



RSA Designers Response

Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane

Crest Nicholson Chiltern (Crest)

Prepared by:

SLR Consulting Limited

The Cursitor, 38 Chancery Lane, London, WC2A 1EN

SLR Project No.: 141499

18 November 2025

Revision: 01

1 Project Summary

RSA REPORT TITLE	RSA STAGE 1 DESIGNERS RESPONSE
Date	18 th November 2025
Document Reference and Revision:	R08-Stage 1 RSA Designers Response 251118
Prepared by:	Taylor Davis
On behalf of:	SLR Consulting Ltd
AUTHORISATION SHEET	
Project:	Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane
Report Title	RSA Stage 1 Designers Response
DESIGNERS RESPONSE PREPARED BY	
Name:	Taylor Davis
Signed:	<i>Taylor Davis</i>
Organisation:	SLR Consulting Ltd
Date:	18 th November 2025



2 General Details

GENERAL DETAILS:				
Highway scheme name and road number:		Lower Luton Road, Harpenden		
Type of scheme:	Development Site Access			
RSA Stage:	☒ Stage 1	☐ Stage 2	☐ Stage 3	☐ Stage 4
	Interim			
Overseeing Organisation details:		Hertfordshire County Council		
Design organisation details:		SLR Consulting Ltd		
Police contact details:		N/A		
Maintaining agent contact details:				
RSA team membership:		Duncan Stuart BSc, MSc, MCIHT, MSoRSA, NH Cert. Comp. Ben Finch, MCIHT, MSoRSA		
Terms of reference:				



3 Road Safety Audit Decision Log

RSA PROBLEM	RSA RECOMMENDATION	DESIGN ORGANISATION RESPONSE	OVERSEEING ORGANISATION RESPONSE	AGREED RSA ACTION
2.1	It is recommended that appropriate right turn and straight-ahead arrows are provided at the proposed junction.	This recommendation is accepted. The site access drawing has been amended to show road marking arrows on the mainline at the junction. Revised site access junction drawing is provided at Appendix A of this Designer's Response.		
2.2	It is recommended that appropriate visibility is provided for the proposed site access right turn lane and minor arm.	This recommendation is accepted. The site access drawing (Appendix A) has been amended to show visibility from 4.5m set back from the give way line for the minor arm, and also shown for the right-turn lane.		
2.3	It is recommended that the bus stop is relocated so it does not conflict with the proposed signalised pedestrian crossing.	This recommendation is accepted. It is intended that the existing bus stops will be relocated so as not to conflict with the proposed signalised crossing. This is noted within the updated site access drawing with the suggested location for the relocated bus stops also shown.		



2.4	It is recommended that the private land is kept clear of obstruction so that it does not impede visibility for cyclists traveling northbound from the bridleway to Bowers Heath Lane.	This recommendation is accepted. To allow cyclists to achieve appropriate visibility the area will be kept clear of obstruction.		
2.5	It is recommended that appropriate tactile paving depth is provided at the dropped kerb and tactile paving is provided at the island location of the new site access.	This recommendation is accepted. Tactile paving depth has been revised within the latest site access junction drawing.		



4 Design Organisation and Overseeing Organisation Statements

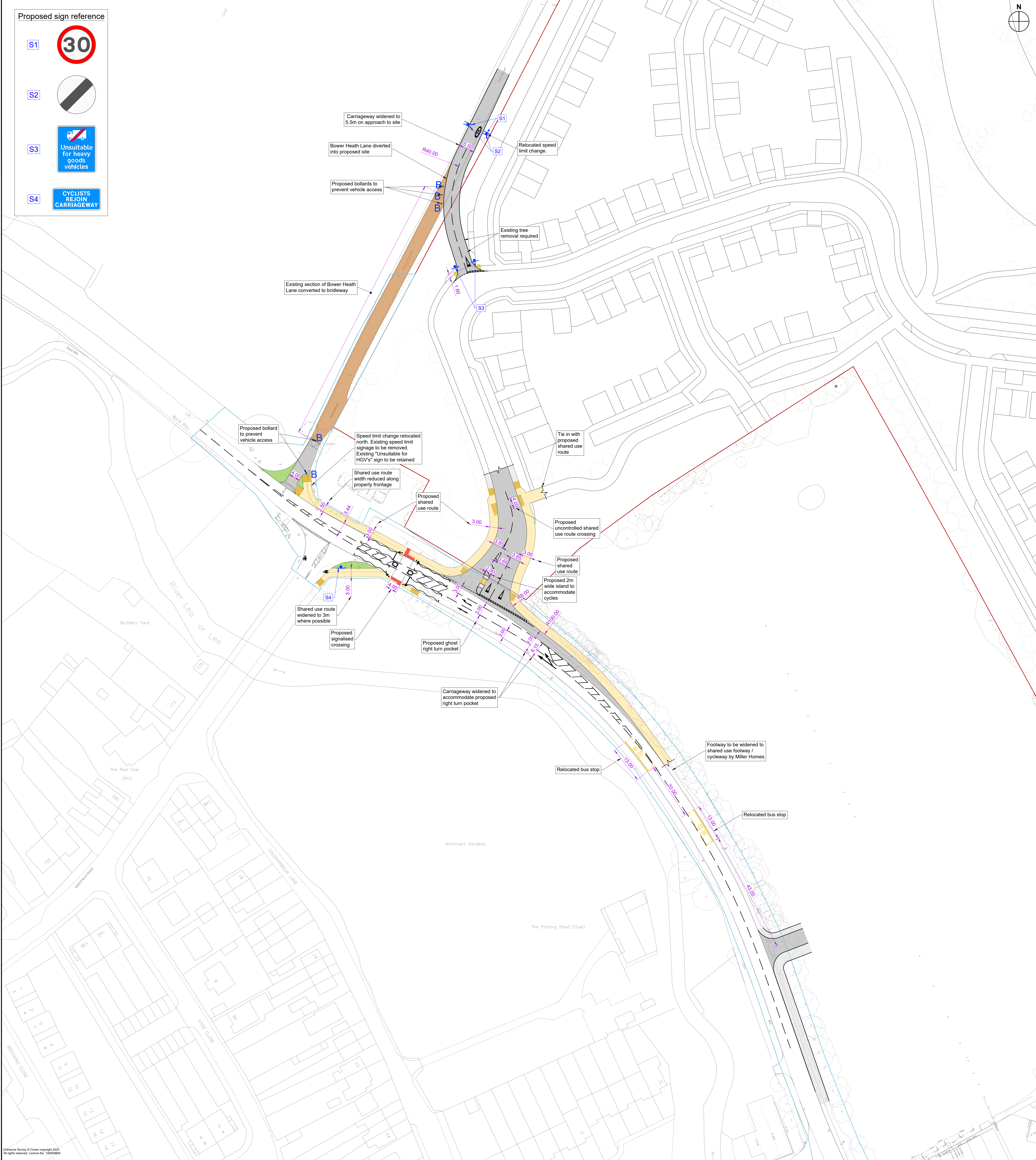
ON BEHALF OF THE DESIGN ORGANISATION I CERTIFY THAT: THE RSA ACTIONS IDENTIFIED IN RESPONSE TO THE ROAD SAFETY AUDIT PROBLEMS IN THE ROAD SAFETY AUDIT HAVE BEEN DISCUSSED AND AGREED WITH THE OVERSEEING ORGANISATION.	
Name	Taylor Davis
Signed	<i>Taylor Davis</i>
Position	Principal Transport Planner
Organisation	SLR Consulting Ltd
Date	18 th November 2025

ON BEHALF OF THE OVERSEEING ORGANISATION I CERTIFY THAT: THE RSA ACTIONS IDENTIFIED IN RESPONSE TO THE ROAD SAFETY AUDIT PROBLEMS IN THE ROAD SAFETY AUDIT HAVE BEEN DISCUSSED AND AGREED WITH THE DESIGN ORGANISATION; AND THE AGREED RSA ACTIONS WILL BE PROGRESSED.	
Name	
Signed	
Position	
Organisation	
Date	





