SURREY
COUNTY COUNCIL
Transport for Surrey

TRANSPORT EVALUATION FOR SURREY HEATH BOROUGH COUNCIL'S CORE STRATEGY

2026 Transport Assessment

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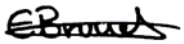
Sign 

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Amendment List

Iss. / Rev.	Iss. / Rev Date	Remove		Insert	
		Page	Iss. / Rev.	Page	Iss. / Rev.
2	17/09/10				SHBC comments comparing C to A
3 Final	22/10/10				HA comments

CONTENTS

EXECUTIVE SUMMARY

Surrey County Council (SCC) is assisting Surrey Heath Borough Council (SHBC) with the development of their Local Development Framework (LDF). SHBC needs to consider the impact that their proposed development strategy will have on the highway network within the borough.

The key objective of this evaluation is to provide an assessment of the transport impact from future development and the sensitivity of the highway network with regard to traffic distribution from the proposed development.

The model used for the evaluation was SCC's County model SINTRAM, using the transport modelling software OmniTRANS. SINTRAM is a strategic traffic model that covers the key road network in Surrey. The County model makes use of three vehicle types: Cars, Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs) and at present only assesses the AM peak hour (0800 – 0900). The base year of the model is 2005 and the future forecast year is 2026.

SHBC provided SCC with planning data that is proposed to occur in the borough between 2005 and 2026. The data was provided in accordance with the model zoning system and consisted of two categories of development: commercial and residential, from this data two scenarios were created,

- 2026 Scenario A consisted only of commercial and residential developments that have been approved by planning permission,

- 2026 Scenario B consisted of all commercial and residential developments irrespective of whether they have received planning permission or not.

In addition to the two forecast scenarios A and B it was thought appropriate for (SHBC) to consider two additional scenarios.

- 2026 Scenarios C consisted of Scenario B plus the inclusion of the Princess Royal Barracks (PRB) development site.

- 2026 Scenario D consisted of Scenario C plus the inclusion of the Defence Evaluation and Research Agency (DERA) development in the neighbouring borough of Runnymede

Even though the DERA development is not located within the borough of Surrey Heath, it was thought necessary to evaluate any possible cross-borough boundary impacts of the proposed development.

The number of trips projected to be generated from all developments stated in SHBC's planning data was calculated using the Trip Rate Information Computer System (TRICS) database.

In addition to the four test scenarios A, B, C and D two other reference scenarios were incorporated. Firstly a 2005 base year scenario was used to reflect the road network at the present time. Secondly a 2026 Do-Minimum scenario was created to act as a reference case to the four test scenarios. The 2026 Do-Minimum scenario incorporates background growth (e.g. changes in demographics and car ownership) between 2005 and 2026 for the Surrey Heath borough trips, but all other external trips grow at rates as forecast by the Department for Transport's (DfT) Trip End Model Presentation Programme (TEMPRO) database.

Two networks were used in the modelling process, a 2005 and 2026 network. The 2005 network reflects the road network in its current state. The 2026 network is the same as the 2005 but includes the Highways Agency's Hindhead Improvement Scheme. The Hindhead Scheme is due to open to traffic in 2011, and inclusion of this scheme in the assessment will produce a more robust and representative analysis of future traffic conditions.

The total number of estimated additional departures in Surrey Heath for each scenario is shown below in Table 1: (The differences represent the difference in the total number of departures and arrivals compared to Scenario A which already has planning permission

	Additional Departures	**Additional Arrivals**	**Difference in Departures**	**Difference in Arrivals**
2026 Scenario A	551	966		
2026 Scenario B	992	1,250	+441	+284
2026 Scenario C	1,736	1,448	+1185	+482
2026 Scenario D	2,853	1,617	+2,302	+651

Table 1: Additional departure and arrival trips by scenario

Tables 2 and 3 display the estimated changes in summary statistics for total non-motorway and motorway traffic flows in Surrey Heath in the AM peak hour (0800 – 0900). The tables shows the summary statistics of the traffic impacts between SHBC's proposed LDF Core Strategy Option Scenario C and Scenario A commercial and residential developments that have already been approved with planning permission.

Key Statistics	**2026 Scenario C-A**
Total Vehicle Kilometrage (Veh Kms)	+11,972 (+5.1%)
Total Link Travel Time (Veh Hrs)	+349 (+7.7%)
Total Junction Delay (Veh Hrs)	+82 (+3.3%)
Total Network Travel Time (Veh Hrs)	+432 (+6.1%)
Average Speed (Km/hrs)	-1.1 (-1.8%)

Table 2: Changes in non-motorway summary statistics

Key Statistics	2026 Scenario C-A
Total Vehicle Kilometrage (Veh Kms)	+727 (+0.4%)
Total Link Travel Time (Veh Hrs)	+10 (+0.6%)
Average Speed (Km/hrs)	0

Table 3: Changes in motorway summary statistics

Scenario C has the greatest impacts on the local traffic flows in Surrey Heath, when compared to all other scenarios. The distinct areas in the borough of Surrey Heath that are projected to be affected most by the additional trips generated from the proposed commercial and residential developments is York Town, Bagshot and Deepcut & Mytchett. All of these zones are subject to receiving a large proportion of additional trips generated from the proposed developments. Specifically the A322 Bracknell Road corridor that passes through the M3 Junction 3 is the area to feel the largest impacts of increased traffic flow and delay. The area surrounding the PRB development in Deepcut & Mytchett, specifically the B3015 Deepcut Bridge Road, could also be impacted by increased flow and delay due to the proposed PRB development in Scenario C.

From a strategic viewpoint it is unlikely that the traffic impacts produced from Scenario C are significant enough to cause major disruption or require significant highway infrastructure improvement measures on the road network in the borough of Surrey Heath, but it is likely that local junctions and surrounding links will be affected as new developments come forward.

This assessment concentrates on the impacts within the borough of Surrey Heath. Therefore the evaluation is based solely on the projected amount of additional trips to be generated from SHBC's planning data between 2005 and 2026, and the traffic impacts produced from these additional trips are only analysed in the borough of Surrey Heath.

Mitigation methods that may be implemented in the future have not been incorporated into the evaluation. Subsequently all projected traffic impacts referred to in the analysis of the transport evaluation could potentially act as worst-case scenarios.

1 INTRODUCTION

1.1.1 Surrey Heath Borough Council (SHBC) is in the process of developing their Local Development Framework (LDF). As part of the LDF and to inform the Core Strategy, SHBC need to present and consult on their preferred options for development in the borough. One of the aspects that needs to be considered when developing their preferred options is the impact the development strategy will have on movement and transport. In March 2010, SHBC commissioned Surrey County Council's (SCC) Transport Studies Team to evaluate the transport implications for the future developments identified in the Core Strategy.

1.1.2 SCC is working in partnership with SHBC, assisting with the development of their LDF. This assistance includes the provision of technical expertise to ensure that the resulting LDF will pass the "test of soundness" and meet SCC policies and objectives.

1.1.3 The main aims of the evaluation are to:

- Determine the sensitivity of the highway network to the distribution of development within the borough;
- Provide a general assessment of the transport impact from future development within Surrey Heath for the forecast year of 2026.

1.1.4 This report considers the impacts of the LDF between 2005 and 2026.

1.2 Objectives

1.2.1 The main objectives of the evaluation were to:

- Identify the locations and estimates of additional commercial and residential development in the borough;
- Calculate the distribution of vehicle trips resulting from the additional development;
- Prepare a 2026 traffic forecast based on these developments;
- Compare the resulting 2026 traffic forecast for each development scenario against a suitable reference;
- Report the main traffic impacts and conclusions arising.

1.3 Scope

1.3.1 The study will use the existing County model (SINTRAM) and OmniTRANS transport modelling software. SINTRAM is currently an AM peak hour model, and study will be based on this time period. The model base year is 2005, and the future forecast year is 2026.

1.3.2 For comparison purposes a Do-Minimum scenario was developed as a reference. This is described later in *paragraph 4.1.3.* Two networks were used in the modelling process: a 2005 network and a 2026 network. The 2005 base network replicates the road network in its current state, whereas the 2026 network is the same as the 2005 but includes the Highways Agency's Hindhead Improvement Scheme in the borough of Waverley, which is currently under construction. There is no other committed highway schemes in the area so the Hindhead Scheme is the

only highway alteration involved in the forecasting. Forecasts based on SHBC scenarios are developed using traffic generation rates derived from the TRICS database in conjunction with the County's transport model (SINTRAM).

1.4 Report Structure

1.4.1 This document describes both the methodology and transport evaluation. It has been split into the main tasks as listed below:

Section 2: A description of the model and its constraints;
Section 3: The estimation of trip rates for the proposed developments and scenarios;
Section 4: The development and summary results of the 2026 forecast year trip matrices used in the model;
Section 5: The detailed results and network analysis of the model;
Section 6: Main conclusions and summary of the evaluation.

2 MODEL DESCRIPTION

2.1 Context

2.1.1 The County model (SINTRAM Version 3.3/100811SH) was used to evaluate the development proposals. This is a strategic model that encapsulates the road network of Surrey and surrounding local authorities; at a national level the model incorporates all strategic roads within Great Britain.

2.1.2 All motorways, A and B roads together with some local roads are explicitly modelled within SINTRAM. Where traffic junctions and traffic signals are likely to have significant effects, the details of their general layout or the timing of the signals are also included in the modelling. However, strategic modelling uses aggregate descriptions of traffic such as flow, density and speed, and the relationships between them and hence does not include every road or junction. As a result the model is unable to answer detailed questions regarding traffic interactions, such as queuing and individual driver behaviour. It can, however, provide approximate answers to a wide range of transport problems (i.e. re-distribution effects), making it a reasonable tool for the initial transport assessment for Surrey Heath's Core Strategy at the area wide level.

2.2 Vehicle Types

2.2.1 Cars, Light Goods Vehicles (LGVs) and Heavy Goods Vehicles (HGVs) are separately represented in the model. Trips by public transport are not modelled.

2.3 Time Period

2.3.1 The evaluation was performed in the AM peak hour time period (0800 – 0900 hours).

2.4 Assignment Method

2.4.1 A fixed matrix equilibrium assignment was performed for 30 iterations using the Method of Successive Averages (MSA). This is an assignment using volume averaging with optional Burrell type perturbations. The assignment allocates given travel demand (a set of trips with fixed origins and destinations) on the travel network (roads and junctions) in order to obtain distribution of traffic flow. The resulting traffic flow represents the average conditions for the time period under study.

2.5 Zoning System

2.5.1 The Borough of Surrey Heath was split into multiple zones (16 in total) according to the zoning system of the traffic model (SINTRAM Version 3.3), to which the planning data was allocated. The zoning system of the County model is based on the national census output areas.

2.5.2 *Figure 2.1* shows the locations of the 16 modelled zones in the borough of Surrey Heath.

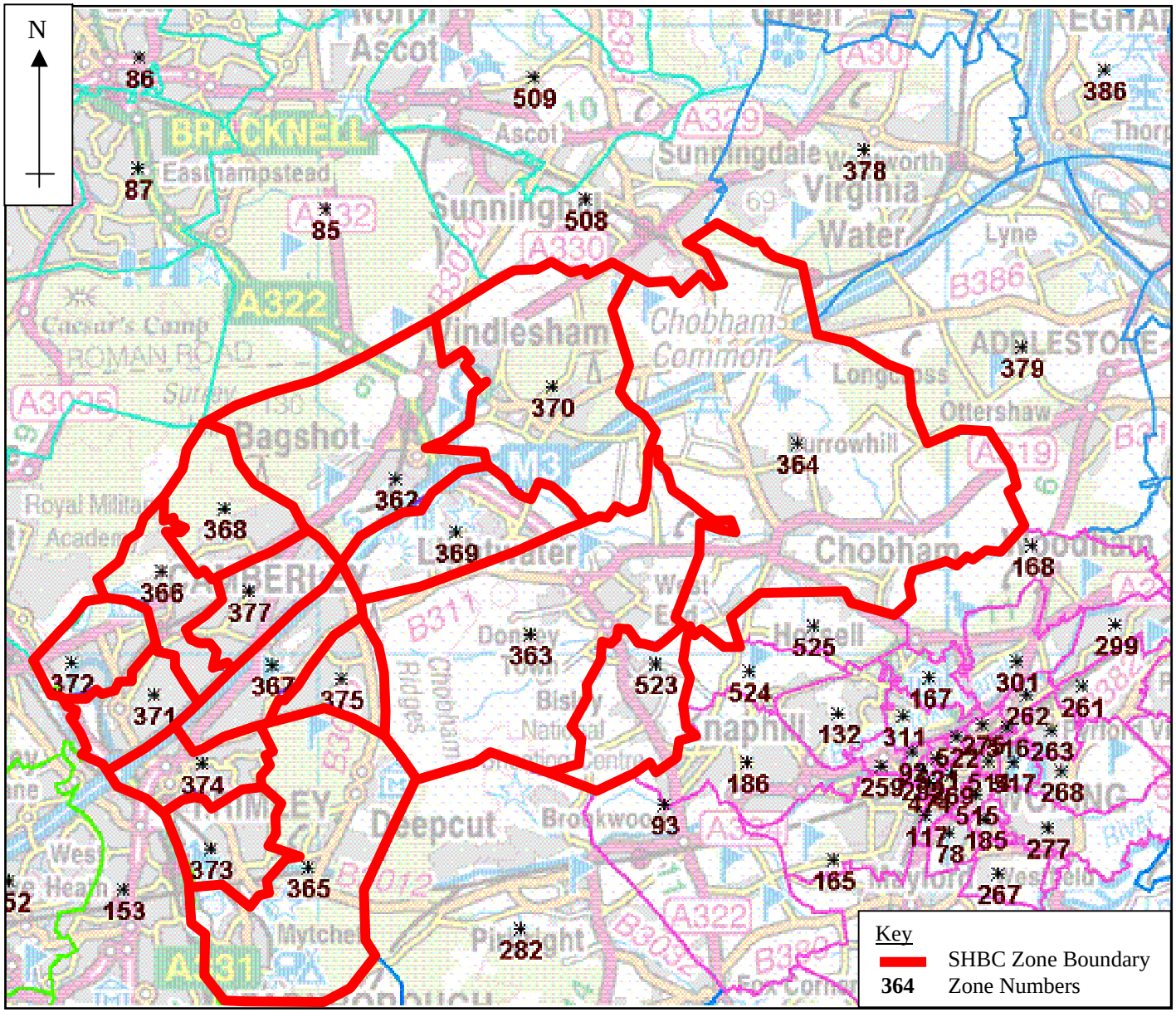


Figure 2.1: Surrey Heath borough zone plan

3 TRIP RATE EXTIMATES FOR INDIVIDUAL SITES

3.1 Data and Scenarios

3.1.1 Data concerning the permissions and allocations of commercial and residential developments from 2005 to 2026 in the borough of Surrey Heath was presented to SCC Transport Studies Team in July 2010. The data was received in the form of the Transport Studies Teams completed pro-forma, by email on 27th July 2010, from SHBC.

3.1.2 The planning data contained two key categories of development: commercial and residential. It reflects SHBC's expectations of development to occur between 2005 and 2026. See *Appendices A* and *B* for a summary of SHBC's commercial and residential planning data.

3.1.3 SHBC provided details of whether each development had been approved by planning permission or not. Status of planning permission affects the implications of developments because it is not possible to influence the developments that have received planning permission.

3.1.4 It was agreed between SCC and SHBC to test four scenarios:

- Scenario A refers only to the proposed developments between 2005 and 2026 that have been approved by planning permission.
- Scenario B includes all developments proposed to occur between 2005 and 2026, irrespective of whether they have received planning permission (i.e. approved and non-approved developments).
- Scenario C refers to the approved and non-approved developments plus the developments proposed to occur on the Princess Royal Barracks (PRB) site in Deepcut.
- Scenario D consists of the approved and non-approved developments, the PRB development and the Defence Evaluation and Research Agency (DERA) development in the neighbouring borough of Runnymede.

3.1.5 It was thought most appropriate to assess the proposed PRB development as a separate scenario due to the size and nature of the existing and proposed land uses. The existing land use is military and the proposed is a mix of residential and commercial land uses. SHBC provided information regarding the proposed development to consist of the following land uses: A1 – A5, B1a, D1 (primary school, crèche/nursery and health centre) and 1,200 residential dwellings. See *Appendices A* and *B* for the exact planning data concerning the PRB development. Scenario C in this transport assessment consists of approved and non-approved developments and the proposed PRB development.

3.1.6 Scenario D refers to the inclusion of the redevelopment of the former DERA site located at Longcross within the neighbouring borough of Runnymede. The DERA site is located on the western borough boundary of Runnymede and the eastern borough boundary of Surrey Heath. SCC has previously provided support to

Runnymede Borough Council (RBC) with their LDF and included the redevelopment of DERA as a separate scenario. Due to the DERA site being in such close proximity to the borough boundary of Surrey Heath it was thought appropriate to include it in SHBC's transport evaluation, ensuring that any potential borough cross-boundary traffic impacts are accounted for. The existing DERA development consists of 76,885m² of commercial gross floor area (GFA), whereas the proposed development shall consist of 68,810m² of commercial GFA and an additional 2,500 housing units. See *Appendices A* and *B* for the exact planning data concerning the DERA development. The planning data for the DERA development was provided by RBC and is exactly the same as what was used in the transport assessment for RBC.

3.1.7 The trip generation and modelling methodology for the PRB and DERA developments in this transport assessment was based on the planning data provided from SHBC and RBC at the time of the assessment being conducted and was calculated the same as any other development within the study area. The trip generation is consistent with those from the Runnymede Transport Assessment.

3.1.8 The only difference between Scenario A and Scenario B is the proportion of developments that have been approved and non-approved by planning permission. The difference between Scenario B and Scenario C is the inclusion of the PRB development, and the difference between Scenario C and Scenario D is the inclusion of the DERA development in Runnymede. Both the PRB and DERA development were non-approved by planning permission at the time of this assessment being conducted.

3.2 TRICS

3.2.1 Development trip rates have been obtained from the Trip Rate Information Computer System (TRICS) database, version 2009(b).

3.2.2 A trip rate refers to the amount of trips generated by a development. These include both trips that arrive and depart from a development.

3.2.3 The TRICS database stores information recorded from past surveys completed in the UK for a range of locations and land uses, counting the number of vehicular trips made to and from individual sites. The TRICS database allows users to select sites that are relevant and similar criteria to a site in question. This enables the estimation of trip rates to and from proposed developments based on past surveyed sites.

3.2.4 It should be noted that the TRICS database is a subjective tool. This is because personal choice and judgement plays a key role in decision making when choosing appropriate sites to compare with the existing and proposed developments.

3.3 TRICS Methodology

3.3.1 TRICS Good Practice Guide 2009 was followed for the interrogation of the database to determine comparative sites.

3.3.2 Trip rates produced from the TRICS database were calculated as a trip rate estimate per 100m² GFA for commercial developments, and per household for residential developments. Estimates were then applied to the relevant GFA or number of households for each development, by modelled zone.

3.3.3 Trip rate estimates were generated for both the existing and proposed developments using the TRICS database. Although an exception to this occurred in Scenario C with relation to the PRB development. The existing land use of the PRB site is military, and as such generates relatively unique trip patterns. To establish as realistic as possible existing trip rate estimates for the PRB site it was thought best to use a recent traffic survey instead of the TRICS database. Therefore the existing trip rate estimates for the PRB site were obtained from a survey conducted by Entec Ltd for the purpose of the report entitled *"Princess Royal Barracks, Deepcut Disposal, Transport Assessment, 23rd April 2010."* See *Appendix C* for a summary of this existing trip generation.

3.3.4 Three vehicle types are modelled within SINTRAM: Cars, LGVs and HGVs. Consequently vehicle proportions were calculated for these vehicle types from the corresponding surveys in the TRICS database.

3.3.5 Whilst different trip rates were generated for each category of development and for each land use, trip rates also needed to be extracted to appropriate corresponding TRICS locations. The TRICS database classifies all surveys conducted at a development as one of the following TRICS locations: town centre; edge of town centre; neighbourhood centre; suburban area; edge of town and free standing. See *Appendix D* for the TRICS definitions of each location.

3.3.6 The methodology for assigning a TRICS location to each development differed between the approved and non-approved developments. The developments approved by planning permission provided addresses for each development, allowing a TRICS location to be assigned accurately. However, the developments non-approved by planning permission did not provide addresses so it was necessary to award and proportion TRICS locations to entire zones of the borough of Surrey Heath. *Table 3.1* shows the TRICS locations awarded to the zones of Surrey Heath.

Zone No.	Zone Name	TRICS Location	Comments
362	Bagshot	50% Edge of Town 40% Neighbourhood Centre 10% Edge of Town Centre	Northern half of the zone (north of the A30) is rural and contains few developments. Covers Bagshot Heath. Land between the A30 and M3 is relatively urban but the main land use is residential, served by local schools. A small proportion of the zone surrounds the centre of Bagshot and Bagshot train station.
363	Westend	70% Edge of Town 30% Neighbourhood Centre	Large proportion of the zone (west of the A322), covers Westend Common (army ranges). Very sparse open land with few developments. The residential area of West End surrounds the A322 and A319.
364	Chobham	80% Edge of Town 20% Neighbourhood Centre	The majority of the zone is rural land. In the north of the zone (north of the M3) is Chobham Common and Sunningdale golf course. Central and to the south of zone are the two main residential areas of Burrowhill and Chobham, with local services of schools etc.
365	Deepcut & Mytchett	60% Suburban Area 40% Neighbourhood Centre	Majority of the zone (on the eastern zone boundary) covers the Deepcut development for army training and residential barracks. The residential area of Frimley Green is in the west of the zone. Local schools and recreation facilities serve this area.
366	Camberley	30%Town Centre 40% Neighbourhood Centre 30% Suburban Area	Central to the zone is Camberley town centre and Camberley train station. South of the railway line is predominantly residential land with recreation and education facilities. North of the A30 covers part of the Sandhurst Royal Military Academy. Land uses in the north of the zone are diverse.
367	Camberley Heath	100% Neighbourhood Centre	Main land use of this zone is residential development. Camberley Heath golf course and multiple schools are also located in this zone.
368	Collingwood College	50% Neighbourhood Centre 50% Edge of Town	In the south of the zone the land use is predominantly residential. Collingwood college is also located within this area. The northern half of the zone (on the boroughs northern boundary) is rural and covered by common/heath land with few developments.
369	Lightwater	60% Neighbourhood Centre 40% Suburban Area	In the east and centre of the zone the prominent land use is residential, Lightwater. The west of the zone and far east contains a mix of development i.e. recreation land, farmland and MOD testing areas.
370	Windlesham	80% Suburban Area 20% Edge of Town	The majority of the zone contains a mix of land uses e.g. residential, recreational, golf courses and businesses. Northern and southern areas of the zone are very rural containing few developments. The south of the zone, below the M25, is very rural.
371	Riverside & Watchetts	30% Suburban Area 70% Neighbourhood Centre	Riverside Park and other industrial/business land uses are located in the west of the zone, as well as a supermarket and recreation areas. The rest of the zone contains mainly residential developments supported by local schools and recreation grounds.
372	York Town	50% Neighbourhood Centre 50% Suburban Area	The half of the zone east of the B3411 is mainly a residential area containing a few schools. Half of the zone west of the B3411 contains industrial estates/business parks, e.g. York Town Industrial Estate, Watchmoor Trade Centre.
373	Frimley Green	30% Suburban Area 70% Neighbourhood Centre	Land west of the B3411 contains a mix of land uses e.g. industrial land uses are apparent, but set within a relatively rural and sparse land.. The remainder of the zone contains residential development (Frimley Green) and local recreation and sports centres as well as schools.
374	Frimley & Frimley Hospital	30% Suburban Area 70% Neighbourhood Centre	The north-west of the zone (north of the A325) contains a large area of industrial buildings and Frimley Park Hospital. A large proportion of the zone contains residential developments and Frimley train station
375	Frimley Ridge & Heatherside	100% Neighbourhood Centre	The entire zone is covered by residential development.
377	Crawley Ridge	100% Neighbourhood Centre	The entire zone is covered by residential development.
523	Bisley	40% Neighbourhood Centre 60% Edge of Town	Central to the zone is the residential area of Bisley. Recreation grounds and other local services provide for this area. Perimeter of the zone is predominantly rural but contains few developments and industries.

Table 3.1: Zones within the Borough of Surrey Heath classified and proportioned to TRICS locations

3.4 Additional Trips per Zone

3.4.1 *Tables 3.2* to *3.6* show the estimated number of additional departures and arrivals generated from the proposed development by zone during the AM peak hour (0800 – 0900) for Scenario A (approved development only), Scenario B (approved and non-approved development), Scenario C (approved and non-approved development plus the PRB site) and Scenario D (approved and non-approved development plus the PRB and DERA site). A base year of 2005 and a forecast year of 2026 were used.

3.4.2 The estimated number of additional trips in Surrey Heath are

Scenario	*Additional Departures*	*Additional Arrivals*
A	551	966
B	992	1,250
C	1,736	1,448
D	2,853	1,617

3.4.3 It should be noted that where developments are mixed between commercial and residential land uses and when it was not possible to split the additional trips between these two categories, the development was classified as either residential or commercial based on which land use generated the largest amount of additional trips. An example of this is the PRB development in Scenario C that is proposed to consist of both commercial and residential land uses. For the purpose of this assessment the PRB site was classified as a residential development as this generates the largest amount of additional trips.

3.4.4 *Table 3.2* presents the proportion of commercial and residential additional trips by scenario.

Development Type	**Proportion of Trips**		
	Departures	**Arrivals**	**Both Departures & Arrivals**
Scenario A 2005 - 2026			
Commercial	52%	106%	86%
Residential	48%	-6%	14%
Total	*100%*	*100%*	*100%*
Scenario B 2005 - 2026			
Commercial	29%	92%	64%
Residential	71%	8%	36%
Total	*100%*	*100%*	*100%*
Scenario C 2005 - 2026			
Commercial	17%	79%	45%
Residential	83%	21%	55%
Total	*100%*	*100%*	*100%*
Scenario D 2005 - 2026			
Commercial	11%	62%	29%
Residential	89%	38%	71%
Total	*100%*	*100%*	*100%*

Table 3.2: Proportion of additional trips by development type and scenario

3.4.5 The negative value in *Table 3.2* is due to changes in land use between the existing and proposed developments, resulting in an overall reduction in arrival trips being

generated from residential developments in Scenario A. However, the overall arrivals total for this scenario becomes positive when summed with the commercial arrival trips. This table illustrates that trips generated from both commercial and residential land uses are present in all scenarios.

3.4.6 The only difference between *Tables 3.4* (Scenario B) and *3.5* (Scenario C) is in zone 365 Deepcut & Mytchett, relating to the inclusion of the PRB development in Scenario C. The inclusion of the DERA development is the only difference between *Tables 3.5* (Scenario C) and *3.6* (Scenario D) which relates to the two Runnymede zones of 378 Virginia Water and 379 Ottershaw.

3.4.7 It is important to remember that the rows highlighted in grey in *Tables 3.3* to *3.6* relate to the two zones that are not within the borough of Surrey Heath but belong to the neighbouring borough of Runnymede. These zones have been included due to the DERA development being incorporated in Scenario D and the development being contained in the Runnymede zones of 378 Virginia Water and 379 Ottershaw.

Zone No.	Zone Name	Total Additional Trips							
		Additional Departures				Additional Arrivals			
		Total	**Car**	**LGV**	**HGV**	**Total**	**Car**	**LGV**	**HGV**
362	Bagshot	85.3	77.8	6.3	1.1	23.8	20.5	2.5	0.8
363	Westend	2.5	2.2	0.2	0.1	2.2	1.6	0.3	0.3
364	Chobham	11.5	10.2	0.9	0.5	7.5	6.3	0.7	0.6
365	Deepcut & Mytchett	5.8	5.1	0.5	0.2	13.9	11.0	1.9	1.0
366	Camberley	42.4	36.7	3.8	1.9	-9.8	-10.8	0.0	1.1
367	Camberley Heath	11.0	10.1	0.8	0.1	2.8	2.6	0.2	0.0
368	Collingwood College	36.5	33.6	2.5	0.4	25.3	23.6	1.4	0.3
369	Lightwater	9.9	9.1	0.7	0.1	-5.6	-5.3	-0.3	0.0
370	Windlesham	1.9	2.0	0.1	-0.2	5.4	4.5	0.5	0.4
371	Riverside & Watchetts	4.6	4.5	0.1	-0.1	138.6	105.8	21.3	11.5
372	York Town	263.4	206.6	33.4	23.3	622.2	477.5	83.5	61.2
373	Frimley Green	18.5	17.0	1.3	0.2	-1.2	-1.1	-0.1	0.0
374	Frimley & Frimley Hospital	35.8	31.5	3.6	0.6	147.6	125.3	18.7	3.6
375	Frimley Ridge & Heatherside	5.3	4.9	0.4	0.1	1.9	1.8	0.1	0.0
377	Crawley Ridge	12.8	11.8	0.9	0.2	-0.2	-0.2	0.0	0.0
378	Virginia Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
379	Ottershaw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
523	Bisley	3.7	3.4	0.3	0.0	-8.1	-7.4	-0.6	-0.1
		551	**467**	**56**	**28**	**966**	**756**	**130**	**81**

Table 3.3: Estimated additional departures and arrivals in the AM peak hour (0800 – 0900) in Scenario A for 2005 to 2026 by vehicle type

Zone No.	Zone Name	Total Additional Trips							
		Additional Departures				Additional Arrivals			
		Total	Car	LGV	HGV	Total	Car	LGV	HGV
362	Bagshot	202.4	185.6	14.5	2.3	63.5	57.0	5.3	1.2
363	Westend	13.5	12.3	1.0	0.2	5.6	4.7	0.5	0.3
364	Chobham	45.8	41.7	3.3	0.8	17.8	15.8	1.4	0.7
365	Deepcut & Mytchett	22.0	20.0	1.6	0.3	20.8	17.3	2.4	1.1
366	Camberley	59.6	52.5	5.0	2.1	112.5	97.1	12.6	2.8
367	Camberley Heath	33.2	30.5	2.3	0.3	11.8	10.9	0.8	0.1
368	Collingwood College	36.5	33.6	2.5	0.4	25.3	23.6	1.4	0.3
369	Lightwater	18.7	17.2	1.4	0.2	-1.9	-1.9	-0.1	0.0
370	Windlesham	12.5	11.8	0.8	-0.1	9.6	8.4	0.8	0.4
371	Riverside & Watchetts	90.8	83.9	6.2	0.8	174.5	138.8	23.8	11.9
372	York Town	320.0	258.8	37.4	23.9	646.1	499.5	85.1	61.5
373	Frimley Green	35.7	32.9	2.5	0.4	5.9	5.5	0.4	0.1
374	Frimley & Frimley Hospital	37.5	33.2	3.7	0.7	148.3	126.0	18.7	3.6
375	Frimley Ridge & Heatherside	9.5	8.7	0.7	0.1	3.6	3.3	0.3	0.0
377	Crawley Ridge	40.2	37.0	2.8	0.4	10.9	10.0	0.7	0.1
378	Virginia Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
379	Ottershaw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
523	Bisley	14.3	13.1	1.0	0.1	-4.7	-4.3	-0.3	0.0
		992	**873**	**86**	**33**	**1,250**	**1,012**	**154**	**84**

Table 3.4: Estimated additional departures and arrivals in the AM peak hour (0800 – 0900) in Scenario B for 2005 to 2026 by vehicle type

Zone No.	Zone Name	Total Additional Trips							
		Additional Departures				Additional Arrivals			
		Total	Car	LGV	HGV	Total	Car	LGV	HGV
362	Bagshot	202.4	185.6	14.5	2.3	63.5	57.0	5.3	1.2
363	Westend	13.5	12.3	1.0	0.2	5.6	4.7	0.5	0.3
364	Chobham	45.8	41.7	3.3	0.8	17.8	15.8	1.4	0.7
365	Deepcut & Mytchett	765.2	707.0	47.9	10.3	219.4	200.9	14.7	3.7
366	Camberley	59.6	52.5	5.0	2.1	112.5	97.1	12.6	2.8
367	Camberley Heath	33.2	30.5	2.3	0.3	11.8	10.9	0.8	0.1
368	Collingwood College	36.5	33.6	2.5	0.4	25.3	23.6	1.4	0.3
369	Lightwater	18.7	17.2	1.4	0.2	-1.9	-1.9	-0.1	0.0
370	Windlesham	12.5	11.8	0.8	-0.1	9.6	8.4	0.8	0.4
371	Riverside & Watchetts	90.8	83.9	6.2	0.8	174.5	138.8	23.8	11.9
372	York Town	320.0	258.8	37.4	23.9	646.1	499.5	85.1	61.5
373	Frimley Green	35.7	32.9	2.5	0.4	5.9	5.5	0.4	0.1
374	Frimley & Frimley Hospital	37.5	33.2	3.7	0.7	148.3	126.0	18.7	3.6
375	Frimley Ridge & Heatherside	9.5	8.7	0.7	0.1	3.6	3.3	0.3	0.0
377	Crawley Ridge	40.2	37.0	2.8	0.4	10.9	10.0	0.7	0.1
378	Virginia Water	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
379	Ottershaw	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
523	Bisley	14.3	13.1	1.0	0.1	-4.7	-4.3	-0.3	0.0
		1,736	**1,560**	**133**	**43**	**1,448**	**1,195**	**166**	**87**

Table 3.5: Estimated additional departures and arrivals in the AM peak hour (0800 – 0900) in Scenario C for 2005 to 2026 by vehicle type

Zone No.	Zone Name	Total Additional Trips							
		Additional Departures				Additional Arrivals			
		Total	Car	LGV	HGV	Total	Car	LGV	HGV
362	Bagshot	202.4	185.6	14.5	2.3	63.5	57.0	5.3	1.2
363	Westend	13.5	12.3	1.0	0.2	5.6	4.7	0.5	0.3
364	Chobham	45.8	41.7	3.3	0.8	17.8	15.8	1.4	0.7
365	Deepcut & Mytchett	765.2	707.0	47.9	10.3	219.4	200.9	14.7	3.7
366	Camberley	59.6	52.5	5.0	2.1	112.5	97.1	12.6	2.8
367	Camberley Heath	33.2	30.5	2.3	0.3	11.8	10.9	0.8	0.1
368	Collingwood College	36.5	33.6	2.5	0.4	25.3	23.6	1.4	0.3
369	Lightwater	18.7	17.2	1.4	0.2	-1.9	-1.9	-0.1	0.0
370	Windlesham	12.5	11.8	0.8	-0.1	9.6	8.4	0.8	0.4
371	Riverside & Watchetts	90.8	83.9	6.2	0.8	174.5	138.8	23.8	11.9
372	York Town	320.0	258.8	37.4	23.9	646.1	499.5	85.1	61.5
373	Frimley Green	35.7	32.9	2.5	0.4	5.9	5.5	0.4	0.1
374	Frimley & Frimley Hospital	37.5	33.2	3.7	0.7	148.3	126.0	18.7	3.6
375	Frimley Ridge & Heatherside	9.5	8.7	0.7	0.1	3.6	3.3	0.3	0.0
377	Crawley Ridge	40.2	37.0	2.8	0.4	10.9	10.0	0.7	0.1
378	Virginia Water	92.0	85.5	5.7	0.8	-126.8	-121.7	-4.5	-0.6
379	Ottershaw	1025.8	943.9	71.4	10.5	295.6	272.0	20.6	3.0
523	Bisley	14.3	13.1	1.0	0.1	-4.7	-4.3	-0.3	0.0
		2,853	**2,589**	**210**	**54**	**1,617**	**1,346**	**182**	**89**

Table 3.6: Estimated additional departures and arrivals in the AM peak hour (0800 – 0900) in Scenario D for 2005 to 2026 by vehicle type

3.4.8 *Figures 3.1* to *3.8* show the disposition of additional trips generated by SHBC's planning data for both commercial and residential developments for all zones within Surrey Heath. The additional trips are shown in percentage terms using pie charts. The areas of the pie charts are scaled to the zone containing the largest amount of additional trips. The plots are separated to show both departure and arrival trips. Separate plots are also provided for all four scenarios: 2026 Scenario A, B, C and D respectively.

3.4.9 *Figures 3.1* to *3.8* graphically display the information given in *Table 3.2* (proportion of arrivals and departures) on a zonal basis, for all zones within the borough of Surrey Heath. These plots are pictorial representations of the locations of where the additional trips generated by the planning data are to be located.

3.4.10 A strategic transport model operates on a zonal basis. Therefore it is not possible to allocate additional trips to specific links, but instead allocate trips to start or terminate to a central point within a zone. These central points are known as zone centroids (shown as asterisks along with the zone numbers in the figures), the zone centroids are connected to the modelled highway network via centroid connectors (light green links between the centroid and modelled network). Due to centroids being located in a central point in a zone, *Figures 3.1* to *3.8* show the pie for each zone located in a similar position to the centroid.

3.4.11 It should be noted that it was thought necessary to add an additional centroid connector for zone 365 Deepcut & Mytchett. This is due to the entire PRB development being contained within a single zone, zone 365. To make the strategic model representative an additional point for the traffic to access the network in this zone was added to allow the distribution of traffic to be more accurate. However it

is important to note that this additional centroid connector is only included in zone 365 in the scenarios where the PRB development is present, Scenarios C and D.

3.4.12 *Figures 3.1* to *3.4* indicate that in Scenario A and B, residential developments generally generate a larger amount of additional departure trips than additional arrival trips in the AM peak hour. However, commercial developments generally generate a larger amount of additional arrival trips than additional departure trips in the AM peak hour. In a few zones, 100% of arrival trips are generated by commercial developments, for instance this occurs in zones 372 York Town and 371 Riverside & Watchetts in Scenario A and in zones 372 York Town and 366 Camberley in Scenario B.

3.4.13 *Figures 3.5* and *3.6* display the disposition of additional trips generated by developments in Scenario C. *Figures 3.5* and *3.6 (Scenario C)* are almost identical to *Figures 3.3* and *3.4* (Scenario B) apart from an increase in both arrival and departure trips in zone 365 Deepcut & Mytchett. This increase in trips in zone 365 is purely related to the PRB development being incorporated in Scenario C. In Scenario C the largest amount of additional departure trips is generated from zone 365 i.e. the PRB development. Even though there is an increase in the additional amount of arrival trips in zone 365, it is not the zone with the largest amount of additional arrival trips in Scenario C, zone 372 York Town is.

3.4.14 The figures for Scenario D, *Figure 3.7* and *3.8*, are almost the same as Scenario C apart from additional trips being generated in the Runnymede zones, 378 Virginia Water and 379 Ottershaw, purely related to the DERA development. Zone 379 generates the largest amount of the departure trips in Scenario D and 100% of these trips are generated by residential developments.

3.4.15 The general trend shown by *Figures 3.1* to *3.8* is that residential developments generate the majority of additional departure trips and commercial developments generate the majority of additional arrival trips, in the AM peak hour. This trend is to be expected as most people depart (originate) from their place of residence in the AM peak hour and arrive (destined) at their place of work.

3.4.16 *Figures 3.1* to *3.8* indicate that in Scenario A and B the zone to generate the largest amount of additional departure and arrival trips is zone 372, York Town. In Scenario C the zones to generate the largest amount of additional departure and arrival trips is zones 372 York Town and 365 Deepcut & Mytchett. In Scenario D the zones generating the largest amount of additional departure and arrival trips is zone 379 Ottershaw (Runnymede Borough Council zone), 372 York Town and 365 Deepcut & Mytchett.

