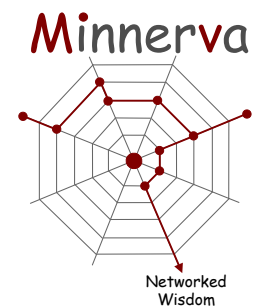


Surrey Heath Borough Council Local Plan

Strategic Highway Assessment Part 1: Model Development,
Validation and Forecasting



Project Title: Surrey Heath Borough Council Local Plan

Document Title: Strategic Highway Assessment Part 1:
Model Development, Validation and
Forecasting

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1 INTRODUCTION

1.1 Regulation 18 Appraisal

1.1.1 Surrey Heath Borough Council is in the process of developing their new Local Plan covering the period to 2032 which will plan for future growth to be accommodated within the borough over this period. Surrey County Council have been commissioned to assess the impact of the development options using the County's strategic transport model SINTRAM.

1.1.2 The overall aim is to help inform the decision making surrounding the suitability of potential development sites which have been identified, and to highlight junctions and sections of roads to focus mitigation solutions. This will aid the borough by providing the transport evidence base to inform the Regulation 18 consultation.

1.2 Organisation of this Report

1.2.1 The Strategic Highway Assessment (SHA) Report is split into two parts:

- Part 1 details the technical aspects of the modelling work undertaken, which includes model development, validation and forecasting; and
- Part 2 provides the results and analysis of the forecasts, together with an overview of the key findings from the modelling.

1.2.2 Within this Part 1, Chapter 2 describes the development and validation of the Base year (2014) model from which forecasts are subsequently projected. The chapter introduces the two-level modelling system that is applied.

1.2.3 Chapter 3 sets out the model validation of both flows and journey times.

1.2.4 Chapter 4 describes the forecasting process. This is based on forecasting travel demand using modelling components for trip productions and attractions (trip ends), and the patterns of travel (trip distribution). The impact of travel demand on the transport network is modelled using network assignment procedures. Chapter 4 explains how the demand for travel, using the higher-level, multi-modal 'SINTRAM72' modelling, is converted to forecasts of traffic demand used to provide forecasts of peak-hour traffic conditions on the Surrey Heath highway network in 2032.

1.2.5 The Appendix contains a number of figures and tables that are referenced in the main text.

1.2.6 NOTE: The figures and tables in this report are designed for viewing in print and at standard scales, but they have a resolution that enables them to be viewed on-screen with a reasonable level of zoom to facilitate reading and discerning details.

2 BASE MODEL DEVELOPMENT

2.1 Model and Scope

2.1.1 The modelling for the Surrey Heath's Strategic Highway Assessment (SHA), associated with preparation of the Surrey Heath's 2032 Local Plan, is largely focused on a local highway model that covers Surrey Heath Borough and a hinterland. The hinterland incorporates areas of Farnborough to the west, Woking to the south, and Virginia Water and Ottershaw to the east.

2.1.2 Significantly, this local model is derived from Surrey County Council's (SCC) regional, multi-modal transport model, version SINTRAM72¹. It is used in this application to forecast changes in the demand for travel in 2032, as well as to provide initial ('prior') Base year highway travel information for the local model in the form of origin-destination (OD) trip matrices. These prior OD matrices from SINTRAM72 are refined as part of the validation process reported below in Section 3.

2.1.3 The modelling system, all of which is implemented in OmniTRANS modelling software, may thus be understood as having two levels, with SINTRAM72 forecasting demand, and the local Surrey Heath model providing assessments of the highway conditions for different planning scenarios relevant to the Local Plan. Although the SINTRAM72 demand forecast is regional in nature, covering all of Surrey and beyond, it includes a fine zone system and uses details of Local Plan developments as supplied by Surrey Heath Borough Council to Surrey County Council².

2.2 Further Model Documentation

2.2.1 The validation of the SINTRAM72 model provides an important background and a further basis of assurance for the Surrey Heath SHAR modelling; its validation and technical reports listed below are relevant and available from Surrey CC on request.

2.2.2 SINTRAM72 reports include:

- The calculation of trip ends and car availability described in *Technical Note TN1 Processing Trip Ends*.
- The development of Base trip matrices described in *Technical Note TN3 Base Trip Matrix Production*.
- The validation of SINTRAM72 described in *Technical Note S72 TN4 Model Assessment and Validation Report*.
- The nature of the modelling described in *Technical Note TN5 Model Technical Report*.
- Besides this document, aspects of the model are also described in the *User Guide, Running the SINTRAM Model*.

2.2.3 In addition to the SINTRAM72 reports, *The Local Model User Guide* provides further information on the operation of the Local Model.

¹ Developed in 2017

² Proforma listing developments finalised 20/12/18

2.3 Base and Forecast Years

2.3.1 The model Base year is 2014.

2.3.2 The forecast year is 2032, to match that of the Local Plan period.

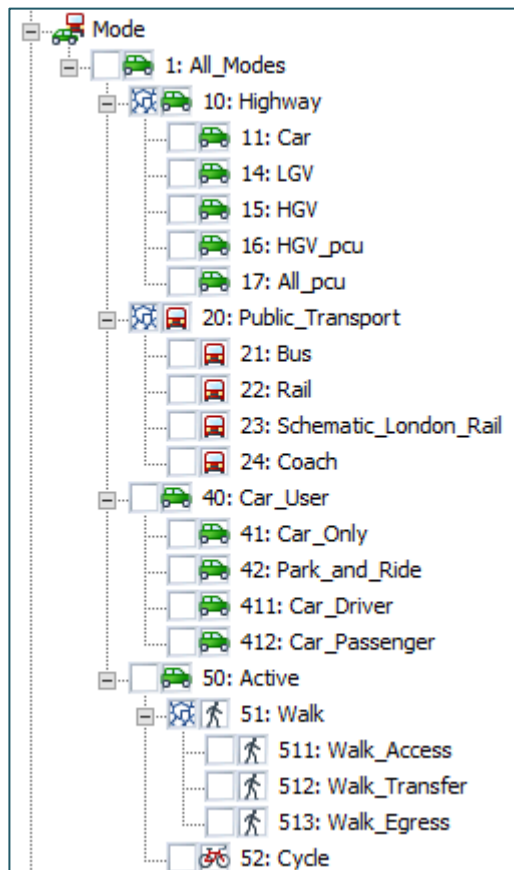
2.4 Modes of Transport

2.4.1 The modelling of demand in SINTRAM72 is multi-modal, with the main modes of:

- Highway;
- Public Transport (PT); and
- Active.

2.4.2 As shown in Figure 2-1, these categories include an extensive number of sub-modes.

Figure 2-1 Travel Modes for Demand Modelling

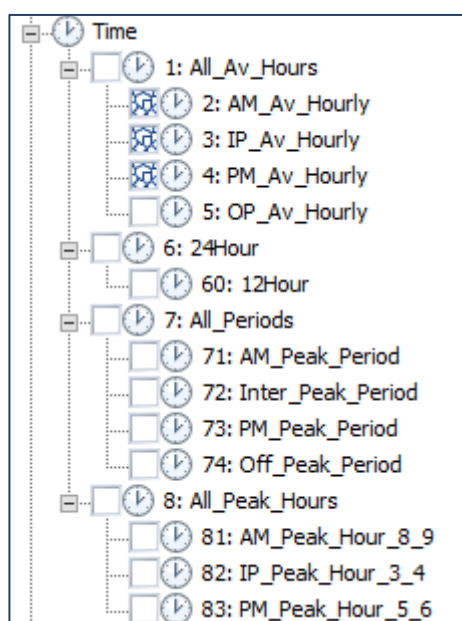


2.4.3 For both the SINTRAM72 and Local Model cases, primary highway vehicle types are: car; light goods vehicles (LGV); and heavy goods vehicles (HGV). Additionally, bus vehicles are included in the highway traffic, as are the car components of Park & Ride trips³.

³ Park and ride trips include connectivity between car and rail as well as traditional car and bus.

- 2.4.4 For highway assignment modelling, all the vehicle types are considered in terms of passenger car units (PCUs). Most vehicles on the road have a PCU value of 1.0, i.e. ‘vehicles’ and ‘PCUs’ are the same, but HGVs have a PCU value of 2.0 and buses of 2.5, reflecting their relatively greater impact on network capacity.
- 2.4.5 Some of the analysis reported in Part 2 of the SHA report, regarding Levels of Service (LoS) for example, uses PCU units, but other analyses, more related to person trips, simply uses car as the vehicle type.
- 2.5 Time Periods
 - 2.5.1 The starting point for the calculation of travel demand is an average 24-hours for a working day in a ‘neutral’ month (avoiding significant holiday periods and more extreme winter weather). This enables total daily trip rates by trip purpose to be assumed constant over the forecasting period.
 - 2.5.2 For most demand modelling though, trips are allocated to the four time-periods of AM (0700 – 1000), Inter-Peak (1000 – 1600), PM (1600 – 1900), and Off-Peak/night-time (1900 – 0700).
 - 2.5.3 The demand modelling focuses on the 12 daytime hours covered by AM, Inter-peak (IP), and PM, but return-trips include consideration of Off-Peak (OP) travel.
 - 2.5.4 The SINTRAM72 highway modelling uses ‘peak hour’ factors to represent heightened levels of congestion within the AM and PM peak periods, respectively taken as occurring for the peak hours 0800 – 0900 and 1700 – 1800. For the Local Model AM and PM peak hours, trips are further adjusted with reference to values of local peak-hour traffic counts.
 - 2.5.5 An average hourly Inter-Peak highway network assignment is generated in the Local Modelling, but is not subject to specific validation or reporting.
 - 2.5.6 The set of time periods used at various points in the modelling is shown in Figure 2-2.

Figure 2-2 Time Periods used in Modelling

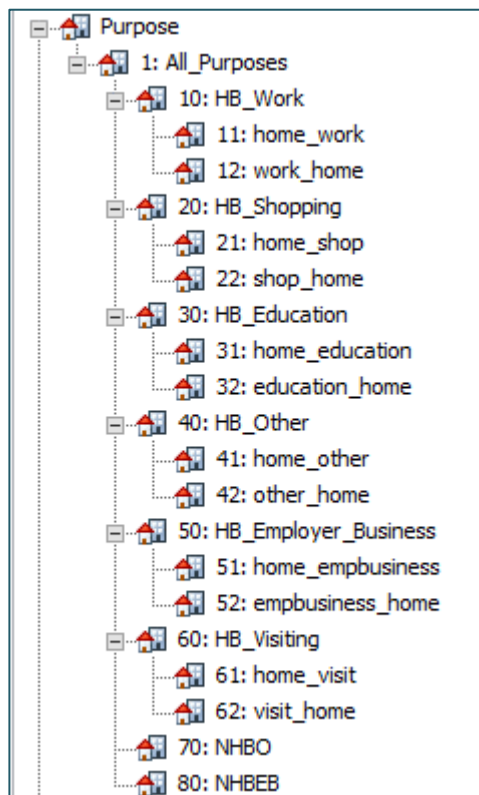


2.6 Demand Types

2.6.1 For demand modelling, trips are initially considered as ‘tours’ and identified as ‘Production-Attraction’ (‘PA’) trips. Tours apply to home-based (HB) trips, with an outbound trip from the home implying (in nearly all cases) a return trip later in the day. Non-home based (NHB) trips do not imply return trips. For network assignment modelling, and, importantly, for local modelling, trips are considered as ‘Origin-Destination’ (‘OD’) movements for a particular time period, that is, OD trip tables (matrices) include both outbound and (returning) inbound home-based trips, as well as any NHB trips arising in the particular time period.

2.6.2 The set of trip purposes used in demand modelling is shown in Figure 2-3.

Figure 2-3 Trip Purposes used in Demand Modelling



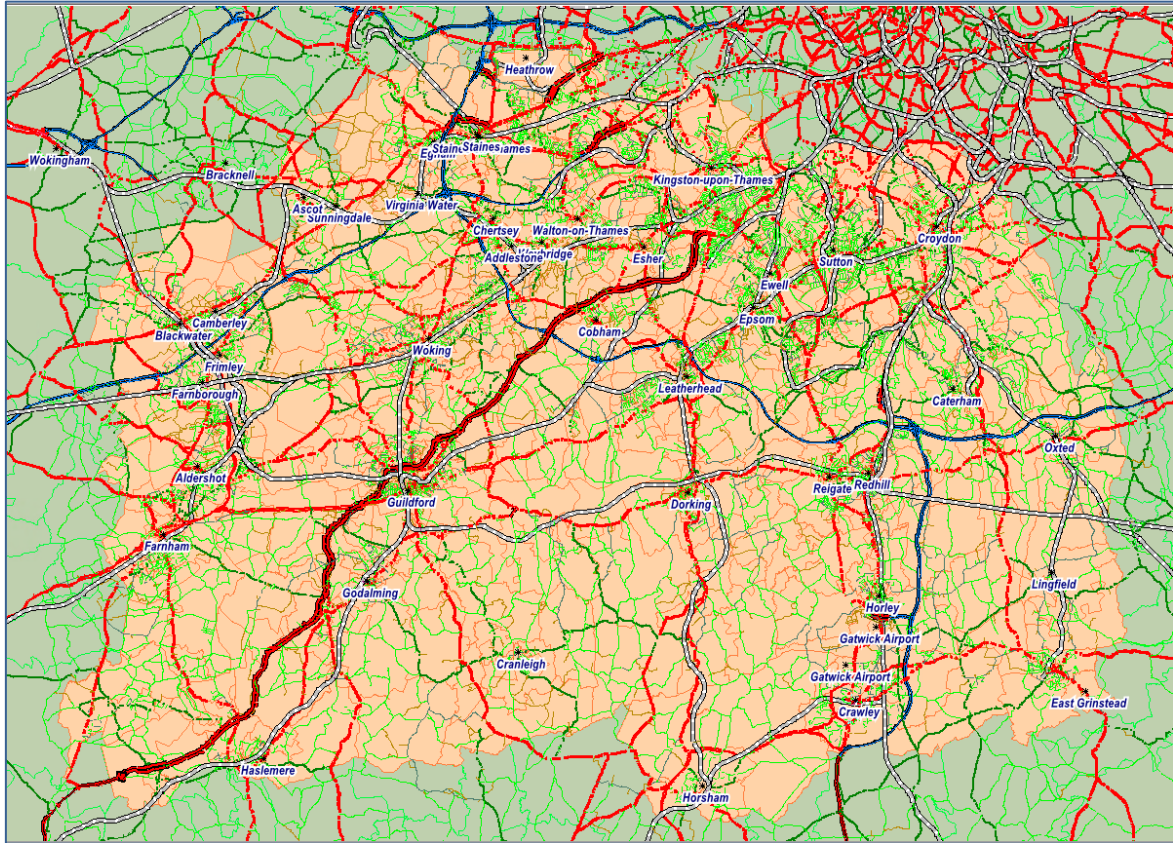
2.6.3 Travel demand is further categorised in the demand modelling according to the availability of a car for travel.

2.6.4 For the Local Model, all person car trips are considered as all purposes combined but, obviously, the pattern of trips reflects the underlying trip purposes used in the demand modelling.

2.7 Study Area

2.7.1 Figure 2-4 shows a part of the SINTRAM72 transport network. An ‘Inner Study Area’ (ISA), where the modelling is most detailed, is shown with a light orange background. The ISA includes Surrey and some adjacent areas. While the area of the Surrey Heath local model lies within the ISA, it should be noted that its northern, southern, and eastern boundaries abut the SINTRAM72 ‘Hinterland’ area (green background) where there is less detail and the zone sizes are larger.

Figure 2-4 SINTRAM72 Inner Study Area



2.7.2 The Local Model is defined by a cordon around Surrey Heath Borough and some adjacent areas in the SINTRAM72 model, as shown in Figure 2-5 below, to produce the Local Model shown in Figure 2-6 following.

Figure 2-5 Extraction of Surrey Heath SHA Network

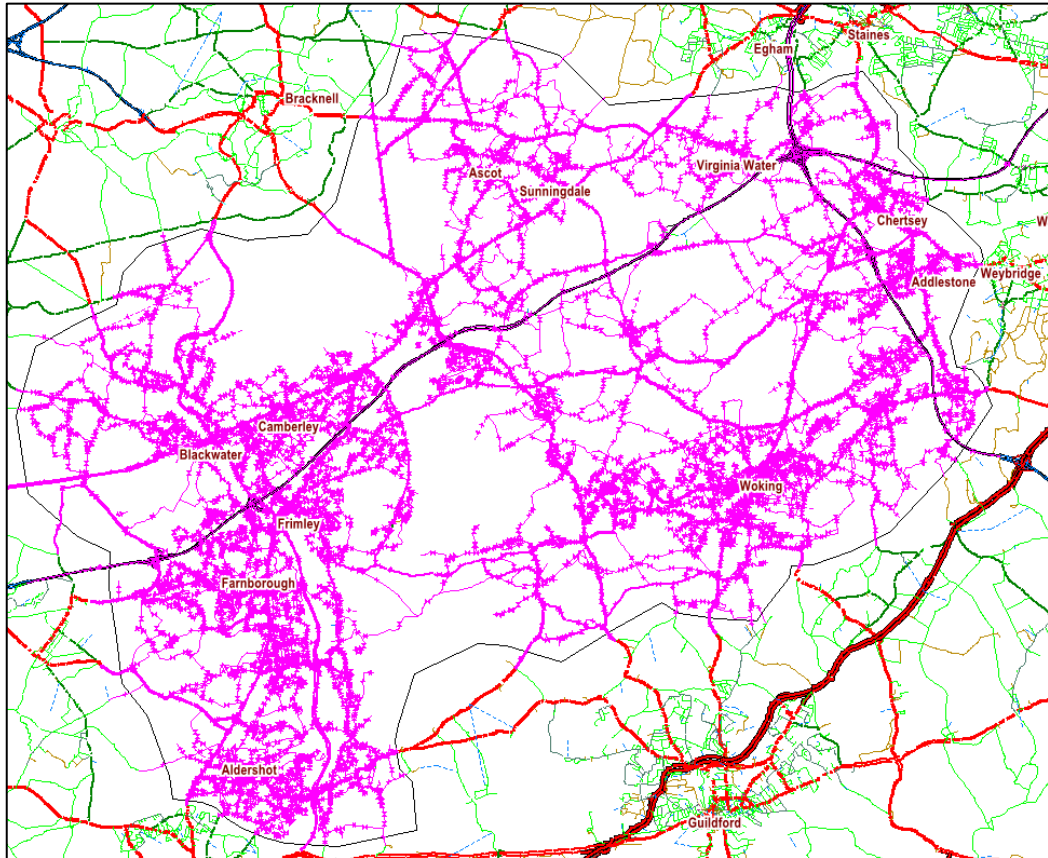
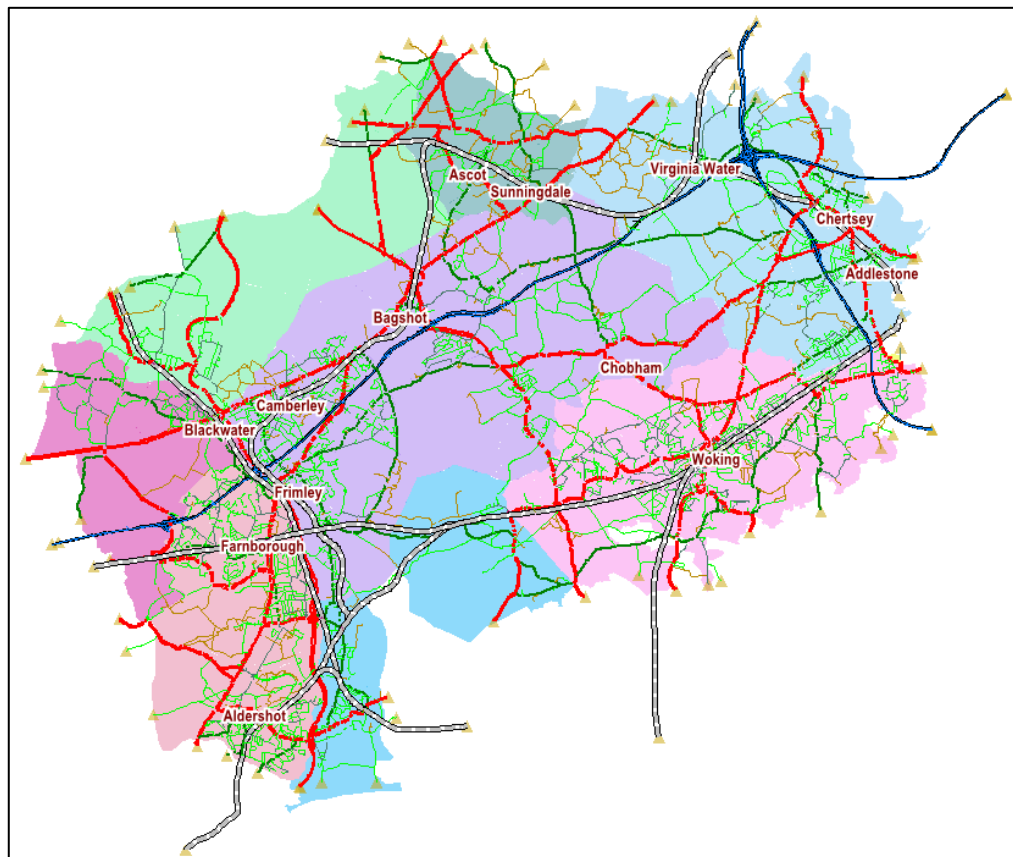


Figure 2-6 Local Model Network Showing Surrey Heath (purple) and Surrounding Areas



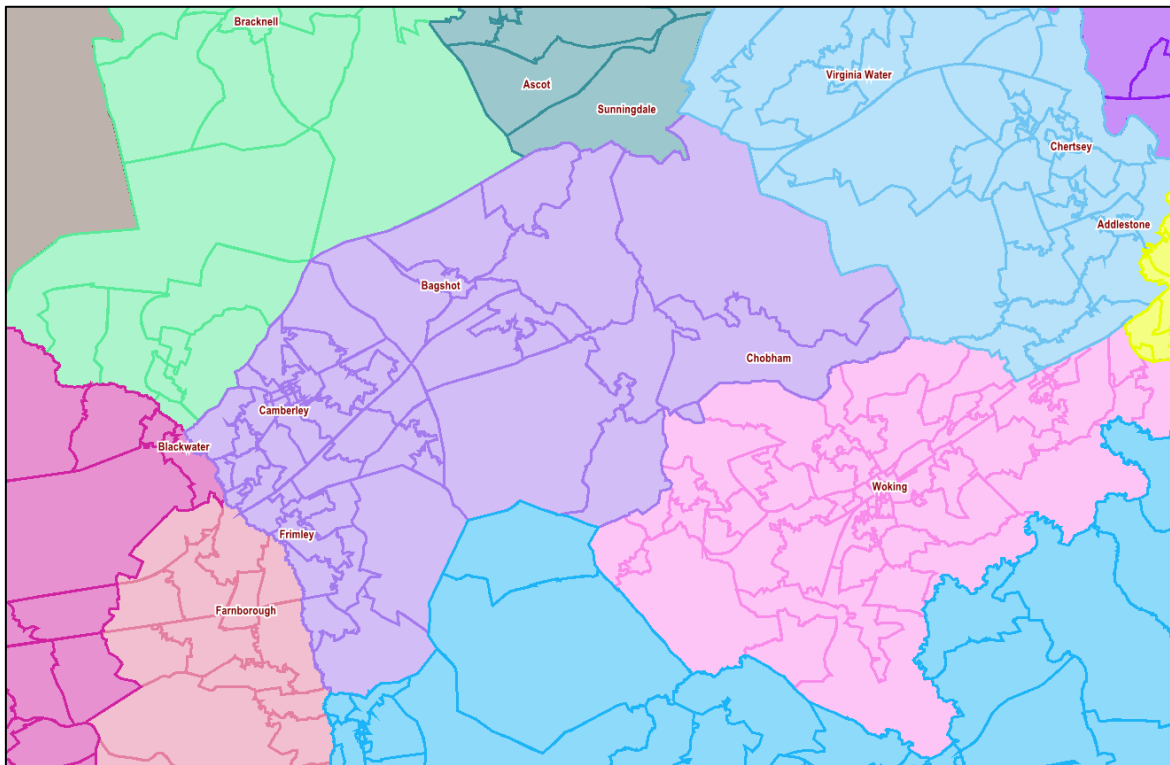
2.7.3 Surrey Heath Borough contains sections of the M3. Additionally, within the Local Model there are further sections of the M3 as well as sections of the M25. These roads are the responsibility of Highways England; they are included in the analysis and have been reported on separately.

2.7.4 The primary cross-boundary impacts are addressed by inclusion of parts of Runnymede, Woking, Guildford, Hampshire and Berkshire in the Local Model, as shown in Figure 2-6 above. Further analysis of cross-boundary impacts is available from the SINTRAM72 modelling, but is not generally reported here. However, impacts of forecast changes outside of the Local Model on motorway flows is discussed in Part 2 of the Strategic Highway Assessment Report.

2.8 Zoning

2.8.1 The Local Model has 299 zones defined. Of these, 72 correspond to the cordon crossing points, which are labelled as yellow triangles in Figure 2-6 above. Figure 2-7 below shows example details of the zoning in Surrey Heath and the surrounding area.

Figure 2-7 Model Zones in and around Surrey Heath Borough



2.9 Junction Modelling

2.9.1 The network modelling includes explicit modelling of junctions. This is naturally more prominent in urban areas. Figure 2-8 illustrates junction modelling at Junction 3 of the M3. This includes the intersection of the A322 and M3 roads, which is also shown in Figure 2-9 where the symbols indicate the location of additional attention to the modelling of delays when merging onto motorways.

Figure 2-8 Junction Controls and Lane Markings

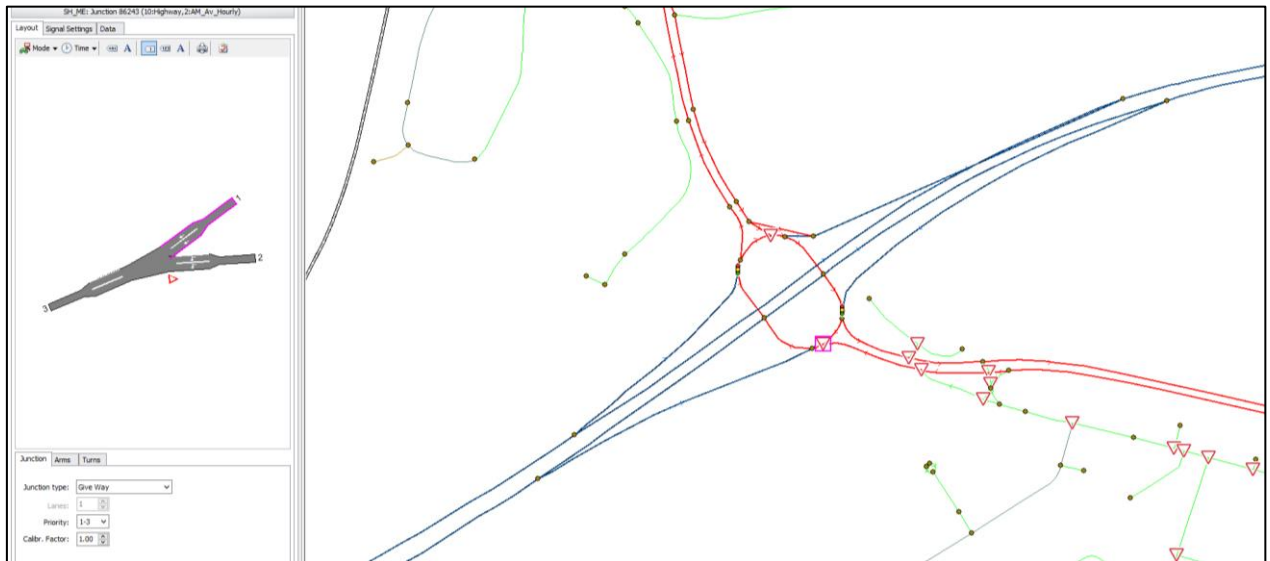
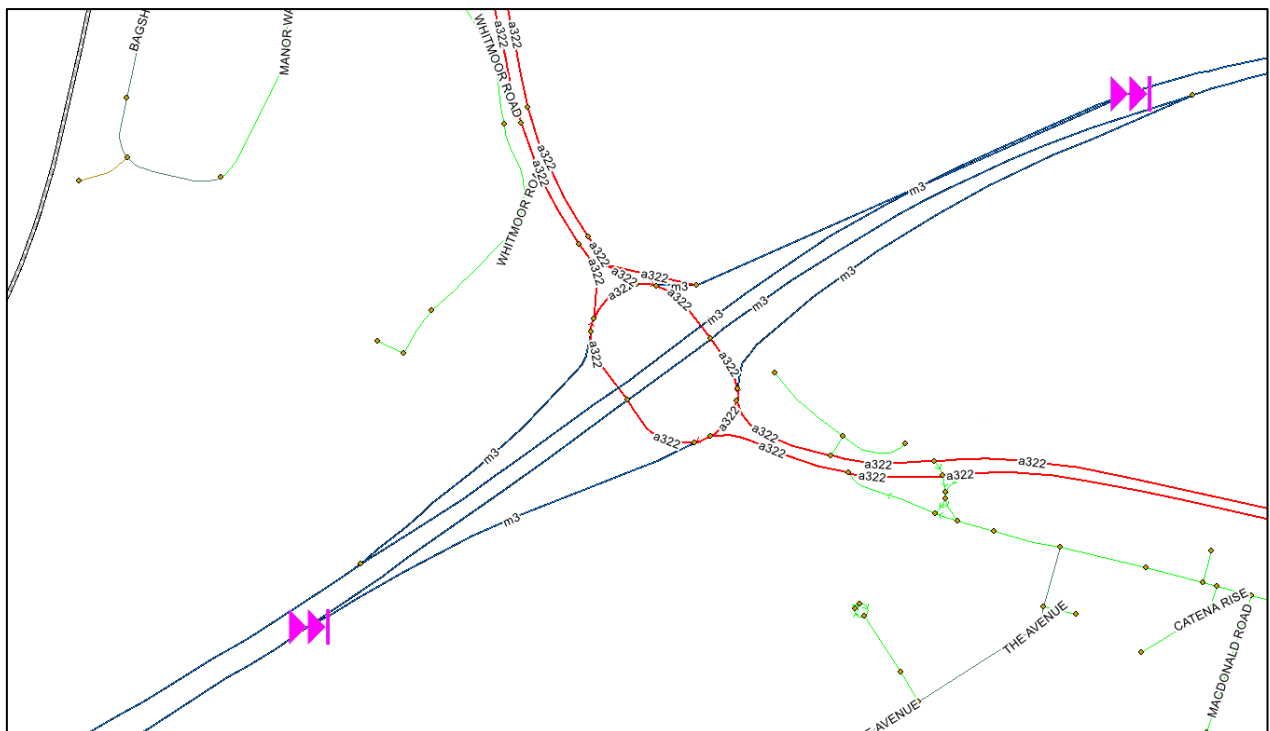


Figure 2-9 Modelling of Motorway Merges

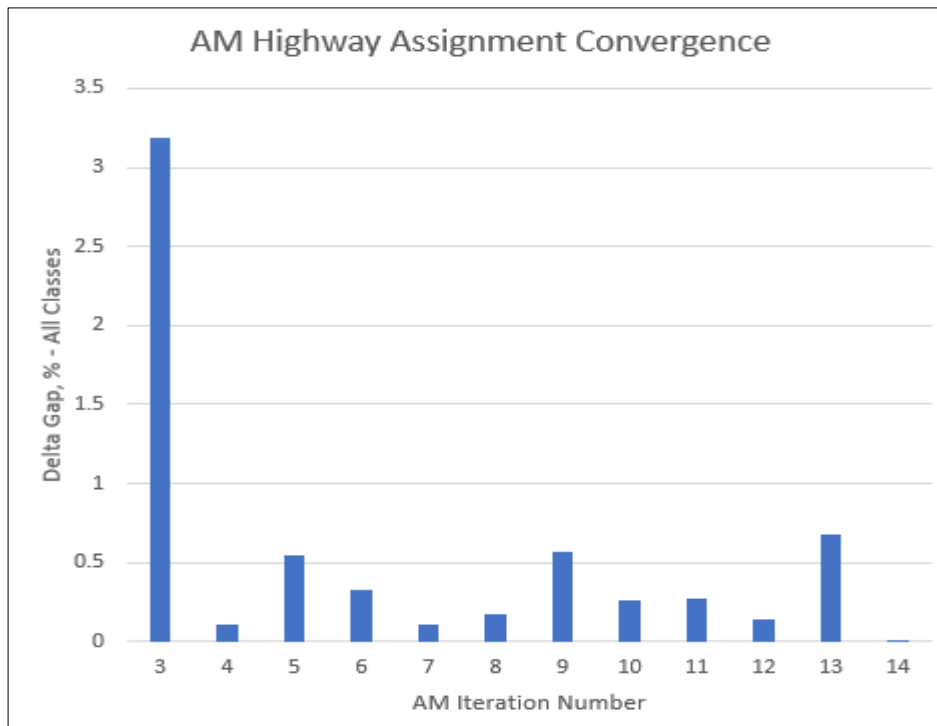


2.10 Assignment

- 2.10.1 The local highway assignment modelling is provided by the OtTraffic component of OmniTRANS, which provides multi-user class (MUC) equilibrium assignment.
- 2.10.2 The MUC assignment models the combined effects of cars, LGVs, and HGVs on congestion, while supporting different routing characteristics for each class.
- 2.10.3 Congestion effects on links are modelled via speed-flow curves derived from 'COBA', as specified in Appendix D of Transport Appraisal Guidance (TAG) Unit M3.1 "Highway Assignment Modelling", and which take account road types, widths, and localities (urban, rural, etc.).

