Project:	**Suffolk County Council**	Job No:	**60445024**
Subject:	**Forest Heath District Council Transport Study – Rev. 2**		
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Executive Summary

Forest Heath District Council (FHDC) are in the process of preparing a Single Issue Review (SIR) of Core Strategy Policy CS7 Overall Housing Provision and Distribution and a Site Allocations Local Plan (SALP)

AECOM has been commissioned by Suffolk County Council (SCC) and FHDC to review and update the Transport Study (TS) named 'Forest Heath LDF Transport Impacts' compiled by AECOM in 2009 as part of the evidence base to support by SIR and SALP. The work carried out by AECOM during November 2009 concerned a review of the transport impacts of the emerging proposals for the broad locations of housing provision as part of the development of the Forest Heath Local Development Framework (LDF) - Core Strategy.

This Technical Note (TN) forms part of an early stage in the process to identify the potential transport impacts of the emerging proposals for the broad locations of housing provision as part of the development of the Forest Heath Local Plan.

FHDC provided information on the level of growth anticipated across the District for two potential growth scenarios. Although the broad distribution of growth to the settlements for Growth Scenario Two does not appear in the SIR, this TN assesses the potential impact of such a distribution.

Unlike the 2009 TS the impacts on walking, cycling and public transport as a result of the broad distribution of growth to the settlements has not been considered, as this TN is an update to the Highway Assessment section of the 2009 TS only. A further, more detailed study of the transport impacts of the Local Plan will need to be prepared in due course.

In addition, identifying solutions to the impacts identified in this TN and the respective mitigation is not included within this study and should form part of a further study at a later date.

The potential impacts of the two growth scenarios identified has been assessed through the preparation of a trip generation and distribution for the key settlements of Forest Heath, referred to as growth locations namely Brandon, Lakenheath, Mildenhall, Red Lodge and Newmarket. Potential growth in the Primary Villages was considered by adding their respective growth to nearby key settlements.

The volume of traffic generated in the two growth scenarios was then compared to that which had been estimated to be generated in the 2009 study. This comparison was used to review the broad infrastructure requirements identified in the earlier study.

Consideration was also given to more recent studies that had been undertaken including the Mildenhall Mixed and Residential Land Use Development, Traffic Assessment, WSP, December 2014 and Lakenheath Cumulative Site Traffic Study, AECOM, November 2015.

The results of the assessment for either growth scenario can be summarised as follows for the growth locations assessed:

Newmarket: At the grade-separated A14 / A142 Fordham Road junction (A14 junction 37) the highest increase in traffic is expected to be on the A14. However, traffic flows at the A14 / A142 Fordham Road junction are expected to increase and further more detailed work is recommended. At the A14 / A11 / A1304 Bury Road junction (A14 junction 38) an increase in traffic is anticipated but this is not anticipated to warrant further investigation. An increase in traffic is expected at the Newmarket Clocktower junction which should be further considered. Further work will need to take account of committed improvements proposed as part of the Hatchfield Farm planning application.

Mildenhall: There will be an increase in traffic to and from Mildenhall, passing through the Fiveways roundabout junction. The Mildenhall Mixed and Residential Land Use Development, Traffic Assessment identifies that congestion is anticipated at a number of junctions across Mildenhall town centre. These junctions should be assessed in more detail and appropriate mitigation developed.

Red Lodge: There is anticipated to be an increase in traffic at the A11 / B1085 Elms Road and A11 / B1085 Dane Hill Lane junctions in Red Lodge. These junctions should be investigated in more detail.

Lakenheath: There is anticipated to be an increase in traffic at the A1065 / B1112 junction, B1112 / Lord's Walk / Earls Field four-arm roundabout and the B1112/Eriswell Road junctions. Mitigation measures are understood to be being considered as part of the Lakenheath Cumulative Site Traffic Study.

Brandon: Generally a decrease in traffic is expected as a result of lower growth assumptions when compared to the 2009 study. No further assessment is therefore considered necessary.

Growth within neighbouring East Cambridgeshire was also considered due to potential cumulative impacts on the A142 and A14 corridors. The results of this assessment highlight the need for joint working between the two authorities to understand and develop an appropriate package of mitigation.

1. Introduction

1.1 AECOM has been commissioned by Suffolk County Council (SCC) and Forest Heath District Council (FHDC) to review and update the Transport Study (TS) named 'Forest Heath LDF Transport Impacts' compiled by AECOM in 2009.

1.2 **This Technical Note (TN) forms part of an early stage in the process to identify the potential transport impacts of the emerging proposals for the broad locations of housing provision as part of the development of the Forest Heath Local Plan.**

1.3 Following this section the remainder of this Technical Note (TN) is structured as follows:

- Section two provides background to the 2009 TS and states the need for this TN;
- Section three outlines the scope of work undertaken in this update;
- Section four discusses the broad distribution of growth to the settlements identified by FHDC;
- Section five sets out the traffic impact approach used in this TN;
- Section six provides a trip generation for each settlement and compares it to the 2009 TS;
- Section seven identifies the work undertaken to update the trip distribution;
- Section eight covers the results of the traffic impact analysis;
- Section nine contains a review of the infrastructure requirements based on the updated traffic impact analysis; and
- Section ten provides a summary and conclusion.

2. Background

2.1 The work carried out by AECOM during November 2009 concerned a review of the transport impacts of the emerging proposals for the broad locations of housing provision as part of the development of the Forest Heath Local Development Framework (LDF) - Core Strategy. The review concentrated on two main aspects, namely the way in which the developments can achieve a high level of sustainable transport connection within the overall land use pattern of the District; and the likely scale and location of specific vehicular traffic impacts on the major highway routes in the area.

2.2 The 2009 review of FHDC LDF - Core Strategy's residential land allocations concluded that the allocations were all feasible in transport terms, subject to the provision of a package of transport infrastructure and other measures.

2.3 Following the work undertaken in 2009 and the merger of St Edmundsbury District Council and FHDC a Local Plan Working Group (LPWG) meeting was held on 16 October 2014, where Members agreed that a 'combined' Single Issue Review Local Plan (SIR) and Site Allocation Local Plan (SALP) document should be prepared. A verbal update was given on 28th January 2015 to the LPWG that the SIR and SALP are to progress as separate Local Plan (LP) documents prepared in tandem. Further consultation was held between FHDC and SCC including the 'FHDC Transport Implications of the SIR and SALP' workshop held in November 2015, where five new options for distributions of growth between settlements were assessed. Towards the middle of December 2015, an option for distributions of growth between settlements was agreed upon and AECOM was requested to revisit the 2009 study to assess the transport implications of the new and revised the distributions of growth between settlements.

2.4 A draft of this report was issued to SCC in January 2016. Following comments the scope of traffic analysis was revised at the request of SCC to include the following:

- Growth occurring in East Cambridgeshire that would have an impact on the study area was included at this stage, whilst the potential impact of growth within other neighbouring authorities was not included. This task was included due to concerns about the impact of growth in East Cambridgeshire on the A142 and A14 corridors in particular;
- Include the growth anticipated in the Primary Villages (PV). In order to do this the growth assumptions for the PV's have been added to the nearest growth settlement assessed in the 2009 TS; and
- Two potential growth scenarios.

3. Scope of Work

3.1 The scope of work for this TN has been to review the housing growth assumptions used in the 2009 TS in light of the new/revised broad distribution of growth to the settlements that have been identified by FHDC originally considered in the 2009 TS.

3.2 To undertake this work AECOM has carried out an update of the trip generation derived for each growth location in the 2009 TS (Newmarket, Brandon, Mildenhall, Lakenheath, Red Lodge) to account for the changes in the allocations, revised modal split and trip distribution information from the 2011 census data and more up to date National Travel Survey (NTS) information. Unlike the 2009 study, growth within individual villages has now been considered by allocating growth to the nearest growth location that forms part of the study.

3.3 The trip distribution assumptions used to distribute the planned growth on the highway network in the 2009 TS have also been updated to take account of the results of the 2011 Census Journey to Work distribution. Due to changes in the way origin-destination data is reported in the 2011 Census the distribution has been revised from the original ward based distribution to a Middle Level Super Output Area (MSOA) scale distribution. MSOA's are larger than wards and therefore the distribution of trips will inevitably have changed slightly from that reported in the 2009 TS but the use of 2011 data is considered to be more relevant to a study undertaken in 2016 than simply relying upon 2001 data.

3.4 The revised trip generation and distribution were compiled into a series of traffic flow diagrams representing the individual growth locations (Newmarket, Brandon, Mildenhall, Lakenheath, and Red Lodge) and also as one combined diagram. A comparison was then made with the 2009 TS to compare the growth predicted in the traffic flow on the major highway routes in the District presented in the 2009 TS and the revised flows to identify where on the highway network significant changes in traffic flows are likely to occur which could result in the need to reconsider the package of mitigation required to support the growth in the Local Plan.

3.5 The infrastructure requirements identified in the 2009 TS were then reviewed in light of the revised traffic flows and further assessment undertaken as part of the Mildenhall Mixed and Residential Land Use Development, Traffic Assessment, WSP, December 2014 and Lakenheath Cumulative Site Traffic Study, AECOM, November 2015. A qualitative analysis of the ability of this previously proposed infrastructure to accommodate the impacts from the revised growth figures was then provided.

3.6 The analysis has then been fed back to SCC to review and discuss. Where significant differences in flow and new/additional infrastructure are identified AECOM have sought to highlight this with SCC for discussion. No detailed highway modelling has been undertaken as part of this study. It is recommended that moving forwards a more detailed analysis of the impacts of the proposed local plan growth is undertaken to understand in more detail the impacts and likely infrastructure requirements.

4. Broad Distribution of Growth to the Settlements

4.1 SCC and FHDC provided information on the level of growth anticipated across the District for two potential growth scenarios. It should be noted that whilst two growth scenarios have been assessed these are scenarios and do not both feature within the SIR.

4.2 **Table 1 and Table 3** provide a summary of the number of dwellings to be provided for the broad distribution of growth to the settlements for each Growth Scenario (GS). The 2009 TS focussed solely on the five main areas identified in the Spatial Strategy at the time, namely Brandon, Mildenhall, Newmarket, Lakenheath and Red Lodge. It is acknowledged that development is likely to also occur in the PVs of the District as within other villages. SCC subsequently requested that the growth for the PVs be included within the existing assessments for Mildenhall and Newmarket, representing the nearest growth locations.

4.3 **Table 2** and **Table 4** provide a summary of the number of dwellings to be provided at the broad distribution of growth to the settlements for each GS with the growth in the PVs of Exning, Kentford, Beck Row and West Row included under Mildenhall and Newmarket. The numbers include additional housing provision, existing commitments / completions (2011 – 2015) and windfalls to ensure they are comparable to those used in the 2009 TS.

4.4 Further to the above, SCC requested that growth within East Cambridgeshire be included to assess the potential impact on the A142 corridor and the A14 junction 37. Only the growth locations that would reasonably have an impact on Forest Heath were considered. The considered locations and their growth quantum as per East Cambridgeshire District Council's (ECDC) Local Plan (LP), adopted in April 2015, are listed in **Table 5**. The same methodology for quantifying growth in the remainder of this study was used and inputted as a new scenario called East Cambridgeshire (EC).

Table 1: Housing Provision for Growth Scenario One (GS1) – 2016 Technical Note

Settlement	Completions (net dwellings) 2011-2015	Existing commitments at 31st March 2015	Additional provision	Windfall	Total
Newmarket	133	155	680	-	968
Brandon	40	15	70	-	125
Mildenhall	54	123	1350	-	1527
Lakenheath	41	35	800	-	876
Red Lodge	565	139	950	-	1654

Table 2: Housing Provision for GS1 plus PV – 2016 Technical Note

Settlement	Completions (net dwellings) 2011-2015	Existing commitments at 31st March 2015	Additional provision	Windfall	Totals
Newmarket	133	155	680	-	1628
Exning	*20*	*135*	*217*	-	
Kentford	*38*	*82*	*168*	-	
Brandon	40	15	70	-	125
Mildenhall	54	123	1350	-	2151
Beck Row	*165*	*21*	*261*	-	
West Row	*26*	*48*	*104*	-	
Lakenheath	41	35	800	-	876
Red Lodge	565	139	950	-	1654

Table 3: Housing Provision for Growth Scenario Two (GS2) – 2016 Technical Note

Settlement	Completions (net dwellings) 2011-2015	Existing commitments at 31st March 2015	Additional provision	Windfall	Total
Newmarket	133	155	1080	-	1368
Brandon	40	15	70	-	125
Mildenhall	54	123	1150	-	1327
Lakenheath	41	35	800	-	876
Red Lodge	565	139	850	-	1554

Table 4: Housing Provision for GS2 plus PV – 2016 Technical Note

Settlement	Completions (net dwellings) 2011-2015	Existing commitments at 31st March 2015	Additional provision	Windfall	Total
Newmarket	133	155	1080	-	1977
Exning	*20*	*135*	*334**	-	
Kentford	*38*	*82*		-	
Brandon	40	15	70	-	125
Mildenhall	54	123	1150	-	1903
Beck Row	*165*	*21*	*316**	-	
West Row	*26*	*48*		-	
Lakenheath	41	35	800	-	876
Red Lodge	565	139	850	-	1554

**these are indicative figures for the purpose of assessing this scenario*

Table 5: East Cambridgeshire Locations and Growth Quantum (ECDC's LP, adopted April 2015)

Settlement	Estimated New Dwellings 2013-2031
Burwell	350
Ely	3948
Fordham	129
Littleport	1346
Soham	2030

4.5 **Table 6** shows the difference in the number of dwellings used in the 2009 TS and in the assessment that underpins this TN.

Table 6: Comparison of Housing Provision 2009 to 2016

Settlement	Additional Allocation TS (2009)	Additional Allocation TN (2016)		Difference	
		GS1	GS2	GS1	GS2
Newmarket	1640	680	1080	**-960**	**-560**
Newmarket plus PV	-	*1629*	*1977*	***-11***	***+337***
Brandon	760	70	70	**-690**	**-690**
Mildenhall	1330	1350	1150	**+20**	**-180**
Mildenhall plus PV	-	*2151*	*1903*	***+821***	***+573***
Lakenheath	600	800	800	**+200**	**+200**
Red Lodge	1200	950	850	**-250**	**-350**

5. Traffic Impact Approach

5.1 To enable a comparison with the 2009 TS the methodology used in this TN has been aligned with the methodology used in the 2009 TS and therefore follows the same traffic impact approach used in the 2009 TS. As a summary, the process followed to derive the likely traffic volumes anticipated to be generated by each growth location for each growth scenario identified in **Tables 1** to **4** was as follows:

- The 2001 ward level Census journey to work modal split information has been updated with 2011 Census journey to work data for the MSOA considered to most closely align to the wards used for each settlement in the 2009 TS to establish a new baseline for the modal split of each settlement for work based journeys;
- Population and household information from the 2011 Census were used for each of the growth locations and combined with NTS 2014 data used to provide an overall level of vehicle trip generation for the proposed additional housing growth; and
- Trip distribution information was updated to use 2011 Census journey to work origin-destination information at an MSOA level.

5.2 As identified in Section 2 of this report the 2009 TS used ward level data from the 2001 census to distribute trips. The 2011 census does not include origin-destination data at this spatial scale and therefore MSOAs have been used. Each settlement was matched with its closest MSOA in order to obtain distribution information that could be considered representative of the predicted travel patterns for that area. The representative MSOAs used have been compared to the 2001 wards from the 2009 TS and shown in **Table 7**.

Table 7: MSOAs used to represent the wards used in the 2009 TS

Area	Ward	MSOA
Newmarket	Severals (sic)	Forest Heath 006 and 008
Brandon	Brandon East Brandon West	Forest Heath 001
Mildenhall	Great Heath Market	Forest Heath 003 and 004
Lakenheath	Lakenheath	Forest Heath 002
Red Lodge	Red Lodge	Forest Heath 005

5.3 A similar exercise was undertaken for the growth locations in EC to enable the impacts of development in this neighbouring District to be considered. **Table 8** shows the MSOAs that were used to represent the major growth locations in EC.

Table 8: Growth Locations and MSOAs used for East Cambridgeshire

Area	MSOA
Burwell	East Cambridgeshire 008
Ely	East Cambridgeshire 003 + 004
Fordham	East Cambridgeshire 007
Littleport	East Cambridgeshire 001
Soham	East Cambridgeshire 006

5.4 As per the 2009 TS, using the updated trip generation and distribution the traffic impact on the following key junctions was analysed for each of the settlements separately and then cumulatively:

- A14 / A142 Fordham Road (A14 junction 37);
- A14 / A11 / A1304 Bury Road (A14 junction 38);
- A11 / A1101 Mildenhall Road / A1065 Brandon Road / A1101 Bury Road (A11 Fiveways);
- A1304 High Street / Exeter Road / A142 / A1304 Bury Road / B1063 (Clocktower roundabout, Newmarket);
- A1101 Kingsway / A1101 North Terrace / B1102 High Street (Mildenhall);
- A1065 London Road / A1065 High Street / B1107 Thetford Road (Brandon);
- B1107 Thetford Road / B1107 Beavor Lane / Lode Street (Brandon);
- A11/ B1085 Dane Hill Lane (Red Lodge); and
- A11/ B1085 Elms Road (Red Lodge).

5.5 For all areas, the traffic has been distributed onto the network so that the change in traffic volumes at the relevant nearby junctions can be seen.

6. Trip Generation

6.1 The trip generation methodology used in the 2009 TS was followed and fully updated as described in Section 2 above.

6.2 The resultant trip rates calculated for each of the five growth locations (plus the considered growth locations in EC) have been compared to those derived in the 2009 TS and are shown in **Table 9**.

Table 9: Vehicle Trip Rate for each Growth Location (trips per hour per dwelling)

Area	TS (2009)						TN (2016)					
	AM			PM			AM			PM		
	Arr	Dep	Total	Arr	Dep	Total	Arr	Dep	Total	Arr	Dep	Total
Newmarket	0.12	0.46	0.58	0.30	0.19	0.49	0.11	0.41	0.52	0.27	0.17	0.44
Brandon	0.12	0.46	0.58	0.30	0.19	0.49	0.12	0.45	0.57	0.30	0.19	0.49
Mildenhall	0.13	0.49	0.62	0.32	0.20	0.53	0.13	0.50	0.63	0.33	0.21	0.54
Lakenheath	0.14	0.52	0.65	0.34	0.22	0.56	0.13	0.49	0.62	0.33	0.21	0.54
Red Lodge	0.14	0.53	0.67	0.35	0.22	0.57	0.13	0.50	0.63	0.34	0.21	0.55
Burwell	-	-	-	-	-	-	0.13	0.49	0.62	0.33	0.21	0.54
Ely	-	-	-	-	-	-	0.11	0.44	0.55	0.29	0.18	0.47
Fordham	-	-	-	-	-	-	0.13	0.51	0.64	0.34	0.21	0.55
Littleport	-	-	-	-	-	-	0.13	0.48	0.61	0.32	0.20	0.52
Soham	-	-	-	-	-	-	0.13	0.50	0.63	0.33	0.21	0.54

6.3 From **Table 9** it can be seen that the trip rates have remained broadly comparable to the 2009 TS following the update of the data that was used to underpin the assessment.

6.4 The vehicle trip rates shown in Table 9 have been combined with the number of dwellings per settlement (see Table 1 to Table 4) to provide an updated trip generation for each settlement. Table 10 provides a comparison of the vehicle trip generation used in the 2009 TS and this TN for GS1 and Table 11 for GS2.

Table 10: Vehicle Trip Generation per Settlement (vehicle trips per hour) - GS1

Area	TS (2009)						TN (2016)					
	AM			PM			AM			PM		
	Arr	Dep	Total	Arr	Dep	Total	Arr	Dep	Total	Arr	Dep	Total
Newmarket	197	752	949	495	311	806	104	398	501	262	165	426
Newmarket plus PV	-	-	-	-	-	-	*175*	*669*	*844*	*440*	*277*	*717*
Brandon	89	341	430	226	142	368	15	56	71	37	23	61
Mildenhall	171	655	826	432	272	704	199	761	960	508	320	828
Mildenhall plus PV	-	-	-	-	-	-	*280*	*1073*	*1353*	*716*	*450*	*1166*
Lakenheath	103	395	498	262	165	427	113	433	546	290	182	472
Red Lodge	166	634	800	422	265	687	216	827	1043	554	349	903

Table 11: Vehicle Trip Generation per Settlement (vehicle trips per hour) – GS2

Area	TS (2009)						TN (2016)					
	AM			PM			AM			PM		
	Arr	Dep	Total	Arr	Dep	Total	Arr	Dep	Total	Arr	Dep	Total
Newmarket	197	752	949	495	311	806	147	562	709	370	232	602
Newmarket plus PV	-	-	-	-	-	-	*212*	*812*	*1024*	*534*	*336*	*870*
Brandon	89	341	430	226	142	368	15	56	71	37	23	61
Mildenhall	171	655	826	432	272	704	173	662	835	442	278	719
Mildenhall plus PV	-	-	-	-	-	-	*248*	*949*	*1197*	*633*	*398*	*1031*
Lakenheath	103	395	498	262	165	427	113	433	546	290	182	472
Red Lodge	166	634	800	422	265	687	203	777	980	521	328	848

6.5 **Table 10** and **Table 11** above show that the trip generation remains broadly comparable with minor differences between the 2009 TS and TN largely related to changes in the level of growth anticipated.

6.6 The vehicle trip rates shown in **Table 9** have also been combined with the number of dwellings per settlement (**Table 5**) to provide a trip generation for each considered growth location in EC. **Table 12** reflects the gross trip generation per settlement, however not all of these trips will pass through the study area. **Table 13** below outlines the percentage of traffic from each of the EC growth locations that have been estimated to pass through the study area based upon a Census journey to work origin-destination analysis.

Table 12: Gross Vehicle Trip Generation per Settlement (vehicle trips per hour) - EC

Area	Trip Generation (2016)					
	AM			PM		
	Arr	Dep	Total	Arr	Dep	Total
Burwell	45	173	218	115	73	188
Ely	454	1737	2191	1142	718	1860
Fordham	17	65	82	44	27	71
Littleport	171	653	823	433	272	706
Soham	266	1018	1284	678	426	1104

Table 13: Percentage of EC Trips Estimated to Pass Through Study Area

Growth Location	Trips estimated to pass through study area	Trip Generation (2016)					
		AM			PM		
		Arr	Dep	Total	Arr	Dep	Total
Burwell	29%	13	51	64	34	21	55
Ely	25%	116	443	558	291	183	474
Fordham	52%	9	33	42	22	14	36
Littleport	33%	56	214	270	142	89	232
Soham	62%	161	617	779	411	259	670

6.7 The individual trip generation for each settlement can be found in **Appendix A**.

7. Trip Distribution

7.1 AECOM distributed the traffic generated by the potential sites onto the road network based on 2011 Census journey to work origin-destination data. Whilst the origin and destinations have been updated to reflect MSOA level data the origin of the trip on the traffic flow diagram has remained the same as that used in the 2009 TS. **Table 14** compares and summarises the trip distribution assumptions made for the 2009 TS and this TN.

Table 14: Distribution of Vehicle Trips per Area

Direction	Study	Newmarket	Brandon	Mildenhall	Lakenheath	Red Lodge
North	**TN (2009)**	20.96%	11.98%	31.58%	15.78%	23.37%
	TS (2016)	19.63%	12.04%	23.43%	10.00%	29.35%
South	**TN (2009)**	7.81%	26.09%	7.57%	8.95%	38.31%
	TS (2016)	7.99%	30.08%	12.47%	12.71%	47.03%
East	**TN (2009)**	4.62%	16.49%	8.95%	8.79%	1.50%
	TS (2016)	4.84%	18.20%	10.38%	9.38%	2.92%
West	**TN (2009)**	15.95%	5.02%	5.52%	14.38%	13.34%
	TS (2016)	22.10%	7.38%	10.00%	22.81%	12.70%
Central (Internalised Trips)	**TN (2009)**	50.66%	40.42%	46.38%	52.10%	23.47%
	TS (2016)	45.43%	32.30%	43.71%	45.10%	8.00%

7.2 From **Table 14** it can be seen that the trip distribution has remained broadly comparable to the 2009 TS, the only significant difference is found in the Red Lodge figure. It is likely that this is down to the areas used in the analysis changing as a result of moving to MSOA data instead of ward level data.

8. Results of Analysis

8.1 **Table 15** identifies the main pressures resulting from each growth area and then considers the impact of the SIR and SALP growth aspirations over the whole District. It should be noted that the trip rates and subsequent trip generation used are a high level estimate only.

Table 15: Traffic Impact Comparison to 2009 TS – per Settlement

Housing Allocation Area	Growth Scenario 1	Growth Scenario 2
Newmarket	The analysis shows that the overall impact on the A14/A142 junction north of Newmarket, will be significantly less when compared to the results obtained in the 2009 TS. This is due to the lower additional housing allocation proposed in Newmarket. In Newmarket itself the level of traffic anticipated will reduce when compared to the 2009 TS.	The analysis shows that there will be a modest increase in flow at the A14/A142 junction north of Newmarket, when compared to the results obtained in the 2009 TS. For GS2 a higher number of housing is proposed in Newmarket and therefore it is anticipated that there will be an increase in traffic within the town.
Newmarket + PV	The analysis shows that at the A14/A142 junction eastbound traffic from Newmarket and traffic originating in the east traveling towards Newmarket will be less when compared to the 2009 TS. There will be an increase in all other traffic to and from Newmarket at the A14/A142 junction.	The analysis shows that there will be an increase in all traffic to and from Newmarket at the A14/A142 junction.
Brandon	The updated housing allocation for Brandon is significantly less when compared to the 2009 TS. There is therefore less impact on the highway network surrounding Brandon than previously reported.	The updated housing allocation for Brandon is significantly less when compared to the 2009 TS. There is therefore less impact on the highway network surrounding Brandon than previously reported.
Mildenhall	The traffic generated in Mildenhall, due to the increased housing allocation will increase flows in the town, especially at the A1101/B1102/Queensway roundabout junction which is understood to already be a busy roundabout and at the A11 Fiveways junction. Traffic flows are expected to increase between 165 and 147 trips during the AM and PM peaks at the A1101/B1102/Queensway roundabout junction when compared to the 2009 TS analysis.	The additional housing provision for Mildenhall in GS2 is 180 units less than for GS1. With this lower housing provision for GS 2, traffic flows are expected to increase between 86 and 78 during the AM and PM peak at the A1101/B1102/Queensway roundabout junction when compared to the 2009 TS analysis.
Mildenhall + PV	When including the growth of West Row and Beck Row (PV) to the growth in Mildenhall, the expected impact increases substantively. Flows in the town will greatly increase, especially at the A1101/B1102/Queensway roundabout junction which is understood to already be a busy roundabout and at the A11 Fiveways junction. Traffic flows are expected increase between 415 and 361 trips during the AM and PM peak at the A1101/B1102/Queensway roundabout junction when compared to the 2009 TS analysis.	The increase in housing allocated to Mildenhall in GS2 is less than in GS1. As such traffic flows are not expected to increase as significantly. For instance traffic flows are expected to increase between 315 and 276 during the AM and PM peak when compared to the 2009 TS analysis.
Lakenheath	The additional development in Lakenheath is likely to have an impact at the B1112/A1065 junction as well as the A11 Fiveways junction. Traffic flows at the A1065/B1112 junction are expected to increase between 85 and 74 trips higher during the AM and PM peak hours, respectively when compared to the 2009 TS.	The impacts are likely to be the same as for GS 1 as the level of growth remains the same.
Red Lodge	The traffic generated in Red Lodge, due to the increased housing allocation will increase flows around this settlement, especially at the B1085/A11 junction and it's on-/off-slips with the A11 and to a lesser extent at the A11 Fiveways	The additional housing provision for Red Lodge in GS2 is 100 units less than for GS1. The traffic generated in Red Lodge will still increase flows in the town, especially at the B1085/A11junction and its on-/off-slips with the

Housing Allocation Area	Growth Scenario 1	Growth Scenario 2
	junction as the traffic towards Mildenhall is expected to increase. During the AM peak hour traffic flows towards the A14 westbound are expected to be 151 trips higher at the A11/A14 junction and 103 trips higher during the PM peak, for traffic returning to Red Lodge, when compared to the 2009 TS analysis.	A11 and to a lesser extent at the A11 Fiveways junction as the traffic towards Mildenhall is expected to increase. With this lower housing provision for GS 2, traffic flows are expected to be 126 vehicles higher towards the A14 westbound and 86 trips higher during the PM peak, for traffic returning to Red Lodge, when compared to the 2009 TS analysis.

