

Appendix B – Traffic Modelling and Appraisal Reports

B.1 Traffic Data Report

Client SEMMMS Client Board

Project SEMMMS7C Improved A6 'Corridor' Traffic Model

Subject HFAS Report 1677: SEMMMS7C Model Data Report

This report describes the data used in preparing traffic forecasts for the appraisal of the SEMMMS7C (A6 to Manchester Airport Relief Road) using the improved A6 'Corridor' traffic model.

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1. Introduction

- 1.1 In 2009, the SEMMMS Project Board commissioned the Greater Manchester Transportation Unit (¹GMTU) to develop models, to inform production of a Major Scheme Business Case for the proposed SEMMMS (A6 to Manchester Airport) Relief Road.
- 1.2 To assist in development of the models (labelled SEMMMS7B), a significant amount of new data on traffic patterns and volumes was collected within the identified scheme Area of Influence (AOI). Details of these data, together with other data already held by GMTU which were used in developing the models were documented in GMTU Report 1544 (September 2010), GMTU Report 1609 (May 2010) & GMTU Report 1615 (June 2010).
- 1.3 In Spring 2011, TfGM HFAS was asked by the Project Board to undertake additional data collection (origin-destination surveys and counts) in the east of the AOI (the surveys conducted in 2009 having focused mainly on the west of the AOI) and revalidate/calibrate the highway and variable demand models, the updated highway model becoming SEMMMS7C.
- 1.4 This report details the new and existing data employed in the model build and revalidation/recalibration. The report has nine main sections:
- Section 1 Introduction
 - Section 2 Background
 - Section 3 Roadside Interview Surveys
 - Section 4 Household Interview Surveys
 - Section 5 Public Transport User Survey Data
 - Section 6 2001 National Census Matrices
 - Section 7 Great Britain Freight Model Data
 - Section 8 Journey Time Data
 - Section 9 Traffic Counts
 - Appendices detail RIS locations, sample rates and traffic count locations.

¹GMTU became part of the newly formed Transport for Greater Manchester on 1st April 2011. Within TfGM, GMTU is now known as Highways Forecasting and Analytical Services (HFAS).

2. Overview

The Models

- 2.1 Two transport models have been developed and maintained for the SEMMMS work:
- the SEMMMS Variable Demand Model (VDM) that has been developed from the former Greater Manchester Strategy Planning Model (GMSPM2); and
 - the SEMMMS7 traffic assignment and simulation models which uses the SATURN model software
- 2.2 The role of the VDM is to
- convert employment and demographics projections into future year travel demand matrices and produce indicators of the outcomes of the projections in terms of mode splits, travel times, patronage, congestions etc:
 - test and appraise the impacts on these outcomes of the proposed scheme and various transport supply and land use strategies; and
 - produce matrices of highway car travel demand that are used in the GM-wide SATURN modelling.
- 2.3 The role of the SATURN model is to take the future year car travel demand as forecast by the SEMMMS VDM and to develop more detailed representations of the impacts of that demand, considered together with goods vehicle demand, in terms of travel times and link flows. The SATURN model also provides the inputs (at the forecast year) to the economic and environmental appraisal processes.
- 2.4 The development of the SEMMMS7B base and future year models are documented in the 'SEMMMS Local Model and Validation Report' and the SEMMMS Model Forecasting Note' respectively.
- 2.5 In building and validating the SEMMMS7B models it was recognised that there was significant variation in the ages of the origin-destination data used in matrix building. While an extensive set of surveys was undertaken in and round the western and central parts of the SEMMMS AOI in September 2009, the available O-D data for the eastern part of the AOI, and in particular the important A6 corridor, was more dated.
- A6 'Corridor'
- 2.6 The A6 corridor encompasses an area on either side of the A6 Buxton Road bounded broadly by Marple and the A627 to the north, New Mills to the east, Poynton to the south and Hazel Grove and the A523 to the west.
- 2.7 The A6 is part of the national Primary Route Network (PRN) and provides a strategic link between Greater Manchester and key towns in north Derbyshire including Buxton, Matlock and Chapel-on-le-Frith. It also serves New Mills, Whalley Bridge and a number of smaller settlements including High Lane, Disley and Danebank. It is also a major access route for the Peak District National Park. The A6 is the only major road within the corridor itself but is linked to the A627 and A523 at various locations by a number of minor roads. This minor

road network is particularly dense to the north, with a number of possible routes between Marple and High Lane, Disley and New Mills.

- 2.8 To improve the currency of the data for the A6 corridor, further Roadside Interview Surveys and traffic counts were undertaken in June 2011. Additional site visits were also undertaken to inform an audit of the SATURN network in the corridor. The data collected has been used to create an updated and revalidated SATURN model (labelled SEMMMS7C).
- 2.9 Table 2.1 summarises the sources of transport data used in developing both the SATURN model and the VDM to provide an understanding of existing travel patterns and problems. The following sections consider each source in more detail, including where appropriate, locations, methods of data collection, dates, durations and sample.
- 2.10 The volume of data used in developing the models and in understanding existing travel patterns and issues is substantial, and a number of different sources of data have been exploited. This report therefore refers to other reports where detailed information can be found, where appropriate.

Table 2.1 Summary of Key Data Sources	
Data Source	How used
Roadside interview (RSI) cordon and screenline surveys with drivers of vehicles	Development of SEMMMS SATURN model and SEMMMS VDM
Manual classified and automatic traffic counts associated with RSI and at other locations	Development of SEMMMS SATURN model and SEMMMS VDM
Bus passenger on-bus interviews at screenline/cordon surveys	Development of SEMMMS VDM (via GMSPM2)
Roadside counts of passengers on buses crossing screenlines/cordons	Development of SEMMMS VDM (via GMSPM2)
Rail interview surveys with boarding passengers in key centres	Development of SEMMMS VDM (via GMSPM2)
Counts of boarding and alighting passengers in association with the key centre interview surveys and otherwise	Development of SEMMMS VDM (via GMSPM2)
Rail passenger on-train interviews on two screenlines in the south of GM	Development of SEMMMS VDM (via GMSPM2)
Metrolink interview surveys with boarding passengers in key centres	Development of SEMMMS VDM (via GMSPM2)
Metrolink interview surveys with boarding passengers on Altrincham line	Development of SEMMMS VDM (via GMSPM2)
Counts of boarding and alighting passengers at all Metrolink stops in association with the interview surveys and otherwise	Development of SEMMMS VDM (via GMSPM2)
Household Interview Survey data	Development of SEMMMS SATURN model and SEMMMS VDM
2001 National Census matrices of usual mode of travel to work	Development of SEMMMS SATURN model and SEMMMS VDM
TrafficMaster journey time data	SEMMMS SATURN development, understanding JT variation through the day, where congestion occurs

Roadside Interview Surveys

Overview

- 3.1 There have been five major sets of roadside interview surveys (RIS) in Greater Manchester since the beginning of the decade, which are relevant to the SEMMMS area; these are as follows:
- SEMMMS Roadside Interview Surveys Phase A, which were carried out in October 2009 to specifically provide information to inform the modelling, forecasting and appraisal of the SEMMMS highway scheme;
 - the SEMMMS Roadside Interview Surveys Phase B, which were carried out in June 2011 to provide current information on the A6 corridor area.
 - the M60 Junction Eighteen to Twelve Study (JETTS) which involved 18 roadside interview (RSI) sites surveyed during June and July 2001, managed by Faber Maunsell on behalf of the Government Office for the North West (GONW);
 - the M60 Motorway Box After Study (M60AS) which involved 89 RSI sites surveyed between March and June 2003, managed by GMTU on behalf of the Department for Transport (DfT); and
 - the Greater Manchester Area Transportation Surveys (GMATS) which involved 300 sites surveyed between 25 February 2002 and 22 April 2004, managed by GMTU on behalf of the Association of Greater Manchester Authorities (AGMA), the Greater Manchester Passenger Transport Executive (GMPTE) and the Highways Agency (HA).
- 3.2 In the 2009 SEMMMS surveys, conducted specifically for the SEMMMS traffic modelling work, RSI data was collected to provide up-to-date information about the critical movements for the SEMMMS scheme. Data was collected at 45 sites forming two cordons around Manchester Airport/Wythenshawe and Heald Green/Wilmslow. Traffic was surveyed in both the inbound and outbound directions for each of the cordons, to provide detailed information about the movements in the study area.
- 3.3 The 2009 SEMMMS RIS focussed on the west of the SEMMMS Area of Influence, including the critical Airport area. However, no new surveys were undertaken in the eastern part of the AOI (broadly from Woodford/Bramhall eastwards through Poynton and along the A6 corridor). In June 2011, RIS were therefore undertaken at five additional sites on key routes to the east and south of Stockport including the A627, A626 and A6 routes. Traffic at was surveyed either inbound or outbound (from Greater Manchester/Stockport) at each of these sites.
- 3.4 The GMATS survey sites were originally located to form continuous survey cordons when combined with the sites from M60AS and JETTS. These cordons observe traffic travelling between different areas of the county at points where traffic flows are relatively high. The GMATS survey sites also form cordons around Greater Manchester's ten key centres, again where traffic flows are relatively high.
- 3.5 However, for the SEMMMS work, the GMATS surveys were mainly only used in combination with the National Census journey-to-work data (ie, the full set of GMATS data was not used in the formation of the other trip-purpose/ vehicle type matrices).

SEMMMS Roadside Interview Surveys

Phase 'A'

- 3.6 The SEMMMS (phase A) roadside interview data was collected in October 2009 at 46 sites, as described in Table 2.1 and illustrated in Figure 1. The sites formed two cordons in the study area, to intercept movements to and from:
- Manchester Airport / Wythenshawe
 - Cheadle Hulme / Wilmslow / Heald Green.
- 3.7 To reduce the costs of the surveys, and avoid causing unnecessary disruption to traffic, the SEMMMS RSI data was supplemented with information from 11 sites that were surveyed during the GMATS and M60 After Study RSI surveys, which were used to fill 'holes' in the SEMMMS cordons. The locations of these sites are described in Table 2.2, and are shown as green squares in Figure 2.1. Data from the re-used GMATS/M60 After Study sites was re-expanded to present day ATC counts collected during the SEMMMS surveys.
- 3.8 The SEMMMS RSI data was collected by Sky High PLC, with traffic being surveyed in both the inbound and outbound directions for each cordon. Two types of interview were undertaken:
- Face-to-face interviews
 - Postcard surveys.
- 3.9 In total, 19 sites were surveyed using face-to-face interviews, with 25 of the sites being surveyed using the postcard technique. Two sites were surveyed using a mixture of face-to-face interviews and postcards.

Phase 'B'

- 3.10 The SEMMMS (phase B) roadside interview data was collected in June 2011 at 5 sites, as described in Table 2.1 and illustrated in Figure 1. The sites formed a cordon in the study area, to intercept movements to and from Stockport (south of M60), Hazel Grove, High Lane and Poynton.
- 3.11 To complete the cordon SEMMMS RSI data was supplemented with information from 11 sites that were surveyed during the GMATS and M60 After Study RSI surveys. The locations of these sites are described in Table 2.2, and are shown as green squares in Figure 2.1. Data from the re-used GMATS/M60 After Study sites was re-expanded to present day ATC counts collected during the SEMMMS surveys.
- 3.12 Phase B surveys were undertaken by Nationwide Data Collection, with traffic being surveyed in either the inbound or outbound directions for the cordon.
- 3.13 In total, 3 sites were surveyed using only face-to-face interviews, 1 site was surveyed using only the postcard technique. One site was surveyed using a mixture of face-to-face interviews and postcards.
- 3.14 Both sets of SEMMMS surveys were undertaken on weekdays between 0700 and 1900 for drivers of cars, Light Goods Vehicles (LGV) and Other Goods Vehicles (OGV). (Motor cycles

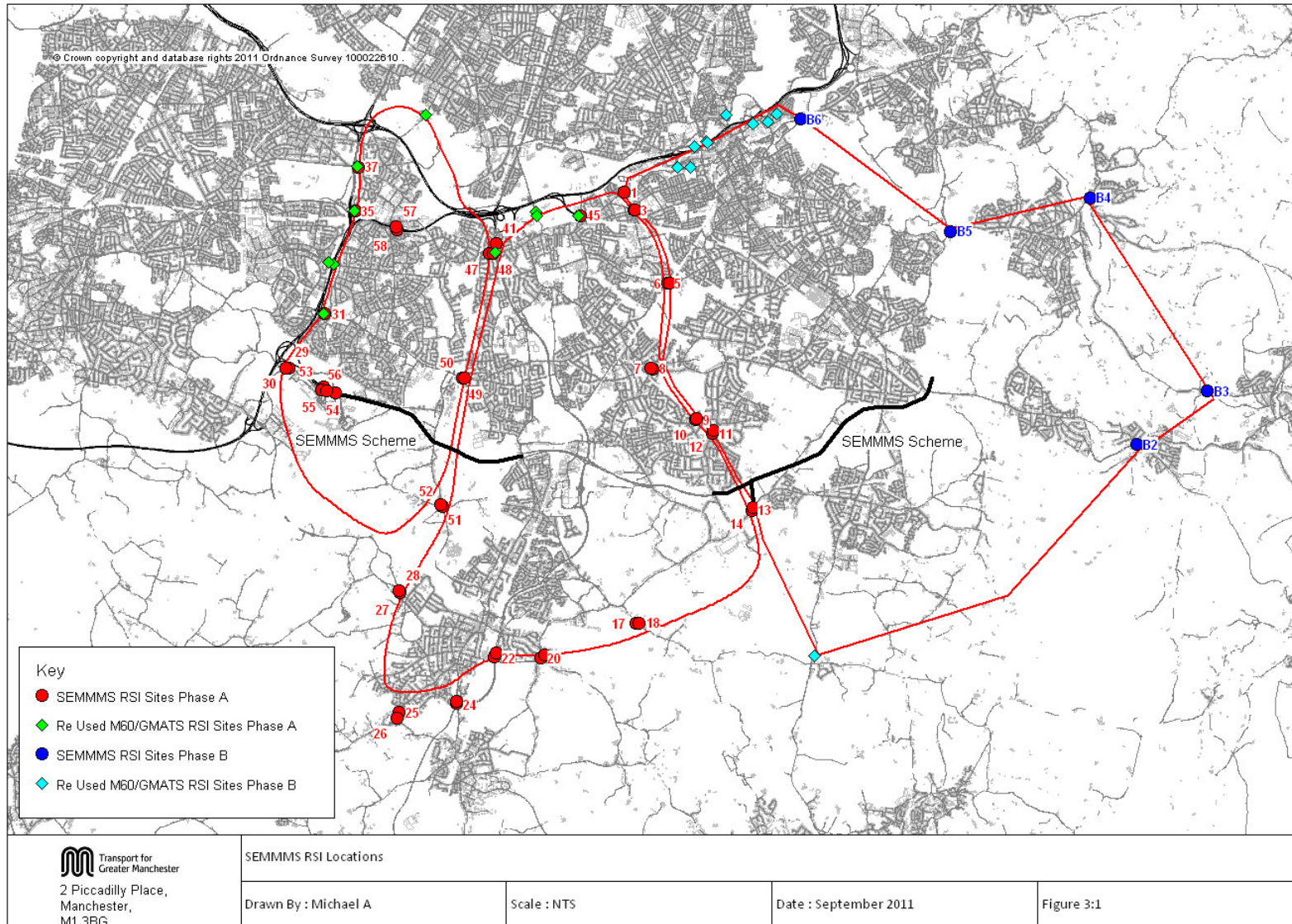
and pedal cycles were also surveyed, although these interviews were not expanded or used for matrix building)

- 3.15 Automatic traffic counts were undertaken at each site for a two-week period covering the interview date. These counts were used for data expansion, with the ATC count on the day of the survey being excluded to ensure that the data expansion was representative. In addition, two-way manual counts were also collected on the day of the survey to monitor and control the sampling. These counts were also used to disaggregate the ATC data, to allow the interviews to be expanded separately by vehicle type.
- 3.16 Details of the sample rates for the SEMMMS RSI sites are presented in Appendix 1, for the 12-hour period 07:00-19:00 broken down by vehicle type. The table includes a brief description of any problems that were encountered during the data expansion, together with the steps that were taken to alleviate the problems. The sample sizes that are shown in the table relate to the number of interviews used following any such intervention.

Table 3.1 SEMMMS RSI Site Locations and Interview Dates							
Site Number	Location	Direction	Survey Method	Survey Day	Survey Date	Easting	Northing
SEMMMS Phase A RSI Site Locations and Interview Dates							
S1	A560 Stockport Road	W	Face to face	Friday	16/10/2009	387507	389533
S2	A560 Stockport Road	E	Face to face	Tuesday	13/10/2009	387514	389537
S3	B5465 Edgeley Road	W	Face to face	Friday	16/10/2009	387696	389194
S4	B5465 Edgeley Road	E	Face to face	Tuesday	13/10/2009	387712	389189
S5	Adswood Road	W	Face to face	Friday	16/10/2009	388345	387777
S6	Adswood Road	E	Face to face	Tuesday	13/10/2009	388388	387774
S7	Manor Road	W	Face to face	Wednesday	14/10/2009	388027	386129
S8	Manor Road	W	Face to face	Thursday	15/10/2009	388055	386118
S9	Robins Lane	SW	Face to face	Wednesday	14/10/2009	388890	385149
S10	Robins Lane	NE	Face to face	Thursday	15/10/2009	388911	385171
S11	A5102 Bramhall Lane South	SW	Face to face	Wednesday	14/10/2009	389204	384881
S12	A5102 Bramhall Lane South	NE	Postcard	Thursday	15/10/2009	389227	384927
S13	A5149 Chester Road	SW	Postcard	Wednesday	14/10/2009	389967	383392
S14	A5149 Chester Road	NE	Face to face	Thursday	15/10/2009	389998	383442
S17	B5358 Lees Lane	NW	Postcard	Tuesday	06/10/2009	390062	378935
S18	B5358 Lees Lane	SE	Face to face	Wednesday	07/10/2009	390244	378768
S19	A5102 Adlington Road	N	Mixed	Friday	02/10/2009	385977	380593
S20	A5102 Adlington Road	S	Postcard	Tuesday	06/10/2009	385906	380537
S21	A34 Wilmslow By-pass	N	Postcard	Friday	02/10/2009	385035	380625
S22	A34 Wilmslow By-pass	S	Postcard	Wednesday	07/10/2009	385007	380551
S23	Alderley Road	N	Postcard	Tuesday	06/10/2009	384272	379688
S24	Alderley Road	S	Postcard	Thursday	08/10/2009	384280	379649
S25	B5086 Knutsford Road	NE	Postcard	Thursday	01/10/2009	383168	379487
S26	B5086 Knutsford Road	SW	Postcard	Thursday	08/10/2009	383131	379376
S27	A538 Altrincham Road	SE	Face to face	Monday	05/10/2009	383184	381794
S28	A538 Altrincham Road	NW	Postcard	Friday	09/10/2009	383170	381838