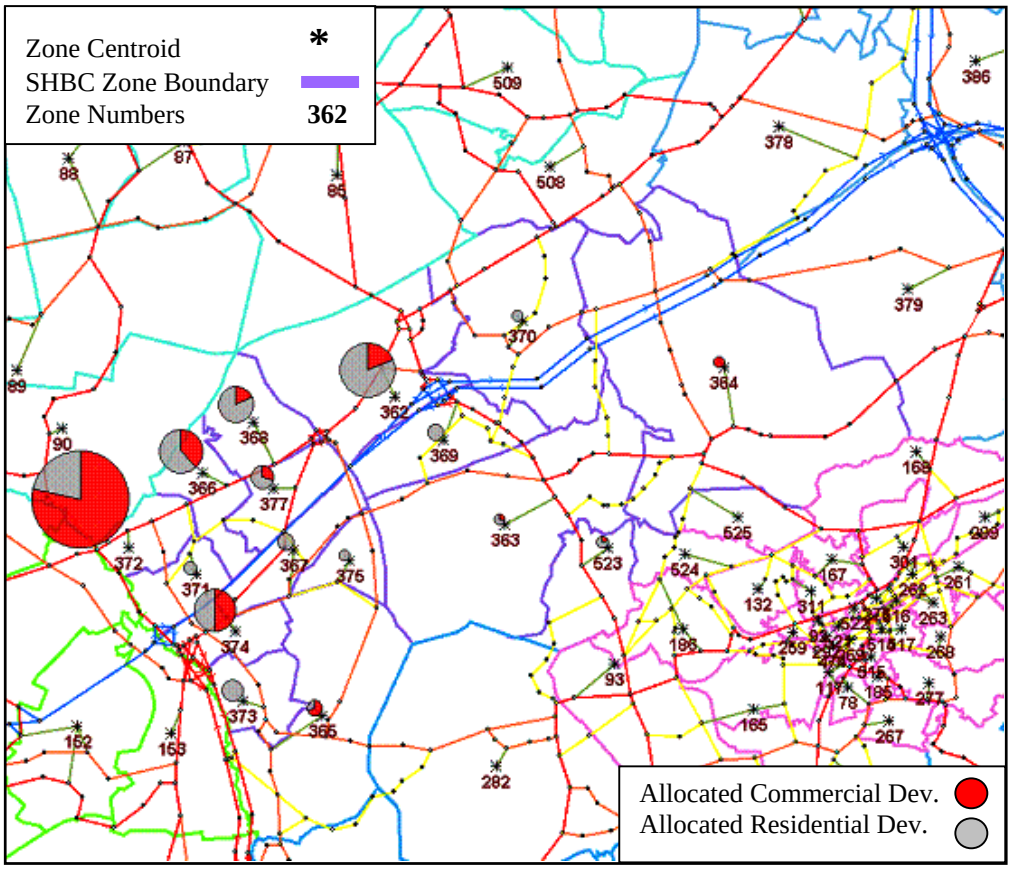


Figure 3.1: 2026 Scenario A disposition of development growth by departures *(see Para 3.4.8 onwards for explanation of figure)*

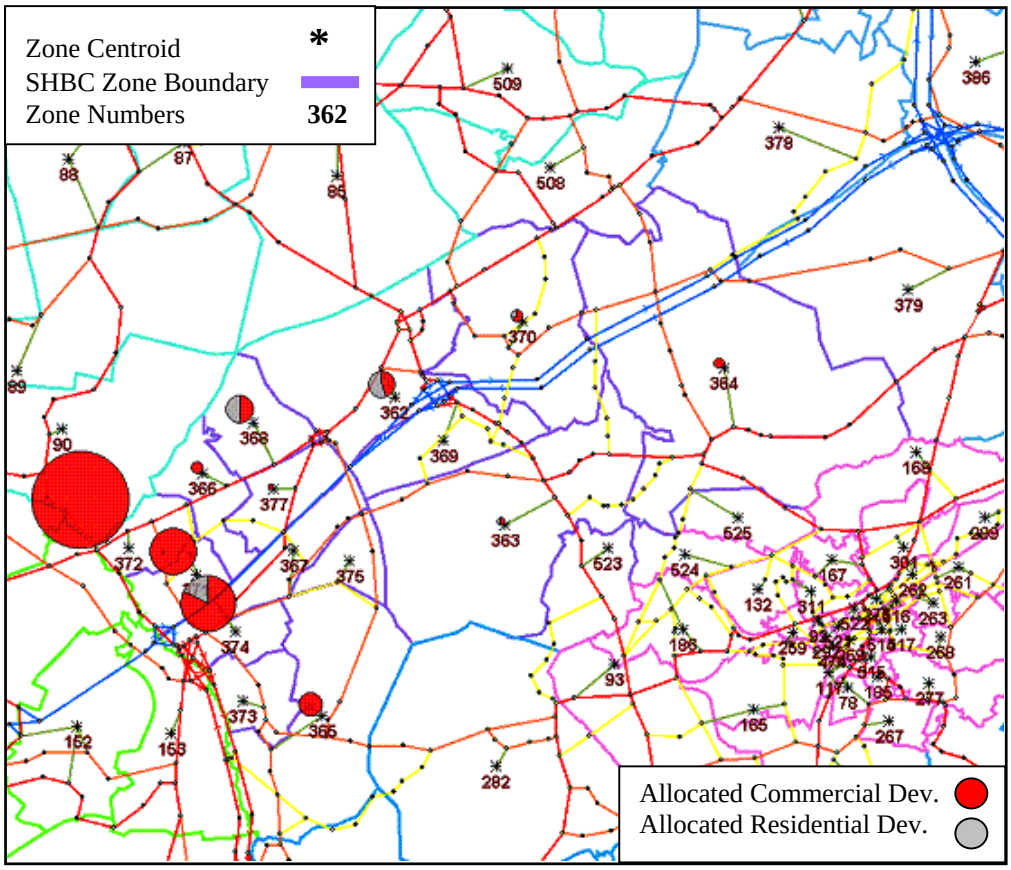


Figure 3.2: 2026 Scenario A disposition of development growth by arrivals *(see Para 3.4.8 onwards for explanation of figure)*

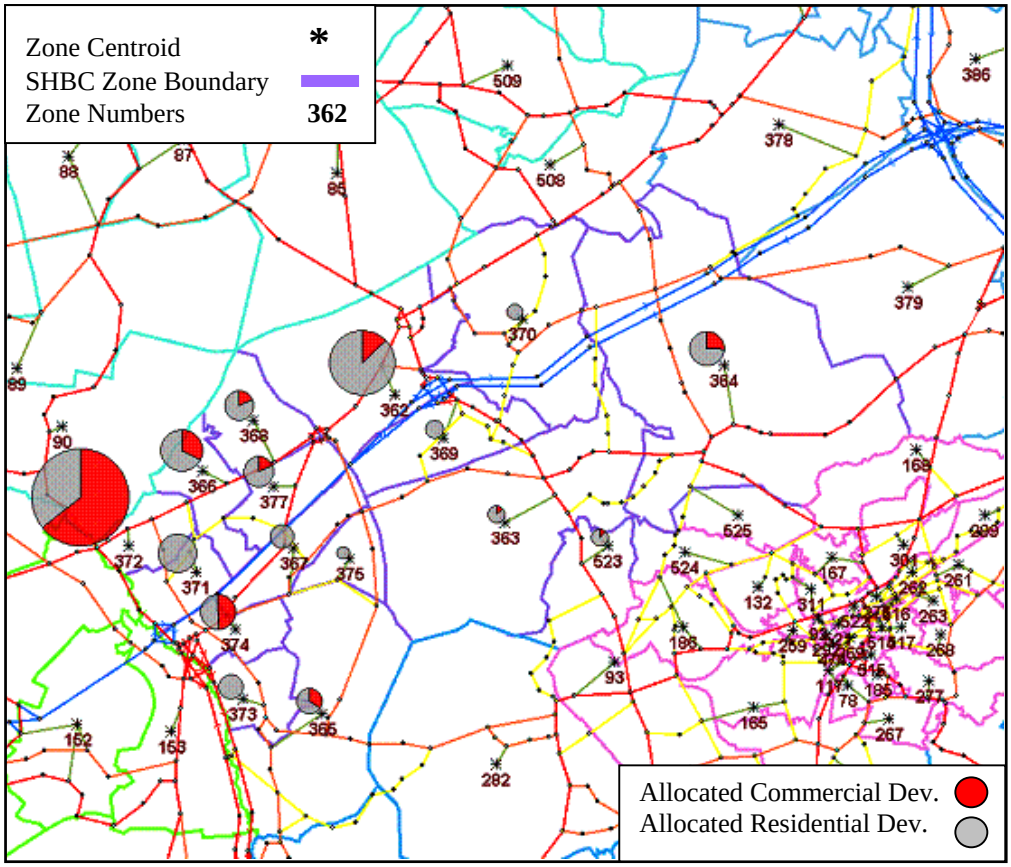


Figure 3.3: 2026 Scenario B disposition of development growth by departures *(see Para 3.4.8 onwards for explanation of figure)*

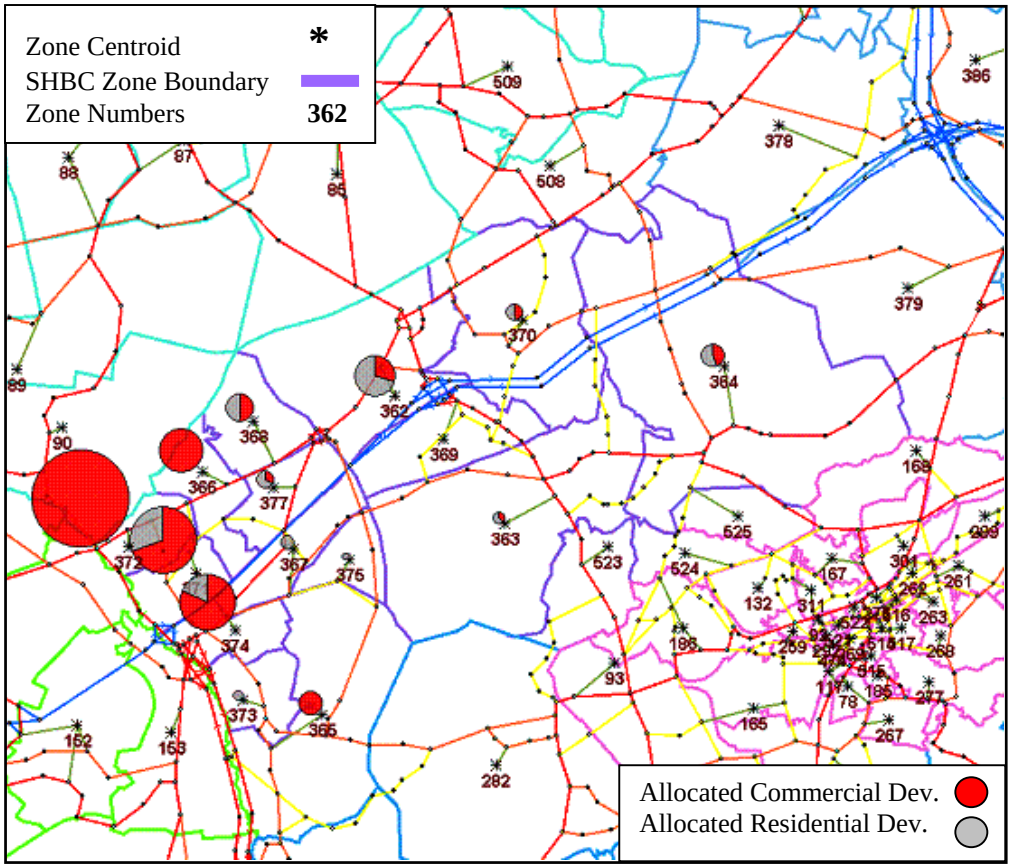


Figure 3.4: 2026 Scenario B disposition of development growth by arrivals *(see Para 3.4.8 onwards for explanation of figure)*

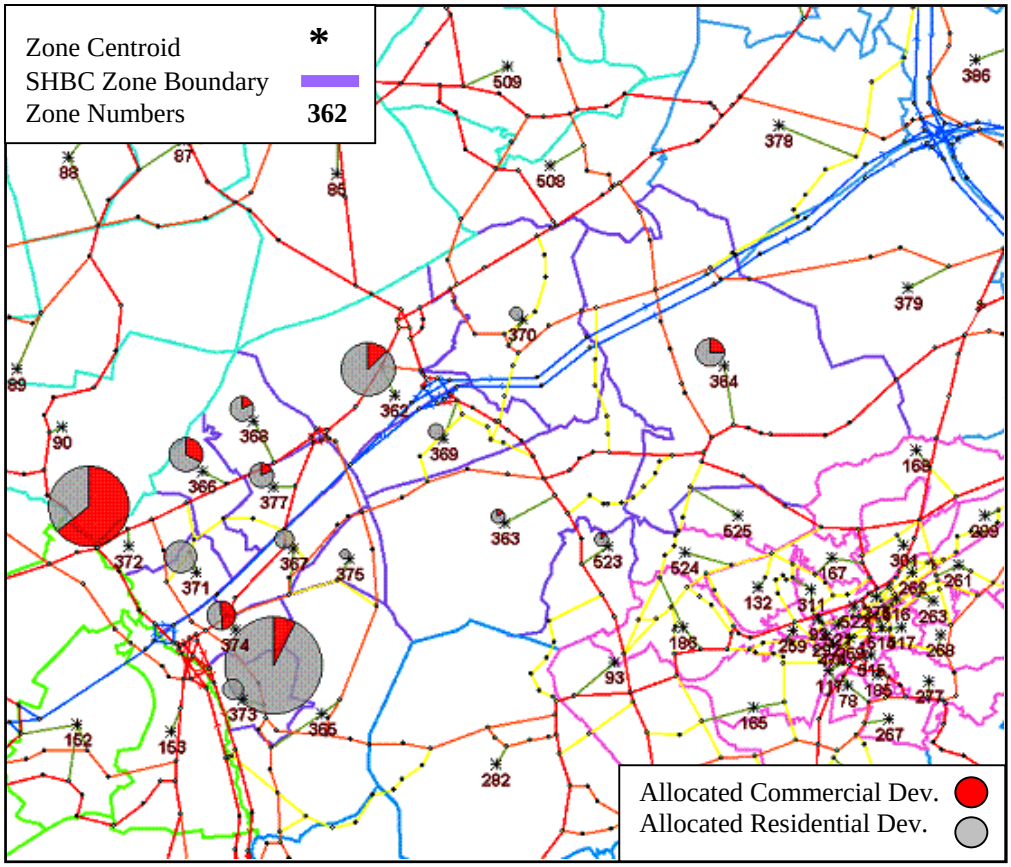


Figure 3.5: 2026 Scenario C disposition of development growth by departures *(see Para 3.4.8 onwards for explanation of figure)*

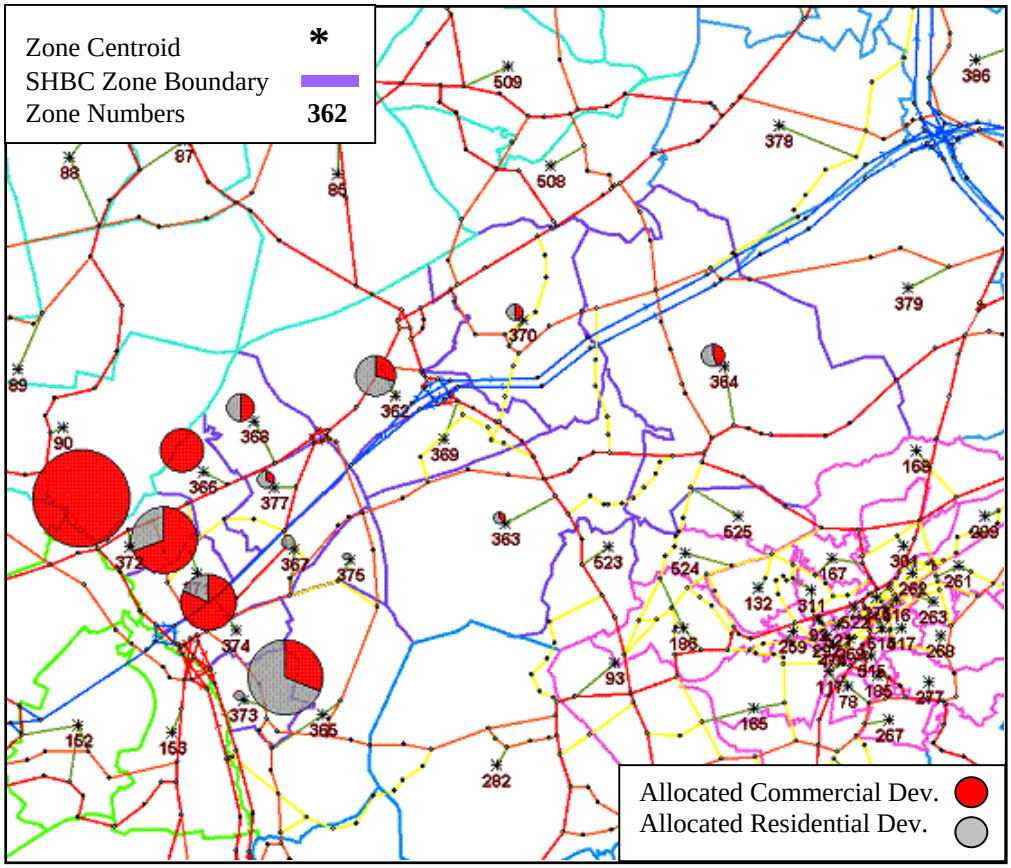


Figure 3.6: 2026 Scenario C disposition of development growth by arrivals *(see Para 3.4.8 onwards for explanation of figure)*

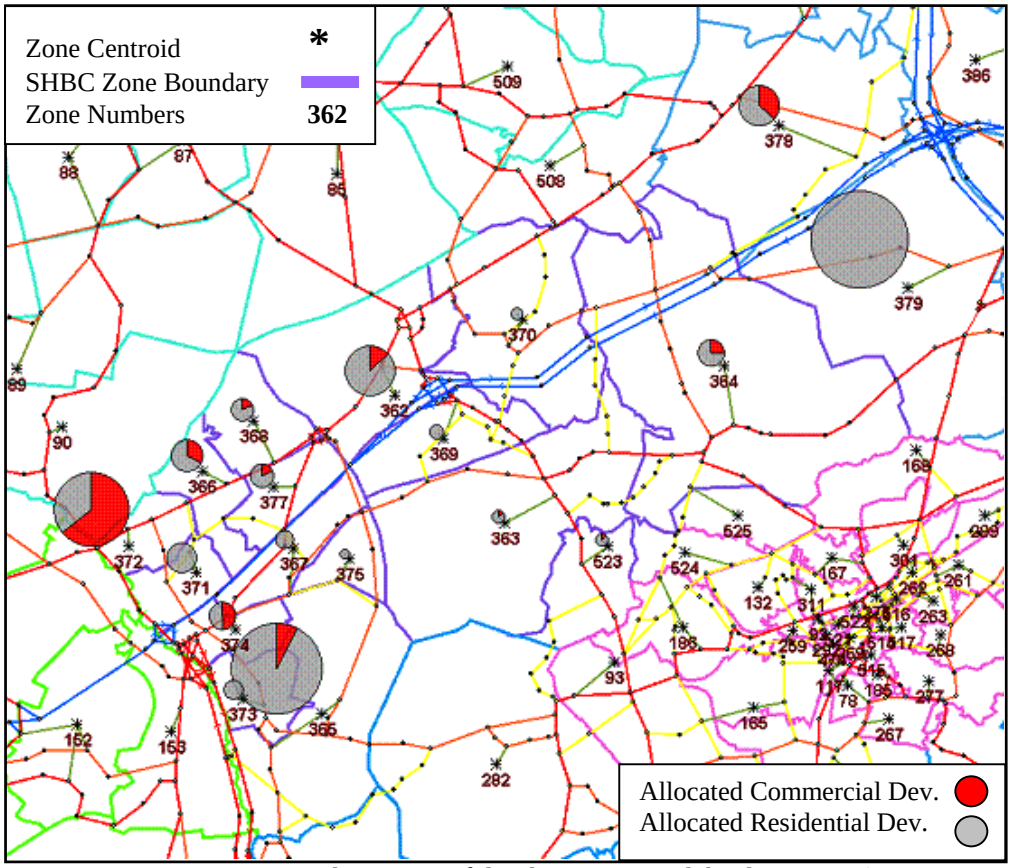


Figure 3.7: 2026 Scenario D disposition of development growth by departures *(see Para 3.4.8 onwards for explanation of figure)*

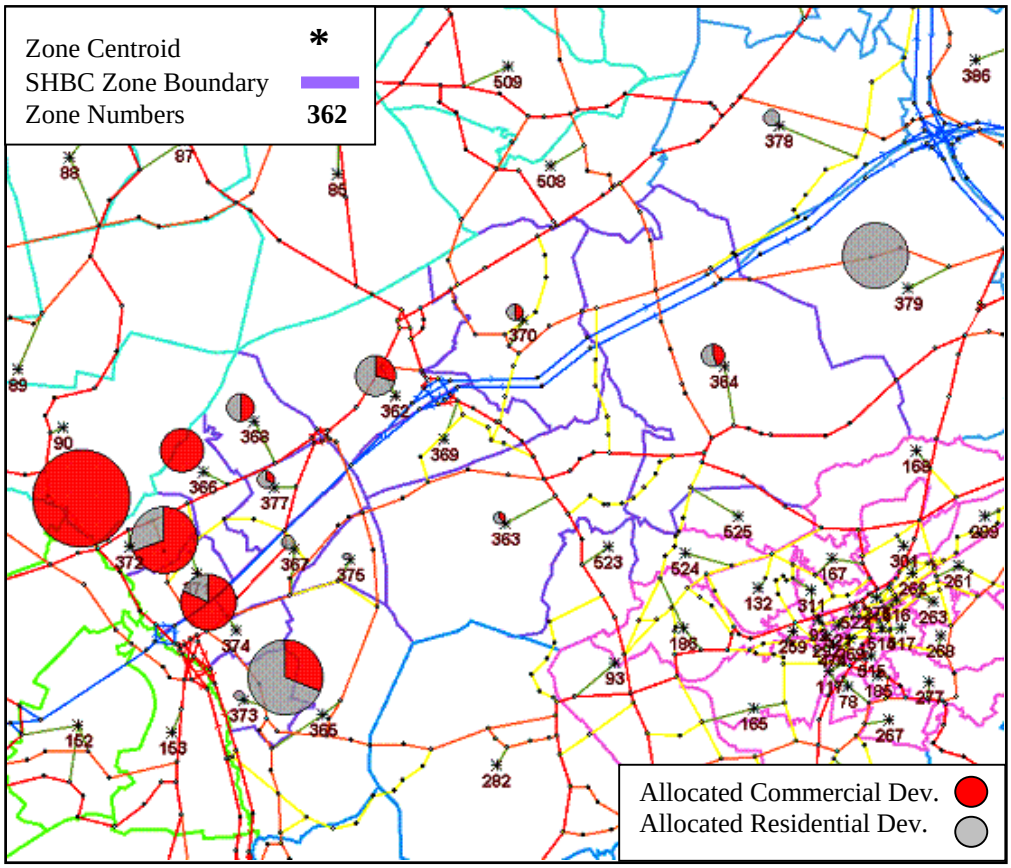


Figure 3.8: 2026 Scenario C disposition of development growth by arrivals *(see Para 3.4.8 onwards for explanation of figure)*

3.4.17 Trip ends are the total number of trips that either have an origin (origin trip ends) or destination (destination trip ends) within the defined modelled zone.

3.4.18 The model base year is 2005. Trip ends from the 2005 matrix (reference 2005_SH, a derivative of SINTRAM Ref 2005_RB_MV_GU_WK) were extracted from zones within the borough of Surrey Heath. These were combined with the DfT's TEMPRO forecast of growth factors for the "background growth" (e.g. changes in demographics and car ownership) between 2005 and 2026 in the borough of Surrey Heath. Areas outside of the study area were factored to 2026 forecast levels. This resulted in the creation of the 2026 Do-Minimum matrix.

3.4.19 2026 forecast matrices were created using the Surrey Heath 2026 Do-Minimum matrix and combining this matrix with the new estimated trip ends generated from SHBC's planning data (see *Tables 3.3* to *3.6*). The development trip ends were distributed using a growth factor method. This process was initially performed for Scenario A and again for Scenarios B, C and D. However, to create Scenario B, Scenario A was used as the starting point instead of the Do-Minimum (refer to *Section 4* for more detail) and to create Scenario C and D, Scenarios B and C respectively were used as the starting points. The creation of multiple scenarios enables comparisons and reference cases to be used, providing the results with more relevance. The 2026 Do-Minimum acts as a reference case for Scenario A, Scenario A acts as a reference case for Scenario B, Scenario B as a reference case for Scenario C and Scenario C as a reference case for Scenario D.

3.4.20 *Tables 3.7* and *3.8* display trip ends for the 2005 base, the 2026 Do-Minimum and the four test scenarios (2026 Scenario A, B, C and D).

3.4.21 Due to a growth factor method being used to combine the new trip ends produced from SHBC's planning data with the 2026 Do-Minimum, extra growth is caused to occur as well as the additional trip ends. These differences can be seen from comparing *Tables 3.3* to *3.6* with *3.7* and *3.8*. Therefore the growth factor method allows a more representative method of forecasting.

3.4.22 Rows highlighted in grey relate to the two Runnymede zones (378 Virginia Water and 379 Ottershaw). These Runnymede zones have only been included due to the DERA development being located within these zones in Scenario D.

Zone No.	2005	2026 Do-Minimum	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D	Do-Min - 2005	Scen A – Do-Min	Scen B – Scen A	Scen C - Scen B	Scen D – Scen C
362	754	732	830	954	957	957	-22	98	124	3	0
363	548	531	542	557	559	558	-17	11	15	2	-1
364	527	517	536	574	576	576	-10	19	38	2	0
365	2690	2627	2668	2703	3460	3460	-63	41	35	757	0
366	451	441	490	511	513	513	-10	49	21	2	0
367	745	728	749	777	780	781	-17	21	28	3	1
368	493	481	525	529	531	531	-12	44	4	2	0
369	960	914	937	953	956	956	-46	23	16	3	0
370	514	499	508	521	523	522	-15	9	13	2	-1
371	529	516	529	620	623	623	-13	13	91	3	0
372	622	608	884	948	951	951	-14	276	64	3	0
373	1035	1012	1045	1070	1074	1074	-23	33	25	4	0
374	771	753	801	808	811	813	-18	48	7	3	2
375	690	675	691	699	701	701	-15	16	8	2	0
377	894	873	897	932	936	936	-21	24	35	4	0
378	552	646	646	646	646	739	94	0	0	0	93
379	956	1089	1092	1093	1093	2119	133	3	1	0	1026
523	1117	1284	1305	1324	1331	1331	167	21	19	7	0
	14,848	**14,926**	**15,675**	**16,219**	**17,021**	**18,141**	**78**	**749**	**544**	**802**	**1,120**

Table 3.7: 2026 AM peak (0800 – 0900) origin trip ends for all vehicle types and all forecast scenarios

Zone No.	2005	2026 Do-Minimum	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D	Do-Min - 2005	Scen A – Do-Min	Scen B – Scen A	Scen C - Scen B	Scen D – Scen C
362	453	454	481	524	529	551	1	27	43	5	22
363	190	190	194	199	200	200	0	4	5	1	0
364	534	535	542	552	552	552	1	7	10	0	0
365	1084	1084	1111	1126	1343	1343	0	27	15	217	0
366	615	616	616	748	764	775	1	0	132	16	11
367	752	755	764	778	786	786	3	9	14	8	0
368	623	626	657	660	667	684	3	31	3	7	17
369	152	151	147	151	151	151	-1	-4	4	0	0
370	223	221	231	238	243	245	-2	10	7	5	2
371	588	589	753	808	842	842	1	164	55	34	0
372	495	496	1121	1145	1146	1147	1	625	24	1	1
373	911	915	930	952	972	973	4	15	22	20	1
374	1021	1024	1207	1238	1288	1288	3	183	31	50	0
375	714	716	727	736	747	747	2	11	9	11	0
377	906	909	930	959	986	995	3	21	29	27	9
378	337	396	396	397	397	272	59	0	1	0	-125
379	947	1121	1121	1121	1121	1418	174	0	0	0	297
523	339	402	401	408	417	417	63	-1	7	9	0
	10,884	**11,200**	**12,329**	**12,740**	**13,151**	**13,386**	**316**	**1,129**	**411**	**411**	**235**

Table 3.8: 2026 AM peak (0800 – 0900) destination trip ends for all vehicle types and all forecast scenarios

4 FORECAST MATRICES

4.1 Do-Minimum Forecast

4.1.1 In order to assess the effects of the additional commercial and residential developments provided by SHBC in the forecast year of 2026, it is useful to have a reference case, which for this assessment is provided by the 2026 Do-Minimum.

4.1.2 The 2026 Do-Minimum highway network includes the highway alteration of the Highways Agency's Hindhead Improvement Scheme. The Hindhead Improvement Scheme is currently under construction but is planned to be open to traffic in mid 2011 (Highways Agency, 2009). The main outcome of the scheme will convert the current single carriageway section of the A3, between the Thursley Junction and Hammer Lane, to dual carriageway. Therefore the Hindhead Improvement Scheme has been incorporated into the 2026 network for the purpose of creating realistic future traffic flows and interactions. Highways Agency documents showing the locations of key highway alterations were used to incorporate the scheme in the modelled network. Therefore the only difference between the 2005 and 2026 network is the Hindhead Improvement Scheme.

4.1.3 The 2026 Do-Minimum trip matrix includes background growth between the base year (2005) and the forecast year (2026) for the Surrey Heath borough trips only (internal, internal to external and external to internal trips). Growth factors to create the background growth were sourced from the DfT's TEMPRO database (V5.4). All other external trips in the matrix grow at rates forecast by TEMPRO from 2005 to 2026. The distribution of these 2026 trip ends was completed using the 'furness' method to balance the matrix row and column totals.

4.1.4 This allows a comparison between the 2026 Do-Minimum and the 2005 base to show the impact of growth in traffic from the "Rest of Britain," while growth within the borough is constrained to represent background growth only.

4.1.5 The ratio difference in trips, in the borough of Surrey Heath, between the 2005 base matrix and the 2026 Do-Minimum matrix is 0.989 for origin trips and 1.009 for destination trips. This is a minimal amount and justifies the reasoning for deciding not to include background growth in the trip rates extracted from the TRICS database for SHBC's planning data.

4.2 2026 Do-Something Forecasts

4.2.1 Forecast matrices for Scenarios A, B, C and D were obtained following the procedure outlined in *Figure 4.1*. The Hindhead Improvement Scheme was incorporated in the network used for all scenarios.

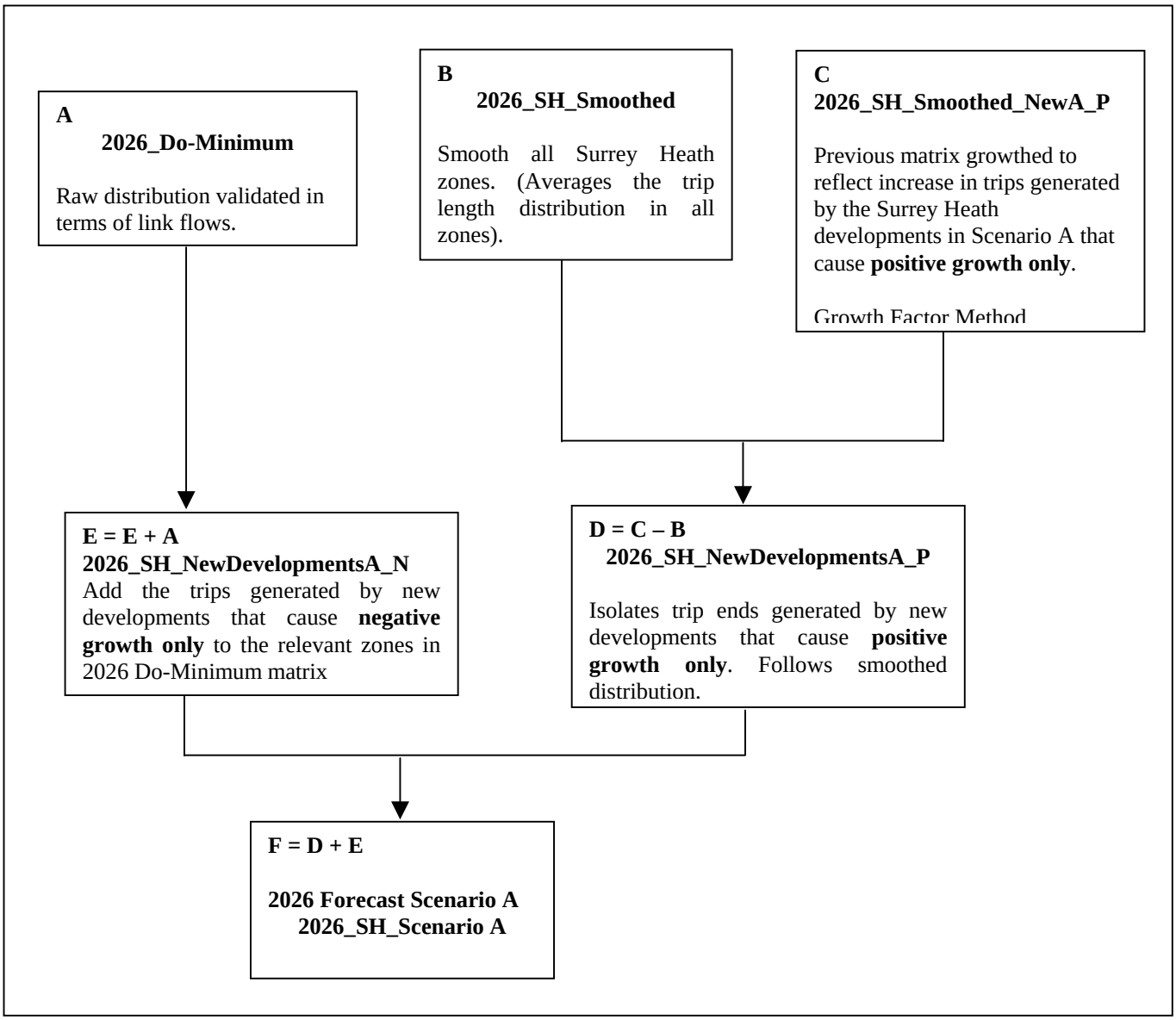


Figure 4.1: Processes undertaken to create the forecast matrix for Scenario A

N.B. The same process was used to create Scenario B but using Scenario A as the starting point, instead of the Do-Minimum. To create Scenario C, Scenario B was used as the starting point and to create Scenario D, Scenario C was used as the starting point.

4.2.2 The trip ends in the Surrey Heath zones are smoothed in the 2026 Do-Minimum matrix to allow the new trip ends to follow a more representative distribution. A smoothed distribution refers to the origin and destination trip ends being averaged for a selected area (i.e. the borough of Surrey Heath).

4.2.3 The new trip ends derived from SHBC's planning data follows this smoothed distribution but has been added to the original raw distribution of the SINTRAM model. Raw distribution is lumpy but validates well in terms of link flows. Combining the two types of distribution enables a more robust forecast.

4.2.4 The 2005 base matrix travel demand total for the AM peak hour (0800 – 0900) is 1,781,589 trips. *Table 4.1* shows the matrix totals and absolute and percentage differences between the modelled 2026 future scenarios and the base year.

Scenario	Borough Internal Trips	Absolute Difference (Base)	Percentage Difference (Base)	Matrix Total	Absolute Difference (Base)	Percentage Difference (Base)
2005	3,880			1,781,589		
2026 Do-Minimum	3,667	-213	-5.5%	2,099,129	317,540	17.8%
2026 Scenario A	4,013	134	3.4%	2,100,653	319,064	17.9%
2026 Scenario B	4,233	354	9.1%	2,101,381	319,792	17.9%
2026 Scenario C	4,504	625	16.1%	2,102,325	320,736	18.0%
2026 Scenario D	4,504	625	16.1%	2,103,612	322,023	18.1%

Table 4.1: AM Peak aggregated matrix totals

4.2.5 *Tables 4.2* to *4.7* show the aggregated Car, LGV and HGV matrices for each modelled scenario. The matrices have been further aggregated into 7 sectors covering geographic areas of each borough or district of Surrey, neighbouring counties and London boroughs and other areas of the country.

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**3,880**	629	1,954	1,614	447	4,792	16	**13,332**
East Surrey	393	18,663	6,691	15,968	7,634	2,163	13	51,525
West Surrey	1,536	5,758	23,917	7,845	3,826	15,607	36	58,525
London	171	14,022	4,546	320,021	9,786	18,782	11,164	378,493
Kent / Sussex	47	6,076	3,157	13,869	199,981	7,957	192	231,279
Home Counties	3,564	1,327	10,083	25,766	9,177	339,860	41,073	430,850
Rest of Britain	2	46	332	16,898	708	44,308	555,291	617,585
{All}	**9,592**	46,522	50,680	401,981	231,558	433,469	607,787	**1,781,589**

Table 4.2: 2005 base aggregated matrix totals (7 sectors)

Note:
Surrey Heath Intra Borough AM Trips = 3,880
External to Borough Trips = 9,592 – 3,880 = 5,712
Borough to External Trips = 13,332 – 3,880 = 9,452
Total (All) = 1,781,589

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**3,667**	699	2,096	1,476	434	4,793	15	**13,180**
East Surrey	422	23,952	7,805	17,901	8,851	2,527	14	61,471
West Surrey	1,638	7,231	27,978	8,442	4,244	17,568	38	67,139
London	199	18,887	5,601	384,816	11,935	23,179	13,820	458,437
Kent / Sussex	48	8,019	3,726	15,749	235,732	9,109	193	272,577
Home Counties	3,702	1,661	12,207	28,412	10,804	401,062	49,757	507,605
Rest of Britain	2	68	507	19,041	917	53,207	644,977	718,719
{All}	**9,678**	60,517	59,919	475,836	272,918	511,447	708,814	**2,099,129**

Table 4.3: 2026 Do-Minimum aggregated matrix totals (7 sectors)

Note:
Surrey Heath Intra Borough AM Trips = 3,667
External to Borough Trips = 9,678 – 3,667 = 6,011
Borough to External Trips = 13,180 – 3,667 = 9,513
Total (All) = 2,099,129

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**4,013**	729	2,185	1,539	452	4,993	16	**13,926**
East Surrey	478	23,952	7,805	17,901	8,851	2,527	14	61,528
West Surrey	1,849	7,231	27,978	8,442	4,244	17,569	38	67,349
London	225	18,887	5,601	384,816	11,935	23,179	13,820	458,463
Kent / Sussex	56	8,019	3,726	15,749	235,732	9,109	193	272,584
Home Counties	4,180	1,661	12,207	28,412	10,804	401,062	49,757	508,083
Rest of Britain	2	68	507	19,041	917	53,207	644,977	718,719
{All}	**10,803**	60,547	60,008	475,899	272,935	511,647	708,815	**2,100,653**

Table 4.4: 2026 Scenario A aggregated matrix totals (7 sectors)

Note:
Surrey Heath Intra Borough AM Trips = 4,013
External to Borough Trips = 10,803 – 4,013 = 6,790
Borough to External Trips = 13,926 – 4,013 = 9,913
Total (All) = 2,100,653

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**4,233**	754	2,257	1,590	465	5,150	16	**14,465**
East Surrey	492	23,952	7,805	17,901	8,851	2,527	14	61,541
West Surrey	1,901	7,231	27,978	8,442	4,244	17,569	38	67,401
London	231	18,887	5,601	384,816	11,935	23,179	13,820	458,470
Kent / Sussex	57	8,019	3,726	15,749	235,732	9,109	193	272,585
Home Counties	4,296	1,661	12,207	28,412	10,804	401,062	49,757	508,199
Rest of Britain	2	68	507	19,041	917	53,207	644,977	718,719
{All}	**11,211**	60,571	60,080	475,950	272,948	511,804	708,815	**2,101,381**

Table 4.5: 2026 Scenario B aggregated matrix totals (7 sectors)

Note:
Surrey Heath Intra Borough AM Trips = 4,233
External to Borough Trips = 11,211 – 4,233 = 6,978
Borough to External Trips = 14,465 – 4,233 = 10,232
Total (All) = 2,101,381

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**4,504**	795	2,377	1,677	486	5,413	17	**15,269**
East Surrey	502	23,952	7,805	17,901	8,851	2,527	14	61,551
West Surrey	1,939	7,231	27,978	8,442	4,244	17,569	38	67,439
London	236	18,887	5,601	384,816	11,935	23,179	13,820	458,474
Kent / Sussex	57	8,019	3,726	15,749	235,732	9,109	193	272,586
Home Counties	4,383	1,661	12,207	28,412	10,804	401,062	49,757	508,286
Rest of Britain	2	68	507	19,041	917	53,207	644,978	718,720
{All}	**11,623**	60,612	60,200	476,037	272,970	512,067	708,816	**2,102,325**

Table 4.6: 2026 Scenario C aggregated matrix totals (7 sectors)

Note:
Surrey Heath Intra Borough AM Trips = 4,504
External to Borough Trips = 11,623 – 4,504 = 7,119
Borough to External Trips = 15,269 – 4,504 = 10,765
Total (All) = 2,102,325

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**4,504**	795	2,379	1,677	486	5,413	17	**15,271**
East Surrey	502	23,952	7,852	17,901	8,851	2,527	14	61,598
West Surrey	2,001	7,320	28,251	8,644	4,337	17,941	38	68,532
London	236	18,887	5,651	384,816	11,935	23,179	13,820	458,524
Kent / Sussex	57	8,019	3,743	15,749	235,732	9,109	193	272,604
Home Counties	4,383	1,661	12,282	28,412	10,804	401,062	49,757	508,362
Rest of Britain	2	68	507	19,041	917	53,207	644,978	718,720
{All}	**11,685**	60,701	60,667	476,239	273,063	512,440	708,817	**2,103,612**

Table 4.7: 2026 Scenario D aggregated matrix totals (7 sectors)

Note:
Surrey Heath Intra Borough AM Trips = 4,504
External to Borough Trips = 11,685 – 4,504 = 7,181
Borough to External Trips = 15,271 – 4,504 = 10,767
Total (All) = 2,103,612

4.3 Motorway Select Link Matrices

4.3.1 The impact of the new commercial and residential developments on the motorways was investigated by undertaking "select link" analyses of the strategic links of interest to the borough of Surrey Heath. The analysis uses the SINTRAM model to reveal origins and destinations of all traffic using a particular link or selection of links. These results have been tabulated below in terms of summary tables (matrices) showing these movements from and to the borough of Surrey Heath and neighbouring geographical regions.

4.3.2 The analysis was carried out on the two areas of the strategic road network surrounding the borough of Surrey Heath: the M3 and M25. Within the M3 Junctions 1 to 4 were analysed (Junctions 1 to 2, Junctions 2 to 3 and Junctions 3 to 4). Within the M25 Junctions 11 to 13 were analysed (Junction 11 to 12 and Junction 12 to 13).

4.3.3 *Tables 4.8.*to *4.37* show the aggregated Car, LGV and HGV matrices for traffic either originating from or destined to the borough of Surrey Heath in the AM peak hour using the surrounding strategic road network. Select link analyses are presented for each future scenario as well as the 2005 base and 2026 Do-Minimum.

