

ASSOCIATION OF GREATER MANCHESTER AUTHORITIES

GREATER MANCHESTER TRANSPORTATION UNIT

Hazel Grove Bus Gating Scheme

Final Report

GMTU Report 1341

November 2007

Summary

This report details the results of the 'Before' and 'After' surveys undertaken in May and October 2007 in relation to the Bus Gating Scheme trialled in Hazel Grove, Stockport. An 'Interim' report has already been produced (GMTU Report 1324) which details the 'Before' and 'Interim' results.

The scheme gives increased priority to buses leaving the bus terminus, allowing them to progress along the A523 Macclesfield Rd onto the A6 northbound, whilst general traffic is held back at the bus terminus and A6 Buxton Rd (Rising Sun) traffic signals.

The results show significant improvements of over 3 minutes have been made to both bus and car journey times between the bus terminus and Sainsbury's (just north of Hazel Grove), though buses are now taking longer to make the rest of the journey to Stockport Town Centre. Bus journey time variances have reduced from almost 10 minutes to less than 5 minutes when travelling through Hazel Grove, but increased by almost 2 minutes on the full route. In the southbound direction both bus and car journey times have remained similar to before, with slight gains made in Hazel Grove offset by delays on the earlier part of the route. It is thought this is partly due to traffic signal changes at Dialstone Lane.

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November 2007

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1. Introduction

- 1.1 As part of the strategy to improve conditions for buses on the A6 Quality Bus Corridor between Hazel Grove and Manchester, GMPTE and Stockport MBC have tested 'bus gating' in Hazel Grove.
- 1.2 The principle of the scheme is to use traffic signal timings to prevent too much traffic entering Hazel Grove beyond the Rising Sun junction, to allow the A6 to run clear heading towards Stockport. Given the close proximity of this junction to the 192 bus terminus the route is kept clear of excess queues.
- 1.3 The scheme is designed to apply during the morning peak when there are currently large queues of traffic heading towards Stockport.

The two traffic signal junctions that hold back traffic are:

1. Buxton Road at the Rising Sun junction.
2. Macclesfield Road at the bus terminus (near Melford Road)

These are seen as 'gates' that are opened only for a short time to allow a controlled amount of traffic to get through.

- 1.4 The detailed adjustments made by Greater Manchester Urban Traffic Control (GMUTC) do not form part of this report but it is understood the traffic signals at the bus terminus are a signalised pedestrian crossing, adapted to control exiting buses.
- 1.5 GMTU were commissioned to collect three sets of traffic monitoring data, to cover the periods before any changes were made (before), immediately following (interim) and several months later (after). The objectives of this data collection is summarised below:
 - To quantify the changes in bus and car journey times between the bus terminus and Stockport Town Centre.
 - To identify and quantify any changes in traffic patterns across the local and wider road network.
- 1.6 The survey periods selected were as follows and were undertaken in the AM Peak period only, between 0700 and 1000 over three consecutive weekdays, during neutral periods and outside of school holidays.

The 'before' survey period was 8, 9, 10 May 2007

The 'interim' survey period was 12, 13, 14 June 2007 (see GMTU Report 1324)

The 'after' survey period was 16, 17, 18 October 2007

- 1.7 For bus journey time surveys, an additional week was agreed for the 'interim' and 'after' studies, with the data incorporated into the main results. The dates for these were as follows:-

'interim'	19, 20, 21 June 2007
'after'	9, 10, 11 October 2007

- 1.8 The types of survey undertaken are provided in the following list. Details of specific survey types, methodologies used and detailed locations can be found within each of the survey results.

List of surveys

- Bus Journey Times
- Car Journey Times
- Traffic Flows on local roads
- Traffic Flows on the wider network
- Red light running (interim survey only at bus terminus signals)

- 1.9 The object of this 'Final' report is to provide the results of the 'Before' and 'After' surveys along with any analysis that can be drawn. In order to provide a fuller picture of the effects and changes to journey times in and around Hazel Grove data for each direction has been included. Please refer to the separate GMTU Report 1324 for details of the 'Interim' results and their comparisons with the 'Before' or 'After' surveys.

2. Bus Journey Times – Surveys and Results

- 2.1 GMTU proposed the use of GPS units on buses running the route to monitor journey times as this methodology has been proven with successful trial runs in co-operation with Stagecoach. GPS units were therefore issued to bus drivers with the assistance of Stagecoach supervisors. The focus was on the short running 192 services between Hazel Grove and Stockport Town Centre. Seven of these services operated each day during the morning peak survey period (0700 to 1000). However, prior to the final set of surveys Stagecoach had discontinued the short running service, so the full routing services were used. The GPS units were removed from northbound buses on arrival at the bus stop opposite Debenhams in Stockport Town Centre and placed on southbound services as they left Mersey Square.
- 2.2 A selected number of key signalised traffic junctions were used in order to compare the three sets of results against. The focus of these is in Hazel Grove District Centre. The list is as follows:
- A523 Macclesfield Rd (Bus Terminus)
 - A6 London Rd/Buxton Rd and A523 Macclesfield Rd (Rising Sun)
 - A6 London Rd/A627 Torkington Road
 - A6 London Rd/School St/Brook St (McDonalds)
 - A6 London Rd/Commercial Road (Co-op)
 - A6 London Rd/Mill Street (Sainsbury's)
 - A6 Wellington Rd South/Greek St – Stockport Town Centre
- 2.3 Figure 1 on page 6 maps the above points (except Greek St) along with those used for Car Journeys.
- 2.4 Tables 1 and 2 (page 5) provide the results of the Bus Journey Time surveys. Dwell times have been included as it is not possible (using GPS) to distinguish between a junction delay and time stood at a bus stop when they are very close to each other. As such, any junction delays for buses detailed in this report are only a guide and have been labelled 'section' delays. Table 1 shows the northbound journey from Hazel Grove to Stockport and Table 2 is southbound.
- 2.5 Table 1 shows that average journey times have reduced by over three minutes between the bus terminus and Sainsbury's (which lies just north of Hazel Grove District Centre). However, the journey time from Sainsbury's to Stockport Town Centre has increased by the same amount, leaving the full-length journey time unchanged. A reduction in delays seems to account for over half the time saved in Hazel Grove. The most significant improvement has been between School St (McDonalds) and the junction of the A6 with Commercial Rd (near the Co-op), with over two minutes saved on average. This suggests less congestion within the District Centre, probably due to the general traffic being temporarily held back at the 'bus gate'.
- 2.6 Table 2 (the opposite direction) also shows a saving on journey times within Hazel Grove, which equates to just over one minute between Sainsbury's and the bus terminus. Again though, the average journey time has increased along the section from Stockport to Sainsbury's (by over one and a half minutes). The

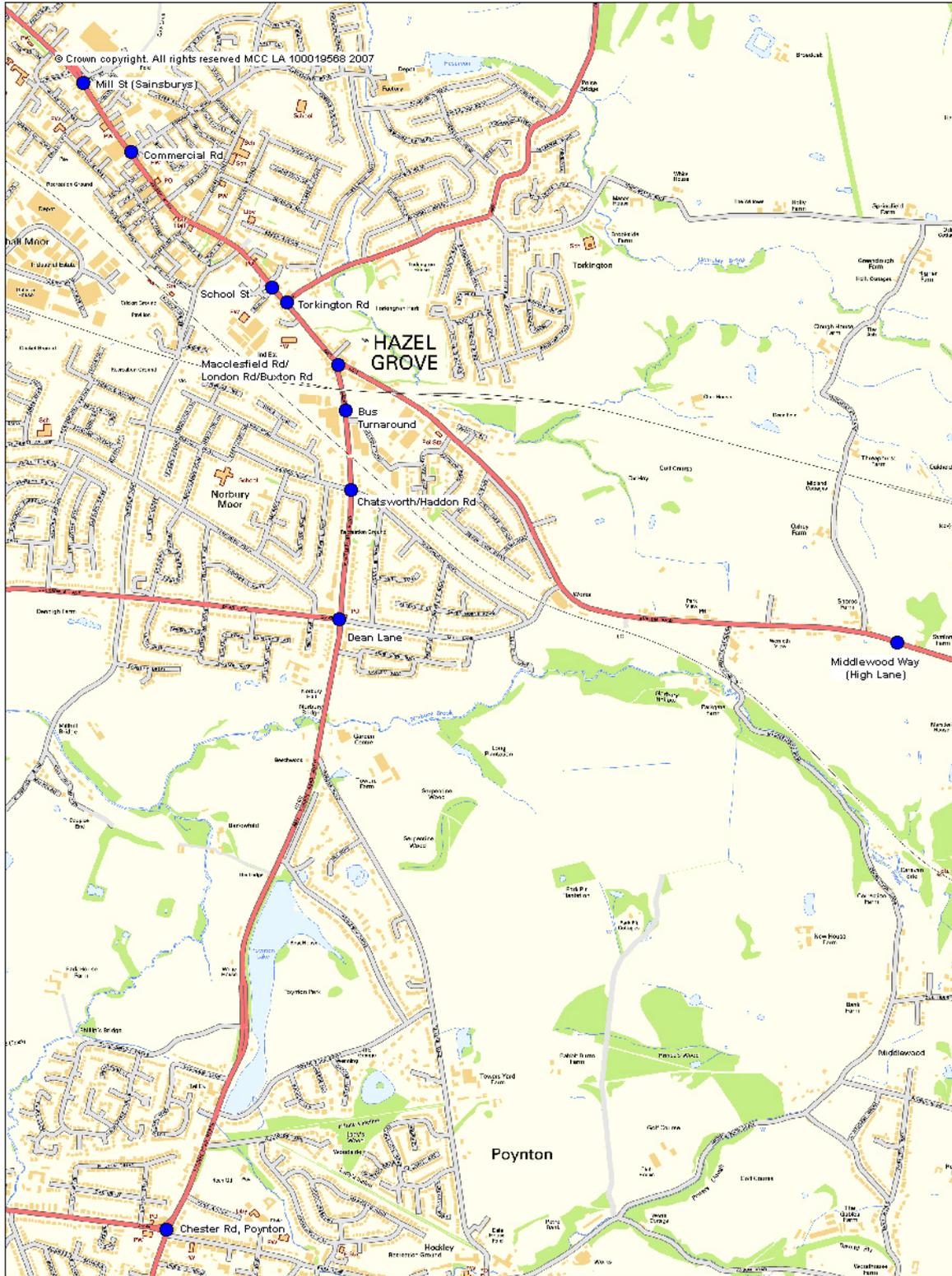
net effect has been slightly longer journey times along the whole length (just over half a minute). As mentioned in the 'Interim Report' it was thought that reductions made to the traffic signal green times (southbound) at the junction with Dialstone Lane could have contributed to this.

- 2.7 A full set of Bus Survey results for the 'Before' and 'Final' surveys, including all timing points between the Hazel Grove bus terminus and Stockport Town Centre (in both directions) can be found in Appendix 1 at the back of this report.
- 2.8 It is frequently mentioned that people experience huge variations in journey times along the A6 from Hazel Grove to Stockport, therefore a summary table has been included below (Table 3) to show the variations recorded on the survey days for bus journeys. The results for the 'Before' survey week show a difference of almost nine minutes for the full route to Stockport Town Centre and just under ten minutes difference to get through Hazel Grove itself. In the 'Final' surveys (done over two weeks) the results fair much better within Hazel Grove, and show a difference of just four and a half minutes between the slowest and fastest recorded journeys. Unfortunately the full route has got worse by almost two minutes, indicating problems may have been created further along the A6 towards Stockport. From the data contained in the full set of results (Appendix 1) it appears the problem area lies between Dialstone Lane and Bramhall Lane South, as most of the timing points in between show longer journey times.

Table 3	Bus Journey Time Variations - Hazel Grove to Stockport (mm:ss)		
	Terminus to Sainsbury's	Sainsbury's to Stockport	Whole Journey
Before			
08/05/2007	17:37	12:49	30:26
09/05/2007	09:20	12:55	22:15
10/05/2007	07:48	13:46	21:34
Average	11:35	13:10	24:46
Minimum	07:48	12:49	21:34
Maximum	17:37	13:46	30:26
Difference	09:49	00:57	08:52
After			
9/10/2007	11:05	15:31	26:36
10/10/2007	10:38	15:17	25:55
11/10/2007	09:40	19:55	29:35
16/10/2007	07:51	15:57	23:48
17/10/2007	06:47	13:54	20:41
18/10/2007	06:29	18:23	24:52
Average	08:45	16:29	25:15
Minimum	06:29	13:54	20:23
Maximum	11:05	19:55	31:00
Difference	04:36	06:01	10:37

Table 1		Bus Journey Times - Hazel Grove to Stockport - incl. boarding/alighting times								
Timing Point	Length (miles)	Ave Journey Time (mm:ss)			Ave Speed (mph)			Ave Section Delay (mm:ss)		
		Before	After	Diff	Before	After	Diff	Before	After	Diff
A523 Macclesfield Rd - Traffic Signals - London Rd/Buxton Rd (Rising Sun)	0.1	00:49	00:30	-00:19	7.4	12.1	4.7	00:31	00:09	-00:22
A6 London Rd - Traffic Signals - A627 Torkington Rd	0.2	01:26	01:03	-00:18	7.0	9.6	2.6	01:06	00:39	-00:22
A6 London Rd - Traffic Signals – School/Brook St (McDonalds)	0.1	00:38	00:21	-00:16	5.7	10.1	4.4	00:29	00:13	-00:16
A6 London Rd - Traffic Signals - Commercial Rd (Co-op)	0.4	06:51	04:25	-02:09	3.5	5.4	1.9	02:08	01:20	-00:40
A6 London Rd - Traffic Signals - Mill St (Sainsbury's)	0.2	01:52	02:09	00:17	5.4	4.7	-0.7	00:21	00:37	00:16
Total/Average (Bus Terminus to Sainsbury's)	0.9	11:36	08:28	-03:08	5.8	8.4	2.6	04:35	02:58	-01:37
A6 Wellington Rd South - Traffic Signals - Greek St, Stockport	2.0	13:10	16:16	03:06	9.2	7.5	-1.7	05:47	06:34	00:47
Total/Average (whole journey)	2.9	24:46	24:44	-00:04	7.0	7.1	0.1	10:22	09:32	-00:50

Table 2		Bus Journey Times - Stockport to Hazel Grove - incl. boarding/alighting times								
Timing Point	Length (miles)	Ave Journey Time (mm:ss)			Ave Speed (mph)			Ave Section Delay (mm:ss)		
		Before	After	Diff	Before	After	Diff	Before	After	Diff
A6 London Rd - Traffic Signals - Mill St (Sainsbury's)	2.0	11:15	12:53	01:38	10.9	9.5	-1.4	03:45	04:26	00:41
A6 London Rd - Traffic Signals - Commercial Rd (Co-op)	0.2	01:15	00:55	-00:20	8.1	11.1	3.0	00:48	00:30	-00:18
A6 London Rd - Traffic Signals – School/Brook St (McDonalds)	0.4	02:09	01:57	-00:12	10.9	12.1	1.2	00:26	00:17	-00:09
A6 London Rd - Traffic Signals - A627 Torkington Rd	0.1	00:31	00:39	00:08	6.8	5.4	-1.4	00:23	00:31	00:08
A523 Macclesfield Rd - Traffic Signals - London Rd/Buxton Rd (Rising Sun)	0.2	01:27	01:13	-00:14	7.0	8.3	1.3	01:07	00:54	-00:13
A523 Macclesfield Rd - Traffic Signals - Bus Terminus	0.1	01:00	00:35	-00:25	6.6	10.9	4.3	00:44	00:18	-00:26
Total/Average (Sainsbury's to Bus Terminus)	0.9	06:22	05:19	-01:03	7.9	9.6	1.7	03:28	02:30	-00:58
Total/Average (whole journey)	2.9	17:37	18:12	00:35	10.0	9.7	-0.3	07:13	06:56	-00:17



Bus/Car Journey Times (Selected Timing Point Locations)

GMTU SALISBURY HOUSE GRANBY ROW MANCHESTER, M1 7AH	Drawn By : Paul Howarth	Date : July 2007
	Scale : NTS	Figure 1

3. Car Journey Times – Surveys and Results

3.1 In car GPS units were used to collect a series of car journey times along two routes, both of which pass through the centre of Hazel Grove and along the A6 to Stockport.

