ATKINS

Salisbury Transport Models

PD 2.2 Highway Local Model Validation Report

25th September 2009

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1. Introduction

Background

1.1 Wiltshire Council commissioned Atkins to develop Transport Models for Salisbury in September 2008. The commission was a response to a need to test the impact of significant proposed development in the Salisbury area.

1.2 This Highway Local Model Validation Report forms deliverable 2.2 of the commission and it describes the development and validation of the Salisbury Transport Model's Highway Transport Model (SHM). The purpose of this model is to demonstrate a robust level of highway demand, and an ability for this demand to match observed flow and journey times on modelled links in Salisbury and to provide travel times (costs) to the Salisbury Demand Model to enable accurate representative of variable demand in Salisbury.

Context

Planning

1.3 The Secretary of State's modifications to the South West Spatial Strategy shows that Salisbury City is required to accommodate a 8,700 new dwellings and provide 13,500 new employment opportunities by 2026. A range of potential sites have been identified. The strategy identifies sites in and around Salisbury, including potentially major changes in land use through the redevelopment of Churchfields and new developments to the north-west and south of the City.

1.4 As such, the Salisbury Transport Model must be able to:

- identify the impact on the transport network of locating development in each of the strategic residential and employment sites;
- identify the potential for maximising the use of public transport, walking and cycling for movements to from and within sites;
- identify the potentially significant switches in travel patterns arising from major changes in employment type and location;
- assess the potential impact on movements to/from Salisbury arising from the location of development outside Salisbury and Wilton; and
- support the Wiltshire Council through the Local Development Framework (LDF) process and any subsequent statutory processes.

Modelling Approach

1.5 Our response to these needs is to develop a fully up-to-date and appropriately validated area-wide traffic model of the Salisbury and Wilton area, supported by a demand model that is capable of representing the effect of mode switching and re-distribution of travel patterns as land uses change (macro modelling) and a detailed micro-simulation model of specific areas to view the impact of changes to land use and transport provision in more detail (micro modelling).

1.6 The "macro-level" multi-modal model of Salisbury that represents movements to the city from its rural hinterland; through traffic, particularly that using the A36; and public transport movements including rail and park-and-ride.

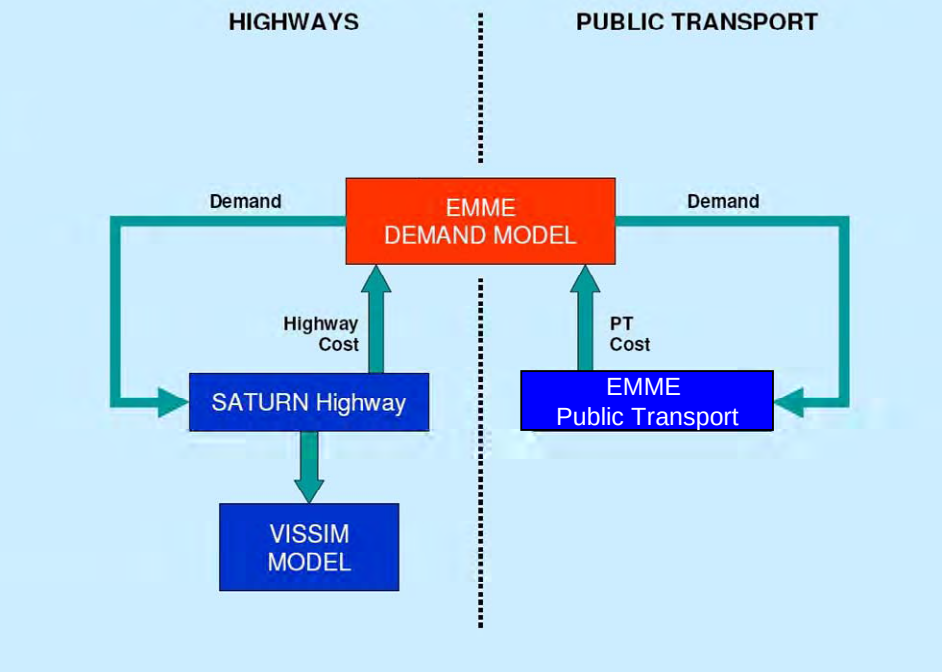
1.7 This model will be able to represent the impact of land use changes on travel demands and network performance – specifically being able to asses the impact of different development locations, scales of development and type of development including the impact of sustainable development principles. The model must also assess the impact of different trip distribution patterns arising from in-commuting from the City's hinterland.

1.8 Our approach to this “macro-level” model, collectively referred to as the Salisbury Transport Model (STM) is developed using:

- an EMME demand model representing modal switching and redistribution effects and is referred to as the Salisbury Demand Model (SDM);
- a SATURN to represent the highway network and highway travel demands, referred to as the Salisbury Highway Model (SHM); and
- an EMME model representing the public transport network with individual bus, rail and park and ride services coded and is referred to as the Salisbury Public Transport Model (SPTM).

1.9 Figure 1.1 displays the linkages between the modelling framework.

Figure 1.1 - Modelling Components and Linkages



Highway Model

1.10 The Salisbury Highway Model (SHM) model is a key element of the model framework. It is an integral part of the demand model as it undertakes the highway assignment that in turn provides highway costs to the demand model, which ultimately determines the highway and public transport demand. The highway model can also stand alone and be used to test small schemes that would be unlikely to change demand. This commission includes the development of a three time period, weekday model and Saturday model representing an average hour between 11:00 and 14:00 hours. This report focuses upon the weekday model.

Weekday Model

1.11 Three separate weekday models will model the following time periods:

- The morning peak hour (08:00-09:00),
- An average interpeak hour (between 10:00-1600), and
- The evening peak hour (17:00-1800)

1.12 The peak period models development is intended to capture the network at the times of the day where the greatest level of traffic and hence congestion is present, i.e. the network is under its greatest strain. The inter-peak period model is intended to capture the ‘typical’ conditions of the network under average traffic levels during the off peak period.

Saturday Model

1.13 The commission includes the development of a Saturday Model, which would focus on the period between 11:00 and 14:00 on a Saturday. This is to reflect the busy service centre and tourist destination that Salisbury is.

1.14 The Saturday demand model would not have time period choice but would cover the other modelling elements and be capable of determining the impact of changes to transport network and parking supply on a Saturday peak. The Saturday model would also be origin/destination based rather than production/attraction based.

1.15 The Saturday highway model is based upon the same network as the weekday model and contains demand based heavily upon the weekday inter-peak model. Details of the development of the Saturday Model can be found in Appendix F.

Scope of Report

The development of a macro highway model suitable for above planning considerations & modelling approach is described in the following chapters:

- Chapter 2 describes the specification of the model in terms, of scope and coverage, segmentation and time periods,
- Chapter 3 describes the data collected to support the development of the highway model,
- Chapter 4 describes the development of a suitable network,
- Chapter 5 describes the building of suitable demand matrices,
- Chapters 6 & 7 describes the calibration & subsequent validation to independent data of the model assignment to observed network conditions and values,

2. Model Specification

Introduction

2.1 The aim of this chapter is to describe the specification of the Salisbury Highways Model (SHM) ahead of more detailed description in subsequent chapters. In describing the SHM, it is necessary to describe how the model contributes to the Salisbury Transport Model framework and specifically the Salisbury Demand Model (SDM) and the Salisbury Public Transport Model (SPTM). This chapter specifies the:

- spatial detail;
- temporal scope;
- nature of highway demand; and
- nature of public transport demand.

Spatial Detail

Zones

2.2 In the first instance the existing zone system from the 2001 version of the SHM were adjusted to TEMPRO (Trip End Model Presentation PROgramme) boundaries. This stage is necessary for forecasting future year trip rates from the National Trip End Model data extracted from TEMPRO (Figure 2.1and Figure 2.2).

2.3 Following the review of TEMPRO boundaries each existing zone was considered for current land use and likely public transport (PT) catchments. As an example a supermarket site is expected to have different trip patterns to a residential area. If combined within an existing zone, different land uses were divided into two separate zones (Figure 2.3).

2.4 The zoning in areas also being modelled in micro-simulation was carefully considered for the loading of trips to the network. Trips within the micro-simulation model are loaded at the location of zone to network connectors in the SATURN network. To accommodate this, zones must be of a suitable size that connections to the network give an accurate representation of trips in the micro-simulation model. As a general principle smaller zones are required in such cases (Figure 2.4).

Sector System

2.5 It is often easier to visualise the trip matrix in a condensed form. For the Salisbury Transport Model the following sectoring system is used (and is shown in Figure 2.5):

- Salisbury City Centre;
- Salisbury urban area;
- Salisbury District Council;
- Wiltshire; and
- Rest of Britain.

2.6 The names, number and sector of each zone is listed in Appendix A.

Figure 2.1 – National Zoning System

Figure 2.2 – Zoning System Within Wiltshire

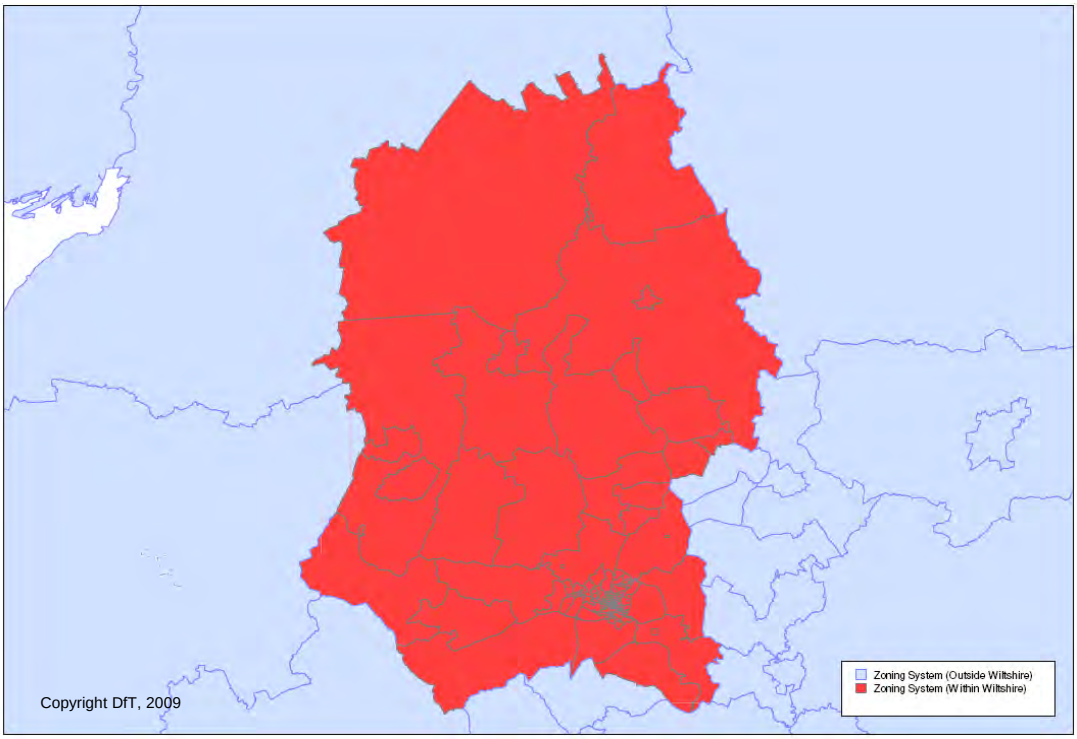


Figure 2.3 – Zoning System Within Salisbury District

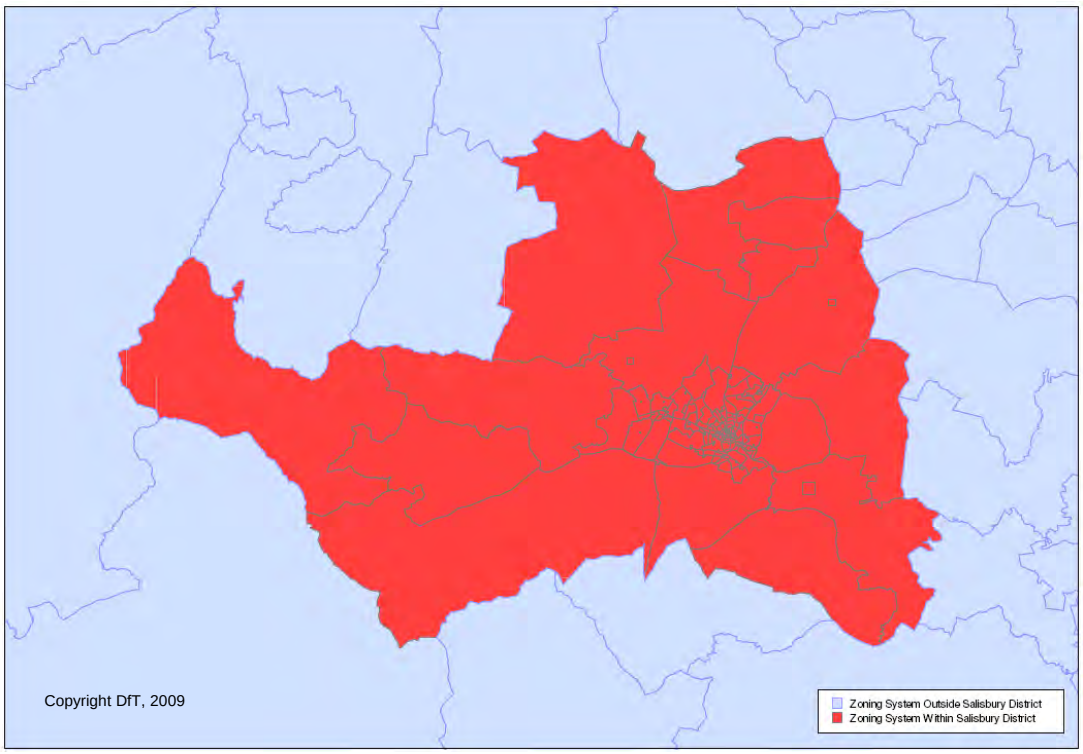


Figure 2.4 – Zoning System Within Salisbury City Centre

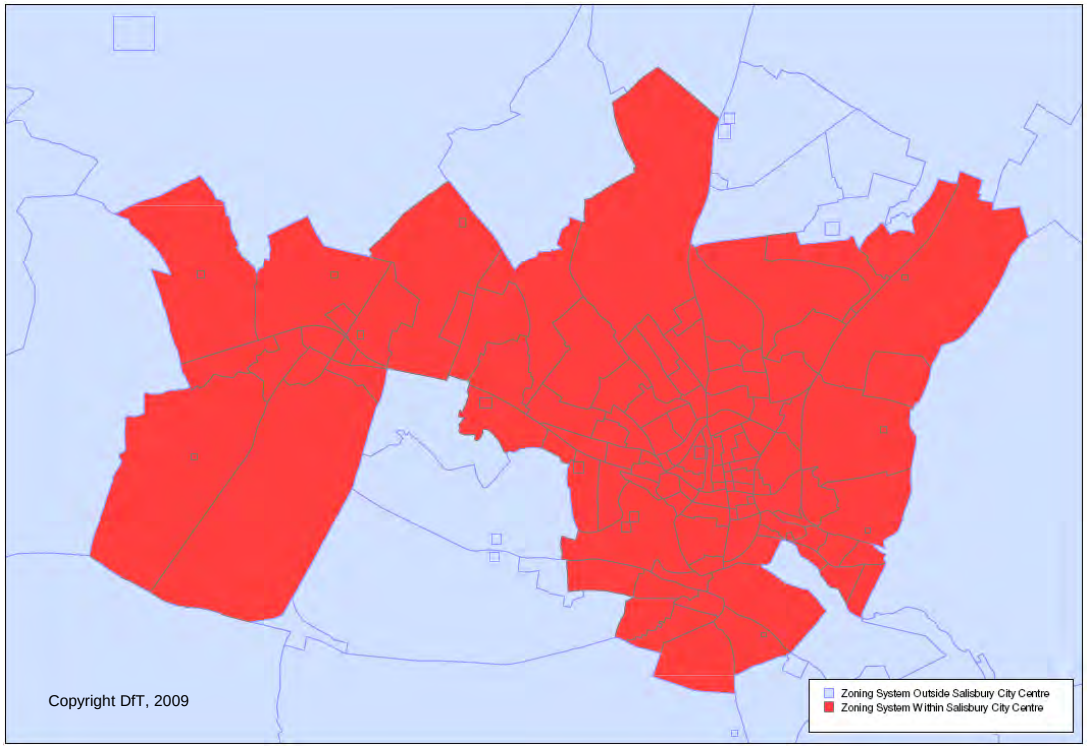
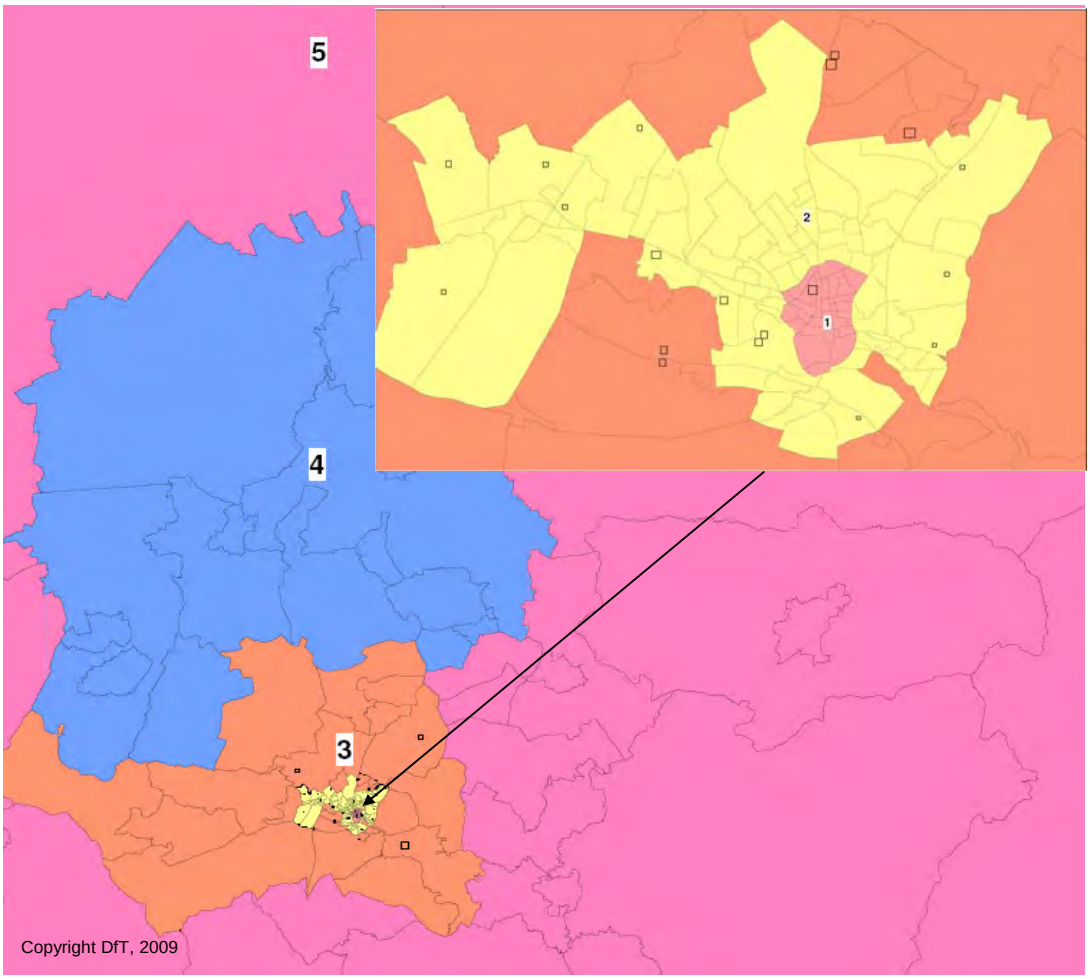


Figure 2.5 – Sector System



Network

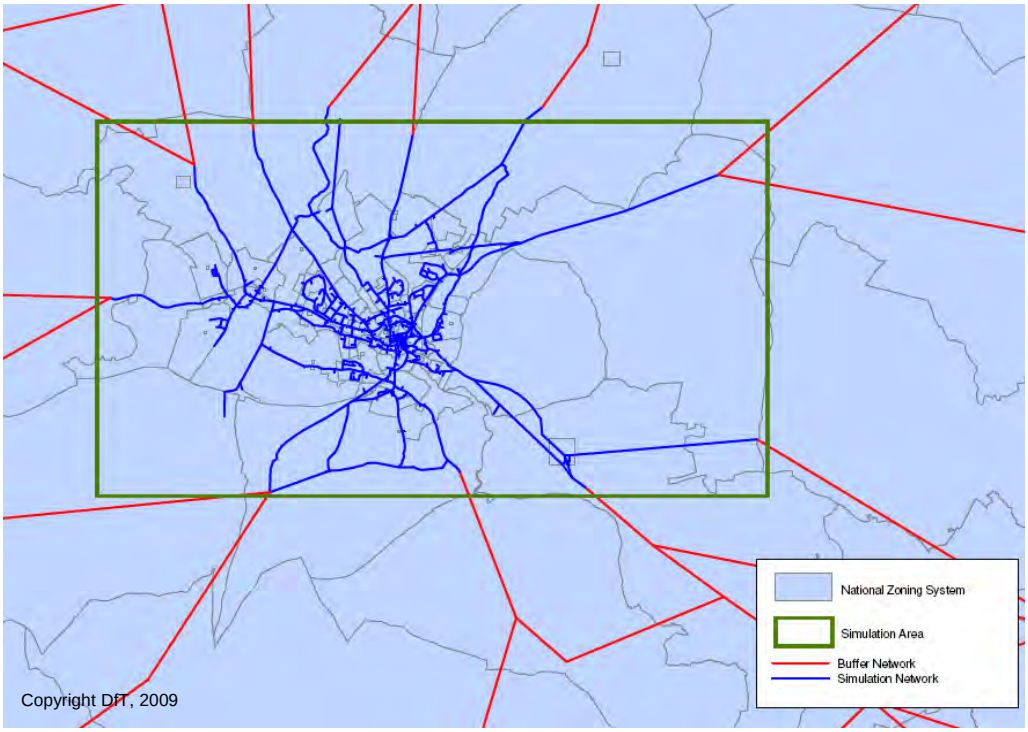
2.7 The SHM will be a representation of the highway network in and around Salisbury. The density of network detail must be consummate with the zoning system described above. The detailed highway network, with full junction detail and relatively small zones is referred to in SATURN as the simulation area whilst the remainder of the network is much more sparsely represented and referred to in SATURN as buffer network. The buffer network and simulation area are shown in Figure 2.6 – Buffer Network and Figure 2.7 respectively.

2.8 In SATURN it is not necessary to include all roads within Salisbury, merely the main arterial and distributor roads. Local access roads tend to be combined and are represented by the centroid connector, although local access roads that are also bus routes will be included in the model.

2.9 SATURN is a node based model and is able to represent junction characteristics in considerable detail. The accurate representation of junctions is a key feature of the network inventory. The network specification includes the type of junction, the capacity and turning possibilities of each lane and details specific to the junction type (i.e. signal timings for signalised junctions).

Figure 2.6 – Buffer Network

Figure 2.7 – Simulation Area



Temporal

2.10 The scope of the Salisbury Transport Model framework will be a 24 hour period of an average weekday. Within the full model framework four time periods are specifically modelled, namely;

- Morning peak period from 07:00 to 10:00;
- Inter-peak period from 10:00 to 16:00; and
- Evening peak period from 16:00 to 19:00.

2.11 The SDM will operate as a 24 hour model, explicitly using the costs from these time period models as input. This is to facilitate the use of production-attraction modelling format, as discussed below.

2.12 It is necessary to have an off-peak period to form a 24hr day but there is no need for an off-peak assignment model. The base off-peak demands and costs, with sensible reasons being mostly with free-flow traffic conditions, will be referred from the base inter-peak demands and costs with approximation.

2.13 The SHM covers the key three time periods during the day through assignment of a single hour in each of the three peaks:

- Morning peak (AM) assignment peak hour of 08:00 to 09:00;
- Inter-peak (IP) assignment covering an average hour between 10:00 to 16:00; and
- Evening peak (PM) assignment peak hour of 17:00 to18:00.

2.14 For the SHM to adequately represent network performance in congested urban conditions it needs information on the amount of traffic queuing in the network at the start of the modelled hour. The PASSQ option in SATURN enables this feature and requires information about queuing from the previous hour. The PASSQ option is only used for the morning peak and evening peak models and is based on factoring the prior matrix as follows to represent the previous model hour (07:00-08:00) and (16:00-17:00) respectively.

Vehicles and Trip Purposes

Within the Demand Model

2.15 TAG Unit 3.12.2 (para. 2.1.1. et al) provides guidance on the segmentation required for the modelling of road pricing. Salisbury travel demands were segmented by car availability and journey purpose as described below. The structure of the demand model considers segmentation of demand by person type, income (effectively ignored in the SDM) and journey purpose:

- By person type
  - car available (CA); and
  - non-car available (NCA)
- By household income
  - Income Low (IL): less than £17,500;
  - Income Medium (IM): £17,500 to £35,000, and
  - Income High (IH): greater than £35,000.
- By journey purpose
  - home based work (HBW);
  - home based other (HBO);
  - non-home based other (NHBO);
  - home based employer's business (HBEB); and

- non-home based employer's business (NHBEB).

2.16 Note the distinction made between home-based and non-home based purposes – this is required for adoption of PA-based modelling.

2.17 As noted above, the SDM segmentation was undertaken in a more aggregated form than that adopted for the demand models to significantly reduce the model runtimes. Following discussions with DfT and its advisors, Salisbury aggregates the five demand purposes into two supply-side purposes namely:

- Non Work (HBW+ HBO+NHBO); and
- Work (HBEB+NHBEB).

2.18 Apart from cars, there are two further assignment segments for lights (LGV) and heavies (HGV). Altogether, there are six highway demand segments assigned in the SATURN model in the Salisbury:

- Car Non Work IL,
- Car Non Work IM,
- Car Non Work IH,
- Car Work,
- LGV; and
- HGV.

2.19 Note that the Salisbury Model deliberately does model the impact of household income, there are, in effect, only two journey purposes: work and non-work.

Highway Validation

2.20 The base year validation model has assumed the following journey purposes during matrix construction and development and they each represent the different values of time of the main demand model purposes (shown in brackets):

- car – work (HBEB+NHBEB);
- car – commuting (HBW);
- car – other purposes (HBO+NHBO);
- LGV; and
- HGV.

Public Transport

2.21 Bus services have been hard coded in the SHM to represent the road space occupied by public service vehicles in Salisbury. . The addition of buses to the network ensures that SHM has the most accurate representation of highway conditions possible and is consistent with the SPTM.

2.22 All buses serving Salisbury have been included in the highway network including school specific services. However, public transport demand is not included in the SHM but is included in the SPTM.

2.23 Detailed of the bus services added can be found in Appendix B.

3. Data Collection

Introduction

3.1 Model development involves an extensive data collection and gathering exercise and processing. The aim of this chapter is to describe the data collected for this study for the development of the Salisbury Highway Model (SHM) and the processing of the data.

3.2 The *Data Collection Report*[1] contains the further details of the processed data used in this model development; this chapter should be considered a summary of that report.

Road Side Interviews

Purpose

3.3 Road side interviews (RSI) were conducted to comprehensively record a sample of origin/destination patterns for movements within the modelled study area. Data captured during this exercise was used to create the majority of traffic movements within the new matrix of highway movements.

Data Collected

3.4 In total nine separate RSI sites were identified to capture trip samples, a list of these is given in Table 3.1. The location of the sites is shown in Figure 3.1.

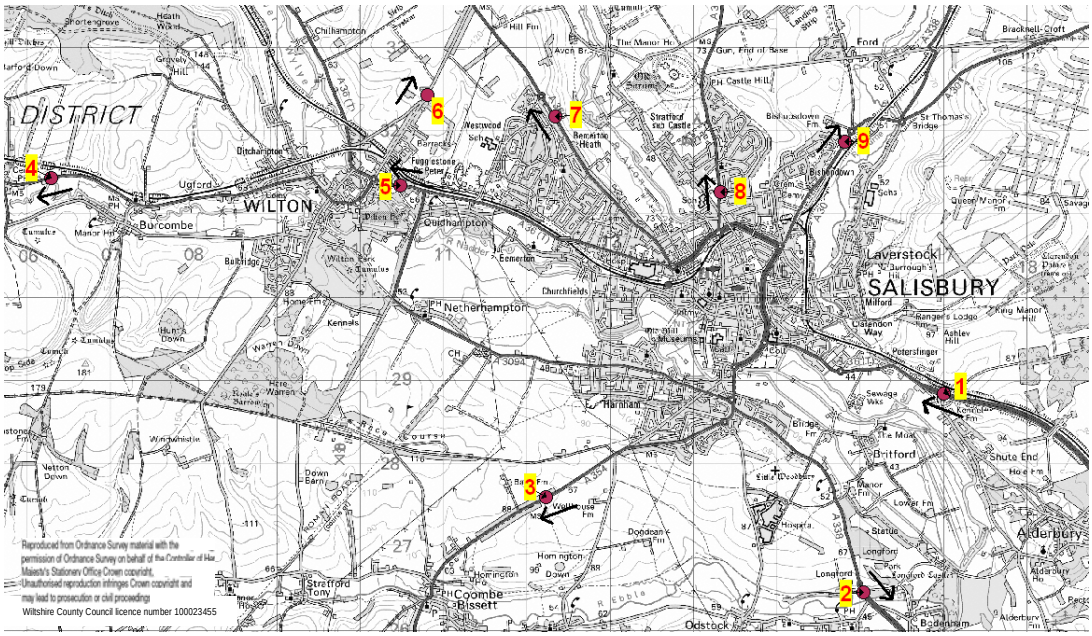
3.5 The interviews formed a near-complete cordon around Salisbury urban area and included a further two interviews to cover movements around Wilton.

Table 3.1 – Road Side Interview Sites

Site No	Date	Road No	Road Name	Interview Direction
1	21/10/2008	A36	Southampton Road	WB
2	21/10/2008	A338	The Highway	SB
3	22/10/2008	A345	Salisbury Road	SB
4	22/10/2008	A30	Wilton Road	SB
5	05/11/2008	A36	Salisbury Road	EB
6	05/11/2008	Uncl	The Avenue	EB
7	06/11/2008	A329	Devises Road	WB
8	23/10/2008	A345	Castle Road	WB
9	22/10/2008	A30	London Road	SB

[1] Akins, 2009, Salisbury Transport Models – Data Collection Report.

Figure 3.1 – Location of Road Side Interviews



Processing Procedures

3.6 The data was processed into six separate journey purposes for car trips listed below:

- Home Based Work (HBW),
- Home Based Other (HBO),
- Home Based Education (HBED),
- Home Based Employers Business (HBEB),
- Non Home Based Employers Business (NHBEB), and
- Non Home Based Other (NHBO).

3.7 The data was expanded to match manual classified counts taken on the day of the survey and then factored to the average value from automatic traffic counts taken over a two-week period surrounding the survey to remove survey day bias.

3.8 The road side interview (RSI) data achieved sample rates ranging from 7.6% on the A36 Salisbury Road to 26.2% on the A30 Wilton Road. The daily average across all sites was 15%, as shown in Table 3.3 HGV samples were lower, around 10% as illustrated by Table 3.3.

Table 3.2 - – 12 hour Sample Rates

Location	Road No	Road Name	Interviews	MCC Total	Sample Rate
Site 1	A36	Southampton Road	1317	7799	16.8%
Site 2	A338	The Highway	1088	5653	19.2%
Site 3	A345	Salisbury Road	680	3037	22.3%
Site 4	A30	Wilton Road	818	3111	26.2%
Site 5	A36	Salisbury Road	767	10005	7.6%
Site 6	Uncl	The Avenue	506	2984	16.9%
Site 7	A329	Devises Road	601	2729	22%
Site 8	A345	Castle Road	652	7754	8.4%
Site 9	A30	London Road	848	6497	13%
Total			**7277**	**49569**	**14.6%**

Table 3.3 – HGV Sample Rates

Time Period	Interviews	MCC Total	Sample Rate
AM	60	279	22%
IP	83	1813	5%
PM	10	135	7%
Total	**153**	**2227**	**7%**

3.9 LGV & HGV trips were all classified as HBEB. The samples and proportions of all vehicle trips recorded during the RSI survey are given in Table 3.4

Table 3.4 – RSI Trips by Purpose[2]

Time Period	Car-Work	Car-Commuting	Car-Education	Car-Other purposes	LGV	HGV	Total
AM	266	810	87	471	229	79	1942
IP	610	390	110	2406	391	126	4033
PM	228	777	76	914	137	29	2161
Total	1104	1977	273	3791	757	234	8136

[2] The total number of trips – 8136 is higher than the total given in Table 3.2 due to some trips being transferred from LGV to HGV and trips from sites 4 & 6 being added to site 5. This is explained in greater detail within section 5.

Car Park Survey

Purpose

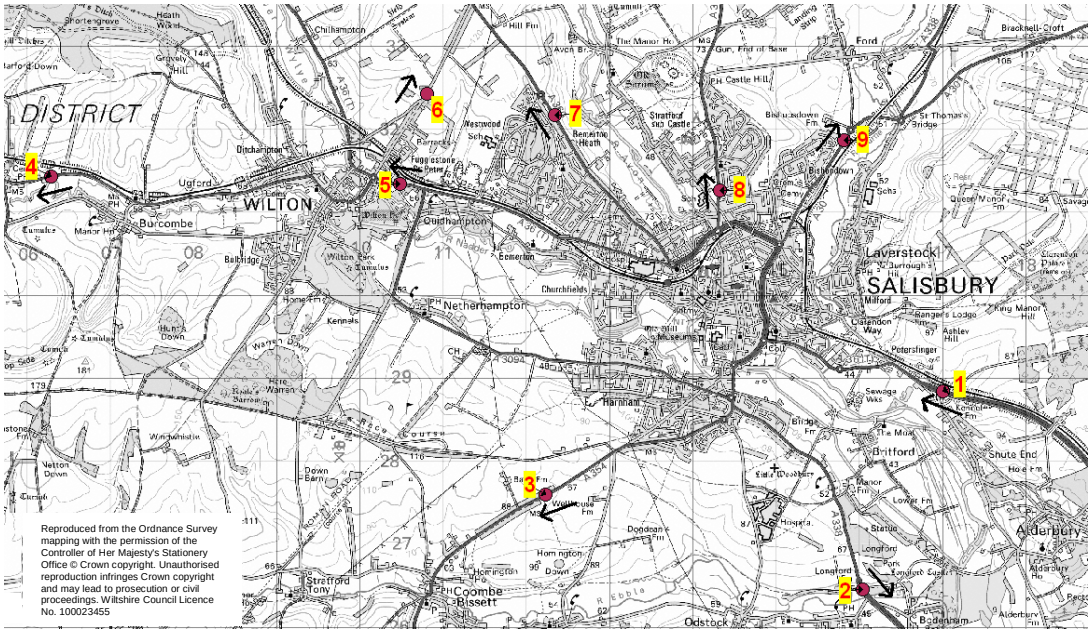
3.10 The car park survey, similar in design to the RSI, was designed to capture the trip patterns of a specific location with a high volume of trips in this case the largest car park in Salisbury at the Maltings / Central Car Park location. The aim of this survey was to supplement the data from the nine RSI sites by capturing movements from within the RSI cordon to the city centre.

Data Collected

3.11 Survey data is collected or 'sampled' using a similar interview technique as the RSI data. Data was collected for a weekday (21/11/2008) and weekend (22/11/2008)

3.12 The survey form requested data for a truncated number of journey purposes (commuting, business, leisure, tourism, school/college, shopping) that would match the main validated purposes and provide information for Wiltshire Council regarding the break down of leisure trips.