8.2 If we consider the overall impact of the SALP housing allocations, **Table 16** below provides a summary of likely impacts per growth scenario for the AM and PM peak periods at each junction when compared to the 2009 TS. The following thresholds have been applied to derive the likely impacts resulting from the scenarios:

- 0-29 additional vehicle trips at a junction represents no material change in traffic flow;
- 30-100 additional vehicle trips at a junction represent a potential small increase in traffic that may have a material impact; and
- More than 100 vehicle trips at a junction represent a moderate to high increase in traffic that could have a material impact.

Table 16: Traffic Impact Comparison to 2009 TS – All Scenarios

Junction	GS1	GS2	GS1+PV	GS2+PV	GS1+EC	GS2+EC	GS1+PV+EC	GS2+PV+EC
A14 / A142 Fordham Road (A14 junction 37)	no material change in traffic flow	potential small increase in traffic that may have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact
A14 / A11 / A1304 Bury Road (A14 junction 38)	potential small increase in traffic that may have a material impact	potential small increase in traffic that may have a material impact	potential small increase in traffic that may have a material impact	potential small increase in traffic that may have a material impact	potential small increase in traffic that may have a material impact	potential small increase in traffic that may have a material impact	potential small increase in traffic that may have a material impact	potential small increase in traffic that may have a material impact
A11 / A1101 Mildenhall Road / A1065 Brandon Road / A1101 Bury Road (A11 Fiveways)	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact
A1304 High Street / Exeter Road / A142 / A1304 Bury Road / B1063 (Clocktower roundabout, Newmarket)	potential small increase in traffic that may have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact
A1101 Kingsway / A1101 North Terrace / B1102 High Street (Mildenhall)	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact
A1065 London Road / A1065 High Street / B1107 Thetford Road (Brandon)	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow
B1107 Thetford Road / B1107 Beavor Lane / Lode Street (Brandon)	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow	no material change in traffic flow
A11 / B1085 Dane Hill Lane (Red Lodge)	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact
A11/ B1085 Elms Road (Red Lodge)	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact
A1065 / B1112 (Lakenheath)	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact	moderate to high increase in traffic that could have a material impact

8.3 In **Table 16** above, at the grade-separated A14 / A142 Fordham Road junction (A14 junction 37) the highest increase in traffic is expected to be on the A14 and will therefore not affect the on-/off slips at this junction for GS1.

8.4 The on-/off slips at the grade-separated A14 / A11 / A1304 Bury Road junction (A14 junction 38) are not expected to be greatly affected by the increase in traffic at this junction.

8.5 An increase in traffic is expected in all scenarios at the Newmarket Clocktower junction. This increase is expected to be material in all but the GS1 scenario.

8.6 When compared to the 2009 TS, there will be a significant increase in traffic to and from Mildenhall, passing through the Fiveways roundabout junction.

8.7 It is expected that there will be a material impact at the A1101 Kingsway / A1101 North Terrace / B1102 High Street junction in Mildenhall.

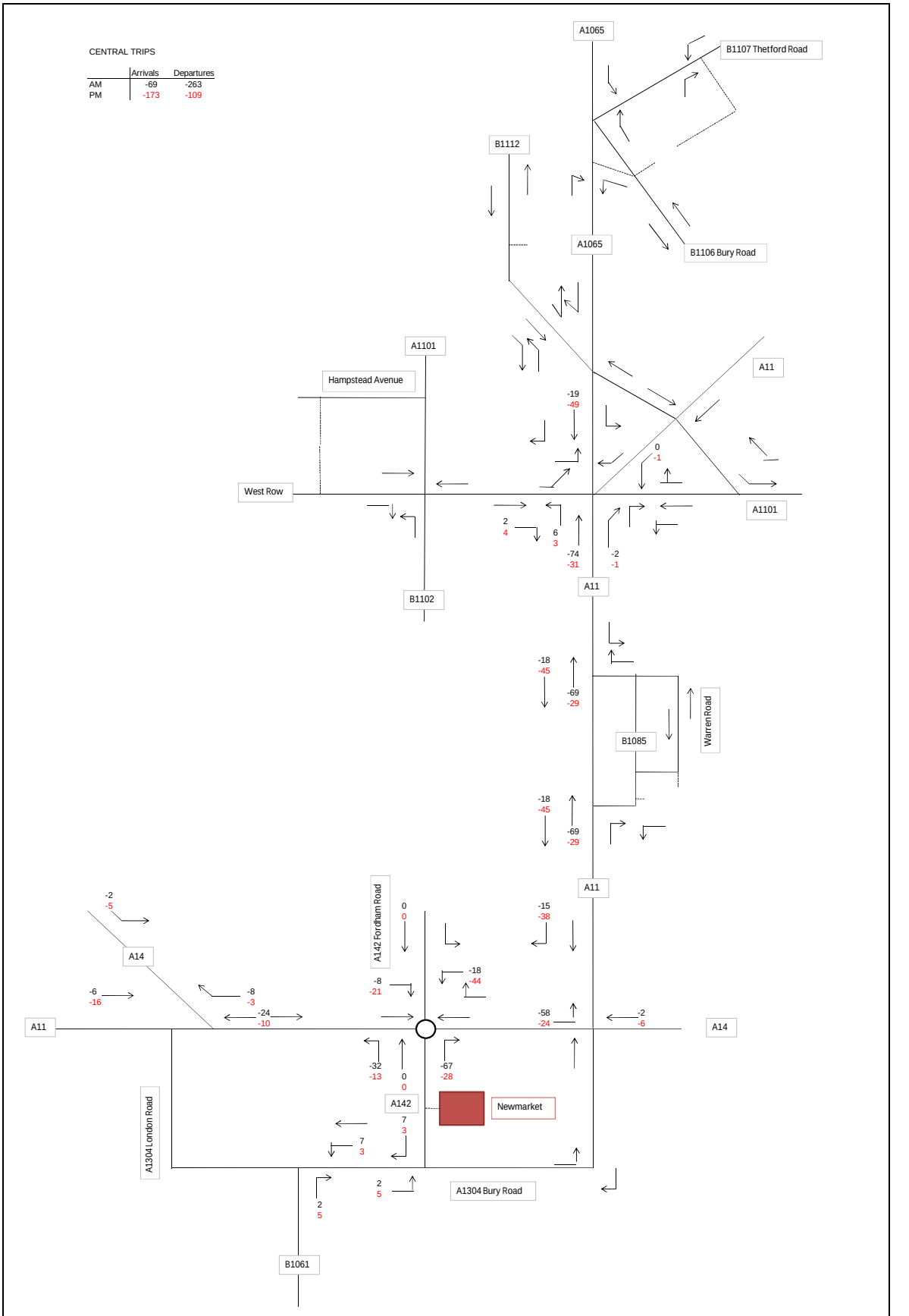
8.8 The updated housing allocation for Brandon is significantly less when compared to the 2009 TS. The A1065 London Road / A1065 High Street / B1107 Thetford Road and B1107 Thetford Road / B1107 Beavor Lane / Lode Street junctions in Brandon are therefore not expected to experience any material impact when compared to the 2009 TS.

8.9 There is a potential material impact at the A11 / B1085 Elms Road and A11 / B1085 Dane Hill Lane junctions in Red Lodge.

8.10 Traffic impacts at the A1065 / B1112 junction are expected to come from an increase in traffic traveling to and from Lakenheath.

8.11 **Figure 1** and **2** below provide a comparison in vehicle trips between the 2009 TS and the 2016 TN for GS1 and GS2; in **Figure 3** and **4** the PVs are included in Newmarket and Mildenhall and in **Figure 5** to **Figure 8** the growth in East Cambridgeshire are included for each GS and compared to the 2009 TS.

8.12 The traffic flows distributed across the highway network for each settlement can be found in **Appendix B**.

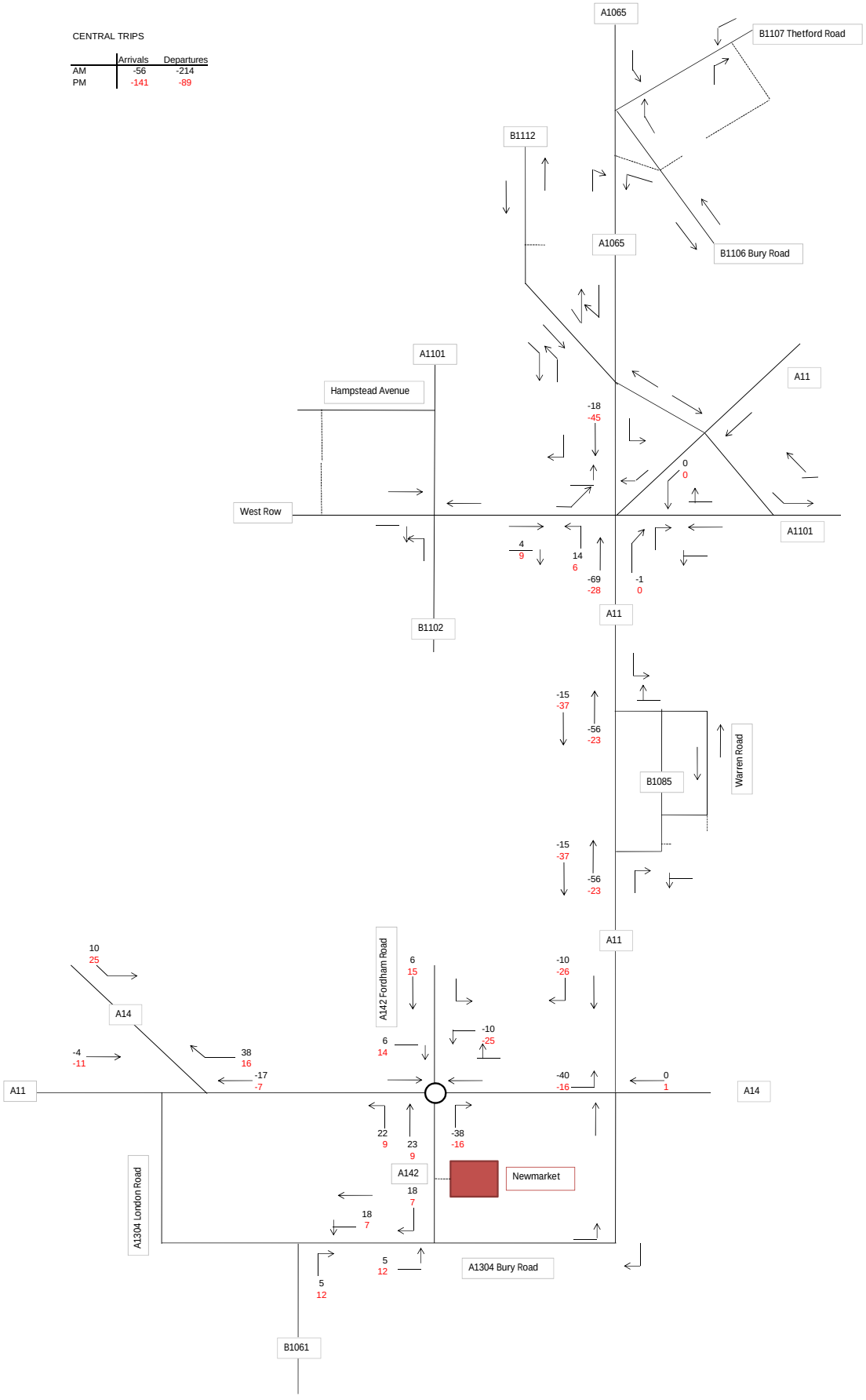


Newmarket - Trip Distribution Comparison between TS (2009) and TN (2016)

Growth Scenario 1	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Mar-16

CENTRAL TRIPS

	Arrivals	Departures
AM	-56	-214
PM	-141	-89

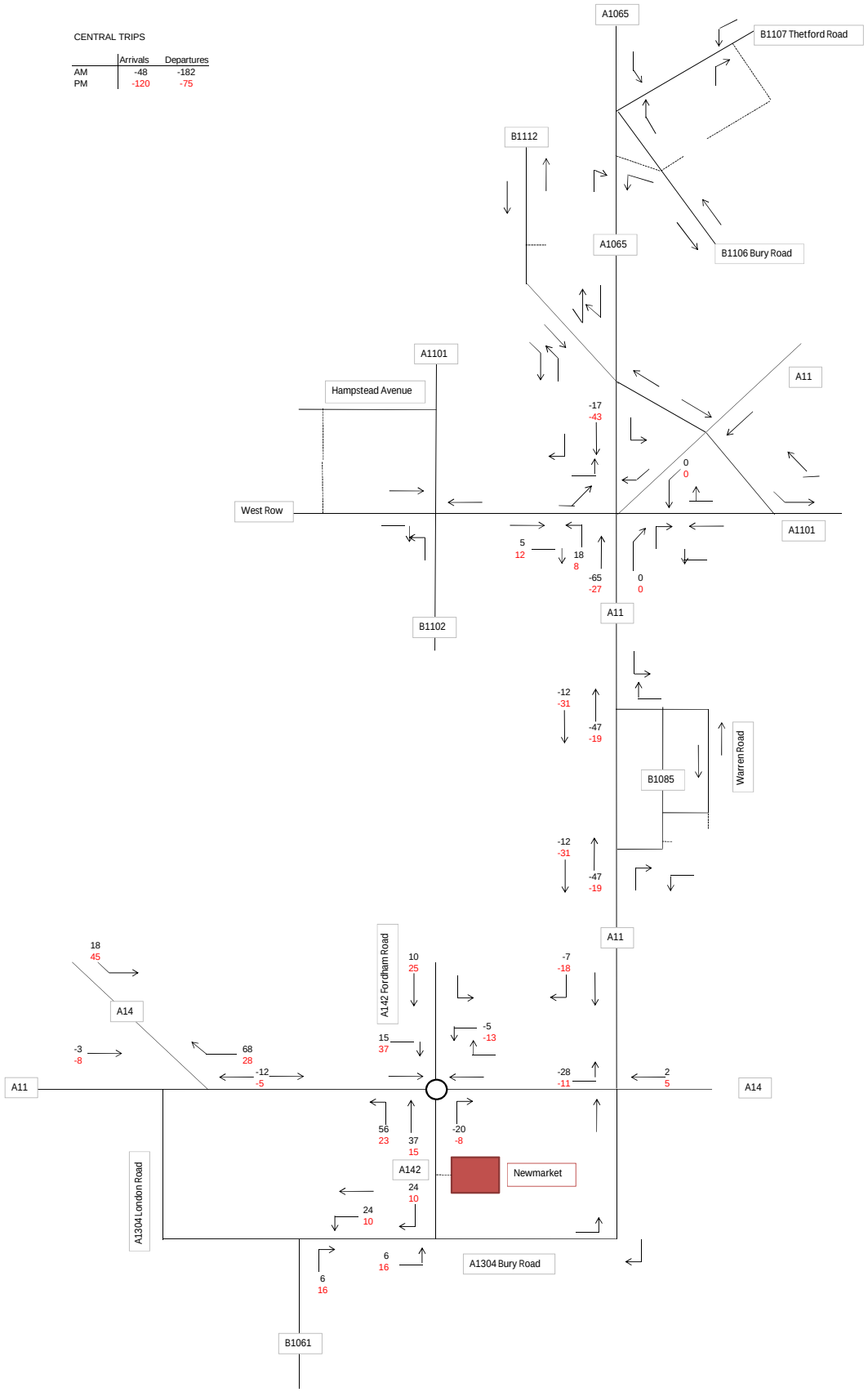


Newmarket Trip Distribution Comparison between TS (2009) and TN (2016)

Growth Scenario 2	Made by: CT Checked by: LL Approved by: JS Date: Mar-16

CENTRAL TRIPS

	Arrivals	Departures
AM	-48	-182
PM	-120	-75

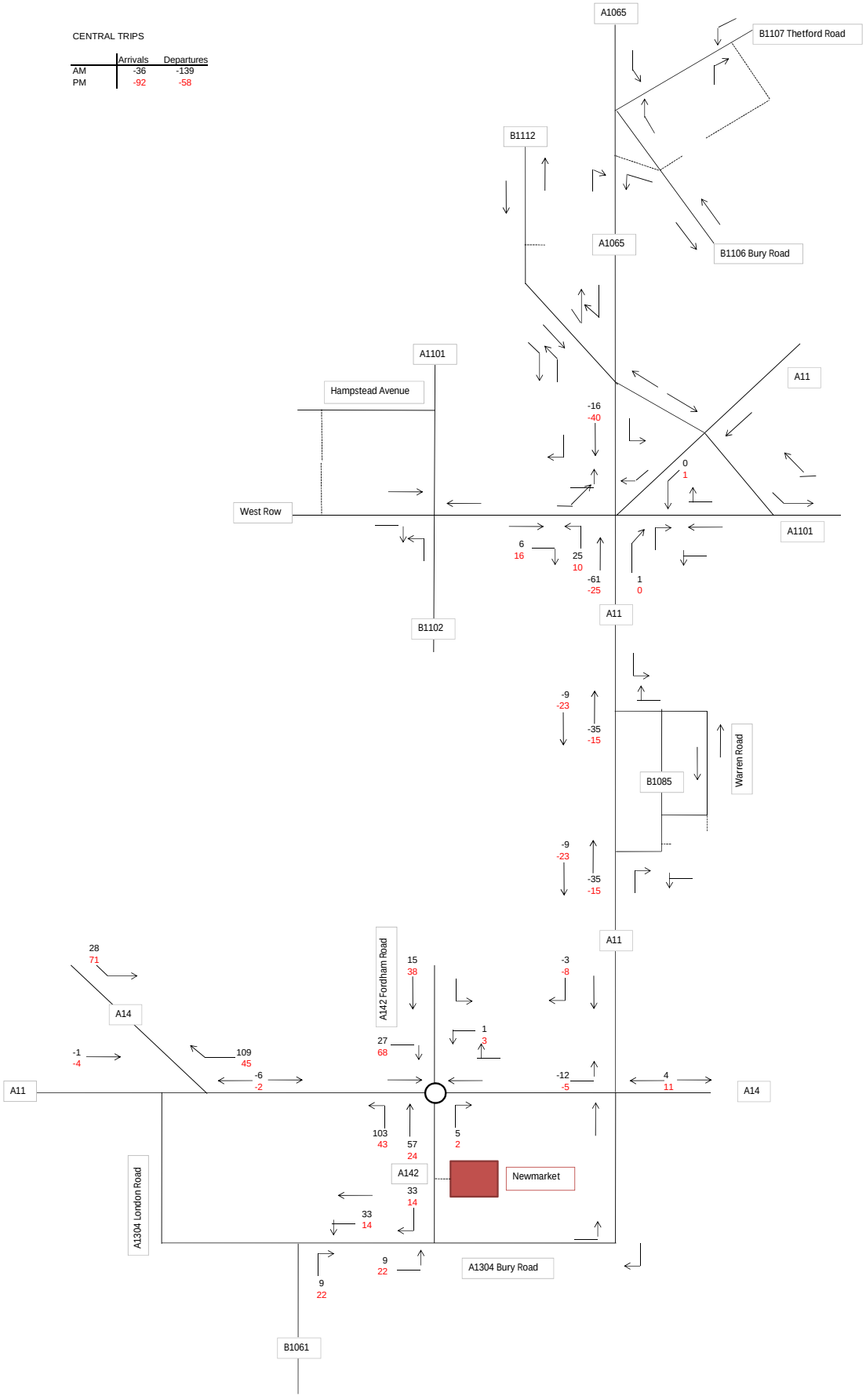


Newmarket Trip Distribution Comparison between TS (2009) and TN (2016)

Growth Scenario 1 plus Primary Villages	Made by: CT Checked by: LL Approved by: JS Date: Mar-16

CENTRAL TRIPS

	Arrivals	Departures
AM	-36	-139
PM	-92	-58

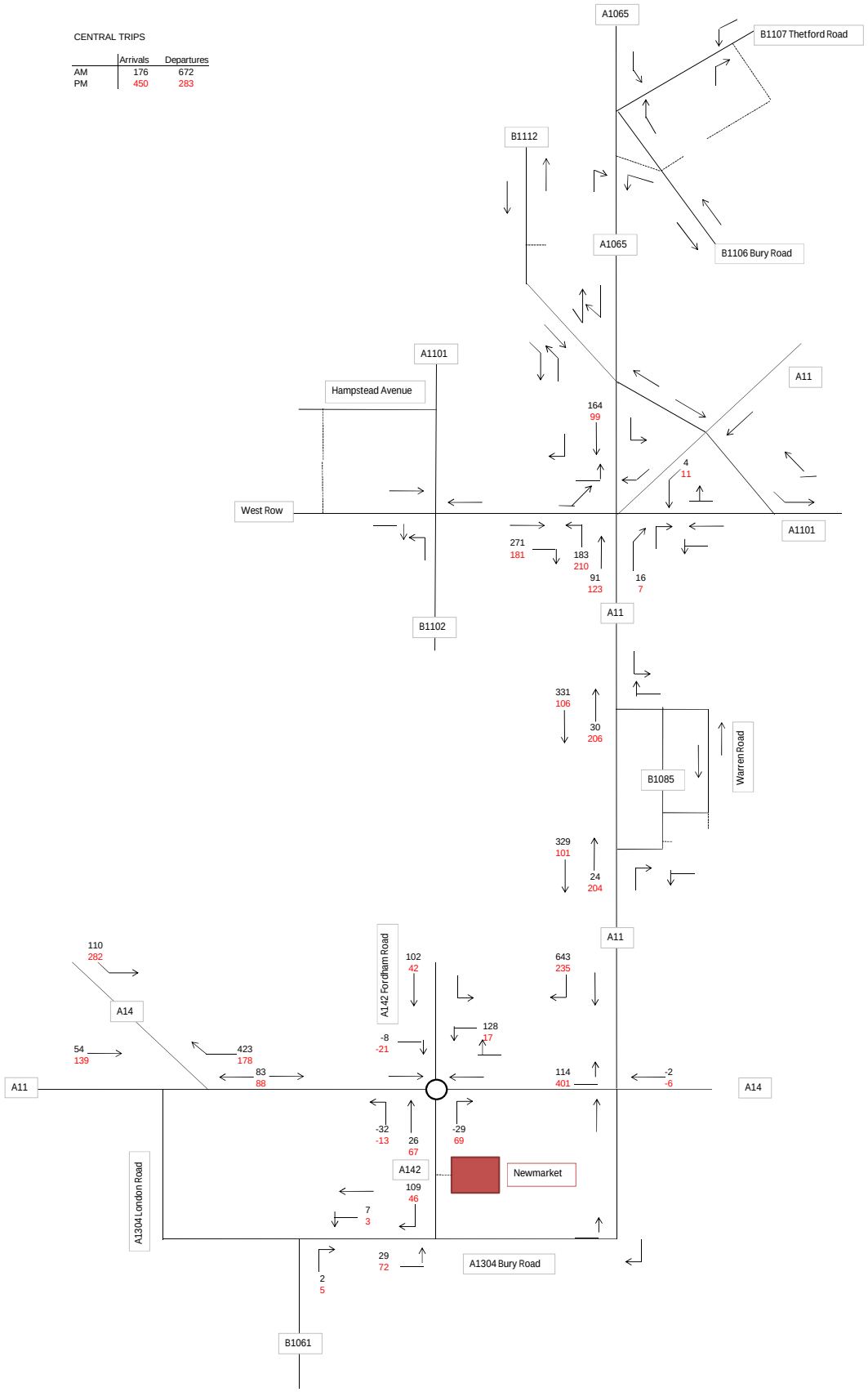


Newmarket Trip Distribution Comparison between TS (2009) and TN (2016)

Growth Scenario 2 plus Primary Villages	Made by: CT Checked by: LL	Approved by: JS Date: Jan-16	

CENTRAL TRIPS

	Arrivals	Departures
AM	176	672
PM	450	283

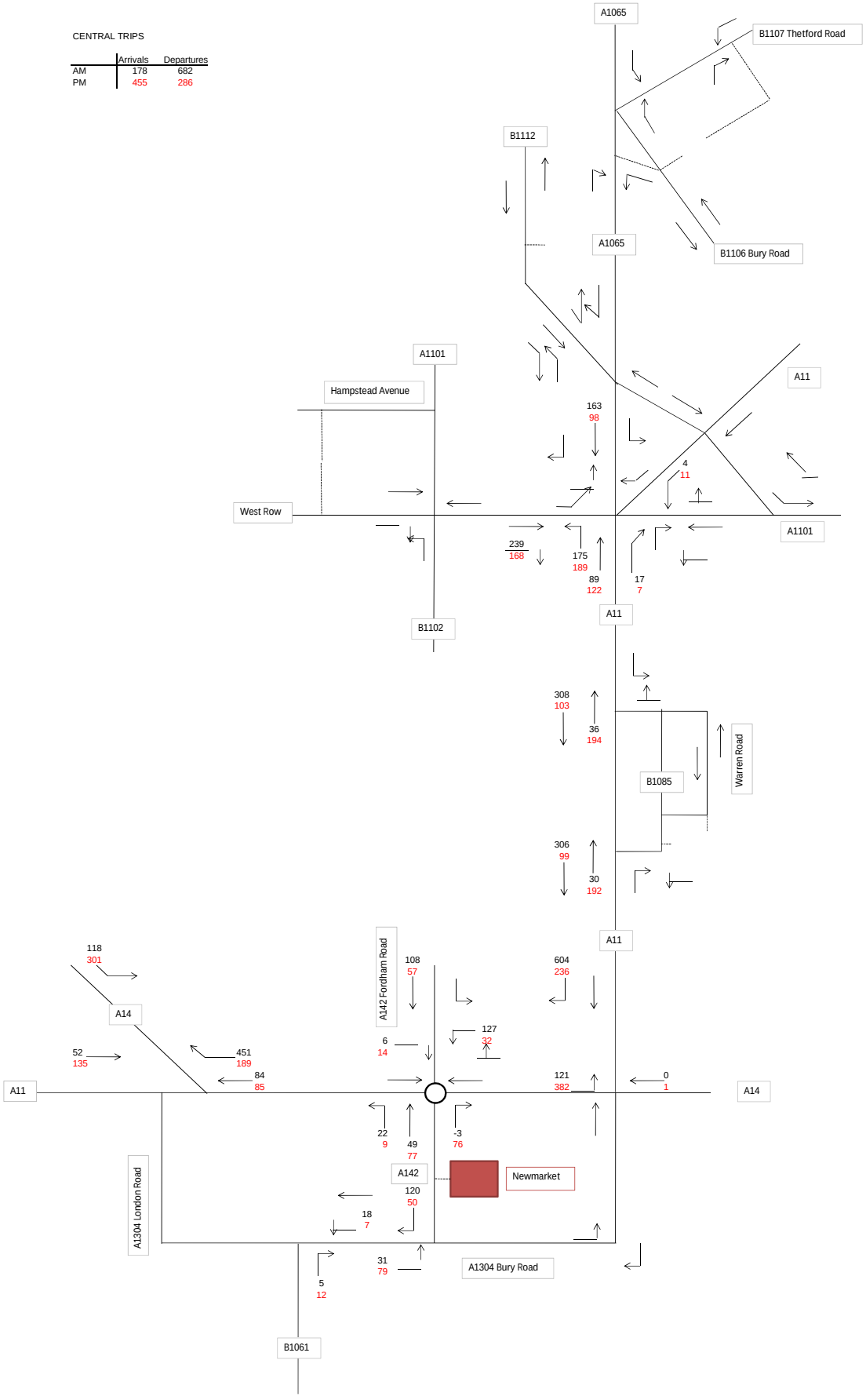


Newmarket - Trip Distribution Comparison between TS (2009) and TN (2016)