- Route 1 – Poynton (Chester Road junction) to Greek Street, Stockport Town Centre.
- Route 2 – High Lane (west of Windlehurst Road at Middlewood Way to Greek Street, Stockport Town Centre.

3.2 Journey times for a sample of cars were also collected using registration plate matching along the A627 Torkington Road, between Sanderling Road and the A6 London Road in the southwest bound direction only.

3.3 The above car journey time surveys were run in parallel with the bus journey time surveys in order to allow for comparisons between mutual timing points.

3.4 As per the bus journey time surveys a number of selected timing points were chosen in order to compare results. These points include those used for bus journeys (see paragraph 2.2), but with the following additions which are beyond the end of the bus route:

Route 1

- Signalised pedestrian crossing at Chatsworth Rd/Haddon Rd on the A523 Macclesfield Rd
- Junction of Dean Lane and A523 Macclesfield Rd
- Junction of Chester Road and A523 Macclesfield Rd, Poynton (start point)

Route 2

- Start point at Middlewood Way, High Lane

Figure 1 on page 6 shows the positions of these along with those listed in paragraph 2.2.

3.5 Table 4 on the next page provides the results of the Car Journey Time surveys from Poynton to Stockport. The route has been broken down into three sectors with sub totals for each as follows:

- Poynton to the Hazel Grove bus terminus
- Bus terminus to Sainsbury's in Hazel Grove (Mill Street)
- Sainsbury's to Stockport.

3.6 Table 5 (which then follows on page 9) is the reverse journey, i.e. Stockport to Poynton. Again this has been broken down into sectors.

3.7 A full set of Car Journey Time results for the 'before' and 'after' surveys, can be found in Appendix 2 at the back of this report.

Table 4		Car Journey Times - Poynton (Jnc A5149 Chester Rd) to Stockport								
Timing Point	Length (miles)	Ave Journey Time (mm:ss)			Ave Speed (mph)			Ave Junction Delay (mm:ss)		
		Before	After	Diff	Before	After	Diff	Before	After	Diff
A523 Macclesfield Rd - Traffic Signals - A5143 Dean Lane	1.4	02:55	03:06	00:11	27.8	26.2	-1.6	00:28	00:43	00:15
A523 Macclesfield Rd - Ped Signals - Chatsworth Rd/Haddon Rd	0.2	00:26	00:27	00:01	27.0	25.8	-1.2	00:00	00:00	00:00
A523 Macclesfield Rd - Traffic Signals - Bus Turnaround	0.2	00:46	01:01	00:15	18.9	14.1	-4.8	00:12	00:33	00:21
Total/Average (Poynton to Bus Turnaround)	1.8	04:07	04:34	00:27	24.6	22.0	-2.5	00:40	01:16	00:36
A523 Macclesfield Rd - Traffic Signals - A6 Buxton Rd (Rising Sun)	0.1	00:32	00:25	-00:07	11.5	14.8	3.3	00:16	00:09	-00:07
A6 London Rd - Traffic Signals - A627 Torkington Rd	0.2	00:54	00:23	-00:31	11.2	26.1	14.9	00:33	00:01	-00:32
A6 London Rd - Traffic Signals - School St (McDonalds)	0.1	00:21	00:11	-00:10	10.3	19.2	8.9	00:14	00:03	-00:11
A6 London Rd - Traffic Signals - Commercial Rd (Co-op)	0.4	05:19	02:13	-03:06	4.5	10.7	6.2	04:36	01:22	-03:14
A6 London Rd - Traffic Signals - Mill St (Sainsbury's)	0.2	01:32	01:16	-00:16	6.6	8.0	1.4	01:16	00:55	-00:21
Total/Average (Bus Turnaround to Sainsbury's)	0.9	08:38	04:28	-04:10	8.8	15.8	6.9	06:55	02:30	-04:25
A6 Wellington Rd South - Traffic Signals - Greek St, Stockport	2.0	10:12	10:50	00:38	12.0	11.3	-0.7	05:35	06:27	00:52
Total/Average (whole journey)	4.7	22:56	19:52	-03:04	12.3	14.2	1.9	13:10	10:13	-02:57

Table 5		Car Journey Times - Stockport to Poynton (Jnc A5149 Chester Rd)								
Timing Point	Length (miles)	Ave Journey Time (mm:ss)			Ave Speed (mph)			Ave Junction Delay (mm:ss)		
		Before	After	Diff	Before	After	Diff	Before	After	Diff
A6 London Rd - Traffic Signals - Mill St (Sainsbury's)	2.0	08:29	10:05	01:36	14.4	12.1	-2.3	03:34	05:33	01:59
A6 London Rd - Traffic Signals - Commercial Rd (Co-op)	0.2	01:06	00:41	-00:25	9.2	14.9	5.7	00:44	00:17	-00:27
A6 London Rd - Traffic Signals - School St (McDonalds)	0.4	01:20	01:13	-00:07	17.9	19.4	1.5	00:19	00:14	-00:05
A6 London Rd - Traffic Signals - A627 Torkington Rd	0.1	00:41	00:19	-00:22	5.2	11.1	5.9	00:35	00:11	-00:24
A523 Macclesfield Rd - Traffic Signals - A6 Buxton Rd (Rising Sun)	0.2	01:29	00:57	-00:32	6.7	10.5	3.8	01:14	00:38	-00:36
A523 Macclesfield Rd - Traffic Signals - Bus Turnaround	0.1	00:21	00:24	00:03	18.5	16.4	-2.1	00:04	00:07	00:03
Total/Average (Sainsbury's to Bus Turnaround)	0.9	04:57	03:34	-01:23	11.5	14.5	3.0	02:56	01:27	-01:23
A523 Macclesfield Rd - Ped Signals - Chatsworth Rd/Haddon Rd	0.2	00:36	00:33	-00:03	23.9	26.3	2.4	00:00	00:00	00:00
A523 Macclesfield Rd - Traffic Signals - A5143 Dean Lane	0.2	00:48	00:41	-00:07	14.6	16.9	2.3	00:19	00:14	-00:05
A523 Macclesfield Rd - Traffic Signals - A5149 Chester Rd	1.3	04:35	04:47	00:12	17.6	16.8	-0.8	02:28	02:06	-00:22
Total/Average (Bus Turnaround to A5149 Chester Rd, Poynton)	1.8	05:59	06:01	00:02	18.7	20.0	1.3	02:47	02:20	-00:27
Total/Average (whole journey)	4.7	19:25	19:40	00:15	14.5	14.4	-0.1	09:14	09:20	00:06

- 3.8 Table 4 shows that average car journey times from Poynton to Stockport have decreased by three minutes, and over four minutes between the bus terminus and Sainsbury's. This is despite journeys being half a minute longer between Poynton and the Hazel Grove bus terminus, and again half a minute longer between Sainsbury's and Stockport. As was seen with buses, the largest time saver has been between McDonalds and Commercial Road with more than three minutes cut from journey times.
- 3.9 In the opposite direction (Table 5) car journey times have hardly changed over the full route with significant gains within Hazel Grove offset by delays between Stockport and Hazel Grove. As pointed out in the bus journey time results the changes made by GMUTC to the traffic signals at Dialstone Lane may have been a factor in increased journey times from Stockport to Hazel Grove.
- 3.10 Route 2 results (High Lane to Stockport and Stockport to High Lane) can be found in Tables 6 and 7 respectively which follow on page 11.
- 3.11 The results from Route 2 follow a similar pattern to the Poynton to Stockport route which is as expected, given the majority of the route is the same. However, journey times from Middlewood Way to the Rising Sun have increased significantly by around three minutes. Again, despite this increase to journey times prior to the 'bus gating' traffic signals, the journey times through Hazel Grove have reduced by over three minutes. The net affect though has been a slight increase to journey times for this route. Table 7 shows that in the other direction journey times have increased by just over a minute, with most of additional time incurred prior to entering Hazel Grove.
- 3.12 Figure 2 on page 12 details the locations of the start and end points of the Origin/Destination (OD) Survey carried out along the A627 Torkington Road in order to obtain car journey times. The rationale behind this survey is to measure the effects the 'bus gating' scheme has on vehicles travelling along this road towards the A6.
- 3.13 Table 8 (below) summaries the results of the OD Survey.

Table 8	A627 Offerton Rd / Torkington Rd OD Survey					
	Average Speed (MPH)			Average Journey Time (MM:SS)		
	Before	After	Difference	Before	After	Difference
Tue	15.27	14.07	-1.2	05:22	05:40	00:18
Wed	18.00	13.29	-4.71	04:09	06:48	02:39
Thu	20.17	15.54	-4.63	03:45	04:52	01:07
Average	18.08	14.34	-3.74	04:18	05:45	01:27

- 3.14 As can be seen in the above table average journey times have increased by almost one and a half minutes, but large fluctuations occur when comparing the averages for each of the three survey days. It is suggested part of this problem may either be caused by a possible reduced green time at the traffic signals, the left turn flare at the junction with the A6 being too short, or a combination of both.

Table 6		Car Journey Times - High Lane (Middlewood Way) to Stockport								
Timing Point	Length (miles)	Ave Journey Time (mm:ss)			Ave Speed (mph)			Ave Junction Delay (mm:ss)		
		Before	After	Diff	Before	After	Diff	Before	After	Diff
A523 Macclesfield Rd - Traffic Signals - A6 Buxton Rd (Rising Sun)	1.4	03:15	06:13	02:58	25.8	13.5	-12.3	00:34	04:17	03:43
A6 London Rd - Traffic Signals - A627 Torkington Rd	0.2	01:46	00:52	-00:54	6.6	13.4	6.8	01:27	00:26	-01:01
A6 London Rd - Traffic Signals - School St (McDonalds)	0.1	00:18	00:08	-00:10	11.7	24.4	12.7	00:11	00:00	-00:11
A6 London Rd - Traffic Signals - Commercial Rd (Co-op)	0.4	04:24	02:20	-02:04	5.4	10.1	4.7	03:44	01:30	-02:14
A6 London Rd - Traffic Signals - Mill St (Sainsbury's)	0.2	01:35	01:19	-00:16	6.4	7.7	1.3	01:16	00:57	-00:19
Total/Average (Rising Sun to Sainsbury's)	0.8	08:03	04:39	-03:24	7.5	13.9	6.4	06:38	02:53	-03:45
A6 Wellington Rd South - Traffic Signals - Greek St, Stockport	2.0	10:05	10:42	00:37	12.1	11.4	-0.7	05:29	06:09	00:40
Total/Average (whole journey)	4.2	21:22	21:34	00:12	11.9	11.8	-0.1	12:41	13:19	00:38

Table 7		Car Journey Times - Stockport to High Lane (Middlewood Way)								
Timing Point	Length (miles)	Ave Journey Time (mm:ss)			Ave Speed (mph)			Ave Junction Delay (mm:ss)		
		Before	After	Diff	Before	After	Diff	Before	After	Diff
A6 London Rd - Traffic Signals - Mill St (Sainsbury's)	2.0	08:34	09:22	00:48	14.2	13.0	-1.2	03:42	04:38	00:56
A6 London Rd - Traffic Signals - Commercial Rd (Co-op)	0.2	00:53	00:41	-00:12	11.6	14.9	3.3	00:29	00:16	-00:13
A6 London Rd - Traffic Signals - School St (McDonalds)	0.4	01:40	01:28	-00:12	14.3	16.2	1.9	00:40	00:30	-00:10
A6 London Rd - Traffic Signals - A627 Torkington Rd	0.1	00:32	00:43	00:11	6.7	5.0	-1.7	00:24	00:36	00:12
A523 Macclesfield Rd - Traffic Signals - A6 Buxton Rd (Rising Sun)	0.2	00:29	00:56	00:27	20.3	10.7	-9.6	00:02	00:35	00:33
Total/Average (Sainsbury's to the Rising Sun)	0.8	03:34	03:48	00:14	13.2	11.7	-1.5	01:35	01:57	00:22
A6 Buxton Road, High Lane - (Middlewood Way)	1.4	02:28	02:36	00:08	34.5	32.6	-1.9	00:00	00:00	00:00
Total/Average (whole journey)	4.2	14:36	15:46	01:10	17.4	16.1	-1.3	05:17	06:35	01:18



Origin/Destination Survey Points for Tornington Road

<p>GMTU SALISBURY HOUSE GRANBY ROW MANCHESTER M1 7AH</p>	<p>Drawn By : Paul Howarth</p>	<p>Date : July 2007</p>
	<p>Scale : NTS</p>	<p>Figure 2</p>

4.0 Vehicle Type Comparisons

4.1 Table 9 provides a comparison of the journey times for buses and cars from the bus terminus in Hazel Grove to Stockport Town Centre, both before and after the signal changes. This shows that buses are on average, now around nine and a half minutes slower than cars compared to being six minutes slower prior to the scheme changes. This shows that the changes made have provided more benefits to car users than buses.

4.2 Interestingly bus journey times within Hazel Grove (from the bus terminus to Sainsbury's) have improved by over three minutes, but are still four minutes slower than cars, reinforcing the reduction to delays through Hazel Grove District Centre have also provided a major benefit to car users travelling from Macclesfield Road. On the other hand traffic from High Lane does not reap any of the benefits gained in Hazel Grove due to much longer journey times from Middlewood Way.