Figure 3.2 – Location of Car Park Survey



Processing Procedures

3.13 The data was processed into six separate journey purposes for car trips listed below:

- work (business);
- commuting (work); and
- other purposes (leisure, tourism, school/college, shopping).

3.14 The data was expanded to survey day ticket sales taken on the day of the survey and then factored to the average value from daily ticket sales and season tickets during October 2008 to remove survey day bias and include season ticket holders.

3.15 The car park interviews were undertaken on a Friday (21/11/2008) and Saturday (22/11/2008) morning only. Sample rates against ticket sales data are shown in Table 3.5. Overall sample rates recorded across the two days are shown to be comparable to RSI rates at around 15%.

Table 3.5 – Car Park Sample Rates

Day	Interviews	Ticket Sales	Sample Rate
Friday	473	2416	20%
Saturday	454	3808	12%
Total	**927**	**6224**	**14.8%**

Traffic Counts

Purpose

3.16 Traffic counts are used to compare and adjust modelled demand in the SHM to real conditions. These counts enable ability of the model to match observed conditions to be judged and its suitability for future tests to be determined.

Data Collected

3.17 In total 16 automatic traffic counts (ATC) sites and a further 15 manual classified count (MCC) sites were surveyed specifically for the revised SHM. 13 additional ATC & and 15 MCC counts were obtained from WCC as well as three TRADS sites along the A36 maintained by the HA. Table 3.6 lists traffic counts, and displays the location of counts.

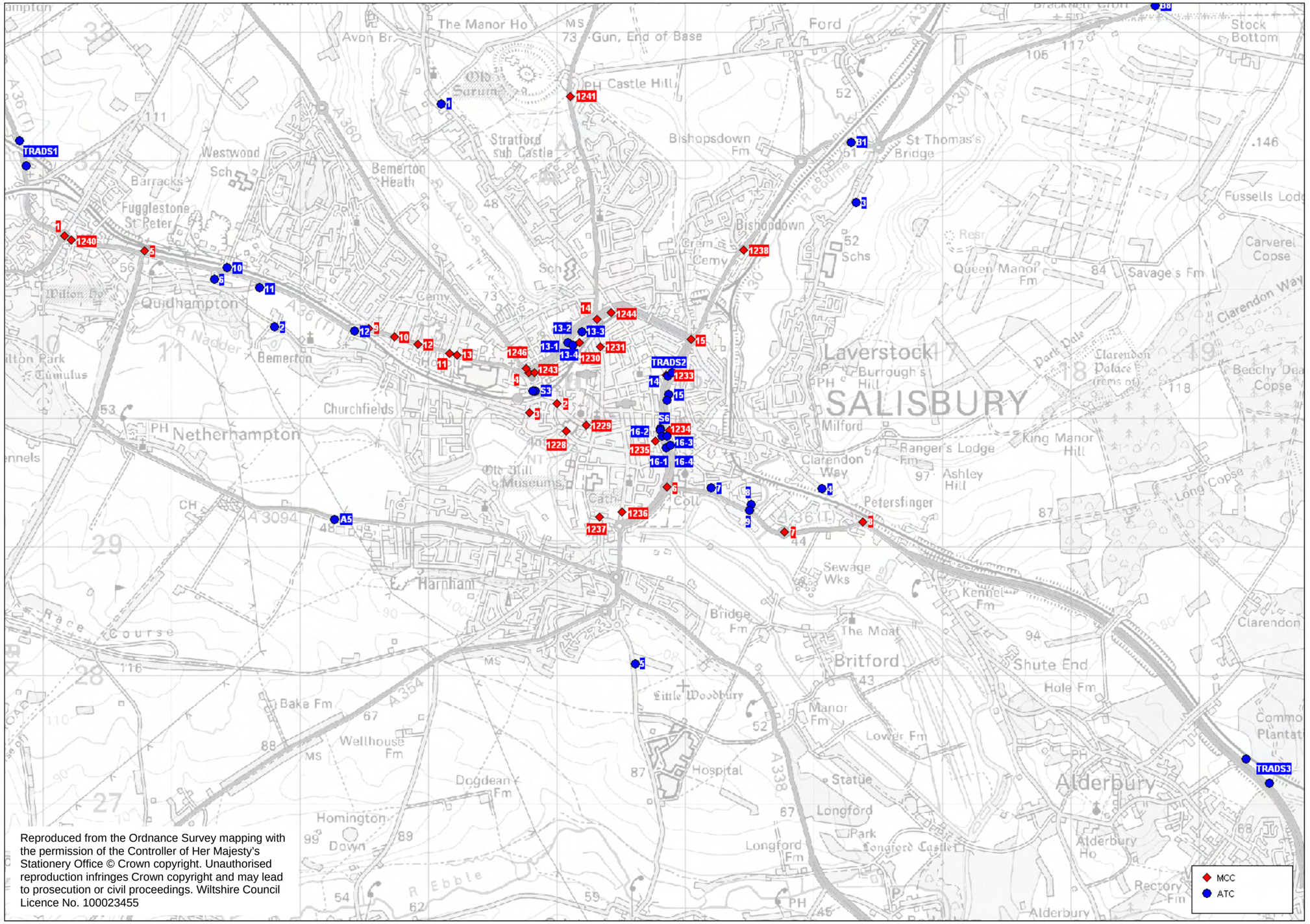
Table 3.6 – Traffic Counts

Reference	Location	Type	Date	Specified by	Source
ATC 1	Stratford Road	ATC	Nov-08	Atkins	Count on Us
ATC 2	Lower Road	ATC	Nov-08	Atkins	Count on Us
ATC 3	Church Road	ATC	Nov-08	Atkins	Count on Us
ATC 4	Petersfinger Road	ATC	Nov-08	Atkins	Count on Us
ATC 5	Odstock Road	ATC	Nov-08	Atkins	Count on Us
ATC 6	Foots Hill	ATC	Nov-08	HA	Count on Us
ATC 7	Tollgate Road	ATC	Nov-08	HA	Count on Us
ATC 8	Dolphin Industrial Estate Access from A36 Southampton Rd.	ATC	Nov-08	HA	Count on Us
ATC 9	Access to Matalan from A36 Southampton Road	ATC	Nov-08	HA	Count on Us
ATC 10	Wilton Road	ATC	Nov-08	HA	Count on Us
ATC 11	Skew Road	ATC	Nov-08	HA	Count on Us
ATC 12	Church Lane	ATC	Nov-08	HA	Count on Us
ATC 13-1	Churchill Way West Northbound Slip Roads	ATC	Nov-08	HA	Count on Us
ATC 13-2	Churchill Way West Northbound Slip Roads	ATC	Nov-08	HA	Count on Us
ATC 13-3	Churchill Way West Northbound Slip Roads	ATC	Nov-08	HA	Count on Us
ATC 13-4	Churchill Way West Northbound Slip Roads	ATC	Nov-08	HA	Count on Us
ATC 14	Bourne Hill	ATC	Nov-08	HA	Count on Us
ATC 15	Kelsey Road	ATC	Nov-08	HA	Count on Us
ATC 16-1	Churchill Way East, Northbound & Southbound Slip Roads	ATC	Nov-08	HA	Count on Us
ATC 16-2	Churchill Way East, Northbound & Southbound Slip Roads	ATC	Nov-08	HA	Count on Us
ATC 16-3	Churchill Way East, Northbound & Southbound Slip Roads	ATC	Nov-08	HA	Count on Us

Reference	Location	Type	Date	Specified by	Source
ATC 16-4	Churchill Way East, Northbound & Southbound Slip Roads	ATC	Nov-08	HA	Count on Us
MCC 1	A36 / A30 Roundabout	MCC	Nov-08	HA	Count on Us
MCC 2	Fisherton Street Bridge	MCC	Nov-08	Atkins	Count on Us
MCC 3	Churchfields Road / Mill Road	MCC	Nov-08	Atkins	Count on Us
MCC 4	St Paul's Roundabout	MCC	Nov-08	HA	Count on Us
MCC 5	A36 / Netherhampton Road	MCC	Nov-08	HA	Count on Us
MCC 6	Churchill Way / Southampton Road	MCC	Nov-08	HA	Count on Us
MCC 7	Bourne way / Southampton Road	MCC	Nov-08	Atkins	Count on Us
MCC 8	Peter's Finger Road / Southampton Road	MCC	Nov-08	Atkins	Count on Us
MCC 9	Wilton Road / Roman Road	MCC	Nov-08	HA	Count on Us
MCC 10	Australian Avenue / Wilton Road / Granshaw Avenue	MCC	Nov-08	Atkins	Count on Us
MCC 11	Highburn Avenue / Wilton Road / Longland	MCC	Nov-08	Atkins	Count on Us
MCC 12	Wilton Road / Cherry Orchards	MCC	Nov-08	HA	Count on Us
MCC 13	Wilton Road / Ashfield Road	MCC	Nov-08	HA	Count on Us
MCC 14	Castle Roundabout	MCC	Nov-08	Atkins	Count on Us
MCC 15	St Mark's Roundabout	MCC	Nov-08	Atkins	Count on Us
A1	A338 South of Downton	ATC	Jun-08	WCC	WCC
A2	A27 East of Whiteparish	ATC	Jun-08	WCC	WCC
A5	A3094 West Harnham	ATC	Jun-08	WCC	WCC
A9	B3080 East of Downton	ATC	Jun-08	WCC	WCC
A11	B3083 South of Berwick St James	ATC	Jun-08	WCC	WCC
B1	A30 St Thomas' Bridge	ATC	Jul-08	WCC	WCC
B2	A338 North of Winterbourne Gunner	ATC	Jul-08	WCC	WCC
B3	A345 South of Highpost	ATC	Jul-08	WCC	WCC
B4	A360 South of Druids Lodge	ATC	Jul-08	WCC	WCC
B7	A345 South of Netheravon	ATC	Jul-08	WCC	WCC
B8	A30 North East of Salisbury	ATC	Jul-08	WCC	WCC
S3	Fisherton Street	ATC	Jun-08	WCC	WCC
S6	Milford Street	ATC	Jun-08	WCC	WCC
TRADS 1	A36, Wilton	ATC	Oct-08	HA	HA
TRADS 2	A36, Churchill Way	ATC	Oct-08	HA	HA
TRADS 3	A36, Alderbury	ATC	Oct-08	HA	HA
1228	Cranebridge Road	MCC	Jun-08	WCC	WCC
1229	Fisherton Street	MCC	Jun-08	WCC	WCC
1230	Central Cark Park	MCC	Jun-08	WCC	WCC
1231	Castle Street	MCC	Jun-08	WCC	WCC
1233	Bourne Hill	MCC	Jun-07	WCC	WCC
1234	Milford Street	MCC	Jun-08	WCC	WCC

Reference	Location	Type	Date	Specified by	Source
1235	Culver Street	MCC	Jun-08	WCC	WCC
1236	Exeter Street	MCC	Jun-08	WCC	WCC
1237	The Close	MCC	Jun-07	WCC	WCC
1238	London Road	MCC	Mar-08	WCC	WCC
1240	Salisbury Road, Wilton	MCC	Nov-07	WCC	WCC
1241	Castle Road	MCC	Nov-07	WCC	WCC
1245	Queen Street Junction	MCC	Jul-07	WCC	WCC
1246	Devizes Road	MCC	Jul-07	WCC	WCC
1247	Catherine Street	MCC	Jul-07	WCC	WCC

Figure 3.3 – Traffic Count Locations



Processing Procedures

3.18 The traffic counts were processed to provide counts for the three modelled time periods. The processing involved converting vehicles in to passenger carrying units (PCU) that reflects the amount of road space occupied by each vehicle type. The following factors were used to convert vehicles to PCU:

- Car : 1.0
- LGV : 1.0
- HGV : 2.3

3.19 Note that the ATC counts were split into user class proportions ,car, lights and heavy vehicles based on RSI proportions per time period.

Journey Time Surveys

Purpose

3.20 The purpose of journey time surveys is to capture the time taken to travel along key routes in the study area. By specifying key time points (or using Global Positioning System data) it is possible to determine the location and extent of delay on the highway networks.

Data Collected

3.21 Five separate journey time routes were identified:

- Route 1- Netherhampton Road (A3094) to A338 / Old Malthouse Lane Junction, recorded on the 26th - 27th Nov. 2008
- Route 2- Southampton Road / Petersfinger Road Junction to Beehive P&R Roundabout, 25th - 26th Nov. 2008
- Route 3- Downton Road / Rowbarrow Junction, Salisbury to Queen Street / Kingsway, 25th - 26th Nov. 2008
- Route 4- A360 / The Avenue Road Junction to Old Malthouse Lane / A30 Junction 25th - 27th Nov. 2008, and
- Route 5- Southampton Road / Petersfinger Road Junction to Churchill Way East / Churchill Way North Roundabout 18th - 27th Nov. 2008.

3.22 The journey time routes are shown in Figure 3.5 to Figure 3.9.

Figure 3.4 – Journey Time Route 1

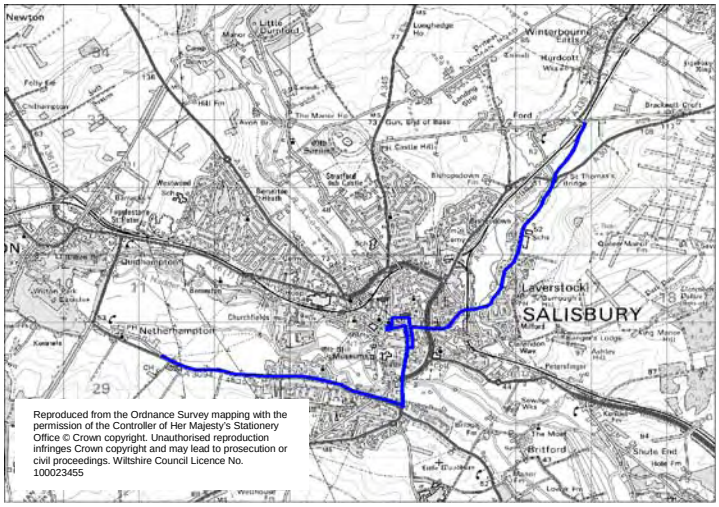


Figure 3.5 – Journey Time Route 2

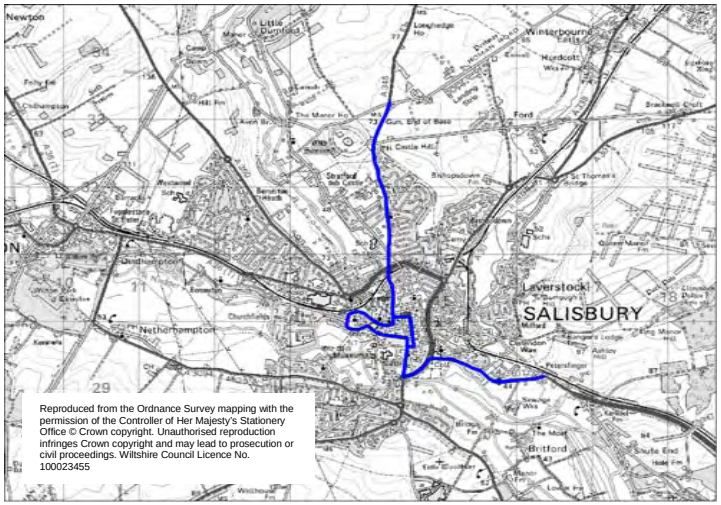


Figure 3.6 – Journey Time Route 3

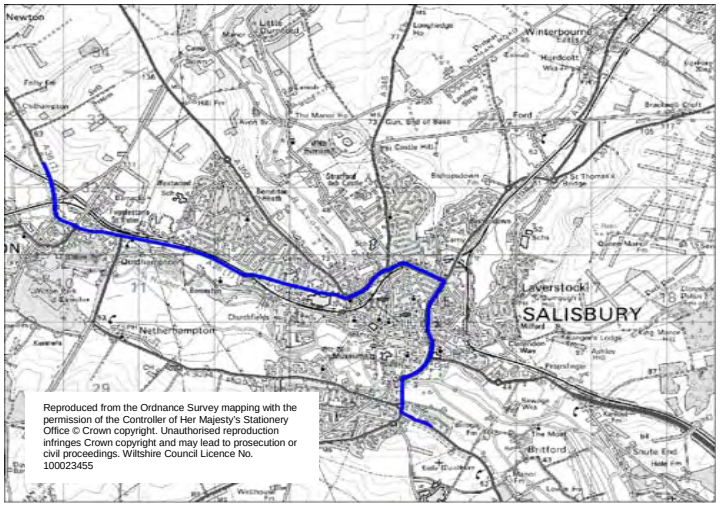


Figure 3.7 - Journey Time Route 4

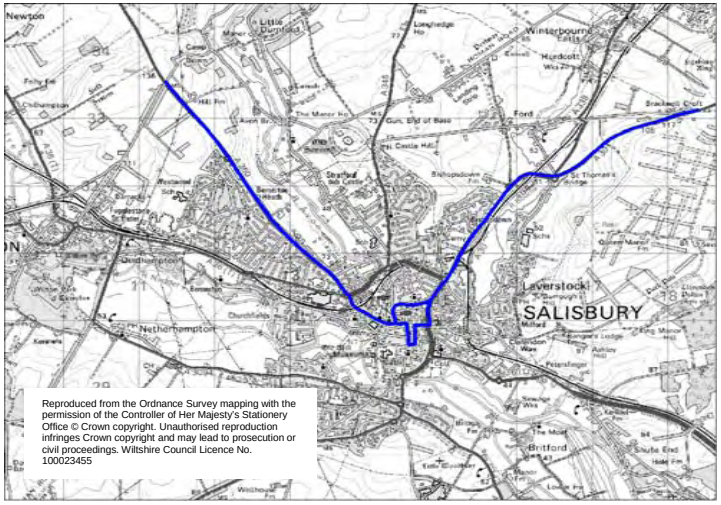
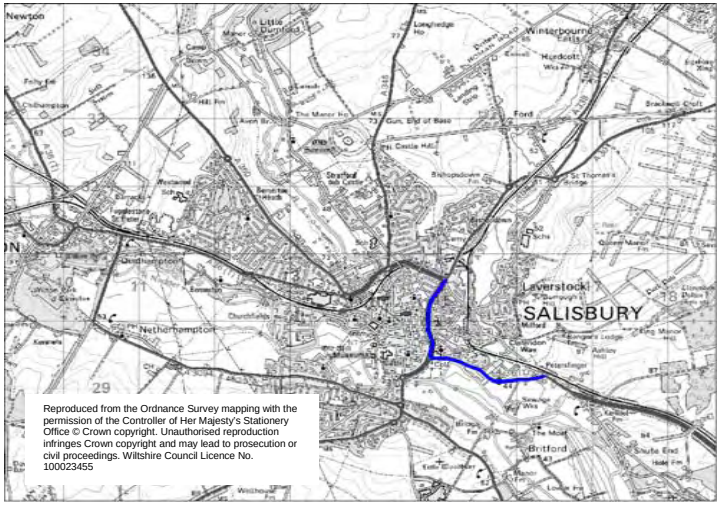


Figure 3.8 - Journey Time Route 5



Processing Procedures

3.23 Journey times were processed by time period rather than peak hour. This approach increases the number of journey time runs and overall accuracy of the journey times which is discussed in more detail within the *Data Collection Report*[3]**.** The journey times are processed to include confidence intervals that form the target boundaries for the validation.

Automatic Number Plate Recognition

Purpose

3.24 The purpose of the automatic number plate recognition (ANPR) surveys was to capture the route of movements for trips passing through the study area. Specifically this approach intended to capture the distribution of trips arriving into Salisbury along the A36 at Southampton Road to the east and at Wilton to west. The survey would provide evidence of the proportion of through trips passing via the A36, via Netherhampton (A3094) or the city centre (via deduction rather than direct observation). In addition the ANPR movements could be used to derive a number of additional link and turning counts throughout the study area.

Data Collected

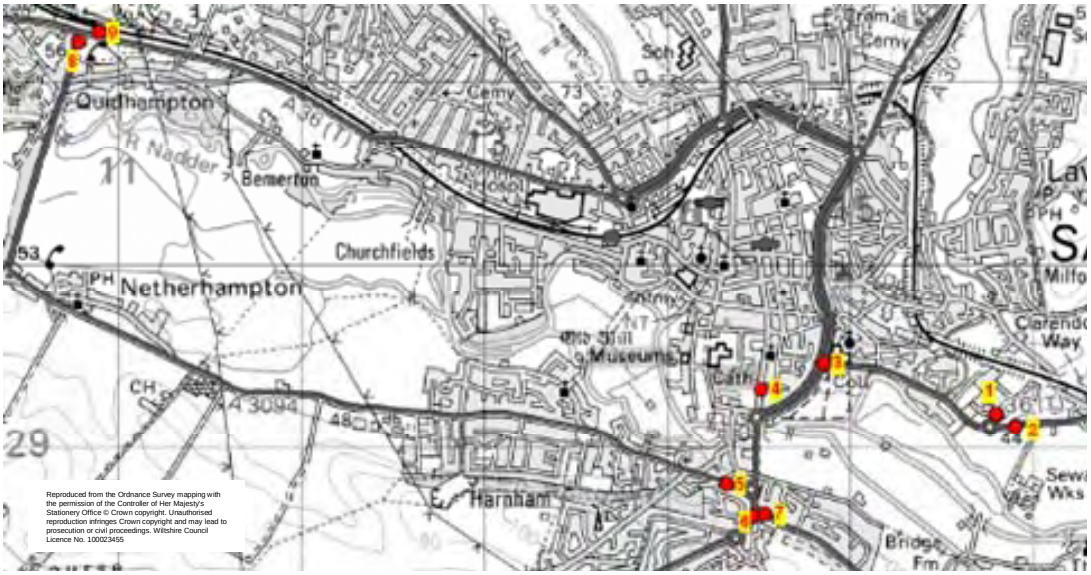
3.25 In total nine separate camera locations were identified. These are listed in Table 3.7 and shown in Figure 3.10.

Table 3.7 – ANPR Camera Locations

Camera Location	Location
1	Bourne Way
2	Southampton Road
3	Churchill Way East
4	Exeter Street
5	New Harnham Road
6	Coombe road
7	Downtown Road
8	Netherhampton Road
9	Wilton Road

[3] Akins, 2009, Salisbury Transport Models – Data Collection Report.

Figure 3.9 – Location of Automatic Number Plate Recognition Cameras

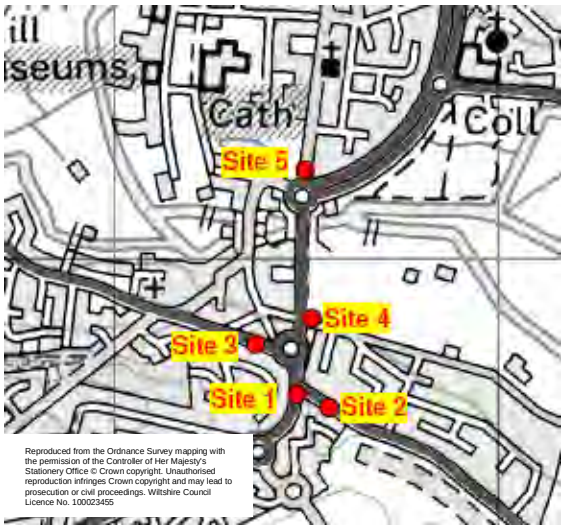


3.26 Despite ensuring that the survey was undertaken after half-term a few schools within Salisbury had taken an additional inset day. This meant the overall volume of traffic was lower than could be expected for a 'typical day'. To overcome this an additional set of five MCC surveys at Harnham Gyratory and Exeter Street were commissioned (Table 3.6 and Figure 3.11). These surveys were used to uplift the ANPR counts to a typical level of traffic flow that could be expected in Salisbury. This is discussed in greater detail within the *Data Collection Report* (Atkins, 2009).

Table 3.8 – Additional MCC Counts

Site	Description
Site 1	Coombe Road, Salisbury
Site 2	Downtown Road, Salisbury
Site 3	New Harnham Road, Salisbury
Site 4	New Bridge Road, Salisbury
Site 5	Exeter Street, Salisbury

Figure 3.10 – Additional MCC Count Locations



Processing Procedures

3.27 After the collection, the data was processed so as to capture only those vehicles that took 60 minutes or less to travel from one side of the ANPR cordon to the other end of the cordon. This was a generous time period that would potentially allow vehicles to make short stops en-route but would be sufficient to cater for any delays en-route and importantly enable the highest detection rates.

3.28 The ANPR data was first expanded to inbound totals at each of the nine locations and then expanded to the new MCC totals and processed into individual link and turn counts.

Traffic Signal Timings

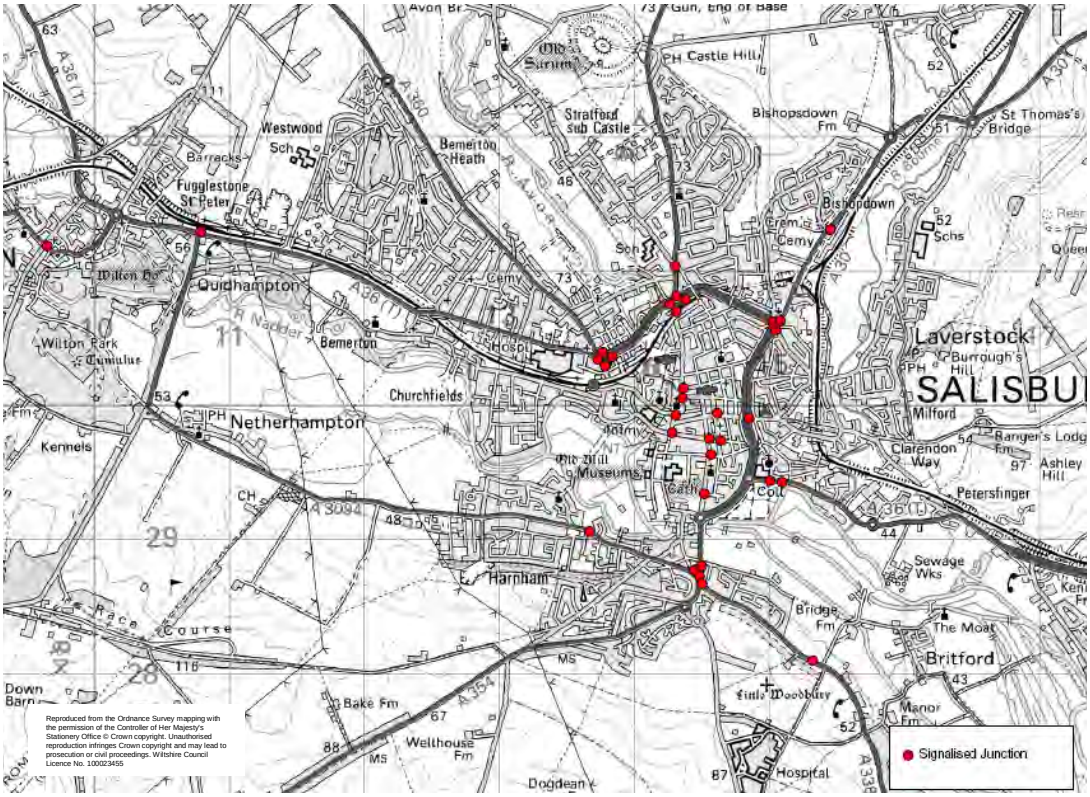
Purpose

3.29 Traffic signal times are added to the model to enable the accurate replication of capacity at junctions and to thus model patterns of delay and queues associated with traffic signals. It should be recognised that traffic signals are often set to encourage/discourage certain movements and may not be optimal is for this reason that observed data is used rather than allowing the SATURN program to optimise signal times in the model.

Data Collected

3.30 Traffic signals in Salisbury are operated at both fixed times, under SCOOT control (Split Cycle Offset Optimisation Technique) and pedestrian actuated i.e. pelican crossings. Fixed times and pedestrian signalised junction times were provided directly to Atkins. SCOOT junction data was collected from ASTRID (Automatic SCOOT Traffic Information Database). This data allowed average phase green times to be calculated and offsets between SCOOT junctions to be taken. Figure 3.11 displays the location of signalised junctions within the model study area.

Figure 3.11 – Location of Signalised Junctions



Processing Procedures

3.31 As described above, signal data for fixed time and pelican junctions was processed into green times and phases to be entered directly into the network file. SCOOT data was processed from ASTRID graphs displaying green time averages by phase. Where available, offsets between separate signal heads were coded directly into the SATURN network file.

Miscellaneous Travel Demand

Purpose

3.32 To support the development of robust matrices additional sources of trip information were collated and incorporated into the data collected during the RSI process. This is discussed in greater detail in Chapter 5.

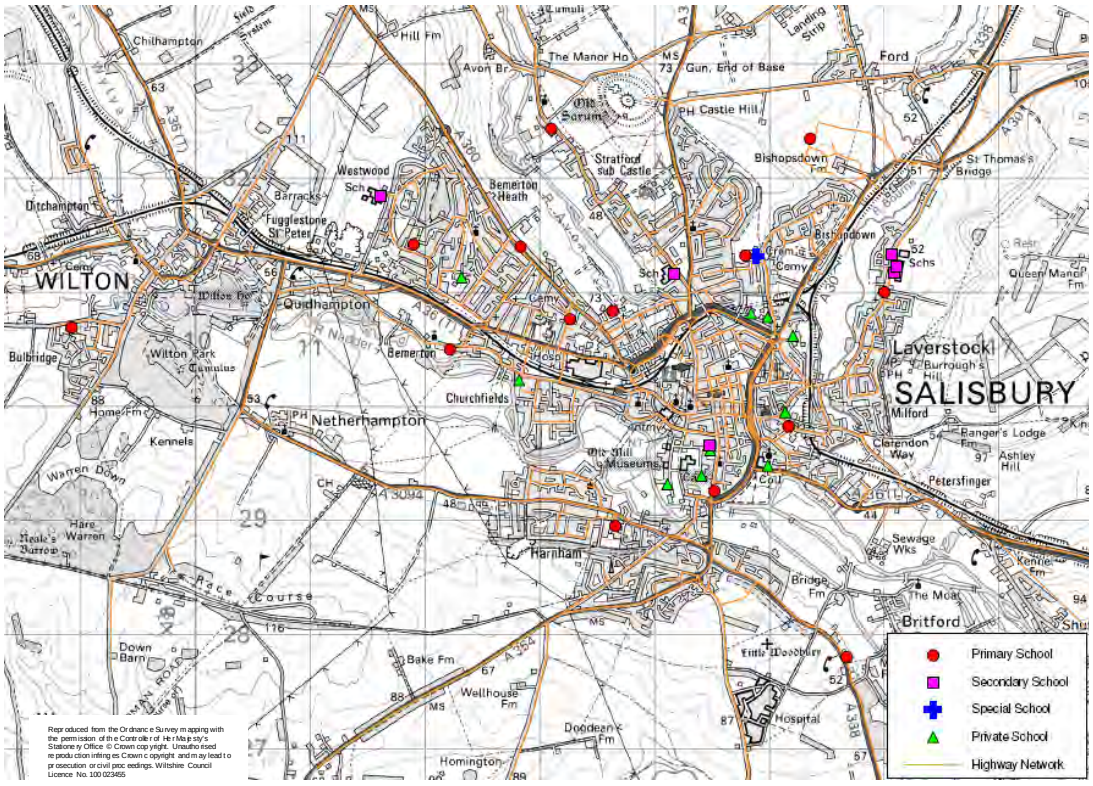
Data Collected

3.33 The following additional two sources of trip data were utilised:

- Journey to Work (JtW) database from the 2001 Census, and
- Journey to School (JtS) database provided by WCC taken from the annual school travel survey.

3.34 The JtS data included a home postcode, school postcode and mode of travel to school for each pupil. The location of schools within Salisbury is shown in Figure 3.12.

Figure 3.12 – Location of Schools in Salisbury



Processing Procedures

3.35 The JtW data was only used to supplement movements that were wholly within the cordon created by RSI sites. The data was processed into time periods and transposed for the journey home according to RSI samples for home-based-work trips.

Table 3.9 – Journey to Work (2001 Census)

Time Period	Home to Work	Work to Home	Total
Morning Peak	1332	70	1402
Inter-peak	86	191	277
Evening Peak	32	1115	1147

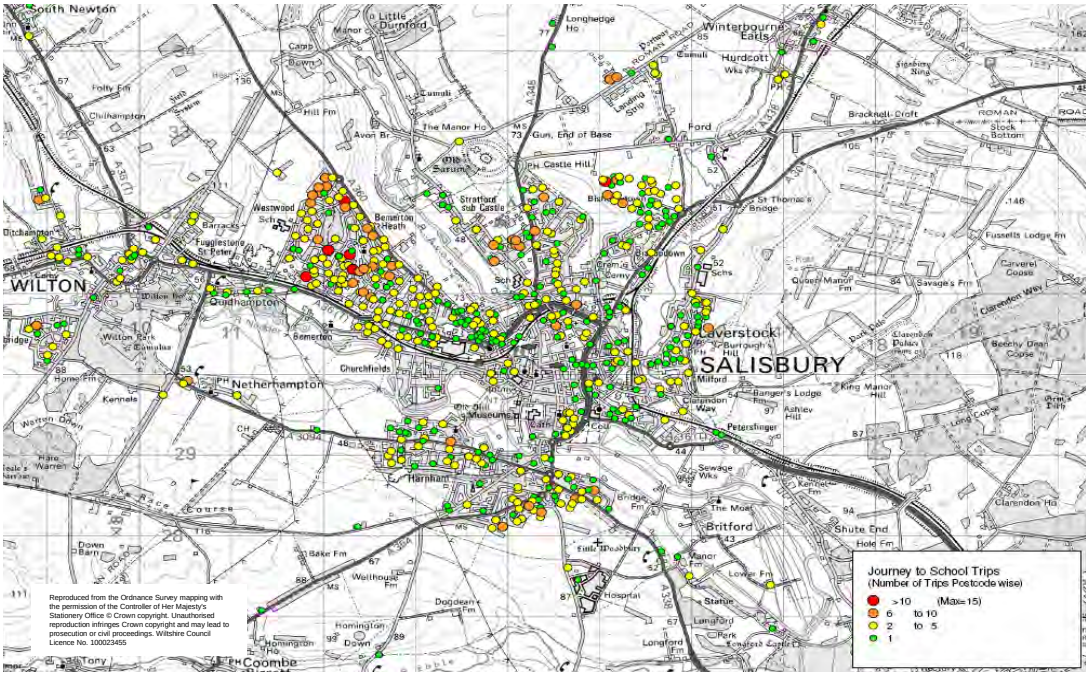
3.36 The JtS data was processed for journeys to school by motorised modes only (excluding buses). School journeys were converted in car trips using an occupancy factor of 2.1 taken from the Household Income Survey. [4].

3.37 The data is as accurate as the child's response. Table 3.10 displays JTS trips for motorised modes for schools within Salisbury. Figure 3.13 displays the origin of school trips by postcode within the core study area of Salisbury and Wilton urban areas.

Table 3.10 – Journey to School Trips for Motorised Modes

School type	From Within Salisbury District	From Outside Salisbury District	Total
Primary	805	82	887
Secondary	587	317	904
Special	3	0	3
Total	**1395**	**399**	**1794**

Figure 3.13 – Salisbury School Trips



[4] http://www.statistics.gov.uk/StatBase/Expodata/Spreadsheets/D5154.xls

4. Network Development

Introduction

4.1 This chapter describes the development and scope of the highway network for the SHM.

Network Development Process

Network Inventory

4.2 The SATURN network is a representation of the highway network in and around Salisbury. In SATURN it is not necessary to include all roads within Salisbury, merely the main arterial and distributor roads. Local access roads tend to be combined and are represented by the centroid connector, although local access roads that are also bus routes will be included in the model.