Growth Scenario 1+EC	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Mar-16

CENTRAL TRIPS

	Arrivals	Departures
AM	178	682
PM	455	286

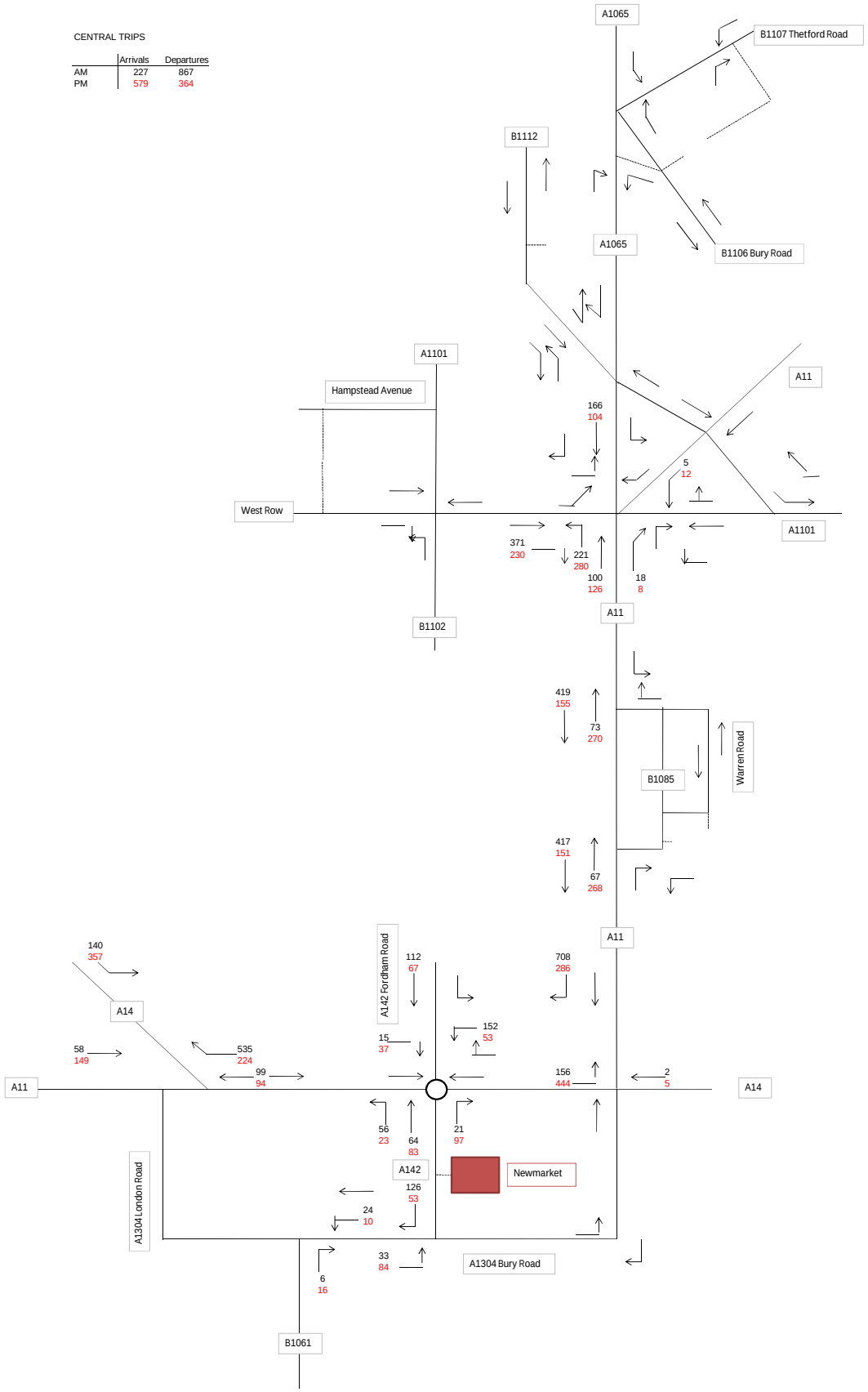


Newmarket Trip Distribution Comparison between TS (2009) and TN (2016)

Growth Scenario 2+EC	Made by: CT	Approved by: JS	
	Checked by: LL	Date: Mar-16	

CENTRAL TRIPS

	Arrivals	Departures
AM	227	867
PM	579	364

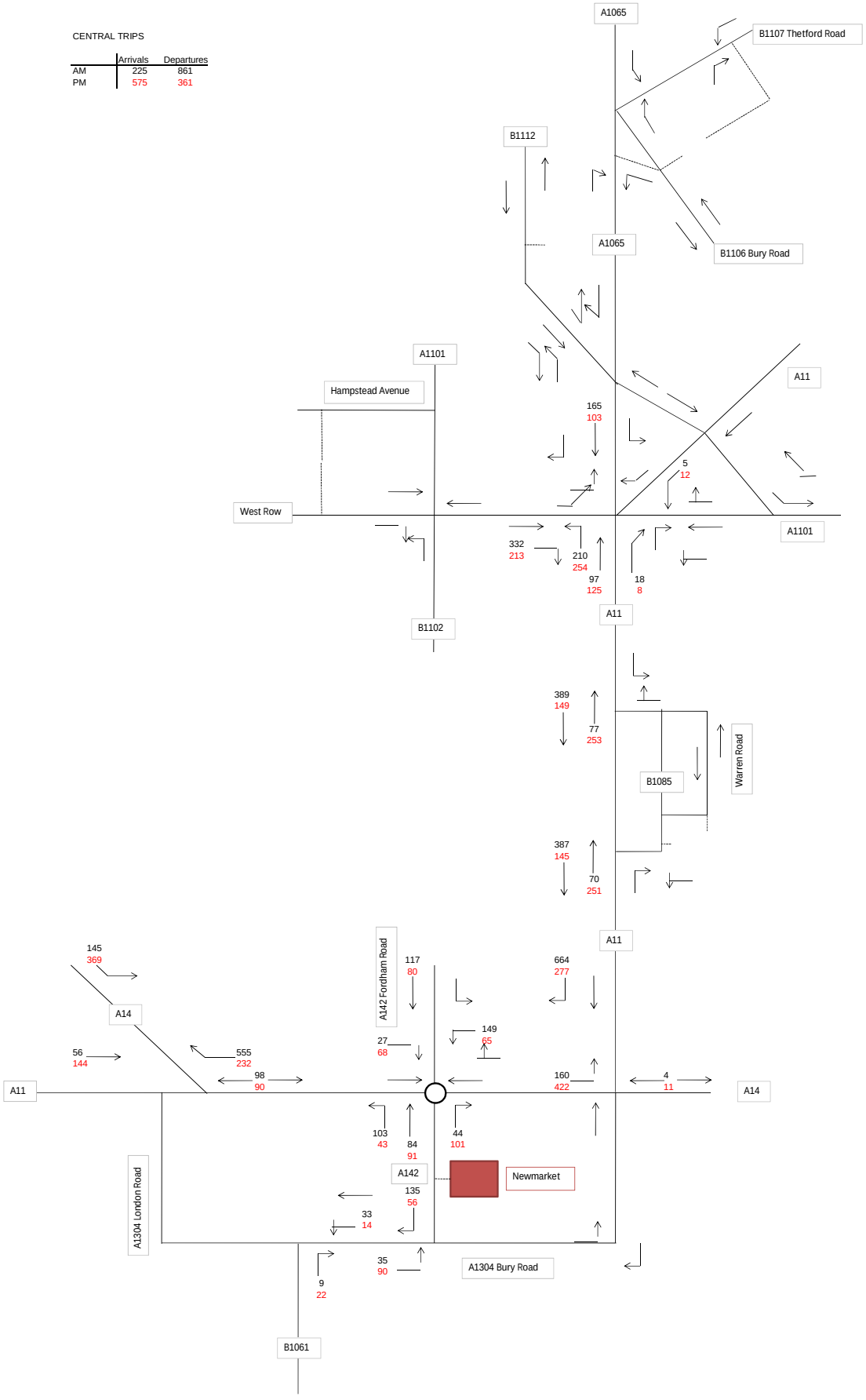


Newmarket Trip Distribution Comparison between TS (2009) and TN (2016)

Growth Scenario 1+PV+EC	Made by: CT Checked by: LL	Approved by: JS Date: Mar-16	

CENTRAL TRIPS

	Arrivals	Departures
AM	225	861
PM	575	361



Newmarket Trip Distribution Comparison between TS (2009) and TN (2016)

Growth Scenario 2+PV+EC	Made by: CT	Approved by: JS	
	Checked by: LL	Date: Jan-16	

9. Infrastructure Requirements

9.1 This section provides a review of the transport infrastructure identified in the 2009 TS and then qualitatively assesses whether the change in traffic flows anticipated (for each growth scenario) would generate a need for new/additional infrastructure requirements across the highway network. It should be noted that unlike the 2009 TS we have not considered the impacts of the allocations on walking, cycling and public transport as this TN is an update to the Highway Assessment section of the 2009 TS only and further more detailed assessment will be undertaken in due course. The assumptions regarding requirements for infrastructure associated with non-highway modes is therefore not changed from the 2009 study.

9.2 **Table 17** to **Table 20** review the infrastructure improvements identified in the 2009 TS against the revised trip generation and distributions discussed in section 6 and 7 of this TN.

Newmarket

Table 17: Newmarket – Infrastructure Requirements – All Scenarios

	Proposed Infrastructure (2009 TS)	Requirement Identified in 2016 TN
Connection assumption	Developer is expected to improve the A142 as part of the area access, and provide two exits from the residential area, to co-ordinate with bus access and potentially control vehicle egress.	The 2009 TS recommendation remains valid.
Internal trip assumption	The area lies close to the Newmarket town centre, and so no particular mixed use arrangements are needed.	The 2009 TS recommendation remains valid.
Smarter Choices campaign	Targeted information for new dwellings and schools, co-ordinated with new bus services and cycle routes.	The 2009 TS recommendation remains valid.
Walk/cycle links to neighbouring communities and the town centre	Opportunistic improvements to existing walk and cycle networks, including Pelican / Pegasus crossings, and development of the walk and cycle routes using Snailwell Road.	The 2009 TS recommendation remains valid.
Bus service enhancement	Extension and reinforcement of the current routes to provide a high frequency urban service link to the centre of Newmarket and the rail station.	The 2009 TS recommendation remains valid.
Traffic management measures	Bus priority facilities and traffic management along the A142 into the centre of Newmarket.	The 2009 TS recommendation remains valid.
New road infrastructure	May be some requirement for management at the A142/A14 junction.	Improvements may be required at the A142/A14 junction (junction 37) as a result of GS1+PV, GS2+PV, GS1+PV+EC and GS2+PV+EC. Improvements may be to be required at the A1304 High Street / Exeter Road / A142 / A1304 Bury Road / B1063 (Clocktower roundabout, Newmarket) as a result of all scenarios assessed.

9.3 In addition to the infrastructure identified above the Hatchfield Farm application (DC/13/0408/OUT) proposes an improvement scheme to the A14/A142 (junction 37) in the form of signalising the two A14 off slip road junctions with the A142.

9.4 Further traffic management measures were identified in the 2009 TS that may relieve existing traffic conditions within Newmarket. These are considered to remain valid and are listed below:

- Signalisation of the Studlands Park avenue junction with the B1103 Exning Road. Bus priority could also be provided at thus junction.
- Signalisation of the B1103 Mill Hill/ Rowley Drive junction.

9.5 Other improvements to the local transport network proposed in the Hatchfield Farm application (DC/13/0408/OUT) include the following:

- A mini-roundabout at the Exning Road / Willie Snaith Road junction;
- Improvements at the Fordham Rd/Rayes Lane junction; and
- Improved footways / cycle paths and additional crossing facilities.

Brandon

9.6 The allocation for Brandon has reduced considerably from 760 units in 2009 to 125 units in 2016. Based upon the analysis undertaken in 2009 it is considered unlikely that the allocation proposed for this settlement would require any additional infrastructure. However, it will be for the individual developer/s of the allocation within Brandon to demonstrate whether any mitigation is required.

Mildenhall

9.7 The review of infrastructure requirements for Mildenhall has taken cognisance of the Mildenhall Mixed and Residential Land Use Development Transport Assessment (TA) undertaken by WSP in December 2014 which was commissioned to inform both the Local Plan and the first business case for the Mildenhall Hub project.

9.8 The 2014 TA study investigated the impact of a mixed use development, including a residential component consisting of 1000 dwellings assuming that 25% of the dwellings would be south and 75% north of West Row Road. The proposed housing allocation of 1000 is similar to the 1330 allocation proposed in the 2009 TS and the 1300-1500 proposed in this TN, excluding the PVs. It is expected that the broad traffic impact and mitigation recommendations of the 2014 study for mixed and residential land use development, the 2009 TS and this TN should be aligned to ensure a comprehensive package of mitigation is proposed.

9.9 It should be noted that the 2014 TA study is site specific whereas the 2009 TS and TN considers broad district wide traffic impacts and a more detailed capacity assessment will be required in due course to validate the conclusions of this study. The proposed transport mitigation measures of the 2014 study for mixed and residential land use development are summarised below and compared with the 2009 TS and TN infrastructure requirements in **Table 18**.

9.10 It is proposed that the residential land use element of the proposed development site in the 2014 TA study will take access from West Row Road in the form of a new four arm roundabout junction. A second access for the residential development is proposed off Fred Dannatt Road which will extend the existing road into the site. This is broadly in line with the development location assumption in the 2009 TS.

9.11 The 2014 TA study discusses the junctions in Mildenhall town centre that are likely to be impacted upon in section 7 of their report, these are as follows:

- Roundabout junction of the North Terrace / Kingsway / High Street;
- Priority junction of Queensway / High Street;
- Roundabout junction Brandon Road, Bury Road and Kingsway;
- Roundabout junction of Field Road and College Heath Road; and
- Roundabout junction of Field Road and Hampstead Avenue.

9.12 WSP carried out a highway assessment for the future year 2019 with and without development traffic for the junctions mentioned above. The need for mitigation at the A1101/B1102/Queensway roundabout junction is identified for the Mildenhall Hub project in its own business case and development brief. The resultant capacity analysis is summarised below:

- 'The roundabout junction of North Terrace / Kingsway / High Street operates over capacity in the 2019 Future Year 'Without Development' scenario in the PM peak, with a maximum RFC of 1.058, and queue length of 23.49 PCU's. It also operates over capacity in the 2019 Future Year 'With Development' scenario in the AM peak, with a maximum RFC of 1.366 and a queue length of 111.54 PCU's , and in the 2024 Future Year 'With Development' scenario in the PM peak, with a maximum RFC of 1.419, and a queue length 140.03 PCU's'.
- In the 2024 Future Year 'With Development' scenario '…the priority junction of Queensway and High Street operates over capacity. In the AM peak hour the junction has a maximum RFC of 1.630 and a queue length of 387.29 PCU's, and in the PM peak hour the junction has a maximum RFC of 1.435 and a queue length of 229.58 PCU's'.
- 'The roundabout junction of Brandon Road, Bury Road and Kingsway operates over capacity in the 2019 Future Year 'With Development' scenario in the PM peak, with a maximum RFC of 1.057 and a queue length of 34.11 PCU's, and in the 2024 Future Year 'With Development' scenario in the PM peak, with a maximum RFC of 1.135 and a queue length of 59.72'.
- 'The roundabout junction of Field Road and College Heath Road operates over capacity in the 2024 Future Year "With Development" scenario in the AM peak, with a maximum RFC of 1.017 and a queue length of 14.66'.
- 'The roundabout junction of Field Road and Hampstead Avenue operates over capacity in the 2019 Future Year 'Without Development' scenario in the AM peak, with a maximum RFC of 1.129, and a queue length of 8.42 PCU's. It also operates over capacity in the 2019 Future Year 'With Development' scenario, with a maximum RFC of 2.802 and a queue length of 58.31 PCU's, and in the 2024 Future Year 'With Development' scenario, with a maximum RFC of 3.696, and a queue length of 78.49'.

9.13 The above represents some significant capacity issues that will need to be mitigated. Whilst mitigation is not proposed as part of the 2014 study for mixed and residential land use development it is clear that significant mitigation measures will be required in the locations identified above.

9.14 In addition to the infrastructure identified above it is clear that there are likely to be impacts at the A11 Fiveways junction. This should be investigated in more detail and mitigation measures devised if appropriate. However, it should be noted that the recent dualling of the A11 may have

changed the flow of traffic at the Fiveways junction and therefore any need for mitigation should take account of this.

9.15 It should be noted that inclusion of the PVs and EC greatly increases the level of growth anticipated in Mildenhall which may increase the level of mitigation required. This will need to be investigated in more detail.

9.16 It should also be noted that growth is occurring to the west of the town and upgrades will be addressed within the wider context of a new longer-term traffic plan for Mildenhall, taking into account the local plan growth and RAF Mildenhall.

Table 18: Mildenhall – Infrastructure Requirements – All Scenarios

	Proposed Infrastructure (2009 TS)	Requirement Identified in 2016 TN
Connection assumption	Developer to provide a distributor road connecting to James Carter Road/ Hampstead Avenue in the north, and to West Row Road to the south.	The 2009 TS recommendation remains valid.
Internal trip assumption	The design brief should allow for some mixed use and live/work units.	The 2009 TS recommendation remains valid.
Smarter Choices campaign	Information throughout the existing and new residential areas to reduce short distance car trips to the town centre, by diverting them to convenient more sustainable alternatives.	The 2009 TS recommendation remains valid.
Walk/cycle links to neighbouring communities and the town centre	Improved radial links to the town centre.	The 2009 TS recommendation remains valid.
Bus service enhancement	Extension and improvement to the existing bus services to provide frequent links to the town centre and to Lakenheath.	The 2009 TS recommendation remains valid.
Traffic management measures	Extensive improvements will be needed in and around the town centre.	The 2009 TS recommendation remains valid and is in line with the findings of the 2014 study for mixed and residential land use development.
New road infrastructure	The current allocation is expected to be managed by a shift to less short distance car use. Any subsequent increase in allocation to the west is expected to trigger the need for some form of relief to the town centre traffic circulation.	The 2014 TA study for mixed and residential land use development shows that there are local capacity issues that will need to be addressed. Improvements at the following key junctions will therefore be required: • Roundabout junction of the North Terrace / Kingsway / High Street; • Priority junction of Queensway / High Street; • Roundabout junction Brandon Road, Bury Road and Kingsway; • Roundabout junction of Field Road and College Heath Road; and • Roundabout junction of Field Road and Hampstead Avenue. In addition improvements at the Fiveways junction may be required. This will need to be subject to junction capacity assessment.

Lakenheath

9.17 The review of infrastructure requirements for Lakenheath has taken cognisance of the Lakenheath Cumulative Site Traffic Study (LCSTS) undertaken by AECOM during November 2015. It is understood that this study is currently being updated and when available it is recommended that this study is updated to reflect this.

9.18 The LCSTS investigated the cumulative traffic impact of three planning applications namely:

- Rabbithill Covert, Station Road - Outline application for residential development of up to 81 dwellings, WSDC planning reference 13/0345/OUT;
- Land West of Eriswell Road - Outline application for residential development of up to 140 dwellings with associated open space provision, landscaping and infrastructure works, WSDC planning reference 13/0394/OUT; and
- Land off Briscoe Way - Erection of 67 dwellings (including 20 affordable dwellings) together with 1500 square metres of public open space, WSDC planning reference 13/0660/FUL.

9.19 Access to the proposed developments is proposed as follows:

- 'Rabbithill Covert' will take access off a new priority T-junction with the B1112 (Station Road) which it is understood to form the only proposed vehicular access to the site.
- 'Land West of Eriswell Road' will take access off two priority junctions with the B1112 (Eriswell Road), one located between the existing junctions at North Road and Avenue Road and the second to the north of Bell Trees.
- 'Land off Briscoe Way' will take access via an extension to Briscoe Way.

9.20 The total proposed housing allocation of 288 accounts for 48% of the 600 allocation proposed in the 2009 TS and 36% of the 800 proposed in this TN. It should be noted that the LCSTS is site specific whereas the 2009 TS and TN consider traffic impacts across the district as a whole. The proposed transport mitigation measures identified in the LCSTS are summarised below and compared with the 2009 TS and TN infrastructure requirements in **Table 19**.

9.21 The LCSTS discusses the junctions in Lakenheath that will most likely experience a material impact as a result of the addition of cumulative development traffic in section 3 of their report. It is anticipated that the following junctions will require infrastructure improvements, namely:

- B1112 / Lord's Walk / Earls Field four-arm roundabout; and
- B1112 / Eriswell Road priority 'T' junction.

9.22 AECOM carried out a highway assessment for the future year 2020 with development traffic for the LCSTS. The resultant capacity analysis is summarised below:

- The modelling results indicate that the redistribution of traffic from the Rabbit Hill development has a marginal impact on the operation of the B1112 / Lord's Walk / Earls Field four-arm roundabout.
- The modelling results indicate that the redistribution of traffic from the Rabbit Hill development results in slight increases to the RFC values and associated queuing at the B1112 / Eriswell Road priority 'T' junction.

9.23 The following infrastructure requirements are proposed in the LCSTS:

- The B1112 / Lord's Walk / Earls Field four-arm roundabout: 'An improvement scheme for the junction has been developed in order to mitigate the cumulative impact of development traffic. The scheme comprises widening of the B1112 north and south arms and the Lord's Walk arm to create two entry lanes onto the junction. The size and position of the central island has also been adjusted to increase the width for circulatory traffic'.
- B1112 / Eriswell Road priority 'T' junction: 'A proposed improvement for the junction was identified within the TA report for Land to the East of Eriswell Road and South of Broom Road, WSDC planning reference 13/0918/OUT. The scheme comprises signalisation of the junction with the provision of two lanes of entry on the Eriswell Road arm'.

Table 19: Lakenheath – Infrastructure Requirements – All Scenarios

	Proposed Infrastructure (2009 TS)	Requirement Identified in 2016 TN
Connection assumption	Direct connection to the B1112 is assumed.	The 2009 TS recommendation remains valid. However, the LCSTS identifies that land off Briscoe Way will access onto Briscoe Way which will in turn access onto the B1112.
Internal trip assumption	No significant internal mixed use anticipated.	The 2009 TS recommendation remains valid.
Smarter Choices campaign	Targeted information for new dwellings and schools.	The 2009 TS recommendation remains valid.
Walk/cycle links to neighbouring communities and the town centre	Some improvements to the walking facilities – the town is small and self-contained. Limited requirement for cycle facilities.	The 2009 TS recommendation remains valid.
Bus service enhancement	More frequent connections to Mildenhall, possibly extending to Brandon and Newmarket, are required on the B1112. The potential patronage for a weekday service to Lakenheath should be explored – if viable, it would require a bus connection.	The 2009 TS recommendation remains valid.
Traffic management measures	Some minor pedestrian and safety management measures across the B1112 will be required.	The 2009 TS recommendation remains valid.
New road infrastructure	None.	Highway improvements are recommended for the B1112 / Lord's Walk / Earls Field four-arm roundabout and B1112 / Eriswell Road priority 'T' junction as outlined in the LCSTS. The results of our analysis also indicate that improvements to the A1065/B1112 junction may be required. The exact measures required will need to be the subject of highway capacity assessment.

Red Lodge

9.24 The infrastructure identified for Red Lodge in the 2009 TS is outlined in **Table 20** below along with the findings of this TS.

Table 20: Red Lodge – Infrastructure Requirements – All Scenarios

	Proposed Infrastructure (2009 TS)	Requirement Identified in 2016 TN
Connection assumption	Further extensions to the Red Lodge development will connect to the existing residential roads and the B1085 (old A11).	The 2009 TS recommendation stands.
Internal trip assumption	The design brief should allow for some mixed use and live/work units. It is assumed that the new centre will be developed within Red Lodge.	The 2009 TS recommendation stands.
Smarter Choices campaign	Targeted information for new dwellings and schools, co-ordinated with wayfinding	The 2009 TS recommendation stands.
Walk/cycle links to neighbouring communities and the town centre	Walk and cycle links (and possibly busways) are required through the development, linking to the proposed centre, and providing links to Kennett rail station.	The 2009 TS recommendation stands.
Bus service enhancement	As Red Lodge matures and consolidates, it will require direct fast links to Newmarket and Mildenhall, adapted from the existing 400/401 route.	The 2009 TS recommendation stands.
Traffic management measures	None.	The 2009 TS recommendation stands.
New road infrastructure	With further development of Red Lodge there may be a need for some limited improvements at the A11/ B1085 junction south of Red Lodge.	Increases in traffic are anticipated at both Red Lodge junctions with the A14 in all scenarios. Further detailed analysis should be undertaken and a package of mitigation developed where appropriate.

10. Summary and Conclusion

10.1 AECOM has prepared an update of the 2009 Transport Study undertaken for the proposed housing allocations identified in the Local Plan. The findings of this updated study are summarised below.

10.2 At Brandon a significant reduction in the number of allocated dwellings is likely to remove the need for significant infrastructure to support growth. However, as individual developments come forwards this assumption will need to be assessed in detail.

10.3 At Newmarket a reduction in the housing allocation has been identified in GS1. This has reduced the overall impacts that growth is likely to have but as the allocation is still some 680 dwellings the conclusions of the original study remain valid. Specifically improvements at the A14 / A142 Fordham Road (A14 junction 37) and Clocktower junctions are likely to be required, especially when the growth in East Cambridgeshire is considered. In Scenario GS2 a higher level of growth is assumed highlighting the need to consider the impacts of growth at the key junctions in more detail.

10.4 At Mildenhall further detailed analysis of the highway network has been undertaken within the 2014 study for mixed and residential land use development. This has identified some significant congestion issues at the following locations:

- Roundabout junction of the North Terrace / Kingsway / High Street;
- Priority junction of Queensway / High Street;

- Roundabout junction Brandon Road, Bury Road and Kingsway;
- Roundabout junction of Field Road and College Heath Road; and
- Roundabout junction of Field Road and Hampstead Avenue.

10.5 This TN shows that there are clear implications for combined effects of growth in East Cambridgeshire and Forest Heath; these two authorities should work together to assess implications of cross boundary transport impacts.

10.6 Mitigation at these junctions will need to be developed. In addition, there is likely to be an impact at the A11 Fiveways junction which may require mitigation. However, it should be acknowledged that improvements delivered as part of the A11 dualling scheme may change the pattern of traffic at this location. Further detailed analysis is recommended.

10.7 In Lakenheath the increase in housing allocation will create a potential need for further mitigation. A detailed cumulative study of Lakenheath conducted within the LCSTS identifies the need for mitigation at the following locations:

- The B1112 / Lord's Walk / Earls Field four-arm roundabout: 'An improvement scheme for the junction has been developed in order to mitigate the cumulative impact of development traffic. The scheme comprises widening of the B1112 north and south arms and the Lord's Walk arm to create two entry lanes onto the junction. The size and position of the central island has also been adjusted to increase the width for circulatory traffic'.
- B1112 / Eriswell Road priority 'T' junction: 'A proposed improvement for the junction was identified within the TA report for Land to the East of Eriswell Road and South of Broom Road, WSDC planning reference 13/0918/OUT. The scheme comprises signalisation of the junction with the provision of two lanes of entry on the Eriswell Road arm'.

10.8 In addition to the mitigation identified above there is likely to be a requirement for mitigation at the A1065/B1112 junction and this will need to be considered in more detail.

10.9 It is understood that the LCSTS is being updated and changes to this should be reflected in this TN in due course.

10.10 At Red Lodge improvements to the A11/ B1085 junction south of Red Lodge and the A11/ B1085 Elms Road junction to the north should be investigated.