Appendix A Revised Site Access Drawing

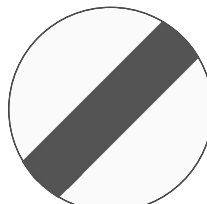


Proposed sign reference

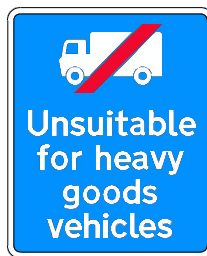
S1



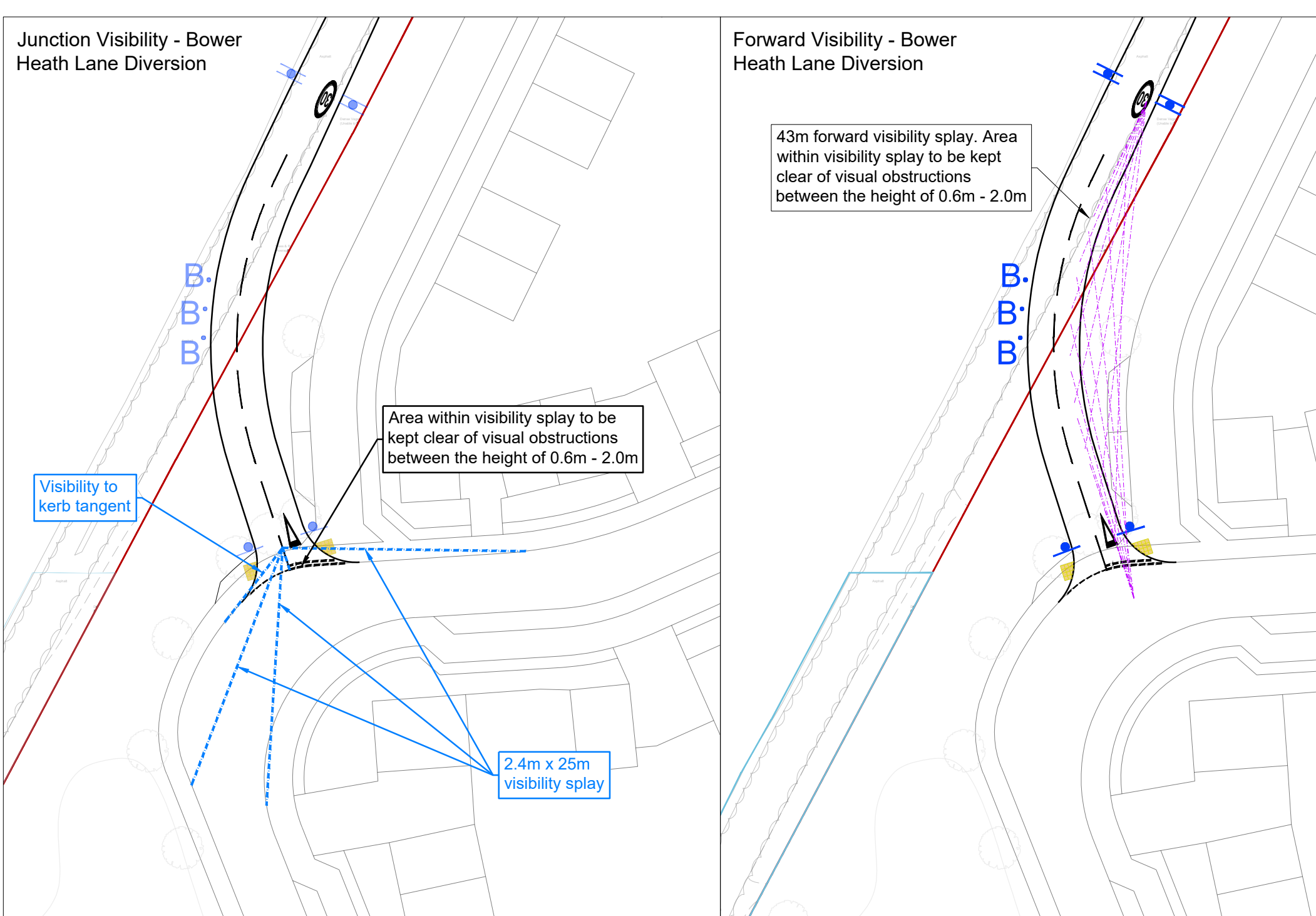
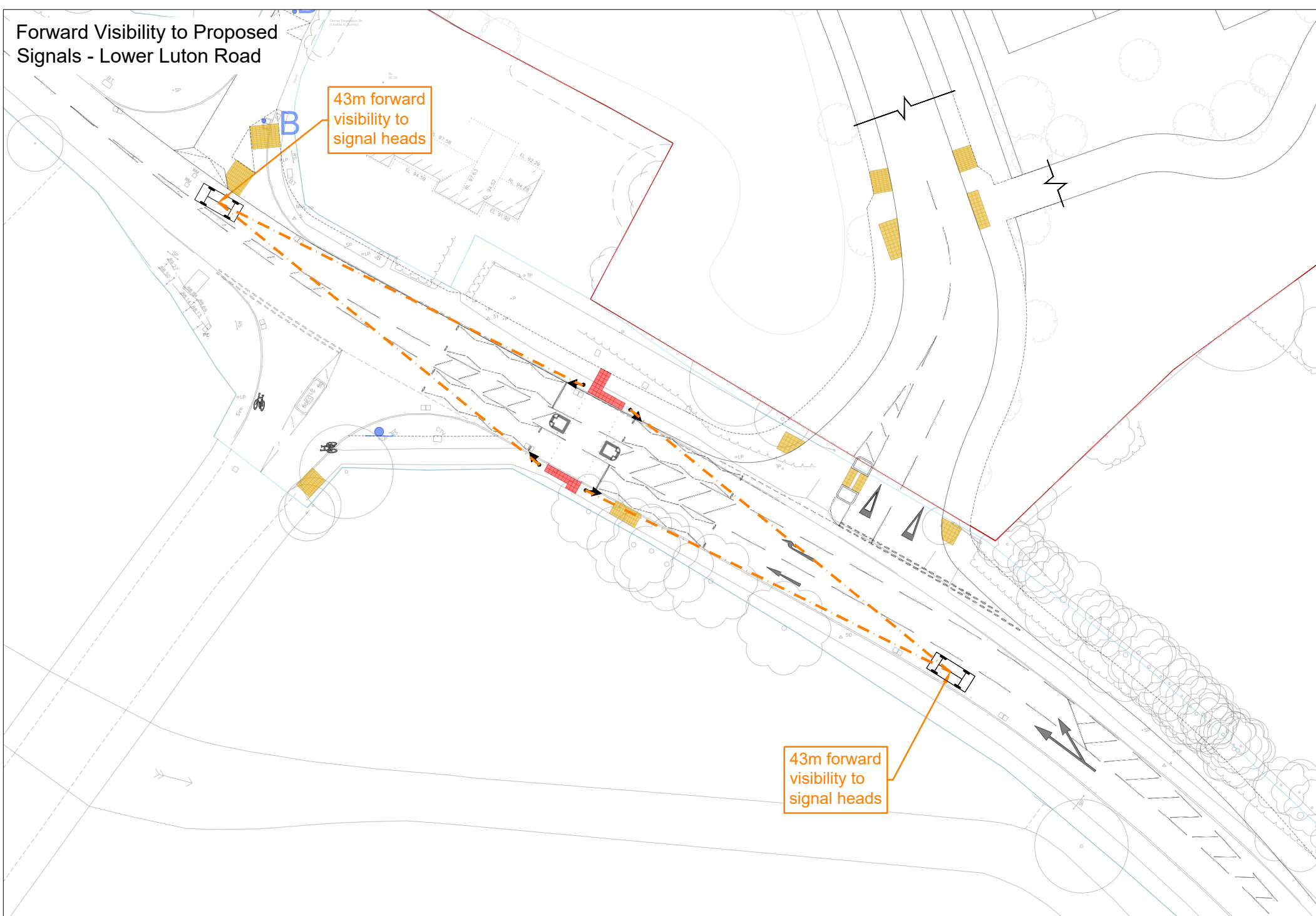
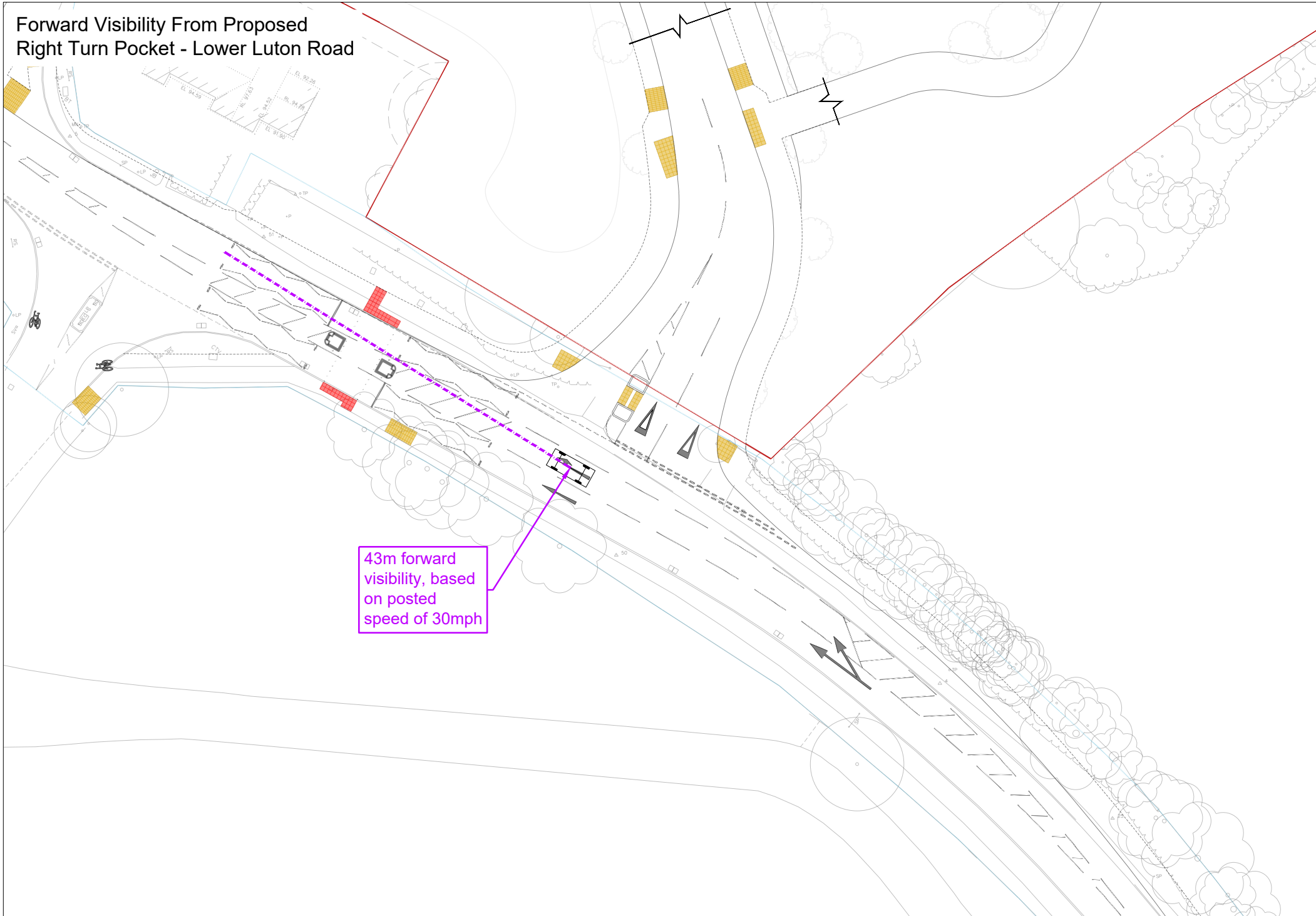
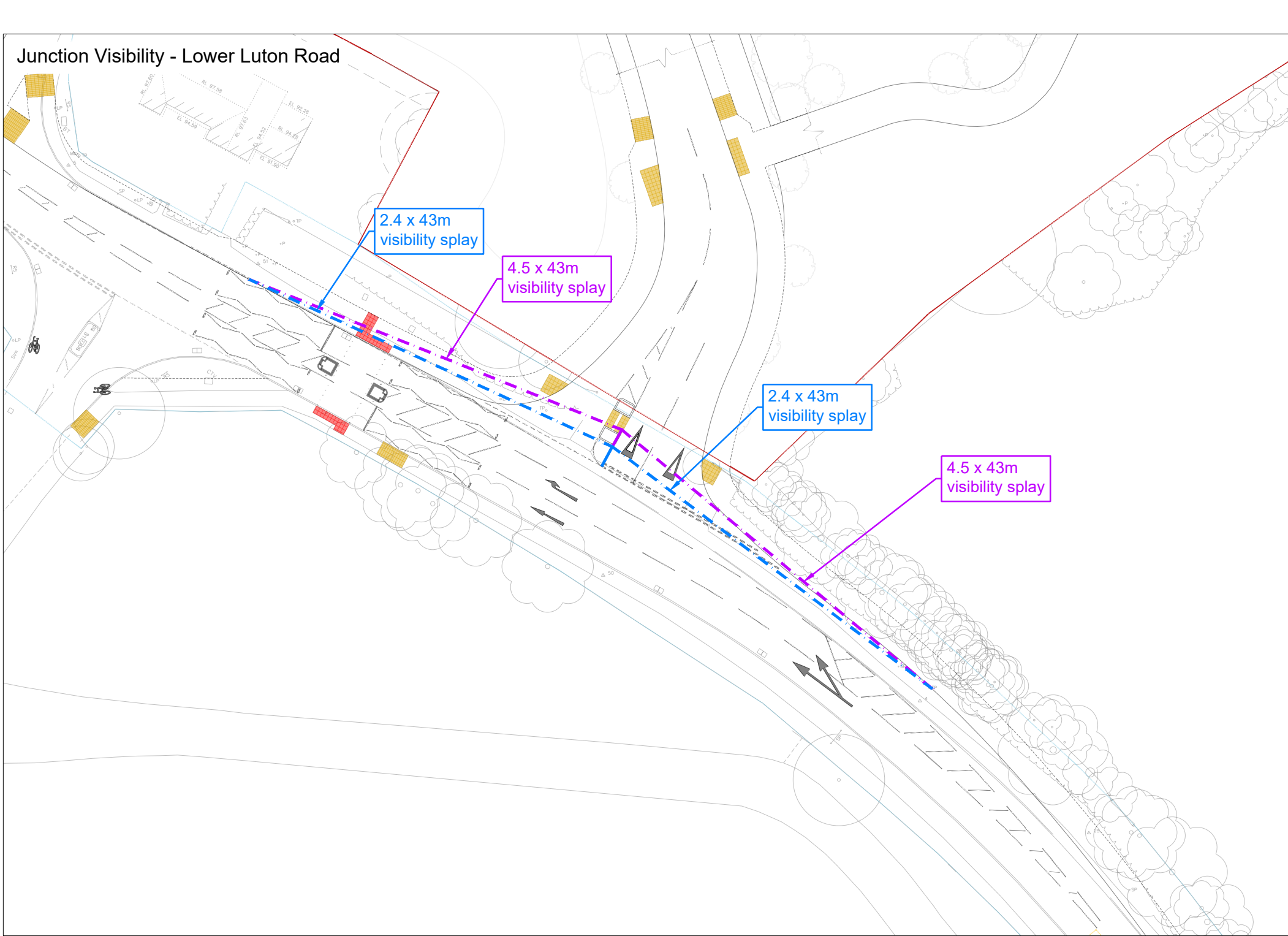
S2



