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GUILDFORD BOROUGH

Guildford Borough Council Local Plan

Study of Performance of A3 Trunk Road Interchanges in Guildford Urban Area to 2024 Under Development Scenarios

April 2018

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Executive summary

Guildford Borough Council (GBC) has prepared a new Local Plan; the Guildford Borough Submission Local Plan: Strategy and Sites (December 2017), hereafter referred to as the Submission Local Plan. This study responds to issues raised by Highways England with respect to the impact of proposed planned development in the Submission Local Plan on the Guildford section of the A3 trunk road in the period to 2024, the earliest date for the start of construction of the A3 Guildford scheme.

The study has been updated to include revised data that more accurately reflects development in the period between 2014 and 2024. This report, therefore, supersedes the December 2017 report.

The study considers how the operation of the A3 junctions is predicted to change by 2024 with the addition of traffic demand associated with the Submission Local Plan development and if this is likely to have any impact on the A3. The merge and diverge flows and layouts at each location are also considered. The base case for comparison is taken from traffic counts at the junctions in 2013/14, with background traffic growth to 2024 included, as well as traffic from:

- Developments that have been completed between 2014 and 2017;
- Developments on existing Development Plan policy compliant land – sites that would be expected to come forward and be completed by 2024 (noting that the existing Development Plan includes saved policies from the 2003 Local Plan and NPPF compliant sites).

Data on the number of new homes and areas of other development (housing, office, industrial, retail, etc) for the above categories and for the Submission Local Plan were provided by GBC, together with details of the location of each site. The expected trip distribution for each site was assumed to be as the existing travel to work patterns for the 2011 Census zone (Middle Super Output Area) that the site is in, with different distributions for residential and employment-based trips.

Peak hour trip rates for each development type were applied to give the vehicle trip generations of the different categories of development to/from each Census zone. Applying the Census travel to work distributions gave predicted traffic volumes from each zone in Guildford Borough to all other areas, both within the Borough and to neighbouring authorities and further afield.

Assumed routes to travel between zones were defined and all trips that would be expected to join the A3, or pass through a junction on the A3, were quantified. Junction capacity testing was then undertaken to assess the impact on the junction operation of adding the Submission Local Plan trips to the 2024 base case.

The testing showed that at the Cathedral (Egerton Road / The Chase) and Dennis (A322 / A25) junctions, the addition of Submission Local Plan trips would give minimal impact on queuing on the A3 off-slip road, with the queue not stretching back onto the A3 main carriageway. At the A3 Stoke (Woking Road) junction, significant queuing already occurs on the off-slip but with Local Plan trips added in 2024, the queue length is shown to increase by only one vehicle.

At the Hospital (Egerton Road) junction, queuing on the A3 off-slip already backs up onto the A3 main carriageway for one hour or more in the AM peak period. This congestion is a direct result of insufficient capacity at the signalised crossroads (Hospital junction) immediately west of the A3 slip road roundabout (Tesco roundabout). Improvements to the signalised crossroads and the roundabout are planned by GBC as part of the Sustainable Movement Corridor between the Hospital/University area and the town centre. These improvements are predicted to prevent queuing from the crossroads stretching back to the roundabout and will also allow better management of traffic from the A3. Testing shows that the queue on the A3 off-slip should no longer extend onto the A3 main carriageway.

The impact of the additional Submission Local Plan traffic on the merge and diverge layouts of the A3 junctions has also been assessed. No changes in the required layout (according to the standard TD22/06 Layout of Grade Separated Junctions) are shown to be required with the Local Plan trips.

The overall conclusion of the report is that, whilst recurrent congestion will continue to be experienced, traffic from the Submission Local Plan allocations should not have a significant detrimental impact on the operation of the A3 through the Guildford urban area. Indeed, the proposed improvements at the Hospital junction and Tesco roundabout, in combination with widening of the A3 slip road, should have major benefits in preventing queuing on the off-slip extending back onto the A3 northbound main carriageway.

1 Introduction

1.1 Background

1.1.1 Guildford Borough Council (GBC) has prepared a new Local Plan; the Guildford Borough Submission Local Plan: Strategy and Sites (December 2017), hereafter referred to as the Submission Local Plan. The Submission Local Plan outlines the spatial development strategy for the borough up to 2034, including the quantum and location of development. This is based on an assessment of the objectively assessed need for new homes, employment and retail space and an assessment of whether this quantum of development can be provided in a sustainable way following consideration of other policy constraints.

1.1.2 The Submission Local Plan is based on the premise that the implementation of the A3 Guildford scheme, as mandated by the Department for Transport's Road Investment Strategy (March 2015) (the "RIS"), is, alongside other identified critical infrastructure, required in order to be able to accommodate future planned development both outside and within the borough. The A3 Guildford scheme is presently subject to feasibility and design development by Highways England, with construction anticipated to commence in Road Period 2 (2020/21 to 2024/25). Highways England has advised GBC that, if an A3 Guildford scheme is approved with funding agreed, construction is unlikely to start until 2024 at the earliest with construction taking 2½ years.

1.1.3 GBC has planned positively for the development and infrastructure required in the area, and accordingly is working on the basis that any A3 Guildford scheme will take account of future planned growth including that from Guildford's Submission Local Plan.

1.1.4 In the early years of the new Local Plan, the delivery of planned development and the impact of new development traffic on the A3 is likely to be an important ongoing consideration as the trunk road suffers from significant congestion during peak periods. Some relief will be provided by two off-slip lane widening schemes, on the A3 northbound off-slip at the University interchange (approaching Tesco roundabout) (scheme SRN7 in the Submission Local Plan) and the A3 southbound off-slip at the Stoke Interchange (scheme SRN8), to which funding was committed by Government in March 2017, and which are to be delivered by 2020. These two schemes will primarily improve road safety but also provide some congestion relief.

1.1.5 The delivery of planned development has been proposed to ensure that the sites, and phasing of sites, that will be delivered in the first years of the Submission Local Plan, and therefore in the absence of the A3 Guildford scheme, as well as the Department for Transport's RIS Road Period 1 schemes for the M25 Junction 10/A3 Wisley interchange scheme and the M25 Junctions 10-16 scheme, are located where traffic associated with them will have the least impact on the Strategic Road Network's links and junctions where current congestion issues are the most acute.

1.1.6 This study responds to issues raised by Highways England with respect to the impact of proposed planned development in the Submission Local Plan on the Guildford section of the A3 trunk road in the period to 2024, the earliest date for the start of construction of the A3 Guildford scheme. Two specific issues are:

- the extent, in terms of length and duration, of mainline queuing resulting from blocking back of traffic exiting the A3 at diverge junctions in the peak periods;

- the operation of merging and diverging traffic associated with the junctions in the peak periods.

1.2 Junctions Considered

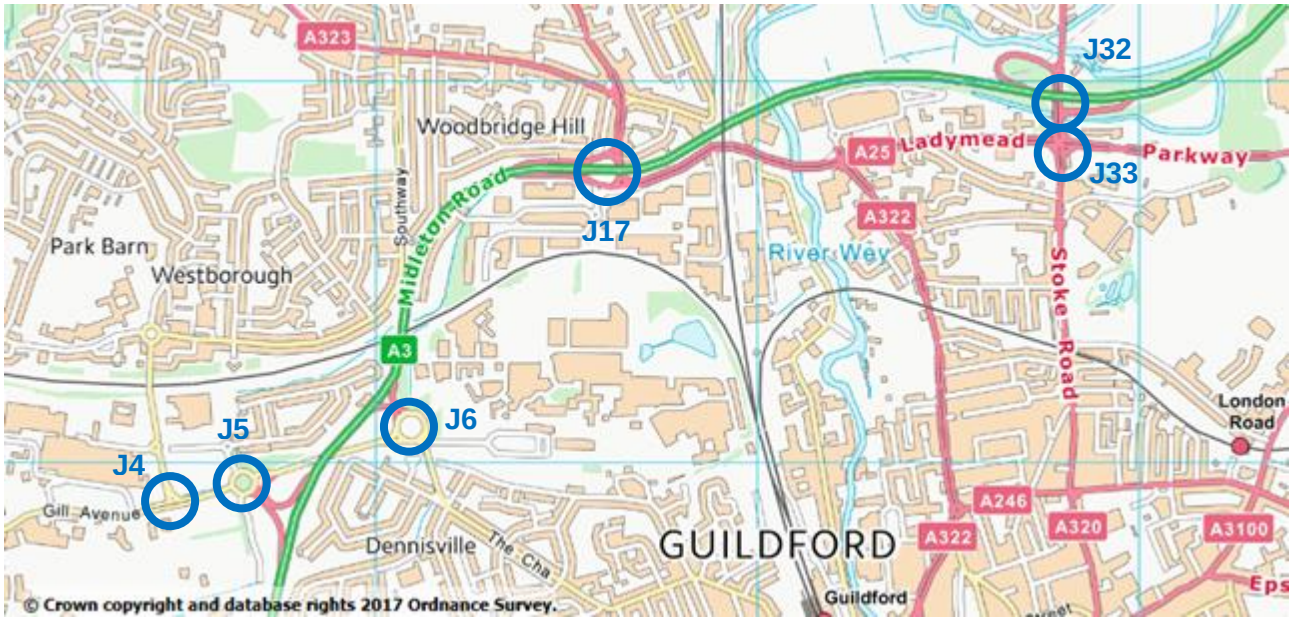
1.2.1 **Figure 1** shows the following junctions considered under this study (with numbering that is consistent with counts from Highways England):

- J4 – Hospital signalised crossroads
- J5 – Hospital (Tesco) roundabout
- J6 - Cathedral roundabout
- J17 – Dennis signalised roundabout
- J32 – A3 Off-slip / Woking Road signalised junction
- J33 – A25 / Stoke Road signalised crossroads.

1.2.2 The study considers how the operation of these junctions is predicted to change with the addition of traffic demand associated with the Submission Local Plan development and if this is likely to have any impact on the A3. The merge and diverge flows and layouts at each location are also considered.

1.2.3 The study has been updated to include revised data that more accurately reflects development in the period between 2014 and 2024. This report, therefore, supersedes the December 2017 report.

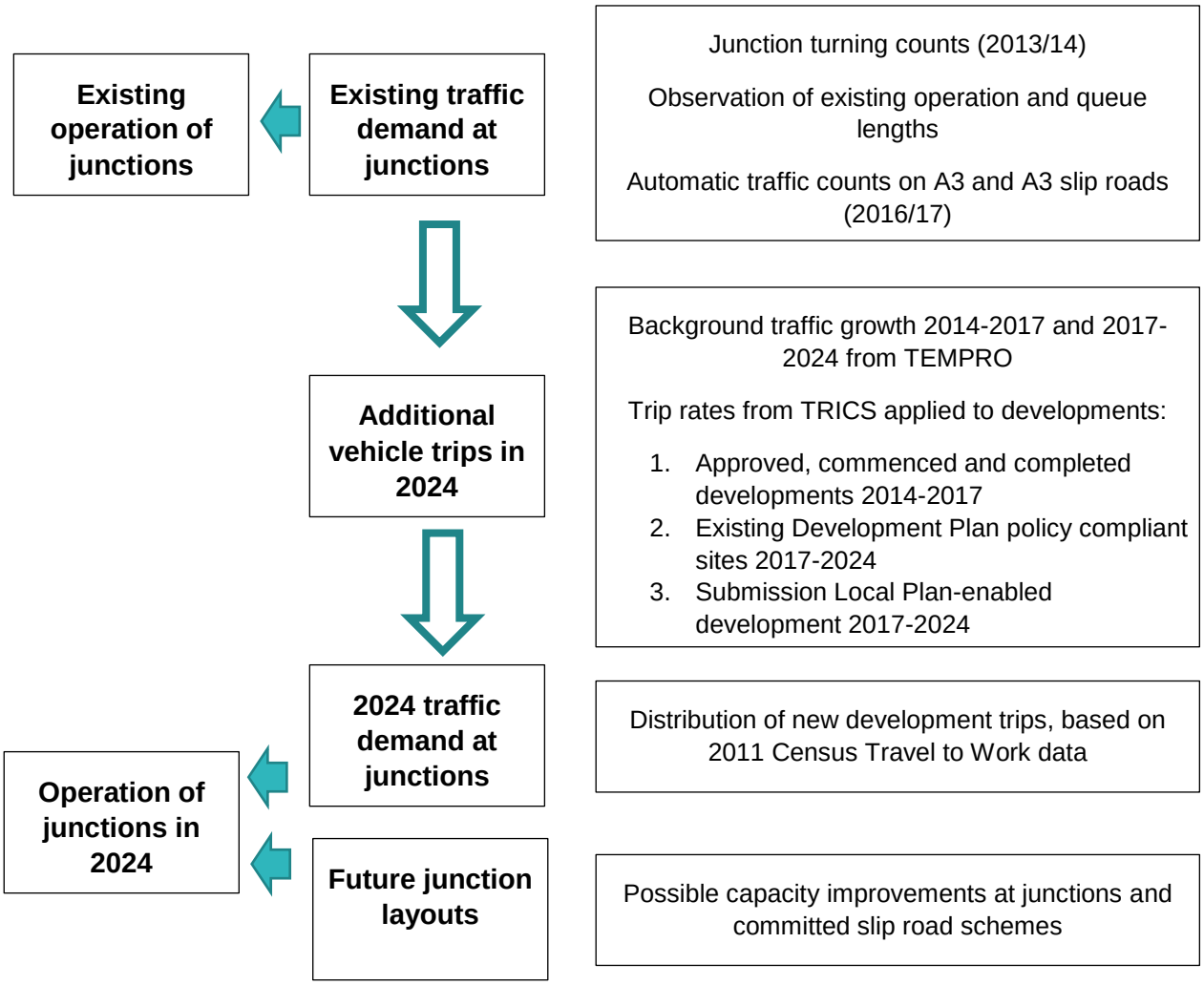
Figure 1: A3 Junctions within Study Area



2 Methodology

2.1.1 The overall methodology adopted for this study is summarised in **Figure 2** below. The aim of the study is to compare the predicted operation of the A3 junctions in 2024 with planned development on existing Development Plan policy compliant sites to the operation with the addition of trips associated with planned development considered only to be realised with the Submission Local Plan sites.

Figure 2: Outline of Study Methodology



3 Base Year Traffic Data

3.1 Junction Counts

3.1.1 Counts of turning movements, classified by vehicle class, were provided for all of the junctions that form part of this study. Peak hour movements were derived for the busiest hour over the AM and PM peak periods, based on total flow into each junction.

3.1.2 One survey in October 2013 collected data covering the Hospital crossroads, Hospital (Tesco) roundabout and Cathedral roundabout, giving a full matrix of movements through these junctions. Peak hour turning movements for each junction are given in **Tables 1-3**.

Table 1: Hospital (Tesco) Roundabout – Count from Tuesday 8 October 2013

AM Peak – 08:00-09:00

From	To	A	B	C	D	E	Total
A - Tesco		0	114	50	12	93	269
B - Egerton Road East		124	0	364	21	1135	1644
C - A3 Slip Road		63	435	0	10	403	911
D - Holiday Inn		0	29	3	0	13	45
E - Egerton Road West		119	738	214	12	0	1083
Total		306	1316	631	55	1644	3952

PM Peak – 16:35-17:35

From	To	A	B	C	D	E	Total
A - Tesco		0	231	210	16	85	542
B - Egerton Road East		184	0	559	21	554	1318
C - A3 Slip Road		17	184	0	12	128	341
D - Holiday Inn		7	43	9	0	14	73
E - Egerton Road West		191	1029	509	15	0	1744
Total		399	1487	1287	64	781	4018

Source: SCC count

Table 2: Cathedral Roundabout – Count from Tuesday 8 October 2013

AM Peak – 08:00-09:00

From	To	A	B	C	D	Total
A - A3 Slip Road		0	347	296	798	1441
B - University		15	0	14	88	117
C - The Chase		36	123	0	758	917
D - Egerton Road		288	311	717	0	1316
Total		339	781	1027	1644	3791

PM Peak – 16:35-17:35

From	To	A	B	C	D	Total
A - A3 Slip Road		0	47	73	239	359
B - University		218	0	136	335	689
C - The Chase		77	11	0	744	832
D - Egerton Road		687	126	674	0	1487
Total		982	184	883	1318	3367

Source: SCC count

Table 3: Hospital Crossroads – Count from Tuesday 8 October 2013

AM Peak – 08:00-09:00

From	To	A	B	C	D	Total
A - Egerton Road North		0	767	36	302	1105
B - Egerton Road East		444	0	148	1039	1631
C - Daphne Jackson		13	77	0	17	107
D - Gill Avenue		53	240	0	0	293
Total		510	1084	184	1358	3136

PM Peak – 16:35-17:35

From	To	A	B	C	D	Total
A - Egerton Road North		0	646	41	73	760
B - Egerton Road East		427	0	119	231	777
C - Daphne Jackson		28	183	0	2	213
D - Gill Avenue		198	900	0	0	1098
Total		653	1729	160	306	2848

Source: SCC count

3.1.3 **Table 4** shows the turning movements at the A3/A322/A25 Dennis junction.

Table 4: Dennis Roundabout – Count from Thursday 20 November 2014

AM Peak – 07:45-08:45

From	To	A	B	C	D	Total
A – A25 Midelton Road		0	232	696	469	1397
B – Surrey Way		39	0	33	17	89
C – A3 Slip Road		835	173	0	454	1462
D – A322 Worplesdon Road		1239	146	391	0	1776
Total		2113	551	1120	940	4724

PM Peak – 15:15-16:15

From	To	A	B	C	D	Total
A – A25 Midelton Road		0	50	769	829	1648
B – Surrey Way		120	0	93	69	282
C – A3 Slip Road		679	22	0	548	1249
D – A322 Worplesdon Road		771	32	338	0	1141
Total		1570	104	1200	1446	4320

Source: HE count

3.1.4 **Table 5** gives a turning matrix for the Stoke junction, taking the A3 off-slip and A25 crossroads junctions together.

Table 5: A3 Off Slip and A25 Crossroads – Count from Tuesday 18 November 2014

AM Peak – 07:30-08:30

From	To	A	B	C	D	E	Total
A – Woking Road North		0	0	122	298	384	804
B - A3 Off-Slip Road		158	0	182	415	524	1279
C – A25 East		200	0	0	101	622	923
D – Stoke Road		420	0	83	0	122	625
E – A25 East		721	0	584	187	0	1492
Total		1499	0	971	1001	1652	5123

PM Peak – 15:00-16:00

From	To	A	B	C	D	E	Total
A – Woking Road North		0	0	138	295	387	820
B - A3 Off-Slip Road		313	0	79	185	250	827
C – A25 East		278	0	0	75	493	846
D – Stoke Road		534	0	57	0	164	755
E – A25 East		972	0	598	186	0	1756
Total		2097	0	872	741	1294	5004

Source: HE count

3.2 Operation of Junctions

3.2.1 The operation of the A3 junctions was observed for both the AM and PM peak periods in the second week of October 2017. This ensured that the junctions were modelled correctly, in terms of use of particular lanes for turning movements, and also provided observations of queuing on each arm and interaction with adjacent junctions. The observations are summarised below and are believed to be representative of usual peak conditions.

Hospital Junction

3.2.2 At this junction the A3 southbound off-slip joins into the 'Tesco' roundabout (Egerton Road, Ashenden Road and access road for the Holiday Inn). Traffic heading for the Hospital, University and Surrey Research Park travels west along Egerton Road and east along Egerton Road for the town centre (via the Cathedral junction).

3.2.3 The main cause of congestion is the Hospital signalised crossroads to the west of the Tesco roundabout. The westbound straight-ahead movement has two lanes at the signals but this merges into one lane over a length of around 30m. In the AM peak period, this merge causes traffic to slow down and constrains the capacity that the two lanes provide. As a result, long queues develop stretching back to the roundabout (**Figure 3**) and then through the roundabout, extending east on Egerton Road.

3.2.4 Before the exit from the roundabout was blocked, very little queuing was observed on the A3 off-slip. With queuing through the roundabout, the off-slip traffic struggles to find a gap, leading to queuing up the slip road. Observations showed the slip road queue was in two lanes to where the slip road narrows on one lane, from where the queue stretched back onto the A3 main carriageway between 07:50-09:00 (**Figure 4**).