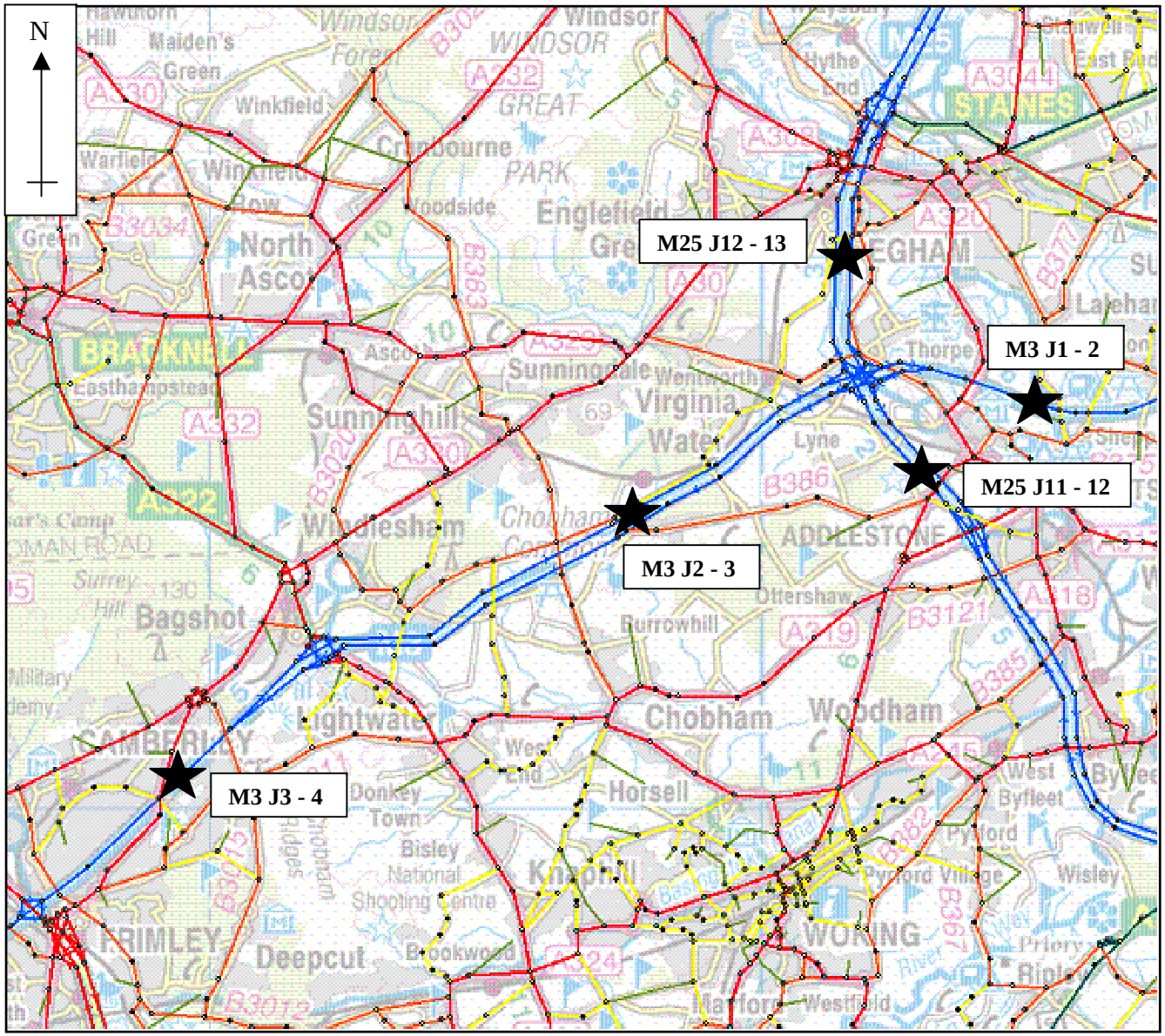


Figure 4.2: Location of motorway select link analysis

Select Link Analysis: M3 between Junctions 1 and 2

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	43	13	455	45	0	0	**556**
East Surrey	13	0	0	0	0	0	0	13
West Surrey	3	0	0	0	0	0	0	3
London	65	0	0	0	0	0	0	65
Kent / Sussex	1	0	0	0	0	0	0	1
Home Counties	0	0	0	0	0	0	0	0
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**82**	43	13	455	45	0	0	**638**

Table 4.8: 2005 base, select link analysis of M3 Junctions 1 – 2

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 82 – 0 = 82
Borough to External Trips = 556 – 0 = 556
Total (All) = 638

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	46	11	422	15	0	0	**494**
East Surrey	7	0	0	0	0	0	0	7
West Surrey	1	0	0	0	0	0	0	1
London	71	0	0	0	0	0	0	71
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	7	0	0	0	0	0	0	7
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**86**	46	11	422	15	0	0	**580**

Table 4.9: 2026 Do-Minimum, select link analysis of M3 Junctions 1 – 2

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 86 – 0 = 86
Borough to External Trips = 494 – 0 = 494
Total (All) = 580

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	52	12	452	15	0	0	**532**
East Surrey	10	0	0	0	0	0	0	10
West Surrey	2	0	0	0	0	0	0	2
London	83	0	0	0	0	0	0	83
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	8	0	0	0	0	0	0	8
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**104**	52	12	452	15	0	0	**635**

Table 4.10: 2026 Scenario A, select link analysis of M3 Junctions 1 – 2

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 104 – 0 = 104
Borough to External Trips = 532 – 0 = 532
Total (All) = 635

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	49	13	468	16	0	0	**546**
East Surrey	11	0	0	0	0	0	0	11
West Surrey	2	0	0	0	0	0	0	2
London	83	0	0	0	0	0	0	83
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	8	0	0	0	0	0	0	8
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**105**	49	13	468	16	0	0	**651**

Table 4.11: 2026 Scenario B, select link analysis of M3 Junctions 1 – 2

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 105 – 0 = 105
Borough to External Trips = 546 – 0 = 546
Total (All) = 651

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	50	15	448	18	0	0	**531**
East Surrey	27	0	0	0	0	0	0	27
West Surrey	3	0	0	0	0	0	0	3
London	119	0	0	0	0	0	0	119
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	1	0	0	0	0	0	0	1
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**150**	50	15	448	18	0	0	**681**

Table 4.12: 2026 Scenario C, select link analysis of M3 Junctions 1 – 2

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 150 – 0 = 150
Borough to External Trips = 531 – 0 = 531
Total (All) = 681

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	55	14	454	18	0	0	**542**
East Surrey	29	0	0	0	0	0	0	29
West Surrey	4	0	0	0	0	0	0	4
London	120	0	0	0	0	0	0	120
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	1	0	0	0	0	0	0	1
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**154**	55	14	454	18	0	0	**695**

Table 4.13: 2026 Scenario D, select link analysis of M3 Junctions 1 – 2

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 154 – 0 = 154
Borough to External Trips = 542 – 0 = 542
Total (All) = 695

Select Link Analysis: M3 between Junctions 2 and 3

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	111	33	879	360	23	1	**1,405**
East Surrey	118	0	0	0	0	0	0	118
West Surrey	26	0	0	0	0	0	0	26
London	127	0	0	0	0	0	0	127
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	117	0	0	0	0	0	0	117
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**390**	111	33	879	360	23	1	**1,795**

Table 4.14: 2005 base, select link analysis of M3 Junctions 2 – 3

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 390 – 0 = 390
Borough to External Trips = 1,405 – 0 = 1,405
Total (All) = 1,795

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	136	24	860	389	27	1	**1,436**
East Surrey	116	0	0	0	0	0	0	116
West Surrey	17	0	0	0	0	0	0	17
London	148	0	0	0	0	0	0	148
Kent / Sussex	3	0	0	0	0	0	0	3
Home Counties	142	0	0	0	0	0	0	142
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**426**	136	24	860	389	27	1	**1,862**

Table 4.15: 2026 Do-Minimum, select link analysis of M3 Junctions 2 – 3

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 426 – 0 = 426
Borough to External Trips = 1,436 – 0 = 1,436
Total (All) = 1,862

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	139	25	903	399	25	1	**1,491**
East Surrey	141	0	0	0	0	0	0	141
West Surrey	20	0	0	0	0	0	0	20
London	170	0	0	0	0	0	0	170
Kent / Sussex	11	0	0	0	0	0	0	11
Home Counties	170	0	0	0	0	0	0	170
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**513**	139	25	903	399	25	1	**2,004**

Table 4.16: 2026 Scenario A, select link analysis of M3 Junctions 2 – 3

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 513 – 0 = 513
Borough to External Trips = 1,491 – 0 = 1,491
Total (All) = 2,004

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	144	24	925	414	27	1	**1,535**
East Surrey	149	0	0	0	0	0	0	149
West Surrey	19	0	0	0	0	0	0	19
London	171	0	0	0	0	0	0	171
Kent / Sussex	12	0	0	0	0	0	0	12
Home Counties	178	0	0	0	0	0	0	178
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**529**	144	24	925	414	27	1	**2,065**

Table 4.17: 2026 Scenario B, select link analysis of M3 Junctions 2 – 3

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 529 – 0 = 529
Borough to External Trips = 1,535 – 0 = 1,535
Total (All) = 2,065

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	164	43	959	421	32	1	**1,619**
East Surrey	204	0	0	0	0	0	0	204
West Surrey	30	0	0	0	0	0	0	30
London	181	0	0	0	0	0	0	181
Kent / Sussex	21	0	0	0	0	0	0	21
Home Counties	159	0	0	0	0	0	0	159
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**595**	164	43	959	421	32	1	**2,214**

Table 4.18: 2026 Scenario C, select link analysis of M3 Junctions 2 – 3

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 595 – 0 = 595
Borough to External Trips = 1,619 – 0 = 1,619
Total (All) = 2,214

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	172	41	969	421	31	1	**1,634**
East Surrey	205	0	0	0	0	0	0	205
West Surrey	32	0	0	0	0	0	0	32
London	182	0	0	0	0	0	0	182
Kent / Sussex	21	0	0	0	0	0	0	21
Home Counties	147	0	0	0	0	0	0	147
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**588**	172	41	969	421	31	1	**2,221**

Table 4.19: 2026 Scenario D, select link analysis of M3 Junctions 2 – 3

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 588 – 0 = 588
Borough to External Trips = 1,634 – 0 = 1,634
Total (All) = 2,221

Select Link Analysis: M3 between Junctions 3 and 4

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**7**	56	19	105	9	508	2	**706**
East Surrey	4	0	0	0	0	0	0	4
West Surrey	4	0	0	0	0	0	0	4
London	7	0	0	0	0	0	0	7
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	77	0	0	0	0	0	0	77
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**99**	56	19	105	9	508	2	**798**

Table 4.20: 2005 base, select link analysis of M3 Junctions 3 – 4

Surrey Heath Intra Borough AM Trips = 7
External to Borough Trips = 99 – 7 = 92
Borough to External Trips = 706 – 6 = 700
Total (All) = 798

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**5**	71	21	129	14	459	1	**700**
East Surrey	6	0	0	0	0	0	0	6
West Surrey	5	0	0	0	0	0	0	5
London	17	0	0	0	0	0	0	17
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	74	0	0	0	0	0	0	74
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**107**	71	21	129	14	459	1	**802**

Table 4.21: 2026 Do-Minimum, select link analysis of M3 Junctions 3 – 4

Surrey Heath Intra Borough AM Trips = 5
External to Borough Trips = 107 – 5 = 102
Borough to External Trips = 700 – 5 = 695
Total (All) = 802

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**8**	66	30	133	29	471	1	**739**
East Surrey	15	0	0	0	0	0	0	15
West Surrey	12	0	0	0	0	0	0	12
London	24	0	0	0	0	0	0	24
Kent / Sussex	3	0	0	0	0	0	0	3
Home Counties	106	0	0	0	0	0	0	106
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**167**	66	30	133	29	471	1	**898**

Table 4.22: 2026 Scenario A, select link analysis of M3 Junctions 3 – 4

Surrey Heath Intra Borough AM Trips = 8
External to Borough Trips = 167 – 8 = 159
Borough to External Trips = 739 – 8 = 731
Total (All) = 898

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**9**	71	32	138	25	518	1	**794**
East Surrey	19	0	0	0	0	0	0	19
West Surrey	13	0	0	0	0	0	0	13
London	26	0	0	0	0	0	0	26
Kent / Sussex	3	0	0	0	0	0	0	3
Home Counties	119	0	0	0	0	0	0	119
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**190**	71	32	138	25	518	1	**974**

Table 4.23: 2026 Scenario B, select link analysis of M3 Junctions 3 – 4

Surrey Heath Intra Borough AM Trips = 9
External to Borough Trips = 190 – 9 = 181
Borough to External Trips = 794 – 9 = 785
Total (All) = 974

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**14**	66	24	228	28	559	2	**920**
East Surrey	37	0	0	0	0	0	0	37
West Surrey	26	0	0	0	0	0	0	26
London	36	0	0	0	0	0	0	36
Kent / Sussex	4	0	0	0	0	0	0	4
Home Counties	119	0	0	0	0	0	0	119
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**236**	66	24	228	28	559	2	**1,142**

Table 4.24: 2026 Scenario C, select link analysis of M3 Junctions 3 – 4

Surrey Heath Intra Borough AM Trips = 14
External to Borough Trips = 236 – 14 = 222
Borough to External Trips = 920 – 14 = 906
Total (All) = 1,142

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**15**	69	24	226	28	555	2	**918**
East Surrey	37	0	0	0	0	0	0	37
West Surrey	27	0	0	0	0	0	0	27
London	32	0	0	0	0	0	0	32
Kent / Sussex	4	0	0	0	0	0	0	4
Home Counties	113	0	0	0	0	0	0	113
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**227**	69	24	226	28	555	2	**1,130**

Table 4.25: 2026 Scenario D, select link analysis of M3 Junctions 3 – 4

Surrey Heath Intra Borough AM Trips = 15
External to Borough Trips = 227 – 15 = 212
Borough to External Trips = 918 – 15 = 903
Total (All) = 1,130

Select Link Analysis: M25 between Junctions 11 and 12

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	68	4	68	312	6	0	**457**
East Surrey	105	0	0	0	0	0	0	105
West Surrey	8	0	0	0	0	0	0	8
London	1	0	0	0	0	0	0	1
Kent / Sussex	2	0	0	0	0	0	0	2
Home Counties	0	0	0	0	0	0	0	0
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**115**	68	4	68	312	6	0	**572**

Table 4.26: 2005 base, select link analysis of M25 Junctions 11 – 12

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 115 – 0 = 115
Borough to External Trips = 457 – 0 = 457
Total (All) = 572

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	89	3	49	374	9	0	**523**
East Surrey	108	0	0	0	0	0	0	108
West Surrey	7	0	0	0	0	0	0	7
London	1	0	0	0	0	0	0	1
Kent / Sussex	3	0	0	0	0	0	0	3
Home Counties	0	0	0	0	0	0	0	0
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**119**	89	3	49	374	9	0	**642**

Table 4.27: 2026 Do-Minimum, select link analysis of M25 Junctions 11 – 12

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 119 – 0 = 119
Borough to External Trips = 523 – 0 = 523
Total (All) = 642

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	86	3	55	383	7	0	**534**
East Surrey	129	0	0	0	0	0	0	129
West Surrey	7	0	0	0	0	0	0	7
London	1	0	0	0	0	0	0	1
Kent / Sussex	11	0	0	0	0	0	0	11
Home Counties	0	0	0	0	0	0	0	0
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**148**	86	3	55	383	7	0	**682**

Table 4.28: 2026 Scenario A, select link analysis of M25 Junctions 11 – 12

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 148 – 0 = 148
Borough to External Trips = 534 – 0 = 534
Total (All) = 682

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	96	3	57	398	7	0	**560**
East Surrey	136	0	0	0	0	0	0	136
West Surrey	8	0	0	0	0	0	0	8
London	1	0	0	0	0	0	0	1
Kent / Sussex	11	0	0	0	0	0	0	11
Home Counties	0	0	0	0	0	0	0	0
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**155**	96	3	57	398	7	0	**715**

Table 4.29: 2026 Scenario B, select link analysis of M25 Junctions 11 – 12

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 155 – 0 = 155
Borough to External Trips = 560 – 0 = 560
Total (All) = 715

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	114	4	72	402	7	0	**599**
East Surrey	176	0	0	0	0	0	0	176
West Surrey	10	0	0	0	0	0	0	10
London	2	0	0	0	0	0	0	2
Kent / Sussex	23	0	0	0	0	0	0	23
Home Counties	0	0	0	0	0	0	0	0
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**211**	114	4	72	402	7	0	**810**

Table 4.30: 2026 Scenario C select link analysis of M25 Junctions 11 – 12

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 211 – 0 = 211
Borough to External Trips = 599 – 0 = 599
Total (All) = 810

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	114	4	66	402	7	0	**594**
East Surrey	176	0	0	0	0	0	0	176
West Surrey	12	0	0	0	0	0	0	12
London	1	0	0	0	0	0	0	1
Kent / Sussex	23	0	0	0	0	0	0	23
Home Counties	0	0	0	0	0	0	0	0
Rest of Britain	0	0	0	0	0	0	0	0
{All}	**212**	114	4	66	402	7	0	**806**

Table 4.31: 2026 Scenario D select link analysis of M25 Junctions 11 – 12

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 212 – 0 = 212
Borough to External Trips = 594 – 0 = 594
Total (All) = 806

Select Link Analysis: M25 between Junctions 12 and 13

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	0	16	391	2	28	1	**439**
East Surrey	0	0	0	0	0	0	0	0
West Surrey	16	0	0	0	0	0	0	16
London	63	0	0	0	0	0	0	63
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	117	0	0	0	0	0	0	117
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**196**	0	16	391	2	28	1	**635**

Table 4.32: 2005 base select link analysis of M25 Junctions 12 – 13

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 196 – 0 = 196
Borough to External Trips = 439 – 0 = 439
Total (All) = 635

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	0	10	424	1	35	1	**471**
East Surrey	1	0	0	0	0	0	0	1
West Surrey	9	0	0	0	0	0	0	9
London	78	0	0	0	0	0	0	78
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	135	0	0	0	0	0	0	135
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**224**	0	10	424	1	35	1	**695**

Table 4.33: 2026 Do-Minimum select link analysis of M25 Junctions12 – 13

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 224 – 0 = 224
Borough to External Trips = 471 – 0 = 471
Total (All) = 695

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	0	9	430	1	31	1	**473**
East Surrey	2	0	0	0	0	0	0	2
West Surrey	11	0	0	0	0	0	0	11
London	88	0	0	0	0	0	0	88
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	162	0	0	0	0	0	0	162
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**263**	0	9	430	1	31	1	**736**

Table 4.34: 2026 Scenario A select link analysis of M25 Junctions 12 – 13

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 263 – 0 = 263
Borough to External Trips = 473 – 0 = 473
Total (All) = 736

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	0	8	436	1	34	1	**479**
East Surrey	2	0	0	0	0	0	0	2
West Surrey	9	0	0	0	0	0	0	9
London	89	0	0	0	0	0	0	89
Kent / Sussex	0	0	0	0	0	0	0	0
Home Counties	170	0	0	0	0	0	0	170
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**271**	0	8	436	1	34	1	**750**

Table 4.35: 2026 Scenario B select link analysis of M25 Junctions 12 – 13

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 271 – 0 = 271
Borough to External Trips = 479 – 0 = 479
Total (All) = 750

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	1	24	490	1	39	1	**554**
East Surrey	1	0	0	0	0	0	0	1
West Surrey	17	0	0	0	0	0	0	17
London	62	0	0	0	0	0	0	62
Kent / Sussex	3	0	0	0	0	0	0	3
Home Counties	158	0	0	0	0	0	0	158
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**241**	1	24	490	1	39	1	**795**

Table 4.36: 2026 Scenario C select link analysis of M25 Junctions 12 – 13

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 241 – 0 = 241
Borough to External Trips = 554 – 0 = 554
Total (All) = 795

	Surrey Heath	East Surrey	West Surrey	London	Kent / Sussex	Home Counties	Rest of Britain	{All}
Surrey Heath	**0**	2	23	498	1	38	1	**563**
East Surrey	1	0	0	0	0	0	0	1
West Surrey	16	0	0	0	0	0	0	16
London	62	0	0	0	0	0	0	62
Kent / Sussex	3	0	0	0	0	0	0	3
Home Counties	147	0	0	0	0	0	0	147
Rest of Britain	1	0	0	0	0	0	0	1
{All}	**229**	2	23	498	1	38	1	**792**

Table 4.37: 2026 Scenario D select link analysis of M25 Junctions 12 – 13

Surrey Heath Intra Borough AM Trips = 0
External to Borough Trips = 229 – 0 = 229
Borough to External Trips = 563 – 0 = 563
Total (All) = 792

	2005	2026 Do-Minimum	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D	2026 C - A
M3 J1 – 2	638	580	635	651	681	695	**46** (+7%)
M3 J2 – 3	1,795	1,862	2,004	2,065	2,214	2,221	**210** (+10%)
M3 J3 – 4	798	802	898	974	1,142	1,130	**244** (+27%)
M25 J11 – 12	572	642	682	715	810	806	**128** (+19%)
M25 J12 - 13	635	695	736	750	795	792	**59** (+8%)

Table 4.38: Select link analysis summary table

4.3.4 The values in *Tables 4.8* to *4.38* are displayed in whole numbers; any differences are purely related to a rounding error.

4.3.5 The M3 between Junctions 2 and 3 (in both directions) is the section of the surrounding local strategic network that carries the largest amount of trips, originating from or destined to the borough of Surrey Heath in the AM peak hour. This section of the strategic road network carries the largest amount of trips in Scenario D, a total of 2,221 trips (see *Table 4.19*).

4.3.6 *Tables 4.8* to *4.13* display the select link analyses for the M3 Junctions 1 to 2 (in both directions). There is a general increase in the amount of trips using this section of the motorway, associated with the borough of Surrey Heath, between the 2026 Do-Minimum and Scenario D. The total amount of trips using this section of the strategic network in Scenarios A, B, C and D is 635, 651, 681 and 695 trips respectively. The impact of the (LDF) proposals between Scenario C and A shows an overall increase of 46 additional trips using this section of the M3 that have either originated from or are destined to Surrey Heath.

4.3.7 *Tables 4.14* to *4.19* display the select link analyses for the M3 Junctions 2 to 3 (in both directions). There is a general increase in the amount of trips using this section of the motorway, associated with the borough of Surrey Heath, between the 2026 Do-Minimum and Scenario D. The total amount of trips using this section of the strategic network in Scenarios A, B, C and D is 2004, 2065, 2214 and 2221 trips respectively. The impact of the (LDF) proposals between Scenario C and A shows an overall increase of 210 additional trips using this section of the M3 that have either originated from or are destined to Surrey Heath. Between the 2005 base and Scenario C, row (origins) and column (destinations) totals both increase, but comparison of *Tables 4.18* and *4.19* indicates that between Scenario C and Scenario D there is a decrease in the column total but an increase in the row total. In Scenario D there is an increase in the total number of trips using this link, but closer examination indicates that the increase between Scenario C and D is solely related to origin trips.

4.3.8 *Tables 4.20* to *4.25* display the select link analyses for the M3 between Junctions 3 and 4 (in both directions). There is an increase in the total number of trips using this link between the 2005 base (798 trips) and Scenario C (1,142 trips). There is a minor decrease (12 trips), in trips using this section of the M3 between Scenario C (1,142 trips) and Scenario D (1,130 trips). It should also be noted that unlike other sections of the motorway the M3 Junctions 3 to 4 contains a small amount of intra-borough trips in all scenarios. This is due to both Junctions 3 and 4 being within the borough of Surrey Heath, allowing a small proportion of people to make short

distance trips, within the borough, on the strategic network. The largest amount of intra-borough trips on the M3 Junctions 3 to 4 is 15 trips in Scenario D (see *Table 4.25*). The impact of the (LDF) proposals between Scenario C and A shows an overall increase of 244 additional trips using this section of the M3 that have either originated from or are destined to Surrey Heath and this stretch carries the highest amount of additional traffic.

4.3.9 *Tables 4.26* to *4.31* display the select link analyses for the M25 Junctions 11 to 12 (in both directions). There is a general increase in the amount of trips using this section of the motorway, associated with the borough of Surrey Heath, between the 2026 Do-Minimum and Scenario D. The total amount of trips using this section of the strategic network in Scenarios A, B, C and D is 682, 715, 810 and 806 trips respectively. The impact of the (LDF) proposals between Scenario C and A shows an overall increase of 128 additional trips using this section of the M25 that have either originated from or are destined to Surrey Heath.

4.3.10 *Tables 4.32* to *4.37* display the select link analyses for the M25 Junctions 12 to 13 (in both directions). There is a general increase in the amount of trips using this section of the motorway, associated with the borough of Surrey Heath, between the 2026 Do-Minimum and Scenario D. The total amount of trips using this section of the strategic network in Scenarios A, B, C and D is 736, 750, 795 and 792 trips respectively. The impact of the (LDF) proposals between Scenario C and A shows an overall increase of 59 additional trips using this section of the M25 that have either originated from or are destined to Surrey Heath.

4.3.11 In summary, the select link analysis of traffic using the surrounding strategic road network associated with travel from or to Surrey Heath between (LDF) Scenario C and the 2026 Reference Case plus permissions (Scenario A) shows that the M3 between junctions 3 – 4 has the largest increase of additional trips (244) which represents an additional 27% increase in trips. The M3 stretch between junctions 2 – 3 shows a projected increase of 210 trips but this is only an additional 10% increase.

5 MODELLING RESULTS AND ANALYSES

5.1 Summary Statistics

5.1.1 *Table 5.1* presents matrix based statistics for the borough of Surrey Heath.

AM Vehicle Trips	2005	2026 Do-Minimum	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D	2026 C - A
Surrey Heath Intra Borough Trips	3,880	3,667	4,013	4,233	4,504	4,504	**491** (12%)
External to Borough Trips	5,712	6,011	6,790	6,978	7,119	7,181	**329** (5%)
Borough to External Trips	9,452	9,513	9,949	10,232	10,765	10,767	**816** (8%)

Table 5.1: Summary Trip Matrix AM Peak Hour (0800 – 0900)

5.1.2 *Tables 5.2* and *5.3* present the network based summary statistics for the borough of Surrey Heath. The summary statistics compare the key outputs from the modelling of the 2005 base, the 2026 Do-Minimum and the forecast Scenarios A, B, C and D. These network based summary statistics report motorway and non-motorway road statistics separately. The tables include both link and (for non-motorway roads) junction based statistics.

5.1.3 Following a request from (SHBC) the results will generally refer to the impacts between Scenario C the proposed LDF strategy including (PRB) and the 2026 Reference Case plus permissions Scenario A.

Key Statistics	2005	2026 Do-Minimum	2026 Scenario A (Do-Min as reference)	2026 Scenario B (Scenario A as ref.)	2026 Scenario C (Scenario A as ref)	2026 Scenario D (Scenario A as ref)
Total Vehicle Kilometrage (Veh Km)	207,323	224,671	232,676	235,595	244,648	249,772
Total Link Travel Time (Veh Hr)	3,947	4,336	4,554	4,642	4,904	5,046
Total Junction Delay (Veh Hr)	1,776	2,294	2,473	2,549	2,556	2,639
Total Network Travel Time (Veh Hr)	5,724	6,630	7,028	7,192	7,460	7,686
Average Speed (Km/Hr)	60.1	59.1	58.8	58.6	57.7	57.5
Difference Between Scenario and 2026 Do-Minimum						
Total Vehicle Kilometrage (Veh Km)			8,005	10,924	19,977	25,101
Total Link Travel Time (Veh Hr)			219	307	568	711
Total Junction Delay (Veh Hr)			179	255	262	345
Total Network Travel Time (Veh Hr)			398	562	830	1,056
Average Speed (Km/Hr)			-0.4	-0.6	-1.4	-1.6
Percentage Difference Between Scenario and 2026 Do-Minimum						
Total Vehicle Kilometrage (Veh Km)			3.6%	4.9%	8.9%	11.2%
Total Link Travel Time (Veh Hr)			5.0%	7.1%	13.1%	16.4%
Total Junction Delay (Veh Hr)			7.8%	11.1%	11.4%	15.1%
Total Network Travel Time (Veh Hr)			6.0%	8.5%	12.5%	15.9%
Average Speed (Km/Hr)			-0.6%	-1.0%	-2.4%	-2.8%
Difference Between Scenario A and B						
Total Vehicle Kilometrage (Veh Km)				2,919		
Total Link Travel Time (Veh Hr)				88		
Total Junction Delay (Veh Hr)				76		
Total Network Travel Time (Veh Hr)				164		
Average Speed (Km/Hr)				-0.2		
Percentage Difference Between Scenario A and B						
Total Vehicle Kilometrage (Veh Km)				1.3%		
Total Link Travel Time (Veh Hr)				1.9%		
Total Junction Delay (Veh Hr)				3.1%		
Total Network Travel Time (Veh Hr)				2.3%		
Average Speed (Km/Hr)				-0.4%		
Difference Between Scenario A and C						
Total Vehicle Kilometrage (Veh Km)					11,972	
Total Link Travel Time (Veh Hr)					349	
Total Junction Delay (Veh Hr)					82	
Total Network Travel Time (Veh Hr)					432	
Average Speed (Km/Hr)					-1.1	
Percentage Difference Between Scenario A and C						
Total Vehicle Kilometrage (Veh Km)					5.1%	
Total Link Travel Time (Veh Hr)					7.7%	
Total Junction Delay (Veh Hr)					3.3%	
Total Network Travel Time (Veh Hr)					6.1%	
Average Speed (Km/Hr)					-1.8%	
Difference Between Scenario A and D						
Total Vehicle Kilometrage (Veh Km)						17,096
Total Link Travel Time (Veh Hr)						492
Total Junction Delay (Veh Hr)						166
Total Network Travel Time (Veh Hr)						658
Average Speed (Km/Hr)						-1.3
Percentage Difference Between Scenario A and D						
Total Vehicle Kilometrage (Veh Km)						7.3%
Total Link Travel Time (Veh Hr)						10.8%
Total Junction Delay (Veh Hr)						6.7%
Total Network Travel Time (Veh Hr)						9.4%
Average Speed (Km/Hr)						-2.2%

Table 5.2: Borough non-motorway summary statistics

Key Statistics	2005	2026 Do-Minimum	2026 Scenario A (Do-Min as reference)	2026 Scenario B (Scenario A as ref.)	2026 Scenario C (Scenario A as ref)	2026 Scenario D (Scenario A as ref)
Total Vehicle Kilometrage (Veh Km)	132,394	158,203	158,930	161,192	165,645	165,114
Total Link Travel Time (Veh Hr)	1,292	1,636	1,646	1,681	1,752	1,743
Average Speed (Km/Hr)	103.0	100.2	100.2	99.8	99.3	99.4
Difference Between Scenario and 2026 Do-Minimum						
Total Vehicle Kilometrage (Veh Km)			727	2,988	7,442	6,911
Total Link Travel Time (Veh Hr)			10	45	116	107
Average Speed (Km/Hr)			-0.1	-0.4	-0.9	-1
Percentage Difference Between Scenario and 2026 Do-Minimum						
Total Vehicle Kilometrage (Veh Km)			0.5%	1.9%	4.7%	4.4%
Total Link Travel Time (Veh Hr)			0.6%	2.8%	7.1%	6.5%
Average Speed (Km/Hr)			-0.1%	-0.4%	-0.9%	-0.8%
Difference Between Scenario A and B						
Total Vehicle Kilometrage (Veh Km)				2,262		
Total Link Travel Time (Veh Hr)				35		
Average Speed (Km/Hr)				-0.3		
Percentage Difference Between Scenario A and B						
Total Vehicle Kilometrage (Veh Km)				1.4%		
Total Link Travel Time (Veh Hr)				2.2%		
Average Speed (Km/Hr)				-0.3%		
Difference Between Scenario A and C						
Total Vehicle Kilometrage (Veh Km)					6,715	
Total Link Travel Time (Veh Hr)					107	
Average Speed (Km/Hr)					-0.8	
Percentage Difference Between Scenario A and C						
Total Vehicle Kilometrage (Veh Km)					4.2%	
Total Link Travel Time (Veh Hr)					6.5%	
Average Speed (Km/Hr)					-0.8%	
Difference Between Scenario A and D						
Total Vehicle Kilometrage (Veh Km)						6,184
Total Link Travel Time (Veh Hr)						97
Average Speed (Km/Hr)						-0.7
Percentage Difference Between Scenario A and D						
Total Vehicle Kilometrage (Veh Km)						3.9%
Total Link Travel Time (Veh Hr)						5.9%
Average Speed (Km/Hr)						-0.7%

Table 5.3: Borough motorway summary statistics

5.1.4 It must be noted that any increase in delay in the future is not just due to growth within Surrey Heath but also attributed to growth across Great Britain. This is shown from the comparison between the 2026 Do-Minimum and 2005 base results.

5.1.5 The M3 between Junctions 3 and 4 as well as nearly half of Junction 2 to 3 is within Surrey Heath's borough boundaries. These sections of the M3 have been included in the motorway summary statistics and presented in *Table 5.3*.

5.1.6 The model suggests the following for the forecast year of 2026:

5.1.7 An increase in non-motorway vehicle kilometres (vkms) travelled in Surrey Heath of approximately 8,000vkm in Scenario A when compared to the Do-Minimum, 2,900vkm in Scenario B when compared to Scenario A, 12,000vkm in Scenario C when compared to Scenario A and 17,100vkm in Scenario D when compared to

Scenario A. Resulting in an approximate increase of 2.3%, 6.1% and 9.4% in total network travel time between Scenarios B-D compared to A. This caused a decrease in average speed of –0.2%, -1.1% and –1.3% between Scenarios B-D compared to A.

5.1.8 At a borough level, the non-motorway summary statistics (*Table 5.2*) suggest incremental differences (increases) between all four forecast scenarios and their relevant reference cases.

5.1.9 Considering traffic flow along the motorway network, the total vehicle kilometres travelled is estimated to increase by approximately 700vkm in Scenario A compared to the Do-Minimum, 2,250vkm in Scenario B compared to Scenario A and 6,700vkm in Scenario C compared to Scenario A and 6,200vkm in Scenario D compared to Scenario A. Hence Scenario D shows an estimated minor decrease in vehicle kilometres of approximately 500vkm, (a reduction of 0.3%) compared to Scenario C.

5.1.10 Comparing the differences in motorway traffic impacts between Scenario A and B, there is relatively small differences as the total link travel time in Scenario B increases by 2.2% and a reduction in average speed of 0.3% when compared to Scenario A. Scenario C presents slightly larger traffic impacts as total link travel time increases by 6.5% and average speed decreases by 0.8%. Scenario D presents smaller traffic impacts in all statistics when compared to Scenario C as both vehicle kilometres and total link travel time decrease by 0.3% and 0.6% respectively and average speed increases by 0.1%, therefore the differences between Scenario C and D are minimal. Scenario C presents the largest traffic impacts on the motorway network within Surrey Heath when compared to Scenario A.

5.2 Largest Increases in Forecast Trip Ends

5.2.1 Using additional trips derived from the planning data as shown previously in *Tables 3.3* to *3.6* the zones that experience the largest increases in additional departure (origin) trips, for all vehicle types, are shown below in *Tables 5.4* to *5.7*.

5.2.2 Any rows of *Tables 5.4* to *5.7* highlighted in grey indicates that the data in question relates to the Runnymede zones included for the purposes of the DERA development in Scenario D (zone 378 Virginia Water and zone 379 Ottershaw).

Zone No.	Zone Name	Additional Trips	Percentage of Additional Trips
372	York Town	263.4	47.8%
362	Bagshot	85.3	15.5%
366	Camberley	42.4	7.7%
368	Collingwood College	36.5	6.6%
374	Frimley & Frimley Hospital	35.8	6.5%

Table 5.4: Zones with greatest increase in additional departure (origin) trips, Scenario A

Zone No.	Zone Name	Additional Trips	Percentage of Additional Trips
372	York Town	320.0	32.2%
362	Bagshot	202.4	20.4%
371	Riverside & Watchetts	90.8	9.2%
366	Camberley	59.6	6.0%
364	Chobham	45.8	4.6%

Table 5.5: Zones with greatest increase in additional departure (origin) trips, Scenario B

Zone No.	Zone Name	Additional Trips	Percentage of Additional Trips
365	Deepcut & Mytchett	765.2	44.1%
372	York Town	320.0	18.4%
362	Bagshot	202.4	11.7%
371	Riverside & Watchetts	90.8	5.2%
366	Camberley	59.6	3.4%

Table 5.6: Zones with greatest increase in additional departure (origin) trips, Scenario C

Zone No.	Zone Name	Additional Trips	Percentage of Additional Trips
379	Ottershaw	1025.8	35.9%
365	Deepcut & Mytchett	765.2	26.8%
372	York Town	320.0	11.2%
362	Bagshot	202.4	7.1%
378	Virginia Water	92.0	3.2%

Table 5.7: Zones with greatest increase in additional departure (origin) trips, Scenario D

5.2.3 In Scenarios A and B the largest amount of additional departure trips generated by the proposed developments are within two zones in the north-west of the borough, zone 372 York Town and 362 Bagshot. Zone 372 York Town contains, approximately 48% of all additional departure trips in Scenario A and 32% of trips in Scenario B.

5.2.4 In Scenario C the largest amount of additional departure trips is within zone 365 Deepcut & Mytchett, representing approximately 44% of all trips. This increase in additional departure trips in zone 365, in Scenario C, is purely related to the PRB development. In Scenario D zone 379 Ottershaw (in the borough of Runnymede), contains the largest amount of departure trips, approximately 36% of all additional departure trips. Additional trips in this Runnymede zone is wholly attributed to the DERA development being incorporated in Scenario D. However, both zones 372 York Town and 362 Bagshot are still within the five zones that contribute to the largest amount of additional departure trips in Scenarios C and D.

5.2.5 Using additional trips derived from the planning data as shown previously in *Tables 3.3* to *3.6* the zones that experience the largest increases in additional arrival (destination) trips, for all vehicle types are shown *in Tables 5.8* to *5.11*.

Zone No.	Zone Name	Additional Trips	Percentage of Additional Trips
372	York Town	622.2	64.4%
374	Frimley & Frimley Hospital	147.6	15.3%
371	Riverside & Watchetts	138.6	14.3%
368	Collingwood College	25.3	2.6%
362	Bagshot	23.8	2.5%

Table 5.8: Zones with greatest increase in additional arrival (destination) trips, Scenario A

Zone No.	Zone Name	Additional Trips	Percentage of Additional Trips
372	York Town	646.1	51.7%
371	Riverside & Watchetts	174.5	14.0%
374	Frimley & Frimley Hospital	148.3	11.9%
366	Camberley	112.5	9.0%
362	Bagshot	63.5	5.1%

Table 5.9: Zones with greatest increase in additional arrival (destination) trips, Scenario B

Zone No.	Zone Name	Additional Trips	Percentage of Additional Trips
372	York Town	646.1	44.6%
365	Deepcut & Mytchett	219.4	15.1%
371	Riverside & Watchetts	174.5	12.0%
374	Frimley & Frimley Hospital	148.3	10.2%
366	Camberley	112.5	7.8%

Table 5.10: Zones with greatest increase in additional arrival (destination) trips, Scenario C

Zone No.	Zone Name	Additional Trips	Percentage of Additional Trips
372	York Town	646.1	40.0%
379	Ottershaw	295.6	18.3%
365	Deepcut & Mytchett	219.4	13.6%
371	Riverside & Watchetts	174.5	10.8%
374	Frimley & Frimley Hospital	148.3	9.2%

Table 5.11: Zones with greatest increase in additional arrival (destination) trips, Scenario D

5.2.6 Within Surrey Heath the largest proportion of additional arrival trips generated from the proposed developments is concentrated in the zone of 372 York Town, with at least 40% of all arrival trips in each scenario.

5.2.7 The zones containing the largest proportion of additional arrival trips in Scenarios A and B are in the west of the borough specifically York Town, Frimley and Riverside & Watchetts. In Scenario C the two zones containing the largest proportion of additional arrival trips are zone 372 York Town (approximately 45%) and 365 Deepcut & Mytchett (approximately 15%). In Scenario C zone 365 Deepcut & Mytchett contains the second largest proportion of trips due to the inclusion of the PRB development. In Scenario D zone 372 again contains the largest proportion of trips but the Runnymede zone of 379 Ottershaw contains the second largest proportion of arrival trips (approximately 18%) as a result of the incorporation of the DERA development.

5.2.8 Comparisons of *Tables 5.4* to *5.11* indicate that Scenario A contains the smallest amount of additional trips (both departure and arrival) and Scenario D contains the largest.

5.2.9 In Scenario D the zone containing the most departure trips is the Runnymede zone 379 Ottershaw (related to DERA) and zone 372 York Town contains the largest proportion of arrival trips (see *Tables 5.7* and *5.11*).

5.3 Traffic Impacts

5.3.1 *Table 5.12* lists the roads within Surrey Heath that experience the greatest increases in traffic delay (increase in flow) during the AM peak hour in 2026 compared with each scenarios reference case. It should be noted that the links displayed in *Table 5.12* are based on the largest increase in delay between Scenarios C and A.

5.3.2 The general trend displayed in *Table 5.12* is that flow will increase on all stated links between the 2005 base and Scenario D. Some decreases in flow occur on a small amount of the stated links, however the majority of these decreases occur between the 2026 Do-Minimum and the 2005 base. *Table 5.12* indicates that the main areas to be impacted by the largest increases in flow are Lightwater, Bagshot and Deepcut & Mytchett. Increase in flow in these areas relates to the zones (or in close proximity to the zones) that are proposed to incur some of the largest proportions of additional trips, (see *Tables 5.4* to *5.11*).

5.3.3 While the smaller (local) roads have not been modelled, it should be remembered that only inter-zonal trips (trips made between zones) are actually modelled and therefore detail of the road network has to be balanced against the size of the zone system to obtain realistic results.

5.3.4 *Table 5.13* shows the junctions within Surrey Heath that experience the greatest increase in junction delay during the AM peak hour. It is important to note that the junctions displayed in the table are based on the largest increase in flow between Scenarios C and A.

5.3.5 *Figures 5.1* and *5.2* show the geographical location of the links and junctions presented in *Tables 5.12* and *5.13.*

Link No.	Dir	Description	Location	Nominal Capacity	Flow – All Vehicles (Absolute Values)						Absolute Differences*					
					2005	2026 Do-Min	2026 Scen A	2026 Scen B	2026 Scen C	2026 Scen D	2026 Do-Min - 2005	Scen A – Do-Min	Scen B – Scen A	Scen C – Scen A	Scen C – Scen B	Scen D – Scen B
16924	1 (N)	B3015 Deepcut Bridge Rd	Deepcut & Mytchett	1,700	1278	1386	1425	1405	1983	1989	108 8%	39 3%	-20 -1%	**557** **39%**	577 41%	584 42%
16939	1 (S)	A322 Bracknell Rd	Bagshot	3,500	1877	2206	2230	2196	2724	2692	329 18%	25 1%	-34 -2%	**494** **22%**	528 24%	496 23%
16943	1 (S)	A322 Bracknell Rd	Bagshot	3,500	1877	2206	2230	2196	2724	2692	329 18%	25 1%	-34 -2%	**494** **22%**	528 24%	496 23%
16941	2 (S)	A322 Bracknell Rd	Bagshot	3,400	1877	2206	2230	2196	2724	2692	329 18%	25 1%	-34 -2%	**494** **22%**	528 24%	496 23%
16933	2 (N)	A331 Blackwater Valley Road	Frimley	3,500	1860	1897	1895	1900	2366	2294	38 2%	-2 0%	5 0%	**471** **25%**	467 25%	394 21%
16768	2 (S)	A322 Bracknell Rd	Bagshot	3,500	1967	2194	2127	2173	2585	2550	227 12%	-68 -3%	47 2%	**458** **22%**	411 19%	377 17%
16771	2 (S)	A322 Bracknell Rd	Bagshot	3,500	1967	2194	2127	2173	2585	2550	227 12%	-68 -3%	47 2%	**458** **22%**	411 19%	377 17%
16824	2 (E)	B3029 Guildford Road	Bagshot	1,200	1439	1306	1178	1244	1636	1696	-133 -9%	-128 -10%	65 6%	**458** **39%**	393 32%	452 36%
16926	2 (N)	A331 Blackwater Valley Road	Frimley	3,500	649	498	495	528	950	893	-150 -23%	-4 -1%	34 7%	**455** **92%**	421 80%	365 69%
16858	2 (S)	C5 Guildford Road	Lightwater	800	404	360	437	450	885	869	-44 -11%	78 22%	12 3%	**448** **102%**	435 97%	420 93%

Table 5.12: Links that display the largest increase in flow resulting from scenarios with their relevant reference cases (sorted on the largest increases between Scenario C and Scenario A)

Nominal capacity is the flow at which queuing is likely to start at.

* The values shown in brackets are the percentage differences.

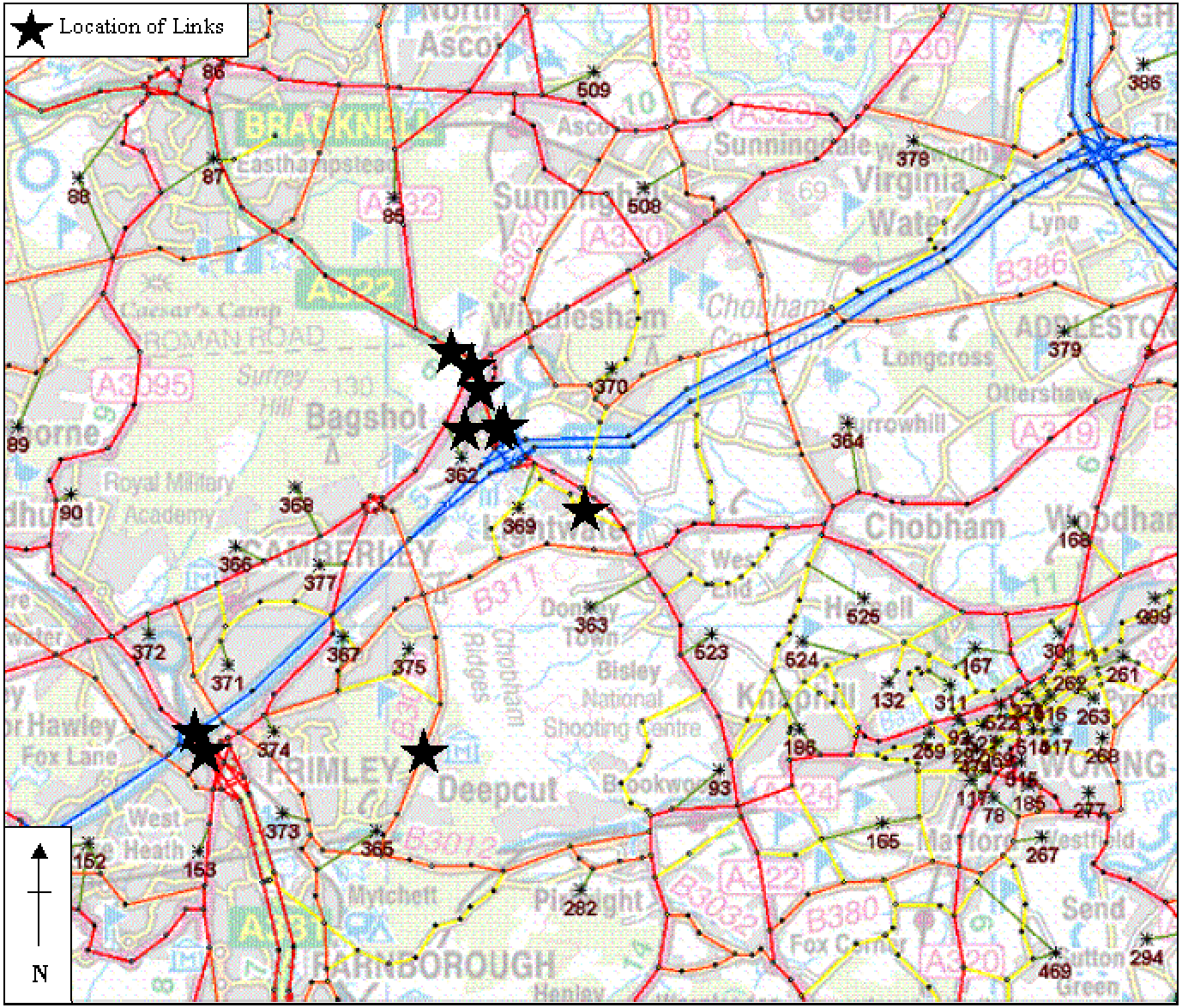


Figure 5.1: Location of the links with the largest increase in flow between Scenario C and A

Node No.	Description	Junction Type	Location	Junction Delay - All Vehicles (Veh Hr) (Absolute Values)						Absolute Differences (Veh Hr)					
				2005	2026 Do-Min	2026 Scen A	2026 Scen B	2026 Scen C	2026 Scen D	2026 Do-Min - 2005	Scen A – Do-Min	Scen B – Scen A	Scen C – Scen A	Scen C – Scen B	Scen D – Scen B
99758	A30 London Rd, B3015 The Maultway, A325 Portsmouth Rd	Signal	Bagshot	13	13	15	18	82	83	-1 -4%	3 20%	3 18%	**67** **433%**	64 352%	65 359%
41768	M3 Junction 4 (Northbound)	Rdabt	Riverside & Watchetts	154	189	212	197	266	274	35 23%	22 12%	-15 -6%	**54** **26%**	69 35%	77 39%
99791	M3 Junction 4 (Southbound)	Rdabt	Frimley	181	241	239	244	277	283	60 33%	-2 -1%	5 2%	**38** **16%**	33 14%	39 16%
99798	M3 Junction 3 (Northbound)	Priority	Bagshot	166	188	182	186	217	214	22 13%	-6 -3%	4 2%	**35** **19%**	31 17%	28 15%
99799	M3 Junction 3 (Northbound)	Signal	Bagshot	158	155	143	148	173	164	-4 -2%	-12 -8%	5 3%	**30** **21%**	25 17%	16 11%
99761	A30 London Rd, B3015 The Maultway, A325 Portsmouth Rd	Signal	Baghshot	57	41	57	63	79	80	-17 -29%	17 41%	6 11%	**22** **38%**	16 25%	17 27%
99795	A322 Bracknell Rd, A30 London Rd	Priority	Bagshot	27	24	26	27	43	41	-3 -12%	2 10%	1 5%	**17** **66%**	16 58%	13 49%
99763	A30 London Rd, B3015 The Maultway, A325 Portsmouth Rd	Signal	Bagshot	45	43	56	67	73	73	-2 -5%	14 32%	10 18%	**16** **29%**	6 9%	6 9%
99753	A322 Bracknell Rd, A30 Grove End	Priority	Bagshot	7	12	11	12	22	24	5 78%	-2 -13%	1 10%	**12** **112%**	11 92%	12 101%
99796	A322 Bracknell Rd, A30 London Rd	Priority	Bagshot	23	12	19	19	30	29	-11 -47%	7 55%	0 0%	**11** **59%**	11 58%	10 54%

Table 5.13: Junctions that display changes in junction delay due to increase flow from all scenarios when compared to their relevant reference cases.