S3



S4



- Notes:
- This is not a construction drawing and is intended for illustrative purposes only.
 - White lining is indicative only.
 - Proposed site layout is based on: C6017 Masterplan Rev F
- Key
- Proposed carriageway
 - Proposed footway
 - Proposed shared use route
 - Proposed brideway
 - Proposed verge / landscaping
 - Proposed sign & post
 - Proposed traffic signal
 - Proposed buff tactile paving
 - Proposed red tactile paving

REV	DETAILS	DRAWN	CHECKED	DATE

STATUS:

CLIENT: Crest Strategic Projects

PROJECT: Lower Luton Road, Harpenden

DRAWING TITLE: Proposed Highway Layout

SCALES: 1:500 at A0

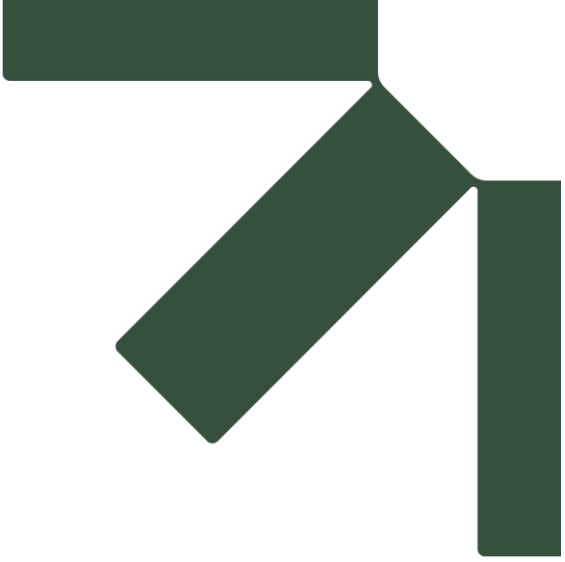
DRAWN: JB CHECKED: TD DATE: 03.12.2025

DRAWING NUMBER: 141499/SK20

REVISION:



Making Sustainability Happen



Appendix H Trip Generation Methodology Note

Transport Assessment

**Land North East of Harpenden between Lower Luton Road, Bower Heath Lane
and Common Lane**

Crest Nicholson

SLR Project No.: 141499

24 February 2026

Crest Nicholson

Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane

SLR Project No.: 141499

10 December 2025

Revision: 1

RE: TRIP GENERATION METHODOLOGY

1.0 Introduction

- 1.1 This note has been prepared by SLR Consulting Ltd on behalf of Crest Nicholson to provide additional information in respect to the methodology used to determine the trip generation of the proposed site at Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane.
- 1.2 This note considers two scenarios. The methodology for both is broadly the same. The first scenario considers the trip generation of the proposed site, which comprises of up to 500 residential dwellings, a two-form entry (2FE) primary school, 1,200m² of flexible Class E floorspace and a 70-bed care home or extra care facility. The second scenario considers the trip generation of the full North East Harpenden allocation (reference C-078, C-253 and C-048) which comprises of up to 738 (indicative) residential dwellings (inclusive of the care home/extra care facility) plus the aforementioned ancillary uses to be delivered as part of the proposed site. To present a robust worst-case scenario, the full allocation scenario considers 730 residential units plus a 70-bed care home/extra care facility (800 total).
- 1.3 The trip generation methodology utilises an approach whereby residential trips are split by journey purpose and a mode split is then subsequently applied to derive the number of trips by all modes of transport.

2.0 Total Person Trip Rates

- 2.1 As a starting point for determining the trip generation of the site, representative trip rates were obtained from the industry standard TRICS database. The trip rates obtained were total person (i.e. trips by all modes). These will be used to derive the total number of trips by all modes later within this note.
 - 2.2 Trip rates have been obtained for the following land uses:
-



- Residential – Houses Privately Owned;
- Education – Primary School;
- Health – GP Surgery; and
- Health – Care Home (Elderly Residential).

- 2.3 The use of “privately owned house” trip rates for the residential aspect of the development allows for a robust assessment. The development will provide a proportion of affordable units, or flats which typically generate fewer trips than privately owned houses.
- 2.4 Trip rates for a GP surgery have been collected to be representative of the proposed medical centre. This is considered to be appropriate given the absence of a dedicated medical centre land use within TRICS.
- 2.5 Whilst the development could deliver a care home or extra care facility depending on end-occupier, trip rates for a residential care home have been utilised as these are higher than trip rates for extra care (assisted living in TRICS) land uses. This allows for a robust assessment.
- 2.6 Whilst the site does propose a local centre which is likely to include retail and community facilities, no trip rates have been obtained for these purposes as it is expected that the majority of trips to these facilities will be undertaken by those residing within the development or local neighbouring residents who will be able to access by active travel modes. Furthermore, it is unlikely that during the peak hour periods trips will be made purely for the purpose of visiting shops within the site, and any vehicle trips are likely to form a pass-by or diverted trip.
- 2.7 The total person trip rates for each proposed land uses are presented within **Table 2.1** for the traditional AM and PM peak hour periods (08:00-09:00 and 17:00-18:00). The residential trip rates presented are per unit, whilst the primary school trip rates are presented as per pupil. The medical centre trip rates are presented as per 100m² of floorspace and the care home trip rates are presented as per resident (equivalent to per bed).

Table 2.1 - Total Person Trip Rates

	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Residential – Privately Owned Houses (per unit)	0.212	0.765	0.977	0.618	0.271	0.889
Education – Primary School (per pupil)	1.253	0.322	1.575	0.025	0.044	0.069
Health – GP Surgery (per 100m ²)	6.023	2.970	8.993	1.938	3.960	5.898
Health – Care Home (per resident)	0.154	0.133	0.287	0.087	0.129	0.216



- 2.8 The TRICS parameters used for each land use to derive appropriate and representative trip rates are presented subsequently within this section.

Residential – Privately Owned Dwellings

- 2.9 The following parameters were used to obtain appropriate trip rates from the TRICS database for residential privately owned dwellings:
- Land Use – Residential;
 - Category – Houses Privately Owned;
 - Regions – England only (excluding Greater London);
 - Size – 200 to 750 dwellings;
 - Days – Weekday surveys only; and
 - Locations – Edge of town only.
- 2.10 The above parameters derived a total of 15 sites from the TRICS database. No surveys were undertaken during the COVID-19 pandemic and therefore no manual removal of any survey site was necessary.
- 2.11 The full TRICS output report is contained within **Appendix A**.

Education – Primary School

- 2.12 The following parameters were used to obtain appropriate trip rates from the TRICS database for a primary school:
- Land Use – Education;
 - Category – Primary;
 - Regions – England only (excluding Greater London);
 - Size – 92 (minimum) to 538 (maximum) pupils;
 - Days – Weekday surveys only; and
 - Locations – Edge of town and Edge of Town Centre only.
- 2.13 The above parameters derived a total of 7 sites from the TRICS database. No surveys were undertaken during the COVID-19 pandemic and therefore no manual removal of any survey site for this purpose was necessary. Following discussions with HCC, two sites were manually removed from the selection on the basis that the trip accumulation indicated a low number of attendees on the survey day and therefore underrepresents the trip generation of the school.
- 2.14 The full TRICS output report is contained within **Appendix A**.



Health – GP Surgery

- 2.15 The following parameters were used to obtain appropriate trip rates from the TRICS database for a GP surgery.
- Land Use – Health;
 - Category – GP Surgery;
 - Regions – England only (excluding Greater London);
 - Size – 200 (minimum) to 2900 (maximum) m²;
 - Days – Weekday surveys only; and
 - Locations – Edge of Town and Suburban Area only (limited number of edge of town sites available).
- 2.16 The above parameters derived a total of 5 sites from the TRICS database. No surveys were undertaken during the COVID-19 pandemic and therefore no manual removal of any survey site was necessary.
- 2.17 The full TRICS output report is contained within **Appendix A**.

Health – Care Home (Elderly Residential)

- 2.18 The following parameters were used to obtain appropriate trip rates from the TRICS database for a care home facility:
- Land Use – Health;
 - Category – Care Home;
 - Regions – England only (excluding Greater London);
 - Size – 40 (minimum) to 125 (maximum) beds;
 - Days – Weekday surveys only; and
 - Locations – Edge of Town and Suburban Area only (limited number of edge of town sites available).
- 2.19 The above parameters derived a total of 4 sites from the TRICS database. No surveys were undertaken during the COVID-19 pandemic and therefore no manual removal of any survey site was necessary.
- 2.20 The full TRICS output report is contained within **Appendix A**.

3.0 Residential Journey Purpose

- 3.1 Residential trips are made for a variety of purposes and the application of a single modal split using Census commuting data to account for all trips does not accurately reflect the likely trip generation of the site.



- 3.2 As such, National Travel Survey (NTS) data (NTS0502a) which sets out the proportions of trips by all modes for a number of journey purposes has been obtained. **Table 3.1** presents the data available for 2023 for the AM and PM peak hours.

Table 3.1 - NTS0502a Residential Journey Purpose

Journey Purpose	08:00-08:59	17:00-17:59
Commuting	16.2%	26.2%
Business	2.4%	2.6%
Education	28.1%	2.7%
Escort education	25.3%	2.4%
Shopping	4.5%	13.7%
Other work, other escort and personal business	13.4%	20.1%
Visiting friends, entertainment and sport	3.5%	21.3%
Holiday, day trip and other	6.6%	11.0%
All purposes	100.0%	100.0%

- 3.3 For simplicity, some of the journey purposes have been combined to create an overarching journey purpose. Commuting and Business have been combined under the journey purpose of "Commuting", Education and Escort Education have been combined under the journey purpose of "Education" and subsequently split in half to represent "Primary Education" and "Secondary/Further Education" journey purposes. Shopping has not been combined with any other journey purposes and has been considered as a standalone journey purpose. Finally, "Other work, other escort and personal business", "Visiting friends, entertainment and sport" and "Holiday, day trip and other" have been combined together to create a "Leisure" journey purpose.

- 3.4 **Table 3.2** presents the simplified journey purpose proportions for the AM and PM peak hours.

Table 3.2 - Simplified Residential Journey Purpose

Journey Purpose	08:00-08:59	17:00-17:59
Commuting	18.6%	28.8%
Primary Education	26.7%	2.5%
Secondary/Further Education	26.7%	2.5%
Shopping	4.5%	13.7%
Leisure	23.6%	52.4%
All purposes	100.0%	100.0%

- 3.5 As demonstrated in **Table 3.2**, during the AM peak hour the majority of residential trips are made for the purpose of education (53.3% total), whilst in the PM the majority of trips are made for the purpose of leisure (52.4%).