Figure 3: Queue on Westbound Egerton Road Blocking Back Through Roundabout

Source: MM photo, 08:20 11 October 2017

Figure 4: Queue on A3 Northbound Off-slip reaching the A3 Main Carriageway

Source: MM photo, 07:55 11 October 2017

3.2.5 In the PM peak period, the main cause of congestion is the right turn at the Hospital signalised crossroads from westbound Egerton Road. Although a dedicated right-turn lane is provided all the way back to the roundabout, there is insufficient capacity at the signals which means that the queue stretches back to the roundabout (**Figure 5**).

Figure 5: Queue on Westbound Egerton Road Right-turn Lane

Source: MM photo, 16:03 12 October 2017

3.2.6 Despite this queue, in the PM peak period there are only very short queues on the A3 off-slip and on Egerton Road east of the roundabout (**Figure 6**).

Figure 6: Queue on A3 Northbound Off-slip in PM Peak Period

Source: MM photo, 17:04 12 October 2017

Cathedral Junction

3.2.7 The Cathedral junction is a roundabout where the A3 southbound off-slip meets Egerton Road (heading to the Hospital) and The Chase (heading to the town centre). Part-time signals are provided on the A3 Off-slip arm but these were not in use in either the AM or PM peak period.

3.2.8 Generally, there is limited queuing at the roundabout, with minimal queuing on the A3 off-slip (**Figure 7**) in both peak periods. Occasionally, slow-moving traffic was observed on the A3 on-slip due to a vehicle that struggled to find a gap when merging onto the main carriageway. At times the queue on westbound Egerton Road (back from the Tesco roundabout) extended back to the Cathedral roundabout, giving longer queues on The Chase but other movements were not generally affected by this (**Figure 8**).

Figure 7: Queue on A3 Southbound Off-slip in AM Peak Period

Source: MM photo, 08:41 11 October 2017

Figure 8: Queue on Egerton Road back to Cathedral Roundabout

Source: MM photo, 08:27 11 October 2017

Dennis Junction

3.2.9 The Dennis junction is a signalised roundabout where the A3 northbound off-slip meets the A322 Worplesdon Road and A25 Midleton Road. The entry from the A322 to the north is the only arm that is not signalised, with a free-flow left-turn lane from the A322 to eastbound A25.

3.2.10 In the PM peak period this junction is very congested due to blocking back from the merge of the A3 Southbound on-slip onto the A3 main carriageway (**Figure 9**). This lack of capacity on the slip road leads to long queues on the westbound A25 and, to a lesser extent, southbound A322.

3.2.11 In the AM peak period the junction generally worked within capacity, with only short queues on all approaches. In both peak periods there was limited queuing on the A3 off-slip and it was mainly in the offside lane heading for the A25 (**Figure 10**).

Figure 9: Queue on A3 Southbound On-slip in PM Peak Period

Source: MM photo, 17:08 12 October 2017

Figure 10: Queue on A3 Northbound Off-slip in AM Peak Period

Source: MM photo, 08:41 11 October 2017

Stoke Junction

3.2.12 The Stoke junction is a signalised T-junction where the A3 southbound off-slip meets Woking Road. The A3 northbound on-slip is accessed via a roundabout to the north of the signals. Immediately south of the A3 off-slip signals, Woking Road meets the A25 and Stoke Road at a signalised crossroads.

3.2.13 In both peak periods, queuing was observed on the A3 southbound off-slip (**Figure 11**) which was a result of the limited capacity available for the southbound Woking Road movement into the A25 junction. Queuing on Woking Road reaches the off-slip junction and reduces the slip road capacity as left-turning traffic is obstructed, even when it is given a green signal (**Figure 12**). The slip road queues are longer in the AM peak period compared to the PM peak period. At the A25 signals, long queues develop on the eastbound A25 in the PM peak and northbound Stoke Road (both peak periods)

Figure 11: Queue on A3 Southbound Off-slip in AM Peak Period

Source: MM photo, 08:12 11 October 2017

Figure 12: Queue on Woking Road Southbound in AM Peak Period

Source: MM photo, 08:05 11 October 2017

3.3 Automatic Traffic Counts (ATCs)

3.3.1 ATC data was extracted from the HE WebTris site for the following locations:

- A3 Northbound, south of A31 merge (Site 5526/1)
- A31 Northbound On-slip (Site 5526/2)
- A3 Southbound, south of A31 diverge (Site 5525/1)
- A31 Southbound Off-slip (Site 5525/2)
- Hospital junction Northbound Off-slip (Site 5527/2)
- Hospital junction Northbound On-slip (Site 5527/1)
- Cathedral junction Southbound Off-slip (Site 5528/1)
- A3 Southbound, between Cathedral On and Off-slips (Site 5528/2)
- Stoke junction Northbound On-slip (Site 5529/1)
- Stoke junction Southbound Off-slip (Site 5530/1)
- A3 Northbound, north of Stoke On-slip (Site 5531/1)
- A3 Southbound, south of Stoke Off-slip (Site 5530/2)

3.3.2 Using the above data, it is possible to derive counts for the missing sites of the Cathedral On-slip and Dennis On and Off-slip roads.

3.3.3 From the data, average hourly flows for each slip road and section of the main carriageway were calculated for an average weekday in June. For northbound, 2017 data was used but this was not available for all Southbound sites so 2016 data were used for Southbound. The results are shown in **Figures 13-14**.

3.4 Existing Trip Distributions

3.4.1 Existing travel to work patterns were extracted from the 2011 Census data, for which the most detailed level of disaggregation is 'Middle Super Output Areas' (MSOA). Guildford Borough is split into 18 MSOAs, with plans of the boundaries of these areas contained in **Appendix A**

(which also show the locations of the different developments discussed later). Two trip distributions were derived for each MSOA:

- Home-based – residents of the Borough travelling to work
- Employment-based – people travelling to work in the Borough.

3.4.2 A proportion of trips to/from each MSOA is contained within the Borough, with the distribution to other areas based on the following zoning system:

- At MSOA level to the neighbouring boroughs/districts of Waverley, Woking and Surrey Heath
- At borough/district level to all other areas in the South East (Census definition)
- At Census region level for rest of the UK (e.g. London, South West, East etc).

3.4.3 **Table 6** gives a summary of the distribution of trips to work for each of the MSOAs that the Borough is made up of, using data for car drivers only. The data shows that in all areas 10%-40% of residents work in the town of Guildford, with 22%-50% of trips contained within the whole Borough. Significant proportions of residents work in the nearby boroughs/districts of Waverley, Woking, Surrey Heath, Elmbridge, Mole Valley and Rushmoor, with the highest proportions for the MSOAs that are closest to each of these areas. Around 5%-18% work in London, with only 15%-25% working in the rest of the UK.

Figure 13: Merge/Diverge Flows – 2016/17 AM Peak Hour

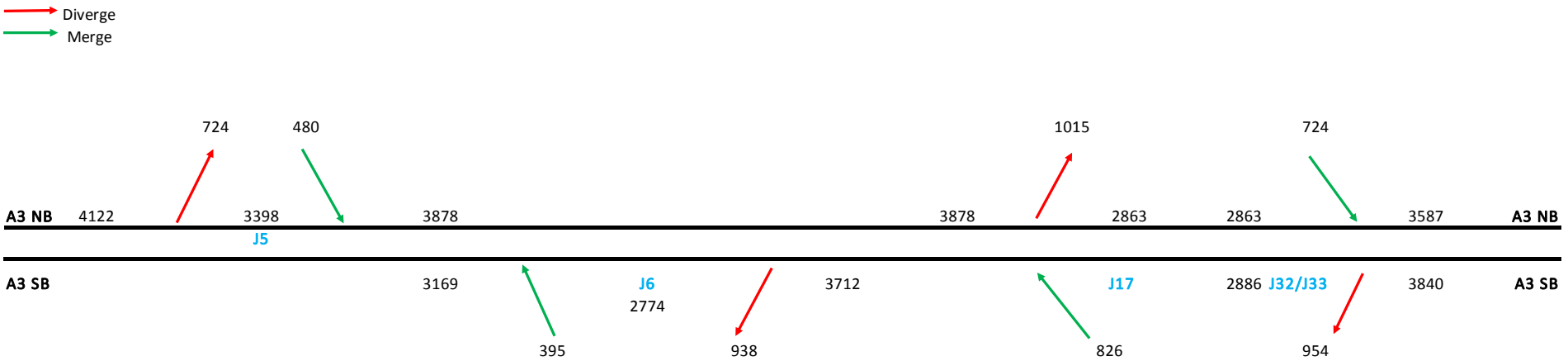
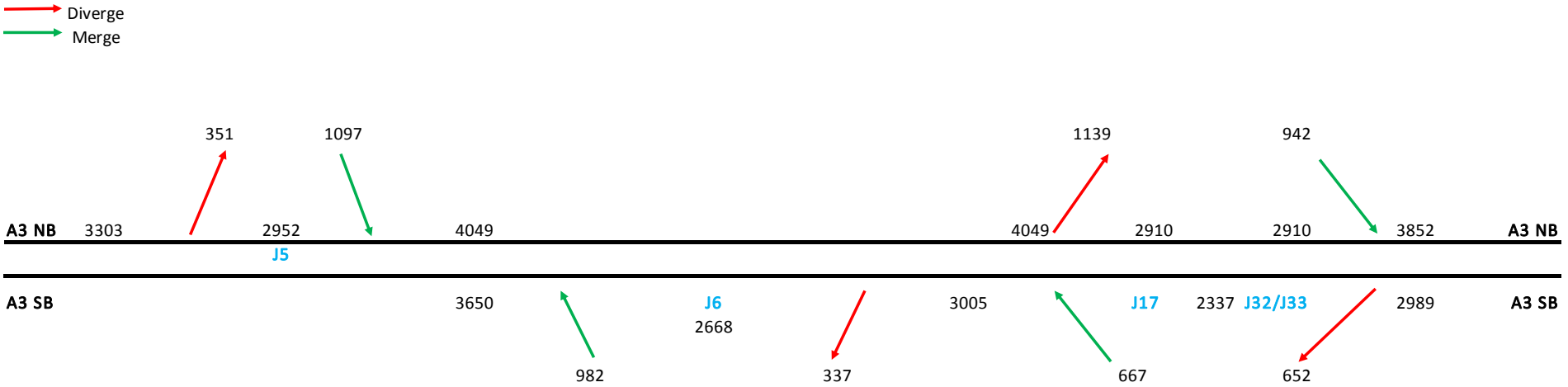


Figure 14: Merge/Diverge Flows – 2016/17 PM Peak Hour



Source: HE Traffic counts via http://webtris.highwaysengland.co.uk/#

Table 6: Travel to Work Distribution of Guildford Borough Residents (Car Drivers)

Usual Residence	Guildford Town	Other Guildford	Waverley	Woking	Surrey Heath	Elmbridge	Mole Valley	Rushmoor	London	Rest of UK
Guildford 001	17.0%	14.9%	4.5%	14.5%	2.2%	9.0%	3.6%	2.1%	15.5%	16.8%
Guildford 002	18.6%	22.2%	6.4%	11.5%	8.4%	2.3%	1.5%	6.4%	6.1%	16.5%
Guildford 003	10.4%	15.5%	3.7%	5.8%	0.5%	12.9%	14.0%	1.0%	17.8%	18.3%
Guildford 004	12.0%	10.4%	7.8%	5.3%	10.6%	1.3%	1.0%	19.9%	6.2%	25.3%
Guildford 005	34.6%	13.3%	8.5%	7.8%	3.2%	3.3%	2.9%	3.5%	7.8%	15.2%
Guildford 006	34.3%	9.9%	8.9%	7.7%	3.1%	4.6%	3.2%	3.0%	8.1%	17.2%
Guildford 007	38.2%	10.9%	7.9%	9.4%	2.7%	3.4%	2.8%	3.4%	7.1%	14.1%
Guildford 008	35.9%	10.1%	7.1%	7.1%	2.2%	4.1%	4.4%	2.7%	10.0%	16.4%
Guildford 009	34.7%	11.6%	9.3%	8.3%	2.7%	3.5%	2.8%	2.8%	8.3%	16.1%
Guildford 010	14.6%	11.7%	10.1%	5.0%	8.6%	1.9%	1.2%	20.3%	6.4%	20.3%
Guildford 011	33.8%	8.0%	7.5%	7.0%	2.5%	4.0%	4.8%	3.4%	9.4%	19.7%
Guildford 012	39.8%	11.6%	10.9%	6.7%	2.0%	2.0%	2.0%	3.4%	6.9%	14.7%
Guildford 013	26.0%	8.6%	10.3%	7.2%	3.2%	4.6%	3.7%	4.4%	10.1%	21.8%
Guildford 014	14.9%	12.4%	12.2%	4.7%	7.1%	1.9%	1.0%	18.6%	4.9%	22.1%
Guildford 015	29.1%	7.4%	10.7%	5.9%	3.0%	3.8%	2.2%	3.8%	9.7%	24.4%
Guildford 016	29.4%	7.3%	11.1%	6.7%	3.3%	3.1%	2.6%	2.8%	12.5%	21.2%
Guildford 017	24.5%	13.4%	19.3%	5.1%	2.9%	2.7%	2.4%	4.1%	8.7%	16.8%
Guildford 018	21.7%	16.8%	12.5%	5.0%	1.0%	5.4%	9.8%	0.6%	11.9%	15.3%

Source: analysis of 2011 Travel to Work Census Data

4 Future Traffic Volumes

4.1 Background Traffic Growth

4.1.1 The National Trip End Model (NTEM) forecasts the growth in trip origin-destinations (or productions-attractions) up to 2051 for use in transport modelling. The forecasts take into account national projections of:

- population
- employment
- housing
- car ownership.

4.1.2 The NTEM[1] software reads in projections for population, households, dwellings and employment at an aggregate spatial level. In the case of policy based dwelling inputs these are extracted from published local authority trajectories.

4.1.3 NTEM produces a 'central' forecast i.e. does not give a range between low and high traffic growth. Results from the NTEM forecasting suite are made available through the Department for Transport's TEMPRO software.

4.1.4 With detailed local development information, the distribution of households or jobs can be adjusted at the zone level. This adjustment is achieved by using the 'Alternative planning assumptions' functionality within the TEMPRO software. Using the NTEM 7.2 planning data set, increases in the number of households and employees in Guildford Borough were set to zero in the future, allowing 'background' traffic growth to be calculated. This background growth takes into account additional trips due to new development in areas outside of the Borough itself, for example new trips into Guildford due to additional housing provided in the adjacent Borough of Waverley.

4.1.5 TEMPRO can give growth in person trips by travel mode for each Census area (MSOA) or for overall growth in a larger area by different type of road (which then also allows for growth due to future changes in relative fuel costs). The predicted growth for Guildford Borough (with no new development in the Borough) is detailed in **Table 7** for each peak period. The Urban Trunk Road figures have been used for this study, as applicable to the A3.

[1] NTEM Planning Data Version 7.2, Guidance Note, Department for Transport, February 2017

Table 7: Background Traffic Growth Factors from TEMPRO

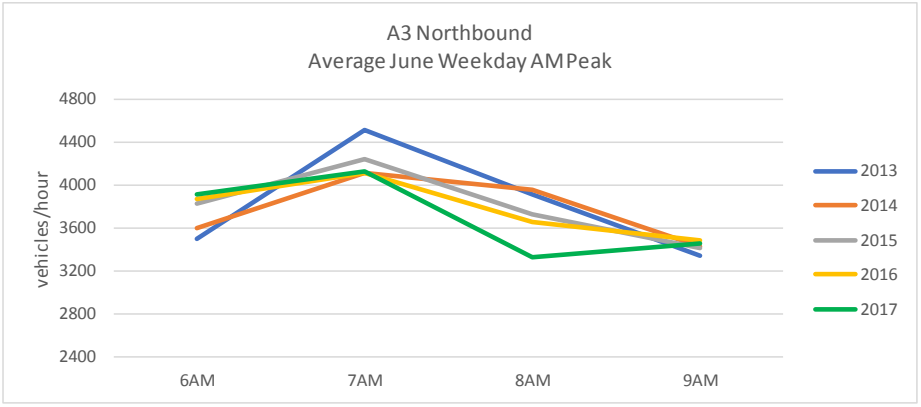
AM Peak Period	2013-2014	2014-2017	2017-2024
Urban Trunk	**0.995**	**0.999**	**1.047**
Urban Principal	0.995	0.998	1.040
Urban Minor	0.993	0.996	1.042
Rural Trunk	0.999	0.999	1.077
Rural Principal	0.996	0.999	1.056
Rural Minor	0.996	1.000	1.055

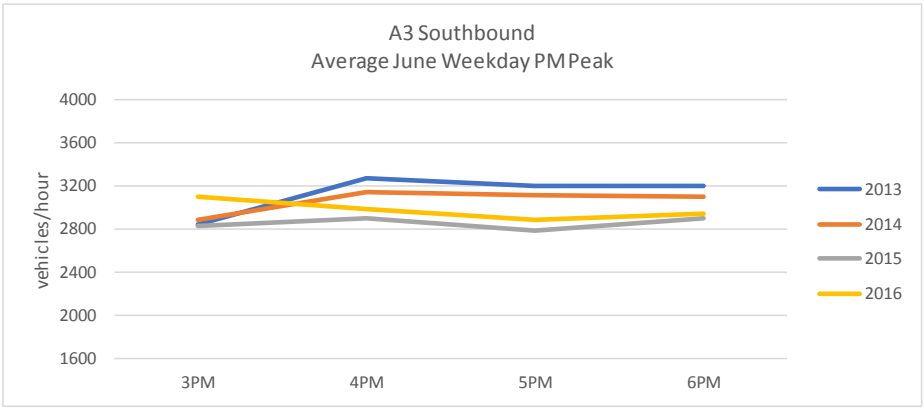
PM Peak Period	2013-2014	2014-2017	2017-2024
Urban Trunk	**0.996**	**0.999**	**1.043**
Urban Principal	0.995	0.998	1.036
Urban Minor	0.994	0.996	1.039
Rural Trunk	1.000	1.012	1.072
Rural Principal	0.996	0.999	1.052
Rural Minor	0.996	1.000	1.051

Source: TEMPROv7.2

4.1.6 No growth is shown between 2013-2014 and 2014-2017 and count data for the A3 over these years confirms that there has been no increase, as illustrated in **Figure 15** (no data are available for Southbound in 2017). In fact, the peak flows are shown to have reduced since 2013.

Figure 15: Peak Period Traffic Flows on the A3





Source: HE Traffic counts via http://webtris.highwaysengland.co.uk/#

4.2 Development Trips

4.2.1 Three sets of data on new developments were supplied by GBC:

- developments approved, commenced and completed between 2014 and October 2017;
- planned development on existing Development Plan policy compliant sites – sites that would be expected to come forward and be completed by 2024. The existing Development Plan includes saved policies from the 2003 Local Plan and NPPF compliant sites;
- planned development considered only to be enabled with the Submission Local Plan between 2017-2024.

4.2.2 An OS grid reference was provided for each development, which allowed the development to be allocated to one of the Guildford MSOAs. **Tables 8-10** detail the development for each set by MSOA and by land use type.

4.2.3 MSOA 15 and 17 were split into two (15A and 17A) as the constraint of the railway line meant that there would be different routes to/from sites to the east and west of the railway.

4.2.4 For some MSOAs negative changes in employment areas are shown in the tables. This is because some existing employment locations have been, or will be, redeveloped for residential uses.