- 2.10.4 Delays at junctions are modelled via relationships based on 'time-dependent queueing theory'. These are described further in the OmniTRANS support document *Junction Modelling*.
- 2.10.5 Additionally, Minnerva has implemented a custom 'cost function' for modelling merging delays at motorway junctions. This is based on TRL research evidence documented in Appendix D.9 of TAG Unit M3.1.
- 2.10.6 Routes through the network are calculated in terms of 'generalised time' (units of minutes). The coefficients for the expressions used to calculate generalised time are the same as reported for SINTRAM72, and are taken from the November 2016 WebTAG Databook for values of time (VoT) and vehicle operating costs (VOC) applicable to each of Cars, LGVs, and HGVs.
- 2.10.7 The assignments are run through an iterative process which is halted when the variation in results, as defined by the TAG (Unit M3.1, Section C.2.4) 'Delta' Gap statistic, is less than the WebTAG target value of 0.1%.
- 2.10.8 The convergences for the Surrey Heath network are shown in Figure 2-10 for the AM Base year. Figure 2-10 omits the first two iterations to provide clarity for variations in the later iterations.

Figure 2-10 AM Highway Assignment Convergence - Epsilon Values



- 2.10.9 It may be seen that initial convergence is quite fast in the Base year, but some instabilities affect later iterations. The convergence patterns for the PM is much quicker.

3 MODEL VALIDATION

3.1 Introduction

3.1.1 The validation reported here focuses on a local highway model that covers Surrey Heath and a hinterland incorporating parts of adjacent authorities.

3.1.2 As described previously, this local model is derived from Surrey County Council’s regional, multi-modal transport model, version SINTRAM72, which is used in this application to forecast changes in the demand for travel in 2032, as well as to provide initial (‘prior’) Base year highway travel information for the local model in the form of origin-destination (OD) trip matrices. These prior OD matrices from SINTRAM72 are refined as part of the validation process reported in this section.

3.1.3 This chapter focuses on the local model Base year (2014) highway validation, considering the comparison of modelled traffic flows with observations and, similarly, comparisons of journey times along a set of 14 journey time routes defined for the purpose.

3.2 Assessment Objectives

3.2.1 The primary objective of the local model validation is to provide assurance that the model’s replication of observed Base year traffic flows and congestion levels is sufficient to give confidence in the forecast highway network modelling for Surrey Heath.

3.3 Validation Criteria

3.3.1 Validation simply compares modelled and observed data. The standard criteria for assessing highway network models is provided by the Department for Transport’s WebTAG guidance, notably, *Unit M3 Highway Assignment Modelling*. Table 3-1 below, places a strong emphasis on comparisons of observed traffic counts and modelled traffic flows using a comparison metric termed the ‘GEH’ statistic.

3.3.2 Another component of the criteria is comparison of observed and modelled journey times that need to match within specified levels for a set of journey time routes defined for the purpose.

Table 3-1 Validation acceptability guidelines

Validation Criteria	Acceptability Guideline
Individual flows within 100 vph of counts for flows less than 700 vph	> 85% of cases
Individual flows within 15% of counts for flows from 700 to 2,700 vph	
Individual flows within 400vph of counts for flows more than 2,700 vph	
GEH < 5 for individual flows	
Modelled journey times within 15% (or 1 minute, if higher)	

3.4 Methodology for Comparing Counts and Flows

3.4.1 The local model observed traffic counts are taken from the set used in SINTRAM72 modelling, of which there were nearly 3,000 one-way counts. These counts were taken in the period 2011 to 2016 and have been normalised, using measures of traffic growth, to all correspond to the Base year of 2014.

- 3.4.2 Of these 3,000 counts, 903 relate to the local model highway network, with nearly 320 of being situated inside of Surrey Heath. As described below, flow validation is based on 616 counts from across the subarea.
- 3.4.3 This large total number of counts, and their distribution on the highway network, is due to numerous sources of traffic count data which have contributed to the set. These include counts produced by DfT, Highways England, Surrey CC, as well as counts commissioned for individual concerns. The count data has also been observed by different means, both instrumented and manual, and across widely varying numbers of days. These differences are encoded via 'confidence level' factors⁴ that are used in matrix estimation.
- 3.4.4 These different forms and sources of collection also vary in how and the extent to which traffic is classified by the vehicle types used in the modelling of car, LGV, and HGV.
- 3.4.5 Where counts have not been classified, or only in a limited way, then estimates have had to be made of the numbers of cars, light, and heavy good vehicles associated with each count site and for each time period.

3.5 Motorway and Trunk Road Mainline Counts

- 3.5.1 Simple inspection of the count data on the motorway and trunk road network, of the M25 and A3, reveals a number of inconsistencies that cannot be resolved by any feasible set of modelled flows. For these roads, the peak hour counts are less than the experienced levels of congestion imply. The reason for this is readily accounted by the extensive queueing present at the start of the modelled periods, where long stretches of 4 and 3 lane motorway and trunk road can store up to 2,000 vehicles in a 2km stretch. Peak hour queueing occurs, of course, elsewhere in the network, but the discrepancies between counted flows and travel demand are most significant for these roads.
- 3.5.2 For this reason, peak hour motorway and trunk road mainline count data has largely been discounted in the modelling and validation. Instead, reliance is placed, in the first instance, on the demand placed on the motorways by the 'prior' matrices, that is, the demand as derived by SINTRAM72. This demand is calculated from wide-ranging data sources, but is partly based on average-hourly 3-hour counts for each of the AM and PM periods, and then subject to 'peak hour' adjustment factors. On this account, the prior estimates for the motorway flows (notably at the entry and exit points) may be considered to be reasonably representative.
- 3.5.3 Another source of assessment of appropriate motorway flow demand is provided by journey time data (as described later in Section 3.10). Through flow-delay relationships, these can provide fair indicators of travel demand.
- 3.5.4 A further source of the assessment of motorway demand, given that these motorways are typically highly congested in the peak hours, is provided by noting the maximum counted flows at any time of the day and by the capacity of the motorways as defined by consideration of COBA relationships and the number of lanes. For this the highest observed values, for the entire morning and afternoon, were sourced from the Highway England's WebTRIS database, where the data was available. This provided 22 assessed counts as set out in Table 3-2. As can be seen there was limited data available. There is no valid data between the

⁴ Confidence levels vary between 0.0 ('no confidence') and 1.0 ('full confidence'). The range applied in practice varies from 0.6 to 0.9, largely depending on the data collection type and numbers of repeated observations.

junctions on the M3 Westbound, or between Junction 12 and 11 on the M25 Anticlockwise.

Table 3-2 Motorway and Trunk Road Mainline Assessed Counts

Count Nr	Description	Link Nr
2209	M3 Eastbound within Junction 4a	330251
2216	M3 Eastbound Junction 4a - Junction 4	331229
3585	M3 Eastbound within Junction 4	6553
3586	M3 Eastbound Junction 4 - Junction 3	783
3133	M3 Eastbound within Junction 3	328412
3588	M3 Eastbound Junction 3 - Junction 2	329303
3583	M3 Eastbound within Junction 2	121183
3579	M3 Eastbound Junction 2 - Junction 1	335380
3584	M3 Westbound Junction 1 - Junction 2	335365
3580	M3 Westbound within Junction 2	121182
3131	M3 Westbound within Junction 3	328426
3587	M3 Westbound within Junction 4	46292
2208	M3 Westbound within Junction 4a	330226
3576	M25 Clockwise Junction 10 - Junction 11	263304
1592	M25 Clockwise Within Junction 11	333030
3578	M25 Clockwise Junction 11 - Junction 12	72422
3581	M25 Clockwise within Junction 12	90325
1695	M25 Clockwise Junction 12 - Junction 13	335181
1694	M25 Anticlockwise Junction 13 - Junction 12	335270
3582	M25 Anticlockwise within Junction 12	334327
1595	M25 Anticlockwise within Junction 11	333033
3577	M25 Anticlockwise Junction 11 - Junction 10	263305

3.5.5 Therefore, although the motorway counts are not used directly, it is possible to form a view of the 'assessed' demand against which the modelled flows may be considered. On this basis, and noting the largely accurate modelling of motorway travel times described in Section 3.10, it is possible to assert confidence in the motorway flows indicated by the prior trip matrices.

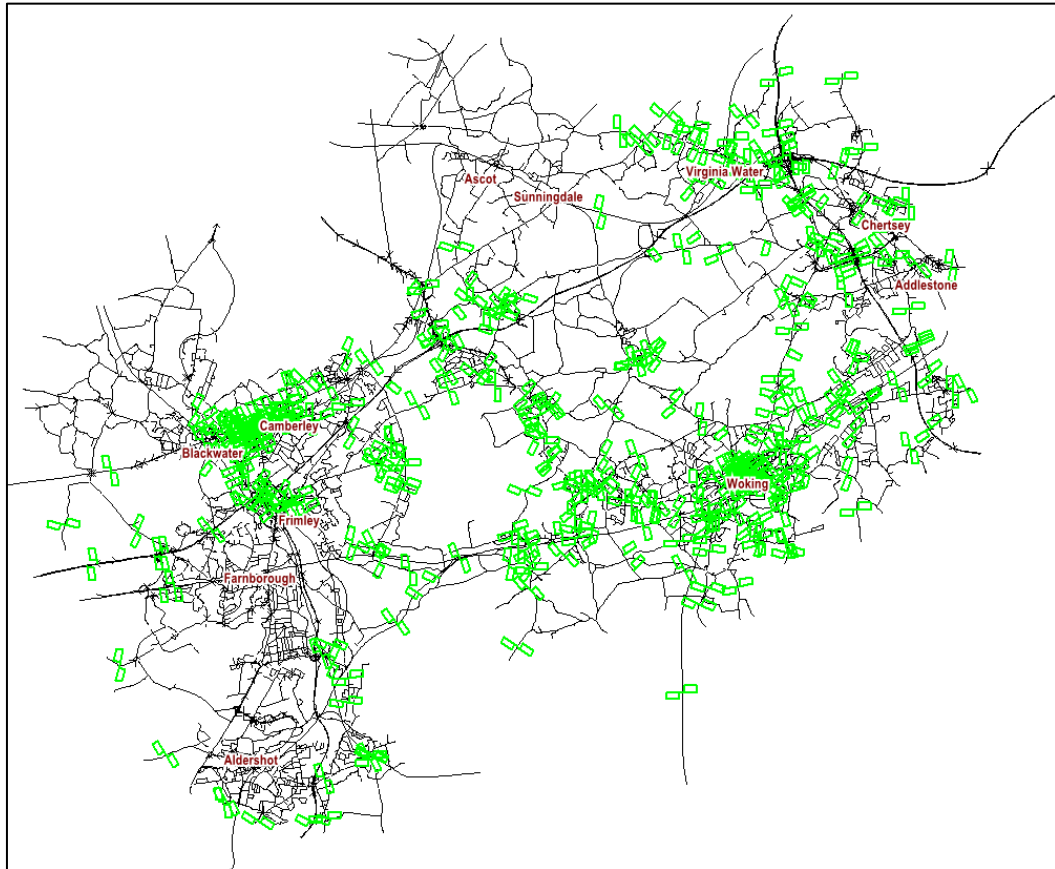
3.5.6 Modelling motorway and trunk road flow levels adequately is significant, as they carry flows that are ten times those of many roads in the rest of the local model network. Thus errors of 10% in motorway counts and related routings can correspond to 100% of many local counts.

3.6 Count Selection

3.6.1 There is a sufficient density of counts that inconsistencies between adjacent and nearby counts are manifest. In some cases, these discrepancies may reasonably be associated with queueing effects reducing the apparent demand (as per motorways but on a smaller scale), but in other cases the reasons are not clear.

3.6.2 Sets of counts have therefore been defined respectively for matrix estimation and for flow validation. These sets are selected in terms of 'reliable' counts for which 697 counts are used for matrix estimation. As shown in Figure 3-1, these count sites are indicated by the green rectangles.

Figure 3-1 Matrix Estimation Count Sites



3.6.3 TAG Unit M3 specifies the use of another set of counts for validation purposes that are not used in matrix estimation. This is problematic for several reasons: if the 'validation' counts differ from the 'estimation' counts then they should be included in the estimation set if the differences imply additional information that should not unreasonably be withheld from the estimation. If the differences arise because of observation errors, then they are not fair validation tests.

3.6.4 For these reasons, the assessment of model flows is confined to the 616 counts that have passed the quality threshold of 'reasonably self-consistent'. The full set of 903 counts is retained in the model so that variances with modelled values can be inspected.

3.6.5 The number of 616 counts is still large for the size of the Surrey Heath network, so any broad level of agreement, coupled with the established provenance of the prior OD matrices, provides strong assurance that the model reflects Base year travel patterns.

3.7 Development of SINTRAM72 Base Matrices

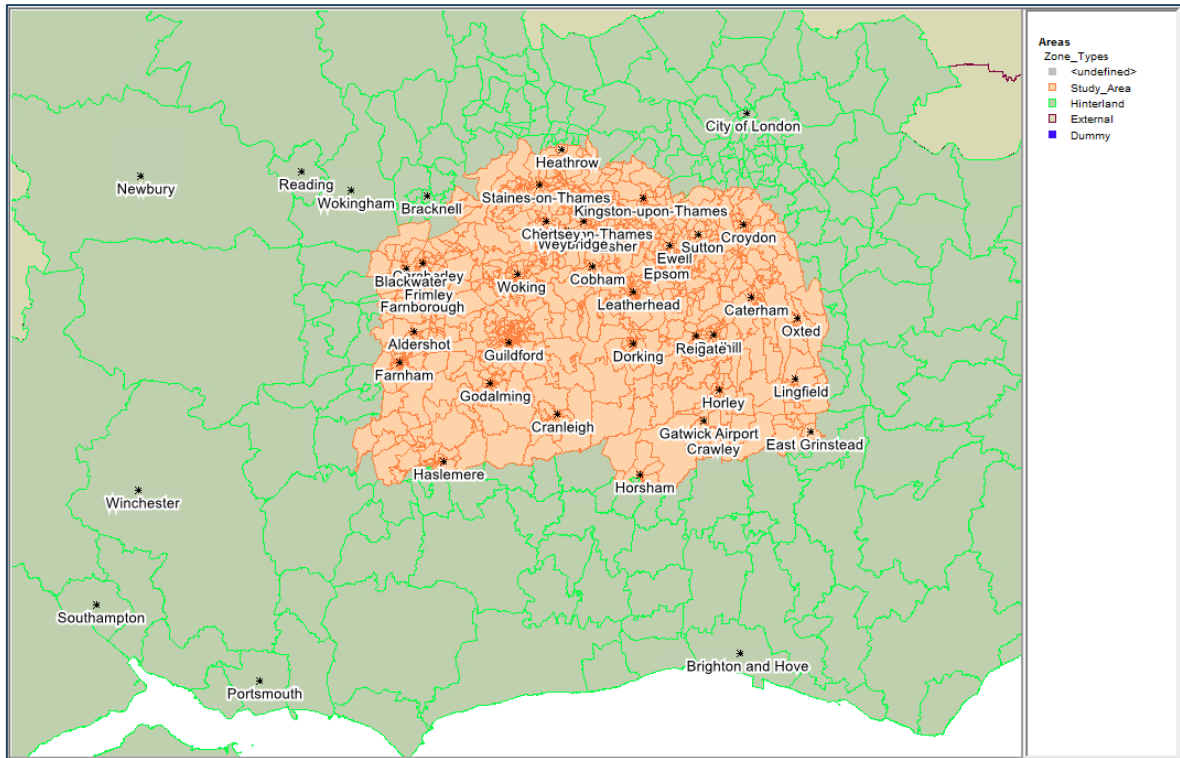
3.7.1 The starting point for the Local Model Base matrices is provided by the Base matrices in the SINTRAM72 model, with 2014 being the Base year in both cases.

3.7.2 The zones in the SINTRAM72 model are categorised as: (*Inner*) Study Area: zones 1 – 1325; (*Hinterland*): zones 1326 – 1553; and (*External*): zones 1554 – 1595.

3.7.3 A set of zones are classified as ‘Dummy’ zones and used for representing developments on major ‘greenfield’ sites⁵; these bring the total number of zones in the SINTRAM72 model to 1615.

3.7.4 Figure 3-2 shows the Study Area and Hinterland zones in the context of the south-east of England. As is clearly shown, the Hinterland zones (green boundaries) are much larger than the Study Area zones.

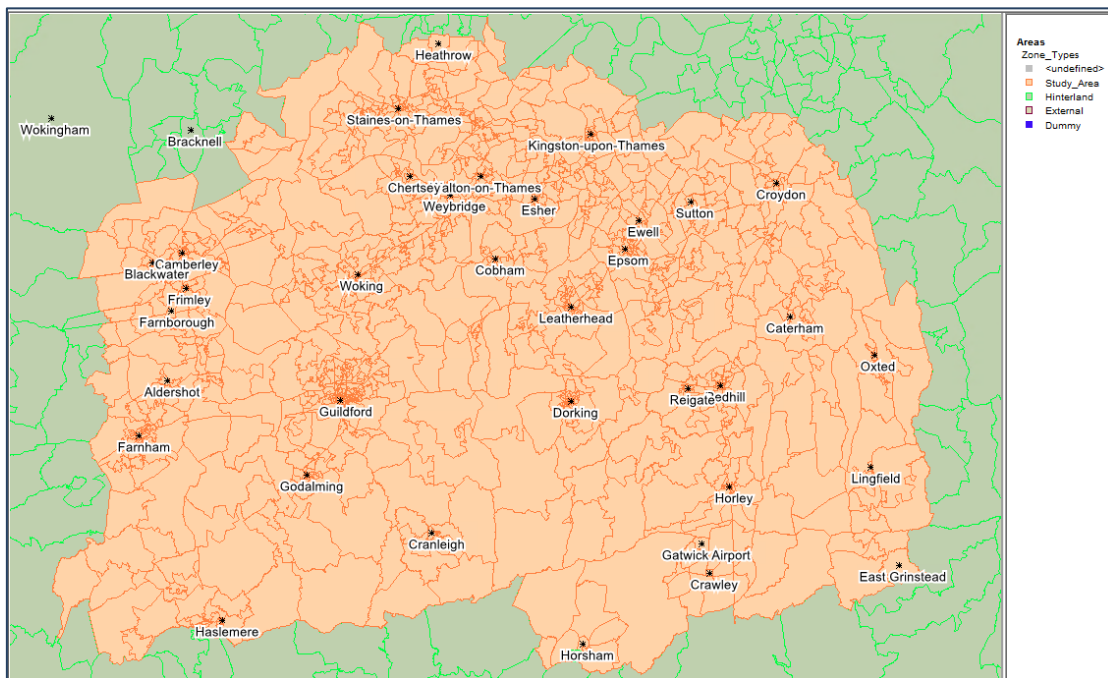
Figure 3-2 Study Area, Hinterland, and External Zone Areas



3.7.5 Figure 3-3 below shows a more detailed view of the SINTRAM72 zoning in the Study Area.

Figure 3-3 Detail of Study Area Zoning

⁵ ‘Greenfield’ should be interpreted here as (largely) vacant sites subject to significant land use change, thus including ‘brownfield’ sites.



- 3.7.6 The development of the SINTRAM72 Base matrices involved a complex and comprehensive process, reported in *SINTRAM72 Technical Notes TN2* and *TN3*.
- 3.7.7 The process' starting point is the set of trip ends calculated from CTripEnd v6.2⁶, but with locally-defined population and employment data for the Study Area for 2014. This data corresponds to standard update estimates of 2011 ONS Census data. This is the same as for the Local Model forecasting, but without the detail of the Surrey Heath Local Plan developments. Hinterland and External zones use data provided by CTripEnd. Information on this aspect is provided in *SINTRAM72 Technical Note TN1*.
- 3.7.8 The trip end data is used, together with National Travel Survey (NTS) information for the South East, to synthesise a full set of Production-Attraction (PA) matrices for different trip purposes and travel modes. The PA matrices reflect 'tours', rather than trips, in which trips outbound from home imply return trips to home later in the day.
- 3.7.9 The Base matrix development process uses a broad range of observed data to enhance the initial synthesised matrices. This is done first for PA matrices (e.g. using Census Travel to Work data) from which a set of Origin-Destination (OD) trip matrices are derived. OD matrices define travel patterns for particular periods of the day and include outbound and return trips, as well as non-home based (NHB) trips. These OD matrices are revised using varied data sets, but including GPS-based observations of car travel patterns.
- 3.7.10 Traffic count data is also used to enhance the OD matrices. This is via the same matrix estimation procedure applied to the Local Model matrices, but in the case of SINTRAM72 matrices the matrix estimation is only used to influence travel patterns, not scaling of the numbers of trips. This is because SINTRAM72 matrices are constrained to trip rates by purpose (with the trip rates originating from NTS data).

⁶ It is noted that CTripEnd v7.2 was released in 2017, but the DfT are yet to release the full v7.2 tables, as provided for v6.2.

3.7.11 The comprehensive assessment of the SINTRAM72 Base matrices that is reported provides evidence that the properties of the Base matrices, such as trip length distributions match expectations, and that the different sources of updating information have effects that commensurate with their assessed levels of precision and accuracy.

3.7.12 The SINTRAM72 OD matrices for goods vehicles (LGV and HGV types) are much less robustly based and rely largely on matrix estimation.

3.8 Development of Local Model Base Trip Matrices

3.8.1 The Local Model Base trip matrices use traffic count data and matrix estimation provided by OmniTRANS to update prior OD matrices generated from SINTRAM72.

3.8.2 The location of the 697 traffic counts used in the estimation is indicated above in Figure 3-1 which shows the sites as green rectangular symbols.

3.8.3 The major assurance for the quality of the local matrices is provided by their provenance as extracts of SINTRAM72 matrices. In general, the Local Model matrix estimation alters the matrices, but only to a relatively limited extent, so that travel patterns are not markedly altered. This is illustrated in Figure 3-4, which displays origin (blue) and destination (green) trip ends for the Base prior (darker) and the final matrix estimation ('ME', lighter) cases⁷.

3.8.4 Figure 3-4 compares the prior and matrix estimation car trip ends for the entire Local Model for the AM peak hour, and a close-up view of Surrey Heath is provided in Figure 3-5. Similarly, Figure 3-6 and Figure 3-7 present comparisons for the Local Model and Surrey Heath, but for the PM peak hour.

3.8.5 It can be seen that most change occurs at the cordon edge. In the AM peak hour, there is a reduction in car trip ends arising from matrix estimation in rural areas whilst some more urban areas show an increase; in the PM peak hour this pattern tends to be in reverse.

⁷ Some zones are shown with no trip ends. These correspond to future 'Greenfield' sites which, correctly, do not have Base year trips.

Figure 3-4 Prior versus ME Car Trip Ends for the AM Peak Hour (0800 – 0900), Local Model. Note maximum label value =200.

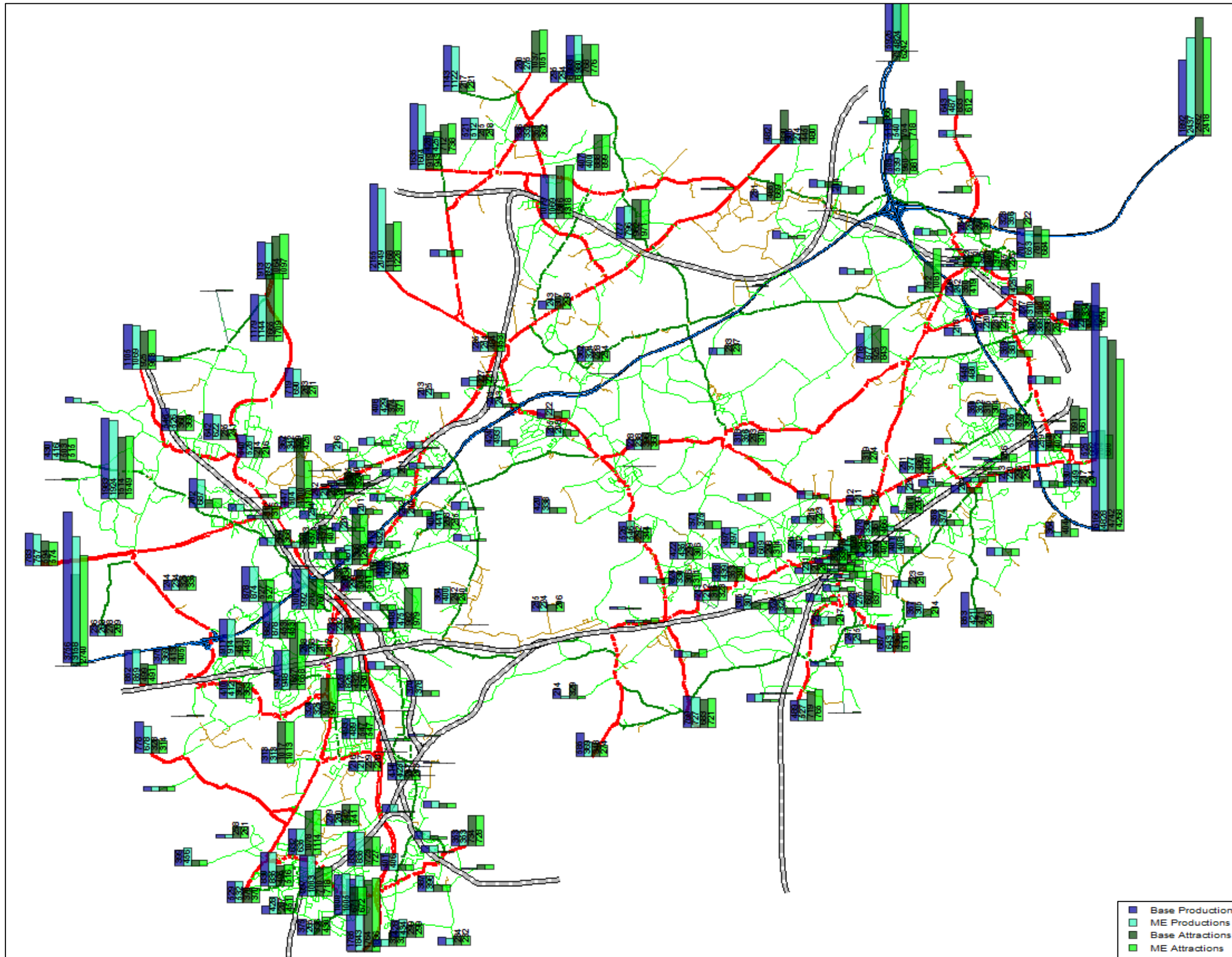


Figure 3-5 Prior versus ME Car Trip Ends for the AM Peak Hour (0800 – 0900), Surrey Heath. Note maximum label value =100.

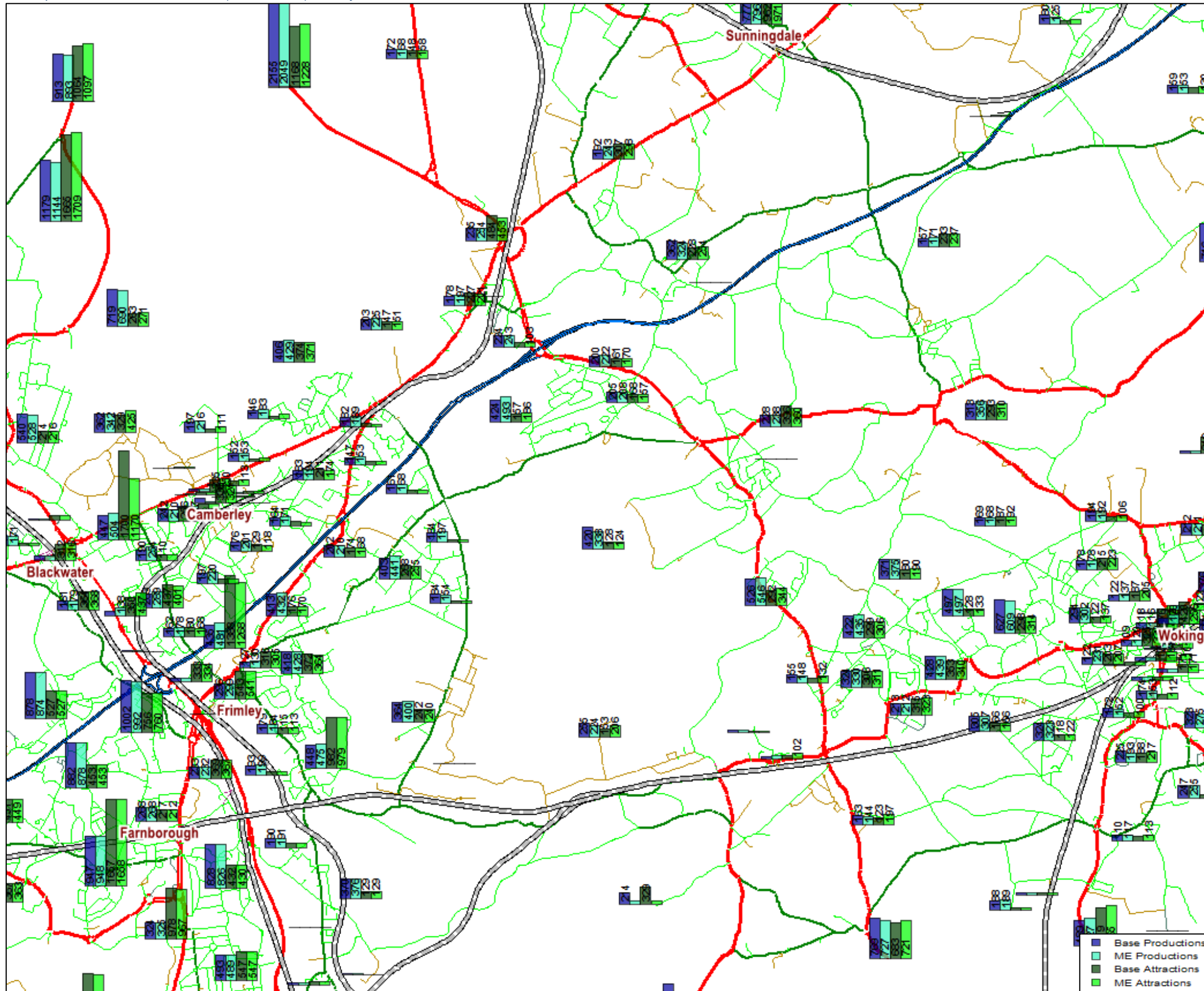


Figure 3-6 Prior versus ME Car Trip Ends for the PM Peak Hour (1700 – 1800), Local Model. Note maximum label value =200.

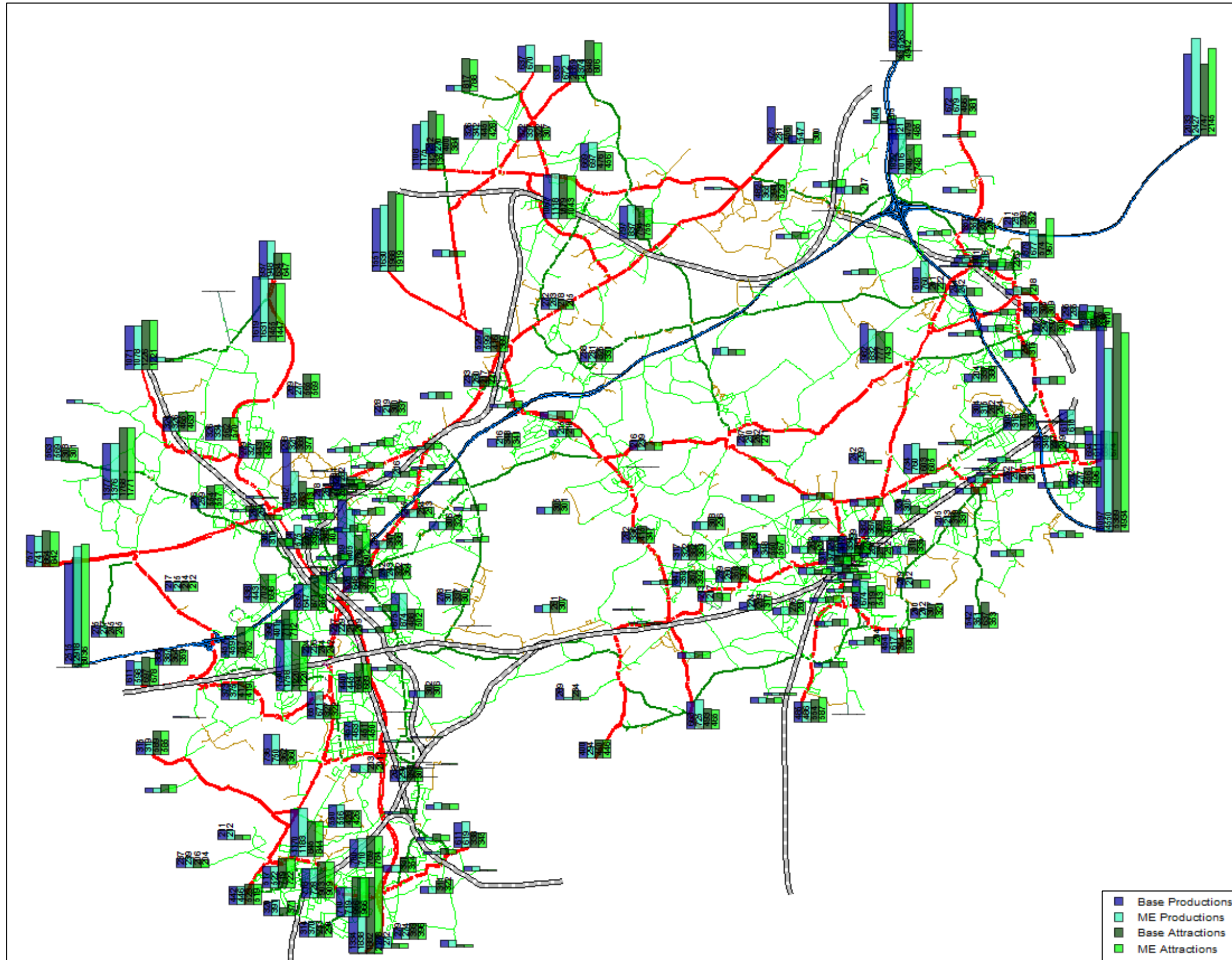
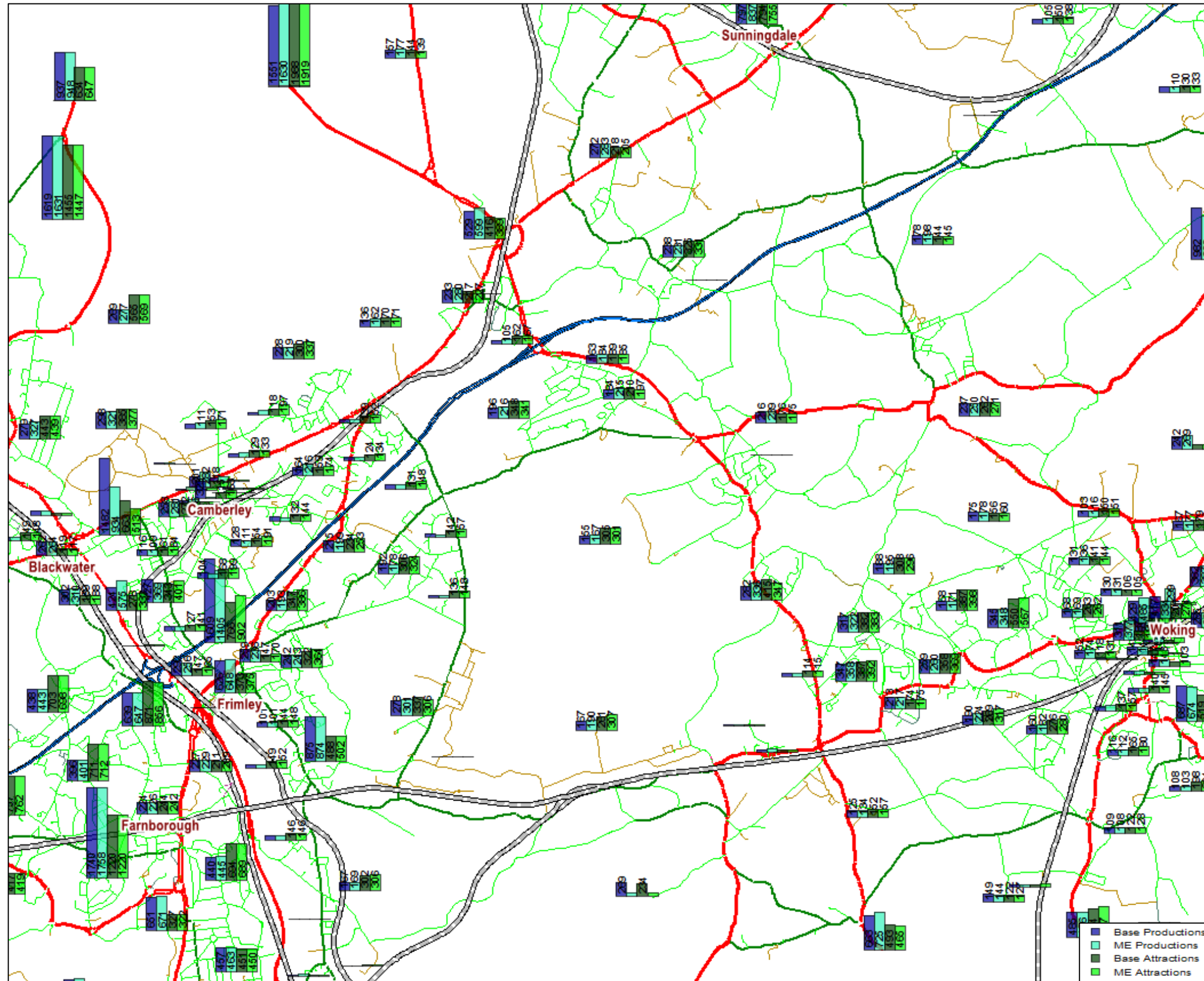


Figure 3-7 Prior versus ME Car Trip Ends for the PM Peak Hour (1700 – 1800), Surrey Heath. Note maximum label value =100.