Table 3.1 SEMMMS RSI Site Locations and Interview Dates Cont'd							
S30	Thorley Lane	W	Postcard	Tuesday	20/10/2009	380991	386136
S29	Thorley Lane	E	Mixed	Monday	19/10/2009	381047	386144
S31	Simonsway	E	Postcard	Monday	12/10/2009	381738	387192
S35	A560 Altrincham Road	E	Postcard	Monday	12/10/2009	382317	389176
S37	B5167 Palatine Road	E	Face to face	Monday	12/10/2009	382373	390026
S41	A34 Kingsway	S	Postcard	Friday	23/10/2009	385035	388537
S45	M60 Junction 2 off-slip	SE	Postcard	Wednesday	21/10/2009	386669	389086
S47	A560 Gatley Road	W	Face to face	Thursday	22/10/2009	384912	388355
S48	A560 Gatley Road	W	Postcard	Wednesday	21/10/2009	384976	388359
S49	Finney Lane	W	Postcard	Thursday	22/10/2009	384389	385942
S50	Finney Lane	E	Face to face	Friday	23/10/2009	384427	385943
S51	B5166 Styal Road	N	Face to face	Friday	09/10/2009	383976	383500
S52	B5166 Styal Road	S	Face to face	Monday	05/10/2009	384003	383460
S53	M56 Jn 5 Terminal 2 Off-Slip	E	Postcard	Monday	19/10/2009	381706	385780
S54	M56 Jn 5 Terminals 1&3 Off-Slip	E	Postcard	Monday	19/10/2009	381934	385650
S551	Outwood Lane, M56 JN5	W	Postcard	Tuesday	20/10/2009	381768	385692
S552	Ringwood Road, M56 JN5	W	Postcard	Tuesday	20/10/2009	381768	385692
S56	M56 Jn 5 Terminal 2 On-Slip	W	Postcard	Tuesday	20/10/2009	381680	385711
S57	M56 Jn 2 On-Slip	E	Postcard	Wednesday	21/10/2009	383117	388866
S58	M56 Jn 2 Off-Slip	W	Postcard	Thursday	22/10/2009	383133	388812
SEMMMS Phase B RSI Site Location and Interview Dates							
B2	A6 Buxton Road West	E	Face to face	Tuesday	14/06/2011	397386	384672
B3	B6101 Hague Bar Road	E	Face to face	Tuesday	14/06/2011	398753	385690
B4	A626 Brabyns Brow	E	Face to face	Wednesday	15/06/2011	396492	389431
B4	A626 Brabyns Brow	E	Postcard	Wednesday	15/06/2011	396492	389431
B5	A627 Dooley Lane	S	Postcard	Wednesday	15/06/2011	393790	388781
B6	B6104 Stockport Road West	W	Face to face	Thursday	16/06/2011	390900	390946

Table 3.2 Re-Expanded GMATS / M60 After Study RSI Sites							
Site Number	Location	Direction	Survey Method	Survey Day	Survey Date	Easting	Northing
SEMMMS Phase A							
781	Simonsway	W	Face to face	Tuesday	25/02/2003	381705	387193
782	Hollyhedge Road	W	Postcard	Tuesday	25/02/2003	381817	388190
953	Hollyhedge Road	E	Mixed	Tuesday	25/03/2003	381897	388154
783	A560 Altrincham Road	W	Postcard	Monday	24/02/2003	382308	389179
784	B5166 Palatine Road	W	Postcard	Monday	24/02/2003	382358	390026
374	B5167 Palatine Road	SW	Postcard	Tuesday	16/03/2004	383678	391036
1210	B5167 Palatine Road	NE	Mixed	Tuesday	06/05/2003	383675	391030
9006	A34 Kingsway	N	Postcard	Monday	09/06/2003	385028	388381
372	B5095 Manchester Road	S	Mixed	Monday	15/03/2004	385797	389148
1212	B5095 Manchester Road	N	Mixed	Monday	19/05/2003	385817	389070
1306	M60 Junction 2 On-Slip	NW	Face to face	Monday	16/06/2003	386632	389075
SEMMMS Phase B							
368	Lancashire Hill	S	Face to face	Thursday	13/03/2003	389483	391038
369	A6 Wellington Road	S	Postcard	Wednesday	24/03/2004	389118	390500
772	London Road	S	Face to face	Thursday	27/02/2003	391174	380582
1213	A560 Brinksway	E	Mixed	Tuesday	24/06/2003	388531	390024
1214	A560 Wood Street	W	Face to face	Wednesday	25/06/2003	388792	390012
1216	A5145 Travis Brow	W	Face to face	Wednesday	25/06/2003	388868	390424
1218	A6 Wellington Road	N	Face to face	Wednesday	25/06/2003	389095	390520
1219	B6167 Lancashire Hill	N	Face to face	Thursday	08/05/2003	389482	391026
1220	A560 Great Portwood Street	E	Mixed	Monday	16/06/2003	389992	390852
1229	B6104 Carrington Road	W	Mixed	Tuesday	17/06/2003	390453	391048
1307	A626 St Marys Way	N	Mixed	Tuesday	17/06/2003	390281	390902



JETTS Roadside Interview Surveys

- 3.17 The JETTS roadside interview survey is described in the report '*M60 JETTS (Junction Eighteen to Twelve Transport Study) April 2002 Data Collection Report (Document No. 21.0)*'.
- 3.18 In brief, the interviews were undertaken on weekdays (Monday to Thursday) in neutral months between 07:00 and 19:00 with the drivers of cars and commercial vehicles. Three methods of survey were used:
- face-to-face interviews; and
 - postcard questionnaire surveys at sites where face-to-face interviews were not practical, in which drivers were handed postcards for self-completion and postal return.
- 3.19 Automatic number plate recognition surveys (ANPR) on motorway links crossing the survey cordon, in which the registered keepers of vehicles whose plates were recorded on the designated day of survey were sent questionnaires for completion and return. This method was used because it was not practical to use other survey methods on the motorways, or to survey the many motorway entry and exit points that would be required to build up an estimate of the origins and destinations of traffic using the sections of motorway crossing the cordon.
- 3.20 In addition, traffic counts were undertaken in the survey direction on the day of interview and automatic traffic counters were used to record traffic over a 2-week period around the survey day to provide any necessary factors to correct for survey site avoidance.

M60 After Surveys (M60AS) Roadside Interview Surveys

- 3.21 The M60AS roadside interview survey programme is described in two GMTU reports:
- *M60 After Study Technical Report 2: The Roadside Interviews Surveys April 2004*
 - *M60 After Study Technical Report 8: Data Processing & Expansion*
- 3.22 These include examples of the questionnaires.
- 3.23 In brief, the interviews were undertaken on weekdays (Monday to Friday) in neutral months between 06:30 and 20:30 with the drivers of cars and commercial vehicles, motorcyclists and cyclists. Two methods of survey were used:
- Face-to-face interviews
 - Postcard questionnaire surveys.
- 3.24 A two-way, classified, manual count was conducted at each site on the day of the survey, and on an equivalent day a week apart. The count on the day of survey was used to monitor and control sampling, while the other count was used for data expansion. Additionally at each site, an ATC survey was undertaken which covered the dates of both manual counts, to check that the expansion was representative. Details of the ATC surveys can be found in *M60 After Study Technical Report 6: ATC Count Surveys, November 2004*.

GMATS Roadside Interview Surveys

- 3.25 The GMATS RIS were undertaken on weekdays (Monday to Friday) in neutral months between 07:00 and 19:00 with the drivers of cars and commercial vehicles, motorcyclists and cyclists. Two methods of survey were used:
- Face-to-face interviews
 - Postcard questionnaire surveys.
- 3.26 In addition, manual classified traffic counts were undertaken in both directions on the day of interview for sample control purposes, and on an equivalent day in another week to provide an expansion count. Automatic traffic counts were done over a 2-week period, but were limited to key centres to minimise the substantial survey costs.
- 3.27 The survey methodology was the same as that described in *M60 After Study Technical Report 2*.

Data Uses

- 3.28 The RIS data have been used to develop initial trip matrices for the SEMMMS SATURN model (that were then enhanced using matrix estimation techniques)

GMATS Household Interview Surveys

- 4.1 The GMATS household interview survey was conducted in neutral months between January 2002 and March 2003. It involved face-to-face interviews with household residents and asked questions about the characteristics of the household and its members, and the details of journeys made on a pre-determined travel day. The study area included the whole of Greater Manchester, plus the neighbouring areas of Glossop, Poynton, Wilmslow and Alderley Edge, which have strong travel links with the county.
- 4.2 Details of the survey methodology can be found in '*Greater Manchester Area Transportation Surveys (GMATS) Brief for the Household Interview Surveys*' and are described briefly below.
- 4.3 The households for interview were selected randomly by Business Geographics Ltd, such that each ward in the study area had the same proportion of households within the sample.
- 4.4 Selected households were sent letters advising them that they had been selected for interview and to expect a visit from an interviewer in the near future. The letter also gave instructions on withdrawing from the survey, should the household wish not to take part.
- 4.5 Each interviewer was allocated one ward to survey at a time and instructed to revisit a household at a different time should they fail to make contact at the first attempt. After four unfruitful visits or a refusal to take part, the interviewer was allowed to select the next household on a reserve list for interview.
- 4.6 Interviewers were also instructed to achieve proportionally the same number of travel diaries on each day of the week. Normally, the travel day would be the day before the survey day to assist the interviewees recall of events, however, surveying practicalities meant that some travel days were two days before and a few three days before.
- 4.7 The target number of interviews was 15,000 (equating to a sample of about 1.5%). However, budget constraints prevented a final phase of interviewing from taking place and the final sample was 9,000 households.
- 4.8 The household interview survey included a question about people's usual mode of travel to their main place of work; the question was designed to be consistent with the 2001 census. The GMATS surveys also included a trip diary so that information on trips made throughout a typical day could be obtained. About one-seventh of households were asked about Sunday travel, another seventh were asked about Saturday travel and the remainder were asked about travel on a weekday. The data from the diaries makes it possible to relate the trips actually made from home to work in a particular period on a weekday Saturday or Sunday to the usual mode of travel to work in the census data. In particular, factors can be generated from the GMATS Household Interview Survey (HIS) information to estimate home to work and work to home trips, by mode.

Data Uses

- 4.9 The household data have been used to develop trip matrices for the SEMMMS Models by providing factors to apply to the 'Usual Mode of Travel To Work' trip matrices derived from the 2001 National Census, to produce period-specific matrices (see Chapter 5).

Public Transport User Survey Data

- 5.1 The SEMMMS VDM and associated SEMMMS Public Transport (PT) model were developed from the GM Strategy Planning Model (GMSPM2). Whilst significant updates were made to the model in creating SEMMMS VDM, much of the initial PT data forming the basis of the SEMMMS VDM (and its PT component) was as used in GMSPM2.
- 5.2 This chapter briefly outlines the key sources of public transport data for Greater Manchester used in GMSPM2 and carried forward into SEMMMS VDM.
- 5.3 Further details of the PT model can be found in the SEMMMS VDM forecasting documentation being prepared by MVA.

Bus Passenger Interview Surveys

- 5.4 Data from three major bus passenger interview surveys in Greater Manchester were used in creating GMSPM2:
- the M60 Motorway Box After Study (M60AS) which involved 39 interview sites surveyed between March and June 2003, managed by HFAS on behalf of the DfT;
 - the Greater Manchester Area Transportation Surveys (GMATS) 2002-03 which involved 109 interview sites on ten key centre cordons surveyed between 6 March 2002 and 13 March 2003, managed by HFAS on behalf of AGMA et al; and
 - GMATS 2005 which involved 22 interview sites surveyed between 11 October 2005 and 5 December 2005, managed by HFAS on behalf of AGMA et al.
- 5.5 In the latter survey, some of the sites were located to form a continuous inbound survey cordon around the M60 when combined with the sites from M60AS. This is illustrated in Figure A1.2 in Appendix 1. It can be seen that the cordon observes bus travel into the centre of the county.
- 5.6 The key centre surveys were conducted outbound (see Figure A1.2), and observed bus travel from and through:
- Manchester City Centre
 - Altrincham Town Centre
 - Wigan Town Centre
 - Bolton Town Centre
 - Bury Town Centre
 - Rochdale Town Centre
 - Oldham Town Centre
 - Ashton-under-Lyne Town Centre
 - Stockport Town Centre
 - Trafford Park
- 5.7 In the case of Trafford Park, the survey sites excluded roads crossing the Manchester ship Canal, which were surveyed in the M60AS.

- 5.8 The survey methodology was the same for both surveys and is described in *M60 After Study Technical Report 3*. In brief, surveyors boarded buses to count passengers crossing the survey screenlines and hand out self-completion, postal-return questionnaires. In addition, counts were made of all passengers crossing the screenlines from the roadside.
- 5.9 The M60AS survey was conducted between 06:30 and 20:30 on weekdays in neutral months, while the GMATS survey was conducted between 07:00 and 19:00.

Rail Passenger Interview Surveys

- 5.10 There have been two major rail passenger interview surveys in Greater Manchester in recent years:
- M60 Motorway Box After Study (M60AS) conducted 06:30-20:30 on weekdays in neutral months between March and June 2003 and managed by HFAS on behalf of the DfT; and the
 - Greater Manchester Area Transportation Surveys (GMATS) conducted 07:00-19:00 on weekdays in neutral months between 5 March 2002 and 6 March 2003 and managed by HFAS on behalf of AGMA et al.
- 5.11 The M60AS rail survey covered those rail services which crossed two screenlines, intercepting six rail routes, each of which radiated from Manchester Piccadilly Station:
- Guide Bridge (Rose Hill line)
 - Bredbury (New Mills line)
 - Stalybridge/Huddersfield
 - Warrington
 - Manchester Airport
 - Stockport.
- 5.12 More details can be found in *M60 After Study Technical Report 3*. The survey principle was that a prepaid questionnaire, similar to the bus surveys, was handed to as many passengers as possible on all services crossing the screenlines. In addition, counts were made of all passengers on the trains in the survey period
- 5.13 The GMATS surveys also used pre-paid postal questionnaires, but these were handed out to passengers boarding trains at stations in Greater Manchester's key centres where passenger flows are at their highest:
- Manchester City Centre
 - Piccadilly
 - Victoria
 - Oxford Road
 - Deansgate
 - Salford Central
 - Altrincham Town Centre

- Altrincham
- Navigation Road
- Wigan Town Centre
 - Wigan North Western
 - Wigan Wallgate
- Bolton
- Rochdale
- Oldham Mumps
- Ashton-under-Lyne
- Stockport

5.14 Counts were also undertaken of all boarding and alighting passengers by service.

Metrolink Passenger Interview Surveys

5.15 There have been two major Metrolink passenger interview surveys in Greater Manchester since the beginning of the decade:

- The M60 Motorway Box After Study (M60AS) conducted 06:30-20:30 on weekdays in neutral months between March and June 2003, managed by HFAS on behalf of the DfT
- The Greater Manchester Area Transportation Surveys (GMATS) conducted 07:00-19:00 on weekdays in neutral months between 16 April 2002 and 7 November 2003, managed by HFAS on behalf of AGMA et al.

5.16 The M60AS survey was designed to intercept Metrolink passengers crossing two survey screenlines on the Altrincham line. As peak period trams are extremely crowded, the survey could not be done in the same manner as the rail survey. Instead the surveys were undertaken as face-to-face interviews at the following 9 stations:

- Altrincham
- Navigation Road
- Timperley
- Brooklands
- Sale
- Dane Road
- Stretford
- Old Trafford
- Trafford Bar

5.17 Interviews were carried out on the northbound platforms together with an associated count of passengers boarding and alighting each tram.

5.18 The GMATS Metrolink passenger survey was conducted with passengers boarding trams at Metrolink stops in the following key centres:

- Manchester City Centre
 - Piccadilly station
 - Victoria station
 - Market Street
 - Piccadilly Gardens
 - Mosley Street
 - St Peter's Square
 - GMEX
 - Deansgate
- Altrincham Town Centre
 - Altrincham
 - Navigation Road
- Bury Town Centre
 - Bury

5.19 The method was the same as that for the GMATS rail passenger survey.

Data Uses

5.20 The bus, rail and Metrolink passenger data were used to develop trip matrices for the GMSPM2, on which SEMMMS VDM is based.

2001 National Census Matrices of Mode of Travel to Work

- 6.1 The 2001 National Census provides information about the usual mode of travel to work at 'Output Area' level, based on a 100% sample. The output areas can be grouped to form wards, or user defined zoning systems, so that the census provides full matrix data for all car driver work trips.
- 6.2 Before the census matrices could be used with the SATURN model, however, they needed to be converted from the 2001 daily matrices (represented by the census), to 2009 period-specific matrices for each of the modelled hours represented by the SATURN model. To help convert the census matrices, the household interview survey (HIS) which formed part of the 2001-2003 Greater Manchester Area Transportation Surveys (GMATS) included a question about people's usual mode of travel to their main place of work. This question was designed to be consistent with the census, so that the census and HIS data could be easily compared, and so that factors could be generated from the household interview data to estimate home to work and work to home trips by mode, for selected time periods.
- 6.3 One issue of concern when transforming the census data is that the spatial distribution of work trips can vary by time of day. (It was thought, for example, that there might be more part time work trips in the inter-peak period, which might have a different trip length distribution to full time trips). To allow for this, the matrices were segmented by trip length, (using the average crow-fly distance between zones), with short and longer distance car driver trips being factored separately when estimating the work trips for each time-period.
- 6.4 The methodology used to build the SEMMMS travel to work matrices is described in detail in the local model validation report (LMVR).

Data Uses

- 6.5 The 2001 census journey to work data has been used to build initial journey to work matrices for the entire modelled area.

Great Britain Freight Model (GBFM) Data

- 7.1 The GBFM is a freight transport demand model developed by MDS Transmodal and used by the Department for Transport as part of the National Transport Model (NTM) framework. It was originally developed to assess the impact of the Channel Tunnel on the ferry industry but later extended using GB-specific data sources for use on domestic applications. Forecasting procedures were also added.
- 7.2 The ITEA division of DfT adopted the GBFM for use as part of NTM in 2001 and significant improvements were made to integrate it into the NTM framework. Since then, the model has been continually updated and software improvements made, culminating in Version 5 (GBFMv5)
- 7.3 The outputs from the GBFM provide information about annual origin-to-destination OGV trips at postcode district level (about 2,600 “zones”), for a 2007 base.
- 7.4 For SEMMMS, the procedure for converting the GBFM matrices to SATURN format involved four steps, as follows:
- disaggregating the matrices from postcode district level to the detailed zoning system used with the SATURN model;
 - factoring movements from the annual trips represented by the GBFM to the modelled hours represented by the SATURN model;
 - factoring movements from 2007 to 2009; and
 - infilling intra-postcode district trips (which were not available from the GBFM).
- 7.5 The method is described in detail in the LMVR.

Data Uses

- 7.6 The GBFM data have been used to infill OGV movements that were not observed in the roadside interview surveys.