Table 8: Approvals, Commencements and Completions 2014 - 2017

	Homes (no.)	Student Accom (no. beds)	Care home (no. beds)	Industrial (sqm)	Office (sqm)	Retail comp'n (sqm)	Retail conv'nce (sqm)	A2-A5 (sqm)
Guildford 001	82	0	0	-440	-2075	-400	-268	79
Guildford 002	26	0	0	2000	472	0	0	0
Guildford 003	33	0	0	-790	-602	0	-37	0
Guildford 004	10	0	0	165	0	0	0	-548
Guildford 005	9	0	0	-10	0	0	0	125
Guildford 006	2	0	0	-25	0	-73	0	73
Guildford 007	31	0	0	-136	-630	0	0	0
Guildford 008	18	0	0	0	0	13	0	0
Guildford 009	10	0	0	0	0	0	0	0
Guildford 010	6	0	0	0	0	-109	0	0
Guildford 011	25	0	0	0	-166	0	-13	0
Guildford 012	9	0	0	0	0	0	0	0
Guildford 013	141	0	-20	-1003	-6976	4156	3254	-193
Guildford 014	103	0	0	0	0	0	0	-110
Guildford 015	246	141	0	855	-36	0	0	25
Guildford 015A	23	0	0	3455	-134	0	0	0
Guildford 016	50	0	0	0	-3410	0	0	0
Guildford 017	9	0	0	-750	0	0	0	0
Guildford 017A	4	0	0	479	-59	-97	0	0
Guildford 018	41	0	-38	-200	-558	0	0	89
Total	878	141	-58	3600	-14174	3490	2936	-460

Source: GBC data

Table 9: Existing Development Plan Policy Compliant Development 2017-2024

	Homes (no.)	Student Accom (no. beds)	Care home (no. beds)	Industrial (sqm)	Office (sqm)	Retail comp'n (sqm)	Retail conv'nce (sqm)	A2-A5 (sqm)
Guildford 001	118	0	0	1532	-64	-150	-79	0
Guildford 002	31	0	0	7678	25265	0	0	0
Guildford 003	58	0	0	-891	-683	-139	-16	0
Guildford 004	19	0	0	0	0	0	376	-337
Guildford 005	101	0	0	898	-100	0	0	-140
Guildford 006	25	0	0	-52	0	0	0	0
Guildford 007	12	0	0	0	0	0	0	0
Guildford 008	15	0	0	0	0	0	0	0
Guildford 009	48	0	0	0	0	0	0	0
Guildford 010	22	0	0	0	0	0	0	0
Guildford 011	58	0	0	0	0	0	0	0
Guildford 012	39	0	0	0	7680	0	0	-275
Guildford 013	180	200	136	0	-6280	-24	-146	-255
Guildford 014	1164	0	0	-400	0	0	0	0
Guildford 015	619	0	0	-5809	2121	2677	0	0
Guildford 015A	195	0	0	-506	5959	215	0	0
Guildford 016	138	0	0	0	-931	0	0	0
Guildford 017	44	0	0	-395	-129	0	0	0
Guildford 017A	43	112	11	0	-363	-300	0	0
Guildford 018	36	0	0	-255	-1054	0	0	0
Total	2965	312	147	1800	31421	2279	135	-1007

Source: GBC data

Table 10: Submission Local Plan-Enabled Development 2017-2024

	Homes (no.)	Student Accom (no. beds)	Care home (no. beds)	Industrial (sqm)	Office (sqm)	Retail comp'n (sqm)	Retail conv'nce (sqm)	A2-A5 (sqm)
Guildford 001	876	0	0	6335	9355	87	176	86
Guildford 002	0	0	0	0	0	0	0	0
Guildford 003	458	0	0	-529	0	0	0	0
Guildford 004	0	0	0	0	0	0	0	0
Guildford 005	150	0	60	0	0	0	0	0
Guildford 006	0	0	0	0	0	0	0	0
Guildford 007	0	0	0	0	0	0	0	0
Guildford 008	0	0	0	0	0	0	0	0
Guildford 009	0	0	0	0	0	0	0	0
Guildford 010	0	0	0	0	0	0	0	0
Guildford 011	0	0	0	0	0	0	0	0
Guildford 012	0	0	0	0	0	0	0	0
Guildford 013	0	0	0	0	0	0	0	0
Guildford 014	0	0	0	0	0	0	0	0
Guildford 015	0	0	0	0	0	0	0	0
Guildford 015A	0	0	0	0	0	0	0	0
Guildford 016	0	0	0	0	0	0	0	0
Guildford 017	20	0	0	0	0	0	0	0
Guildford 017A	150	0	0	0	3000	58	58	55
Guildford 018	0	0	0	0	0	0	0	0
Total	1654	0	60	5806	12355	145	234	141
Guildford Borough Totals								
Approvals, commencements and completions 2014-2017	861	141	-58	-3671	-14984	-1235	-374	-264
Existing Development Plan policy compliant development	2504	312	147	284	-2885	-688	135	-752
Submission Local Plan-enabled development	1654	0	60	5806	12355	145	234	141
Total	5019	453	149	2419	-5514	-1778	-5	-875

Source: GBC data

4.3 Trip Rates

4.3.1 Trip rates for new developments were based on TRICS rates (v7.2.4) provided by SCC. The rates used were appropriate to the location i.e. Town Centre, Sub Urban, Edge of Town Centre and Neighbourhood Centre, as detailed in **Table 11**.

4.3.2 Due to a limited number of surveys for some areas, not every category of land use has a rate for all locations, so the next most appropriate location was used for other areas. The trip rates apply to number of units for residential (houses and flats), number of beds/rooms for student accommodation and care homes and per 100sqm gross floor area for employment, retail and food/drink uses.

4.3.3 A pcu factor is also shown for each trip rate which was used to convert vehicle numbers into passenger car units (pcus) which are used in the junction capacity analysis. The use of pcus is so that the greater impact of larger vehicles is taken into account e.g. a rigid heavy goods vehicle is equivalent to 1.5 cars. The pcu factor is calculated in TRICS from the mix of vehicle classes recorded from the surveys used in the database. Most land uses have a low pcu factor (just over 1.00) reflecting low volumes of heavy goods vehicles and buses, although for the Industrial Estate the factor is higher, as expected, at 1.04-1.05.

4.3.4 For a number of larger approved and completed sites and Development Plan policy compliant sites, Transport Assessments are available which were scrutinised by the relevant Highway Authorities before planning consent was granted. For these sites, the trip generation was taken from the relevant Transport Assessment directly, however, the areas of development and numbers of new homes are included from **Table 8** and **Table 9**.

Table 11: Vehicle Trip Rates

Location	Land Use	Category	No. of surveys	Arr 08:00	Arr 17:00	Dep 08:00	Dep 17:00	pcu factor
Town Centre	3 Residential	C Flats privately owned	5	0.030	0.068	0.056	0.056	1.007
Suburban Area	3 Residential	M Mixed private/affordable housing	16	0.116	0.251	0.289	0.144	1.006
Neighbourhood Centre	3 Residential	M Mixed private/affordable housing	4	0.117	0.329	0.360	0.174	1.002
Town Centre	2 Employment	A Office	12	0.286	0.032	0.039	0.274	0.996
Suburban Area	2 Employment	A Office	10	0.690	0.151	0.200	0.592	1.003
Suburban Area	2 Employment	D Industrial Estate	12	0.191	0.064	0.112	0.158	1.052
Neighbourhood Centre	2 Employment	D Industrial Estate	3	0.262	0.046	0.178	0.176	1.043
Edge of Town Centre	5 Health	F Care home (elderly residential)	4	0.046	0.046	0.040	0.114	1.011
Edge of Town Centre	3 Residential	G Student accommodation	2	0.005	0.000	0.000	0.011	1.000
Suburban Area	1 Retail	I Shopping centre- local shops	5	3.456	4.106	2.885	3.950	1.021
Town Centre	1 Retail	O Convenience stores	5	2.870	3.248	2.176	4.068	1.001
Suburban Area	1 Retail	O Convenience stores	8	9.932	12.110	10.298	10.619	1.004
Town Centre	6 Hotel, food and drink	B Restaurants	5	0.000	0.967	0.000	0.636	1.001
Edge of Town Centre	6 Hotel, food and drink	B Restaurants	5	0.000	2.191	0.000	1.878	1.001

Source: Rates from TRICS V7.2.4 provided by SCC

4.4 Trip Generation/Attraction

4.4.1 Applying the trip rates to the development in each MSOA gives the total number of vehicles arriving and departing in the AM and PM peak hours. **Tables 13-15** show the resultant trips from residential (home based) and other uses (employment based) for the three different development datasets.

4.4.2 For some MSOAs negative employment trips are shown. This is because some existing employment locations have been, or will be, redeveloped for residential uses, as noted earlier. Some completed and approved sites with planning consent involve the redevelopment of former D1/D2 uses (non-residential institutions and assembly and leisure). There are no standard trip rates available for D1/D2 uses as trip generation will be specific to the particular site. As such, no allowance has been made for the existing trip generation of these sites and all new development trips are included as additional.

4.4.3 As noted earlier, for a number of larger approved and completed sites, the trip generation was taken from Transport Assessments. These sites and generated trips are detailed in **Table 12**, with the trips included in **Table 13** and **Table 14**.

4.4.4 **Table 16** gives a summary of the total number of vehicles generated for each of the development datasets, including the trips extracted from the Transport Assessments detailed above.

Table 12: Trip Generation of Sites with Transport Assessments (vehs/hour)

Planning Reference	Arr	Arr	Dep	Dep	MSOA	Scenario	Type
	08:00	17:00	08:00	17:00			
15/P/02450	0	9	0	12	13	Completed	Comparison retail
13/P/01317	5	5	3	8	15	Completed	Industrial
13/P/02183	43	11	20	52	1	with consent	Industrial
15/P/00604	204	0	6	165	2	with consent	Office
16/P/02557	18	2	2	20	13	with consent	Office
14/P/02168	32	84	107	48	15	with consent	Residential with some mixed use
17/P/00243	67	16	7	54	15a	with consent	Office

Source: GBC and Transport Assessments

Table 13: Approvals, Commencements and Completions: Vehicle Trips 2014 – 2017

		Total HOME based				Total EMPLOYMENT based			
		Arr	Arr	Dep	Dep	Arr	Arr	Dep	Dep
2014-2017		08:00	17:00	08:00	17:00	08:00	17:00	08:00	17:00
Guildford 001	Neighbourhood Centre	10	27	30	14	-56	-50	-44	-56
Guildford 002	Neighbourhood Centre	3	9	9	5	3	1	1	3
Guildford 003	Neighbourhood Centre	4	11	12	6	-10	-6	-6	-9
Guildford 004	Neighbourhood Centre	1	3	4	2	0	-12	0	-10
Guildford 005	Neighbourhood Centre	1	3	3	2	0	3	0	2
Guildford 006	Suburban Area	0	1	1	0	-3	-1	-2	-2
Guildford 007	Suburban Area	4	8	9	4	-5	-1	-1	-4
Guildford 008	Suburban Area	2	5	5	3	0	1	0	1
Guildford 009	Suburban Area	1	3	3	1	0	0	0	0
Guildford 010	Neighbourhood Centre	1	0	1	1	-4	-4	-3	-4
Guildford 011	Suburban Area	3	6	7	4	-2	-2	-2	-2
Guildford 012	Suburban Area	1	2	3	1	0	0	0	0
Guildford 013	Town Centre	3	8	6	5	-45	-19	-22	-36
Guildford 014	Neighbourhood Centre	12	34	37	18	0	-2	0	-2
Guildford 015	Town Centre	8	17	14	15	3	5	2	7
Guildford 015A	Town Centre	1	2	1	1	0	0	0	0
Guildford 016	Suburban Area	6	13	14	7	-24	-5	-7	-20
Guildford 017	Neighbourhood Centre	1	3	3	2	-2	0	-1	-1
Guildford 017A	Neighbourhood Centre	0	1	1	1	-3	-4	-2	-3
Guildford 018	Neighbourhood Centre	3	12	13	3	-4	1	-1	-2
	Total	65	165	176	94	-150	-98	-89	-140

Source: TRICS trip rates applied to development quantum from GBC

Table 14: Existing Development Plan Policy Compliant Development: Vehicle Trips 2017-2024

		Total HOME based				Total EMPLOYMENT based			
		Arr	Arr	Dep	Dep	Arr	Arr	Dep	Dep
Existing policy compliant sites		08:00	17:00	08:00	17:00	08:00	17:00	08:00	17:00
Guildford 001	Neighbourhood Centre	11	31	34	17	21	-6	3	31
Guildford 002	Neighbourhood Centre	4	10	11	5	226	4	21	180
Guildford 003	Neighbourhood Centre	7	19	21	10	-13	-9	-9	-13
Guildford 004	Neighbourhood Centre	2	6	7	3	37	38	39	34
Guildford 005	Neighbourhood Centre	12	33	36	18	2	-3	1	-2
Guildford 006	Suburban Area	3	6	7	4	0	0	0	0
Guildford 007	Suburban Area	1	3	3	2	0	0	0	0
Guildford 008	Suburban Area	2	4	4	2	0	0	0	0
Guildford 009	Suburban Area	6	12	14	7	0	0	0	0
Guildford 010	Neighbourhood Centre	4	1	2	3	0	0	0	0
Guildford 011	Suburban Area	7	15	17	8	0	0	0	0
Guildford 012	Suburban Area	5	10	11	6	53	6	15	40
Guildford 013	Town Centre	13	18	16	28	-20	-18	-13	-20
Guildford 014	Neighbourhood Centre	136	383	419	203	-1	0	-1	-1
Guildford 015	Town Centre	37	96	117	58	-7	-3	-5	-5
Guildford 015A	Town Centre	6	13	11	11	74	25	13	62
Guildford 016	Suburban Area	16	35	40	20	-6	-1	-2	-6
Guildford 017	Neighbourhood Centre	5	14	16	8	-2	0	-1	-1
Guildford 017A	Neighbourhood Centre	6	15	16	10	-13	-13	-9	-14
Guildford 018	Neighbourhood Centre	4	12	13	6	-8	-2	-3	-7
	Total	227	601	652	336	-6	-2	-12	-2

Source: TRICS trip rates applied to development quantum from GBC

Table 15: Submission Local Plan-Enabled Development: Vehicle Trips 2017-2024

		Total HOME based				Total EMPLOYMENT based			
		Arr	Arr	Dep	Dep	Arr	Arr	Dep	Dep
2014-2017		08:00	17:00	08:00	17:00	08:00	17:00	08:00	17:00
Guildford 001	Neighbourhood Centre	102	288	315	152	102	44	51	90
Guildford 002	Neighbourhood Centre	0	0	0	0	0	0	0	0
Guildford 003	Neighbourhood Centre	54	151	165	80	-1	0	-1	-1
Guildford 004	Neighbourhood Centre	0	0	0	0	0	0	0	0
Guildford 005	Neighbourhood Centre	20	52	56	33	0	0	0	0
Guildford 006	Suburban Area	0	0	0	0	0	0	0	0
Guildford 007	Suburban Area	0	0	0	0	0	0	0	0
Guildford 008	Suburban Area	0	0	0	0	0	0	0	0
Guildford 009	Suburban Area	0	0	0	0	0	0	0	0
Guildford 010	Neighbourhood Centre	0	0	0	0	0	0	0	0
Guildford 011	Suburban Area	0	0	0	0	0	0	0	0
Guildford 012	Suburban Area	0	0	0	0	0	0	0	0
Guildford 013	Town Centre	0	0	0	0	0	0	0	0
Guildford 014	Neighbourhood Centre	0	0	0	0	0	0	0	0
Guildford 015	Town Centre	0	0	0	0	0	0	0	0
Guildford 015A	Town Centre	0	0	0	0	0	0	0	0
Guildford 016	Suburban Area	0	0	0	0	0	0	0	0
Guildford 017	Neighbourhood Centre	2	7	7	3	0	0	0	0
Guildford 017A	Neighbourhood Centre	18	49	54	26	28	15	14	27
Guildford 018	Neighbourhood Centre	0	0	0	0	0	0	0	0
	Total	196	547	598	295	129	59	63	116

Source: TRICS trip rates applied to development quantum from GBC

Table 16: Summary of Vehicle Trips

	Total HOME based (vehs/hour)				Total EMPLOYMENT based (vehs/hour)			
	Arr	Arr	Dep	Dep	Arr	Arr	Dep	Dep
	08:00	17:00	08:00	17:00	08:00	17:00	08:00	17:00
Approvals, commencements and completions 2014-2017	65	165	176	94	-150	-98	-89	-140
Existing Development Plan policy compliant development	286	738	816	428	344	16	50	279
Submission Local Plan – enabled development	196	547	598	295	129	59	63	116
Total	547	1450	1590	816	322	-23	24	256

4.5 Trip Distribution

4.5.1 The vehicle trips to/from each MSOA were then distributed between the Guildford MSOAs and external areas, based on the existing distributions detailed in **Table 6**. This gave a full matrix of trips between the different 'zones'.

4.5.2 For each movement between MSOAs in Guildford and to/from all external zones, a route was derived through the road network. This identified movements that would use or pass through the junctions being considered on the A3. **Figure 16** shows the junction coding numbers (consistent with the traffic count reference numbers as listed below) and arm references:

- J4 – Hospital signalised crossroads
- J5 – Hospital (Tesco) roundabout
- J6 - Cathedral roundabout
- J17 – Dennis signalised roundabout
- J32 – A3 Off-slip signalised junction
- J33 – A25 / Stoke Road signalised crossroads.

4.5.3 A 'matrix' of movements to/from each MSOA was produced highlighting which junctions and turning movements would experience additional demand. **Table 17** is an extract from the matrix showing assumed routes from each Guildford MSOA and some of the Waverley MSOAs (the full matrix is in **Appendix B,** showing routes between all internal and external zones).

4.5.4 Taking movements from Guildford MSOA 14 to 7, for example, shows the assumed route via junction 17 (A3 Dennis junction) moving from Arm D to Arm B, followed by Arm F to Arm C at junction 33 (Stoke crossroads) then Arm C to Arm A at the A3 off-slip road signals.

4.5.5 MSOA 15 and 17 were split into two (15A and 17A) as the constraint of the railway line meant that there would be different routes to/from sites to the east and west of the railway.