Table 9	Car v Bus - Average Journey Times (mm:ss) Hazel Grove to Stockport - (incl. boarding/alighting times)							
	Timing Point	Length (miles)	Before			After		
			Car	Bus	Diff	Car	Bus	Diff
A523 Macclesfield Rd - Traffic Signals - London Rd/Buxton Rd (Rising Sun)	0.1	00:32	00:49	00:17	00:25	00:30	00:05	
A6 London Rd - Traffic Signals - A627 Torkington Rd	0.2	00:54	01:26	00:32	00:23	01:03	00:40	
A6 London Rd - Traffic Signals - Brook St (McDonalds)	0.1	00:21	00:38	00:17	00:11	00:21	00:10	
A6 London Rd - Traffic Signals - Commercial Rd (Co-op)	0.4	05:19	06:51	01:32	02:13	04:25	02:12	
A6 London Rd - Traffic Signals - Mill St (Sainsbury's)	0.2	01:32	01:52	00:20	01:16	02:09	00:53	
Total/Average (Bus Terminus to Sainsbury's)	0.9	08:38	11:36	02:58	04:28	08:28	04:00	
A6 Wellington Rd South - Traffic Signals - Greek St, Stockport	2.0	10:12	13:10	02:58	10:50	16:16	05:26	
Total/Average (whole journey)	2.9	18:50	24:46	05:56	15:18	24:44	09:26	

5. Person Delay for Hazel Grove - Bus Terminus to Sainsbury's (Mill Street)

5.1 As part of the reporting requirements the GMPTE requested that journey time changes should also be shown on a per person basis, similar to the format used for the PSA Person Delay Indicator. In order to do this, occupancy levels were required for both buses and cars. These have been obtained from the Spring 2007 and Autumn PSA Surveys for Route 7, Sectors 1-4 (Hazel Grove – Torkington Road to Dialstone Lane). Vehicle flows have been obtained from the Link Counts carried out near to Sainsbury's as part of the Wider Network reporting (see section 7).

5.2 Table 10 below details the results broken down by vehicle type. For buses the journey time (per person) has reduced by around a third, whilst for cars it has almost halved. This shows cars have benefited more than buses, even when occupancy levels are taken into account.

Table 10		Person Delay for Hazel Grove (Bus Turnaround to Mill St)							
Vehicle Type	Distance (miles)	Journey Time (mm:ss)	Vehicle Flow	Average Occ	Total Occ	Vehicle Minutes	Person Minutes	Person Miles	Journey Time per person (mins)
Bus									
Before	0.91	11:36	76	11.49	873	882	10130	795	12.75
After	0.91	08:28	61	11.79	719	517	6092	654	9.31
Car									
Before	0.91	08:38	3853	1.28	4932	33251	42564	4488	9.48
After	0.91	04:28	4134	1.18	4878	18479	21805	4439	4.91
Car & Bus									
Before	0.91						52694	5283	9.97
After	0.91						27897	5094	5.48

Notes:

Average Occ source is the Spring and Autumn 2007 PSA Surveys (Torkington Rd to Dialstone Lane)

5.3 It is interesting to note this table also highlights the reduction in the number of service buses running the route, with average flows down to 61 buses (over the 3 hour survey period) compared to 76 during the 'before' survey (a reduction of 20%). This may be due in part, to the removal of the short running 192 service.

5.4 Taking both bus and car journeys into account the Journey Time indicator has reduced by 45% from 9.97 to 5.48. Please note this does not reflect the formal PSA Urban Congestion Target on the Hazel Grove to Stockport Route, given this section of the A6 is normally broken down into multiple sectors, and only two of the five vehicle types are represented. It does, however, give a good indication of the benefits obtained by the changes made.

6. Traffic Flow Data – Local Roads

- 6.1 Two of the most critical locations identified as where the changes would have the greatest impact are the A523 Macclesfield Rd/A6 London Rd (Rising Sun junction), which in itself has become a bus gate, and the A523 Macclesfield Rd/Dean Lane junction, which is the last major junction before reaching the bus gates. Therefore full turn counts of all movements were carried out prior to the changes taking place, then for the 'interim' period immediately following. Finally these were repeated in October 2007, several months after the implementation, which allowed for the changes to bed in and traffic levels to settle down. Figure 3 on page 17 maps their locations.
- 6.2 The surveys cover the AM Peak period from 0700 to 1000, but unlike most of the other surveys requested for monitoring this scheme they have been limited to just one day for each survey period. The survey dates were as follows:-
- 'Before' 8th May 2007
 - 'Interim' 12th June 2007
 - 'After' 16th October 2007
- 6.3 Summary diagrams of the arm-to-arm vehicle movements (for the 'before' and 'after' surveys) are shown on pages 18 and 19. Full classified turn counts for each junction can be found in Appendix 3 at the back of this report.
- 6.4 The key changes to vehicle movements (for the 3 hour AM Peak) between the 'before' and 'after' surveys are listed below:-

Rising Sun Junction:

- Macclesfield Rd (left to) London Rd - increased by 137 vehicles (+9.2%)
- Buxton Rd (left to) Macclesfield Rd - decreased by 252 vehicles (-21.0%)
- Buxton Rd (straight) to London Rd - decreased by 191 vehicles (-9.3%)

Other movements have remained fairly constant (i.e. less than a 5% change).

Dean Lane Junction:

- Macclesfield Rd (left to) Dean Lane - decreased by 141 vehicles (-14.2%)
- Dean Lane (straight to) Mill Lane - decreased by 28 vehicles (-30.0%)
- Macclesfield Rd (right to) Dean Lane - decreased by 254 vehicles (-29.5%)
- Mill Lane (right to) Macclesfield Rd - increased by 18 vehicles (+32.0%)

Other movements at the Dean Lane junction have remained similar.

- 6.5 The above information suggests some drivers heading towards Bramhall may now be continuing along the A6 rather than using Macclesfield Rd and Dean Lane, with a substantial reduction of 252 vehicles turning left onto Macclesfield Rd (southbound) off Buxton Road, which in turn results in far fewer vehicles (-254) turning right onto Dean Lane at the Dean Lane junction. Whilst an element of these reductions could be due to the road works further back along the A6 in Disley and a shorter 'green time', the proportion of these reductions is far higher

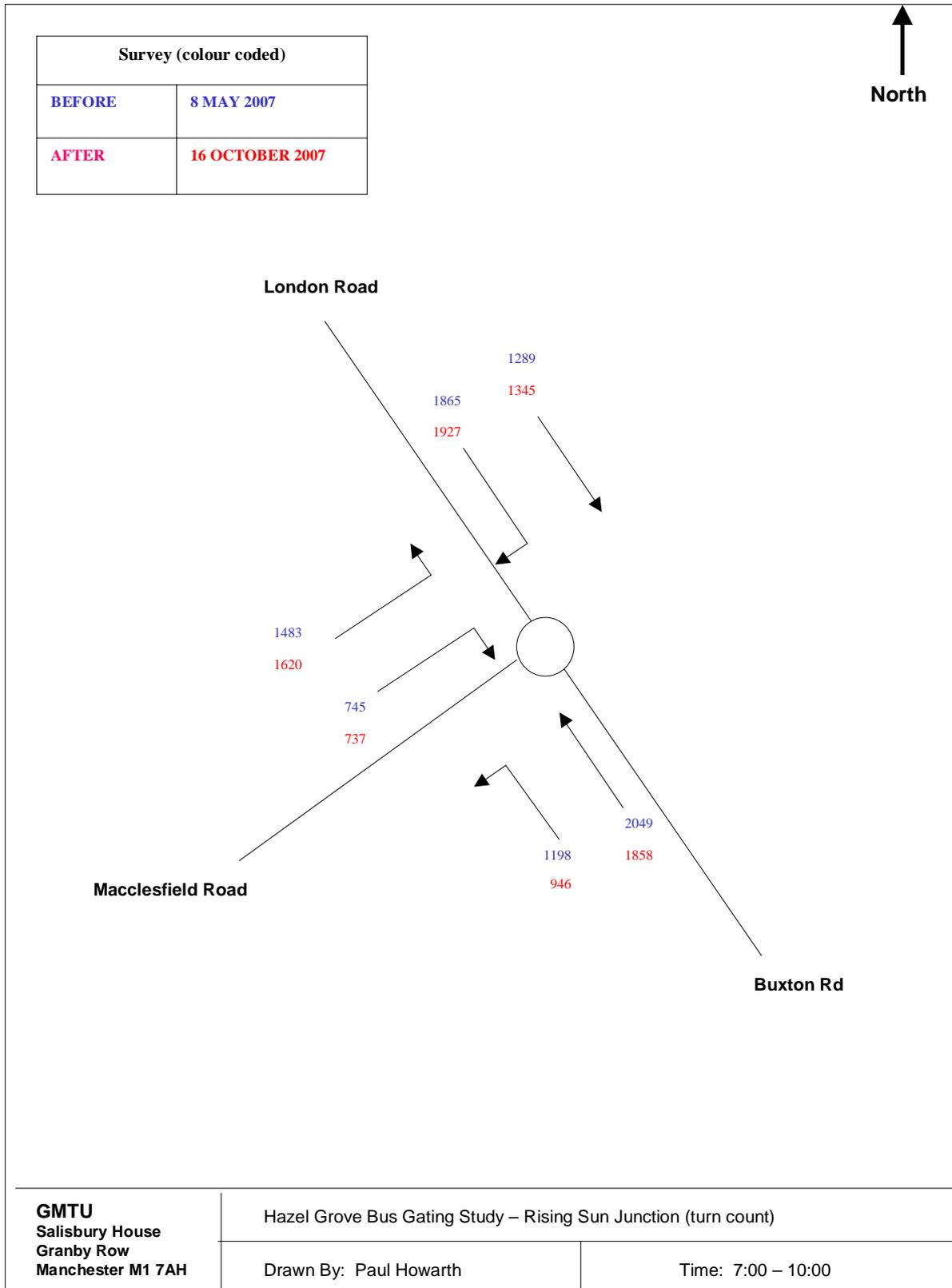
than the 14% reduction (443 vehicles) entering the Rising Sun junction from Buxton Road during the survey period. Likewise a large fall in vehicles turning left off the northbound Macclesfield Road onto Dean Lane have been recorded (-141), which may suggest some drivers now prefer to go through Hazel Grove rather than avoid it. This ties in with the increase of 137 vehicles joining the A6 from Macclesfield Road at the Rising Sun.

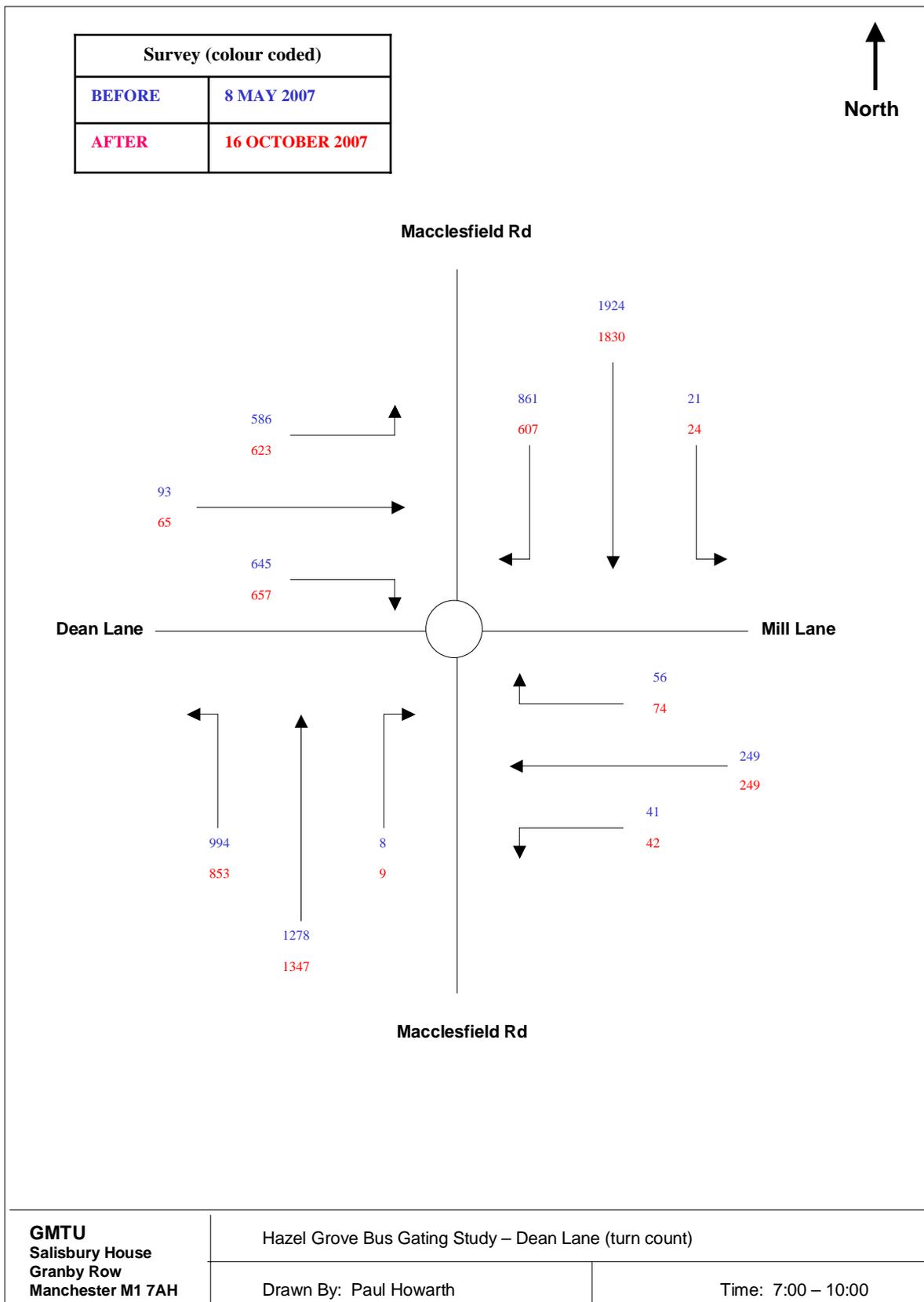
- 6.6 The large reduction of 191 vehicles (9.3%) heading straight on from Buxton Road to London Road at the Rising Sun is likely to be as a result of the long term roadworks in Disley, and less green time at the traffic signals due to the bus gate.