3.8.6 Consideration of the trip matrix totals, presented in Table 3-3 below, shows the overall volume of trips changing by a nominal amount of 4% in the AM and 0% in the PM case. Table 3-3 gives values for the prior matrices (as generated by SINTRAM72), and the final matrix estimated matrices.

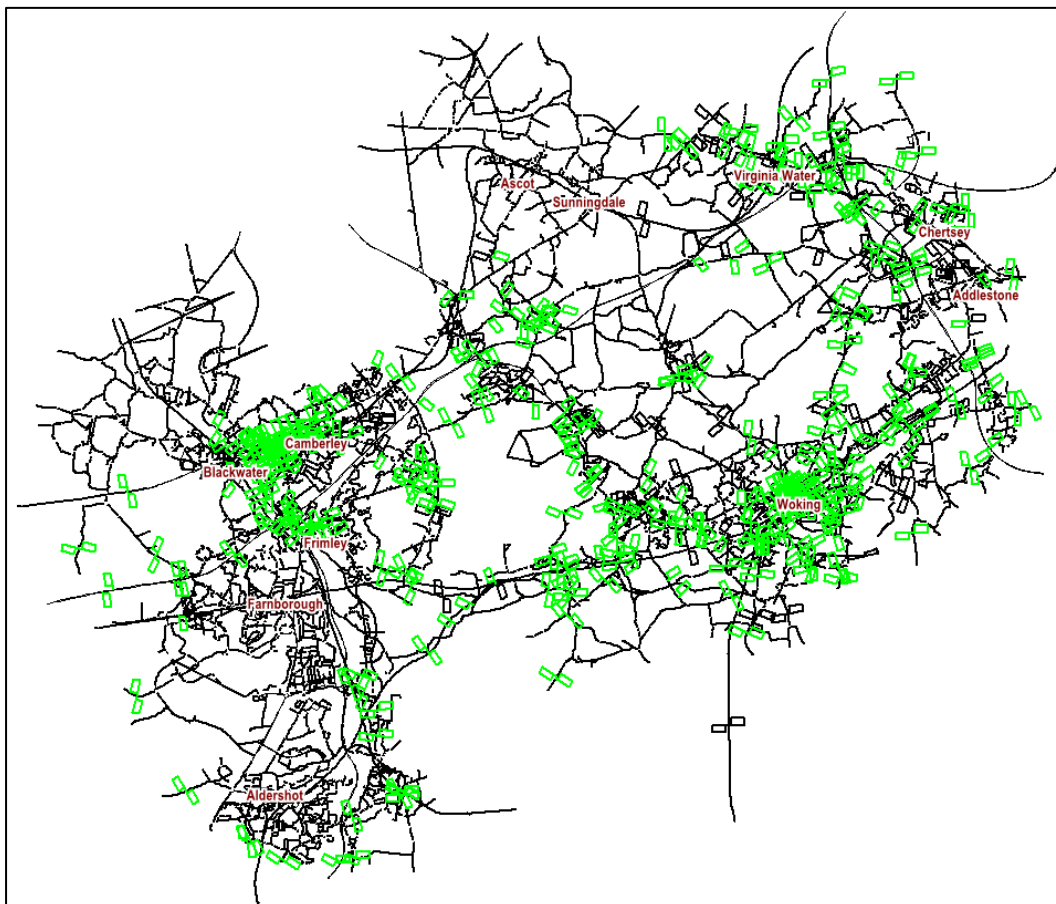
Table 3-3 Prior, Adjusted-Prior, and ME Final Matrix Totals

Matrix Type	Cars	LGV	HGV	All Vehicles	% of Original Total
<i>AM Peak Hour (0800 - 0900)</i>					
Prior Matrix	100195	31294	4177	135666	100%
ME Matrix	97939	27852	4869	130660	96%
<i>PM Peak Hour (1700 - 1800)</i>					
Prior Matrix	92735	20529	2371	115635	100%
ME Matrix	93354	18522	3775	115651	100%

3.9 Link Flow Validation

3.9.1 Figure 3-8 below shows the location, in green, of the 616 one-way count sites, which have been used for validation. Sites not used are indicated in black.

Figure 3-8 Location of All Counts Sites



3.9.2 Table 3-4 presents the summary of the validation of both the weekday AM and PM peak hours in terms of the Department for Transport's acceptability guidelines.

3.9.3 In the AM peak hour 80% of observed movements met the GEH criteria and 82% the flow criteria. Similarly in the PM peak hour 85% of observed movements met the GEH criteria and 86% the flow criteria.

3.9.4 In the AM peak hour, the GEH statistic just falls short of the TAG desired acceptance level of 85%; and the AM flow statistics also just falls short of the criteria. Whilst both the PM GEH and flow statistics meet the criteria. Given the size of the model, the supporting journey time validation described in the next Section, and the fact that the discrepancy is relatively small, it is not considered to be of concern for the assessment of the Local Plan.

Table 3-4 Link Flow Validation Results for the Local Model

Local Model	AM Peak Hour (0800 – 0900)			PM Peak Hour (1700 – 1800)		
	Values	% Met Criteria	Counts Met Criteria?	Values	% Met Criteria	Counts Met Criteria?
Number of counts	616			561		
Average GEH	3.48			3.20		
GEH > 10	29			14		
GEH < 5	495	80%	No	476	85%	Yes
Flow Criteria	508	82%	No	484	86%	Yes

3.9.5 Figure 3-9 and Figure 3-10 show the modelled flows plotted against the observed with best-fit regression line and correlation coefficient (R^2), for each model time period. This helps visualise the goodness of fit. An R^2 value greater than 0.95 is typically considered to indicate that the model reflects observed traffic flows well.

Figure 3-9 Comparison Plot of Modelled Against Observed Link Flows with Best-Fit Regression Line and Correlation Coefficient (R^2) for the weekday AM Peak Hour (0800 – 0900)

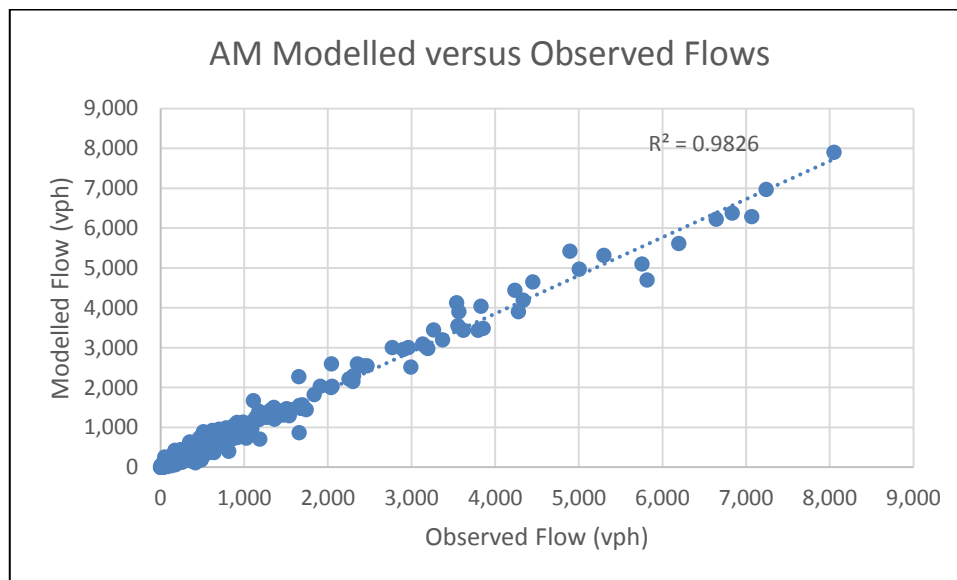
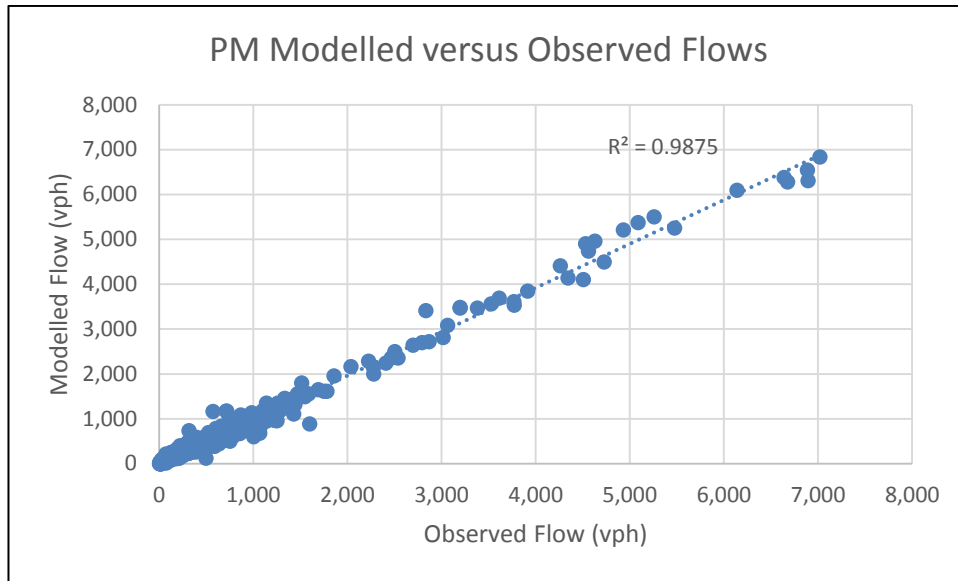


Figure 3-10 Comparison Plot of Modelled Against Observed Link Flows with Best-Fit Regression Line and Correlation Coefficient (R^2) for the weekday PM Peak Hour (1700 – 1800)



3.9.1 The cumulative frequency of GEH, for the AM and PM peak hours respectively, is presented in Figure 3-11 and Figure 3-12. In both the AM and PM peak hours, more than 55% of the counts have a GEH of less than 3, which means that more than 300 count sites match very closely to modelled flows.

Figure 3-11 Graph showing the variation of GEH for the AM Peak hour (0800 – 0900)

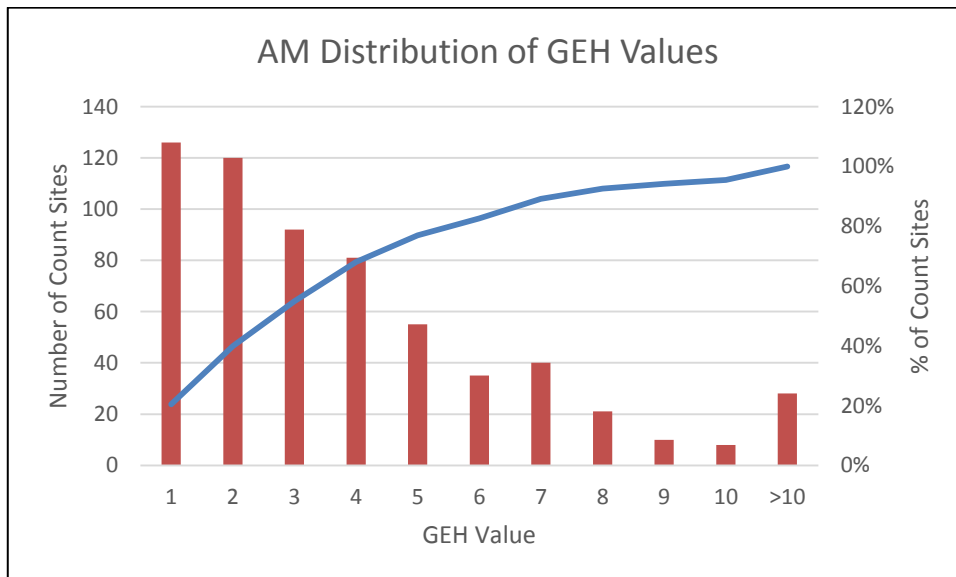
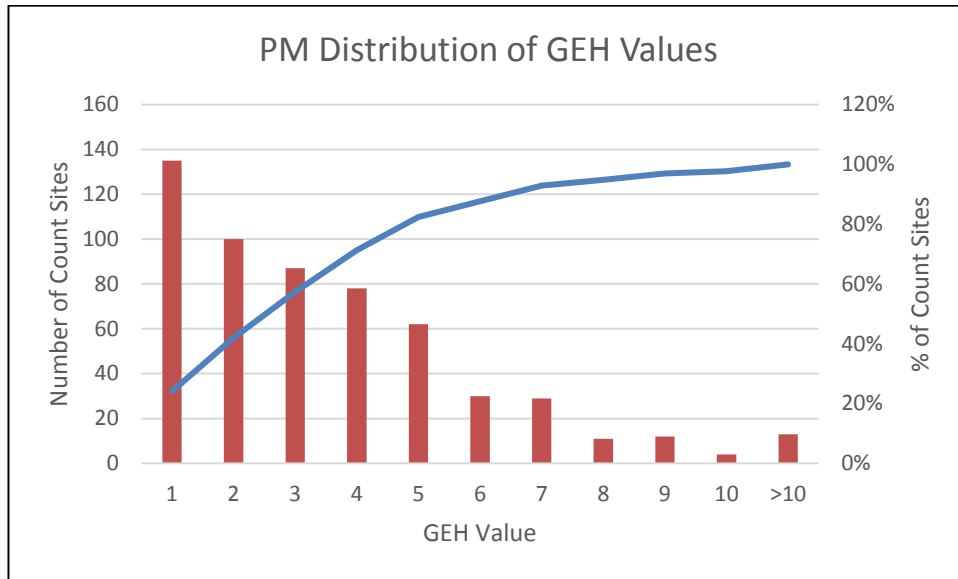


Figure 3-12 Graph showing the variation of GEH for the PM Peak hour (1700 – 1800)



3.9.2 Figure 3-13 and Figure 3-14 display observed versus model flow bandwidths for the entire Local Model. Due to scaling and for purposes of clarity, a close up of the borough is provided in Figure 3-15 and Figure 3-16, for the AM and PM peak hours respectively.

3.9.3 The bandwidths⁸ are proportional to the level of flow. A bandwidth coloured light purple indicates that an observed count is present on the link. Where the purple bands have a red edge, the model flow is less than the observed flow. Where the purple bands show a blue edge, the model flow is greater than the observed flow.

⁸ The bandwidths reflect all counts in the model and exclude P&R car flows.

Figure 3-13 Local Model Link Flow versus Count Bandwidth for the AM Peak Hour (0800 – 0900)



Figure 3-14 Local Model Link Flow versus Count Bandwidth for the PM Peak Hour (1700 – 1800)

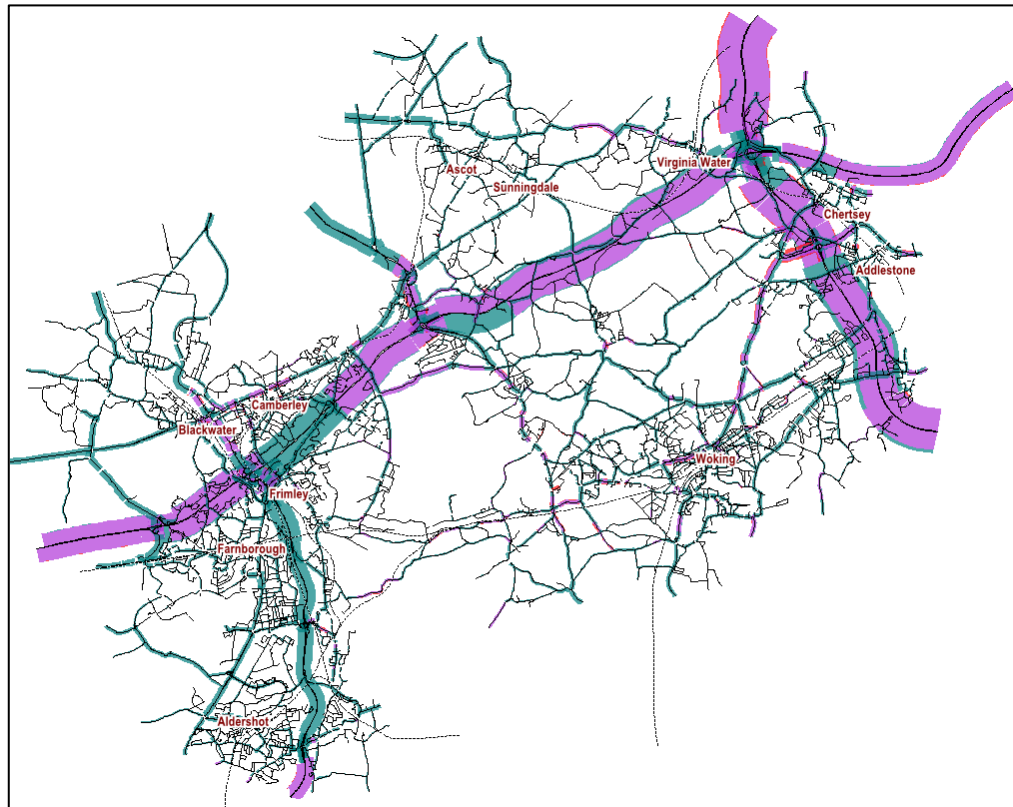


Figure 3-15 Surrey Heath versus Count Bandwidth for the AM Peak Hour (0800 – 0900)

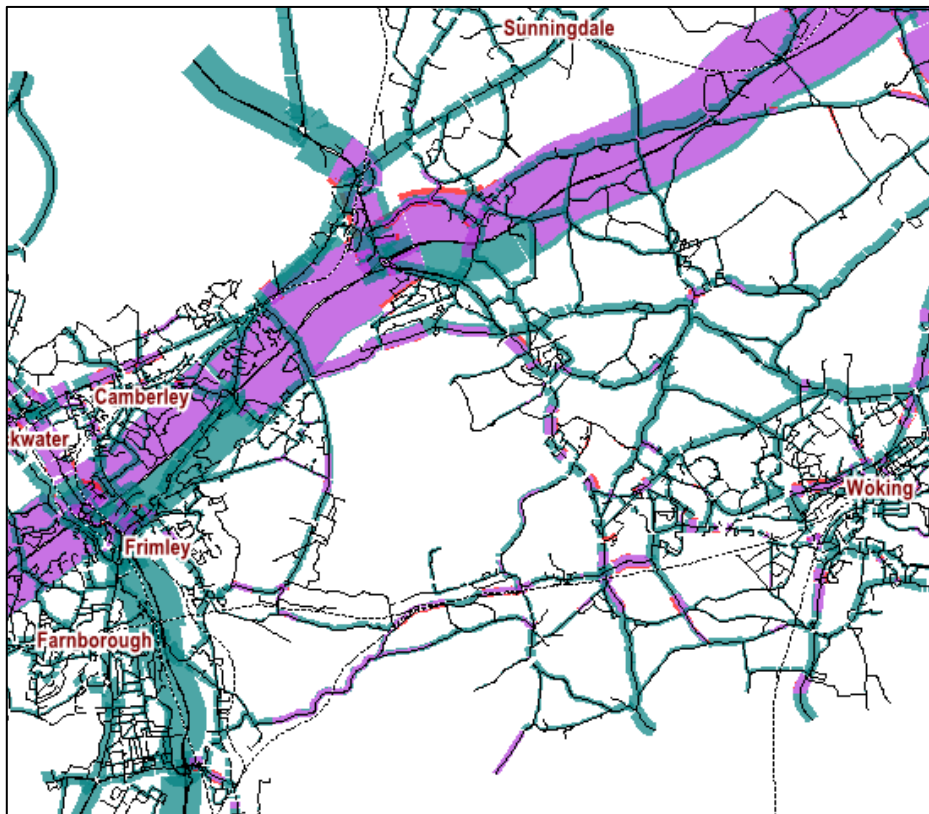
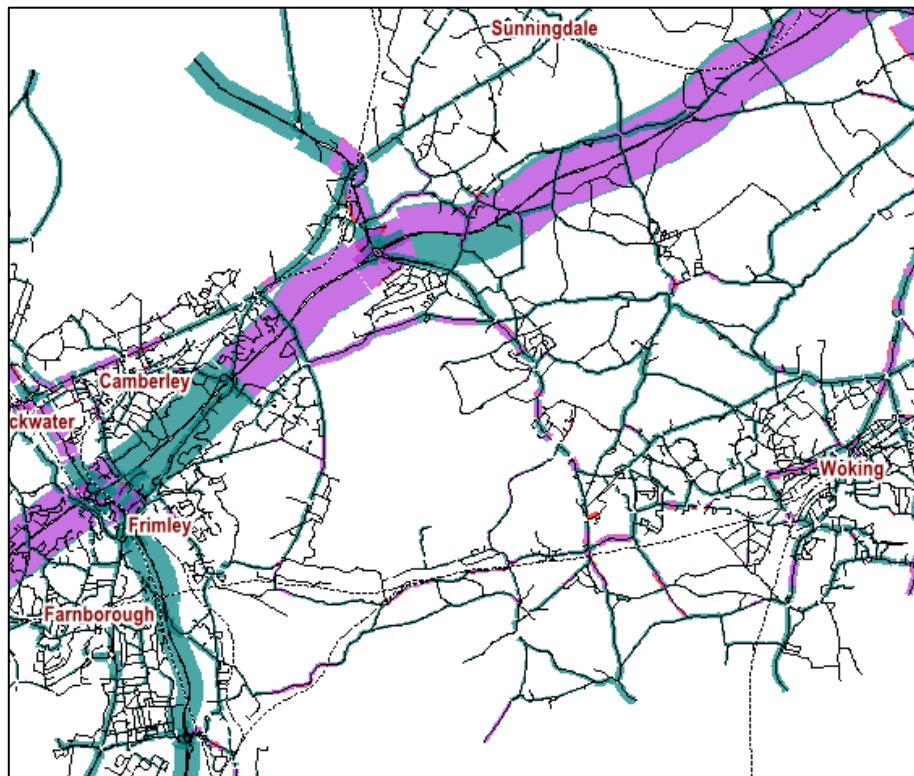
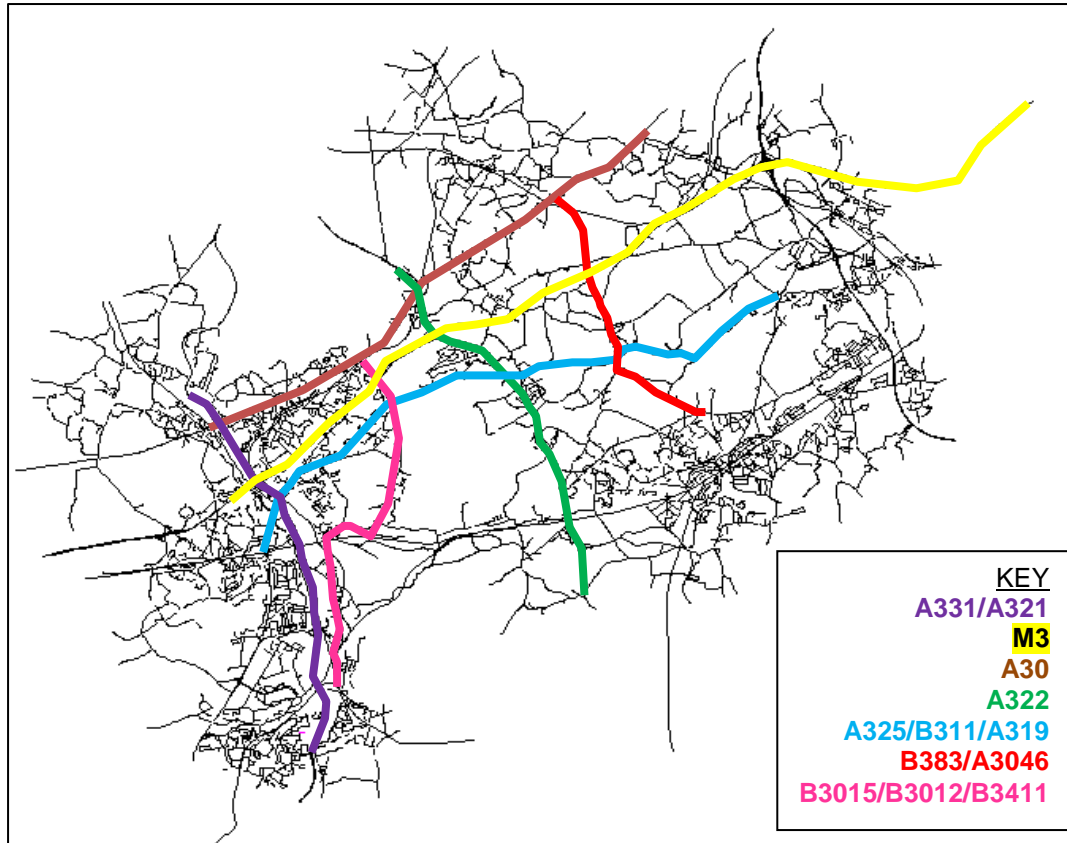


Figure 3-16 Surrey Heath versus Count Bandwidth for the PM Peak Hour (1700 – 1800)



- 3.9.4 A full comparison of observed and modelled flow for the selected counts is provided in Section 5.1 and Section 5.2 of the appendix.
- 3.10 Journey Time Validation
- 3.10.1 Seven journey time routes have been defined for the purposes of assessing modelled journey times, as shown in Figure 3-17. This implies fourteen one-way journey time routes for two time periods, which equals twenty-eight result sets.
- 3.10.2 The journey time data was acquired from Highways Analyst, developed by Basemap. Highways Analyst uses congestion data supplied by Trafficmaster plc that is mapped to the Ordnance Survey (OS) Integrated Transport Network (ITN) in order to calculate journey time by ITN link. The Trafficmaster data is obtained from GPS-equipped vehicles traversing the highway, which provides high volume GPS-based samples. In contrast to the traffic count data, it is statistically precise at capture and does not have associated self-consistency problems.
- 3.10.3 Tuesday to Thursday weekday data (excluding school holidays) was extracted for the academic year. This was used to calibrate and verify model values of delay, speed and travel times.
- 3.10.4 The captured data is converted to the modelled road network algorithmically and involves some melding where ITN and model networks are not the same (typically because some junction geometry detail is omitted for modelling reasons). Modelled junction delays are included in the upstream link to which they apply. It can be less clear from the GPS data to which links junction delays are associated (given ambiguities in determining the extent of junctions, and their entry and exit delays).
- 3.10.5 This results in a few caveats for individual link times, but overall journey times still match with TrafficMaster and, generally, the journey time data is regarded as precise and accurate, especially when taken over a contiguous set of links.
- 3.10.6 The journey time routes are between 9 and 28 km in length, and the observed journey times vary between approximately 13 and 38 minutes.

Figure 3-17 Locations of Journey Time Routes



- 3.10.7 Evaluation of modelled and observed journey times provides a good indication of how well the model is replicating delay, especially as the observed data is extensive both in terms of area coverage and the sample size.
- 3.10.8 Table 3-5 and Table 3-6 compare the observed journey time routes with those extracted from the model.
- 3.10.9 With reference to the criteria set out in Table 3-1, the model successfully validates in both time periods.
- 3.10.10 The only routes which did not meet the criteria are the A30 in the southbound direction and B383 in the southbound direction, whereby the model is overestimating travel time by just over 7 and 3 minutes respectively. This is due to an overestimation of junction, rather than link delay.
- 3.10.11 Section 5.3 in the Appendix, presents graphs which compare observed and modelled travel times across the length of each analysed routes.

Table 3-5 Journey Time Comparisons for the AM Peak Hour (0800 – 0900)

Route	Length (km)	Observed Time (mins)	Modelled Time (mins)	Difference	% Difference	Met Criteria? ✓/✗
A30 Northbound	17.06	32.59	33.05	0.46	1%	✓
A30 Southbound	15.88	26.09	33.26	7.17	27%	✗
A322 Northbound	12.95	35.75	36.42	0.67	2%	✓
A322 Southbound	13.61	31.61	27.11	-4.50	-14%	✓
A325 Eastbound	19.71	38.06	37.45	-0.61	-2%	✓
A325 Westbound	19.63	35.10	31.21	-3.89	-11%	✓
A331 Northbound	12.51	15.25	14.71	-0.55	-4%	✓
A331 Southbound	13.35	15.72	15.17	-0.55	-3%	✓
B3015 Northbound	12.12	22.24	19.05	-3.20	-14%	✓
B3015 Southbound	12.35	18.78	16.27	-2.52	-13%	✓
B383 Northbound	9.13	15.57	17.07	1.50	10%	✓
B383 Southbound	9.13	14.07	17.09	3.02	21%	✗
M3 Eastbound	27.83	22.18	19.45	-2.73	-12%	✓
M3 Westbound	27.17	20.33	18.37	-1.96	-10%	✓
<i>Total number of routes met criteria</i>						12
<i>% of routes met criteria</i>						86%
<i>Within DfT acceptability guidelines?</i>						Yes

Table 3-6 Journey Time Comparison for the PM Peak Hour (1700 – 1800)

Route	Length (km)	Observed Time (mins)	Modelled Time (mins)	Difference	% Difference	Met Criteria? ✓/✗
A30 Northbound	17.06	28.35	26.48	-1.88	-7%	✓
A30 Southbound	15.88	34.60	34.70	0.11	0%	✓
A322 Northbound	12.95	27.58	26.50	-1.07	-4%	✓
A322 Southbound	13.61	27.39	26.91	-0.48	-2%	✓
A325 Eastbound	19.71	30.44	27.45	-2.99	-10%	✓
A325 Westbound	19.63	34.75	29.85	-4.91	-14%	✓
A331 Northbound	12.51	17.77	17.89	0.12	1%	✓
A331 Southbound	13.35	15.49	13.55	-1.94	-13%	✓
B3015 Northbound	12.12	19.04	16.71	-2.33	-12%	✓
B3015 Southbound	12.35	18.75	16.68	-2.07	-11%	✓
B383 Northbound	9.13	16.99	14.71	-2.28	-13%	✓
B383 Southbound	9.13	12.71	12.20	-0.51	-4%	✓
M3 Eastbound	27.83	18.91	16.29	-2.62	-14%	✓
M3 Westbound	27.17	26.88	23.62	-3.26	-12%	✓
<i>Total number of routes met criteria</i>						14
<i>% of routes met criteria</i>						100%
<i>Within DfT acceptability guidelines?</i>						Yes

3.11 Network Validation Adjustments

- 3.11.1 The validation of the network's flows and journey times mainly involved attention to the trip matrices, as described earlier in Section 3.8.
- 3.11.2 In just a few instances where specific issues arose, link times have been adjusted in the light of observed data. These changes, it must be noted, are included in the results presented in Section 3.10 above. The set of journey time routes involves around 3,500 one-way links, of which only 1.7% have been subject to adjustments.
- 3.11.3 The main changes related to specific parts of the network where the modelling was not reflecting all the factors. The adjustments were applied to replicate:

- Delay through urban areas such as Camberley and bottle-necks such as Chobham;
- Delay at approaches to major junctions;
- Delay at pedestrian crossings, which are not explicitly modelled; and
- Motorway queueing.

