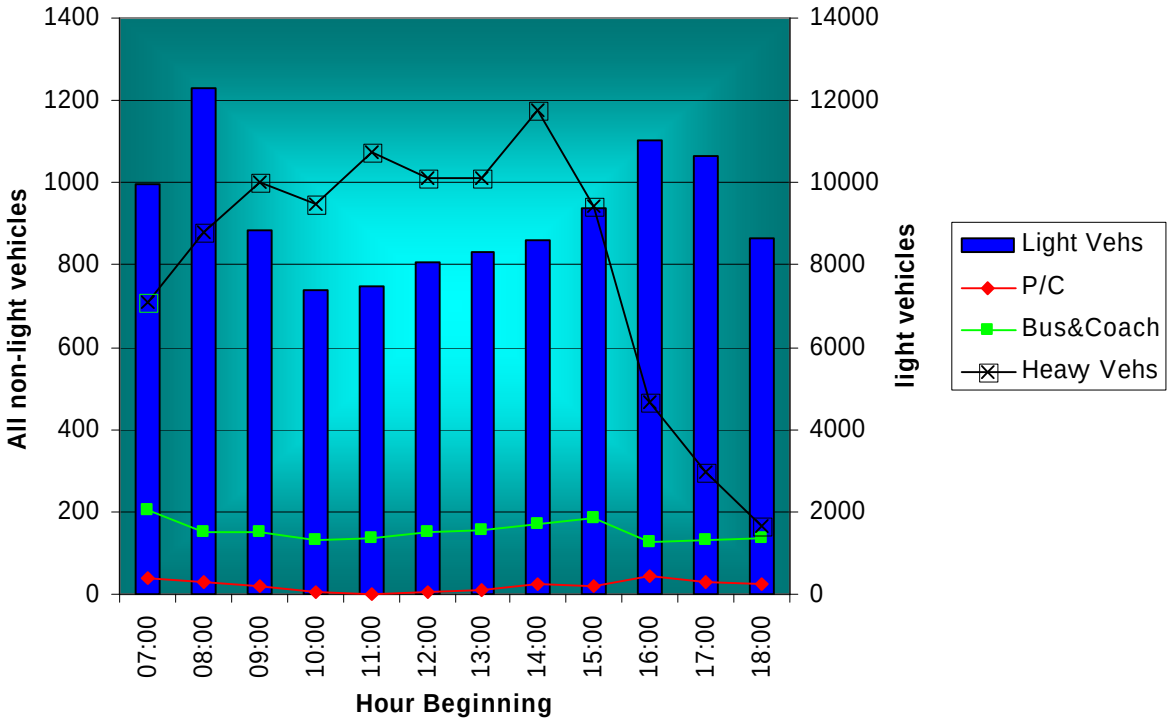


- Figure 7 shows the accumulation of vehicles during the 24 hour period in Dudley town centre.
- The highest number of vehicles remaining inside the town centre occurs during 11.00-12.00 when there were an estimated 6,311 vehicles within the cordon.
- There has been a continuation in the decline in the number of vehicles present within the town centre since 1996 from a peak of 9,500 to approximately 6,300 in 2004.

* N.B. In calculating accumulation of vehicles, the ratio of inbound to outbound vehicles was balanced and a nominal 300 vehicles were added in as an estimate of vehicles remaining inside the cordon overnight

1.4 Mode of Travel

Figure 8: Estimated Inbound Vehicles by Mode 2004.



- The manual surveys give us an indication of the volume of travel into and out of the centre by mode.
- For the purpose of Figure 8, 'light vehicles' includes motorcycles, cars, taxis and light vans less than 1.5T. The heavy goods category includes all vehicles over 1.5T.
- The vehicle mode is estimated by multiplying the percentage vehicle type taken from the manual surveys and the number of vehicles taken from the automatic traffic count survey.