Acronyms

FHDC – Forest Heath District Council
SCC – Suffolk County Council
SIR - Single Issue Review (SIR) of Core Strategy Policy CS7 Overall Housing Provision and Distribution
SALP - Site Allocations Local Plan
LDF – Local Development Framework
TS – 2009 Transport Study
TN – 2016 Technical Note
LPWG - Local Plan Working Group
PV – Primary Villages
MSOA - Middle Level Super Output Area
TA - Mildenhall Mixed and Residential Land Use Development Transport Assessment (TA) undertaken by WSP in December 2014
LCSTS - Lakenheath Cumulative Site Traffic Study undertaken by AECOM during November 2015

Appendix A - Trip Generation Tables

Table 21: Newmarket Trip Generation – GS1

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.11	0.41	0.52
17:00 – 18:00	Trip Rate	0.27	0.17	0.44
08:00 – 09:00	Trip Generation	104	398	501
17:00 – 18:00	Trip Generation	262	165	426

Table 22: Newmarket Trip Generation – GS1 plus PV

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.11	0.41	0.52
17:00 – 18:00	Trip Rate	0.27	0.17	0.44
08:00 – 09:00	Trip Generation	175	669	844
17:00 – 18:00	Trip Generation	440	277	717

Table 23: Newmarket Trip Generation – GS2

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.11	0.41	0.52
17:00 – 18:00	Trip Rate	0.27	0.17	0.44
08:00 – 09:00	Trip Generation	147	562	709
17:00 – 18:00	Trip Generation	370	232	602

Table 24: Newmarket Trip Generation – GS2 plus PV

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.11	0.41	0.52
17:00 – 18:00	Trip Rate	0.27	0.17	0.44
08:00 – 09:00	Trip Generation	212	812	1024
17:00 – 18:00	Trip Generation	534	336	870

Table 25: Brandon Trip Generation – GS1

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.12	0.45	0.57
17:00 – 18:00	Trip Rate	0.30	0.19	0.49
08:00 – 09:00	Trip Generation	15	56	71
17:00 – 18:00	Trip Generation	37	23	61

Table 26: Brandon Trip Generation – GS2

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.12	0.45	0.57
17:00 – 18:00	Trip Rate	0.30	0.19	0.49
08:00 – 09:00	Trip Generation	15	56	71
17:00 – 18:00	Trip Generation	37	23	61

Table 27: Mildenhall Trip Generation – GS1

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.50	0.63
17:00 – 18:00	Trip Rate	0.33	0.21	0.54
08:00 – 09:00	Trip Generation	199	761	860
17:00 – 18:00	Trip Generation	508	320	828

Table 28: Mildenhall Trip Generation – GS1 plus PV

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.50	0.63
17:00 – 18:00	Trip Rate	0.33	0.21	0.54
08:00 – 09:00	Trip Generation	208	1073	1353
17:00 – 18:00	Trip Generation	716	450	1166

Table 29: Mildenhall Trip Generation – GS2

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.50	0.63
17:00 – 18:00	Trip Rate	0.33	0.21	0.54
08:00 – 09:00	Trip Generation	173	662	835
17:00 – 18:00	Trip Generation	442	278	719

Table 30: Mildenhall Trip Generation – GS2 plus PV

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.50	0.63
17:00 – 18:00	Trip Rate	0.33	0.21	0.54
08:00 – 09:00	Trip Generation	248	949	1197
17:00 – 18:00	Trip Generation	633	398	1031

Table 31: Lakenheath Trip Generation – GS1

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.49	0.62
17:00 – 18:00	Trip Rate	0.33	0.21	0.54
08:00 – 09:00	Trip Generation	113	433	546
17:00 – 18:00	Trip Generation	290	182	472

Table 32: Lakenheath Trip Generation – GS2

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.49	0.62
17:00 – 18:00	Trip Rate	0.33	0.21	0.54
08:00 – 09:00	Trip Generation	113	433	546
17:00 – 18:00	Trip Generation	290	182	472

Table 33: Red Lodge Trip Generation – GS1

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.50	0.63
17:00 – 18:00	Trip Rate	0.34	0.21	0.55
08:00 – 09:00	Trip Generation	216	827	1043
17:00 – 18:00	Trip Generation	554	349	903

Table 34: Red Lodge Trip Generation – GS2

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.50	0.63
17:00 – 18:00	Trip Rate	0.34	0.21	0.55
08:00 – 09:00	Trip Generation	203	777	980
17:00 – 18:00	Trip Generation	521	328	848

Table 35: Burwell Nett Trip Generation – EC

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.49	0.62
17:00 – 18:00	Trip Rate	0.33	0.21	0.54
08:00 – 09:00	Trip Generation	13	51	64
17:00 – 18:00	Trip Generation	34	21	55

Table 36: Ely Nett Trip Generation – EC

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.11	0.44	0.55
17:00 – 18:00	Trip Rate	0.29	0.18	0.47
08:00 – 09:00	Trip Generation	116	443	558
17:00 – 18:00	Trip Generation	291	183	474

Table 37: Fordham Nett Trip Generation – EC

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.51	0.64
17:00 – 18:00	Trip Rate	0.34	0.21	0.55
08:00 – 09:00	Trip Generation	9	33	42
17:00 – 18:00	Trip Generation	22	14	36

Table 38: Littleport Nett Trip Generation – EC

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.48	0.61
17:00 – 18:00	Trip Rate	0.32	0.20	0.52
08:00 – 09:00	Trip Generation	56	214	270
17:00 – 18:00	Trip Generation	142	89	232

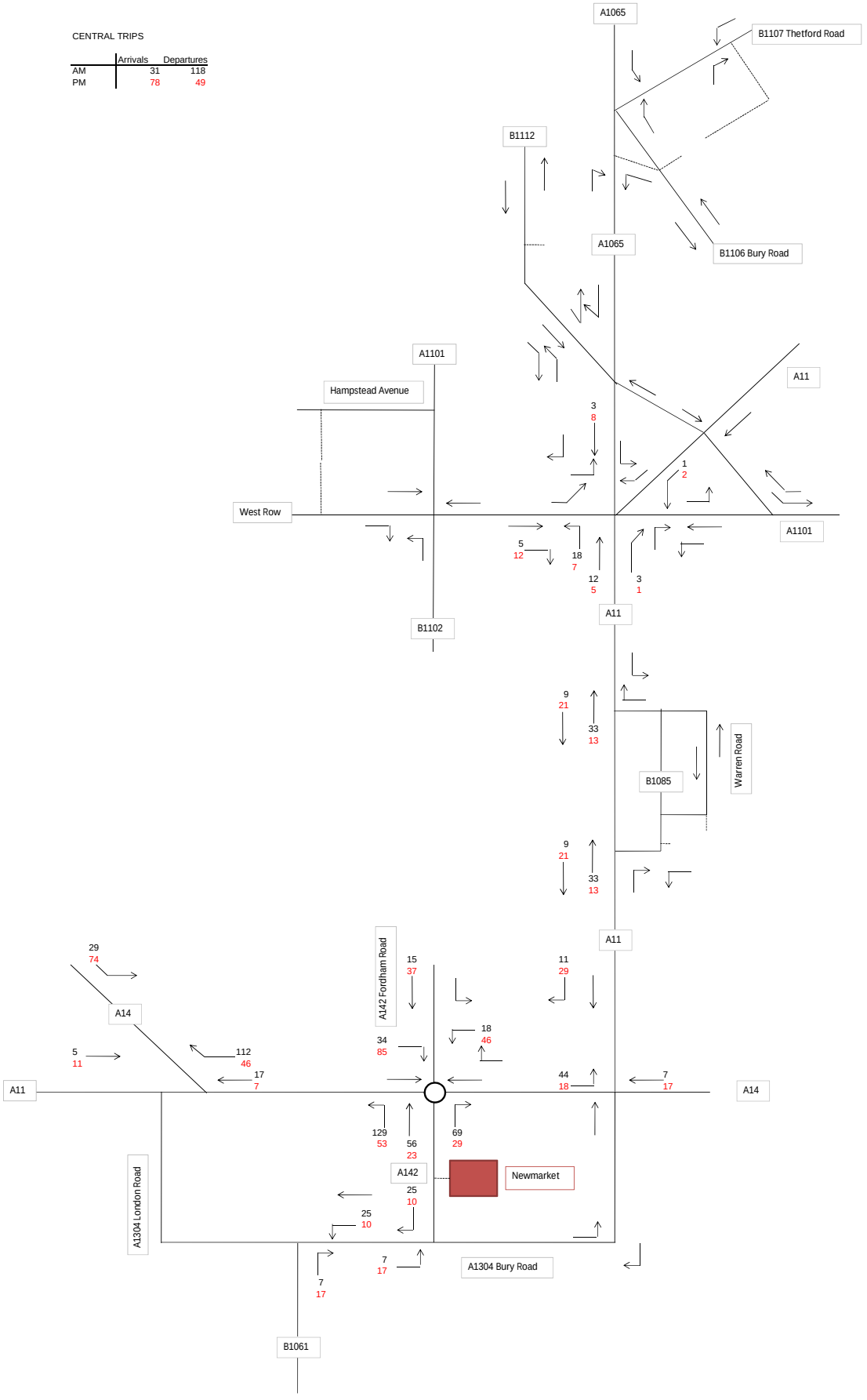
Table 39: Soham Nett Trip Generation – EC

Peak Period		Arrivals	Departures	Total
08:00 – 09:00	Trip Rate	0.13	0.50	0.63
17:00 – 18:00	Trip Rate	0.33	0.21	0.54
08:00 – 09:00	Trip Generation	161	617	779
17:00 – 18:00	Trip Generation	411	259	670

Appendix B – Traffic Flow Diagrams

CENTRAL TRIPS

	Arrivals	Departures
AM	31	118
PM	78	49



Newmarket Trip Distribution

968 Dwellings Newmarket - Traffic Distribution Growth Scenario 1	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Mar-16

CHECK:

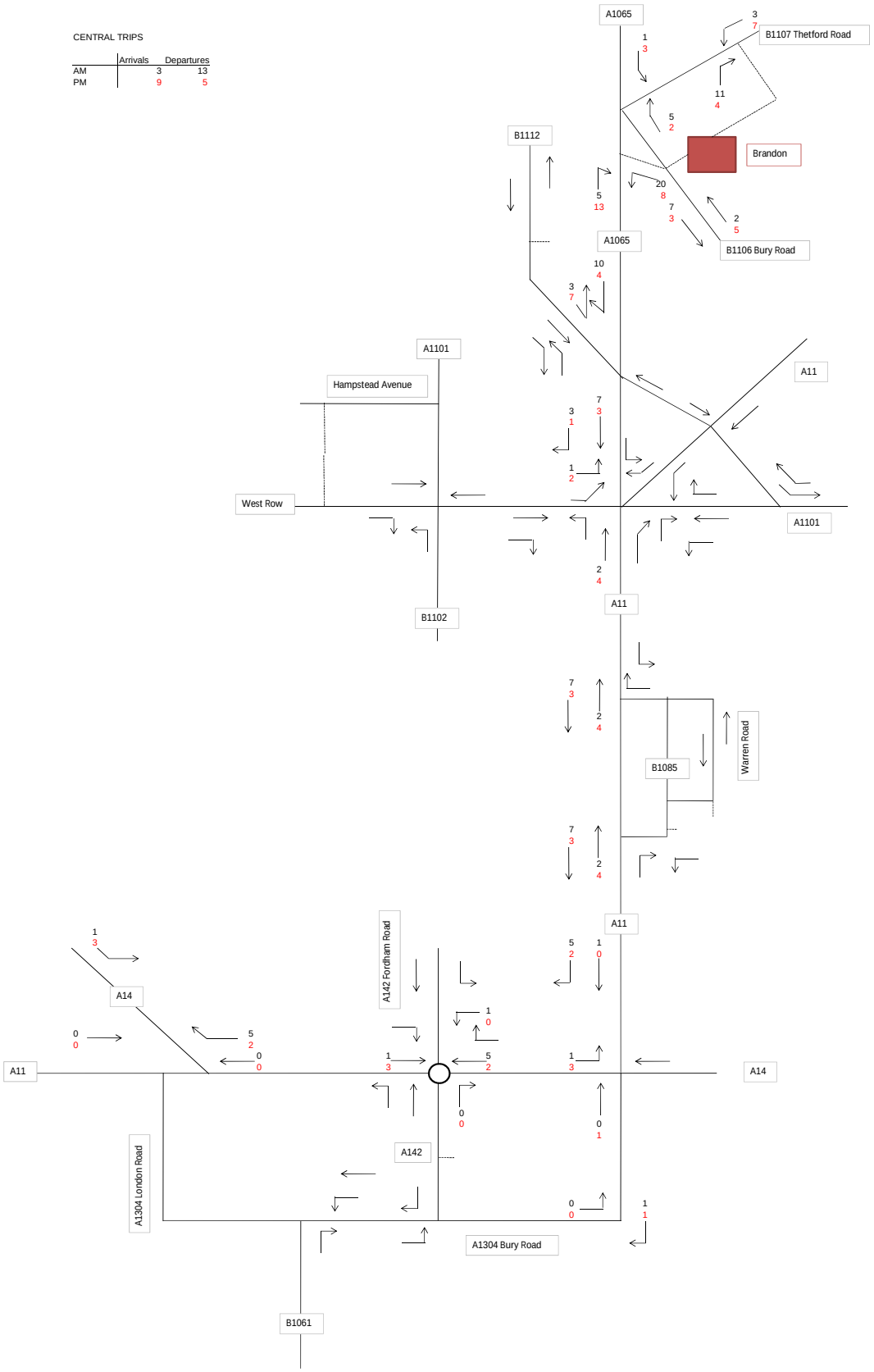
Model	Arrivals	Departures
AM	104	398
PM	262	165

Data	Arrivals	Departures
AM	104	398
PM	262	165

Difference	Arrivals	Departures
AM	0	0
PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	3	13
PM	9	5



Brandon Trip Distribution

125 Dwellings Brandon - Traffic Distribution Growth Scenario 1	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Mar-16

CHECK:

Model	Arrivals	Departures
AM	14	55
PM	36	23

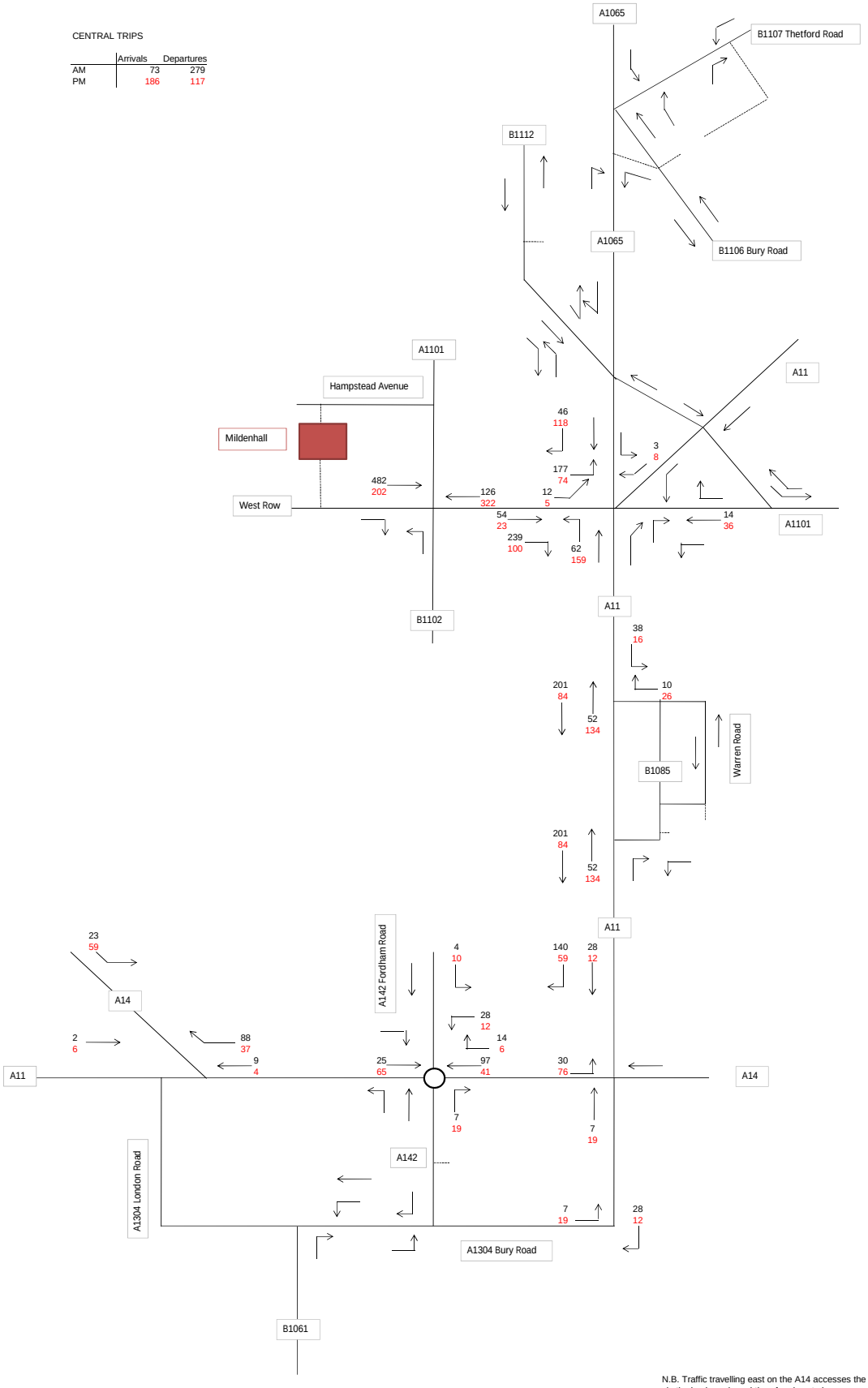
Data	Arrivals	Departures
AM	15	56
PM	37	23

Difference	Arrivals	Departures
AM	0.371523	1.421612
PM	0.944906	0.594281

DOES NOT MATCH AS DISTRIBUTION < 1% NOT INCLUDED

CENTRAL TRIPS

	Arrivals	Departures
AM	73	279
PM	186	117



Mildenhall Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

1527 Dwellings Mildenhall - Traffic Distribution
Growth Scenario 1

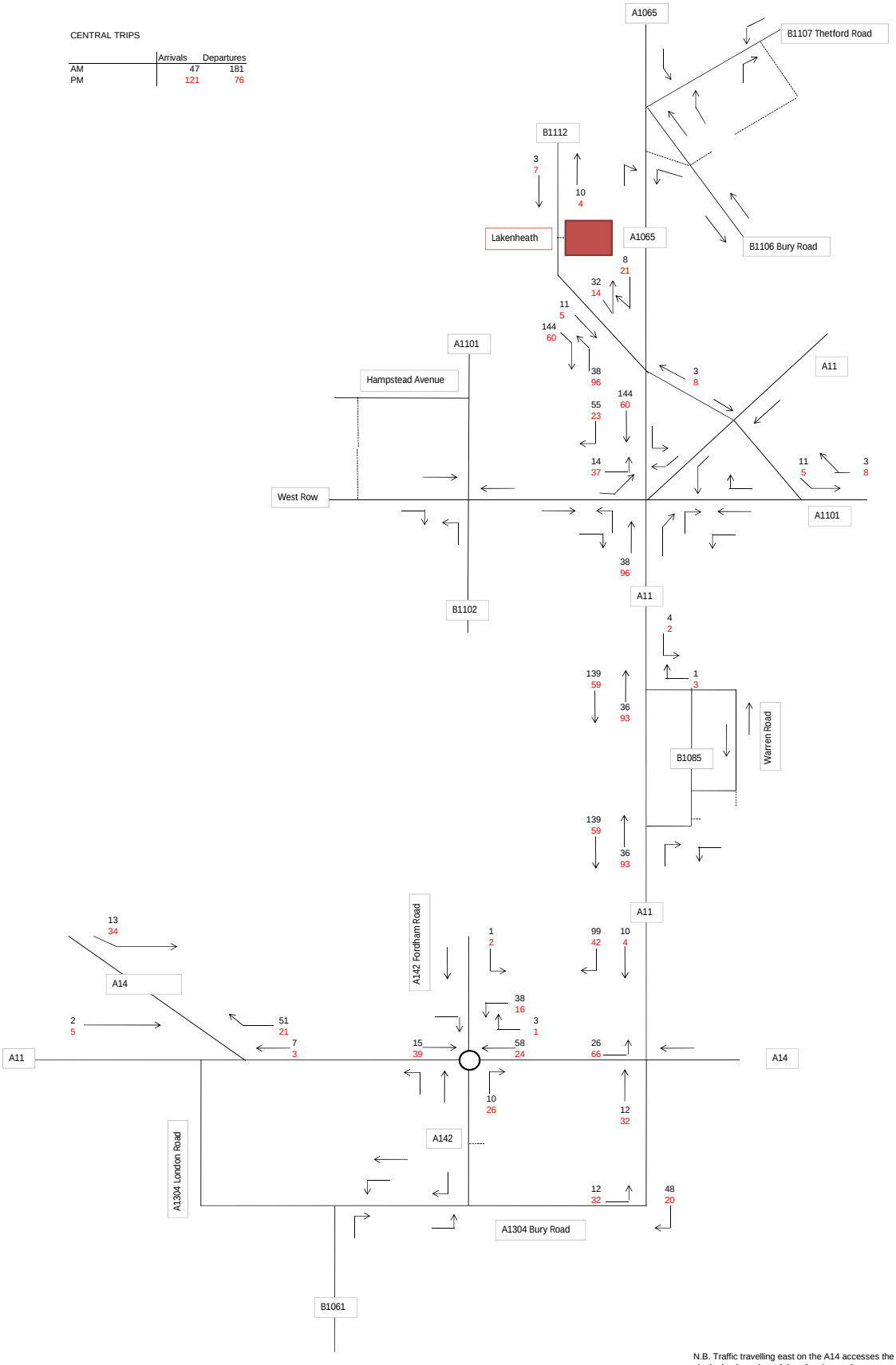
Made by: CT
Checked by: LL
Approved by: JS
Date: Mar-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	199	761	AM	199	761	AM	0	0
PM	508	320	PM	508	320	PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	47	181
PM	121	76



Lakenheath Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

876 Dwellings Lakenheath - Traffic Distribution
Growth Scenario 1

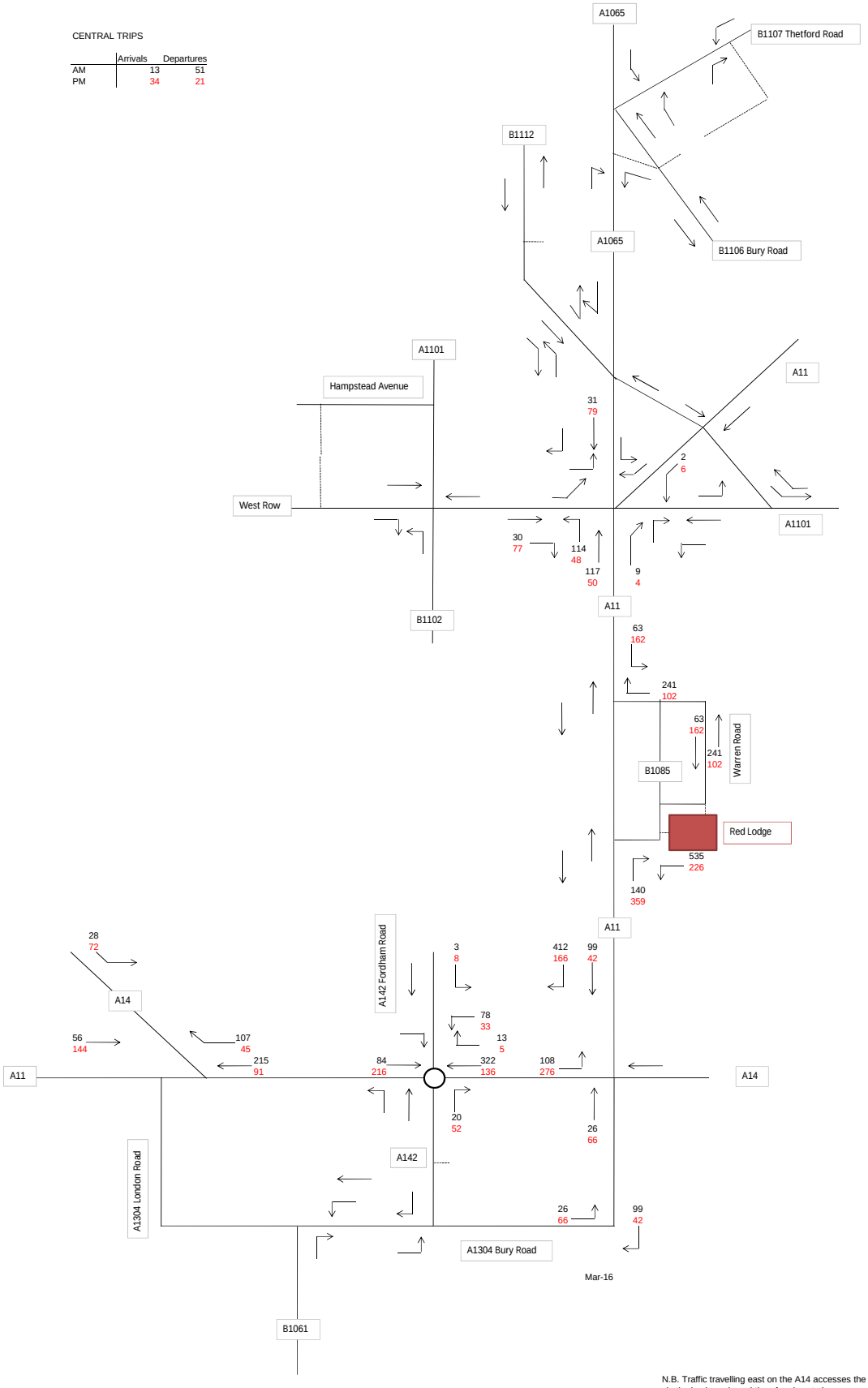
Made by: CT
Checked by: LL
Approved by: JS
Date: Mar-16

CHECK:

	Model		Data		Difference	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
AM	113	433	113	433	0	0
PM	290	182	290	182	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	13	51
PM	34	21



N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

Red Lodge Trip Distribution

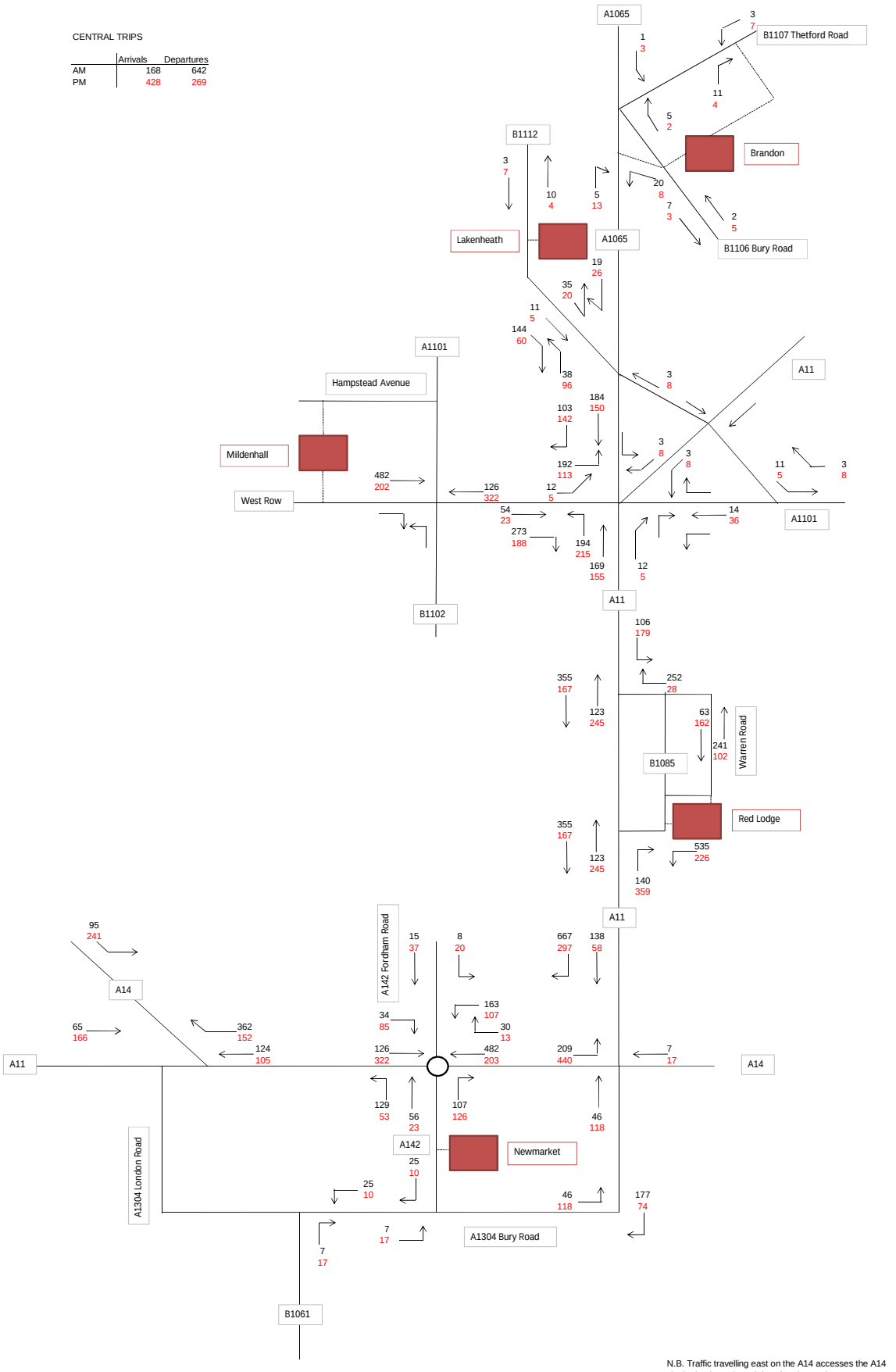
1654 Dwellings Red Lodge - Traffic Distribution Growth Scenario 1	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Mar-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	216	827	AM	216	827	AM	0	0
PM	554	349	PM	554	349	PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	168	642
PM	428	269