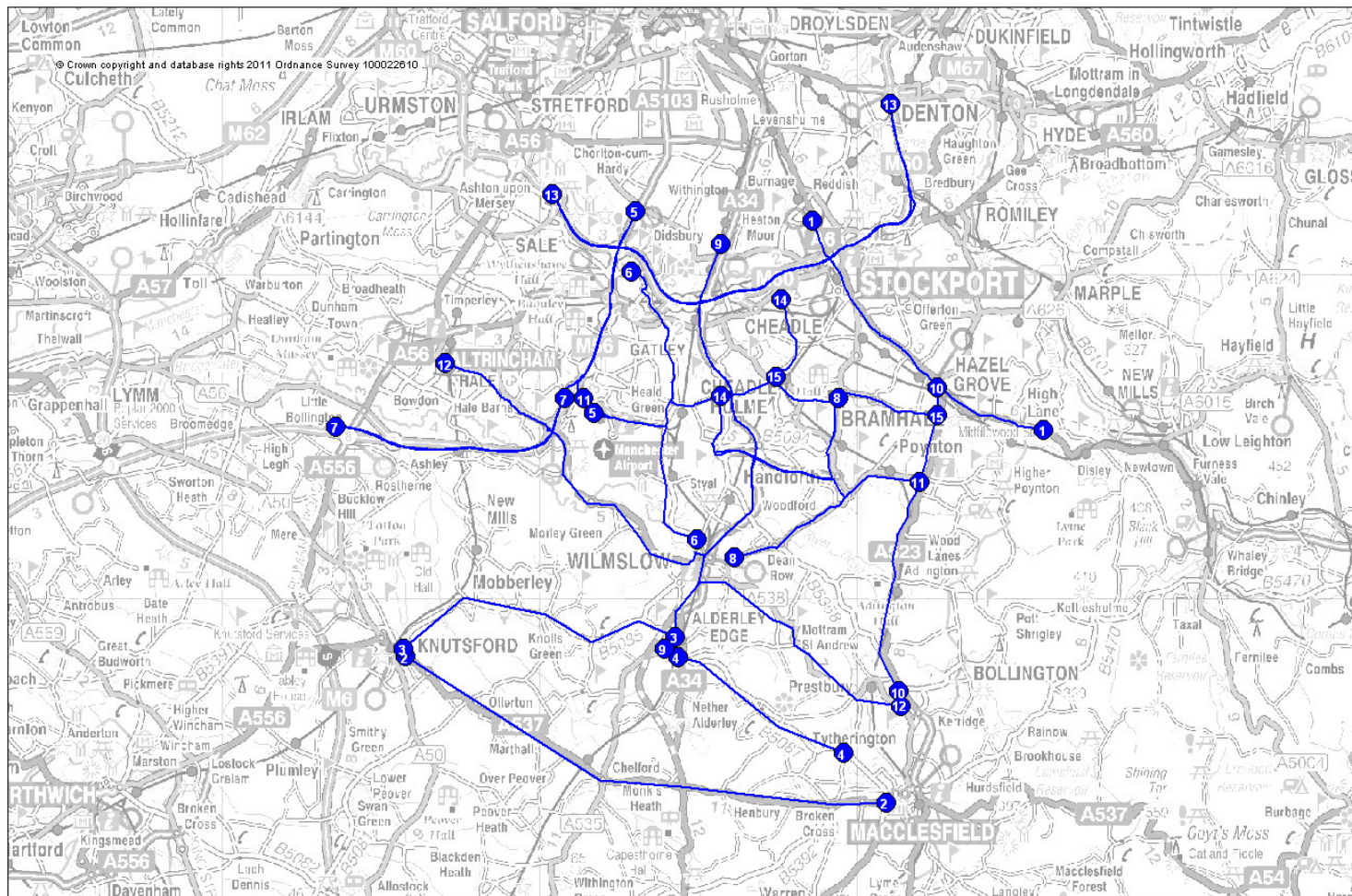
Journey Time Data

- 8.1 Observed journey times on a number of routes in the SEMMMS Area of Influence were obtained from the Trafficmaster database.
- 8.2 Trafficmaster is a database run by Trafficmaster Plc that holds data collected from in-vehicle GPS tracking devices and provides information about average vehicle speeds on roads across the UK for vehicles. This information has been mapped to a set of ITN (Integrated Transport Network) links and can be used to derive measures of speed and journey time.
- 8.3 Trafficmaster acts as prime contractor for the Department for Transport to collect historical journey time data and the data is shared with public authorities for the purposes of:
- activities related to local transport planning; and
 - traffic congestion monitoring, analysis and research.
- 8.4 The data are anonymised prior to supply to Local Authorities and is provided in quarter hour time bands
- 8.5 HFAS currently hold data for Greater Manchester and a 10 KM buffer surrounding the county (thereby including a substantial part of northern Cheshire). Data is currently available from September 2006.
- 8.6 On receipt from DfT the Trafficmaster data is processed by HFAS to exclude observations collected during school and national holidays, and to calculate average times for non-stopping vehicles (i.e. excluding buses and taxis) for standardized time periods.
- 8.7 To validate the SATURN models, the modelled times have been compared with observed times collected during 2009 for the morning peak hour 0800-0900, the evening peak hour 1700-1800 and the inter-peak period 0930-1430.
- 8.8 Fifteen routes were extracted from the Trafficmaster database. The routes are detailed in Table 7.1 and shown in Figure 7.1. In all, the journey time routes cover approximately 327km of the highway network in the SEMMMS area.
- 8.9 The observed journey times on each of the routes are shown in Table 7.2.

Data Uses

- 8.10 The Trafficmaster data has been used to validate modelled journey times.

Table 8.1 Journey Time Route Descriptions			
Route No.	Description	Direction	Route Length (Modelled km)
1	A6 High Lane to Heaton Moor	NW	8.7
	A6 Heaton Moor to High Lane	SE	8.7
2	A537 Knutsford to Macclesfield	E	16.4
	A537 Macclesfield to Knutsford	W	16.4
3	B5085 Knutsford to Alderley Edge	E	10.2
	B5085 Alderley Edge to Knutsford	W	10.2
4	B5087 Macclesfield to Alderley Edge	NW	6.6
	B5087 Alderley Edge to Macclesfield	SE	6.6
5	M56 Manchester Airport to West Didsbury	N	7.3
	M56 West Didsbury to Manchester Airport	S	6.8
6	B5166 Wilmslow to Northenden	N	10.0
	B5166 Northenden to Wilmslow	S	10.0
7	M56 J8 to J5	E	8.3
	M56 J5 to J8	W	8.3
8	A5102 Wilmslow to Bramhall	NE	7.6
	A5102 Bramhall to Wilmslow	SW	7.6
9	A34 Alderley Edge to East Didsbury	N	14.4
	A34 East Didsbury to Alderley Edge	S	14.4
10	A523 Prestbury to Hazel Grove	N	10.0
	A523 Hazel Grove to Prestbury	S	10.0
11	A555 MAELR Poynton to Manchester Airport	W	14.0
	A555 MAELR Manchester Airport to Poynton	E	13.9
12	A538 Prestbury to Hale	NW	22.1
	A538 Hale to Prestbury	SE	22.2
13	M60 J6 to J24	AC	17.0
	M60 J24 to J6	CW	17.0
14	Heald Green to Cheadle Heath	NE	5.2
	Cheadle Heath to Heald Green	SW	5.2
15	A5149/3 Cheadle Hulme to Hazel Grove	E	5.8
	A5143/9 Hazel Grove to Cheadle Hulme	W	5.8




 <p>Transport for Greater Manchester 2 Piccadilly Place, Manchester, M1 3BG</p>	SEMMS7C Journey Time Routes			
	Drawn By : Michael A	Scale : NTS	Date : September 2011	Figure : 8.1

Table 8.2 Observed Journey Times by Route (Minutes)				
Route Number	Direction	Observed Time		
		AM	Inter Peak	PM
1	NW	27.2	19.5	21.7
	SE	22.1	19.0	27.7
2	E	22.7	18.5	20.1
	W	21.7	18.0	19.5
3	E	13.8	13.2	13.2
	W	13.8	13.1	13.3
4	NW	7.7	7.5	7.4
	SE	7.4	7.2	7.1
5	N	12.3	5.5	7.9
	S	5.2	5.0	6.1
6	N	16.5	15.5	17.2
	S	16.6	14.6	16.5
7	E	6.7	4.6	5.6
	W	5.2	4.8	6.6
8	NE	11.6	10.8	13.2
	SW	13.9	11.2	13.1
9	N	24.0	15.8	21.6
	S	24.2	16.4	21.2
10	N	16.3	14.8	18.0
	S	17.7	13.4	14.0
11	W	24.7	19.1	21.2
	E	23.2	20.5	27.8
12	NW	38.9	30.3	32.5
	SE	38.8	30.8	37.5
13	AC	11.2	9.8	16.1
	CW	16.3	10.4	11.5
14	NE	14.6	9.7	13.5
	SW	14.1	9.7	12.6
15	E	10.7	9.8	13.7
	W	14.9	9.8	11.1

Traffic Counts

Sources of Count Data

9.1 Traffic count data was obtained from three sources:

- HFAS's GMCOUNTS database;
- Cheshire East Council;
- the Highways Agency's Traffic Flow Data System (TRADS) counts database; and
- data collected by HFAS on behalf of Manchester Airport.

Data for Greater Manchester - GMCOUNTS Database

- 9.2 HFAS undertakes manual classified traffic counts (MCCs) on links and at junctions on behalf of Greater Manchester's District Councils and other clients, including the DfT. All counts are stored on Greater Manchester's map-based traffic counts database and enquiry system, GMCOUNTS.
- 9.3 A significant proportion of the link counts are for monitoring long-term trends. These include National Road Traffic Census counts, which are supplied by the DfT. Other counts are collected for scheme monitoring and appraisal. The link counts are mainly 12-hour continuous, undertaken between 07:00 and 19:00. Most turning counts are discontinuous short-period counts, which usually cover the peak periods (07:30-09:30 and 16:00-18:00) and a 2-hour period in the inter-peak (usually 10:00-12:00, or 12:00-14:00).
- 9.4 In addition to the MCCs, GMCOUNTS also holds data from automatic traffic counters (ATCs). ATCs consist of "ad hoc" and fixed sites. The ad hoc sites are generally established for scheme appraisal and monitoring purposes and are usually short-term in nature, counters being in place for a two-week period. The fixed ATC sites are spread throughout Greater Manchester and provide continuous monitoring of traffic from year to year. The data from these sites are generally used to monitor long term trends in traffic flow.
- 9.5 A number of counts were undertaken by HFAS specifically for the SEMMMS study. For example manual counts were done and ATC installed to provide expansion factors for trips observed at each roadside interview survey site (phases A & B).
- 9.6 The GM counts sites that provided data that were used in the matrix estimation process are listed in Table A2.1 of Appendix 2. A further set of GM counts were retained as an independent counts set in the model validation process, that is, these count data were not used to modify the demand matrices; the GM sites that provided these data are shown in Table A2.2 of Appendix 2.

Data For Cheshire East

- 9.7 Count data for the northern part of Cheshire East was provided by that local authority and processed/reviewed by Mott MacDonald. The data consisted of a mixture of manual classified and ATC data collected over the period 2007 to 2009.
- 9.8 The Cheshire count sites used are listed in Appendix 3.

Data for Highways Agency Roads

- 9.9 The TRADS database provides online access to the ATC data collected by the Highways Agency on motorways and trunk roads. The database holds data for some 15,000 sites of which around 9,000 are currently active.
- 9.10 Data from 49 TRADS sites were used.
- 9.11 The TRADS counts sites that provided data that were used in the matrix estimation process are listed in Table A4.1 of Appendix 4. A further set of TRADS counts were retained as an independent counts set in the model validation process, that is, these count data were not used to modify the demand matrices; the TRADS sites that provided these data are shown in Table A4.2 of Appendix 4.

Airport Count Data

- 9.12 The set of counts used to establish the SEMMM7B SATURN model also included automatic traffic counter (ATC) data collected by HFAS on behalf of Manchester Airport.
- 9.13 HFAS maintain and operate a cordon of ATC sites around Manchester Airport, providing traffic flow data for five key roads serving the Airport terminal area or the Cargo Centre.
- 9.14 The Airport sites used are listed in Appendix 5.

Locations of the Count Sites

- 9.15 To provide reassurance that the validation of the base year model was acceptable over a wider area counts on cordons and screenlines across Greater Manchester were included in the validation process. For the purposes of this report only cordons and screenlines within the SEMMMS Area of influence have been reported but results for other cordons and screenlines within Greater Manchester are available on request from HFAS.
- 9.16 Figure 8.1 and Table 8.2 show the locations of the survey sites that were used to obtain counts for use in development of the SEMMMS SATURN model. Figure 8.1 shows counts sites that were used in the matrix estimation process; that is, counts from these sites were used to modify the demand matrices so that they better reflected observed travel patterns. Table 8.2 shows sites that provided independent counts that were not used in matrix estimation; these counts were therefore available as an independent check on model validation.

Age of Data

- 9.17 Generally, all the counts used regardless of data source were conducted between 2008 & 2011. However, in a small number of cases, older counts sourced from GMCOUNTS had to be used to complete matrix estimation and/or validation cordons due to problems being identified in more recent surveys.

The Observed Peak Hours

- 9.18 To establish the peak hours for the SEMMMS SATURN models, GMTU conducted an analysis of 102 manual classified counts near the line of the proposed SEMMMS scheme. Sixty-eight of the counts were in Greater Manchester and 34 were in Cheshire.

9.19 The data were processed to show total hourly flows at 15-minute intervals in Greater Manchester and in Cheshire separately, and for all the counts considered together. The analysis concluded that the SEMMMS7C modelling should be based on 0800-0900 and 1700-1800 peak hours.

9.20 The analysis is detailed in full in GMTU SEMMMS Briefing Note 2023-00-B25v01.2-PeakHours.doc, included as Appendix 6.

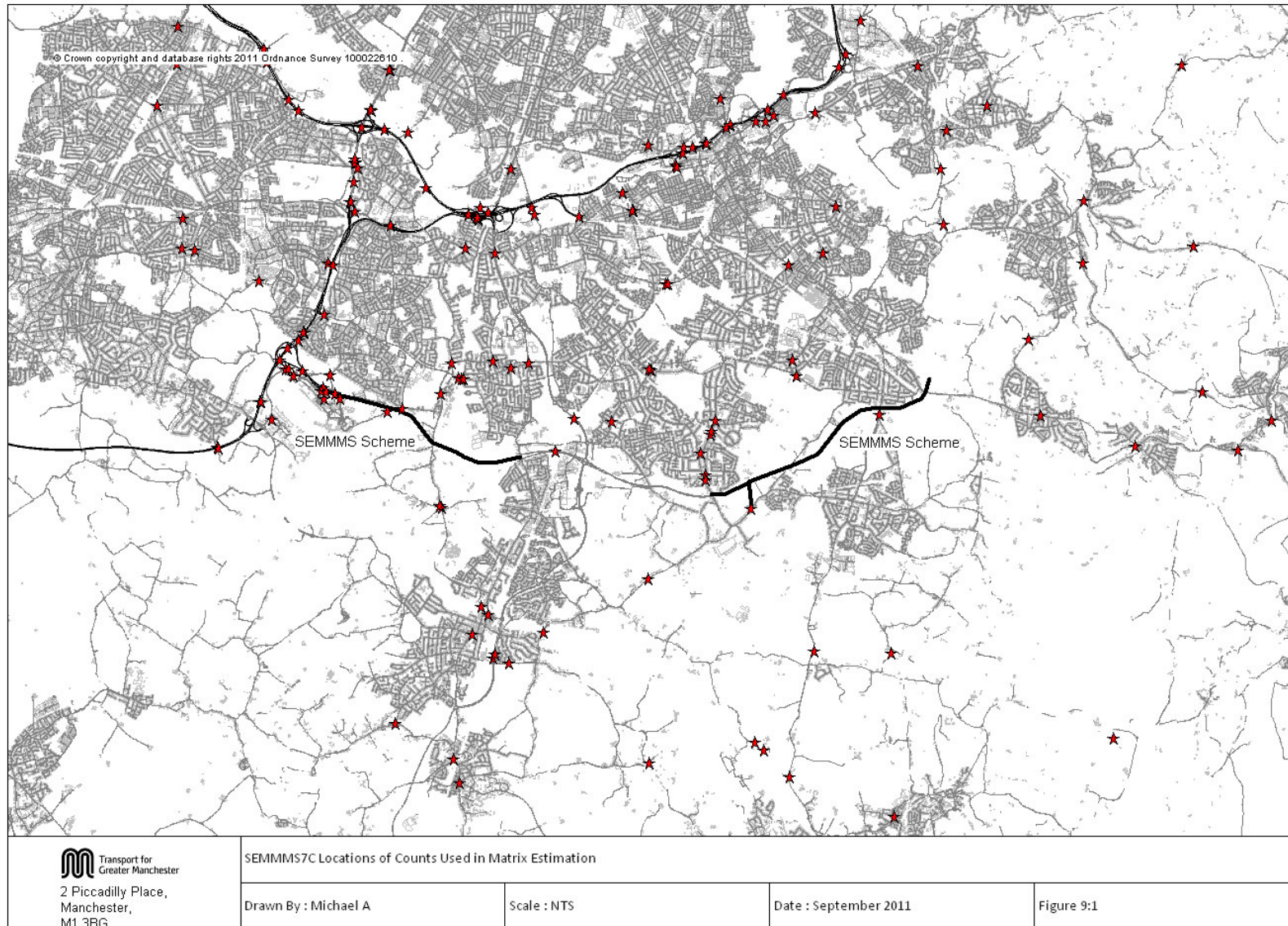
Observed Traffic Flows

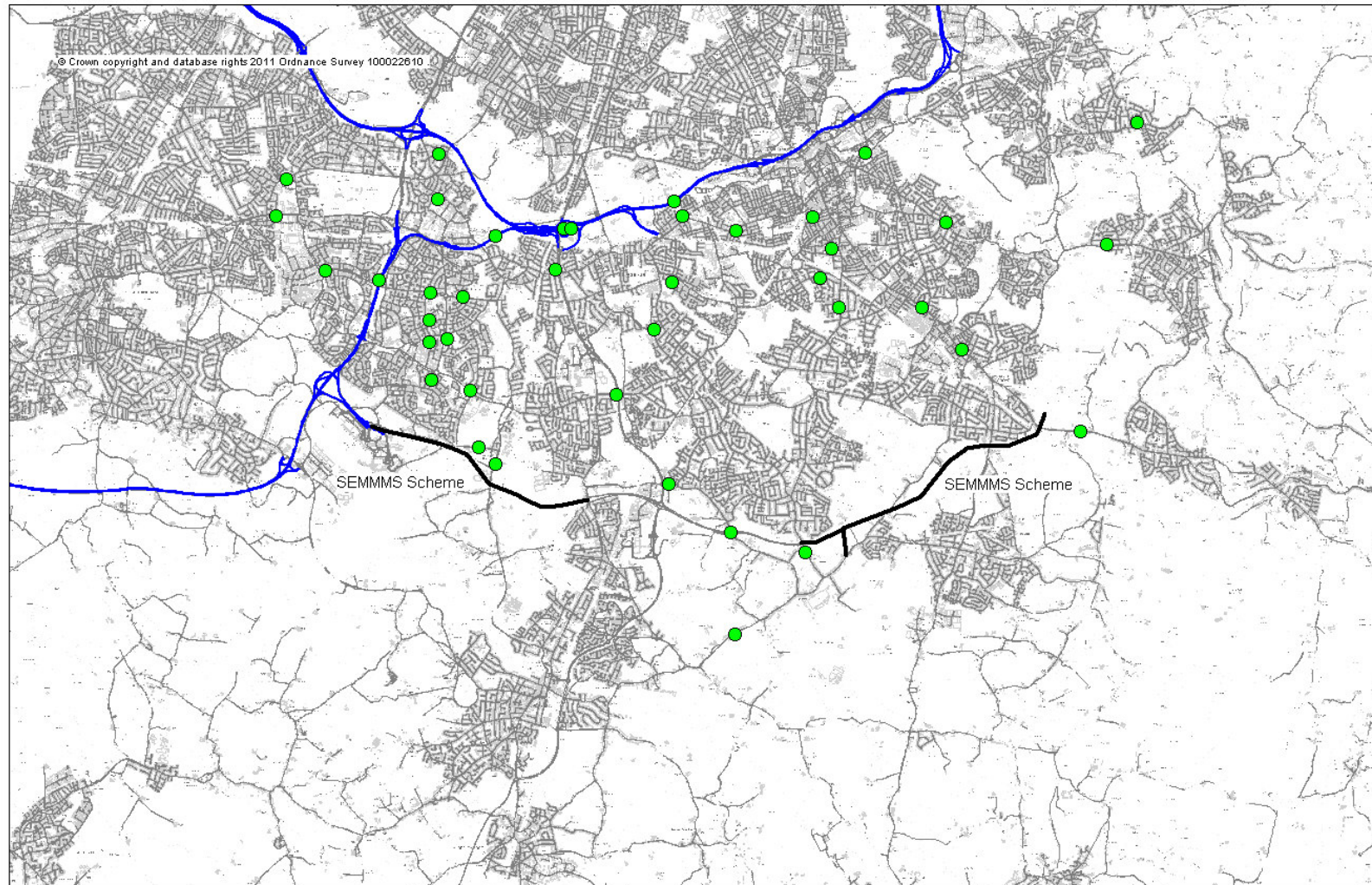
9.21 The morning peak hour, inter peak hour and evening peak hour flows as observed on roads within the SEMMMS7C 'area of influence' are listed in Appendix-7.