4.3 SATURN is a node based model and is able to represent junction characteristics in considerable detail. The accurate representation of junctions is a key feature of the network inventory. Details of the inventory process and coding procedures are described below.

Nodes

4.4 Junction type was confirmed using aerial photography during the network inventory stage. Turning movements were also deduced using aerial photography and site visits to determine any obscured highway markings.

4.5 Lane capacity was determined using appropriate in-house spreadsheet tools for calculating capacity of roundabouts and priority junctions.

4.6 Turn bans were applied to the model in accordance with Traffic Restriction Orders supplied by WCC.

4.7 Nodes have been correctly located using GIS to determine the location of each junction.

Links

4.8 Link lengths have been calculated using GIS.

4.9 Speed flow curves are not being used unless it is not possible to correctly match observed and model link delay through junction performance alone. This is typically the case on long semi-urban and rural links. It may also be the case on urban links where incidence of bus stops, parking and side roads reduce link capacity without affecting junction capacity. Where this is the case, speed flow curves will be selectively used and used in accordance with DMRB guidelines.

4.10 Speed limits have been assigned and checked against WCC information and Traffic Restriction Orders supplied by WCC.

Bus Networks

4.11 Buses have been coded in the SATURN network. The addition of buses to the network ensures that highway network has the most accurate representation possible.

4.12 All buses serving Salisbury have been included in the highway network including school specific services. Details of the bus services added can be found in Appendix B.

Network Description

4.13 The network nominally covers the whole of the UK. As described in Chapter 2 the network is coded externally to the Salisbury/Wilton study area in ‘buffer’ whereas the core network includes simulation coding at intersections or junctions. The national highway network is shown in Figure 4.1 whilst the highway network within Wiltshire is shown in Figure 4.2, and Salisbury district is given in Figure 4.3. The highway network in the urban area is shown in Figure 4.4.

Figure 4.1 – National Highway Network

Figure 4.2 – Highway Network Within Wiltshire

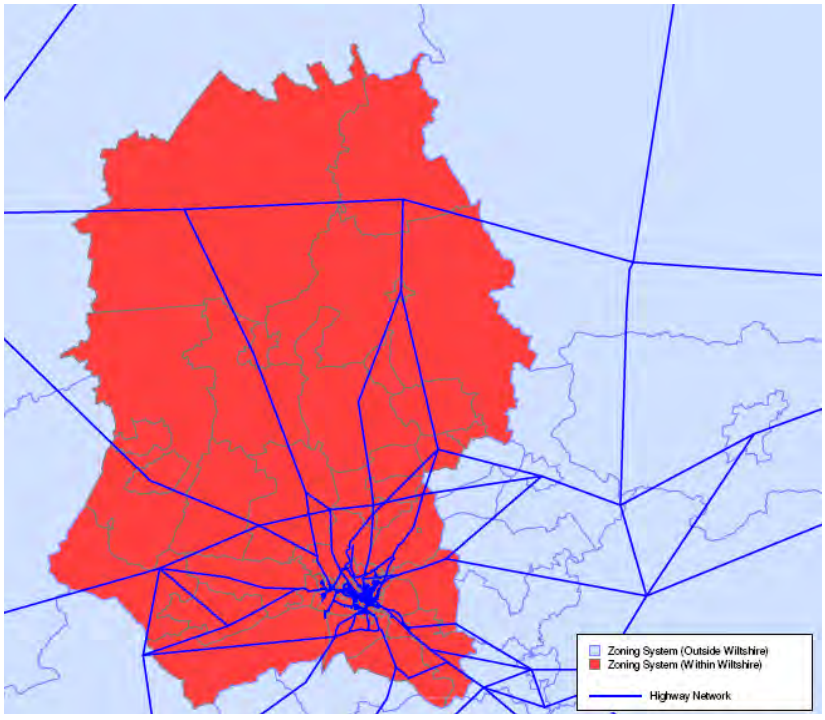


Figure 4.3 – Highway Network Within Salisbury District

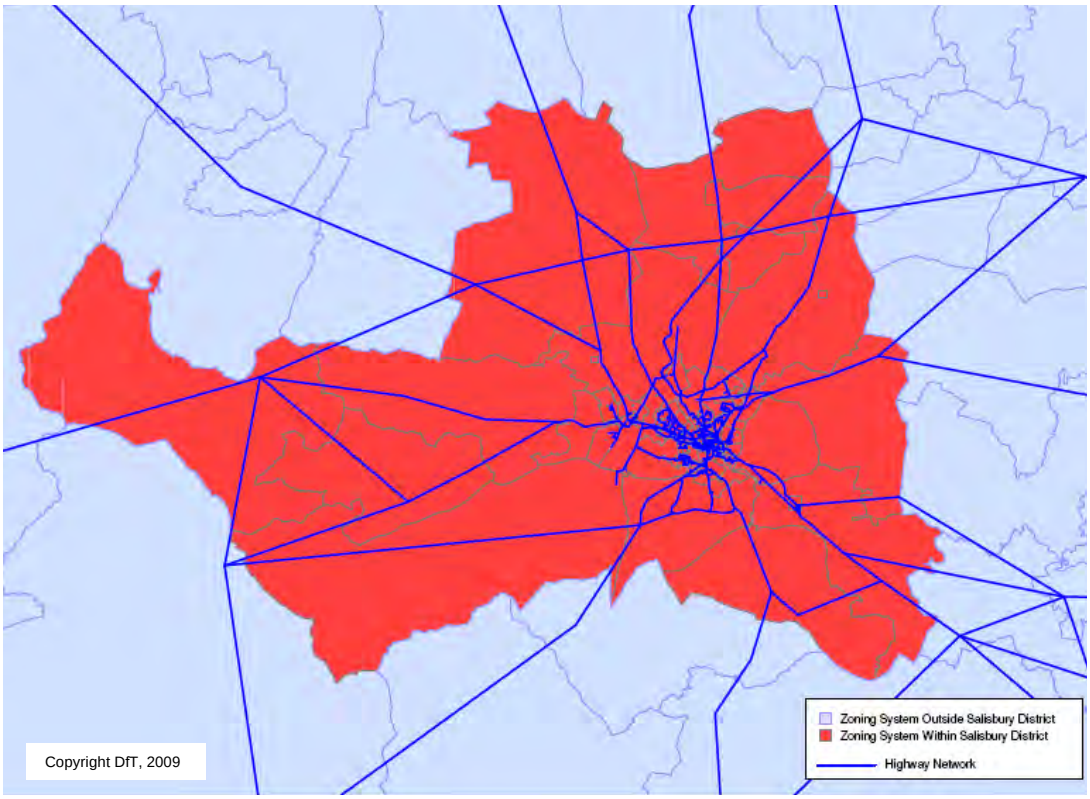
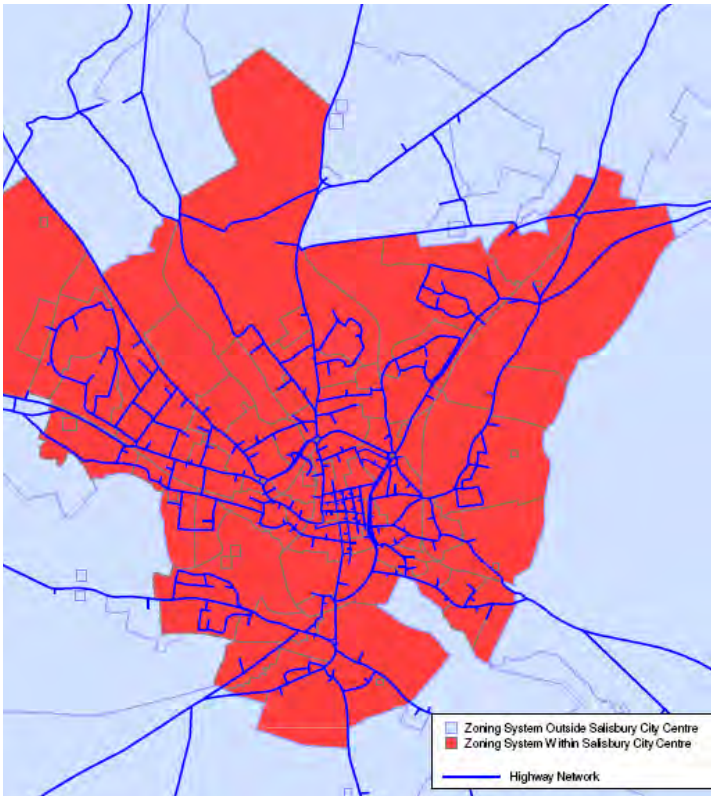
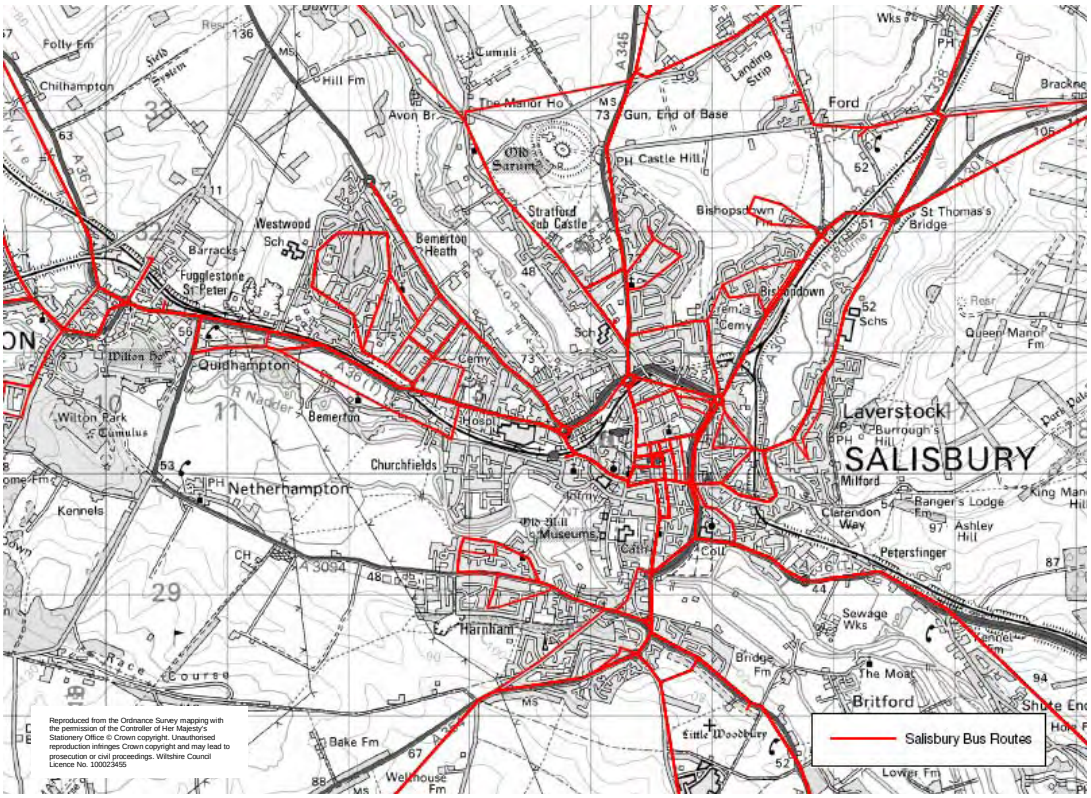


Figure 4.4 – Highway Network Within Salisbury Urban Area



4.14 An overview of bus routes coded within the network is given in Figure 4.5.

Figure 4.5 – Bus Routes



5. Matrix Development

Introduction

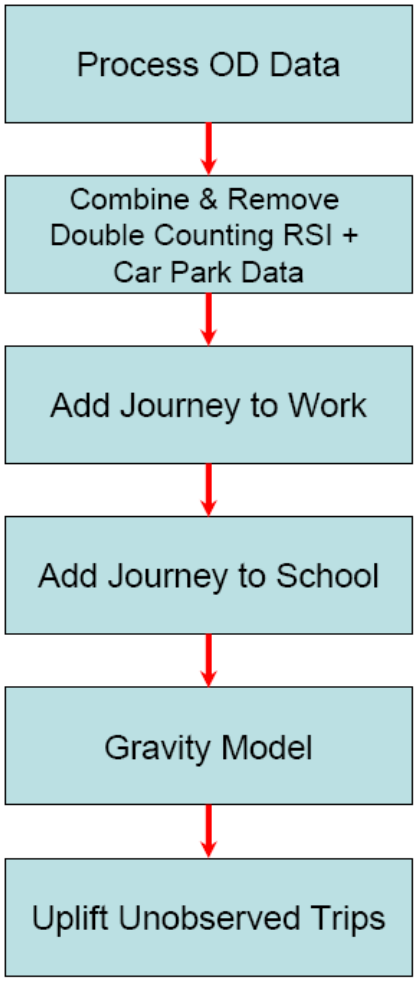
5.1 The purpose of this chapter is to describe the process used to construct demand matrices for the SHM

5.2 The matrices were built using the following data sources:

- Road Side Interview samples at nine separate locations,
- A car park interview survey at a the largest car park in Salisbury,
- Journey to school (JTS) data for pupils within Wiltshire, and
- Journey to work (JTW) data extracted from the 2001 census.

5.3 The data sources listed were first processed i.e. translated from a postcode to model zone by trip purpose. The second stage was combine data & remove potentially double-counted trips with the same zone pair and purpose. The third stage was to add journey to work and journey to school data. Synthetic matrices were then produced using a gravity model to improve the distribution of trips from the more 'lumpy' or sampled nature of RSI and car park interviews. Finally some sections of the matrix that were not fully observed in there manually increased or uplifted based on observed data. These five stages are summarised in Figure 5.1.

Figure 5.1 – Matrix Build & Processing Summary



5.4 The modelled study are has been divided into five sectors which are used in the matrix build to analyse demand. These sectors are defined below and shown in Figure 2.5.

- Sector 1 - Salisbury City Centre
- Sector 2 - Salisbury and Wilton Urban Areas
- Sector 3 - Salisbury District
- Sector 4 - Wiltshire County
- Sector 5 - Rest of Britain

Data Processing

Road Side Interviews

RSI - Converting RSI Trips to Model Zone

5.5 RSI responses were allocated to a modelled zone by the standard method of geo-coding the origin and destination postcode of sampled trip. At this stage records were logic-checked to ensure that the origin and destination looked sensible in relation to the interview site.

5.6 Allocation to an appropriate modelled zone is an important consideration when building the trip matrix, for example, large attractors or generators of trips, such as large workplaces should be checked to ensure interview samples are allocated accurately to the correct zone and not a neighbouring zone. To ensure this took place, Atkins reviewed the 25 largest productions and attractions of trips recorded across the 9 RSI sites, as shown in Table 5.6.

City Centre Trips

5.7 The quality of the RSI data is restricted to the answers given by respondents. The city centre location is one particularly large instance where uncertainty is common. This is because respondents may state one of three types of response:

- “city centre” – a generic response with no obvious destination;
- “Library” – a specific location but without any parking associated with it; and
- Sainsbury’s – a specific location and one that has parking.

5.8 A cordon 19 zones in the city centre was identified focusing on ‘destination’ zones rather than those areas that are predominantly residential. Each zone was classified as containing public car parking, zones with restricted or private parking and zones without parking. Figure 5.2 displays the city centre parking cordon zones identified and their classification.

Figure 5.2 – City Centre Parking Cordon Zones

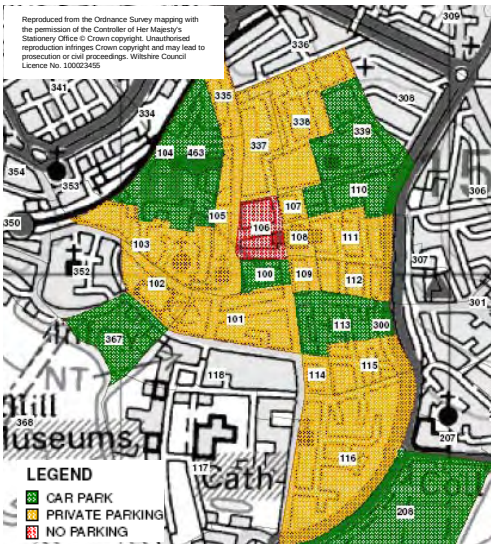


Table 5.1 – Key Productions/Attractions Salisbury Samples

PRODUCTIONS				ATTRACTIONS			
Post Code	Zone	Description	Trips	Post Code	Zone	Description	Trips
SP2 8BJ	379	District Hospital, Open Area	350	SP1 2NY	200 / 203	Commercial (TESCO)	173
SP1 1AA	106	Work Place, Commercial (City Centre Generic)	309	SP2 0HE	406 / 407	Commercial, Play Ground, Residential	105
SP1 2AA	101	Commercial, Car Park	148	SP1 1AA	106	Work Place, Commercial (City Centre Generic)	76
SP1 3JD	312	Residential, Play Grounds, Commercial	147	SP2 8BJ	379	District Hospital, Open Area	52
SP2 7TS	340	Commercial (Waitrose)	127	SP3 5JL	511	Hinterland	50
SP1 2NY	200 / 203	Commercial (TESCO)	122	SP1 2AA	101	Commercial, Car Park	38
SP1 2PF	118	School, College	70	SP4 0JF	520	Hinterland	35
SP2 0HE	406 / 407	Commercial, Play Ground, Residential	69	SP2 0AG	401	Commercial, Business Centre, Park	35
SP2 7QP	353	Churches, Commercial	63	SP1 1TL	105	Commercial	31
SO14 1PF	604	External	63	SP4	519	Hinterland	31
SP2 0AG	401	Commercial, Business Centre, Park	57	SP1 3JD	312	Residential, Play Grounds, Commercial	27
SP1 1DF	106	Work Place, Commercial	48	SP3 6LD	511	Hinterland	26
SP2 0RS	407	Commercial, Residential, Car Park, Sports Ground	43	SP2 0RS	407	Commercial, Residential, Car Park, Sports Facilities	26
SP1 1TT	105	Commercial	39	SP1 1AB	106	Work Place, Commercial	25
SP1 2LW	207	College (Salisbury College of Technology)	38	SP3 4BU	514	Hinterland	25
SP2 8NA	369	Residential, Play Grounds	36	SP5 3PJ	506	Hinterland	25
SP1 2NG	101	Commercial, Car Park	31	SP3 5DZ	510	Hinterland	24
SP1 2LE	204	Commercial	31	SP4 7HD	520	Hinterland	23
SP2 0AQ	403	Commercial, Residential	31	SP4 6QX	321	Air Field, Business Park	22
SP2 7NP	357 / 358	Industrial (Churchfields East)	30	SP4 0JG	519	Hinterland	22
SP5 3EB	502	Hinterland	27	SP4 0JQ	519	Hinterland	22
SP1 2SW	209	Hospital	26	SP1 2PF	118	School, College	21
SP1 1AB	106	Work Place, Commercial	25	SP4 6EB	321	Air Field, Business Park	21
SP1 3NR	346	Salisbury Leisure Centre, Sports Field, Open Area	25	SP2 9PJ	349	Residential, Open Area	20
SP2 7PH	357	Industrial (Churchfields East)	24	SP4 0LF	519	Hinterland	18

5.9 As mentioned above, there are three types of city centre trip but only one that has a specific and obvious parking option. The responses with an obvious location such as “Sainsbury’s” or “Central Car Park”, that have a car park (public or private) associated with were assigned to the zone in which the origin or destination could be found.

5.10 The responses with a vague location, such as “Salisbury City Centre” were allocated against the postcode SP1 1AA. Trips with this postcode were reallocated proportionally to one of the 19 ‘city centre parking cordon’ zones based upon the more accurate responses in the RSI.

5.11 Those respondents that specified a city centre location, such as the “Library” had specified a city centre origin or destination but they would not be able to park in the zone of their stated origin or destination. These trips were relocated to a suitable public car park. Reallocation was considered by time period, trip purpose and geographical location of the trip. Such consideration assumed that a home based work trip in the morning peak was more likely to opt for a longer stay car park compared against a shopping trip during the inter-peak, where a convenient short stay car park would be more appropriate. Car park ticketing data provided an indication to average car park occupancy by time period to assist this process.

Sample Rates of HGV Trips

5.12 Although the total response rate for HGV was 7% (refer Table 3.3), for many RSI sites the sample rate was much lower and the HGV responses were expanded to a very large number. At most locations there were no interviews covering the evening peak hour. To overcome this shortfall in the data and also to reduce the expansion factor, it was necessary to firstly use all HGV records during the 12 hour survey period. When this did not reduce the expansion factor significantly the HGV records were supplemented with logical LGV records, i.e. those not originating or with destination in residential areas. Once analysed, suitable LGV records were transferred to HGV records prior to expansion. The original number of interviews and the modified number of interviews by time period and survey site is presented in Table 5.2.

Table 5.2 – Modified HGV Samples

RSI Site	AM		IP		PM	
	Actual Samples	Modified Samples	Actual Samples	Modified Samples	Actual Samples	Modified Samples
1	7	7	9	14	2	4
2	21	21	34	34	4	4
3	0	1	0	4	0	1
4	10	10	14	14	1	1
5	11	17	3	13	0	5
6	0	1	1	5	0	3
7	2	7	4	11	0	4
8	3	5	5	8	0	3
9	6	8	13	16	3	3
Total	**60**	**77**	**83**	**119**	**10**	**28**

Car Park Survey

5.13 The car park survey asked for the origin of the trip to the car park, the ultimate destination of trip beyond the car park and the destination upon leaving the car park.

5.14 Car park survey responses were allocated to a modelled zone by the standard method of geo-coding the origin and next destination postcode of sampled trip. At this stage records were logic-

checked to ensure that the origin and next destination looked sensible in relation to the interview site.

5.15 To account for the destination upon leaving the car park, inbound journeys to the car park were allocated a return leg based on the stated duration on the survey form. The responses were subsequently expanded against the appropriate ticket sales for the stated duration of stay:

- Weekday Parking < 1hr;
- Weekday Parking - 1 to 2hr;
- Weekday Parking - 2 to 4hr; and
- Weekday Parking > 4hr

5.16 The return records were allocated to the appropriate time periods for their duration of stay. For instance, an inbound trip at 9am that stayed for more than four hours would have the return leg in the inter-peak period.

Journey to School

5.17 Journey to School (JtS) data responses were allocated to a modelled zone by the standard method of geo-coding the origin and the school. Only motorised trips were used in the matrix development, despite some rather large walk trips in the survey!

5.18 Journeys were converted from person to vehicle using the average occupancy of 2.1 taken from the household income survey, where home based education (HBED) trips have an average occupancy of 1.1 pupils per vehicle. [5].

5.19 The RSI asks only the origin and destination of the current trip. Clearly not every journey from home to school stays at school. Using the RSI data it was possible to deduce the proportion of trips to school that return home. Table 5.3 shows the proportion of 'return' school to home journeys in the morning peak and home to school journeys in the inter-peak and evening peak. The Table also shows the proportion of school to home trips in the inter-peak and evening peak based RSI responses.

5.20 Using this information the education trip matrix assumed that 47% of every home to school trip in the morning peak returned home within that period. It was not possible to determine the next destination for the remaining 53% of home to school trips.

Table 5.3 – Home to Education Trips and Returns Based on RSI Data

Time Period	Home to Education	Education to Home	IP/PM Split Education to Home
AM	62	29	N/A
	100%	47%	
IP	50	64	48%
	78%	100%	
PM	9	68	52%
	13%	100%	

5.21 JtS trips are allocated to HBED trip purpose. Trips were merged with HBED matrices recorded during the RSI with double counting between the two sources removed.

[5] http://www.statistics.gov.uk/StatBase/Expodata/Spreadsheets/D5154.xls

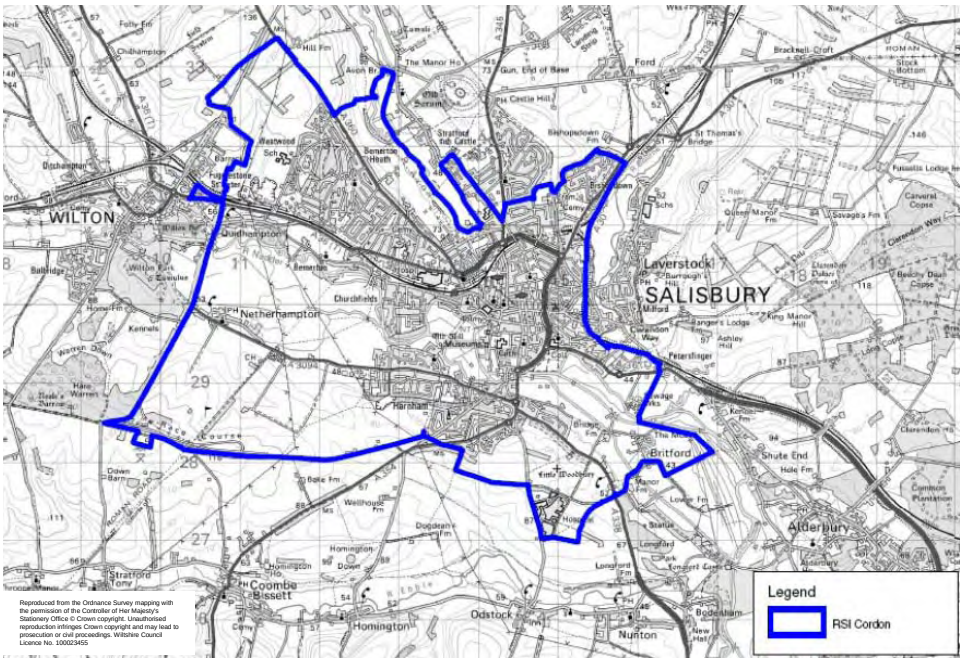
Journey To Work

5.22 The RSI provided sufficient up-to-date data for journeys crossing the RSI cordon. The Journey to Work (JtW) data was used to populate the matrix for journeys exclusively within the RSI cordon (Figure 5.3).

5.23 JtW trips were extracted from the 2001 census datasets. The data includes the origin and destination of all journey to work trips and is as close to a population dataset as is otherwise available. The JtW data is aggregated to Census output area. The data was disaggregated to STM zone by distributing the journeys to work according to STM zone size and residential nature for the origin and STM zone size and employment nature for the destination.

5.24 JtW trips were reallocated within the 20 city centre zones using the same methodology as the RSI trips.

Figure 5.3 – RSI Cordon



5.25 As the JtW data covers a 12 hour period (0700-1900) the data was proportioned based on HBW trips recorded in RSI samples and transposed using work based home, these proportions are given in Table 5.4.

Table 5.4 – JTW Proportions Taken From RSI Samples

Home to Work	Car	LGV	Total	Percentage
Morning Peak Period (0700 – 1000)	679	61	740	84%
Inter-Peak Period (1000 - 1600)	111	12	123	14%
Evening Peak Period (1600 - 1900)	19	2	21	2%
TOTAL	**801**	**75**	**884**	**100%**

Work to Home	Car	LGV	Total	Percentage
Morning Peak Period (0700 – 1000)	38	1	39	4%
Inter-Peak Period (1000 - 1600)	248	24	272	26%
Evening Peak Period (1600 - 1900)	688	41	729	70%
TOTAL	**970**	**66**	**1040**	**100%**

5.26 As the proportions split the data by peak period rather than modelled hours for AM and PM periods (08:00-09:00 & 17:00-18:00) the data was subsequently factored again to peak hour proportions of traffic taken from the ATC surveys recorded at RSI sites listed below:

- Morning Peak Hour is 61.3% of trips between 07:00-10:00;
- Inter Peak Hour as an average across the 6 hours between 10:00-16:00; and
- Evening Peak Hour is 33.3% of trips between 16:00-19:00.

Producing Trip Matrices

Stage 1 - Expansion

5.27 The RSI and Car Park survey used all records in the specific time period rather than just the peak modelled hour; again to provide a great distribution of trips in the matrix. All records were transposed to give a return trip and finally output as six separate journey purposes.

5.28 The RSI interview samples were expanded to the ATC totals for sites two to nine. The MCC was used for site one as the location of the ATC was some distance from the RSI survey site. Checks were made to ensure that the survey day was 'typical' of the two week ATC monitoring period.

5.29 Some of the sample data from sites four and six, which potentially would have passed through site five, was copied to site five samples for expansion. This approach would ensure trips between the same zone pairs would be present in sites four or six and five when double counting was removed at a later stage.

Stage 2a Removing Double Counting Between Sites 1-9 excluding 4&6

5.30 The combining of the RSI site matrices would likely involve some double counting. A record was consider to be double counted when a whole record from one RSI site was found in another RSI site (i.e. the time, origin, destination and purpose was the same in two RSI site matrices). Double counting would most likely occur between site 1and all other sites as site 1 was inbound and all other sites were outbound. It was also likely that double counting could occur between sites 4 or 6 and site 5.

5.31 The RSI site matrices were combined at a disaggregate level i.e. by site, time period and purpose. Such disaggregation reduces the possibility of double counting and thus keeps more records in the matrix. The removal of double counted trips was first done between site 1 and all other sites excluding sites 4 and 6. The double counting was removed using a weighted average with the expansion factors of the respective sites weighting the calculation.

5.32 Following the removal of double counting the matrix totals by site were factored back to the ATC totals. This stage was necessary to ensure the correct volume of trips entering the study area through the RSI cordon.

Stage 2b Remove Double Counting Between Sites 5-4

5.33 The modified matrix for Site 5 (after Stage 2a) was used to remove the double counting with Site 4 using the same technique as mentioned in previous stage.

5.34 The matrices were expanded back to the ATC totals.

Stage 2c Remove Double Counting Between Sites 5-6

5.35 The modified matrix for Site 5 (After stage 2b) was used to remove the double counting with Site 6 using the same technique as mentioned above.

5.36 The matrices were expanded back to the ATC totals.

Stage 3 Combine Site Matrices

5.37 Following the removal of double counting the matrices were combined to the following purposes:

- HBW,
- HBED,
- HBEB,
- HBO,
- NHBEB and
- NHBO

5.38 With six purposes per time period, there were 18 separate RSI matrices ready to be combined with the car park trips in stage 4.

Stage 4: Adding Car Park Trips

5.39 The internal to internal (i.e. within the RSI cordon), car park trips were removed as there were no internal to internal trips in the RSI matrix therefore no need to consider for double counting for this trips.

5.40 The remaining matrix was first checked for double counting against the same purposes within the RSI matrices. Where double counting was present, the RSI data was weighted 60% in favour of the RSI data and 40% in favour of the car park data which reflects fractionally more confidence in the RSI data than the car park data due to its sample size

5.41 The RSI matrices were expanded back to the ATC totals where necessary before the internal to internal car park survey journeys were added back into the matrices.

Stage 5: Adding JtW Trips

5.42 As the JtW matrix was exclusively internal to internal (i.e. within the RSI cordon), the only scope for double counting would be with the internal to internal car park matrix described above for home base work trips. Checks for double counting were made and where double counting existed the resultant value was weighted 75% in favour of the car park data and 25% in favour of the JtW data. This ratio reflects the age of the JtW data and gives it a lower ratio when combining the matrices.

Stage 6: Adding JtS

5.43 The JtS data covered all movements for schools into Salisbury and thus included both internal to internal (i.e. within the RSI cordon) and internal to external / external to internal trips (i.e. those trip that crossed the RSI cordon). The matrices included the journey to and from school as described in Table 5.3 above.

5.44 The internal to external / external to internal trips within the JtS matrices were first extracted and combined with the HBED matrix calculated from Stage 5. Checks for double counting were made and where double counting existed the resultant value was weighted 45% in favour of the RSI data and 55% in favour of the JtS data. The weighting, slightly in favour of the JtS data reflects the comprehensive nature of the survey but is tempered by the unreliability of children's answers.

5.45 After combining, the matrices were expanded back to the expanded totals for HBED for internal to external and vice versa.

5.46 The internal-internal JtS trips, without any possibility of double counting having checked the car park surveys, were added to the final HBED matrices.

Stage 7 Gravity Model Adjustment

5.47 WebTAG (3.10.3) recommends that some form of synthetic infilling should be undertaken to overcome the problem of partial sampling with the model matrices created using a mixture of observed and synthesised data.

5.48 The matrices produced during stage 6 were assigned to the model and modelled and observed flows were compared at the RSI cordon. Modifications to the network were made to ensure that modelled and observed flows at the RSI cordon matched within standard modeling criteria described in Chapter Six. This would ensure that accurate cost skims were used in the gravity model.

5.49 A gravity-based trip length distribution model was built using the MVGRAM program from CUBE, the modelling package developed by Citilabs, replicating the existing trip ends (o_i and d_j). The model was of the form $t_{ij} = a_i b_j o_i d_j f(c_{ij})$. The balancing factors a_i & b_j was calculated iteratively whilst the deterrence function was based on the Tanner function, $f(c_{ij}) = c_{ij}^{\alpha}$ e^(-βc_{ij});

5.50 The use of weighted average of observed and synthetic matrices will remove potentially empty cells and a greater weight is given to cells where there are more observed trips than expected from a locally-calibrated synthetic model. WebTAG recommends that the relative weights should reflect the accuracy of the two forms of estimates, when this information is available, otherwise a 90% / 10% split between observed and synthetic forms is recommended.

Matrix Review

5.51 Stage 7 concluded the development of the prior matrices. During the development stage it was apparent that the internal to internal (i.e. within the RSI cordon) movements would possibly be under-observed. The RSI process focused on movements that entered urban Salisbury. The car park survey did not provide sufficient internal to internal movements so the JtW and JtS data was added to increase internal to internal movements to the matrices.

5.52 Early assignments revealed that traffic demand across the city centre cordon (inside of the A36) was lower than observed counts but clearly matching observed counts across the RSI cordon. This evidence and a comparison of flows along the A36 at intermediate points through Salisbury suggested that the observed matrix was light for trips within Salisbury. We were faced with two options – begin matrix estimation, or use existing observed data to increase demand into the city centre cordon. We proceeded to update the matrix manually and compare this to the effect of matrix estimation using the Stage 7 matrix as the prior matrix.

Stage 8: Manual Adjustment - Car Park Trips

5.53 The first stage of the manual adjustment included the insertion of trips to/from all city centre car parks. Following discussions with Salisbury District Council about car park use, the general feeling was that people use car parks based upon final destination rather than route into the city. As such, it would be reasonable to add the observed movements to/from Central Car Park to the observed movements to/from other car parks and control these movements to parking ticket sales data. During this process only those movements that remained internal to internal were added to the other car parks.

5.54 Adjustments were also made to park and ride sites, although this did not effect the inner or RSI cordon.

5.55 Assigning these trips to the network did not yield significant modelled trips crossing the city centre cordon. We decided to further review the matrix under controlled conditions before applying matrix estimation.