Figure 16: Junction Numbering

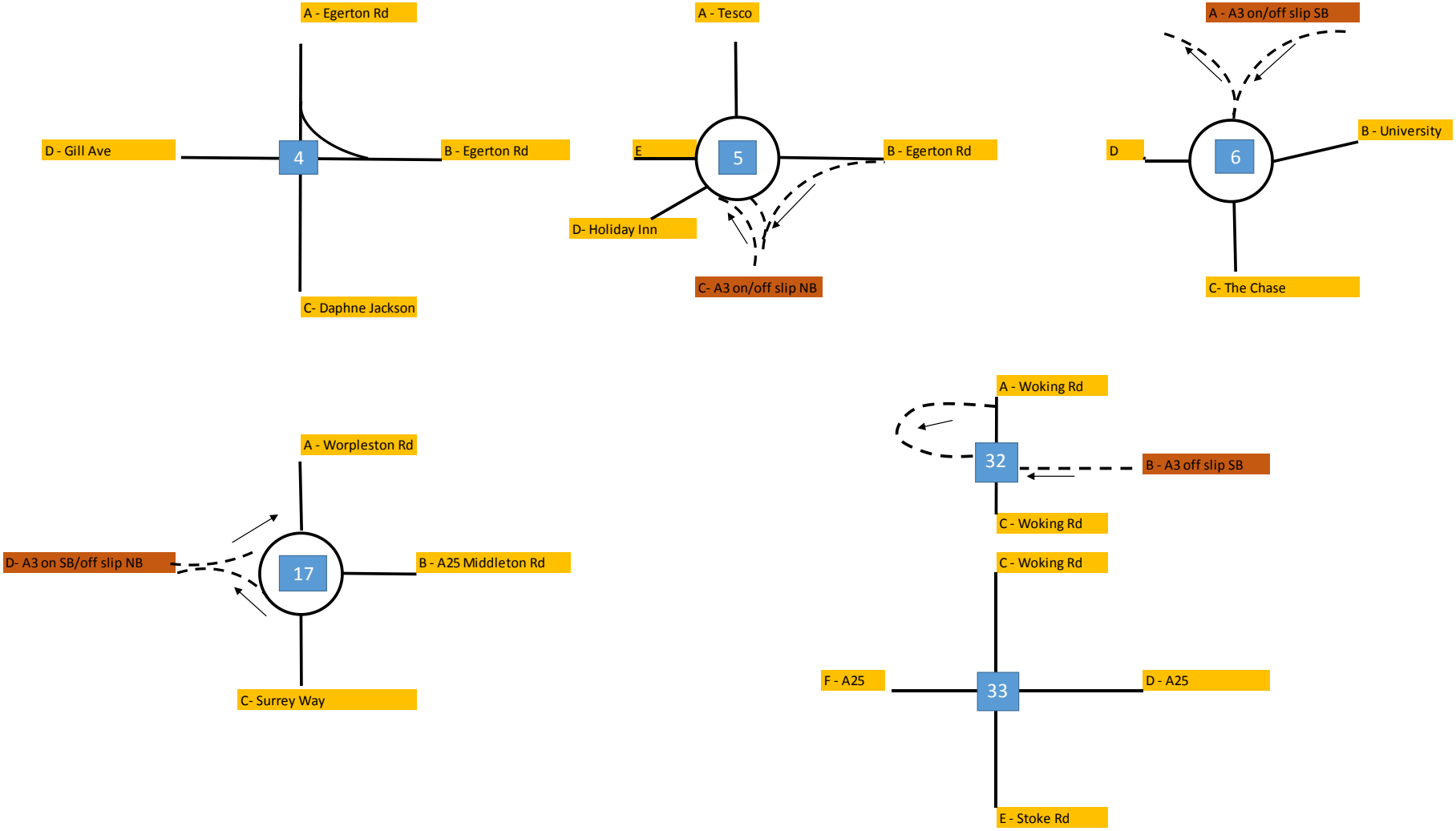


Table 17: Extract of Routes Matrix

from: Usual Residence	Guildford 001	Guildford 002	Guildford 003	Guildford 004	Guildford 005	Guildford 006	Guildford 007	Guildford 008	Guildford 009	Guildford 010	Guildford 011
Guildford 001						32BA	32BA		32BA		
Guildford 002											
Guildford 003					17BA, 33DF	32BA			32BC, 33CF, 17BA		
Guildford 004											
Guildford 005			17AB, 33FD								
Guildford 006	32AB		32AB							17AD	32AC, 33CD
Guildford 007	32AB		17AB							17AD	32AC, 33CD
Guildford 008									33DF, 17BA		
Guildford 009	32AB							17AB, 33FD		17AD	17AB, 33FD
Guildford 010						17DA	17DA		17DA		17DB, 33FD
Guildford 011						33DC, 32CA	33DC, 32CA		33DF, 17BA	17BD, 33DF	
Guildford 012	4AB, 5EC		4AB, 5EC					17AB, 33FD		4AB, 5EB, 6DA	17AB, 33FD
Guildford 013	33EC, 32CA	17BA			17BA	17CA	33EC, 32CA		17BA		
Guildford 014					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA		
Guildford 015	33EC, 32CA	17BA			17BA	17BA			17BA		
Guildford 015A	6CD, 5BC	6CD, 5BC, 17DA	17BA		6CD, 5BC, 17DA	6CD, 5BC, 17DA	6CD, 5BC, 17DB, 33FC, 32CA		6CD, 5BC, 17DA		
Guildford 016	33EC, 32CA				17BA	17BA	33EC, 32CA		17BA		
Guildford 017	33EC, 32CA				17BA	17BA	33EC, 32CA		17BA		
Guildford 017A					17DA	17BA	33EC, 32CA		17DA		
Guildford 018						33DC, 32CA			17BA		
Waverley 001					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA		17DB, 33FD
Waverley 002					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA		17DB, 33FD
Waverley 003					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA		17DB, 33FD
Waverley 004					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA		17DB, 33FD
Waverley 005	6CD, 5BC				17DA	17DA	33EC, 32CA		17DA		

Table 18: Vehicle Trips Using the A3 Slip Roads

	AM Peak Hour 08:00-09:00 (pcus/hour)					PM Peak Hour 17:00-18:00 (pcus/hour)				
A3 Slip Road	(1) Approvals, commencements and completions 2014-2017	(2) Existing Development Plan policy compliant development 2017-2024	(3) Submission Local Plan-enabled development 2017-2024	(1) + (2)	(1) + (2) + (3)	(1) Approvals, Commencements and Completions 2014-2017	(2) Existing Development Plan policy compliant 2017-2024	(3) Submission Local Plan-enabled 2017-2024	(1) + (2)	(1) + (2) + (3)
Hospital Merge	-2	18	13	16	28	0	30	22	30	52
Hospital Diverge	1	34	3	35	38	1	14	2	15	17
Cathedral Merge	1	15	2	16	18	1	30	3	31	33
Cathedral Diverge	0	35	26	36	61	-1	21	16	20	36
Dennis Merge	8	43	23	50	74	4	33	16	37	53
Dennis Diverge	2	36	12	38	50	8	41	22	49	72
Stoke Merge	-3	35	30	33	63	-6	18	42	11	54
Stoke Diverge	-10	11	45	1	46	-1	32	34	31	65
Using A3	**-3**	**227**	**153**	**224**	**378**	**6**	**218**	**158**	**224**	**382**
Total trips	0	1498	989	1498	2487	19	1463	1019	1482	2501
% Using A3	**0%**	**15%**	**16%**	**15%**	**15%**	**30%**	**15%**	**15%**	**15%**	**15%**

Source: MM analysis

4.5.6 The total number of vehicles (and pcus) making each particular junction turning movement was then determined by summing up all trips within the matrix that were allocated that turning movement.

4.5.7 **Table 18** shows how much of the total trip generation would use the A3 junctions, based on the assumed route allocations, with a table of all junction turning movements provided in **Appendix C**. This shows that around 150-160 pcus/hour associated with the Submission Local Plan would be expected to use the A3 slip roads in the Guildford study area in the AM and PM peak hours. This equates to approximately 16% of all Submission Local Plan trips, noting that some Submission Local Plan trips would use more than one A3 slip road e.g. to join and then leave the A3, so the proportion of trips would be less than 16%.

4.5.8 The increases in flow on the slip roads due to the Submission Local Plan-enabled development are shown to be relatively low in all cases.

5 Junction Capacity Analysis

5.1 Stoke Junction (J32 and J33)

5.1.1 The performance of the signal junction of the A3 southbound off-slip with Woking Road was assessed with a LINSIG model. The model also includes the A25 / Stoke Road signalised crossroads, as the junctions are very close together and queuing from the crossroads affects the A3 off-slip junction, as detailed in Section 3.2.

5.1.2 The following peak hours were modelled, determined from the total flow entering the junction from all arms:

- AM peak hour 07:30-08:30
- PM peak hour 15:00-16:00

5.1.3 The flow from the southbound A3 off-slip onto the southbound Woking Road remains fairly constant over the whole afternoon/evening period at around 500 vehicles/hour, with the flow at 17:00-18:00 similar to that for 15:00-16:00.

5.1.4 LINSIG does not model the impact of queuing from one junction reducing the capacity of an adjacent junction, therefore, the model had to be adjusted to reflect reduced capacity on the off-slip. This was done by reducing the green time available for the off-slip by 25 seconds in each cycle for both AM and PM peak hours, to reflect the time that off-slip traffic was not moving due to queuing on Woking Road. This was through the LINSIG feature that allows additional green time to be included on links but in this case negative additional time was added.

5.1.5 The results of the capacity testing are detailed in **Table 19** by way of the degree of saturation and queue length (mean maximum queue) for the A3 off-slip, taking the highest value from the three lanes. It was assumed that the green time allocated to the A3 off-slip would remain the same in the future as that modelled for 2014.

Table 19: Performance of A3 Off-slip at Stoke Junction

	2014 Base Case		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant development 2017-2024		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant development 2017-2024 + Submission Local Plan-enabled development 2017-2024	
	AM	PM	AM	PM	AM	PM
Degree of saturation	89.0%	68.3%	93.5%	71.8%	97.5%	77.9%
Queue length (pcus)	17.9	10.4	19.6	11.1	20.4	12.0

Source: LINSIG results

5.1.6 The results show that the additional demand due to the Submission Local Plan-enabled trips increases the degree of saturation, as would be expected, but this only causes the queue length to increase by 0.8 pcus in the AM peak hour and 0.9 pcus in the PM peak hour.

5.1.7 The tests also assume that existing Development Plan policy compliant sites and Submission Local Plan development flows will be as those generated for the 'usual' peak hours of 08:00-

09:00 and 17:00-18:00. Therefore, the tests are considered robust, in terms of predicted traffic movements in 2024.

5.1.8 There is a committed improvement scheme for the A25 Stoke crossroads and A3 off-slip junction which will allow improved co-ordination between the two junctions and should improve overall efficiency. Highways England also have a committed scheme to widen the A3 off-slip: this would widen the existing narrow lanes but would not lengthen the existing three-lane section. In LINSIG wider lanes would increase the link capacity but this has not been modelled due to the constraint of blocking back on Woking Road which means that the additional capacity would not be realised.

5.1.9 Therefore, it is concluded that the addition of the Submission Local Plan-enabled trips would not have a detrimental impact on the operation of the A3 at the Stoke junction.

5.2 Dennis Junction (J17)

5.2.1 The performance of the signalised roundabout where the A3 northbound off-slip meets the A322 Worplesdon Road and A25 Midleton Road was modelled with LINSIG.

5.2.2 The following peak hours were modelled, determined from the total flow entering the junction from all arms:

- AM peak hour 07:45-08:45
- PM peak hour 15:15-16:15

5.2.3 Again negative additional green time was used to reflect the reduced capacity for the movement onto the A3 on-slip (green time reduced by 25 seconds from the A25). **Table 20** shows the results for the A3 Off-slip and in each case this is for the offside lane as this has the highest flow.

Table 20: Performance of A3 Off-slip at Dennis Junction

	2014 Base Case		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant development 2017-2024		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant sites 2017-2024 + Submission Local Plan-enabled development 2017-2024	
	AM	PM	AM	PM	AM	PM
Degree of saturation	86.6%	80.3%	91.8%	85.9%	91.9%	89.2%
Queue length (pcus)	14.6	11.9	18.1	14.0	18.2	15.3

Source: LINSIG results

5.2.4 The results show that the additional demand due to the Submission Local Plan-enabled trips does not change the results significantly in both AM and PM peak hours. This is because most of the Submission Local Plan trips turn left onto the A322, rather than straight on for the A25, and the nearside lane that is dedicated to the A322 movement has spare capacity. The queue length of 18.2 pcus in the AM peak hour is equivalent to 109m (at 6m per pcu) which is contained within the two-lane section of the slip road (which is approximately 140m, with a further 100m before the queue would extend onto the A3 main carriageway).

5.2.5 Therefore, it is concluded that the addition of the Submission Local Plan-enabled trips would not have a detrimental impact on the operation of the A3 at the Dennis junction.

5.3 Hospital and Cathedral Junction (J4, J5 and J6)

5.3.1 The performance of the roundabouts at these two junctions was assessed using a linked ARCADY model (Junctions9 software). A LINSIG model was also used to assess the Hospital signalised crossroads and to assess a proposed scheme to signalise the Tesco roundabout.

5.3.2 The following peak hours were modelled, determined from the total flow entering the junction from all arms:

- AM peak hour 08:00-09:00
- PM peak hour 16:35-17:35

5.3.3 The constraint of the merge of the two straight-ahead lanes on the westbound Egerton Road at the Hospital signalised crossroads was modelled by including 19 seconds of negative green time. **Table 21** shows the performance of Egerton Road westbound which is the key link that dictates the overall capacity at this junction.

Table 21: Performance of Westbound Egerton Road at Hospital Signalised Crossroads

	2014 Base Case		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant development 2017-2024		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant sites 2017-2024 + Submission Local Plan-enabled development 2017-2024	
	AM	PM	AM	PM	AM	PM
Degree of saturation	99.0%	95.4%	102.9%	100.1%	103.1%	102.1%
Queue length (pcus)	26.6	17.5	34.8	23.4	35.2	26.5

Source: LINSIG results

5.3.4 The queue of 27 pcus in the 2014 AM peak stretches back through the roundabout, as there is only stacking space for around 23 pcus (140m), reflecting the observed congestion. However, the LINSIG model cannot replicate the impact of this blocking back on the A3 off-slip and Egerton Road arms of the Tesco roundabout.

5.3.5 The Submission Local Plan includes improvements in this area, detailed in the Infrastructure Schedule, as part of the Guildford Sustainable Movement Corridor 1 - West (SMC1). The SMC1 scheme is aligned with the principles in the Guildford Town and Approaches Movement Study and the Guildford Borough Transport Strategy 2017 and is endorsed within the Enterprise M3 LEP Strategic Economic Plan.

5.3.6 This package of improvements is for the corridor between the Hospital/University area and the town centre (rail station) including along Gill Avenue, Egerton Road, The Chase and Guildford Park Road. The proposed works involve junction improvements to reduce congestion but also include new and improved pedestrian and cycle provision and bus priority along this corridor. The outline scheme drawings are provided in **Appendix D.**

5.3.7 Details of the scheme relevant to the modelling for this study are:

- two westbound lanes extending west of the Hospital signalised crossroads on Gill Avenue to remove the existing ‘bottleneck’;
- widening of Gill Avenue eastbound towards the Hospital signalised junction to provide a third lane at the signal stop line, used for left turns into Egerton Road to the north;

- signalising the Tesco roundabout to allow better management of queuing on the A3 off-slip, including widening of the off-slip to provide a short section of three lanes at the new signal stop line.

5.3.8 There is also a committed Highways England scheme to widen the A3 off-slip to extend the length of the two-lane section from 165m to 285m (from 27 pcus to 47 pcus).

5.3.9 **Table 22** shows that the queue would no longer block back to the roundabout with the above improvements in place as it is less than 23 pcus. **Table 23** shows how the A3 off-slip would perform with the signalised roundabout to manage the different traffic movements. The slip road queue of 12 pcus with the Submission Local Plan-enabled traffic is much less than the length of the extended two-lane section, so the improvements should prevent blocking back onto the A3 main carriageway.

Table 22: Performance of Westbound Egerton Road with Improved Signalised Crossroads

	2014 Base Case		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant development 2017-2024		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant sites 2017-2024 + Submission Local Plan-enabled development 2017-2024	
	AM	PM	AM	PM	AM	PM
Degree of saturation	72.2%	88.0%	76.6%	92.7%	84.2%	94.5%
Queue length (pcus)	15.6	14.6	17.4	17.1	16.7	18.5

Source: LINSIG results

Table 23: Performance of A3 Off-slip at Signalised Roundabout

	2014 Base Case		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant development 2017-2024		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant sites 2017-2024 + Submission Local Plan-enabled development 2017-2024	
	AM	PM	AM	PM	AM	PM
Degree of saturation	62.9%	19.2%	56.6%	20.3%	64.6%	21.5%
Queue length (pcus)	11.2	2.8	10.5	3.0	11.8	3.2

Source: LINSIG results

5.3.10 The Cathedral roundabout was assessed with Junctions9, as the part-time signals were not in operation when observed in 2017 and no significant queuing was observed (other than that due to blocking back from the Hospital signalised crossroads via the Tesco roundabout). The results are shown in **Table 24** for the A3 off-slip arm into the roundabout, taking the worst 15-minute period over the peak hour. This shows minimal queuing in the Base Case and for 2024 with and without the Submission Local Plan-enabled trips.

Table 24: Performance of A3 Off-slip at Cathedral Roundabout

	2014 Base Case		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant development 2017-2024		2024 with Approvals, Commencements and Completions 2014-2017 + Existing Development Plan policy compliant sites 2017-2024 + Submission Local Plan-enabled development 2017-2024	
	AM	PM	AM	PM	AM	PM
Degree of saturation	83.8%	23.2%	89.0%	26.1%	91.8%	27.5%
Queue length (pcus)	2.4	0.3	3.1	0.3	3.4	0.4

Source: Junctions9 results

5.3.11 Therefore, it is concluded that the addition of the Submission Local Plan-enabled trips would not have a detrimental impact on the operation of the A3 at the Hospital and Cathedral junctions, with the proposed improvement schemes in place. Indeed, the improvements would have a major benefit in increasing capacity at the Hospital signalised crossroads and preventing blocking back to the Tesco roundabout. This, combined with the signalisation of the Tesco roundabout, would reduce the queue length on the A3 off-slip and should prevent blocking back onto the A3 main carriageway.

6 Merge and Diverge Analysis

6.1 Predicted Merge/Diverge Volumes

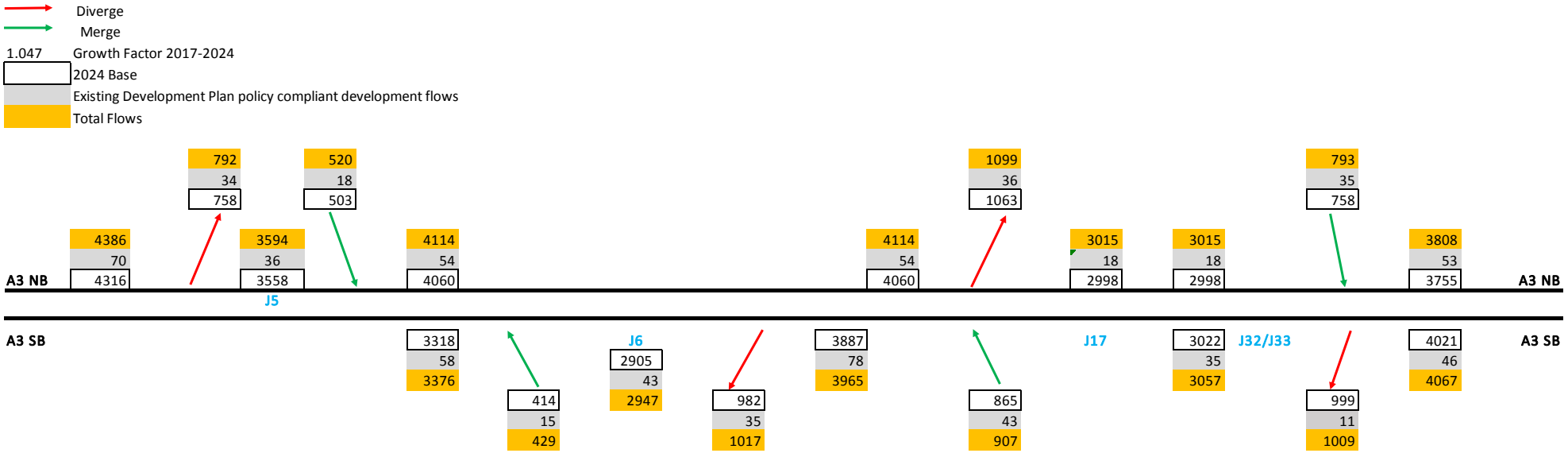
6.1.1 The predicted flows on the A3 and A3 slip roads are based on the average weekday flows for June 2016/17. They are shown in **Figures 17 - 20** for 2024 with planned development on existing Development Plan policy compliant sites and for 2024 with the addition of Submission Local Plan-enabled developments.

6.2 Merge/Diverge Layouts

6.2.1 **Figures 21-28** show an assessment of the recommended merge/diverge layout at each location on the A3, as set out in DMRB Volume 6, TD22/06. These show the predicted A3 merge, diverge and mainline flows for the AM and PM peak hours for 2024 with and without the Submission Local Plan-enabled development. In all cases, no change in layout is shown to be required due to the Submission Local Plan.

6.2.2 Given the relatively low additional merge/diverge trips with the Submission Local Plan-enabled development, it is considered that the Submission Local Plan is unlikely to have a detrimental impact on the operation of junction merges and diverges.