* The values shown in brackets are the percentage differences.

It should be noted that modelling represented in a strategic model produces outputs that are approximate projections, like many other outputs. This is due to the level of detail that can be included and represented in a strategic model, and can therefore inhibit some accuracy of the modelled junction's outputs. It is important to remember that junction delay increases exponentially, thus referring to how junction delay can increase considerably once passing a certain threshold. For instance flow breakdown and queuing can cause junction delay to increase rapidly for a single junction, and can also have continued effects on junction delay at other nearby junctions.

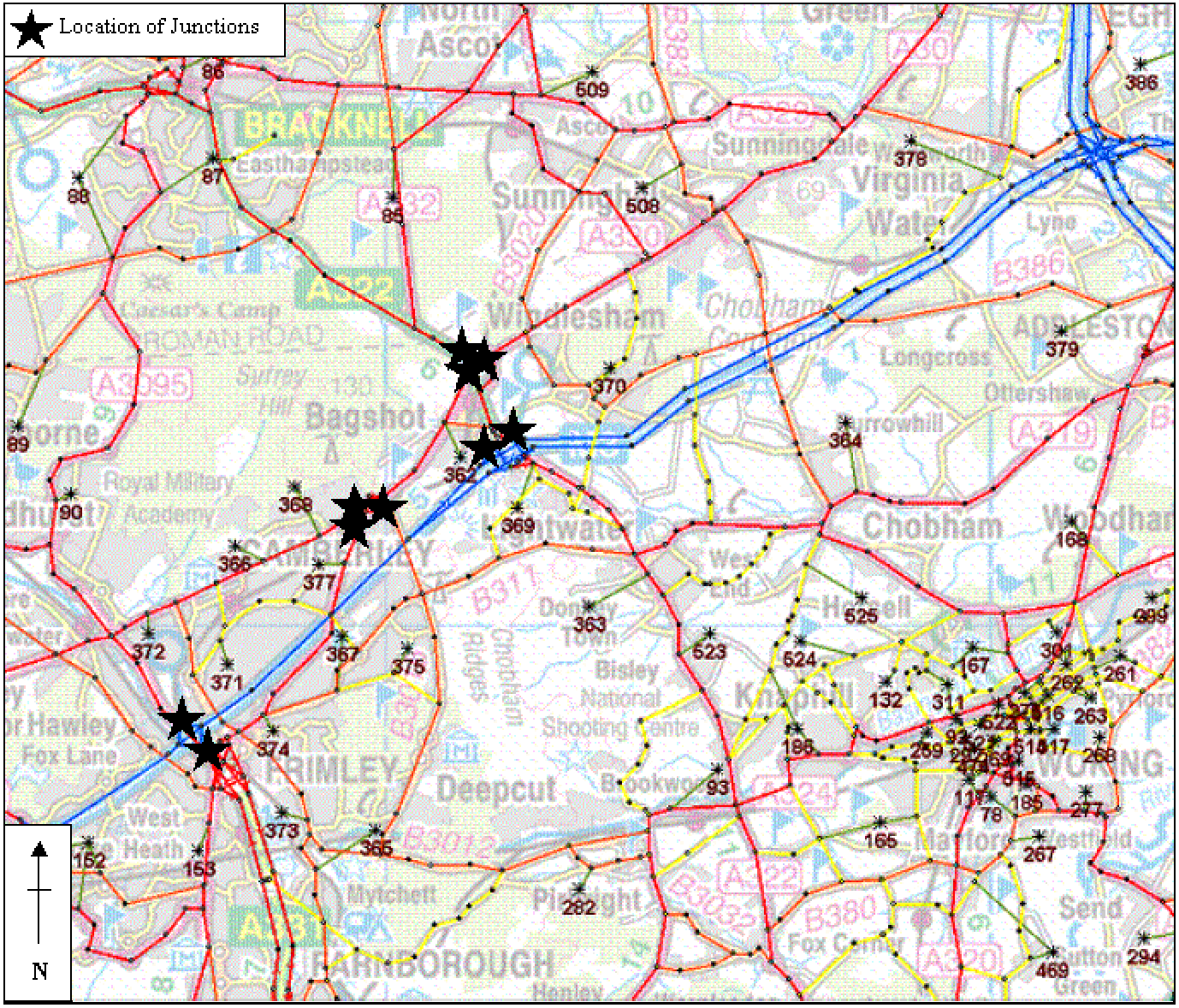


Figure 5.2: Location of the junctions with changes in junction delay based on largest increases in flow between Scenario C and A

5.3.6 *Table 5.13* indicates a general tend of increased junction delay at the listed junctions between the 2005 base and Scenario D. The junctions displaying the largest increases in junction delay are within the area of Bagshot (zone 362). Such increases in delay are prominent in Scenario C when compared to Scenario A, specifically at the A30 London Rd, The Maultway signalised junction and the priority junction of A30 Grove End and A322 Bracknell Road with increases in junction delay of 430% and 112% respectively.

5.3.7 The main areas of increased flow generating increased junction delay surround the interactions of the A30 / A322 in Bagshot, and M3 J3 and J4. These junctions are in close proximity to each other and zone 362 Bagshot, is a key zone that is to contain a large amount of additional departure trips in the AM peak hour.

5.3.8 A number of junctions are estimated to incur a minor reduction in junction delay (under 6%) in Scenario D when compared to Scenario C. This is related to Scenario D incorporating the DERA development which is outside the borough of Surrey Heath and can therefore re-distribute traffic and therefore impact flow and junction delay on Surrey Heath's network by a minimal amount.

5.3.9 The junctions stated to have an increase in delay in *Table 5.13* relate to the links stated to have an increase in flow in *Table 5.12*. For instance many of the links stated in *Table 5.12* are in very close proximity to the junctions, or contribute to the junctions in *Table 5.13*. For example the A322 Bracknell Road and A30 London Road feature multiple times in both tables displaying an increase in flow and junction delay (specifically the A322 Bracknell Road). This is due to an increase in delay being a result of increased flow.

5.3.10 The main areas affected by an increase in flow and junction delay are not isolated areas but centre on specific areas of Camberley, Bagshot, Lightwater and the approaches to M3 J4 Frimley.

5.4 Borough Bandwidth Plots – Volume/Capacity Ratio

5.4.1 Both the volume of traffic and level of congestion prevalent in the 2005 base, 2026 Do-Minimum and subsequent test scenarios: 2026 Scenarios A, B, C and D can be visualised using a coloured bandwidth plot on the road network. The volume/capacity ratios (VCR) are shown only for links within the borough boundaries of Surrey Heath with a VCR value greater than or equal to 0.85.

5.4.2 In *Figures 5.3* to *5.8* the width of the band is proportionate to the flow. The colour of the links relate to the VCR value e.g. links coloured orange have a VCR ranging between 0.85 and 0.99, see the key in the figure for more detail.

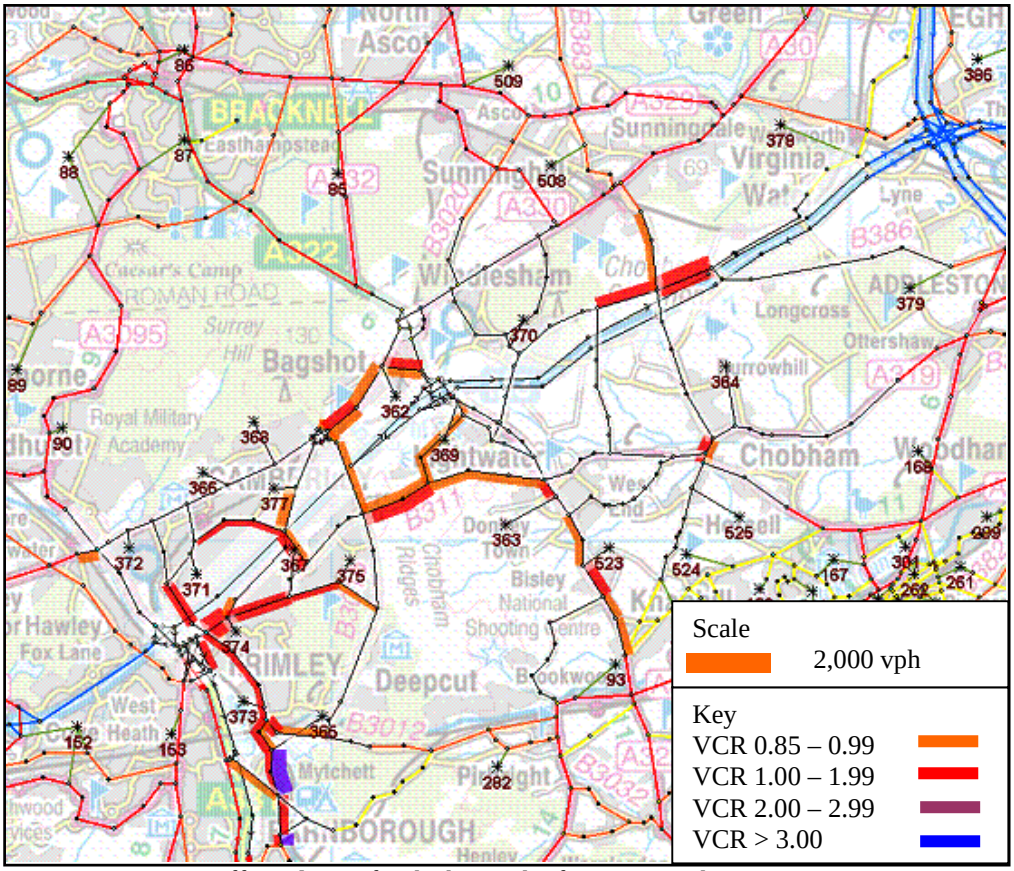


Figure 5.3: 2005 traffic volumes for the borough of Surrey Heath

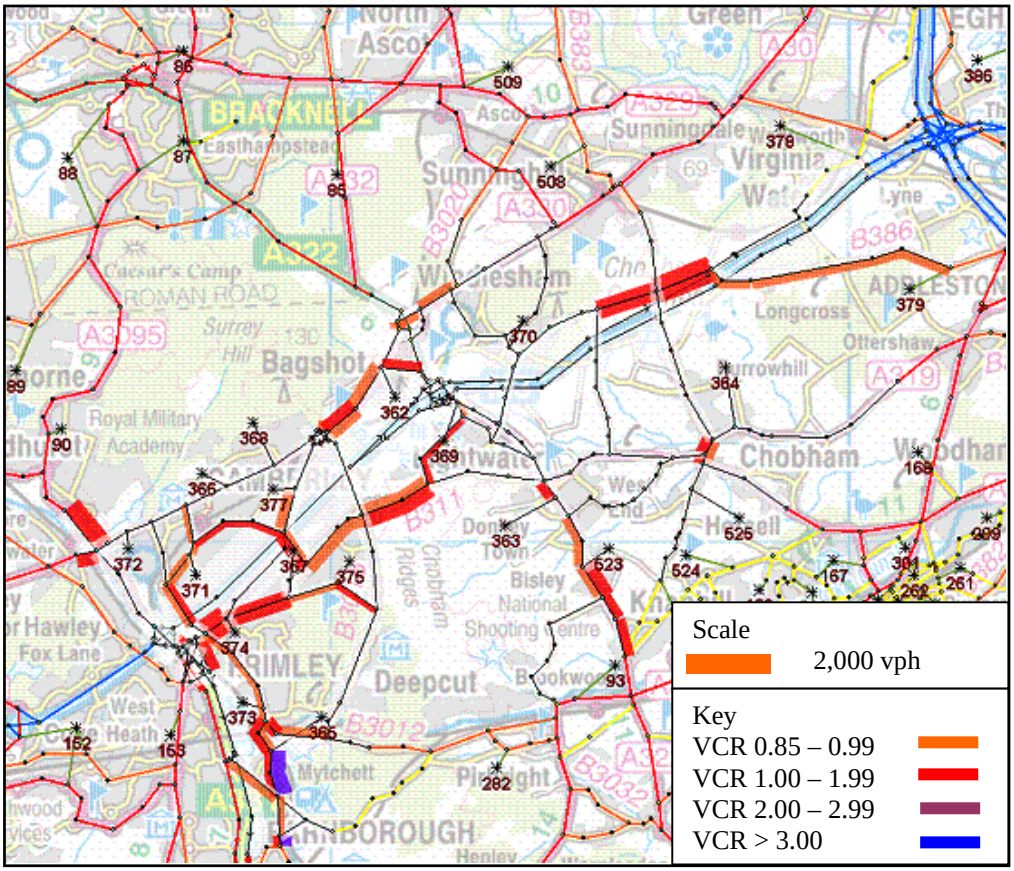


Figure 5.4: 2026 Do-Minimum traffic volumes for the borough of Surrey Heath

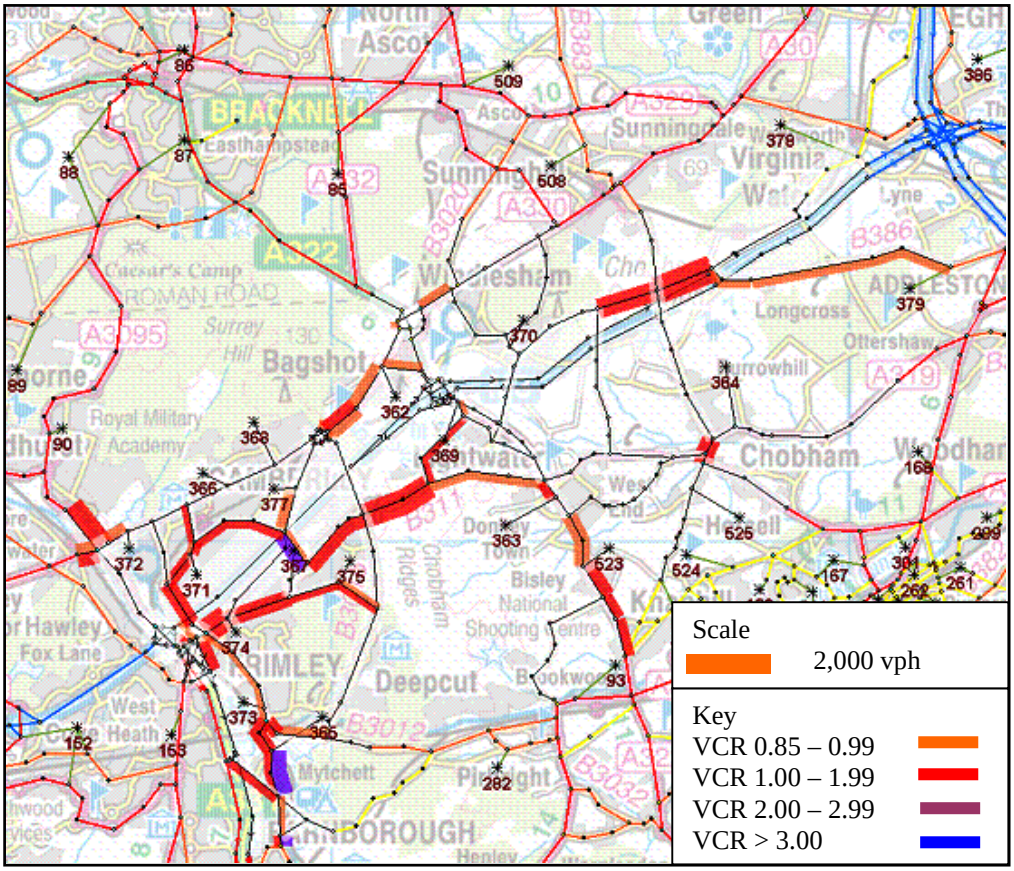


Figure 5.5: 2026 Scenario A traffic volumes for the borough of Surrey Heath

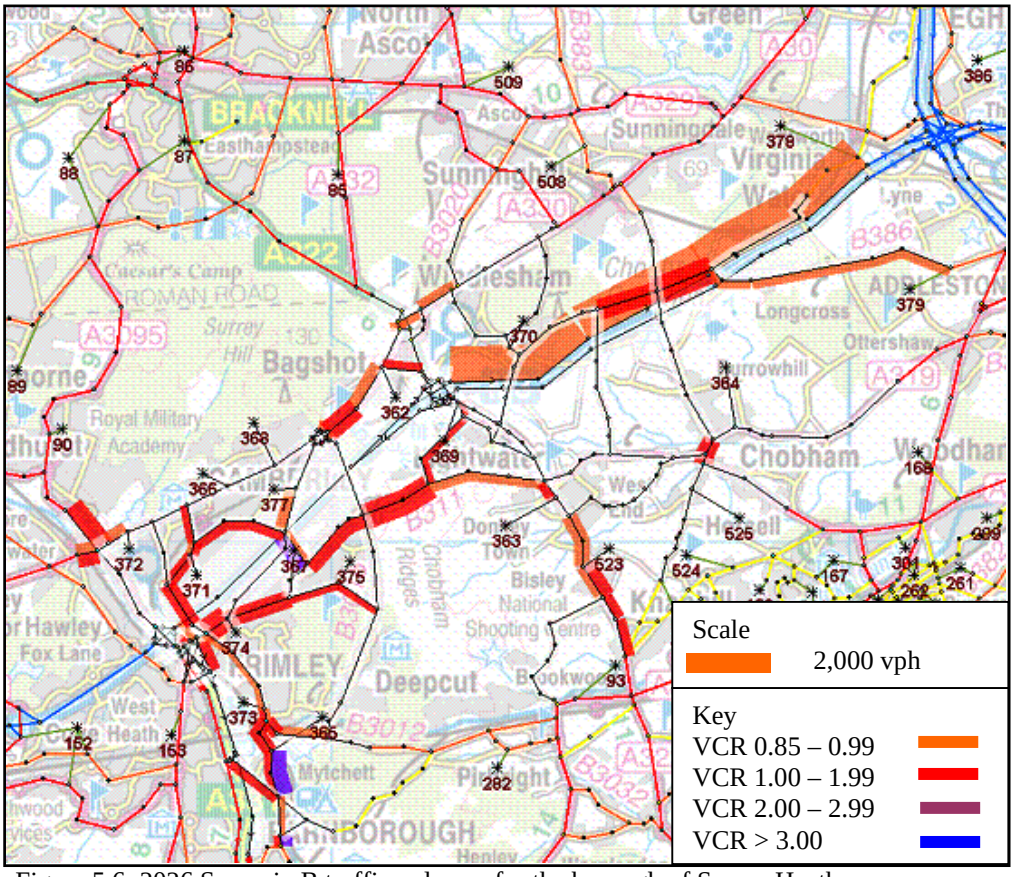


Figure 5.6: 2026 Scenario B traffic volumes for the borough of Surrey Heath

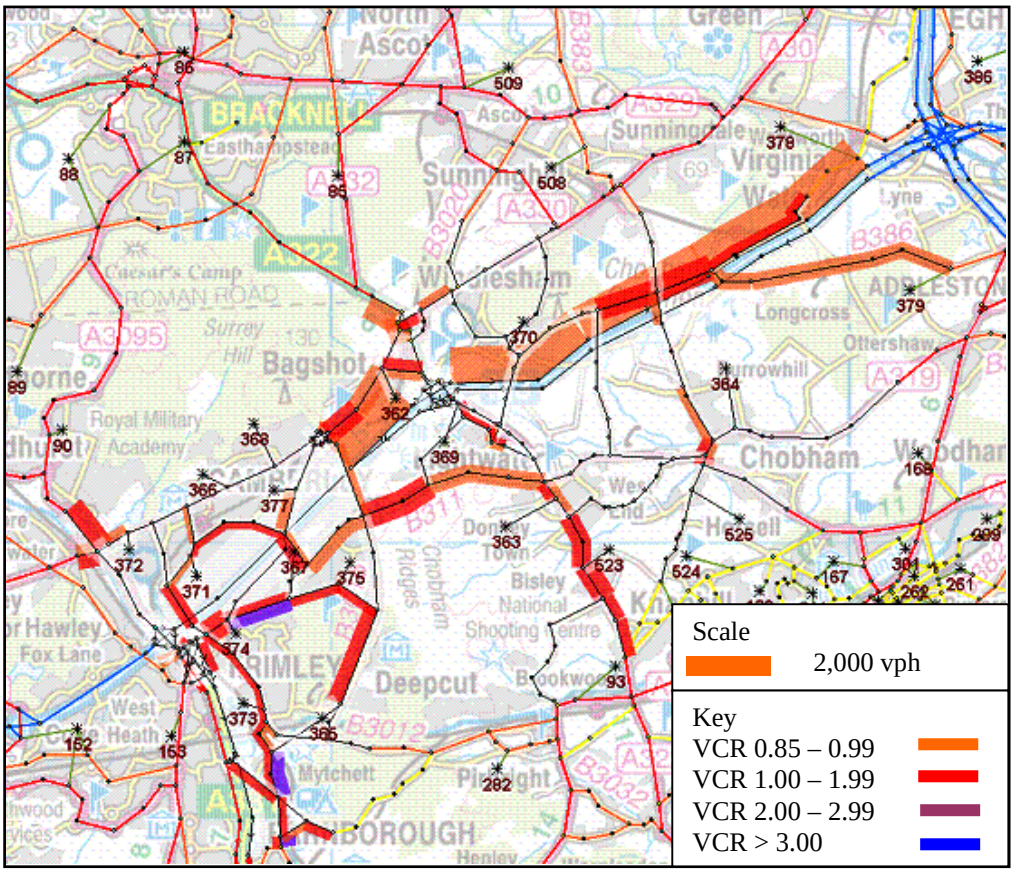


Figure 5.7: 2026 Scenario C traffic volumes for the borough of Surrey Heath

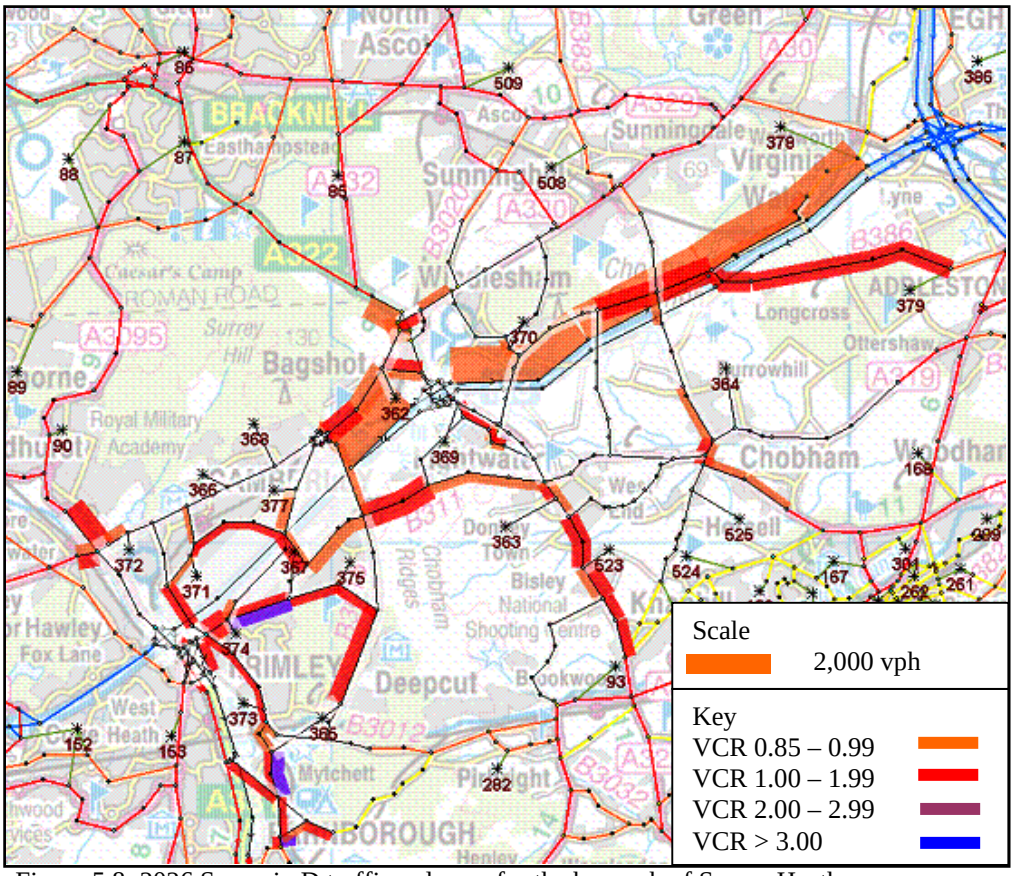


Figure 5.8: 2026 Scenario D traffic volumes for the borough of Surrey Heath

5.4.3 The VCR plots of the borough of Surrey Heath indicate that levels of congestion and flow incrementally increase between the 2005 base, 2026 Do-Minimum and the four forecast scenarios, Scenarios A, B, C and D.

5.4.4 The levels of congestion between the 2026 Do-Minimum and Scenario A remain relatively constant but with Scenario A containing minimally higher flows and congestion levels. However in Scenarios B, C and D congestion levels increase and the VCR value on the M3 Junction 3 to 2 (northbound) increase to values between 0.85 and 0.99 (indicated by orange bandwidths).

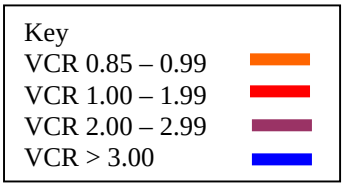
5.4.5 Scenario D causes the highest VCR values out of all four scenarios and increases the number of links where the VCR reaches 0.85 or above. However, it should be noted that congestion is prominent on some links in the 2005 base and congestion and flow increases on these links into Scenario D, for example the A325 Portsmouth Road (Frimley) and the A322 Guildford Road (Bisley). Comparisons of Scenario C and Scenario A indicate that the areas with increased levels of congestion and flow are the M3 Junction 3 to 2, A322 (through Knaphill and West End) and local B roads surrounding Frimley / Mytchett and Deepcut such as B3015 The Maultway, B311 Red Road.

5.4.6 Further increases in congestion and flow are apparent on the B386 Chertsey Road/B386 Longcross Road at the eastern borough boundary. This is due to the link being in close proximity to the DERA development in Runnymede and small evidence of borough cross-boundary traffic impacts between Runnymede and Surrey Heath (see *Figure 5.8*).

5.4.7 The next set of figures; *Figures 5.9* to *5.32* are also VCR plots indicating the amount of proposed congestion on individual links. These figures are the same as the borough VCR plots (*Figures 5.3* to *5.8*) but are looking at the main strategic road network and junctions relating to Surrey Heath in more detail. The strategic road network covered in *Figures 5.9* to *5.32* is the M3 Junctions 3 and 4, M25 J11 and M25 Junction 12/M3 Junction 2.

5.4.8 The scale is provided for each set of strategic VCR plots. The key is the same for all plots and is displayed below.

5.4.9 *Figures 5.9* to *5.32* display a general trend that levels of congestion do not increase by any major amount at the junctions surrounding and related to the borough of Surrey Heath. Where congestion is prominent and seen to increase is mainly on the local roads surrounding the strategic junctions, and congestion on the strategic network is only prominent in Scenarios C and D, which is related to the two large developments of PRB and DERA.



Key applies to all VCR plots

Volume/Capacity Ratio – M3 Junction 3

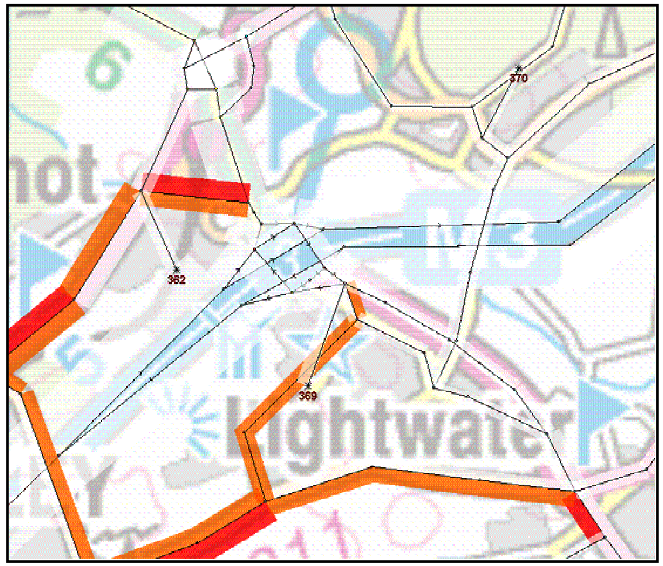
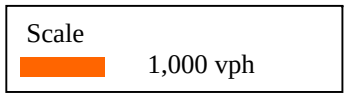


Figure 5.9: 2005 traffic volumes, M3 Junction 3



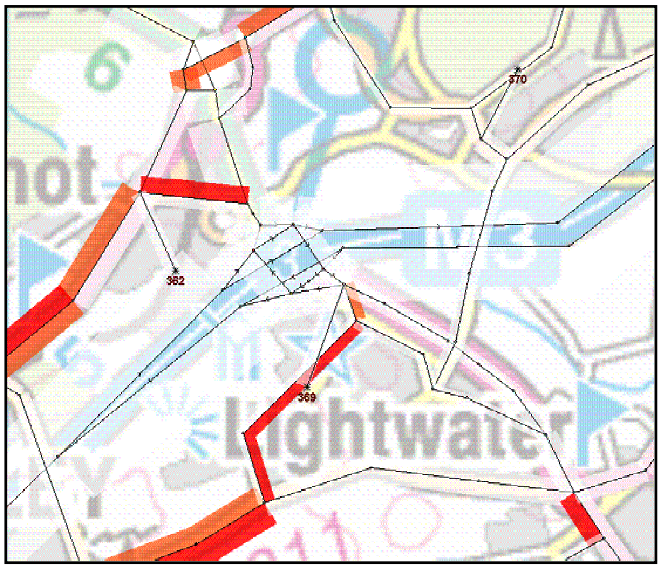


Figure 5.10: 2026 Do-Minimum traffic volumes, M3 Junction 3

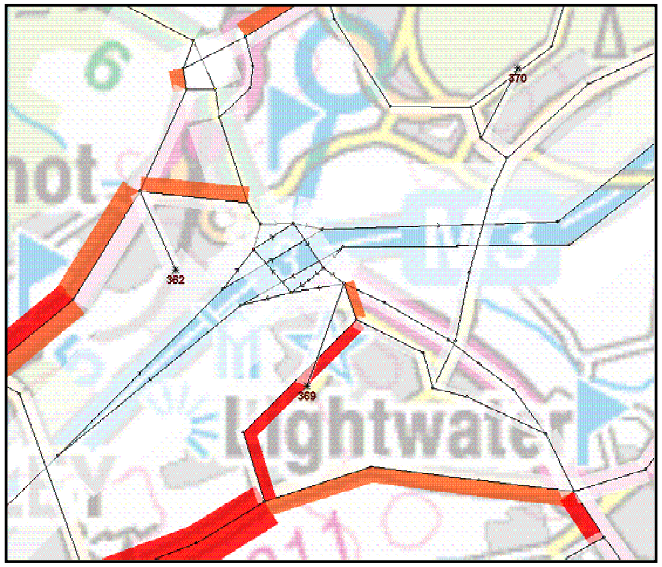


Figure 5.11: 2026 Scenario A traffic volumes, M3 Junction 3

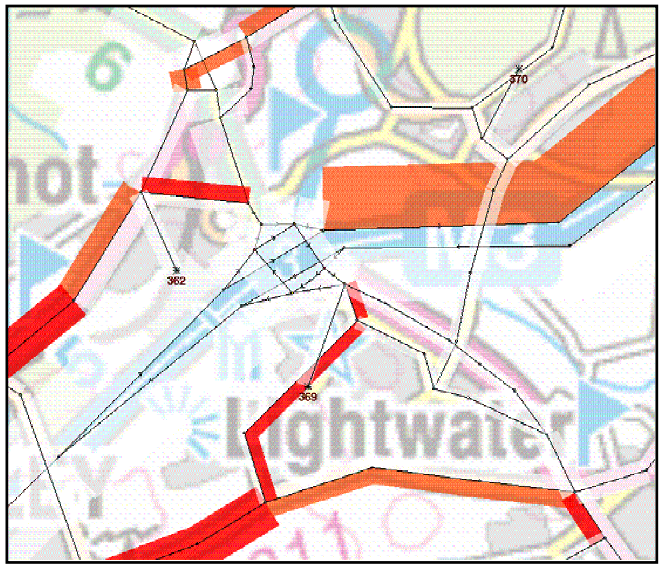


Figure 5.12: 2026 Scenario B traffic volumes, M3 Junction 3

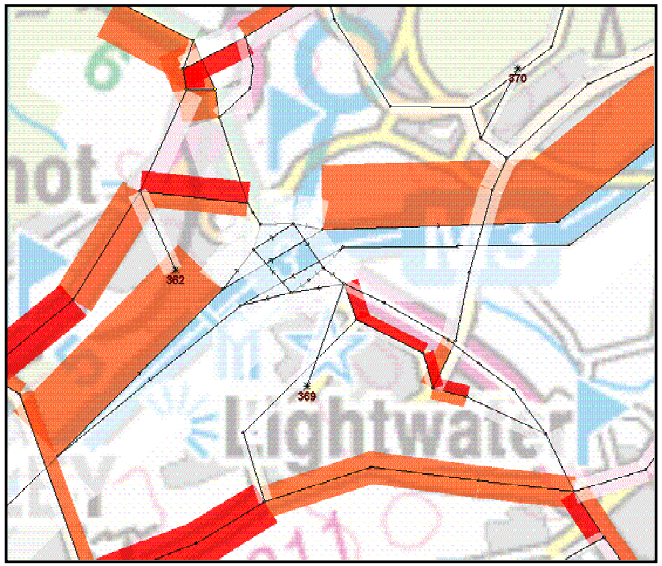


Figure 5.13: 2026 Scenario C traffic volumes, M3 Junction 3

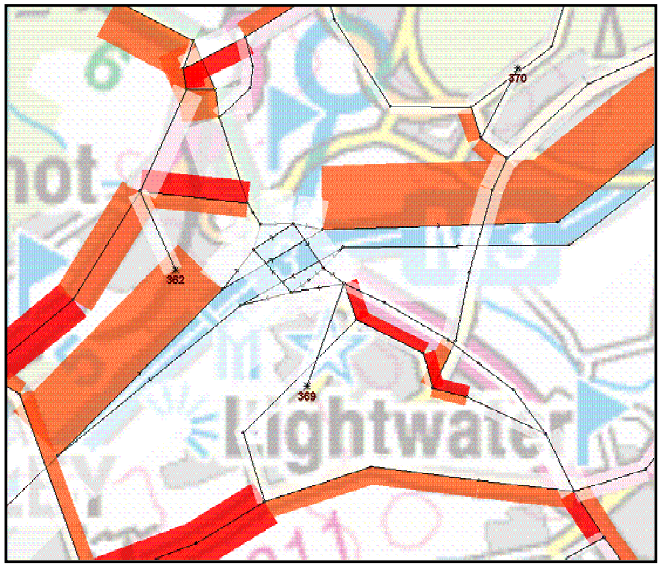
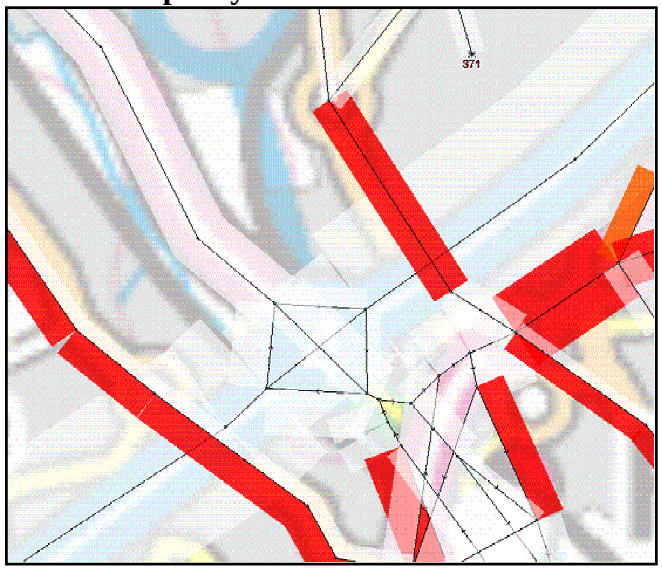


Figure 5.14: 2026 Scenario D traffic volumes, M3 Junction 3

5.4.10 The strategic network surrounding the M3 Junction 3 does not have VCR values greater than 0.85 in the 2005 base, 2026 Do-Minimum and Scenario A. However, in Scenario B on the main carriageway between Junctions 3 and 2 (travelling in a northbound direction) flow and levels of congestion increase to a value between 0.85 and 0.99. In Scenario C and D flow and levels of congestion continue to increase to have a VCR value between 0.85 and 0.99 on the northbound carriageway before and after Junction 3 (i.e. Junctions 4 to 3 and 3 to 2).

Volume/Capacity Ratio – M3 Junction 4



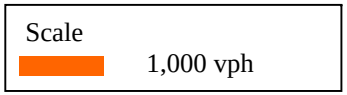


Figure 5.15: 2005 traffic volumes, M3 Junction 4

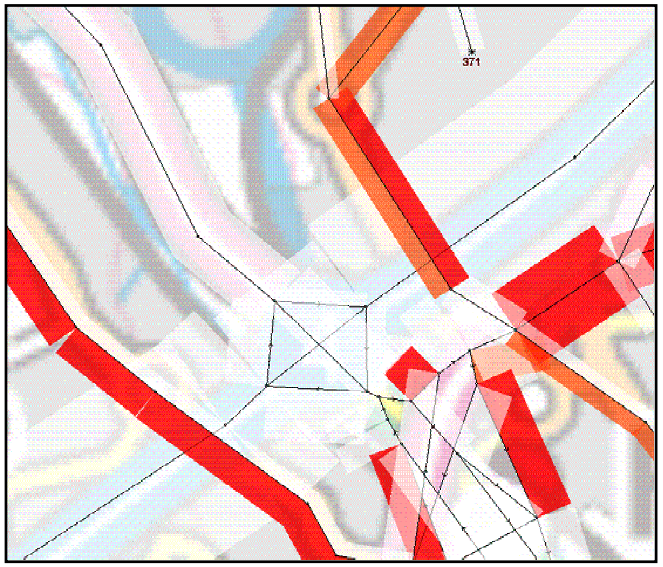
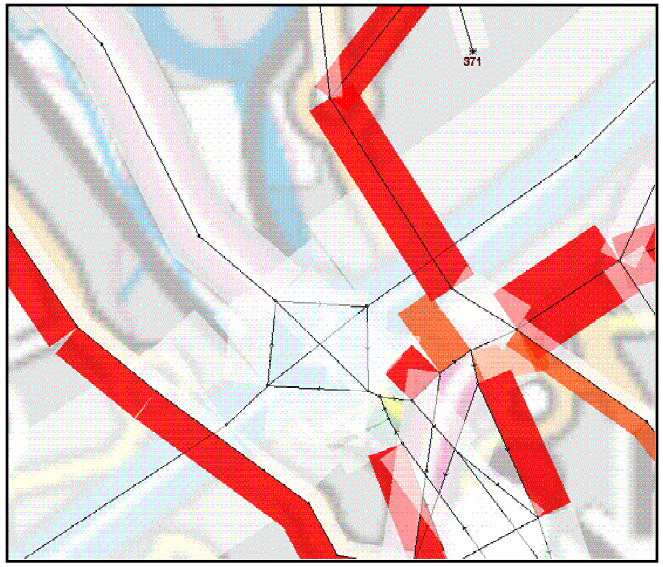


Figure 5.16: 2026 Do-Minimum traffic volumes, M3 Junction 4



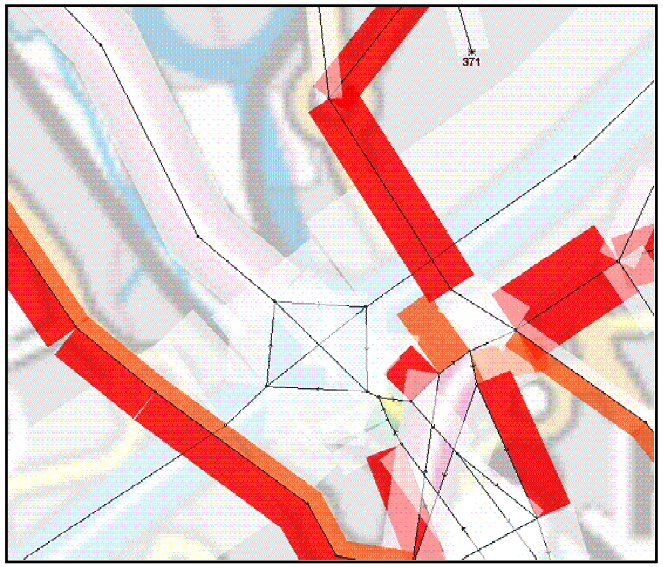


Figure 5.17: 2026 Scenario A traffic volumes, M3 Junction 4

Figure 5.18: 2026 Scenario B traffic volumes, M3 Junction 4

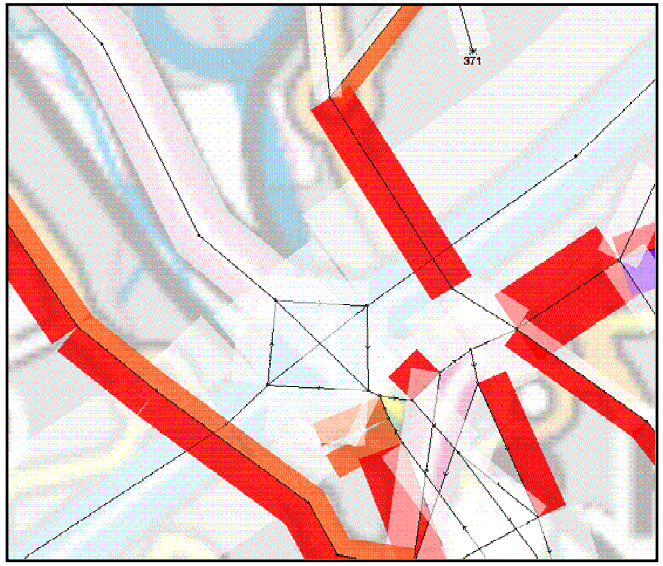


Figure 5.19: 2026 Scenario C traffic volumes, M3 Junction 4

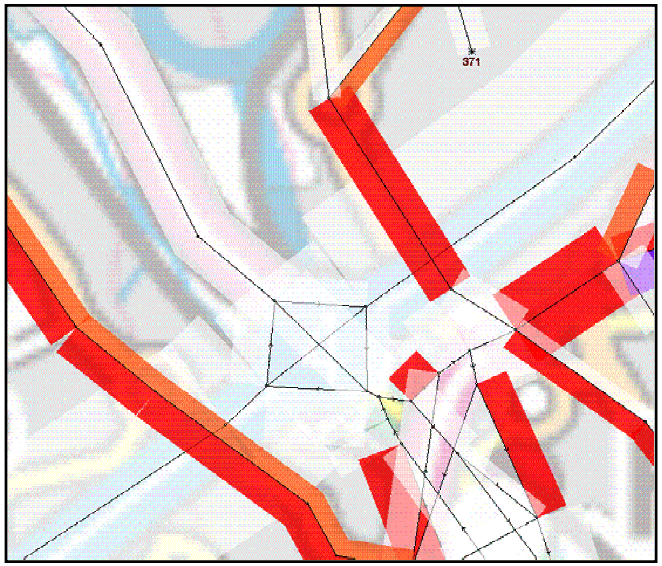


Figure 5.20: 2026 Scenario D traffic volumes, M3 Junction 4

5.4.11 *Figures 5.15* to *5.20* indicate that levels of congestion on the strategic network surrounding and at Junction 4 of the M3 do not reach a value equal to or greater than 0.85. This suggests that in all of the four tested scenarios the strategic network surrounding M3 Junction 4 is operating within capacity.