Data Uses

9.22 The traffic counts have been used to:

- establish the morning and evening peak hours in the model 'area of influence' of the scheme (as detailed in Appendix 6);
- provide data for the model validation;
- expand the origin-destination data revealed by the roadside interviews;
- contribute to the development of factors to annualise scheme benefits in economic appraisal; and
- assess how observed network speeds (Trafficmaster speed data) vary with traffic volume.





 Transport for Greater Manchester 2 Piccadilly Place, Manchester, M1 3BG	SEMMMS7C Locations of Counts Used in Independent Count Set			
	Drawn By : Michael A	Scale : NTS	Date : September 2011	Figure 9:2

Appendix 1: SEMMMS Roadside Interview Surveys: Site Issues and Survey Rates

Table A1 SEMMMS RSI Sample Sizes 0700-19:00							
Site Number	Location	Dir	Problems	Intervention	Sample Size % (Post Intervention)		
					Car	LGV	OGV
S1	A560 Stockport Road	W	No HGV interviews due to illegally parked vehicle	Transpose HGV interviews from site S2 and add these to site S1	11.9	4.3	11.9
S2	A560 Stockport Road	E	None		9.9	2.3	10.9
S3	B5465 Edgeley Road	W	None		11.9	2.9	2.0
S4	B5465 Edgeley Road	E	No commercial vehicle interviews	Transpose CV interviews from site S3 and add these to site S4	10.0	3.3	2.2
S5	Adswood Road	W	None		9.5	1.8	10.0
S6	Adswood Road	E	None		13.1	4.2	15.0
S7	Manor Road	W	None		16.7	7.5	27.7
S8	Manor Road	W	None		31.0	9.5	36.8
S9	Robins Lane	SW	None		37.7	14.3	107.1
S10	Robins Lane	NE	None		11.9	17.8	121.1
S11	A5102 Bramhall Lane South	SW	None		8.8	3.9	4.5
S12	A5102 Bramhall Lane South	NE	None		7.4	1.5	2.8
S13	A5149 Chester Road	SW	Low sample size for commercial vehicles	Transpose CV interviews from site S14 and add these to site S13	7.9	1.1	8.2
S14	A5149 Chester Road	NE	None		7.4	0.8	7.9
S17	B5358 Lees Lane	N W	Low sample size for commercial vehicles	Copy CV interviews from site S19 and add these to site S17	7.4	4.2	4.3
S18	B5358 Lees Lane	SE	No HGV interviews due to police stipulation	Copy HGV interviews from site S20 and add these to site S18	11.7	5.3	5.9
S19	A5102 Adlington Road	N	None		15.1	4.0	11.1
S20	A5102 Adlington Road	S	None		18.1	4.7	9.1
S21	A34 Wilmslow By-pass	N	Low sample sizes due to queuing traffic		3.7	0.7	2.8

S22	A34 Wilmslow By-pass	S	Low sample sizes due to queuing traffic		2.9	0.8	2.1
S23	Alderley Road	N	None		5.3	1.5	2.7
S24	Alderley Road	S	None		7.7	0.9	3.1
S25	B5086 Knutsford Road	NE	None		17.7	11.9	24.4
S26	B5086 Knutsford Road	SW	None		13.8	2.8	3.6
S27	A538 Altrincham Road	SE	Problems interviewing larger HGVs	Transpose HGV interviews from site S28 and add these to site S27	9.2	5.8	13.9
S28	A538 Altrincham Road	N W	None		7.2	1.1	3.8
S29	Thorley Lane	E	None		15.1	3.4	6.0
S30	Thorley Lane	W	None		10.1	1.2	4.7
S31	Simonsway	E	None		6.3	2.2	2.0
S35	A560 Altrincham Road	E	Low sample sizes for all vehicle types	Duplicate sampled records and transpose interviews from GMATS site 783 and add these to site S35 data	32.3	7.3	24.4
S37	B5167 Palatine Road	E	None		10.1	5.0	28.7
S41	A34 Kingsway	S	Low sample sizes for all vehicle types	Duplicate sampled records and transpose interviews from GMATS site 9006 and add these to site S41 data	10.0	2.8	10.9
S45	M60 Junction 2 off-slip	SE	Survey suspended by police at 16:30	Transpose interviews from GMATS site 1306 and add records for period 16:30-1900 to site S45 data	7.6	3.4	8.3
S47	A560 Gatley Road	W	None		7.1	5.6	10.3
S48	A560 Gatley Road	W	None		9.3	1.1	3.4
S49	Finney Lane	W	Low sample sizes for all vehicle types	Transpose interviews from site S50 and add these to site S49	3.9	2.6	13.0
S50	Finney Lane	E	None		8.7	2.1	11.5
S51	B5166 Styal Road	N	None		15.1	4.6	27.5

S52	B5166 Styal Road	S	None		18.6	9.7	7.9
S53	M56 Jn 5 Terminal 2 Off-Slip	E	None		5.3	2.8	4.8
S54	M56 Jn 5 Terminals 1&3 Off-Slip	E	None		5.1	0.9	3.7
S551	Outwood Lane, M56 JN5	W	None		4.2	1.5	6.1
S552	Ringwood Road, M56 JN5	W	None		6.4	2.5	5.2
S56	M56 Jn 5 Terminal 2 On-Slip	W	Low sample size for commercial vehicles	Transpose CV interviews from site S53 and add these to site S56	4.7	3.1	19.5
S57	M56 Jn 2 on-slip	E	Survey suspended by police at 16:30	Transpose interviews from site S58 and add records for period 16:30-1900 to site S57	3.9	0.9	2.1
S58	M56 Jn 2 off-slip	W	Low sample size for commercial vehicles	Transpose CV interviews from site S57 and add to site S58	2.1	0.9	3.1
B2	A6 Buxton Road West	E	Survey suspended between 11:00-11:20 & 16:00-16:10 by police		8.7	5.6	11.4
B3	B6101 Hague Bar Road	E	None		27.4	12.8	33.0
B4	A626 Brabyns Brow	E	Surveys suspended between 09:00-09:30 & 15:15-15:50 due to school run. The surveys were also suspended between 16:10-16:55 due to rain.		16.3	8.6	20.8
B5	A627 Dooley Lane	S	Surveys suspended between 15:45-17:15 due to rain.	Interviews synthesised by copying interviews from adjacent time period	10.1	2.3	7.0
B6	B6104 Stockport Road West	W	2 accidents caused vehicles to divert off M60 Interviewing was suspended between 8:25-8:50, 9:25-9:40 & 10:45-10:55 to help alleviate queues.		15.4	8.8	25.7

Appendix 2: HFAS (GMCOUNTS) Count Sites Used in SEMMMS7C

Table 2:1 Matrix Estimation GMCOUNTS Sites Used in SEMMMS7C					
Anode	Bnode	Location	Site No'	X' OSGR	Y' OSGR
5933	8791	A34 ANSON RD	99999	385606	395677
8791	5933	A34 ANSON RD	99999	385606	395677
13486	13487	A34 CONGLETON RD	0	384345	378148
13487	13486	A34 CONGLETON RD	0	384345	378148
5839	6159	A34 IRWELL ST	0	383056	398346
6159	5839	A34 IRWELL ST	0	383056	398346
2430	2853	A34 KINGSWAY	0	385030	388365
2887	2430	A34 KINGSWAY	0	385030	388365
6108	8735	A34 Kingsway	46357	385350	390000
8735	6108	A34 Kingsway	46357	385350	390000
3874	4078	A34 Kingsway Cheadle	79058	386570	385180
4078	3874	A34 Kingsway Cheadle	79058	386570	385180
3320	4532	A34 OXFORD RD	99999	384224	397323
4532	3320	A34 OXFORD RD	99999	384224	397323
1335	2295	A34 PRINCESS ST	48019	384363	397496
1337	2905	A34 Upper Brook St	48020	384624	397078
2905	1337	A34 Upper Brook St	48020	384624	397078
13295	13296	A34 Wilmslow Bypass	220	385007	380551
13296	13295	A34 Wilmslow Bypass	210	385035	380625
13902	15341	A34 Wilmslow Road	0	384245	378603
15341	13902	A34 Wilmslow Road	0	384245	378603
13007	3574	A49 Preston Rd	28446	355512	412000
3574	13007	A49 Preston Rd	28446	355512	412000
10325	10329	A50 Toft Road	0	375335	378035
10329	10325	A50 Toft Road	0	375335	378035
1361	1391	A5014 STRETFORD RD	28684	381903	396240
1391	1361	A5014 STRETFORD RD	28684	381903	396240
1374	1400	A5063 TRAFFORD RD	38050	381240	396650
3525	3644	A5063 TRAFFORD RD	38050	381240	396650
1283	1730	A5066 GT CLOWES ST	0	382712	400522
1730	1283	A5066 GT CLOWES ST	0	382712	400522
5344	7903	A5066 ORDSALL LN	99999	381482	396846
7903	5344	A5066 ORDSALL LN	99999	381482	396846
1339	5075	A5067 CAMBRIDGE ST	99999	384098	397000
5075	1339	A5067 CAMBRIDGE ST	99999	384098	397000
3962	4733	A5067 CHORLTON RD	0	382997	397289
4733	3962	A5067 CHORLTON RD	0	382997	397289
2963	4971	A5081 PARK WAY	0	377572	395752
3609	5304	A5081 PARK WAY	27755	378039	396470
5303	3570	A5081 PARK WAY	27755	378037	396470

4969	12851	A5081 PARK WAY	0	377572	395752
13235	13236	A5102 Adlington Road	0	385974	381058
13236	13235	A5102 Adlington Road	0	385974	381058
4657	6819	A5102 Bramhall Lane	120	389227	384927
6819	4657	A5102 Bramhall Lane	110	389204	384881
13254	15326	A5102 Wilmslow Rd	27762	388000	382080
15326	13254	A5102 Wilmslow Rd	27762	388000	382080
13828	15538	A5102 Woodford Rd	47762	389120	384100
15538	13828	A5102 Woodford Rd	47762	389114	383989
5065	8566	A5103 MEDLOCK ST	0	383718	397115
8566	5065	A5103 MEDLOCK ST	0	383718	397115
2354	2844	A5103 NB A5103 TMU	30014	382318	390195
2857	2844	A5103 NB A5103 TMU	30014	382326	390193
2858	2857	A5103 NB A5103 TMU	30014	382299	389752
1329	4344	A5103 Princess Rd	37809	383012	391914
1427	4484	A5103 Princess Rd	80940	383830	395000
3640	5069	A5103 PRINCESS RD	99999	383707	397027
4344	1329	A5103 Princess Rd	37809	382989	391910
4484	1427	A5103 Princess Rd	80940	383830	395000
5068	3641	A5103 PRINCESS RD	99999	383707	397027
2843	2847	A5103 SB A5103 TMU	30014	382633	391142
2843	3039	A5103 SB A5103 TMU	30014	382644	391136
2855	2218	A5103 SB A5103 TMU	30014	382351	390126
2855	2856	A5103 SB A5103 TMU	30014	382333	390118
2859	5120	A5103 SB A5103 TMU	30014	382254	389367
5651	8824	A5143 Jacksons Lane	79071	390879	385995
8824	5651	A5143 Jacksons Lane	79071	390879	385995
4189	8907	A5145 DIDSBUY RD	58034	388000	390450
8907	4189	A5145 DIDSBUY RD	58034	388000	390450
1447	6245	A5145 EDGE LN	0	380952	393984
6245	1447	A5145 EDGE LN	0	380952	393984
1412	14241	A5145 Edge Ln	17698	379975	394331
14241	1412	A5145 Edge Ln	17698	379957	394345
1873	3848	A5145 Hollywood Way	99999	388536	390071
3848	1873	A5145 Hollywood Way	0	388558	390041
3769	4062	A5145 Kingsway	38053	379500	394440
4062	3769	A5145 Kingsway	38053	379500	394440
1678	2967	A5145 TRAVIS BROW	1216	388868	390424
2967	1678	A5145 TRAVIS BROW	1216	388868	390424
13839	2167	A5149 Chester Rd	7714	390000	383450
2167	13839	A5149 Chester Rd	7714	390000	383450
13839	15532	A5149 Chester Rd	7714	390000	383450
15532	13839	A5149 Chester Rd	7714	390000	383450
1404	1406	A5181 PARK RD	99999	379213	394676

1406	1404	A5181 PARK RD	99999	379213	394676
1469	7131	A5184 PLYMOUTH GR	0	386525	395914
7131	1469	A5184 PLYMOUTH GR	0	386525	395914
13221	15313	A523 LONDON RD	99999	391215	380688
13228	13229	A523 LONDON RD	0	390734	378269
13229	13228	A523 LONDON RD	0	390734	378269
15313	13221	A523 LONDON RD	99999	391215	380688
15294	2188	A523 MACCLESFIELD R	27267	392473	385252
2188	15294	A523 MACCLESFIELD R	27267	392473	385252
10331	13337	A535 HOLMES CHAPEL	0	381826	374349
13337	10331	A535 HOLMES CHAPEL	0	381826	374349
13336	13337	A537 Chelford Road	0	384001	374197
13337	13336	A537 Chelford Road	0	384001	374197
13298	13843	A538 Prestbury Link	0	385302	380455
13843	13298	A538 Prestbury Link	0	385302	380455
13304	13850	A538 WILMSLOW RD	0	388016	378527
13850	13304	A538 WILMSLOW RD	0	388016	378527
3019	3933	A555 MAELR	99522	386200	384542
3885	3017	A555 MAELR	99522	386200	384542
5316	7592	A56 Bridgewater Way	99999	381548	396420
7592	2159	A56 Bridgewater Way	99999	381548	396420
1288	1546	A56 BURY NEW RD	0	382984	400625
1546	1288	A56 BURY NEW RD	0	382984	400625
3953	9011	A56 BURY NEW RD	0	381009	404475
9011	3953	A56 BURY NEW RD	0	381009	404475
1410	8105	A56 CHESTER RD	0	379710	394409
2909	3957	A56 CHESTER RD	0	382997	397289
4486	8642	A56 Chester Rd	99516	382585	397080
8105	1410	A56 CHESTER RD	0	379710	394409
8642	4486	A56 Chester Rd	99516	382585	397080
3957	14088	A56 CHESTER RD	85324	383124	397362
2349	4077	A56 CROSS ST	0	378903	392753
4077	2349	A56 CROSS ST	0	378903	392753
2045	4417	A56 MANCHESTER RD	36576	380653	408059
4417	2045	A56 MANCHESTER RD	36576	380653	408059
1312	3274	A56 Victoria St	36577	383850	398968
3274	1312	A56 Victoria St	36577	383850	398968
4373	5121	A560 Altrincham Road	352	382317	389176
5121	4373	A560 Altrincham Road	351	382317	389176
4166	4787	A560 GATLEY RD	0	384468	388472
4787	4166	A560 GATLEY RD	0	384468	388472
4656	8909	A560 GT Portwood ST	1220	390082	390908
8909	4656	A560 GT Portwood ST	1220	390082	390908
15260	4174	A560 HYDE RD	0	393219	391982

4174	15260	A560 HYDE RD	0	393219	391982
2422	8118	A560 SHAFTESBURY AV	0	378985	388470
8118	2422	A560 SHAFTESBURY AV	0	378985	388470
14008	4169	A560 Stockport Road	20	387514	389537
4169	14008	A560 Stockport Road	10	387507	389533
3887	6918	A57 CADISHEAD WAY	0	371875	392680
6918	3887	A57 CADISHEAD WAY	0	371875	392680
12996	6918	A57 CADISHEAD WAY	0	370391	391324
6918	12996	A57 CADISHEAD WAY	0	370391	391324
1201	3328	A57 Hyde Rd	56582	386950	396580
3328	1201	A57 Hyde Rd	56582	386950	396580
12804	7851	A57 LIVERPOOL RD	0	375701	397916
7851	12804	A57 LIVERPOOL RD	0	375701	397916
3761	5653	A57 MANCHESTER RD	0	391055	395584
5652	3761	A57 MANCHESTER RD	0	391055	395584
4574	7897	A57 Regent Rd	36585	381971	397869
7897	4574	A57 Regent Rd	36585	381942	397890
3513	3983	A571 WIGAN RD	0	354399	401887
3983	3513	A571 WIGAN RD	0	354399	401887
4784	8253	A572 Manchester Rd	57317	369440	400000
8253	4784	A572 Manchester Rd	57317	369440	400000
3542	3554	A572 Newton Rd	7287	360992	396244
3554	3542	A572 Newton Rd	7287	360992	396246
5181	7912	A572 WORSLEY RD	0	374715	400469
7912	5181	A572 WORSLEY RD	0	374715	400469
3549	8250	A573 Warrington Rd	27310	360000	403245
8250	3549	A573 Warrington Rd	27310	360000	403245
1437	1751	A575 Bolton Rd	74677	373530	406700
1751	1437	A575 Bolton Rd	74677	373530	406700
3835	3866	A576 CENTENARY WAY	99999	378523	398064
3866	3835	A576 CENTENARY WAY	99999	378529	398119
1740	3796	A576 Middleton Rd	27313	383996	404404
3796	1740	A576 Middleton Rd	27313	384016	404413
2133	8206	A577 Tyldesley Rd	74722	368000	402750
8206	2133	A577 Tyldesley Rd	74722	368000	402750
3365	6290	A577 WIGAN RD	0	361475	404426
6290	3365	A577 WIGAN RD	0	361475	404426
2080	2497	A579 BURY RD	0	373128	409385
2497	2080	A579 BURY RD	0	373128	409385
2123	2124	A579 ST HELENS RD	99999	369026	406131
2124	2123	A579 ST HELENS RD	99999	369026	406131
12993	3541	A579 WINWICK LN	74023	362190	396200
3541	12993	A579 WINWICK LN	74023	362190	396200
2240	3556	A58 BOLTON RD	0	358364	399721