3.12 Validation Summary

- 3.12.1 The model validates well across geography, road types and time periods.
- 3.12.2 The assessment with respect to observed flows is less assured due to the variability of the large count dataset, as well as limitations in the standard count comparison metrics. A broad view across the study area, though, does not indicate any systematic problems.
- 3.12.3 The journey time comparisons provide more assurance because of the statistical strength of the observed data, and to which the model's results match well.
- 3.12.4 Details are also open for further inspection via spreadsheets providing additional technical documentation, on request.

4 **MODEL FORECASTING**

4.1 Forecast Year

- 4.1.1 The model forecast year is 2032.

4.2 Forecast Scenarios

- 4.2.1 For this Regulation 18 assessment, Surrey Heath Borough Council identified the following two scenarios for testing as part of the SHA:
- 4.2.2 **Scenario 1: Do Minimum.** This scenario includes committed developments identified from the Base year (since 2014) to the forecast year 2032, where committed developments comprise sites already built, or in the process of construction, or have planning permission.
- 4.2.3 The brief notes that whilst the study area is the extent of Surrey Heath Borough, the SHA must factor in growth in neighbouring authority areas, specifically the large committed and proposed development at Longcross in Runnymede.
- 4.2.4 **Scenario 2: Local Plan Growth.** This scenario is a continuation of Scenario 1 plus the options for development as contained in the emerging Surrey Heath 2032 Local Plan.
- 4.2.5 Scenario 2 is compared with Scenario 1, to determine the marginal highway impact of Surrey Heath's Local Plan.
- 4.2.6 Within both scenarios, natural demographic and employment changes, as determined by the Department for Transport's (DfT) National Trip End Model (NTEM) have been included for the whole of Great Britain. In line with the DfT's Transport Appraisal Guidance, adjustments have been made to the NTEM data to reflect the locality and composition of the committed and non-committed development sites which comprise both scenarios.

4.3 Development Sites and Pro-Forma

- 4.3.1 Information regarding the composition of both commercial and residential development sites to be considered in this appraisal was provided by Surrey Heath Borough Council in the form of the County Council's pro-forma. The pro-forma was finalised by Surrey Heath Borough Council on 20/12/2017.
- 4.3.2 Each development site listed in the pro-forma was matched to the model zone system using provided grid references and Geographic Information System (GIS).
- 4.3.3 Figure 3-1 geographically presents the commercial development sites that have been set out in the pro-forma. Figure 3-2 shows the same but for residential sites. Note that sites which have already received planning permission are included within these figures.
- 4.3.4 The gross and net total of non-committed households for each scenario is summarised in Table 4-1.

Table 4-1 Gross and Net Non-Committed Households by Scenario.

Non-Committed Households	Scenario	
	1	2
Gross	0	1348
Net	0	1330

**Note that this is for Surrey Heath only and does not include Longcross.*

Figure 4-1 Commercial development sites in Surrey Heath

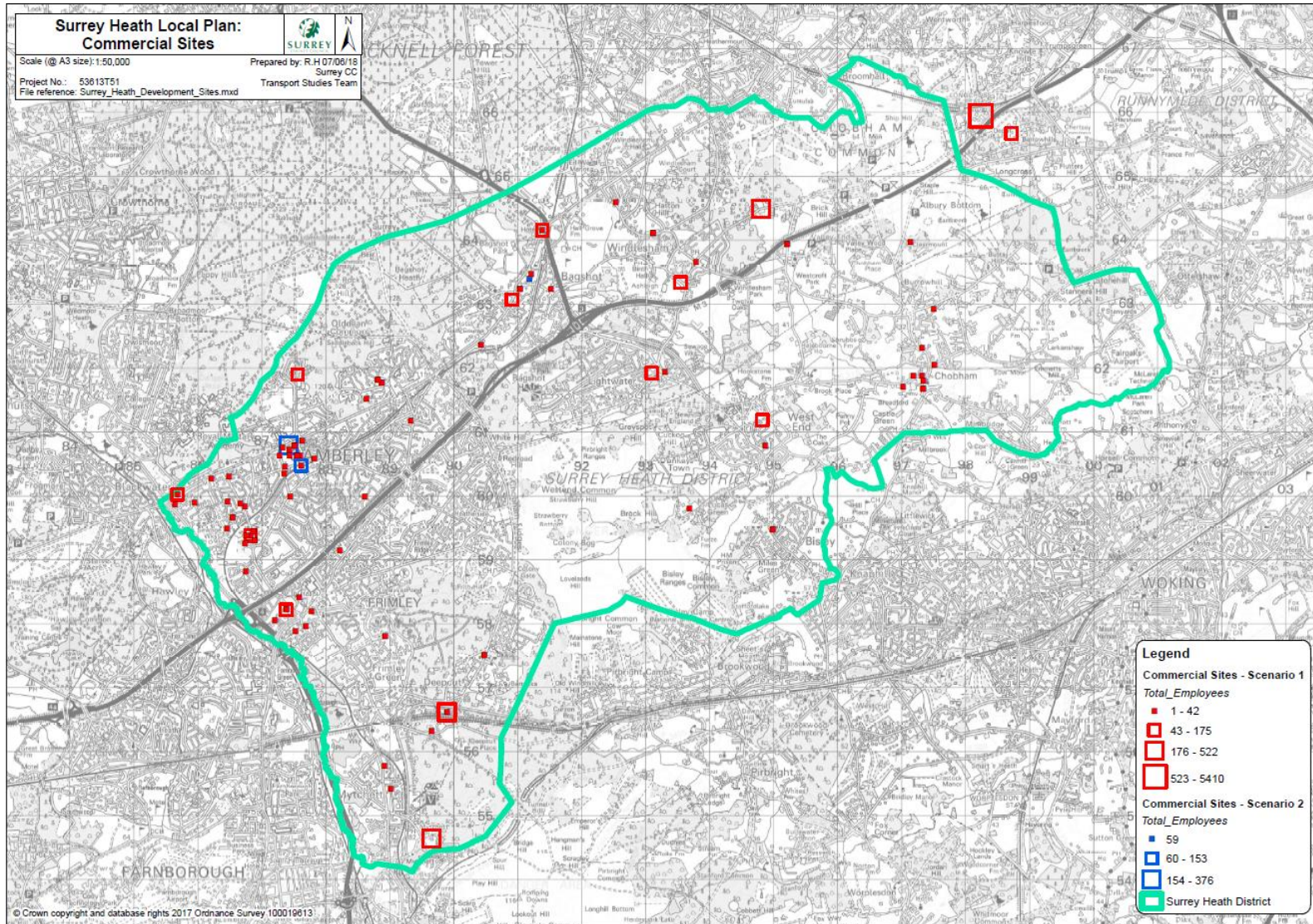
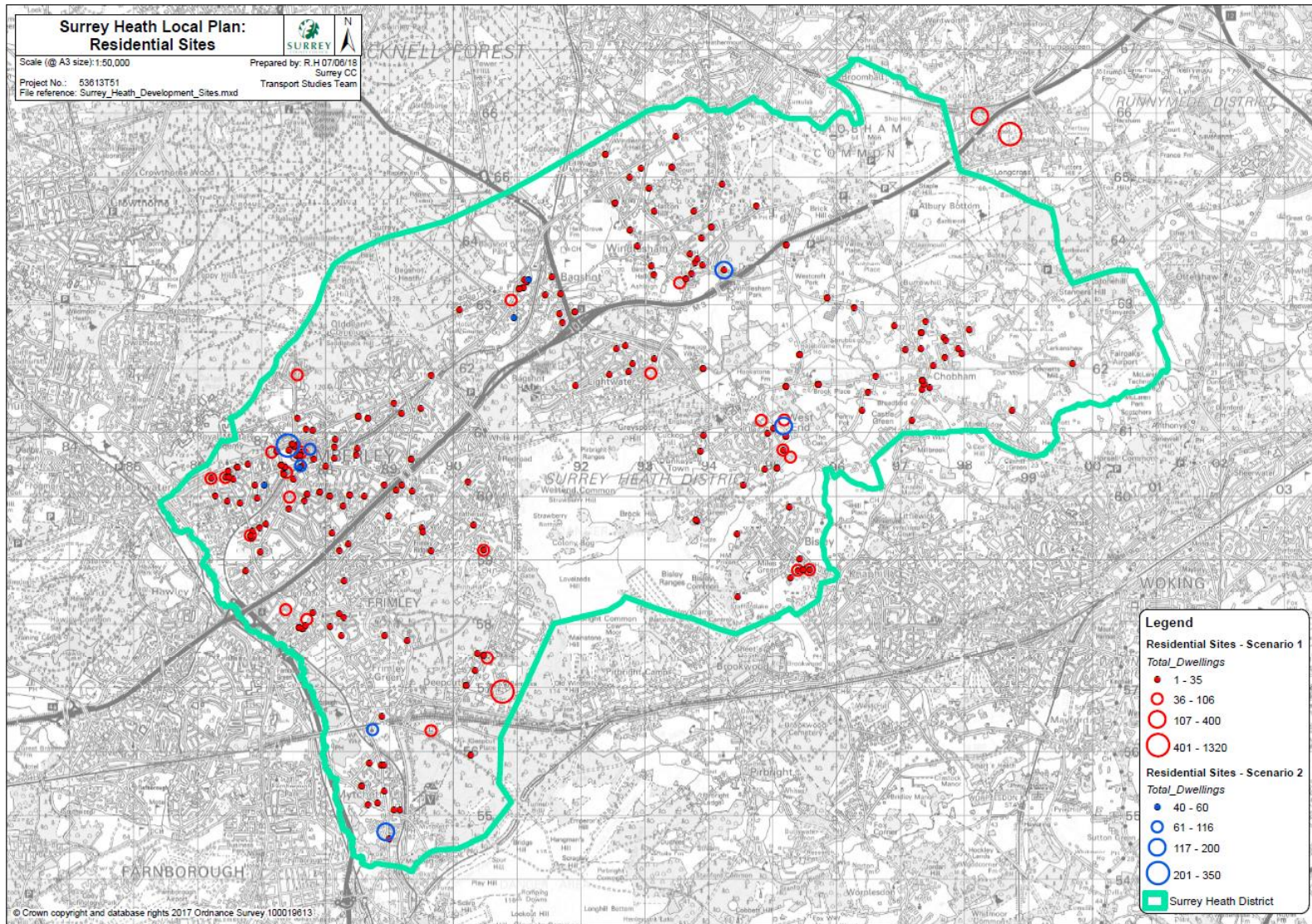


Figure 4-2 Residential development sites in Surrey Heath



4.4 Changes in Land Use Forecasts

4.4.1 There are three factors influencing the demand for car travel during the peak hours being modelled which are:

- 1) General demographic and economic trends, as per DfT's NTEM forecasts;
- 2) Local Plan developments in housing and employment; and
- 3) Balancing to avoid double-counting between the first two factors, unless the implied Local Plan growth exceeds estimates.

4.4.2 The effect of these factors on the Borough's resident and job numbers for the scenarios is shown in Table 4-2. This is further described in the following section and differences are illustrated in Figure 4-3, Figure 4-4, and Figure 4-5.

4.4.3 The decline in jobs is due to the replacement of employment with residential land use. The total residents in Scenario 1 and 2 is very similar, this is due to balancing as mentioned in Section 4.4.1.

4.4.4 For Surrey Heath, the SHA is effectively testing the different distribution of population between the two scenarios rather than implying changes in numbers as explained further in Sections 4.5.6 and 4.5.7. This implies that some of the new development is occupied by existing/future local residents, which suggests changes in average household density between the scenarios.

Table 4-2 Resident and Job Numbers by Scenario for Surrey Heath Borough

Scenario	Residents		Jobs	
	Total	Difference from Scenario 1	Total	Difference from Scenario 1
1	102,911	-	63,877	-
2	102,912	1	63,600	-277

4.5 Vehicle Trip Generation

4.5.1 As described above in Section 3.1, Local Model trip ends (zonal trip productions and attractions) are initially derived from SINTRAM72 modelling which uses local population and employment data at a detailed level for, in the case of forecasting, for the future year of 2032.

4.5.2 An extract of the Planning Spreadsheet which contains the local land use data used in Scenario 1, and which is derived from the Pro-Forma information supplied by Surrey Heath Borough Council, is shown in Figure 4-3. The differences relate to Base year (2014) values.

Figure 4-3 Extract of Scenario Land Use Data for Scenario 1

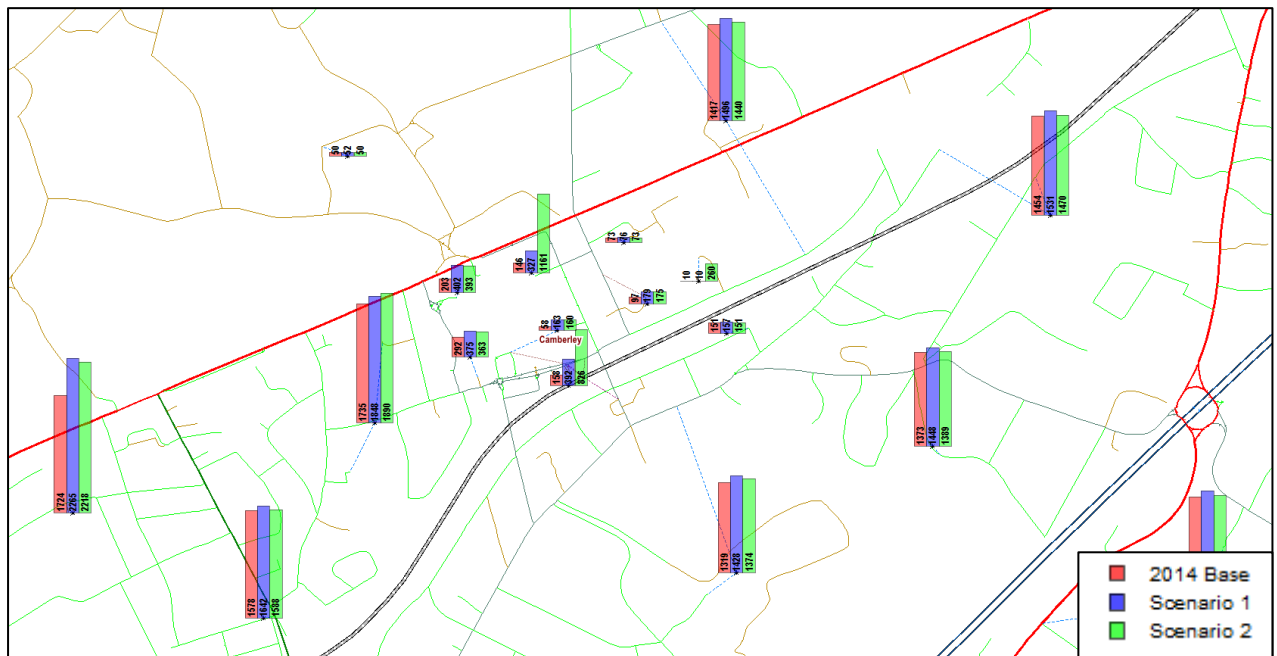
SINTRAM Zone	Zone Name	PROPOSED							DIFFERENCE						
		Population	Dwellings	Jobs - A Retail trade	Jobs - B Business	Jobs - C Residential (hotels...)	Jobs - D Leisure	Jobs - Other land use	Population	Dwellings	Jobs - A Retail trade	Jobs - B Business	Jobs - C Residential (hotels...)	Jobs - D Leisure	Jobs - Other land use
767	High Street Chobham Car Park	198	78	24	12	0	1	24	143	56	-7	-53	0	1	0
768	Lakeside Primary School	10	4	0	0	0	0	0	10	4	0	0	0	0	0
769	Balmoral Drive Car Park	10	4	14	0	0	0	0	10	4	-4	0	0	0	0
772	Cheylesmore Drive Frimley	278	111	0	0	0	0	0	263	105	0	0	0	0	0
773	Martindale Avenue Car Park	8	3	0	0	0	0	0	5	2	0	0	0	0	0
774	Buttermere Drive Camberley	5	2	0	0	0	0	0	5	2	0	0	0	0	0
775	Hammond School	10	4	0	0	0	0	0	5	2	0	0	0	0	0
776	Guldford Road Lightwater	63	60	0	0	0	63	0	61	59	0	-36	0	63	0
777	Lightwater Village School	16	6	0	0	0	0	0	11	4	0	0	0	0	0
778	Mytchett Primary School	13	5	0	0	0	0	2	10	4	-2	0	0	0	2
779	linsford business park	98	39	0	296	0	12	0	85	34	0	102	0	12	0
780	Woodend Road Car Park	253	138	0	180	2	36	1	240	133	-21	146	2	33	1
781	Collingwood College	25	10	31	0	0	0	0	25	10	7	-3	0	0	-4
782	Lorraine School	0	0	0	0	0	5	0	0	0	0	0	0	1	0
783	Prior Road Car Park	25	10	0	0	0	0	0	20	8	0	0	0	0	0
784	The Grove Primary School	38	15	6	0	0	0	0	33	13	4	0	0	0	0
786	York Town Car Park	509	203	20	73	0	0	14	492	196	-29	-39	0	-6	-12
787	Frimley Road Camberley	10	4	0	25	0	32	0	8	3	0	0	0	15	-33
788	Iberian Way Camberley	33	13	0	0	0	5	0	28	11	0	0	0	4	0
789	Peninsular Close Camberley	30	12	0	0	0	0	0	28	11	0	0	-6	0	0
790	Crawley Ridge Infant School	18	7	0	0	0	0	0	13	5	0	0	0	0	0
791	Castle Road Camberley	26	15	0	0	0	10	0	13	10	0	0	0	10	0
792	Kings Ride Camberley	224	127	0	0	0	60	9	221	126	0	-289	0	60	-62
793	Verran Road Camberley	98	93	0	0	0	39	0	23	20	0	0	0	9	0
795	Brentmoor Road West End	25	10	6	3	0	0	0	8	3	4	3	0	0	0
796	Gordons School	801	356	0	0	0	65	0	778	347	0	-13	0	65	-15
797	Chertsey Road Windlesham	159	103	4	527	0	73	5	109	83	2	-204	0	71	-5
798	Windlesham Village Infant School	38	15	0	1	0	0	15	18	7	0	1	0	0	5
802	Camberley Station Car Park	228	91	0	0	0	0	6	228	91	-10	-106	0	0	6
806	Camberley Town Centre	178	71	41	0	0	0	8	175	70	16	-183	0	-16	8

- 4.5.3 Trip productions are calculated from daily trip rates for different trip purposes from the DfT's National Trip End Model (NTEM) CTripEnd v6.2 system. Trip attractions for different purposes are allocated to zones on the basis of different types of employment levels per zone. A sample of these are shown in Figure 4-3 as the types identified as 'Jobs A1, A2, B1 ...'.
- 4.5.4 Further details are provided in the SINTRAM72 documentation *Technical Note TN1 Processing Trip Ends*, which also describes the allocation of trips into 'car available' and 'non-car available' categories.
- 4.5.5 CTripEnd is based on a coarser zoning system than represented by the 1615 zones used in SINTRAM72. However, it allows the introduction of finer zones, as is done for SINTRAM72 in general but, importantly here, also for Surrey Heath. So, as described earlier for validation modelling, the Local Model has 299 zones that allow land use developments to be associated with quite detailed spatial areas in the modelling.
- 4.5.6 Because the forecasts for population and employment are provided from the two sources of the DfT's CTripEnd software, which represents general forecasts, and from data supplied by Surrey Heath Borough Council that reflects the Surrey Heath 2032 Local Plan, provision is included in the calculations to avoid issues of 'double-counting' arising from the use of the two data sources, subject to some constraints.
- 4.5.7 The basic notion is that growth implied by 'local' data is more considered than that given by the DfT estimates; that is, there is a clearer view as to its spatial distribution across the Borough in specific zones. Accordingly, the implied local Surrey Heath Borough Council growth between 2014 and 2032 is first 'scaled down' across the Borough, then the local forecast growth is applied to the specific zones as given by the Borough. In that way, the overall growth level for the Borough respects the DfT 2032 forecasts.

4.5.8 However, this methodology only works if the growth given by the local forecasts is less⁹ than the growth implied by the DfT data 2014-2032 which is the case for Surrey Heath.

4.5.9 The resulting changes in resident and job numbers across the Borough is illustrated in Figure 4-4 which shows a small area of Surrey Heath with corresponding numbers of residents for (SINTRAM72) zones. The histograms for each numbered zone, reading from the left, give resident numbers respectively for the 2014 Base, Scenario 1, and Scenario 2. Apart from the development sites (in this sample “Land at Half Moon Street”, “Heathpark Wood” (near top of figure) and “West End Reserve sites” (near right of figure) are shown), there is limited population change for other zones.

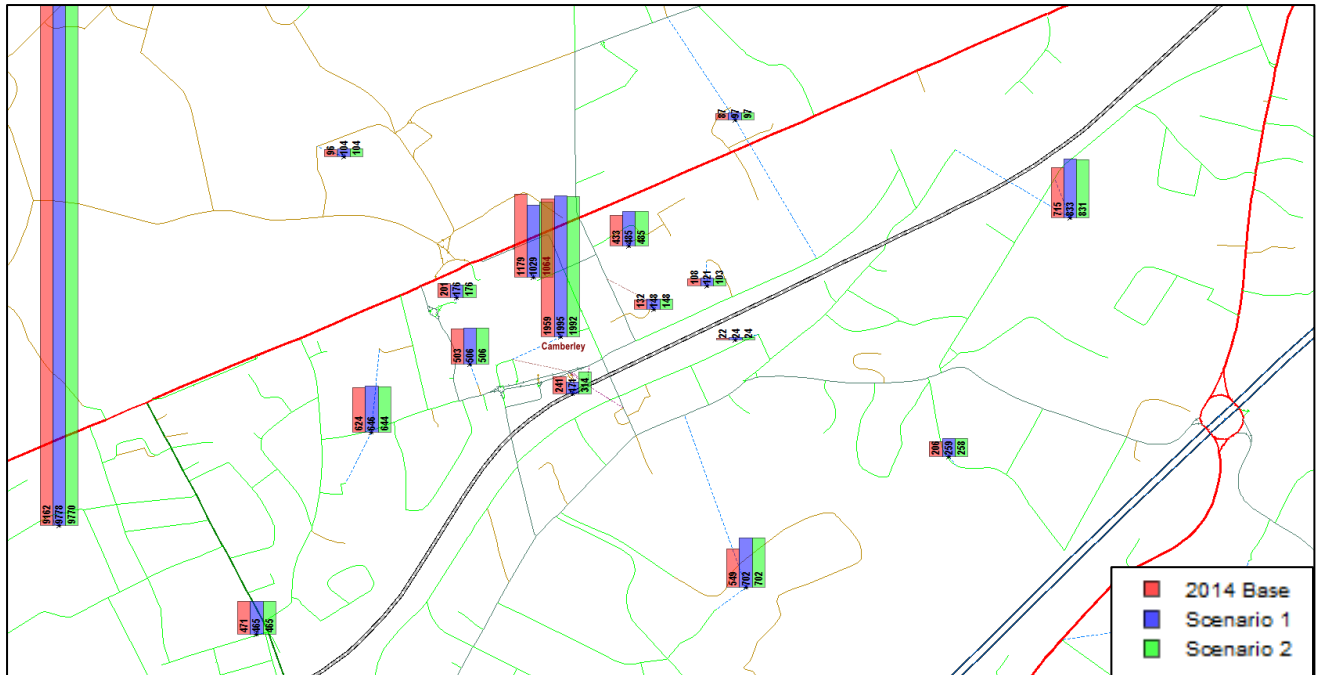
Figure 4-4 Sample of Changes in Resident Numbers: 2014 v S1 v S2, centred at Camberley



4.5.10 A similar pattern applies to numbers of jobs per zone, which are illustrated on the same basis in Figure 4-5.

⁹ If greater, the scaling down process would lead to ‘depopulation’ and a reduction in employment across the Borough, a situation that is considered unreasonable. In these circumstances, the growth 2014-2032, as implied by the DfT data, is ignored; and all the growth implied by the local forecasts is added to the 2014 base. This means that the DfT 2032 forecasts are now ‘exceeded’, but the 2032 forecast data then becomes more representative of the ‘housing need’ that the SHAR is intended to assess. This means, elsewhere for non-development zones in the Borough, demographic changes altering household composition/density and employment trends are not included as they are outside of Surrey Heath.

Figure 4-5 Sample of Changes in Job Numbers: 2014 v S1 v S2, centred at Camberley



4.6 Vehicle Trip Distribution

- 4.6.1 The trip ends arising from CTripEnd-related processing, as described above in Section 4.5, are used in the SINTRAM72 modelling to construct 'latent' (or 'unconstrained') demand PA trip matrices and their zonal trip ends. This corresponds to the demand for travel implied by economic and land use data applying to the forecast scenario, but not taking into account congestion on the transport networks, which can inhibit demand. Calculating the effects of congestion on demand relative to the latent demand represents the 'variable demand' element. This involves a number of 'demand-supply' iterations in the modelling process.
- 4.6.2 The PA (production-attraction) matrices in the demand modelling reflect all-day home-based (HB) 'tours', that is, implying outbound from the home and inbound returning to the home, plus non-home based (NHB) trips. These PA matrices are converted to OD (origin-destination) trip matrices for three time-periods representing the AM peak, inter-peak, and PM peak (q.v. Section 2.5). These are used for highway assignment (congestion) modelling in SINTRAM72, but also provide the forecast 'prior' car matrices for the Local Model.
- 4.6.3 Once the latent demand matrices have been established, as outlined above, SINTRAM72 takes account of congestion through 'variable demand modelling' (VDM). This follows the form of modelling recommended in WebTAG (Unit M2 Variable Demand Modelling), and details of the SINTRAM72 implementation are provided in the SINTRAM72 Technical Note *TN5 Model Technical Report*.
- 4.6.4 A central component of the methodology is provided by '(hierarchical incremental) choice modelling', which models traveller choices for travel.
- 4.6.5 The choice modelling is driven by the costs of different options. In the modelling, these are expressed as generalised time (minutes) where financial costs (e.g. fares, fuel, and parking costs) are converted to time units using values of time applicable to the relevant segments of demand, such as different trip purposes, as provided in the WebTAG Data Book.
- 4.6.6 The sensitivity of choices to cost differences is modelled using initial values taken from WebTAG Data Book parameters. These have been adjusted as part of the SINTRAM72 forecasting validation process, in particular, through the WebTAG 'Realism' sensitivity tests.
- 4.6.7 The choice modelling is confined to destination and mode choices. Mode choice includes Park & Ride as a choice for car users. Home-based work (commuting) and education trips are 'doubly-constrained' to match employment and education zonal trip attractions.
- 4.6.8 The sensitivity of travel choices to changes in costs is limited to trips with one or both ends in the SINTRAM72 Inner Study Area. Mode, time period, and destination characteristics of other ('external-to-external') trips are based on growth factoring ('Furnessing') Base year/reference trips to trip ends derived from CTripEnd.
- 4.6.9 Once the trip matrices have been forecast via VDM modelling, they are converted to car matrices for the Local Model. These are then subject to further processing within the Local Model to reflect the changes between the prior and estimated matrices arising in the Base year validation modelling.
- 4.6.10 The means of achieving this is by calculating a set of production and attraction adjustment factors for each zone that reflects the changes between the Base

matrices and the equivalent estimated matrices. These adjustment factors are then applied to the future year matrices using a Furness factoring process.

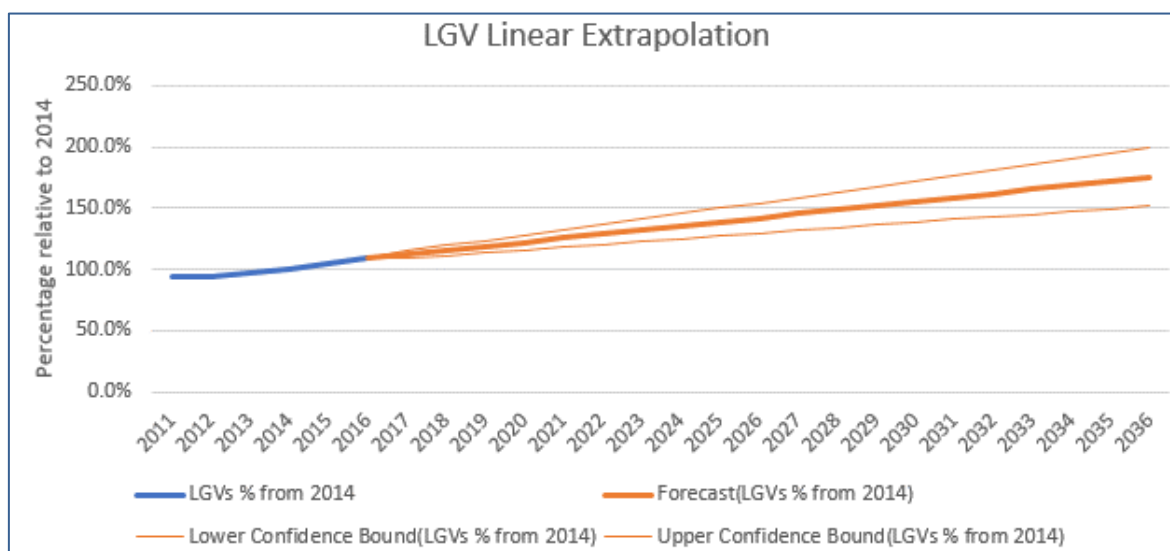
4.7 Goods Vehicles

4.7.1 Goods vehicle trip matrices are forecast using growth factors by time period for LGVs and HGVs.

4.7.2 Historically such growth factors have been associated with forecasts of GDP growth, but in more recent years the link with goods vehicle numbers and GDP has been found not to apply. The growth factors are therefore determined from recent trends, as now discussed.

4.7.3 Information on changes in LGV numbers is available from DfT¹⁰, which is illustrated in Figure 4-6. This shows percentage changes in LGV numbers from the SINTRAM72 Base year of 2014. Observed data (2011 to 2016) is shown in blue.

Figure 4-6 Forecast Changes in LGV Numbers

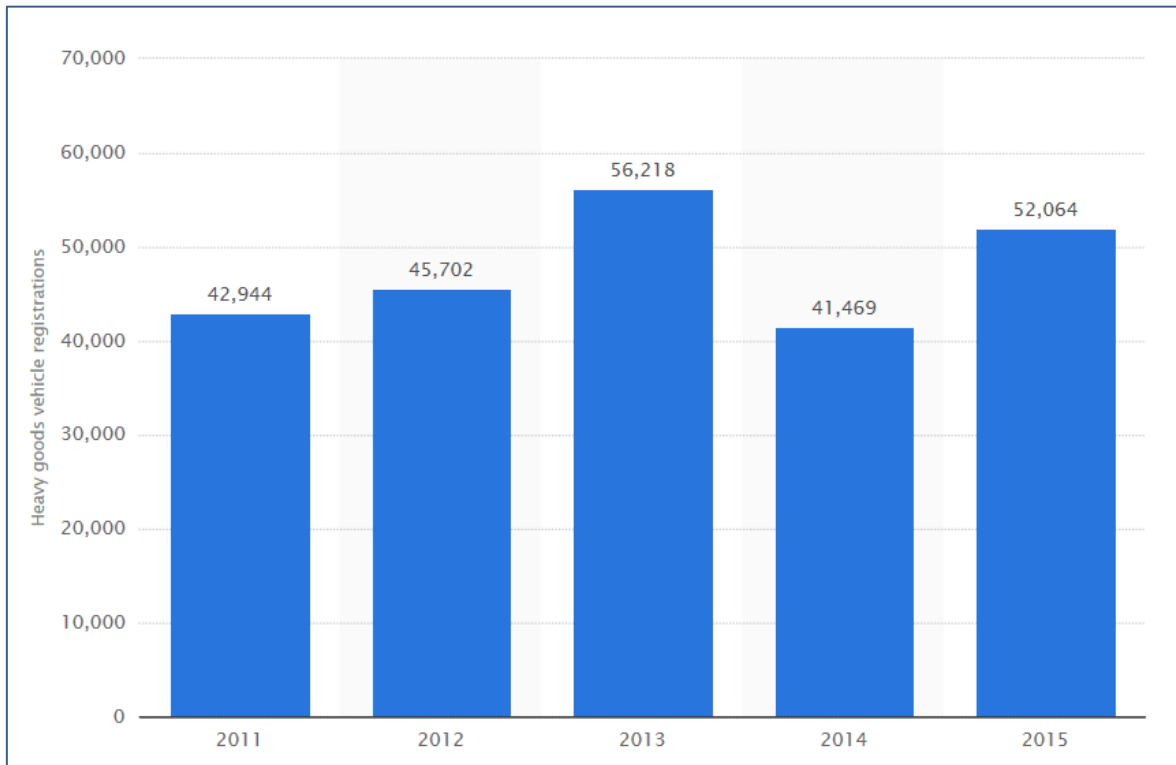


4.7.4 The orange line represents a linear extrapolation forecasting to 2032. While LGV growth may reasonably be expected to be strong, given recent changes, including the effects of deliveries associated with internet-based shopping, the linear trend is considered likely to be too strong, so just half the increase associated with the Lower Confidence Bound line is assumed in the modelling. Most goods vehicle trips occur in the inter-peak period, with congestion limiting incentives and scope for growth in the peak hours.

4.7.5 Information on HGV changes is not similarly available from DfT sources, but Figure 4-7 shows a less definite pattern of changes in in HGV registrations for the period 2011 to 2015. This information has been interpreted to imply only a small increase in HGV numbers in 2032, especially in the peak hours that HGV vehicles seek to avoid.

¹⁰ Table VEH0407 (Vehicle Licensing Statistics (<https://www.gov.uk/government/collections/vehicles-statistics>))

Figure 4-7 Changes in HGV Registrations 2011 to 2015



4.8 Changes in Forecast Demand

4.8.1 The modelling process, as described in Section 4.6, converts the land use forecasts into travel demand forecast. There are four main steps in this process:

- 1) Calculate latent demand in SINTRAM72 – just taking account of land use changes
- 2) Take account of highway congestion on demand for car travel in SINTRAM72 – VDM modelling
- 3) Convert forecast vehicle OD matrices to Local Model OD vehicle matrices
- 4) Apply Base year Local Model re-validation adjustments to Local Model OD forecasts.