Stage 9: Enhancing the Matrix

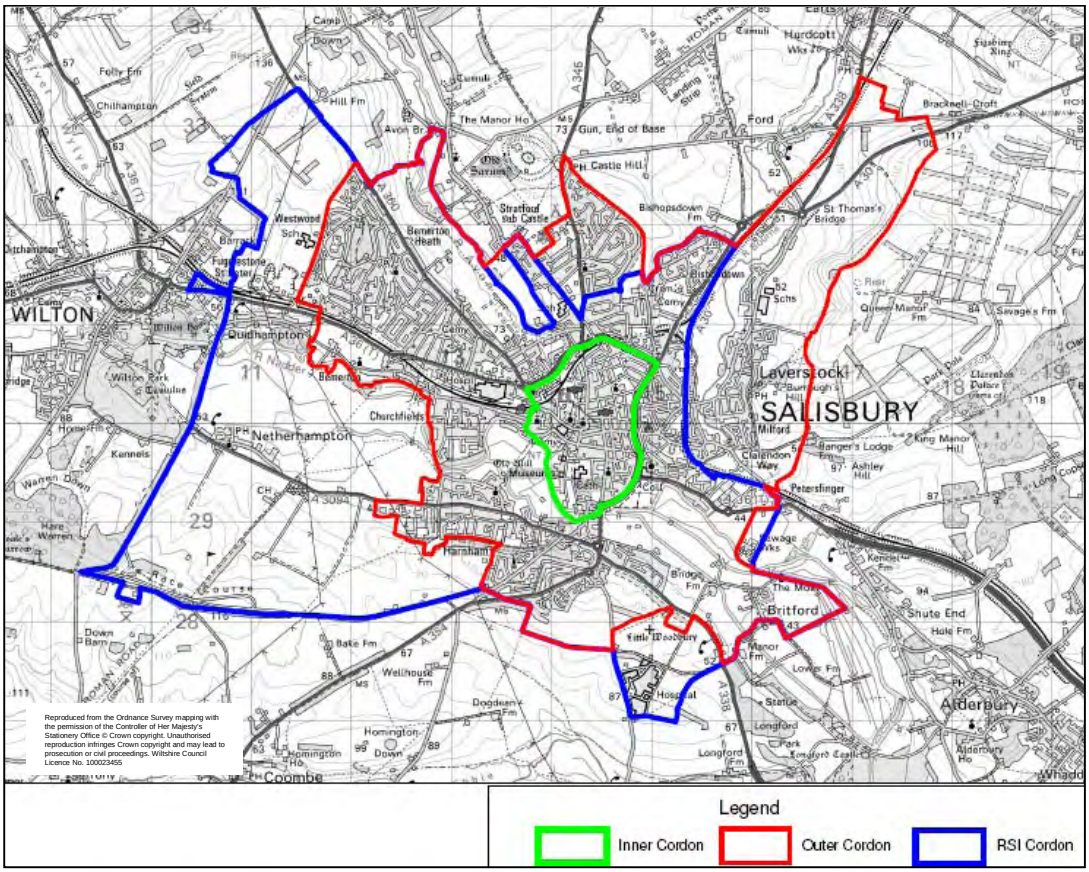
5.56 The select link analysis (SLA) option in SATURN was conducted at locations where link counts were significantly below observed counts. The primary focus of this effort was to match modelled and observed flow at the inner cordon (Figure 5.7). At each of the locations below select link analysis was undertaken and from the subsequent matrix from this approach the internal to internal movements were factored to match observed counts and where parallel routes existed, the factoring was done at a combined level:

- Exeter Street
- Fisherton Street Bridge

- Castle Roundabout
- Milford Street,
- Crane bridge
- Culver Street
- St Marks Roundabout
- Bourne Hill, Salisbury

5.57 In addition, minor adjusts were also made to movements using Church Road and Odstock Road, both on the outer cordon.

Figure 5.4 – Model Cordons



Final Matrices

5.58 The final, albeit adjusted, observed matrices were produced and assigned to the model. The assignment results demonstrated that the matrices were capable of producing modelled flows that resembled observed flows across the outer, RSI and inner cordons.

5.59 Furthermore, the trip ends were checked against the population in Salisbury, and using a trip rate of 0.33, seem to reflect the expected number of trips in the morning peak (Table 5.5)

Table 5.5 – Comparison of Households and Expected Trips Against Observed Matrix

Location	Approximate Households	Expected Trips	Observed Trips
City centre	4000	1320	1244
Salisbury & Wilton Urban	17967	5929	6415

5.60 Details of the matrix development at each of the above stages is shown in Appendix E whilst the prior matrices are shown in Chapter 6.

6. Model Calibration

Introduction

6.1 The acceptability guidelines as outlined in DMRB are shown in Table 6.1. The observed flow and screenline flow criteria in the table relate to total link flows, i.e. all vehicles and should not be used when comparing partial link flows, e.g. heavy goods vehicles.

Table 6.1 - DMRB Acceptability Guidelines

	Criteria and Measure	Acceptability Guideline	
DMRB Flow Criteria			
1	Observed flow < 700vph	Modelled flow within ± 100vph	> 85% of links
	Observed flow 700 to 2700vph	Modelled flow within ± 15%	
	Observed flow > 2700vph	Modelled flow within ± 400vph	
DMRB GEH Criteria			
2	Total screen line flows (normally > 5 links) to be within ± 5%		All (or nearly all) screen lines
3	GEH statistic for individual links <5		> 85% of links
4	GEH statistic for screen line totals <4		All (or nearly all) screen lines

GEH Statistic

6.2 The GEH statistic shown below is a generally accepted value used as an indicator of 'goodness of fit', i.e. the extent to which the modelled flows match the corresponding observed flows. This is recommended in the calibration guidelines contained in the Design Manual for Roads and Bridges (DMRB) Volume 12 and is defined as:

$$GEH = \sqrt{\frac{(M-C)^2}{0.5 \times (M + C)}}$$

Where:

- M = modelled flow and
- C = observed flow

Model Calibration

6.3 The Traffic Appraisal in Urban Areas (DMRB Vol. 12a) advice recommends two criteria for Wardrop User Equilibrium assignment to ensure a satisfactory model convergence where Delta - should be less than 1%, or at least stable, with convergence fully documented and all other criteria met.

Network Checks

6.4 The initial stages of calibration sought to improve the overall quality of the assignment by removing general network coding errors causing excessive delay or inappropriate route choice.

Matrix Estimation

6.5 Once the network file had reached a sufficient level of early calibration matrix estimation was performed on the prior matrices to improve the level of flow calibration across all screenlines and cordons when compared to DMRB criteria.

6.6 Matrix estimation was done on the prior matrix using screenline counts discussed within paragraph 6.9 excluding the RSI cordon. The RSI counts were kept separate as a check to ensure that the post matrix estimation matrix was sufficiently close to the observed values recorded during this survey. As a significant element of the prior matrix was built using RSI data the RSI cordon traffic counts cannot be regarded as completely independent and therefore are not consider suitable for validation of the model.

6.7 Table 6.2 to Table 6.10 compare the prior (observed) matrix, post matrix estimation matrix and difference matrices for the morning peak, inter peak average and evening peak.

6.8 The differences between the two matrices can be regarded as small, taking the AM matrix as an example the total change in trips between the prior and post is -48 for CAR, -181 for LGV and -74 for HGV. This equates to a -0.34% change in trip volumes for CAR, -13.2% for LGV and -6.22% for HGV. The CAR matrices for IP and PM change by 1.71% & 2.3% respectively. LGV trips change by 0.64% & 0.98% for IP and PM and HGV 17.1% & -19.6%. The percentage of trip change in the CAR matrices is low overall. LGV and HGV matrices change at a greater overall percentage level due to a lower number of trips and typically being less well observed when compared to CAR movements.

Table 6.2 - Morning Peak Prior Matrix

Sectored Matrices by Vehicle Type						
Car						
Sector	1	2	3	4	5	Total
1	69	518	309	25	183	1104
2	1265	2750	1390	86	670	6161
3	512	1380	957	116	466	3430
4	100	232	164	7	188	691
5	425	743	709	126	617	2621
Total	2370	5623	3530	360	2125	14007
LGV						
Sector	1	2	3	4	5	Total
1	0	10	37	0	44	91
2	22	27	161	10	126	346
3	42	136	114	2	79	374
4	0	32	18	0	29	78
5	58	73	165	65	116	477
Total	122	278	494	77	394	1366
HGV						
Sector	1	2	3	4	5	Total
1	0	0	5	0	11	16
2	0	0	133	15	95	243
3	6	255	33	59	103	456
4	0	50	4	0	44	98
5	12	70	88	73	132	375
Total	18	376	264	147	384	1189

Table 6.3 - Morning Peak Post Matrix

Sectored Matrices by Vehicle Type						
CAR						
Sector	1	2	3	4	5	Total
1	103	832	339	29	142	1444
2	1403	2864	1259	78	620	6224
3	639	1362	874	79	387	3342
4	85	198	171	7	148	608
5	461	713	599	85	559	2416
Total	2690	5970	3242	277	1855	14034
LGV						
Sector	1	2	3	4	5	Total
1	0	9	21	1	37	68
2	26	14	134	22	101	297
3	74	167	127	1	65	435
4	0	20	9	0	20	49
5	52	55	147	47	113	414
Total	152	266	438	71	336	1264
HGV						
Sector	1	2	3	4	5	Total
1	0	0	7	0	24	31
2	0	0	135	29	83	247
3	18	160	18	19	172	386
4	0	23	3	0	38	64
5	28	32	144	50	135	390
Total	46	215	308	98	451	1118

Table 6.4 – Difference Between Morning Peak Prior and Post Matrix

Sectored Matrices by Vehicle Type						
CAR						
Sector	1	2	3	4	5	Total
1	34	314	30	4	-41	341
2	139	114	-131	-8	-51	63
3	127	-17	-83	-37	-79	-89
4	-15	-34	7	0	-41	-83
5	36	-30	-111	-41	-59	-205
Total	320	346	-288	-82	-270	27
LGV						
Sector	1	2	3	4	5	Total
1	0	0	-16	1	-7	-23
2	4	-13	-27	13	-25	-49
3	32	31	13	-1	-14	61
4	0	-11	-9	0	-9	-29
5	-6	-18	-17	-18	-3	-63
Total	30	-12	-57	-6	-58	-102
HGV						
Sector	1	2	3	4	5	Total
1	0	0	2	0	13	15
2	0	0	3	14	-12	4
3	12	-95	-15	-40	69	-70
4	0	-28	-1	0	-6	-35
5	16	-38	56	-23	3	14
Total	27	-160	44	-49	66	-72

Table 6.5 – Inter-Peak Prior Matrix

Sectored Matrices by Vehicle Type						
Car						
Sector	1	2	3	4	5	Total
1	72	791	396	58	277	1594
2	1065	1590	728	102	408	3893
3	465	870	622	70	373	2399
4	74	108	75	2	111	370
5	306	415	359	105	565	1749
Total	1983	3774	2179	337	1733	10006
LGV						
Sector	1	2	3	4	5	Total
1	0	16	54	5	55	129
2	18	45	102	10	69	245
3	60	109	67	7	69	311
4	5	10	8	0	32	55
5	61	68	69	34	110	343
Total	145	249	300	55	335	1084
HGV						
Sector	1	2	3	4	5	Total
1	0	0	2	0	2	4
2	0	0	201	4	171	375
3	2	198	102	28	100	430
4	0	4	27	0	22	54
5	2	176	98	28	204	509
Total	4	379	429	60	500	1372

Table 6.6 – Inter-Peak Post Matrix

Sectored Matrices by Vehicle Type						
CAR						
Sector	1	2	3	4	5	Total
1	63	896	433	51	248	1691
2	1118	1999	850	90	481	4538
3	446	874	533	47	332	2233
4	51	71	46	2	72	241
5	270	438	323	71	473	1574
Total	1948	4278	2186	261	1606	10278
LGV						
Sector	1	2	3	4	5	Total
1	0	16	63	6	43	128
2	24	58	129	7	84	302
3	73	118	54	3	45	293
4	3	6	5	0	24	38
5	46	72	50	25	97	290
Total	147	270	301	41	292	1051
HGV						
Sector	1	2	3	4	5	Total
1	0	0	2	0	6	8
2	0	0	178	3	120	300
3	1	157	87	28	91	365
4	0	3	25	0	19	47
5	3	79	84	27	211	404
Total	4	240	376	58	446	1124

Table 6.7 – Difference Between Inter-Peak Prior and Post Matrix

Sectored Matrices by Vehicle Type						
CAR						
Sector	1	2	3	4	5	Total
1	-10	104	38	-7	-29	97
2	53	410	122	-12	73	645
3	-19	4	-88	-23	-40	-166
4	-23	-37	-29	0	-39	-128
5	-36	23	-36	-34	-92	-175
Total	-35	504	7	-76	-127	273
LGV						
Sector	1	2	3	4	5	Total
1	0	1	9	1	-12	-1
2	6	12	27	-3	15	57
3	13	8	-12	-4	-24	-18
4	-2	-4	-2	0	-8	-17
5	-15	4	-20	-9	-14	-53
Total	2	22	1	-14	-43	-33
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	4	4
2	0	0	-23	-1	-51	-75
3	-1	-41	-14	1	-9	-65
4	0	-1	-2	0	-4	-7
5	1	-97	-14	-1	7	-105
Total	0	-139	-53	-1	-54	-248

Table 6.8 – Evening Peak Prior Matrix

Sectored Matrices by Vehicle Type						
Car						
Sector	1	2	3	4	5	Total
1	77	800	555	112	505	2048
2	694	2068	1207	205	699	4872
3	403	1621	942	144	837	3946
4	33	92	110	8	143	387
5	226	788	500	199	698	2411
Total	1433	5369	3314	667	2881	13665
LGV						
Sector	1	2	3	4	5	Total
1	0	10	40	0	45	95
2	8	25	101	21	54	209
3	29	130	73	12	120	364
4	0	11	1	0	48	60
5	38	93	61	17	82	291
Total	75	269	275	50	350	1019
HGV						
Sector	1	2	3	4	5	Total
1	0	0	5	5	0	9
2	0	0	124	28	41	193
3	5	77	15	3	68	167
4	5	9	27	0	28	69
5	0	60	66	17	66	208
Total	9	146	237	52	203	646

Table 6.9 – Evening Peak Post Matrix

Sectored Matrices by Vehicle Type						
CAR						
Sector	1	2	3	4	5	Total
1	121	909	627	97	439	2192
2	858	2369	1452	218	733	5631
3	493	1518	815	105	758	3689
4	30	95	77	8	108	317
5	254	722	450	154	632	2212
Total	1757	5612	3421	582	2670	14042
LGV						
Sector	1	2	3	4	5	Total
1	0	32	37	0	39	108
2	24	23	113	27	61	248
3	31	114	62	4	94	306
4	0	11	1	0	31	43
5	69	77	39	12	75	271
Total	124	257	251	43	300	975
HGV						
Sector	1	2	3	4	5	Total
1	0	0	5	10	0	14
2	0	0	76	26	43	145
3	4	65	10	2	62	143
4	5	4	10	0	20	39
5	0	16	99	17	59	190
Total	8	85	199	55	184	532

Table 6.10 – Difference Between Evening Peak Prior and Post Matrix

Sectored Matrices by Vehicle Type						
CAR						
Sector	1	2	3	4	5	Total
1	44	109	72	-15	-65	144
2	165	301	246	13	35	759
3	90	-103	-127	-39	-79	-258
4	-3	3	-33	0	-36	-70
5	28	-67	-51	-44	-66	-199
Total	323	243	107	-85	-211	377
LGV						
Sector	1	2	3	4	5	Total
1	0	22	-2	0	-7	13
2	16	-2	12	6	8	39
3	2	-16	-11	-8	-26	-58
4	0	0	-1	0	-17	-18
5	31	-17	-22	-5	-7	-20
Total	49	-13	-24	-7	-49	-44
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	5	0	5
2	0	0	-49	-2	3	-48
3	-1	-12	-4	0	-6	-23
4	0	-5	-17	0	-8	-30
5	0	-44	33	1	-7	-18
Total	-1	-61	-38	4	-19	-115

Network Flow Calibration

6.9 A number of model screenlines and cordons have been defined to report the volume of traffic within the model assignment for comparison against observed values. The following screenlines and cordons were defined:

- Inner Cordon (City Centre);
- Outer Cordon (RSI and some external counts);
- RSI Cordon;
- City Centre Car Parks;
- Park and Ride Sites;
- Wilton Cordon; and
- A36 Junctions.

6.10 The reporting tables for all time periods are given Table 6.11 to Table 6.13 . The model calibrates well with almost all of the model screenlines having a GEH <4.

6.11 In the morning peak the Outer Cordon outbound has all links meeting the DMRB flow criteria but has Castle Road failing to meet GEH criteria. Further investigation reveals that this count (collected in 2007) may be inconsistent with the Castle Road RSI count (collected in 2008) to the immediate south, and modelled flow at the Castle Road RSI site is within 3% of the observed flow.

Table 6.11 – Morning Peak Screenline Summary

Direction	Count	Prior ME				Post ME			
		Model	Diff	% Diff	GEH	Model	Diff	% Diff	GEH
Inner Cordon									
In	3717	3260	-457	-12%	7.7	3467	-251	-7%	4.2
Out	2320	2131	-189	-8%	4.0	2171	-149	-6%	3.1
Outer Cordon									
In	6148	6168	19	0%	0.2	6112	-36	-1%	0.5
Out	5562	5633	72	1%	1.0	5076	-486	-9%	6.7
RSI Cordon									
In	5670	5975	305	5%	4.0	5858	189	3%	2.5
Out	4432	4792	360	8%	5.3	4361	-71	-2%	1.1
City Centre Car Parks									
In	470	468	-2	0%	0.1	497	27	6%	1.2
Out	78	67	-11	-14%	1.2	73	-5	-7%	0.6
Park and Ride Sites									
In	385	380	-4	-1%	0.2	380	-5	-1%	0.2
Out	59	54	-5	-8%	0.6	54	-5	-8%	0.6
Wilton Cordon									
In	2369	2656	287	12%	5.7	2417	47	2%	1.0
Out	1758	2226	468	27%	10.5	1881	124	7%	2.9
A36 Junctions									
Churchill Way / Southampton Road	11614	12395	781	7%	7.1	11935	321	3%	3.0
St Marks Roundabout	6194	6156	-38	-1%	0.5	5878	-317	-5%	4.1
Castle Roundabout	8515	7091	-1423	-17%	16.1	8443	-71	-1%	0.8
Devizes Road*	967	889	-78	-8%	2.5	777	-189	-20%	6.4
St Pauls Roundabout	5608	5081	-527	-9%	7.2	5717	109	2%	1.4
Harnham Gyratory	7697	8221	525	7%	5.9	7597	-99	-1%	1.1

* Note that Devises Road has only two counts leading on to the A36 and should not be considered as a screenline as a result.

Table 6.12 – Inter-Peak Screenline Summary

Direction	Count	Prior ME				Post ME			
		Model	Diff	% Diff	GEH	Model	Diff	% Diff	GEH
Inner Cordon									
In	2438	2628	189	8%	3.8	2465	27	1%	0.5
Out	2422	2200	-222	-9%	4.6	2213	-209	-9%	4.3
Outer Cordon									
In	4137	4388	251	6%	3.8	3923	-214	-5%	3.4
Out	3993	4155	161	4%	2.5	3885	-108	-3%	1.7
RSI Cordon									
In	4133	4501	368	9%	5.6	4045	-88	-2%	1.4
Out	4015	4111	95	2%	1.5	4020	4	0%	0.1
City Centre Car Parks									
In	597	594	-3	0%	0.1	572	-25	-4%	1.0
Out	466	455	-11	-2%	0.5	464	-2	-1%	0.1
Park and Ride Sites									
In	82	77	-5	-6%	0.5	77	-5	-6%	0.5
Out	78	75	-3	-3%	0.3	75	-3	-3%	0.3
Wilton Cordon									
In	No Data								
Out									
A36 Junctions									
Churchill Way / Southampton Road	9929	10148	219	2%	2.2	10298	369	4%	3.7
St Marks Roundabout	4847	4750	-98	-2%	1.4	4593	-255	-5%	3.7
Castle Roundabout	7606	5613	-1993	-26%	24.5	6850	-756	-10%	8.9
Devizes Road*	791	640	-151	-19%	5.6	630	-161	-20%	6.1
St Pauls Roundabout									
Harnham Gyratory	6419	6744	326	5%	4.0	6062	-357	-6%	4.5

* Note that Devises Road has only two counts leading on to the A36 and should not be considered as a screenline as a result.

Table 6.13 – Evening Peak Screenline Summary

Direction	Count	Prior ME				Post ME			
		Model	Diff	% Diff	GEH	Model	Diff	% Diff	GEH
Inner Cordon									
In	2549	2476	-74	-3%	1.5	2453	-96	-4%	1.9
Out	3176	2917	-259	-8%	4.7	3000	-176	-6%	3.2
Outer Cordon									
In	5676	5532	-144	-3%	1.9	5424	-251	-4%	3.4
Out	5568	5602	34	1%	0.4	5471	-97	-2%	1.3
RSI Cordon									
In	4816	5192	376	8%	5.3	4823	7	0%	0.1
Out	5554	5453	-101	-2%	1.4	5564	10	0%	0.1
City Centre Car Parks									
In	148	155	7	5%	0.6	164	16	11%	1.3
Out	521	506	-15	-3%	0.6	599	78	15%	3.3
Park and Ride Sites									
In	56	47	-9	-17%	1.3	47	-9	-16%	1.3
Out	263	260	-2	-1%	0.1	260	-2	-1%	0.1
Wilton Cordon									
In	1782	2281	499	28%	11.1	1769	-13	-1%	0.3
Out	2297	2327	30	1%	0.6	2442	145	6%	3.0
A36 Junctions									
Churchill Way / Southampton Road	11204	11452	248	2%	2.3	11266	62	1%	0.6
St Marks Roundabout	5824	5583	-240	-4%	3.2	5569	-254	-4%	3.4
Castle Roundabout	8041	6770	-1271	-16%	14.8	8055	14	0%	0.2
Devizes Road*	1130	629	-501	-44%	16.9	922	-208	-18%	6.5
St Pauls Roundabout	5561	4435	-1126	-20%	15.9	5426	-135	-2%	1.8
Harnham Gyratory	7938	8335	397	5%	4.4	7868	-70	-1%	0.8

***** Note that Devises Road has only two counts leading on to the A36 and should not be considered as a screenline as a result

7. Model Validation

Introduction

7.1 The validation of the model assignment acts as an independent confirmation that the model assignment is of a sufficient match to that observed. In the case of the Salisbury model the following criteria is utilised:

- Assignment convergence
- Link Length validation
- Journey Time validation
- Route Choice validation

Convergence

7.2 The good convergence or stability of any model assignment is important to ensure the model responds suitably to either a change in supply or demand. Within SATURN the convergence is taken per model loop (between assignment and simulation) as a % of flow and delay changing less than 5% on links as well as the % GAP discussed above.

7.3 The convergence of the assignment by time period for the last ten loops using the post ME matrix is given in Table 7.1. The level of convergence is shown to be high with both a small number of loops, maximum 24 for the AM period, high percentages of flow/delay less with less than a 5% change and low levels of % GAP for all three peak periods.

Table 7.1 – Model Convergence

Loop	% Flow	% Delay	% Gap
Morning Peak			
28	98.7	99.7	0.011
29	99.2	99.5	0.0074
30	99.1	99.7	0.0087
31	99.5	99.8	0.0069
Inter Peak			
22	99.1	99.9	0.0010
23	99.6	100.0	0.0011
24	99.5	100.0	0.0012
25	99.7	100.0	0.0010
Evening Peak			
19	98.9	99.9	0.0033
20	99.2	99.8	0.0024
21	99.1	99.7	0.0034
22	98.5	99.7	0.0023

Link Length Validation

7.4 The link length vs crow fly validation is given in within Table 7.2. It demonstrates that logically most links are greater than crow fly distance due to some curvature along their length. A small number of links are less than the crow fly distance, with the majority being shorter links where the percentage difference tends to be greater due to lower distance. The errors are typically caused through some inaccuracy in the SATURN coordinates for nodes.

Table 7.2 – Link Length v Crow Fly Length Validation

Length	Percentage Difference (-ve for crow fly greater)									
	< -20	-20 & -15	-15 & -10	-10 & -5	-5 & 0	0 & 5	5 & 10	10 & 15	15 & 20	> 20
0- 500m	65	2	11	18	232	429	64	29	8	238
500- 1000m	1	0	0	0	8	51	10	2	2	10
1000- 2000m	2	0	0	0	12	26	12	4	2	0
2000- 5000m	0	0	2	0	3	17	12	2	1	8
5000-10000m	4	2	2	2	2	1	11	8	4	3
10000-20000m	3	0	0	1	2	0	7	4	3	5
Over 20000m	0	0	0	0	0	0	24	9	6	10
All	75	4	15	21	259	524	140	58	26	274

Network Flow Validation

7.5 The proof of the network flow validation is modelled flow to compared with observed flow for a set links that have been independent to the model development. In this instance we chose flows along the A36 from Churchill Way to the east of Wilton. This route was considered as it is the main route through Salisbury. It should be noted that although the links leading onto the main junctions with the A36 were used in model calibration, these were link flows and not turning counts and these A36 counts used in the network validation remain independent to the model development process.

7.6 The results of the network flow validation are given in for the morning peak, inter-peak and evening peak in Tables7.3 to 7.5. Data was not collected at a number of locations in the inter-peak.

7.7 The model achieves a satisfactory level of validation for all time periods, although the evening peak westbound screenline has only 70% of links meeting DMRB criteria yet the highest GEH of these links was 6.0, which is very reasonable.

Table 7.3 – Morning Peak Traffic Flow Validation

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
A36 Churchill Way East (north of College Roundabout)	WB	1112_1109	979	281	1522	181	444	35%	11.5	×	×	1383	233	357	28%	9.4	×	×
A36 Churchill Way East (south of St Marks Roundabout)	WB	1108_1372	1079	145	1302	165	244	20%	6.6	×	×	1112	197	85	7%	2.4	✓	✓
A36 Churchill Way North	WB	1368_1366	1220	156	1268	112	3	0%	0.1	✓	✓	1362	167	153	11%	4.0	✓	✓
A36 Churchill Way West (south of Castle Roundabout)	WB	1364_1104	1179	113	838	129	-325	-25%	9.7	×	×	1093	175	-24	-2%	0.7	✓	✓
A36 Churchill Way West (north of St Paul's Roundabout)	WB	1101_1362	1010	150	874	133	-152	-13%	4.6	✓	✓	1043	184	67	6%	2.0	✓	✓
A36 Wilton Road (west of St Paul's Roundabout)	WB	1360_1211	690	131	729	72	-21	-3%	0.7	✓	✓	699	117	-5	-1%	0.2	✓	✓
A36 Wilton Road (west of Ashfield Road)	WB	1130_63552	769	179	639	183	-126	-13%	4.2	✓	✓	635	225	-88	-9%	2.9	✓	✓
A36 Wilton Road (east of Netherhampton Road)	WB	1386_1260	532	131	720	126	184	28%	6.7	×	×	602	167	105	16%	3.9	×	✓
A36 Wilton Road (west of Netherhampton Road)	WB	1260_64022	893	216	1221	168	280	25%	7.9	×	×	942	180	13	1%	0.4	✓	✓
A36 Salisbury Road (east of A30)	WB	64082_1259	850	189	1228	170	360	35%	10.3	×	×	942	182	85	8%	2.6	✓	✓
A36 Salisbury Road (east of A30)	EB	1259_64082	1094	260	1123	118	-114	-8%	3.2	✓	✓	1107	161	-85	-6%	2.4	✓	✓
A36 Wilton Road (west of Netherhampton Road)	EB	64022_1260	1054	262	1130	118	-69	-5%	1.9	✓	✓	1106	161	-49	-4%	1.4	✓	✓
A36 Wilton Road (east of Netherhampton Road)	EB	1260_1386	714	175	694	93	-103	-12%	3.5	✓	✓	489	117	-283	-32%	10.4	×	×
A36 Wilton Road (west of Ashfield Road)	EB	63552_1130	602	124	661	71	6	1%	0.2	✓	✓	632	117	23	3%	0.9	✓	✓
A36 Wilton Road (west of St Paul's Roundabout)	EB	1211_1360	748	147	687	183	-25	-3%	0.8	✓	✓	720	225	50	6%	1.6	✓	✓
A36 Churchill Way West (north of St Paul's Roundabout)	EB	1362_1102	1357	175	1256	93	-183	-12%	4.8	✓	✓	1340	174	-17	-1%	0.4	✓	✓
A36 Churchill Way West (south of Castle Roundabout)	EB	1102_1364	1218	163	965	74	-343	-25%	9.9	×	×	1123	158	-101	-7%	2.8	✓	✓
A36 Churchill Way North	EB	1366_1368	1202	179	1365	62	46	3%	1.2	✓	✓	1276	150	44	3%	1.2	✓	✓
A36 Churchill Way East (south of St Marks Roundabout)	EB	1372_1108	1365	196	1670	96	206	13%	5.0	✓	✓	1370	157	-33	-2%	0.9	✓	✓
A36 Churchill Way East (north of College Roundabout)	EB	1110_1113	1179	179	1624	96	362	27%	9.2	×	×	1269	157	67	5%	1.8	✓	✓
WB																	**810**	**9/10**
EB																	**9/10**	**9/10**

Table 7.4 - Inter-Peak Traffic Flow Validation

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
A36 Churchill Way East (north of College Roundabout)	WB	1112_1109	887	255	1114	267	239	21%	6.7	×	×	1020	218	95	8%	2.8	✓	✓
A36 Churchill Way East (south of St Marks Roundabout)	WB	1108_1372	964	182	879	263	-4	0%	0.1	✓	✓	879	213	-54	-5%	1.6	✓	✓
A36 Churchill Way North	WB	1368_1366	1016	182	898	210	-89	-7%	2.6	✓	✓	974	170	-54	-5%	1.6	✓	✓
A36 Churchill Way West (south of Castle Roundabout)	WB	1364_1104	1069	156	450	156	-620	-51%	20.5	×	×	778	138	-309	-25%	9.5	×	×
A36 Churchill Way West (north of St Paul's Roundabout)	WB	1101_1362	Data Not Available															
A36 Wilton Road (west of St Paul's Roundabout)	WB	1360_1211																
A36 Wilton Road (west of Ashfield Road)	WB	1130_63552																
A36 Wilton Road (east of Netherhampton Road)	WB	1386_1260																
A36 Wilton Road (west of Netherhampton Road)	WB	1260_64022																
A36 Salisbury Road (east of A30)	WB	64082_1259																
A36 Wilton Road (west of Netherhampton Road)	EB	1259_64082	Data Not Available															
A36 Wilton Road (east of Netherhampton Road)	EB	64022_1260																
A36 Wilton Road (west of Ashfield Road)	EB	1260_1386																
A36 Wilton Road (west of St Paul's Roundabout)	EB	63552_1130																
A36 Churchill Way West (north of St Paul's Roundabout)	EB	1211_1360																
A36 Churchill Way West (south of Castle Roundabout)	EB	1362_1102																
A36 Churchill Way North	EB	1102_1364	1111	168	607	146	-526	-41%	16.5	×	×	1007	96	-176	-14%	5.1	✓	×
A36 Churchill Way East (south of St Marks Roundabout)	EB	1366_1368	1050	200	868	189	-193	-15%	5.7	×	×	1051	103	-96	-8%	2.8	✓	✓
A36 Churchill Way East (north of College Roundabout)	EB	1372_1108	1077	212	1129	243	84	7%	2.3	✓	✓	1112	135	-41	-3%	1.1	✓	✓
A36 Churchill Way East (north of College Roundabout)	EB	1110_1113	1046	159	1089	241	126	10%	3.5	✓	✓	1096	133	24	2%	0.7	✓	✓
WB																	**3/4**	**3/4**
EB																	**4/4**	**3/4**

Table 7.5 - Evening Peak Traffic Flow Validation

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
A36 Churchill Way East (north of College Roundabout)	WB	1112_1109	1070	301	1467	68	164	12%	4.3	✓	✓	1313	90	31	2%	0.8	✓	✓
A36 Churchill Way East (south of St Marks Roundabout)	WB	1108_1372	1178	71	1251	62	63	5%	1.8	✓	✓	1117	84	-49	-4%	1.4	✓	✓
A36 Churchill Way North	WB	1368_1366	1137	71	1318	70	180	15%	5.0	✓	✓	1305	86	183	15%	5.1	×	×
A36 Churchill Way West (south of Castle Roundabout)	WB	1364_1104	1237	92	673	61	-595	-45%	18.5	×	×	1054	65	-209	-16%	6.0	×	×
A36 Churchill Way West (north of St Paul's Roundabout)	WB	1101_1362	1182	85	812	63	-392	-31%	12.0	×	×	1264	72	69	5%	1.9	✓	✓
A36 Wilton Road (west of St Paul's Roundabout)	WB	1360_1211	780	87	714	47	-106	-12%	3.7	✓	✓	872	54	58	7%	1.9	✓	✓
A36 Wilton Road (west of Ashfield Road)	WB	1130_63552	752	106	574	136	-147	-17%	5.3	×	×	654	83	-121	-14%	4.3	✓	✓
A36 Wilton Road (east of Netherhampton Road)	WB	1386_1260	639	62	653	61	13	2%	0.5	✓	✓	772	84	155	22%	5.6	×	×
A36 Wilton Road (west of Netherhampton Road)	WB	1260_64022	1114	101	1020	83	-112	-9%	3.3	✓	✓	1137	100	21	2%	0.6	✓	✓
A36 Salisbury Road (east of A30)	WB	64082_1259	1047	115	1013	83	-66	-6%	2.0	✓	✓	1128	100	66	6%	1.9	✓	✓
A36 Wilton Road (west of Netherhampton Road)	EB	1259_64082	1104	106	1384	104	278	23%	7.6	×	×	1130	84	4	0%	0.1	✓	✓
A36 Wilton Road (east of Netherhampton Road)	EB	64022_1260	1172	131	1376	104	177	14%	4.7	✓	✓	1136	84	-83	-6%	2.3	✓	✓
A36 Wilton Road (west of Ashfield Road)	EB	1260_1386	724	94	749	84	14	2%	0.5	✓	✓	528	55	-235	-29%	8.9	×	×
A36 Wilton Road (west of St Paul's Roundabout)	EB	63552_1130	760	81	691	47	-102	-12%	3.6	✓	✓	824	54	38	5%	1.3	✓	✓
A36 Churchill Way West (north of St Paul's Roundabout)	EB	1211_1360	792	85	644	136	-97	-11%	3.4	✓	✓	725	83	-70	-8%	2.4	✓	✓
A36 Churchill Way West (south of Castle Roundabout)	EB	1362_1102	1142	74	905	72	-238	-20%	7.2	×	×	1070	45	-100	-8%	2.9	✓	✓
A36 Churchill Way North	EB	1102_1364	1348	37	846	67	-471	-34%	13.9	×	×	1171	39	-175	-13%	4.9	✓	✓
A36 Churchill Way East (south of St Marks Roundabout)	EB	1366_1368	1365	53	1228	58	-132	-9%	3.6	✓	✓	1314	46	-57	-4%	1.5	✓	✓
A36 Churchill Way East (north of College Roundabout)	EB	1372_1108	1300	55	1560	77	282	21%	7.3	×	×	1245	52	-58	-4%	1.6	✓	✓
A36 Churchill Way East (north of College Roundabout)	EB	1110_1113	1251	184	1472	77	114	8%	3.0	✓	✓	1172	52	-211	-15%	5.8	✓	×
WB																	**7/10**	**7/10**
EB																	**9/10**	**8/10**

Journey Time Validation

7.8 DMRB validation criteria states that a journey time should be within +/- 15% of the observed value. As highlighted in the *Data Collection Report*[6], the reliability of the observed journey time data on a number of routes for the AM peak is below DMRB standards, due to a combination of the variability experienced in the morning peak and some small sample sizes on certain surveyed routes. The results of the journey time validation are given in. Table 7.6 to Table 7.8.

7.9 In the morning peak, all journey time routes meet DMRB criteria whilst in the inter-peak and evening peak, one route each modelled in excess of +/- 15% of the observed value. Given the variability and reliability of this data, this is satisfactory.

Route Choice Validation

7.10 Checking the routing of traffic is a key final sense check on model validation. This process will focus on the route choice offered between eastern Salisbury and Wilton along:

- the A36 for the duration; and
- the Netherhampton Road.

7.11 Automatic number plate recognition between the A36 Southampton Road and the Park Wall junction in Wilton should provide a very reasonable indication of the proportion of vehicles travelling between those two points on each of the available routes. The validation process will aim to match these proportions within reasonable tolerances.