Volume/Capacity Ration – M25 Junction 11

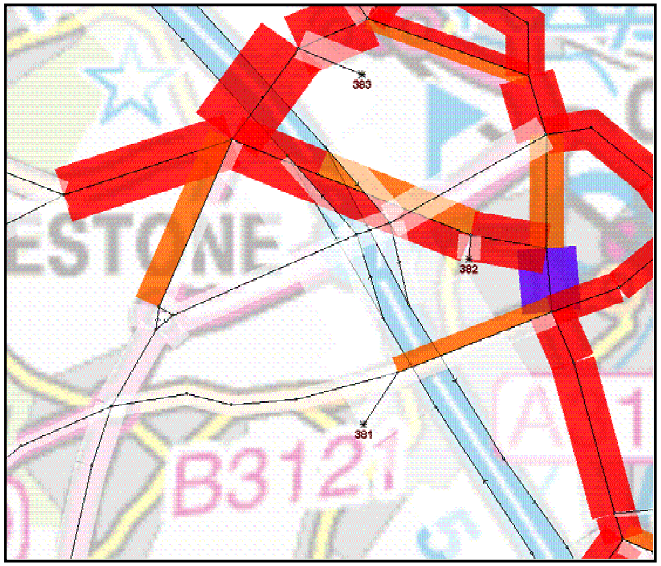
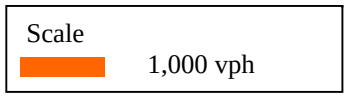


Figure 5.21: 2005 traffic volumes, M25 Junction 11



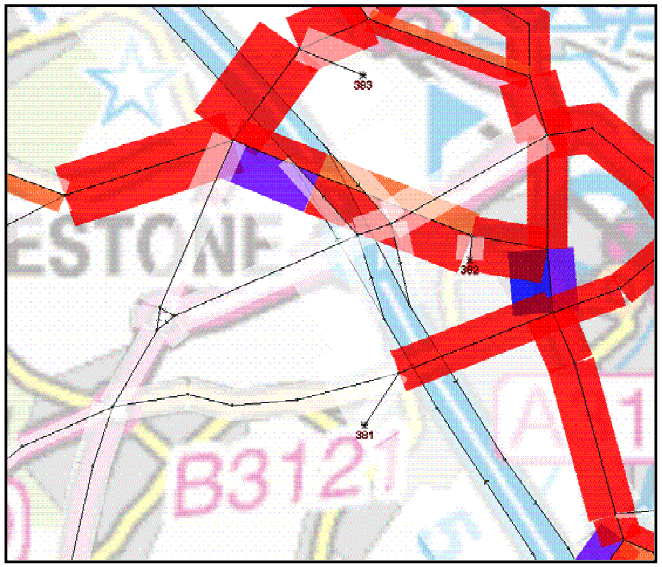


Figure 5.22: 2026 Do-Minimum traffic volumes, M25 Junction 11

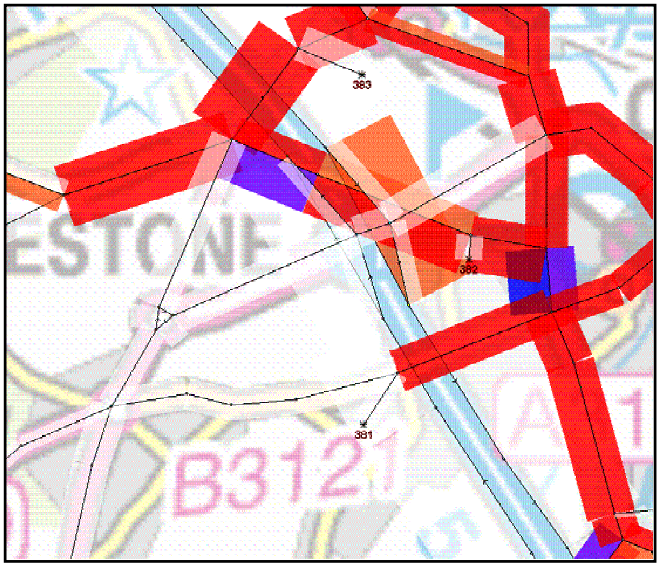


Figure 5.23: 2026 Scenario A traffic volumes, M25 Junction 11

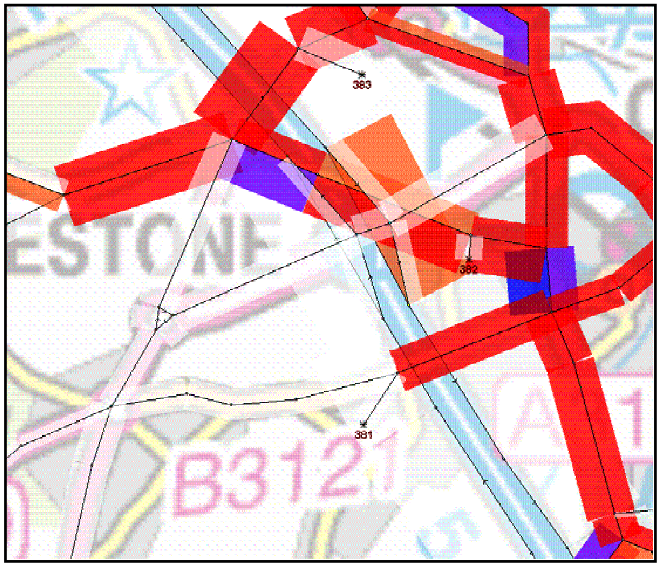


Figure 5.24: 2026 Scenario B traffic volumes, M25 Junction 11

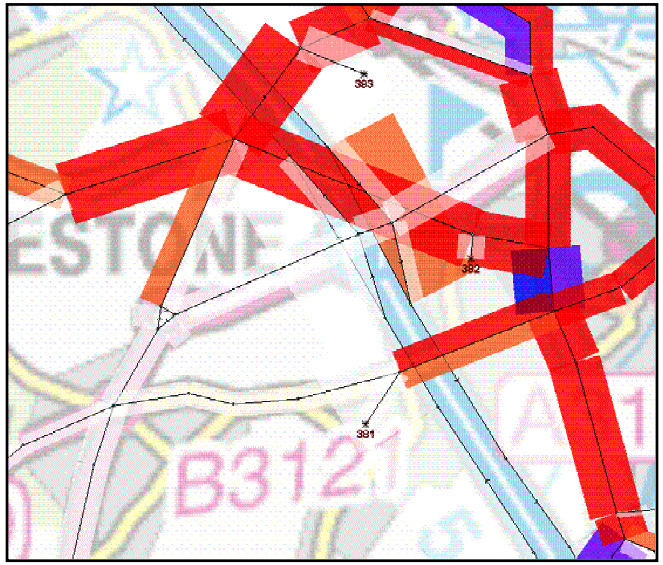


Figure 5.25: 2026 Scenario C traffic volumes, M25 J11

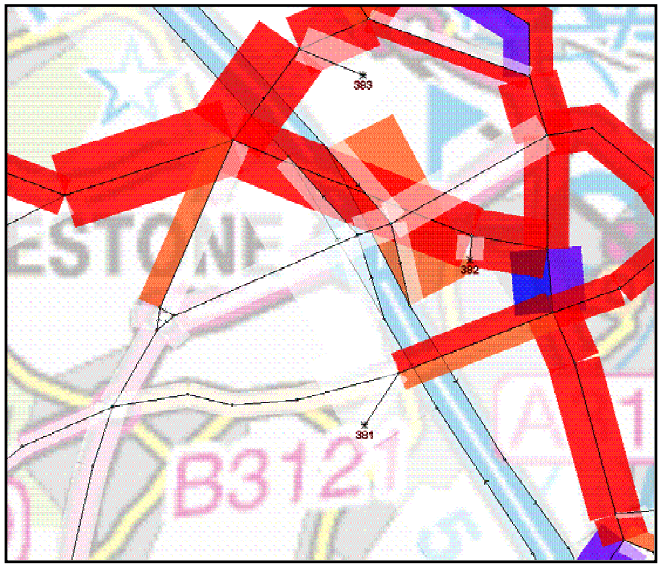


Figure 5.26: 2026 Scenario D traffic volumes, M25 Junction 11

5.4.12 Levels of congestion on the M25 Junction 11 in the 2005 base and 2026 Do-Minimum remain below a VCR value of 0.85. However, in the forecast scenarios (Scenario A, B, C and D) flow and congestion increases, specifically on the main carriageway of the M25 at Junction 11 travelling southbound i.e. M25 Junction 11 to 10. The VCR value of this link is between 0.85 and 0.99 in all of the four forecast scenarios, suggesting that this one specific link, between the off and on slips of the M25 Junction 11 southbound, is starting to operate slightly outside its means of capacity.

Volume/Capacity Ratio – M25 Junction 12 / M3 Junction 2

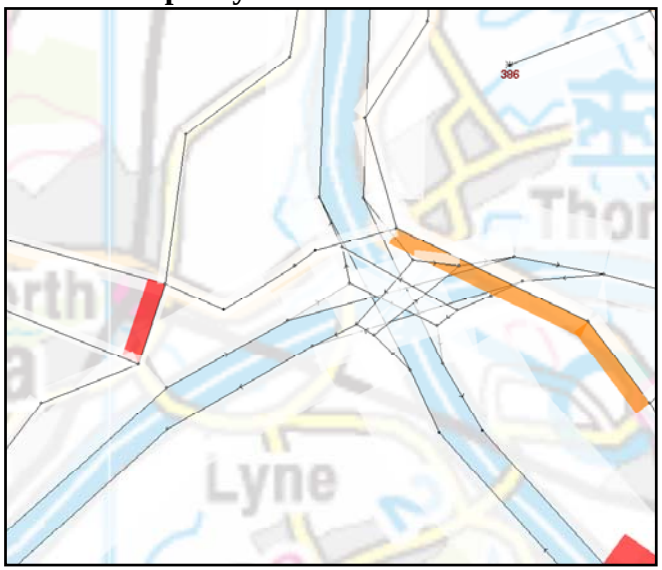


Figure 5.27: 2005 traffic volumes, M25 J12/M3 J2

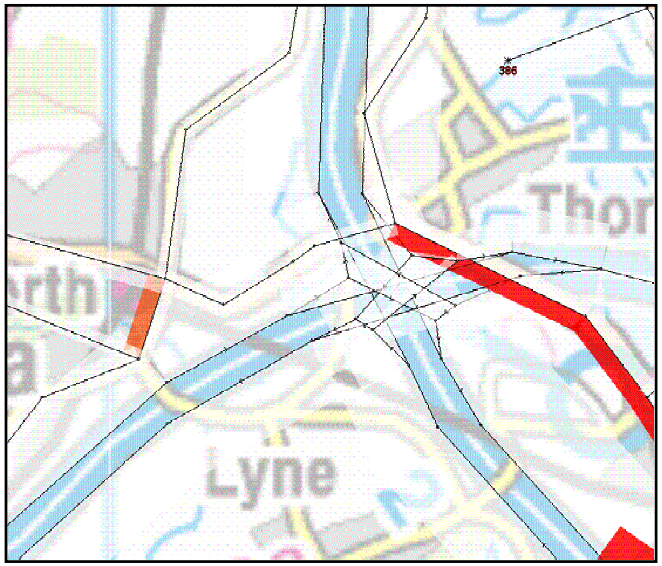


Figure 5.28: 2026 Do-Minimum traffic volumes, M25 J12/M3 J2

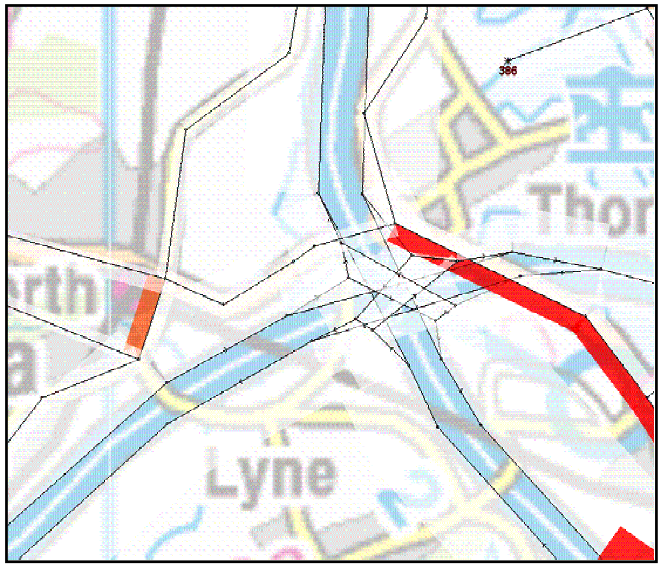


Figure 5.29: 2026 Scenario A traffic volumes, M25 J12/M3 J2

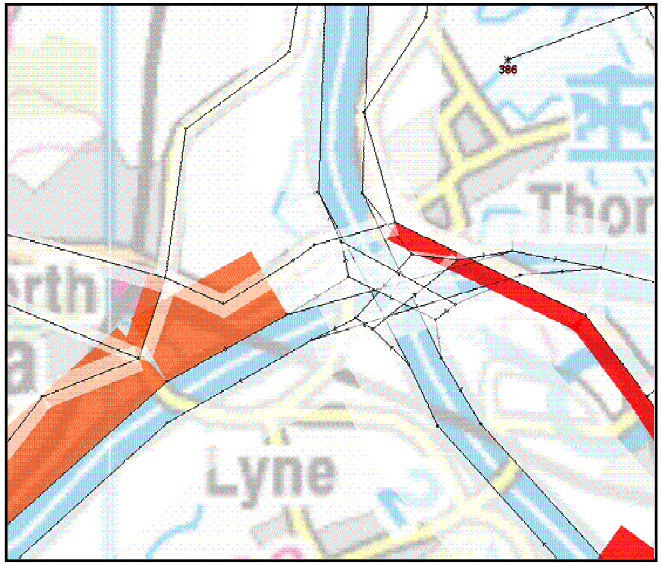


Figure 5.30: 2026 Scenario B traffic volumes, M25 J12/M3 J2

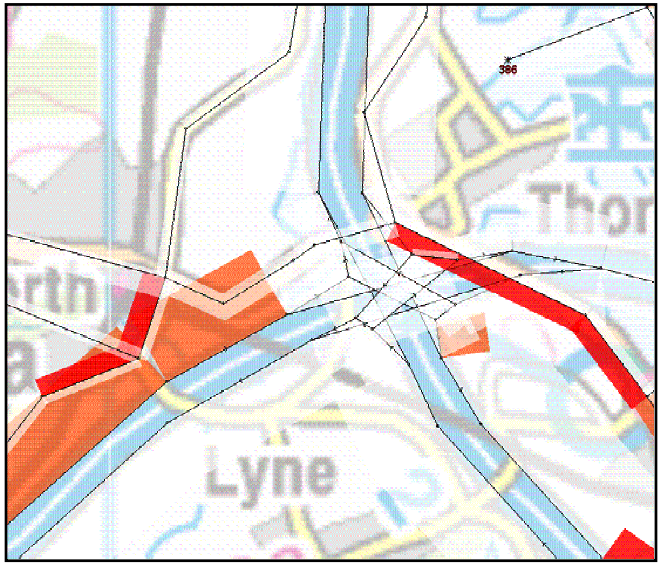


Figure 5.31: 2026 Scenario C traffic volumes, M25 J12/M3 J2

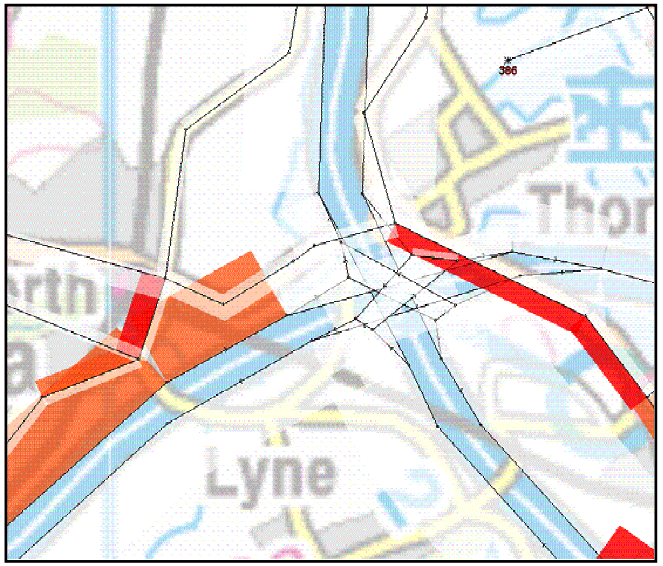


Figure 5.32: 2026 Scenario D traffic volumes, M25 J12/M3 J2

5.4.13 *Figures 5.27* to *5.32* indicate that levels of congestion remain relatively stable at the M25 Junction 12 / M3 Junction 2 from the 2005 base to Scenario D. Although the VCR plots do display congestion (as previously mentioned), on the M3 Junction 3 to 2 (travelling northbound) in Scenarios B, C and D. These figures relate to the M3 Junction 3 figures that highlight the same increases in VCR values (see *Figures 5.12* to *5.14*).

5.4.14 Further tabulated analysis of the strategic network including flows, free-flow and congested link travel time values and VCR values for each modelled scenario by modelled link in proximity to Surrey Heath are contained in *Appendix E*. The purpose of this analysis was to show a comparison of the actual VCR values which are represented in the VCR Plots contained in Figures 5.9 to 5.32.

5.5 Borough Bandwidth Plots – Difference in Flow

5.5.1 Changes in levels of traffic are shown using a bandwidth plot on the road network with comparison to the relevant reference cases. *Figures 5.33*.to *5.38* show the differences in traffic between the 2005 base year and the 2026 Do-Minimum, 2026 Do-Minimum and Scenario A, Scenario A and Scenario B, Scenario B and Scenario C and finally Scenario C and Scenario A for the entire borough of Surrey Heath (local roads). By comparing each scenario with their relevant reference cases it is possible to visualise the increases/decreases in traffic flows on individual links at a borough scale.

5.5.2 Where links are coloured blue, this indicates an increase in flow whereas links coloured yellow represent a decrease in traffic flow between the two scenarios in question. Due to the impacts of Scenarios C and D being two large developments that have not yet obtained planning permission (PRB and DERA), it was thought appropriate to compare Scenario D to Scenario B to see the general effects.

5.5.3 For reference *Figures 5.33* to *5.38* show the disposition of allocated growth by development type (commercial and residential) represented by pie charts. These plots are very similar to those produced in *Figures 3.1* to *3.8*, although the plots shown below represent all trips (departures and arrivals summed). The allocated growth for commercial developments is shown in red and the residential developments in grey.

5.5.4 *Figures 5.33* to *5.38* indicate that all 2026 forecast scenarios experience a general increase in traffic flow when compared to their relevant reference cases. *Figure 5.33* displays the projected traffic growth between the 2005 base and the forecast year of 2026 (the Do-Minimum). Traffic flow is generally forecast to increase at a borough wide level and the links forecast to experience the greatest increases are part of the strategic road network within Surrey Heath, the M3.

5.5.5 *Figure 5.34* displays the increases in traffic flow between the 2026 Do-Minimum and Scenario A. Flow is estimated to increase by a small amount on the majority of the borough links. The largest increases in flow is estimated to occur in the more urban areas of the borough, namely the towns in the west i.e. Camberley and nearby Frimley. Unsurprisingly the flows are estimated to increase most on links surrounding the areas of the borough that are proposed to contain the largest proportions of development in Scenario A.

5.5.6 *Figure 5.35* illustrates that Scenario B has a similar impact (if not slightly less of an impact) on increasing flow in the borough to Scenario A. Flow is generally projected to increase in the borough of Surrey Heath in Scenario B but by a minimal amount when compared to Scenario A. The M3 is projected to incur a minimal amount of additional flow in Scenario B.

5.5.7 *Figure 5.36* indicates that flow is estimated to increase as well as decrease within areas of the borough in Scenario C when compared to Scenario B. It is important to note that the only difference between Scenario B and C is the inclusion of the PRB development in zone 365 Deepcut & Mytchett. Due to this a second centroid connector was added to zone 365 in Scenarios C and D to allow for more representative access points to the large proposed development in one zone. This additional centroid connector can be an explanation for why some links within or in close proximity to zone 365 experiences a decrease in flow, as route choice will be affected for trips in this zone. Overall links within the borough are estimated to experience a general increase in flow in Scenario C when compared to Scenario B, the M3 between Junctions 4 and 3 (travelling northbound) are subject to these small increases in flow.

5.5.8 Flow is expected to increase in a similar trend to that shown between Scenarios C and B, when comparisons are made between Scenario C and Scenario A (see *Figure 5.37*). This plot shows the aggregated impacts caused by Scenario C when compared to Scenario A.

5.5.9 *Figure 5.38* displays the differences in flow between Scenario D and Scenario B. It can be seen that the areas most impacted by changes in flow surround the locations of the two developments i.e. the south-west of the borough surrounding the PRB development and the east of the borough. Links displaying most prominent increases in flow in Scenario D when compared to Scenario B are B3015 Deepcut Bridge Road, B386 Longcross/Cherstey Road and the M3 Junction 3 to 2 (northbound).

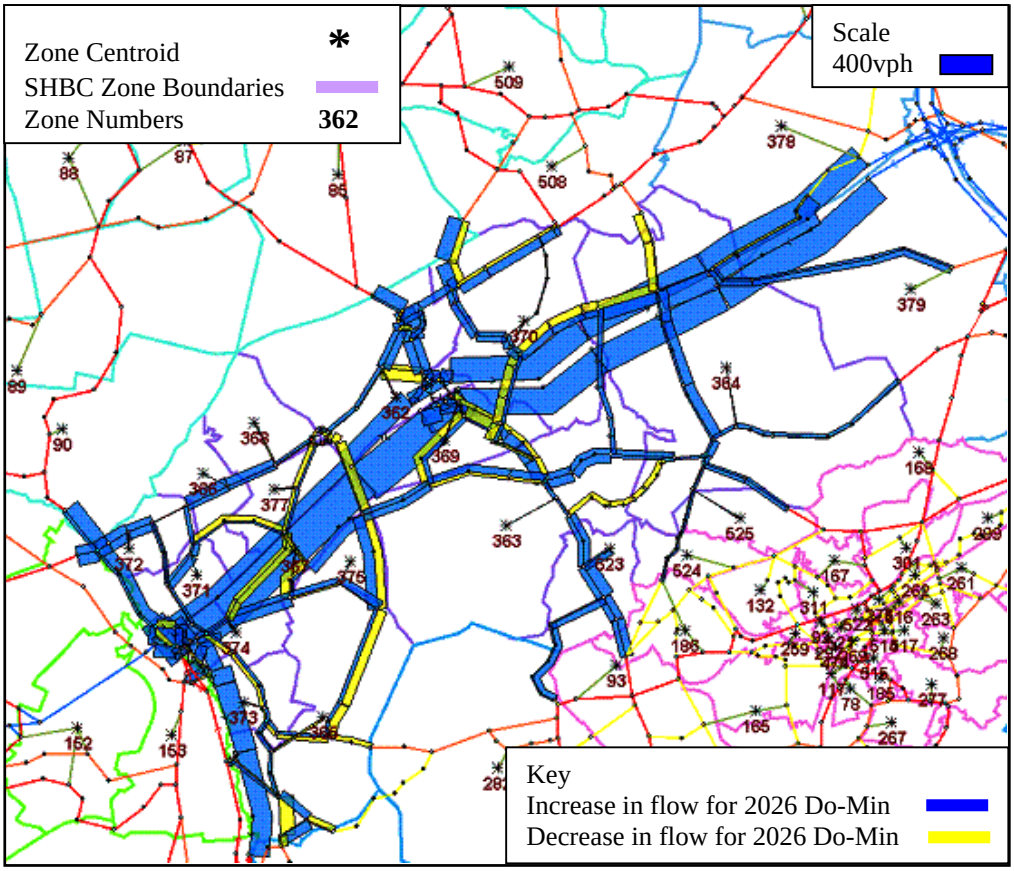


Figure 5.33: 2026 Do-Minimum flow minus the 2005 base flow (results in the increases/decreases in flow between 2005 base and 2026 Do-Minimum being displayed)

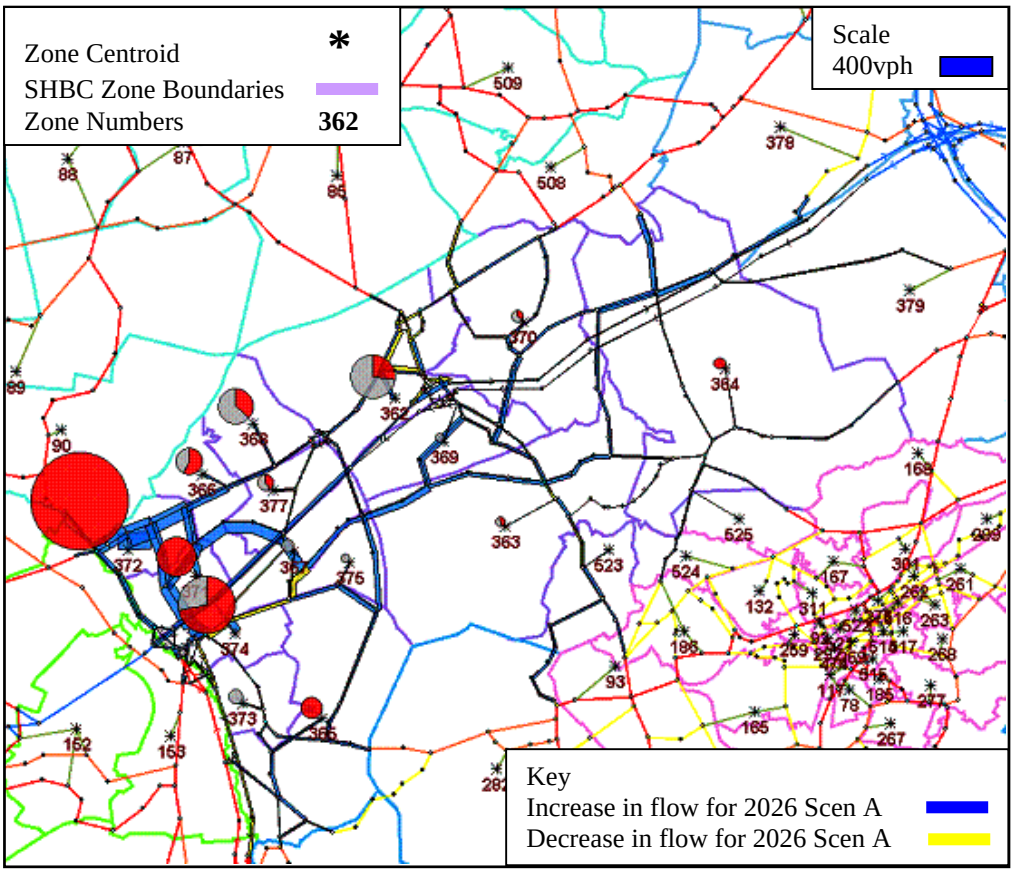


Figure 5.34: 2026 Scenario A flow minus the 2026 Do-Minimum flow (results in the increases/decreases in flow between 2026 Do-Minimum and 2026 Scenario A being displayed)

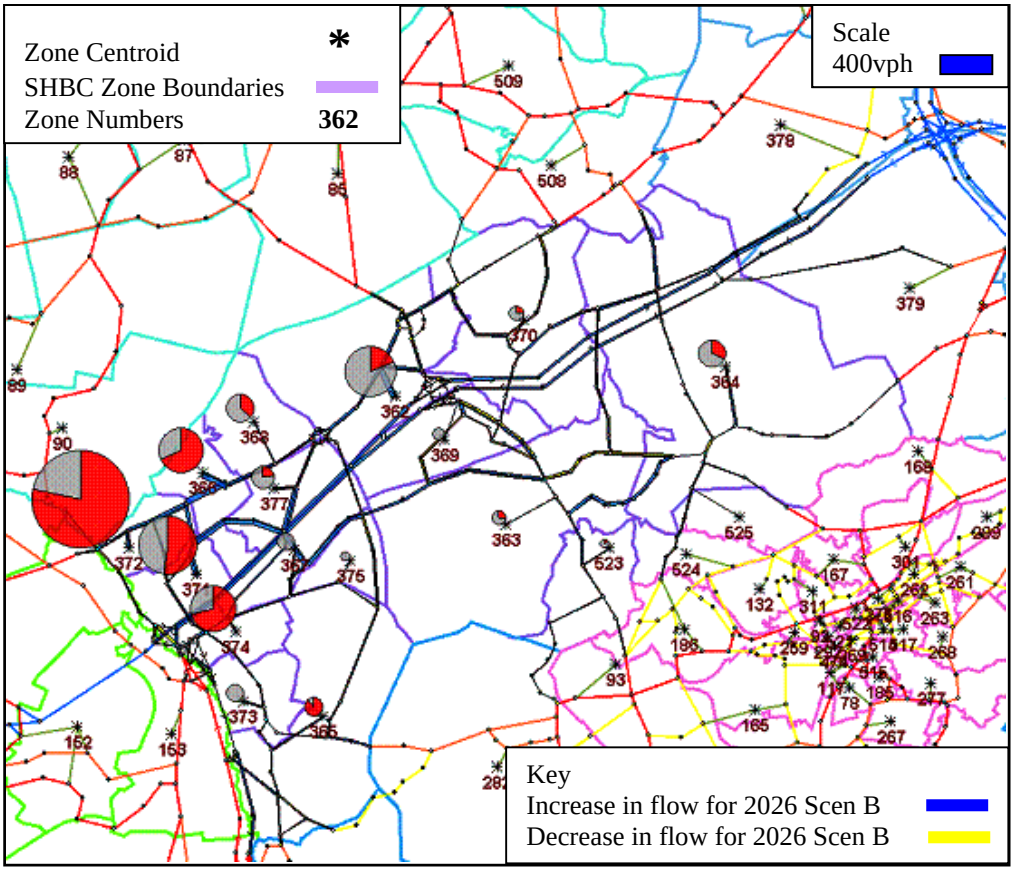


Figure 5.35: 2026 Scenario B flow minus 2026 Scenario A flow (results in the increases/decreases in flow between 2026 Scenario A and 2026 Scenario B being displayed)

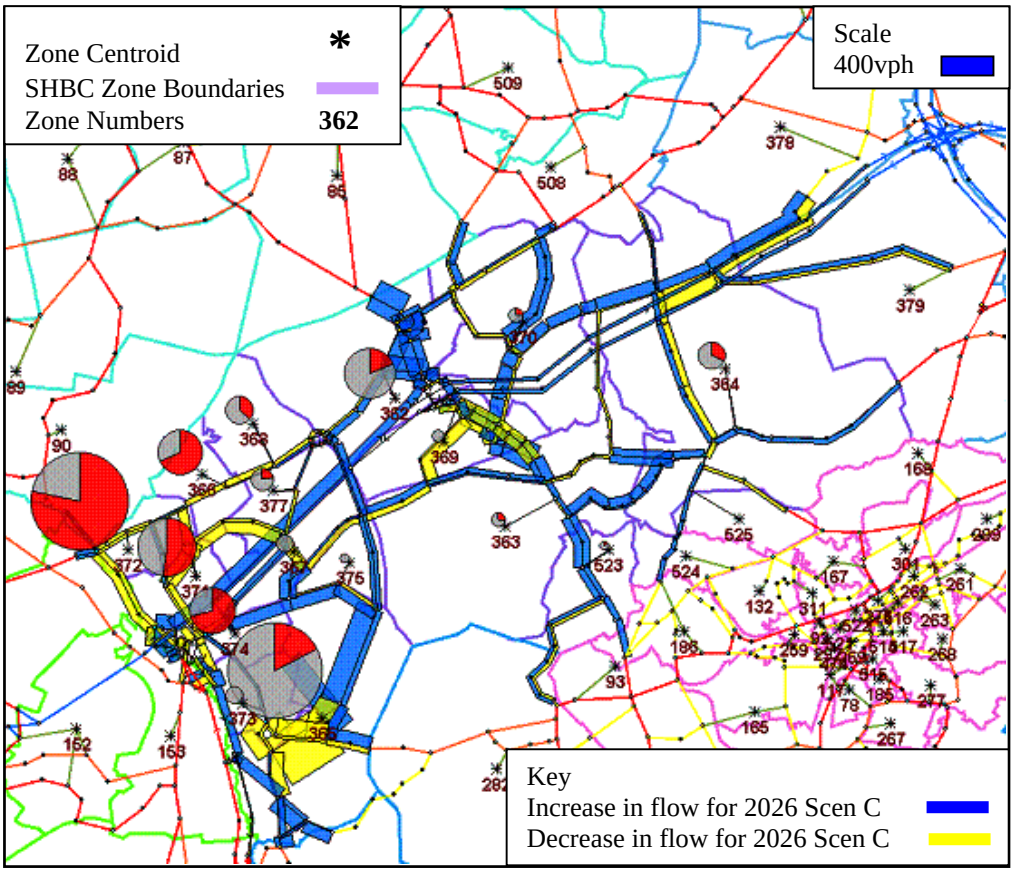


Figure 5.36: 2026 Scenario C flow minus 2026 Scenario B flow (results in the increases/decreases in flow between 2026 Scenario B and 2026 Scenario C being displayed)

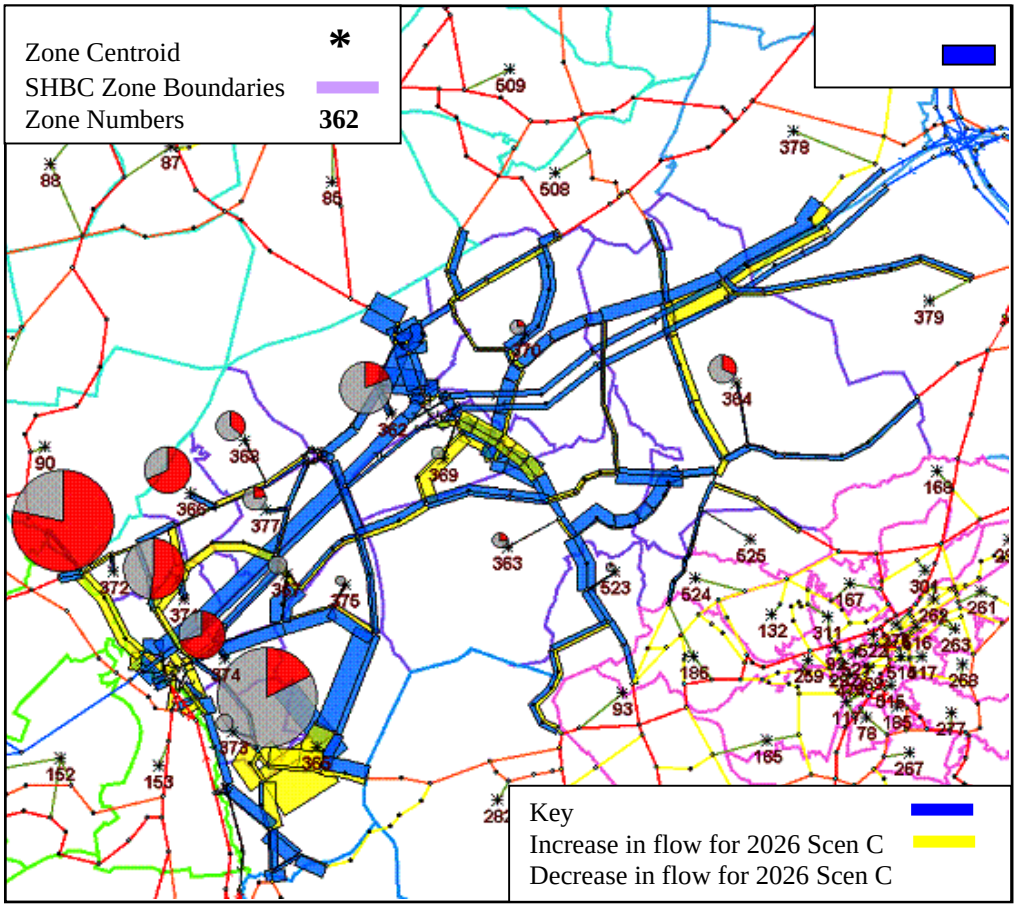


Figure 5.37: 2026 Scenario C flow minus 2026 Scenario A flow (results in the increases/decreases in flow between 2026 Scenario C and 2026 Scenario A being displayed)

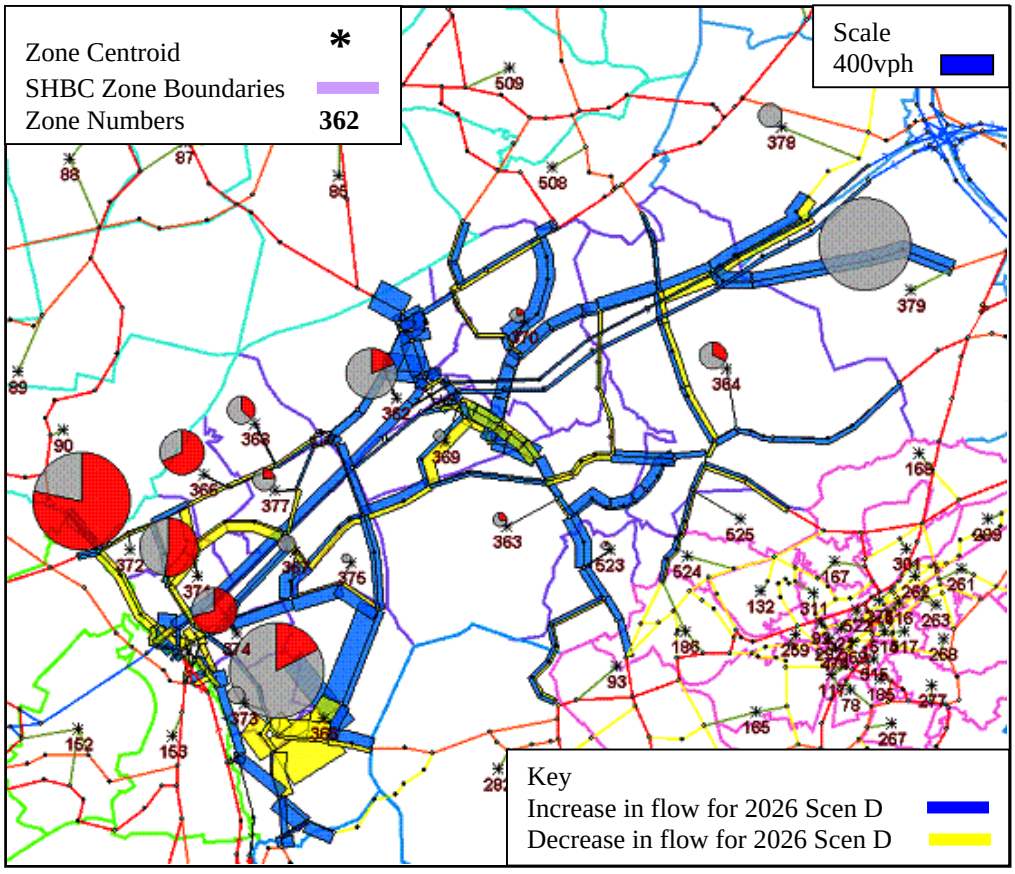


Figure 5.38: 2026 Scenario D flow minus 2026 Scenario B flow (results in the increases/decreases in flow between 2026 Scenario B and 2026 Scenario D being displayed)

5.5.10 *Figures 5.39* to *5.62* show more detailed plots of the differences in flow for all scenarios in all areas surrounding the key junctions of the strategic road network to the borough of Surrey Heath.

5.5.11 *Figures 5.*39 to *5.62* display exactly the same information as the borough changes in flow plots (*Figures 5.33* to *5.38*) but in greater detail. The following figures display the actual values of increases/decreases in flow on individual links. This is displayed by the small numbers above and below the link for each direction of flow. For example if the value of 10 is displayed above a link, the flow has increased by 10 vehicles, for the specified direction, between the two scenarios in comparison.

Difference in Flow – M3 Junction 3

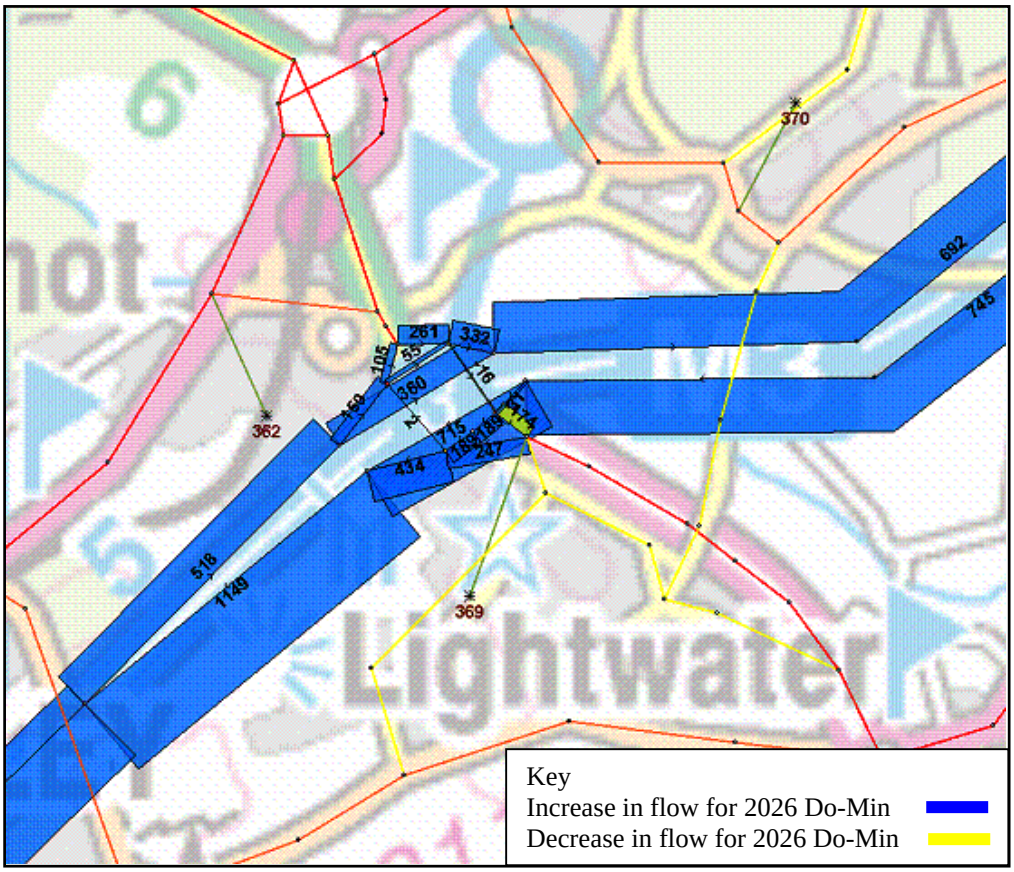


Figure 5.39: 2026 Do-Minimum flow minus the 2005 base flow (results in the increases/decreases in flow between the 2005 base and 2026 Do-Minimum being displayed).