Figure 17: Merge/Diverge Flows – 2024 with Existing Development Plan Policy Compliant Development AM Peak Hour



LEGEND

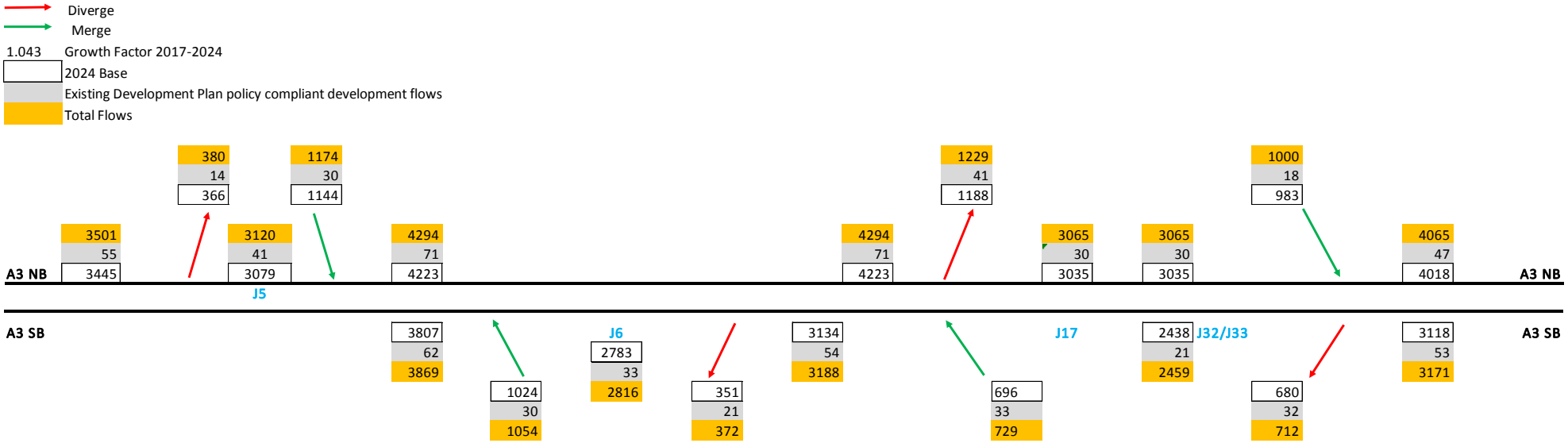
J5 – Hospital Junction

J6 – Cathedral Junction

J17 – Dennis Junction

J32 – Stoke Junction

Figure 18: Merge/Diverge Flows – 2024 with Existing Development Plan Policy Compliant Development PM Peak Hour



LEGEND

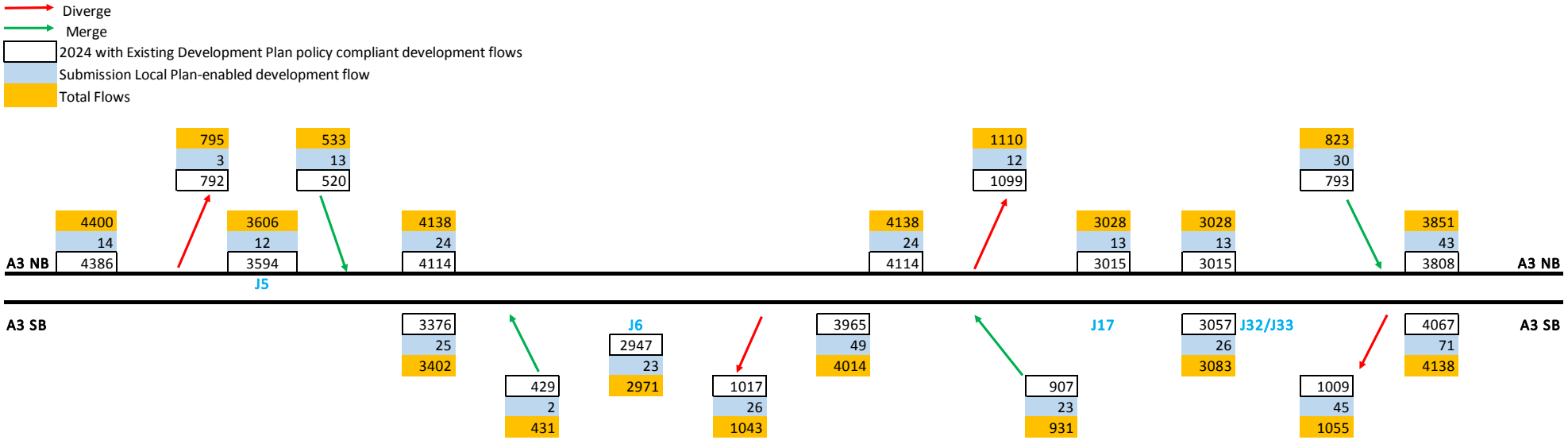
J5 – Hospital Junction

J6 – Cathedral Junction

J17 – Dennis Junction

J32 – Stoke Junction

Figure 19: Merge/Diverge Flows – 2024 with Submission Local Plan-Enabled Development AM Peak Hour



LEGEND

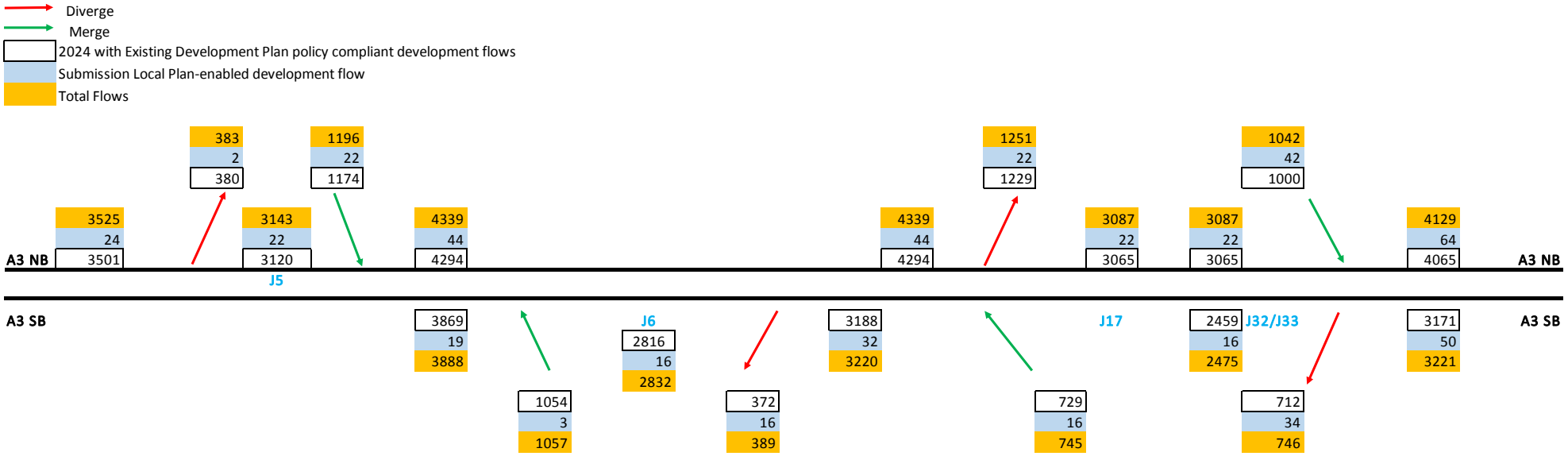
J5 – Hospital Junction

J6 – Cathedral Junction

J17 – Dennis Junction

J32 – Stoke Junction

Figure 20: Merge/Diverge Flows – 2024 with Submission Local Plan-Enabled Development PM Peak Hour



LEGEND

J5 – Hospital Junction

J6 – Cathedral Junction

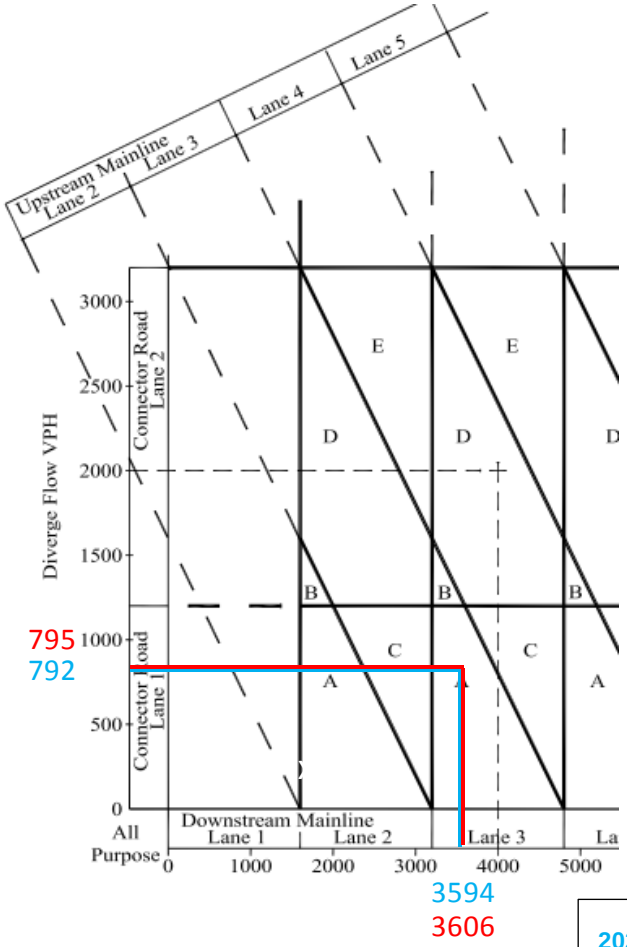
J17 – Dennis Junction

J32 – Stoke Junction

Figure 21: Hospital Diverge/Merge Assessment - AM Peak Hour

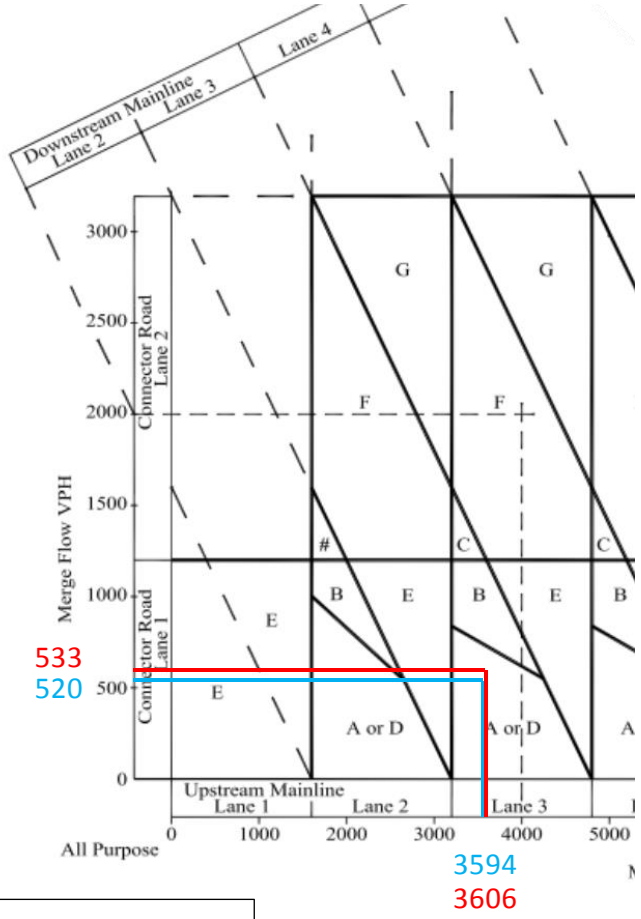
J5 Diverge - AM

Required: Taper diverge



J5 Merge - AM

Required: Taper merge/ 2 Lane urban merge



2024 with existing Development Plan policy compliant development

2024 with above plus Submission Local Plan-enabled development

Figure 22: Hospital Diverge/Merge Assessment - PM Peak Hour

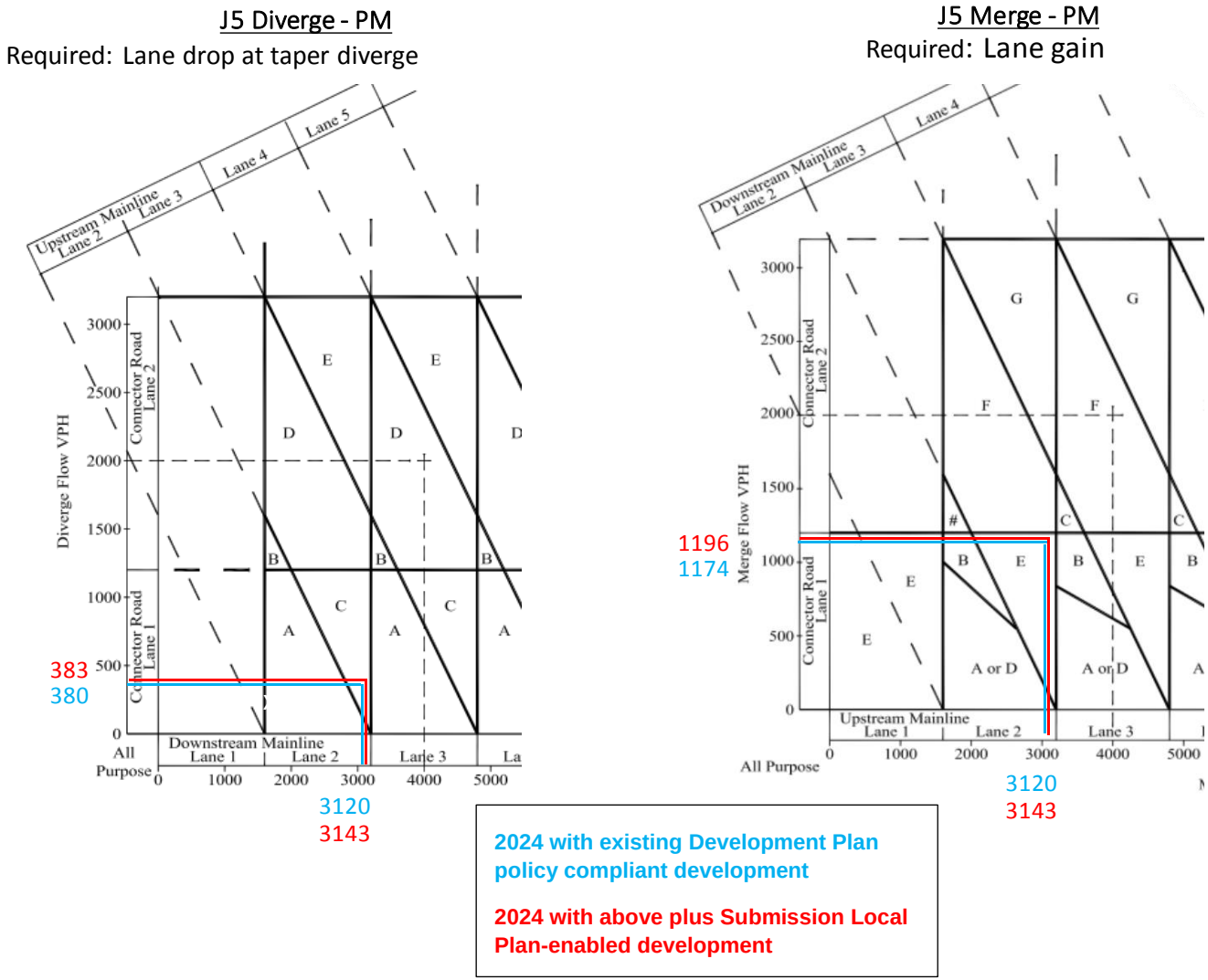
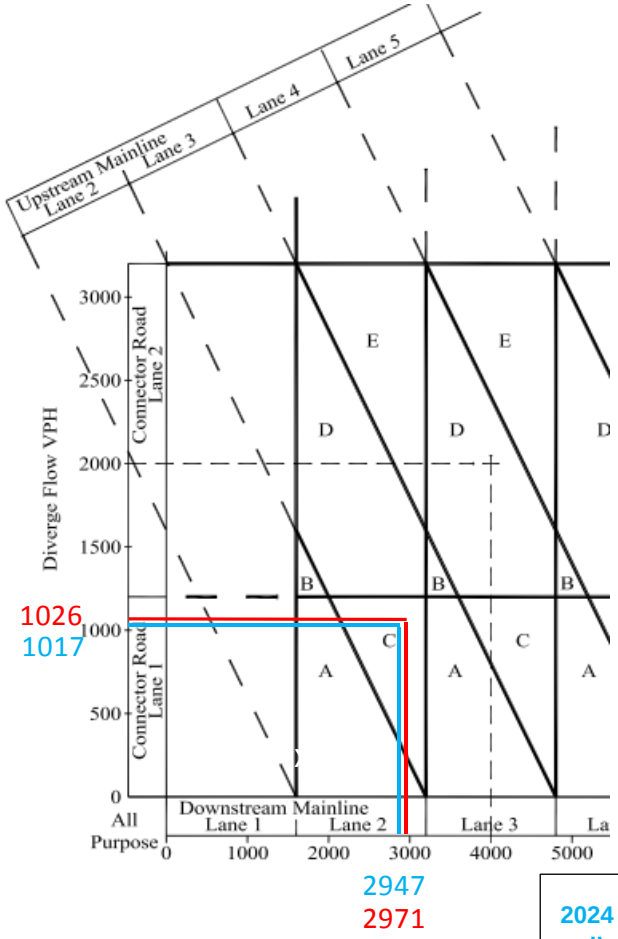


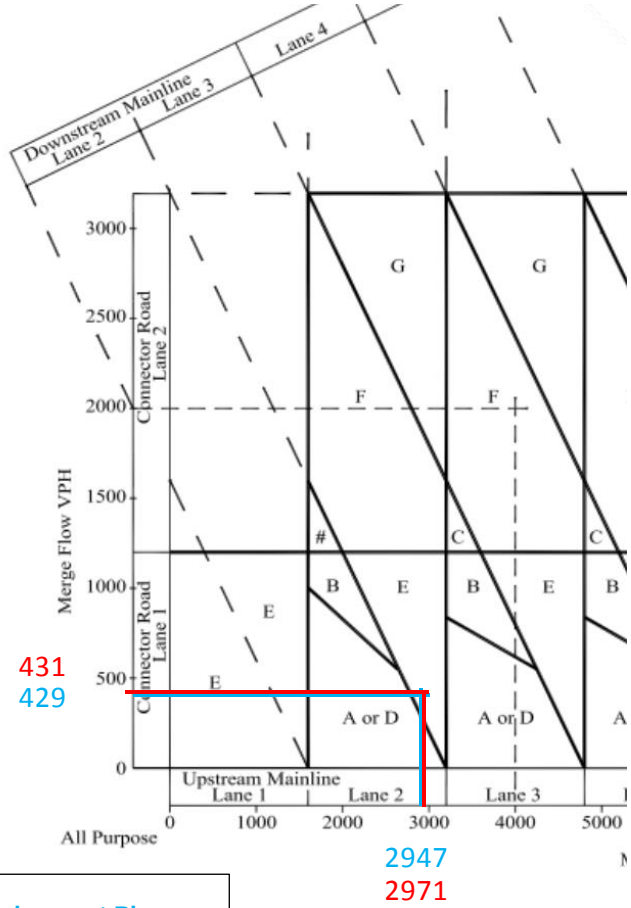
Figure 23: Cathedral Diverge/Merge Assessment - AM Peak Hour