3556	2240	A58 BOLTON RD	0	358364	399721
1815	7654	A58 CROMPTON WAY	26583	371976	411421
7654	1815	A58 CROMPTON WAY	26583	371976	411421
2520	8239	A58 Liverpool Rd	48025	357128	399019
8239	2520	A58 Liverpool Rd	48025	357128	399019
3821	3857	A58 ROCHDALE RD	16556	381022	410798
3857	3821	A58 ROCHDALE RD	16556	381035	410782
5107	7711	A58 SNYDALE WAY Nor	0	367626	406667
7711	5107	A58 SNYDALE WAY Nor	0	367626	406667
1569	2734	A580 East Lancs Rd	7301	375996	401703
2260	2810	A580 East Lancs Rd	57252	359800	397189
2582	2990	A580 East Lancs Rd	7300	369978	400152
2747	7280	A580 East Lancs Rd	7301	375982	401736
2990	2582	A580 East Lancs Rd	7300	369983	400145
14082	2260	A580 East Lancs Rd	57252	359769	397208
1947	8883	A6 BUXTON RD	0	395585	385236
2441	4795	A6 BUXTON RD	0	390727	388137
4795	2441	A6 BUXTON RD	0	390727	388137
8883	1947	A6 BUXTON RD	0	395585	385236
10404	12965	A6 BUXTON RD	0	399416	384575
12965	10404	A6 BUXTON RD	0	399416	384575
15279	1611	A6 BUXTON RD W	88002	397420	384650
1611	15279	A6 BUXTON RD W	88002	397420	384650
1356	1357	A6 CHAPEL ST	0	383172	398559
1357	1356	A6 CHAPEL ST	0	383172	398559
2607	3056	A6 DOWNING ST	99999	384909	397344
3056	2607	A6 DOWNING ST	99999	384909	397344
3319	3839	A6 LONDON RD	0	384836	397490
3839	3319	A6 LONDON RD	0	384836	397490
2111	2112	A6 MANCHESTER RD	0	365374	407183
2112	2111	A6 MANCHESTER RD	0	365374	407183
4779	7279	A6 Manchester Rd	16151	375000	402987
7279	4779	A6 Manchester Rd	16151	375000	402987
2764	6746	A6 Salford Rd	73081	370400	405050
6746	2764	A6 Salford Rd	73081	370400	405050
12926	1469	A6 STOCKPORT RD	0	386525	395914
1469	12926	A6 STOCKPORT RD	0	386525	395914
12945	7894	A6 the Crescent	56160	382000	398670
7894	12945	A6 the Crescent	56160	382000	398670
3679	5935	A6 WELLINGTON RD N	86701	389121	390493
5935	3679	A6 WELLINGTON RD N	85701	389130	390488
1454	1461	A6010 Dickenson Rd	28246	386000	395230
1461	1454	A6010 Dickenson Rd	28246	386000	395230
1476	3825	A6010 Pottery Ln	99014	387203	397000

3825	1476	A6010 Pottery Ln	99014	387193	397000
1449	1453	A6010 WILBRAHAM RD	0	384703	394127
1453	1449	A6010 WILBRAHAM RD	0	384703	394127
1456	8707	A6010 WILBRAHAM RD	0	385584	394001
8707	1456	A6010 WILBRAHAM RD	0	385584	394001
14159	1456	A6010 WILMSLOW RD	0	385584	394001
1456	14159	A6010 WILMSLOW RD	0	385584	394001
10399	12966	A6015 CHURCH RD	0	400075	385140
12966	10399	A6015 CHURCH RD	0	400075	385140
1925	8526	A6017 ASHTON RD	99999	392113	392870
8526	1925	A6017 ASHTON RD	99999	392113	392870
1689	8491	A6017 GUIDE LN	0	392535	397467
8491	1689	A6017 GUIDE LN	0	392535	397467
4033	7053	A6018 MOTTRAM RD	0	397814	397088
7053	4033	A6018 MOTTRAM RD	0	397814	397088
3629	5413	A6041 BLACKFRIARS Rd	0	383269	398925
5413	3629	A6041 BLACKFRIARS Rd	0	383269	398925
3257	1309	A6042 Corporation St	0	384169	399037
1309	3257	A6042 Corporation St	0	384169	399037
2814	4730	A6045 Manchester Rd	0	385680	408809
4730	2814	A6045 Manchester Rd	0	385680	408809
4923	6176	A6046 Hollin Ln	37847	386500	408030
6176	4923	A6046 Hollin Ln	37847	386500	408030
14213	4266	A6053 CHURCH ST	17709	375000	407364
4266	14213	A6053 CHURCH ST	17709	375000	407364
1772	4493	A6104 VICTORIA AVE	0	386057	404103
4493	1772	A6104 VICTORIA AVE	0	386057	404103
5840	6013	A6143 WATER ST	0	382742	397760
6013	5840	A6143 WATER ST	0	382742	397760
4087	8058	A6144 Manchester Rd	0	373587	392873
8058	4087	A6144 Manchester Rd	0	373587	392873
1620	1623	A6144 MARSLAND RD	0	378492	391220
1623	1620	A6144 MARSLAND RD	0	378492	391220
1240	1238	A62 LEVER ST	70155	384620	398500
1297	1300	A62 Newton St	8563	384671	398413
1300	1297	A62 Newton St	8563	384671	398413
1520	2916	A62 OLDHAM RD	99999	386038	399870
1615	8401	A62 OLDHAM RD	0	389245	401301
2916	1520	A62 OLDHAM RD	99999	386038	399870
8401	1615	A62 OLDHAM RD	0	389245	401301
15514	2219	A626 BRABYNS BROW	88004	396426	389392
2219	15514	A626 BRABYNS BROW	88004	396426	389392
1219	7076	A626 Glossop Rd	7370	398334	392000
7076	1219	A626 Glossop Rd	7370	398334	392000

1914	4179	A626 MARPLE RD	99999	391637	389271
4179	1914	A626 MARPLE RD	99999	391637	389271
3624	5022	A626 ST MARYS WAY	1307	390273	390909
5022	3624	A626 ST MARYS WAY	1307	390273	390909
1681	6257	A626 TIVIOT WAY	0	389406	391363
6257	1681	A626 TIVIOT WAY	0	389406	391363
5216	8306	A627 Chadderton Way	0	391746	405694
8306	5216	A627 Chadderton Way	0	391746	405694
15273	15274	A627 DOOLEY LN	88005	393721	388934
15274	15273	A627 DOOLEY LN	88005	393721	388934
7067	8489	A627 Duckinfield Rd	27386	394218	396000
8489	7067	A627 Duckinfield Rd	27386	394218	396000
3593	5236	A627 KING ST	0	392420	404590
5236	3593	A627 KING ST	0	392420	404590
2465	2925	A627 MIDDLETON RD	0	392247	405019
2925	2465	A627 MIDDLETON RD	0	392247	405019
1700	6370	A627 OLDHAM RD	0	393521	399316
6370	1700	A627 OLDHAM RD	0	393521	399316
15507	15508	A627 Otterspool Rd	37434	393661	390000
15508	15507	A627 Otterspool Rd	37434	393661	390000
5290	5200	A627(M) EB A627(M)	1974	388882	408618
4929	2767	A627(M) Jn 20 - Sla	36074	389497	409058
2769	5199	A627(M) NB A627(M)	6293	389508	408428
2772	2769	A627(M) NB A627(M)	6296	389886	407506
4926	6260	A627(M) NB A627(M)	6290	389141	410936
2770	2771	A627(M) SB A627(M)	6297	389896	407516
6259	4927	A627(M) SB A627(M)	6291	389153	410941
2768	4932	A627(M) Slattocks -	36074	389472	409055
5289	5291	A627(M) WB A627(M)	1975	388882	408618
14253	1511	A635 Ashton Old Rd	27403	386000	397614
1511	14253	A635 Ashton Old Rd	27403	386000	397614
13084	7018	A635 HOLMFIRTH RD	73667	401840	405200
7018	13084	A635 HOLMFIRTH RD	73667	401840	405200
1708	8457	A635 MANCHESTER RD	0	391346	397868
8457	1708	A635 MANCHESTER RD	0	391346	397868
2456	7048	A635 Wakefield Rd	99011	397260	400000
7048	2456	A635 Wakefield Rd	99011	397260	400000
12990	8275	A640 Huddersfield Rd	27416	400000	412182
8275	12990	A640 Huddersfield Rd	27416	400000	412182
1213	2533	A640 NEWHEY RD	27444	393479	411533
2533	1213	A640 NEWHEY RD	27444	393479	411533
1509	2325	A662 ASHTON NEW RD	0	387148	398337
2325	1509	A662 ASHTON NEW RD	0	387148	398337
4769	8456	A662 DROYLSDEN RD	0	391328	397976

8456	4769	A662 DROYLSDEN RD	0	391328	397976
1533	8621	A663 Broadway	27445	388829	402009
8621	1533	A663 Broadway	27445	388843	402006
4473	7492	A664 Manchester Rd	27446	388470	410000
7492	4473	A664 Manchester Rd	27446	388470	410000
1772	3321	A664 ROCHDALE RD	0	386006	403341
3321	1772	A664 ROCHDALE RD	0	386006	403341
12942	2946	A664 ROCHDALE RD	0	385576	400586
2946	12942	A664 ROCHDALE RD	0	385576	400586
8546	1302	A664 SHUDE HILL	0	384440	398870
1302	8546	A664 SHUDEHILL	85304	384426	398843
2383	7387	A665 BURY OLD RD	17934	382383	404000
7387	2383	A665 BURY OLD RD	17934	382383	404000
2335	8597	A665 CHEETHAM HILL	99999	384415	400337
8597	2335	A665 CHEETHAM HILL	99999	384415	400337
1478	4518	A665 Devonshire St	27449	385770	397000
4518	1478	A665 Devonshire St	27449	385770	397000
2487	3804	A665 PILKINGTON WAY	58340	378370	407320
3804	2487	A665 PILKINGTON WAY	58340	378370	407320
2699	2812	A666 MANCHESTER RD	37500	377672	403404
2812	2699	A666 MANCHESTER RD	37500	377680	403414
4268	6423	A666 Manchester Rd	73086	375429	404714
6423	4268	A666 Manchester Rd	73086	375432	404721
2638	2639	A666 St Peter's Way	57453	374557	405898
2656	2657	A666 St Peter's Way	57453	374570	405916
2407	4267	A667 Stoneclough Rd	0	374766	405113
4267	2407	A667 Stoneclough Rd	0	374766	405113
7041	8428	A670 Mossley Rd	17387	395515	400000
8428	7041	A670 Mossley Rd	17387	395515	400000
4453	4848	A671 OLDHAM RD	0	390575	410842
4848	4453	A671 OLDHAM RD	0	390575	410842
2095	8305	A671 ROCHDALE RD	0	392157	405434
8305	2095	A671 ROCHDALE RD	0	392157	405434
3216	7731	A673 Chorley New Rd	17392	366000	409574
7731	3216	A673 Chorley New Rd	17392	366000	409574
1784	9012	A675 Belmont Rd	77892	371000	412498
9012	1784	A675 Belmont Rd	77892	371000	412498
4249	7799	A676 FOLDS RD	17394	372588	410000
7799	4249	A676 FOLDS RD	17394	372588	410000
13904	15337	A999 HOLLIN LINK	0	384902	381402
15337	13904	A999 HOLLIN LINK	0	384902	381402
13287	15336	A999 MANCHESTER RD	0	384902	381402
15336	13287	A999 MANCHESTER RD	0	384902	381402
20288	8752	Avro Way	20002	380715	385155

8752	20288	Avro Way	20002	380715	385155
13465	13494	B5085/6 Knutsford Rd	0	383113	379290
13494	13465	B5085/6 Knutsford Rd	0	383113	379290
13470	13486	B5087 MACCLESFIELD	0	384345	378148
13486	13470	B5087 MACCLESFIELD	0	384345	378148
10464	10465	B5090 Wellington Ro	0	392757	377504
10465	10464	B5090 Wellington Ro	0	392757	377504
13333	2164	B5094 MOSS LN	0	389020	384518
2164	13333	B5094 MOSS LN	0	389020	384518
5932	8796	B5095 Manchester Rd	99999	385802	389119
8796	5932	B5095 Manchester Rd	99999	385802	389119
1338	2904	B5117 OXFORD RD	0	384459	396878
2904	1338	B5117 OXFORD RD	0	384459	396878
1788	1797	B5159 Warburton BRI	81113	369826	389680
1797	1788	B5159 Warburton BRI	81113	369826	389680
1626	7975	B5165 STOCKPORT RD	82101	379000	389041
7975	1626	B5165 STOCKPORT RD	82101	379000	389041
1206	4064	B5166 School Road	94651	378878	392032
4064	1206	B5166 School Road	94651	378878	392032
2889	8757	B5166 STYAL RD	83012	383985	385658
8757	2889	B5166 STYAL RD	83012	383985	385658
13275	13276	B5166 Styal Road	510	383976	383500
13276	13275	B5166 Styal Road	520	384003	383460
4369	5945	B5167 PALATINE RD	99999	383354	390711
5945	4369	B5167 PALATINE RD	99999	383354	390711
2218	4761	B5167 Palatine Road	370	382373	390026
4761	2218	B5167 Palatine Road	380	382373	390026
12992	2311	B5207 KENYON LN	81301	363076	396200
2311	12992	B5207 KENYON LN	81301	363076	396200
1540	8020	B5211 BARTON DOCK R	0	377920	396210
8020	1540	B5211 BARTON DOCK R	0	377920	396210
4590	5177	B5211 BARTON RD	0	374715	400469
5177	4590	B5211 BARTON RD	0	374715	400469
1609	7699	B5211 REDCLYFFE RD	0	376898	397105
1783	8053	B5211 REDCLYFFE RD	81109	376653	397550
7699	1609	B5211 REDCLYFFE RD	0	376898	397105
8053	1783	B5211 REDCLYFFE RD	81109	376653	397550
1609	8119	B5214 ASHBURTON RD	0	376898	397105
8119	1609	B5214 ASHBURTON RD	0	376898	397105
7605	4959	B5214 TRAFFORD BOUL	0	376398	396466
4956	14114	B5214 TRAFFORD BOUL	0	376398	396466
4750	8694	B5217 Manchester Rd	0	381621	394327
8694	4750	B5217 Manchester Rd	0	381621	394327
14251	8693	B5217 Manchester Rd	81013	381903	394831

8693	14251	B5217 Manchester Rd	81013	381903	394831
1389	8017	B5217 SEYMOUR GRO	81112	381920	395310
8017	1389	B5217 SEYMOUR GRO	81112	381920	395310
4744	8014	B5217 Seymour Grove	93102	381760	396020
8014	4744	B5217 Seymour Grove	93102	381760	396020
1445	8665	B5218 Upper Chorlton	94649	382190	395044
8665	1445	B5218 Upper Chorlton	94649	382190	395044
2111	3756	B5236 CHURCH ST	99999	365355	406831
3756	2111	B5236 CHURCH ST	99999	365355	406831
6302	6453	B5238 WIGAN RD	81307	360334	407203
6453	6302	B5238 WIGAN RD	81307	360334	407203
3408	3560	B5239 RED ROCK LN	83306	357910	409871
3560	3408	B5239 RED ROCK LN	83306	357910	409871
1907	4579	B5320 LIVERPOOL RD	0	371189	392556
4579	1907	B5320 LIVERPOOL RD	0	371189	392556
13230	15324	B5358 Lees Lane	170	390062	378935
15324	13230	B5358 Lees Lane	180	390244	378768
2427	4163	B5358 WILMSLOW RD	0	385687	386249
4163	2427	B5358 WILMSLOW RD	0	385687	386249
3355	3458	B5375 MILES LN	83303	353089	409030
3458	3355	B5375 MILES LN	83303	353089	409030
2439	4083	B5465 Edgeley Road	40	387712	389189
4083	2439	B5465 Edgeley Road	30	387696	389194
10401	13604	B5470 MACCLESFIELD	0	397000	379000
13604	10401	B5470 MACCLESFIELD	0	397000	379000
2591	3608	B6101 HAGUEBAR RD	88003	398729	385699
3608	2591	B6101 HAGUEBAR RD	88003	398729	385699
2177	3608	B6101 Strines Rd	93107	396410	388180
3608	2177	B6101 Strines Rd	93107	396410	388180
2663	8911	B6104 Carrington Rd	1229	390434	391041
8911	2663	B6104 Carrington Rd	1229	390434	391041
1929	3390	B6104 Stockport Road	94579	391243	391098
3390	1929	B6104 Stockport Road	94579	391243	391098
3784	8873	B6104 Stockport Road	79069	393774	390749
8873	3784	B6104 Stockport Road	79069	393774	390749
13009	2616	B6138 TURVIN ST	81606	397535	418163
2616	13009	B6138 TURVIN ST	81606	397535	418163
14054	1859	B6167 LANCASHIRE Hill	85702	389511	390796
1859	14054	B6167 LANCASHIRE Hill	86702	389511	390796
1691	6361	B6169 SHEPLEY RD	81807	392977	396792
6361	1691	B6169 SHEPLEY RD	81807	392977	396792
1933	2379	B6170 ASHTON RD	0	394924	396622
2379	1933	B6170 ASHTON RD	0	394924	396622
6360	8435	B6175 HUDDERSFIELD	99999	397474	399076

8435	6360	B6175 HUDDERSFIELD	99999	397474	399076
1550	7109	B6180 WATERLOO RD	81012	383735	400288
7109	1550	B6180 WATERLOO RD	81012	383735	400288
3583	1566	B6182 NEW BRIDGE ST	85349	383687	399055
2299	7947	B6186 FREDERICK RD	0	381502	399113
7947	2299	B6186 FREDERICK RD	0	381502	399113
3146	5643	B6194 QUEEN S RD	0	394900	400419
5643	3146	B6194 QUEEN S RD	0	394900	400419
6956	7499	B6194 Rochdale Rd	97223	392555	409830
7499	6956	B6194 Rochdale Rd	97223	392555	409830
1747	2489	B6199 Plodder Lane	94841	370980	405916
2489	1747	B6199 Plodder Lane	94841	370980	405916
1753	2124	B6199 Plodder Ln	96998	369213	406013
2124	1753	B6199 Plodder Ln	96998	369213	406013
1765	7827	B6209 RADCLIFFE RD	82405	373853	408288
7827	1765	B6209 RADCLIFFE RD	82405	373853	408288
2243	7400	B6219 HEYWOOD ST	84001	381163	410584
7400	2243	B6219 HEYWOOD ST	84001	381163	410584
1758	2241	B6221 WASH LN	82507	381336	411000
2241	1758	B6221 WASH LN	82507	381336	411000
2241	2242	B6222 BELL LN	81506	381258	411208
2242	2241	B6222 BELL LN	81506	381258	411208
2265	7250	B6226 CHORLEY OLD R	81403	366113	411231
7250	2265	B6226 CHORLEY OLD R	81403	366113	411231
1688	8493	B6390 Audenshaw Rd	83804	391430	397179
8493	1688	B6390 Audenshaw Rd	83804	391430	397179
1537	1734	B6393 Lightbowne Rd	0	387424	401481
1734	1537	B6393 Lightbowne Rd	0	387424	401481
2296	8562	B6469 FAIRFIELD ST	83007	385300	397687
8562	2296	B6469 FAIRFIELD ST	83007	385300	397687
2559	3915	B6472 DARWEN RD	83410	371454	413972
3915	2559	B6472 DARWEN RD	83410	371454	413972
5229	8348	B6477 MANCHESTER ST	0	392153	404879
8348	5229	B6477 MANCHESTER ST	0	392153	404879
2467	4140	B6477 YORKSHIRE ST	0	393159	405059
4140	2467	B6477 YORKSHIRE ST	0	393159	405059
13866	4207	C Adswood Road	50	388345	387777
4207	13866	C Adswood Road	60	388388	387774
3513	7243	C ASHTON RD	0	354399	401887
7243	3513	C ASHTON RD	0	354399	401887
3107	6627	C ASHTON RD E	0	390451	401353
6627	3107	C ASHTON RD E	0	390451	401353
1502	1517	C BRADFORD RD	99999	386584	399297
1517	1502	C BRADFORD RD	99999	386584	399297