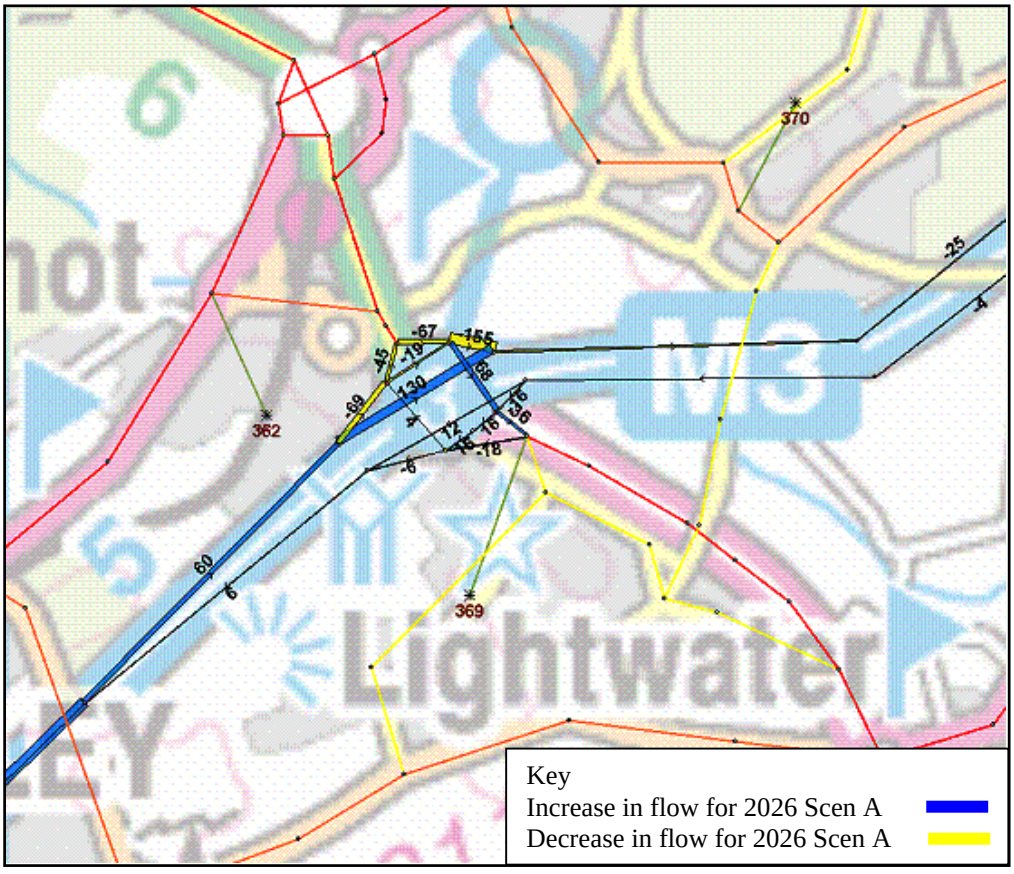


Figure 5.40: 2026 Scenario A flow minus the 2026 Do-Minimum flow (results in the increases/decreases in flow between the 2026 Do-Minimum and 2026 Scenario A being displayed).

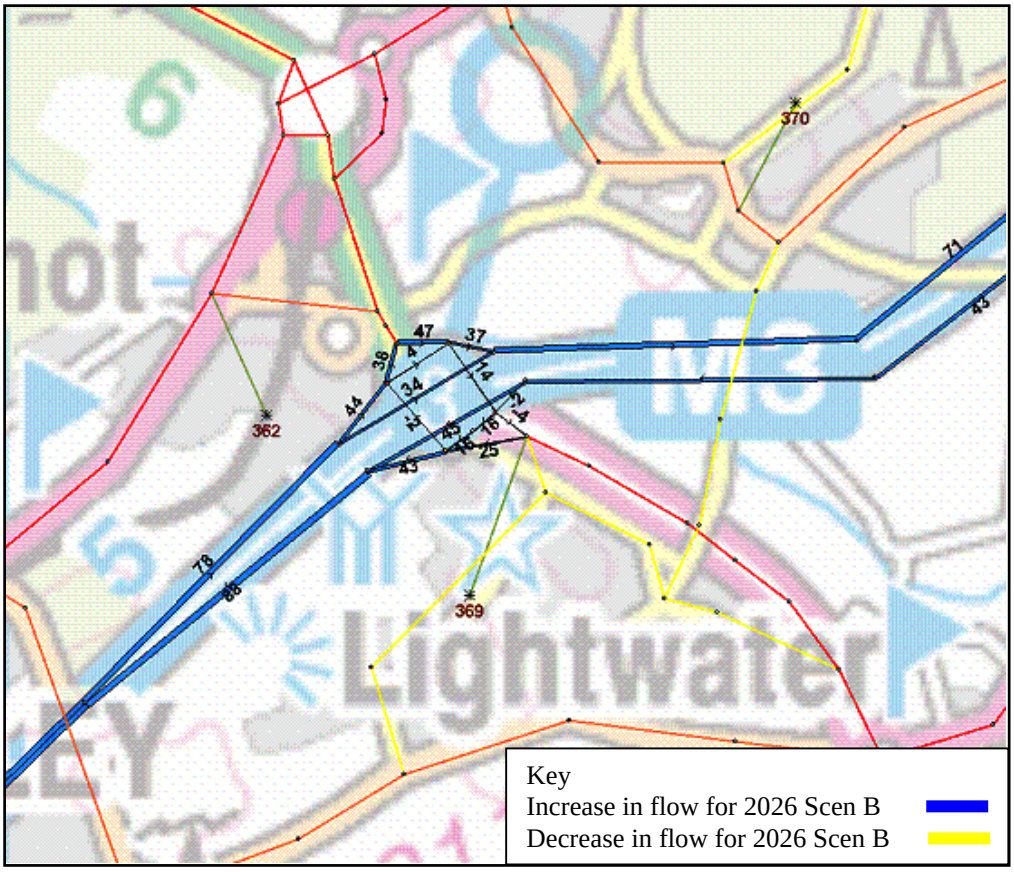


Figure 5.41: 2026 Scenario B flow minus the 2026 Scenario A flow (results in the increases/decreases in flow between the 2026 Scenario A and 2026 Scenario B being displayed).

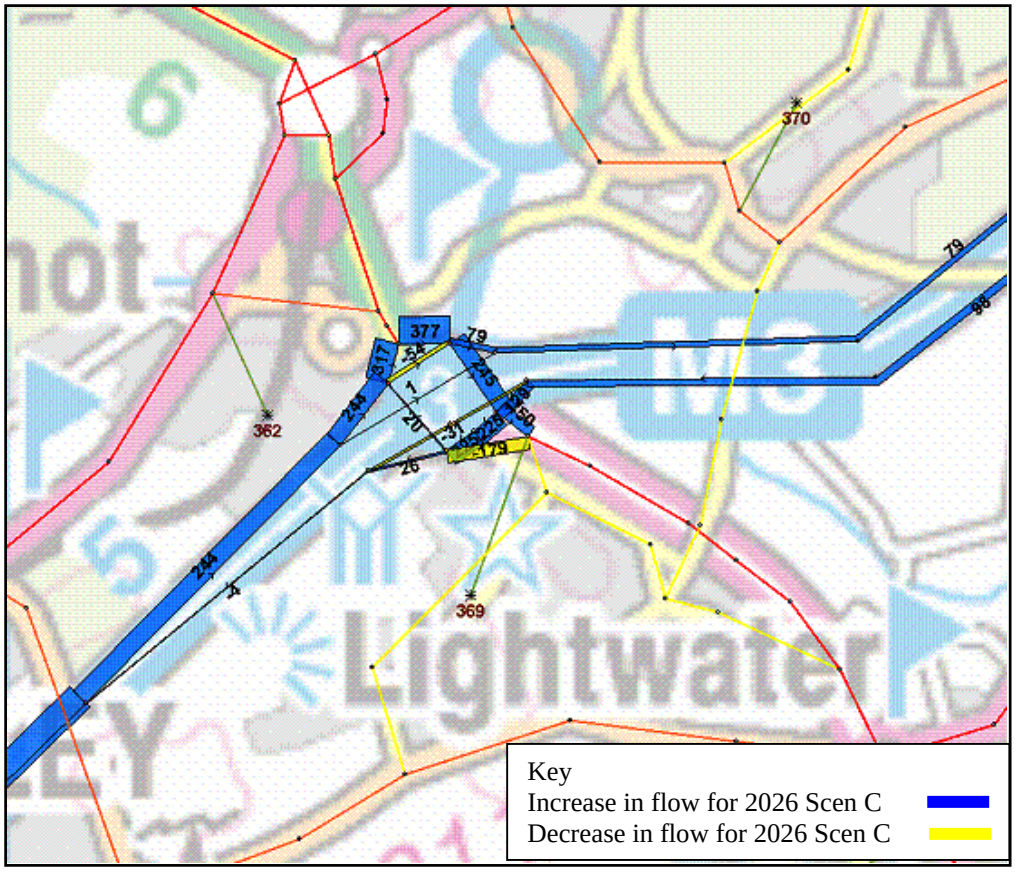


Figure 5.42: 2026 Scenario C flow minus the 2026 Scenario B flow (results in the increases/decreases in flow between the 2026 Scenario B and 2026 Scenario C being displayed).

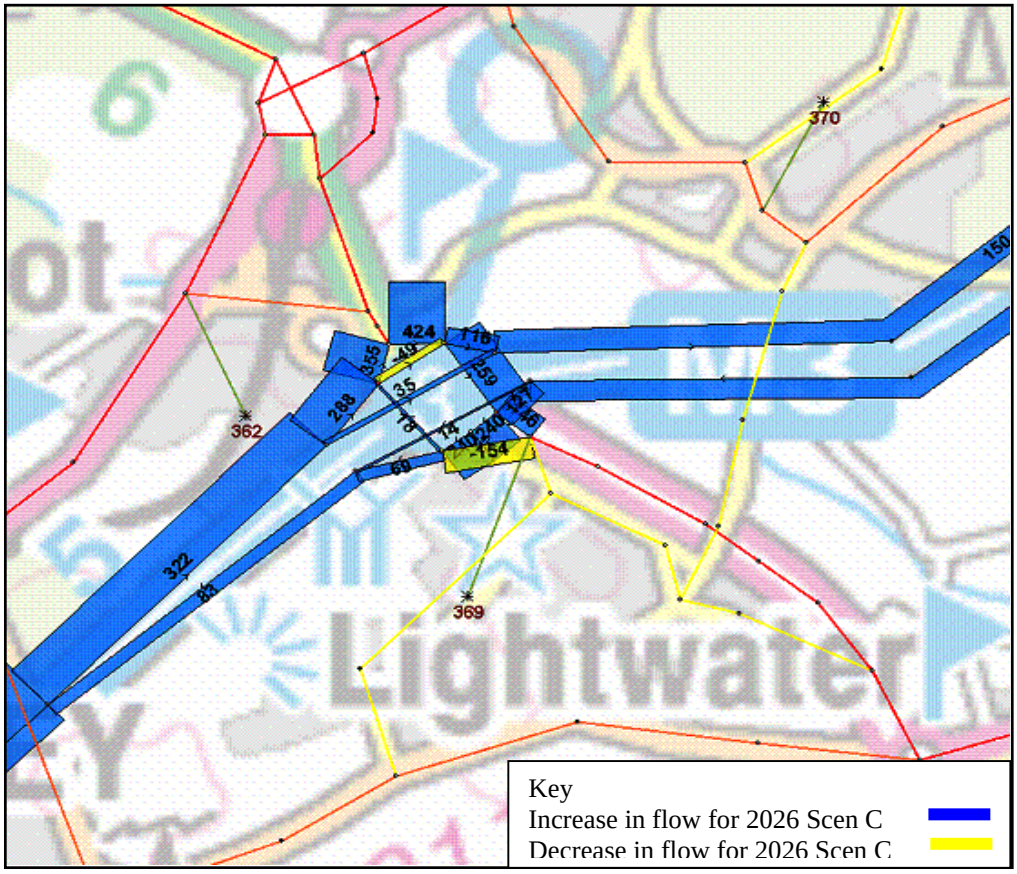


Figure 5.43: 2026 Scenario C flow minus the 2026 Scenario A flow (results in the increases/decreases in flow between the 2026 Scenario A and 2026 Scenario C being displayed).

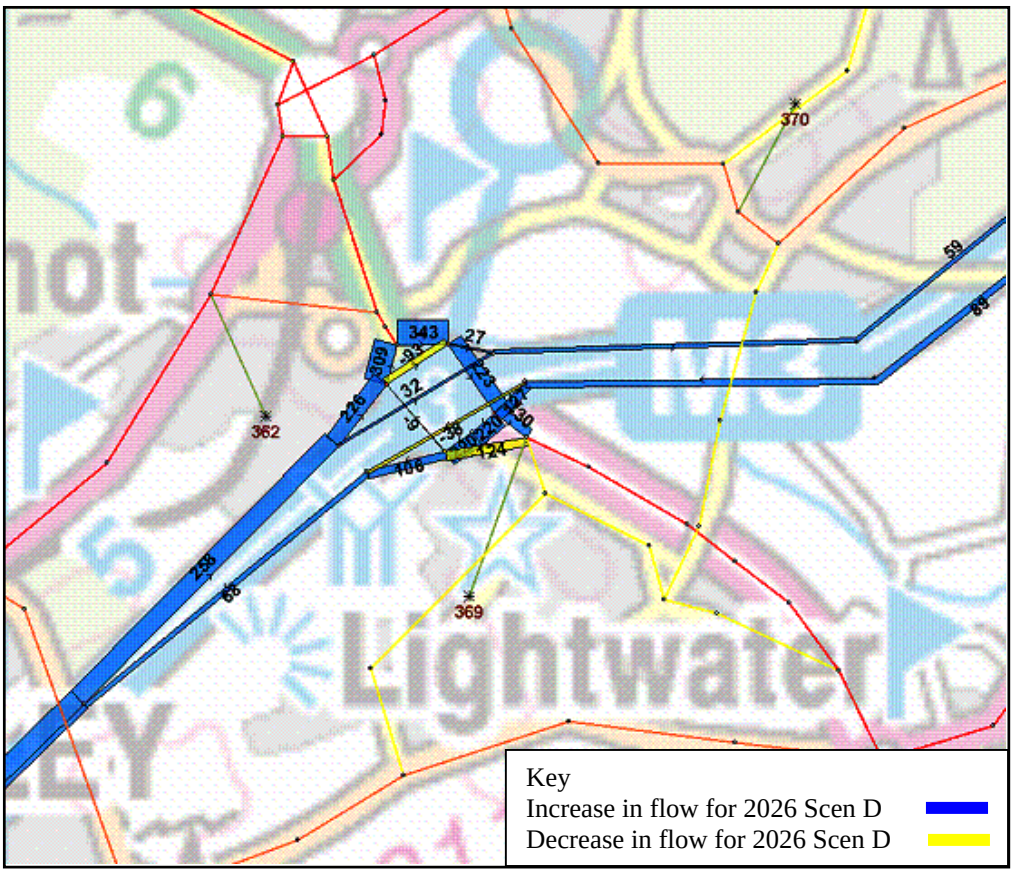


Figure 5.44: 2026 Scenario D flow minus the 2026 Scenario B flow (results in the increases/decreases in flow between the 2026 Scenario B and 2026 Scenario D being displayed).

5.5.12 *Figures 5.39* to *5.44* show the differences in flow for each scenario compared to their reference case for the area of the M3 Junction 3. A comparison between Scenario D and B is included as it displays the combined effects of the PRB and DERA development against Scenario B. A comparison between Scenario C and A is also included to highlight the overall effects of permitted and proposed developments in Surrey Heath

5.5.13 The largest increases in flow on the M3 and the slip roads of Junction 3 are between the 2005 base and 2026 Do-Minimum. This is related to background growth within the borough of Surrey Heath and national projected traffic growth for external trips to the borough of Surrey Heath.

5.5.14 *Figure 5.43* indicates that the links estimated to incur the largest increases in flow between Scenarios C and A is the northbound links on the M3 prior to and at Junction 3. The northbound carriageway prior to Junction 3 is estimates to incur an increase in flow of 322 vehicles and 285 vehicles on the northbound off-slip.

5.5.15 *Figure 5.44* illustrates that between Scenario B and Scenario D flow on the M3 between Junctions 4 and 3 (travelling northbound) is estimated to increase by approximately 250 vehicles. Similarly the M3 Junction 3 northbound slips on and off are estimated to incur increased flow of approximately 300 to 350 vehicles in Scenario D when compared to Scenario B.

Difference in Flow - M3 Junction 4

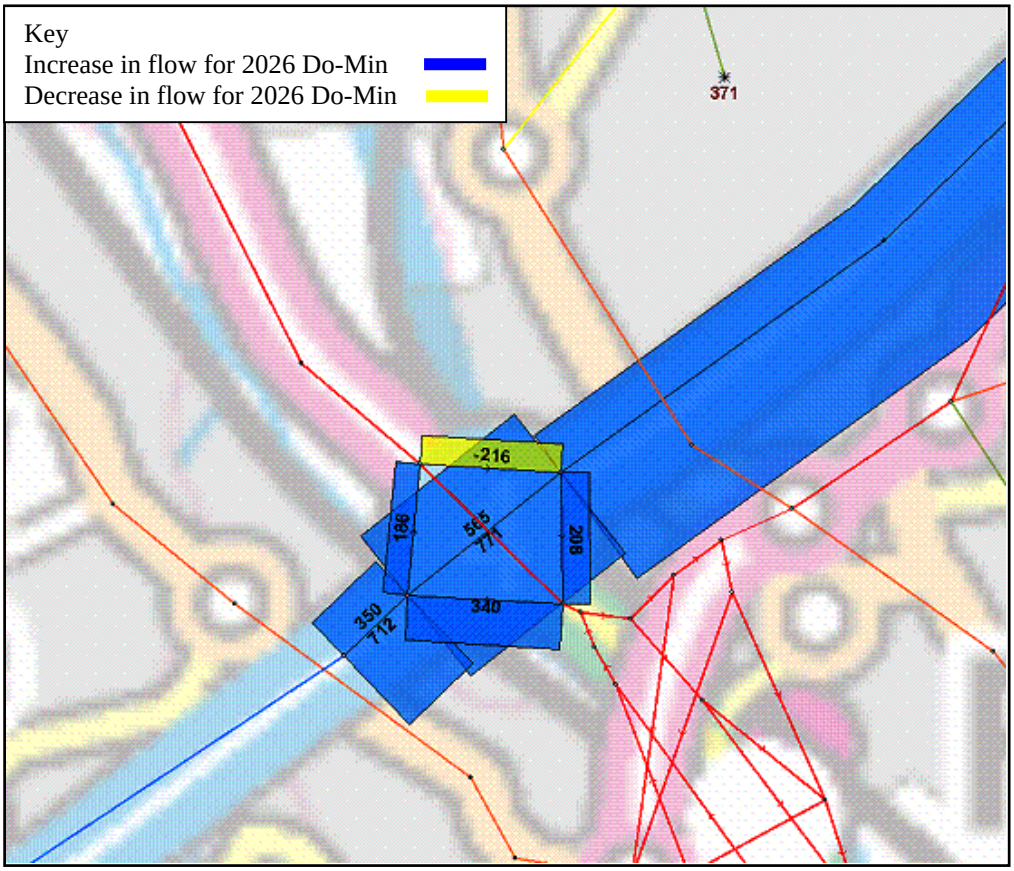


Figure 5.45: 2026 Do-Minimum flow minus the 2005 base flow (results in the increases/decreases in flow between the 2005 base and 2026 Do-Minimum being displayed).

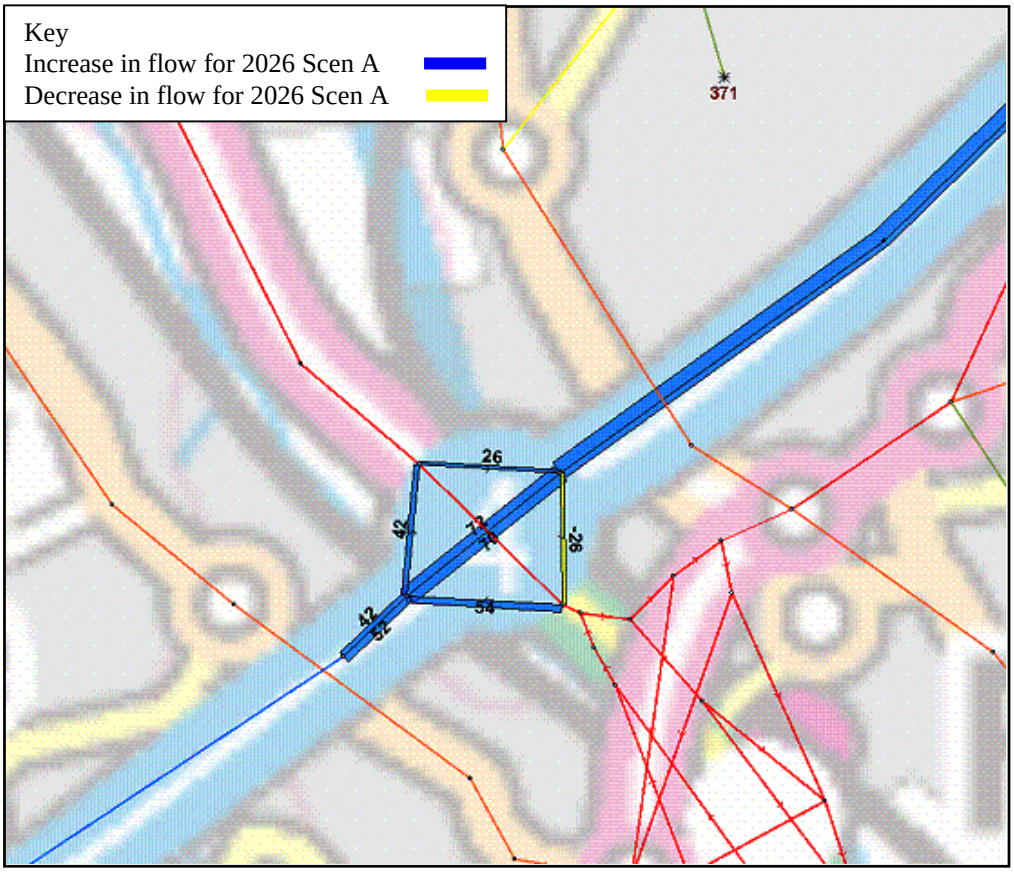


Figure 5.46: 2026 Scenario A flow minus the 2026 Do-Minimum flow (results in the increases/decreases in flow between the 2026 Do-Minimum and 2026 Scenario A being displayed).

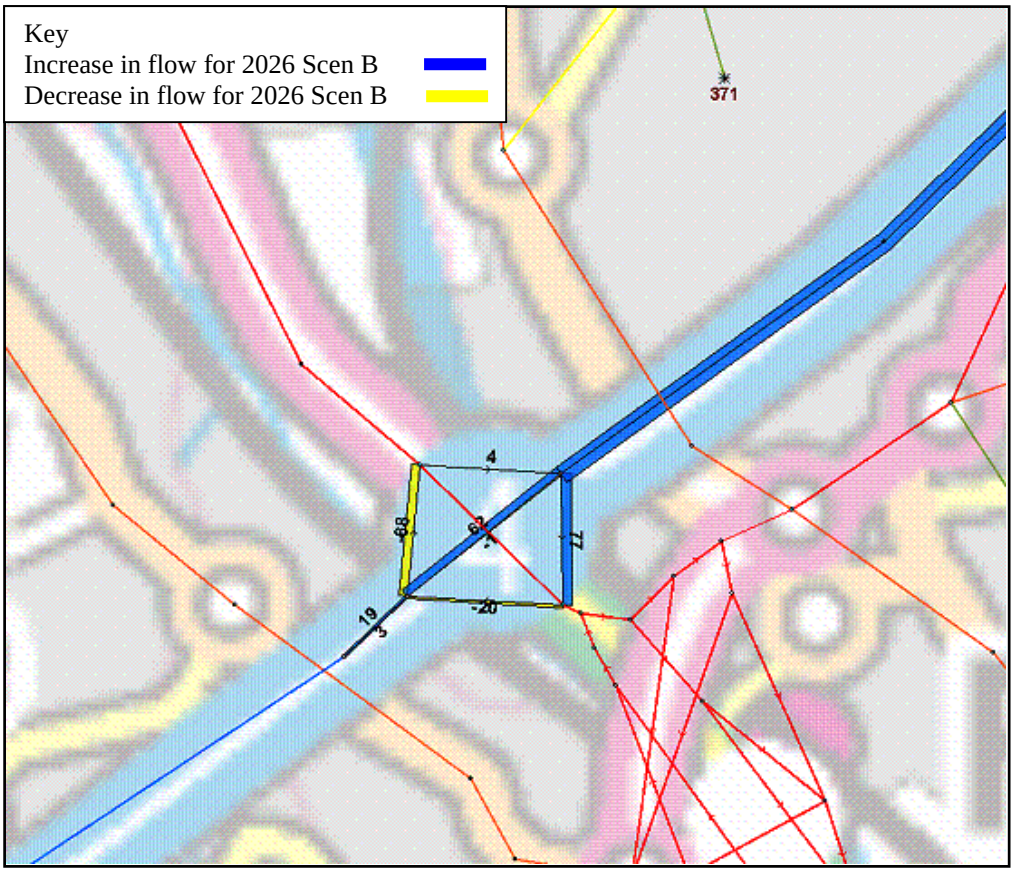


Figure 5.47: 2026 Scenario B flow minus the 2026 Scenario A flow (results in the increases/decreases in flow between the 2026 Scenario A and 2026 Scenario B being displayed).

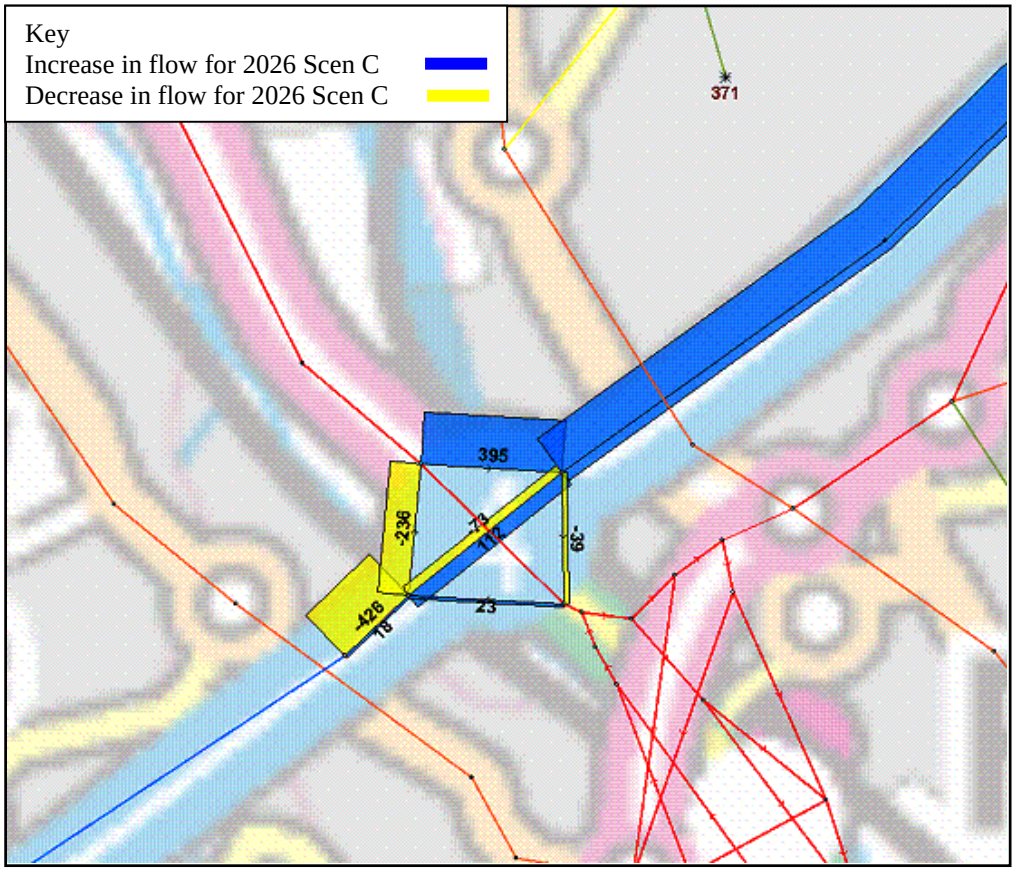


Figure 5.48: 2026 Scenario C flow minus the 2026 Scenario B flow (results in the increases/decreases in flow between the 2026 Scenario B and 2026 Scenario C being displayed).

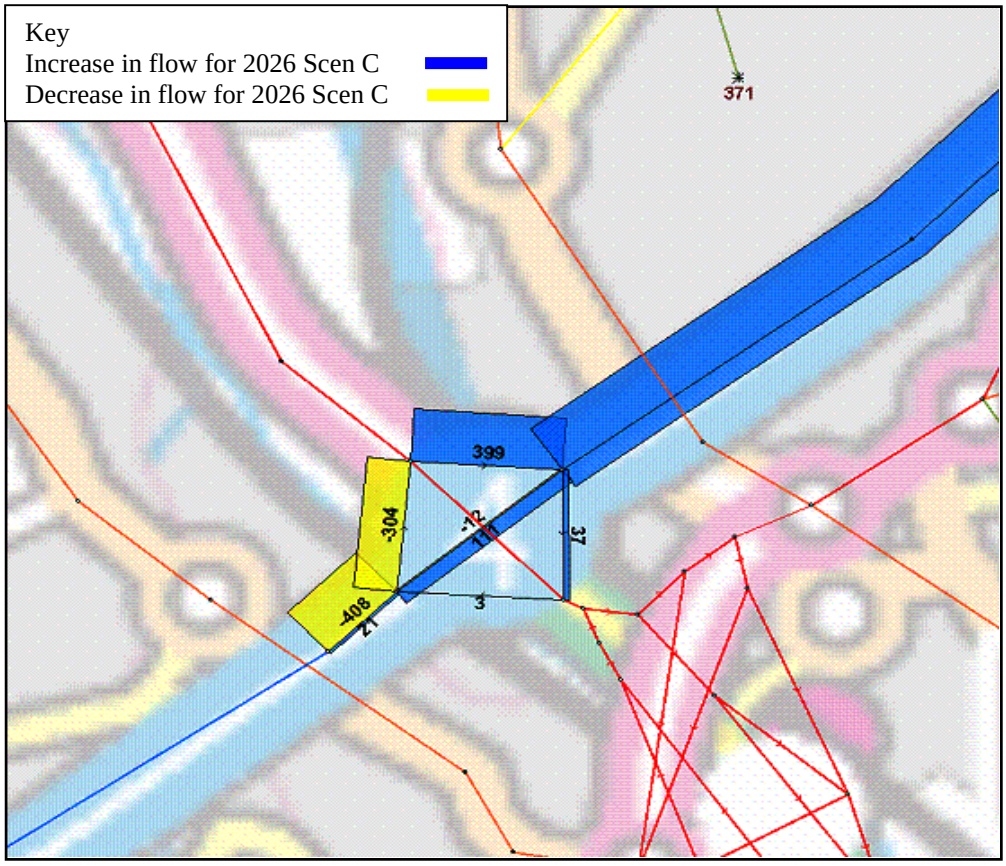


Figure 5.49: 2026 Scenario C flow minus the 2026 Scenario A flow (results in the increases/decreases in flow between the 2026 Scenario A and 2026 Scenario C being displayed).

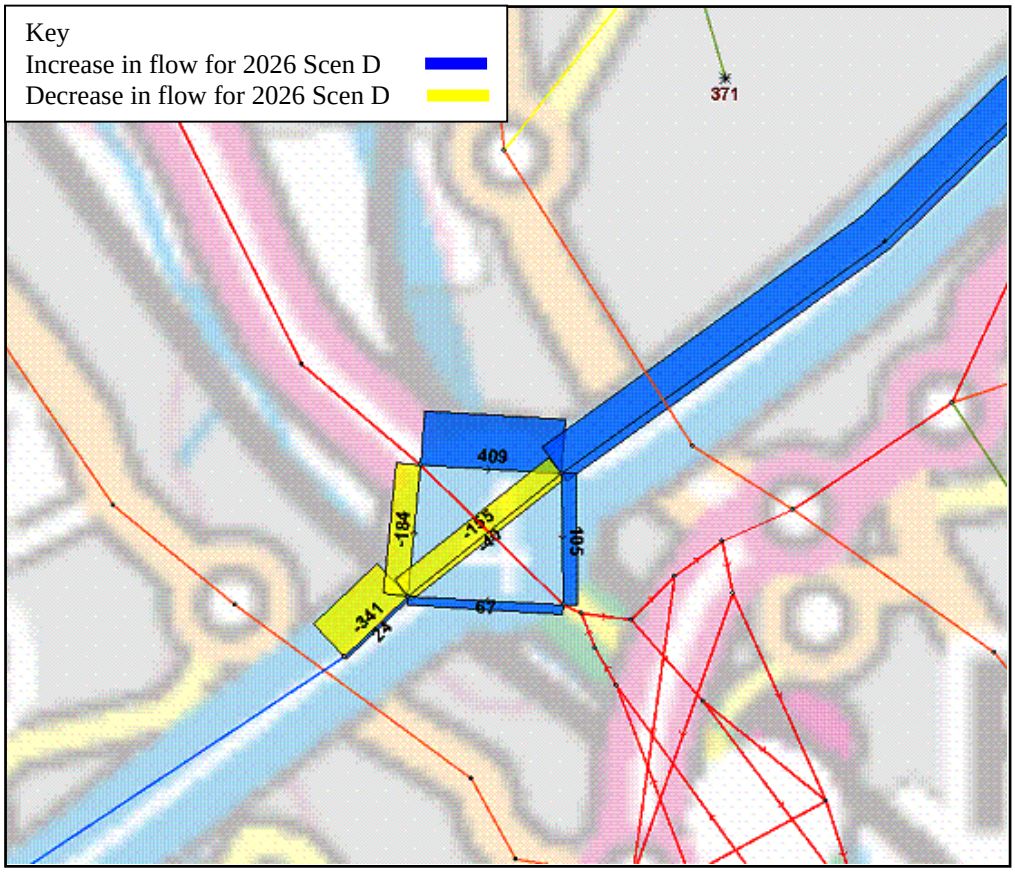


Figure 5.50: 2026 Scenario D flow minus the 2026 Scenario B flow (results in the increases/decreases in flow between the 2026 Scenario B and 2026 Scenario D being displayed).

5.5.16 *Figures 5.45* to *5.50* display the differences in flow plots for the M3 Junction 4 for all scenarios and their reference cases.

5.5.17 The largest increases in flow on this section of the strategic network are within the 2026 Do-Minimum when compared to the 2005 base. This increase in flow is related to background growth and national traffic growth between 2005 and 2026.

5.5.18 Flow increases by a minimal amount on the main carriageway and slip roads in Scenarios A and B. However, the largest increases in flow on the M3 Junction 4 are in Scenario C and an outcome of the incorporation of the PRB development. Flow is projected to increase by approximately 400 vehicles on the M3 Junction 4 slip on in a northbound direction as well as on the main carriageway, Junctions 4 to 3, in Scenario C (see *Figure 5.48 and 5.49*).

Difference in Flow – M25 Junction 11

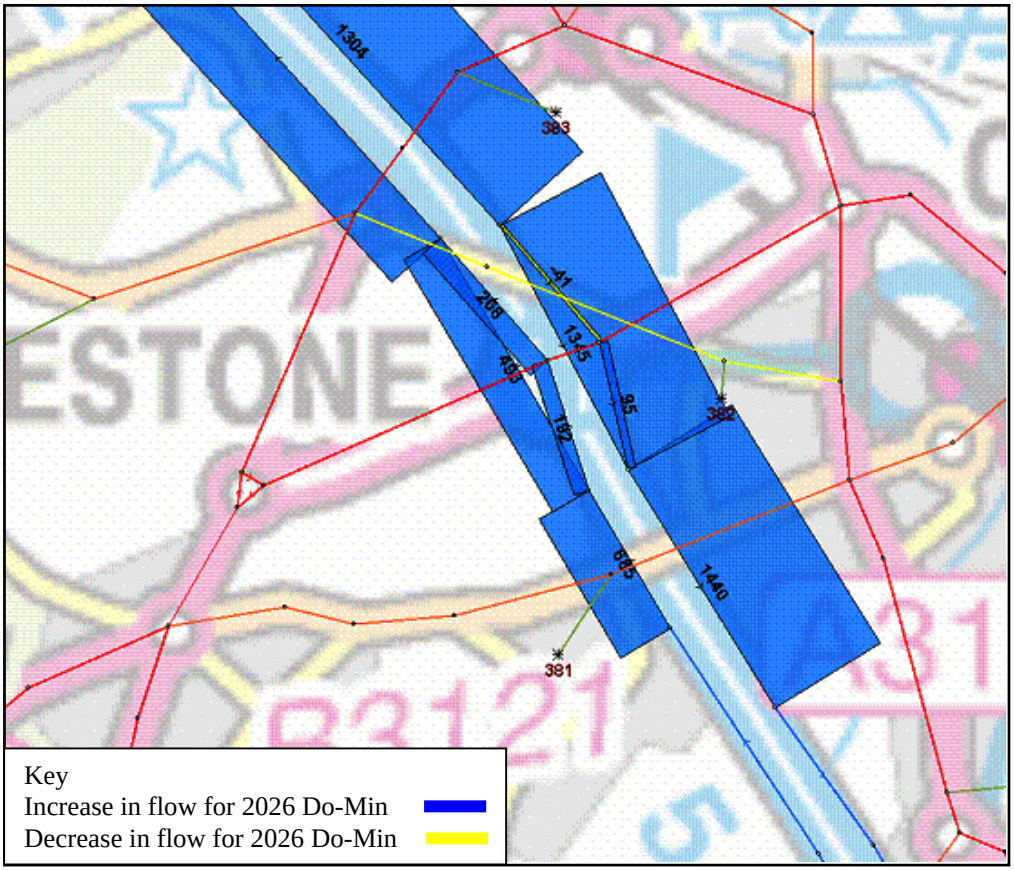


Figure 5.51: 2026 Do-Minimum flow minus the 2005 base flow (results in the increases/decreases in flow between the 2005 base and 2026 Do-Minimum being displayed).

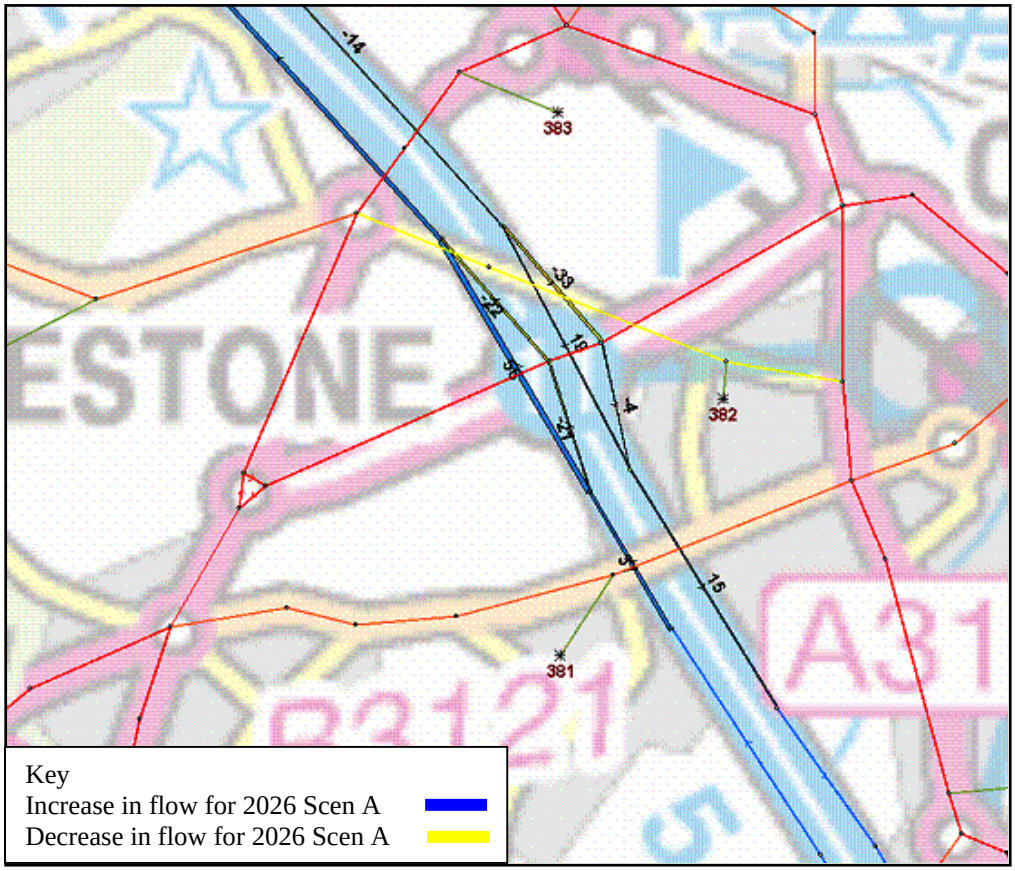


Figure 5.52: 2026 Scenario A flow minus the 2026 Do-Minimum flow (results in the increases/decreases in flow between the 2026 Do-Minimum and 2026 Scenario A being displayed).

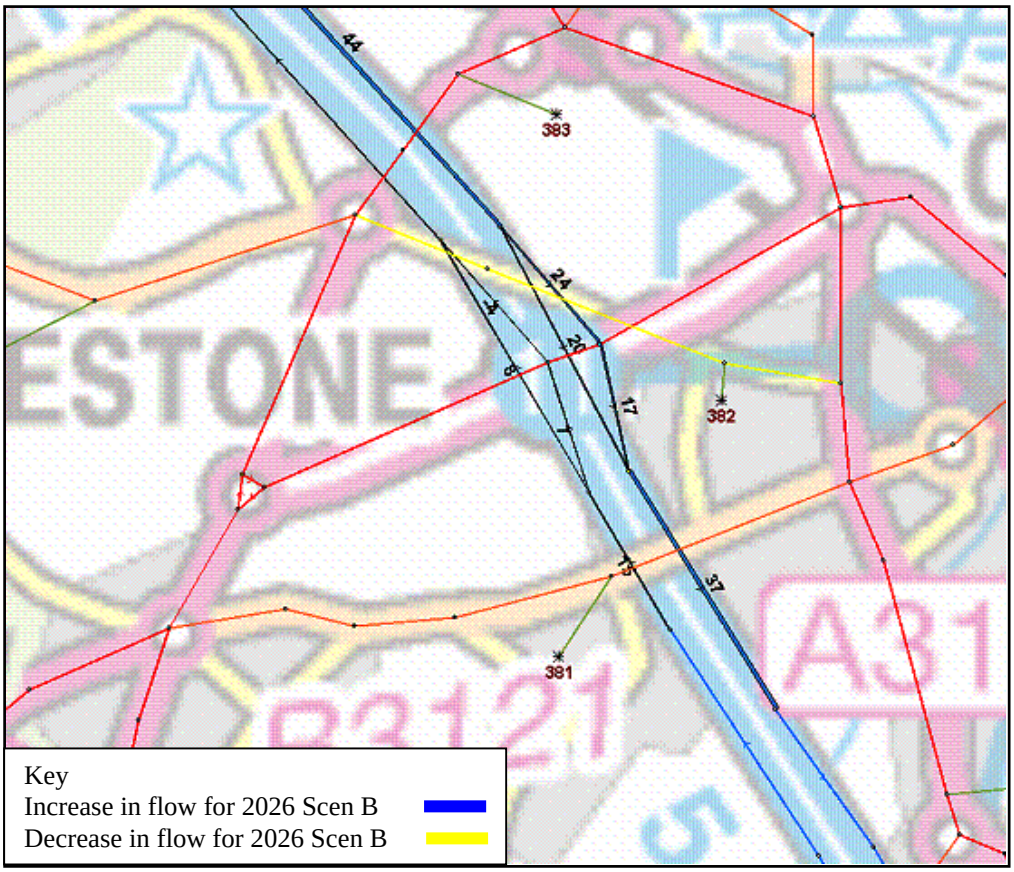


Figure 5.53: 2026 Scenario B flow minus the 2026 Scenario A flow (results in the increases/decreases in flow between the 2026 Scenario A and 2026 Scenario B being displayed).