A523 Macclesfield Rd (Turn Count Locations)

<p>GMTU SALISBURY HOUSE GRANBY ROW MANCHESTER, M1 7AH</p>	<p>Drawn By : Paul Howarth</p>	<p>Date : July 2007</p>
	<p>Scale : NTS</p>	<p>Figure 3</p>





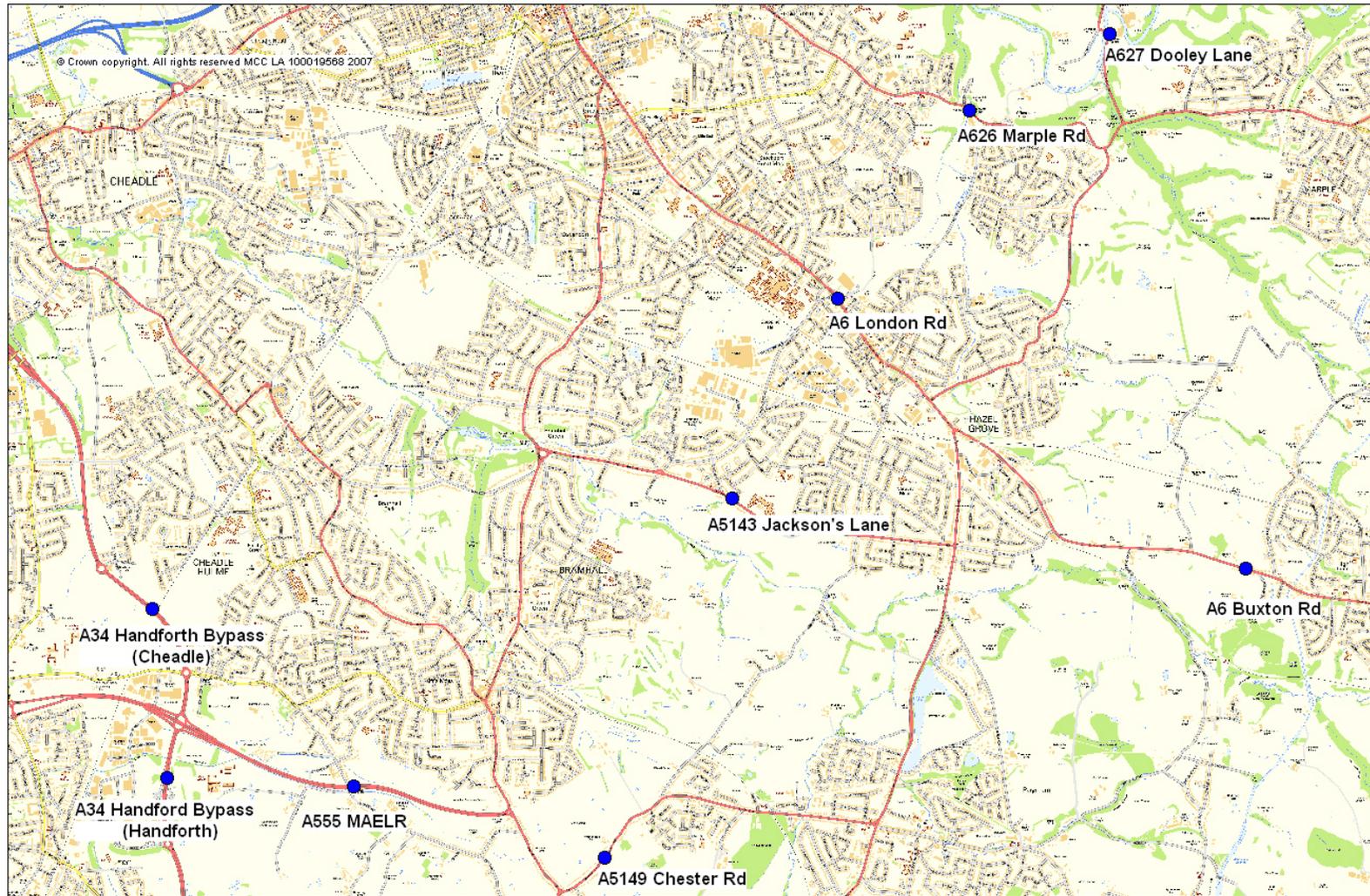
7. Traffic Flow Data – Wider Network

7.1 On behalf of Stockport MBC, GMTU operates seven permanent ATC counter sites in a screenline between Romiley and Handforth. Data from these sites has been gathered and the results summarised in Table 11 below. In addition, an ATC counter is also maintained on the A6 Buxton Rd at High Lane. The data from this has also been recovered and results included in the table. In the absence of an ATC site on the A6 in Hazel Grove manual link counts were carried out on London Rd between Mill Street and New Moor Lane, to coincide with each of the three 'before' and 'after' survey days. Again results are included in the table.

Table 11	Average Hourly Vehicle Flow (7-10am)			
ATC Screenline Sites	Before	After	Difference	Percentage
A627 Dooley Lane, Marple	595	543	-52	-8.7%
A626 Marple Road, Offerton	1148	1131	-17	-1.5%
A5143 Jackson's Lane, Hazel Grove	836	800	-36	-4.3%
A5149 Chester Road, Woodford	1207	1189	-18	-1.5%
A555 MAELR, Bramhall	1280	1177	-103	-8.1%
A34 Handforth Bypass, Cheadle	1815	1842	28	1.5%
A34 Handforth Bypass, Handforth	1233	1201	-31	-2.6%
Link Counts				
A6 London Road, Great Moor	1545	1645	100	6.5%
Other relevant ATC Sites				
A6 Buxton Road, High Lane	1163	1046	-117	-10.1%

Notes: Before data = 8,9,10 May 2007, After data = 16,17,18 October 2007

- 7.2 Figure 4 is a map showing the location of all the counts included in this section and can be found on the following page.
- 7.3 The increased number of vehicles recorded by the Link Count on the A6 London Rd at Great Moor (near Sainsbury's) ties in with the increase in vehicles recorded entering the A6 off Macclesfield Road at the Rising Sun. It is interesting to note this is despite a large decrease in vehicles entering Hazel Grove from Buxton Rd (High Lane area), the possible reasoning for which is mentioned in paragraph 6.6 earlier.
- 7.4 The 8.7% drop in traffic on the A627 Dooley Lane in Marple equates to only 52 vehicles and is therefore too small a decrease to attribute directly to changes in Hazel Grove.
- 7.5 The reductions recorded on the A555 MAELR at Bramhall cannot directly be linked to any of the changes in Hazel Grove, especially given the relatively small drop in traffic recorded on the southwest bound A5149 Chester Rd.



<p>GMTU SALISBURY HOUSE GRANBY ROW MANCHESTER M1 7AH</p>	<p>ATC Screenline and Selected Link Count Sites</p>		
	<p>Drawn By : Paul Howarth</p>	<p>Scale : NTS</p>	<p>Date : July 2007</p>

8. Red Light Running

- 8.1 At the request of GMUTC a 'red light running' survey was conducted during the interim period only to assess how many vehicles were passing through the red signal at the bus gate on Macclesfield Rd (192 bus terminus).
- 8.2 The surveys were undertaken using a MetroCount MC5711 data logger with the purpose of capturing vehicle speed class and volume data. The equipment uses pneumatic tubes placed across the carriageway to capture vehicle data. Timing information is derived from the traffic signals. The unit is connected to the signal head via fibre optic cable, and a low voltage optical transmitter is connected to the Green phase. The unit was programmed to commence its timing sequence at the end of the Green phase.
- 8.3 The survey commenced on the 25th June 2007 and ran for one week. For the purposes of streamlining the results all vehicles passing on the Amber stage have been excluded, along with any outside the 0700 to 1000 AM Weekday Peak. The results in Table 12 below show that very few vehicles ran the red light, indicating any earlier abuse observed has not continued.

Table 12 Red Light Running at Bus Gate			
Date	Time	Speed (mph)	Delay after Red (secs)
25/06/2007	07:11	25.3	0.8
26/06/2007	07:15	26.1	1.4
26/06/2007	07:38	33.8	1.2
27/06/2007	09:01	27.1	0.3
28/06/2007	08:35	24.9	0.1
28/06/2007	08:43	11.9	1.5
29/06/2007	07:43	30.7	0.8

9. Summary of Findings

- 9.1 Average bus journey times have reduced by over three minutes between the Hazel Grove bus terminus and Sainsbury's since the introduction of the bus gates. However, over the full route to Stockport Town Centre there has been little change. The section of road between McDonalds (near School St) and the Co-op (Commercial Rd) shows the greatest improvement, with an average of two minutes saved. The results suggest this is down to less delay at the key junctions.
- 9.2 For buses in the opposite direction (Stockport to Hazel Grove) results show there has also been a saving of just over a minute within Hazel Grove, between Sainsbury's and the terminus. Again, the stretch between Stockport Town Centre and Sainsbury's is now experiencing slower journey times. The net effect is a total journey time now half a minute longer than before.
- 9.3 Average car journey times from Poynton to Stockport have decreased by three minutes, and over four minutes between the bus terminus and Sainsbury's. This is despite journeys being half a minute longer between Poynton and the Hazel Grove bus terminus, then again by the same amount between Sainsbury's and Stockport. As was seen with buses, the greatest time saver has been between McDonalds and Commercial Road with more than three minutes cut from journey times.
- 9.4 In the opposite direction car journey times have hardly changed over the full route with significant gains within Hazel Grove offset by delays between Stockport and Hazel Grove. As pointed out in the bus journey time results, the changes made by GMUTC to the traffic signals at Dialstone Lane may have been a factor in increased journey times from Stockport to Hazel Grove.
- 9.5 On Torkington Road average journey times have increased by almost one and a half minutes, but large fluctuations occur when comparing the averages for each of the three survey days. It is suggested part of this problem may be caused by either, a possible reduced green time at the junction with the A6, the left turn flare at the junction with the A6 being too short, or a combination of both.
- 9.6 From the Turn Count surveys undertaken on Macclesfield Road at both Dean Lane and the Rising Sun junctions, evidence suggests some drivers heading towards Bramhall from High Lane are now continuing along the A6, with far fewer vehicles turning south onto Macclesfield Road from Buxton Road and turning west off Macclesfield Road onto Dean Lane.
- 9.7 Data from the ATC counters on the Screenline and other counts suggest there has been little change to flows on the wider network that could be directly attributable to the Bus Gate. The link count on the A6 London Road (near to Sainsbury's) shows a 6.5% increase, partly as a result of increased traffic flows joining from Macclesfield Rd and from the side streets within Hazel Grove, probably as a result of the bus gate giving greater opportunity to turn onto the A6.
-

Appendix 1 – Detailed Bus Journey Time Results

Route Number: 178 - Hazel Grove to Stockport (Pre-Bus Gate Survey) May 2007)

Route Start Description: A523 Macclesfield Rd/ Bus Gate Traffic Signals, Hazel Grove.

Timing Point at Start: TP0 A523 Macclesfield Rd/ Bus Gate Traffic Signals, Hazel Grove.

No Of Journeys: 24

Dates: 08/05/2007 - 10/05/2007

Times: AM Peak (07:24:44 - 09:23:22)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time Incl. Board/Alight (s)	Av Speed Incl. Board/Alight (mph)	Av Junction Delay (s)
1	A523 Macclesfield Rd	Traffic Signals	A6 Buxton Rd	0.10	49.1	7.4	31.8
2	A6 London Road	Traffic Signals	A627 Torkington Rd	0.17	86.1	7.0	65.5
3	A6 London Road	Traffic Signals	Brook St (McDonalds)	0.06	37.9	5.7	29.3
4	A6 London Road	Signalised Pedestrian	Grundy St	0.10	64.2	5.5	
5	A6 London Road	Signalised Pedestrian	Hatherlow St	0.09	90.6	3.4	
6	A6 London Road	Signalised Pedestrian	Hope St	0.10	122.3	2.9	
7	A6 London Road	Traffic Signals	Commercial Rd (nr Co-op)	0.11	133.3	3.1	128.1
8	A6 London Road	Signalised Pedestrian	Grosvenor St	0.12	82.9	5.0	
9	A6 London Road	Traffic Signals	Mill St (nr Sainsbury's)	0.05	29.0	6.6	20.7
10	A6 London Road	Traffic Signals	New Moor Ln	0.04	17.7	7.3	11.7
11	A6 Buxton Road	Traffic Signals	Dialstone Ln	0.21	67.3	11.2	37.4
12	A6 Buxton Road	Signalised Pedestrian	Dialstone Ln	0.03	6.5	16.2	
13	A6 Buxton Road	Signalised Pedestrian	Cherry Tree Ln	0.24	66.8	12.9	
14	A6 Buxton Road	Signalised Pedestrian	Lake St	0.21	57.0	13.5	
15	A6 Buxton Road	Signalised Pedestrian	Mile End Ln	0.15	50.5	10.6	
16	A6 Buxton Road	Traffic Signals	Kennerley Rd	0.16	81.2	7.3	64.9
17	A6 Buxton Road	Signalised Pedestrian	Heaviley Gr	0.14	48.2	10.3	
18	A6 Buxton Road	Traffic Signals	Nangreave Rd	0.12	60.9	7.0	47.3
19	A6 Buxton Road	Traffic Signals	Bramhall Ln	0.21	112.3	6.8	99.0
20	A6 Wellington Road South	Signalised Pedestrian	Wellington Gr	0.10	39.0	9.1	
21	A6 Wellington Road South	Traffic Signals	Longshut Ln	0.13	76.6	6.1	65.5
22	A6 Wellington Road South	Signalised Pedestrian	Charlsworth St	0.08	30.6	9.1	
23	A6 Wellington Road South	Signalised Pedestrian	Union St	0.09	17.0	18.0	
24	A6 Wellington Road South	Signalised Pedestrian	Outside College	0.07	29.5	7.9	
25	A6 Wellington Road South	Traffic Signals	Greek St	0.07	29.0	8.4	21.0
Total				2.92	1486		622.1
Average						7.1	41.9
Total (hh:mm:ss)					00:24:46		00:10:22

Route Number: 179 - Stockport to Hazel Grove (Pre-Bus gate Survey May 2007)

Route Start Description: A6 Wellington Rd South/ Greek St, Stockport

Timing Point at Start: TP0 A6 Wellington Rd South/ Greek St, Stockport

No Of Journeys: 24

Dates: 08/05/2007 - 10/05/2007

Times: AM Peak (08:03:07 - 09:58:09)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time Incl. Board/Alight (s)	Av Speed Incl. Board/Alight (mph)	Av Junction Delay (s)
1	A6 Wellington Road South	Signalised Pedestrian	Outside College	0.07	40.3	6.0	
2	A6 Wellington Road South	Signalised Pedestrian	St Thomas's Pl	0.07	13.2	17.8	
3	A6 Wellington Road South	Signalised Pedestrian	Brentnall St	0.08	14.1	19.7	
4	A6 Wellington Road South	Traffic Signals	Longshut Ln	0.08	45.5	6.6	37.0
5	A6 Wellington Road South	Signalised Pedestrian	Daisy St	0.13	36.5	12.7	
6	A6 Wellington Road South	Traffic Signals	Bramhall Ln	0.10	66.5	5.3	55.6
7	A6 Buxton Road	Traffic Signals	Nangreave Rd	0.21	95.9	8.0	66.3
8	A6 Buxton Road	Signalised Pedestrian	Regent Rd	0.14	45.7	11.4	
9	A6 Buxton Road	Traffic Signals	Kennerley Rd	0.11	38.8	10.4	20.6
10	A6 Buxton Road	Signalised Pedestrian	Mile End Ln	0.17	38.0	15.8	
11	A6 Buxton Road	Signalised Pedestrian	Woodsmoor Ln	0.15	29.0	18.8	
12	A6 Buxton Road	Signalised Pedestrian	Cherry Tree Ln	0.21	50.3	15.2	
13	A6 Buxton Road	Signalised Pedestrian	Dialstone Ln	0.24	71.1	12.1	
14	A6 Buxton Road	Traffic Signals	Dialstone Ln	0.03	23.7	4.9	18.6
15	A6 Buxton Road	Traffic Signals	New Moor Ln	0.21	40.3	18.6	6.2
16	A6 London Road	Traffic Signals	Mill St (Sainsbury's)	0.04	25.8	5.0	21.2
17	A6 London Road	Signalised Pedestrian	Grosvenor St	0.05	14.3	13.6	
18	A6 London Road	Traffic Signals	Commercial Rd (Co-op)	0.12	61.3	6.8	48.0
19	A6 London Road	Signalised Pedestrian	Oak St	0.11	37.0	10.9	
20	A6 London Road	Signalised Pedestrian	Chapel St	0.10	18.8	18.4	
21	A6 London Road	Signalised Pedestrian	Grundey St	0.09	33.2	9.3	
22	A6 London Road	Traffic Signals	Brook St (McDonalds)	0.10	40.0	8.8	25.8
23	A6 London Road	Traffic Signals	Torkington Rd	0.06	31.0	6.8	22.9
24	A6 London Road	Traffic Signals	A523 Macclesfield Rd	0.17	86.5	7.0	66.9
25	A523 Macclesfield Road	Traffic Signals	Bus layby	0.11	59.6	6.6	43.8
Total				2.93	1057		432.9
Average						10.0	40.9
Total (hh:mm:ss)					00:17:37		00:07:13

Route Number: 182 - Hazel Grove to Stockport (Post-Bus Gate Survey) October 2007)

Route Start Description: A523 Macclesfield Rd/ Bus Gate Traffic Signals, Hazel Grove.