4.0 Modal Splits

- 4.1 The modal splits for each land use and journey purpose are presented within this section. The modal splits only relate to trips that are external to the site and are supported by local



and national data. It is expected that all trips that remain internal to the site will be undertaken by active travel modes. Where data is not available, a first principles approach has been undertaken to derive an appropriate modal split.

- 4.2 The modal splits that have been presented are based on data available and no adjustments have been made to account for the potential mode shifts that are likely to occur as a result of the implementation of measures associated with the Travel Plan. This therefore allows for a robust consideration of the likely trip generation of the site.

Residential Modal Splits by Journey Purpose

Residential Commuting

- 4.3 The modal split applied to residential commuting trips was derived from 2011 census data. The dataset used for this purpose was WU03EW which allows for consideration of location of usual residence and place of work by method of travel.
- 4.4 The Middle Super Output Area (MSOA) which is most representative of the site, St Albans 002, was used as the usual residency location, whilst place of work was selected as anywhere within Great Britain to understand the methods of travel that are used to reach all destinations.
- 4.5 The site predominantly sits within St Albans 002, however also encroaches on MSOA St Albans 004 which covers a large rural area and is not consider representative of the proposed development location.
- 4.6 Whilst it is appreciated that 2011 Census data is now approximately 13 years old, it remains more appropriate for deriving modal splits for commuting trips than 2021 Census data due to the COVID-19 pandemic which was ongoing during the data collection period and therefore is likely to have skewed data as people were advised to avoid shared transport, or to avoid travelling altogether. For this reason, 2011 Census data is considered to be the most representative data source available.
- 4.7 The resultant modal split for residential trips for the purpose of commuting is presented in **Table 4.1**.

Table 4.1 - Forecast Residential Commuting Modal Split

Mode	Split
Train	28.1%
Bus, minibus or coach	1.2%
Taxi	0.1%
Motorcycle, scooter or moped	0.6%
Driving a car or van	55.1%
Passenger in a car or van	2.6%
Bicycle	2.1%
On foot	10.2%
Other method of travel to work	0.1%



Residential Primary Education

- 4.8 Whilst the development proposes an on-site primary school, it is likely that some residential trips will still be made externally to off-site primary schools.
- 4.9 National Travel Survey (NTS) data has been collected using dataset NTS0614a which presents the proportion of education trips by length and main mode. NTS data from 2023 has been used. This is the most recently available data.
- 4.10 Given the number of schools available within Harpenden, it is likely that the majority of external residential primary education trips will be made to local schools, as such, a mode split has been calculated using NTS data for education trips (ages 5 to 10) of between 0 and 2 miles.
- 4.11 The resultant modal split for residential trips for the purpose of primary education is presented in **Table 4.2**. This modal split only relates to external trips. Trips between residential dwellings and the on-site primary school are expected to be made by active travel modes.

Table 4.2 - Forecast Residential Primary Education Modal Split

Mode	Split
Train	0.0%
Bus, minibus or coach	1.3%
Taxi	0.0%
Motorcycle, scooter or moped	0.0%
Driving a car or van	32.9%
Passenger in a car or van	0.0%
Bicycle	1.9%
On foot	63.3%
Other method of travel to work	0.6%

Residential Secondary/Further Education

- 4.12 Similarly to residential primary education trips, the dataset NTS0614a has been used to derive a modal split for residential secondary education trips.
- 4.13 The most local secondary school is approximately 1 mile from the site and it is considered that secondary school students are more likely to travel further afield to access schools than primary aged children. There are also limited further education facilities within Harpenden and as such those travelling for further education are likely to travel to St Albans or Luton. As such, a modal split has been calculated using NTS data for education trips (ages 11 to 16) of between 1 and 5 miles.



- 4.14 The resultant modal split for residential trips for the purpose of secondary education is presented in **Table 4.3**.

Table 4.3 - Forecast Residential Secondary/Further Education Modal Split

Mode	Split
Train	0.0%
Bus, minibus or coach	20.9%
Taxi	0.0%
Motorcycle, scooter or moped	0.0%
Driving a car or van	40.9%
Passenger in a car or van	0.0%
Bicycle	4.7%
On foot	30.1%
Other method of travel to work	3.4%

Residential Leisure

- 4.15 There is limited data available to determine the likely modal split for residential trips for the purpose of leisure.
- 4.16 The modal split that was presented at **Table 4.1** for residential commuting trips has been considered an appropriate proxy for applying to leisure trips. No alterations have been made.
- 4.17 **Table 4.4** replicates the forecast modal split for residential trips for the purpose of leisure.

Table 4.4 - Forecast Residential Leisure Modal Split

Mode	Split
Train	28.1%
Bus, minibus or coach	1.2%
Taxi	0.1%
Motorcycle, scooter or moped	0.6%
Driving a car or van	55.1%
Passenger in a car or van	2.6%
Bicycle	2.1%
On foot	10.2%
Other method of travel to work	0.1%

Residential Shopping

- 4.18 There is limited data available to determine the likely modal split for residential trips for the purpose of shopping. The modal split used for residential commuting trips has been used as a starting point for considering the likely residential shopping modal split. Some alterations are necessary to make this modal split representative of shopping trips.



- 4.19 As set out within **Table 4.1**, 28.1% of residential commuting trips are undertaken by train. It is considered that residents are unlikely to make a longer distance journey during the peak hour periods for the purpose of shopping and therefore the propensity for residential shopping trips during the peak hours to be made by train is significantly lower than for commuting trips. As such, the train modal split for shopping trips has been reduced to 5%.
- 4.20 During the peak hours it would be expected that most trips made purely for the purpose of shopping would be to areas within Harpenden. The centre of Harpenden is accessible by bus services which stop within close proximity to the site access on Lower Luton Road. The census data for residential commuting trips indicates that only 1.2% of commuting trips would be made by bus. It is expected that this proportion would be higher for residential shopping trips during the peak hour periods. The bus mode split has been increased to 5% (+3.8%) to account for this, using some of the proportions removed from the train mode split.
- 4.21 The remaining 19.3% that was removed from the train modal split and not already re-applied to bus mode has been proportionally reapplied to car driver, car passenger, cycling and on foot travel modes.
- 4.22 The resultant modal split for residential trips for the purpose of shopping is presented in **Table 4.5**.

Table 4.5 - Forecast Residential Shopping Modal Split

Mode	Split
Train	5.0%
Bus, minibus or coach	5.0%
Taxi	0.1%
Motorcycle, scooter or moped	0.6%
Driving a car or van	70.4%
Passenger in a car or van	3.3%
Bicycle	2.6%
On foot	13.0%
Other method of travel to work	0.1%

- 4.23 The modal split presented for residential shopping trips is considered to be robust. The centre of Harpenden is situated approximately 2.4km from the site access by bicycle, or 2.1km on foot. As such there is a high likelihood that a higher proportion of shopping trips will be made by active travel modes, rather than by car drivers.

Non-Residential Modal Splits

Primary School

- 4.24 The on-site primary school is likely to attract those who either reside within the site, or those who reside within the immediate surrounding area. Given the number of primary schools within the local area it is not expected that any students would be enrolled at the school that reside from outside of Harpenden.



- 4.25 As such, the NTS modal split applied to residential trips for the purpose of primary education has been applied the on-site primary school. This assumes that all students will be located between 0-2 miles from the school.
- 4.26 **Table 4.6** replicates the forecast modal split for the on-site primary school. This modal split only accounts for those arriving at the site from external locations. It is considered that all residents within the site that are enrolled at the on-site primary school would travel using active modes of transport.

Table 4.6 - Forecast Primary School Modal Split

Mode	Split
Train	0.0%
Bus, minibus or coach	1.3%
Taxi	0.0%
Motorcycle, scooter or moped	0.0%
Driving a car or van	32.9%
Passenger in a car or van	0.0%
Bicycle	1.9%
On foot	63.3%
Other method of travel to work	0.6%

Medical Centre

- 4.27 It is likely that the medical centre will serve the local area and therefore there is an opportunity for a large proportion of trips to be made by sustainable modes of transport. However, it should be recognised, given the nature of the development, that a proportion of visitors are likely to be unable to use active travel to reach the site.
- 4.28 The TRICS database has been used to determine the likely modal split of the medical centre. The survey sites that have informed the modal split are identical to those which were used to inform the GP surgery trip rates as presented within **Section 2**.
- 4.29 The TRICS database presents the modal split for various transport options, including “multi-vehicle occupant”. For robustness, it is assumed that all multi-vehicle occupants are travelling to the site as one car driver and one car passenger. In reality it is likely that there are more than an average of 2 occupants in each multi-occupancy vehicle and therefore the mode split assumes a worst-case scenario.
- 4.30 The resultant modal split for trips made to the medical centre are presented within **Table 4.7**.