4.8.2 The changes mean that there is more than one set of forecasts. Clearly, it is the results of the last step that are most pertinent, but it can be informative to understand the results of the earlier steps when seeking to interpret the results. On this account, the Appendix (see Section 5.4) includes results from SINTRAM72 modelling.

4.8.3 NOTE: Care is required with regard to the units applying in the tables relating to demand, especially when comparing between tables. The tables are labelled, but values can vary according to PA (outbound elements of tours) or OD trips, average hourly and peak hours, summed over 24-hours or over AM, IP, and PM average hourly flows.

4.8.4 Table 4-3 shows average growth rates by trip purpose from 2014 to 2032. It may be noted that work and education trips, which predominate in the peak hours, especially the AM peak, have lower growth rates than other purposes.

Table 4-3 Average Growth Rates 2014 to 2032

Trip Purposes	Mean Production Growth	Mean Attraction Growth
Home based education	1.06	1.09
Home based employers' business	1.07	1.09
Home based other	1.14	1.15
Home based shop	1.14	1.14
Home based visiting	1.11	1.10
Home based work	1.05	1.06
NHBEB	1.08	1.09
NHBO	1.11	1.11

4.8.5 Table 4-4 shows the Latent Demand increases associated with major development sites for each scenario. The applicable zone names are listed. The Car User trips provide the basis for the Car (vehicle) trips in the Local Modelling, but with changes for congestion, car occupancy levels, and local re-validation effects.

Table 4-4 Major Development Site Increases by Scenario - AM + IP + PM Trips

Greenfield Zones	Scenario 1	Scenario 2
Zone 673: Longcross Railway Station		
Attractions	2047	2048
Production	990	990
Zone 811: Princess Royal Barracks		
Attractions	27	27
Production	680	680
Zone 1600: Longcross South		
Attractions	120	120
Production	708	708
Zone 760: Frimley Grove Gardens Frimley		
Attractions	65	65
Zone 802: Camberley Station Car Park		
Production	-	128
Zone 806: Camberley Town Centre		
Production	-	206
Zone 812: Heathpark Wood		
Production	-	27
Zone 813: West End Reserve Sites		
Production	-	58
Zone 815: Water's Edge		
Production	-	30
Total	4637	5087

4.8.6 Further details of Latent Demand changes are provided in Table 5-1, Table 5-2 and Table 5-3 in the Appendix.

4.8.7 The matrix totals applying in the Local Model forecasts are modified from Latent Demand values on account of highway congestion and Local Model validation changes. The resulting Local Model totals are shown in Table 5-4 of the Appendix,

but a summary of the growth is shown here in Table 4-5. The comparison is made relative to the 2032 Scenario 1 (do-minimum).

- 4.8.8 As shown in Table 4-5 changes in growth are minimal between Scenarios 1 and 2. There is a slight increase in Car growth in the AM whilst there is a slight decrease in HGV growth in the AM. The only change in the PM is a slight decrease in Car growth. This is in part potentially due to land use change response; also long-distance trips which were previously passing through the subarea now routing elsewhere.

Table 4-5 Matrix Growth Relative to 2032 S1_S1 Scenario

Scenario	AM Peak Hour (0800 – 0900)			PM Peak Hour (1700 – 1800)		
	Car	LGV	HGV	Car	LGV	HGV
1	1.000	1.00	1.00	1.000	1.00	1.00
2	1.003	1.00	0.98	0.998	1.00	1.00

- 4.8.9 Changes in forecast Car (vehicle) trip productions and attractions in the Local Model are illustrated in Section 5.5 of the Appendix in Figure 5-1. This shows changes relative to scenario S1 for scenario S2.

4.9 Forecast Network

- 4.9.1 The forecast network is the same for all of the scenarios. It is a copy of the Base but with the changes listed in Table 4-6 below. These are completed or committed highway schemes of strategic importance.

Table 4-6 Completed or Committed Highway Schemes Included in the Forecast Network

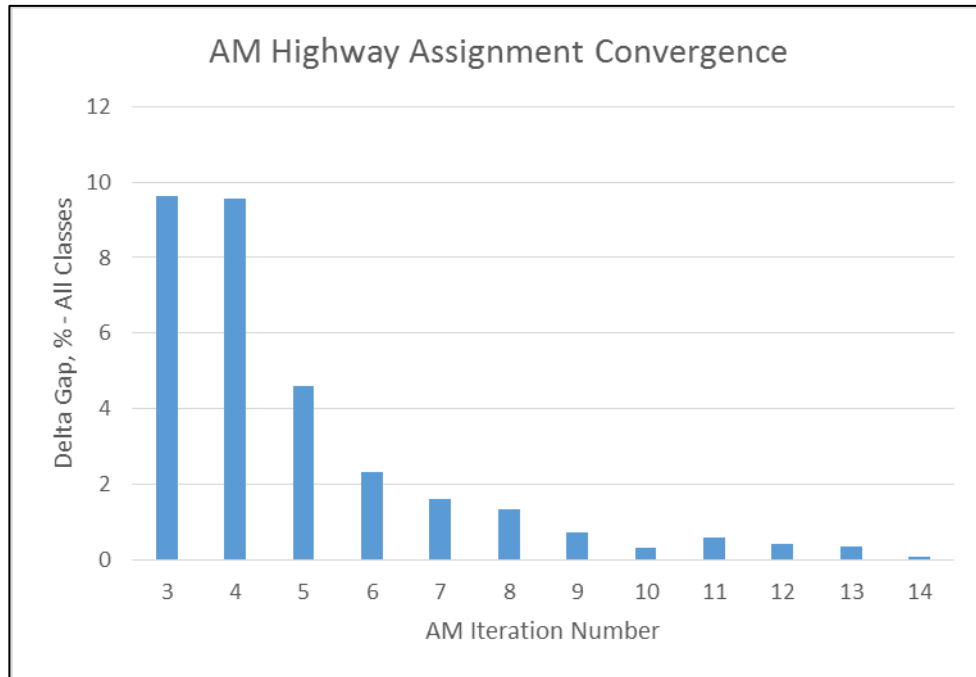
F1	Malden Rushett signal junction of A243 Leatherhead Road with B280 Fair Oak Lane
F2	M3 Hard Shoulder running J2 to 4a
F3	A325 Portsmouth Road two lanes between Toshiba and Frimley Hospital roundabouts
F4	Waitrose access to A246 York Road, Guildford
F5	East Street development, Farnham
F6	Redhill balanced network
F7	Runnymede roundabout scheme
F8	Epsom Plan E
F9	Horley Masterplan
F10	Farnham rail station car park enlargement
F11	Meadows scheme, Camberley
F12	M23 J8 to 10 smart motorway
F13	M25 J10 to 16 smart motorway
F14	Forge Wood development, Crawley
F15	Improvements to Dukes Head and Copthorne Roundabouts
F16	Victoria Square, Woking
F17	Princess Royal Barracks, Deepcut
F18	Millbrook car park, Guildford
F19	M25 J10 to A3 Interchange scheme, including improvements to Ockham and Painshill junctions
F20	Ash rail station level crossing replacement with bridge alternative
F21	Staines STP
F22	A240 Reigate Road Nescot College entrance, Epsom

4.10 Assignment

- 4.10.1 The assignment methodology is the same as reported for the Base year in Section 2.10.

- 4.10.2 An example of convergence is provided in Figure 4-8 for Scenario 1 forecast. The first two iterations are omitted to provide clarity for variations in the later iterations.
- 4.10.3 Convergence is generally smoother for the forecast year than the Base, with PM convergences patterns being much quicker than the AM.
- 4.10.4 Convergence is achieved rapidly, and with only minor evidence of instability evident in the AM case.

Figure 4-8 AM Forecast Scenario S1 Highway Assignment Convergence - Epsilon Values



5 APPENDIX

5.1 AM Peak Hour (0800 – 0900) Link Flow Validation Count Comparison

Count No.	Name	AM Peak (8-9) Obs TOTAL	AM Peak (8-9) Mod TOTAL	Diff	% Diff	GEH
2	3216: MCTC A30 London Road E-W	632	502	-130	-21%	5.44
3	4317: ATC B389 Christchurch Road E-W	480	468	-12	-2%	0.54
4	4318: ATC B389 Christchurch Road W-E	535	546	11	2%	0.49
21	2707: MCTC B383 Windsor Road S-N	420	116	-304	-72%	18.54
22	2706: MCTC B383 Windsor Road N-S	457	515	58	13%	2.63
27	3819: MCTC A322 Bagshot Road S-N	572	654	82	14%	3.32
28	3820: MCTC A322 Bagshot Road N-S	536	500	-36	-7%	1.57
32	3045: MCTC D7309 St Johns Road N-S	185	195	10	6%	0.76
33	3046: MCTC D7309 St Johns Road S-N	196	173	-23	-12%	1.66
49	3183: MCTC A30 London Road E-W	914	1130	216	24%	6.75
50	4200: ATC D3576 Laundry Lane S-N	173	198	25	15%	1.86
52	4816: ATC A328 Guildford Road S-N	742	916	174	23%	6.03
56	4556: MCTC A323 Guildford Road S-N	373	505	132	35%	6.31
57	4555: MCTC A323 Guildford Road N-S	343	354	11	3%	0.58
58	4846: MCTC A323 Guildford Road N-S	343	354	11	3%	0.58
59	4847: MCTC A323 Guildford Road S-N	373	505	132	35%	6.31
68	Bus Woking West Outbound	786	774	-12	-1%	0.42
69	Bus Woking West Inbound	898	761	-137	-15%	4.76
83	3822: MCTC Unclassified Raynes Close E-W	7	0	-7	-100%	3.74
84	3821: MCTC Unclassified Raynes Close W-E	8	0	-8	-100%	4.00
279	1848: RT ATC A247 Kingfield Road E-W	439	418	-21	-5%	1.03
280	1849: RT ATC A247 Kingfield Road W-E	340	238	-102	-30%	6.00
281	3150: MCTC A247 High Street W-E	827	684	-143	-17%	5.19
282	3149: MCTC A247 High Street E-W	523	571	48	9%	2.05
283	3152: MCTC B380 Vicarage Road E-W	319	313	-6	-2%	0.36
284	3151: MCTC B380 Vicarage Road W-E	519	488	-31	-6%	1.38
285	3148: MCTC A247 Kingfield Road S-N	277	258	-19	-7%	1.14
287	Site 1 on screenline: Bus Woking South East Inbound	666	680	14	2%	0.52
288	Site 1 on screenline: Bus Woking South East Outbound	549	547	-2	0%	0.10
289	2884: MCTC A247 High Street W-E	694	659	-35	-5%	1.33
290	2885: MCTC A247 High Street E-W	769	677	-92	-12%	3.44
291	2881: MCTC B382 High Street W-E	889	786	-103	-12%	3.57
292	2880: MCTC B382 High Street E-W	537	670	133	25%	5.41
318	4552: MCTC D7244 Goldsworth Road N-S	354	305	-49	-14%	2.72
321	2912: MCTC A320 Guildford Road N-S	735	594	-141	-19%	5.47
322	2913: MCTC A320 Guildford Road S-N	447	450	3	1%	0.13
323	2914: MCTC A247 Claremont Avenue N-S	418	336	-82	-20%	4.24
324	2916: MCTC A320 Guildford Road E-W	417	277	-140	-34%	7.52
325	2915: MCTC A320 Guildford Road W-E	547	468	-79	-14%	3.49
326	4110: ATC D3708 White Rose Lane W-E	154	179	25	16%	1.92
327	4111: ATC D3708 White Rose Lane E-W	273	258	-15	-6%	0.95
329	4549: MCTC D7244 Goldsworth Road E-W	241	133	-108	-45%	7.92
330	4548: MCTC D7281 Church Street West S-N	609	379	-230	-38%	10.36
331	4547: MCTC D7281 Church Street West N-S	287	215	-72	-25%	4.52
332	4554: MCTC D7242 Forge End S-N	391	363	-28	-7%	1.46
333	4553: MCTC D7242 Forge End N-S	8	21	13	163%	3.42
334	2549: MCTC C143 High Street W-E	231	321	90	39%	5.40
335	2550: MCTC C143 High Street E-W	128	88	-40	-31%	3.82
336	2563: MCTC D3708 Victoria Road E-W	524	478	-46	-9%	2.05
337	2562: MCTC D3708 Victoria Road W-E	685	656	-29	-4%	1.12
339	2597: MCTC D3708 Heathside Car Park N-S	129	126	-3	-2%	0.23
340	2596: MCTC D3708 Heathside Car Park S-N	13	48	35	272%	6.39

Count No.	Name	AM Peak (8-9) Obs TOTAL	AM Peak (8-9) Mod TOTAL	Diff	% Diff	GEH
343	2576: MCTC D3708 White Rose Lane S-N	31	106	75	240%	9.02
345	2560: MCTC D3710 Oriental Road W-E	618	423	-195	-32%	8.56
346	2565: MCTC D3708 White Rose Lane S-N	63	85	22	35%	2.59
347	2564: MCTC D3708 White Rose Lane N-S	183	152	-31	-17%	2.36
348	2568: MCTC D3710 Oriental Road W-E	426	337	-89	-21%	4.53
349	2566: MCTC D3710 Oriental Road W-E	546	490	-56	-10%	2.47
351	2558: MCTC D3708 Station Approach N-S	18	0	-18	-100%	6.00
352	2571: MCTC D3708 Heathside Crescent N-S	724	718	-6	-1%	0.22
353	2573: MCTC D3710 Park Road W-E	54	47	-7	-13%	0.97
354	2574: MCTC D3710 Park Road E-W	78	56	-22	-28%	2.64
355	1666: ATC D3709 Pembroke Road S-N	230	195	-35	-15%	2.41
356	1665: ATC D3709 Pembroke Road N-S	299	245	-54	-18%	3.28
358	1667: ATC D3709 Pembroke Road E-W	364	495	131	36%	6.31
359	4109: ATC D3708 White Rose Lane E-W	277	258	-19	-7%	1.19
360	4108: ATC D3708 White Rose Lane W-E	155	179	24	15%	1.84
361	1651: ATC D3710 Park Road E-W	299	243	-56	-19%	3.37
362	1652: ATC D3710 Park Road W-E	133	210	77	58%	5.91
363	1650: ATC D3710 Park Road W-E	138	136	-2	-2%	0.19
364	1649: ATC D3710 Park Road E-W	304	322	18	6%	1.00
365	2602: MCTC C140 Brewery Road W-E	437	397	-40	-9%	1.97
366	2603: MCTC C140 Brewery Road E-W	245	272	27	11%	1.68
367	2581: MCTC Unclassified The Peacocks Centre Car Park N-S	373	416	43	12%	2.16
368	2580: MCTC Unclassified The Peacocks Centre Car Park S-N	15	31	16	109%	3.39
369	2546: MCTC D3662 Chertsey Rd S-N	191	265	74	39%	4.90
370	2547: MCTC C143 The Broadway E-W	270	259	-11	-4%	0.70
371	2548: MCTC C143 The Broadway W-E	182	225	43	24%	3.02
374	2906: MCTC A3046 Chobham Road N-S	466	356	-110	-24%	5.44
375	2907: MCTC A3046 Chobham Road S-N	486	517	31	6%	1.40
376	2908: MCTC A3046 Chobham Road S-N	599	593	-6	-1%	0.24
377	2909: MCTC A3046 Chobham Road N-S	689	548	-141	-20%	5.66
378	2911: MCTC C140 Brewery Road E-W	198	261	63	32%	4.18
379	2910: MCTC C140 Brewery Road W-E	308	378	70	23%	3.77
381	2556: MCTC D3662 Church Street East W-E	90	110	20	22%	2.01
382	2552: MCTC C143 Chertsey Road S-N	361	373	12	3%	0.62
384	2590: MCTC D3710 Oriental Road E-W	386	519	133	34%	6.25
385	2591: MCTC D3710 Oriental Road W-E	483	271	-212	-44%	10.94
386	2823: MCTC C143 The Broadway W-E	314	414	100	32%	5.22
387	2824: MCTC C143 The Broadway E-W	268	259	-9	-3%	0.57
388	2569: MCTC D3710 Oriental Road E-W	353	498	145	41%	7.05
389	2570: MCTC D3710 Oriental Road W-E	507	270	-237	-47%	12.02
391	2593: MCTC D3710 Oriental Road E-W	364	498	134	37%	6.47
393	2822: MCTC C143 Stanley Road S-N	548	521	-27	-5%	1.17
394	2821: MCTC C143 Stanley Road N-S	157	128	-29	-18%	2.43
395	3583: MCC C143 Maybury Road E-W	324	348	24	7%	1.28
396	2553: MCTC C143 Stanley Road E-W	396	357	-39	-10%	2.01
397	2554: MCTC C143 Stanley Road W-E	303	222	-81	-27%	5.00
398	353: Partial A3046 Chobham Road S-N	420	517	97	23%	4.49
400	1871: RT ATC A3046 Kettlewell Hill N-S	439	356	-83	-19%	4.18
402	32: Partial A320 Chertsey Road S-N	633	486	-147	-23%	6.20
404	1663: ATC D3709 Pembroke Road S-N	111	163	52	46%	4.41
405	1664: ATC D3709 Pembroke Road N-S	196	248	52	26%	3.46
407	355: Partial C144 Maybury Hill S-N	215	221	6	3%	0.42
408	1878: RT ATC C144 Maybury Hill N-S	176	210	34	19%	2.42
410	43: Partial D3731 East Hill W-E	386	428	42	11%	2.09
413	1880: RT ATC D3731 East Hill E-W	257	252	-5	-2%	0.34
417	4731: MCTC C143 Walton Road W-E	479	586	107	22%	4.64
420	4606: MCTC D3668 Albert Drive E-W	260	134	-126	-49%	9.00

Count No.	Name	AM Peak (8-9) Obs TOTAL	AM Peak (8-9) Mod TOTAL	Diff	% Diff	GEH
421	4607: MCTC D3668 Albert Drive W-E	648	524	-124	-19%	5.13
423	Bus Woking East Outbound	633	524	-109	-17%	4.54
424	3646: MCC D3670 Forsyth Road E-W	33	55	22	66%	3.28
426	4308: ATC D3668 Albert Drive N-S	429	379	-50	-12%	2.50
427	4290: ATC A3046 Chobham Road E-W	756	946	190	25%	6.52
429	1858: RT ATC A320 Chertsey Road S-N	712	609	-103	-14%	3.99
430	1859: RT ATC A320 Chertsey Road N-S	717	618	-99	-14%	3.83
431	4284: ATC A320 Chertsey Road S-N	878	880	2	0%	0.08
432	4285: ATC A320 Chertsey Road N-S	899	845	-54	-6%	1.82
434	1585: ATC D3782 Martyrs Lane S-N	350	300	-50	-14%	2.75
435	1583: ATC D3782 Martyrs Lane S-N	333	300	-33	-10%	1.83
436	1584: ATC D3782 Martyrs Lane N-S	180	65	-115	-64%	10.35
437	1582: ATC A245 Woodham Lane E-W	617	585	-32	-5%	1.30
438	1581: ATC A245 Woodham Lane W-E	823	878	55	7%	1.88
439	4242: ATC A320 Guildford Road N-S	1090	964	-126	-12%	3.94
440	4241: ATC A320 Guildford Road S-N	984	984	0	0%	0.01
441	2042: ATC B367 Newark Lane N-S	301	342	41	14%	2.31
442	2041: ATC B367 Newark Lane S-N	438	485	47	11%	2.17
443	4294: ATC D3744 Lock Lane W-E	191	217	26	13%	1.80
444	4295: ATC D3744 Lock Lane E-W	92	113	21	22%	2.03
454	4309: ATC D3668 Albert Drive W-E	215	190	-25	-11%	1.72
455	4310: ATC D3668 Albert Drive E-W	315	300	-15	-5%	0.86
456	3715: MCC D3743 Coldharbour Road W-E	99	88	-11	-11%	1.16
457	3716: MCC D3743 Coldharbour Road E-W	85	30	-55	-65%	7.28
460	2750: MCTC A245 Sheerwater Road N-S	860	792	-68	-8%	2.37
461	2751: MCTC A245 Sheerwater Road S-N	716	653	-63	-9%	2.41
462	2752: MCTC A245 Sheerwater Road S-N	712	644	-68	-10%	2.62
463	2753: MCTC A245 Sheerwater Road N-S	873	816	-57	-7%	1.96
464	2755: MCTC D3668 Albert Drive E-W	364	302	-62	-17%	3.41
467	2610: MCTC D3759 Station Approach N-S	264	236	-28	-10%	1.75
468	2612: MCTC D3759 Station Approach S-N	151	246	95	63%	6.73
469	2613: MCTC D3759 Station Approach N-S	241	224	-17	-7%	1.10
473	3138: MCTC D3057 Woodham Park Road N-S	250	230	-20	-8%	1.30
474	3135: MCTC D3062 Queen Marys Drive E-W	167	161	-6	-4%	0.49
475	3136: MCTC D3062 Queen Marys Drive W-E	178	163	-15	-8%	1.14
476	3140: MCTC D3057 Woodham Park Road E-W	330	422	92	28%	4.74
477	3139: MCTC D3057 Woodham Park Road W-E	372	362	-10	-3%	0.52
478	4305: ATC D3758 Dartnell Avenue W-E	10	19	9	89%	2.35
479	4306: ATC D3758 Dartnell Avenue E-W	15	21	6	43%	1.51
482	1569: ATC A322 Oyster Lane S-N	575	575	0	0%	0.02
483	1570: ATC A323 Oyster Lane N-S	638	602	-36	-6%	1.46
484	1959: ATC A245 Parvis Road W-E	683	597	-86	-13%	3.40
485	1960: ATC A245 Parvis Road E-W	740	748	8	1%	0.29
486	3354: MCC A245 Parvis Road W-E	770	773	3	0%	0.10
487	3355: MCC A245 Parvis Road E-W	899	857	-42	-5%	1.43
1559	4243: ATC A320 Guildford Road S-N	956	870	-86	-9%	2.84
1560	4244: ATC A320 Guildford Road N-S	909	846	-63	-7%	2.12
1562	2000: ATC A320 Guildford Road N-S	791	749	-42	-5%	1.51
1564	4091: ATC A320 Guildford Road N-S	920	749	-171	-19%	5.92
1566	1995: ATC A319 Chobham Road E-W	201	200	-1	0%	0.07
1567	3451: MCC A320 Guildford Road N-S	1186	713	-473	-40%	15.35
1568	3450: MCC A320 Guildford Road S-N	1837	1827	-10	-1%	0.24
1573	3983: MCTC B386 Holloway Hill E-W	661	671	10	2%	0.40
1575	311: Partial D7008 Lyne Lane N-S	345	450	105	30%	5.26
1576	313: Partial C127 Bridge Lane E-W	232	258	26	11%	1.65
1577	312: Partial C127 Bridge Lane W-E	314	300	-14	-4%	0.80
1578	308: Partial D3005 Almners Road W-E	75	88	13	18%	1.49

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1579	309: Partial D3005 Almners Road E-W	213	217	4	2%	0.31
1580	307: Partial C127 Hardwick Lane N-S	466	297	-169	-36%	8.67
1581	306: Partial C127 Hardwick Lane S-N	412	492	80	20%	3.78
1583	3435: MCC M25 J12 - J11 N-S	7068	6294	-774	-11%	9.47
1584	2355: TRADS M25 M25 J12 clockwise - M3 J2 S-N	2041	2004	-37	-2%	0.83
1589	3551: MCC B3121 Spinney Hill W-E	371	381	10	3%	0.52
1592	9014: ASS* M25 CW Within J11	5819	4703	-1116	-19%	15.39
1593	2362: TRADS M25 M25 J11 clockwise exit S-N	1110	1674	564	51%	15.11
1594	2361: TRADS M25 M25 J11 anti-clockwise access N-S	486	191	-295	-61%	16.06
1595	9020: ASS* M25 AC Within J11	4896	5427	531	11%	7.39
1598	1567: ATC A320 Byfleet Road N-S	768	734	-34	-4%	1.24
1599	1568: ATC A321 Byfleet Road S-N	542	494	-48	-9%	2.12
1600	1993: ATC A318 Byfleet Road N-S	580	457	-123	-21%	5.40
1601	1994: ATC A318 Byfleet Road S-N	439	412	-27	-6%	1.33
1603	1566: ATC A319 New Haw Road S-N	745	713	-32	-4%	1.18
1612	4833: MCC B3121 Station Road N-S	385	334	-51	-13%	2.66
1614	1991: ATC A317 Weybridge Road W-E	652	655	3	0%	0.10
1615	1992: ATC A317 Weybridge Road E-W	1026	732	-294	-29%	9.90
1645	3981: MCTC A320 Guildford Road N-S	975	880	-95	-10%	3.10
1646	3979: MCTC A320 Guildford Road S-N	908	940	32	4%	1.05
1647	3978: MCTC A320 Guildford Road N-S	785	987	202	26%	6.80
1649	2364: TRADS M25 M25 J11 clockwise access S-N	1653	2272	619	37%	13.96
1650	2359: TRADS M25 M25 J11 anti-clockwise exit N-S	1658	868	-790	-48%	22.24
1655	1599: ATC A317 Chertsey Road N-S	256	259	3	1%	0.18
1656	3348: MCC A317 Eastworth Road W-E	377	475	98	26%	4.75
1657	3349: MCC A317 Eastworth Road E-W	779	678	-101	-13%	3.73
1658	2703: MCTC B387 Weir Road N-S	371	161	-210	-57%	12.89
1659	2702: MCTC B387 Weir Road S-N	590	501	-89	-15%	3.83
1663	2700: MCTC B375 Bridge Road E-W	850	760	-90	-11%	3.17
1668	4469: MCC B375 Chertsey Bridge E-W	847	760	-87	-10%	3.07
1669	4470: MCC B375 Chertsey Bridge W-E	883	734	-149	-17%	5.22
1672	2626: MCTC B389 Sandhills Lane E-W	356	172	-184	-52%	11.30
1673	2627: MCTC B389 Sandhills Lane W-E	346	307	-39	-11%	2.18
1675	2629: MCTC C10 Trumps Green Road N-S	288	269	-19	-7%	1.13
1677	551: Partial B389 Sandhills W-E	349	307	-42	-12%	2.34
1678	2630: MCTC B389 Christchurch Road W-E	409	477	68	17%	3.25
1679	2631: MCTC B389 Christchurch Road E-W	464	487	23	5%	1.05
1682	2200: TRADS M3 M3 J2 eastbound to M25 J12 W-E	3558	3549	-9	0%	0.16
1684	Site 2 on screenline: Bus Egham South West Inbound	411	397	-14	-3%	0.71
1685	Site 2 on screenline: Bus Egham South West Outbound	233	216	-17	-7%	1.17
1686	2202: TRADS M3 M25 J12 clockwise to M3 J2 eastbound W-E	810	794	-16	-2%	0.55
1687	2199: TRADS M3 M25 J12 clockwise to M3 J2 westbound E-W	1363	1209	-154	-11%	4.29
1688	2197: TRADS M3 M3 J2 westbound to M25 J12 E-W	1678	1481	-197	-12%	4.96
1691	2352: TRADS M25 M25 J12 anti-clockwise - M3 J2 N-S	2054	2032	-22	-1%	0.49
1692	3527: MCC B388 Thorpe By-Pass S-N	505	506	1	0%	0.04
1693	3528: MCC B388 Thorpe By-Pass N-S	409	410	1	0%	0.06
1694	9018: ASS* M25 AC J13 - J12	6644	6226	-418	-6%	5.20
1695	9017: ASS* M25 CW J12 - J13	8052	7901	-151	-2%	1.69
1698	4245: ATC C10 Stroude Road S-N	420	397	-23	-6%	1.15
1699	4246: ATC C10 Stroude Road N-S	215	216	1	0%	0.04
1744	3503: MCC A320 Staines Road S-N	538	530	-8	-1%	0.33
1745	3504: MCC A320 Staines Road N-S	587	520	-67	-11%	2.87
1752	1997: ATC A320 Chertsey Lane S-N	666	650	-16	-2%	0.61
1753	1998: ATC A320 Chertsey Lane N-S	508	528	20	4%	0.89
2177	3549: MCC B3007 Weybourne Road W-E	488	452	-36	-7%	1.68
2178	3550: MCC B3007 Weybourne Road E-W	530	477	-53	-10%	2.35
2179	2086: ATC B3007 Weybourne Road W-E	454	452	-2	-1%	0.11

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2180	2085: ATC B3007 Weybourne Road E-W	476	477	1	0%	0.06
2183	2094: ATC B3208 Badshot Lea Road S-N	286	304	18	6%	1.07
2184	2093: ATC B3208 Badshot Lea Road N-S	501	490	-11	-2%	0.47
2185	423: Partial Bourley Road E-W	166	158	-8	-5%	0.60
2186	424: Partial Bourley Road W-E	569	515	-54	-10%	2.33
2187	2050: ATC B385 Woodham Lane W-E	420	348	-72	-17%	3.65
2188	2049: ATC B385 Woodham Lane E-W	451	493	42	9%	1.94
2196	429: Partial A323 Norris Hill Road W-E	676	764	88	13%	3.27
2197	430: Partial A323 Norris Hill Road E-W	356	374	18	5%	0.94
2198	2221: TRADS M3 Junction 4a - 5 W-E	3620	3442	-178	-5%	3.00
2199	2222: TRADS M3 Junction 5 - 4a E-W	3567	3907	340	10%	5.56
2202	397: Partial B3013 Minley Road S-N	343	308	-35	-10%	1.92
2203	398: Partial B3013 Minley Road N-S	303	313	10	3%	0.56
2207	426: Partial B3014 Fleet Road E-W	759	783	24	3%	0.85
2208	9012: ASS* M3 WB Within J4a	3170	3028	-142	-4%	2.56
2209	9000: ASS* M3 EB Within J4a	3371	3202	-169	-5%	2.95
2210	2219: TRADS M3 M3 J4A eastbound exit W-E	655	705	50	8%	1.93
2211	379: Partial A327 Minley Road N-S	788	906	118	15%	4.07
2212	380: Partial A327 Minley Road S-N	529	639	110	21%	4.56
2213	2217: TRADS M3 M3 J4A westbound exit E-W	888	1012	124	14%	4.02
2215	2215: TRADS M3 Junction 4 - 4a E-W	3831	4039	208	5%	3.32
2216	9001: ASS* M3 EB J4a - J4	4452	4656	204	5%	3.02
2223	372: Partial A30 Hartford Bridge Flats W-E	467	537	70	15%	3.11
2224	371: Partial A30 Hartford Bridge Flats E-W	568	481	-87	-15%	3.79
2234	4297: ATC D3744 Wisley Lane N-S	91	113	22	24%	2.14
2235	4296: ATC D3744 Wisley Lane S-N	188	217	29	15%	2.02
2242	2213: TRADS M3 M3 J4 eastbound exit W-E	1128	1212	84	7%	2.47
2249	4605: MCTC C144 Monument Road S-N	508	443	-65	-13%	2.98
2250	3428: MCC A331 Blackwater Valley Road N-S	3135	3096	-39	-1%	0.69
2251	2211: TRADS M3 M3 J4 westbound exit E-W	1486	1437	-49	-3%	1.29
2252	3427: MCC A331 Blackwater Valley Road S-N	3267	3450	183	6%	3.16
2253	2011: ATC A325 Frimley Bypass W-E	1313	1435	122	9%	3.29
2254	2012: ATC A325 Frimley Bypass E-W	822	773	-49	-6%	1.72
2255	1158: Partial A331 Blackwater Valley Road S-N	2355	2594	239	10%	4.81
2257	4197: ATC A331 Blackwater Valley Road N-S	1909	2034	125	7%	2.81
2258	4196: ATC A331 Blackwater Valley Road S-N	2044	2594	550	27%	11.42
2259	987: Partial M3 J4 within junction SB N-S	2773	3010	237	9%	4.41
2260	3698: MCC D3433 Bain Avenue N-S	46	42	-4	-8%	0.54
2261	3697: MCC D3433 Bain Avenue S-N	12	9	-3	-22%	0.82
2262	1711: ATC B3411 Frimley Road S-N	1257	1257	0	0%	0.00
2267	431: Partial B3272 Hawley Road S-N	321	411	90	28%	4.72
2269	3206: MCTC A331 Blackwater Valley Road S-N	1463	1312	-151	-10%	4.05
2270	3205: MCTC A331 Blackwater Valley Road N-S	1743	1445	-298	-17%	7.45
2273	3210: MCTC A331 Blackwater Valley Road N-S	1698	1572	-126	-7%	3.12
2274	3209: MCTC A331 Blackwater Valley Road S-N	1508	1473	-35	-2%	0.92
2277	3203: MCTC A331 Blackwater Valley Road S-N	1340	1312	-28	-2%	0.77
2278	3204: MCTC A331 Blackwater Valley Road N-S	1569	1445	-124	-8%	3.18
2279	3201: MCTC D3571 Riverside Way E-W	73	61	-12	-16%	1.45
2280	3202: MCTC D3571 Riverside Way W-E	275	285	10	4%	0.61
2292	3249: MCTC A331 Blackwater Valley Road N-S	1470	1343	-127	-9%	3.38
2294	3217: MCTC A331 Blackwater Valley Road N-S	1462	1343	-119	-8%	3.17
2296	3219: MCTC D3425 Stanhope Road E-W	615	687	72	12%	2.83
2297	3207: MCTC Unclassified Sainsburys E-W	180	182	2	1%	0.12
2298	3208: MCTC Unclassified Sainsburys W-E	270	216	-54	-20%	3.48
2299	4202: ATC B3411 Frimley Road S-N	547	753	206	38%	8.09
2300	4203: ATC B3411 Frimley Road N-S	665	597	-68	-10%	2.71
2303	3861: MCTC D3424 Surrey Avenue S-N	49	264	215	439%	17.19