7.12 Table 7.9, Table 7.10and Table 7.11 display route choice validation for morning, inter and evening peak models respectively. The route choice assignment is particularly difficult to match exactly as the model seeks to minimise travel costs whilst knowing the costs of travel on all routes; in reality knowledge is imperfect and route choice can be influenced by journey ambience and perceived shortest time.

7.13 In terms of the percentage of vehicles taking each route, the model is always within 20 percentage points of the observed value. Where one route is used more predominant than the other, the model reflects this.

[6] Akins, 2009, Salisbury Transport Models – Data Collection Report.

Table 7.6 – Morning Peak Journey Time Validation Summary

Route	Description	Distance (km)	Modelled Travel Time (Sec)	Observed Travel Time (Sec)	% Diff
Route 1	Netherhampton Road (A3094) to A338 / Old Malthouse Lane Junction (Northbound)	10.25	1110	1240	-10.5%
Route 1	A338 / Old Malthouse Lane Junction to Netherhampton Road (A3094) (Southbound)	8.40	1006	1114	-9.7%
Route 2	Southampton Road / Petersfinger Road Junction to Beehive P&R Roundabout (Northbound)	7.89	1108	1127	-1.7%
Route 2	Beehive P&R Roundabout to Southampton Road / Petersfinger Road Junction (Southbound)	6.89	851	826	3.0%
Route 3	Downton Road / Rowbarrow Junction, Salisbury to A36 / Kingsway Junction, Wilton (Northbound)	8.66	796	770	3.3%
Route 3	A36 / Kingsway Junction, Wilton to Downton Road / Rowbarrow Junction, Salisbury (Southbound)	8.64	794	872	-9.0%
Route 4	A360 / The Avenue Road Junction to Old Malthouse Lane / A30 Junction (Eastbound)	10.60	1031	1060	-2.7%
Route 4	Old Malthouse Lane / A30 Junction to A360 / The Avenue Road Junction (Westbound)	11.29	1184	1137	4.1%
Route 5	Southampton Road / Petersfinger Road Junction to Churchill Way East / Churchill Way North Roundabout (Northbound)	3.57	349	328	6.4%
Route 5	Churchill Way East / Churchill Way North Roundabout to Southampton Road / Petersfinger Road Junction (Southbound)	2.91	231	226	2.2%

Table 7.7 – Inter-Peak Journey Time Validation Summary

Route	Description	Distance (km)	Modelled Travel Time (Sec)	Observed Travel Time (Sec)	% Diff
Route 1	Netherhampton Road (A3094) to A338 / Old Malthouse Lane Junction (Northbound)	10.25	1067	1066	0.1%
Route 1	A338 / Old Malthouse Lane Junction to Netherhampton Road (A3094) (Southbound)	8.40	972	1008	-3.6%
Route 2	Southampton Road / Petersfinger Road Junction to Beehive P&R Roundabout (Northbound)	7.89	979	1137	-13.9%
Route 2	Beehive P&R Roundabout to Southampton Road / Petersfinger Road Junction (Southbound)	6.89	830	853	-2.7%
Route 3	Downton Road / Rowbarrow Junction, Salisbury to A36 / Kingsway Junction, Wilton (Northbound)	8.66	753	754	-0.1%
Route 3	A36 / Kingsway Junction, Wilton to Downton Road / Rowbarrow Junction, Salisbury (Southbound)	8.64	729	713	2.3%
Route 4	A360 / The Avenue Road Junction to Old Malthouse Lane / A30 Junction (Eastbound)	10.60	921	1012	-9.0%
Route 4	Old Malthouse Lane / A30 Junction to A360 / The Avenue Road Junction (Westbound)	11.29	1177	1248	-5.7%
Route 5	Southampton Road / Petersfinger Road Junction to Churchill Way East / Churchill Way North Roundabout (Northbound)	3.57	314	289	8.8%
Route 5	Churchill Way East / Churchill Way North Roundabout to Southampton Road / Petersfinger Road Junction (Southbound)	2.91	228	226	0.9%

Table 7.8 – Evening Peak Journey Time Validation Summary

Route	Description	Distance (km)	Modelled Travel Time (Sec)	Observed Travel Time (Sec)	% Diff
Route 1	Netherhampton Road (A3094) to A338 / Old Malthouse Lane Junction (Northbound)	10.25	1115	1341	-16.9%
Route 1	A338 / Old Malthouse Lane Junction to Netherhampton Road (A3094) (Southbound)	8.40	1014	1067	-4.9%
Route 2	Southampton Road / Petersfinger Road Junction to Beehive P&R Roundabout (Northbound)	7.89	1022	1112	-8.1%
Route 2	Beehive P&R Roundabout to Southampton Road / Petersfinger Road Junction (Southbound)	6.89	853	920	-7.3%
Route 3	Downton Road / Rowbarrow Junction, Salisbury to A36 / Kingsway Junction, Wilton (Northbound)	8.66	773	794	-2.7%
Route 3	A36 / Kingsway Junction, Wilton to Downton Road / Rowbarrow Junction, Salisbury (Southbound)	8.64	757	879	-13.9%
Route 4	A360 / The Avenue Road Junction to Old Malthouse Lane / A30 Junction (Eastbound)	10.60	975	1062	-8.2%
Route 4	Old Malthouse Lane / A30 Junction to A360 / The Avenue Road Junction (Westbound)	11.29	1193	1354	-11.9%
Route 5	Southampton Road / Petersfinger Road Junction to Churchill Way East / Churchill Way North Roundabout (Northbound)	3.57	324	311	4.1%
Route 5	Churchill Way East / Churchill Way North Roundabout to Southampton Road / Petersfinger Road Junction (Southbound)	2.91	233	225	3.6%

Table 7.9 – Proportion of Modelled and Observed Traffic Passing Through Salisbury by Route - Morning Peak

From	To	Via A36		Via Netherhampton Rd	
		Modelled	Observed	Modelled	Observed
Salisbury Rd	Southampton Rd	54%	73%	46%	27%
Southampton Rd	Salisbury Rd	61%	56%	39%	44%

Table 7.10 – Proportion of Modelled and Observed Traffic Passing Through Salisbury by Route – Inter-Peak

From	To	Via A36		Via Netherhampton Rd	
		Modelled	Observed	Modelled	Observed
Salisbury Rd	Southampton Rd	59%	68%	41%	32%
Southampton Rd	Salisbury Rd	42%	51%	58%	49%

Table 7.11 – Proportion of Modelled and Observed Traffic Passing Through Salisbury by Route - Evening Peak

From	To	Via A36		Via Netherhampton Rd	
		Modelled	Observed	Modelled	Observed
Salisbury Rd	Southampton Rd	39%	35%	61%	65%
Southampton Rd	Salisbury Rd	52%	46%	48%	54%

8. Summary

8.1 The Salisbury Highway Model (SHM) has been developed to simulate the movement of traffic in and around Salisbury. It will be used, in conjunction with the related public transport and demand models to test and assess the impacts of future land-use scenarios and proposed highway and public transport improvements.

8.2 The model represents a typical weekday (Monday – Thursday) in neutral month (October) of 2008. It covers the morning and evening peak hours (08:00 to 09:00 and 17:00 to 18:00 respectively) and an average hour in the inter-peak period (between 10:00 and 16:00).

8.3 The model uses a range of data sources, including: nine road side interviews, one car park survey, journey to school and journey to work data and a range of traffic counts, journey time surveys and automatic number plate surveys.

8.4 This Local Model Validation Report has described the development of the modelled networks and trip matrices in Chapters Four and Five whilst Chapters Six and Seven demonstrate that the model is an appropriate representation of the highway network for Salisbury, both in terms of reproducing the observed demand as well as journey times. Furthermore, the model provides a reasonable representation of route choice between Southampton Road and Wilton given the mathematical functions of the model compared to the many reasons behind individual route choice.

Appendix A
Zone Names

Table A.1 – Zone Description

Zone	Ward	Land Use	Description	Sector
100	46UDHL	Commercial, Car Park	Salisbury	1
101	46UDHL	Commercial, Car Park	Salisbury	1
102	46UDHL	Commercial	Salisbury	1
103	46UDHJ	Commercial	Salisbury	1
104	46UDHJ	Car Park	Salisbury	1
105	46UDHJ	Commercial	Salisbury	1
106	46UDHJ	Work Place, Commercial	Salisbury	1
107	46UDHJ	Work Place, Commercial, Car Park	Salisbury	1
108	46UDHJ	Salisbury Bus Station, Commercial	Salisbury	1
109	46UDHL	Commercial, Car Park	Salisbury	1
110	46UDHJ	Work Place, Commercial, Car Park, Garden	Salisbury	1
111	46UDHJ	Residential, Commercial	Salisbury	1
112	46UDHL	Commercial, Work Place, Car Park	Salisbury	1
113	46UDHL	Commercial, Car Park, Residential, Church	Salisbury	1
114	46UDHL	Commercial	Salisbury	1
115	46UDHL	Residential, Hospital	Salisbury	1
116	46UDHL	Schools, College, Residential, Court, Church, Commercial	Salisbury	1
117	46UDHL	Cathedral, School	Salisbury	1
118	46UDHL	School, College	Salisbury	1
200	46UDHL	Commercial (TESCO)	Salisbury	2
201	46UDHL	Treatment Plant	Salisbury	2
202	46UDHL	Proposed Petersfinger Park and Ride Zone	Salisbury	2
203	46UDHL	Industrial	Salisbury	2
204	46UDHL	Commercial	Salisbury	2
205	46UDHL	Industrial	Salisbury	2
206	46UDHL	Residential, School, Church, Commercial	Salisbury	2
207	46UDHL	College (Salisbury College of Technology)	Salisbury	2
208	46UDHL	Car Park, Park	Salisbury	2
209	46UDHL	Hospital	Salisbury	1
300	46UDHL	Car Park	Salisbury	1
301	46UDHL	Residential, Commercial, School	Salisbury	2
302	46UDHL	Business Centre	Salisbury	2
303	46UDHL	Residential	Salisbury	2
304	46UDHG	Residential, Open Area	Salisbury	2
305	46UDHG	Residential, Open Area	Salisbury	2
306	46UDHJ	Residential, School	Salisbury	2

Zone	Ward	Land Use	Description	Sector
307	46UDHL	Residential, Hostel, Commercial	Salisbury	2
308	46UDHJ	Residential	Salisbury	1
309	46UDHK	School, Play Field, Residential	Salisbury	2
310	46UDHJ	Residential, School, Sports Facilities	Salisbury	2
311	46UDGT	Salisbury Crematorium, Residential, Open Area	Salisbury	2
312	46UDGT	Residential, Play Grounds, Commercial	Salisbury	2
313	46UDHG	Residential, Open Area, Warehouse	Salisbury	2
314	46UDHG	Schools	Salisbury	2
315	46UDGT	London Road Park and Ride Zone	Salisbury	2
316	46UDGT	Residential, Open Area, School, Play Ground	Salisbury	2
317	46UDGT	Commercial, Open Area	Salisbury	2
318	46UDHG	Commercial, Open Area	Salisbury	2
319	46UDHG	Residential, Open Area	Salisbury	3
320	46UDHG	School, Open Area	Salisbury	3
321	46UDHG	Air Field, Business Park	Salisbury	3
322	46UDHG	Business Centre, Play Grounds	Salisbury	3
323	46UDHG	Beehive Park and Ride Zone	Salisbury	3
324	46UDHK	Castle, Residential, Play Grounds, School, Open Area	Salisbury	2
325	46UDHK	Work Place	Salisbury	2
326	46UDHK	Residential	Salisbury	2
327	46UDHK	Victoria Park, Play Grounds, Residential	Salisbury	2
328	46UDHK	Residential	Salisbury	2
329	46UDHK	School	Salisbury	2
330	46UDHK	Residential	Salisbury	2
331	46UDHK	Residential	Salisbury	2
332	46UDHK	School	Salisbury	2
333	46UDHK	Residential	Salisbury	2
334	46UDHM	Residential (Crosses the ward boundary to match the highway)	Salisbury	1
335	46UDHJ	Work Place, Commercial	Salisbury	1
336	46UDHJ	Residential, Commercial (Crosses the ward boundary to match the highway)	Salisbury	1
337	46UDHJ	Work Place, Commercial	Salisbury	1
338	46UDHJ	Residential	Salisbury	1
339	46UDHJ	Salisbury Art Centre, District Council Office, House	Salisbury	1
340	46UDHM	Commercial (Waitrose)	Salisbury	2
341	46UDHM	Residential	Salisbury	2
342	46UDHM	Residential, School, Play Ground	Salisbury	2

Zone	Ward	Land Use	Description	Sector
343	46UDHB	Residential	Salisbury	2
344	46UDHM	Residential, Open Area	Salisbury	2
345	46UDHM	Residential, Cemetery, School, Open Area	Salisbury	2
346	46UDHK	Salisbury Leisure Centre, Sports Field, Open Area	Salisbury	2
347	46UDHK	Residential	Salisbury	2
348	46UDHB	Commercial, Police Station, School, Residential	Salisbury	2
349	46UDGS	Residential, Open Area	Salisbury	2
350	46UDHB	Salisbury Railway Station	Salisbury	2
351	46UDHB	Residential	Salisbury	2
352	46UDHL	Residential, Commercial	Salisbury	1
353	46UDHM	Churches, Commercial	Salisbury	1
354	46UDHB	Residential, Commercial	Salisbury	2
355	46UDHB	Hospital	Salisbury	2
356	46UDHB	Residential, Commercial	Salisbury	2
357	46UDHB	Industrial (Churchfields East)	Salisbury	2
358	46UDHB	Industrial (Churchfields West)	Salisbury	2
359	46UDHB	Residential, Work Place	Salisbury	2
360	46UDHB	Residential, Open Area	Salisbury	2
361	46UDHB	Residential	Salisbury	2
362	46UDGS	Residential, School	Salisbury	2
363	46UDGS	Residential, Woods, Play Ground, Open Space	Salisbury	2
364	46UDGS	School	Salisbury	2
365	46UDGS	Quarry, Open Area	Salisbury	2
366	46UDHS	Residential, Open Area (Quidhampton)	Salisbury	3
367	46UDHL	Medical Centre, Car Park, Park	Salisbury	1
368	46UDHE	Residential, Commercial, Church, Play Ground, Open Area	Salisbury	2
369	46UDHE	Residential, Play Grounds	Salisbury	2
370	46UDHE	Residential, Commercial	Salisbury	2
371	46UDHE	Residential, School, Tennis Courts	Salisbury	2
372	46UDHE	Residential	Salisbury	2
373	46UDHD	Residential	Salisbury	2
374	46UDHD	Residential	Salisbury	2
375	46UDHD	Residential, Open Area	Salisbury	2
376	46UDHD	Residential, Open Area	Salisbury	2
377	46UDHD	Residential, Open Area	Salisbury	2
378	46UDHA	Britford Park and Ride Zone	Salisbury	3
379	46UDHA	District Hospital, Open Area	Salisbury	3

Zone	Ward	Land Use	Description	Sector
380	46UDHA	Mixed Land use (School, Commercial, Residential, Open Area) Britford	Salisbury	3
381	46UDHA	Ware House, School, Residential, Open Area	Salisbury	3
382	46UDHA	Industrial	Salisbury	3
383	46UDHA	Golf Course, Ware House, Open Area	Salisbury	3
384	46UDHA	Race Course	Salisbury	3
385	46UDHH	Open Area, Resort (Hinterland Zone)	Salisbury	3
400	46UDHS	Wilton Park and Ride Zone	Wilton	2
401	46UDHS	Commercial, Business Centre, Park	Wilton	2
402	46UDHS	Residential	Wilton	2
403	46UDHS	Commercial, Residential	Wilton	2
404	46UDHS	Residential, Commercial, Open Area	Wilton	2
405	46UDHS	Work Place, Open Area	Wilton	2
406	46UDHS	Commercial, Play Ground, Residential	Wilton	2
407	46UDHS	Commercial, Residential, Car Park, Sports Facilities	Wilton	2
408	46UDHS	Commercial	Wilton	2
409	46UDHS	Residential, Open Area, Cemetery	Wilton	2
410	46UDHS	Residential, Open Area	Wilton	2
411	46UDHS	Wilton House, Commercial, Park, Open Area	Wilton	2
412	46UDHS	Residential, School, Open Area	Wilton	2
450	46UDHE	Dummy zone for Future Development Near Churchfields Industrial Area (Churchfields Additional Development)	Salisbury	2
451	46UDHE	Dummy zone for Future Development Near Churchfields Industrial Area (Churchfields mixed use development)	Salisbury	2
452	46UDHA		Salisbury	0
453	46UDHA	Dummy zone for Future Development Harnham (Employment)	Salisbury	3
454	46UDHB	Dummy zone for Future Development Near Churchfields Industrial Area (Engine Development Site for Residential development)	Salisbury	2
455	46UDHD		Salisbury	2
456	46UDHA		Coombe Bissett	3
457	46UDHG	Dummy Zone for Future Development	Salisbury	2
458	46UDHG	Dummy Zone for Future Development	Salisbury	2
459	46UDHG	Dummy Zone for Future Development	Salisbury	2
460	46UDGT		Salisbury	2
461	46UDHG	Dummy Zone for Future Development (Old Sarum for Residential Development)	Salisbury	3
462	46UDHG	Dummy Zone for Future Development (Old Sarum)	Salisbury	3
463	46UDHJ	Dummy Zone for Future Development (Central Park / Maltings)	Salisbury	1

Zone	Ward	Land Use	Description	Sector
464	46UDHB	Dummy Zone for Future Development	Salisbury	2
465	46UDGS		Chilmark	3
466	46UDHS	Dummy Zone for Future Development (UKLF)	Wilton	2
467	46UDGS		Salisbury	2
468	46UDHS	Dummy Zone for Future Development	Wilton	2
469	46UDHS	Dummy Zone for Future Development	Wilton	2
470	46UDGS	Dummy Zone for Future Development	Salisbury	2
500	46UDHG	Hinterland	Alderbury	3
501	46UDHT	Hinterland	West Winterslow	3
502	46UDGP	Hinterland	Whiteparish	3
503	24UNGM	Hinterland	Lockerly Hall	5
504	24UNGF	Hinterland	Wellow	5
505	46UDHA	Hinterland	Coombe Bissett	3
506	46UDGY	Hinterland	Downton	3
507	24UJGY	Hinterland	Rockbourne	5
508	46UDGW	Hinterland	Broad Chalke	3
509	46UDHS	Hinterland	Burcombe	3
510	46UDHC	Hinterland	Chilmark	3
511	46UDHP	Hinterland	Tisbury	3
512	46UDHF	Hinterland	Mere	3
513	46UDHH	Hinterland	Woodford	3
514	46UDHN	Hinterland	Shrewton	3
515	46UFGS	Hinterland	Codford	4
516		Hinterland	Warminister	4
517		Hinterland	Westbury	4
518		Hinterland	West Wiltshire Rural and other parts	4
519	46UDHQ	Hinterland	Porton	3
520		Hinterland	Amesbury	3
521		Hinterland	Durrington / Bulford	3
522		Hinterland	Modified ward 46UDGR	3
523	46UBHB	Hinterland	Upavon	4
524	46UBHD	Hinterland	Pewsey	4
525		Hinterland	Mildenhall	4
526		Hinterland	Marlborough	4
527		Hinterland	Devizes	4
528	46UBHN	Hinterland	Potterne	4
529		Hinterland	North Wiltshire	4

Zone	Ward	Land Use	Description	Sector
530		Hinterland	Swindon	4
531	46UBGR	Hinterland	Collingbourne Ducis	4
532		Hinterland	Ludgershall	4
533		Hinterland	Tidworth	4
534	24UNGU	Hinterland	Kempton	5
535	24UNGD	Hinterland	Quarley	5
536	24UNGT	Hinterland	Nether Wallop	5
537		Hinterland	Andover	5
538		Hinterland	Amesbury	3
539		Hinterland	Dummy zone for future development (South Newton Employment Area)	3
540		Hinterland	Dummy zone for future development (Amesbury Residential development)	3
541		Hinterland	Amesbury	3
600		External	Part of Hampshire County	5
601		External	Hampshire County except Basingstoke	5
602		External	Basingstoke	5
603		External	Romsey	5
604		External	Southampton(main)	5
605		External	Hampshire County	5
606		External	Surrey, West Sussex, East Sussex and Kent Counties (Guildford as zone centroid)	5
607		External	London Region	5
608		External	Berkshire, Buckinghamshire and Oxfordshire County (Oxford as Zone Centroid)	5
609		External	East of England (Cambridge)	5
610		External	Gloucestershire and Avon County (Bristol)	5
611		External	Wales (Cardiff)	5
612		External	West Midlands (Birmingham)	5
613		External	East Midlands (Leicestershire)	5
614		External	North West (Manchester)	5
615		External	York & Humber (York)	5
616		External	North East (Newcastle)	5
617		External	New Forest and Isle of Wight	5
618		External	East Dorset	5
619		External	Poole, Bournemouth and Christchurch	5
620		External	Purbeck	5
621		External	North Dorset, West Dorset, Weymouth and Portland	5

Zone	Ward	Land Use	Description	Sector
622		External	Somerset County (Bridgewaters)	5
623		External	Devon and Cornwall	5
624		External	Scotland (Edinburgh)	5

Appendix B
Bus Services Coded in SHM

Table B.1 – Bus Services

Service No.	Service Description (From/To)	Operator	Frequency (mins)		
			AM	IP	PM
1a	Salisbury to Great Durnford	W&D	0	0	60
1b	Amesbury to Salisbury	W&D	60	0	0
2a	Salisbury to Devizes	W&D	60	60	60
2b	Devizes to Salisbury	W&D	60	60	60
4a	Salisbury to Devizes	W&D	0	0	60
4b	Devizes to Salisbury	W&D	60	0	0
5a	Salisbury to Pewsey	W&D	0	30	60
5b	Pewsey to Salisbury	W&D	60	60	60
6a	Salisbury - Durrington	W&D	60	60	60
6b	Durrington to Salisbury	W&D	30	60	60
25a	Salisbury - Hindon - Bourton	W&D	0	180	60
25b	Bourton - Hindon - Salisbury	W&D	60	180	60
26a	Salisbury-Tisbury-Hindon	W&D	0	180	0
26b	Hindon - Tisbury - Salisbury	W&D	0	180	0
27a	Salisbury to Shaftesbury (Hill Farm Estate)	W&D	0	180	30
27b	Shaftesbury (Hill Farm Estate) to Salisbury	W&D	60	0	60
29a	Salisbury - Shaftesbury (via District Hospital)	W&D	0	90	60
29b	Shaftesbury - Salisbury	W&D	60	90	60
34a	Salisbury - Romsey	W&D	60	120	60
34b	Romsey - Salisbury	W&D	60	120	60
36a	Salisbury to Romsey	W&D	60	120	60
36b	Romsey to Salisbury	W&D	60	90	30
53	Salisbury - Devizes Road(Top)- Salisbury	W&D	30	30	30
55	Salisbury CC - West Harnham - Salisbury CC	W&D	60	30	60
57	Salisbury - Bishopdown - Salisbury	W&D	20	15	20
60a	Salisbury CC-Ditchampton	W&D	30	60	30
60b	Ditchampton -Salisbury CC	W&D	30	60	30
60Aa	Salisbury - Ditchampton (via L-Bemerton)	W&D	0	60	0
60Ab	Ditchampton -Salisbury (via L-Bemerton)	W&D	0	60	0
61a	Salisbury- Bulbridge - Ditchampton	W&D	30	30	30
61b	Ditchampton - Salisbury CC	W&D	30	30	30
62	Salisbury CC - Pauls Dene - Salisbury CC	W&D	30	30	30
63a	Salisbury – Porton – Allington – Tidworth	W&D	0	72	60
63b	Tidworth – Allington – Porton – Salisbury	W&D	30	120	60
64a	Salisbury – Porton – Allington – Tidworth	W&D	0	120	60
64b	Tidworth – Allington – Porton – Salisbury	W&D	60	120	60
69a	Salisbury - Porton Down via Old Sarum	W&D	60	0	60
69b	Porton Down - Salisbury via Old Sarum	W&D	60	0	60
69Aa	Salisbury - Porton Down via Old Sarum	W&D	0	90	0
69Ab	Porton Down - Salisbury via Old Sarum	W&D	0	90	0
71	Stratford Bridge - Salisbury - Harnham- Stratford Bridge	W&D	0	72	0
72	Salisbury -Laverstock - Salisbury	W&D	30	30	30
73	Salisbury CC- Bishopdown Farm	W&D	0	60	0
89a	Salisbury to Winterslow	W&D	60	60	60

Service No.	Service Description (From/To)	Operator	Frequency (mins)		
			AM	IP	PM
89b	Winterslow to Salisbury	W&D	60	60	0
184a	Salisbury CC - Blandford - Weymouth	W&D	60	120	30
184b	Weymouth - Blandford - Salisbury	W&D	0	90	30
X3a	Salisbury to Bournemouth	W&D	30	30	30
X3b	Bournemouth to Salisbury	W&D	30	30	30
X7a	Salisbury to Southampton	W&D	60	60	60
X7b	Southampton to Salisbury	W&D	60	60	60
P1a	Woodfalls to Bemerton Heath	Pulseline - W&D	60	60	60
P1b	Bemerton Heath to Woodfalls	Pulseline - W&D	60	60	60
P2	Salisbury (Hospital) to Bemerton Heath	Pulseline- W&D	7.5	10	15
501a	Salisbury CC to Beehive P&R	P&R Service W&D	10	15	10
501b	Beehive P&R to Salisbury CC	P&R Service (W&D)	10	15	10
502a	Salisbury CC to Wilton P&R	P&R Service (W&D)	10	15	12
502b	Wilton P&R to Salisbury CC	P&R Service (W&D)	10	15	10
503a	Salisbury CC to Britford P&R	P&R Service (W&D)	12	15	10
503b	Britford P&R to Salisbury CC	P&R Service (W&D)	10	12	10
504a	Salisbury CC to London Road P&R	P&R Service (W&D)	10	15	10
504b	London Road P&R to Salisbury CC	P&R Service (W&D)	10	15	10
8a	Salisbury- Andover (WD, Stagecoach)	Other Operators	30	30	30
8b	Andover -Salisbury (WD, Stagecoach)	Other Operators	30	30	30
B24a	Salisbury - Warminster (Bodmans service)	Other Operators	0	60	60
B24b	Warminster- Salisbury (Bodmans service)	Other Operators	60	60	60
BX2a	Salisbury - Lackham College (Bodmans)	Other Operators	60	0	0
Bx2b	Lackham College - Salisbury (Bodmans)	Other Operators	0	0	60

Appendix C
Traffic Count Calibration

Table C.1: Inner Cordon – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Exeter St (Roundabout to City Centre)	IN	1121_1159	890	99	705	117	-167	-17%	5.5	×	×	778	64	-147	-15%	4.9	✓	✓
Fisherton Street Bridge (Eastbound)	IN	1216_1144	210	81	163	98	-30	-10%	1.8	✓	✓	203	103	15	5%	0.9	✓	✓
Castle Roundabout (TO C)	IN	1367_63364	539	62	202	45	-354	-59%	17.2	×	×	523	44	-34	-6%	1.4	✓	✓
Milford Street, Salisbury (To City Centre)	IN	1184_1183	496	74	446	14	-110	-19%	4.8	×	✓	501	14	-55	-10%	2.3	✓	✓
Central Car Pk (Churchill Way to Car Park)	IN	1804_1103	272	7	320	19	61	22%	3.5	✓	✓	275	16	12	4%	0.7	✓	✓
Cranebridge (Mill Road to High Street)	IN	1217_1207	372	55	719	1	294	69%	12.3	×	×	454	0	27	6%	1.3	✓	✓
Culver St (Churchill W to Culver St Parking)	IN	1115_1116	81	0	29	0	-51	-63%	6.9	✓	×	51	0	-30	-37%	3.7	✓	✓
St Marks Roundabout (TO C)	IN	1373_1186	146	23	130	15	-25	-15%	2.0	✓	✓	120	14	-36	-21%	2.9	✓	✓
Bourne Hill, Salisbury (20mph Zone Sign) (NB)	IN	1109_1185	272	39	220	16	-76	-24%	4.6	✓	✓	271	36	-4	-1%	0.2	✓	✓
Central Car Pk (Car Park to Churchill Way)	OUT	1103_1805	95	9	100	4	0	0%	0.0	✓	✓	102	9	7	7%	0.7	✓	✓
Exeter St (City Centre to Roundabout)	OUT	1159_1121	545	110	524	69	-63	-10%	2.5	✓	✓	487	76	-92	-14%	3.7	✓	✓
Fisherton Street Bridge (Westbound)	OUT	1144_1216	137	124	215	105	58	22%	3.4	✓	✓	231	67	36	14%	2.2	✓	✓
Castle Roundabout (FROM C)	OUT	63364_1367	363	55	107	56	-255	-61%	15.0	×	×	320	56	-42	-10%	2.1	✓	✓
Milford Street, Salisbury (To Milford Hill)	OUT	1183_1184	229	35	290	59	86	33%	4.9	✓	✓	224	52	13	5%	0.8	✓	✓
Cranebridge (High Street to Mill Road)	OUT	1207_1217	362	30	366	5	-21	-5%	1.1	✓	✓	330	0	-62	-16%	3.2	✓	✓
Culver St (Culver St Parking to Churchill W)	OUT	1116_1115																
St Marks Roundabout (FROM C)	OUT	1186_1373	209	16	221	10	6	3%	0.4	✓	✓	205	10	-10	-5%	0.7	✓	✓
IN			**3278**	**439**	**2934**	**326**	**-457**	**-12%**	**7.7**	**5**	**5**	**3176**	**290**	**-251**	**-7%**	**4.2**	**9**	**9**
OUT			**1940**	**380**	**1822**	**308**	**-189**	**-8%**	**4.0**	**6**	**6**	**1900**	**271**	**-149**	**-6%**	**3.1**	**7**	**7**

Table C.2: RSI Cordon – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 1 - A36 (Southampton Road) (IN)	IN	1450_62012	874	154	882	179	33	3%	1.0	✓	✓	994	138	104	10%	3.2	✓	✓
RSI 2 - A338 (The Highway) (IN)	IN	1907_1314	666	83	681	102	34	5%	1.2	✓	✓	650	121	23	3%	0.8	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (IN)	IN	1949_1453	472	58	453	46	-30	-6%	1.3	✓	✓	462	42	-25	-5%	1.1	✓	✓
RSI 5 - A36 (Salisbury Road) (IN)	IN	64082_64022	1098	69	1123	118	73	6%	2.1	✓	✓	1107	161	101	9%	2.9	✓	✓
RSI 7 - A329 (Devises Road) (IN)	IN	1322_63492	499	23	333	101	-88	-17%	4.0	✓	✓	456	33	-32	-6%	1.4	✓	✓
RSI 8 - A345 (Castle Road) (IN)	IN	1358_1344	690	124	884	70	140	17%	4.7	×	✓	730	86	1	0%	0.1	✓	✓
RSI 9 - A30 (London Road) (IN)	IN	1218_1194	784	76	908	95	143	17%	4.7	×	✓	799	78	16	2%	0.6	✓	✓
RSI 1 - A36 (Southampton Road) (OUT)	OUT	62012_1450	523	124	549	97	-1	0%	0.1	✓	✓	539	132	25	4%	1.0	✓	✓
RSI 2 - A338 (The Highway) (OUT)	OUT	1314_1907	458	99	576	117	136	24%	5.5	×	×	457	151	51	9%	2.1	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (OUT)	OUT	1453_1949	198	53	221	8	-21	-8%	1.4	✓	✓	195	17	-39	-16%	2.6	✓	✓
RSI 5 - A36 (Salisbury Road) (OUT)	OUT	64022_64082	909	186	1228	170	303	28%	8.6	×	×	942	182	29	3%	0.9	✓	✓
RSI 7 - A329 (Devises Road) (OUT)	OUT	63492_1322	284	44	325	45	43	13%	2.3	✓	✓	262	39	-27	-8%	1.5	✓	✓
RSI 8 - A345 (Castle Road) (OUT)	OUT	1344_1358	607	104	575	69	-66	-9%	2.5	✓	✓	604	88	-18	-3%	0.7	✓	✓
RSI 9 - A30 (London Road) (OUT)	OUT	1194_1218	768	76	693	117	-34	-4%	1.2	✓	✓	652	102	-90	-11%	3.2	✓	✓
IN			**5083**	**587**	**5265**	**710**	**305**	**5%**	**4.0**	**5**	**7**	**5199**	**659**	**189**	**3%**	**2.5**	**7**	**7**
OUT			**3747**	**685**	**4168**	**624**	**360**	**8%**	**5.3**	**5**	**5**	**3650**	**711**	**-71**	**-2%**	**1.1**	**7**	**7**

Table C.3 Outer Cordon – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 7 - A329 (Devises Road) (IN)	IN	1322_63492	499	23	333	101	-88	-17%	4.0	✓	✓	456	33	-32	-6%	1.4	✓	✓
Stratford Road (SB)	IN	1355_1354	198	30	80	8	-140	-61%	11.1	×	×	101	21	-106	-46%	8.0	×	×
Castle Road (Old Sarum to City Centre)	IN	1352_63252	503	129	612	70	50	8%	1.9	✓	✓	502	69	-61	-10%	2.5	✓	✓
RSI 9 - A30 (London Road) (IN)	IN	1218_1194	784	76	908	95	143	17%	4.7	×	✓	799	78	16	2%	0.6	✓	✓
Church Road (SB)	IN	1346_63142	475	71	418	18	-110	-20%	5.0	×	✓	476	18	-53	-10%	2.3	✓	✓
Petersfinger Road (WB)	IN	1450_63044	206	32	220	0	-18	-7%	1.2	✓	✓	218	0	-20	-9%	1.4	✓	✓
RSI 1 - A36 (Southampton Road) (IN)	IN	1450_62012	874	154	882	179	33	3%	1.0	✓	✓	994	138	104	10%	3.2	✓	✓
RSI 2 - A338 (The Highway) (IN)	IN	1907_1314	666	83	681	102	34	5%	1.2	✓	✓	650	121	23	3%	0.8	✓	✓
Odstock Road, Salisbury (A338 Sign) (NB)	IN	63794_1309	288	44	298	22	-12	-4%	0.7	✓	✓	288	22	-22	-7%	1.2	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (IN)	IN	1949_1453	472	58	453	46	-30	-6%	1.3	✓	✓	462	42	-25	-5%	1.1	✓	✓
A3094 West Harnham (To Salisbury)	IN	1454_1304	388	58	452	17	24	5%	1.1	✓	✓	525	37	116	26%	5.2	×	×
Skew Road, Salisbury (Railings) (EB)	IN	1316_1317	34	5	164	8	133	345%	13.0	×	×	54	8	24	62%	3.3	✓	✓
RSI 7 - A329 (Devises Road) (OUT)	OUT	63492_1322	284	44	325	45	43	13%	2.3	✓	✓	262	39	-27	-8%	1.5	✓	✓
Stratford Road (NB)	OUT	1354_1355	88	14	96	2	-4	-4%	0.4	✓	✓	80	2	-20	-20%	2.1	✓	✓
Castle Road (City Centre to Old Sarum)	OUT	63252_1352	725	136	509	71	-281	-33%	10.5	×	×	587	90	-184	-21%	6.6	×	×
RSI 9 - A30 (London Road) (OUT)	OUT	1194_1218	768	76	693	117	-34	-4%	1.2	✓	✓	652	102	-90	-11%	3.2	✓	✓
Church Road (NB)	OUT	63142_1346	396	60	370	7	-80	-17%	3.9	✓	✓	412	6	-37	-8%	1.8	✓	✓
Petersfinger Road (EB)	OUT	63044_1450	192	28	257	0	38	17%	2.5	✓	✓	188	0	-31	-14%	2.2	✓	✓
RSI 1 - A36 (Southampton Road) (OUT)	OUT	62012_1450	523	124	549	97	-1	0%	0.1	✓	✓	539	132	25	4%	1.0	✓	✓
RSI 2 - A338 (The Highway) (OUT)	OUT	1314_1907	458	99	576	117	136	24%	5.5	×	×	457	151	51	9%	2.1	✓	✓
Odstock Road, Salisbury (A338 Sign) (SB)	OUT	1309_63794	681	104	718	19	-48	-6%	1.7	✓	✓	681	18	-86	-11%	3.2	✓	✓