Table 4.7 - Forecast Medical Centre Modal Split

Mode	Split
Train	0.3%
Bus, minibus or coach	3.6%
Taxi	0.0%
Motorcycle, scooter or moped	0.0%
Driving a car or van	58.5%
Passenger in a car or van	19.0%
Bicycle	0.6%
On foot	18.0%
Other method of travel to work	0.0%

Care Home Facility

- 4.31 It is assumed that the majority of trips to and from the care home facility during the peak hour periods would be undertaken by staff either arriving or departing from the site. As such, it is considered appropriate to utilise 2011 Census journey to work data.
- 4.32 The reasoning for the use of 2011 Census data as opposed to 2021 Census data was presented within the residential commuting modal split section previously.
- 4.33 Whilst the dataset used (WU03EW) remains unchanged from the methodology for the residential commuting modal split, the MSOA that the site resides within (St Albans 002) was used as the place of work, with England & Wales (Great Britain unavailable) used as the usual residency.
- 4.34 The resultant modal split for trips made to the care home facility are presented within **Table 4.8**.

Table 4.8 - Forecast Care Home Modal Split

Mode	Split
Train	4.0%
Bus, minibus or coach	2.8%
Taxi	0.2%
Motorcycle, scooter or moped	0.2%
Driving a car or van	70.7%
Passenger in a car or van	3.2%
Bicycle	2.5%
On foot	16.2%
Other method of travel to work	0.3%



Modal Split Summary

4.35 **Table 4.9** presents a summary of the modal splits that have been applied for the proposed development.

Table 4.9 - Forecast Modal Split Summary

Mode	Residential Journeys					Primary School	Medical Centre	Care Home
	Commuting	Primary Education	Secondary Education	Leisure	Shopping			
Train	28.1%	0.0%	0.0%	28.1%	5.0%	0.0%	0.3%	4.0%
Bus, minibus or coach	1.2%	1.3%	20.9%	1.2%	5.0%	1.3%	3.6%	2.8%
Taxi	0.1%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.2%
Motorcycle, scooter or moped	0.6%	0.0%	0.0%	0.6%	0.6%	0.0%	0.0%	0.2%
Driving a car or van	55.1%	32.9%	40.9%	55.1%	70.4%	32.9%	58.5%	70.7%
Passenger in a car or van	2.6%	0.0%	0.0%	2.6%	3.3%	0.0%	19.0%	3.2%
Bicycle	2.1%	1.9%	4.7%	2.1%	2.6%	1.9%	0.6%	2.5%
On foot	10.2%	63.3%	30.1%	10.2%	13.0%	63.3%	18.0%	16.2%
Other method of travel to work	0.1%	0.6%	3.4%	0.1%	0.1%	0.6%	0.0%	0.3%

5.0 Proposed Development Scenario

5.1 The following section considers the trip generation associated with the proposed development. **Section 6** considers the trip generation of the full allocation.

Proposed Development Quantum

5.2 The quantum of development that the proposed development is expected to comprise of is as follows:

- Up to 500 residential dwellings;
- Two-Form Entry (2FE) primary school (420 pupils);
- 70-bed Care Home/Extra Care Facility; and
- 1,200m² of flexible Class E floorspace.

5.3 For the purpose of assessment the flexible Class E floorspace has been split equally between a local centre (i.e. local shops) and medical centre.



Internalisation Factors

- 5.4 Considering that the site will provide ancillary primary education and commercial/community uses, there is potential for internalisation of residential primary education trips and residential shopping trips.
- 5.5 Whilst the on-site primary school has the potential to accommodate all primary school aged students within the site, it is likely that some will continue to attend off-site schools. This may be because students are already enrolled at a local school, personal or religious reasons, or attending a private or special educational needs facility.
- 5.6 For this reason, it is considered that 85% of all residential trips for the purpose of primary education has been internalised. The internalised trips will also be removed from the on-site primary school trip generation to reflect this.
- 5.7 It is considered that the on-site local centre which is likely to comprise of community and/or commercial uses will be provided for the use of the residents and are unlikely to attract trips externally from the site. Any external trips generated are likely to derive from adjacent residential areas which will be able to access by sustainable modes of transport. For this reason, no trips have been forecast for the on-site commercial uses.
- 5.8 The medical centre is expected to be delivered for the purpose of accommodating the residents within the proposed development and within the existing areas of Batford. On this basis it is expected that a considerable proportion of trips to the medical centre would be internalised within the proposed development. To allow for a robust assessment, a 50% internalisation factor has been applied for the proposed medical centre. This therefore allows for accounting of some trips to occur from outside of the site associated with staff and those enrolled at the medical centre who reside further beyond the site.
- 5.9 During the peak hours it is likely that a reasonable proportion of residential trips for the purpose of shopping are likely to be made to the on-site local centre. A reasonable estimate has been made that 20% of residential trips for the purpose of shopping will be internalised. This is considered to be a conservative estimate as in reality during peak hours people who are undertaking a journey purely for shopping purposes would typically choose to undertake a local journey.

External Trip Generation by Land Use

- 5.10 The following trip generation information presents the forecast number of external trips generated by each land use, and for each journey purpose of residential trips. Internalised trips have been excluded within the subsequent tables.
- 5.11 The trip generation data presented accounts for the modal splits set out in **Section 4** and the internalisation factors applied in **Section 5**.



Residential

Residential Commuting

- 5.12 **Table 5.1** presents the proposed development external trip generation forecast for residential trips for the purpose of commuting. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.1**. As there are limited employment uses on site (with the exception of a small number of staff at the local centre) no trips have been internalised for this journey purpose.

Table 5.1 - Forecast Residential Commuting Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	28.1%	6	20	25	25	11	36
Bus, minibuss or coach	1.2%	0	1	1	1	0	2
Taxi	0.1%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.6%	0	0	1	0	0	1
Driving a car or van	55.1%	11	39	50	49	21	70
Passenger in a car or van	2.6%	1	2	2	2	1	3
Bicycle	2.1%	0	1	2	2	1	3
On foot	10.2%	2	7	9	9	4	13
Other method of travel to work	0.1%	0	0	0	0	0	0

Residential Primary Education

- 5.13 **Table 5.2** presents the proposed development external trip generation forecast for residential trips for the purpose of primary education. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.2**. As aforementioned, 85% of the primary education trips have been internalised to attend the on-site primary school.

Table 5.2 - Forecast Residential Primary Education Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	0.0%	0	0	0	0	0	0
Bus, minibuss or coach	1.3%	0	0	0	0	0	0
Taxi	0.0%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.0%	0	0	0	0	0	0
Driving a car or van	32.9%	1	5	6	0	0	1
Passenger in a car or van	0.0%	0	0	0	0	0	0
Bicycle	1.9%	0	0	0	0	0	0
On foot	63.3%	3	10	12	1	0	1
Other method of travel to work	0.6%	0	0	0	0	0	0



Residential Secondary/Further Education

- 5.14 **Table 5.3** presents the proposed development external trip generation forecast for residential trips for the purpose of secondary/further education. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.3**. As no on-site secondary school is provided, no trips have been internalised for this purpose.

Table 5.3 - Forecast Residential Secondary Education Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	0.0%	0	0	0	0	0	0
Bus, minibus or coach	20.9%	6	21	27	2	1	2
Taxi	0.0%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.0%	0	0	0	0	0	0
Driving a car or van	40.9%	12	42	53	3	1	5
Passenger in a car or van	0.0%	0	0	0	0	0	0
Bicycle	4.7%	1	5	6	0	0	1
On foot	30.1%	9	31	39	2	1	3
Other method of travel to work	3.4%	1	3	4	0	0	0

- 5.15 This resultant vehicle trip generation is considered to be very robust considering that there are three existing secondary schools accessible within a walk of 1.5km from the proposed development.

Residential Leisure

- 5.16 **Table 5.4** presents the proposed development external trip generation forecast for residential trips for the purpose of leisure. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.4**. No trips have been internalised for this purpose. This is robust as an element of leisure trips is for the purpose of visiting friends or family which may be able to be done locally, or “just going for a walk”, which could be done within the areas within the site which will remain as public open space.