2073	3902	C BRADFORD RD	0	372199	407049
3902	2073	C BRADFORD RD	0	372199	407049
6821	8826	C Bramhall Moor Ln	96018	390800	386309
8826	6821	C Bramhall Moor Ln	96018	390800	386309
2570	2773	C Bury Road	94895	380051	418668
2773	2570	C Bury Road	94895	380051	418668
14108	1486	C CHAPMAN ST	0	388867	396294
1486	14108	C CHAPMAN ST	0	388867	396294
1541	8613	C CHARLESTOWN RD	0	385860	402763
8613	1541	C CHARLESTOWN RD	0	385860	402763
3807	7412	C CHURCH ST W	99999	378692	407127
7412	3807	C CHURCH ST W	99999	378692	407127
7131	7132	C CLARENCE RD	99999	386410	395888
7132	7131	C CLARENCE RD	99999	386410	395888
3238	8594	C COLLYHURST RD	99999	385064	400117
8594	3238	C COLLYHURST RD	99999	385064	400117
3893	8405	C CUTLER HILL RD	87477	391252	401367
8405	3893	C CUTLER HILL RD	87477	391252	401367
1404	2308	C DERBYSHIRE LN	0	379186	394899
2308	1404	C DERBYSHIRE LN	0	379186	394899
1899	1900	C DIALSTONE LN	0	391378	388380
1900	1899	C DIALSTONE LN	0	391378	388380
7145	7164	C DOBBINETTS LN	0	380463	387836
7164	7145	C DOBBINETTS LN	0	380463	387836
1293	3269	C DUCIE ST	85311	385099	398281
1976	8345	C EGERTON ST	0	392783	405228
8345	1976	C EGERTON ST	0	392783	405228
1490	1552	C ELIZABETH ST	99999	384326	400144
1552	1490	C ELIZABETH ST	99999	384326	400144
4215	4216	C Finney Lane	490	384389	385942
4216	4215	C Finney Lane	500	384427	385943
2889	4216	C FINNEY LN	99999	384330	385957
4216	2889	C FINNEY LN	99999	384330	385957
13709	13833	C FINNEY LN	83909	385337	386149
13833	13709	C FINNEY LN	83909	385337	386149
1825	7145	C FLOATS RD	0	380463	387836
7145	1825	C FLOATS RD	0	380463	387836
2300	7208	C GERALD RD	99999	381933	400018
7208	2300	C GERALD RD	99999	381933	400018
2428	6214	C Gill Bent Rd	93658	387290	385120
6214	2428	C Gill Bent Rd	93658	387290	385120
2349	7995	C GLEBELANDS RD	0	378903	392753
7995	2349	C GLEBELANDS RD	0	378903	392753
2612	7915	C Greenleach Ln	93650	374980	401650

7915	2612	C Greenleach Ln	93650	374980	401650
1383	1384	C GT STONE RD	0	380751	395536
1384	1383	C GT STONE RD	0	380751	395536
3144	2378	C HENRIETTA ST	99999	393993	399370
2960	8304	C HENSHAW ST	86402	392475	405306
8304	2960	C Henshaw St	85402	392474	405295
2359	2394	C HEYWOOD RD	0	381892	404514
2394	2359	C HEYWOOD RD	0	381892	404514
1846	2423	C Hollyhedge Road	330	381817	388190
2423	1846	C Hollyhedge Road	340	381897	388154
4853	8651	C Hr Ardwick	96008	385563	397262
8651	4853	C Hr Ardwick	96008	385563	397262
1537	8638	C KENYON LN	0	387424	401481
8638	1537	C KENYON LN	0	387424	401481
1364	7942	C LISSADEL ST	99999	381643	399601
7942	1364	C LISSADEL ST	99999	381643	399601
1233	7896	C Liverpool St	90345	381647	398346
7896	1233	C Liverpool St	90345	381647	398346
3150	3151	C Longworth Rd	96999	370719	415002
3151	3150	C Longworth Rd	96999	370719	415002
3600	8398	C Lord Lane	93689	389680	400550
8398	3600	C Lord Lane	93689	389680	400550
3857	7407	C LORD ST	85211	380945	410589
1549	1570	C LWR BROUGHTON RD	0	382346	399921
1570	1549	C LWR BROUGHTON RD	0	382346	399921
1904	8956	C Manor Road	80	388055	386118
8956	1904	C Manor Road	70	388027	386129
1705	2380	C Market St	93660	390750	398620
2380	1705	C Market St	93660	390750	398620
3339	5130	C Simonsway	310	381738	387192
5130	3339	C Simonsway	310	381738	387192
3566	3601	C Moor End Rd	96786	398556	388515
3601	3566	C Moor End Rd	96786	398556	388515
4310	8637	C Moston Lane	94415	386824	401924
8637	4310	C Moston Lane	94415	386824	401924
7052	8475	C Mottram Old Road	94625	397686	397531
8475	7052	C Mottram Old Road	94625	397686	397531
3509	7392	C PILSWORTH RD	0	381583	408753
7392	3509	C PILSWORTH RD	0	381583	408753
2315	8687	C PLATT LN	99999	384365	394517
8687	2315	C PLATT LN	99999	384365	394517
14176	8399	C PROPPS HALL DR	0	388868	400709
8399	14176	C PROPPS HALL DR	0	388868	400709
3328	3329	C REDGATE LN	99999	386923	396273

3329	3328	C REDGATE LN	99999	386923	396273
6158	6372	C RICHMOND ST	0	392882	399285
6372	6158	C RICHMOND ST	0	392882	399285
15539	15540	C ROBIN S LN	0	389297	385139
15540	15539	C ROBIN S LN	0	389297	385139
7075	8872	C Sandy Ln	93656	394560	391230
8872	7075	C Sandy Ln	93656	394560	391230
6651	7208	C SEAFORD RD	99999	381962	400046
7208	6651	C SEAFORD RD	99999	381962	400046
3559	4003	C SEFTON RD	0	352888	404311
4003	3559	C SEFTON RD	0	352888	404311
2232	7407	C SPRING ST	85213	380715	410603
1735	8622	C ST MARY S RD	0	388367	402350
8622	1735	C ST MARY S RD	0	388367	402350
2365	8492	C STAMFORD RD	82812	391955	397045
8492	2365	C STAMFORD RD	82812	391955	397045
1291	1292	C STORE ST	0	385201	398246
1292	1291	C STORE ST	0	385201	398246
13881	7153	C Thorley Lane	300	380991	386136
7153	13881	C Thorley Lane	290	381047	386144
3825	8655	C WENLOCK WAY	99999	387151	396970
8655	3825	C WENLOCK WAY	99999	387151	396970
3399	8392	C WESTMINSTER RD	99999	390733	401647
8392	3399	C WESTMINSTER RD	99999	390733	401647
2478	7455	C WHITTLE LN	0	385116	407627
7455	2478	C WHITTLE LN	0	385116	407627
3134	3224	C WINDMILL LN	1224	391242	394787
3224	3134	C WINDMILL LN	1224	391242	394787
1442	8666	C WITHINGTON RD	0	383024	394099
8666	1442	C WITHINGTON RD	0	383024	394099
1453	1663	C YEW TREE RD	0	384703	394127
1663	1453	C YEW TREE RD	0	384703	394127
2869	2866	M56 EB M56 MIDAS	6010	381023	386538
2870	2869	M56 EB M56 T/10/163	1632	380493	385506
12841	2865	M56 EB M56 T/10/163	1637	381334	386851
12842	2876	M56 EB M56 T/10/336	3364	383012	388905
2873	12490	M56 Jn 6 to Jn 7	73269	379678	384603
5718	2872	M56 Jn 7 to Jn 6	73269	379673	384622
3900	2911	M56 NB M56 T/10/163	1635	381310	386097
2877	2878	M56 NB M56 T/10/192	1921	384909	389163
3899	5151	M56 T1 offslip	540	381934	385650
12800	12801	M56 T1 onslip	550	381768	385692
12802	12801	M56 T1 onslip	550	381768	385692
3899	5140	M56 T2 offslip	530	381706	385780

5143	3900	M56 T2 onslip	560	381680	385711
2867	2910	M56 WB M56 MIDAS	6008	381228	386690
2867	5926	M56 WB M56 MIDAS	6011	380864	386304
2864	2867	M56 WB M56 T/10/163	1636	381347	386837
5926	2871	M56 WB M56 T/10/163	1633	380509	385504
2881	2882	M56 WB M56 T/10/191	1918	384705	389050
2884	12845	M56 WB M56 T/10/336	3365	383012	388905
2859	2860	M56 WB M56 TMU te	30014	382238	389369
3521	3522	M6 NB M6 T/10/1900	1900	353545	406824
2492	5272	M6 NB M6 TMU te 9	30014	353760	404154
2534	2509	M6 NB M6 TMU te 9	30014	356501	400221
3515	3516	M6 SB M6 T/10/1901	1901	353579	406833
2506	2514	M6 SB M6 TMU te 9	30014	356503	400321
3516	5277	M6 SB M6 TMU te 9	30014	353844	404257
1244	4948	M60 AC M60 MIDAS	6139	375245	398002
1245	1248	M60 AC M60 MIDAS	6132	375775	396787
1248	1249	M60 AC M60 MIDAS	6129	376244	396541
1248	4955	M60 AC M60 MIDAS	6130	376238	396557
1249	1252	M60 AC M60 MIDAS	6123	376843	396287
1252	1253	M60 AC M60 MIDAS	6117	377601	395693
1252	4969	M60 AC M60 MIDAS	6120	377528	395896
2676	4946	M60 AC M60 MIDAS	6149	375144	398894
2694	2692	M60 AC M60 MIDAS	6156	374606	400394
2694	5180	M60 AC M60 MIDAS	6160	374864	400806
2708	2701	M60 AC M60 MIDAS	6170	378715	403670
2710	2708	M60 AC M60 MIDAS	6174	380805	404652
2710	4942	M60 AC M60 MIDAS	6179	381165	404885
2731	2730	M60 AC M60 MIDAS	6167	376164	402999
2731	2732	M60 AC M60 MIDAS	6163	375652	402277
2838	2839	M60 AC M60 MIDAS	6024	380556	392307
2839	2842	M60 AC M60 MIDAS	6023	381049	391332
2842	2845	M60 AC M60 MIDAS	6020	382896	390757
2849	2852	M60 AC M60 MIDAS	6404	384516	389114
2962	2966	M60 AC M60 MIDAS	6038	388675	390310
3936	5161	M60 AC M60 MIDAS	6280	391041	395312
4946	4948	M60 AC M60 MIDAS	6142	375155	398428
4947	1244	M60 AC M60 MIDAS	6143	375172	398413
4952	1245	M60 AC M60 MIDAS	6135	375373	397683
4962	1249	M60 AC M60 MIDAS	6126	376508	396448
4974	1253	M60 AC M60 MIDAS	6118	377633	395643
5178	2692	M60 AC M60 MIDAS	6157	374641	400384
5675	5662	M60 AC M60 MIDAS	6268	389964	402892
5676	1703	M60 AC M60 MIDAS	6272	390736	402402

3929	12820	M60 AC M60 MIDAS	6033	391691	391965
12826	12827	M60 AC M60 MIDAS	6260	383478	405386
2879	2880	M60 AC M60 T/10/191	1915	385750	389250
2849	2851	M60 AC M60 T/10/192	1922	384750	389250
2958	3929	M60 AC M60 T/10/334	3348	390624	391436
2845	2849	M60 AC M60 T/10/335	3359	383700	389631
5680	5676	M60 AC M60 T/10/335	3352	391400	400900
12821	3936	M60 AC M60 T/10/335	3356	391425	393555
2880	4989	M60 Cheadle Spur	450	386669	389086
4988	2885	M60 Cheadle Spur	460	386669	389086
1247	4953	M60 CW M60 MIDAS	6133	375327	397646
1251	1250	M60 CW M60 MIDAS	6128	376211	396538
1251	4963	M60 CW M60 MIDAS	6124	376552	396376
1254	1251	M60 CW M60 MIDAS	6122	376835	396268
1255	4975	M60 CW M60 MIDAS	6114	377577	395640
2682	2686	M60 CW M60 MIDAS	6148	375114	398970
2691	5184	M60 CW M60 MIDAS	6152	374539	400129
2695	2696	M60 CW M60 MIDAS	6166	376199	403042
2697	2696	M60 CW M60 MIDAS	6164	375734	402634
2700	2707	M60 CW M60 MIDAS	6171	378856	403749
2707	2709	M60 CW M60 MIDAS	6173	380776	404660
2709	2713	M60 CW M60 MIDAS	6180	382102	405553
2713	4910	M60 CW M60 MIDAS	6183	382644	405856
2840	2837	M60 CW M60 MIDAS	6025	380631	392072
2846	2841	M60 CW M60 MIDAS	6021	382462	390809
2854	2850	M60 CW M60 MIDAS	6405	384681	389084
2935	3283	M60 CW M60 MIDAS	6259	383716	405331
3927	3930	M60 CW M60 MIDAS	6032	391826	392220
3932	2956	M60 CW M60 MIDAS	6034	390317	391146
4978	1254	M60 CW M60 MIDAS	6119	377488	395857
5183	2693	M60 CW M60 MIDAS	6154	374567	400422
5673	3918	M60 CW M60 MIDAS	6267	389009	403499
5685	5654	M60 CW M60 MIDAS	6279	391043	395881
12813	2700	M60 CW M60 MIDAS	6406	377122	403196
12815	2691	M60 CW M60 MIDAS	6150	374704	399746
13031	2840	M60 CW M60 MIDAS	6022	381225	391119
5669	12824	M60 CW M60 MIDAS	6263	385740	404929
14118	12847	M60 CW M60 MIDAS	6127	376220	396515
2853	2850	M60 CW M60 T/10/191	1917	384710	389024
2885	2886	M60 CW M60 T/10/191	1914	385750	389250
12817	2882	M60 CW M60 T/10/191	1919	384697	389066
2850	2846	M60 CW M60 T/10/335	3358	383700	389631
9997	3927	M60 CW M60 T/10/335	3357	391425	393555
3117	1255	M60 CW M60 T/10/337	3370	377526	394806

2699	2700	M60 EB M60 T/10/165	1650	377829	403418
4941	2709	M60 EB M60 T/10/165	1654	381080	404884
2966	2958	M60 Jn 1 to Jn 27	48011	389592	390852
2701	2702	M60 JN 16 OFF SLIP	0	377766	403305
2956	2965	M60 Jn 27 to Jn 1	48011	389598	390838
5684	5682	M60 NB M60 T/10/334	3341	390877	396711
5675	12858	M60 NB M60 T/10/334	3343	389857	403007
5683	5685	M60 SB M60 T/10/334	3340	390877	396711
4945	2708	M60 WB M60 T/10/165	1652	380760	404608
2673	2687	M602 EB M602 MIDAS	6227	374895	398945
1203	1879	M602 EB M602 TMU	30014	379527	398608
2678	2688	M602 Jn 1 to Jn 2	16050	377671	398858
2689	2679	M602 Jn 2 to Jn 1	16050	377710	398840
2005	1347	M602 WB M602 MIDAS	6409	380018	398492
2679	2680	M602 WB M602 MIDAS	6231	375321	399134
2746	2730	M61 AC M61 MIDAS	6221	376109	403394
2741	2744	M61 EB M61 MIDAS	6216	373967	404593
2742	2743	M61 EB M61 MIDAS	6214	374593	404071
2742	2745	M61 EB M61 MIDAS	6225	374977	403918
2743	2747	M61 EB M61 MIDAS	6207	375782	402776
2744	2743	M61 EB M61 MIDAS	6209	374718	404089
2749	2741	M61 EB M61 MIDAS	6218	373157	404758
2754	2759	M61 Jn 5 to Jn 6	36049	364644	408213
2760	2755	M61 Jn 6 to Jn 5	36049	364653	408229
2741	12829	M61 NB M61 MIDAS	6215	374005	404608
2729	2737	M61 NB M61 T/10/164	1645	376090	403235
2752	2754	M61 NB M61 TMU te	30014	367735	406597
2752	5109	M61 NB M61 TMU te	30014	367726	406573
2759	2762	M61 NB M61 TMU te	30014	364136	408620
2759	5088	M61 NB M61 TMU te	30014	364120	408604
2746	12812	M61 SB M61 T/10/164	1646	376182	403334
2751	2749	M61 SB M61 TMU te	30014	370109	405535
2751	5101	M61 SB M61 TMU te	30014	370113	405552
2755	2753	M61 SB M61 TMU te	30014	367479	406773
2755	5106	M61 SB M61 TMU te	30014	367488	406791
2761	2760	M61 SB M61 TMU te	30014	363801	408985
2761	5079	M61 SB M61 TMU te	30014	363816	408998
2734	3403	M61 WB M61 MIDAS	6206	375824	402890
2735	2736	M61 WB M61 MIDAS	6210	374651	403920
2736	2748	M61 WB M61 MIDAS	6281	372329	404969
2676	2677	M62 AC M62 MIDAS	6108	375029	399331
2673	2674	M62 EB M62 MIDAS	6228	374813	398925
2715	2717	M62 EB M62 MIDAS	6190	384084	407329
2717	4925	M62 EB M62 MIDAS	6192	386113	408694

2719	2721	M62 EB M62 MIDAS	6200	386879	409306
2723	2725	M62 EB M62 MIDAS	6282	391622	410930
4921	2719	M62 EB M62 MIDAS	6196	386544	409041
12855	2715	M62 EB M62 MIDAS	6187	382973	406048
2674	12814	M62 EB M62 MIDAS	6107	374917	399089
2726	12988	M62 Jn 21 to Jn 22	26054	394222	413175
12998	2728	M62 Jn 22 to Jn 21	26054	394253	413214
2677	2685	M62 WB M62 MIDAS	6104	374957	398936
2683	2684	M62 WB M62 MIDAS	6102	374731	398814
2716	2714	M62 WB M62 MIDAS	6188	383093	406118
2720	2718	M62 WB M62 MIDAS	6194	386520	408959
2722	2720	M62 WB M62 MIDAS	6201	388198	409760
2724	2722	M62 WB M62 MIDAS	6204	389368	409939
2727	2724	M62 WB M62 MIDAS	6283	391744	410986
2684	13006	M62 WB M62 MIDAS	6337	369015	393688
2716	12806	M62 WB M62 MIDAS	6189	383065	406067
3000	3002	M66 NB M66 T/10/194	1946	382018	409865
12832	2999	M66 NB M66 T/10/335	3350	382200	407600
3005	3013	M66 NB M66 TMU te	30014	381609	412896
3013	3986	M66 NB M66 TMU te	30014	380370	415028
3003	3001	M66 SB M66 T/10/194	1947	382018	409865
2998	9996	M66 SB M66 T/10/335	3351	382200	407600
3012	3004	M66 SB M66 TMU te	30014	381321	413930
3987	3012	M66 SB M66 TMU te	30014	379846	417067
3209	3245	M67 EB M67 MIDAS	6042	392515	395751
3245	3247	M67 EB M67 MIDAS	6045	394329	395296
3248	5171	M67 EB M67 MIDAS	6046	397276	395458
5163	3209	M67 EB M67 MIDAS	6040	391717	395536
3243	3244	M67 WB M67 MIDAS	6044	394171	395382
3244	3210	M67 WB M67 MIDAS	6043	392541	395741
5172	3242	M67 WB M67 MIDAS	6047	397338	395423
3210	5164	M67 WB M67 T/10/167	1676	391512	395518
12800	14258	Outwood Lane	20005	382030	385560
14258	12800	Outwood Lane	20005	382030	385560
13883	3708	Ringway Road	20004	382960	385320
3708	13883	Ringway Road	20004	382960	385320
13759	8751	Sydney Avenue	20001	381130	386005
8751	13759	Sydney Avenue	20001	381130	386005
13240	13905	U A538 MANCHESTER R	0	384602	381012
13905	13240	U A538 MANCHESTER R	0	384602	381012
1438	8689	U ALEXANDRA RD S	0	383335	395408
8689	1438	U ALEXANDRA RD S	0	383335	395408
2617	2619	U ASHTON RD	87476	391421	401083
2619	2617	U ASHTON RD	87476	391421	401083