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (OUT)	OUT	1453_1949	198	53	221	8	-21	-8%	1.4	✓	✓	195	17	-39	-16%	2.6	✓	✓
A3094 West Harnham (To Wilton)	OUT	1304_1454	414	62	712	39	275	58%	11.1	×	×	414	9	-53	-11%	2.5	✓	✓
Skew Road, Salisbury (Railings) (WB)	OUT	1317_1316	32	5	77	8	49	133%	6.2	✓	×	35	8	6	17%	1.0	✓	✓
IN			**5387**	**761**	**5501**	**666**	**19**	**0%**	**0.2**	**8**	**10**	**5526**	**586**	**-36**	**-1%**	**0.5**	**10**	**10**
OUT			**4759**	**803**	**5103**	**531**	**72**	**1%**	**1.0**	**9**	**8**	**4501**	**574**	**-486**	**-9%**	**6.7**	**11**	**11**

Table C.4: City Centre Car Parks – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Market Square Car Park (IN)	IN	C_100_IN	4	0	4	0	0	0%	0.0	✓	✓	4	0	0	0%	0.0	✓	✓
Maltings / Central Car Park (IN)	IN	C_104_IN	265	0	265	0	0	0%	0.0	✓	✓	265	0	0	0%	0.0	✓	✓
Salt Lane Car Park (IN)	IN	C_110_IN	35	0	35	0	0	-1%	0.1	✓	✓	35	0	0	-1%	0.1	✓	✓
Brown Street Car Park (IN)	IN	C_113_IN	44	0	44	0	0	0%	0.0	✓	✓	61	0	17	40%	2.4	✓	✓
Southampton Road Car Park (IN)	IN	C_208_IN	19	0	19	0	0	-2%	0.1	✓	✓	14	0	-5	-25%	1.2	✓	✓
Culver Street Car Park (IN)	IN	C_300_IN	73	0	72	0	-1	-1%	0.1	✓	✓	93	0	20	27%	2.2	✓	✓
College Street Car Park (IN)	IN	C_339_IN	11	0	11	0	0	-1%	0.0	✓	✓	15	0	4	36%	1.1	✓	✓
Lush House Car Park (IN)	IN	C_367_IN	19	0	19	0	0	1%	0.0	✓	✓	10	0	-9	-47%	2.3	✓	✓
Market Square Car Park (OUT)	OUT	C_100_OUT	4	0	4	0	0	-6%	0.1	✓	✓	4	0	0	-6%	0.1	✓	✓
Maltings / Central Car Park (OUT)	OUT	C_104_OUT	35	0	27	0	-8	-22%	1.4	✓	✓	27	0	-8	-22%	1.4	✓	✓
Salt Lane Car Park (OUT)	OUT	C_110_OUT	14	0	14	0	0	-3%	0.1	✓	✓	14	0	0	-3%	0.1	✓	✓
Brown Street Car Park (OUT)	OUT	C_113_OUT	15	0	14	0	-1	-9%	0.3	✓	✓	20	0	5	33%	1.2	✓	✓
Southampton Road Car Park (OUT)	OUT	C_208_OUT	Data Not Available															
Culver Street Car Park (OUT)	OUT	C_300_OUT																
College Street Car Park (OUT)	OUT	C_339_OUT																
Lush House Car Park (OUT)	OUT	C_367_OUT	10	0	9	0	-1	-9%	0.3	✓	✓	8	0	-2	-20%	0.7	✓	✓
IN			**470**	**0**	**468**	**0**	**-2**	**0%**	**0.1**	**8**	**8**	**497**	**0**	**27**	**6%**	**1.2**	**8**	**8**
OUT			**78**	**0**	**67**	**0**	**-11**	**-14%**	**1.2**	**5**	**5**	**73**	**0**	**-5**	**-7%**	**0.6**	**5**	**5**

Table C.5: Park and Ride Sites – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
London Road Park and Ride Zone (IN)	IN	C_315_IN	36	14	36	12	-2	-4%	0.3	✓	✓	36	12	-2	-4%	0.3	✓	✓
Beehive Park and Ride Zone (IN)	IN	C_323_IN	114	12	115	12	1	1%	0.1	✓	✓	115	12	1	1%	0.1	✓	✓
Britford Park and Ride Zone (IN)	IN	C_378_IN	84	14	84	10	-4	-4%	0.4	✓	✓	84	10	-4	-4%	0.4	✓	✓
Wilton Park and Ride Zone (IN)	IN	C_400_IN	100	12	100	12	0	0%	0.0	✓	✓	100	12	0	0%	0.0	✓	✓
London Road Park and Ride Zone (OUT)	OUT	C_315_OUT	0	12	0	12	1	4%	0.1	✓	✓	0	12	1	4%	0.1	✓	✓
Beehive Park and Ride Zone (OUT)	OUT	C_323_OUT	3	14	3	12	-2	-10%	0.4	✓	✓	3	12	-2	-10%	0.4	✓	✓
Britford Park and Ride Zone (OUT)	OUT	C_378_OUT	0	14	0	12	-2	-13%	0.5	✓	✓	0	12	-2	-13%	0.5	✓	✓
Wilton Park and Ride Zone (OUT)	OUT	C_400_OUT	3	14	3	12	-2	-10%	0.4	✓	✓	3	12	-2	-10%	0.4	✓	✓
IN			**334**	**51**	**334**	**46**	**-4**	**-1%**	**0.2**	**4**	**4**	**334**	**46**	**-5**	**-1%**	**0.2**	**4**	**4**
OUT			**6**	**53**	**6**	**48**	**-5**	**-8%**	**0.6**	**4**	**4**	**6**	**48**	**-5**	**-8%**	**0.6**	**4**	**4**

Table C.6: Churchfields Industrial Estate – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Churchfields Road	EB	1134_1141	465	120	612	38	66	11%	2.7	✓	✓	443	43	-99	-17%	4.3	✓	✓
Churchfields Road	WB	1141_1134	494	71	338	291	64	11%	2.6	✓	✓	461	153	49	9%	2.0	✓	✓

Table C.7: Wilton (Cordon & Wilton Rd/Netherhampton Junction) – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
B3083 South of Berwick St James (To Stapleford)	IN	2101_1939	27	2	189	6	166	568%	15.7	×	×	101	14	85	290%	10.0	✓	×
RSI 4 - A30 East of Barford St Martin (To Salisbury)	IN	1912_1911	397	48	356	151	62	14%	2.8	✓	✓	403	65	23	5%	1.1	✓	✓
Wilton (Wilton to City Centre)	IN	1259_64082	1094	260	1123	118	-114	-8%	3.2	✓	✓	1107	161	-85	-6%	2.4	✓	✓
A36 / A30 Roundabout / The Avenue / King Street / Minster Road / Salisbury Road (To Arm A)	IN	1259_64032	488	53	598	115	172	32%	6.9	×	×	512	54	24	4%	1.0	✓	✓
B3083 South of Berwick St James (To Winterbourne Stoke)	OUT	1939_2101	28	2	82	18	69	228%	8.6	✓	×	39	4	13	41%	2.1	✓	✓
RSI 4 - A30 East of Barford St Martin (To Shaftesbury)	OUT	1911_1912	198	44	286	77	121	50%	6.9	×	×	201	80	40	17%	2.5	✓	✓
Wilton (City Centre to Wilton)	OUT	64082_1259	850	189	1228	170	360	35%	10.3	×	×	942	182	85	8%	2.6	✓	✓
A36 / A30 Roundabout / The Avenue / King Street / Minster Road / Salisbury Road (From Arm A)	OUT	64032_1259	385	62	338	28	-81	-18%	4.0	✓	✓	379	54	-14	-3%	0.7	✓	✓
IN			**2006**	**363**	**2266**	**390**	**287**	**12%**	**5.7**	**2**	**2**	**2123**	**294**	**47**	**2%**	**1.0**	**4**	**3**
OUT			**1461**	**297**	**1933**	**293**	**468**	**27%**	**10.5**	**2**	**1**	**1561**	**320**	**124**	**7%**	**2.9**	**4**	**4**
Wilton Road / Netherhampton Road (TO ARM B (Salisbury))	Wilton Road/Netherhampton	1260_1300	416	99	436	25	-53	-10%	2.4	✓	✓	617	45	147	29%	6.1	×	×
Wilton Road / Netherhampton Road (TO ARM C (Netherhampton))	Wilton Road/Netherhampton	1260_1386	714	175	694	93	-103	-12%	3.5	✓	✓	489	117	-283	-32%	10.4	×	×
Wilton Road / Netherhampton Road (TO ARM A (Wilton))	Wilton Road/Netherhampton	1260_64022	893	216	1221	168	280	25%	7.9	×	×	942	180	13	1%	0.4	✓	✓
Wilton Road / Netherhampton Road (FROM ARM B (Salisbury))	Wilton Road/Netherhampton	1300_1260	436	97	507	43	17	3%	0.7	✓	✓	341	13	-178	-33%	8.5	×	×
Wilton Road / Netherhampton Road (FROM ARM C (Netherhampton))	Wilton Road/Netherhampton	1386_1260	532	131	720	126	184	28%	6.7	×	×	602	167	105	16%	3.9	×	✓
Wilton Road / Netherhampton Road (FROM ARM A (Wilton))	Wilton Road/Netherhampton	64022_1260	1054	262	1130	118	-69	-5%	1.9	✓	✓	1106	161	-49	-4%	1.4	✓	✓

Table C.8: Other RSI Site – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 6 - The Avenue (Reverse)	IN	1456_1258	557	58	649	14	92	8%	1.9	✓	✓	529	40	-46	-8%	1.9	✓	✓
RSI 6 - The Avenue (As shown on map)	OUT	1258_1456	312	39	444	100	132	55%	9.1	×	×	314	40	2	1%	0.1	✓	✓

Table C.9 A36 Junctions – AM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Churchill Way / Southampton Road																		
Churchill Way / Southampton Road (From Salisbury College)	A36	62082_1119	1068	161	935	179	-114	-9%	3.3	✓	✓	1139	162	73	6%	2.0	✓	✓
Churchill Way / Southampton Road (Left From Salisbury College)	A36	62082_1119_1121	490	74	296	55	-213	-38%	10.0	×	×	489	18	-57	-10%	2.4	✓	✓
Churchill Way / Southampton Road (Right turn from Salisbury College)	A36	62082_1119_1118	577	85	625	125	88	13%	3.3	✓	✓	630	144	113	17%	4.2	×	✓
Churchill Way / Southampton Road (From New Bridge Road)	A36	1121_1119	1074	161	1196	119	79	6%	2.2	✓	✓	1137	140	42	3%	1.2	✓	✓
Churchill Way / Southampton Road (New Bridge Road to Churchill Way)	A36	1121_1119_1118	783	117	909	60	69	8%	2.3	✓	✓	782	89	-29	-3%	1.0	✓	✓
Churchill Way / Southampton Road (Right turn from New Bridge Road)	A36	1121_1119_62082	291	44	286	58	10	3%	0.6	✓	✓	355	51	71	21%	3.7	✓	✓
Churchill Way / Southampton Road (From Churchill Way)	A36	1117_1119	1224	184	1612	96	300	21%	7.6	×	×	1250	157	-2	0%	0.0	✓	✓
Churchill Way / Southampton Road (Left turn from Churchill Way)	A36	1117_1119_62082	546	83	602	25	-2	0%	0.1	✓	✓	546	76	-7	-1%	0.3	✓	✓
Churchill Way / Southampton Road (Churchill Way to New Bridge Road)	A36	1117_1119_1121	678	104	1010	71	299	38%	9.8	×	×	704	81	3	0%	0.1	✓	✓
Churchill Way / Southampton Road (To Churchill Way)	A36	1119_1118	1360	205	1538	182	154	10%	3.8	✓	✓	1413	233	81	5%	2.0	✓	✓
Churchill Way / Southampton Road (To Salisbury College)	A36	1119_62082	838	127	901	85	22	2%	0.7	✓	✓	921	127	83	9%	2.6	✓	✓
Churchill Way / Southampton Road (To New Bridge Road)	A36	1119_1121	1167	175	1305	126	89	7%	2.4	✓	✓	1193	99	-50	-4%	1.4	✓	✓

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
St Marks Roundabout																		
St Marks Roundabout (FROM A)	A36	1188_1369	217	0	132	2	-83	-38%	6.2	✓	×	222	2	7	3%	0.5	✓	✓
St Marks Roundabout (TO A)	A36	1369_1188	289	0	56	0	-233	-80%	17.7	×	×	106	0	-183	-63%	13.0	×	×
St Marks Roundabout (FROM C)	A36	1186_1373	209	16	221	10	6	3%	0.4	✓	✓	205	10	-10	-5%	0.7	✓	✓
St Marks Roundabout (TO C)	A36	1373_1186	146	23	130	15	-25	-15%	2.0	✓	✓	120	14	-36	-21%	2.9	✓	✓
St Marks Roundabout (FROM D)	A36	1108_1372	1079	145	1302	165	244	20%	6.6	×	×	1112	197	85	7%	2.4	✓	✓
St Marks Roundabout (TO D)	A36	1372_1108	1365	196	1670	96	206	13%	5.0	✓	✓	1370	157	-33	-2%	0.9	✓	✓
St Marks Roundabout (FROM E)	A36	1189_1371	358	9	219	6	-142	-39%	8.2	×	×	294	6	-68	-18%	3.7	✓	✓
St Marks Roundabout (TO E)	A36	1371_1189	290	12	232	5	-65	-21%	3.9	✓	✓	287	4	-10	-3%	0.6	✓	✓
St Marks Roundabout (FROM F)	A36	63114_1370	958	104	902	101	-59	-6%	1.8	✓	✓	874	84	-104	-10%	3.3	✓	✓
St Marks Roundabout (TO F)	A36	1370_63114	713	67	767	123	111	14%	3.8	✓	✓	707	108	35	4%	1.2	✓	✓
Castle Roundabout																		
Castle Roundabout (FROM A)	A36	1139_1365	988	117	859	106	-140	-13%	4.4	✓	✓	918	118	-69	-6%	2.1	✓	✓
Castle Roundabout (TO A)	A36	1365_1139	828	131	795	109	-54	-6%	1.8	✓	✓	830	131	2	0%	0.1	✓	✓
Castle Roundabout (FROM B)	A36	1102_1364	1218	163	965	74	-343	-25%	9.9	×	×	1123	158	-101	-7%	2.8	✓	✓
Castle Roundabout (TO B)	A36	1364_1104	1179	113	838	129	-325	-25%	9.7	×	×	1093	175	-24	-2%	0.7	✓	✓
Castle Roundabout (FROM C)	A36	63364_1367	363	55	107	56	-255	-61%	15.0	×	×	320	56	-42	-10%	2.1	✓	✓
Castle Roundabout (TO C)	A36	1367_63364	539	62	202	45	-354	-59%	17.2	×	×	523	44	-34	-6%	1.4	✓	✓
St Marks Roundabout (TO B)	A36	1368_1366	1220	156	1268	112	3	0%	0.1	✓	✓	1362	167	153	11%	4.0	✓	✓
St Marks Roundabout (FROM B)	A36	1366_1368	1202	179	1365	62	46	3%	1.2	✓	✓	1276	150	44	3%	1.2	✓	✓

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Devizes Road																		
Devizes Rd (St Pauls Rbt to Devizes Rd)	A36	1361_1212	251	51	73	16	-213	-71%	15.2	×	×	116	16	-169	-56%	11.5	×	×
Devizes Rd (Devizes Rd to St Pauls Rbt)	A36	1212_1361	589	76	685	115	135	20%	5.0	×	✓	599	47	-20	-3%	0.8	✓	✓
St Paul's Roundabout																		
St Paul's Roundabout (TO ARM C (Wilton))	A36	1360_1211	690	131	729	72	-21	-3%	0.7	✓	✓	699	117	-5	-1%	0.2	✓	✓
St Paul's Roundabout (FROM ARM C (Wilton))	A36	1211_1360	748	147	687	183	-25	-3%	0.8	✓	✓	720	225	50	6%	1.6	✓	✓
St Paul's Roundabout (TO ARM E (Fisherton Street))	A36	1363_63342	616	87	454	293	43	6%	1.6	✓	✓	587	197	81	11%	3.0	✓	✓
St Paul's Roundabout (FROM ARM E (Fisherton Street))	A36	63342_1363	405	92	263	44	-189	-38%	9.4	×	×	381	49	-67	-13%	3.1	✓	✓
St Paul's Roundabout (TO ARM F (Churchillway West))	A36	1362_1102	1357	175	1256	93	-183	-12%	4.8	✓	✓	1340	174	-17	-1%	0.4	✓	✓
St Paul's Roundabout (FROM ARM F (Churchillway West))	A36	1101_1362	1010	150	874	133	-152	-13%	4.6	✓	✓	1043	184	67	6%	2.0	✓	✓
Harnham Gyratory																		
Coombe Road (Northbound)	A36	1202_1201	852	60	1001	26	115	13%	3.7	✓	✓	922	30	40	4%	1.3	✓	✓
Coombe Road (Southbound)	A36	1201_1202	846	60	790	30	-86	-10%	2.9	✓	✓	821	37	-49	-5%	1.6	✓	✓
Downton Road (Southbound)	A36	1201_63752	478	159	800	127	291	46%	10.4	×	×	539	161	64	10%	2.5	✓	✓
Downton Road (Northbound)	A36	63752_1201	708	147	830	116	91	11%	3.0	✓	✓	692	135	-28	-3%	1.0	✓	✓
New Bridge Road (Southbound)	A36	1121_1197	1342	237	1451	140	12	1%	0.3	✓	✓	1306	163	-110	-7%	2.8	✓	✓
New Bridge Road (Northbound)	A36	1197_1121	1574	212	1690	149	54	3%	1.3	✓	✓	1568	196	-22	-1%	0.5	✓	✓
New Harnham Road (Eastbound)	A36	63742_1196	435	60	481	66	52	11%	2.3	✓	✓	474	76	55	11%	2.4	✓	✓
New Harnham Road (Westbound)	A36	1196_63742	438	90	483	41	-4	-1%	0.2	✓	✓	466	11	-50	-10%	2.2	✓	✓

Table C.10: Inner Cordon – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Exeter St (Roundabout to City Centre)	IN	1121_1159	633	97	677	101	49	7%	1.8	✓	✓	707	68	46	6%	1.7	✓	✓
Fisherton Street Bridge (Eastbound)	IN	1216_1144	209	71	292	91	103	37%	5.7	×	×	291	82	93	33%	5.2	✓	×
Castle Roundabout (TO C)	IN	1367_63364	391	58	251	32	-165	-37%	8.6	×	×	391	32	-26	-6%	1.2	✓	✓
Milford Street, Salisbury (To City Centre)	IN	1184_1183	183	35	222	6	10	5%	0.7	✓	✓	199	6	-12	-6%	0.8	✓	✓
Central Car Pk (Churchill Way to Car Park)	IN	1804_1103	173	2	57	1	-118	-67%	10.9	×	×	108	38	-30	-17%	2.4	✓	✓
Cranebridge (Mill Road to High Street)	IN	1217_1207	267	25	574	0	281	96%	13.5	×	×	305	0	13	4%	0.8	✓	✓
Culver St (Churchill W to Culver St Parkin)	IN	1115_1116	29	0	18	0	-11	-39%	2.3	✓	✓	29	0	0	-1%	0.0	✓	✓
St Marks Roundabout (TO C)	IN	1373_1186	102	21	51	16	-56	-46%	5.7	✓	×	48	16	-59	-48%	6.1	✓	×
Bourne Hill, Salisbury (20mph Zone Sign) (NB)	IN	1109_1185	120	23	235	4	96	67%	7.0	✓	×	141	5	2	2%	0.2	✓	✓
Central Car Pk (Car Park to Churchill Way)	OUT	1103_1805	230	2	80	1	-152	-65%	12.1	×	×	145	2	-85	-37%	6.2	✓	×
Exeter St (City Centre to Roundabout)	OUT	1159_1121	575	92	580	59	-29	-4%	1.1	✓	✓	555	70	-42	-6%	1.7	✓	✓
Fisherton Street Bridge (Westbound)	OUT	1144_1216	164	71	172	105	42	18%	2.6	✓	✓	163	70	-2	-1%	0.1	✓	✓
Castle Roundabout (FROM C)	OUT	63364_1367	400	90	121	36	-332	-68%	18.5	×	×	281	36	-172	-35%	8.6	×	×
Milford Street, Salisbury (To Milford Hill)	OUT	1183_1184	230	46	260	39	22	8%	1.3	✓	✓	254	60	38	14%	2.2	✓	✓
Cranebridge (High Street to Mill Road)	OUT	1207_1217	278	28	524	0	218	71%	10.7	×	×	363	0	57	19%	3.1	✓	✓
Culver St (Culver St Parking to Churchill W)	OUT	1116_1115	30	0	27	0	-3	-9%	0.5	✓	✓	30	0	0	0%	0.0	✓	✓
St Marks Roundabout (FROM C)	OUT	1186_1373	163	23	182	16	12	6%	0.8	✓	✓	166	16	-4	-2%	0.3	✓	✓
IN			**2107**	**331**	**2376**	**252**	**189**	**8%**	**3.8**	**5**	**3**	**2218**	**247**	**27**	**1%**	**0.5**	**9**	**7**
OUT			**2070**	**352**	**1945**	**255**	**-222**	**-9%**	**4.6**	**5**	**5**	**1958**	**254**	**-209**	**-9%**	**4.3**	**7**	**6**

Table C.11: RSI Cordon – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 1 - A36 (Southampton Road) (IN)	IN	1450_62012	505	184	461	212	-16	-2%	0.6	✓	✓	502	132	-54	-8%	2.1	✓	✓
RSI 2 - A338 (The Highway) (IN)	IN	1907_1314	445	106	492	84	25	4%	1.0	✓	✓	443	101	-7	-1%	0.3	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (IN)	IN	1949_1453	257	53	271	51	12	4%	0.7	✓	✓	257	48	-5	-2%	0.3	✓	✓
RSI 5 - A36 (Salisbury Road) (IN)	IN	64082_64022	806	154	832	201	72	8%	2.3	✓	✓	844	144	29	3%	0.9	✓	✓
RSI 7 - A329 (Devises Road) (IN)	IN	1322_63492	210	35	285	50	91	37%	5.3	✓	×	212	25	-8	-3%	0.5	✓	✓
RSI 8 - A345 (Castle Road) (IN)	IN	1358_1344	660	136	732	67	4	0%	0.1	✓	✓	654	96	-45	-6%	1.6	✓	✓
RSI 9 - A30 (London Road) (IN)	IN	1218_1194	505	78	623	140	180	31%	7.0	×	×	502	84	2	0%	0.1	✓	✓
RSI 1 - A36 (Southampton Road) (OUT)	OUT	62012_1450	549	150	456	188	-54	-8%	2.1	✓	✓	554	148	4	1%	0.1	✓	✓
RSI 2 - A338 (The Highway) (OUT)	OUT	1314_1907	428	83	562	65	116	23%	4.9	×	✓	425	75	-11	-2%	0.5	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (OUT)	OUT	1453_1949	245	46	207	56	-28	-10%	1.7	✓	✓	243	60	12	4%	0.7	✓	✓
RSI 5 - A36 (Salisbury Road) (OUT)	OUT	64022_64082	838	191	845	227	43	4%	1.3	✓	✓	842	175	-13	-1%	0.4	✓	✓
RSI 7 - A329 (Devises Road) (OUT)	OUT	63492_1322	206	28	197	59	22	9%	1.4	✓	✓	205	41	12	5%	0.8	✓	✓
RSI 8 - A345 (Castle Road) (OUT)	OUT	1344_1358	566	120	527	76	-83	-12%	3.3	✓	✓	561	112	-13	-2%	0.5	✓	✓
RSI 9 - A30 (London Road) (OUT)	OUT	1194_1218	484	83	507	138	79	14%	3.2	✓	✓	486	94	13	2%	0.5	✓	✓
IN			**3388**	**745**	**3697**	**804**	**368**	**9%**	**5.6**	**6**	**5**	**3414**	**631**	**-88**	**-2%**	**1.4**	**7**	**7**
OUT			**3316**	**699**	**3303**	**808**	**95**	**2%**	**1.5**	**6**	**7**	**3315**	**705**	**4**	**0%**	**0.1**	**7**	**7**

Table C.12 Outer Cordon – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 7 - A329 (Devises Road) (IN)	IN	1322_63492	210	35	285	50	91	37%	5.3	✓	×	212	25	-8	-3%	0.5	✓	✓
Stratford Road (SB)	IN	1355_1354	45	9	21	15	-18	-34%	2.7	✓	✓	35	10	-9	-17%	1.3	✓	✓
Castle Road (Old Sarum to City Centre)	IN	1352_63252	439	152	495	54	-42	-7%	1.8	✓	✓	441	89	-62	-10%	2.6	✓	✓
RSI 9 - A30 (London Road) (IN)	IN	1218_1194	505	78	623	140	180	31%	7.0	×	×	502	84	2	0%	0.1	✓	✓
Church Road (SB)	IN	1346_63142	127	25	117	2	-33	-22%	2.9	✓	✓	128	2	-23	-15%	1.9	✓	✓
Petersfinger Road (WB)	IN	1450_63044	98	18	150	0	33	29%	2.9	✓	✓	129	0	12	11%	1.1	✓	✓
RSI 1 - A36 (Southampton Road) (IN)	IN	1450_62012	505	184	461	212	-16	-2%	0.6	✓	✓	502	132	-54	-8%	2.1	✓	✓
RSI 2 - A338 (The Highway) (IN)	IN	1907_1314	445	106	492	84	25	4%	1.0	✓	✓	443	101	-7	-1%	0.3	✓	✓
Odstock Road, Salisbury (A338 Sign) (NB)	IN	63794_1309	349	67	403	16	3	1%	0.2	✓	✓	349	16	-51	-12%	2.6	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (IN)	IN	1949_1453	257	53	271	51	12	4%	0.7	✓	✓	257	48	-5	-2%	0.3	✓	✓
A3094 West Harnham (To Salisbury)	IN	1454_1304	337	64	346	32	-23	-6%	1.2	✓	✓	341	33	-28	-7%	1.4	✓	✓
Skew Road, Salisbury (Railings) (EB)	IN	1316_1317	24	5	62	6	39	136%	5.6	✓	×	41	6	18	65%	3.0	✓	✓
RSI 7 - A329 (Devises Road) (OUT)	OUT	63492_1322	206	28	197	59	22	9%	1.4	✓	✓	205	41	12	5%	0.8	✓	✓
Stratford Road (NB)	OUT	1354_1355	45	9	79	16	40	74%	4.7	✓	✓	43	14	3	5%	0.4	✓	✓
Castle Road (City Centre to Old Sarum)	OUT	63252_1352	388	108	399	74	-24	-5%	1.1	✓	✓	383	110	-3	-1%	0.2	✓	✓
RSI 9 - A30 (London Road) (OUT)	OUT	1194_1218	484	83	507	138	79	14%	3.2	✓	✓	486	94	13	2%	0.5	✓	✓
Church Road (NB)	OUT	63142_1346	146	30	95	4	-77	-44%	6.5	✓	×	128	4	-44	-25%	3.6	✓	✓
Petersfinger Road (EB)	OUT	63044_1450	118	23	176	0	35	25%	2.8	✓	✓	135	0	-6	-4%	0.5	✓	✓
RSI 1 - A36 (Southampton Road) (OUT)	OUT	62012_1450	549	150	456	188	-54	-8%	2.1	✓	✓	554	148	4	1%	0.1	✓	✓
RSI 2 - A338 (The Highway) (OUT)	OUT	1314_1907	428	83	562	65	116	23%	4.9	×	✓	425	75	-11	-2%	0.5	✓	✓
Odstock Road, Salisbury (A338 Sign) (SB)	OUT	1309_63794	318	62	356	16	-8	-2%	0.4	✓	✓	318	16	-46	-12%	2.4	✓	✓

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (OUT)	OUT	1453_1949	245	46	207	56	-28	-10%	1.7	✓	✓	243	60	12	4%	0.7	✓	✓
A3094 West Harnham (To Wilton)	OUT	1304_1454	354	69	422	39	39	9%	1.8	✓	✓	356	19	-48	-11%	2.4	✓	✓
Skew Road, Salisbury (Railings) (WB)	OUT	1317_1316	20	2	38	6	21	96%	3.7	✓	✓	22	6	6	28%	1.2	✓	✓
IN			**3341**	**796**	**3726**	**662**	**251**	**6%**	**3.8**	**11**	**9**	**3378**	**545**	**-214**	**-5%**	**3.4**	**12**	**12**
OUT			**3301**	**692**	**3495**	**660**	**161**	**4%**	**2.5**	**11**	**11**	**3298**	**587**	**-108**	**-3%**	**1.7**	**12**	**12**

Table C.13: City Centre Car Parks – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Market Square Car Park (IN)	IN	C_100_IN	26	0	26	0	0	0%	0.0	✓	✓	26	0	0	0%	0.0	✓	✓
Maltings / Central Car Park (IN)	IN	C_104_IN	367	0	366	0	-1	0%	0.0	✓	✓	366	0	-1	0%	0.0	✓	✓
Salt Lane Car Park (IN)	IN	C_110_IN	63	0	63	0	0	0%	0.0	✓	✓	63	0	0	0%	0.0	✓	✓
Brown Street Car Park (IN)	IN	C_113_IN	68	0	67	0	-1	-2%	0.2	✓	✓	40	0	-28	-41%	3.8	✓	✓
Southampton Road Car Park (IN)	IN	C_208_IN	4	0	5	0	1	14%	0.3	✓	✓	12	0	8	193%	2.8	✓	✓
Culver Street Car Park (IN)	IN	C_300_IN	29	0	29	0	0	0%	0.0	✓	✓	39	0	10	35%	1.7	✓	✓
College Street Car Park (IN)	IN	C_339_IN	4	0	4	0	0	-9%	0.2	✓	✓	4	0	0	9%	0.2	✓	✓
Lush House Car Park (IN)	IN	C_367_IN	36	0	35	0	-1	-2%	0.1	✓	✓	21	0	-15	-41%	2.7	✓	✓
Market Square Car Park (OUT)	OUT	C_100_OUT	18	0	18	0	0	-1%	0.0	✓	✓	18	0	0	-1%	0.0	✓	✓
Maltings / Central Car Park (OUT)	OUT	C_104_OUT	243	0	232	0	-11	-5%	0.7	✓	✓	232	0	-11	-5%	0.7	✓	✓
Salt Lane Car Park (OUT)	OUT	C_110_OUT	64	0	64	0	0	0%	0.0	✓	✓	64	0	0	0%	0.0	✓	✓
Brown Street Car Park (OUT)	OUT	C_113_OUT	70	0	70	0	0	-1%	0.1	✓	✓	63	0	-7	-9%	0.8	✓	✓
Southampton Road Car Park (OUT)	OUT	C_208_OUT	3	0	3	0	0	0%	0.0	✓	✓	6	0	3	104%	1.5	✓	✓
Culver Street Car Park (OUT)	OUT	C_300_OUT	27	0	27	0	0	2%	0.1	✓	✓	30	0	3	11%	0.6	✓	✓
College Street Car Park (OUT)	OUT	C_339_OUT	5	0	5	0	0	-1%	0.0	✓	✓	12	0	7	149%	2.5	✓	✓
Lush House Car Park (OUT)	OUT	C_367_OUT	36	0	36	0	0	0%	0.0	✓	✓	38	0	2	5%	0.3	✓	✓
IN			**597**	**0**	**594**	**0**	**-3**	**0%**	**0.1**	**8**	**8**	**572**	**0**	**-25**	**-4%**	**1.0**	**8**	**8**
OUT			**466**	**0**	**455**	**0**	**-11**	**-2%**	**0.5**	**8**	**8**	**464**	**0**	**-2**	**-1%**	**0.1**	**8**	**8**

Table C.14: Park and Ride Sites – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
London Road Park and Ride Zone (IN)	IN	C_315_IN	7	9	7	8	-1	-7%	0.3	✓	✓	7	8	-1	-7%	0.3	✓	✓
Beehive Park and Ride Zone (IN)	IN	C_323_IN	11	9	11	8	-1	-6%	0.3	✓	✓	11	8	-1	-6%	0.3	✓	✓
Britford Park and Ride Zone (IN)	IN	C_378_IN	11	9	11	8	-1	-5%	0.2	✓	✓	11	8	-1	-5%	0.2	✓	✓
Wilton Park and Ride Zone (IN)	IN	C_400_IN	16	9	16	8	-1	-5%	0.2	✓	✓	16	8	-1	-5%	0.2	✓	✓
London Road Park and Ride Zone (OUT)	OUT	C_315_OUT	5	9	5	8	-1	-8%	0.3	✓	✓	5	8	-1	-8%	0.3	✓	✓
Beehive Park and Ride Zone (OUT)	OUT	C_323_OUT	10	9	10	8	-1	-6%	0.3	✓	✓	10	8	-1	-6%	0.3	✓	✓
Britford Park and Ride Zone (OUT)	OUT	C_378_OUT	5	9	5	10	1	5%	0.2	✓	✓	5	10	1	5%	0.2	✓	✓
Wilton Park and Ride Zone (OUT)	OUT	C_400_OUT	21	9	21	8	-1	-4%	0.2	✓	✓	21	8	-1	-4%	0.2	✓	✓
IN			**45**	**37**	**45**	**32**	**-5**	**-6%**	**0.5**	**4**	**4**	**45**	**32**	**-5**	**-6%**	**0.5**	**4**	**4**
OUT			**41**	**37**	**41**	**34**	**-3**	**-3%**	**0.3**	**4**	**4**	**41**	**34**	**-3**	**-3%**	**0.3**	**4**	**4**

Table C.15: Churchfields Industrial Estate – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Churchfields Road	EB	1134_1141	369	78	500	50	103	23%	4.6	×	✓	357	42	-48	-11%	2.4	✓	✓
Churchfields Road	WB	1141_1134	353	94	340	190	83	18%	3.7	✓	✓	344	132	29	6%	1.3	✓	✓