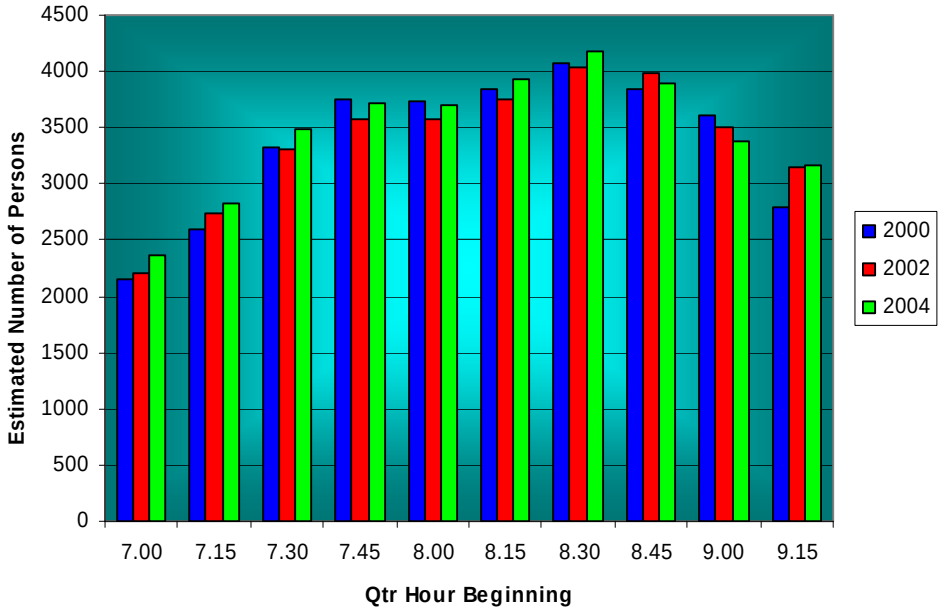
Dudley Cordon Survey

Table 4: Estimates of Persons from Occupancy Data 2004

Total Veh	Total Occ.	Ave Occupancy		A	B	C	D	E	F	G				
				Automatically Counted Vehicles	Estimated Number of Buses	Estimated Pedal Cycles	Est. Light Vehs.	Est People Light Vehs	Est People Light Vehs + Ped Cyc	Estimated Heavy Vehs	Est People Heavy Vehs	**Est People 2004 Light&Heavy + P/C**	**2002**	**2000**
676	796	1.18	7.00	2060	56	8	1852	2181	2188	144	173	2361	2214	2145
775	905	1.17	7.15	2487	61	12	2256	2634	2646	159	177	2823	2737	2589
1056	1226	1.16	7.30	3052	54	14	2794	3244	3258	189	236	3495	3300	3318
1019	1156	1.13	7.45	3314	29	6	3065	3477	3483	213	235	3718	3580	3758
1046	1204	1.15	8.00	3265	55	9	2983	3433	3442	219	266	3708	3572	3742
944	1111	1.18	8.15	3377	32	12	3075	3620	3631	257	308	3939	3745	3839
1093	1330	1.22	8.30	3483	30	3	3259	3966	3969	191	212	4181	4037	4073
1093	1328	1.22	8.45	3256	34	6	3003	3648	3654	214	243	3897	3992	3850
1002	1219	1.22	9.00	2819	40	3	2572	3129	3131	205	240	3371	3506	3603
863	1078	1.25	9.15	2598	48	0	2293	2865	2865	257	303	3168	3143	2792
8116	9652	1.19	0730-0930	25163	323	52	23044	27381	27434	1744	2043	29477	28875	28974

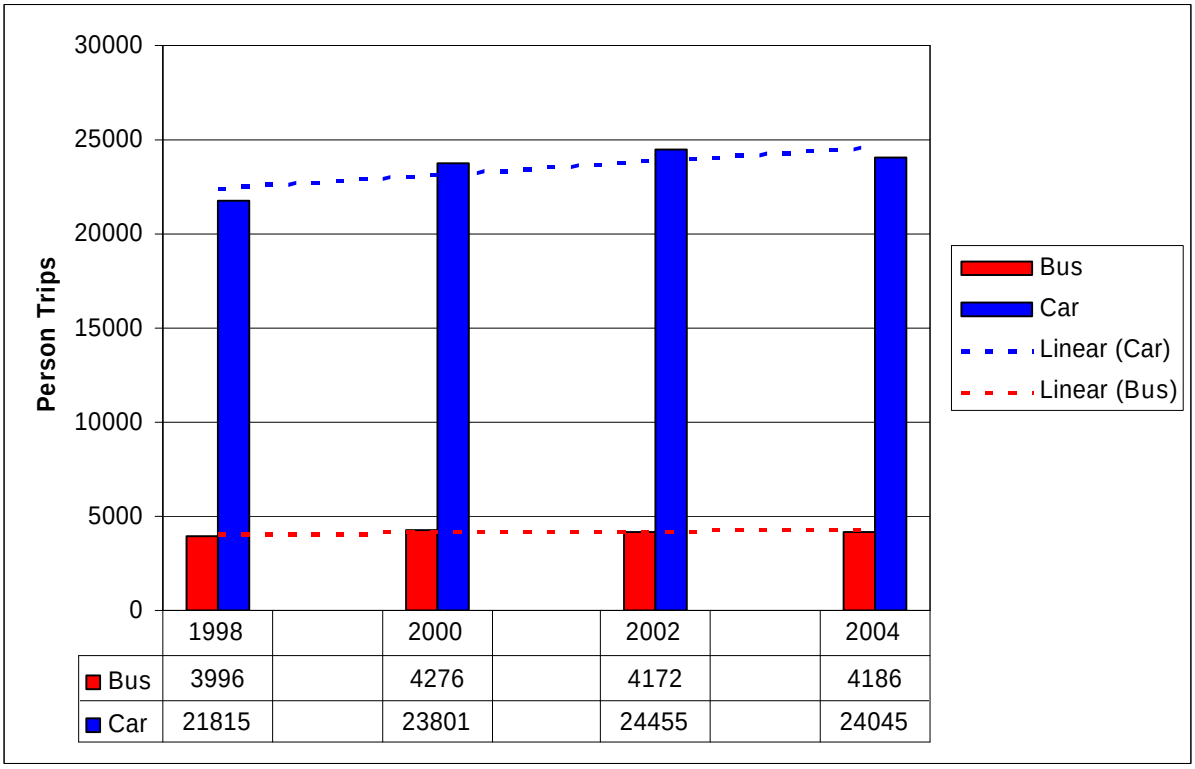
The figures represented in Table 4 are shown in Figure 9.

Figure 9: Estimates of Persons Travelling Inbound by Private Transport 07.00-09.30



- Figure 9 illustrates the estimated number of people travelling into Dudley town centre by means of private transport. This includes drivers and passengers of all vehicles except buses.
- Most time periods show increases compared with 2002. The only exception was the half hour period from 08.45-09.15.

Figure 10: Total Inbound Person Trips 0730-0930



	1998	2000	2002	2004
Bus	3996	4276	4172	4186
Car	21815	23801	24455	24045

- 85.2% of personal trips made into Dudley Town centre during the morning peak are made by car. This figure has only varied from this amount by -0.7% since 1998.

- Bus trips have remained fairly constant over the six year period while car trips have fluctuated slightly. Car trips peaked in 2002, but in 2004 they decreased slightly by 1.7%