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2304	3862: MCTC D3424 Surrey Avenue N-S	23	87	64	278%	8.61
2306	3864: MCTC D3426 Vale Road E-W	136	154	18	13%	1.52
2307	2660: MCTC D3424 Queen Mary Avenue S-N	5	42	37	743%	7.65
2308	2661: MCTC D3424 Queen Mary Avenue N-S	6	2	-4	-75%	2.32
2309	3858: MCTC D3424 Victoria Avenue S-N	35	98	63	179%	7.70
2310	3857: MCTC D3424 Victoria Avenue N-S	20	0	-20	-100%	6.32
2311	3241: MCTC B3411 Frimley Road S-N	636	799	163	26%	6.08
2312	3242: MCTC B3411 Frimley Road N-S	583	649	66	11%	2.66
2313	3238: MCTC B3411 Frimley Road S-N	535	654	119	22%	4.87
2314	3237: MCTC B3411 Frimley Road N-S	500	538	38	8%	1.68
2315	3240: MCTC D3517 The Avenue W-E	169	265	96	57%	6.53
2316	3239: MCTC D3517 The Avenue E-W	151	231	80	53%	5.79
2320	1788: ATC A321 Marshall Road N-S	1270	1295	25	2%	0.70
2321	1787: ATC A321 Marshall Road S-N	925	781	-144	-16%	4.92
2334	4198: ATC A321 Marshall Road S-N	876	781	-95	-11%	3.29
2337	3193: MCTC D3576 Laundry Lane S-N	213	198	-15	-7%	1.02
2338	3192: MCTC D3576 Laundry Lane N-S	1049	906	-143	-14%	4.57
2339	3177: MCTC D3576 Laundry Lane N-S	1063	1058	-5	0%	0.14
2340	3181: MCTC D3425 Yorktown Way N-S	401	505	104	26%	4.87
2341	3180: MCTC D3425 Yorktown Way S-N	59	124	65	111%	6.84
2342	3194: MCTC D3576 Laundry Lane W-E	993	1058	65	7%	2.04
2343	3178: MCTC A30 London Road E-W	823	966	143	17%	4.79
2344	3179: MCTC A30 London Road W-E	1295	1262	-33	-3%	0.91
2345	2663: MCTC D3425 Stanhope Road E-W	295	426	131	44%	6.90
2346	2662: MCTC D3425 Stanhope Road W-E	127	141	14	11%	1.23
2349	3799: MCTC B3411 Frimley Road N-S	460	359	-101	-22%	4.97
2350	3800: MCTC B3411 Frimley Road S-N	467	434	-33	-7%	1.54
2351	3804: MCTC D3424 Edward Avenue E-W	177	304	127	72%	8.21
2352	3803: MCTC D3424 Edward Avenue W-E	145	135	-10	-7%	0.82
2353	3802: MCTC B3411 Frimley Road N-S	414	361	-53	-13%	2.67
2354	3801: MCTC B3411 Frimley Road S-N	453	429	-24	-5%	1.12
2355	2683: MCTC D3424 Victoria Avenue N-S	18	6	-12	-68%	3.54
2357	2685: MCTC D3424 Queen Mary Avenue E-W	299	384	85	28%	4.59
2358	2684: MCTC D3424 Queen Mary Avenue W-E	143	140	-3	-2%	0.27
2360	2678: MCTC D3424 Victoria Avenue N-S	48	48	0	0%	0.02
2361	3173: MCTC D3424 Victoria Avenue S-N	63	196	133	211%	11.67
2362	3174: MCTC D3424 Victoria Avenue N-S	54	48	-6	-11%	0.86
2363	3740: MCC D3426 Vale Road E-W	147	121	-26	-18%	2.27
2365	3172: MCTC A30 London Road W-E	1341	1262	-79	-6%	2.18
2366	3171: MCTC A30 London Road E-W	647	819	172	27%	6.34
2367	4254: ATC A30 London Road E-W	872	966	94	11%	3.11
2368	4253: ATC A30 London Road W-E	1318	1262	-56	-4%	1.55
2370	3244: MCTC A30 London Road W-E	1000	1057	57	6%	1.76
2371	3246: MCTC B3411 Frimley Road N-S	342	359	17	5%	0.93
2373	3248: MCTC A30 London Road E-W	793	819	26	3%	0.90
2374	3247: MCTC A30 London Road W-E	1145	1262	117	10%	3.39
2375	3157: MCTC A30 London Road W-E	881	1057	176	20%	5.64
2376	3158: MCTC A30 London Road E-W	700	538	-162	-23%	6.53
2379	4251: ATC A30 London Road W-E	992	873	-119	-12%	3.89
2380	4252: ATC A30 London Road E-W	791	663	-128	-16%	4.74
2381	3163: MCTC D3517 The Avenue S-N	208	318	110	53%	6.76
2382	3164: MCTC D3517 The Avenue N-S	213	296	83	39%	5.21
2384	1794: ATC D3514 Park Street N-S	411	332	-79	-19%	4.08
2385	3160: MCTC D3517 The Avenue S-N	132	173	41	31%	3.30
2387	3162: MCTC D3516 Southwell Park Road W-E	328	448	120	37%	6.08
2388	3161: MCTC D3516 Southwell Park Road E-W	248	230	-18	-7%	1.16
2389	3233: MCTC D3514 Park Street S-N	467	438	-29	-6%	1.34

Count No.	Name	AM Peak (8-9) Obs TOTAL	AM Peak (8-9) Mod TOTAL	Diff	% Diff	GEH
2390	3234: MCTC D3514 Park Street N-S	342	275	-67	-20%	3.84
2391	3231: MCTC D3514 Pembroke Broadway E-W	268	265	-3	-1%	0.21
2392	3230: MCTC D3514 Park Street N-S	15	23	8	56%	1.91
2393	3232: MCTC D3514 Pembroke Broadway W-E	528	632	104	20%	4.30
2394	3235: MCTC D3516 Southwell Park Road W-E	486	542	56	12%	2.47
2395	3236: MCTC D3516 Southwell Park Road E-W	366	362	-4	-1%	0.20
2398	3165: MCTC A30 London Road E-W	642	724	82	13%	3.13
2399	3166: MCTC A30 London Road W-E	962	918	-44	-5%	1.43
2400	3168: MCTC D3515 Lower Charles Street N-S	302	227	-75	-25%	4.63
2401	3167: MCTC D3515 Lower Charles Street S-N	137	158	21	15%	1.69
2410	2598: MCTC C140 Brewery Road E-W	253	261	8	3%	0.52
2411	2599: MCTC C140 Brewery Road W-E	429	378	-51	-12%	2.55
2412	2594: MCTC A320 Victoria Way Car Park N-S	192	129	-63	-33%	4.96
2414	3648: MCC D3730 Balmoral Drive N-S	24	0	-24	-100%	6.93
2415	3647: MCC D3730 Balmoral Drive S-N	22	0	-22	-100%	6.63
2419	4289: ATC A320 Chertsey Road N-S	1088	964	-124	-11%	3.88
2420	4288: ATC A320 Chertsey Road S-N	1014	984	-30	-3%	0.96
2421	304: Partial C127 Lyne Crossing Road S-N	282	339	57	20%	3.26
2431	2600: MCTC Unclassified Brewery Road Car Park S-N	12	14	2	13%	0.43
2432	2601: MCTC Unclassified Brewery Road Car Park N-S	28	22	-6	-23%	1.27
2433	2589: MCTC Private Woking Station Car Park S-N	72	21	-51	-71%	7.55
2434	2588: MCTC Private Woking Station Car Park N-S	2	1	-1	-70%	1.24
2435	3326: MCC D3406 Foxhills Road N-S	124	160	36	29%	2.99
2436	3325: MCC D3406 Foxhills Road S-N	173	127	-46	-27%	3.80
2622	3907: MCTC A3 Connaught Road W-E	411	393	-18	-4%	0.89
2634	4511: MCTC A324 Dawney Hill S-N	277	195	-82	-30%	5.37
2635	4512: MCTC A324 Dawney Hill N-S	434	355	-79	-18%	3.96
2637	1676: ATC B3012 Gole Road W-E	676	599	-77	-11%	3.07
2725	3509: MCC A331 Blackwater Valley Road S-N	2255	2217	-38	-2%	0.80
2726	3510: MCC A331 Blackwater Valley Road N-S	2309	2296	-13	-1%	0.27
2733	3588: MCC C119 The Street S-N	274	273	-1	0%	0.07
2734	3589: MCC C119 The Street N-S	442	440	-2	0%	0.08
2737	2007: ATC A323 Aldershot Road W-E	654	688	34	5%	1.33
2738	2008: ATC A323 Aldershot Road E-W	853	884	31	4%	1.04
2739	4850: MCTC A323 Church Road S-N	364	479	115	31%	5.59
2740	4851: MCTC A323 Church Road N-S	345	346	1	0%	0.06
2741	4849: MCTC C18 Foreman Road S-N	34	64	30	87%	4.24
2742	4848: MCTC C18 Foreman Road N-S	45	45	0	0%	0.01
2743	3557: MCC B3411 Vale Road S-N	515	548	33	6%	1.43
2744	3558: MCC B3411 Vale Road N-S	372	343	-29	-8%	1.52
2988	3960: MCC B3411 Vale Road S-N	707	721	14	2%	0.52
2989	3961: MCC B3411 Vale Road N-S	398	417	19	5%	0.96
2990	3956: MCTC B3166 Lysons Avenue S-N	541	439	-102	-19%	4.62
2991	3957: MCTC B3166 Lysons Avenue N-S	551	360	-191	-35%	8.94
2992	3958: MCTC B3166 Lynchford Road W-E	688	675	-13	-2%	0.50
2993	3959: MCTC B3166 Lynchford Road E-W	866	758	-108	-12%	3.79
2994	3955: MCTC B3165 Stratford Road S-N	397	355	-42	-11%	2.18
2995	3954: MCTC B3165 Stratford Road N-S	585	658	73	13%	2.94
2996	4220: ATC D3455 Mytchett Place Road W-E	444	489	45	10%	2.06
2997	4221: ATC D3455 Mytchett Place Road E-W	328	353	25	8%	1.35
2998	4216: ATC B3012 Guildford Road W-E	379	477	98	26%	4.72
2999	4217: ATC B3012 Guildford Road E-W	192	177	-15	-8%	1.14
3000	848: Partial Lake Road W-E	411	374	-37	-9%	1.88
3001	849: Partial Lake Road E-W	403	380	-23	-6%	1.17
3002	882: Partial Tunnel Hill Road (Mytchett) S-N	418	489	71	17%	3.31
3003	883: Partial Tunnel Hill Road (Mytchett) N-S	283	353	70	25%	3.92
3006	878: Partial Tunnel Hill Road (Pirbright) S-N	215	292	77	36%	4.85

Count No.	Name	AM Peak (8-9) Obs TOTAL	AM Peak (8-9) Mod TOTAL	Diff	% Diff	GEH
3010	2956: MCTC B3015 Deepcut Bridge Road N-S	265	316	51	19%	2.99
3011	2955: MCTC B3015 Deepcut Bridge Road S-N	134	113	-21	-16%	1.93
3012	2958: MCTC D3474 Lake Road E-W	394	380	-14	-4%	0.72
3013	2957: MCTC D3474 Lake Road W-E	390	374	-16	-4%	0.83
3014	4218: ATC B3012 Gapemouth Road W-E	589	599	10	2%	0.42
3016	2010: ATC A324 Aldershot Road S-N	383	383	0	0%	0.01
3017	2009: ATC A324 Aldershot Road N-S	285	284	-1	0%	0.03
3020	3620: MCC D49 Mill Lane S-N	34	61	27	80%	3.96
3021	3621: MCC D49 Mill Lane N-S	32	54	22	70%	3.39
3022	4734: MCTC D45 Vapery Lane E-W	27	1	-26	-96%	6.88
3023	4733: MCTC D45 Vapery Lane W-E	15	1	-14	-97%	5.20
3024	2873: MCTC B3405 School Lane E-W	304	332	28	9%	1.58
3025	2872: MCTC B3405 School Lane W-E	324	349	25	8%	1.39
3026	2871: MCTC A324 Pirbright Green N-S	732	705	-27	-4%	1.02
3027	2870: MCTC A324 Pirbright Green S-N	414	527	113	27%	5.20
3028	2869: MCTC A324 Dawney Hill S-N	192	195	3	1%	0.19
3030	4514: MCTC B3012 Gole Road E-W	246	171	-75	-31%	5.22
3031	4513: MCTC B3012 Gole Road W-E	645	599	-46	-7%	1.86
3035	4508: MCTC A324 Dawney Hill N-S	455	474	19	4%	0.87
3036	4506: MCTC A324 Connaught Road W-E	320	340	20	6%	1.10
3037	4505: MCTC A324 Connaught Road E-W	383	391	8	2%	0.41
3039	4503: MCTC D44 Brunswick Road N-S	206	253	47	23%	3.07
3042	4601: MCTC D44 Queens Road S-N	252	444	192	76%	10.29
3043	4600: MCTC D44 Queens Road N-S	108	151	43	40%	3.81
3046	3914: MCTC D3000 Cemetery Pales E-W	249	255	6	2%	0.37
3047	3913: MCTC D3000 Cemetery Pales W-E	261	220	-41	-16%	2.64
3048	3905: MCTC A322 Bagshot Road S-N	713	933	220	31%	7.67
3049	3906: MCTC A322 Bagshot Road N-S	668	599	-69	-10%	2.75
3050	3912: MCTC A322 Bagshot Road N-S	403	362	-41	-10%	2.08
3053	1549: ATC D3680 Blackhorse Road N-S	617	658	41	7%	1.62
3054	1551: ATC D3680 Blackhorse Road N-S	286	224	-62	-22%	3.91
3057	3501: MCC A324 Brookwood Lye Road S-N	730	718	-12	-2%	0.44
3058	3320: MCC B3411 Frimley High Street S-N	944	810	-134	-14%	4.52
3059	3319: MCC B3411 Frimley High Street N-S	795	634	-161	-20%	6.03
3060	3934: MCTC B3411 Church Road W-E	576	642	66	11%	2.68
3061	3935: MCTC B3411 Church Road E-W	492	583	91	18%	3.91
3062	3933: MCTC B3411 Frimley Green Road N-S	438	417	-21	-5%	1.00
3063	3932: MCTC B3411 Frimley Green Road S-N	492	505	13	3%	0.57
3066	3930: MCTC B3411 Grove Cross Road N-S	70	92	22	31%	2.44
3067	3931: MCTC B3411 Grove Cross Road S-N	208	250	42	20%	2.80
3068	2648: MCTC D3488 Old Bisley Road W-E	188	248	60	32%	4.07
3069	2649: MCTC D3488 Old Bisley Road E-W	350	356	6	2%	0.30
3070	2666: MCTC B3015 Deepcut Bridge Road S-N	480	456	-24	-5%	1.09
3071	2667: MCTC B3015 Deepcut Bridge Road N-S	415	503	88	21%	4.10
3072	2668: MCTC D3488 Old Bisley Road W-E	158	185	27	17%	2.05
3073	2669: MCTC D3488 Old Bisley Road E-W	151	154	3	2%	0.21
3074	2645: MCTC D3488 Edgemoor Road S-N	127	151	24	19%	2.04
3075	2644: MCTC D3488 Edgemoor Road N-S	240	203	-37	-16%	2.52
3076	2647: MCTC D3488 Old Bisley Road W-E	145	172	27	18%	2.13
3077	2646: MCTC D3488 Old Bisley Road E-W	194	228	34	17%	2.33
3078	2665: MCTC B3015 The Maultway S-N	438	392	-46	-11%	2.27
3079	2664: MCTC B3015 The Maultway N-S	366	407	41	11%	2.07
3080	912: Partial Martindale Avenue S-N	179	158	-21	-12%	1.65
3081	913: Partial Martindale Avenue N-S	169	159	-10	-6%	0.81
3082	915: Partial D3493 Cumberland Road (west) E-W	193	251	58	30%	3.88
3083	914: Partial D3493 Cumberland Road (west) W-E	189	160	-29	-15%	2.16
3084	910: Partial D3493 Cumberland Road (east) W-E	144	128	-16	-11%	1.37

Count No.	Name	AM Peak (8-9) Obs TOTAL	AM Peak (8-9) Mod TOTAL	Diff	% Diff	GEH
3085	911: Partial D3493 Cumberland Road (east) E-W	139	220	81	58%	6.02
3086	3223: MCTC D3512 High Street S-N	202	263	61	30%	3.98
3087	3227: MCTC D3528 Heathcote Road N-S	141	129	-12	-8%	1.01
3088	3226: MCTC D3528 Heathcote Road S-N	256	195	-61	-24%	4.05
3089	3229: MCTC D3514 Pembroke Broadway E-W	302	333	31	10%	1.73
3092	3224: MCTC D3511 Portesbery Road E-W	384	411	27	7%	1.34
3097	1783: ATC D3526 Church Hill W-E	639	372	-267	-42%	11.87
3098	1784: ATC D3526 Church Hill E-W	829	765	-64	-8%	2.25
3099	3669: MCC D3525 Waverley Drive S-N	40	105	65	162%	7.60
3100	3670: MCC D3525 Waverley Drive N-S	17	49	32	191%	5.63
3102	3189: MCTC D3512 Knoll Road N-S	607	569	-38	-6%	1.55
3103	4250: ATC A30 London Road E-W	639	498	-141	-22%	5.91
3105	3185: MCTC D3402 Kings Ride S-N	267	218	-49	-18%	3.13
3106	3184: MCTC D3402 Kings Ride N-S	363	496	133	37%	6.44
3107	1834: RT ATC A30 London Road W-E	392	476	84	21%	4.03
3110	850: Partial D3489 Prior Road S-N	744	843	99	13%	3.53
3111	3389: MCC M3 J3 - J4 N-S	4239	4447	208	5%	3.15
3113	4451: ATC D3404 College Ride W-E	278	218	-60	-22%	3.80
3115	4453: ATC D3404 College Ride W-E	280	252	-28	-10%	1.72
3116	4454: ATC D3404 College Ride E-W	231	347	116	50%	6.84
3117	4455: ATC D3404 College Ride W-E	281	273	-8	-3%	0.45
3118	4456: ATC D3404 College Ride E-W	305	335	30	10%	1.70
3121	4129: ATC D3421 Mitcham Road W-E	31	0	-31	-100%	7.87
3123	3849: MCTC B311 Red Road W-E	1129	1175	46	4%	1.35
3124	3850: MCTC B311 Red Road E-W	471	549	78	17%	3.45
3125	1753: ATC B311 Red Road W-E	988	1136	148	15%	4.54
3126	1754: ATC B311 Red Road E-W	678	606	-72	-11%	2.83
3127	3485: MCC A30 London Road N-S	898	849	-49	-5%	1.67
3128	3484: MCC A30 London Road S-N	1540	1292	-248	-16%	6.59
3129	823: Partial D18 MacDonald Road N-S	140	111	-29	-21%	2.61
3130	822: Partial D18 MacDonald Road S-N	186	250	64	34%	4.34
3131	9010: ASS* M3 WB Within J3	3859	3491	-368	-10%	6.07
3132	2207: TRADS M3 M3 J3 eastbound exit W-E	1174	1412	238	20%	6.62
3133	9004: ASS* M3 EB Within J3	4278	3903	-375	-9%	5.86
3134	3829: MCTC D31 Queens Road W-E	241	444	203	84%	10.97
3135	3830: MCTC D31 Queens Road E-W	153	151	-2	-1%	0.13
3136	4819: ATC A331 Guildford Road N-S	727	531	-196	-27%	7.80
3137	4818: ATC A330 Guildford Road S-N	621	927	306	49%	10.99
3138	3824: MCTC A322 Guildford Road S-N	699	854	155	22%	5.57
3139	3823: MCTC A322 Guildford Road N-S	715	531	-184	-26%	7.36
3142	3649: MCC D3602 Oak Tree Road W-E	79	99	20	25%	2.13
3143	3650: MCC D3602 Oak Tree Road E-W	25	28	3	10%	0.50
3146	4820: ATC A332 Guildford Road S-N	493	789	296	60%	11.71
3148	509: Partial C11 Chobham Road S-N	216	237	21	10%	1.37
3149	510: Partial C11 Chobham Road N-S	183	245	62	34%	4.24
3150	301: Partial C11 Chobham Road N-S	183	235	52	28%	3.61
3151	300: Partial C11 Chobham Road S-N	315	411	96	31%	5.05
3155	3703: MCC D7223 Raglan Road S-N	109	121	12	11%	1.11
3156	3704: MCC D7223 Raglan Road N-S	236	177	-59	-25%	4.08
3158	299: Partial C12 High Street N-S	445	403	-42	-9%	2.03
3162	18: Partial C12 Anchor Hill N-S	522	620	98	19%	4.10
3169	4298: ATC D3623 Warbury Lane W-E	1	0	-1	-100%	1.41
3171	3733: MCC D7306 Robin Hood Road W-E	169	161	-8	-5%	0.64
3172	3734: MCC D7306 Robin Hood Road E-W	81	101	20	25%	2.10
3173	4304: ATC D3624 Barrs Lane W-E	316	349	33	10%	1.81
3174	4303: ATC D3624 Barrs Lane E-W	380	351	-29	-8%	1.49
3175	4058: MCTC D29 Ford Road S-N	38	26	-12	-31%	2.10

Count No.	Name	AM Peak (8-9) Obs TOTAL	AM Peak (8-9) Mod TOTAL	Diff	% Diff	GEH
3176	4059: MCTC D29 Ford Road N-S	9	10	1	11%	0.32
3177	4212: ATC D28 Ford Road S-N	29	10	-19	-66%	4.31
3178	4213: ATC D28 Ford Road N-S	9	26	17	190%	4.09
3179	4064: MCTC D28 Lucas Green Road S-N	71	152	81	115%	7.70
3182	4814: ATC A326 Guildford Road S-N	725	906	181	25%	6.33
3185	4063: MCTC D28 Lucas Green Road S-N	109	152	43	40%	3.79
3186	4062: MCTC D28 Lucas Green Road N-S	90	145	55	61%	5.09
3187	4810: ATC A322 Guildford Road S-N	929	966	37	4%	1.21
3188	4811: ATC A323 Guildford Road N-S	818	408	-410	-50%	16.57
3189	4812: ATC A324 Guildford Road S-N	967	846	-121	-13%	4.03
3191	2963: MCTC C11 Fellow Green W-E	442	506	64	15%	2.95
3193	2962: MCTC C11 Beldam Bridge Road W-E	438	622	184	42%	8.00
3194	2961: MCTC C11 Beldam Bridge Road E-W	172	425	253	147%	14.67
3198	3845: MCTC C4 Lightwater Road N-S	96	84	-12	-13%	1.28
3199	3847: MCTC B311 Red Road E-W	438	524	86	20%	3.93
3203	2711: MCTC A319 High Street N-S	657	711	54	8%	2.05
3204	2710: MCTC A319 High Street S-N	727	929	202	28%	7.02
3223	521: Partial A320 Guildford Road S-N	663	627	-36	-5%	1.41
3224	522: Partial A320 Guildford Road N-S	863	908	45	5%	1.50
3225	3580: MCC D3682 Holly Bank Road N-S	105	143	38	36%	3.40
3226	3579: MCC D3682 Holly Bank Road S-N	108	135	27	25%	2.44
3227	4302: ATC B380 Smarts Heath Road E-W	212	243	31	15%	2.09
3228	4301: ATC B380 Smarts Heath Road W-E	289	282	-7	-2%	0.41
3229	1861: RT ATC A320 Egley Road S-N	497	680	183	37%	7.55
3230	1860: RT ATC A320 Egley Road N-S	600	609	9	1%	0.36
3231	19: Partial A320 Egley Road S-N	705	680	-25	-4%	0.95
3235	3049: MCTC D3615 Warwick Lane S-N	3	0	-3	-100%	2.45
3236	3050: MCTC D3615 Warwick Lane N-S	6	0	-6	-100%	3.46
3237	3047: MCTC C141 St Johns Hill Road E-W	363	390	27	8%	1.40
3238	3048: MCTC C141 St Johns Hill Road W-E	281	303	22	8%	1.31
3239	3051: MCTC C141 St Johns Road W-E	437	411	-26	-6%	1.24
3240	3052: MCTC C141 St Johns Road E-W	505	520	15	3%	0.68
3241	1601: ATC C141 St Johns Hill Road Bridge E-W	339	390	51	15%	2.68
3243	3072: MCTC C141 Wych Hill E-W	321	305	-16	-5%	0.90
3245	3738: MCC D3687 Blackbridge Road N-S	75	148	73	97%	6.90
3247	348: Partial C151 Wych Hill Lane (from St Johns) E-W	771	959	188	24%	6.39
3250	346: Partial C151 Wych Hill Lane (from A320) E-W	713	897	184	26%	6.50
3251	343: Partial York Road S-N	131	191	60	46%	4.74
3252	344: Partial York Road N-S	83	62	-21	-26%	2.50
3253	3066: MCTC C142 Triggs Lane S-N	666	697	31	5%	1.20
3254	3065: MCTC C142 Triggs Lane N-S	790	765	-25	-3%	0.91
3255	3070: MCTC C141 Wych Hill Lane W-E	1050	1102	52	5%	1.59
3256	3069: MCTC C141 Wych Hill Lane E-W	702	959	257	37%	8.92
3257	3786: MCTC A324 Lockfield Drive W-E	1020	892	-128	-13%	4.13
3258	3787: MCTC A324 Lockfield Drive E-W	505	478	-27	-5%	1.22
3259	3785: MCTC A324 Lockfield Drive W-E	980	857	-123	-13%	4.07
3261	3782: MCTC D3637 Athurs Bridge Road N-S	303	274	-29	-9%	1.69
3262	3783: MCTC D3637 Athurs Bridge Road S-N	112	135	23	20%	2.06
3263	2026: ATC A3046 Chobham Road E-W	463	733	270	58%	11.04
3264	2025: ATC A3046 Chobham Road W-E	705	723	18	3%	0.67
3266	2849: MCTC C8 Mincing Lane S-N	56	123	67	120%	7.10
3267	2853: MCTC A319 Chertsey Road E-W	195	231	36	18%	2.45
3269	2851: MCTC A319 Chertsey Road W-E	512	894	382	75%	14.40
3270	2850: MCTC A319 Chertsey Road E-W	224	354	130	58%	7.65
3305	3452: MCC A322 Bagshot By-Pass S-N	2300	2156	-144	-6%	3.05
3307	3479: MCC A322 Lightwater By-Pass E-W	878	779	-99	-11%	3.44
3309	2205: TRADS M3 M3 J3 westbound exit E-W	602	641	39	7%	1.58

Count No.	Name	AM Peak (8-9) Obs TOTAL	AM Peak (8-9) Mod TOTAL	Diff	% Diff	GEH
3311	Site 1 on screenline: Bus Lightwater North Inbound	483	328	-155	-32%	7.69
3313	3476: MCC A322 Bracknell Road S-N	2994	2517	-477	-16%	9.09
3314	3477: MCC A322 Bracknell Road N-S	2470	2547	77	3%	1.53
3316	3492: MCC A322 Bracknell Road N-S	2419	2547	128	5%	2.56
3319	2090: ATC B3020 Sunninghill Road N-S	344	382	38	11%	2.01
3320	Site 2 on screenline: Bus Lightwater North Outbound	1176	1198	22	2%	0.65
3326	3896: MCTC C4 Thorndown Lane S-N	685	716	31	5%	1.17
3327	3895: MCTC C4 Thorndown Lane N-S	245	293	48	20%	2.93
3328	4626: MCTC B386 Updown Hill W-E	396	509	113	28%	5.29
3329	4627: MCTC B386 Updown Hill E-W	344	554	210	61%	9.92
3331	4625: MCTC B386 Updown Hill N-S	153	333	180	118%	11.56
3333	3890: MCTC B386 Updown Hill S-N	351	634	283	81%	12.77
3334	4623: MCTC B386 Chertsey Road W-E	538	522	-16	-3%	0.70
3335	4622: MCTC B386 Chertsey Road E-W	289	263	-26	-9%	1.54
3338	3443: MCC M3 J2 - J3 E-W	3539	4132	593	17%	9.58
3339	4611: MCTC C3 Church Road S-N	266	368	102	38%	5.71
3340	4610: MCTC C3 Church Road N-S	126	144	18	14%	1.57
3341	4632: MCTC B386 School Road W-E	219	329	110	50%	6.67
3345	3616: MCC D533 Heathpark Drive S-N	167	177	10	6%	0.79
3346	3617: MCC D533 Heathpark Drive N-S	29	12	-17	-58%	3.68
3347	2019: ATC A329 Blacknest Road W-E	767	851	84	11%	2.97
3348	2020: ATC A329 Blacknest Road E-W	509	306	-203	-40%	10.06
3349	1910: ATC A30 London Road S-N	644	487	-157	-24%	6.59
3350	1909: ATC A30 London Road N-S	425	389	-36	-8%	1.78
3353	2052: ATC B386 Longcross Road E-W	187	220	33	17%	2.29
3355	3323: MCC D3017 Kitsmead Lane S-N	118	154	36	30%	3.08
3357	3330: MCC D4045 Accommodation Road N-S	127	66	-61	-48%	6.19
3358	3329: MCC D4045 Accommodation Road S-N	133	41	-92	-69%	9.87
3360	3328: MCC D3918 Wellington Avenue N-S	265	283	18	7%	1.06
3361	3321: MCC C10 Trumps Green Road S-N	318	488	170	54%	8.48
3362	3322: MCC C10 Trumps Green Road N-S	147	142	-5	-3%	0.38
3363	474: Partial A30 London Road W-E	1379	1335	-44	-3%	1.20
3367	4323: ATC B389 Christchurch Road E-W	549	530	-19	-3%	0.81
3368	4324: ATC B389 Christchurch Road W-E	489	475	-14	-3%	0.62
3369	4326: ATC B389 Christchurch Road W-E	502	475	-27	-5%	1.20
3370	4325: ATC B389 Christchurch Road E-W	565	530	-35	-6%	1.49
3547	4922: ATC D3192 Callow Hill S - N	498	512	14	3%	0.63
3548	4923: ATC D3192 Callow Hill N - S	321	312	-9	-3%	0.52
3575	2354: TRADS M25 M25 J12 anti-clockwise access N-S	2349	1337	-1012	-43%	23.56
3576	9013: ASS* M25 CW J10 - J11	6837	6377	-460	-7%	5.66
3577	9021: ASS* M25 AC J11 - J10	6198	5617	-581	-9%	7.56
3578	9015: ASS* M25 CW J11 - J12	7243	6975	-268	-4%	3.18
3579	9007: ASS* M3 EB J2 - J1	2901	2959	58	2%	1.08
3580	9009: ASS* M3 WB Within J2	1354	1504	150	11%	3.96
3581	9016: ASS* M25 CW Within J12	5007	4971	-36	-1%	0.51
3582	9019: ASS* M25 AC Within J12	4337	4195	-142	-3%	2.18
3583	9006: ASS* M3 EB Within J2	1661	1553	-108	-7%	2.71
3584	9008: ASS* M3 WB J1 - J2	3197	2984	-213	-7%	3.82
3585	9002: ASS* M3 EB Within J4	3796	3443	-353	-9%	5.86
3586	9003: ASS* M3 EB J4 - J3	5301	5315	14	0%	0.20
3587	9011: ASS* M3 WB Within J4	2962	3010	48	2%	0.88
3588	9005: ASS* M3 EB J3 - J2	5757	5101	-656	-11%	8.90

5.2 PM Peak Hour (1700 – 1800) Link Flow Validation Count Comparison

Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
2	3216: MCTC A30 London Road E-W	1165	979	-186	-16%	5.68
3	4317: ATC B389 Christchurch Road E-W	565	648	83	15%	3.37
4	4318: ATC B389 Christchurch Road W-E	415	451	36	9%	1.73
21	2707: MCTC B383 Windsor Road S-N	427	405	-22	-5%	1.09
22	2706: MCTC B383 Windsor Road N-S	591	459	-132	-22%	5.76
27	3819: MCTC A322 Bagshot Road S-N	696	548	-148	-21%	5.94
28	3820: MCTC A322 Bagshot Road N-S	554	491	-63	-11%	2.75
32	3045: MCTC D7309 St Johns Road N-S	257	245	-12	-5%	0.74
33	3046: MCTC D7309 St Johns Road S-N	182	178	-4	-2%	0.30
49	3183: MCTC A30 London Road E-W	1427	1107	-320	-22%	9.00
50	4200: ATC D3576 Laundry Lane S-N	433	426	-7	-2%	0.32
52	4816: ATC A328 Guildford Road S-N	662	575	-87	-13%	3.49
56	4556: MCTC A323 Guildford Road S-N	359	349	-10	-3%	0.53
57	4555: MCTC A323 Guildford Road N-S	534	515	-19	-4%	0.85
58	4846: MCTC A323 Guildford Road N-S	534	515	-19	-4%	0.85
59	4847: MCTC A323 Guildford Road S-N	359	349	-10	-3%	0.53
68	Bus Woking West Outbound	1000	821	-179	-18%	5.92
69	Bus Woking West Inbound	722	624	-98	-14%	3.76
83	3822: MCTC Unclassified Raynes Close E-W	1	0	-1	-100%	1.41
84	3821: MCTC Unclassified Raynes Close W-E	12	0	-12	-100%	4.90
279	1848: RT ATC A247 Kingfield Road E-W	458	492	34	7%	1.57
280	1849: RT ATC A247 Kingfield Road W-E	518	365	-153	-30%	7.29
281	3150: MCTC A247 High Street W-E	683	577	-106	-16%	4.23
282	3149: MCTC A247 High Street E-W	874	811	-63	-7%	2.16
283	3152: MCTC B380 Vicarage Road E-W	546	475	-71	-13%	3.15
284	3151: MCTC B380 Vicarage Road W-E	288	254	-34	-12%	2.04
285	3148: MCTC A247 Kingfield Road S-N	432	337	-95	-22%	4.87
287	Site 1 on screenline: Bus Woking South East Inbound	648	640	-8	-1%	0.33
288	Site 1 on screenline: Bus Woking South East Outbound	565	604	39	7%	1.62
289	2884: MCTC A247 High Street W-E	788	609	-179	-23%	6.78
290	2885: MCTC A247 High Street E-W	812	721	-91	-11%	3.28
291	2881: MCTC B382 High Street W-E	654	580	-74	-11%	2.99
292	2880: MCTC B382 High Street E-W	540	657	117	22%	4.76
318	4552: MCTC D7244 Goldsworth Road N-S	646	478	-168	-26%	7.08
321	2912: MCTC A320 Guildford Road N-S	756	746	-10	-1%	0.36
322	2913: MCTC A320 Guildford Road S-N	424	431	7	2%	0.34
323	2914: MCTC A247 Claremont Avenue N-S	396	403	7	2%	0.36
324	2916: MCTC A320 Guildford Road E-W	396	351	-45	-11%	2.31
325	2915: MCTC A320 Guildford Road W-E	460	439	-21	-5%	0.98
326	4110: ATC D3708 White Rose Lane W-E	124	214	90	72%	6.90
327	4111: ATC D3708 White Rose Lane E-W	193	185	-8	-4%	0.58
329	4549: MCTC D7244 Goldsworth Road E-W	344	432	88	26%	4.47
330	4548: MCTC D7281 Church Street West S-N	386	481	95	25%	4.56
331	4547: MCTC D7281 Church Street West N-S	343	292	-51	-15%	2.85
332	4554: MCTC D7242 Forge End S-N	209	336	127	61%	7.72
333	4553: MCTC D7242 Forge End N-S	78	52	-26	-34%	3.26
334	2549: MCTC C143 High Street W-E	165	216	51	31%	3.71
335	2550: MCTC C143 High Street E-W	152	154	2	1%	0.15
336	2563: MCTC D3708 Victoria Road E-W	517	610	93	18%	3.93
337	2562: MCTC D3708 Victoria Road W-E	468	387	-81	-17%	3.93
339	2597: MCTC D3708 Heathside Car Park N-S	23	28	5	21%	0.97
340	2596: MCTC D3708 Heathside Car Park S-N	113	106	-7	-6%	0.62
343	2576: MCTC D3708 White Rose Lane S-N	47	79	32	68%	4.00
345	2560: MCTC D3710 Oriental Road W-E	452	466	14	3%	0.67
346	2565: MCTC D3708 White Rose Lane S-N	101	80	-21	-21%	2.24

Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
347	2564: MCTC D3708 White Rose Lane N-S	221	397	176	80%	10.00
348	2568: MCTC D3710 Oriental Road W-E	482	387	-95	-20%	4.57
349	2566: MCTC D3710 Oriental Road W-E	602	784	182	30%	6.90
351	2558: MCTC D3708 Station Approach N-S	17	0	-17	-100%	5.83
352	2571: MCTC D3708 Heathside Crescent N-S	772	893	121	16%	4.19
353	2573: MCTC D3710 Park Road W-E	29	27	-2	-7%	0.37
354	2574: MCTC D3710 Park Road E-W	41	6	-35	-85%	7.13
355	1666: ATC D3709 Pembroke Road S-N	132	139	7	5%	0.59
356	1665: ATC D3709 Pembroke Road N-S	175	158	-17	-10%	1.32
358	1667: ATC D3709 Pembroke Road E-W	261	378	117	45%	6.55
359	4109: ATC D3708 White Rose Lane E-W	194	185	-9	-5%	0.65
360	4108: ATC D3708 White Rose Lane W-E	124	214	90	72%	6.90
361	1651: ATC D3710 Park Road E-W	168	177	9	5%	0.69
362	1652: ATC D3710 Park Road W-E	71	210	139	196%	11.72
363	1650: ATC D3710 Park Road W-E	70	171	101	145%	9.23
364	1649: ATC D3710 Park Road E-W	165	228	63	38%	4.52
365	2602: MCTC C140 Brewery Road W-E	230	235	5	2%	0.32
366	2603: MCTC C140 Brewery Road E-W	438	503	65	15%	2.98
367	2581: MCTC Unclassified The Peacocks Centre Car Park N-S	160	166	6	4%	0.46
368	2580: MCTC Unclassified The Peacocks Centre Car Park S-N	476	453	-23	-5%	1.06
369	2546: MCTC D3662 Chertsey Rd S-N	190	324	134	70%	8.34
370	2547: MCTC C143 The Broadway E-W	289	321	32	11%	1.82
371	2548: MCTC C143 The Broadway W-E	112	163	51	45%	4.32
374	2906: MCTC A3046 Chobham Road N-S	426	346	-80	-19%	4.09
375	2907: MCTC A3046 Chobham Road S-N	604	553	-51	-9%	2.14
376	2908: MCTC A3046 Chobham Road S-N	788	776	-12	-2%	0.43
377	2909: MCTC A3046 Chobham Road N-S	405	313	-92	-23%	4.85
378	2911: MCTC C140 Brewery Road E-W	394	479	85	22%	4.09
379	2910: MCTC C140 Brewery Road W-E	189	224	35	18%	2.40
381	2556: MCTC D3662 Church Street East W-E	378	320	-58	-15%	3.12
382	2552: MCTC C143 Chertsey Road S-N	749	636	-113	-15%	4.28
384	2590: MCTC D3710 Oriental Road E-W	388	482	94	24%	4.50
385	2591: MCTC D3710 Oriental Road W-E	319	384	65	20%	3.46
386	2823: MCTC C143 The Broadway W-E	396	508	112	28%	5.25
387	2824: MCTC C143 The Broadway E-W	239	321	82	34%	4.89
388	2569: MCTC D3710 Oriental Road E-W	457	478	21	5%	0.98
389	2570: MCTC D3710 Oriental Road W-E	314	369	55	17%	2.96
391	2593: MCTC D3710 Oriental Road E-W	426	478	52	12%	2.45
393	2822: MCTC C143 Stanley Road S-N	621	645	24	4%	0.95
394	2821: MCTC C143 Stanley Road N-S	95	141	46	48%	4.19
395	3583: MCC C143 Maybury Road E-W	419	471	52	12%	2.48
396	2553: MCTC C143 Stanley Road E-W	538	576	38	7%	1.60
397	2554: MCTC C143 Stanley Road W-E	336	402	66	20%	3.44
400	1871: RT ATC A3046 Kettlewell Hill N-S	397	346	-51	-13%	2.67
404	1663: ATC D3709 Pembroke Road S-N	101	139	38	37%	3.46
405	1664: ATC D3709 Pembroke Road N-S	136	151	15	11%	1.25
408	1878: RT ATC C144 Maybury Hill N-S	171	205	34	20%	2.49
413	1880: RT ATC D3731 East Hill E-W	325	307	-18	-6%	1.03
417	4731: MCTC C143 Walton Road W-E	448	450	2	1%	0.11
420	4606: MCTC D3668 Albert Drive E-W	436	302	-134	-31%	6.97
421	4607: MCTC D3668 Albert Drive W-E	404	342	-62	-15%	3.20
423	Bus Woking East Outbound	367	342	-25	-7%	1.32
424	3646: MCC D3670 Forsyth Road E-W	211	266	55	26%	3.53
426	4308: ATC D3668 Albert Drive N-S	412	473	61	15%	2.88
427	4290: ATC A3046 Chobham Road E-W	1246	1173	-73	-6%	2.11
429	1858: RT ATC A320 Chertsey Road S-N	799	703	-96	-12%	3.52
430	1859: RT ATC A320 Chertsey Road N-S	748	631	-117	-16%	4.47

Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
431	4284: ATC A320 Chertsey Road S-N	871	717	-154	-18%	5.48
432	4285: ATC A320 Chertsey Road N-S	952	958	6	1%	0.21
434	1585: ATC D3782 Martyrs Lane S-N	210	201	-9	-4%	0.65
435	1583: ATC D3782 Martyrs Lane S-N	179	201	22	12%	1.57
436	1584: ATC D3782 Martyrs Lane N-S	308	230	-78	-25%	4.79
437	1582: ATC A245 Woodham Lane E-W	843	743	-100	-12%	3.54
438	1581: ATC A245 Woodham Lane W-E	714	604	-110	-15%	4.29
439	4242: ATC A320 Guildford Road N-S	1032	998	-34	-3%	1.06
440	4241: ATC A320 Guildford Road S-N	1057	945	-112	-11%	3.53
441	2042: ATC B367 Newark Lane N-S	362	379	17	5%	0.87
442	2041: ATC B367 Newark Lane S-N	361	372	11	3%	0.56
443	4294: ATC D3744 Lock Lane W-E	101	121	20	20%	1.89
444	4295: ATC D3744 Lock Lane E-W	166	178	12	7%	0.93
454	4309: ATC D3668 Albert Drive W-E	314	232	-82	-26%	4.99
455	4310: ATC D3668 Albert Drive E-W	187	238	51	27%	3.52
456	3715: MCC D3743 Coldharbour Road W-E	84	84	0	0%	0.01
457	3716: MCC D3743 Coldharbour Road E-W	57	80	23	41%	2.81
460	2750: MCTC A245 Sheerwater Road N-S	986	774	-212	-22%	7.15
461	2751: MCTC A245 Sheerwater Road S-N	916	744	-172	-19%	5.96
462	2752: MCTC A245 Sheerwater Road S-N	899	848	-51	-6%	1.73
463	2753: MCTC A245 Sheerwater Road N-S	1070	805	-265	-25%	8.66
464	2755: MCTC D3668 Albert Drive E-W	313	340	27	9%	1.49
467	2610: MCTC D3759 Station Approach N-S	244	320	76	31%	4.55
468	2612: MCTC D3759 Station Approach S-N	132	94	-38	-28%	3.53
469	2613: MCTC D3759 Station Approach N-S	285	304	19	7%	1.10
473	3138: MCTC D3057 Woodham Park Road N-S	128	109	-19	-15%	1.78
474	3135: MCTC D3062 Queen Marys Drive E-W	207	212	5	3%	0.37
475	3136: MCTC D3062 Queen Marys Drive W-E	118	110	-8	-7%	0.73
476	3140: MCTC D3057 Woodham Park Road E-W	325	277	-48	-15%	2.76
477	3139: MCTC D3057 Woodham Park Road W-E	208	193	-15	-7%	1.09
478	4305: ATC D3758 Dartnell Avenue W-E	13	20	7	57%	1.80
479	4306: ATC D3758 Dartnell Avenue E-W	10	11	1	7%	0.22
482	1569: ATC A322 Oyster Lane S-N	503	566	63	12%	2.71
483	1570: ATC A323 Oyster Lane N-S	417	437	20	5%	0.99
484	1959: ATC A245 Parvis Road W-E	712	712	0	0%	0.00
485	1960: ATC A245 Parvis Road E-W	741	785	44	6%	1.61
486	3354: MCC A245 Parvis Road W-E	316	732	416	132%	18.16
487	3355: MCC A245 Parvis Road E-W	734	764	30	4%	1.10
1559	4243: ATC A320 Guildford Road S-N	1007	803	-204	-20%	6.80
1560	4244: ATC A320 Guildford Road N-S	928	878	-50	-5%	1.68
1562	2000: ATC A320 Guildford Road N-S	852	878	26	3%	0.87
1564	4091: ATC A320 Guildford Road N-S	875	878	3	0%	0.09
1566	1995: ATC A319 Chobham Road E-W	340	406	66	20%	3.44
1567	3451: MCC A320 Guildford Road N-S	1183	1057	-126	-11%	3.75
1568	3450: MCC A320 Guildford Road S-N	1251	953	-298	-24%	8.97
1573	3983: MCTC B386 Holloway Hill E-W	864	718	-146	-17%	5.20
1583	3435: MCC M25 J12 - J11 N-S	6887	6540	-347	-5%	4.23
1584	2355: TRADS M25 M25 J12 clockwise - M3 J2 S-N	2225	2279	54	2%	1.13
1589	3551: MCC B3121 Spinney Hill W-E	320	235	-85	-27%	5.13
1592	9014: ASS* M25 CW Within J11	5259	5500	241	5%	3.28
1593	2362: TRADS M25 M25 J11 clockwise exit S-N	1002	595	-407	-41%	14.38
1594	2361: TRADS M25 M25 J11 anti-clockwise access N-S	739	1056	317	43%	10.60
1595	9020: ASS* M25 AC Within J11	5474	5248	-226	-4%	3.08
1598	1567: ATC A320 Byfleet Road N-S	552	606	54	10%	2.24
1599	1568: ATC A321 Byfleet Road S-N	796	802	6	1%	0.21
1600	1993: ATC A318 Byfleet Road N-S	465	505	40	9%	1.80
1601	1994: ATC A318 Byfleet Road S-N	700	593	-107	-15%	4.22

Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
1603	1566: ATC A319 New Haw Road S-N	627	574	-53	-9%	2.18
1612	4833: MCC B3121 Station Road N-S	660	563	-97	-15%	3.92
1614	1991: ATC A317 Weybridge Road W-E	752	497	-255	-34%	10.22
1615	1992: ATC A317 Weybridge Road E-W	832	766	-66	-8%	2.34
1645	3981: MCTC A320 Guildford Road N-S	960	874	-86	-9%	2.86
1646	3979: MCTC A320 Guildford Road S-N	706	619	-87	-12%	3.37
1647	3978: MCTC A320 Guildford Road N-S	850	747	-103	-12%	3.66
1649	2364: TRADS M25 M25 J11 clockwise access S-N	1599	881	-718	-45%	20.38
1650	2359: TRADS M25 M25 J11 anti-clockwise exit N-S	1237	1292	55	4%	1.54
1655	1599: ATC A317 Chertsey Road N-S	758	660	-98	-13%	3.69
1656	3348: MCC A317 Eastworth Road W-E	604	637	33	5%	1.32
1657	3349: MCC A317 Eastworth Road E-W	465	416	-49	-10%	2.32
1658	2703: MCTC B387 Weir Road N-S	613	688	75	12%	2.96
1659	2702: MCTC B387 Weir Road S-N	496	120	-376	-76%	21.41
1663	2700: MCTC B375 Bridge Road E-W	1044	778	-266	-26%	8.83
1668	4469: MCC B375 Chertsey Bridge E-W	826	778	-48	-6%	1.71
1669	4470: MCC B375 Chertsey Bridge W-E	1173	1018	-155	-13%	4.67
1672	2626: MCTC B389 Sandhills Lane E-W	351	320	-31	-9%	1.67
1673	2627: MCTC B389 Sandhills Lane W-E	259	185	-74	-29%	4.97
1675	2629: MCTC C10 Trumps Green Road N-S	361	474	113	31%	5.55
1678	2630: MCTC B389 Christchurch Road W-E	409	461	52	13%	2.49
1679	2631: MCTC B389 Christchurch Road E-W	620	775	155	25%	5.86
1682	2200: TRADS M3 M3 J2 eastbound to M25 J12 W-E	2831	3408	577	20%	10.32
1684	Site 2 on screenline: Bus Egham South West Inbound	232	222	-10	-4%	0.65
1685	Site 2 on screenline: Bus Egham South West Outbound	409	428	19	5%	0.91
1686	2202: TRADS M3 M25 J12 clockwise to M3 J2 eastbound W-E	780	726	-54	-7%	1.96
1687	2199: TRADS M3 M25 J12 clockwise to M3 J2 westbound E-W	1468	1553	85	6%	2.18
1688	2197: TRADS M3 M3 J2 westbound to M25 J12 E-W	1279	1168	-111	-9%	3.17
1691	2352: TRADS M25 M25 J12 anti-clockwise - M3 J2 N-S	2793	2694	-99	-4%	1.88
1692	3527: MCC B388 Thorpe By-Pass S-N	354	355	1	0%	0.05
1693	3528: MCC B388 Thorpe By-Pass N-S	554	543	-11	-2%	0.45
1694	9018: ASS* M25 AC J13 - J12	7020	6836	-184	-3%	2.21
1695	9017: ASS* M25 CW J12 - J13	6675	6279	-396	-6%	4.92
1698	4245: ATC C10 Stroude Road S-N	243	222	-21	-9%	1.36
1699	4246: ATC C10 Stroude Road N-S	453	428	-25	-6%	1.21
1744	3503: MCC A320 Staines Road S-N	391	375	-16	-4%	0.82
1745	3504: MCC A320 Staines Road N-S	766	757	-9	-1%	0.32
1752	1997: ATC A320 Chertsey Lane S-N	397	408	11	3%	0.56
1753	1998: ATC A320 Chertsey Lane N-S	736	737	1	0%	0.05
2177	3549: MCC B3007 Weybourne Road W-E	352	411	59	17%	3.04
2178	3550: MCC B3007 Weybourne Road E-W	385	396	11	3%	0.54
2179	2086: ATC B3007 Weybourne Road W-E	418	411	-7	-2%	0.33
2180	2085: ATC B3007 Weybourne Road E-W	399	396	-3	-1%	0.17
2183	2094: ATC B3208 Badshot Lea Road S-N	418	413	-5	-1%	0.23
2184	2093: ATC B3208 Badshot Lea Road N-S	327	323	-4	-1%	0.24
2187	2050: ATC B385 Woodham Lane W-E	404	376	-28	-7%	1.41
2188	2049: ATC B385 Woodham Lane E-W	454	386	-68	-15%	3.30
2198	2221: TRADS M3 Junction 4a - 5 W-E	3915	3842	-73	-2%	1.17
2199	2222: TRADS M3 Junction 5 - 4a E-W	3611	3689	78	2%	1.29
2208	9012: ASS* M3 WB Within J4a	3767	3611	-156	-4%	2.57
2209	9000: ASS* M3 EB Within J4a	3064	3085	21	1%	0.37
2210	2219: TRADS M3 M3 J4A eastbound exit W-E	508	604	96	19%	4.07
2213	2217: TRADS M3 M3 J4A westbound exit E-W	1258	1350	92	7%	2.56
2215	2215: TRADS M3 Junction 4 - 4a E-W	4627	4961	334	7%	4.83
2216	9001: ASS* M3 EB J4a - J4	4262	4409	147	3%	2.24
2234	4297: ATC D3744 Wisley Lane N-S	185	178	-7	-4%	0.51
2235	4296: ATC D3744 Wisley Lane S-N	105	121	16	15%	1.49

Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
2242	2213: TRADS M3 M3 J4 eastbound exit W-E	1105	942	-163	-15%	5.08
2249	4605: MCTC C144 Monument Road S-N	583	602	19	3%	0.77
2250	3428: MCC A331 Blackwater Valley Road N-S	3773	3534	-239	-6%	3.95
2251	2211: TRADS M3 M3 J4 westbound exit E-W	1688	1646	-42	-3%	1.04
2252	3427: MCC A331 Blackwater Valley Road S-N	3197	3484	287	9%	4.96
2253	2011: ATC A325 Frimley Bypass W-E	1368	1291	-77	-6%	2.10
2254	2012: ATC A325 Frimley Bypass E-W	1139	1344	205	18%	5.82
2257	4197: ATC A331 Blackwater Valley Road N-S	2279	1995	-284	-12%	6.15
2258	4196: ATC A331 Blackwater Valley Road S-N	2035	2162	127	6%	2.76
2260	3698: MCC D3433 Bain Avenue N-S	20	16	-4	-20%	0.96
2261	3697: MCC D3433 Bain Avenue S-N	40	38	-2	-5%	0.32
2262	1711: ATC B3411 Frimley Road S-N	862	797	-65	-8%	2.27
2269	3206: MCTC A331 Blackwater Valley Road S-N	1432	1454	22	2%	0.58
2270	3205: MCTC A331 Blackwater Valley Road N-S	1782	1614	-168	-9%	4.07
2273	3210: MCTC A331 Blackwater Valley Road N-S	1855	1955	100	5%	2.30
2274	3209: MCTC A331 Blackwater Valley Road S-N	1512	1795	283	19%	6.95
2277	3203: MCTC A331 Blackwater Valley Road S-N	1332	1454	122	9%	3.26
2278	3204: MCTC A331 Blackwater Valley Road N-S	1752	1614	-138	-8%	3.36
2279	3201: MCTC D3571 Riverside Way E-W	339	276	-63	-19%	3.60
2280	3202: MCTC D3571 Riverside Way W-E	68	39	-29	-42%	3.95
2292	3249: MCTC A331 Blackwater Valley Road N-S	1081	985	-96	-9%	2.98
2294	3217: MCTC A331 Blackwater Valley Road N-S	1134	985	-149	-13%	4.57
2296	3219: MCTC D3425 Stanhope Road E-W	702	763	61	9%	2.26
2297	3207: MCTC Unclassified Sainsburys E-W	409	383	-26	-6%	1.32
2298	3208: MCTC Unclassified Sainsburys W-E	416	382	-34	-8%	1.68
2299	4202: ATC B3411 Frimley Road S-N	721	654	-67	-9%	2.57
2300	4203: ATC B3411 Frimley Road N-S	541	646	105	19%	4.31
2303	3861: MCTC D3424 Surrey Avenue S-N	41	22	-19	-47%	3.41
2304	3862: MCTC D3424 Surrey Avenue N-S	37	29	-8	-22%	1.40
2306	3864: MCTC D3426 Vale Road E-W	127	93	-34	-27%	3.29
2307	2660: MCTC D3424 Queen Mary Avenue S-N	5	33	28	566%	6.46
2308	2661: MCTC D3424 Queen Mary Avenue N-S	10	14	4	44%	1.26
2309	3858: MCTC D3424 Victoria Avenue S-N	53	34	-19	-36%	2.90
2310	3857: MCTC D3424 Victoria Avenue N-S	17	0	-17	-100%	5.83
2311	3241: MCTC B3411 Frimley Road S-N	698	632	-66	-10%	2.57
2312	3242: MCTC B3411 Frimley Road N-S	522	692	170	33%	6.91
2313	3238: MCTC B3411 Frimley Road S-N	634	444	-190	-30%	8.16
2314	3237: MCTC B3411 Frimley Road N-S	425	501	76	18%	3.55
2315	3240: MCTC D3517 The Avenue W-E	174	258	84	48%	5.72
2316	3239: MCTC D3517 The Avenue E-W	207	262	55	27%	3.59
2320	1788: ATC A321 Marshall Road N-S	931	903	-28	-3%	0.93
2321	1787: ATC A321 Marshall Road S-N	1441	1320	-121	-8%	3.26
2334	4198: ATC A321 Marshall Road S-N	1314	1320	6	0%	0.16
2337	3193: MCTC D3576 Laundry Lane S-N	482	426	-56	-12%	2.61
2338	3192: MCTC D3576 Laundry Lane N-S	571	1161	590	103%	20.05
2339	3177: MCTC D3576 Laundry Lane N-S	711	1170	459	65%	14.98
2340	3181: MCTC D3425 Yorktown Way N-S	156	175	19	12%	1.51
2341	3180: MCTC D3425 Yorktown Way S-N	168	137	-31	-18%	2.49
2342	3194: MCTC D3576 Laundry Lane W-E	718	1170	452	63%	14.72
2343	3178: MCTC A30 London Road E-W	1242	960	-282	-23%	8.50
2344	3179: MCTC A30 London Road W-E	1083	1083	0	0%	0.01
2345	2663: MCTC D3425 Stanhope Road E-W	346	352	6	2%	0.32
2346	2662: MCTC D3425 Stanhope Road W-E	226	330	104	46%	6.24
2349	3799: MCTC B3411 Frimley Road N-S	393	362	-31	-8%	1.59
2350	3800: MCTC B3411 Frimley Road S-N	326	371	45	14%	2.42
2351	3804: MCTC D3424 Edward Avenue E-W	243	280	37	15%	2.30
2352	3803: MCTC D3424 Edward Avenue W-E	143	206	63	44%	4.75

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2353	3802: MCTC B3411 Frimley Road N-S	371	392	21	6%	1.07
2354	3801: MCTC B3411 Frimley Road S-N	404	272	-132	-33%	7.20
2355	2683: MCTC D3424 Victoria Avenue N-S	26	89	63	241%	8.27
2357	2685: MCTC D3424 Queen Mary Avenue E-W	297	319	22	7%	1.23
2358	2684: MCTC D3424 Queen Mary Avenue W-E	224	316	92	41%	5.58
2360	2678: MCTC D3424 Victoria Avenue N-S	34	26	-8	-25%	1.56
2361	3173: MCTC D3424 Victoria Avenue S-N	122	141	19	16%	1.67
2362	3174: MCTC D3424 Victoria Avenue N-S	13	26	13	96%	2.85
2363	3740: MCC D3426 Vale Road E-W	128	108	-20	-15%	1.81
2365	3172: MCTC A30 London Road W-E	868	1083	215	25%	6.89
2366	3171: MCTC A30 London Road E-W	925	844	-81	-9%	2.72
2367	4254: ATC A30 London Road E-W	1226	960	-266	-22%	8.05
2368	4253: ATC A30 London Road W-E	1041	1083	42	4%	1.29
2370	3244: MCTC A30 London Road W-E	975	841	-134	-14%	4.46
2371	3246: MCTC B3411 Frimley Road N-S	271	362	91	34%	5.13
2373	3248: MCTC A30 London Road E-W	953	844	-109	-11%	3.63
2374	3247: MCTC A30 London Road W-E	1122	1083	-39	-3%	1.17
2375	3157: MCTC A30 London Road W-E	792	841	49	6%	1.71
2376	3158: MCTC A30 London Road E-W	687	593	-94	-14%	3.72
2379	4251: ATC A30 London Road W-E	891	799	-92	-10%	3.16
2380	4252: ATC A30 London Road E-W	743	696	-47	-6%	1.75
2381	3163: MCTC D3517 The Avenue S-N	193	235	42	22%	2.88
2382	3164: MCTC D3517 The Avenue N-S	235	280	45	19%	2.81
2384	1794: ATC D3514 Park Street N-S	486	365	-121	-25%	5.85
2385	3160: MCTC D3517 The Avenue S-N	134	258	124	92%	8.85
2387	3162: MCTC D3516 Southwell Park Road W-E	259	274	15	6%	0.90
2388	3161: MCTC D3516 Southwell Park Road E-W	300	391	91	30%	4.87
2389	3233: MCTC D3514 Park Street S-N	411	436	25	6%	1.23
2390	3234: MCTC D3514 Park Street N-S	411	336	-75	-18%	3.87
2391	3231: MCTC D3514 Pembroke Broadway E-W	456	410	-46	-10%	2.22
2392	3230: MCTC D3514 Park Street N-S	20	36	16	81%	3.05
2393	3232: MCTC D3514 Pembroke Broadway W-E	444	372	-72	-16%	3.55
2394	3235: MCTC D3516 Southwell Park Road W-E	454	422	-32	-7%	1.53
2395	3236: MCTC D3516 Southwell Park Road E-W	486	596	110	23%	4.71
2398	3165: MCTC A30 London Road E-W	751	659	-92	-12%	3.45
2399	3166: MCTC A30 London Road W-E	658	831	173	26%	6.32
2400	3168: MCTC D3515 Lower Charles Street N-S	184	140	-44	-24%	3.42
2401	3167: MCTC D3515 Lower Charles Street S-N	188	112	-76	-40%	6.16
2410	2598: MCTC C140 Brewery Road E-W	422	479	57	14%	2.71
2411	2599: MCTC C140 Brewery Road W-E	241	224	-17	-7%	1.15
2412	2594: MCTC A320 Victoria Way Car Park N-S	49	43	-6	-13%	0.93
2414	3648: MCC D3730 Balmoral Drive N-S	24	0	-24	-100%	6.93
2415	3647: MCC D3730 Balmoral Drive S-N	15	0	-15	-100%	5.48
2419	4289: ATC A320 Chertsey Road N-S	942	998	56	6%	1.81
2420	4288: ATC A320 Chertsey Road S-N	1138	945	-193	-17%	5.97
2431	2600: MCTC Unclassified Brewery Road Car Park S-N	62	41	-21	-34%	2.95
2432	2601: MCTC Unclassified Brewery Road Car Park N-S	35	29	-6	-17%	1.06
2433	2589: MCTC Private Woking Station Car Park S-N	5	4	-1	-27%	0.66
2434	2588: MCTC Private Woking Station Car Park N-S	73	15	-58	-79%	8.71
2435	3326: MCC D3406 Foxhills Road N-S	195	144	-51	-26%	3.88
2436	3325: MCC D3406 Foxhills Road S-N	99	75	-24	-24%	2.58
2622	3907: MCTC A3 Connaught Road W-E	304	304	0	0%	0.03
2634	4511: MCTC A324 Dawney Hill S-N	341	362	21	6%	1.11
2635	4512: MCTC A324 Dawney Hill N-S	194	149	-45	-23%	3.41
2637	1676: ATC B3012 Gole Road W-E	296	259	-37	-12%	2.19
2725	3509: MCC A331 Blackwater Valley Road S-N	2276	2148	-128	-6%	2.72
2726	3510: MCC A331 Blackwater Valley Road N-S	2504	2498	-6	0%	0.11

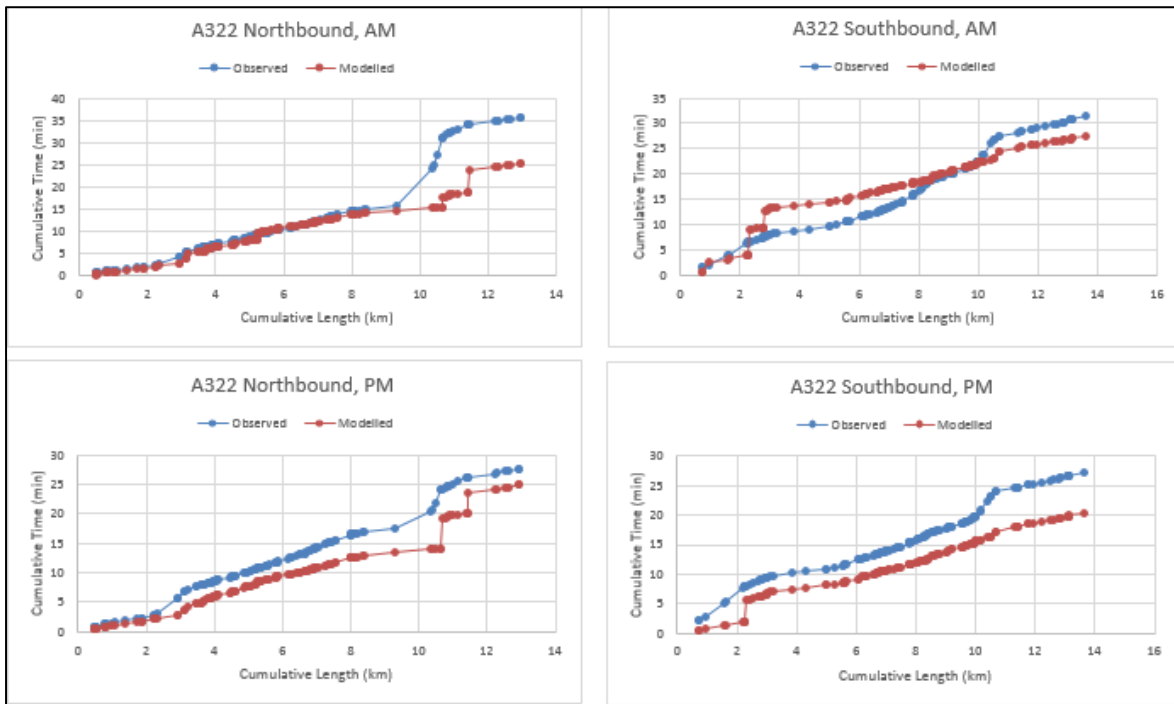
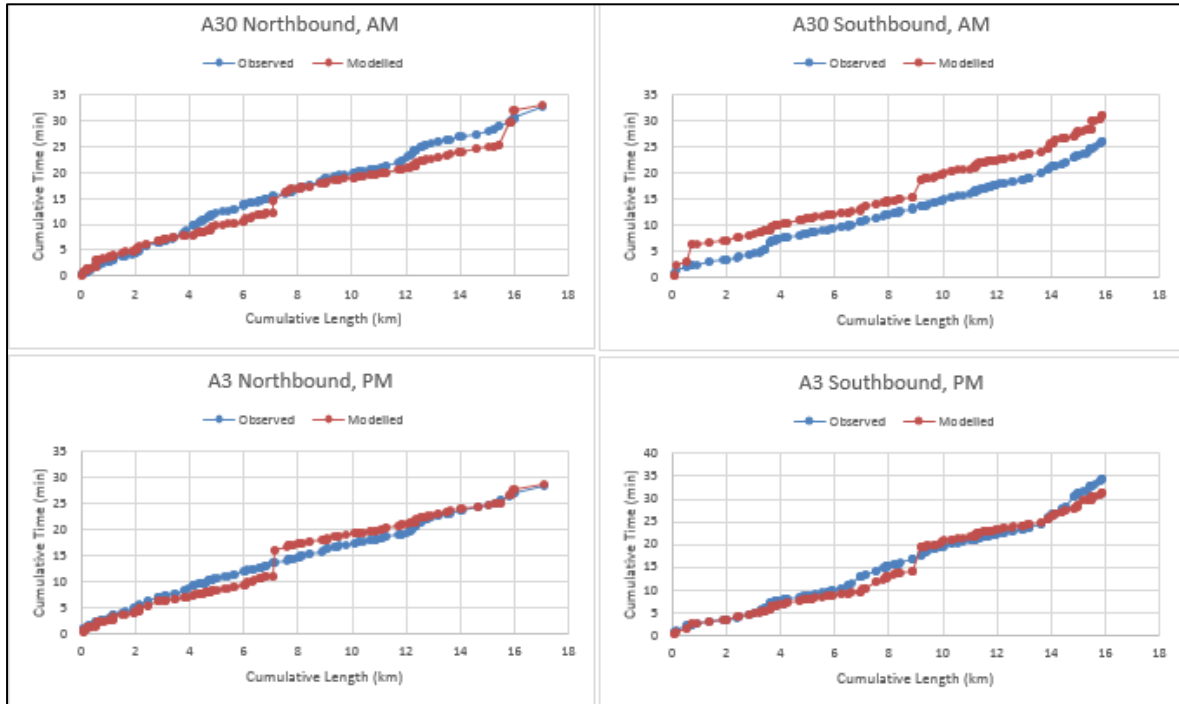
Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
2733	3588: MCC C119 The Street S-N	492	489	-3	-1%	0.14
2734	3589: MCC C119 The Street N-S	347	348	1	0%	0.06
2737	2007: ATC A323 Aldershot Road W-E	783	674	-109	-14%	4.02
2738	2008: ATC A323 Aldershot Road E-W	814	798	-16	-2%	0.57
2739	4850: MCTC A323 Church Road S-N	341	337	-4	-1%	0.21
2740	4851: MCTC A323 Church Road N-S	518	498	-20	-4%	0.89
2741	4849: MCTC C18 Foreman Road S-N	45	42	-3	-7%	0.51
2742	4848: MCTC C18 Foreman Road N-S	47	46	-1	-1%	0.08
2743	3557: MCC B3411 Vale Road S-N	483	496	13	3%	0.59
2744	3558: MCC B3411 Vale Road N-S	512	460	-52	-10%	2.34
2988	3960: MCC B3411 Vale Road S-N	544	492	-52	-10%	2.29
2989	3961: MCC B3411 Vale Road N-S	590	643	53	9%	2.13
2990	3956: MCTC B3166 Lysons Avenue S-N	486	384	-102	-21%	4.89
2991	3957: MCTC B3166 Lysons Avenue N-S	502	402	-100	-20%	4.68
2992	3958: MCTC B3166 Lynchford Road W-E	812	796	-16	-2%	0.57
2993	3959: MCTC B3166 Lynchford Road E-W	816	800	-16	-2%	0.56
2994	3955: MCTC B3165 Stratford Road S-N	429	402	-27	-6%	1.30
2995	3954: MCTC B3165 Stratford Road N-S	449	529	80	18%	3.63
2996	4220: ATC D3455 Mytchett Place Road W-E	266	281	15	6%	0.90
2997	4221: ATC D3455 Mytchett Place Road E-W	481	422	-59	-12%	2.79
2998	4216: ATC B3012 Guildford Road W-E	189	176	-13	-7%	0.99
2999	4217: ATC B3012 Guildford Road E-W	347	345	-2	-1%	0.13
3010	2956: MCTC B3015 Deepcut Bridge Road N-S	98	83	-15	-15%	1.59
3011	2955: MCTC B3015 Deepcut Bridge Road S-N	183	192	9	5%	0.67
3012	2958: MCTC D3474 Lake Road E-W	360	356	-4	-1%	0.21
3013	2957: MCTC D3474 Lake Road W-E	272	275	3	1%	0.16
3014	4218: ATC B3012 Gapemouth Road W-E	290	260	-30	-10%	1.81
3016	2010: ATC A324 Aldershot Road S-N	299	308	9	3%	0.53
3017	2009: ATC A324 Aldershot Road N-S	456	454	-2	0%	0.10
3020	3620: MCC D49 Mill Lane S-N	25	44	19	78%	3.31
3021	3621: MCC D49 Mill Lane N-S	43	71	28	64%	3.68
3022	4734: MCTC D45 Vapery Lane E-W	14	1	-13	-93%	4.75
3023	4733: MCTC D45 Vapery Lane W-E	12	0	-12	-96%	4.62
3024	2873: MCTC B3405 School Lane E-W	316	352	36	11%	1.95
3025	2872: MCTC B3405 School Lane W-E	175	197	22	12%	1.59
3026	2871: MCTC A324 Pirbright Green N-S	398	346	-52	-13%	2.70
3027	2870: MCTC A324 Pirbright Green S-N	672	713	41	6%	1.57
3028	2869: MCTC A324 Dawney Hill S-N	372	362	-10	-3%	0.53
3030	4514: MCTC B3012 Gole Road E-W	479	405	-74	-15%	3.52
3031	4513: MCTC B3012 Gole Road W-E	251	259	8	3%	0.53
3035	4508: MCTC A324 Dawney Hill N-S	574	478	-96	-17%	4.19
3036	4506: MCTC A324 Connaught Road W-E	251	266	15	6%	0.91
3037	4505: MCTC A324 Connaught Road E-W	487	441	-46	-9%	2.12
3039	4503: MCTC D44 Brunswick Road N-S	197	153	-44	-22%	3.30
3042	4601: MCTC D44 Queens Road S-N	157	185	28	18%	2.15
3043	4600: MCTC D44 Queens Road N-S	171	112	-59	-34%	4.92
3046	3914: MCTC D3000 Cemetery Pales E-W	259	382	123	48%	6.88
3047	3913: MCTC D3000 Cemetery Pales W-E	414	299	-115	-28%	6.08
3048	3905: MCTC A322 Bagshot Road S-N	790	720	-70	-9%	2.56
3049	3906: MCTC A322 Bagshot Road N-S	636	535	-101	-16%	4.16
3050	3912: MCTC A322 Bagshot Road N-S	381	256	-125	-33%	7.00
3053	1549: ATC D3680 Blackhorse Road N-S	396	585	189	48%	8.52
3054	1551: ATC D3680 Blackhorse Road N-S	239	226	-13	-6%	0.88
3057	3501: MCC A324 Brookwood Lye Road S-N	637	590	-47	-7%	1.88
3058	3320: MCC B3411 Frimley High Street S-N	1068	673	-395	-37%	13.38
3059	3319: MCC B3411 Frimley High Street N-S	697	789	92	13%	3.37
3060	3934: MCTC B3411 Church Road W-E	657	727	70	11%	2.66