Timing Point at Start: TP0 A523 Macclesfield Rd/ Bus Gate Traffic Signals, Hazel Grove.

No Of Journeys: 36

Dates: 09/05/2007 - 17/05/2007

Times: AM Peak (07:21:28 - 09:27:34)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time Incl. Board/Alight (s)	Av Speed Incl. Board/Alight (mph)	Av Junction Delay (s)
1	A523 Macclesfield Rd	Traffic Signals	A6 Buxton Rd	0.10	30.0	12.1	9.5
2	A6 London Road	Traffic Signals	A627 Torkington Rd	0.17	63.0	9.6	39.3
3	A6 London Road	Traffic Signals	Brook St (McDonalds)	0.06	21.3	10.1	12.8
4	A6 London Road	Signalised Pedestrian	Grundy St	0.10	59.5	5.9	
5	A6 London Road	Signalised Pedestrian	Hatherlow St	0.09	68.9	4.4	
6	A6 London Road	Signalised Pedestrian	Hope St	0.10	48.2	7.3	
7	A6 London Road	Traffic Signals	Commercial Rd (nr Co-op)	0.11	88.3	4.6	80.0
8	A6 London Road	Signalised Pedestrian	Grosvenor St	0.12	84.4	4.9	
9	A6 London Road	Traffic Signals	Mill St (nr Sainsbury's)	0.05	44.3	4.3	37.6
10	A6 London Road	Traffic Signals	New Moor Ln	0.04	12.6	10.3	5.5
11	A6 Buxton Road	Traffic Signals	Dialstone Ln	0.21	79.3	9.5	54.7
12	A6 Buxton Road	Signalised Pedestrian	Dialstone Ln	0.03	5.1	20.5	
13	A6 Buxton Road	Signalised Pedestrian	Cherry Tree Ln	0.24	89.5	9.6	
14	A6 Buxton Road	Signalised Pedestrian	Lake St	0.21	114.2	6.7	
15	A6 Buxton Road	Signalised Pedestrian	Mile End Ln	0.15	71.5	7.5	
16	A6 Buxton Road	Traffic Signals	Kennerley Rd	0.16	92.1	6.4	75.7
17	A6 Buxton Road	Signalised Pedestrian	Heaviley Gr	0.14	71.3	7.0	
18	A6 Buxton Road	Traffic Signals	Nangreave Rd	0.12	71.7	6.0	59.5
19	A6 Buxton Road	Traffic Signals	Bramhall Ln	0.21	143.6	5.3	132.6
20	A6 Wellington Road South	Signalised Pedestrian	Wellington Gr	0.10	43.4	8.2	
21	A6 Wellington Road South	Traffic Signals	Longshut Ln	0.13	62.7	7.4	48.4
22	A6 Wellington Road South	Signalised Pedestrian	Charlsworth St	0.08	36.7	7.6	
23	A6 Wellington Road South	Signalised Pedestrian	Union St	0.09	17.4	17.6	
24	A6 Wellington Road South	Signalised Pedestrian	Outside College	0.07	38.2	6.1	
25	A6 Wellington Road South	Traffic Signals	Greek St	0.07	27.0	9.1	17.4
Total				2.92	1484		572.0
Average						7.1	38.5
Total (hh:mm:ss)					00:24:42		00:09:32

Route Number: 183 - Stockport to Hazel Grove (Post Bus Gate Survey October 2007)

Route Start Description: A6 Wellington Rd South/ Greek St, Stockport)
Timing Point at Start: TP0 A6 Wellington Rd South/ Greek St, Stockport

No Of Journeys: 40

Dates: 09/10/2007 - 17/10/2007

Times: AM Peak (07:00:52 - 09:13:15)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time Incl. Board/Alight (s)	Av Speed Incl. Board/Alight (mph)	Av Junction Delay (s)
1	A6 Wellington Road South	Signalised Pedestrian	Outside College	0.07	51.4	4.7	
2	A6 Wellington Road South	Signalised Pedestrian	St Thomas's Pl	0.07	11.4	20.6	
3	A6 Wellington Road South	Signalised Pedestrian	Brentnall St	0.08	22.4	12.4	
4	A6 Wellington Road South	Traffic Signals	Longshut Ln	0.08	50.6	6.0	41.5
5	A6 Wellington Road South	Signalised Pedestrian	Daisy St	0.13	81.1	5.7	
6	A6 Wellington Road South	Traffic Signals	Bramhall Ln	0.10	74.7	4.7	64.7
7	A6 Buxton Road	Traffic Signals	Nangreave Rd	0.21	109.9	7.0	81.7
8	A6 Buxton Road	Signalised Pedestrian	Regent Rd	0.14	44.3	11.7	
9	A6 Buxton Road	Traffic Signals	Kennerley Rd	0.11	43.7	9.2	29.5
10	A6 Buxton Road	Signalised Pedestrian	Mile End Ln	0.17	40.9	14.7	
11	A6 Buxton Road	Signalised Pedestrian	Woodsmoor Ln	0.15	27.0	20.3	
12	A6 Buxton Road	Signalised Pedestrian	Cherry Tree Ln	0.21	51.3	15.0	
13	A6 Buxton Road	Signalised Pedestrian	Dialstone Ln	0.24	73.9	11.6	
14	A6 Buxton Road	Traffic Signals	Dialstone Ln	0.03	24.1	4.8	18.9
15	A6 Buxton Road	Traffic Signals	New Moor Ln	0.21	40.8	18.4	8.2
16	A6 London Road	Traffic Signals	Mill St (Sainsbury's)	0.04	26.0	5.0	21.6
17	A6 London Road	Signalised Pedestrian	Grosvenor St	0.05	11.0	17.7	
18	A6 London Road	Traffic Signals	Commercial Rd (nr Co-op)	0.12	44.0	9.4	29.7
19	A6 London Road	Signalised Pedestrian	Oak St	0.11	32.9	12.2	
20	A6 London Road	Signalised Pedestrian	Chapel St	0.10	18.0	19.2	
21	A6 London Road	Signalised Pedestrian	Grundey St	0.09	34.5	9.0	
22	A6 London Road	Traffic Signals	Brook St (McDonalds)	0.10	31.3	11.3	17.0
23	A6 London Road	Traffic Signals	Torkington Rd	0.06	39.4	5.4	30.8
24	A6 London Road	Traffic Signals	A523 Macclesfield Rd	0.17	72.6	8.3	54.3
25	A523 Macclesfield Road	Traffic Signals	Bus layby	0.11	35.6	10.9	18.5
Total				2.93	1092		416.0
Average						9.7	38.1
Total (hh:mm:ss)					00:18:12		00:06:56

Appendix 2 – Detailed Car Journey Time Results

Route Number: 310 - Middlewood to Stockport (Pre-Bus Gate Survey May 2007)

Route Start Description: A6 Buxton Rd crossing the Middlewood Way, High Lane.
Timing Point at Start: TP0 A6 Buxton Rd crossing the Middlewood Way, High Lane

No Of Journeys: 18

Dates: 08/05/2007 - 10/05/2007

Times: AM Peak (07:00:36 - 09:25:18)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time (s)	Av Speed (mph)	Av Junction Delay (s)
1	A6 Buxton Rd	Traffic Signals	A523 Macclesfield Rd	1.4	194.5	25.8	33.9
2	A6 London Rd	Traffic Signals	A627 Torkington Rd	0.2	105.7	6.6	87.1
3	A6 London Rd	Traffic Signals	Brook St (McDonald's on left)	0.1	18.4	11.7	11.2
4	A6 London Rd	Signalised Pedestrian	Between Grundy St/Daniel St (White Hart pub on right)	0.1	34.3	10.3	23.3
5	A6 London Rd	Signalised Pedestrian	Hatherlow La / Chapel St (Royal Bank of Scotland on right)	0.1	50.7	6.1	39.9
6	A6 London Rd	Signalised Pedestrian	Between Hope St / Vine St	0.1	77.4	4.6	65.9
7	A6 London Rd	Traffic Signals	Commercial Rd (Co-Op superstore on left)	0.1	101.9	3.9	95.3
8	A6 London Rd	Signalised Pedestrian	Between Grosvenor St & Vernon St (Woodman pub on left)	0.1	55.6	7.6	43.6
9	A6 London Rd	Traffic Signals	Mill St (Sainsburys on right)	0.1	39.2	4.7	32.1
10	A6 London Rd	Traffic Signals	New Moor La (George & Dragon pub on left)	0.0	7.2	18.0	0.7
11	A6 Buxton Rd	Traffic Signals	Dailstone La / Poplar Gro (Funeral Directors on left)	0.2	71.7	10.6	41.8
12	A6 Buxton Rd	Signalised Pedestrian	Dialstone Ln	0.0	4.6	23.1	0.1
13	A6 Buxton Rd	Signalised Pedestrian	Cherry Tree Ln (Travellers Call PH on right)	0.2	44.8	19.2	12.5
14	A6 Buxton Rd	Signalised Pedestrian	Between Lake St / Woodsmoor La (URC Church on right)	0.2	32.9	23.4	5.2
15	A6 Buxton Rd	Signalised Pedestrian	Mile End La (Kwik Fit on left, Acton Court Hotel on right)	0.1	27.9	19.2	7.8
16	A6 Buxton Rd	Traffic Signals	Kennerley Rd (Website Centre & Esso on left)	0.2	53.9	11.0	33.6
17	A6 Buxton Rd	Signalised Pedestrian	Heavily Gro / Regent Rd (AutoCentre on right)	0.1	20.1	20.6	0.7
18	A6 Buxton Rd	Traffic Signals	Hallam Rd / Nangreave Rd (Beefeater Travel Inn on right)	0.1	44.9	11.4	25.3
19	A6 Buxton Rd	Traffic Signals	Bramhall La (Stockport Tandoori on right)	0.2	66.8	11.3	39.6
20	A6 Wellington Rd South	Signalised Pedestrian	Wellington Grv	0.1	31.6	11.4	16.9
21	A6 Wellington Rd South	Traffic Signals	Longshut Ln (Johnstone's Paint on left)	0.1	94.5	4.9	81.5
22	A6 Wellington Rd South	Signalised Pedestrian	Charlsworth St	0.1	25.0	11.1	14.0
23	A6 Wellington Rd South	Signalised Pedestrian	Union St (Opposite TEXACO fuel station)	0.1	29.6	10.3	20.8
24	A6 Wellington Rd South	Signalised Pedestrian	Outside College	0.1	25.4	9.1	17.0
25	A6 Wellington Rd South	Traffic Signals	Greek St	0.1	23.6	10.4	11.1
Total				4.2	1282		761
Average						11.9	
Total (hh:mm:ss)					00:21:22		00:12:41

Route Number: 326 - Middlewood to Stockport (Post Bus Gate Survey October 2007)

Route Start Description: A6 Buxton Rd crossing the Middlewood Way, High Lane.
Timing Point at Start: TP0 A6 Buxton Rd crossing the Middlewood Way, High Lane

No Of Journeys: 20

Dates: 16/10/2007 - 18/10/2007

Times: AM Peak (07:00:01 - 09:19:56)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time (s)	Av Speed (mph)	Av Junction Delay (s)
1	A6 Buxton Rd	Traffic Signals	A523 Macclesfield Rd	1.4	372.9	13.5	257.0
2	A6 London Rd	Traffic Signals	A627 Torkington Rd	0.2	51.7	13.4	26.3
3	A6 London Rd	Traffic Signals	Brook St (McDonald's on left)	0.1	8.8	24.4	0.0
4	A6 London Rd	Signalised Pedestrian	Between Grundy St/Daniel St (White Hart pub on right)	0.1	17.8	19.9	3.0
5	A6 London Rd	Signalised Pedestrian	Hatherlow La / Chapel St (Royal Bank of Scotland on right)	0.1	14.6	21.3	1.1
6	A6 London Rd	Signalised Pedestrian	Between Hope St / Vine St	0.1	35.0	10.2	23.6
7	A6 London Rd	Traffic Signals	Commercial Rd (Co-Op superstore on left)	0.1	73.0	5.5	62.0
8	A6 London Rd	Signalised Pedestrian	Between Grosvenor St & Vernon St (Woodman pub on left)	0.1	41.4	10.2	25.7
9	A6 London Rd	Traffic Signals	Mill St (Sainsburys on right)	0.1	37.4	5.0	31.3
10	A6 London Rd	Traffic Signals	New Moor La (George & Dragon pub on left)	0.0	10.0	13.0	3.0
11	A6 Buxton Rd	Traffic Signals	Dailstone La / Poplar Gro (Funeral Directors on left)	0.2	55.4	13.7	30.5
12	A6 Buxton Rd	Signalised Pedestrian	Dialstone Ln	0.0	4.7	22.4	0.7
13	A6 Buxton Rd	Signalised Pedestrian	Cherry Tree Ln (Travellers Call PH on right)	0.2	46.4	18.6	11.6
14	A6 Buxton Rd	Signalised Pedestrian	Between Lake St / Woodsmoor La (URC Church on right)	0.2	61.7	12.5	30.7
15	A6 Buxton Rd	Signalised Pedestrian	Mile End La (Kwik Fit on left, Acton Court Hotel on right)	0.1	47.9	11.2	27.3
16	A6 Buxton Rd	Traffic Signals	Kennerley Rd (Website Centre & Esso on left)	0.2	66.0	8.9	46.4
17	A6 Buxton Rd	Signalised Pedestrian	Heavily Gro / Regent Rd (AutoCentre on right)	0.1	34.4	12.0	18.4
18	A6 Buxton Rd	Traffic Signals	Hallam Rd / Nangreave Rd (Beefeater Travel Inn on right)	0.1	60.5	8.5	43.5
19	A6 Buxton Rd	Traffic Signals	Bramhall La (Stockport Tandoori on right)	0.2	74.3	10.2	48.0
20	A6 Wellington Rd South	Signalised Pedestrian	Wellington Grv	0.1	28.7	12.6	14.0
21	A6 Wellington Rd South	Traffic Signals	Longshut Ln (Johnstone's Paint on left)	0.1	55.6	8.4	38.2
22	A6 Wellington Rd South	Signalised Pedestrian	Charlsworth St	0.1	21.6	12.9	11.1
23	A6 Wellington Rd South	Signalised Pedestrian	Union St (Opposite TEXACO fuel station)	0.1	29.2	10.5	20.3
24	A6 Wellington Rd South	Signalised Pedestrian	Outside College	0.1	21.1	11.0	10.7
25	A6 Wellington Rd South	Traffic Signals	Greek St	0.1	24.6	10.0	15.2
Total				4.2	1294		799
Average						11.8	
Total (hh:mm:ss)					00:21:34		00:13:19