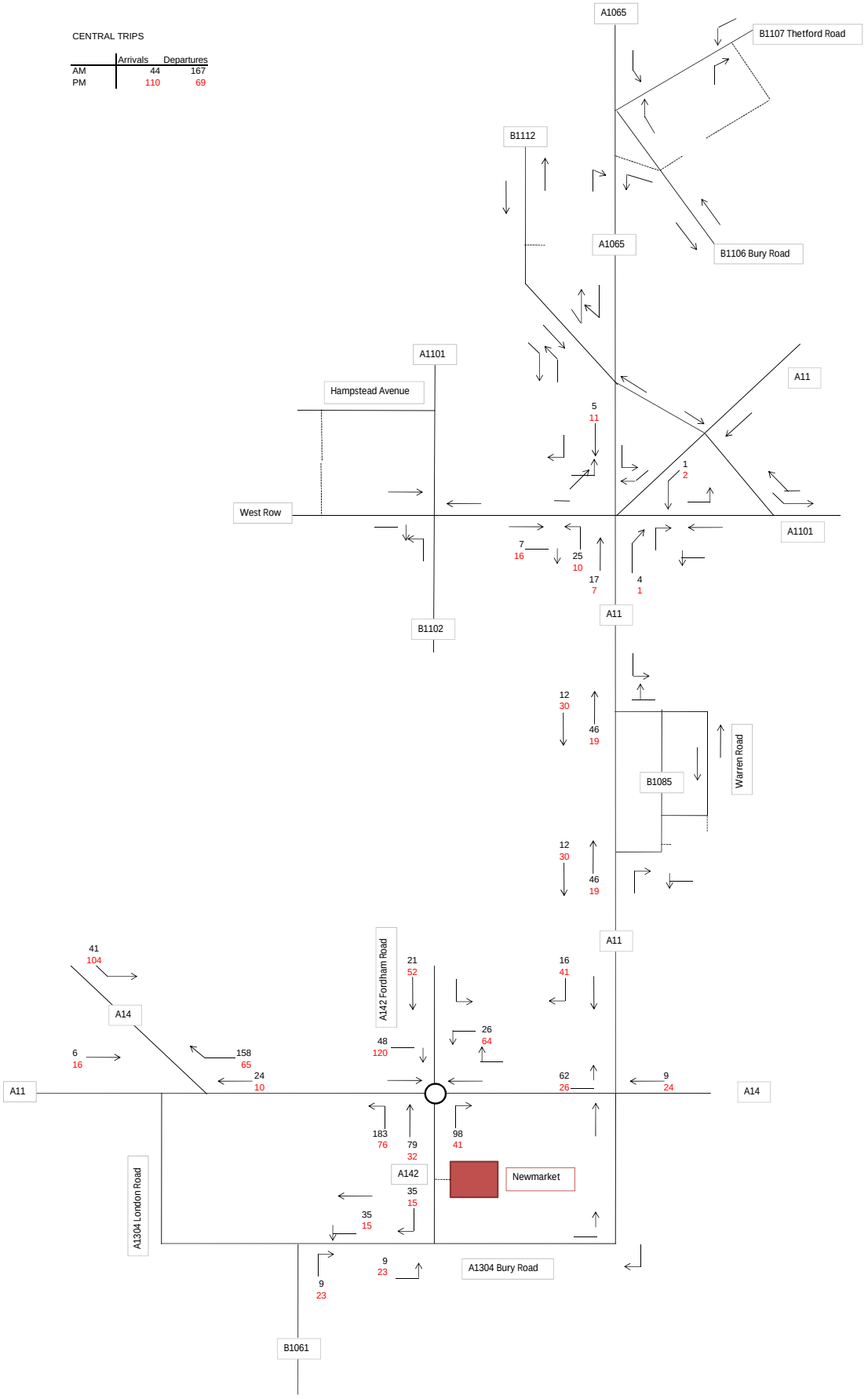
N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

All Areas 5,150 dwellings
Growth Scenario 1 Traffic Distribution

Made by: CT
Checked by: LL
Approved by: JS
Date: Mar-16

CENTRAL TRIPS

	Arrivals	Departures
AM	44	167
PM	110	69



Newmarket Trip Distribution

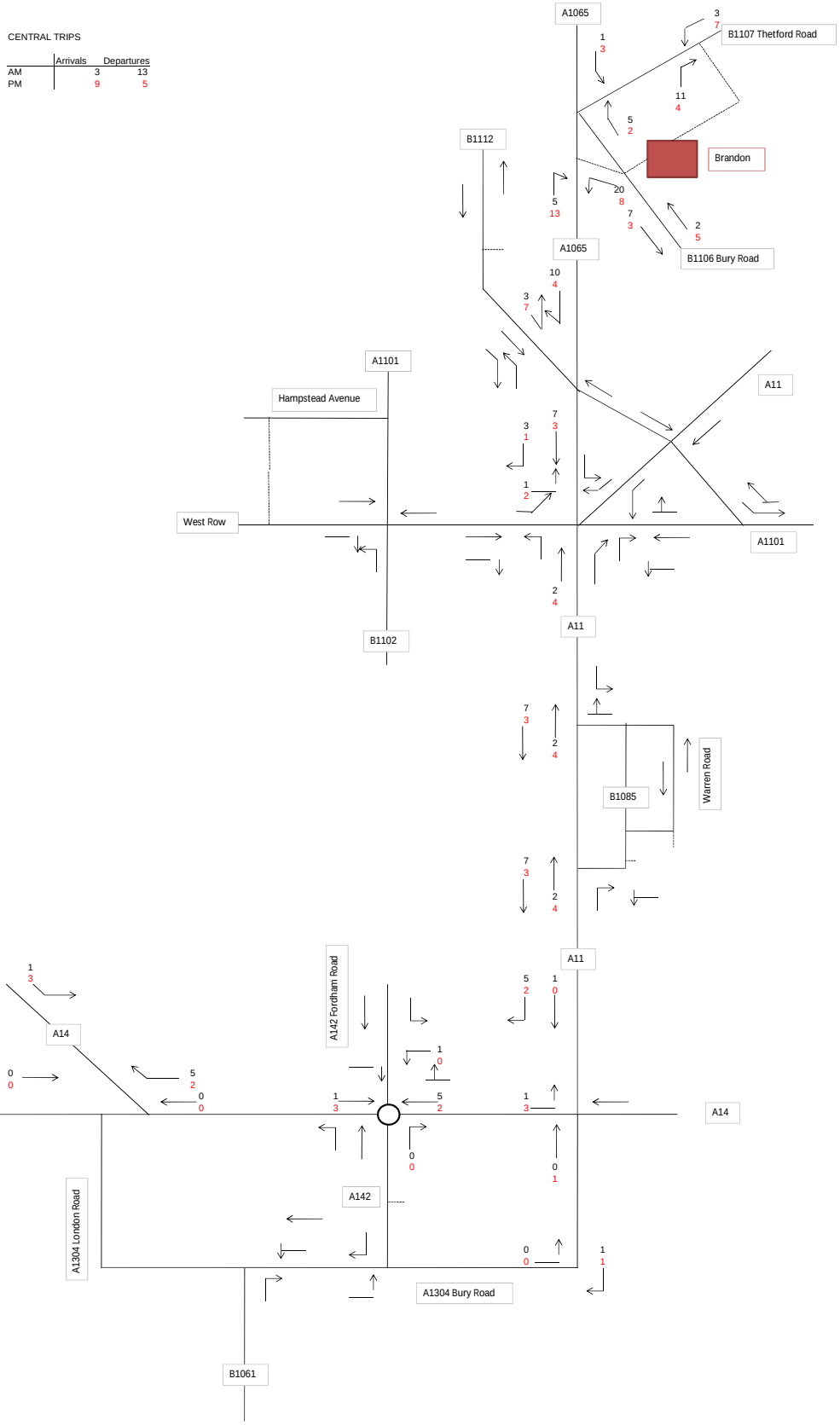
1368 Dwellings Newmarket - Traffic Distribution Growth Scenario 2	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Jan-16

CHECK:

	Model		Data		Difference	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
AM	147	562	147	562	0	0
PM	370	232	370	232	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	3	13
PM	9	5



Brandon Trip Distribution

125 Dwellings Brandon - Traffic Distribution Growth Scenario 2	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Jan-16

CHECK:

Model	Arrivals	Departures
AM	14	55
PM	36	23

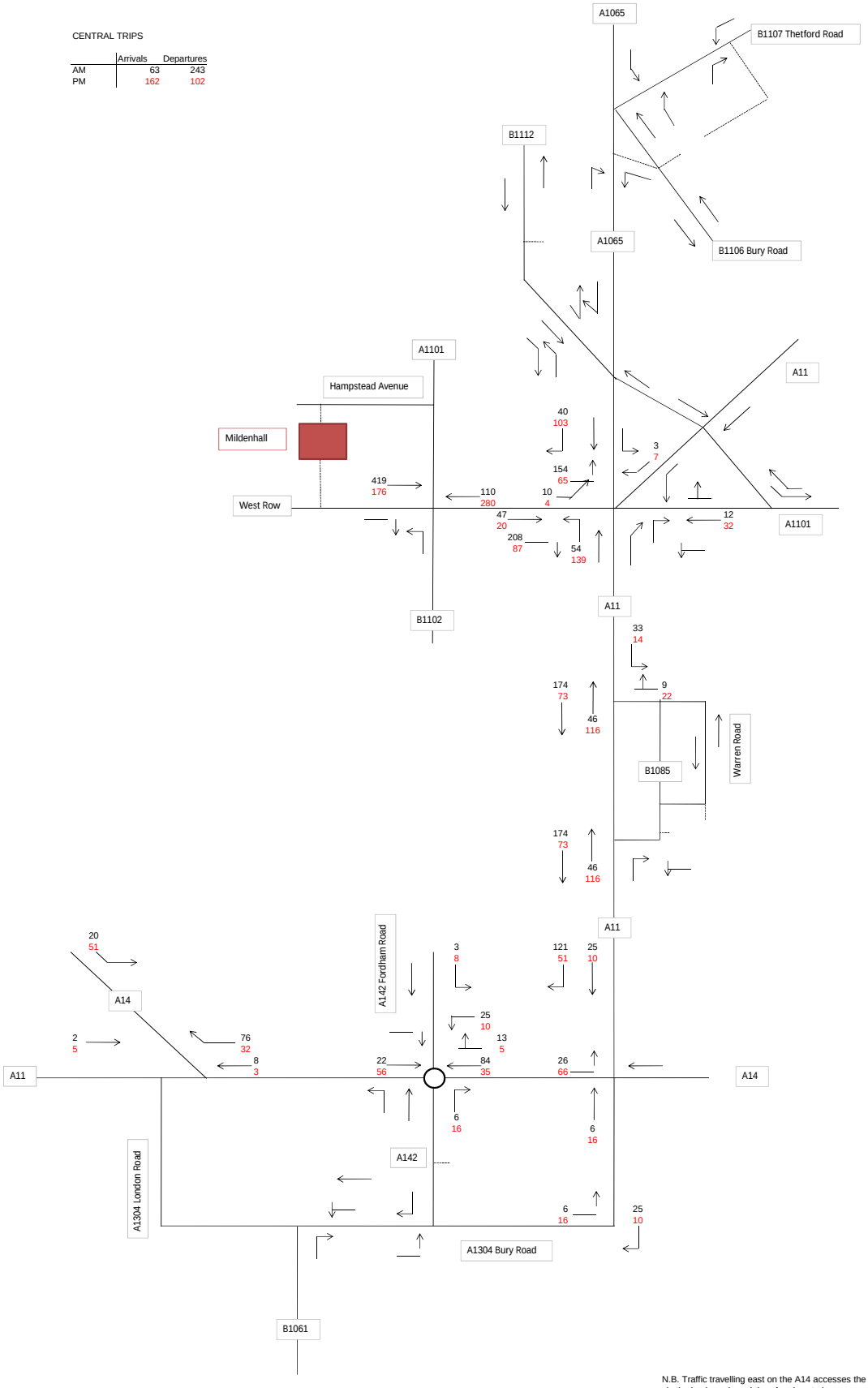
Data	Arrivals	Departures
AM	15	56
PM	37	23

Difference	Arrivals	Departures
AM	0.371523	1.421612
PM	0.944906	0.594281

DOES NOT MATCH AS DISTRIBUTION < 1% NOT INCLUDED

CENTRAL TRIPS

	Arrivals	Departures
AM	63	243
PM	162	102



Mildenhall Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

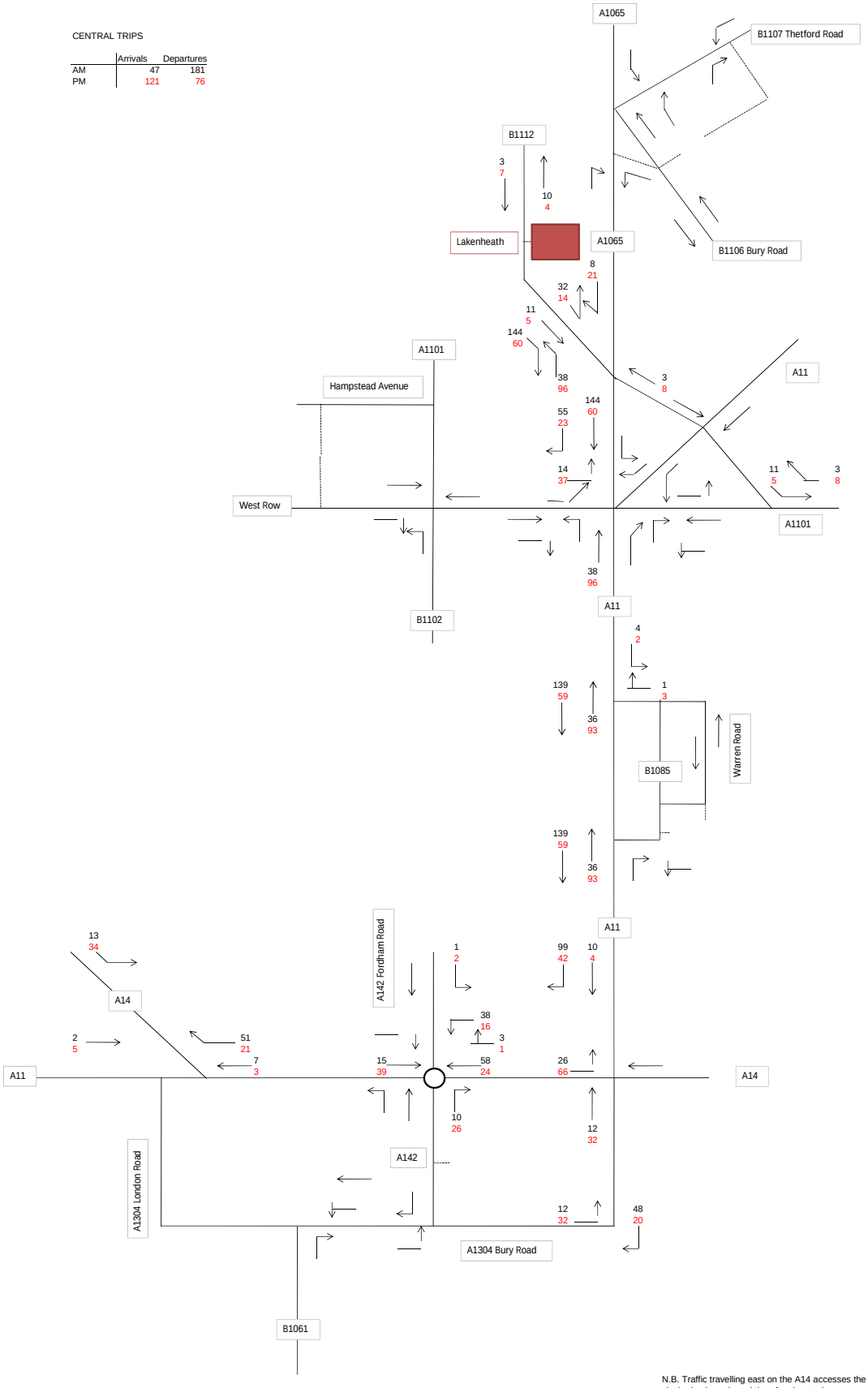
1327 Dwellings Mildenhall - Traffic Distribution Growth Scenario 2	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Jan-16

CHECK:

	Model		Data		Difference	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
AM	173	662	173	662	0	0
PM	442	278	442	278	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	47	181
PM	121	76



Lakenheath Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

876 Dwellings Lakenheath - Traffic Distribution
Growth Scenario 2

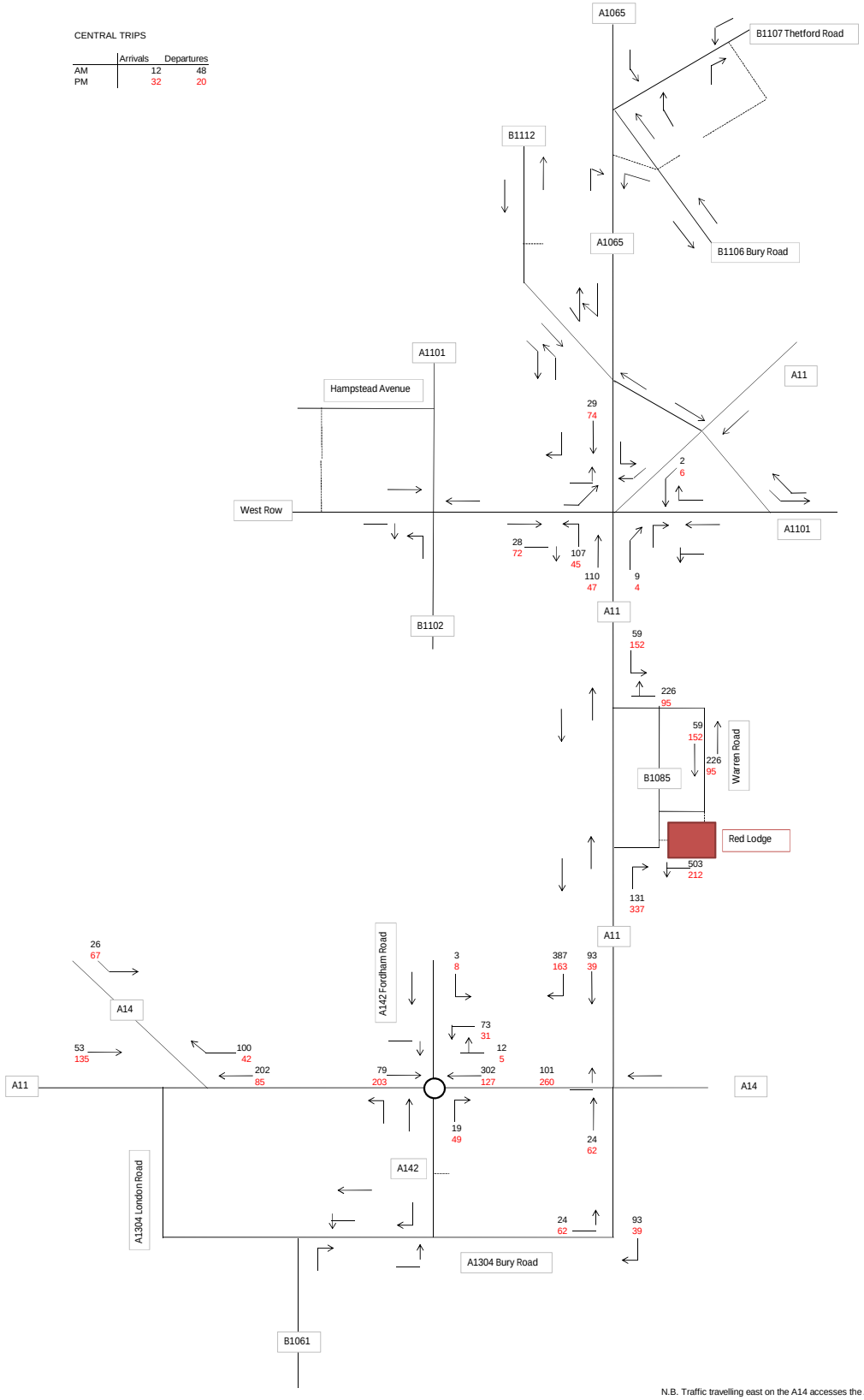
Made by: CT
Checked by: LL
Approved by: JS
Date: Jan-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	113	433	AM	113	433	AM	0	0
PM	290	182	PM	290	182	PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	12	48
PM	32	20



Red Lodge Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

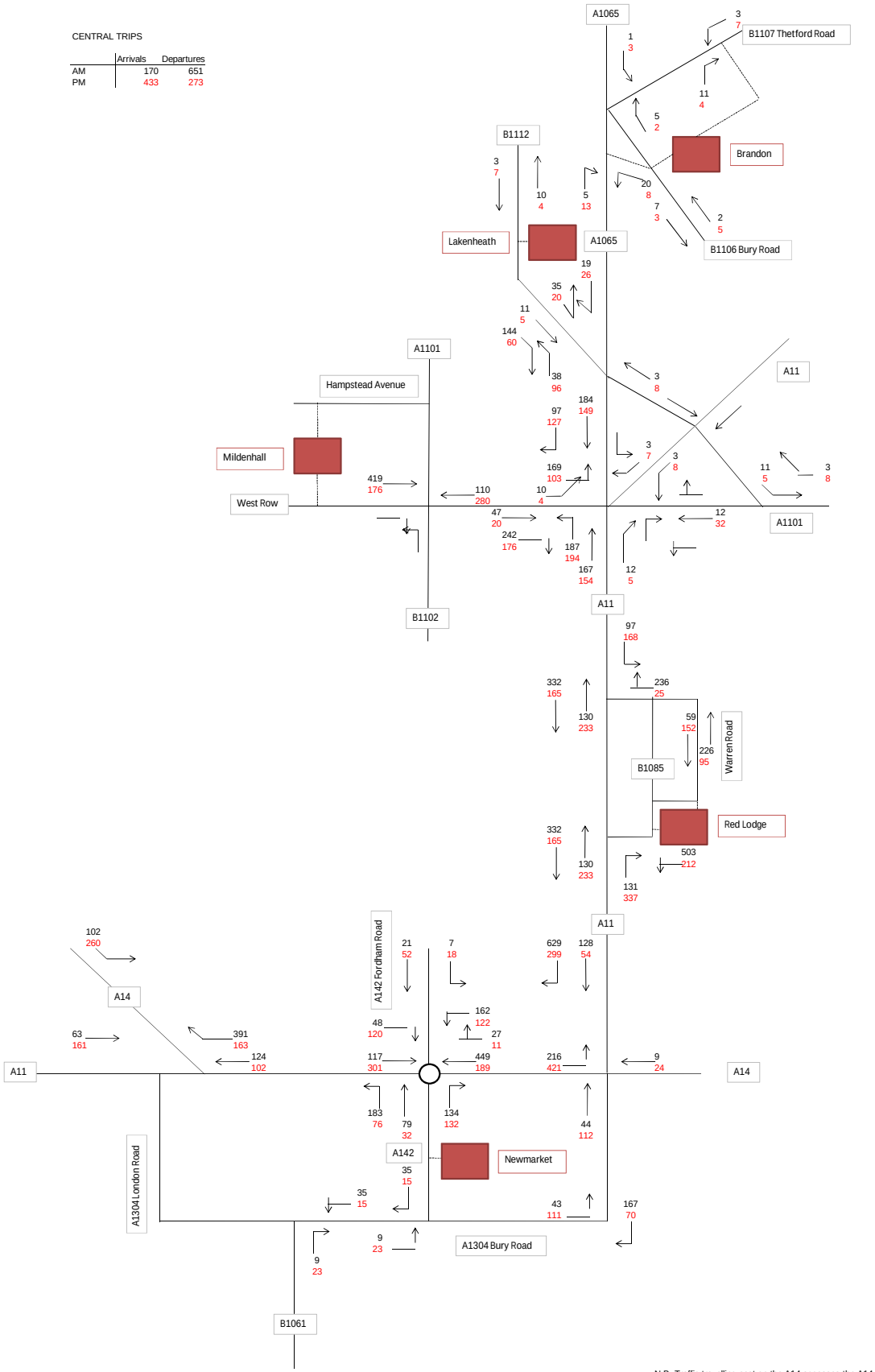
1554 Dwellings Red Lodge - Traffic Distribution Growth Scenario 2	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Jan-16

CHECK:

	Model		Data		Difference	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
AM	203	777	203	777	0	0
PM	521	328	521	328	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	170	651
PM	433	273



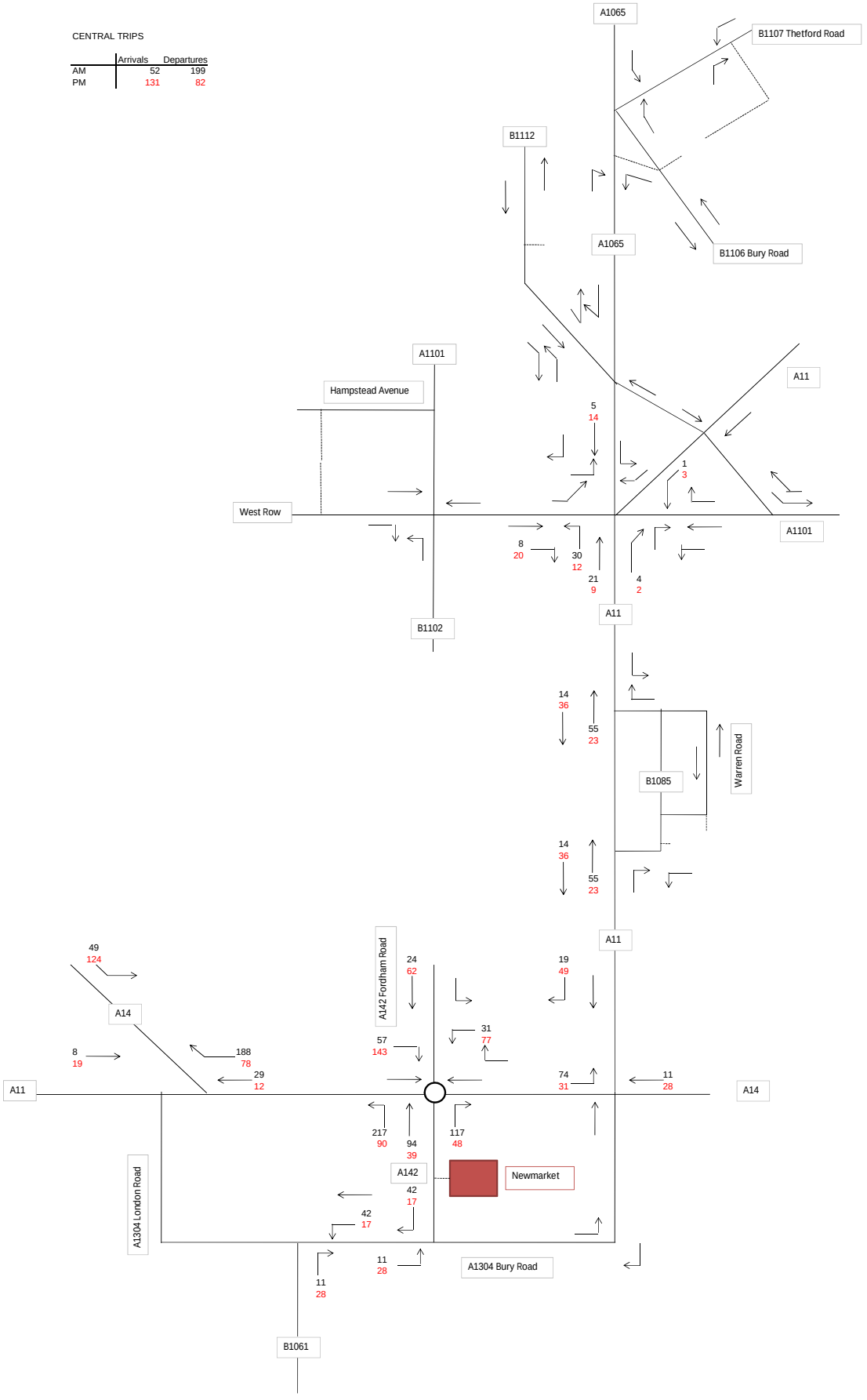
N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