Table C.16: Wilton (Cordon & Wilton Rd/Netherhampton Junction) – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
B3083 South of Berwick St James (To Stapleford)	IN	2101_1939	23	5	33	31	36	132%	5.4	✓	×	27	26	26	93%	4.0	✓	✓
RSI 4 - A30 East of Barford St Martin (To Salisbury)	IN	1912_1911	274	44	232	119	34	11%	1.8	✓	✓	276	51	9	3%	0.5	✓	✓
Wilton (Wilton to City Centre)	IN	1259_64082	Data Not Available															
A36 / A30 Roundabout / The Avenue / King Street / Minster Road / Salisbury Road (To Arm A)	IN	1259_64032																
B3083 South of Berwick St James (To Winterbourne Stoke)	OUT	1939_2101	18	2	64	36	79	391%	10.3	✓	×	17	11	8	40%	1.7	✓	✓
RSI 4 - A30 East of Barford St Martin (To Shaftesbury)	OUT	1911_1912	265	39	212	137	44	14%	2.4	✓	✓	251	97	44	14%	2.4	✓	✓
Wilton (City Centre to Wilton)	OUT	64082_1259	Data Not Available															
A36 / A30 Roundabout / The Avenue / King Street / Minster Road / Salisbury Road (From Arm A)	OUT	64032_1259																
IN			**297**	**48**	**265**	**151**	**70**	**20%**	**3.6**	**2**	**1**	**303**	**77**	**34**	**10%**	**1.8**	**2**	**2**
OUT			**283**	**41**	**276**	**172**	**124**	**38%**	**6.3**	**2**	**1**	**268**	**108**	**52**	**16%**	**2.8**	**2**	**2**
Wilton Road / Netherhampton Road (TO ARM B (Salisbury))	Wilton Road/Netherhampton	1260_1300	Data Not Available															
Wilton Road / Netherhampton Road (TO ARM C (Netherhampton))	Wilton Road/Netherhampton	1260_1386																
Wilton Road / Netherhampton Road (TO ARM A (Wilton))	Wilton Road/Netherhampton	1260_64022																
Wilton Road / Netherhampton Road (FROM ARM B (Salisbury))	Wilton Road/Netherhampton	1300_1260																
Wilton Road / Netherhampton Road (FROM ARM C (Netherhampton))	Wilton Road/Netherhampton	1386_1260																
Wilton Road / Netherhampton Road (FROM ARM A (Wilton))	Wilton Road/Netherhampton	64022_1260																

Table C.17: Other RSI Site – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 6 - The Avenue (Reverse)	IN	1456_1258	188	25	278	29	90	44%	5.8	✓	×	188	29	4	2%	0.3	✓	✓
RSI 6 - The Avenue (As shown on map)	OUT	1258_1456	193	32	270	29	77	33%	4.6	✓	✓	198	29	2	1%	0.1	✓	✓

Table C.18 A36 Junctions – Inter Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Churchill Way / Southampton Road																		
Churchill Way / Southampton Road (From Salisbury College)	A36	62082_1119	910	177	613	296	-178	-16%	5.6	×	×	947	180	40	4%	1.2	✓	✓
Churchill Way / Southampton Road (Left From Salisbury College)	A36	62082_1119_1121	458	90	285	67	-196	-36%	9.2	×	×	455	38	-54	-10%	2.4	✓	✓
Churchill Way / Southampton Road (Right turn from Salisbury College)	A36	62082_1119_1118	452	87	310	229	0	0%	0.0	✓	✓	453	142	55	10%	2.3	✓	✓
Churchill Way / Southampton Road (From New Bridge Road)	A36	1121_1119	941	182	1072	74	24	2%	0.7	✓	✓	965	127	-31	-3%	0.9	✓	✓
Churchill Way / Southampton Road (New Bridge Road to Churchill Way)	A36	1121_1119_1118	536	106	797	38	193	30%	7.1	×	×	564	75	-2	0%	0.1	✓	✓
Churchill Way / Southampton Road (Right turn from New Bridge Road)	A36	1121_1119_62082	405	78	275	37	-171	-35%	8.6	×	×	401	51	-31	-6%	1.4	✓	✓
Churchill Way / Southampton Road (From Churchill Way)	A36	1117_1119	919	179	1092	241	235	21%	6.7	×	×	1094	133	129	12%	3.8	✓	✓
Churchill Way / Southampton Road (Left turn from Churchill Way)	A36	1117_1119_62082	455	90	262	200	-82	-15%	3.7	✓	✓	478	76	10	2%	0.4	✓	✓
Churchill Way / Southampton Road (Churchill Way to New Bridge Road)	A36	1117_1119_1121	464	92	829	41	314	57%	11.8	×	×	616	57	116	21%	4.7	×	✓
Churchill Way / Southampton Road (To Churchill Way)	A36	1119_1118	988	193	1107	267	193	16%	5.4	×	×	1017	218	53	5%	1.5	✓	✓
Churchill Way / Southampton Road (To Salisbury College)	A36	1119_62082	860	166	556	237	-233	-23%	7.7	×	×	917	128	20	2%	0.6	✓	✓
Churchill Way / Southampton Road (To New Bridge Road)	A36	1119_1121	922	179	1114	108	121	11%	3.5	✓	✓	1071	95	65	6%	1.9	✓	✓

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
St Marks Roundabout																		
St Marks Roundabout (FROM A)	A36	1188_1369	98	0	39	2	-57	-58%	6.9	✓	×	96	2	0	0%	0.0	✓	✓
St Marks Roundabout (TO A)	A36	1369_1188	120	5	49	2	-73	-59%	7.8	✓	×	94	2	-28	-23%	2.7	✓	✓
St Marks Roundabout (FROM C)	A36	1186_1373	163	23	182	16	12	6%	0.8	✓	✓	166	16	-4	-2%	0.3	✓	✓
St Marks Roundabout (TO C)	A36	1373_1186	102	21	51	16	-56	-46%	5.7	✓	×	48	16	-59	-48%	6.1	✓	×
St Marks Roundabout (FROM D)	A36	1108_1372	964	182	879	263	-4	0%	0.1	✓	✓	879	213	-54	-5%	1.6	✓	✓
St Marks Roundabout (TO D)	A36	1372_1108	1077	212	1129	243	84	7%	2.3	✓	✓	1112	135	-41	-3%	1.1	✓	✓
St Marks Roundabout (FROM E)	A36	1189_1371	231	14	195	4	-46	-19%	3.1	✓	✓	220	4	-21	-9%	1.4	✓	✓
St Marks Roundabout (TO E)	A36	1371_1189	190	14	143	4	-57	-28%	4.3	✓	✓	188	4	-12	-6%	0.9	✓	✓
St Marks Roundabout (FROM F)	A36	63114_1370	604	113	672	148	103	14%	3.7	✓	✓	600	92	-25	-3%	0.9	✓	✓
St Marks Roundabout (TO F)	A36	1370_63114	613	104	566	146	-4	-1%	0.1	✓	✓	604	102	-10	-1%	0.4	✓	✓
Castle Roundabout																		
Castle Roundabout (FROM A)	A36	1139_1365	738	108	662	126	-58	-7%	2.0	✓	✓	728	133	15	2%	0.5	✓	✓
Castle Roundabout (TO A)	A36	1365_1139	752	117	719	141	-9	-1%	0.3	✓	✓	771	162	64	7%	2.1	✓	✓
Castle Roundabout (FROM B)	A36	1102_1364	1111	168	607	146	-526	-41%	16.5	×	×	1007	96	-176	-14%	5.1	✓	×
Castle Roundabout (TO B)	A36	1364_1104	1069	156	450	156	-620	-51%	20.5	×	×	778	138	-309	-25%	9.5	×	×
Castle Roundabout (FROM C)	A36	63364_1367	400	90	121	36	-332	-68%	18.5	×	×	281	36	-172	-35%	8.6	×	×
Castle Roundabout (TO C)	A36	1367_63364	391	58	251	32	-165	-37%	8.6	×	×	391	32	-26	-6%	1.2	✓	✓
St Marks Roundabout (TO B)	A36	1368_1366	1016	182	898	210	-89	-7%	2.6	✓	✓	974	170	-54	-5%	1.6	✓	✓
St Marks Roundabout (FROM B)	A36	1366_1368	1050	200	868	189	-193	-15%	5.7	×	×	1051	103	-96	-8%	2.8	✓	✓

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Devizes Road																		
Devizes Rd (St Pauls Rbt to Devizes Rd)	A36	1361_1212	314	53	202	12	-153	-42%	8.9	×	×	137	12	-217	-59%	13.5	×	×
Devizes Rd (Devizes Rd to St Pauls Rbt)	A36	1212_1361	378	46	405	21	2	0%	0.1	✓	✓	462	18	56	13%	2.6	✓	✓
St Paul's Roundabout																		
St Paul's Roundabout (TO ARM C (Wilton))	A36	1360_1211	Data Not Available															
St Paul's Roundabout (FROM ARM C (Wilton))	A36	1211_1360																
St Paul's Roundabout (TO ARM E (Fisherton Street))	A36	1363_63342																
St Paul's Roundabout (FROM ARM E (Fisherton Street))	A36	63342_1363																
St Paul's Roundabout (TO ARM F (Churchillway West))	A36	1362_1102																
St Paul's Roundabout (FROM ARM F (Churchillway West))	A36	1101_1362																
Harnham Gyratory																		
Coombe Road (Northbound)	A36	1202_1201	676	71	716	19	-13	-2%	0.5	✓	✓	641	18	-89	-12%	3.3	✓	✓
Coombe Road (Southbound)	A36	1201_1202	626	74	628	53	-18	-3%	0.7	✓	✓	621	60	-18	-3%	0.7	✓	✓
Downton Road (Southbound)	A36	1201_63752	494	120	609	75	70	11%	2.7	✓	✓	489	85	-40	-6%	1.6	✓	✓
Downton Road (Northbound)	A36	63752_1201	467	131	553	96	50	8%	2.0	✓	✓	467	113	-17	-3%	0.7	✓	✓
New Bridge Road (Southbound)	A36	1121_1197	1152	189	1324	114	97	7%	2.6	✓	✓	1140	136	-65	-5%	1.8	✓	✓
New Bridge Road (Northbound)	A36	1197_1121	1183	177	1363	123	125	9%	3.3	✓	✓	1184	166	-10	-1%	0.3	✓	✓
New Harnham Road (Eastbound)	A36	63742_1196	466	60	496	56	26	5%	1.1	✓	✓	453	62	-10	-2%	0.5	✓	✓
New Harnham Road (Westbound)	A36	1196_63742	453	81	489	33	-11	-2%	0.5	✓	✓	407	18	-108	-20%	4.9	×	✓

Table C.19: Inner Cordon – PM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Exeter St (Roundabout to City Centre)	IN	1121_1159	659	71	626	69	-35	-5%	1.3	✓	✓	677	45	-9	-1%	0.3	✓	✓
Fisherton Street Bridge (Eastbound)	IN	1216_1144	247	67	238	69	-7	-2%	0.4	✓	✓	231	62	-20	-6%	1.2	✓	✓
Castle Roundabout (TO C)	IN	1367_63364	369	51	178	40	-201	-48%	11.3	×	×	369	40	-11	-3%	0.5	✓	✓
Milford Street, Salisbury (To City Centre)	IN	1184_1183	244	18	326	8	72	27%	4.2	✓	✓	238	8	-16	-6%	1.0	✓	✓
Central Car Pk (Churchill Way to Car Park)	IN	1804_1103	96	0	135	5	44	46%	4.0	✓	✓	86	7	-4	-4%	0.4	✓	✓
Cranebridg (Mill Road to High Street)	IN	1217_1207	389	12	452	0	52	13%	2.5	✓	✓	372	0	-28	-7%	1.4	✓	✓
Culver St (Churchill W to Culver St Parkin)	IN	1115_1116	2	2	0	0	-4	-89%	2.5	✓	✓	1	0	-3	-68%	1.7	✓	✓
St Marks Roundabout (TO C)	IN	1373_1186	104	18	94	12	-17	-14%	1.6	✓	✓	104	12	-7	-5%	0.6	✓	✓
Bourne Hill, Salisbury (20mph Zone Sign) (NB)	IN	1109_1185	184	16	217	6	23	11%	1.6	✓	✓	196	6	2	1%	0.1	✓	✓
Central Car Pk (Car Park to Churchill Way)	OUT	1103_1805	328	0	142	2	-183	-56%	11.9	×	×	220	7	-101	-31%	6.0	×	×
Exeter St (City Centre to Roundabout)	OUT	1159_1121	829	87	720	57	-139	-15%	4.8	×	✓	727	54	-136	-15%	4.7	✓	✓
Fisherton Street Bridge (Westbound)	OUT	1144_1216	244	76	355	83	118	37%	6.1	×	×	206	58	-56	-17%	3.3	✓	✓
Castle Roundabout (FROM C)	OUT	63364_1367	397	32	197	48	-184	-43%	10.0	×	×	419	48	39	9%	1.8	✓	✓
Milford Street, Salisbury (To Milford Hill)	OUT	1183_1184	403	32	456	19	40	9%	1.9	✓	✓	427	14	6	1%	0.3	✓	✓
Cranebridge (High Street to Mill Road)	OUT	1207_1217	371	23	563	16	185	47%	8.4	×	×	482	0	88	22%	4.2	✓	✓
Culver St (Culver St Parking to Churchill W)	OUT	1116_1115	103	0	67	0	-36	-35%	4.0	✓	✓	103	0	0	0%	0.0	✓	✓
St Marks Roundabout (FROM C)	OUT	1186_1373	232	18	179	12	-59	-24%	4.0	✓	✓	222	12	-16	-7%	1.1	✓	✓
IN			**2294**	**255**	**2266**	**209**	**-74**	**-3%**	**1.5**	**8**	**8**	**2274**	**180**	**-96**	**-4%**	**1.9**	**9**	**9**
OUT			**2907**	**269**	**2679**	**237**	**-259**	**-8%**	**4.7**	**3**	**4**	**2808**	**192**	**-176**	**-6%**	**3.2**	**7**	**7**

Table C.20: RSI Cordon –PM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 1 - A36 (Southampton Road) (IN)	IN	1450_62012	598	71	689	54	74	11%	2.8	✓	✓	617	61	9	1%	0.3	✓	✓
RSI 2 - A338 (The Highway) (IN)	IN	1907_1314	517	67	541	83	40	7%	1.6	✓	✓	517	56	-10	-2%	0.4	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (IN)	IN	1949_1453	271	32	277	7	-19	-6%	1.1	✓	✓	266	21	-17	-6%	1.0	✓	✓
RSI 5 - A36 (Salisbury Road) (IN)	IN	64082_64022	993	87	1384	104	407	38%	11.4	×	×	1130	84	134	12%	3.9	✓	✓
RSI 7 - A329 (Devises Road) (IN)	IN	1322_63492	290	14	236	19	-49	-16%	2.9	✓	✓	282	15	-7	-2%	0.4	✓	✓
RSI 8 - A345 (Castle Road) (IN)	IN	1358_1344	877	58	847	9	-78	-8%	2.6	✓	✓	872	12	-50	-5%	1.7	✓	✓
RSI 9 - A30 (London Road) (IN)	IN	1218_1194	856	85	864	79	1	0%	0.0	✓	✓	827	62	-51	-5%	1.7	✓	✓
RSI 1 - A36 (Southampton Road) (OUT)	OUT	62012_1450	959	62	964	59	2	0%	0.1	✓	✓	963	60	2	0%	0.1	✓	✓
RSI 2 - A338 (The Highway) (OUT)	OUT	1314_1907	754	35	872	65	148	19%	5.1	×	×	751	55	17	2%	0.6	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (OUT)	OUT	1453_1949	480	51	488	46	4	1%	0.2	✓	✓	480	34	-17	-3%	0.7	✓	✓
RSI 5 - A36 (Salisbury Road) (OUT)	OUT	64022_64082	1151	113	1013	83	-168	-13%	4.9	✓	✓	1128	100	-36	-3%	1.0	✓	✓
RSI 7 - A329 (Devises Road) (OUT)	OUT	63492_1322	393	23	251	74	-92	-22%	4.8	✓	✓	350	47	-19	-5%	0.9	✓	✓
RSI 8 - A345 (Castle Road) (OUT)	OUT	1344_1358	734	67	735	59	-6	-1%	0.2	✓	✓	741	59	-1	0%	0.0	✓	✓
RSI 9 - A30 (London Road) (OUT)	OUT	1194_1218	708	25	696	47	10	1%	0.4	✓	✓	746	50	63	9%	2.3	✓	✓
IN			**4402**	**414**	**4837**	**355**	**376**	**8%**	**5.3**	**6**	**6**	**4510**	**312**	**7**	**0%**	**0.1**	**7**	**7**
OUT			**5179**	**375**	**5019**	**434**	**-101**	**-2%**	**1.4**	**6**	**6**	**5159**	**405**	**10**	**0%**	**0.1**	**7**	**7**

Table C.21 Outer Cordon –PM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 7 - A329 (Devises Road) (IN)	IN	1322_63492	290	14	236	19	-49	-16%	2.9	✓	✓	282	15	-7	-2%	0.4	✓	✓
Stratford Road (SB)	IN	1355_1354	95	7	76	0	-26	-25%	2.7	✓	✓	85	0	-17	-17%	1.8	✓	✓
Castle Road (Old Sarum to City Centre)	IN	1352_63252	704	97	665	9	-127	-16%	4.7	×	✓	702	13	-86	-11%	3.1	✓	✓
RSI 9 - A30 (London Road) (IN)	IN	1218_1194	856	85	864	79	1	0%	0.0	✓	✓	827	62	-51	-5%	1.7	✓	✓
Church Road (SB)	IN	1346_63142	358	30	357	6	-24	-6%	1.3	✓	✓	357	6	-25	-6%	1.3	✓	✓
Petersfinger Road (WB)	IN	1450_63044	275	23	152	0	-146	-49%	9.8	×	×	181	0	-117	-39%	7.5	×	×
RSI 1 - A36 (Southampton Road) (IN)	IN	1450_62012	598	71	689	54	74	11%	2.8	✓	✓	617	61	9	1%	0.3	✓	✓
RSI 2 - A338 (The Highway) (IN)	IN	1907_1314	517	67	541	83	40	7%	1.6	✓	✓	517	56	-10	-2%	0.4	✓	✓
Odstock Road, Salisbury (A338 Sign) (NB)	IN	63794_1309	604	48	640	12	0	0%	0.0	✓	✓	606	12	-34	-5%	1.3	✓	✓
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (IN)	IN	1949_1453	271	32	277	7	-19	-6%	1.1	✓	✓	266	21	-17	-6%	1.0	✓	✓
A3094 West Harnham (To Salisbury)	IN	1454_1304	540	44	688	13	117	20%	4.6	×	✓	653	20	90	15%	3.6	✓	✓
Skew Road, Salisbury (Railings) (EB)	IN	1316_1317	48	2	57	8	15	29%	1.9	✓	✓	56	8	14	27%	1.8	✓	✓
RSI 7 - A329 (Devises Road) (OUT)	OUT	63492_1322	393	23	251	74	-92	-22%	4.8	✓	✓	350	47	-19	-5%	0.9	✓	✓
Stratford Road (NB)	OUT	1354_1355	81	7	188	9	110	125%	9.2	×	×	89	6	8	9%	0.8	✓	✓
Castle Road (City Centre to Old Sarum)	OUT	63252_1352	628	44	554	59	-59	-9%	2.3	✓	✓	623	59	11	2%	0.4	✓	✓
RSI 9 - A30 (London Road) (OUT)	OUT	1194_1218	708	25	696	47	10	1%	0.4	✓	✓	746	50	63	9%	2.3	✓	✓
Church Road (NB)	OUT	63142_1346	281	23	263	4	-37	-12%	2.2	✓	✓	272	4	-28	-9%	1.6	✓	✓
Petersfinger Road (EB)	OUT	63044_1450	230	18	249	0	1	0%	0.0	✓	✓	228	0	-20	-8%	1.3	✓	✓
RSI 1 - A36 (Southampton Road) (OUT)	OUT	62012_1450	959	62	964	59	2	0%	0.1	✓	✓	963	60	2	0%	0.1	✓	✓
RSI 2 - A338 (The Highway) (OUT)	OUT	1314_1907	754	35	872	65	148	19%	5.1	×	×	751	55	17	2%	0.6	✓	✓
Odstock Road, Salisbury (A338 Sign) (SB)	OUT	1309_63794	205	16	216	14	10	4%	0.7	✓	✓	205	14	-2	-1%	0.1	✓	✓

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 3 - A354 North east of Coombe Bissett (To Blandford Forum) (OUT)	OUT	1453_1949	480	51	488	46	4	1%	0.2	✓	✓	480	34	-17	-3%	0.7	✓	✓
A3094 West Harnham (To Wilton)	OUT	1304_1454	467	39	403	19	-85	-17%	3.9	✓	✓	394	11	-101	-20%	4.7	×	✓
Skew Road, Salisbury (Railings) (WB)	OUT	1317_1316	37	2	52	8	21	53%	2.9	✓	✓	21	8	-11	-27%	1.9	✓	✓
IN			**5156**	**520**	**5242**	**290**	**-144**	**-3%**	**1.9**	**9**	**11**	**5149**	**275**	**-251**	**-4%**	**3.4**	**11**	**11**
OUT			**5223**	**345**	**5197**	**405**	**34**	**1%**	**0.4**	**10**	**10**	**5123**	**349**	**-97**	**-2%**	**1.3**	**11**	**12**

Table C.22: City Centre Car Parks – PM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Market Square Car Park (IN)	IN	C_100_IN	12	0	14	0	2	20%	0.7	✓	✓	14	0	2	20%	0.7	✓	✓
Maltings / Central Car Park (IN)	IN	C_104_IN	80	0	85	0	5	6%	0.6	✓	✓	85	0	5	6%	0.6	✓	✓
Salt Lane Car Park (IN)	IN	C_110_IN	19	0	19	0	0	1%	0.0	✓	✓	19	0	0	1%	0.0	✓	✓
Brown Street Car Park (IN)	IN	C_113_IN	24	0	24	0	0	-1%	0.1	✓	✓	27	0	3	11%	0.5	✓	✓
Southampton Road Car Park (IN)	IN	C_208_IN																
Culver Street Car Park (IN)	IN	C_300_IN																
College Street Car Park (IN)	IN	C_339_IN																
Lush House Car Park (IN)	IN	C_367_IN	13	0	13	0	0	0%	0.0	✓	✓	19	0	6	43%	1.4	✓	✓
Market Square Car Park (OUT)	OUT	C_100_OUT	11	0	12	0	1	5%	0.2	✓	✓	12	0	1	5%	0.2	✓	✓
Maltings / Central Car Park (OUT)	OUT	C_104_OUT	286	0	258	0	-28	-10%	1.7	✓	✓	258	0	-28	-10%	1.7	✓	✓
Salt Lane Car Park (OUT)	OUT	C_110_OUT	47	0	50	0	3	6%	0.4	✓	✓	50	0	3	6%	0.4	✓	✓
Brown Street Car Park (OUT)	OUT	C_113_OUT	61	0	65	0	4	6%	0.5	✓	✓	128	0	67	110%	6.9	✓	×
Southampton Road Car Park (OUT)	OUT	C_208_OUT	18	0	19	0	1	6%	0.2	✓	✓	15	0	-3	-16%	0.7	✓	✓
Culver Street Car Park (OUT)	OUT	C_300_OUT	64	0	67	0	3	4%	0.3	✓	✓	103	0	39	61%	4.3	✓	✓
College Street Car Park (OUT)	OUT	C_339_OUT	8	0	8	0	0	6%	0.2	✓	✓	14	0	6	72%	1.7	✓	✓
Lush House Car Park (OUT)	OUT	C_367_OUT	26	0	28	0	2	7%	0.4	✓	✓	20	0	-6	-23%	1.2	✓	✓
IN			**148**	**0**	**155**	**0**	**7**	**5%**	**0.6**	**5**	**5**	**164**	**0**	**16**	**11%**	**1.3**	**5**	**5**
OUT			**521**	**0**	**506**	**0**	**-15**	**-3%**	**0.6**	**8**	**8**	**599**	**0**	**78**	**15%**	**3.3**	**8**	**7**

Table C.23: Park and Ride Sites – PM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
London Road Park and Ride Zone (IN)	IN	C_315_IN	0	14	0	12	-2	-13%	0.5	✓	✓	0	12	-2	-13%	0.5	✓	✓
Beehive Park and Ride Zone (IN)	IN	C_323_IN	0	14	0	12	-2	-13%	0.5	✓	✓	0	12	-2	-13%	0.5	✓	✓
Britford Park and Ride Zone (IN)	IN	C_378_IN	0	14	0	12	-2	-14%	0.5	✓	✓	0	12	-2	-13%	0.5	✓	✓
Wilton Park and Ride Zone (IN)	IN	C_400_IN	1	14	1	10	-4	-25%	1.0	✓	✓	1	10	-4	-25%	1.0	✓	✓
London Road Park and Ride Zone (OUT)	OUT	C_315_OUT	19	12	19	12	0	1%	0.1	✓	✓	19	12	0	1%	0.1	✓	✓
Beehive Park and Ride Zone (OUT)	OUT	C_323_OUT	78	12	78	12	1	1%	0.1	✓	✓	78	12	1	1%	0.1	✓	✓
Britford Park and Ride Zone (OUT)	OUT	C_378_OUT	67	14	68	12	-1	-2%	0.1	✓	✓	68	12	-1	-2%	0.1	✓	✓
Wilton Park and Ride Zone (OUT)	OUT	C_400_OUT	48	14	48	12	-2	-3%	0.3	✓	✓	48	12	-2	-3%	0.3	✓	✓
IN			**1**	**55**	**1**	**46**	**-9**	**-17%**	**1.3**	**4**	**4**	**1**	**46**	**-9**	**-16%**	**1.3**	**4**	**4**
OUT			**212**	**51**	**212**	**48**	**-2**	**-1%**	**0.1**	**4**	**4**	**212**	**48**	**-2**	**-1%**	**0.1**	**4**	**4**

Table C.24: Churchfields Industrial Estate – PM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Churchfields Road	EB	1134_1141	434	30	455	20	11	2%	0.5	✓	✓	418	16	-30	-7%	1.4	✓	✓
Churchfields Road	WB	1141_1134	358	35	410	121	138	35%	6.4	×	×	361	59	27	7%	1.3	✓	✓

Table C.25: Wilton (Cordon & Wilton Rd/Netherhampton Junction) – PM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
B3083 South of Berwick St James (To Stapleford)	IN	2101_1939	30	2	58	9	35	108%	4.9	✓	✓	25	4	-4	-11%	0.6	✓	✓
RSI 4 - A30 East of Barford St Martin (To Salisbury)	IN	1912_1911	268	35	371	52	121	40%	6.3	×	×	269	23	-11	-4%	0.6	✓	✓
Wilton (Wilton to City Centre)	IN	1259_64082	1104	106	1384	104	278	23%	7.6	×	×	1130	84	4	0%	0.1	✓	✓
A36 / A30 Roundabout / The Avenue / King Street / Minster Road / Salisbury Road (To Arm A)	IN	1259_64032	205	32	272	30	65	28%	4.0	✓	✓	199	35	-3	-1%	0.2	✓	✓
B3083 South of Berwick St James (To Winterbourne Stoke)	OUT	1939_2101	28	2	151	5	125	412%	13.0	×	×	69	4	43	142%	6.0	✓	×
RSI 4 - A30 East of Barford St Martin (To Shaftesbury)	OUT	1911_1912	471	21	367	71	-53	-11%	2.5	✓	✓	473	66	47	10%	2.1	✓	✓
Wilton (City Centre to Wilton)	OUT	64082_1259	1047	115	1013	83	-66	-6%	2.0	✓	✓	1128	100	66	6%	1.9	✓	✓
A36 / A30 Roundabout / The Avenue / King Street / Minster Road / Salisbury Road (From Arm A)	OUT	64032_1259	567	46	569	68	24	4%	1.0	✓	✓	565	37	-11	-2%	0.4	✓	✓
IN			**1607**	**175**	**2086**	**195**	**499**	**28%**	**11.1**	**2**	**2**	**1624**	**145**	**-13**	**-1%**	**0.3**	**4**	**4**
OUT			**2113**	**184**	**2099**	**228**	**30**	**1%**	**0.6**	**3**	**3**	**2236**	**206**	**145**	**6%**	**3.0**	**4**	**3**
Wilton Road / Netherhampton Road (TO ARM B (Salisbury))	Wilton Road/Netherhampton	1260_1300	506	39	644	21	119	22%	4.8	×	✓	608	28	92	17%	3.8	✓	✓
Wilton Road / Netherhampton Road (TO ARM C (Netherhampton))	Wilton Road/Netherhampton	1260_1386	724	94	749	84	14	2%	0.5	✓	✓	528	55	-235	-29%	8.9	×	×
Wilton Road / Netherhampton Road (TO ARM A (Wilton))	Wilton Road/Netherhampton	1260_64022	1114	101	1020	83	-112	-9%	3.3	✓	✓	1137	100	21	2%	0.6	✓	✓
Wilton Road / Netherhampton Road (FROM ARM B (Salisbury))	Wilton Road/Netherhampton	1300_1260	533	41	384	23	-168	-29%	7.6	×	×	365	15	-194	-34%	8.9	×	×
Wilton Road / Netherhampton Road (FROM ARM C (Netherhampton))	Wilton Road/Netherhampton	1386_1260	639	62	653	61	13	2%	0.5	✓	✓	772	84	155	22%	5.6	×	×
Wilton Road / Netherhampton Road (FROM ARM A (Wilton))	Wilton Road/Netherhampton	64022_1260	1172	131	1376	104	177	14%	4.7	✓	✓	1136	84	-83	-6%	2.3	✓	✓

Table C.26: Other RSI Site – PM Peak

Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
RSI 6 - The Avenue (Reverse)	IN	1456_1258	352	25	478	56	126	41%	7.3	×	×	348	25	-4	-1%	0.2	✓	✓
RSI 6 - The Avenue (As shown on map)	OUT	1258_1456	421	21	487	20	66	15%	3.0	✓	✓	415	25	-2	0%	0.1	✓	✓

Table C.27 A36 Junctions – PM Peak

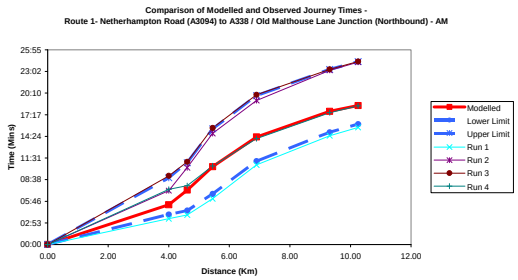
Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Churchill Way / Southampton Road																		
Churchill Way / Southampton Road (From Salisbury College)	A36	62082_1119	900	71	936	87	52	5%	1.6	✓	✓	922	91	41	4%	1.3	✓	✓
Churchill Way / Southampton Road (Left From Salisbury College)	A36	62082_1119_1121	482	39	267	43	-210	-40%	10.3	×	×	410	32	-79	-15%	3.6	✓	✓
Churchill Way / Southampton Road (Right turn from Salisbury College)	A36	62082_1119_1118	418	32	656	43	249	55%	10.4	×	×	495	59	104	23%	4.6	×	✓
Churchill Way / Southampton Road (From New Bridge Road)	A36	1121_1119	1447	117	1186	39	-340	-22%	9.1	×	×	1454	57	-53	-3%	1.4	✓	✓
Churchill Way / Southampton Road (New Bridge Road to Churchill Way)	A36	1121_1119_1118	729	58	770	25	9	1%	0.3	✓	✓	728	31	-28	-4%	1.0	✓	✓
Churchill Way / Southampton Road (Right turn from New Bridge Road)	A36	1121_1119_62082	719	58	416	14	-347	-45%	14.1	×	×	726	27	-24	-3%	0.9	✓	✓
Churchill Way / Southampton Road (From Churchill Way)	A36	1117_1119	1110	90	1497	77	374	31%	10.1	×	×	1185	52	37	3%	1.1	✓	✓
Churchill Way / Southampton Road (Left turn from Churchill Way)	A36	1117_1119_62082	333	25	393	38	73	20%	3.7	✓	✓	269	31	-58	-16%	3.2	✓	✓
Churchill Way / Southampton Road (Churchill Way to New Bridge Road)	A36	1117_1119_1121	776	62	1104	39	305	36%	9.7	×	×	916	21	99	12%	3.3	✓	✓
Churchill Way / Southampton Road (To Churchill Way)	A36	1119_1118	1147	94	1426	68	253	20%	6.8	×	×	1223	90	72	6%	2.0	✓	✓
Churchill Way / Southampton Road (To Salisbury College)	A36	1119_62082	1052	85	822	52	-263	-23%	8.3	×	×	1011	58	-68	-6%	2.0	✓	✓
Churchill Way / Southampton Road (To New Bridge Road)	A36	1119_1121	1258	101	1371	82	94	7%	2.5	✓	✓	1326	53	20	1%	0.5	✓	✓

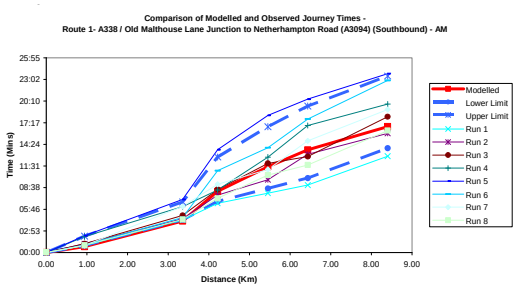
Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
St Marks Roundabout																		
St Marks Roundabout (FROM A)	A36	1188_1369	139	0	112	0	-27	-19%	2.4	✓	✓	114	0	-25	-18%	2.3	✓	✓
St Marks Roundabout (TO A)	A36	1369_1188	252	2	60	2	-192	-76%	15.3	×	×	132	2	-120	-47%	8.6	×	×
St Marks Roundabout (FROM C)	A36	1186_1373	232	18	179	12	-59	-24%	4.0	✓	✓	222	12	-16	-7%	1.1	✓	✓
St Marks Roundabout (TO C)	A36	1373_1186	104	18	94	12	-17	-14%	1.6	✓	✓	104	12	-7	-5%	0.6	✓	✓
St Marks Roundabout (FROM D)	A36	1108_1372	1178	71	1251	62	63	5%	1.8	✓	✓	1117	84	-49	-4%	1.4	✓	✓
St Marks Roundabout (TO D)	A36	1372_1108	1300	55	1560	77	282	21%	7.3	×	×	1245	52	-58	-4%	1.6	✓	✓
St Marks Roundabout (FROM E)	A36	1189_1371	315	5	237	4	-79	-25%	4.7	✓	✓	327	4	11	4%	0.6	✓	✓
St Marks Roundabout (TO E)	A36	1371_1189	310	2	158	6	-149	-48%	9.6	×	×	308	6	2	0%	0.1	✓	✓
St Marks Roundabout (FROM F)	A36	63114_1370	805	44	892	85	128	15%	4.2	×	✓	841	68	60	7%	2.0	✓	✓
St Marks Roundabout (TO F)	A36	1370_63114	931	41	728	53	-191	-20%	6.4	×	×	864	56	-52	-5%	1.7	✓	✓
Castle Roundabout																		
Castle Roundabout (FROM A)	A36	1139_1365	881	46	792	46	-89	-10%	3.0	✓	✓	911	48	32	3%	1.0	✓	✓
Castle Roundabout (TO A)	A36	1365_1139	881	44	1074	73	222	24%	6.9	×	×	1069	69	214	23%	6.6	×	×
Castle Roundabout (FROM B)	A36	1102_1364	1348	37	846	67	-471	-34%	13.9	×	×	1171	39	-175	-13%	4.9	✓	✓
Castle Roundabout (TO B)	A36	1364_1104	1237	92	673	61	-595	-45%	18.5	×	×	1054	65	-209	-16%	6.0	×	×
Castle Roundabout (FROM C)	A36	63364_1367	397	32	197	48	-184	-43%	10.0	×	×	419	48	39	9%	1.8	✓	✓
Castle Roundabout (TO C)	A36	1367_63364	369	51	178	40	-201	-48%	11.3	×	×	369	40	-11	-3%	0.5	✓	✓
St Marks Roundabout (TO B)	A36	1368_1366	1137	71	1318	70	180	15%	5.0	✓	✓	1305	86	183	15%	5.1	×	×
St Marks Roundabout (FROM B)	A36	1366_1368	1365	53	1228	58	-132	-9%	3.6	✓	✓	1314	46	-57	-4%	1.5	✓	✓