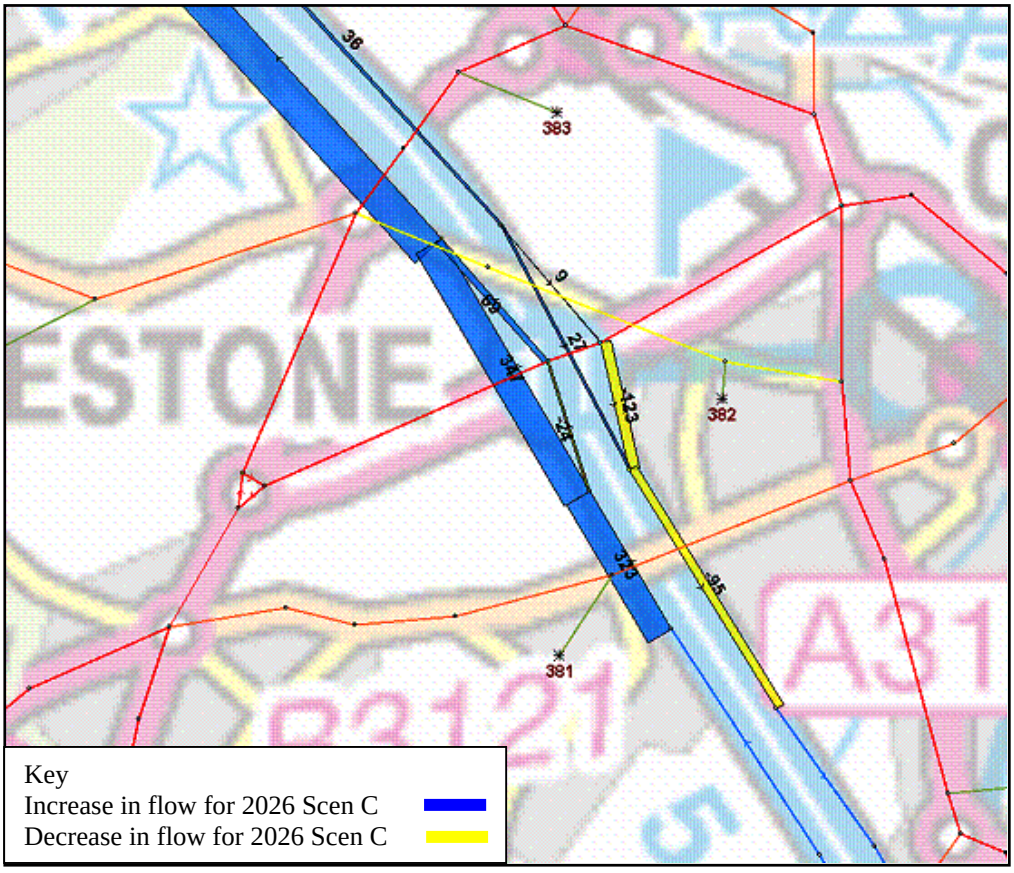


Figure 5.54: 2026 Scenario C flow minus the 2026 Scenario B flow (results in the increases/decreases in flow between the 2026 Scenario B and 2026 Scenario C being displayed).

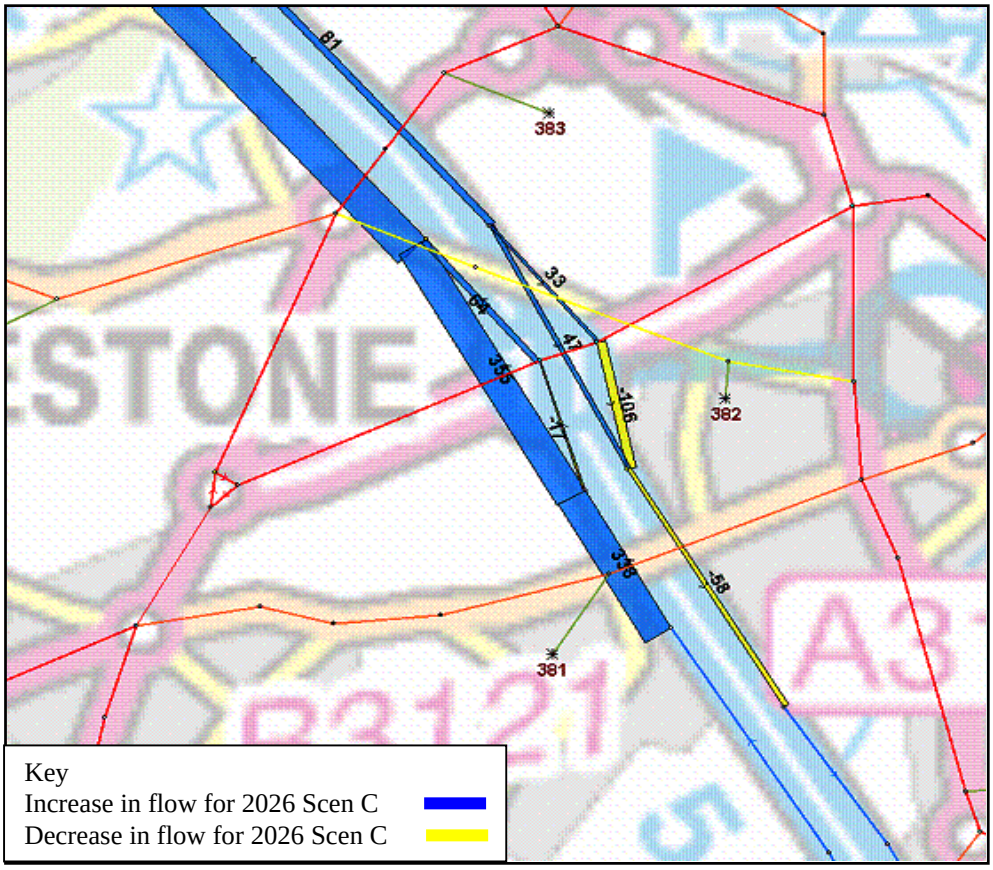


Figure 5.55: 2026 Scenario C flow minus the 2026 Scenario A flow (results in the increases/decreases in flow between the 2026 Scenario A and 2026 Scenario C being displayed).

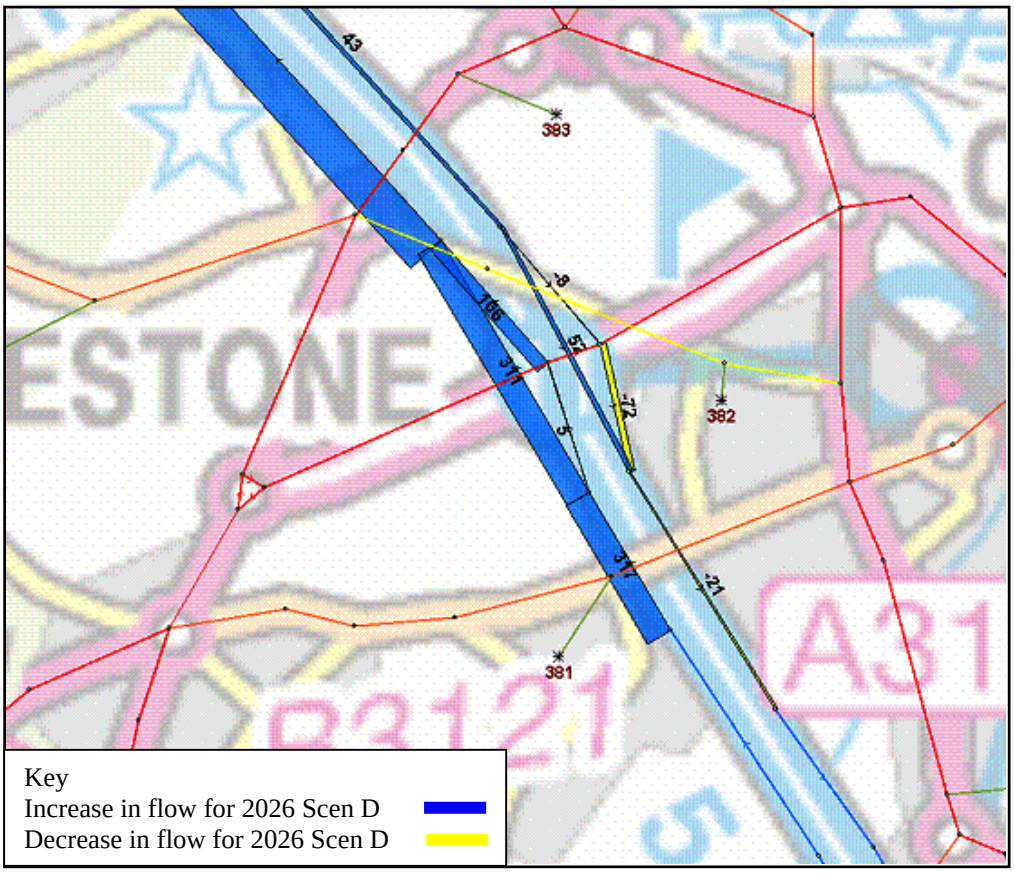


Figure 5.56: 2026 Scenario D flow minus the 2026 Scenario B flow (results in the increases/decreases in flow between the 2026 Scenario B and 2026 Scenario D being displayed).

5.5.19 *Figures 5.51* to *5.56* indicate that the largest increases in flow on the M25 surrounding Junction 11 is in the 2026 Do-Minimum when compared to the 2005 base.

5.5.20 The M25 Junction 11 is impacted by a minimal amount of additional vehicles on the carriageway and slip roads in Scenarios A and B, as in Scenario A the largest increase in flow is approximately 55 vehicles and in Scenario B approximately 45 vehicles.

5.5.21 However, Scenario C generates a larger amount of additional vehicles to travel on the main carriageway of the motorway at Junction 11 in a northbound direction i.e. Junction 11 to 12. The largest increase in vehicles on the M25 link in Scenario C is approximately 400 vehicles travelling northbound between Junctions 11 and 12. This additional flow at Junction 11 between Scenario A/B and C is related to the inclusion of the PRB development in Scenario C.

Difference in Flow – M25 Junction 12 / M3 Junction 2

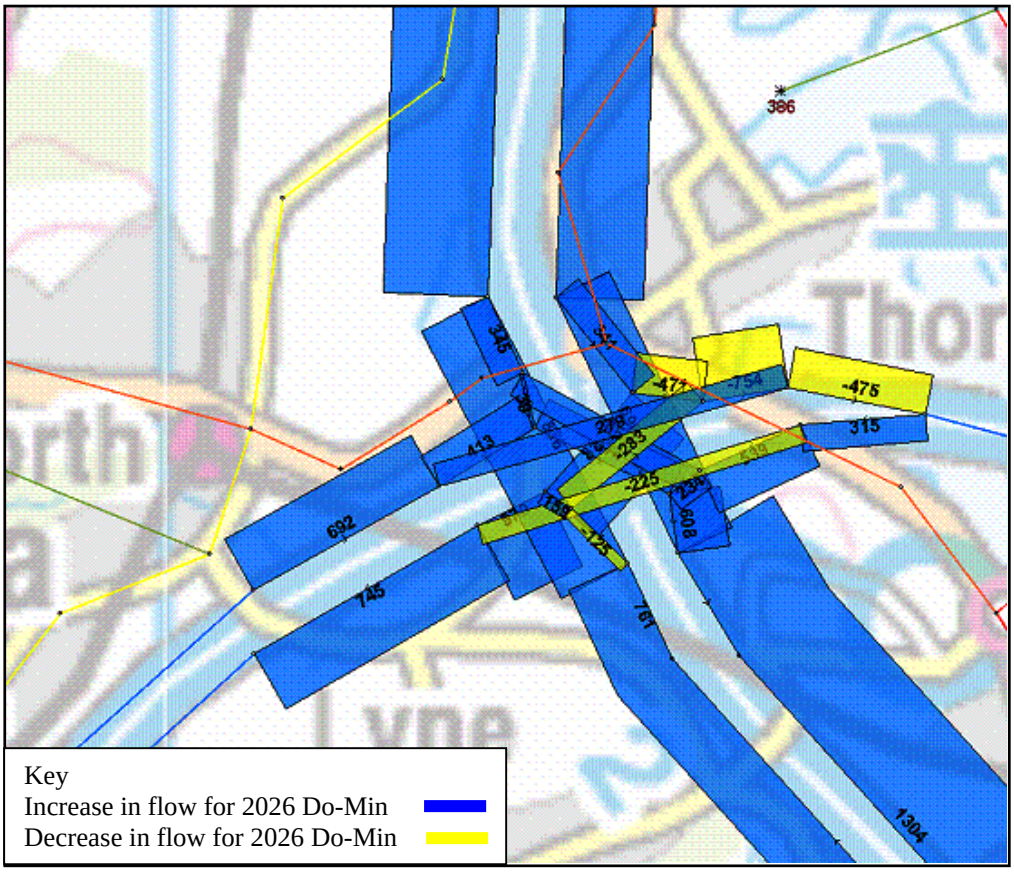


Figure 5.57: 2026 Do-Minimum flow minus the 2005 base flow (results in the increases/decreases in flow between the 2005 base and 2026 Do-Minimum being displayed).

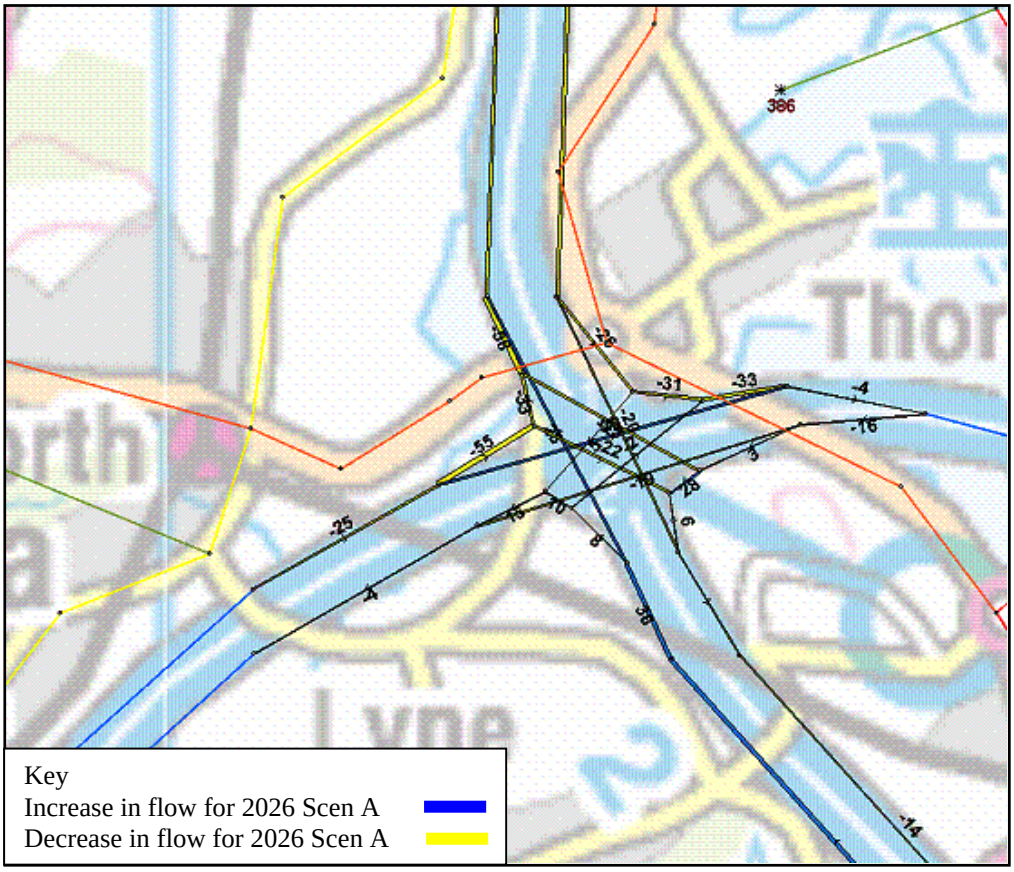


Figure 5.58: 2026 Scenario A flow minus the 2026 Do-Minimum flow (results in the increases/decreases in flow between the 2026 Do-Minimum and 2026 Scenario A being displayed).

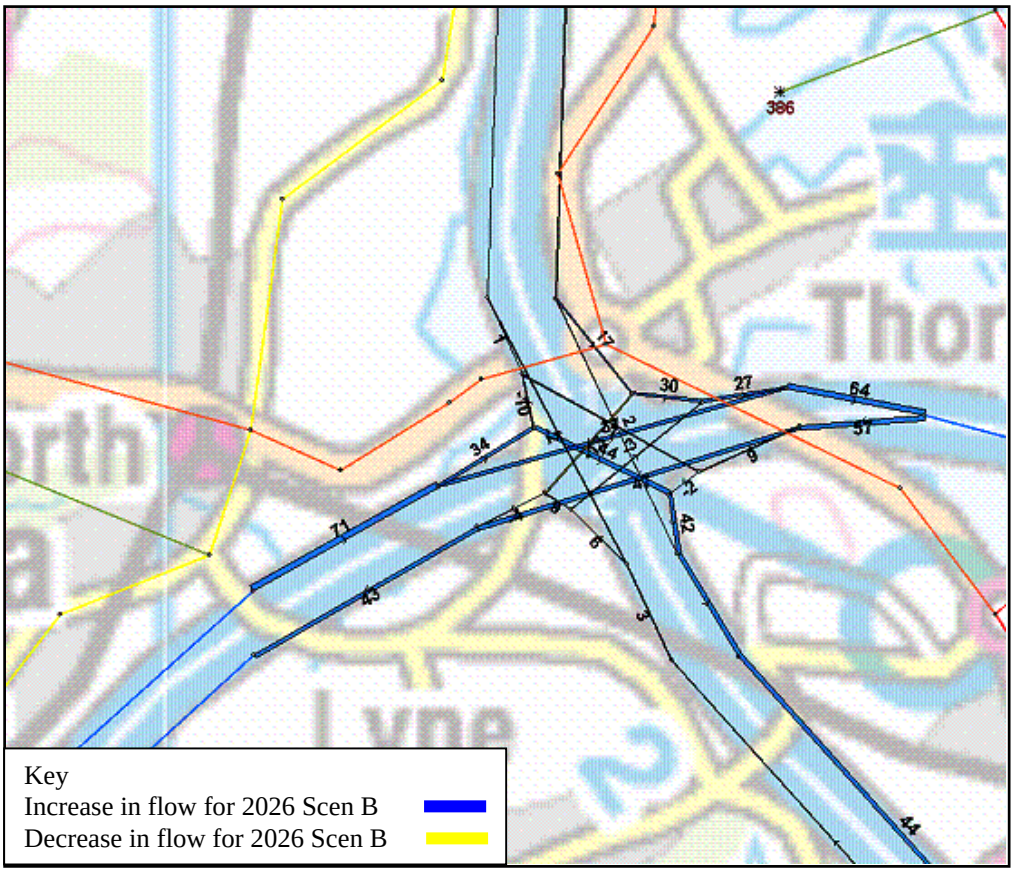


Figure 5.59: 2026 Scenario B flow minus the 2026 Scenario A flow (results in the increases/decreases in flow between the 2026 Scenario A and 2026 Scenario B being displayed).

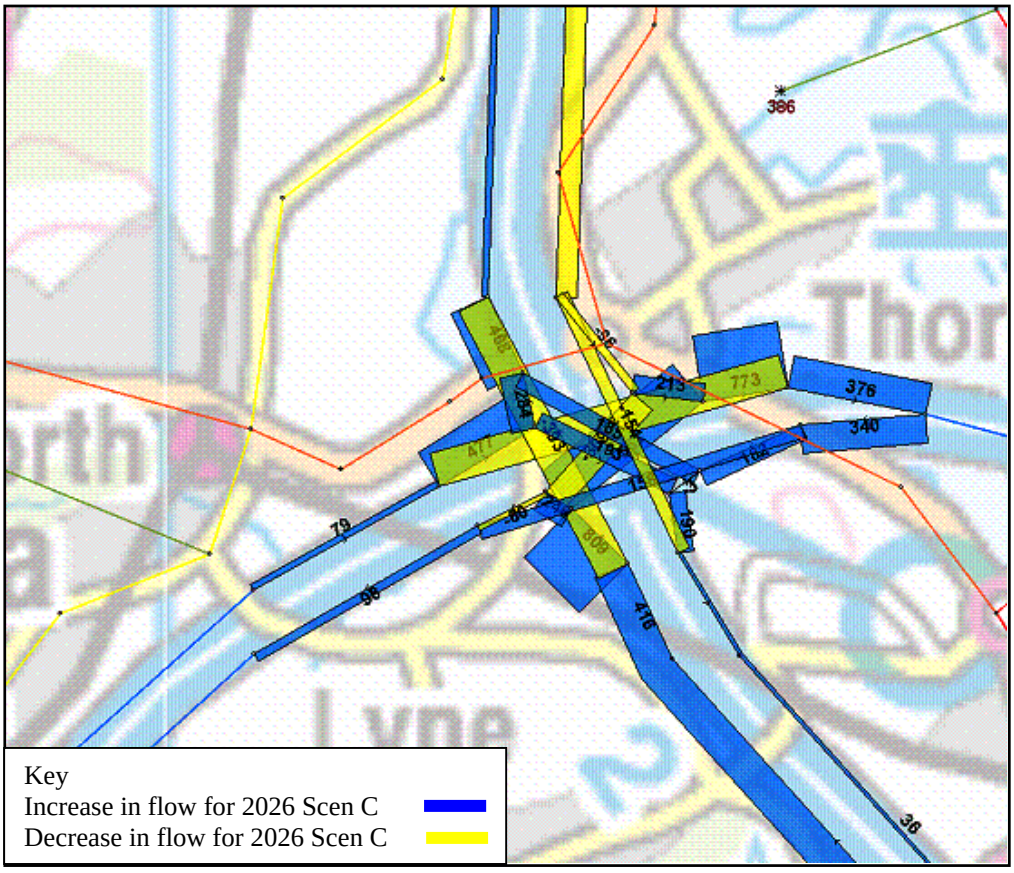


Figure 5.60: 2026 Scenario C flow minus the 2026 Scenario B flow (results in the increases/decreases in flow between the 2026 Scenario B and 2026 Scenario C being displayed).

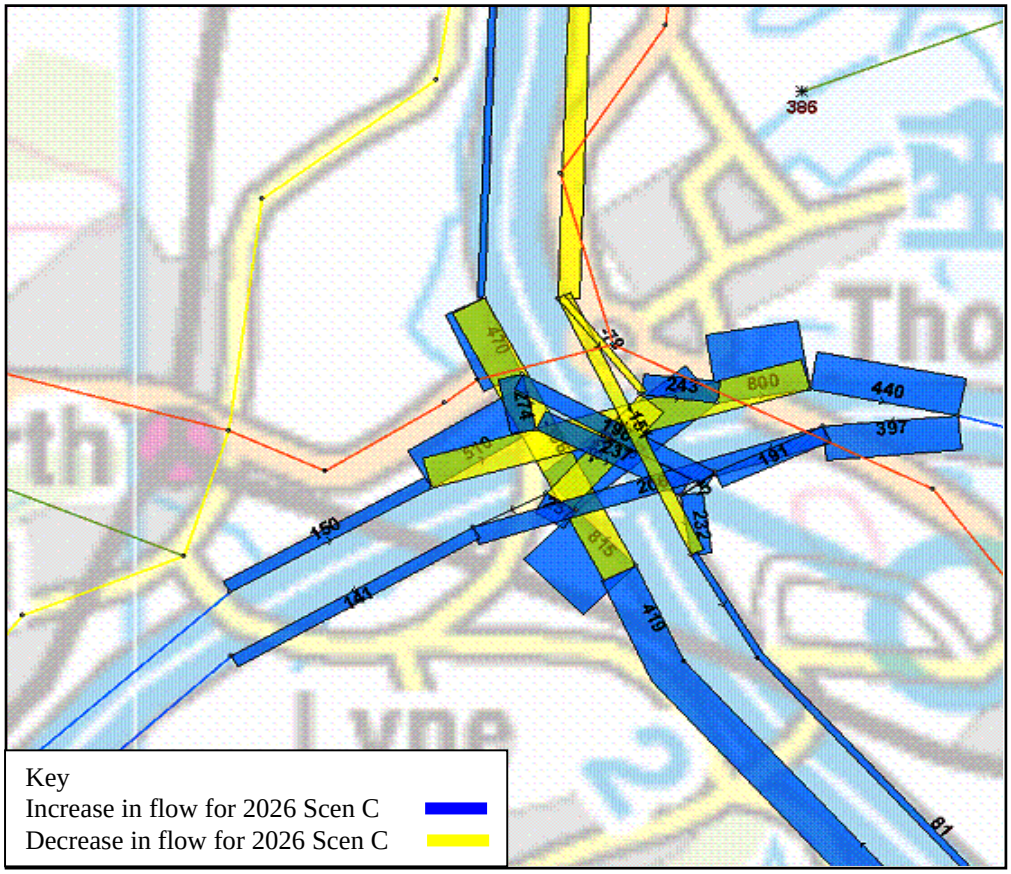


Figure 5.61: 2026 Scenario C flow minus the 2026 Scenario A flow (results in the increases/decreases in flow between the 2026 Scenario A and 2026 Scenario C being displayed).

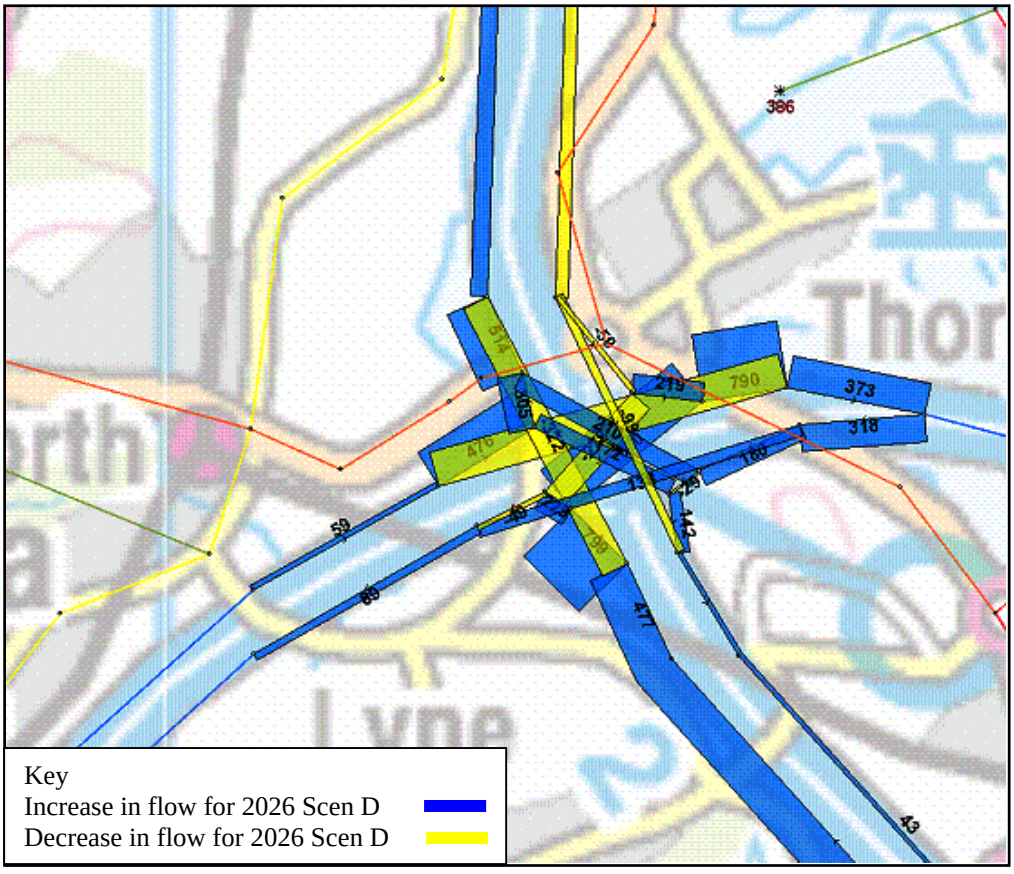


Figure 5.62: 2026 Scenario D flow minus the 2026 Scenario B flow (results in the increases/decreases in flow between the 2026 Scenario B and 2026 Scenario D being displayed).

5.5.22 *Figures 5.57* to *5.62* display the differences in flow plots for the M25 Junction12 / M3 Junction 2 for all forecast scenarios and their reference cases.

5.5.23 Again the largest increase in traffic flow is in the 2026 Do-Minimum when compared to the 2005 base. Increases in flow in the 2026 Do-Minimum are caused by background growth in the borough of Surrey Heath and national traffic growth between 2005 and 2026.

5.5.24 Scenarios A and B cause a minimal amount of increased flow at the M25 Junction 12 and M3 Junction 2 Interchange. The largest increase in flow being in Scenario B on the M3 Junction 3 to 2 (travelling northbound towards the interchange) with an increase of approximately 70 vehicles (see *Figure 5.59*).

5.5.25 Scenario C generates the largest changes in flow at the M25 and M3 interchange. A decrease in flow on the main M25 carriageway is apparent between Junctions 13 to 12 (southbound) when Scenario C is compared to Scenario B, a reduction of approximately 250 vehicles. Although an increase in flow on the M25 between Junctions 11 and 12 (northbound) of approximately 400 vehicles is shown when comparing Scenarios B and C. These changes in flow in Scenario C are a result of the re-distribution of trips due to the inclusion of the PRB development.

6 CONCLUSIONS

6.1 Summary

6.1.1 The aim of this study was to provide SHBC with an initial assessment, in transport terms, of their LDF Core Strategy by considering the impact of the proposed additional commercial and residential development could have on the highway network at a strategic level.

6.1.2 The main objectives of the evaluation were to:

- Identify the locations and estimates of four scenarios (Scenario A, Scenario B, Scenario C and Scenario D) of commercial and residential development in the borough for the forecast year of 2026;
- Compare the traffic impacts of these developments by developing traffic models for the forecast year and for the current situation (taken as 2005);
- To develop specific forecasts for: 2026 Do-Minimum
  2026 Scenario A
  2026 Scenario B
  2026 Scenario C
  2026 Scenario D
- To provide comparisons between the forecast scenarios and their relevant reference cases.

6.1.3 2026 trip generation forecasts within the borough of Surrey Heath were derived from planning data obtained from SHBC and use of the TRICS database. These were used to develop 2026 forecast matrices to input into the SINTRAM strategic traffic model.

6.1.4 The modelling of these forecast scenarios enabled broad comparisons to be made between the forecast and base years, together with differences between the scenarios themselves.

6.2 Traffic Impacts of Development

6.2.1 All impacts stated and indicated in this evaluation concentrate on the borough of Surrey Heath. Therefore the evaluation is based solely on the projected amount of additional trips to be generated from SHBC's planning data between 2005 and 2026, therefore the traffic impacts produced from these additional trips are only analysed in the borough of Surrey Heath.

6.2.2 The Scenario A and B planning data differs only by their definition of approved and non-approved development by planning permission. Scenario A represents development that has been approved by planning permission only. Whereas Scenario B represents all development, irrespective of whether it has been approved by planning permission or note. Therefore Scenario B consists of approved and non-approved development. The third scenario, Scenario C, differs from Scenario B in one aspect only, the inclusion of the PRB development. Therefore Scenario C consists of approved and non-approved development plus the PRB development. The fourth and final scenario, Scenario D, includes the DERA development in the

neighbouring borough of Runnymede. It was thought necessary to evaluate any possible cross-borough boundary traffic impacts that could be generated by the DERA development. Therefore Scenario D consists of approved and non-approved development plus the PRB and DERA developments.

6.2.3 The travel matrix that illustrates growth in traffic is shown in *Table 6.1* for all forecast scenarios as well as the base and Do-Minimum.

AM Vehicle Trips	2005	2026 Do-Minimum	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
Surrey Heath Intra Borough Trips	3,880	3,667	4,013	4,233	4,504	4,504
External to Borough Trips	5,712	6,011	6,790	6,978	7,119	7,181
Borough to External Trips	9,452	9,513	9,949	10,232	10,765	10,767

Table 7.1: Summary trip matrix, AM peak hour (0800 – 0900)

6.2.4 *Table 7.2* displays the estimated changes in summary statistics for total non-motorway traffic flow within Surrey Heath during the AM peak hour for each tested scenario. Table 7.2 represents the cumulative differences in summary statistics between the current scenario and the previous scenario e.g. the difference between Scenario B and Scenario A.

Key Statistics	2026 Do-Minimum	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
Total Vehicle Kilometrage (Veh Kms)	224,671	+8,005 (+3.6%)	+2,919 (+1.3%)	+9,053 (+3.8%)	+5,124 (+2.1%)
Total Link Travel Time (Veh Hrs)	4,336	+218 (+5%)	+88 (+1.9%)	+262 (+5.6%)	+142 (+2.9%)
Total Junction Delay (Veh Hrs)	2,294	+179 (+7.8%)	+76 (+3.1%)	+7 (+0.3%)	+83 (+3.2%)
Total Network Travel Time (Veh Hrs)	6,630	+398 (+6%)	+164 (+2.3%)	+268 (+3.7%)	+226 (+3%)
Average Speed (Km/hrs)	59.1	-0.3 (-0.5%)	-0.2 (-0.3%)	-0.9 (-1.5%)	-0.2 (0.3%)

Table 7.2: Changes in non-motorway summary statistics for all tested scenarios.

6.2.5 *Table 7.3* displays the estimated changes in summary statistics for total motorway traffic flow within Surrey Heath during the AM peak hour for each test scenario.

Key Statistics	2026 Do-Minimum	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
Total Vehicle Kilometrage (Veh Kms)	158,203	+727 (+0.4%)	+2,262 (+1.4%)	+4,453 (+2.7%)	-531 (-0.3%)
Total Link Travel Time (Veh Hrs)	1,636	+10 (+0.6%)	+35 (+2.1%)	+71 (+4.2%)	-9 (-0.5%)
Average Speed (Km/hrs)	100.2	0	-0.4 (-0.4%)	-0.5 (-0.5%)	+0.1 (+0.1%)

Table 7.3: Changes in motorway summary statistics for all tested scenarios.

6.2.6 By comparing summary statistics and plots of traffic flows it is apparent that C has the largest isolated impacts on local traffic flows in Surrey Heath.

6.2.7 Minimal cross-borough boundary traffic impacts are generated from the DERA development in Scenario D. However, these cross-borough boundary impacts are

located to the east of the borough of Surrey Heath, in close proximity to the DERA development i.e. increased flows on the B386 Longcross/Chertsey Road. The PRB development (Scenario C) generates larger traffic impacts on the road network in Surrey Heath when compared to the impacts of the DERA development in the borough of Runnymede (Scenario D).

6.2.8 The distinct areas in the borough of Surrey Heath that is projected to be affected most by the additional trips generated from the proposed commercial and residential developments is York Town (zone 372), Bagshot (zone 362) and Deepcut & Mytchett (zone 365) (specifically in Scenario C). All of these areas are subject to receiving a large proportion of additional trips generated from the proposed developments. Specifically the A322 Bracknell Road corridor that passes through the M3 Junction 3 is the area to feel the highest impacts of increased traffic flow. The area surrounding the PRB development in Deepcut & Mytchett, specifically the B3015 Deepcut Bridge Road could also be impacted by increased flow and delay due to the proposed PRB development in Scenario C.

6.2.9 Further measures may be required in parts of the borough i.e. the A322 corridor and attributed local roads as well as the B3015 Deepcut Bridge Road (in Scenario C only), although more detailed investigation would be needed to confirm this. However, it is suggested that if any improvement plans were implemented then it would be beneficial to do this using integrated demand management measures.

6.2.10 Mitigation methods that may be implemented in the future have not been incorporated into this evaluation. Subsequently all projected traffic impacts referred to in the analysis of the transport evaluation could potentially act as worst-case scenarios.

APPENDICES

APPENDIX A – COMMERCIAL PLANNING DATA

Zone No.	Planning Application / Reference	Address	Existing Land Use	Existing GFA (m²)	Proposed Land Use	Proposed GFA (m²)	Planning Status	
							Approved	Non-approved
371	2001/0181	Caesar (Unit 1) & Corinthian (Unit 2) Riverside Way	B2	9475	B1	9475	✓	
366	2004/0027	75 High Street	C3	105	B8	105	✓	
372	2004/0540	The Atrium Park Street	A1	2086	A1	8497	✓	
372	2004/0540	The Atrium Park Street	B1a	2086	A3	3496		
372	2004/0540	The Atrium Park Street			B1a	224		
372	2004/0540	The Atrium Park Street			D1	1110		
372	2004/0540	The Atrium Park Street			D2	9376	·	
372	2004/0645	505 London Road	B1b	429	A1	429	✓	
372	2004/0645	505 London Road			B8	6151	·	
364	2004/1428	30, 32, 34 High Street	C3	62	B1a	62	✓	
371	2005/0095	112 Frimley Road	A1	77	A3	77	✓	
362	2005/0786	230 London Road	C3	72	D1	72	✓	
366	2005/0991	10 & 12 Grace Reynolds Walk	C3	92	B8	92	✓	
363	2006/0596	Unit 3, Bayfield, Lucas Green Road	B8	790	B8	630	✓	
363	2006/0596	Unit 3, Bayfield, Lucas Green Road			B2	170	·	
372	2006/0616	Merrill Lynch Europe Ltd Stanhope Road	Sui Generis	9070	Sui Generis	14135	✓	
362	2006/0864	61 High Street	A1	126	A5	126	✓	
366	2006/0966	5 The Square	Sui Generis	652	B1a	652	✓	
366	2007/0146	149 London Road	A1	94	A2	94	✓	
372	2007/0179	Unit 5-6 Lawrence Way	B1c	2511	B8	964	✓	
372	2007/0179	Unit 5-6 Lawrence Way			B2	964		
372	2007/0179	Unit 5-6 Lawrence Way			B1a	583	·	
362	2007/0255	Pantiles, 16 London Road	Sui Generis	1135	C2	6133	✓	
371	2007/0345	69-73 James Road	B8	1018	Sui Generis	1018	✓	
368	2007/0355	Collingwood College Kingston Road	D1	0	D1	1022	✓	
372	2007/0517	Unit 14, Craven Court, Stanhope Road,	B8	378	Sui Generis	378	✓	
372	2007/0763	Redevelopment Site, 15 Doman Road	n/a	0	B1c/B2/B8	9664	✓	
374	2007/0845	30-32 Frimley High Street	B1a	126	A1	485	✓	
374	2007/0845	30-32 Frimley High Street	B1b	359			·	
362	2007/0935	Land rear of 4 Guildford Road	B1c	304	B8	284	✓	
362	2007/1023	59A London Road	B2	456	B1	502	✓	
372	2008/0191	9 Doman Road	B2	1920	B2/Sui Generis	1920	✓	
372	2008/0270	13 and Land to the rear of Victoria Avenue	B1	195	B2	195	✓	
372	2008/0435	435 Pilgrims Well, London Road	B1a	90	A2	90	✓	
364	2008/0697	Unit 2 Town Mill Bagshot Road	B1	76	D1	76	✓	
370	2008/0928	Hilliers Garden Centre London Road	Sui Generis	1846	Sui Generis	1908	✓	
363	2008/1022	Willow Farm Bagshot Road	n/a	n/a	B1c	83	✓	
372	2008/1119	55 The Avenue	C3	160	C1	160	✓	

Zone No.	Planning Application / Reference	Address	Existing Land Use	Existing GFA (m²)	Proposed Land Use	Proposed GFA (m²)	Planning Status	
							Approved	Non-approved
371	2001/0651	Centurion (Unit 6) Riverside Way	B2	4144	B1	4144	✓	
372	2001/1026	Land at Nelson Way & Trafalgar Way	B1c	3770	B1	20850	✓	
372	2001/1026	Land at Nelson Way & Trafalgar Way	B8	13178				
372	2001/1026	Land at Nelson Way & Trafalgar Way	B1	945			·	
371	2001/1239	Units 4 and 7 Riverside Way	B2	2656	B1	2656	✓	
372	2001/1321	1-10 Lawrence Way	B1	8740	B1a	13470	✓	
372	2002/0619	Victoria Court Victoria Road	A2	162	C3	162	✓	
374	2003/0644	BAE Systems Lyon Way	B1	21832	B1	32515	✓	
369	2003/1036	138 Frimley Road	A1	63	A3	63	✓	
372	2004/0153	Unit 9 Lawrence Way	B1c	800	B8	800	✓	
370	2004/0192	Q8 Petrol Filling Station London Road	Sui Generis	98	Sui Generis	98	✓	
372	2004/0728	Unit 9 & 10 Trafalgar Way, Tuscam Trading Estate	B1c	1094	B2	2198	✓	
372	2004/0728	Unit 9 & 10 Trafalgar Way, Tuscam Trading Estate	B8	1104			·	
366	2004/1050	St Georges Court and 9 High Street	A1	371	A1	560	✓	
366	2004/1050	St Georges Court and 9 High Street	B1a	149			·	
365	2004/1137	117 Deepcut Bridge Road	C3	71	B1a	71	✓	
372	2005/0426	1 Priory Court Tuscam Way	B1a	191	B1a	238	✓	
366	2005/0436	Heatherside House, 83 Park Street	B2	2319	B1	1656	✓	
363	2005/0460	West End Garage Guildford Road	B1a	270	B1a	285	✓	
363	2005/0460	West End Garage Guildford Road			B8	235	·	
372	2005/0629	4 Priory Court Tuscam Way	B1a	520	B1a	575	✓	
366	2005/0841	6 - 8 and adjacent open space Grace Reynolds Walk	C3	1	A1	460	✓	
523	2006/0128	Princess Christian Homes Stafford Lake	C2	2486	C2	3186	✓	
371	2006/0222	Kingsclear Nursing Home Park Road	C2	3800	C2	5547	✓	
372	2006/0373	Land at 4-8 Oakley Road	B1a	25	B1a	135	✓	
372	2006/0373	Land at 4-8 Oakley Road	B8	214	B8	83	·	
377	2006/0723	Frimley Hall Hotel (Heritage Frimley Hall) Frimley Hall Drive	C1	4281	C1	4629	✓	
372	2006/1021	Unit C Watchmoor Point	B1a	687	B1	1374	✓	
372	2006/1021	Unit C Watchmoor Point	B1b	687			·	
364	2006/1214	Bridge House, 106 High Street	A1	181	A1	181	✓	
372	2007/0151	52 park street	A5	286	A1	1385	✓	
372	2007/0151	52 park street	B1	589			·	
366	2007/0225	86 High Street	A1, A3	84	A2	84	✓	
372	2007/0305	Development Site, 557-593 London Road	Vacant	n/a	B8	2030	✓	
372	2007/0339	GBC UK (Former Rumbold / Britax Unit) Glebeland Road	B2	2875	Sui Generis	2875	✓	
372	2007/0869	16 Doman Road	B2	620	B2	664	✓	
372	2007/0869	16 Doman Road			B8	421	·	
377	2007/0988	61 and 63 London Road	C3	2	C2	1930	✓	
365	2007/1009	Former MOD Fire Station Deepcut Bridge Road	n/a	0	B1	1839	✓	
372	2007/1158	Land East of Bracebridge Road	n/a	0	B8	891	✓	