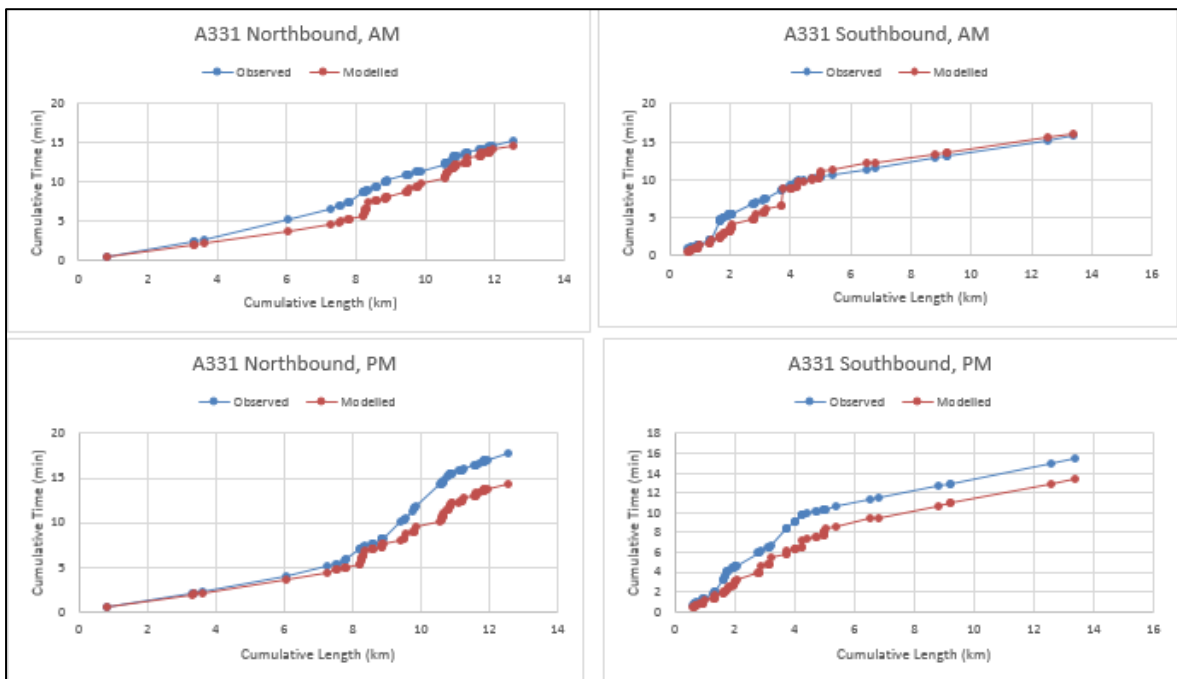
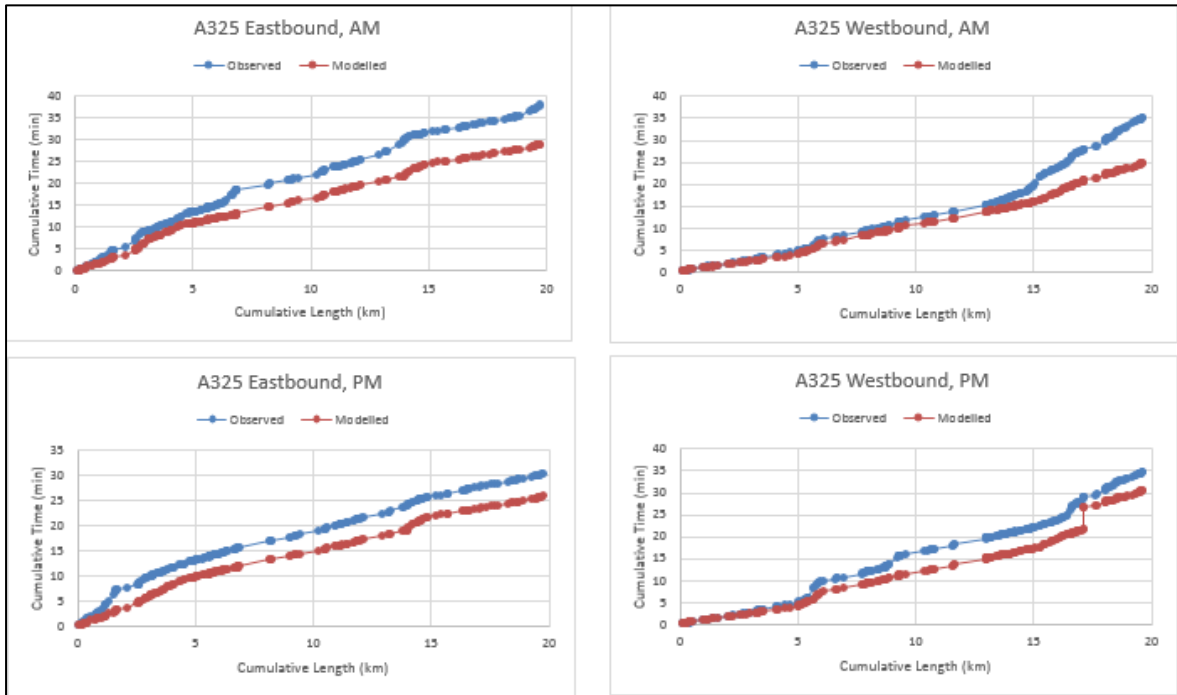
Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
3061	3935: MCTC B3411 Church Road E-W	458	362	-96	-21%	4.74
3062	3933: MCTC B3411 Frimley Green Road N-S	493	515	22	5%	0.99
3063	3932: MCTC B3411 Frimley Green Road S-N	458	505	47	10%	2.15
3066	3930: MCTC B3411 Grove Cross Road N-S	79	60	-19	-24%	2.26
3067	3931: MCTC B3411 Grove Cross Road S-N	243	288	45	19%	2.77
3068	2648: MCTC D3488 Old Bisley Road W-E	201	193	-8	-4%	0.60
3069	2649: MCTC D3488 Old Bisley Road E-W	154	149	-5	-3%	0.41
3070	2666: MCTC B3015 Deepcut Bridge Road S-N	458	478	20	4%	0.91
3071	2667: MCTC B3015 Deepcut Bridge Road N-S	468	480	12	2%	0.54
3072	2668: MCTC D3488 Old Bisley Road W-E	109	113	4	4%	0.40
3073	2669: MCTC D3488 Old Bisley Road E-W	196	199	3	1%	0.18
3074	2645: MCTC D3488 Edgemoor Road S-N	142	128	-14	-10%	1.20
3075	2644: MCTC D3488 Edgemoor Road N-S	115	103	-12	-10%	1.13
3076	2647: MCTC D3488 Old Bisley Road W-E	149	153	4	3%	0.31
3077	2646: MCTC D3488 Old Bisley Road E-W	129	134	5	4%	0.44
3078	2665: MCTC B3015 The Maultway S-N	391	405	14	3%	0.68
3079	2664: MCTC B3015 The Maultway N-S	488	492	4	1%	0.17
3086	3223: MCTC D3512 High Street S-N	206	121	-85	-41%	6.69
3087	3227: MCTC D3528 Heathcote Road N-S	242	241	-1	0%	0.05
3088	3226: MCTC D3528 Heathcote Road S-N	192	131	-61	-32%	4.76
3089	3229: MCTC D3514 Pembroke Broadway E-W	395	408	13	3%	0.64
3092	3224: MCTC D3511 Portesbery Road E-W	591	591	0	0%	0.01
3097	1783: ATC D3526 Church Hill W-E	690	666	-24	-3%	0.92
3098	1784: ATC D3526 Church Hill E-W	597	598	1	0%	0.04
3099	3669: MCC D3525 Waverley Drive S-N	26	23	-3	-11%	0.56
3100	3670: MCC D3525 Waverley Drive N-S	46	48	2	4%	0.29
3102	3189: MCTC D3512 Knoll Road N-S	351	336	-15	-4%	0.79
3103	4250: ATC A30 London Road E-W	553	433	-120	-22%	5.39
3105	3185: MCTC D3402 Kings Ride S-N	376	300	-76	-20%	4.11
3106	3184: MCTC D3402 Kings Ride N-S	215	126	-89	-41%	6.83
3107	1834: RT ATC A30 London Road W-E	757	679	-78	-10%	2.90
3111	3389: MCC M3 J3 - J4 N-S	4930	5209	279	6%	3.92
3113	4451: ATC D3404 College Ride W-E	247	187	-60	-24%	4.06
3115	4453: ATC D3404 College Ride W-E	244	166	-78	-32%	5.42
3116	4454: ATC D3404 College Ride E-W	145	131	-14	-9%	1.16
3117	4455: ATC D3404 College Ride W-E	237	188	-49	-20%	3.33
3118	4456: ATC D3404 College Ride E-W	125	105	-20	-16%	1.86
3121	4129: ATC D3421 Mitcham Road W-E	12	0	-12	-100%	4.90
3123	3849: MCTC B311 Red Road W-E	432	479	47	11%	2.20
3124	3850: MCTC B311 Red Road E-W	1097	1175	78	7%	2.30
3125	1753: ATC B311 Red Road W-E	548	552	4	1%	0.16
3126	1754: ATC B311 Red Road E-W	982	1136	154	16%	4.73
3127	3485: MCC A30 London Road N-S	1224	1158	-66	-5%	1.90
3128	3484: MCC A30 London Road S-N	1054	909	-145	-14%	4.61
3131	9010: ASS* M3 WB Within J3	4726	4492	-234	-5%	3.45
3132	2207: TRADS M3 M3 J3 eastbound exit W-E	1244	1267	23	2%	0.66
3133	9004: ASS* M3 EB Within J3	3381	3470	89	3%	1.52
3134	3829: MCTC D31 Queens Road W-E	175	185	10	6%	0.75
3135	3830: MCTC D31 Queens Road E-W	175	112	-63	-36%	5.22
3136	4819: ATC A331 Guildford Road N-S	857	668	-189	-22%	6.83
3137	4818: ATC A330 Guildford Road S-N	655	778	123	19%	4.60
3138	3824: MCTC A322 Guildford Road S-N	733	778	45	6%	1.64
3139	3823: MCTC A322 Guildford Road N-S	802	668	-134	-17%	4.93
3142	3649: MCC D3602 Oak Tree Road W-E	46	44	-2	-5%	0.31
3143	3650: MCC D3602 Oak Tree Road E-W	72	67	-5	-7%	0.59
3146	4820: ATC A332 Guildford Road S-N	651	736	85	13%	3.24
3155	3703: MCC D7223 Raglan Road S-N	181	174	-7	-4%	0.55

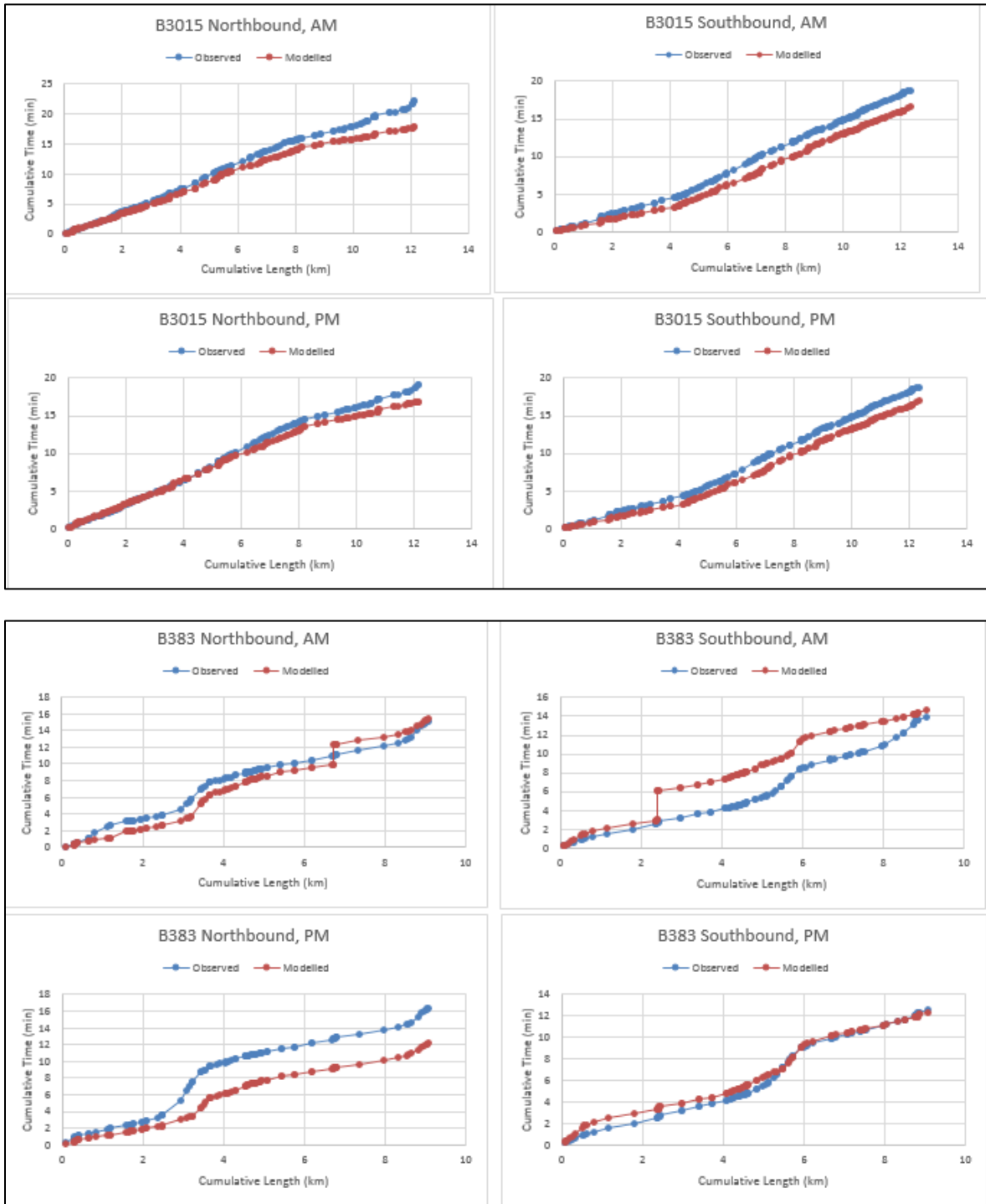
Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
3156	3704: MCC D7223 Raglan Road N-S	153	167	14	9%	1.07
3169	4298: ATC D3623 Warbury Lane W-E	1	0	-1	-100%	1.41
3171	3733: MCC D7306 Robin Hood Road W-E	104	98	-6	-6%	0.60
3172	3734: MCC D7306 Robin Hood Road E-W	146	233	87	59%	6.29
3173	4304: ATC D3624 Barrs Lane W-E	266	245	-21	-8%	1.34
3174	4303: ATC D3624 Barrs Lane E-W	433	404	-29	-7%	1.40
3175	4058: MCTC D29 Ford Road S-N	6	14	8	126%	2.42
3176	4059: MCTC D29 Ford Road N-S	11	10	-1	-6%	0.20
3177	4212: ATC D28 Ford Road S-N	8	10	2	29%	0.78
3178	4213: ATC D28 Ford Road N-S	11	14	3	23%	0.73
3179	4064: MCTC D28 Lucas Green Road S-N	41	90	49	118%	6.01
3182	4814: ATC A326 Guildford Road S-N	717	565	-152	-21%	6.01
3185	4063: MCTC D28 Lucas Green Road S-N	63	90	27	42%	3.04
3186	4062: MCTC D28 Lucas Green Road N-S	82	153	71	87%	6.57
3187	4810: ATC A322 Guildford Road S-N	961	783	-178	-19%	6.03
3188	4811: ATC A323 Guildford Road N-S	797	695	-102	-13%	3.73
3189	4812: ATC A324 Guildford Road S-N	906	803	-103	-11%	3.54
3191	2963: MCTC C11 Fellow Green W-E	171	204	33	19%	2.38
3193	2962: MCTC C11 Beldam Bridge Road W-E	136	225	89	65%	6.61
3194	2961: MCTC C11 Beldam Bridge Road E-W	306	481	175	57%	8.84
3198	3845: MCTC C4 Lightwater Road N-S	236	217	-19	-8%	1.27
3199	3847: MCTC B311 Red Road E-W	883	919	36	4%	1.21
3203	2711: MCTC A319 High Street N-S	871	769	-102	-12%	3.55
3204	2710: MCTC A319 High Street S-N	744	676	-68	-9%	2.53
3225	3580: MCC D3682 Holly Bank Road N-S	62	82	20	32%	2.32
3226	3579: MCC D3682 Holly Bank Road S-N	77	111	34	44%	3.53
3227	4302: ATC B380 Smarts Heath Road E-W	318	359	41	13%	2.23
3228	4301: ATC B380 Smarts Heath Road W-E	207	202	-5	-3%	0.37
3229	1861: RT ATC A320 Egley Road S-N	596	603	7	1%	0.29
3230	1860: RT ATC A320 Egley Road N-S	705	748	43	6%	1.61
3235	3049: MCTC D3615 Warwick Lane S-N	6	0	-6	-100%	3.46
3236	3050: MCTC D3615 Warwick Lane N-S	10	0	-10	-100%	4.47
3237	3047: MCTC C141 St Johns Hill Road E-W	330	337	7	2%	0.40
3238	3048: MCTC C141 St Johns Hill Road W-E	273	264	-9	-3%	0.54
3239	3051: MCTC C141 St Johns Road W-E	406	368	-38	-9%	1.93
3240	3052: MCTC C141 St Johns Road E-W	534	508	-26	-5%	1.13
3241	1601: ATC C141 St Johns Hill Road Bridge E-W	375	337	-38	-10%	2.00
3243	3072: MCTC C141 Wych Hill E-W	503	470	-33	-7%	1.50
3245	3738: MCC D3687 Blackbridge Road N-S	54	100	46	86%	5.28
3253	3066: MCTC C142 Triggs Lane S-N	514	571	57	11%	2.46
3254	3065: MCTC C142 Triggs Lane N-S	843	750	-93	-11%	3.29
3255	3070: MCTC C141 Wych Hill Lane W-E	898	902	4	0%	0.14
3256	3069: MCTC C141 Wych Hill Lane E-W	794	966	172	22%	5.81
3257	3786: MCTC A324 Lockfield Drive W-E	559	510	-49	-9%	2.10
3258	3787: MCTC A324 Lockfield Drive E-W	1011	1016	5	0%	0.15
3259	3785: MCTC A324 Lockfield Drive W-E	443	378	-65	-15%	3.20
3261	3782: MCTC D3637 Athurs Bridge Road N-S	303	285	-18	-6%	1.04
3262	3783: MCTC D3637 Athurs Bridge Road S-N	151	189	38	25%	2.94
3263	2026: ATC A3046 Chobham Road E-W	617	571	-46	-7%	1.90
3264	2025: ATC A3046 Chobham Road W-E	806	843	37	5%	1.28
3266	2849: MCTC C8 Mincing Lane S-N	89	50	-39	-44%	4.68
3267	2853: MCTC A319 Chertsey Road E-W	520	504	-16	-3%	0.70
3269	2851: MCTC A319 Chertsey Road W-E	310	285	-25	-8%	1.42
3270	2850: MCTC A319 Chertsey Road E-W	579	554	-25	-4%	1.04
3305	3452: MCC A322 Bagshot By-Pass S-N	2408	2239	-169	-7%	3.51
3307	3479: MCC A322 Lightwater By-Pass E-W	993	899	-94	-10%	3.07
3309	2205: TRADS M3 M3 J3 westbound exit E-W	829	884	55	7%	1.87

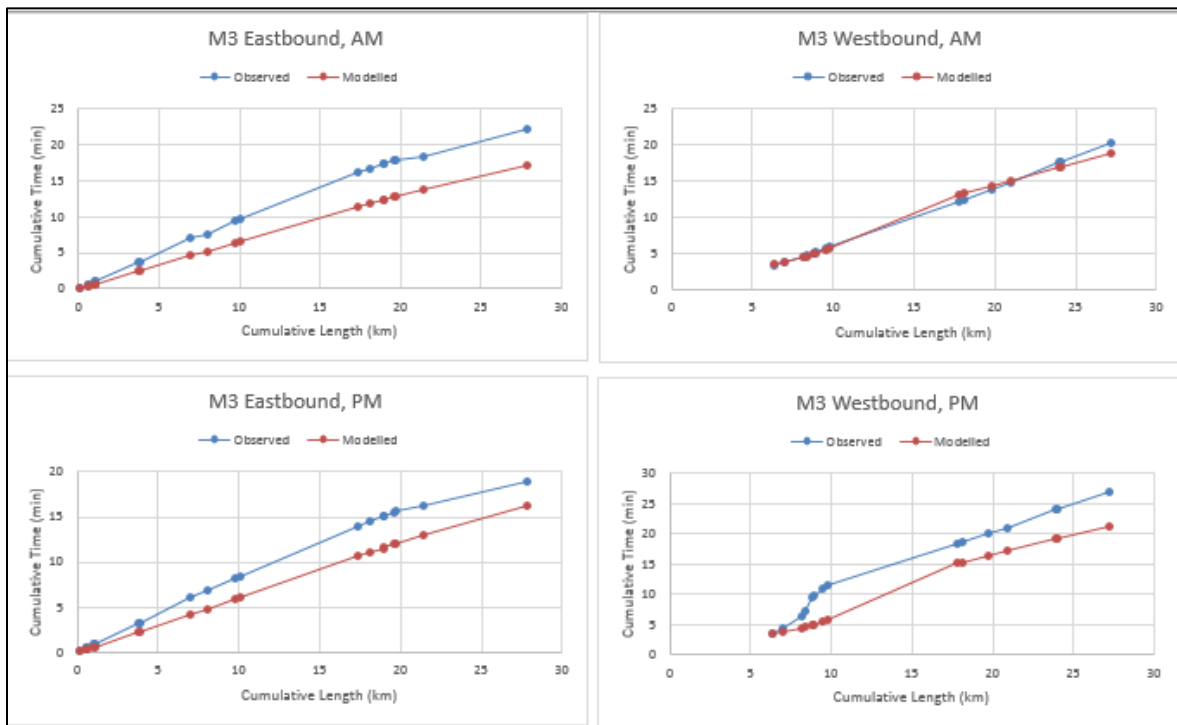
Count No.	Name	PM Peak (17-18) Obs TOTAL	PM Peak (17-18) Mod TOTAL	Diff	% Diff	GEH
3311	Site 1 on screenline: Bus Lightwater North Inbound	547	653	106	19%	4.33
3313	3476: MCC A322 Bracknell Road S-N	3017	2811	-206	-7%	3.81
3314	3477: MCC A322 Bracknell Road N-S	2535	2355	-180	-7%	3.65
3316	3492: MCC A322 Bracknell Road N-S	2466	2355	-111	-5%	2.27
3319	2090: ATC B3020 Sunninghill Road N-S	441	483	42	10%	1.97
3320	Site 2 on screenline: Bus Lightwater North Outbound	339	488	149	44%	7.33
3326	3896: MCTC C4 Thorndown Lane S-N	175	284	109	62%	7.21
3327	3895: MCTC C4 Thorndown Lane N-S	515	397	-118	-23%	5.55
3328	4626: MCTC B386 Updown Hill W-E	243	228	-15	-6%	0.97
3329	4627: MCTC B386 Updown Hill E-W	486	536	50	10%	2.21
3331	4625: MCTC B386 Updown Hill N-S	267	229	-38	-14%	2.40
3333	3890: MCTC B386 Updown Hill S-N	170	230	60	35%	4.26
3334	4623: MCTC B386 Chertsey Road W-E	209	146	-63	-30%	4.76
3335	4622: MCTC B386 Chertsey Road E-W	586	382	-204	-35%	9.25
3338	3443: MCC M3 J2 - J3 E-W	5088	5375	287	6%	3.97
3339	4611: MCTC C3 Church Road S-N	117	242	125	107%	9.33
3340	4610: MCTC C3 Church Road N-S	257	397	140	55%	7.75
3341	4632: MCTC B386 School Road W-E	314	362	48	15%	2.62
3345	3616: MCC D533 Heathpark Drive S-N	37	99	62	169%	7.56
3346	3617: MCC D533 Heathpark Drive N-S	95	99	4	4%	0.41
3347	2019: ATC A329 Blacknest Road W-E	553	587	34	6%	1.43
3348	2020: ATC A329 Blacknest Road E-W	666	536	-130	-20%	5.30
3349	1910: ATC A30 London Road S-N	378	337	-41	-11%	2.17
3350	1909: ATC A30 London Road N-S	619	559	-60	-10%	2.46
3353	2052: ATC B386 Longcross Road E-W	549	516	-33	-6%	1.43
3355	3323: MCC D3017 Kitsmead Lane S-N	84	69	-15	-18%	1.69
3357	3330: MCC D4045 Accommodation Road N-S	132	92	-40	-30%	3.79
3358	3329: MCC D4045 Accommodation Road S-N	108	59	-49	-45%	5.35
3360	3328: MCC D3918 Wellington Avenue N-S	494	543	49	10%	2.17
3361	3321: MCC C10 Trumps Green Road S-N	155	158	3	2%	0.22
3362	3322: MCC C10 Trumps Green Road N-S	347	369	22	6%	1.18
3367	4323: ATC B389 Christchurch Road E-W	608	714	106	17%	4.10
3368	4324: ATC B389 Christchurch Road W-E	459	449	-10	-2%	0.49
3369	4326: ATC B389 Christchurch Road W-E	470	449	-21	-5%	1.00
3370	4325: ATC B389 Christchurch Road E-W	620	714	94	15%	3.62
3547	4922: ATC D3192 Callow Hill S - N	348	334	-14	-4%	0.76
3548	4923: ATC D3192 Callow Hill N - S	631	598	-33	-5%	1.34
3575	2354: TRADS M25 M25 J12 anti-clockwise access N-S	2281	421	-1860	-82%	50.61
3576	9013: ASS* M25 CW J10 - J11	6140	6095	-45	-1%	0.57
3577	9021: ASS* M25 AC J11 - J10	6894	6305	-589	-9%	7.26
3578	9015: ASS* M25 CW J11 - J12	6638	6381	-257	-4%	3.18
3579	9007: ASS* M3 EB J2 - J1	2695	2643	-52	-2%	1.02
3580	9009: ASS* M3 WB Within J2	1589	1552	-37	-2%	0.94
3581	9016: ASS* M25 CW Within J12	4507	4102	-405	-9%	6.17
3582	9019: ASS* M25 AC Within J12	4343	4141	-202	-5%	3.10
3583	9006: ASS* M3 EB Within J2	1548	1493	-55	-4%	1.41
3584	9008: ASS* M3 WB J1 - J2	2868	2720	-148	-5%	2.80
3585	9002: ASS* M3 EB Within J4	3198	3467	269	8%	4.66
3586	9003: ASS* M3 EB J4 - J3	4561	4737	176	4%	2.58
3587	9011: ASS* M3 WB Within J4	3526	3563	37	1%	0.63
3588	9005: ASS* M3 EB J3 - J2	4531	4900	369	8%	5.38

5.3 Journey Time Validation Route Comparison Graphs









5.4 SINTRAM72 Latent Demand

Table 5-1 Latent Demand by Scenario - All Time Hours and Modes for SINTRAM ISA

Sum of Future Productions	Scenario 1	Scenario 2
home_education	600,550	600,873
home_empbusiness	107,381	107,428
home_other	873,698	873,490
home_shop	720,426	720,260
home_visit	413,068	413,050
home_work	1,017,494	1,017,949
NHBEB	191,148	191,157
NHBO	915,565	915,682
Grand Total	4,839,330	4,839,889

Table 5-2 Percentage Growth by Trip Purpose Relative to Scenario S1

Sum of Future Productions	Scenario 1	Scenario 2
home_education	100.00%	100.05%
home_empbusiness	100.00%	100.04%
home_other	100.00%	99.98%
home_shop	100.00%	99.98%
home_visit	100.00%	100.00%
home_work	100.00%	100.04%
NHBEB	100.00%	100.00%
NHBO	100.00%	100.01%
Grand Total	100.00%	100.01%

Table 5-3 Non-Incremental Changes for Scenarios 1 and 2– All Modes and Time Hours

Sum of Scenario Trips	Scenario 1	Scenario 2
Zone 673: Longcross Railway Station		
Active	93	93
Car_User	990	990
Zone 811: Princess Royal Barracks		
Active	203	203
Car_User	680	680
Zone 1600: Longcross South		
Active	201	201
Car_User	708	708
Zone 802: Camberley Station Car Park		
Car_User	-	128
Zone 806: Camberley Town Centre		
Car_User	-	206
Zone 812: Heathpark Wood		
Car_User	-	27
Zone 813: West End Reserve Sites		
Car_User	-	58
Zone 815: Water's Edge		
Car_User	-	30
Grand Total	2875	3324

5.5 Local Model Vehicle Demand

Table 5-4 Car Matrix Trip Numbers per Time Hour and Scenario

Scenario	AM Peak Hour (0800 – 0900)			PM Peak Hour (1700 – 1800)		
	Vehicles per Hour	Difference from S1	% Diff	Vehicles per Hour	Difference from S1	% Diff
1	144,054	-	-	130,838	-	-
2	144,288	234	0.20%	130,638	-200	-0.20%

5.5.1 Figure 5-1 shows the changes in AM car trip productions and attractions, between Scenario 1 and Scenario 2. The PM values are not shown but follow similar patterns.

Figure 5-1 AM Peak Hour Car Trip Ends: S1 v S2