J6 Diverge - AM

Required: Lane drop at taper diverge



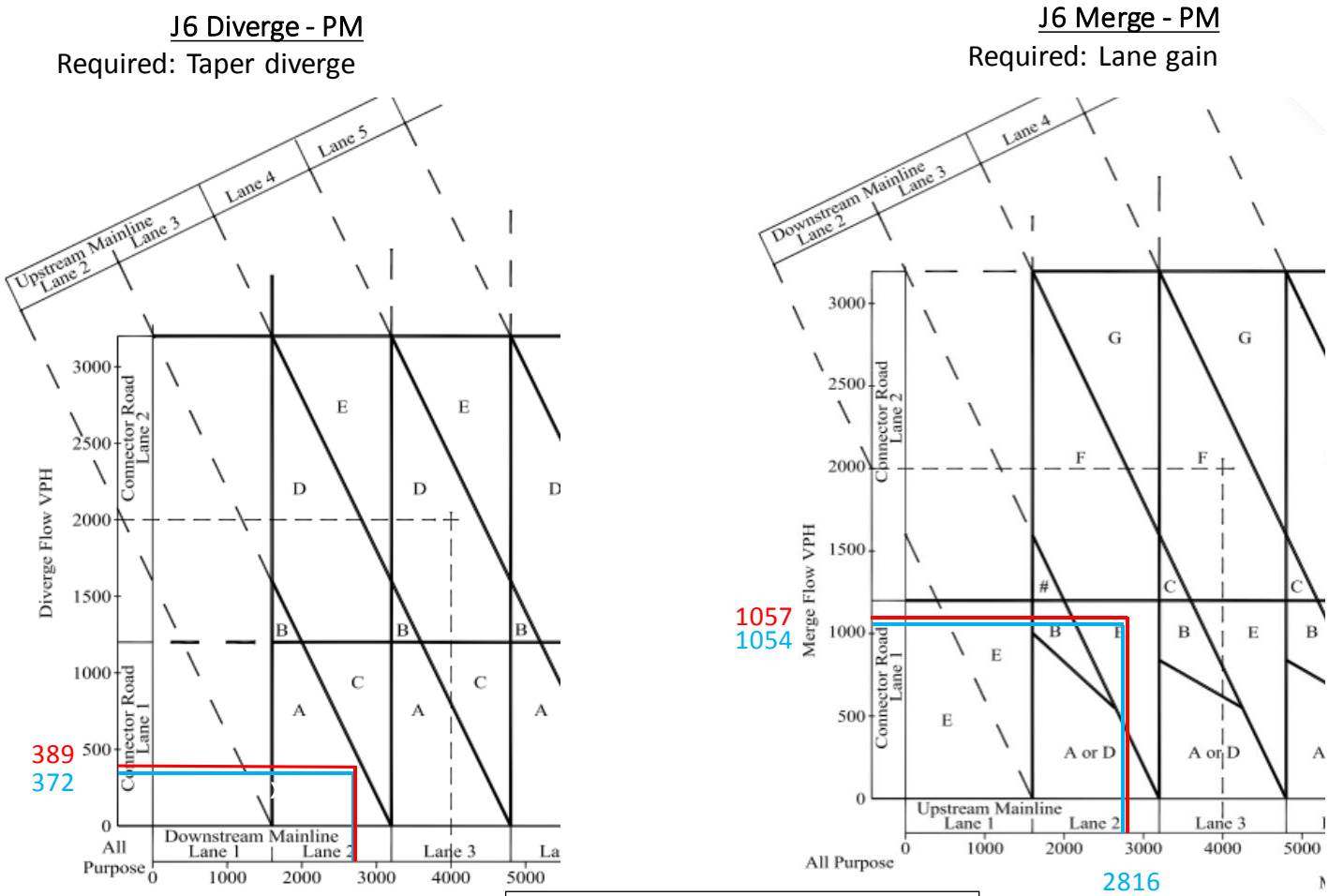
J6 Merge - AM



2024 with existing Development Plan policy compliant development

2024 with above plus Submission Local Plan-enabled development

Figure 24: Cathedral Diverge/Merge Assessment - PM Peak Hour



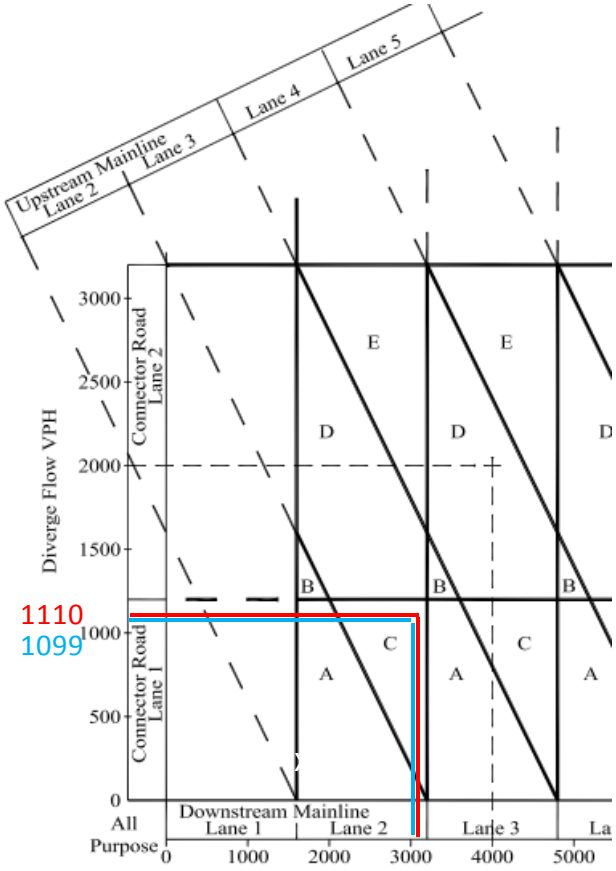
2024 with existing Development Plan policy compliant development

2024 with above plus Submission Local Plan-enabled development

Figure 25: Dennis Diverge/Merge Assessment - AM Peak Hour

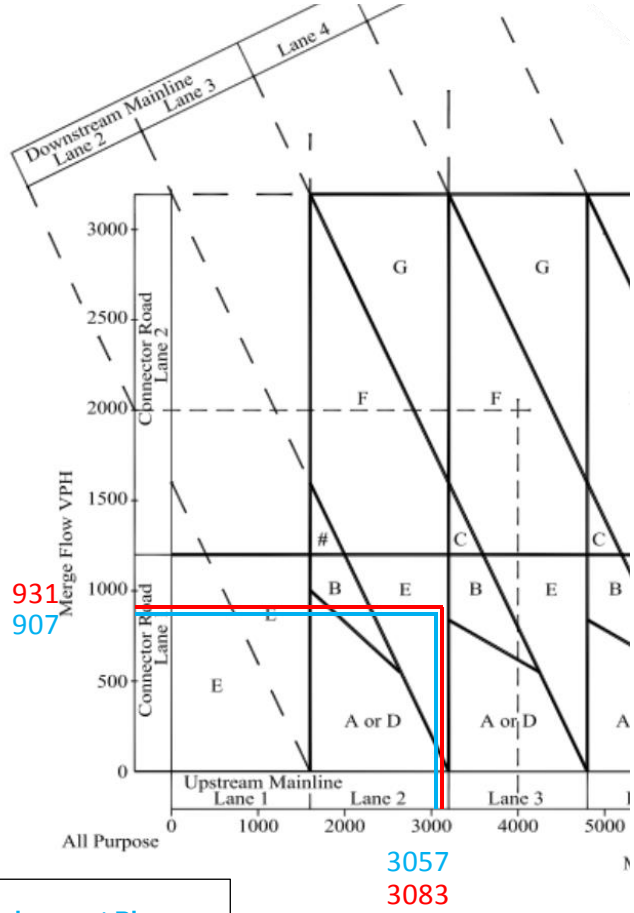
J17 Diverge - AM

Required: Lane drop at taper diverge



J17 Merge - AM

Required: Lane gain



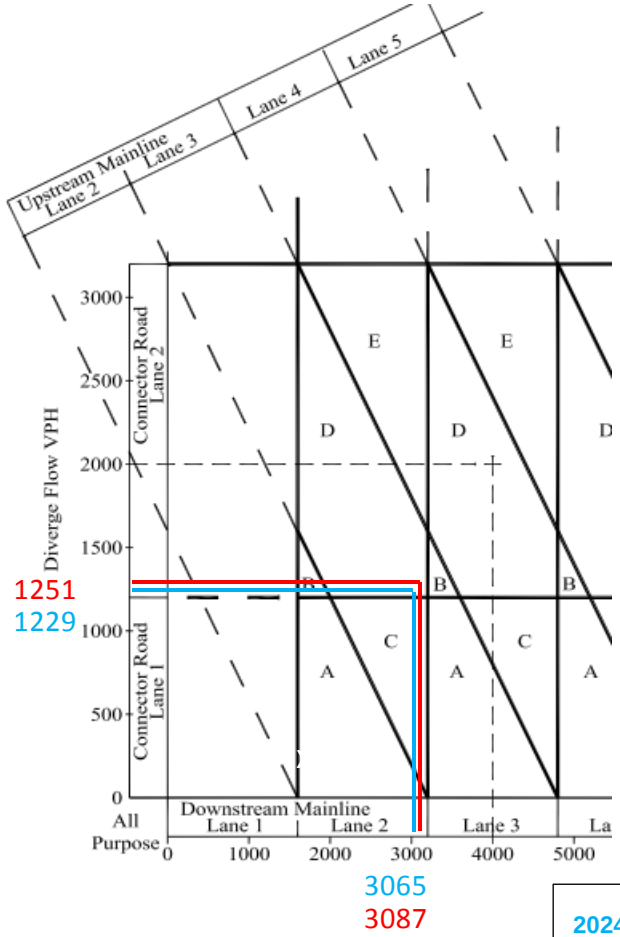
2024 with existing Development Plan policy compliant development

2024 with above plus Submission Local Plan-enabled development

Figure 26: Dennis Diverge/Merge Assessment - PM Peak Hour

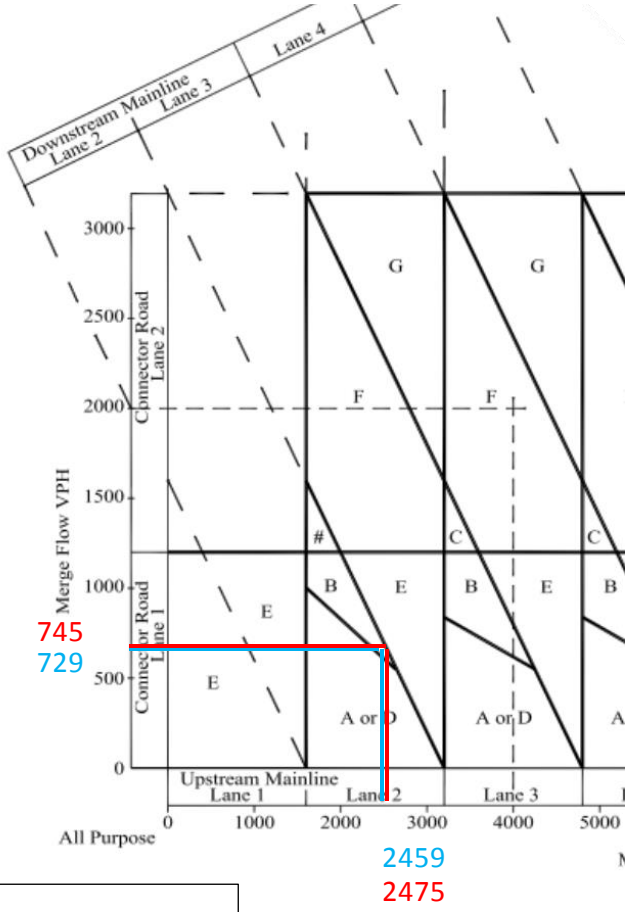
J17 Diverge - PM

Required: Ghost Island for Lane Drop



J17 Merge - PM

Required: Parallel merge

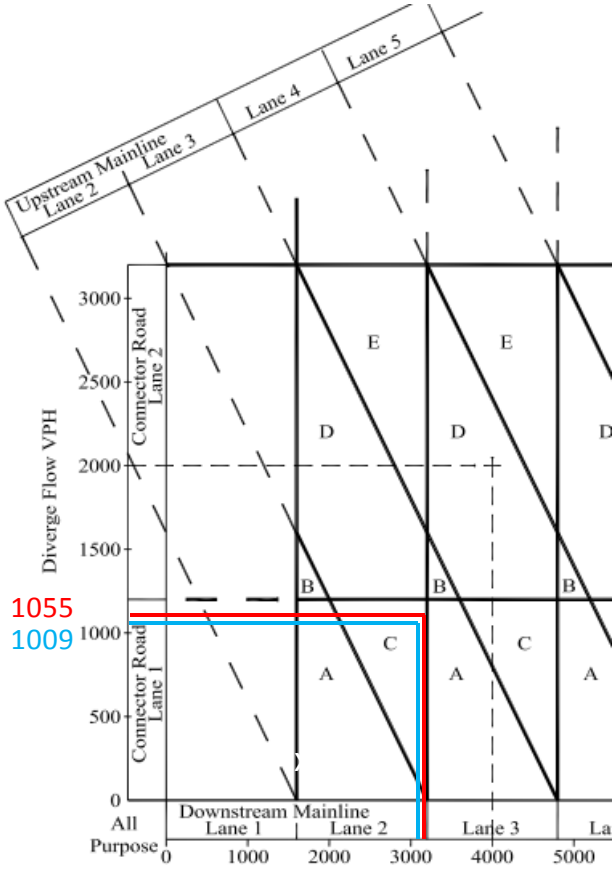


2024 with existing Development Plan policy compliant development

2024 with above plus Submission Local Plan-abled development

Figure 27: Stoke Diverge/Merge Assessment - AM Peak Hour

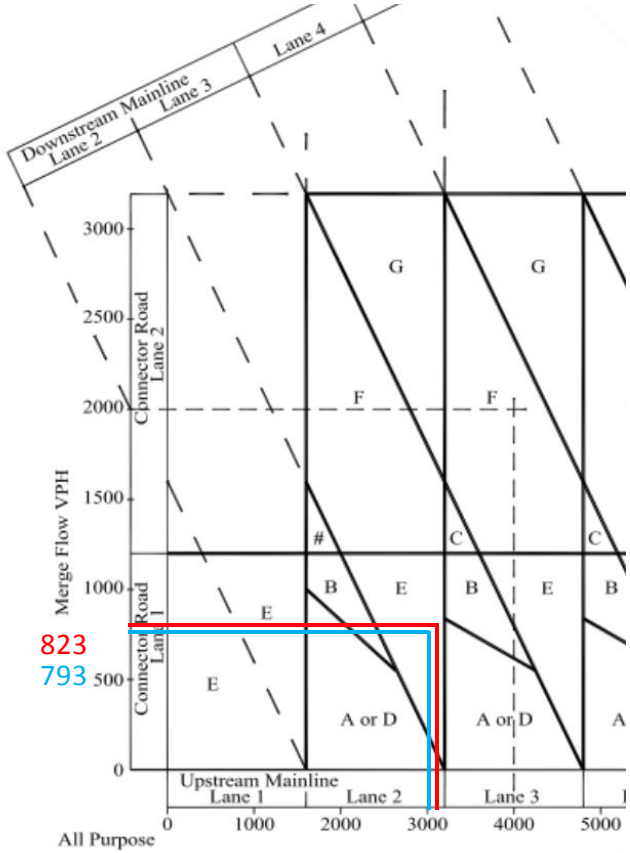
J32 Diverge - AM
Required: Lane drop at taper diverge



1055
1009

3057
3083

J32 Merge - AM
Required: Lane gain



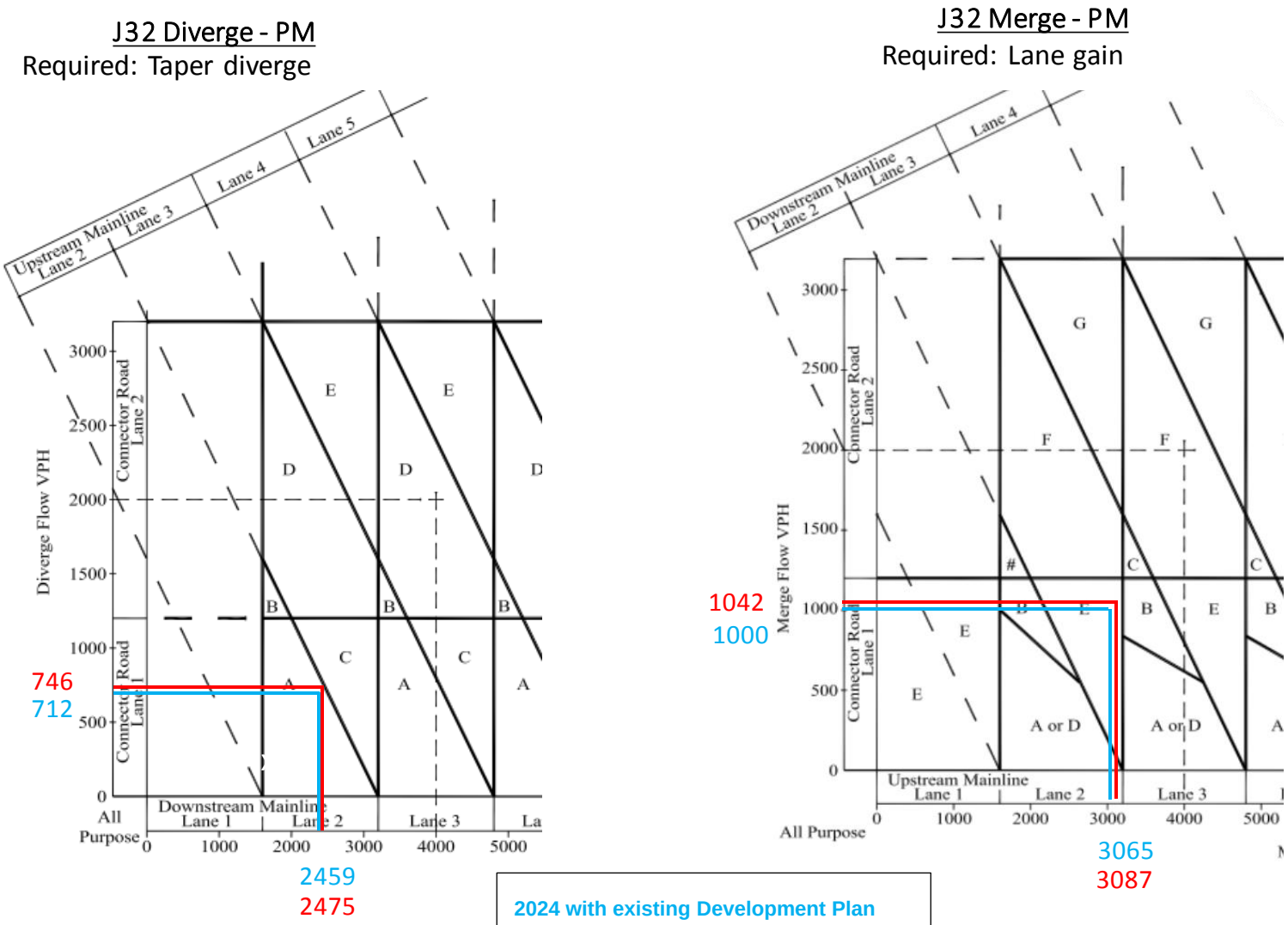
823
793

3015
3028

2024 with existing Development Plan policy compliant development

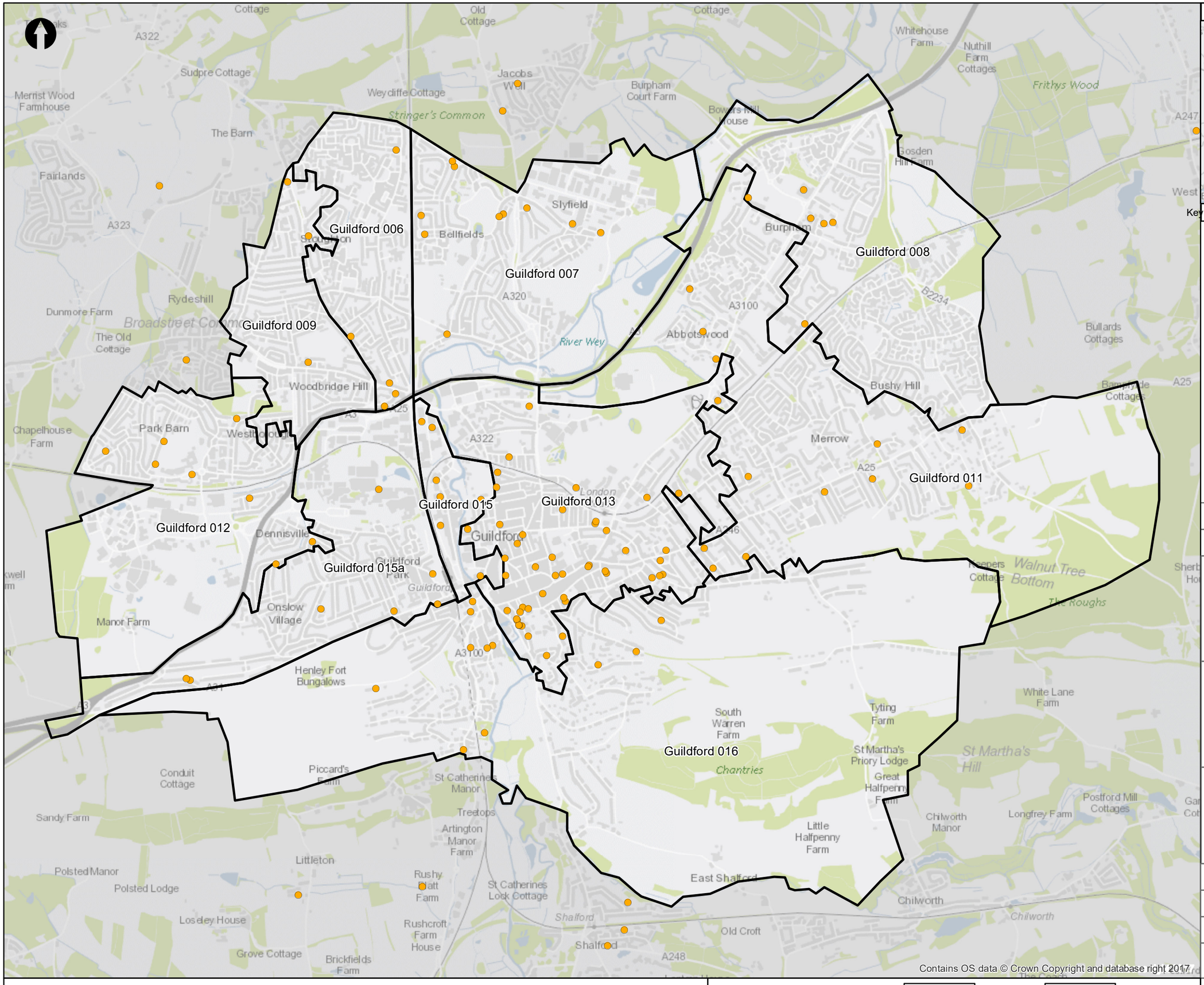
2024 with above plus Submission Local Plan-enabled development