Zone No.	Planning Application / Reference	Address	Existing Land Use	Existing GFA (m²)	Proposed Land Use	Proposed GFA (m²)	Planning Status	
							Approved	Non-approved
372	2007/1177	Watchmoor Trade Centre Watchmoor Road	B1a	1195	B1a	2328	✓	
372	2007/1177	Watchmoor Trade Centre Watchmoor Road	B1c	626				
372	2007/1177	Watchmoor Trade Centre Watchmoor Road	B8	315			·	
372	2007/1281	191 (Formerly Sanhurst Tup) and 12.14 & 16 and land to rear, London Road & Park Street	B1a	270	C1	3754	✓	
372	2007/1281	191 (Formerly Sanhurst Tup) and 12.14 & 16 and land to rear, London Road & Park Street	A4	415	A3/A4	634		
372	2007/1281	191 (Formerly Sanhurst Tup) and 12.14 & 16 and land to rear, London Road & Park Street	A2	87	A3	323		
372	2007/1281	191 (Formerly Sanhurst Tup) and 12.14 & 16 and land to rear, London Road & Park Street	A3	170	A1	393		
372	2007/1281	191 (Formerly Sanhurst Tup) and 12.14 & 16 and land to rear, London Road & Park Street			A1/A2/A3	376	·	
362	2007/1302	28 - 32 London Road	C3	2	C2	2583	✓	
366	2007/1346	29B & 29C High Street	A1	31	B1a	189	✓	
366	2007/1346	29B & 29C High Street	B8	86	B8	39	·	
365	2008/0044	119 Deepcut Bridge Road	A1	127	B1a	113	✓	
362	2008/0409	Premier Travel Inn, The Cricketers, 1 London Road	A1	500	A3	20	✓	
362	2008/0409	Premier Travel Inn, The Cricketers, 1 London Road	C1	1600	C1	1840	·	
370	2008/0417	Land adjacent Oak Tree Cottage New Road	B1a	45	B1a	74	✓	
370	2008/0417	Land adjacent Oak Tree Cottage New Road	B8	137	B8	128	·	
372	2008/0429	475 - 477 London Road	B1a	190	C1	107	✓	
372	2008/0429	475 - 477 London Road			Sui generis	83	·	
364	2008/0533	St Johns Ambulance Centre, 16B Bowling Green Road	D2	0	Sui generis	84	✓	
362	2008/0613	West Lodge, Hall Grove Farm London Road	C3	208	B1a	208	✓	
365	2008/0721	Potters Steak House Mytchett Place Road	B8	270	C1	270	✓	
366	2008/0829	25 High Street	A1	90	A1	152	✓	
366	2008/0970	St Georges Court St Georges Road	A1	371	A1	560	✓	
366	2008/0970	St Georges Court St Georges Road	B1a	149			·	
362	2008/1035	52 - 54 London Road	B2	300	B2	340	✓	
364	2008/1116	Pennypot Nursery School Pennypot Lane	D1	397	D1	437	✓	
362	2009/0030	90 London Road	B2	206	B2	238	✓	
373	2009/0125	219 Frimley Green Road	A1	60	A3	60	✓	
370	2009/0275	Lilly Research Centre, Erlwood Manor London Road	B1a	26980	B1a	27362	✓	
372	2009/0386	Ground Floor, Basset House, 5 Southwell Park Road	B1a	163	D1	163	✓	
374	2009/0433	92A Frimley High Street	B1a	93	1 no. 3-bed flat	93	✓	
366	2009/0449	24A High Street	B1	120	2 no. 2 bed flats	120	✓	
365	2009/0483	Linsford Business Park & Linsford Farm Linsford Lane	B8	31	B1c	458	✓	
372	2009/0524	Unit 13 Nelson Way	Sui Generis	485	B8	485	✓	
364	2009/0573	Land adjacent to Albury Farm Gracious Pond Road	Sui Generis	530	B1c	320	✓	
364	2009/0573	Land adjacent to Albury Farm Gracious Pond Road	Sui Generis		B8	210	·	
362	2009/0680	40 Church Road	D1	63	1 3 bed house	63	✓	
371	2009/0758	69 - 73 James Road	Sui Generis	969	B1c, B8, Sui Generis	969	✓	
366	2009/0805	Sun House Pembroke Broadway	B1a	2582	A3	873	✓	

Zone No.	Planning Application / Reference	Address	Existing Land Use	Existing GFA (m²)	Proposed Land Use	Proposed GFA (m²)	Planning Status	
							Approved	Non-approved
366	2009/0805	Sun House Pembroke Broadway			C1	3099	·	
372	2009/0836	5 Admiralty Way	Sui Generis	723	B1b, B2, B8	723	✓	
364	2009/0838	79 High Street	B1	127	1 no. 2 bed flat	127	✓	
366	N/A	Magistrates Court, Pembroke Broadway, Camberley Town Centre	Sui Generis	280	A3	375		✓
366	N/A	Camberley Train Station, Pembroke Broadway, Camberley Town Centre	B1a	1275	C3 (see residential LDF sheet)	0		✓
366	N/A	Junction Knoll Road/London Road, Camberley Town Centre	Sui Generis	1417	B1a	800		✓
366	N/A	The Granary, Knoll Road, Camberley Town Centre	A1	380	B1a	1500		✓
366	N/A	The Granary, Knoll Road, Camberley Town Centre	D2	323	B1a			·
366	N/A	London Road Frontage, Camberley Town Centre	A1	13547		54547		✓
366	N/A	London Road Frontage, Camberley Town Centre	A2	478		0		
366	N/A	London Road Frontage, Camberley Town Centre	A3	1167		2300		
366	N/A	London Road Frontage, Camberley Town Centre	B1a	1576		0		
366	N/A	London Road Frontage, Camberley Town Centre	D1	734	A1	0		·
365	N/A	PRB Deepcut	Use Entec Study	Use Entec Study	A1	3620		✓
365	N/A	PRB Deepcut			A2	100		
365	N/A	PRB Deepcut			A3	100		
365	N/A	PRB Deepcut			A5	100		
365	N/A	PRB Deepcut			A4	600		
365	N/A	PRB Deepcut			D1	2330		
365	N/A	PRB Deepcut			D1	300		
365	N/A	PRB Deepcut			D1	1000		
365	N/A	PRB Deepcut			B1a	1000		·
378	RU.05/0538	DERA	b1	76885	b1	65000		✓
					a1	325		
					d2	2323		
					d1	604		
					a3	558		

APPENDIX B – RESIDENTIAL PLANNING DATA

Zone No.	Planning Application / Reference	Address	Existing Land Use	Existing GFA (m^2)	Existing No. of Houses	Existing No. of Flats	Proposed No. of Houses	Proposed No. of Flats	Planning Status	
									Approved	Non-approved
371	2001/0305	Heriot, Pine Avenue (W)	C2	585	0	0	0	8	✓	
365	2001/0790	11 Coleford Bridge Road and Grange Nurseries, Linsford Lane	C3		2	0	22	0	✓	
370	2001/1157	Longwalk Cottage & Brook Cottage, Thorndown Lane	C3		2	0	0	6	✓	
364	2002/0332	Chobham Youth Centre, 12 Windsor Road	Sui Generis	452	0	0	0	8	✓	
362	2002/1203	Home Farm, Bagshot Park, London Road	Sui Generis	n/a	0	0	7	0	✓	
366	2003/0305	75-79 Middle Gordon Road (T)	C3	n/a	3	0	0	16	✓	
373	2003/0400	Land at 188-196 Frimley Green Road	C3		2	0	19	0	✓	
368	2003/0492	Land at Collingwood College, London Road	D1	n/a	0	0	5	41	✓	
372	2003/0724	281-297 London Road (SM)	D1	286	0	0	0	98	✓	
372		281-297 London Road (SM)	Sui Generis	1466					✓	
372		281-297 London Road (SM)	B8	160					✓	
373	2003/0870	Land at Guildford Road / Sturt Road	Sui Generis	150 sqm (scout hut)	0	0	28	0	✓	
364	2003/1279	Metco Works Gorse Lane	B2	N/A	0	0	5	0	✓	
371	2004/0085	St Catherine's School Park Road (W)	D1	1112	0	0	0	28	✓	
377	2004/0139	47 Crawley Hill (SP)	C3	n/a	1	0	0	6	✓	
373	2004/0140	Land rear of 57-63 Worsley Road	C3		0	0	0	9	✓	
372	2004/0476	21-23 Vale Road (SM)	B2	625.9	1	0	0	20	✓	
366	2004/0525	Land at 89-95 Kings Ride (T)	C3	n/a	0	0	4	0	✓	
372	2004/0540	Land West of Park Street (The Atrium) (T)	B1a	2086	0	0	0	217	✓	
372		Land West of Park Street (The Atrium) (T)	A1	2086					✓	
371	2004/0546	49 Park Road (T)	C3	n/a	1	0	0	8	✓	
364	2004/0775	Land at 8 & 10 Beta Road	C3		1	0	5	0	✓	
367	2004/0779	104 Portsmouth Road (P)	C3	n/a	1	0	0	8	✓	
367	2004/0796	1 & 2 Tekels Way (P)	C3	n/a	2	0	4	10	✓	
366	2004/0831	15 Kings Ride (T)	C3	n/a	1	0	0	10	✓	
366	2004/0843	1 Upper Park Road (T)	C3	n/a	1	0	0	7	✓	
377	2004/0920	2 Connaught Road (SP)	C3	n/a	1	0	0	5	✓	
366	2004/0998	30 - 34 Cromwell Road (T)	B2	1267	0	0	5	17	✓	
366	2004/1039	Elmhurst Ballet School Heathcote Road (T)	C2	n/a	0	0	0	140	✓	
369	2004/1052	88-90 Guildford Road	Sui Generis	785	0	0	0	27	✓	
371	2004/1096	Former Rotamould Site Murrells Lane (W)	B2	3449	0	0	0	17	✓	
370	2004/1121	Chasemount Snows Ride	C3		1	0	0	12	✓	
367	2004/1147	Darrington Coach House, Springfield Road (P)	C3	n/a	1	0	0	6	✓	
365	2004/1158	Princess Royal Barracks 76/77 Newfoundland Road	C3	0	2	0	0	10	✓	
362	2004/1216	112 London Road and The Haven Chapel Lane	C3	n/a	2	0	0	12	✓	
367	2004/1279	72-74 Portsmouth Road (P)	C3	n/a	2	0	0	12	✓	
366	2004/1287	Flats 1-6, The Heights, Tekels Park (T)	C3	n/a	0	6	0	8	✓	
377	2004/1330	Grasmere, Knightsbridge Road (SP)	C3	n/a	1	0	10	0	✓	

368	2004/1436	Land at Cordwalles Road/ Lorraine Road (OD)	C3	n/a	57	0	96	63	✓	
372	2005/0022	71-73 Frimley Road and 76 The Avenue (SM)	C3	n/a	1	0	0	34	✓	
372	2005/0093	108 Gordon Road (SM)	C3	n/a	1	0	0	13	✓	
371	2005/0222	119 Gordon Road (W)	C3	n/a	1	0	0	8	✓	
373	2005/0228	Land at Beaumaris Parade, Balmoral Drive	n/a	0	1	0	0	12	✓	
363	2005/0256	125, 127, 129 Guildford Road	C3		3	0	7	0	✓	
373	2005/0316	225a - 229a Frimley Green Road	B1	860	0	0	0	9	✓	
	2005/0316	225a - 229a Frimley Green Road	A1	120					✓	
362	2005/0596	108-110 London Road (Belleview Garage)	Sui Generis	772	0	0	0	8	✓	
377	2005/0766	Collingwood Garage and 'Brambles' 6 & 8 Portsmouth Road (SP)	Sui Generis	552	1	0	0	12	✓	
365	2005/1213	107 & Coleford Farm, Coleford Bridge Road	Sui Generis	1308	1	0	0	24	✓	
	2006/0011	2-4 Firwood Drive (SM)	C3	n/a	2	0	0	24	✓	
375	2006/0172	136 Upper Chobham Road (H)	C3	n/a	1	0	0	18	✓	
370	2006/0188	Tudor House, London Road	C3		1	0	0	14	✓	
364	2006/0452	Land at 75 - 77 Windsor Road	C3		1	0	0	7	✓	
377	2006/0491	21 Portsmouth Road (SP)	C3	n/a	1	0	0	8	✓	
366	2007/0223	Lanza and Portesbery House, Portesbery Road (T)	C3	n/a	2	0	6	0	✓	
369	2007/1163	122, 124, 126 Guildford Road	C3		3	0	0	20	✓	
362	2009/0596	Bird in Hand, 123 London Road	A4	265	0	1	6	0	✓	
362	2007/0702	Notcutts Nursery, 150 - 152 London Road	Sui Generis	n/a	0	0	115	67	✓	
523	2008/0362	331 Guildford Road	Sui Generis	900	0	0	14	8	✓	
377	2009/0046	42, 44 & 46 Crawley Hill (SP)	C3	n/a	3	0	0	9	✓	
366	2004/1050	St George's Court and 9 High Street (T)	B1	2853	0	0	0	23	✓	
377	2008/0591	Greenmantle Knightsbridge Road (SP)	C3	n/a	1	0	0	10	✓	
377	2009/0713	Chapel Pines Maywood Drive (SP)	C3	n/a	1	0	10	0	✓	
372	2004/1231	52 Park St (T)	B1	594	0	0	0	10	✓	
372		52 Park St (T)	A3	288					✓	
367	2008/0877	5 Prior End (P)	C3	n/a	1	0	0	8	✓	
367	2008/0397	Kilmore House, 20 Prior Road (P)	C2	810	0	0	9	0	✓	
366	2003/0993	29 West Road House and St. Kitts Upper Park Road (T)	C2	?	0	0	0	13	✓	
372	2009/0043	15 Victoria Avenue ()	B1	1067	0	0	9	0	✓	
367	2009/0893	Ashley House Waverley Close (P)	C3	n/a	1	0	0	8	✓	
365	2008/0811	85 - 93 Deepcut Bridge Road	Sui Generis	2441	0	7	10	0	✓	
374	2009/0347	Old Rectory Cottage Grove Cross Road	C3	n/a	1	0	0	9	✓	
374	2009/0500	Clewborough House School St Catherines Road	D1	n/a	1	0	38	22	✓	
375	2009/0954	Eastlea Court, 20 Westerdale Drive	C3	n/a	0	4	9	0	✓	
369	2008/1133	93 - 95 Guildford Road	C3	n/a	2	0	7	0	✓	
362	N/A						189	102		✓
363	N/A						19	10		✓
364	N/A						57	30		✓
365	N/A	PRB	Use Entec Study				831	369		✓
365	N/A						33	18		✓

366	N/A	Magistrates Court, Camberley Town Centre	Sui G	280	0	0	0	13		✓
366	N/A	Camberley Train Station	B1a	1275	0	0	0	60		✓
366	N/A	Junction Knoll Road/London Road	Sui G	1417	0	0	0	20		✓
366	N/A	The Granary	A1 & D2	380 & 323	0	0	0	6		✓
366	N/A	London Road Frontage	See commercial LDF sheet + 6 1 bed flats		0	6	0	22		✓
366	N/A	Camberley Town Centre (general)					19	60		✓
367	N/A	N/A					53	28		✓
368	N/A	N/A					0	0		✓
369	N/A	N/A					19	10		✓
370	N/A	N/A					19	10		✓
371	N/A	N/A					189	102		✓
372	N/A	N/A					118	64		✓
373	N/A	N/A					38	20		✓
374	N/A	N/A					4	2		✓
375	N/A	N/A					10	5		✓
377	N/A	N/A					65	35		✓
523	N/A	N/A					19	10		✓
378	N/A	DERA	b1/b2		0	0	1750	450		✓
379	N/A	DERA	b1/b2		0	0	0	300		✓

APPENDIX C – EXISTING TRIP GENERATION FOR PRB DEVELOPMENT

(Sourced from document produced by Entec: "*Defence Estates, Princess Royal Barracks, Deepcut Disposal, Transport Assessment,"* 23rd April 2010.

Land Use	AM Peak (0800 – 0900)		PM Peak (1700 – 1800)		Daily (0700 – 1700)	
	Arrivals	**Departures**	**Arrivals**	**Departures**	**Arrivals**	**Departures**
Sergeant Mess	5	12	9	4	65	74
Brunswick Road	176	40	37	97	881	975
Blakedown Road	54	55	44	44	538	494
Officers Mess	0	0	0	0	1	1
Total	**235**	**107**	**90**	**145**	**1485**	**1544**

Existing PRB Traffic Generation (2008)

APPENDIX D – TRICS LOCATION DEFINITIONS

(Source: TRICS 2009(b))

Town Centre
Within the central core area of the heart of the town/city (e.g. the primary shopping area), as defined in the local development (if appropriate).

Edge of Town Centre
For retail, a location within easy walking distance (i.e. up to 300 metres) from the central primary shopping area, often providing parking facilities that serve the centre as well as the site, thus enabling one trip to serve several purposes. For other uses, the edge-of-centre radius from the town/city may be more extensive, based on how far people would be prepared to walk. For offices this may be outside the town centre but in the urban area within 500m of a public transport interchange. Local topography and barriers will affect pedestrians' perception of easy walking distance. Examples of barriers include crossing major roads and car parks. The perceived safety of the route and strength of the attraction of the town centre are also relevant.

Neighbourhood Centre
Predominantly residential area, but with additional amenities like local shops, schools etc. Could be described as a small "district" or "village" within the town/city itself. Would also apply to actual villages. The local shops serve a small catchment. These may include a general grocery store, a newsagent, a sub-post office and a pharmacy, as well as others. These centres provide accessible shopping for people's day-to-day needs.

Suburban Area
An area outside the edge of town/city centre, but not at the town/city's physical edge. This can encompass a wide range of physical locations within a town/city. Suburban Area sites can range from busy built up areas near the centre of town (but outside the Edge of Town Centre radius), to leafy suburbs far from the centre.

Edge of Town
At the physical edge of the town/city, where the town/city meets the countryside. The actual physical distance from the site to the beginning of the countryside can vary proportionately to the size of the town/city.

Free Standing (Out of Town)
Just beyond the physical edge of the nearest town/city, or in an isolated rural location (sites in villages within the Neighbourhood Centre category). The distance from the edge of the town/city, which qualifies a site as Free Standing, is not set, and is instead judged on a site-by-site basis, proportional to the size of the town/city.

APPENDIX E – STRATEGIC JUNCTION DETAILED VCR INFORMATION

M3 Junction 3

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Flow – All Vehicles					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M3	J4 - 3 (mainline)	5700	6.69	110	4123	4815	4790	4861	4940	4920
N	M3	J3 Slip Off Northbound	3800	0.39	105	3353	4098	4094	4137	4235	4226
N	M3	J3 (mainline through junction)	5700	0.9	110	3030	4179	4185	4273	4269	4340
N	M3	J3 Slip on Northbound	3800	0.24	105	1549	2264	2276	2321	2290	2283
N	M3	J3 - 2 (mainline)	5700	10.74	110	3954	4473	4533	4611	4855	4869
S	M3	J2 - 3 (mainline)	5700	10.77	110	2104	2464	2593	2627	2628	2660
S	M3	J3 Slip Off Southbound	3800	0.22	105	2018	2351	2196	2233	2312	2260
S	M3	J3 (mainline through junction)	5700	0.91	110	1850	2009	1939	1984	2227	2209
S	M3	J3 Slip on Southbound	3800	0.4	105	1803	1834	1818	1816	1945	1943
N	M3	J4 - 3 (mainline)	5700	6.71	110	1481	1915	1909	1952	1978	2057

M3 Junction 3 Flow

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Uncongested Link Travel Time (Veh Hrs)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M3	J4 - 3 (mainline)	5700	6.69	110	239	263	269	273	291	288
N	M3	J3 Slip Off Northbound	3800	0.39	105	7	7	7	7	8	8
N	M3	J3 (mainline through junction)	5700	0.9	110	17	20	21	21	22	22
N	M3	J3 Slip on Northbound	3800	0.24	105	5	5	5	5	5	5
N	M3	J3 - 2 (mainline)	5700	10.74	110	403	470	468	475	482	480
S	M3	J2 - 3 (mainline)	5700	10.77	110	328	401	401	405	415	414
S	M3	J3 Slip Off Southbound	3800	0.22	105	4	4	4	4	4	4
S	M3	J3 (mainline through junction)	5700	0.91	110	13	19	19	19	19	19
S	M3	J3 Slip on Southbound	3800	0.4	105	6	7	7	7	8	8
N	M3	J4 - 3 (mainline)	5700	6.71	110	184	246	248	253	256	257

M3 Junction 3 Uncongested Link Travel Time

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Congested Link Travel Time (Veh Hrs)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M3	J4 - 3 (mainline)	5700	6.69	110	260	300	309	316	350	345
N	M3	J3 Slip Off Northbound	3800	0.39	105	7	8	7	8	9	9
N	M3	J3 (mainline through junction)	5700	0.9	110	18	21	22	22	22	22
N	M3	J3 Slip on Northbound	3800	0.24	105	5	6	5	5	5	5
N	M3	J3 - 2 (mainline)	5700	10.74	110	447	568	564	577	592	589
S	M3	J2 - 3 (mainline)	5700	10.77	110	343	444	443	450	466	465
S	M3	J3 Slip Off Southbound	3800	0.22	105	4	4	4	4	4	4
S	M3	J3 (mainline through junction)	5700	0.91	110	13	19	19	20	20	19
S	M3	J3 Slip on Southbound	3800	0.4	105	6	8	8	8	8	8
N	M3	J4 - 3 (mainline)	5700	6.71	110	191	271	274	282	287	288

M3 Junction 3 Congested Link Travel Time

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	VCR (Volume/Capacity Ratio)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M3	J4 - 3 (mainline)	5700	6.69	110	0.69	0.77	0.79	0.80	0.85	0.84
N	M3	J3 Slip Off Northbound	3800	0.39	105	0.49	0.53	0.51	0.52	0.59	0.58
N	M3	J3 (mainline through junction)	5700	0.9	110	0.37	0.43	0.45	0.46	0.46	0.47
N	M3	J3 Slip on Northbound	3800	0.24	105	0.53	0.62	0.58	0.59	0.61	0.59
N	M3	J3 - 2 (mainline)	5700	10.74	110	0.72	0.84	0.84	0.85	0.87	0.86
S	M3	J2 - 3 (mainline)	5700	10.77	110	0.59	0.72	0.72	0.73	0.74	0.74
S	M3	J3 Slip Off Southbound	3800	0.22	105	0.47	0.48	0.48	0.48	0.51	0.51
S	M3	J3 (mainline through junction)	5700	0.91	110	0.27	0.40	0.40	0.41	0.40	0.40
S	M3	J3 Slip on Southbound	3800	0.4	105	0.39	0.50	0.50	0.51	0.52	0.54
N	M3	J4 - 3 (mainline)	5700	6.71	110	0.53	0.72	0.72	0.74	0.74	0.75

M3 Junction 3 VCR

Cells coloured orange have a VCR value between 0.75 and 0.85
Cells coloured pink have a VCR value greater than 0.85

M3 Junction 4

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Flow – All Vehicles					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M3	J4a - 4 (mainline)	5700	2.82	110	4110	4460	4502	4520	4094	4179
N	M3	J4 Slip Off Northbound	3800	0.36	105	1633	1819	1861	1793	1557	1609
N	M3	J4 (mainline through junction)	5700	0.54	110	3072	3637	3709	3771	3697	3616
N	M3	J4 Slip On Northbound	3800	0.39	105	854	638	664	668	1063	1077
N	M3	J4 - 3 (mainline)	5700	6.69	110	3940	4374	4453	4525	4808	4781
S	M3	J3 - 4 (mainline)	5700	6.71	110	3016	4080	4105	4187	4221	4253
S	M3	J4 Slip Off Southbound	3800	0.36	105	605	813	787	864	824	968
S	M3	J4 (mainline through junction)	5700	0.54	110	2397	3169	3238	3237	3349	3197
S	M3	J4 Slip On Southbound	3800	0.43	105	1914	2255	2309	2289	2312	2356
S	M3	J4 - 4a (mainline)	5700	2.82	110	3716	4427	4479	4482	4500	4507

M3 Junction 4 Flow

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Uncongested Link Travel Time (Veh Hrs)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M3	J4a - 4 (mainline)	5700	2.82	110	105	114	115	116	105	107
N	M3	J4 Slip Off Northbound	3800	0.36	105	6	6	6	6	5	6
N	M3	J4 (mainline through junction)	5700	0.54	110	15	18	18	19	18	18
N	M3	J4 Slip On Northbound	3800	0.39	105	3	2	2	2	4	4
N	M3	J4 - 3 (mainline)	5700	6.69	110	239	263	269	273	291	288
S	M3	J3 - 4 (mainline)	5700	6.71	110	184	246	248	253	256	257
S	M3	J4 Slip Off Southbound	3800	0.36	105	2	3	3	3	3	3
S	M3	J4 (mainline through junction)	5700	0.54	110	12	16	16	16	16	16
S	M3	J4 Slip On Southbound	3800	0.43	105	8	9	9	9	9	10
S	M3	J4 - 4a (mainline)	5700	2.82	110	95	113	115	115	115	116

M3 Junction 4 Uncongested Link Travel Time

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Congested Link Travel Time (Veh Hrs)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M3	J4a - 4 (mainline)	5700	2.82	110	117	133	134	135	116	120
N	M3	J4 Slip Off Northbound	3800	0.36	105	6	6	7	6	6	6
N	M3	J4 (mainline through junction)	5700	0.54	110	16	19	19	20	19	19
N	M3	J4 Slip On Northbound	3800	0.39	105	3	2	2	3	4	4
N	M3	J4 - 3 (mainline)	5700	6.69	110	260	300	309	316	350	345
S	M3	J3 - 4 (mainline)	5700	6.71	110	191	271	274	282	287	288
S	M3	J4 Slip Off Southbound	3800	0.36	105	2	3	3	3	3	3
S	M3	J4 (mainline through junction)	5700	0.54	110	12	16	17	16	17	16
S	M3	J4 Slip On Southbound	3800	0.43	105	8	10	10	10	10	10
S	M3	J4 - 4a (mainline)	5700	2.82	110	101	131	133	134	134	135

M3 Junction 4 Congested Link Travel Time

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	VCR (Volume/Capacity Ratio)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M3	J4a - 4 (mainline)	5700	2.82	110	0.72	0.78	0.79	0.79	0.72	0.73
N	M3	J4 Slip Off Northbound	3800	0.36	105	0.43	0.48	0.49	0.47	0.41	0.42
N	M3	J4 (mainline through junction)	5700	0.54	110	0.54	0.64	0.65	0.66	0.65	0.63
N	M3	J4 Slip On Northbound	3800	0.39	105	0.22	0.17	0.17	0.18	0.28	0.28
N	M3	J4 - 3 (mainline)	5700	6.69	110	0.69	0.77	0.79	0.80	0.85	0.84
S	M3	J3 - 4 (mainline)	5700	6.71	110	0.53	0.72	0.72	0.74	0.74	0.75
S	M3	J4 Slip Off Southbound	3800	0.36	105	0.16	0.21	0.21	0.23	0.22	0.25
S	M3	J4 (mainline through junction)	5700	0.54	110	0.42	0.56	0.57	0.57	0.59	0.56
S	M3	J4 Slip On Southbound	3800	0.43	105	0.50	0.59	0.61	0.60	0.61	0.62
S	M3	J4 - 4a (mainline)	5700	2.82	110	0.65	0.78	0.79	0.79	0.79	0.79

M3 Junction 4 VCR

Cells coloured orange have a VCR value between 0.75 and 0.85
Cells coloured pink have a VCR value greater than 0.85

M25 Junction 11

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Flow – All Vehicles					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
S	M25	J11 - 10 (mainline)	7600	7.01	110	4907	5592	5629	5644	5967	5961
N	M25	J11 Slip Off Northbound	3800	0.58	105	1352	1543	1523	1530	1506	1535
N	M25	J11 (mainline through junction)	5700	1.24	110	3555	4049	4107	4115	4461	4426
N	M25	J11 Slip On Northbound	3800	0.69	105	633	901	878	874	943	1040
N	M25	J 11 - 12 (mainline)	7600	2.53	110	4188	4950	4985	4989	5404	5466
S	M25	J 12 - 11 (mainline)	7600	2.54	110	4732	6036	6022	6067	6103	6110
S	M25	J11 Slip Off Southbound	3800	0.66	105	1251	1210	1177	1202	1210	1193
S	M25	J11 (mainline though junction)	5700	1.17	110	3481	4826	4845	4865	4893	4917
S	M25	J11 Slip On Southbound	3800	0.56	105	936	1031	1027	1044	922	972
S	M25	J11 - 10 (mainline)	7600	6.99	110	4417	5857	5873	5910	5814	5889

M25 Junction 11 Flow

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Uncongested Link Travel Time (Veh Hrs)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
S	M25	J11 - 10 (mainline)	7600	7.01	110	313	356	359	360	380	380
N	M25	J11 Slip Off Northbound	3800	0.58	105	7	9	8	8	8	8
N	M25	J11 (mainline through junction)	5700	1.24	110	40	46	46	46	50	50
N	M25	J11 Slip On Northbound	3800	0.69	105	4	6	6	6	6	7
N	M25	J 11 - 12 (mainline)	7600	2.53	110	96	114	115	115	124	126
S	M25	J 12 - 11 (mainline)	7600	2.54	110	109	139	139	140	141	141
S	M25	J11 Slip Off Southbound	3800	0.66	105	8	8	7	8	8	8
S	M25	J11 (mainline though junction)	5700	1.17	110	37	51	52	52	52	52
S	M25	J11 Slip On Southbound	3800	0.56	105	5	6	5	6	5	5
S	M25	J11 - 10 (mainline)	7600	6.99	110	281	372	373	376	369	374

M25 Junction 11 Uncongested Link Travel Time

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Congested Link Travel Time (Veh Hrs)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
S	M25	J11 - 10 (mainline)	7600	7.01	110	331	400	404	406	441	441
N	M25	J11 Slip Off Northbound	3800	0.58	105	8	9	9	9	9	9
N	M25	J11 (mainline through junction)	5700	1.24	110	42	50	51	52	58	58
N	M25	J11 Slip On Northbound	3800	0.69	105	4	6	6	6	6	7
N	M25	J 11 - 12 (mainline)	7600	2.53	110	100	121	122	122	137	139
S	M25	J 12 - 11 (mainline)	7600	2.54	110	114	162	162	164	165	165
S	M25	J11 Slip Off Southbound	3800	0.66	105	8	8	8	8	8	8
S	M25	J11 (mainline though junction)	5700	1.17	110	39	62	63	63	64	64
S	M25	J11 Slip On Southbound	3800	0.56	105	5	6	6	6	5	5
S	M25	J11 - 10 (mainline)	7600	6.99	110	293	427	429	433	423	431

M25 Junction 11 Congested Link Travel Time

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	VCR (Volume/Capacity Ratio)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
S	M25	J11 - 10 (mainline)	7600	7.01	110	0.65	0.74	0.74	0.74	0.79	0.78
N	M25	J11 Slip Off Northbound	3800	0.58	105	0.36	0.41	0.40	0.40	0.40	0.40
N	M25	J11 (mainline through junction)	5700	1.24	110	0.62	0.71	0.72	0.72	0.78	0.78
N	M25	J11 Slip On Northbound	3800	0.69	105	0.17	0.24	0.23	0.23	0.25	0.27
N	M25	J 11 - 12 (mainline)	7600	2.53	110	0.55	0.65	0.66	0.66	0.71	0.72
S	M25	J 12 - 11 (mainline)	7600	2.54	110	0.62	0.79	0.79	0.80	0.80	0.80
S	M25	J11 Slip Off Southbound	3800	0.66	105	0.33	0.32	0.31	0.32	0.32	0.31
S	M25	J11 (mainline though junction)	5700	1.17	110	0.61	0.85	0.85	0.85	0.86	0.86
S	M25	J11 Slip On Southbound	3800	0.56	105	0.25	0.27	0.27	0.27	0.24	0.26
S	M25	J11 - 10 (mainline)	7600	6.99	110	0.58	0.77	0.77	0.78	0.77	0.77

M25 Junction 11 VCR

Cells coloured orange have a VCR value between 0.75 and 0.85
Cells coloured pink have a VCR value greater than 0.85

M25 Junction 12 / M3 Junction 2

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Flow – All Vehicles					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M25	M25 J11-12 (mainline)	7600	2.53	110	4188	4950	4985	4989	5404	5466
N	M25	M25 J12 Slip Off Northbound	3800	0.33	105	1552	1427	1435	1440	2249	2239
N	M25	J12 (mainline through junction)	5700	1.29	110	2637	3523	3551	3548	3155	3226
N	M25	M25 J12 Slip On Northbound	3800	0.36	105	1155	1500	1442	1443	1912	1958
N	M25	J12 - 13 (mainline)	9500	4.1	110	11376	15068	14978	14974	15199	15551
S	M25	J13 - 12 (mainline)	9500	3.98	110	3944	4982	4936	4956	4706	4798
S	M25	M25 J12 Slip Off Southbound	3800	0.52	105	1621	1962	1936	1953	1857	1895
S	M25	J12 (mainline through junction)	5700	1.21	110	2324	3020	3000	3003	2849	2904
S	M25	M25 J12 Slip On Southbound	3800	0.26	105	2408	3016	3022	3064	3254	3206
S	M25	M25 J12 - 11 (mainline)	7600	2.54	110	4732	6036	6022	6067	6103	6110
N	M3	J2 - 1 (mainline)	5700	8.57	110	2034	1886	1924	1933	2008	2024
S	M3	J1 - 2 (mainline)	5700	7.97	110	1655	2297	2322	2323	2362	2360
S	M3	M3 J2 South to M25 J12 South	3800	0.16	105	1201	1435	1463	1461	1458	1431
N	M3	M3 J2 South to M25 J12 North	3400	0.86	80	233	538	513	524	709	734
S	M3	M3 J2 Slip Off Southbound	3800	0.47	105	1434	1973	1976	1985	2167	2166
S	M3	J2 (mainline through junction)	3800	1.44	105	1725	1500	1481	1528	1686	1666
N	M3	M3 J2 Slip On Northbound	3800	0.37	105	1544	790	757	784	1557	1574
N	M25	M25 J12 North to M3 J2 North	3400	0.72	80	860	577	574	571	1132	1141
N	M3	J2 (mainline through junction)	3800	1.55	105	1993	2272	2301	2338	1941	1921
N	M25	M25 J12 South to M3 J2 North	3800	0.3	105	684	214	183	213	426	432
S	M25	M25 J12 South to M3 J2 South	3400	0.56	80	937	1748	1753	1740	1431	1462
S	M3	M3 J2 North to M25 J12 South	3400	0.64	80	1208	1581	1559	1603	1796	1775
N	M3	M25 J12 Slip On Northbound	3800	0.24	105	922	962	929	919	1202	1223
N	M3	M3 J2 Slip Off Northbound	3800	0.48	105	2130	2543	2488	2522	2999	2998
S	M3	J2 - 3 (mainline)	5700	10.77	110	3353	4098	4094	4137	4235	4235
N	M3	J3 - 2 (mainline)	5700	10.74	110	4123	4815	4790	4861	4940	4920

M25 Junction 12 / M3 Junction 2 Flow

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Uncongested Link Travel Time (Veh Hrs)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M25	M25 J11-12 (mainline)	7600	2.53	110	96	114	115	115	124	126
N	M25	M25 J12 Slip Off Northbound	3800	0.33	105	5	4	5	5	7	7
N	M25	J12 (mainline through junction)	5700	1.29	110	31	41	42	42	37	38
N	M25	M25 J12 Slip On Northbound	3800	0.36	105	4	5	5	5	7	7
N	M25	J12 - 13 (mainline)	9500	4.1	110	141	187	186	186	189	193
S	M25	J13 - 12 (mainline)	9500	3.98	110	143	180	179	179	170	174
S	M25	M25 J12 Slip Off Southbound	3800	0.52	105	8	10	10	10	9	9
S	M25	J12 (mainline through junction)	5700	1.21	110	26	33	33	33	31	32
S	M25	M25 J12 Slip On Southbound	3800	0.26	105	6	7	7	8	8	8
S	M25	M25 J12 - 11 (mainline)	7600	2.54	110	109	139	139	140	141	141
N	M3	J2 - 1 (mainline)	5700	8.57	110	167	153	156	157	165	166
S	M3	J1 - 2 (mainline)	5700	7.97	110	120	166	168	168	171	171
S	M3	M3 J2 South to M25 J12 South	3800	0.16	105	2	2	2	2	2	2
N	M3	M3 J2 South to M25 J12 North	3400	0.86	80	3	6	6	6	8	8
S	M3	M3 J2 Slip Off Southbound	3800	0.47	105	6	9	9	9	10	10
S	M3	J2 (mainline through junction)	3800	1.44	105	24	21	20	21	23	23
N	M3	M3 J2 Slip On Northbound	3800	0.37	105	5	3	3	3	5	6
N	M25	M25 J12 North to M3 J2 North	3400	0.72	80	8	5	5	5	10	10
N	M3	J2 (mainline through junction)	3800	1.55	105	29	34	34	35	29	28
N	M25	M25 J12 South to M3 J2 North	3800	0.3	105	2	1	1	1	1	1
S	M25	M25 J12 South to M3 J2 South	3400	0.56	80	7	12	12	12	10	10
S	M3	M3 J2 North to M25 J12 South	3400	0.64	80	10	13	12	13	14	14
N	M3	M25 J12 Slip On Northbound	3800	0.24	105	2	2	2	2	3	3
N	M3	M3 J2 Slip Off Northbound	3800	0.48	105	10	12	11	12	14	14
S	M3	J2 - 3 (mainline)	5700	10.77	110	328	401	401	405	415	414
N	M3	J3 - 2 (mainline)	5700	10.74	110	403	470	468	475	482	480

M25 Junction 12 /M3 Junction 2 Uncongested Link Travel Time

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	Congested Link Travel Time (Veh Hrs)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M25	M25 J11-12 (mainline)	7600	2.53	110	100	121	122	122	137	139
N	M25	M25 J12 Slip Off Northbound	3800	0.33	105	5	5	5	5	7	7
N	M25	J12 (mainline through junction)	5700	1.29	110	32	43	44	43	38	39
N	M25	M25 J12 Slip On Northbound	3800	0.36	105	4	5	5	5	7	7
N	M25	J12 - 13 (mainline)	9500	4.1	110	146	195	194	194	197	202
S	M25	J13 - 12 (mainline)	9500	3.98	110	147	187	185	186	176	180
S	M25	M25 J12 Slip Off Southbound	3800	0.52	105	8	10	10	10	10	10
S	M25	J12 (mainline through junction)	5700	1.21	110	26	35	34	34	33	33
S	M25	M25 J12 Slip On Southbound	3800	0.26	105	6	9	9	9	10	9
S	M25	M25 J12 - 11 (mainline)	7600	2.54	110	114	162	162	164	165	165
N	M3	J2 - 1 (mainline)	5700	8.57	110	171	157	160	161	169	170
S	M3	J1 - 2 (mainline)	5700	7.97	110	123	171	173	173	176	176
S	M3	M3 J2 South to M25 J12 South	3800	0.16	105	2	2	2	2	2	2
N	M3	M3 J2 South to M25 J12 North	3400	0.86	80	3	6	6	6	8	8
S	M3	M3 J2 Slip Off Southbound	3800	0.47	105	7	9	9	9	10	10
S	M3	J2 (mainline through junction)	3800	1.44	105	25	21	21	22	24	24
N	M3	M3 J2 Slip On Northbound	3800	0.37	105	6	3	3	3	6	6
N	M25	M25 J12 North to M3 J2 North	3400	0.72	80	8	5	5	5	11	11
N	M3	J2 (mainline through junction)	3800	1.55	105	31	35	36	36	30	29
N	M25	M25 J12 South to M3 J2 North	3800	0.3	105	2	1	1	1	1	1
S	M25	M25 J12 South to M3 J2 South	3400	0.56	80	7	13	13	13	11	11
S	M3	M3 J2 North to M25 J12 South	3400	0.64	80	10	13	13	13	15	15
N	M3	M25 J12 Slip On Northbound	3800	0.24	105	2	2	2	2	3	3
N	M3	M3 J2 Slip Off Northbound	3800	0.48	105	10	12	12	12	16	16
S	M3	J2 - 3 (mainline)	5700	10.77	110	343	444	443	450	466	465
N	M3	J3 - 2 (mainline)	5700	10.74	110	447	568	564	577	592	589

M25 Junction 12 /M3 Junction 2 Congested Link Travel Time

Direction	Road No.	Link Name	Capacity	Link Length	Free Flow Speed (Kph)	VCR (Volume/Capacity Ratio)					
						2005	2026 Do-Min	2026 Scenario A	2026 Scenario B	2026 Scenario C	2026 Scenario D
N	M25	M25 J11-12 (mainline)	7600	2.53	110	0.55	0.65	0.66	0.66	0.71	0.72
N	M25	M25 J12 Slip Off Northbound	3800	0.33	105	0.41	0.38	0.38	0.38	0.59	0.59
N	M25	J12 (mainline through junction)	5700	1.29	110	0.46	0.62	0.62	0.62	0.55	0.57
N	M25	M25 J12 Slip On Northbound	3800	0.36	105	0.30	0.39	0.38	0.38	0.50	0.52
N	M25	J12 - 13 (mainline)	9500	4.1	110	0.40	0.53	0.53	0.53	0.53	0.55
S	M25	J13 - 12 (mainline)	9500	3.98	110	0.42	0.52	0.52	0.52	0.50	0.51
S	M25	M25 J12 Slip Off Southbound	3800	0.52	105	0.43	0.52	0.51	0.51	0.49	0.50
S	M25	J12 (mainline through junction)	5700	1.21	110	0.41	0.53	0.53	0.53	0.50	0.51
S	M25	M25 J12 Slip On Southbound	3800	0.26	105	0.63	0.79	0.80	0.81	0.86	0.84
S	M25	M25 J12 - 11 (mainline)	7600	2.54	110	0.62	0.79	0.79	0.80	0.80	0.80
N	M3	J2 - 1 (mainline)	5700	8.57	110	0.36	0.33	0.34	0.34	0.35	0.36
S	M3	J1 - 2 (mainline)	5700	7.97	110	0.29	0.40	0.41	0.41	0.41	0.41
S	M3	M3 J2 South to M25 J12 South	3800	0.16	105	0.32	0.38	0.38	0.38	0.38	0.38
N	M3	M3 J2 South to M25 J12 North	3400	0.86	80	0.07	0.16	0.15	0.15	0.21	0.22
S	M3	M3 J2 Slip Off Southbound	3800	0.47	105	0.38	0.52	0.52	0.52	0.57	0.57
S	M3	J2 (mainline through junction)	3800	1.44	105	0.45	0.39	0.39	0.40	0.44	0.44
N	M3	M3 J2 Slip On Northbound	3800	0.37	105	0.41	0.21	0.20	0.21	0.41	0.41
N	M25	M25 J12 North to M3 J2 North	3400	0.72	80	0.25	0.17	0.17	0.17	0.33	0.34
N	M3	J2 (mainline through junction)	3800	1.55	105	0.52	0.60	0.61	0.62	0.51	0.51
N	M25	M25 J12 South to M3 J2 North	3800	0.3	105	0.18	0.06	0.05	0.06	0.11	0.11
S	M25	M25 J12 South to M3 J2 South	3400	0.56	80	0.28	0.51	0.52	0.51	0.42	0.43
S	M3	M3 J2 North to M25 J12 South	3400	0.64	80	0.36	0.47	0.46	0.47	0.53	0.52
N	M3	M25 J12 Slip On Northbound	3800	0.24	105	0.24	0.25	0.24	0.24	0.32	0.32
N	M3	M3 J2 Slip Off Northbound	3800	0.48	105	0.56	0.67	0.65	0.66	0.79	0.79
S	M3	J2 - 3 (mainline)	5700	10.77	110	0.59	0.72	0.72	0.73	0.74	0.74
N	M3	J3 - 2 (mainline)	5700	10.74	110	0.72	0.84	0.84	0.85	0.87	0.86

M25 Junction 12 / M3 Junction 2 VCR

Cells coloured orange have a VCR value between 0.75 and 0.85
Cells coloured pink have a VCR value greater than 0.85