7147	7148	U BAILEY LN	99999	381848	386025
7148	7147	U BAILEY LN	99999	381848	386025
13700	13867	U BROWN LN	0	384200	386243
13867	13700	U BROWN LN	0	384200	386243
3387	5072	U CAMBRIDGE ST	0	384034	397118
5072	3387	U CAMBRIDGE ST	0	384034	397118
2501	3145	U CURZON RD	0	394673	399695
3145	2501	U CURZON RD	0	394673	399695
1310	5705	U DANTZIC ST	0	384269	398967
5705	1310	U DANTZIC ST	0	384269	398967
2967	5008	U GEORGES RD	0	388684	390414
5008	2967	U GEORGES RD	0	388684	390414
3706	8574	U GREY MARE LN	0	387240	397745
8574	3706	U GREY MARE LN	0	387240	397745
7558	1980	U HOBSON ST	0	392577	404831
6674	7972	U Mainwood Road	94677	379218	388438
7972	6674	U Mainwood Road	94677	379218	388438
1613	8674	U NEW BANK ST	99999	386731	395905
8674	1613	U NEW BANK ST	99999	386731	395905
1217	2288	U OLDHAM ST	0	384653	398684
8556	7282	U PORT ST	86336	384856	398473
6613	7898	U Robert Hall Street	94551	382013	397495
7898	6613	U Robert Hall Street	94551	382013	397495
13219	13226	U ROUNDY LN	99999	392699	380655
13226	13219	U ROUNDY LN	99999	392699	380655
5111	1296	U SACKVILLE ST	85318	384567	397424
1827	3340	U SHADOWMOSS RD	0	383244	385381
3340	1827	U SHADOWMOSS RD	0	383244	385381
13701	13709	U ST ANN S RD N	0	384998	386288
13709	13701	U ST ANN S RD N	0	384998	386288
3261	5423	U TIB ST	85305	384615	398700
3323	8561	U TRAVIS ST	86315	385150	397840
8561	3323	U TRAVIS ST	85315	385129	397825
2972	6374	U TURNER LN	99999	393802	399405
6374	2972	U TURNER LN	99999	393802	399405
2765	5102	U WATERGATE LN	0	370325	405456
5102	2765	U WATERGATE LN	0	370325	405456
1975	2466	U WATERLOO ST	0	392925	404937
2466	1975	U WATERLOO ST	0	392925	404937
3321	8610	U WHITE MOSS RD	0	386006	403341
8610	3321	U WHITE MOSS RD	0	386006	403341
6305	7092	U WINDLEHURST RD	0	395369	386702
7092	6305	U WINDLEHURST RD	0	395369	386702
13248	13286	U/C Chancel Lane	0	384779	381557

13286	13248	U/C Chancel Lane	0	384779	381557
3897	5142	World Way	20003	381740	385560
5142	3897	World Way	20003	381740	385560

A2.2 Independent Counts Used in SEMMMS7C					
Anode	Bnode	Location	Site No'	X' OSGR	Y' OSGR
3874	3877	A34 Kingsway	70043	386151	385603
3889	3874	A34 Kingsway	70043	386145	385580
3881	4078	A34 Kingsway	0	386829	384710
4078	3881	A34 Kingsway	0	386829	384710
1894	4186	A5102 BRAMHALL LN	99999	389900	388093
4186	1894	A5102 BRAMHALL LN	99999	389900	388093
13813	13254	A5102 Wilmslow Rd	27762	388000	382080
13254	13813	A5102 Wilmslow Rd	27762	388000	382080
2464	15537	A5102 Woodford Rd	99520	389293	383600
15537	2464	A5102 Woodford Rd	99520	389293	383600
4191	7087	A5149 CHEADLE RD	0	386679	387293
7087	4191	A5149 CHEADLE RD	0	386679	387293
2464	3882	A555 MAELR	99521	388042	383874
3876	2464	A555 MAELR	99521	388042	383874
1632	3794	A560 Altrincham Rd	27294	380175	389388
3794	1632	A560 Altrincham Rd	27294	380175	389376
2430	13706	A560 GATLEY RD	0	385030	388365
13706	2430	A560 GATLEY RD	0	385030	388365
1878	8922	A560 STOCKPORT RD	0	387230	389328
8922	1878	A560 STOCKPORT RD	0	387230	389328
7095	13200	A6 BUXTON RD	0	393837	385638
13200	7095	A6 BUXTON RD	0	393837	385638
14010	1897	A6 Buxton Rd	0	391417	387711
1897	14010	A6 Buxton Rd	0	391417	387711
4160	4646	A6 London Rd	99018	392020	387000
4646	4160	A6 London Rd	99018	392020	387000
6815	1914	A626 MARPLE RD	99999	391637	389271
1914	6815	A626 MARPLE RD	99999	391637	389271
3423	3620	A626 ST MARY S WAY	0	390172	390194
3620	3423	A626 ST MARY S WAY	0	390172	390194
15272	7295	A626 STOCKPORT RD	0	393797	388759
7295	15272	A626 STOCKPORT RD	0	393797	388759
15536	3881	B5094 STANLEY RD	0	387064	384671
3881	15536	B5094 STANLEY RD	0	387064	384671
2888	13284	B5166 STYAL RD	0	383985	385289
13284	2888	B5166 STYAL RD	0	383985	385289
4371	5945	B5167 Palatine Rd	94408	383057	390353

5945	4371	B5167 Palatine Rd	94408	383057	390353
1948	4190	B5465 EDGELEY RD	83904	388020	389111
4190	1948	B5465 EDGELEY RD	83904	388020	389111
2875	14132	B5465 SHAW HEATH	84007	389372	389472
14132	2875	B5465 SHAW HEATH	84007	389372	389472
2446	8870	B6104 Compstall Rd	99999	395422	390887
8870	2446	B6104 Compstall Rd	99999	395422	390887
8764	3044	C BROWNLEY RD	0	383059	387300
3044	8764	C BROWNLEY RD	0	383059	387300
1884	1887	C CALE GREEN	0	389891	388765
1887	1884	C CALE GREEN	0	389891	388765
13831	2427	C ETCHELLS RD	83907	386000	386272
2427	13831	C ETCHELLS RD	83907	386000	386272
1894	8940	C Garner's Ln	99999	395422	390887
8940	1894	C Garner's Ln	99999	389409	388291
6094	4511	C HOLLYHEDGE RD	0	383069	387975
4511	6094	C HOLLYHEDGE RD	0	383069	387975
3888	6687	C HOLLYHEDGE RD	0	380906	388358
6687	3888	C HOLLYHEDGE RD	0	380906	388358
6096	8769	C HOLLYHEDGE RD	0	383069	387975
8769	6096	C HOLLYHEDGE RD	0	383069	387975
3338	8774	C Longley Lane	94451	383088	389620
8774	3338	C Longley Lane	94451	383088	389620
1631	8741	C MOOR RD	0	380436	390082
8741	1631	C MOOR RD	0	380436	390082
13884	2888	C Ringway Rd	94417	383736	385334
2888	13884	C Ringway Rd	94417	383736	385334
3798	4320	C ROWLANDSWAY	0	382784	387267
4320	3798	C ROWLANDSWAY	0	382784	387267
2432	6703	C RUDDPARK RD	0	382903	386646
6703	2432	C RUDDPARK RD	0	382903	386646
2426	6702	C SIMONSWAY	0	383532	386278
6702	2426	C SIMONSWAY	0	383532	386278
2876	2877	M56 EB M56 MIDAS Si	6000	383982	389050
2865	2862	M56 NB M56 T/10/331	3313	381935	388287
12844	2864	M56 SB M56 T/10/331	3312	381942	388239
2882	2884	M56 WB M56 MIDAS	6001	383957	389018
13101	2879	M60 AC M60 MIDAS	6402	385281	389193
2880	12818	M60 AC M60 MIDAS	6017	386929	389577
2886	12816	M60 CW M60 MIDAS	6403	385171	389148
2964	2885	M60 CW M60 MIDAS	6016	387092	389647
13820	4212	U Councillor Lane	77619	387112	388276
4212	13820	U Councillor Lane	77619	387112	388276
7285	8768	U Woodhouse Lane	94453	382720	387582

8768	7285	U Woodhouse Lane	94453	382720	387582
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Appendix 3: Cheshire East Count Sites Used in SEMMMS7C

Table A2.1 Cheshire East Count Sites Used in SEMMMS7C					
Anode	Bnode	Location	Site No'	X' OSGR	Y' OSGR
132481	3286	U/C Chancel Lane	0	384779	381557
132361	3235	A5102 Adlington Road at v	0	385974	381058
132861	3248	U/C Chancel Lane	0	384779	381557
132351	3236	A5102 Adlington Road at v	0	385974	381058
134651	3494	B5085/6 Knutsford Road	0	383113	379290
132981	3843	A538 Prestbury Link Road	0	385302	380455
134911	3902	A34 Wilmslow Road	0	384245	378603
134941	3465	B5085/6 Knutsford Road	0	383113	379290
138431	3298	A538 Prestbury Link Road	0	385302	380455
139021	3491	A34 Wilmslow Road	0	384245	378603
103251	329	A50 Toft Road	0	375335	378035
133361	3337	A537 Chelford Road	0	384001	374197
104641	465	B5090 Wellington Road	0	392757	377504
103291	325	A50 Toft Road	0	375335	378035
133371	3336	A537 Chelford Road	0	384001	374197
104651	464	B5090 Wellington Road	0	392757	377504

Appendix 4: Highways Agency TRADS Sites Used in SEMMMS7C

Table A4.1 TRADS Count Sites Used in Matrix Estimation					
Anode	Bnode	Location	Site No'	X' OSGR	Y' OSGR
2855	2856	A5103 SB A5103 TMU site 8518/2SB	30014	382333	390118
2855	2218	A5103 SB A5103 TMU site 8518/1SB	30014	382351	390126
2843	2847	A5103 SB A5103 TMU site 8516/2SB	30014	382633	391142
2843	3039	A5103 SB A5103 TMU site 8516/1SB	30014	382644	391136
2859	5120	A5103 SB A5103 TMU site 8520/1SB	30014	382254	389367
2858	2857	A5103 NB A5103 TMU site 8547/1NB	30014	382299	389752
2857	2844	A5103 NB A5103 TMU site 8519/2NB	30014	382326	390193
2354	2844	A5103 NB A5103 TMU site 8519/1NB	30014	382318	390195
2870	2869	M56 EB M56 T/10/1632 JUNC 5-6 EB	1632	380493	385506
2881	2882	M56 WB M56 T/10/1918 Link road WB	1918	384705	389050
2877	2878	M56 NB M56 T/10/1921 Link road NB	1921	384909	389163
2859	2860	M56 WB M56 TMU site 8520/2 on WB	30014	382238	389369
12842	2876	M56 EB M56 T/10/3364 JUNC 2-3 EB	3364	383012	388905
2884	12845	M56 WB M56 T/10/3365 JUNC 2-3 WB	3365	383012	388905
2867	2910	M56 WB M56 MIDAS Site at M56/8WB	6008	381228	386690
2869	2866	M56 EB M56 MIDAS Site at M56/8EB	6010	381023	386538
2867	5926	M56 WB M56 MIDAS Site at M56/8WB	6011	380864	386304
3936	5161	M60 AC M60 MIDAS Site at M60/9AC	6280	391041	395312
2849	2852	M60 AC M60 MIDAS Site at M60/9AC	6404	384516	389114
2842	2845	M60 AC M60 MIDAS Site at M60/9AC	6020	382896	390757
2846	2841	M60 CW M60 MIDAS Site at M60/9CW	6021	382462	390809

13031	2840	M60 CW M60 MIDAS Site at M60/9CW	6022	381225	391119
2839	2842	M60 AC M60 MIDAS Site at M60/9AC	6023	381049	391332
2838	2839	M60 AC M60 MIDAS Site at M60/9AC	6024	380556	392307
2840	2837	M60 CW M60 MIDAS Site at M60/9CW	6025	380631	392072
3929	12820	M60 AC M60 MIDAS Site at M60/9AC	6033	391691	391965
3932	2956	M60 CW M60 MIDAS Site at M60/9CW	6034	390317	391146
2956	2965	M60 CW M60 MIDAS Site at M60/9CW	6036	389274	390590
2962	2966	M60 AC M60 MIDAS Site at M60/9AC	6038	388675	390310
2885	2886	M60 CW M60 T/10/1914 JUNC 2-3 CW	1914	385750	389250
2879	2880	M60 AC M60 T/10/1915 JUNC 2-3 AC	1915	385750	389250
2853	2850	M60 CW M60 T/10/1917 Link road CW	1917	384710	389024
12817	2882	M60 CW M60 T/10/1919 M60 junct CW	1919	384697	389066
2849	2851	M60 AC M60 T/10/1922 Link road AC	1922	384750	389250
2966	2958	M60 EB M60 T/10/3320 JUNC 1- 27EB	3320	389454	390764
12821	3936	M60 AC M60 T/10/3356 JUNC 24- 2AC	3356	391425	393555
9997	3927	M60 CW M60 T/10/3357 JUNC 24- 2CW	3357	391425	393555
2850	2846	M60 CW M60 T/10/3358 JUNC 4-5 CW	3358	383700	389631
2845	2849	M60 AC M60 T/10/3359 JUNC 4-5 AC	3359	383700	389631

Table A4.2 TRADS Count Sites Used in Independent Count Set					
Anode	Bnode	Location	Site No'	X' OSGR	Y' OSGR
12844	2864	M56 SB M56 T/10/3312 JUNC 3-4 SB	3312	381942	388239
2865	2862	M56 NB M56 T/10/3313 JUNC 3-4 NB	3313	381935	388287
2876	2877	M56 EB M56 MIDAS Site at M56/8EB	6000	383982	389050
2882	2884	M56 WB M56 MIDAS Site at M56/8WB	6001	383957	389018
13101	2879	M60 AC M60 MIDAS Site at M60/9AC	6402	385281	389193
2886	12816	M60 CW M60 MIDAS Site at M60/9CW	6403	385171	389148
2964	2885	M60 CW M60 MIDAS Site at M60/9CW	6016	387092	389647
2880	12818	M60 AC M60 MIDAS Site at M60/9AC	6017	386929	389577

Appendix 5: Manchester Airport ATC Cordon Site Locations

Table A5.1 Manchester Airport ATC Cordon Site Locations					
ANode	BNode	Location	Site No.	Easting	Northing
87522	288	Avro Way	20002	380715	385155
87511	3759	Sydney Avenue	20001	381130	386005
5142	3897	World Way	20003	381740	385560
128001	4258	Outwood Lane	20005	382030	385560
37081	3883	Ringway Road	20004	382960	385320
20288	8752	Avro Way	20002	380715	385155
13759	8751	Sydney Avenue	20001	381130	386005
3897	5142	World Way	20003	381740	385560
142581	2800	Outwood Lane	20005	382030	385560
13883	3708	Ringway Road	20004	382960	385320

Appendix 6: GMTU SEMMMS Briefing Note - Peak and Inter-Peak Hours

SEMMMS A6 to Manchester Airport Relief Road Identification of Traffic Peak Hours for Modelling

Client SEMMMS Client Board

Project SEMMMS A6 to Manchester Airport Relief Road

Subject Identification of Traffic Peak Hours for Modelling

This note summarises an analysis of traffic count data undertaken to identify the morning and evening peak hours that will be used in SEMMMS7 traffic modelling.

This Note 2023-00-B25v01.3-PeakHours.doc

Originator Riccardo Boncinelli

Version	Comments	Update	Date	Check / Approve
0.1	Proof doc	RB	100201	MK
0.2	Amend count set; Revise front sheet detail and proof doc	MK	100226	DN
0.3	Revisions to format and text; map revised	DN	100304	DN

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Issued	Organisation	FAO
	Date	
100200	Atkins	R Kimber (For Comment)
100225	Atkins	R Kimber (For Comment – At meeting)
100304	Atkins	R Kimber (By Email)

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Introduction

1. This note describes the extraction, processing and analysis of manual traffic count data used to establish the morning and evening traffic peak hours for use in the SEMMMS7 SATURN model.
2. The note details the origin of the count data used during the analysis.
3. A map is provided showing the locations of the manual counts used in the analysis across Greater Manchester and Cheshire.
4. The note includes summary tables that illustrate the peak hours revealed by the counts analysis.

The Count Data Used in The Analysis

5. Initially, 102 counts near the line of the proposed SEMMMS scheme were considered for use in the analysis of the peak hours - 68 in Greater Manchester and 34 in Cheshire East. All the counts were conducted manually and classified by vehicle type.
6. Inspection of this set of counts showed that some of the counts sites were close together in particular areas; as such, the data could have given rise to a bias in the calculation of the busiest peak hours. Accordingly, some 16 counts in Cheshire East and four in Greater Manchester were set aside and not used in the analysis. The Cheshire East counts excluded from the analysis include seven (of about 15) counts along the A34 near Alderley Edge, four counts clustered around Poynton and a number of counts considered to be too far from the SEMMMS Area of Influence (e.g. those near Knutsford). Within Greater Manchester, four of five available counts grouped together on Bramhall Lane in Stockport were also excluded.
7. Wherever a number of counts were grouped closely together, the count(s) selected for use in the analysis were those most likely to show a clear flow on an A road, where possible at some distance from a junction.
8. The final set of counts selected for the peak hour analysis included 52 in Greater Manchester and 19 in Cheshire. Fully classified traffic flow data were extracted in fifteen-minute intervals. All the counts were done during 2008 and 2009.
9. The counts used in the analysis are shown in Figure 1.
10. The Cheshire East data was provided to GMTU via Mott Macdonald. Mott MacDonald have indicated ("SEMMMS Relief Road Modelling Collation and Processing of Cheshire Traffic Count Data", September 2009) that the Cheshire count data were processed using the template and procedure set up previously for use with the Cheshire County Council database. GMTU have therefore used the Cheshire East data as supplied.
11. The Greater Manchester data was extracted by GMTU from GMTU's traffic counts database. Sites with special conditions such as roadworks, accidents, adverse weather and holidays were excluded from the analysis.
12. The Cheshire counts included both turning counts and link counts. The Greater Manchester data were all link counts.

13. Tables 1 and 2 detail the locations of those counts sites from which count data was used in the peak hours analysis, respectively for Greater Manchester and for Cheshire.