All Areas 5,250 dwellings
Growth Scenario 2 Traffic Distribution

Made by: ML
Checked by: CG
Approved by: BH
Date: Nov-09

CENTRAL TRIPS

	Arrivals	Departures
AM	52	199
PM	131	82



Newmarket Trip Distribution

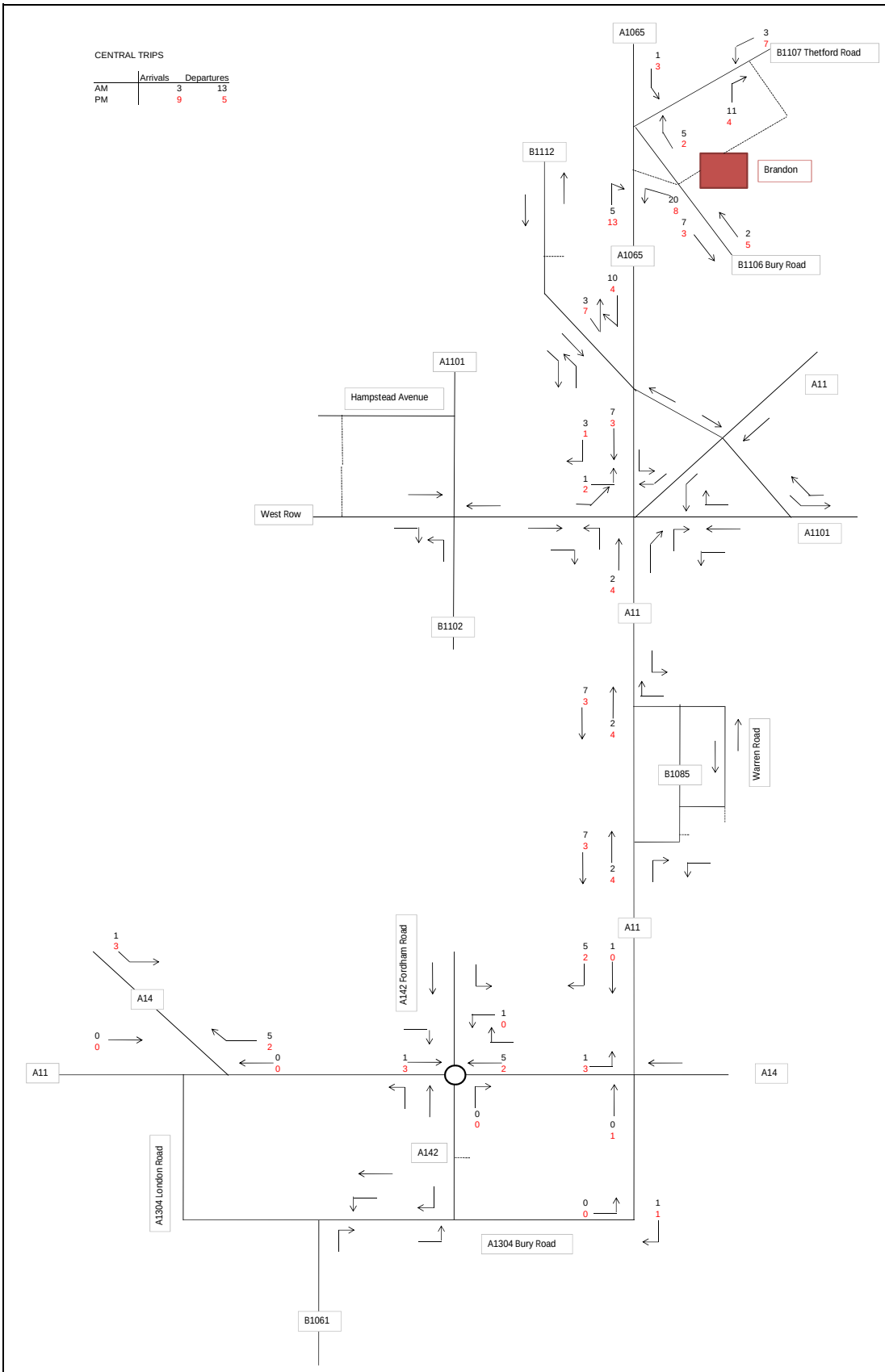
1629 Dwellings Newmarket - Traffic Distribution Growth Scenarion 1 plus Primary Villages	Made by:	LL	Approved by: JS
	Checked by:	JS	Date: Mar-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	175	669	AM	175	669	AM	0	0
PM	440	277	PM	440	277	PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	3	13
PM	9	5



Brandon Trip Distribution

125 Dwellings Brandon - Traffic Distribution Growth Scenarion 1 plus Primary Villages	Made by:	LL	Approved by: JS
	Checked by:	JS	Date: Mar-16

CHECK:

Model	Arrivals	Departures
AM	14	55
PM	36	23

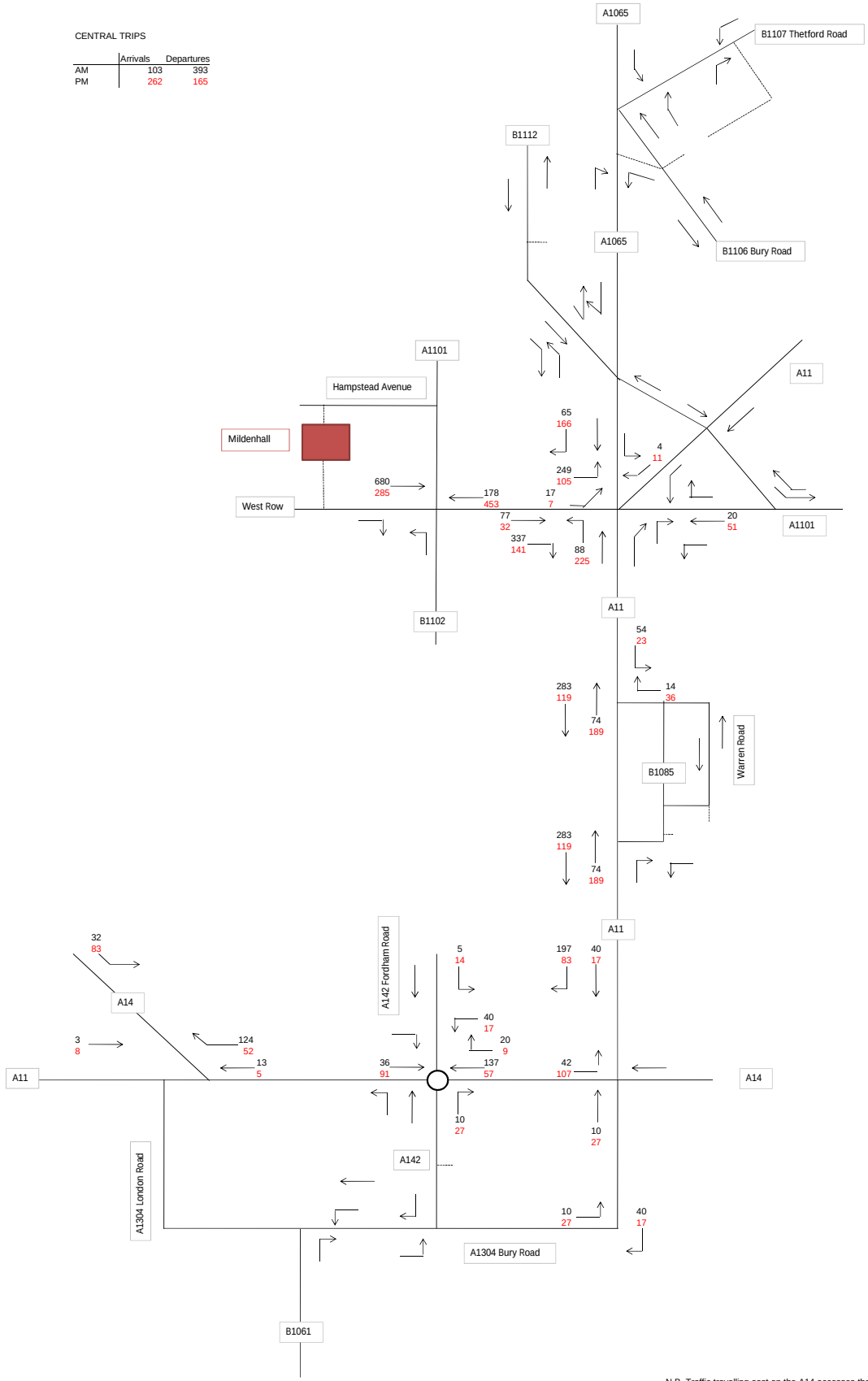
Data	Arrivals	Departures
AM	15	56
PM	37	23

Difference	Arrivals	Departures
AM	0.371523	1.421612
PM	0.944906	0.594281

DOES NOT MATCH AS DISTRIBUTION < 1% NOT INCLUDED

CENTRAL TRIPS

	Arrivals	Departures
AM	103	393
PM	262	165



Mildenhall Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

2151 Dwellings Mildenhall - Traffic Distribution
Growth Scenarion 1 plus Primary Villages

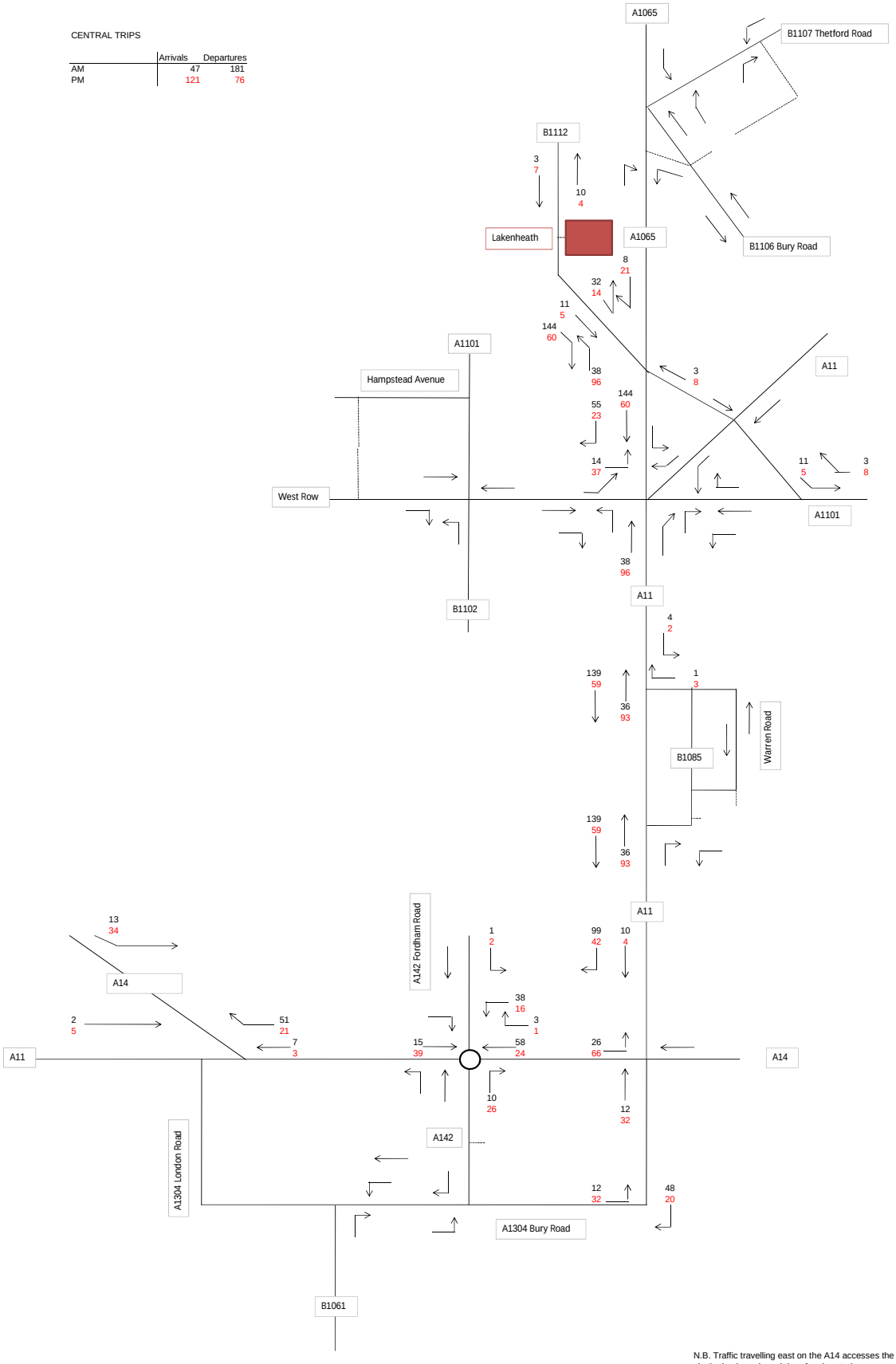
Made by: LL
Checked by: JS
Approved by: JS
Date: Jan-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	280	1073	AM	280	1073	AM	0	0
PM	716	450	PM	716	450	PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	47	181
PM	121	76



Lakenheath Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

876 Dwellings Lakenheath - Traffic Distribution
Growth Scenarion 1 plus Primary Villages

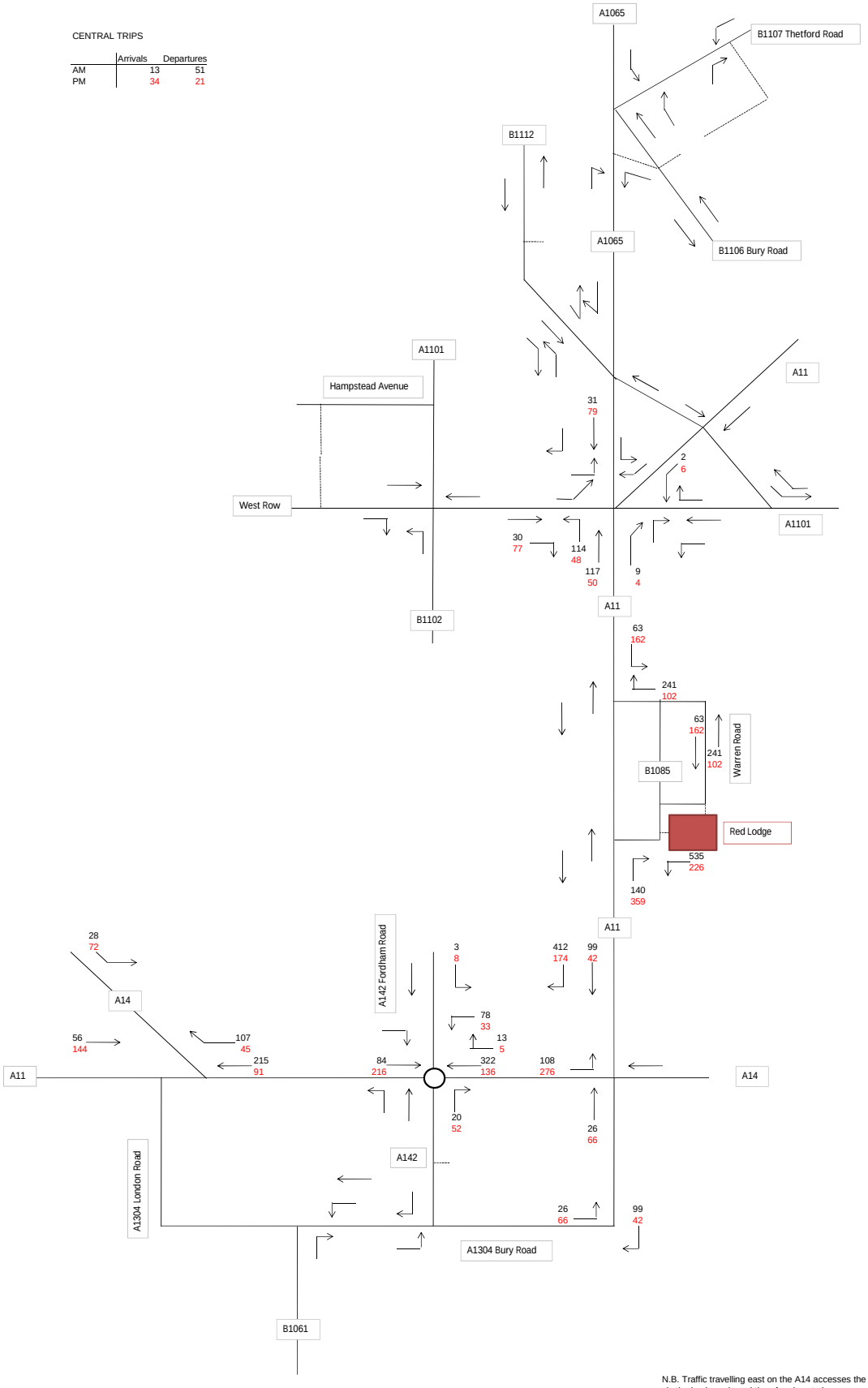
Made by: LL
Checked by: JS
Approved by: JS
Date: Jan-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	113	433	AM	113	433	AM	0	0
PM	290	182	PM	290	182	PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	13	51
PM	34	21



N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

Red Lodge Trip Distribution

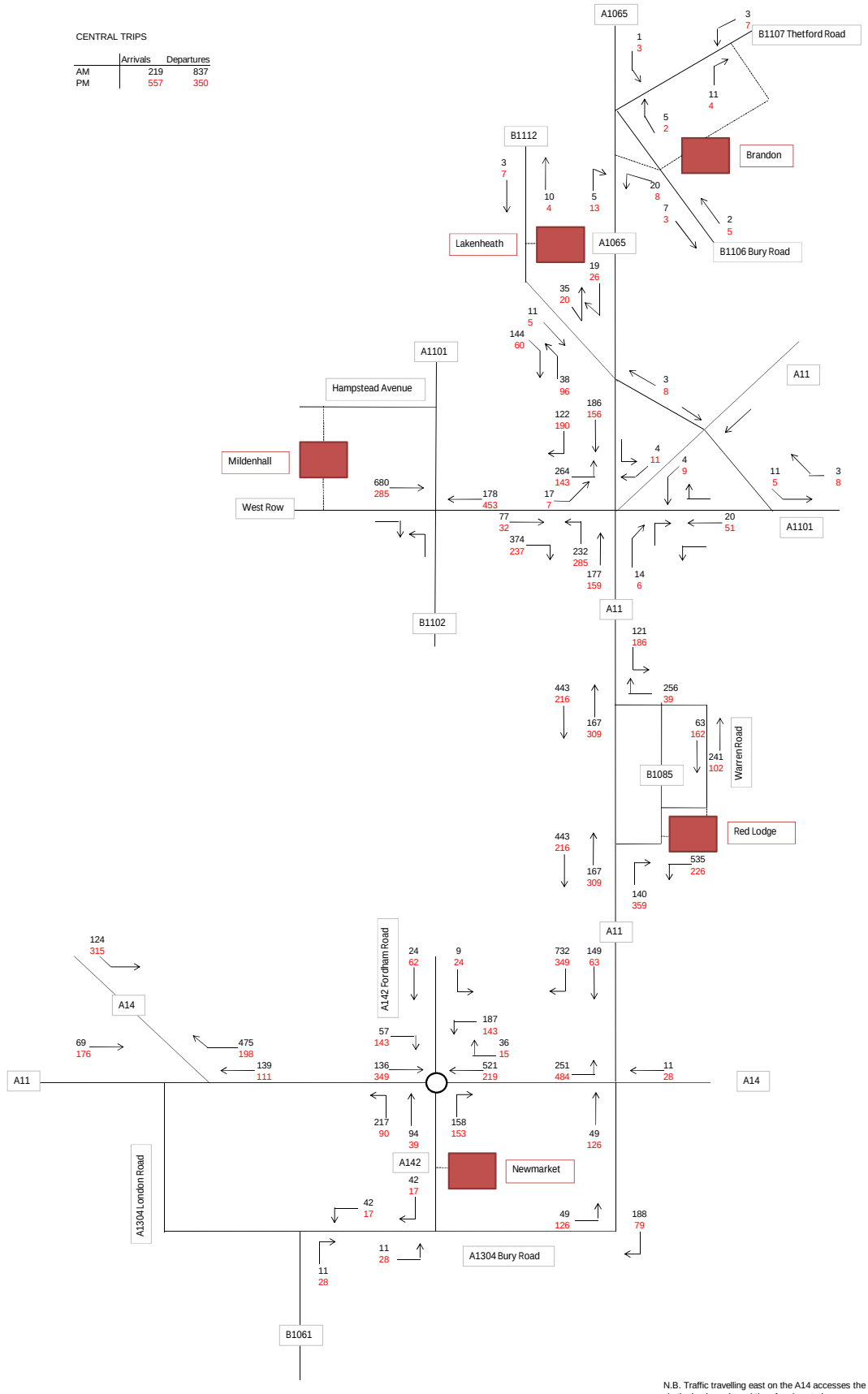
1654 Dwellings Red Lodge - Traffic Distribution Growth Scenarion 1 plus Primary Villages	Made by:	LL	Approved by: JS
	Checked by:	JS	Date: Jan-16

CHECK:

Model	Arrivals	Departures
AM	216	827
PM	554	349

Data	Arrivals	Departures
AM	216	827
PM	554	349

Difference	Arrivals	Departures
AM	0	0
PM	0	0

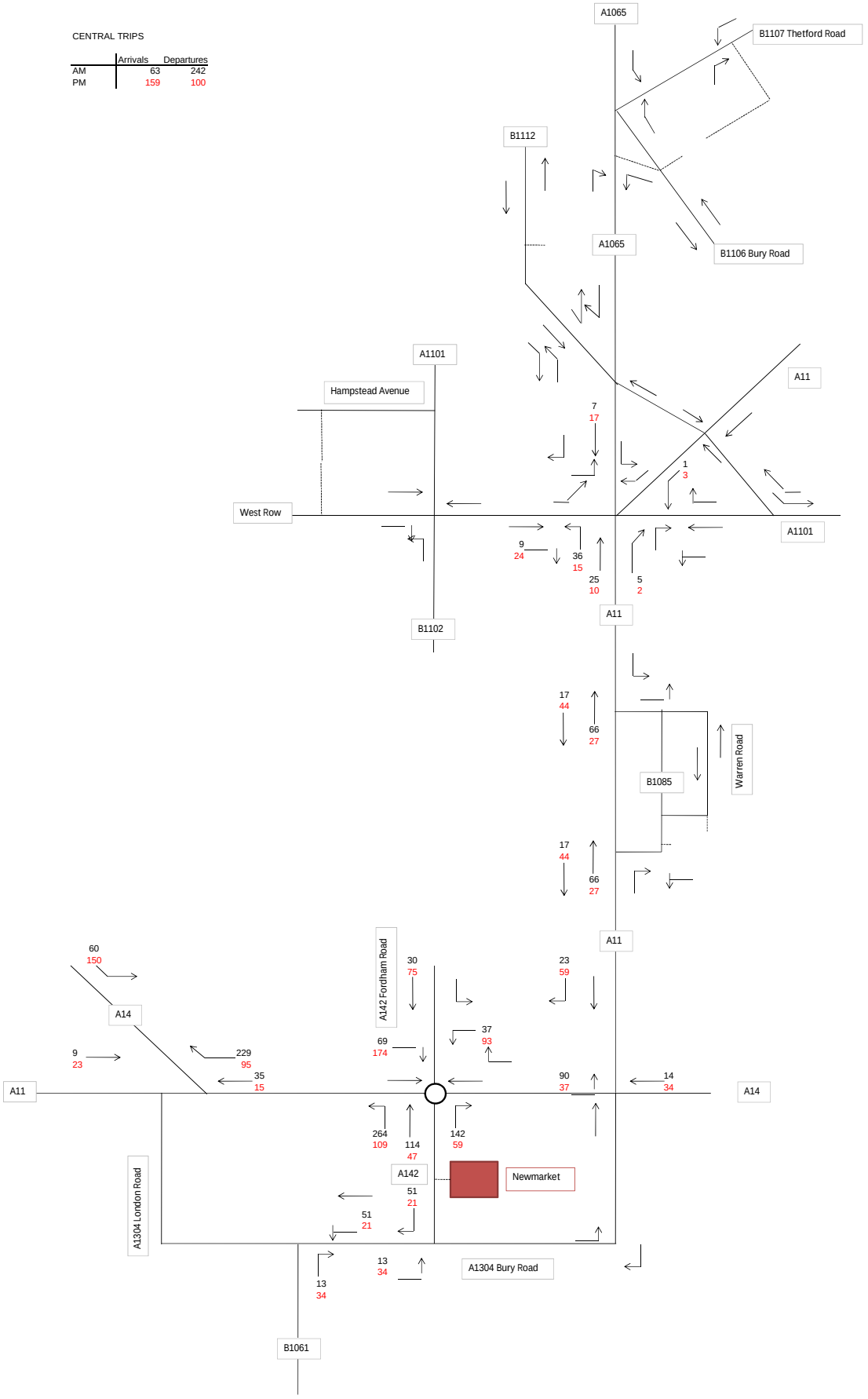


N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

All Areas (5,690 dwellings) Growth Scenarion 1 plus Primary Villages	Traffic Distribution	Made by: LL Checked by: JS	Approved by: JS Date: Mar-16

CENTRAL TRIPS

	Arrivals	Departures
AM	63	242
PM	159	100



Newmarket Trip Distribution

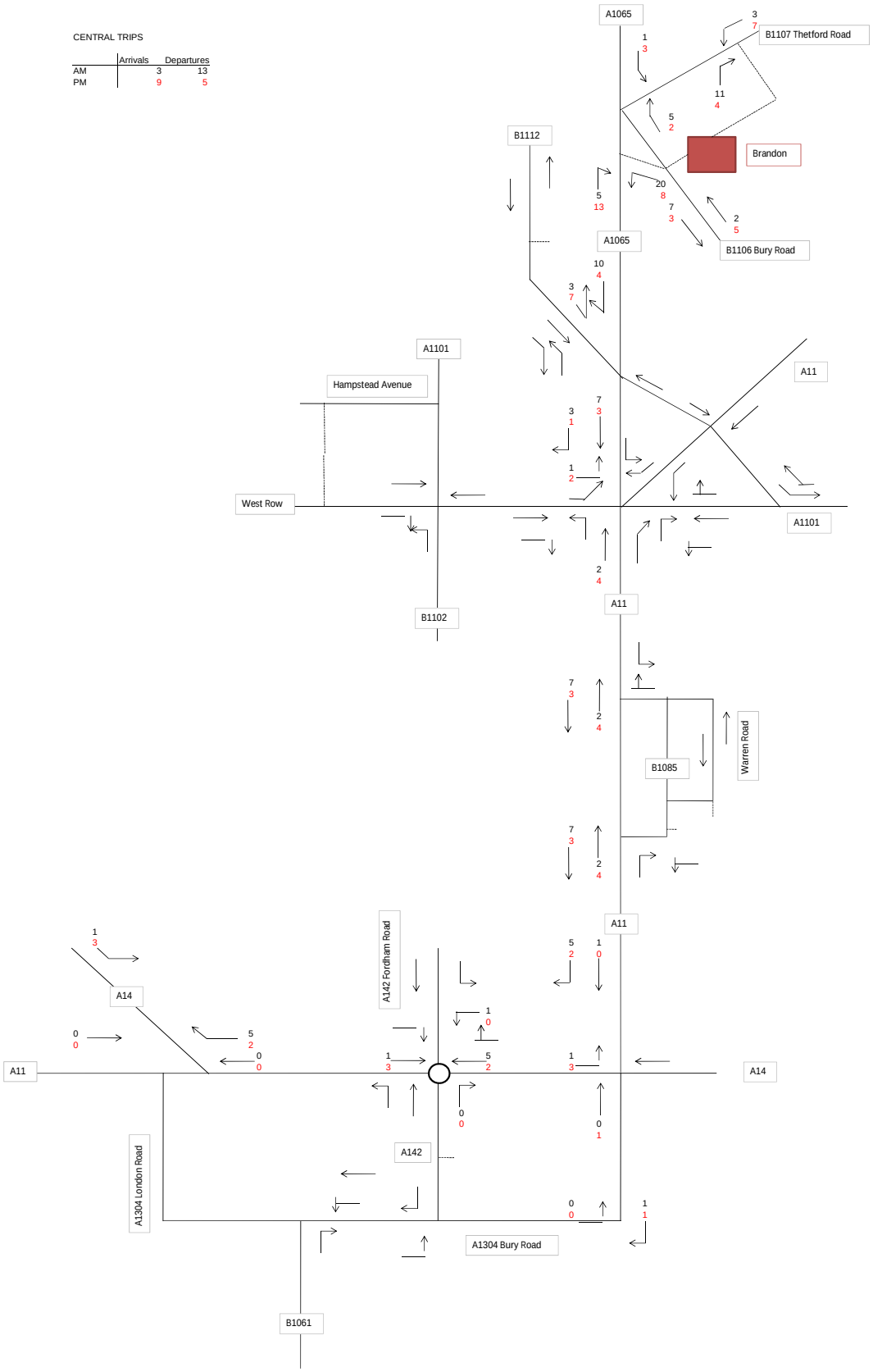
1977 Dwellings Newmarket - Traffic Distribution Growth Scenario 2 plus Primary Villages	Made by: CT	Approved by: JS	
	Checked by: LL	Date: Jan-16	

CHECK:

	Model		Data		Difference	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
AM	212	812	212	812	0	0
PM	534	336	534	336	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	3	13
PM	9	5



Brandon Trip Distribution

125 Dwellings Brandon - Traffic Distribution Growth Scenario 2 plus Primary Villages	Made by: CT Checked by: LL	Approved by: JS Date: Jan-16	

CHECK:

Model	Arrivals	Departures
AM	14	55
PM	36	23

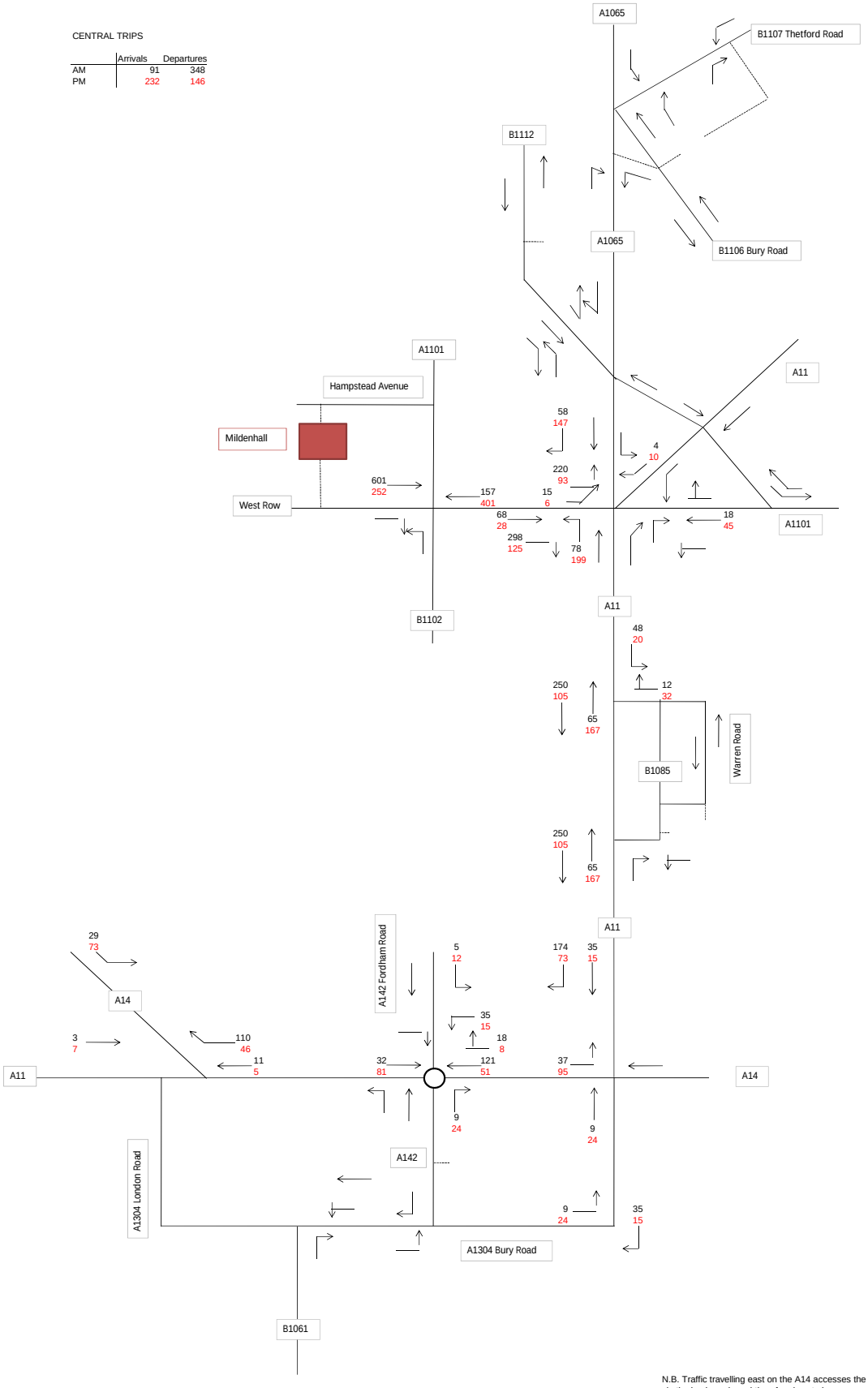
Data	Arrivals	Departures
AM	15	56
PM	37	23

Difference	Arrivals	Departures
AM	0.371523	1.421612
PM	0.944906	0.594281

DOES NOT MATCH AS DISTRIBUTION < 1% NOT INCLUDED

CENTRAL TRIPS

	Arrivals	Departures
AM	91	348
PM	232	146



Mildenhall Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

1903 Dwellings Mildenhall - Traffic Distribution
Growth Scenario 2 plus Primary Villages

Made by: CT
Checked by: LL
Approved by: JS
Date: Jan-16

CHECK:

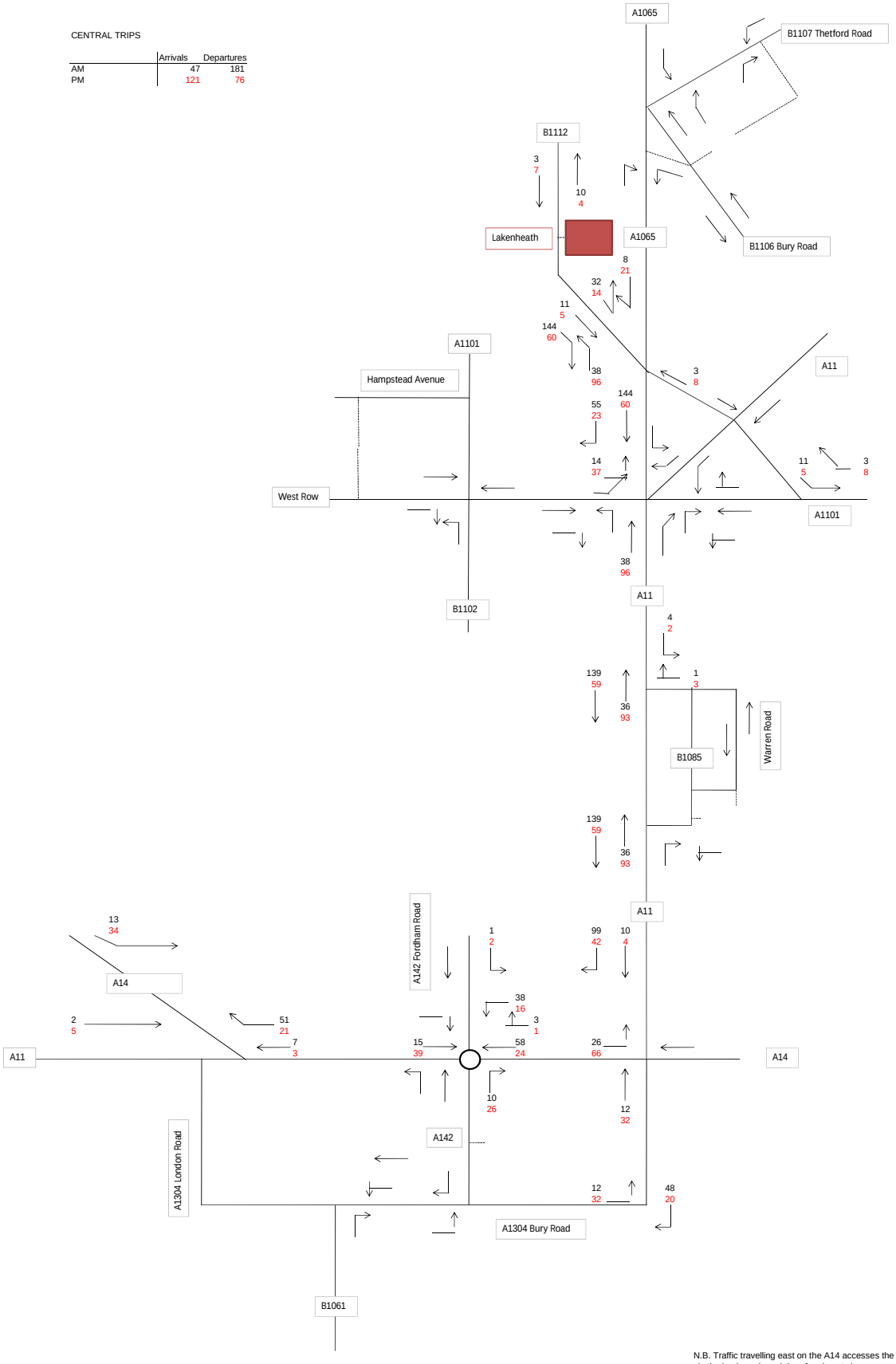
Model	Arrivals	Departures
AM	248	949
PM	633	398

Data	Arrivals	Departures
AM	248	949
PM	633	398

Difference	Arrivals	Departures
AM	0	0
PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	47	181
PM	121	76



Lakenheath Trip Distribution

N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

876 Dwellings Lakenheath - Traffic Distribution
Growth Scenario 2 plus Primary Villages

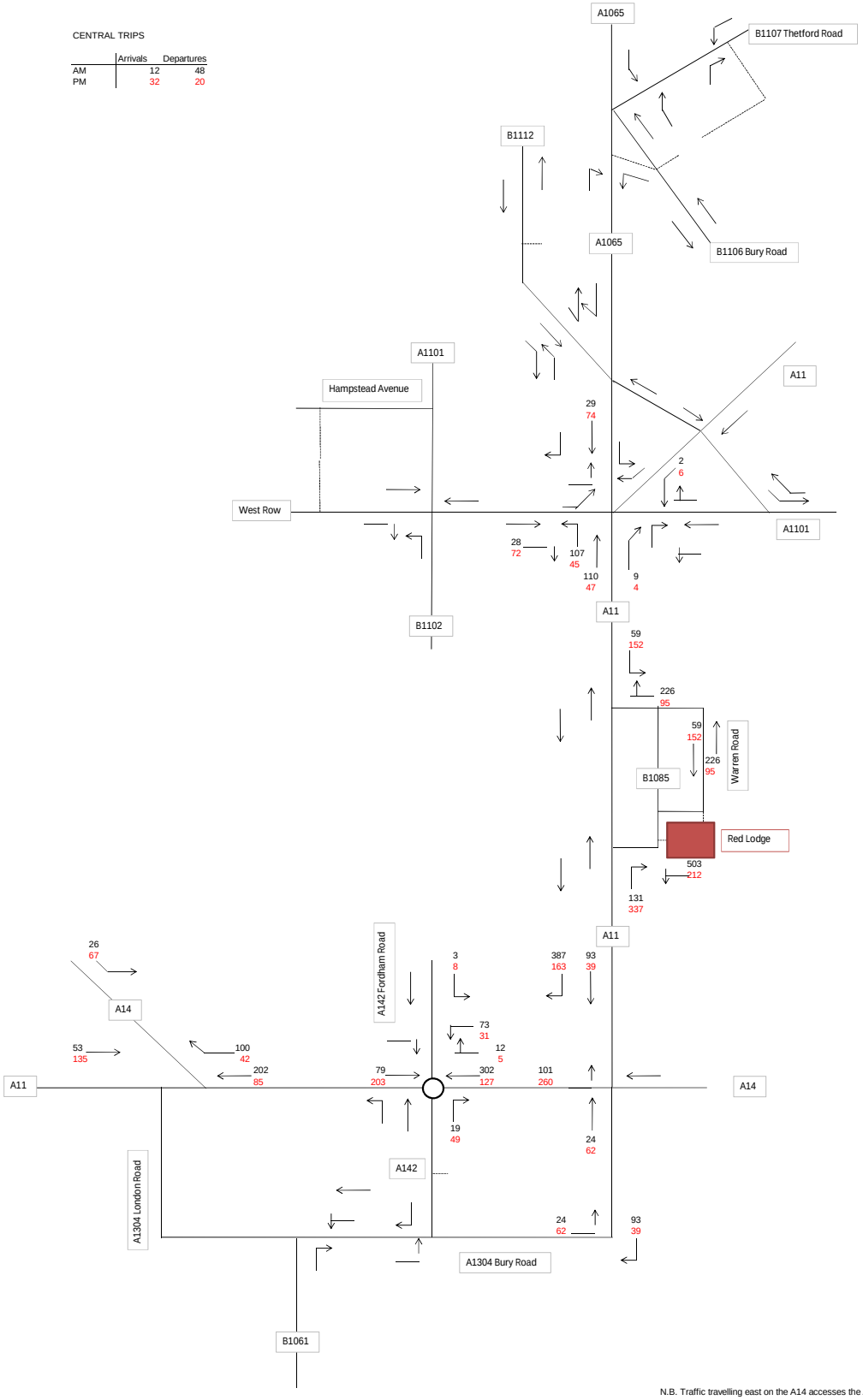
Made by: CT
Checked by: LL
Approved by: JS
Date: Jan-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	113	433	AM	113	433	AM	0	0
PM	290	182	PM	290	182	PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	12	48
PM	32	20



N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

Red Lodge Trip Distribution

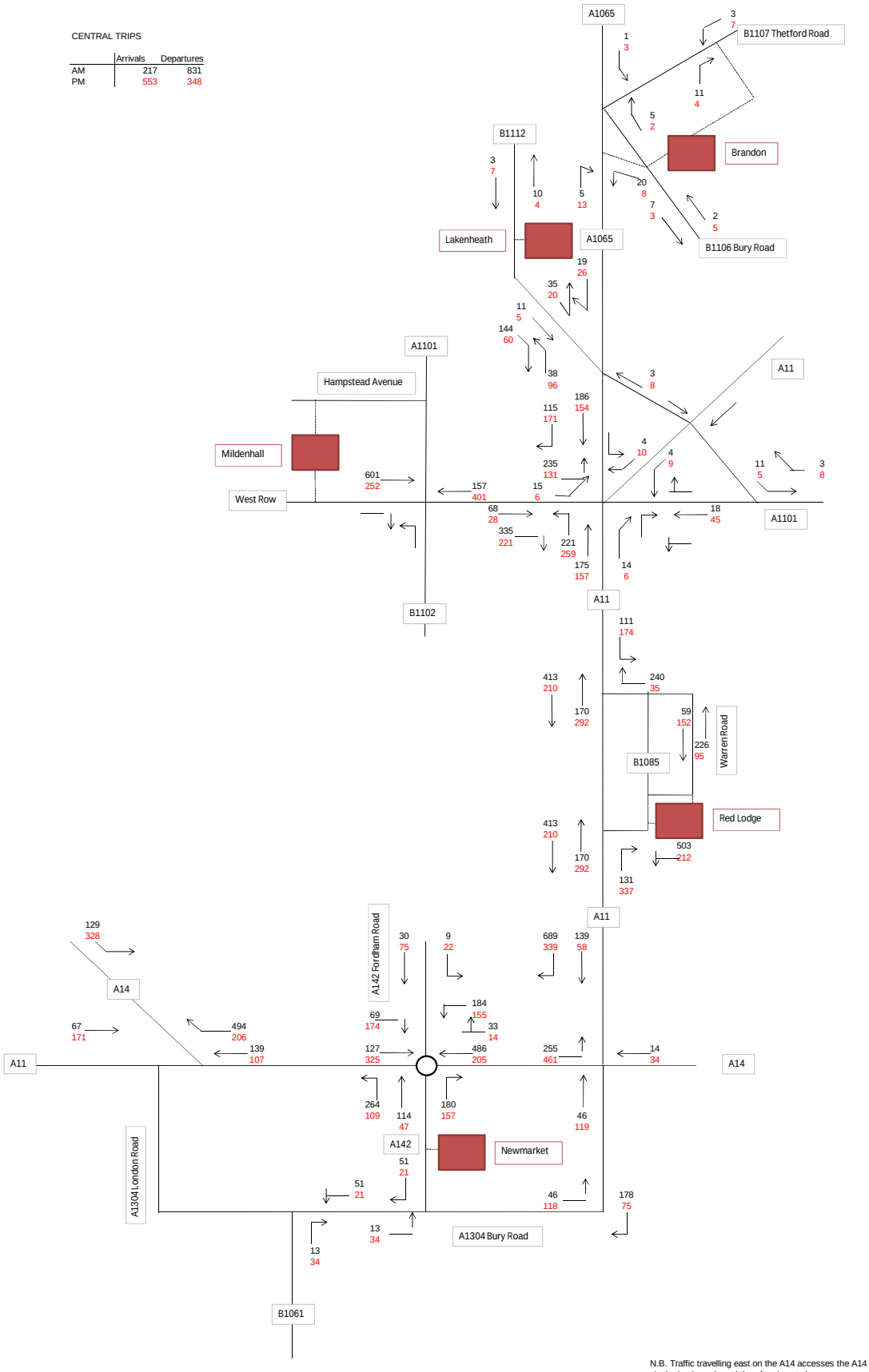
1554 Dwellings Red Lodge - Traffic Distribution Growth Scenario 2 plus Primary Villages	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Jan-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	203	777	AM	203	777	AM	0	0
PM	521	328	PM	521	328	PM	0	0

CENTRAL TRIPS

	Arrivals	Departures
AM	217	831
PM	553	348



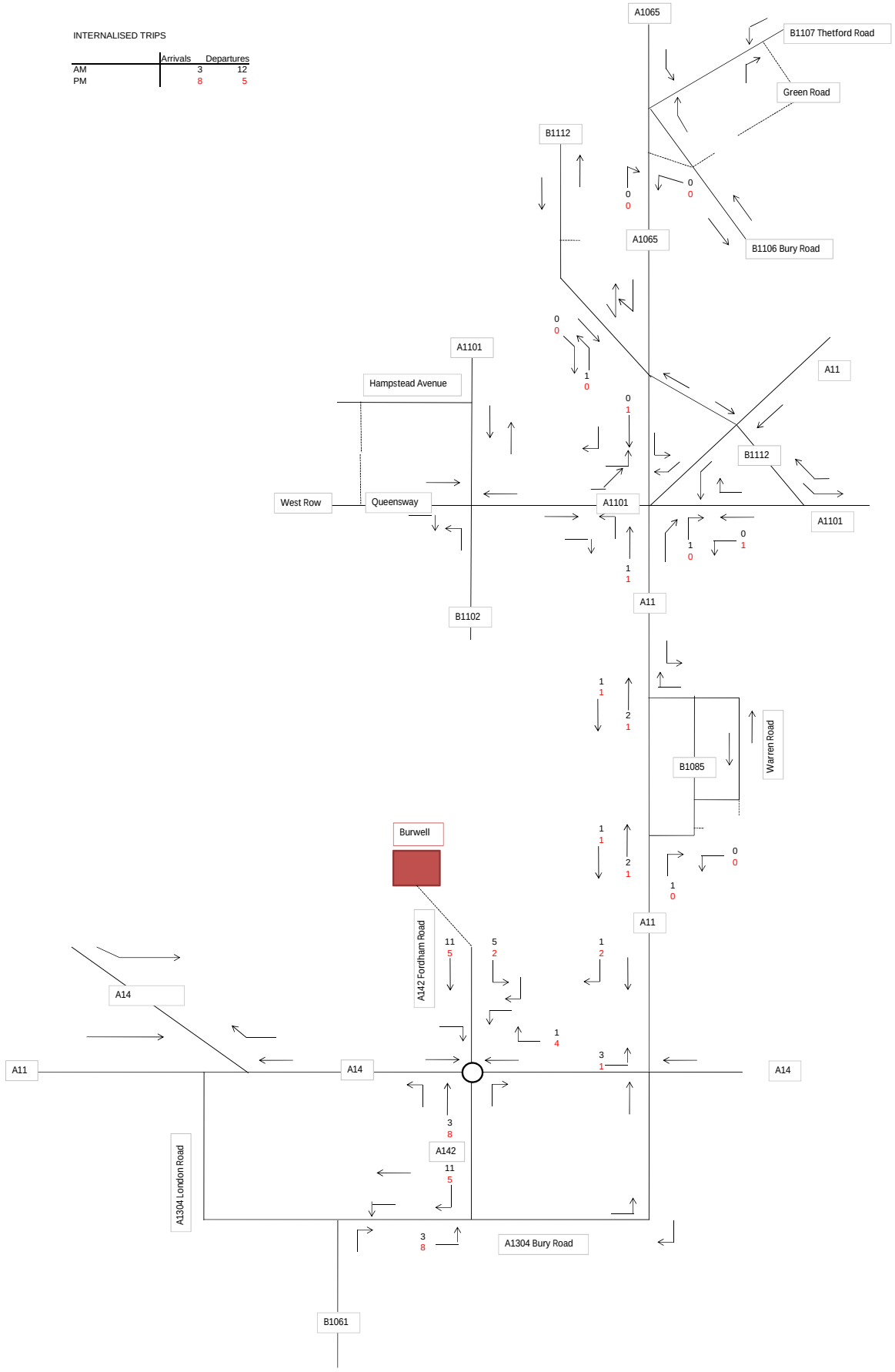
N.B. Traffic travelling east on the A14 accesses the A14 via the back roads and therefore is not shown accessing the A14.

All Areas 6,435 dwellings
Growth Scenario 2 plus Primary Villages Traffic Distribution

Made by: ML
Checked by: CG
Approved by: BH
Date: Nov-09

INTERNALISED TRIPS

	Arrivals	Departures
AM	3	12
PM	8	5



Burwell Trip Distribution

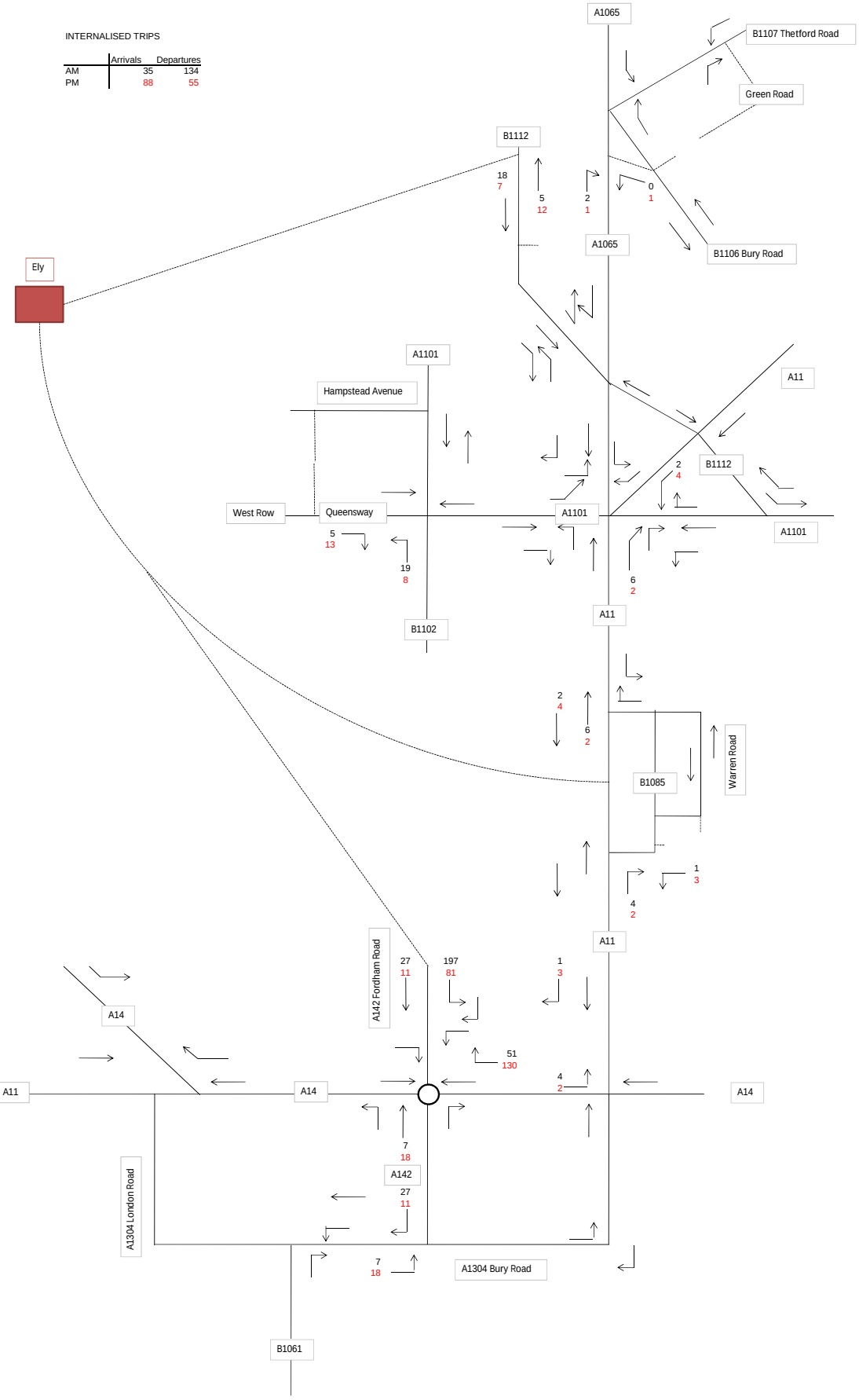
Made by: LL
Checked by: JS
Approved by: JS
Date: Mar-16

CHECK:

Model	Arrivals	Departures	Data	Arrivals	Departures	Difference	Arrivals	Departures
AM	13	51	AM	13	51	AM	0	0
PM	34	21	PM	34	21	PM	0	0

INTERNALISED TRIPS

	Arrivals	Departures
AM	35	134
PM	88	55



Ely Trip Distribution

Made by: LL
Checked by: JS
Approved by: JS
Date: Mar-16

CHECK:

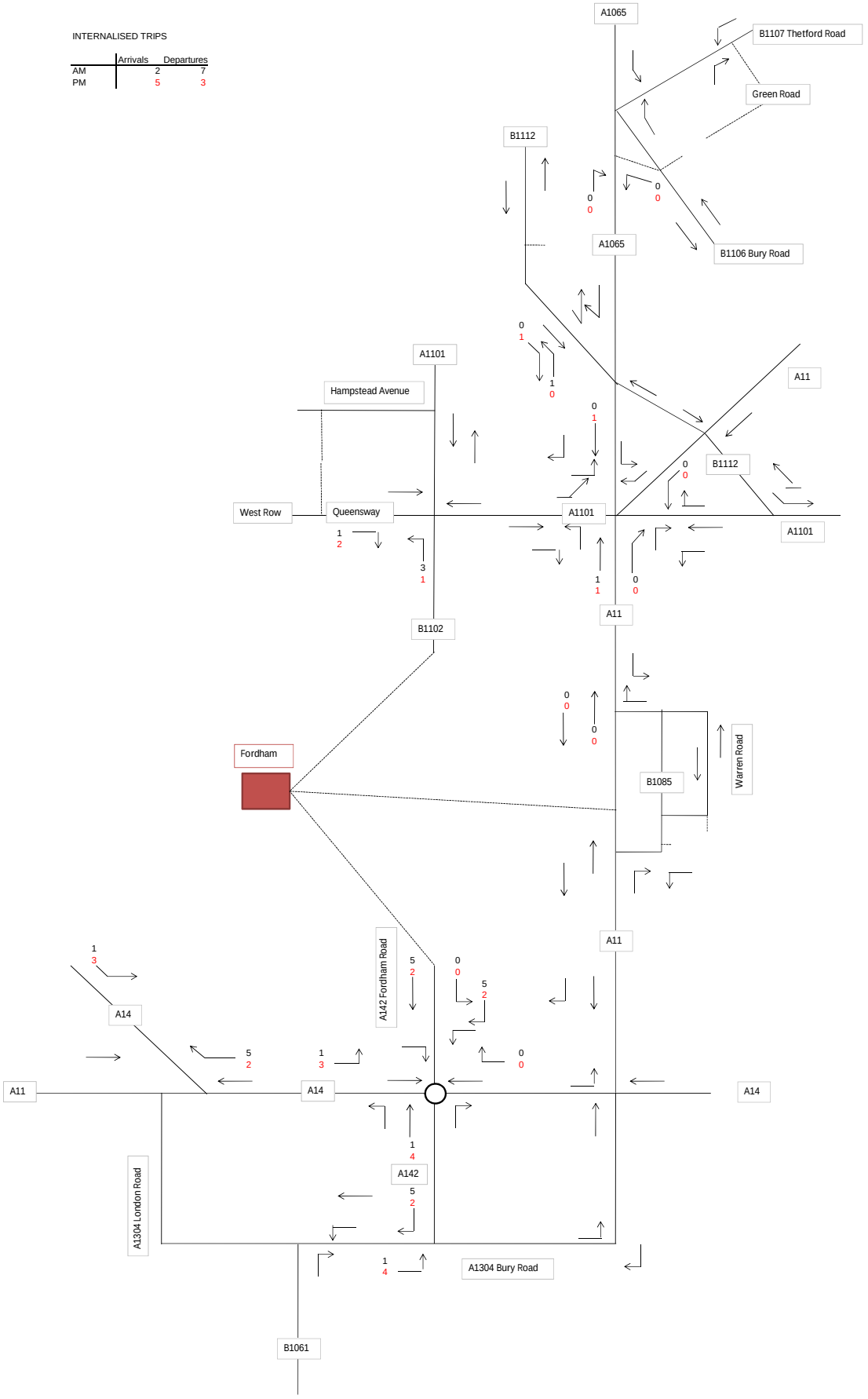
Model	Arrivals	Departures
AM	116	443
PM	291	183