Route Number: 311 - Stockport to Middlewood (Pre-Bus Gate Survey May 2007)

Route Start Description: A6 Wellington Rd South/ Greek St, Stockport

Timing Point at Start: TP0 A6 Wellington Rd South/ Greek St, Stockport

No Of Journeys: 12

Dates: 08/05/2007 - 10/05/2007

Times: AM Peak (07:18:35 - 08:53:37)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time (s)	Av Speed (mph)	Av Junction Delay (s)
1	A6 Wellington Rd South	Signalised Pedestrian	Outside College	0.1	12.3	19.4	1.3
2	A6 Wellington Rd South	Signalised Pedestrian	St Thomas's Pl	0.1	8.1	29.0	0.0
3	A6 Wellington Rd South	Signalised Pedestrian	Brentnall St	0.1	12.3	22.5	0.8
4	A6 Wellington Rd South	Traffic Signals	Longshut Ln (Honda on right)	0.1	29.6	10.2	15.3
5	A6 Wellington Rd South	Signalised Pedestrian	Daisy St	0.1	19.4	23.9	0.8
6	A6 Wellington Rd South	Traffic Signals	Bramhall Ln	0.1	54.6	6.5	41.8
7	A6 Buxton Rd	Traffic Signals	Nangreave Rd	0.2	113.4	6.7	89.3
8	A6 Buxton Rd	Signalised Pedestrian	Between Heavily Gro / Regent Rd (Autocar Alarms on left)	0.1	24.6	21.1	1.8
9	A6 Buxton Rd	Traffic Signals	Kennerley Rd (Website Centre/Esso on right)	0.1	35.6	11.4	19.8
10	A6 Buxton Rd	Signalised Pedestrian	Mile End La (Acton Court Hotel left, Kwik Fit on right)	0.2	27.2	21.7	3.2
11	A6 Buxton Rd	Signalised Pedestrian	Woodsmoor La / Lake St (URC Church on left)	0.2	28.5	19.0	6.5
12	A6 Buxton Rd	Signalised Pedestrian	Cherry Tree La (Travellers Call pub on left)	0.2	36.5	21.0	6.4
13	A6 Buxton Rd	Signalised Pedestrian	Dialstone Ln	0.2	43.6	19.6	8.4
14	A6 Buxton Rd	Traffic Signals	Dialstone Ln (Funeral Service on right)	0.0	24.1	4.9	19.2
15	A6 London Rd	Traffic Signals	New Moor La (George & Dragon pub on right)	0.2	37.4	20.1	7.6
16	A6 London Rd	Traffic Signals	Mill St (just past Sainsbury's on left)	0.0	6.6	20.0	0.1
17	A6 London Rd	Signalised Pedestrian	Between Grosvenor St & Vernon St (Woodman Pub on right)	0.1	14.3	13.4	6.8
18	A6 London Rd	Traffic Signals	Commercial Rd (Co-Op superstore on right)	0.1	38.4	10.9	22.7
19	A6 London Rd	Signalised Pedestrian	Between Hope St / Vine St (Lazy Daisies left)	0.1	20.3	19.9	2.3
20	A6 London Rd	Signalised Pedestrian	Between Hatherlow La / Chapel St (Civic Hall on right)	0.1	24.2	14.6	10.8
21	A6 London Rd	Signalised Pedestrian	Between Grundey St / Daniel St (White Hart pub on left)	0.1	22.9	13.6	10.6
22	A6 London Rd	Traffic Signals	Brook St (McDonald's on right)	0.1	32.4	11.1	16.0
23	A6 London Rd	Traffic Signals	Torkington Rd (Bulls Head pub on left)	0.1	32.2	6.7	23.5
24	A6 London Rd	Traffic Signals	Into A523 Macclesfield Rd	0.2	29.4	20.3	2.4
25	A6 Buxton Rd	Point Of Interest	Over Middlewood Way	1.4	147.7	34.5	0.0
Total				4.2	876		317
Average						17.4	
Total (hh:mm:ss)					00:14:36		00:05:17

Route Number: 327 - Stockport to Middlewood (Post Bus Gate Survey October 2007)

Route Start Description: A6 Wellington Rd South/ Greek St, Stockport

Timing Point at Start: TP0 A6 Wellington Rd South/ Greek St, Stockport

No Of Journeys: 21

Dates: 16/10/2007 - 18/10/2007

Times: AM Peak (07:00:09 - 09:21:01)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time (s)	Av Speed (mph)	Av Junction Delay (s)
1	A6 Wellington Rd South	Signalised Pedestrian	Outside College	0.1	13.7	17.5	2.4
2	A6 Wellington Rd South	Signalised Pedestrian	St Thomas's Pl	0.1	10.9	21.5	2.3
3	A6 Wellington Rd South	Signalised Pedestrian	Brentnall St	0.1	15.3	18.1	4.5
4	A6 Wellington Rd South	Traffic Signals	Longshut Ln (Honda on right)	0.1	48.4	6.2	37.8
5	A6 Wellington Rd South	Signalised Pedestrian	Daisy St	0.1	36.7	12.7	20.3
6	A6 Wellington Rd South	Traffic Signals	Bramhall Ln	0.1	64.9	5.4	52.5
7	A6 Buxton Rd	Traffic Signals	Nangreave Rd	0.2	92.9	8.2	67.7
8	A6 Buxton Rd	Signalised Pedestrian	Between Heavily Gro / Regent Rd (Autocar Alarms on left)	0.1	26.1	19.9	4.3
9	A6 Buxton Rd	Traffic Signals	Kennerley Rd (Website Centre/Esso on right)	0.1	37.4	10.9	22.8
10	A6 Buxton Rd	Signalised Pedestrian	Mile End La (Acton Court Hotel left, Kwik Fit on right)	0.2	29.3	20.1	8.9
11	A6 Buxton Rd	Signalised Pedestrian	Woodsmoor La / Lake St (URC Church on left)	0.2	24.1	22.4	1.1
12	A6 Buxton Rd	Signalised Pedestrian	Cherry Tree La (Travellers Call pub on left)	0.2	43.9	17.5	13.5
13	A6 Buxton Rd	Signalised Pedestrian	Dialstone Ln	0.2	49.3	17.4	15.7
14	A6 Buxton Rd	Traffic Signals	Dialstone Ln (Funeral Service on right)	0.0	23.3	5.1	17.8
15	A6 London Rd	Traffic Signals	New Moor La (George & Dragon pub on right)	0.2	39.2	19.1	6.7
16	A6 London Rd	Traffic Signals	Mill St (just past Sainsbury's on left)	0.0	6.1	21.5	0.8
17	A6 London Rd	Signalised Pedestrian	Between Grosvenor St & Vernon St (Woodman Pub on right)	0.1	8.1	23.6	0.0
18	A6 London Rd	Traffic Signals	Commercial Rd (Co-Op superstore on right)	0.1	32.8	12.7	15.8
19	A6 London Rd	Signalised Pedestrian	Between Hope St / Vine St (Lazy Daisies left)	0.1	19.9	20.2	2.6
20	A6 London Rd	Signalised Pedestrian	Between Hatherlow La / Chapel St (Civic Hall on right)	0.1	16.5	21.4	2.3
21	A6 London Rd	Signalised Pedestrian	Between Grundey St / Daniel St (White Hart pub on left)	0.1	20.0	15.5	8.0
22	A6 London Rd	Traffic Signals	Brook St (McDonald's on right)	0.1	31.8	11.3	17.0
23	A6 London Rd	Traffic Signals	Torkington Rd (Bulls Head pub on left)	0.1	42.5	5.0	36.0
24	A6 London Rd	Traffic Signals	Into A523 Macclesfield Rd	0.2	55.8	10.7	35.0
25	A6 Buxton Rd	Point Of Interest	Over Middlewood Way	1.4	156.2	32.6	0.0
Total				4.2	945		395
Average						16.1	
Total (hh:mm:ss)					00:15:45		00:06:35

Route Number: 312 - Poynton to Stockport (Pre-Bus Gate Survey May 2007)

Route Start Description: A523 London Rd North/ A5149 Manchester rd, Poynton
 Timing Point at Start: TP0 A523 London Rd North/ A5149 Manchester rd, Poynton

No Of Journeys: 16

Dates: 08/05/2007 - 10/05/2007

Times: AM Peak (06:59:44 - 09:25:40)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time (s)	Av Speed (mph)	Av Junction Delay (s)
1	A523 Macclesfield Rd	Traffic Signals	A5143 Dean Ln	1.4	175.1	27.8	28.3
2	A523 Macclesfield Rd	Signalised Pedestrian	Chatsworth Rd/Haddon Rd	0.2	25.6	27.0	0.0
3	A523 Macclesfield Rd	Traffic Signals	Bus Terminus	0.2	45.7	18.9	11.5
4	A523 Macclesfield Rd	Traffic Signals	A6 Buxton Rd	0.1	31.6	11.5	16.1
5	A6 London Rd	Traffic Signals	A627 Torkington Rd (Bulls Head pub on right)	0.2	54.2	11.2	33.4
6	A6 London Rd	Traffic Signals	Brook St (McDonald's on left)	0.1	20.9	10.3	14.0
7	A6 London Rd	Signalised Pedestrian	Between Grundy St/Daniel St (White Hart pub on right)	0.1	31.9	11.1	19.8
8	A6 London Rd	Signalised Pedestrian	Hatherlow La / Chapel St (Royal Bank of Scotland on right)	0.1	60.9	5.1	49.4
9	A6 London Rd	Signalised Pedestrian	Between Hope St / Vine St	0.1	99.0	3.6	89.4
10	A6 London Rd	Traffic Signals	Commercial Rd (Co-Op superstore on left)	0.1	127.1	3.2	117.8
11	A6 London Rd	Signalised Pedestrian	Between Grosvenor St & Vernon St (Woodman pub on left)	0.1	56.9	7.4	46.4
12	A6 London Rd	Traffic Signals	Mill St (Sainsburys on right)	0.1	34.9	5.3	29.6
13	A6 London Rd	Traffic Signals	New Moor La (George & Dragon pub on left)	0.0	15.0	8.6	8.8
14	A6 Buxton Rd	Traffic Signals	Dailstone La / Poplar Gro (Funeral Directors on left)	0.2	57.0	13.3	25.3
15	A6 Buxton Rd	Signalised Pedestrian	Dialstone Ln	0.0	5.0	21.0	0.0
16	A6 Buxton Rd	Signalised Pedestrian	Cherry Tree Ln (Travellers Call PH on right)	0.2	47.9	18.0	8.6
17	A6 Buxton Rd	Signalised Pedestrian	Between Lake St / Woodsmoor La (URC Church on right)	0.2	33.6	22.9	3.5
18	A6 Buxton Rd	Signalised Pedestrian	Mile End La (Kwik Fit on left, Acton Court Hotel on right)	0.1	26.1	20.5	6.3
19	A6 Buxton Rd	Traffic Signals	Kennerley Rd (Website Centre & Esso on left)	0.2	63.1	9.3	43.5
20	A6 Buxton Rd	Signalised Pedestrian	Heavily Gro / Regent Rd (AutoCentre on right)	0.1	23.9	17.3	7.3
21	A6 Buxton Rd	Traffic Signals	Hallam Rd / Nangreave Rd (Beefeater Travel Inn on right)	0.1	53.5	9.6	34.9
22	A6 Buxton Rd	Traffic Signals	Bramhall La (Stockport Tandoori on right)	0.2	68.1	11.1	44.1
23	A6 Wellington Rd South	Signalised Pedestrian	Wellington Grv	0.1	26.6	13.6	11.9
24	A6 Wellington Rd South	Traffic Signals	Longshut Ln (Johnstone's Paint on left)	0.1	80.9	5.8	69.9
25	A6 Wellington Rd South	Signalised Pedestrian	Charlsworth St	0.1	24.2	11.5	12.3
26	A6 Wellington Rd South	Signalised Pedestrian	Union St (Opposite TEXACO fuel station)	0.1	28.9	10.6	19.3
27	A6 Wellington Rd South	Signalised Pedestrian	Outside College	0.1	25.2	9.2	15.7
28	A6 Wellington Rd South	Traffic Signals	Greek St	0.1	33.1	7.4	23.5
Total				4.7	1376		790
Average						12.3	
Total (hh:mm:ss)					00:22:56		00:13:10

Route Number: 328 - Poynton to Stockport (Post Bus Gate Survey October 2007)

Route Start Description: A523 London Rd North/ A5149 Manchester rd, Poynton
Timing Point at Start: TP0 A523 London Rd North/ A5149 Manchester rd, Poynton