Table 5.4 - Forecast Residential Leisure Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	28.1%	7	25	32	45	20	65
Bus, minibuss or coach	1.2%	0	1	1	2	1	3
Taxi	0.1%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.6%	0	0	1	1	0	1
Driving a car or van	55.1%	14	50	63	89	39	129
Passenger in a car or van	2.6%	1	2	3	4	2	6
Bicycle	2.1%	1	2	2	3	1	5
On foot	10.2%	3	9	12	17	7	24
Other method of travel to work	0.1%	0	0	0	0	0	0

Residential Shopping

- 5.17 **Table 5.5** presents the proposed development external trip generation forecast for residential trips for the purpose of shopping. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.5**. As aforementioned, 20% of the residential shopping trips have been internalised as are likely to utilise the on-site local centre provisions during the peak hour periods.

Table 5.5 - Forecast Residential Shopping Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	5.0%	0	1	1	2	1	2
Bus, minibuss or coach	5.0%	0	1	1	2	1	2
Taxi	0.1%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.6%	0	0	0	0	0	0
Driving a car or van	70.4%	3	10	12	24	10	34
Passenger in a car or van	3.3%	0	0	1	1	0	2
Bicycle	2.6%	0	0	0	1	0	1
On foot	13.0%	0	2	2	4	2	6
Other method of travel to work	0.1%	0	0	0	0	0	0

Residential Total

- 5.18 **Table 5.6** combines the proposed development trip generations for all residential journey purposes as presented in **Table 5.1** to **Table 5.5**.



Table 5.6 - Forecast Residential (All Journey Purposes) Trip Generation

Mode	08:00-09:00			17:00-18:00		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	13	46	59	72	32	104
Bus, minibuss or coach	7	24	31	6	3	9
Taxi	0	0	0	0	0	0
Motorcycle, scooter or moped	0	1	1	2	1	2
Driving a car or van	40	145	186	166	73	239
Passenger in a car or van	1	5	6	8	3	11
Bicycle	2	9	11	6	3	9
On foot	16	59	75	33	15	48
Other method of travel to work	1	4	5	0	0	1

- 5.19 **Table 5.6** demonstrates that the residential aspect of the proposed development is capable of generating up to 239 two-way car driver trips in either peak hour period. As aforementioned, this is considered robust as this does not take account of the implementation of any travel plan measures which will encourage a shift from car drivers to sustainable modes of transport.

Primary School

- 5.20 **Table 5.7** presents the proposed development external trip generation forecast for the on-site primary school. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.6**. The trips that are internalised between the on-site primary school and the residential units have been excluded from **Table 5.7**.

Table 5.7 - Forecast Primary School Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	0.0%	0	0	0	0	0	0
Bus, minibuss or coach	1.3%	6	1	7	0	0	0
Taxi	0.0%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.0%	0	0	0	0	0	0
Driving a car or van	32.9%	145	37	181	2	4	6
Passenger in a car or van	0.0%	0	0	0	0	0	0
Bicycle	1.9%	9	2	11	0	0	0
On foot	63.3%	278	70	349	5	7	12
Other method of travel to work	0.6%	3	1	3	0	0	0



Medical Centre

- 5.21 **Table 5.8** presents the proposed development external trip generation forecast for the medical centre. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.7**. The trips that are internalised have been excluded from **Table 5.8**.

Table 5.8 - Forecast Medical Centre Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	0.3%	0	0	0	0	0	0
Bus, minibus or coach	3.6%	1	0	1	0	0	1
Taxi	0.0%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.0%	0	0	0	0	0	0
Driving a car or van	58.5%	11	5	16	3	7	10
Passenger in a car or van	19.0%	3	2	5	1	2	3
Bicycle	0.6%	0	0	0	0	0	0
On foot	18.0%	3	2	5	1	2	3
Other method of travel to work	0.0%	0	0	0	0	0	0

Care Home

- 5.22 **Table 5.9** presents the proposed development external trip generation forecast for the care home facility. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.8**. No trips have been internalised for this land use.

Table 5.9 - Forecast Care Home Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	4.0%	0	0	1	0	0	1
Bus, minibus or coach	2.8%	0	0	1	0	0	0
Taxi	0.2%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.2%	0	0	0	0	0	0
Driving a car or van	70.7%	8	7	14	4	6	11
Passenger in a car or van	3.2%	0	0	1	0	0	0
Bicycle	2.5%	0	0	1	0	0	0
On foot	16.2%	2	2	3	1	1	2
Other method of travel to work	0.3%	0	0	0	0	0	0



Proposed Development Total Trip Generation

- 5.23 **Table 5.10** presents the forecast trip generation for the proposed development. This combines the trip generation presented for the residential uses at **Table 5.6**, the primary school at **Table 5.7**, the medical centre at **Table 5.8**, and the care home facility at **Table 5.9**.

Table 5.10 - Total Forecast Trip Generation (Proposed Development)

Mode	08:00-09:00			17:00-18:00		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	13	46	60	72	32	104
Bus, minibus or coach	13	26	39	7	4	11
Taxi	0	0	0	0	0	0
Motorcycle, scooter or moped	0	1	1	2	1	2
Driving a car or van	203	194	397	176	90	266
Passenger in a car or van	5	7	12	9	6	15
Bicycle	11	11	23	7	3	10
On foot	300	132	432	40	26	66
Other method of travel to work	4	4	8	1	0	1

- 5.24 **Table 5.10** demonstrates that the proposed development is capable of generating up to 397 two-way car driver trips in either peak hour period.

6.0 Full Allocation Scenario

- 6.1 The following section considers the trip generation associated with the full allocation at NE Harpenden.

Full Allocation Quantum

- 6.2 The quantum of development that the full allocation has the potential to deliver is as follows:

- Up to 730 residential dwellings;
- Two-Form Entry (2FE) primary school (420 pupils);
- 70-bed Care Home/Extra Care Facility; and
- 1,200m² of flexible Class E floorspace.

- 6.3 This quantum is in-line with the proposed development with the exception of an uplift of 230 residential dwellings. The number of residential units (800 total when combining the residential dwellings with the care home) exceeds the indicative number identified within the allocation for NE Harpenden and therefore represents a robust assessment, and considers the potential that the full allocation may deliver more than the indicative number identified.



Internalisation Factors

6.4 The internalisation factors applied to the full allocation are unchanged from those used for the proposed development detailed within **Section 5**.

6.5 For clarity, the following internalisation factors have been applied:

- 85% of residential trips for the purpose of primary education (and subsequently removed from the primary school trip generation);
- 50% of medical centre trips;
- 20% of residential trips for the purpose of shopping; and
- All local centre trips.

Trip Generation by Land Use

6.6 The following trip generation information presents the forecast number of external trips generated by the full allocation by each land use, and for each journey purpose of residential trips. Internalised trips have been excluded within the subsequent tables.

6.7 The trip generation data presented accounts for the modal splits set out in **Section 4** and the internalisation factors previously identified.

Residential

Residential Commuting

6.8 **Table 6.1** presents the full allocation external trip generation forecast for residential trips for the purpose of commuting. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.1**. No trips have been internalised for this journey purpose.

Table 6.1 - Forecast Residential Commuting Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	28.1%	8	29	37	36	16	52
Bus, minibuss or coach	1.2%	0	1	2	2	1	2
Taxi	0.1%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.6%	0	1	1	1	0	1
Driving a car or van	55.1%	16	57	73	72	31	103
Passenger in a car or van	2.6%	1	3	3	3	1	5
Bicycle	2.1%	1	2	3	3	1	4
On foot	10.2%	3	11	14	13	6	19
Other method of travel to work	0.1%	0	0	0	0	0	0



Residential Primary Education

- 6.9 **Table 6.2** presents the full allocation external trip generation forecast for residential trips for the purpose of primary education. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.2**. As aforementioned, 85% of the primary education trips have been internalised to attend the on-site primary school.

Table 6.2 - Forecast Residential Primary Education Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	0.0%	0	0	0	0	0	0
Bus, minibuss or coach	1.3%	0	0	0	0	0	0
Taxi	0.0%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.0%	0	0	0	0	0	0
Driving a car or van	32.9%	2	7	9	1	0	1
Passenger in a car or van	0.0%	0	0	0	0	0	0
Bicycle	1.9%	0	0	1	0	0	0
On foot	63.3%	4	14	18	1	0	2
Other method of travel to work	0.6%	0	0	0	0	0	0

Residential Secondary/Further Education

- 6.10 **Table 6.3** presents the full allocation external trip generation forecast for residential trips for the purpose of secondary/further education. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.3**. No trips have been internalised for this purpose.