Figure 1: Locations of 71 Manual Traffic Count Sites Used in the Analysis

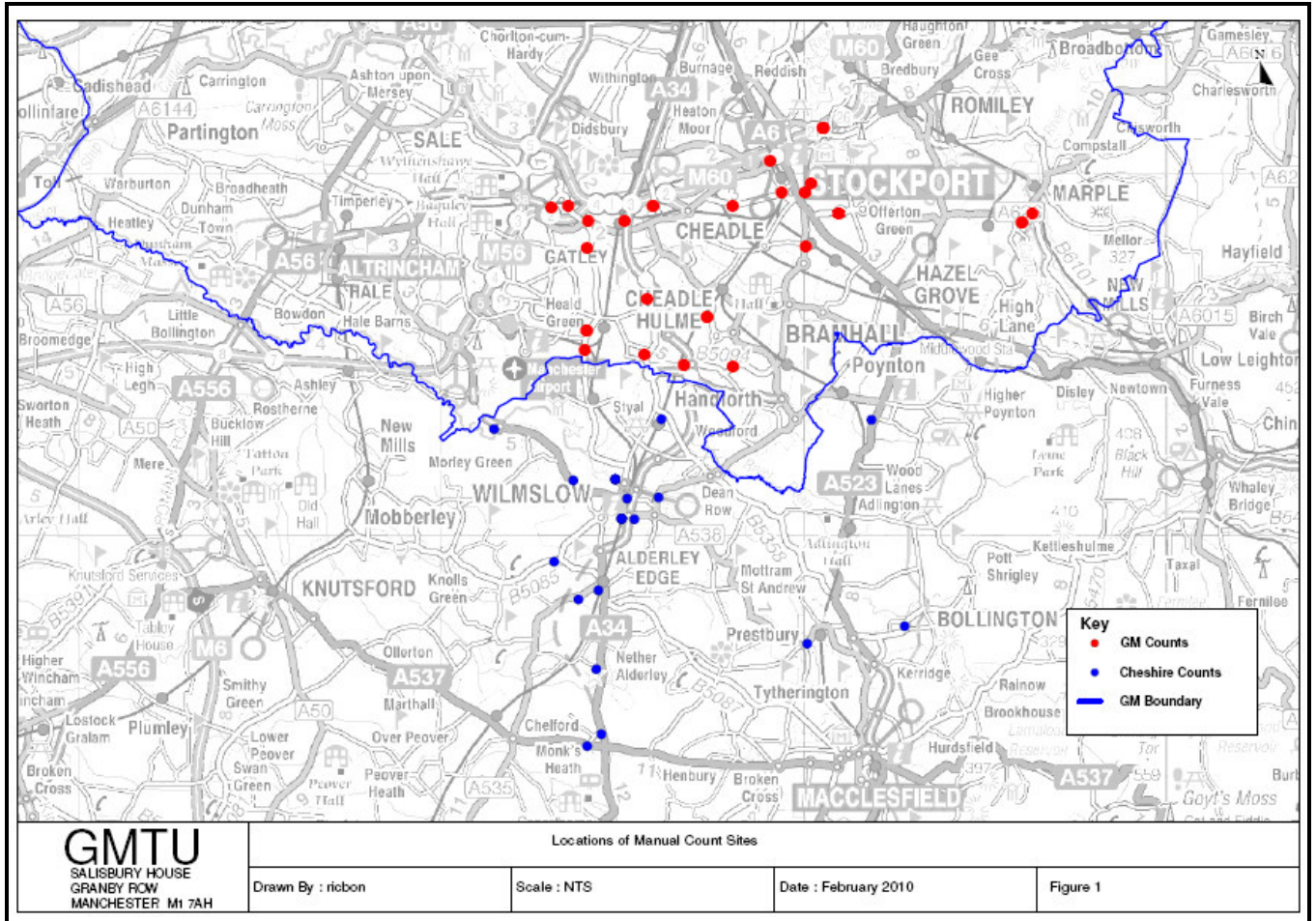


Table 1: Manual Classified Counts Used in the Analysis - Greater Manchester

GM Batch No	Road Number	Survey Date	Type	Easting	Northing	Site No.
805028	B5166 Longley Ln	16/05/2008	L	383479	389080	82004
805027	B5166 Longley Ln	16/05/2008	L	383479	389080	82004
806019	B5168 Sharston Rd	09/06/2008	L	383017	389045	81005
806018	B5168 Sharston Rd	09/06/2008	L	383017	389045	81005
806025	B6171 Nangreave Rd	17/06/2008	L	390938	388900	81902
806024	B6171 Nangreave Rd	17/06/2008	L	390938	388900	81902
807016	B6101 Stockport Rd	03/07/2008	L	396000	388640	83903
807015	B6101 Stockport Rd	03/07/2008	L	396000	388640	83903
807018	B5095 Hulme Hall Rd	07/07/2008	L	387314	386043	83905
807017	B5095 Hulme Hall Rd	07/07/2008	L	387317	386039	83905
809267	A34 Kingsway	09/09/2008	L	385035	388672	99999
809008	A560 Crookilley Way	10/09/2008	L	388020	389111	38747
809007	A560 Crookilley Way	10/09/2008	L	388020	389111	38747
809084	B5465 Edgeley Rd	10/09/2008	L	390509	391256	83904
809083	B5465 Edgeley Rd	10/09/2008	L	390510	391260	83904
809106	B5465 Shaw Heath	18/09/2008	L	389372	389472	84007
809105	B5465 Shaw Heath	18/09/2008	L	389372	389472	84007
809051	A560 Altrincham Rd	26/09/2008	L	384026	388666	7270
809050	A560 Altrincham Rd	26/09/2008	L	384026	388666	7270
810177	C Heaton Ln	08/10/2008	L	389045	390342	85710
811018	B5166 Styal Rd	03/11/2008	L	384000	387925	83005
811017	B5166 Styal Rd	03/11/2008	L	384000	387925	83005
811229	A5102 Bramhall Ln	04/11/2008	L	383934	385137	99999
811227	A5102 Bramhall Ln	04/11/2008	L	383934	385137	99999
811225	A5102 Bramhall Ln	04/11/2008	L	390010	389458	99999
811233	U Egerton Rd	04/11/2008	L	390010	389458	99999
811232	U Egerton Rd	04/11/2008	L	385814	389087	99999
811231	U Egerton Rd	04/11/2008	L	385814	389087	99999
811032	B5166 Styal Rd	10/11/2008	L	385583	385000	84015
811031	B5166 Styal Rd	10/11/2008	L	385583	385000	84015
811036	B5465 Hemphshaw Ln	12/11/2008	L	385662	386512	84008
811035	B5465 Hemphshaw Ln	12/11/2008	L	385662	386512	84008
811179	B5094 Acre Ln	25/11/2008	L	388029	384657	81910
811178	B5094 Acre Ln	25/11/2008	L	388029	384657	81910
811185	B5095 Manchester Rd	25/11/2008	L	383985	385658	81906
811184	B5095 Manchester Rd	25/11/2008	L	383985	385658	81906
811183	B5358 Wilmslow Rd	25/11/2008	L	390056	387619	81908
811182	B5358 Wilmslow Rd	25/11/2008	L	390034	387990	81908
811181	B5358 Wilmslow Rd	25/11/2008	L	390034	387990	81909
811180	B5358 Wilmslow Rd	25/11/2008	L	389900	388093	81909
811193	B5166 Styal Rd	27/11/2008	L	389910	387581	83012
811192	B5166 Styal Rd	27/11/2008	L	389834	387375	83012
906050	B5465 St Marys Way	15/06/2009	L	390175	389723	81904
906049	B5465 St Marys Way	15/06/2009	L	390175	389723	81904
906048	B6102 Arkwright Rd	15/06/2009	L	396287	388900	81903
906047	B6102 Arkwright Rd	15/06/2009	L	396287	388900	81903

Table 1: Manual Classified Counts Used in the Analysis - Greater Manchester Cont'd

GM Batch No	Road Number	Survey Date	Type	Easting	Northing	Site No.
906064	B5094 Stanley Rd	24/06/2009	L	386670	384722	81901
906063	B5094 Stanley Rd	24/06/2009	L	386670	384722	81901
907002	B6101 Stockport Rd	02/07/2009	L	396000	388640	83903
907001	B6101 Stockport Rd	02/07/2009	L	396000	388640	83903
909014	A560 Crookilley Way	09/09/2009	L	390509	391256	38747
909013	A560 Crookilley Way	09/09/2009	L	390510	391260	38747

Table 2: Manual Classified Counts Used in the Analysis – Cheshire East

Cheshire Survey No.	Road Name	Survey Date	Type	Easting	Northing
7040y09	Prestbury Link Road	6/11/09 0:00	L	385302	380455
7041y08	Old A538, Macclesfield Rd, Bridge over A34	6/12/08 0:00	L	385107	381022
7044y08	Chancel lane	6/12/08 0:00	L	384779	381557
7044y09	Chancel Lane	6/11/09 0:00	L	384779	381557
7049y09	Link Road from A34 By Pass to	6/11/09 0:00	L	384953	380468
7052y08	South of Airport Runway Tunnel	6/12/08 0:00	L	381437	382942
8054y08	A538 The Village, Prestbury	10/7/08 0:00	L	390074	377021
8056y09	Adlington Road at Vardon Bridge	6/11/09 0:00	L	385974	381058
A08077	Wellington Road	4/29/08 0:00	L	392757	377504
A08233	Chelford Road	9/25/08 0:00	T	384002	374194
A08234	Congleton Road	10/2/08 0:00	T	384252	376317
A08236	Wilmslow Road	10/2/08 0:00	T	384313	378493
A08239	Knutsford Road	10/9/08 0:00	T	383093	379282
A08240	Congleton Road	9/25/08 0:00	T	384394	374524
A08241	Chelford Road	10/9/08 0:00	T	383760	378244
A09222	Station Road	3/24/09 0:00	L	386051	383217
A09233	Gorseley Road	3/24/09 0:00	L	383623	381527

The Peak Hours

14. Table 3 below shows hourly vehicle flows commencing at fifteen-minute intervals for the morning peak period 0700-0900 for Cheshire, for Greater Manchester and for both counties combined. The data presented is for all vehicles.

Table 3: Observed Traffic Flows – AM Peak Hour (Rolling Hour - Fifteen Minute Intervals)			
Hour Commencing	GM	Cheshire East	GM & Cheshire East Combined
07:00	25613	17202	42815
07:15	29273	20334	49607
07:30	31553	22660	54213
07:45	32334	23772	56106
08:00	38114	24233	62347
08:15	36949	23557	60506
08:30	34888	21793	56681
08:45	32460	19507	51967

15. The data shows that the morning peak hour for Greater Manchester and Cheshire East combined occurs between 0800 and 0900, with 62,347 vehicles. The counts from both counties considered individually also show the morning peak hour to be 0800 to 0900.
16. Table 4 below shows hourly vehicle flows commencing at fifteen minute intervals for the evening peak period, 1600-1800, for Cheshire East, for Greater Manchester and for both counties combined. Again, the data presented is for all vehicles.

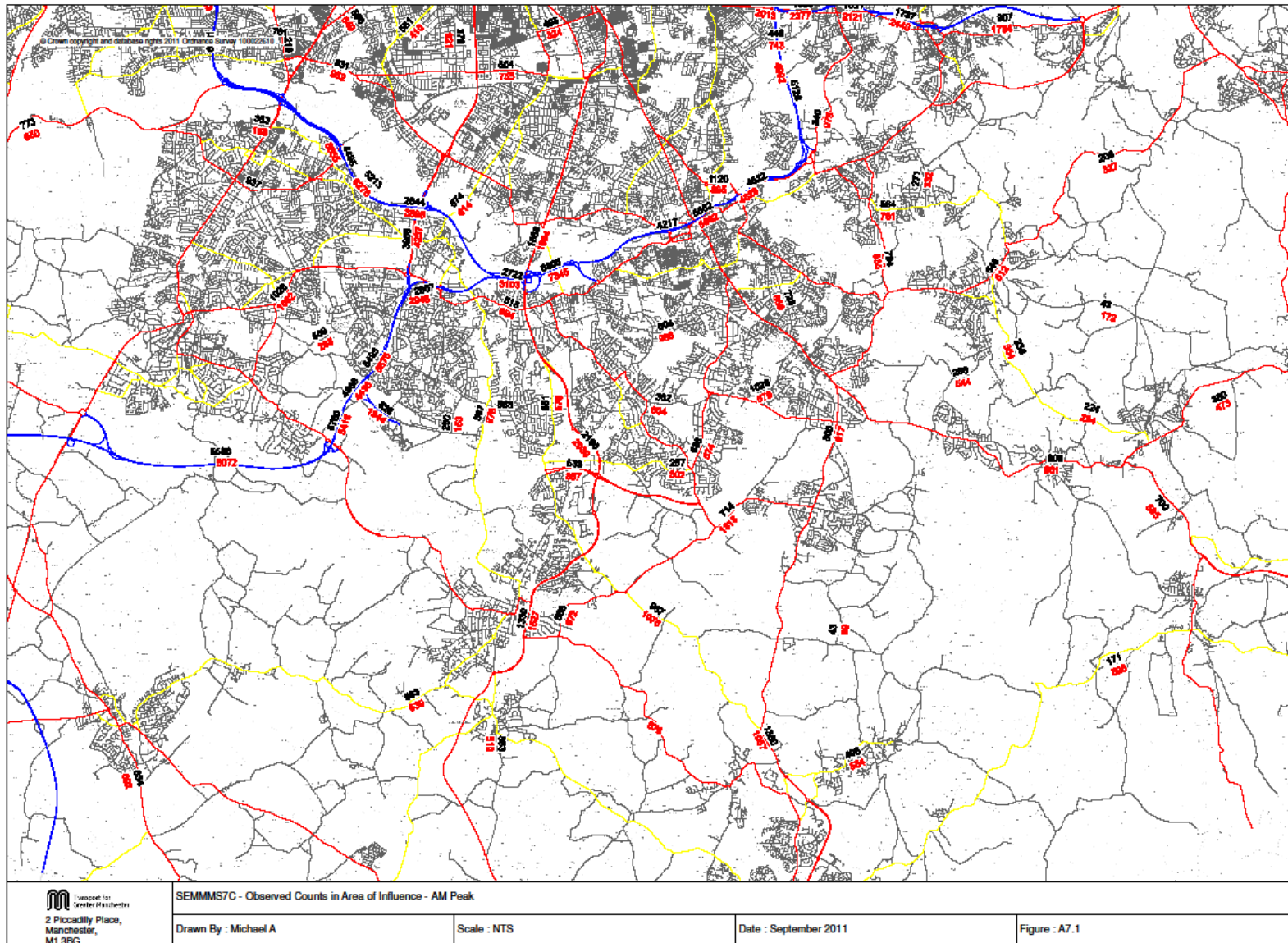
Table 4: All Vehicles – PM Peak Hour Commencing at Fifteen Minute Intervals			
Hour Commencing	GM	Cheshire East	GM & Cheshire East Combined
16:00	31388	20802	52190
16:15	32238	21276	53514
16:30	32728	21761	54489
16:45	32748	21929	54677
17:00	32446	21976	54422
17:15	31550	21481	53031
17:30	30003	20386	50389
17:45	27914	18876	46790

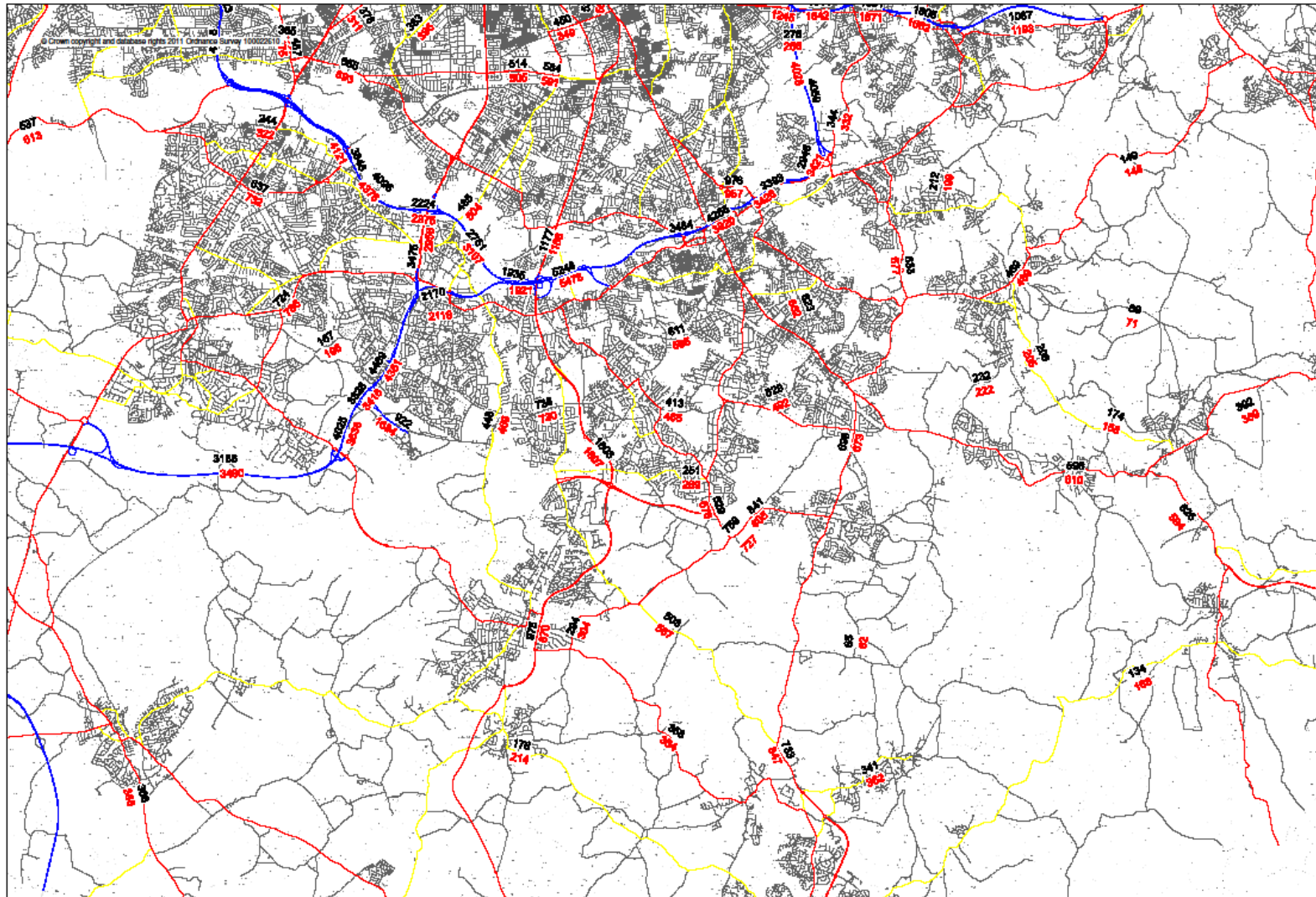
17. The data shows that the hours commencing 1630, 1645 and 1700 have very similar totals across all counts, flows being between 54,400 and 54,700 per hour. The highest hour by a small margin is between 1645 and 1745 with 54,677 vehicles. However, this differs by only 255 vehicles, or less than 0.5 percent, from the total flow of 54,422 recorded between 1700 and 1800.
18. Table 4 shows that counts within Greater Manchester also suggest a peak hour starting at 1645. However, for Cheshire East, the table shows that the observed hourly flow is highest between 1700 and 1800.

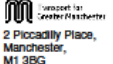
Choice of the Peak Hours

19. The peak hours in use currently within the GM SATURN model, on which the SEMMMS7 traffic model will be based, are 0800-0900 and 1700-1800 respectively for the morning and evening peak hours.
20. The analysis undertaken confirms that the morning peak hour of 0800 to 0900 is supported by count data.
21. The choice of the evening peak hour is slightly less clear-cut. However, there is little to choose between the hour commencing 1645 and the hour commencing 1700. Given that use of the hour commencing 1700 maintains consistency with the wider GM SATURN model and that using an hour beginning 1645 might create difficulties in use of count data not collected in 15-minute intervals, we recommend that the hour commencing 1700 be adopted as the evening peak hour.

Appendix 7: Observed Traffic Flows Used in SEMMMS7C





 <p> <small>Transport for Greater Manchester</small> 2 Piccadilly Place, Manchester, M1 3BG </p>	<p>SEMMMS7C - Observed Counts in Area of Influence - Inter Peak</p> <p>Drawn By : Michael A</p>	<p>Scale : NTS</p>	<p>Date : September 2011</p>	<p>Figure : A7.2</p>
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