Figure 28: Stoke Diverge/Merge Assessment - PM Peak Hour

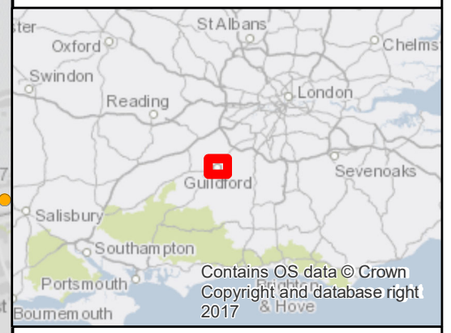


Appendices

A. Location of Development and Middle Super Output Area Zones



Location



Key to Symbols

- Middle Super Output Areas
- Approvals, commencements and completions 2014-2017

Rev	Date	Drawn	Description	Ch'k'd	App'd
01	08/03/18	DM	For Information	SPB	SF

MOTT MACDONALD
ESD
35 Newhall Street
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B3 3PU
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T +44 (0)121 234 1500
F +44 (0)121 234 3295
W www.mottmac.com

Client

Guildford Borough Council

GUILDFORD BOROUGH

Title

Guildford Borough Council
Development Mapping
Base developments 2014 - 2017

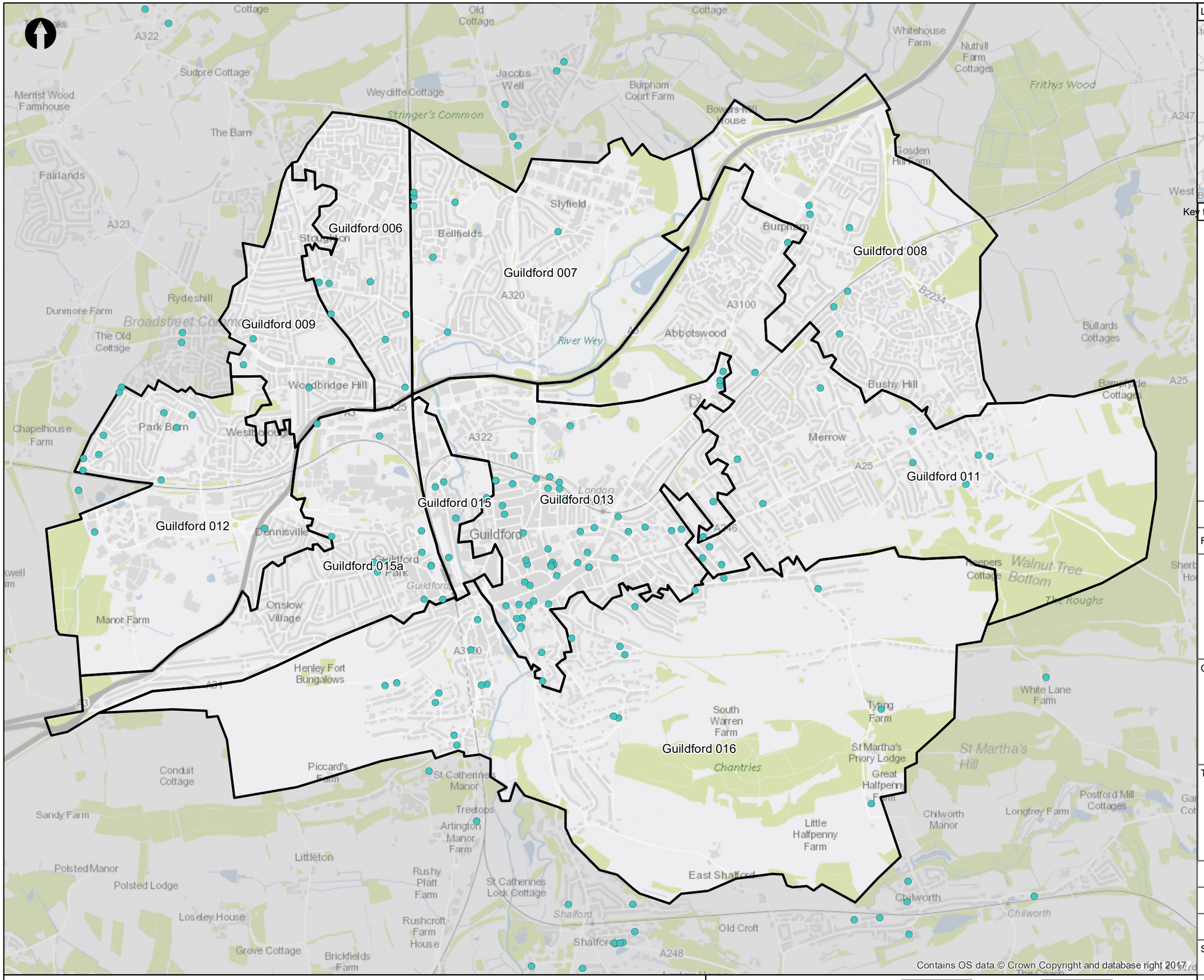
Designed		Eng Check	
Drawn	DMc	Coordination	
GIS Check		Approved	SF

Scale at A3	Status	Rev
1:25,000	INF	01

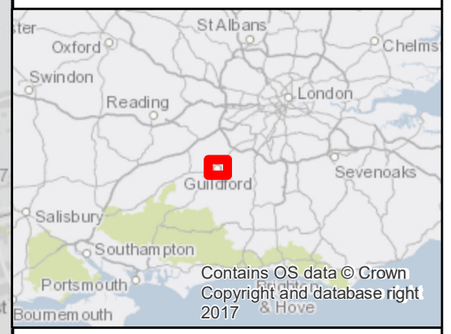
Drawing No.
MMD-390510-ESD-GIS-01-Base

Provide Copyright notice appropriate for all data

0 0.5 1 1.5 Km



Location



Key to Symbols

- Middle Super Output Areas
- Existing Development Plan policy compliant development 2017-2024

Rev	Date	Drawn	Description	Ch'k'd	App'd
01	08/03/18	DM	For Information	SPB	SF

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W www.mottmac.com

Client

Guildford Borough Council

GUILDFORD BOROUGH

Title

Guildford Borough Council
Development Mapping
Existing Policy Compliant Sites

Designed		Eng Check	
Drawn	DMc	Coordination	
GIS Check		Approved	SF
Scale at A3 1:25,000		Status INF	Rev 01

Drawing No. MMD-390510-ESD-GIS-01-ExCo

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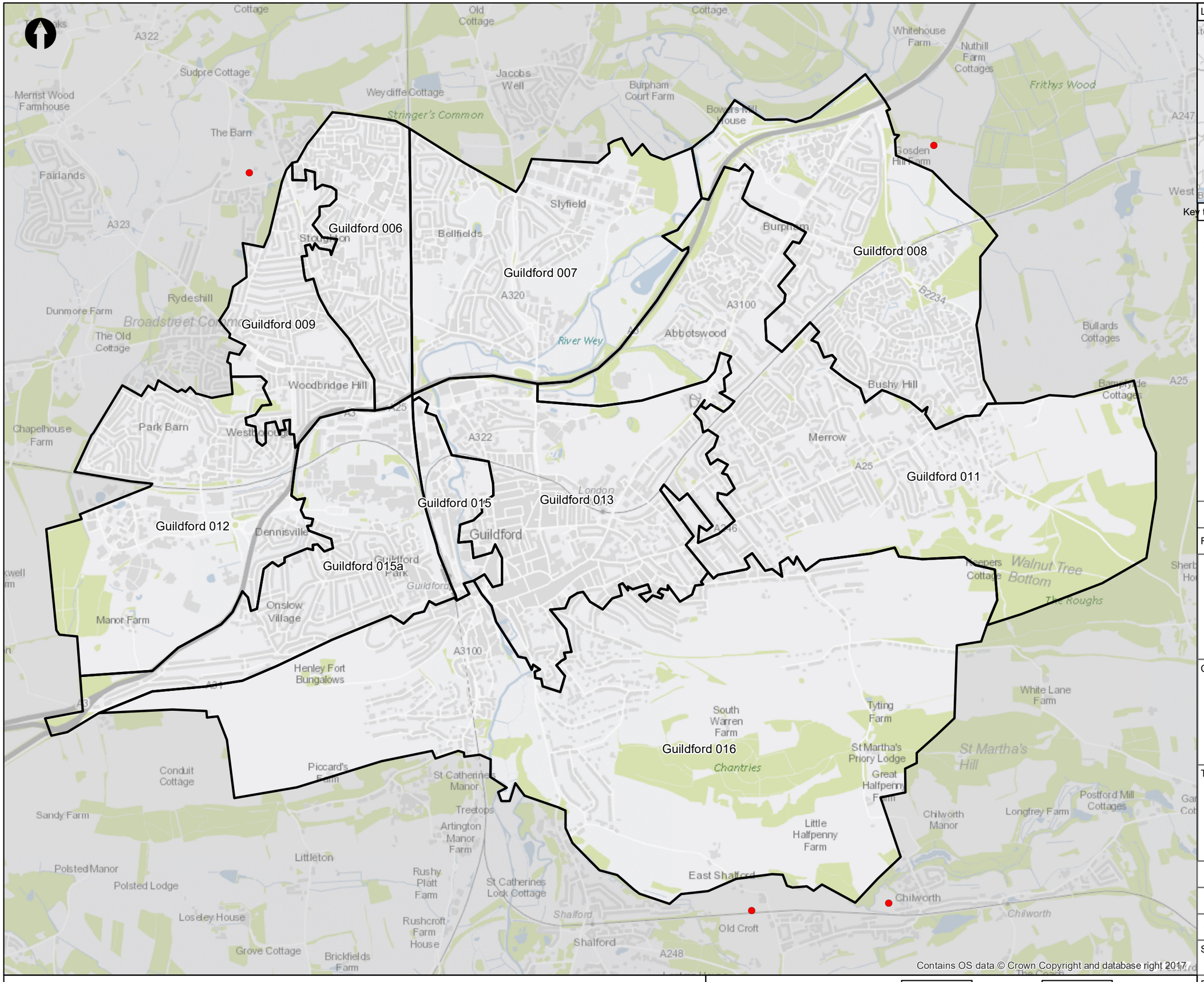
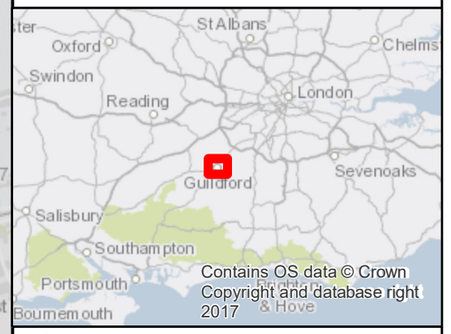


Location



Key to Symbols

- Middle Super Output Areas
- Submission Local Plan-enabled development 2017-2024

Rev	Date	Drawn	Description	Ch'k'd	App'd
01	08/03/18	DM	For Information	SPB	SF

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Client

Guildford Borough Council

GUILDFORD BOROUGH

Title

Guildford Borough Council
Development Mapping
Local Plan Developments

Designed		Eng Check	
Drawn	DMc	Coordination	
GIS Check		Approved	SF

Scale at A3	Status	Rev
1:25,000	INF	01

Drawing No. MMD-390510-ESD-GIS-01-LocP

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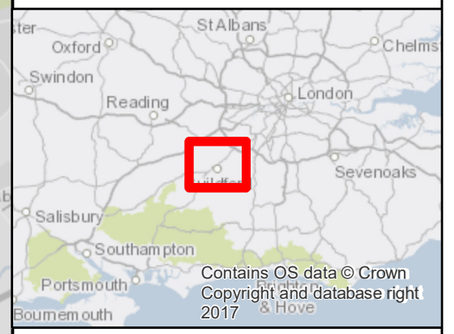
Location



Key to Symbols

- Middle Super Output Areas
- Approvals, commencements and completions 2014-2017
- Existing Development Plan policy compliant development 2017-2024
- Submission Local Plan-enabled development 2017-2024

Rev	Date	Drawn	Description	Ch'k'd	App'd
01	08/03/18	DM	For Information	SPB	SF

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Client

Guildford Borough Council

GUILDFORD BOROUGH

Title

Guildford Borough Council
Development Mapping
All Developments

Designed		Eng Check	
Drawn	DMc	Coordination	
GIS Check		Approved	SF

Scale at A3	Status	Rev
1:75,000	INF	01

Drawing No.
MMD-390510-ESD-GIS-01-All

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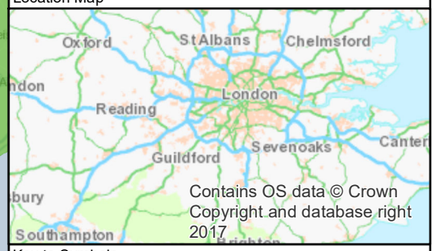
P:\Croydon\VOY\ITL\GIS_ESD_IntAnalytics\06_WIP_RB\390510_GuildfordDevelopment_171016\04_Outgoing Data\MMD-390510-ESD-GIS-All-01 - Created Mar 22, 2018

Location Map



Key to Symbols

- Not using A3
- Using Eastbound A31
- Using Southbound A3
- Using Northbound A3
- Other Distribution
- Guildford Distribution

Notes

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Rev	Date	Drawn	Description	Ch'k'd	App'd
P1	19/10/2017	RB	Development Mapping	MM	NH

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Client

Guildford Borough Council

GUILDFORD BOROUGH

Title

Guildford Borough
Development Mapping
A3 Usage

Designed	R Batten		Eng Check		
Drawn	R Batten		Coordination		
GIS Check			Approved		

Scale at A3	Status	Rev	Security
1:745,000	PRE	P1	STD

Drawing Number

0 20 40 60 Kilometers

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B. Junction Movements Used by Trips between Census Areas

	to: Place of Work									
from: Usual Residence	**Guildford 001**	**Guildford 002**	**Guildford 003**	**Guildford 004**	**Guildford 005**	**Guildford 006**	**Guildford 007**	**Guildford 008**	**Guildford 009**	**Guildford 010**
Guildford 001						32BA	32BA		32BA	
Guildford 002										
Guildford 003					17BA, 33DF	32BA			32BC, 33CF, 17BA	
Guildford 004										
Guildford 005			17AB, 33FD							
Guildford 006	32AB		32AB							17AD
Guildford 007	32AB		17AB							17AD
Guildford 008									33DF, 17BA	
Guildford 009	32AB							17AB, 33FD		17AD
Guildford 010						17DA	17DA		17DA	
Guildford 011						33DC, 32CA	33DC, 32CA		33DF, 17BA	17BD, 33DF
Guildford 012	4AB, 5EC		4AB, 5EC					17AB, 33FD		4AB, 5EB, 6DA
Guildford 013	33EC, 32CB	17BA			17BA	17CA	33EC, 32CA		17BA	
Guildford 014					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Guildford 015	33EC, 32CB	17BA			17BA	17BA			17BA	
Guildford 015A	6CD, 5BC	6CD, 5BC, 17DA	17BA		6CD, 5BC, 17DA	6CD, 5BC, 17DA	6CD, 5BC, 17DB, 33FC, 32CA		6CD, 5BC, 17DA	
Guildford 016	33EC, 32CB				17BA	17BA	33EC, 32CA		17BA	
Guildford 017	33EC, 32CB				17BA	17BA	33EC, 32CA		17BA	
Guildford 017A					17DA	17BA	33EC, 32CA		17DA	
Guildford 018						33DC, 32CA			17BA	
Waverley 001					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 002					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 003					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 004					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 005	6CD, 5BC				17DA	17DA	33EC, 32CA		17DA	
Waverley 006					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 007	6CD, 5BC				17DA	17DA	33EC, 32CA		17DA	
Waverley 008	6CD, 5BC				17BA	17BA	33EC, 32CA		17BA	
Waverley 009					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 010	6CD, 5BC				17DA	17DA	33EC, 32CA		17DA	
Waverley 011					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 012					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 013	6CD, 5BC				17BA	17BA	33EC, 32CA		17BA	
Waverley 014					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 015					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 016					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Waverley 017					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Woking 001						32BA	32BA		32BC, 33CF, 17BA	
Woking 002						32BA	32BA		32BC, 33CF, 17BA	
Woking 003										
Woking 004										
Woking 005										
Woking 006										
Woking 007										
Woking 008										
Woking 009										
Woking 010										
Woking 011										
Woking 012										

	to: Place of Work									
from: Usual Residence	Guildford 001	Guildford 002	Guildford 003	Guildford 004	Guildford 005	Guildford 006	Guildford 007	Guildford 008	Guildford 009	Guildford 010
Surrey Heath 001										
Surrey Heath 002										
Surrey Heath 003										
Surrey Heath 004					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Surrey Heath 005					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Surrey Heath 006										
Surrey Heath 007					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Surrey Heath 008					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Surrey Heath 009					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Surrey Heath 010					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Surrey Heath 011					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Surrey Heath 012										
Adur	33EC, 32CA				17BA	17BA	33EC, 32CA		17BA	
Arun	33EC, 32CA				17BA	17BA	33EC, 32CA		17BA	
Ashford						32BA	32BA		32BC, 33CF, 17BA	
Aylesbury Vale						32BA	32BA		32BC, 33CF, 17BA	
Basingstoke and Deane					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Bracknell Forest					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Brighton and Hove						32BA	32BA		32BC, 33CF, 17BA	
Canterbury						32BA	32BA		32BC, 33CF, 17BA	
Cherwell						32BA	32BA		32BC, 33CF, 17BA	
Chichester					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Chiltern						32BA	32BA		32BC, 33CF, 17BA	
Crawley						32BA	32BA		32BC, 33CF, 17BA	
Dartford						32BA	32BA		32BC, 33CF, 17BA	
Dover						32BA	32BA		32BC, 33CF, 17BA	
East Hampshire					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Eastbourne						32BA	32BA		32BC, 33CF, 17BA	
Eastleigh					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Elmbridge						32BA	32BA		32BC, 33CF, 17BA	
Epsom and Ewell						32BA	32BA		32BC, 33CF, 17BA	
Fareham					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Gosport					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Gravesham						32BA	32BA		32BC, 33CF, 17BA	
Hart					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Hastings						32BA	32BA		32BC, 33CF, 17BA	
Havant					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Horsham	33EC, 32CA				17BA	17BA	33EC, 32CA		17BA	
Isle of Wight					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Lewes						32BA	32BA		32BC, 33CF, 17BA	
Maidstone						32BA	32BA		32BC, 33CF, 17BA	
Medway						32BA	32BA		32BC, 33CF, 17BA	
Mid Sussex						32BA	32BA		32BC, 33CF, 17BA	
Milton Keynes						32BA	32BA		32BC, 33CF, 17BA	
Mole Valley					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
New Forest					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Oxford					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	