No Of Journeys: 16

Dates: 16/10/2007 - 18/10/2007

Times: AM Peak (07:13:45 - 09:28:10)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time (s)	Av Speed (mph)	Av Junction Delay (s)
1	A523 Macclesfield Rd	Traffic Signals	A5143 Dean Ln	1.4	186.0	26.2	42.5
2	A523 Macclesfield Rd	Signalised Pedestrian	Chatsworth Rd/Haddon Rd	0.2	26.8	25.8	0.0
3	A523 Macclesfield Rd	Traffic Signals	Bus turnaround	0.2	61.3	14.1	33.0
4	A523 Macclesfield Rd	Traffic Signals	A6 Buxton Rd	0.1	24.7	14.8	8.8
5	A6 London Rd	Traffic Signals	A627 Torkington Rd (Bulls Head pub on right)	0.2	23.3	26.1	1.2
6	A6 London Rd	Traffic Signals	Brook St (McDonald's on left)	0.1	11.2	19.2	3.1
7	A6 London Rd	Signalised Pedestrian	Between Grundy St/Daniel St (White Hart pub on right)	0.1	15.9	22.2	0.8
8	A6 London Rd	Signalised Pedestrian	Hatherlow La / Chapel St (Royal Bank of Scotland on right)	0.1	19.0	16.4	4.6
9	A6 London Rd	Signalised Pedestrian	Between Hope St / Vine St	0.1	33.9	10.5	22.4
10	A6 London Rd	Traffic Signals	Commercial Rd (Co-Op superstore on left)	0.1	63.7	6.3	54.6
11	A6 London Rd	Signalised Pedestrian	Between Grosvenor St & Vernon St (Woodman pub on left)	0.1	49.4	8.5	35.7
12	A6 London Rd	Traffic Signals	Mill St (Sainsburys on right)	0.1	26.3	7.1	18.9
13	A6 London Rd	Traffic Signals	New Moor La (George & Dragon pub on left)	0.0	11.3	11.5	5.1
14	A6 Buxton Rd	Traffic Signals	Dailstone La / Poplar Gro (Funeral Directors on left)	0.2	58.9	12.9	29.7
15	A6 Buxton Rd	Signalised Pedestrian	Dialstone Ln	0.0	4.1	25.5	0.0
16	A6 Buxton Rd	Signalised Pedestrian	Cherry Tree Ln (Travellers Call PH on right)	0.2	40.2	21.5	4.1
17	A6 Buxton Rd	Signalised Pedestrian	Between Lake St / Woodsmoor La (URC Church on right)	0.2	53.9	14.3	27.5
18	A6 Buxton Rd	Signalised Pedestrian	Mile End La (Kwik Fit on left, Acton Court Hotel on right)	0.1	32.7	16.4	14.0
19	A6 Buxton Rd	Traffic Signals	Kennerley Rd (Website Centre & Esso on left)	0.2	79.4	7.4	64.4
20	A6 Buxton Rd	Signalised Pedestrian	Heavily Gro / Regent Rd (AutoCentre on right)	0.1	35.1	11.8	16.8
21	A6 Buxton Rd	Traffic Signals	Hallam Rd / Nangreave Rd (Beefeater Travel Inn on right)	0.1	71.1	7.2	60.1
22	A6 Buxton Rd	Traffic Signals	Bramhall La (Stockport Tandoori on right)	0.2	80.3	9.4	57.4
23	A6 Wellington Rd South	Signalised Pedestrian	Wellington Grv	0.1	28.6	12.6	13.8
24	A6 Wellington Rd South	Traffic Signals	Longshut Ln (Johnstone's Paint on left)	0.1	55.9	8.4	40.7
25	A6 Wellington Rd South	Signalised Pedestrian	Charlwsworth St	0.1	19.9	13.9	8.7
26	A6 Wellington Rd South	Signalised Pedestrian	Union St (Opposite TEXACO fuel station)	0.1	28.4	10.8	17.0
27	A6 Wellington Rd South	Signalised Pedestrian	Outside College	0.1	22.3	10.4	10.8
28	A6 Wellington Rd South	Traffic Signals	Greek St	0.1	28.1	8.8	17.3
Total				4.7	1192		613
Average						14.2	
Total (hh:mm:ss)					00:19:52		00:10:13

Route Number: 313 - Stockport to Poynton (Pre-Bus Gate Survey May 2007)

Route Start Description: A6 Wellington Rd North/ Greek St, Stockport

Timing Point at Start: TP0 A6 Wellington Rd North/ Greek St, Stockport

No Of Journeys: 11

Dates: 08/05/2007 - 10/05/2007

Times: AM Peak (07:17:11 - 08:56:48)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time (s)	Av Speed (mph)	Av Junction Delay (s)
1	A6 Wellington Rd South	Signalised Pedestrian	Outside College	0.1	14.5	16.4	2.5
2	A6 Wellington Rd South	Signalised Pedestrian	St Thomas's Pl	0.1	8.6	27.2	0.0
3	A6 Wellington Rd South	Signalised Pedestrian	Brentnall St	0.1	11.5	24.0	0.0
4	A6 Wellington Rd South	Traffic Signals	Longshut Ln (Honda on right)	0.1	39.5	7.6	28.5
5	A6 Wellington Rd South	Signalised Pedestrian	Daisy St	0.1	18.3	25.4	0.0
6	A6 Wellington Rd South	Traffic Signals	Bramhall Ln	0.1	39.1	9.0	27.4
7	A6 Buxton Rd	Traffic Signals	Nangreave Rd	0.2	116.3	6.5	94.6
8	A6 Buxton Rd	Signalised Pedestrian	Between Heavily Gro / Regent Rd (Autocar Alarms on left)	0.1	25.4	20.4	2.0
9	A6 Buxton Rd	Traffic Signals	Kennerley Rd (Website Centre/Esso on right)	0.1	32.5	12.5	14.0
10	A6 Buxton Rd	Signalised Pedestrian	Mile End La (Acton Court Hotel left, Kwik Fit on right)	0.2	29.6	19.9	2.5
11	A6 Buxton Rd	Signalised Pedestrian	Woodsmoor La / Lake St (URC Church on left)	0.2	27.5	19.7	4.0
12	A6 Buxton Rd	Signalised Pedestrian	Cherry Tree La (Travellers Call pub on left)	0.2	39.0	19.7	6.8
13	A6 Buxton Rd	Signalised Pedestrian	Dialstone Ln	0.2	48.2	17.8	12.9
14	A6 Buxton Rd	Traffic Signals	Dialstone Ln (Funeral Service on right)	0.0	19.1	6.2	13.2
15	A6 London Rd	Traffic Signals	New Moor La (George & Dragon pub on right)	0.2	34.7	21.6	5.1
16	A6 London Rd	Traffic Signals	Mill St (just past Sainsbury's on left)	0.0	5.2	25.5	0.0
17	A6 London Rd	Signalised Pedestrian	Between Grosvenor St & Vernon St (Woodman Pub on right)	0.1	10.0	19.2	1.2
18	A6 London Rd	Traffic Signals	Commercial Rd (Co-Op superstore on right)	0.1	56.2	7.4	42.3
19	A6 London Rd	Signalised Pedestrian	Between Hope St / Vine St (Lazy Daisies left)	0.1	21.9	18.4	1.6
20	A6 London Rd	Signalised Pedestrian	Between Hatherlow La / Chapel St (Civic Hall on right)	0.1	16.0	22.1	1.6
21	A6 London Rd	Signalised Pedestrian	Between Grundey St / Daniel St (White Hart pub on left)	0.1	19.3	16.1	6.7
22	A6 London Rd	Traffic Signals	Brook St (McDonald's on right)	0.1	22.5	16.0	8.5
23	A6 London Rd	Traffic Signals	Torkington Rd (Bulls Head pub on left)	0.1	41.4	5.2	34.5
24	A6 London Rd	Traffic Signals	Into A523 Macclesfield Rd	0.2	89.4	6.7	73.8
25	A523 Macclesfield Rd	Traffic Signals	Bus Layby	0.1	21.4	18.5	3.8
26	A523 Macclesfield Rd	Signalised Pedestrian	Chatsworth Rd	0.2	36.4	23.9	0.0
27	A523 Macclesfield Rd	Traffic Signals	A5143 Dean La (Summer Palace restaurant on right)	0.2	47.5	14.6	19.3
28	A523 London Rd North	Traffic Signals	A5149 Chester Rd	1.3	274.5	17.6	147.5
Total				4.7	1165		554
Average						14.5	
Total (hh:mm:ss)					00:19:25		00:09:14

Route Number: 329 - Stockport to Poynton (Post Bus Gate Survey October 2007)

Route Start Description: A6 Wellington Rd North/ Greek St, Stockport

Timing Point at Start: TP0 A6 Wellington Rd North/ Greek St, Stockport

No Of Journeys: 15

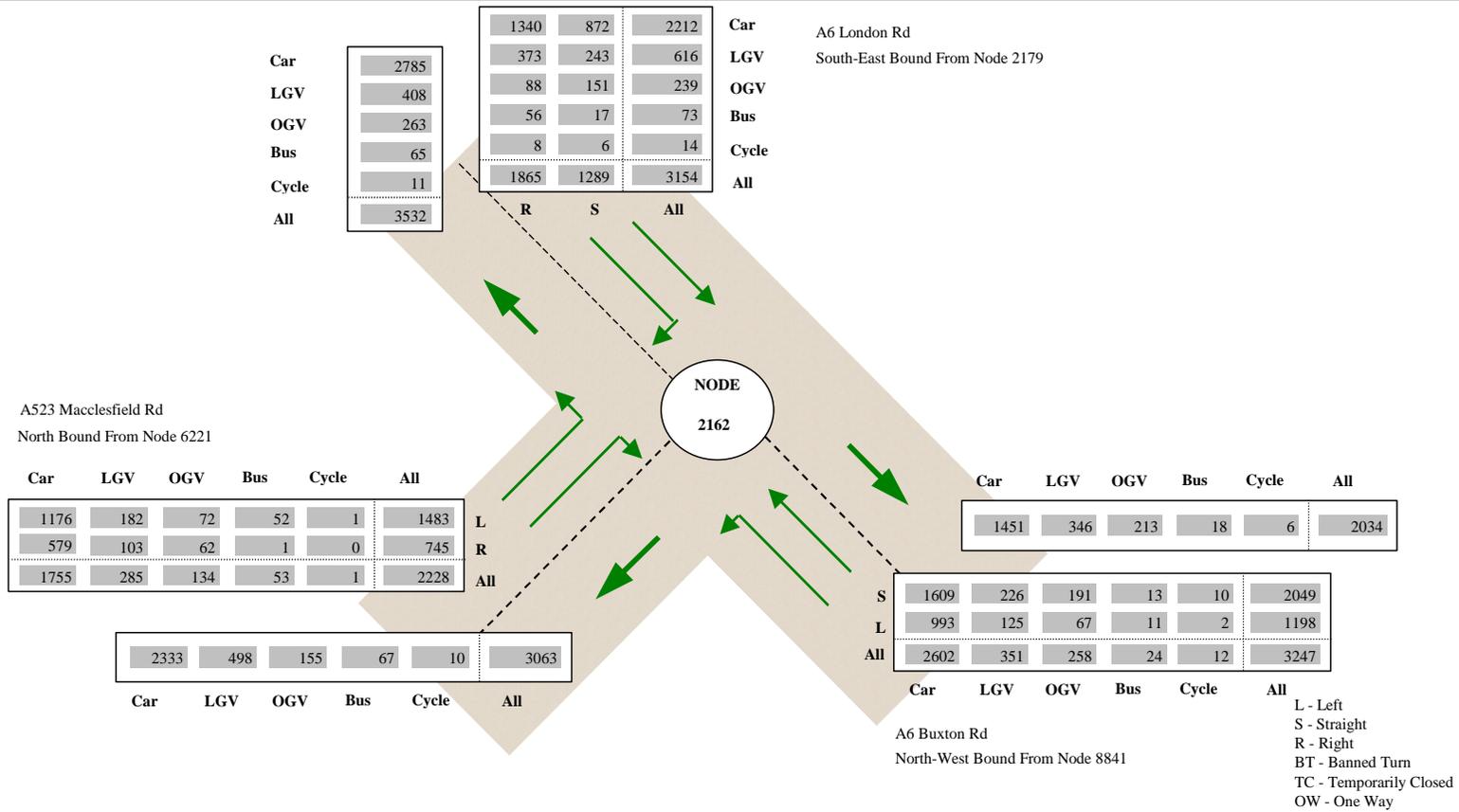
Dates: 16/10/2007 - 18/10/2007

Times: AM Peak (07:11:54 - 09:27:09)

Timing Point	Route	Intersection type	Intersection with	Section Length (mi)	Av Journey Time (s)	Av Speed (mph)	Av Junction Delay (s)
1	A6 Wellington Rd South	Signalised Pedestrian	Outside College	0.1	10.9	22.0	1.5
2	A6 Wellington Rd South	Signalised Pedestrian	St Thomas's PI	0.1	8.8	26.7	0.3
3	A6 Wellington Rd South	Signalised Pedestrian	Brentnall St	0.1	19.9	14.0	9.5
4	A6 Wellington Rd South	Traffic Signals	Longshut Ln (Honda on right)	0.1	45.8	6.6	36.1
5	A6 Wellington Rd South	Signalised Pedestrian	Daisy St	0.1	47.1	9.9	31.5
6	A6 Wellington Rd South	Traffic Signals	Bramhall Ln	0.1	86.7	4.1	75.4
7	A6 Buxton Rd	Traffic Signals	Nangreave Rd	0.2	120.7	6.3	98.6
8	A6 Buxton Rd	Signalised Pedestrian	Between Heavily Gro / Regent Rd (Autocar Alarms on left)	0.1	26.7	19.4	6.7
9	A6 Buxton Rd	Traffic Signals	Kennerley Rd (Website Centre/Esso on right)	0.1	33.2	12.3	20.1
10	A6 Buxton Rd	Signalised Pedestrian	Mile End La (Acton Court Hotel left, Kwik Fit on right)	0.2	27.5	21.4	2.9
11	A6 Buxton Rd	Signalised Pedestrian	Woodsmoor La / Lake St (URC Church on left)	0.2	27.9	19.4	6.4
12	A6 Buxton Rd	Signalised Pedestrian	Cherry Tree La (Travellers Call pub on left)	0.2	34.9	22.0	4.5
13	A6 Buxton Rd	Signalised Pedestrian	Dialstone Ln	0.2	46.5	18.4	10.5
14	A6 Buxton Rd	Traffic Signals	Dialstone Ln (Funeral Service on right)	0.0	25.7	4.6	21.8
15	A6 London Rd	Traffic Signals	New Moor La (George & Dragon pub on right)	0.2	37.1	20.3	6.7
16	A6 London Rd	Traffic Signals	Mill St (just past Sainsbury's on left)	0.0	5.3	25.0	0.1
17	A6 London Rd	Signalised Pedestrian	Between Grosvenor St & Vernon St (Woodman Pub on right)	0.1	9.9	19.4	1.6
18	A6 London Rd	Traffic Signals	Commercial Rd (Co-Op superstore on right)	0.1	30.9	13.5	15.1
19	A6 London Rd	Signalised Pedestrian	Between Hope St / Vine St (Lazy Daisies left)	0.1	20.9	19.3	5.2
20	A6 London Rd	Signalised Pedestrian	Between Hatherlow La / Chapel St (Civic Hall on right)	0.1	13.9	25.4	0.0
21	A6 London Rd	Signalised Pedestrian	Between Grundey St / Daniel St (White Hart pub on left)	0.1	16.5	18.8	1.7
22	A6 London Rd	Traffic Signals	Brook St (McDonald's on right)	0.1	22.1	16.3	7.2
23	A6 London Rd	Traffic Signals	Torkington Rd (Bulls Head pub on left)	0.1	19.4	11.1	10.7
24	A6 London Rd	Traffic Signals	Into A523 Macclesfield Rd	0.2	57.0	10.5	38.1
25	A523 Macclesfield Rd	Traffic Signals	Bus Layby	0.1	24.1	16.4	6.9
26	A523 Macclesfield Rd	Signalised Pedestrian	Chatsworth Rd	0.2	33.0	26.3	0.0
27	A523 Macclesfield Rd	Traffic Signals	A5143 Dean La (Summer Palace restaurant on right)	0.2	40.9	16.9	14.3
28	A523 London Rd North	Traffic Signals	A5149 Chester Rd	1.3	286.7	16.8	126.4
Total				4.7	1180		560
Average						14.4	
Total (hh:mm:ss)					00:19:40		00:09:20