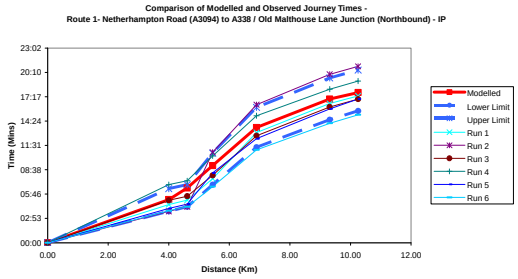
Location	Dir	SATURN Link	Counts		Model - Prior					DMRB		Model Post ME					DMRB	
			LV	HV	LV	HV	Diff	% Diff	GEH	Flow	GEH	LV	HV	Diff	% Diff	GEH	Flow	GEH
Devizes Road																		
Devizes Rd (St Pauls Rbt to Devizes Rd)	A36	1361_1212	576	55	448	20	-164	-26%	7.0	×	×	502	24	-105	-17%	4.4	×	✓
Devizes Rd (Devizes Rd to St Pauls Rbt)	A36	1212_1361	460	39	143	19	-337	-68%	18.6	×	×	380	16	-103	-21%	4.8	×	✓
St Paul's Roundabout																		
St Paul's Roundabout (TO ARM C (Wilton))	A36	1360_1211	780	87	714	47	-106	-12%	3.7	✓	✓	872	54	58	7%	1.9	✓	✓
St Paul's Roundabout (FROM ARM C (Wilton))	A36	1211_1360	792	85	644	136	-97	-11%	3.4	✓	✓	725	83	-70	-8%	2.4	✓	✓
St Paul's Roundabout (TO ARM E (Fisherton Street))	A36	1363_63342	619	71	195	131	-365	-53%	16.2	×	×	509	98	-83	-12%	3.3	✓	✓
St Paul's Roundabout (FROM ARM E (Fisherton Street))	A36	63342_1363	577	67	663	52	72	11%	2.8	✓	✓	584	50	-10	-1%	0.4	✓	✓
St Paul's Roundabout (TO ARM F (Churchillway West))	A36	1362_1102	1142	74	905	72	-238	-20%	7.2	×	×	1070	45	-100	-8%	2.9	✓	✓
St Paul's Roundabout (FROM ARM F (Churchillway West))	A36	1101_1362	1182	85	812	63	-392	-31%	12.0	×	×	1264	72	69	5%	1.9	✓	✓
Harnham Gyratory																		
Coombe Road (Northbound)	A36	1202_1201	829	46	814	16	-45	-5%	1.5	✓	✓	923	17	65	7%	2.2	✓	✓
Coombe Road (Southbound)	A36	1201_1202	750	48	813	59	74	9%	2.6	✓	✓	738	46	-14	-2%	0.5	✓	✓
Downton Road (Southbound)	A36	1201_63752	744	78	1020	81	279	34%	9.0	×	×	740	71	-12	-1%	0.4	✓	✓
Downton Road (Northbound)	A36	63752_1201	634	46	661	97	78	11%	2.9	✓	✓	635	70	25	4%	0.9	✓	✓
New Bridge Road (Southbound)	A36	1121_1197	1659	161	1855	129	164	9%	3.8	✓	✓	1576	96	-148	-8%	3.5	✓	✓
New Bridge Road (Northbound)	A36	1197_1121	1540	110	1518	97	-35	-2%	0.9	✓	✓	1635	92	76	5%	1.9	✓	✓
New Harnham Road (Eastbound)	A36	63742_1196	581	21	581	15	-5	-1%	0.2	✓	✓	582	36	16	3%	0.6	✓	✓
New Harnham Road (Westbound)	A36	1196_63742	647	44	559	19	-113	-16%	4.5	×	✓	602	11	-78	-11%	3.1	✓	✓

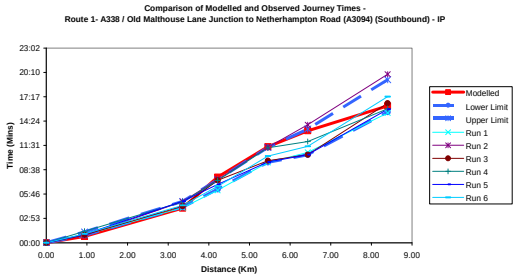
Appendix D
Journey Time Plots

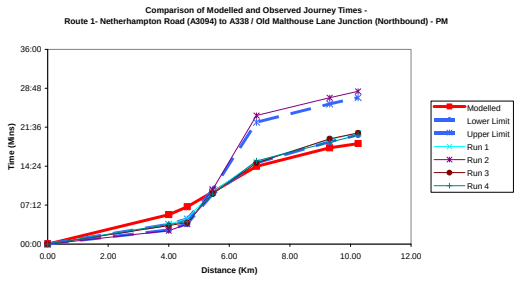
Figure D.1 – Route 1











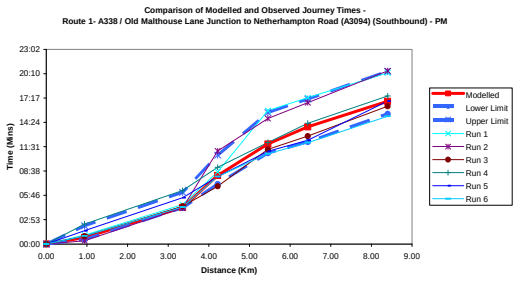
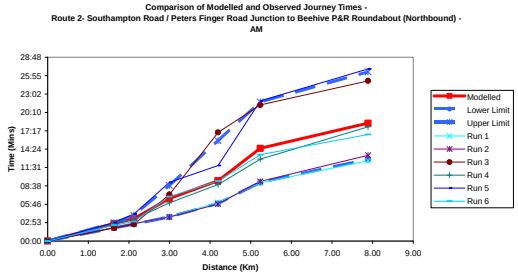
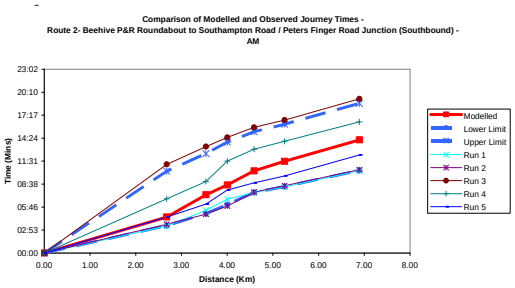
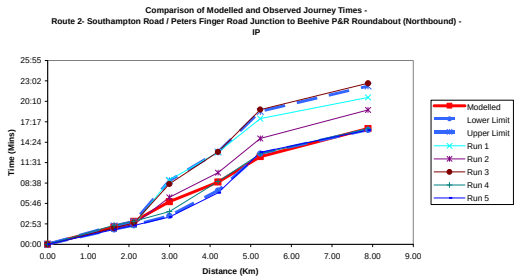
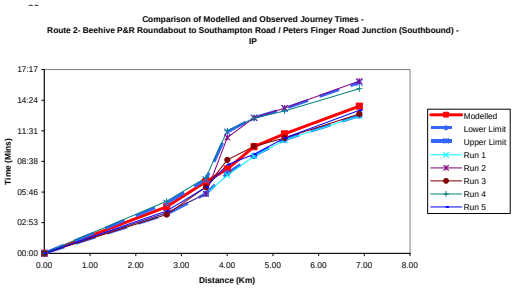


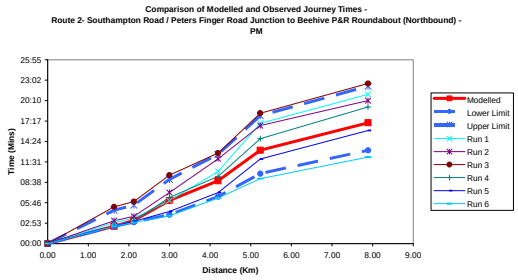
Figure D.2 – Route 2











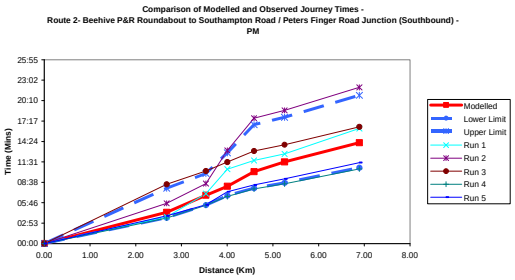
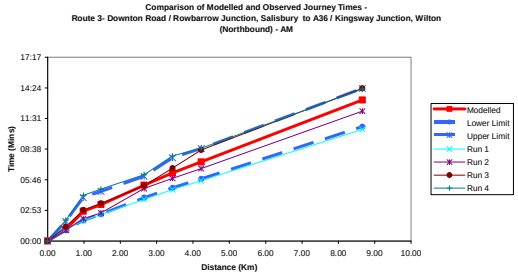
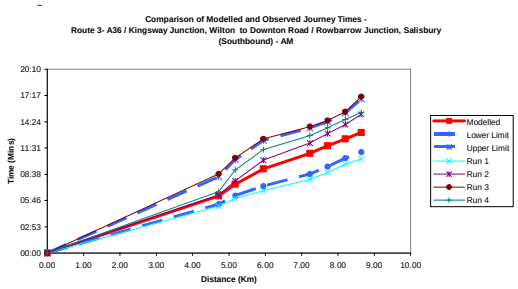
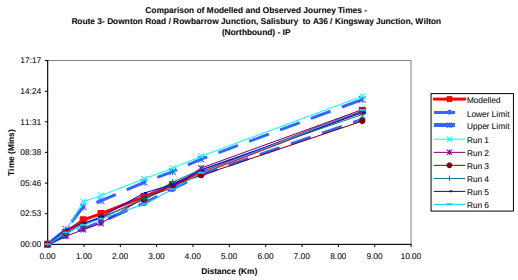
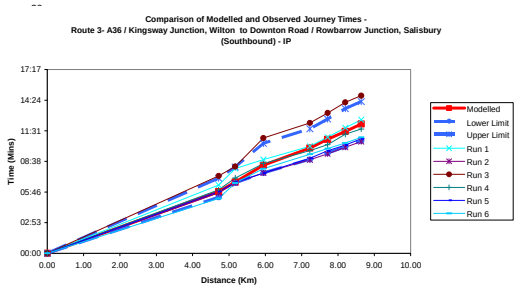


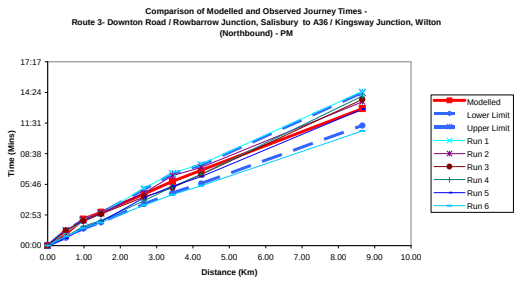
Figure D.3 – Route 3











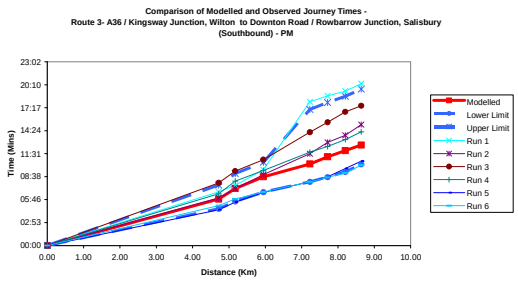
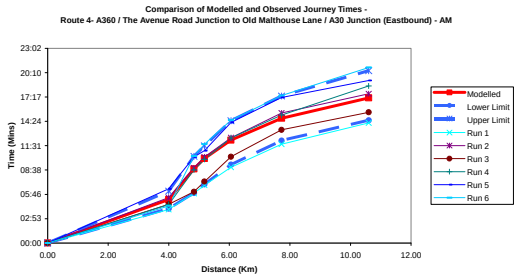
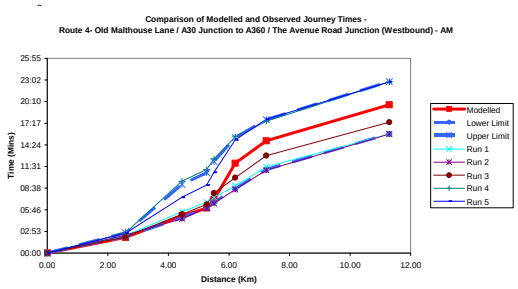
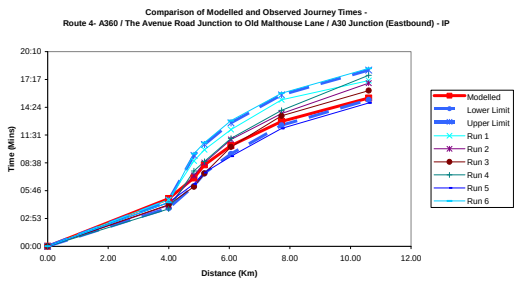
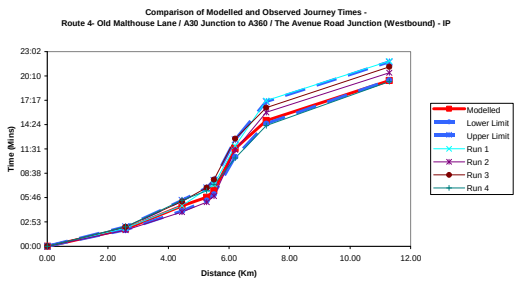


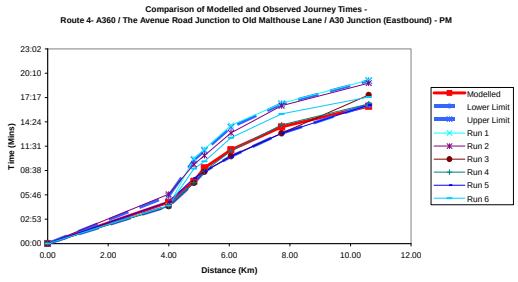
Figure D.4 – Route 4











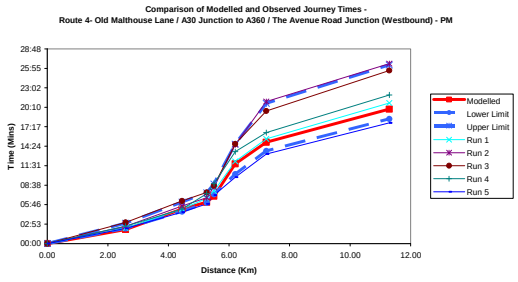
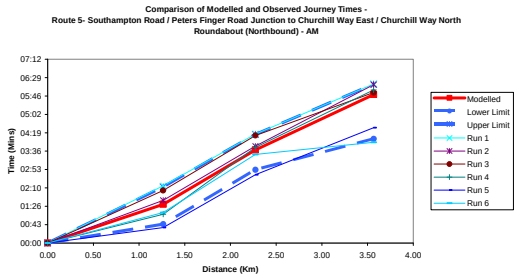
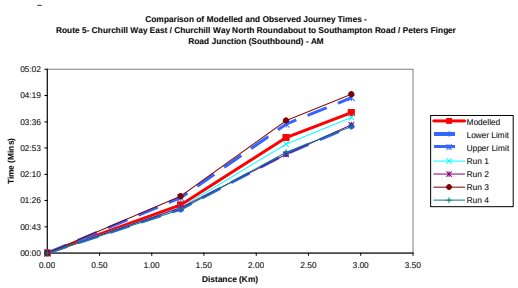
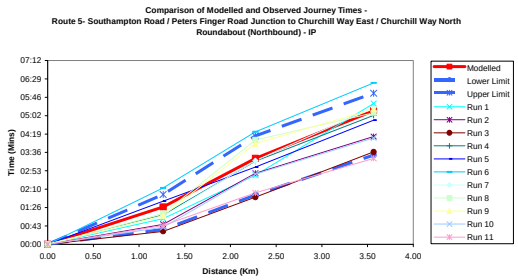
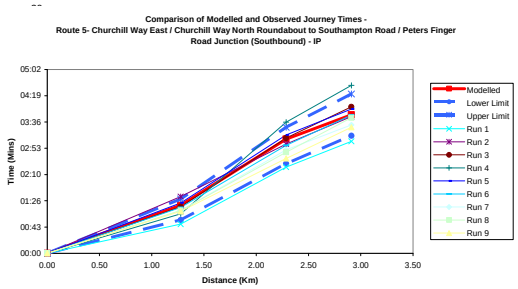


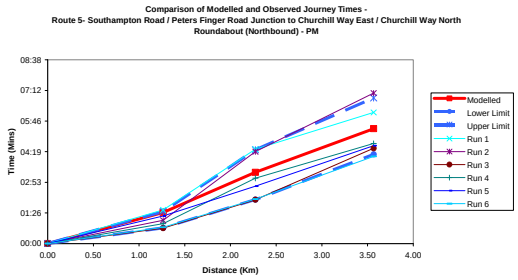
Figure D.5 – Route 5

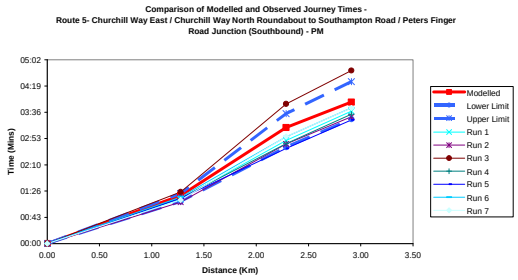












Appendix E
Matrices Construction

E.1 Stage 1-3 Road Side Interview Data

Table E.1 - – Processed RSI Matrix

AM						
Car						
Sector	1	2	3	4	5	Total
1	0	72	284	29	199	585
2	130	594	1040	74	651	2488
3	591	1064	632	65	420	2772
4	126	201	92	6	196	622
5	502	663	626	124	632	2548
Total	1349	2595	2674	299	2098	9015
LGV						
Sector	1	2	3	4	5	Total
1	0	11	39	2	55	106
2	26	27	161	10	126	350
3	50	136	114	2	79	381
4	0	32	18	0	29	78
5	61	73	165	65	116	480
Total	137	279	496	78	405	1396
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	133	15	95	243
3	0	255	33	59	103	450
4	0	50	4	0	44	98
5	0	70	88	73	132	363
Total	0	376	258	147	374	1155
IP						
Car						
Sector	1	2	3	4	5	Total
1	0	109	369	63	307	848
2	111	496	656	100	418	1782
3	377	673	492	50	339	1931
4	64	102	52	0	114	332
5	305	418	338	112	580	1753
Total	857	1797	1907	326	1758	6646
LGV						
Sector	1	2	3	4	5	Total
1	0	19	49	2	52	123
2	23	45	102	10	69	250
3	51	109	67	7	69	303
4	3	10	8	0	32	53
5	56	68	69	34	110	338
Total	134	252	295	53	333	1067
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	201	4	171	375
3	0	198	102	28	100	428
4	0	4	27	0	22	54
5	0	176	98	28	204	507
Total	0	379	427	60	498	1364
PM						
Car						
Sector	1	2	3	4	5	Total
1	0	132	627	125	548	1432
2	80	622	1075	186	671	2634
3	382	1337	737	103	734	3292
4	38	82	77	7	140	343
5	256	780	493	215	710	2453
Total	756	2953	3009	636	2802	10155
LGV						
Sector	1	2	3	4	5	Total
1	0	12	45	0	47	104
2	9	25	101	21	54	210
3	30	130	73	12	120	365
4	2	11	1	0	48	62
5	51	93	61	17	82	304
Total	91	272	281	50	351	1044
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	124	28	41	193
3	0	77	15	3	68	162
4	0	9	27	0	28	64
5	0	60	66	17	66	208
Total	0	146	232	47	203	628

E.2 Stage 4 Car Park Data

Table E.1 – Processed Car Park Matrix

AM						
Car						
Sector	1	2	3	4	5	Total
1	0	71	282	29	197	579
2	129	587	1029	73	644	2461
3	660	1050	624	64	415	2812
4	124	199	91	6	193	614
5	528	655	619	123	625	2550
Total	1440	2563	2644	296	2074	9016
LGV						
Sector	1	2	3	4	5	Total
1	0	11	39	2	55	106
2	26	27	161	10	126	350
3	50	136	114	2	79	381
4	0	32	18	0	29	78
5	61	73	165	65	116	480
Total	137	279	496	78	405	1396
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	133	15	95	243
3	0	255	33	59	103	450
4	0	50	4	0	44	98
5	0	70	88	73	132	363
Total	0	376	258	147	374	1155
IP						
Car						
Sector	1	2	3	4	5	Total
1	0	109	369	63	307	848
2	112	495	656	100	418	1781
3	375	672	492	50	339	1928
4	66	102	52	0	114	334
5	307	417	338	112	580	1754
Total	859	1796	1907	326	1758	6645
LGV						
Sector	1	2	3	4	5	Total
1	0	19	49	2	52	123
2	23	45	102	10	69	250
3	51	109	67	7	69	303
4	3	10	8	0	32	53
5	56	68	69	34	110	338
Total	134	252	295	53	333	1067
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	201	4	171	375
3	0	198	102	28	100	428
4	0	4	27	0	22	54
5	0	176	98	28	204	507
Total	0	379	427	60	498	1364
PM						
Car						
Sector	1	2	3	4	5	Total
1	0	135	656	133	594	1517
2	79	616	1066	184	665	2610
3	377	1325	731	102	728	3263
4	37	81	77	7	138	339
5	253	773	488	213	701	2428
Total	746	2929	3017	639	2826	10157
LGV						
Sector	1	2	3	4	5	Total
1	0	12	45	0	47	104
2	9	25	101	21	54	210
3	30	130	73	12	120	365
4	2	11	1	0	48	62
5	51	93	61	17	82	304
Total	91	272	281	50	351	1044
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	124	28	41	193
3	0	77	15	3	68	162
4	0	9	27	0	28	64
5	0	60	66	17	66	208
Total	0	146	232	47	203	628

E.3 Stage 5 Journey to Work Data

Table E.2 – Processed Journey to Work Matrix

AM						
Car						
Sector	1	2	3	4	5	Total
1	54	214	272	27	189	757
2	596	2095	1087	75	632	4486
3	649	1114	627	64	402	2856
4	122	199	89	6	185	601
5	525	637	612	123	613	2510
Total	1946	4260	2687	295	2021	11210
LGV						
Sector	1	2	3	4	5	Total
1	0	11	39	2	55	106
2	26	27	161	10	126	350
3	50	136	114	2	79	381
4	0	32	18	0	29	78
5	61	73	165	65	116	480
Total	137	279	496	78	405	1396
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	133	15	95	243
3	0	255	33	59	103	450
4	0	50	4	0	44	98
5	0	70	88	73	132	363
Total	0	376	258	147	374	1155
IP						
Car						
Sector	1	2	3	4	5	Total
1	14	234	368	64	302	982
2	232	1252	684	100	401	2670
3	377	726	489	50	329	1971
4	66	103	52	0	112	333
5	302	402	328	110	563	1705
Total	991	2717	1921	324	1707	7660
LGV						
Sector	1	2	3	4	5	Total
1	0	19	49	2	52	123
2	23	45	102	10	69	250
3	51	109	67	7	69	303
4	3	10	8	0	32	53
5	56	68	69	34	110	338
Total	134	252	295	53	333	1067
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	201	4	171	375
3	0	198	102	28	100	428
4	0	4	27	0	22	54
5	0	176	98	28	204	507
Total	0	379	427	60	498	1364
PM						
Car						
Sector	1	2	3	4	5	Total
1	43	486	648	131	593	1901
2	173	1661	1112	186	650	3782
3	366	1348	733	100	722	3269
4	35	83	77	7	138	339
5	243	762	476	205	693	2379
Total	860	4339	3045	630	2795	11671
LGV						
Sector	1	2	3	4	5	Total
1	0	12	45	0	47	104
2	9	25	101	21	54	210
3	30	130	73	12	120	365
4	2	11	1	0	48	62
5	51	93	61	17	82	304
Total	91	272	281	50	351	1044
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	124	28	41	193
3	0	77	15	3	68	162
4	0	9	27	0	28	64
5	0	60	66	17	66	208
Total	0	146	232	47	203	628

E.4 Stage 6 School Travel Data

Table E.3 – Processed School Travel Data Matrix

AM						
Car						
Sector	1	2	3	4	5	Total
1	4	147	263	27	189	630
2	235	1282	1021	75	632	3245
3	640	1099	616	64	402	2821
4	122	199	89	6	185	601
5	525	637	612	123	613	2510
Total	1527	3365	2600	295	2021	9808
LGV						
Sector	1	2	3	4	5	Total
1	0	11	39	2	55	106
2	26	27	161	10	126	350
3	50	136	114	2	79	381
4	0	32	18	0	29	78
5	61	73	165	65	116	480
Total	137	279	496	78	405	1396
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	133	15	95	243
3	0	255	33	59	103	450
4	0	50	4	0	44	98
5	0	70	88	73	132	363
Total	0	376	258	147	374	1155
IP						
Car						
Sector	1	2	3	4	5	Total
1	4	182	367	64	302	918
2	199	1091	678	100	401	2470
3	375	717	487	50	329	1958
4	66	103	52	0	112	333
5	302	402	328	110	563	1705
Total	946	2495	1911	324	1707	7383
LGV						
Sector	1	2	3	4	5	Total
1	0	19	49	2	52	123
2	23	45	102	10	69	250
3	51	109	67	7	69	303
4	3	10	8	0	32	53
5	56	68	69	34	110	338
Total	134	252	295	53	333	1067
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	201	4	171	375
3	0	198	102	28	100	428
4	0	4	27	0	22	54
5	0	176	98	28	204	507
Total	0	379	427	60	498	1364
PM						
Car						
Sector	1	2	3	4	5	Total
1	2	193	641	131	593	1560
2	116	996	1099	186	650	3048
3	358	1294	724	100	722	3198
4	35	83	77	7	138	339
5	243	762	476	205	693	2379
Total	755	3327	3017	630	2795	10524
LGV						
Sector	1	2	3	4	5	Total
1	0	12	45	0	47	104
2	9	25	101	21	54	210
3	30	130	73	12	120	365
4	2	11	1	0	48	62
5	51	93	61	17	82	304
Total	91	272	281	50	351	1044
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	124	28	41	193
3	0	77	15	3	68	162
4	0	9	27	0	28	64
5	0	60	66	17	66	208
Total	0	146	232	47	203	628

E.5 Stage 7 Gravity Model Infilling

Table E.4 – Gravity Model Matrix

AM						
Car						
Sector	1	2	3	4	5	Total
1	61	220	264	26	184	756
2	614	2051	1083	78	637	4463
3	636	1108	633	65	412	2855
4	121	201	95	7	177	601
5	513	657	611	118	613	2512
Total	1945	4237	2686	295	2023	11186
LGV						
Sector	1	2	3	4	5	Total
1	0	11	39	2	55	106
2	26	27	161	10	126	350
3	50	136	114	2	79	381
4	0	32	18	0	29	78
5	61	73	165	65	116	480
Total	137	279	496	78	405	1396
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	133	15	95	243
3	0	255	33	59	103	450
4	0	50	4	0	44	98
5	0	70	88	73	132	363
Total	0	376	258	147	374	1155
IP						
Car						
Sector	1	2	3	4	5	Total
1	24	246	358	61	291	981
2	244	1236	678	100	405	2663
3	366	719	492	55	338	1971
4	64	103	57	2	108	333
5	292	406	337	106	565	1706
Total	990	2711	1921	324	1708	7653
LGV						
Sector	1	2	3	4	5	Total
1	0	19	49	2	52	123
2	23	45	102	10	69	250
3	51	109	67	7	69	303
4	3	10	8	0	32	53
5	56	68	69	34	110	338
Total	134	252	295	53	333	1067
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	201	4	171	375
3	0	198	102	28	100	428
4	0	4	27	0	22	54
5	0	176	98	28	204	507
Total	0	379	427	60	498	1364
PM						
Car						
Sector	1	2	3	4	5	Total
1	52	507	635	129	577	1900
2	182	1629	1098	187	668	3764
3	354	1334	743	108	728	3268
4	35	86	78	8	133	339
5	237	765	489	198	693	2381
Total	859	4322	3044	629	2798	11652
LGV						
Sector	1	2	3	4	5	Total
1	0	12	45	0	47	104
2	9	25	101	21	54	210
3	30	130	73	12	120	365
4	2	11	1	0	48	62
5	51	93	61	17	82	304
Total	91	272	281	50	351	1044
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	124	28	41	193
3	0	77	15	3	68	162
4	0	9	27	0	28	64
5	0	60	66	17	66	208
Total	0	146	232	47	203	628

E.6 Stage 8 Car Park

Table E.5 – Adjusted for Car Park Zones

AM						
Car						
Sector	1	2	3	4	5	Total
1	22	175	243	24	171	636
2	111	2041	1083	78	637	3949
3	447	1105	633	65	412	2663
4	90	201	95	7	177	570
5	392	656	611	118	613	2389
Total	1061	4178	2665	294	2010	10207
LGV						
Sector	1	2	3	4	5	Total
1	0	10	37	0	44	91
2	22	27	161	10	126	346
3	42	136	114	2	79	374
4	0	32	18	0	29	78
5	58	73	165	65	116	477
Total	122	278	494	77	394	1366
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	133	15	95	243
3	0	255	33	59	103	450
4	0	50	4	0	44	98
5	0	70	88	73	132	363
Total	0	376	258	147	374	1155
IP						
Car						
Sector	1	2	3	4	5	Total
1	18	237	361	61	284	961
2	299	1237	678	100	405	2719
3	408	719	492	55	338	2013
4	72	103	57	2	108	341
5	301	406	337	106	565	1715
Total	1098	2703	1924	324	1701	7749
LGV						
Sector	1	2	3	4	5	Total
1	0	16	54	5	55	129
2	18	45	102	10	69	245
3	60	109	67	7	69	311
4	5	10	8	0	32	55
5	61	68	69	34	110	343
Total	145	249	300	55	335	1084
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	201	4	171	375
3	0	198	102	28	100	428
4	0	4	27	0	22	54
5	0	176	98	28	204	507
Total	0	379	427	60	498	1364
PM						
Car						
Sector	1	2	3	4	5	Total
1	5	287	525	109	494	1419
2	136	1626	1096	187	667	3711
3	345	1334	743	108	728	3259
4	33	86	78	8	133	338
5	221	765	489	198	693	2365
Total	739	4099	2932	608	2714	11091
LGV						
Sector	1	2	3	4	5	Total
1	0	10	40	0	45	95
2	8	25	101	21	54	209
3	29	130	73	12	120	364
4	0	11	1	0	48	60
5	38	93	61	17	82	291
Total	75	269	275	50	350	1019
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	124	28	41	193
3	0	77	15	3	68	162
4	0	9	27	0	28	64
5	0	60	66	17	66	208
Total	0	146	232	47	203	628

E.7 Stage 9 Uplift Matrices

Table E.6 – Uplift matrix

AM						
Car						
Sector	1	2	3	4	5	Total
1	64	506	298	25	183	1076
2	1265	2708	1348	85	670	6075
3	512	1343	848	115	466	3283
4	100	228	136	7	188	659
5	425	703	702	126	617	2573
Total	2365	5488	3331	359	2124	13667
LGV						
Sector	1	2	3	4	5	Total
1	0.00	9.64	36.76	0.34	44.30	91
2	22.03	27.34	161.24	9.54	125.86	346
3	42.18	135.98	114.23	2.17	78.96	374
4	0.00	31.58	17.59	0.00	29.30	78
5	58.10	73.48	164.55	64.86	116.01	477
Total	122	278	494	77	394	1366
HGV						
Sector	1	2	3	4	5	Total
1	0.00	0.00	0.00	0.00	0.00	0
2	0.00	0.00	132.83	15.18	95.26	243
3	0.00	255.00	33.21	58.80	102.96	450
4	0.00	50.39	4.27	0.00	43.65	98
5	0.00	70.22	88.07	73.18	131.74	363
Total	0	376	258	147	374	1155
IP						
Car						
Sector	1	2	3	4	5	Total
1	72	791	396	58	277	1594
2	1065	1588	717	98	398	3866
3	465	859	597	68	370	2360
4	74	104	73	2	111	364
5	306	407	353	105	565	1735
Total	1982	3750	2136	331	1721	9920
LGV						
Sector	1	2	3	4	5	Total
1	0	15.51	53.99	4.55	54.83	129
2	18.24	45.21	102.34	9.92	69.25	245
3	60.12	109.27	66.58	6.86	68.51	311
4	5.07	10.45	7.64	0	32.11	55
5	61.48	68.13	69.31	34.1	110.42	343
Total	145	249	300	55	335	1084
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	200.54	3.54	171.22	375
3	0	198.42	101.72	27.9	100.2	428
4	0	4.38	26.72	0	22.44	54
5	0	176.41	97.73	28.49	204.25	507
Total	0	379	427	60	498	1364
PM						
Car						
Sector	1	2	3	4	5	Total
1	73	799	555	112	505	2044
2	694	2066	1177	189	678	4804
3	404	1621	855	126	799	3804
4	33	92	110	8	143	387
5	226	788	500	199	698	2411
Total	1429	5367	3198	633	2823	13449
LGV						
Sector	1	2	3	4	5	Total
1	0	9.59	39.57	0	45.49	95
2	7.85	24.93	101.03	20.84	53.91	209
3	28.97	130.4	72.6	11.86	120.3	364
4	0.45	11.03	1.27	0	47.71	60
5	37.56	93.12	60.93	17.06	82.33	291
Total	75	269	275	50	350	1019
HGV						
Sector	1	2	3	4	5	Total
1	0	0	0	0	0	0
2	0	0	124.35	27.97	40.79	193
3	0	77.11	14.52	2.74	67.87	162
4	0	8.52	27.07	0	28.43	64
5	0	59.88	66.05	16.53	65.95	208
Total	0	146	232	47	203	628

E.8 Final Matrices

Table E.7 – Prior Matrix

AM						
Car						
Sector	1	2	3	4	5	Total
1	69	518	309	25	183	1104
2	1265	2750	1390	86	670	6161
3	512	1380	957	116	466	3430
4	100	232	164	7	188	691
5	425	743	709	126	617	2621
Total	2370	5623	3530	360	2125	14007
LGV						
Sector	1	2	3	4	5	Total
1	0	10	37	0	44	91
2	22	27	161	10	126	346
3	42	136	114	2	79	374
4	0	32	18	0	29	78
5	58	73	165	65	116	477
Total	122	278	494	77	394	1366
HGV						
Sector	1	2	3	4	5	Total
1	0	0	5	0	11	16
2	0	0	133	15	95	243
3	6	255	33	59	103	456
4	0	50	4	0	44	98
5	12	70	88	73	132	375
Total	18	376	264	147	384	1189
IP						
Car						
Sector	1	2	3	4	5	Total
1	72	791	396	58	277	1594
2	1065	1590	728	102	408	3893
3	465	870	622	70	373	2399
4	74	108	75	2	111	370
5	306	415	359	105	565	1749
Total	1983	3774	2179	337	1733	10006
LGV						
Sector	1	2	3	4	5	Total
1	0	16	54	5	55	129
2	18	45	102	10	69	245
3	60	109	67	7	69	311
4	5	10	8	0	32	55
5	61	68	69	34	110	343
Total	145	249	300	55	335	1084
HGV						
Sector	1	2	3	4	5	Total
1	0	0	2	0	2	4
2	0	0	201	4	171	375
3	2	198	102	28	100	430
4	0	4	27	0	22	54
5	2	176	98	28	204	509
Total	4	379	429	60	500	1372
PM						
Car						
Sector	1	2	3	4	5	Total
1	77	800	555	112	505	2048
2	694	2068	1207	205	699	4872
3	403	1621	942	144	837	3946
4	33	92	110	8	143	387
5	226	788	500	199	698	2411
Total	1433	5369	3314	667	2881	13665
LGV						
Sector	1	2	3	4	5	Total
1	0	10	40	0	45	95
2	8	25	101	21	54	209
3	29	130	73	12	120	364
4	0	11	1	0	48	60
5	38	93	61	17	82	291
Total	75	269	275	50	350	1019
HGV						
Sector	1	2	3	4	5	Total
1	0	0	5	5	0	9
2	0	0	124	28	41	193
3	5	77	15	3	68	167
4	5	9	27	0	28	69
5	0	60	66	17	66	208
Total	9	146	237	52	203	646