to: Place of Work

from: Usual Residence	Guildford 001	Guildford 002	Guildford 003	Guildford 004	Guildford 005	Guildford 006	Guildford 007	Guildford 008	Guildford 009	Guildford 010
Portsmouth					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Reading					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Reigate and Banstead						32BA	32BA		32BC, 33CF, 17BA	
Rother						32BA	32BA		32BC, 33CF, 17BA	
Runnymede						32BA	32BA		32BC, 33CF, 17BA	
Rushmoor					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Sevenoaks						32BA	32BA		32BC, 33CF, 17BA	
Shepway						32BA	32BA		32BC, 33CF, 17BA	
Slough						32BA	32BA		32BC, 33CF, 17BA	
South Bucks						32BA	32BA		32BC, 33CF, 17BA	
South Oxfordshire						32BA	32BA		32BC, 33CF, 17BA	
Southampton					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Spelthorne					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Swale						32BA	32BA		32BC, 33CF, 17BA	
Tandridge						32BA	32BA		32BC, 33CF, 17BA	
Test Valley					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Thanet						32BA	32BA		32BC, 33CF, 17BA	
Tonbridge and Malling						32BA	32BA		32BC, 33CF, 17BA	
Tunbridge Wells						32BA	32BA		32BC, 33CF, 17BA	
Vale of White Horse						32BA	32BA		32BC, 33CF, 17BA	
Wealden						32BA	32BA		32BC, 33CF, 17BA	
West Berkshire					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
West Oxfordshire						32BA	32BA		32BC, 33CF, 17BA	
Winchester					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Windsor and Maidenhead						32BA	32BA		32BC, 33CF, 17BA	
Wokingham					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Worthing	33EC, 32CA				17BA	17BA	33EC, 32CA		17BA	
Wycombe						32BA	32BA		32BC, 33CF, 17BA	
East					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
East Midlands					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
London					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
North East					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
North West					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
South West					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Wales					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
West Midlands					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	
Yorkshire and The Humber					17DA	17DA	17DB, 33FC, 32CA	17DB, 33FD	17DA	

	to: Place of Work									
from: Usual Residence	**Guildford 011**	**Guildford 012**	**Guildford 013**	**Guildford 014**	**Guildford 015**	**Guildford 015A**	**Guildford 016**	**Guildford 017**	**Guildford 017A**	**Guildford 018**
Guildford 001		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE		
Guildford 002			17AB		17AB	6AC, 17AD				
Guildford 003		6AD, 5BE, 4BA				6AC				
Guildford 004										
Guildford 005			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Guildford 006	32AC, 33CD		17AB	17AD	17AB	17AD, 6AC	17AB	17AB	17AD	32AC, 33CD
Guildford 007	32AC, 33CD		32AC, 33CE	32AC, 33CF, 17BD	32AC, 33CF	32AC, 33CF, 17BD, 6AC	32AC, 33CE	32AC, 33CE	32AC, 33CE	
Guildford 008		33DF, 17BA		33DF, 17BD						
Guildford 009	17AB, 33FD		17AB	17AD	17AB	17AD, 6AC	17AB	17AB	17AD	17AB, 33FD
Guildford 010	17DB, 33FD	5CE, 4BA								
Guildford 011		33DF, 17BA								
Guildford 012	17AB, 33FD		4AB, 5EB, 6DC	4AB, 5EB, 6DA	17AB	4AB, 5EB, 6DC	4AB, 5EB, 6DC	4AB, 5EB, 6DC	4AB, 5EB, 6DA	4AB, 5EB, 6DC
Guildford 013		6CD, 5BE, 4BA								
Guildford 014		5CE, 4BA								
Guildford 015		17BA								
Guildford 015A		6CD, 5BE, 4BA								
Guildford 016		6CD, 5BE, 4BA								
Guildford 017		6CD, 5BE, 4BA								
Guildford 017A		5CE, 4BA								
Guildford 018		6CD, 5BE, 4BA								
Waverley 001	17DB, 33FD	5CE, 4BA								
Waverley 002	17DB, 33FD	5CE, 4BA								
Waverley 003	17DB, 33FD	5CE, 4BA								
Waverley 004	17DB, 33FD	5CE, 4BA								
Waverley 005										
Waverley 006	17DB, 33FD	5CE, 4BA								
Waverley 007										
Waverley 008										
Waverley 009	17DB, 33FD	5CE, 4BA								
Waverley 010										
Waverley 011	17DB, 33FD	5CE, 4BA								
Waverley 012	17DB, 33FD	5CE, 4BA								
Waverley 013										
Waverley 014	17DB, 33FD	5CE, 4BA								
Waverley 015	17DB, 33FD	5CE, 4BA								
Waverley 016	17DB, 33FD	5CE, 4BA								
Waverley 017	17DB, 33FD	5CE, 4BA								
Woking 001		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE		
Woking 002		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE		
Woking 003			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Woking 004			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Woking 005			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Woking 006			32AC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE		
Woking 007			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Woking 008			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Woking 009			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Woking 010			32AC, 33CE		32AC, 33CF	32AC, 33CF, 17BD, 6AC	32AC, 33CE	32AC, 33CE	17BD, 32AC, 33CF	
Woking 011			32AC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE		
Woking 012			32AC, 33CE		32AC, 33CF	32AC, 33CF, 17BD, 6AC	32AC, 33CE	32AC, 33CE	17BD, 32AC, 33CF	

	to: Place of Work									
from: Usual Residence	Guildford 011	Guildford 012	Guildford 013	Guildford 014	Guildford 015	Guildford 015A	Guildford 016	Guildford 017	Guildford 017A	Guildford 018
Surrey Heath 001			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Surrey Heath 002			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Surrey Heath 003			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Surrey Heath 004	17DB, 33FD	5CE, 4BA								
Surrey Heath 005	17DB, 33FD	5CE, 4BA								
Surrey Heath 006			17AB		17AB	17AD, 6AC	17AB	17AB	17AD	
Surrey Heath 007	17DB, 33FD	5CE, 4BA								
Surrey Heath 008	17DB, 33FD	5CE, 4BA								
Surrey Heath 009	17DB, 33FD	5CE, 4BA								
Surrey Heath 010	17DB, 33FD	5CE, 4BA								
Surrey Heath 011	17DB, 33FD	5CE, 4BA								
Surrey Heath 012			17AB		17AD, 6AC	6AC	17AB	17AB		
Adur		6CD, 5BE, 4BA								
Arun		6CD, 5BE, 4BA								
Ashford		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Aylesbury Vale		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Basingstoke and Deane	17DB, 33FD	5CE, 4BA								
Bracknell Forest	17DB, 33FD	5CE, 4BA								
Brighton and Hove		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Canterbury		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Cherwell		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Chichester	17DB, 33FD	5CE, 4BA	5CB, 6DC		5CB, 6DC	5CB, 6DC				
Chiltern		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Crawley		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Dartford		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Dover		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
East Hampshire	17DB, 33FD	5CE, 4BA	5CB, 6DC		5CB, 6DC	5CB, 6DC				
Eastbourne		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Eastleigh	17DB, 33FD	5CE, 4BA								
Elmbridge		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Epsom and Ewell		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Fareham	17DB, 33FD	5CE, 4BA	5CB, 6DC		5CB, 6DC	5CB, 6DC				
Gosport	17DB, 33FD	5CE, 4BA	5CB, 6DC		5CB, 6DC	5CB, 6DC				
Gravesham		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Hart	17DB, 33FD	5CE, 4BA								
Hastings		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Havant	17DB, 33FD	5CE, 4BA	5CB, 6DC		5CB, 6DC	5CB, 6DC				
Horsham		6CD, 5BE, 4BA								
Isle of Wight	17DB, 33FD	5CE, 4BA	5CB, 6DC		5CB, 6DC	5CB, 6DC				
Lewes		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Maidstone		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Medway		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Mid Sussex		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Milton Keynes		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Mole Valley	17DB, 33FD	5CE, 4BA								
New Forest	17DB, 33FD	5CE, 4BA								
Oxford	17DB, 33FD	5CE, 4BA								

	to: Place of Work									
from: Usual Residence	Guildford 011	Guildford 012	Guildford 013	Guildford 014	Guildford 015	Guildford 015A	Guildford 016	Guildford 017	Guildford 017A	Guildford 018
Portsmouth	17DB, 33FD	5CE, 4BA	5CB, 6DC		5CB, 6DC	5CB, 6DC				
Reading	17DB, 33FD	5CE, 4BA								
Reigate and Banstead		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Rother		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Runnymede		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Rushmoor	17DB, 33FD	5CE, 4BA								
Sevenoaks		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Shepway		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Slough		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
South Bucks		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
South Oxfordshire		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Southampton	17DB, 33FD	5CE, 4BA								
Spelthorne	17DB, 33FD	5CE, 4BA								
Swale		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Tandridge		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Test Valley	17DB, 33FD	5CE, 4BA								
Thanet		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Tonbridge and Malling		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Tunbridge Wells		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Vale of White Horse		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Wealden		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
West Berkshire	17DB, 33FD	5CE, 4BA								
West Oxfordshire		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Winchester	17DB, 33FD	5CE, 4BA								
Windsor and Maidenhead		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
Wokingham	17DB, 33FD	5CE, 4BA								
Worthing		6CD, 5BE, 4BA								
Wycombe		6AD, 5BE, 4BA	32BC, 33CE		32BC, 33CF	6AC	32BC, 33CE	32BC, 33CE	32BC, 33CE	
East	17DB, 33FD	5CE, 4BA								
East Midlands	17DB, 33FD	5CE, 4BA								
London	17DB, 33FD	5CE, 4BA								
North East	17DB, 33FD	5CE, 4BA								
North West	17DB, 33FD	5CE, 4BA								
South West	17DB, 33FD	5CE, 4BA								
Wales	17DB, 33FD	5CE, 4BA								
West Midlands	17DB, 33FD	5CE, 4BA								
Yorkshire and The Humber	17DB, 33FD	5CE, 4BA								

C. Additional Trips on Junction Turning Movements for Each Development Type

	AM Peak Hour 08:00-09:00 (pcus/hour)					PM Peak Hour 17:00-18:00 (pcus/hour)				
Junction Movement	(1)	(2)	(3)	(1) + (2)	(1) + (2) + (3)	(1)	(2)	(3)	(1) + (2)	(1) + (2) + (3)
	Approvals, commencements and completions 2014-2017	Existing Development Plan policy compliant development 2017-2024	Submission Local Plan-enabled development 2017-2024			Approvals, Commencements and Completions 2014-2017	Existing Development Plan policy compliant 2017-2024	Submission Local Plan-enabled 2017-2024		
6DC	-4.5	12.6	0.1	8.1	8.2	0.8	17.3	0.3	18.1	18.4
6DA	1.0	12.6	2.0	13.6	15.6	1.2	27.0	2.8	28.3	31.0
6CA	-0.1	2.7	0.0	2.6	2.6	-0.3	2.7	0.0	2.3	2.3
6CD	-0.9	31.0	8.2	30.2	38.4	-2.4	34.3	13.6	32.0	45.5
6AD	-0.1	6.5	9.8	6.5	16.2	-0.6	2.3	6.0	1.7	7.7
6AC	0.3	28.8	16.1	29.1	45.1	-0.7	18.7	10.3	18.0	28.3
5EC	-0.7	3.1	4.8	2.4	7.1	-0.2	5.1	8.9	4.9	13.8
5EB	-2.7	23.2	2.1	20.6	22.6	1.9	41.8	3.1	43.6	46.7
5CE	1.5	32.0	2.9	33.5	36.4	1.0	11.4	2.3	12.4	14.7
5CB	-0.8	2.0	0.0	1.2	1.2	0.2	2.6	0.0	2.7	2.7
5BE	0.2	23.0	10.1	23.2	33.3	-3.1	12.0	6.1	8.8	15.0
5BC	-1.2	14.5	7.9	13.4	21.2	0.1	24.7	13.4	24.9	38.3
4BA	1.7	55.1	13.0	56.8	69.7	-2.1	23.4	8.4	21.3	29.7
4AB	-3.4	26.3	6.9	22.9	29.8	1.6	46.9	11.9	48.5	60.5
33FE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33FD	1.5	8.3	0.7	9.8	10.5	3.7	10.4	0.9	14.2	15.1
33FC	3.3	28.1	0.3	31.4	31.7	6.2	16.1	0.2	22.2	22.4
33EF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33EC	-6.1	13.8	27.4	7.7	35.1	-9.5	7.7	37.2	-1.8	35.4
33DF	4.3	11.2	0.9	15.4	16.3	2.0	8.3	0.8	10.2	11.0
33DC	0.1	0.6	0.0	0.7	0.7	0.2	0.5	0.0	0.7	0.7
33DA	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
33CF	4.8	13.2	5.5	18.0	23.6	4.8	28.8	3.8	33.6	37.4
33CE	-11.7	3.5	34.3	-8.2	26.2	-4.3	12.0	27.2	7.7	34.9
33CD	0.2	0.5	0.0	0.7	0.7	0.2	0.6	0.0	0.8	0.8
33AD	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32CF	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32CB	-2.4	32.7	25.6	30.3	55.9	-5.6	16.1	35.2	10.5	45.7
32CA	-0.2	9.8	2.1	9.5	11.7	2.5	8.1	2.3	10.6	12.8
32BC	-9.5	9.3	37.6	-0.1	37.5	-0.5	29.1	28.8	28.6	57.4
32BA	-0.8	1.5	7.7	0.7	8.4	-0.1	2.6	5.1	2.5	7.6
32AC	2.8	7.8	2.2	10.7	12.9	1.2	12.2	2.2	13.5	15.6
32AB	-0.2	2.6	4.3	2.4	6.7	-0.6	1.5	7.0	0.8	7.8
17DB	1.4	13.0	0.3	14.4	14.7	5.2	13.5	0.2	18.7	18.9
17DA	0.7	23.2	11.3	23.9	35.2	3.0	27.8	22.0	30.8	52.7
17CA	-0.4	0.3	0.0	-0.1	-0.1	-0.4	0.7	0.0	0.3	0.3
17BD	5.8	13.3	0.2	19.1	19.3	2.1	13.4	0.3	15.5	15.8
17BA	3.2	49.4	5.9	52.6	58.4	2.5	24.1	11.8	26.7	38.4
17AD	1.8	29.5	23.1	31.3	54.5	1.7	19.4	15.9	21.0	36.9
17AC	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

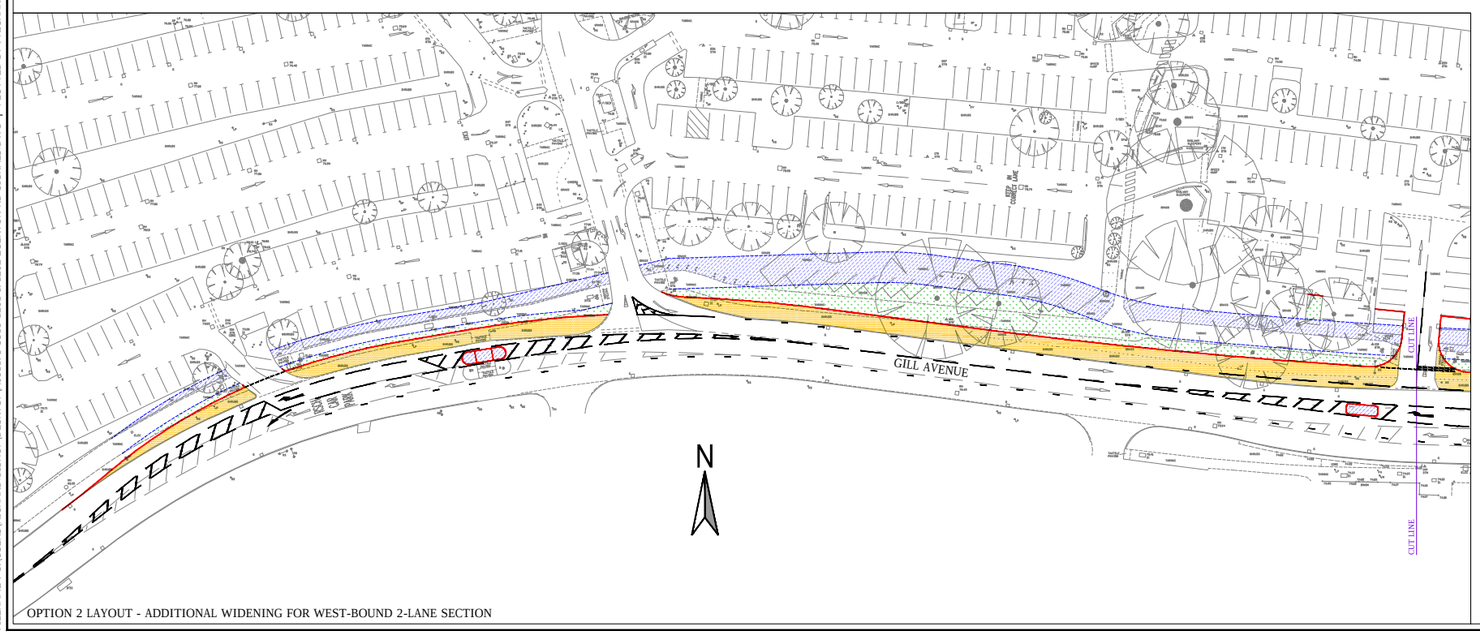
D. Proposed Improvements at the Hospital Junctions

KEY

- NEW CARRIAGEWAY WIDENING
- NEW FOOTWAY CONSTRUCTION
- NEW VERGE

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS

OPTION 1 LAYOUT - MINIMAL WIDENING FOR WEST-BOUND 2-LANE SECTION



OPTION 2 LAYOUT - ADDITIONAL WIDENING FOR WEST-BOUND 2-LANE SECTION

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

GUILDFORD BOROUGH COUNCIL

EXECUTIVE PARK
AVALON WAY
ANSTEY
LEICESTER
LE7 7GR
TEL: +44 (0)116 234 8000
FAX: +44 (0)116 234 8001
e-mail: leicester@wyg.com

Project:

GUILDFORD SUSTAINABLE MOVEMENT CORRIDORS

Drawing Title:

SMC 1
GILL AVENUE & ERGERTON ROAD JUNCTION
HIGHWAYS IMPROVEMENT

Scale @ A3	Drawn	Date	Checked	Date	Approved	Date
1:500	RB	21.11.17	AC	20.11.17	CRS	20.11.17

Project No.	Office	Type	Drawing No.	Revision
A081175-81	35	18	1201	-

FILENAME - C:\USERS\RICHARD.BISHOP\DESKTOP\A081175-3518+1201 & 1202 EGERTON RD SIGNALS.DWG | PLOTTED BY - RICHARD.BISHOP | PLOTTED DATE - 20 November 2017 18:06:54

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REFER TO RG. NO. A081175-81-3518-004 SMC1 PEDESTRIAN AND CYCLE ROUTE IMPROVEMENTS

CUT LINE B

CUT LINE B

KEY

- NEW CARRIAGEWAY WIDENING
- NEW FOOTWAY CONSTRUCTION
- NEW VERGE

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

GUILDFORD BOROUGH COUNCIL

EXECUTIVE PARK
AVALON WAY
ANSTEY
LEICESTER
LE7 7GR
TEL: +44 (0)116 234 8000
FAX: +44 (0)116 234 8001
e-mail: leicester@wyg.com

Project:

GUILDFORD SUSTAINABLE MOVEMENT CORRIDORS

Drawing Title:

SMC 1
ERGERTON ROAD / A3 ROUNDABOUT
HIGHWAYS IMPROVEMENT

Scale @ A3	Drawn Date	Checked Date	Approved Date
1:500	RB 21.11.17	AC 20.11.17	CRS 20.11.17

Project No.	Office	Type	Drawing No.	Revision
A081175-81	35	18	1202	-

FILENAME : C:\USERS\RICHARD.BISHOP\DESKTOP\A081175-3518-1201 & 1202 EGERTON RD SIGNALS.DWG | PLOTTED BY : RICHARD.BISHOP | PLOTTED DATE : 20 November 2017 18:05:44