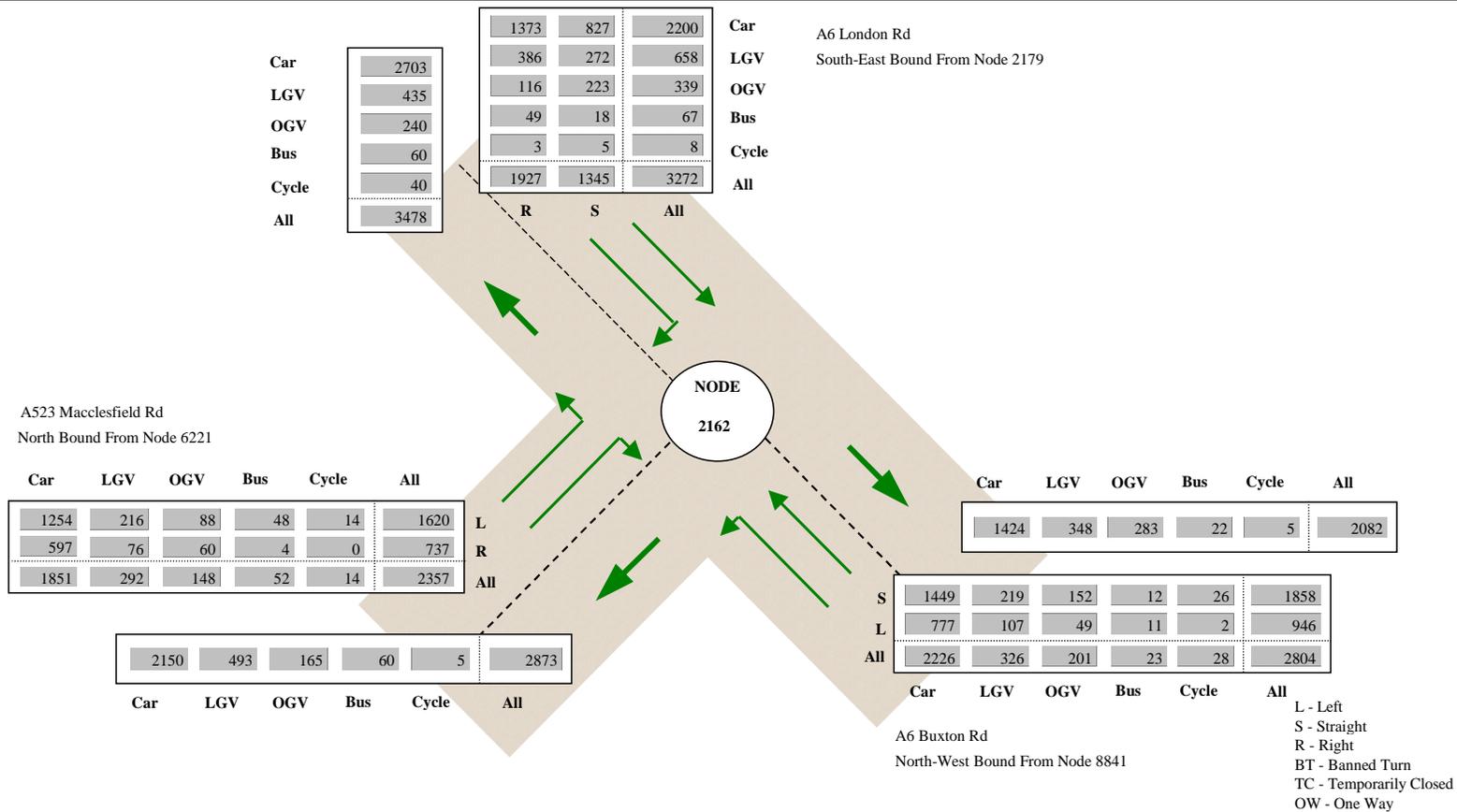
Appendix 3 - Classified Turn Counts – A523 Macclesfield Road

Description: **A6 London Rd / A6 Buxton Rd** Count printed for the time period: **Start** **Finish**
TDC/6541/7 A6 London Road/A6 Buxton Road **7.00** **10.00**
 Local Area: **Hazel Grove**
 Carried out: **Tuesday, 8 May 2007** From **7.00** To **10.00** Continuous: **At 15 Minute Intervals**
 Holidays: **National holiday within 7 days**
 Location: OSGR: Easting **392529** Northing **386511** District: **Stockport** Client: **External** **Shown in:** Vehicles
 Count Details: **Classified Turn Count** NIS Junction Node **2162** GMTU Batch Ref. No: **0705143**



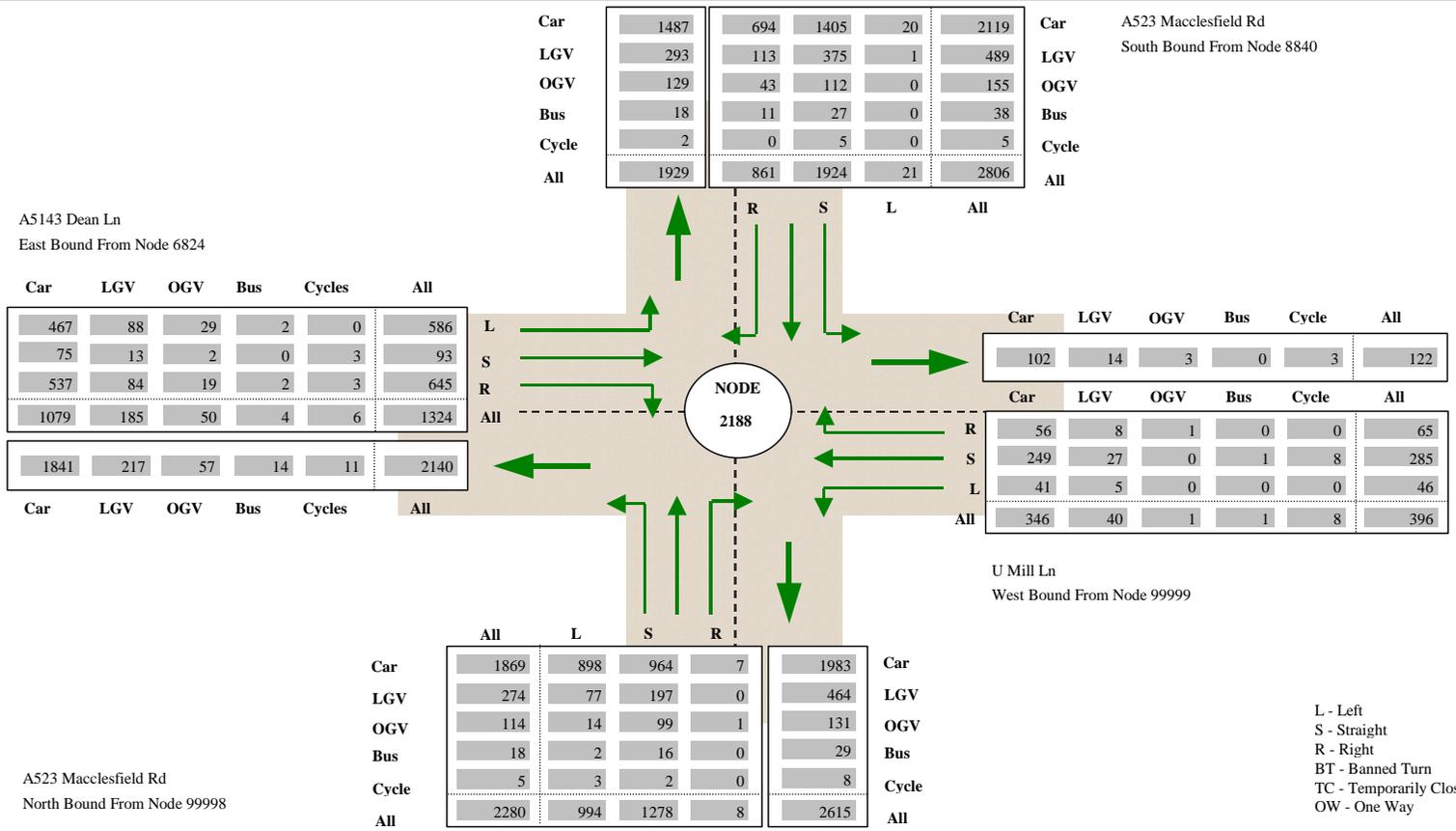
Data values presented in VEHICLES

Description: **A6 London Rd / A6 Buxton Rd** Count printed for the time period: **Start** **Finish**
TDC/6571/7 A6 London Rd/A6 Buxton Rd **7.00** **10.00**
 Local Area: **Hazel Grove**
 Carried out: **Tuesday, 16 October 2007** From **7.00** To **10.00** Continuous: **At 15 Minute Intervals**
 Location: OSGR: Easting **392529** Northing **386511** District: **Stockport** Client: **External** **Shown in:** Vehicles
 Count Details: **Classified Turn Count** NIS Junction Node **2162** GMTU Batch Ref. No: **0710938**



Data values presented in VEHICLES

Description: **A523 Macclesfield Rd / U Mill Ln** Count printed for the time period: **Start** **Finish**
TDC/6541/6 A523 Macclesfield Road/U Mill Lane **7.00** **10.00**
 Local Area: **Hazel Grove**
 Carried out: **Tuesday, 8 May 2007** From **7.00** To **10.00** Continuous: **At 15 Minute Intervals**
 Holidays: **National holiday within 7 days**
 Location: OSGR: **Easting 392542 Northing 385651** District: **Stockport** Client: **External** **Shown in:** Vehicles
 Count Details: **Classified Turn Count** NIS Junction Node **2188** GMTU Batch Ref. No: **0705140**

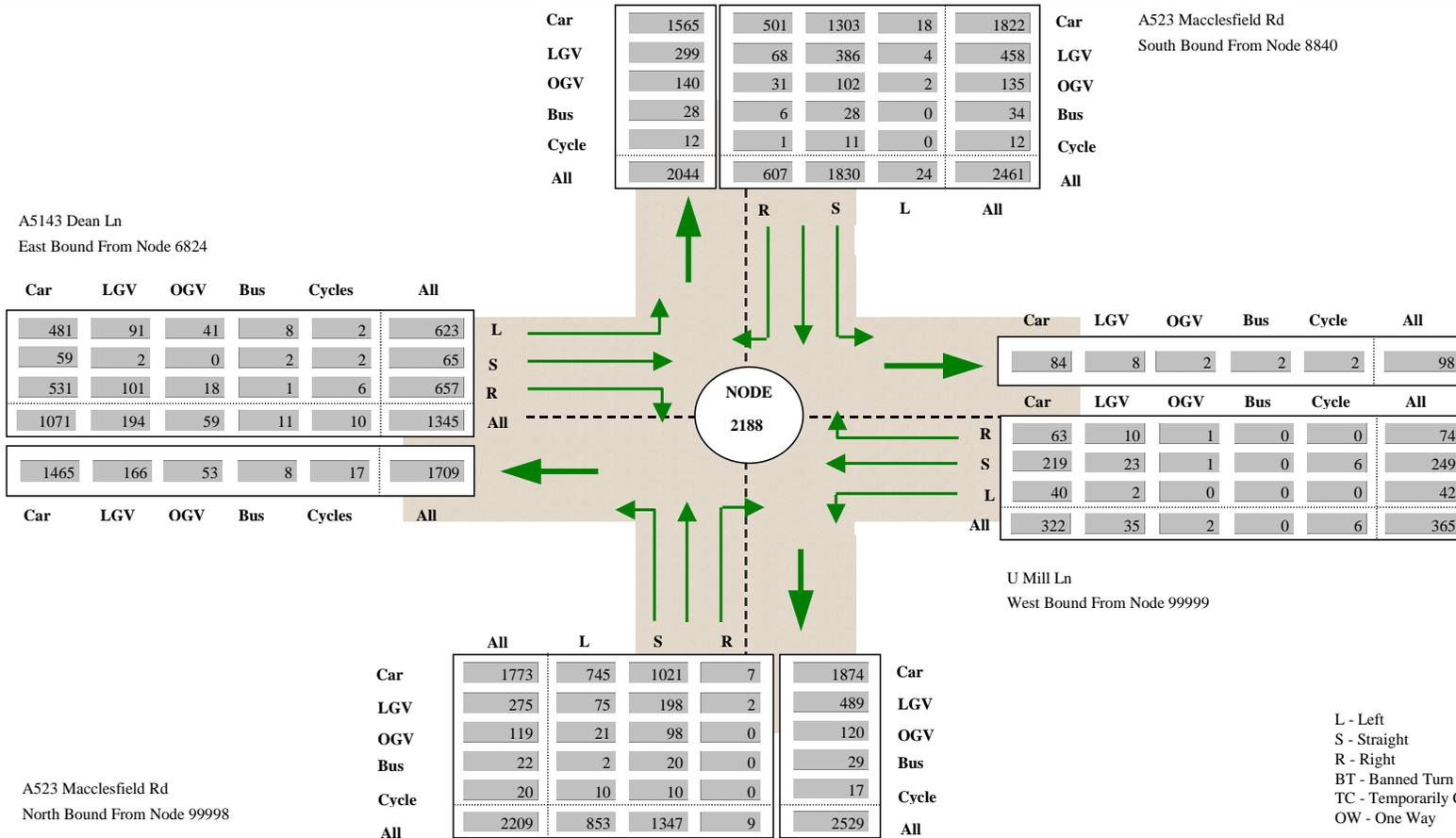


Data values presented in VEHICLES

Description: **A523 Macclesfield Rd / U Mill Ln**
TDC/6571/6 A523 Macclesfield Rd/U Mill Ln
 Local Area: **Hazel Grove**
 Carried out: **Tuesday, 16 October 2007** From **7.00** To **10.00** Continuous: **At 15 Minute Intervals**
 Location: OSGR: Easting **392542** Northing **385651** District: **Stockport** Client: **External** **Shown in:** Vehicles
 Count Details: **Classified Turn Count** NIS Junction Node **2188** GMTU Batch Ref. No: **0710935**

Count printed for the time period:

Start **Finish**
7.00 **10.00**



Data values presented in VEHICLES