Data	Arrivals	Departures
AM	116	443
PM	291	183

Difference	Arrivals	Departures
AM	0	0
PM	0	0

INTERNALISED TRIPS

	Arrivals	Departures
AM	2	7
PM	5	3



Fordham Trip Distribution

Made by: LL
Checked by: JS
Approved by: JS
Date: Mar-16

CHECK:

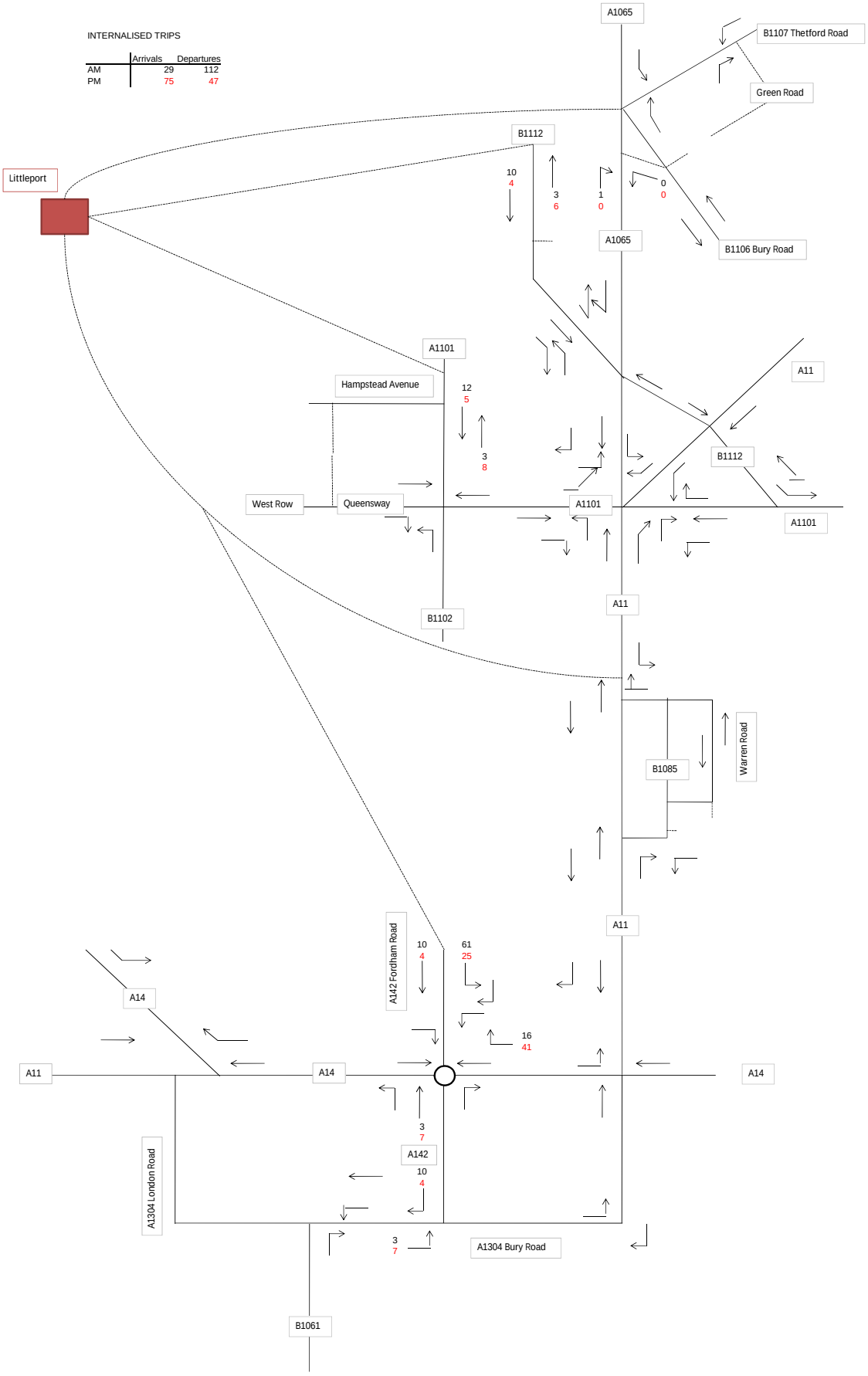
Model	Arrivals	Departures
AM	9	34
PM	23	14

Data	Arrivals	Departures
AM	9	34
PM	23	14

Difference	Arrivals	Departures
AM	0	0
PM	0	0

INTERNALISED TRIPS

	Arrivals	Departures
AM	29	112
PM	75	47



Littleport Trip Distribution

Made by: LL
Checked by: JS
Approved by: JS
Date: Mar-16

CHECK:

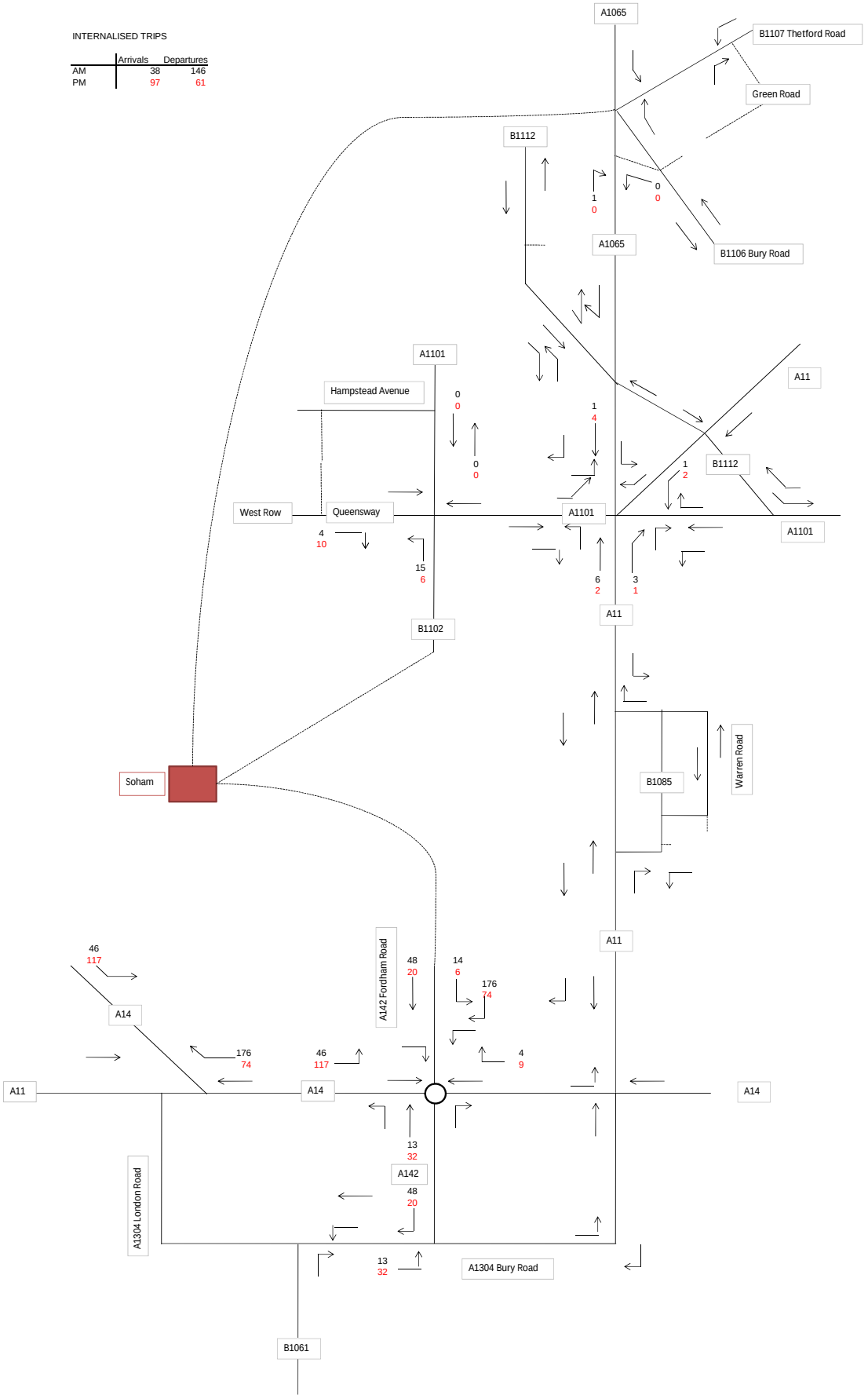
Model	Arrivals	Departures
AM	57	216
PM	144	90

Data	Arrivals	Departures
AM	57	216
PM	144	90

Difference	Arrivals	Departures
AM	0	0
PM	0	0

INTERNALISED TRIPS

	Arrivals	Departures
AM	38	146
PM	97	61



Soham Trip Distribution

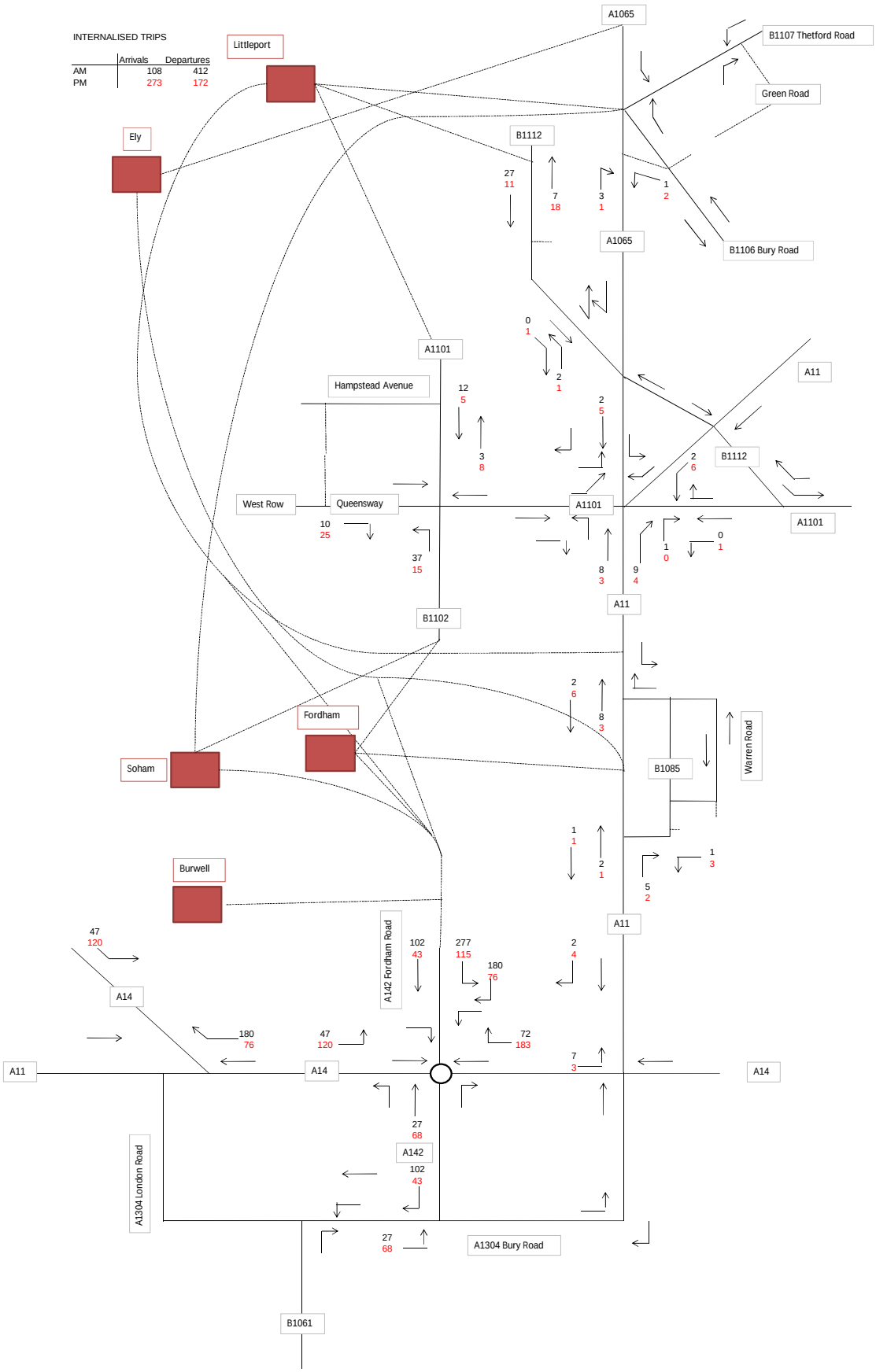
Made by: LL
Checked by: JS
Approved by: JS
Date: Mar-16

CHECK:

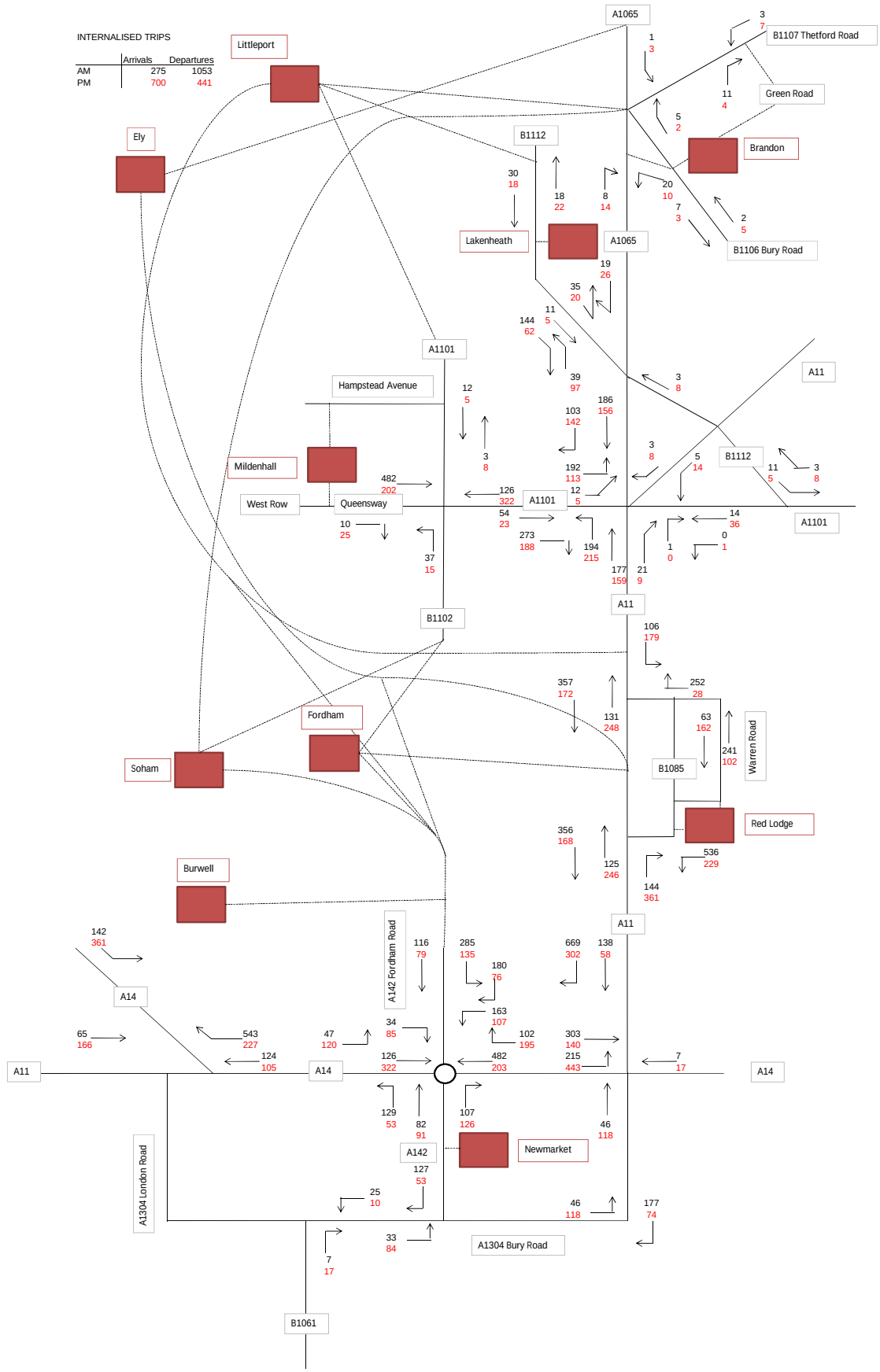
Model	Arrivals	Departures
AM	165	631
PM	420	264

Data	Arrivals	Departures
AM	165	631
PM	420	264

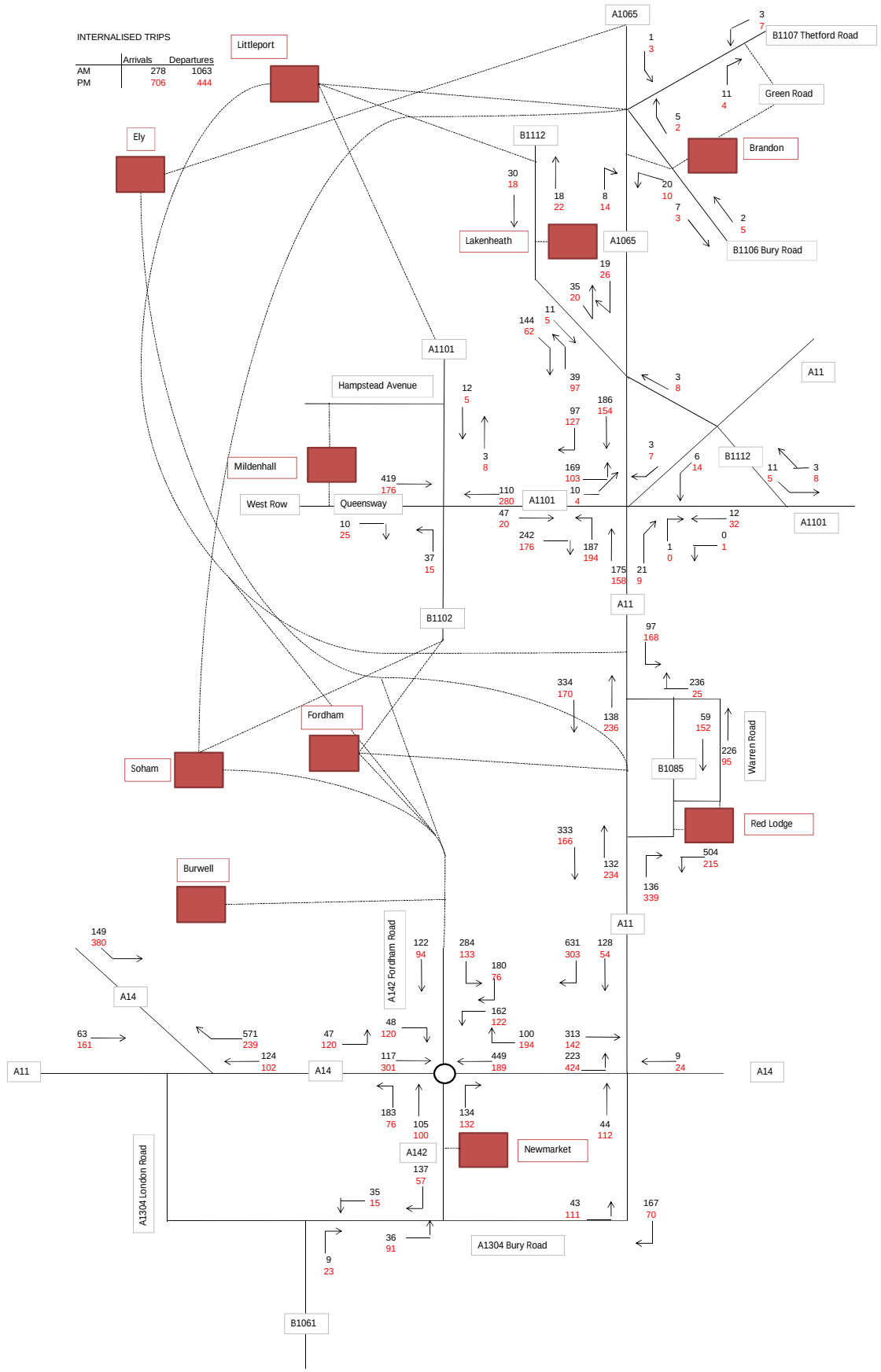
Difference	Arrivals	Departures
AM	0	0
PM	0	0



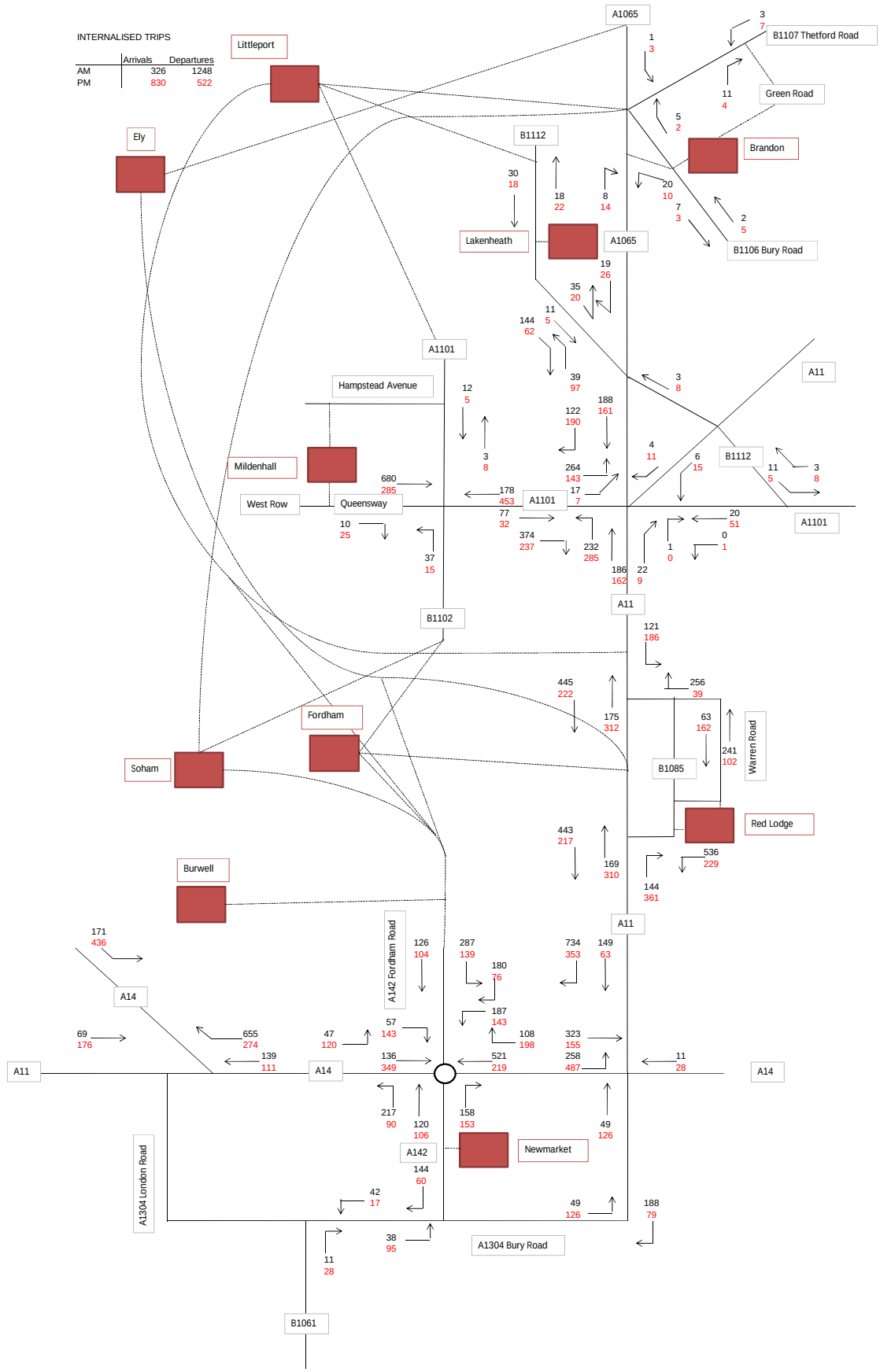
Trip Distribution	Made by: LL	Approved by: JS	
	Checked by: JS	Date: Mar-16	



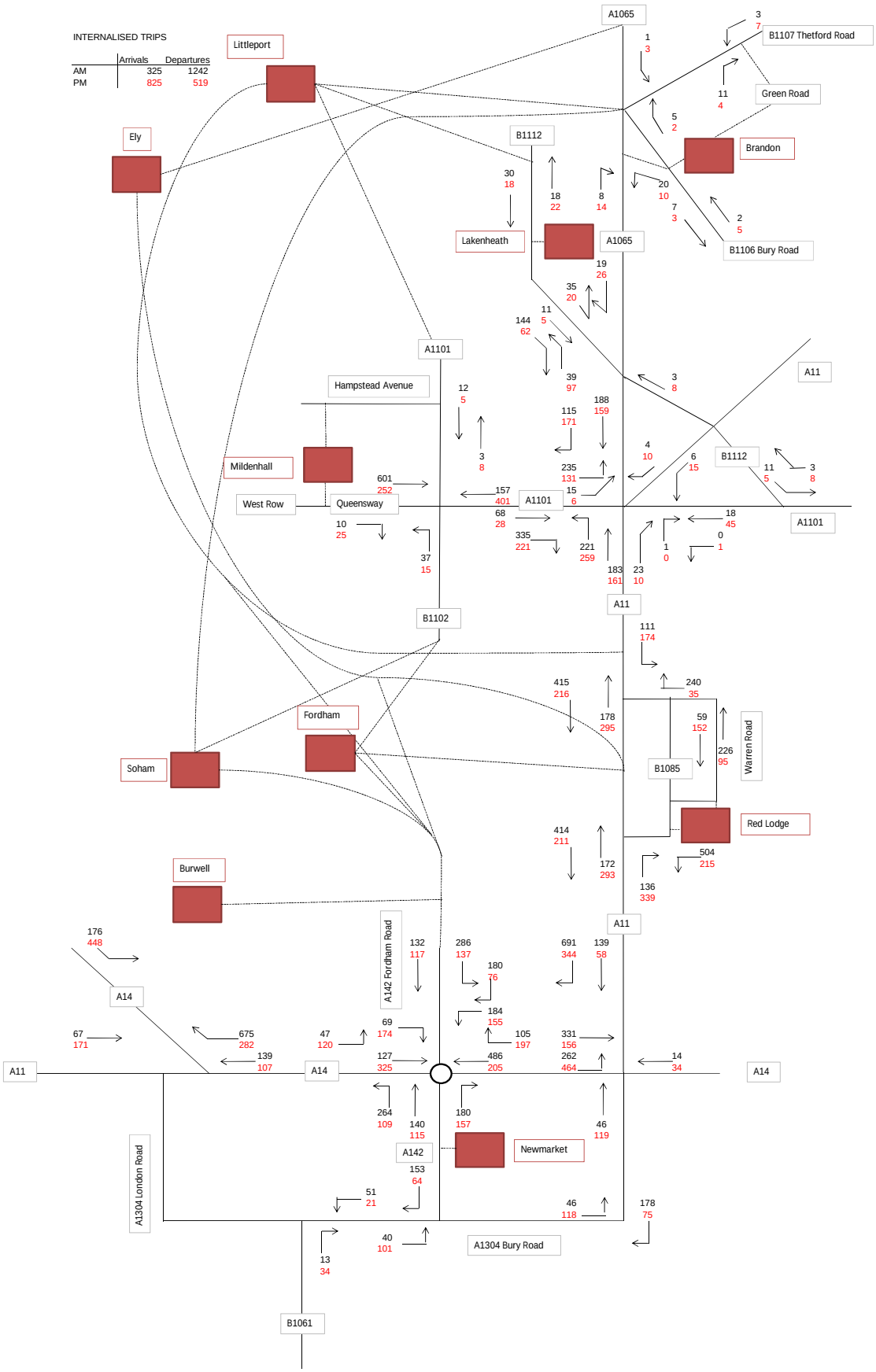
GS1 plus EC Trip Distribution	Made by:	LL	Approved by: JS
	Checked by:	JS	Date: Mar-16



GS2+EC-Trip Distribution	Made by:	LL	Approved by: JS
	Checked by:	JS	Date: Mar-16



GS1+PV+EC-Trip Distribution	Made by:	LL	Approved by: JS
	Checked by:	JS	Date: Mar-16



GS2+PV+EC-Trip Distribution	Made by:	CT	Approved by: JS
	Checked by:	LL	Date: Mar-16