Table 6.3 - Forecast Residential Secondary Education Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	0.0%	0	0	0	0	0	0
Bus, minibuss or coach	20.9%	9	31	40	2	1	3
Taxi	0.0%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.0%	0	0	0	0	0	0
Driving a car or van	40.9%	17	61	78	5	2	7
Passenger in a car or van	0.0%	0	0	0	0	0	0
Bicycle	4.7%	2	7	9	1	0	1
On foot	30.1%	12	45	57	3	2	5
Other method of travel to work	3.4%	1	5	6	0	0	1



Residential Leisure

- 6.11 **Table 6.4** presents the full allocation external trip generation forecast for residential trips for the purpose of leisure. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.4**. No trips have been internalised for this purpose.

Table 6.4 - Forecast Residential Leisure Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	28.1%	10	37	47	66	29	95
Bus, minibuss or coach	1.2%	0	2	2	3	1	4
Taxi	0.1%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.6%	0	1	1	1	1	2
Driving a car or van	55.1%	20	73	93	130	57	188
Passenger in a car or van	2.6%	1	3	4	6	3	9
Bicycle	2.1%	1	3	3	5	2	7
On foot	10.2%	4	13	17	24	11	35
Other method of travel to work	0.1%	0	0	0	0	0	0

Residential Shopping

- 6.12 **Table 6.5** presents the full allocation external trip generation forecast for residential trips for the purpose of shopping. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.5**. As aforementioned, 20% of the residential shopping trips have been internalised as are likely to utilise the on-site local centre.

Table 6.5 - Forecast Residential Shopping Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	5.0%	0	1	1	2	1	4
Bus, minibuss or coach	5.0%	0	1	1	2	1	4
Taxi	0.1%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.6%	0	0	0	0	0	0
Driving a car or van	70.4%	4	14	18	35	15	50
Passenger in a car or van	3.3%	0	1	1	2	1	2
Bicycle	2.6%	0	1	1	1	1	2
On foot	13.0%	1	3	3	6	3	9
Other method of travel to work	0.1%	0	0	0	0	0	0



Residential Total

- 6.13 **Table 6.6** combines the trip generations for all residential journey purposes as presented in **Table 6.1** to **Table 6.5**.

Table 6.6 - Forecast Residential (All Journey Purposes) Trip Generation

Mode	08:00-09:00			17:00-18:00		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	19	67	86	105	46	151
Bus, minibuss or coach	10	35	45	9	4	14
Taxi	0	0	0	0	0	1
Motorcycle, scooter or moped	0	1	2	2	1	3
Driving a car or van	59	212	271	242	106	348
Passenger in a car or van	2	7	9	11	5	16
Bicycle	4	13	16	9	4	14
On foot	24	86	109	48	21	69
Other method of travel to work	1	5	7	1	0	1

- 6.14 **Table 6.6** demonstrates that the residential aspect of the full allocation is capable of generating up to 348 two-way car driver trips in either peak hour period.

Primary School

- 6.15 **Table 6.7** presents the full allocation external trip generation forecast for the on-site primary school. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.6**. The trips that are internalised between the on-site primary school and the residential units have been excluded from **Table 6.7**.

Table 6.7 - Forecast Primary School Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	0.0%	0	0	0	0	0	0
Bus, minibuss or coach	1.3%	5	1	6	0	0	0
Taxi	0.0%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.0%	0	0	0	0	0	0
Driving a car or van	32.9%	131	33	164	2	3	5
Passenger in a car or van	0.0%	0	0	0	0	0	0
Bicycle	1.9%	8	2	10	0	0	0
On foot	63.3%	253	63	317	4	6	10
Other method of travel to work	0.6%	2	1	3	0	0	0



Medical Centre

- 6.16 **Table 6.8** presents the full allocation external trip generation forecast for the medical centre. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.7**. No trips have been internalised for this land use. This trip generation is identical to that presented within the proposed development section as the size of the medical centre is unchanged and no internalisation factors are applied.

Table 6.8 - Forecast Medical Centre Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	0.3%	0	0	0	0	0	0
Bus, minibuss or coach	3.6%	1	0	1	0	0	1
Taxi	0.0%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.0%	0	0	0	0	0	0
Driving a car or van	58.5%	11	5	16	3	7	10
Passenger in a car or van	19.0%	3	2	5	1	2	3
Bicycle	0.6%	0	0	0	0	0	0
On foot	18.0%	3	2	5	1	2	3
Other method of travel to work	0.0%	0	0	0	0	0	0

Care Home

- 6.17 **Table 6.9** presents the full allocation external trip generation forecast for the care home facility. The trips presented are split by each mode of transport in accordance with that presented at **Table 4.8**. No trips have been internalised for this land use. This trip generation is identical to that presented within the proposed development section as the size of the care home is unchanged and no internalisation factors are applied.

Table 6.9 - Forecast Care Home Trip Generation

Mode	Split	08:00-09:00			17:00-18:00		
		Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	4.0%	0	0	1	0	0	1
Bus, minibuss or coach	2.8%	0	0	1	0	0	0
Taxi	0.2%	0	0	0	0	0	0
Motorcycle, scooter or moped	0.2%	0	0	0	0	0	0
Driving a car or van	70.7%	8	7	14	4	6	11
Passenger in a car or van	3.2%	0	0	1	0	0	0
Bicycle	2.5%	0	0	1	0	0	0
On foot	16.2%	2	2	3	1	1	2
Other method of travel to work	0.3%	0	0	0	0	0	0



Full Allocation Total Trip Generation

- 6.18 **Table 6.10** presents the forecast external trip generation for the full allocation. This combines the trip generation presented for the residential uses at **Table 6.6**, the primary school at **Table 6.7**, the medical centre at **Table 6.8**, and the care home facility at **Table 6.9**.

Table 6.10 - Total Forecast Trip Generation (Proposed Development)

Mode	08:00-09:00			17:00-18:00		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
Train	19	67	87	106	47	152
Bus, minibus or coach	16	37	53	10	5	15
Taxi	0	0	0	0	0	1
Motorcycle, scooter or moped	0	1	2	2	1	3
Driving a car or van	208	257	465	252	122	374
Passenger in a car or van	6	9	14	12	7	20
Bicycle	12	15	27	10	5	14
On foot	282	152	434	54	30	85
Other method of travel to work	4	6	10	1	0	1

- 6.19 **Table 6.10** demonstrates that the full allocation is capable of generating up to 465 external two-way car driver trips in either peak hour period.

7.0 Summary

- 7.1 This note has been prepared by SLR Consulting Ltd on behalf of Crest Nicholson to provide additional information in respect to the methodology used to determine the trip generation of the proposed site at Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane. It is suggested that this note should be read in conjunction with the supporting Transport Assessment.
- 7.2 This note has considered two scenarios. The first scenario considers the impact of the proposed development whilst the second scenario considers the impact of the full allocation for NE Harpenden.
- 7.3 Total person trip rates have been obtained from the TRICS database and applied to the relevant quantum of development. Residential trips have been split by journey purpose as identified from the NTS.
- 7.4 Representative modal splits have been applied to trips generated by each land use or journey purpose as derived from a variety of sources including TRICS, census data or NTS data.



- 7.5 The modal splits are applied to the total person trip generation to establish the number of trips generated by each mode of transport.
- 7.6 It has been calculated that the proposed development would generate up to a total of 397 external car driver trips in either peak hour. The full allocation would generate up to a total of 465 external car driver trips in either peak hour.
- 7.7 These trip generation figures have been used to inform the junction modelling work contained within the Transport Assessment.



Appendix A TRICS Output Reports



Calculation Reference: AUDIT-529507-240923-0907

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	HC HAMPSHIRE	2 days
	KC KENT	2 days
	SC SURREY	1 days
	SP SOUTHAMPTON	1 days
04	EAST ANGLIA	
	NF NORFOLK	6 days
05	EAST MIDLANDS	
	DY DERBY	1 days
06	WEST MIDLANDS	
	ST STAFFORDSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
 Actual Range: 207 to 537 (units:)
 Range Selected by User: 200 to 750 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 14/11/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	4 days
Tuesday	7 days
Wednesday	3 days
Thursday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	15 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town	15
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This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	12
Out of Town	2
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	5 days - Selected
Servicing vehicles Excluded	12 days - Selected

Secondary Filtering selection:

Use Class:

C3	15 days
----	---------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	5 days
10,001 to 15,000	4 days
15,001 to 20,000	3 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	3 days
125,001 to 250,000	4 days
250,001 to 500,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	4 days
1.1 to 1.5	10 days
1.6 to 2.0	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	11 days
No	4 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	15 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	DY-03-A-01 RADBOURNE LANE DERBY	MIXED HOUSES	DERBY
	Edge of Town Residential Zone Total No of Dwellings:	371	
	Survey date: TUESDAY	10/07/18	Survey Type: MANUAL
2	ES-03-A-03 SHEPHAM LANE POLEGATE	MIXED HOUSES & FLATS	EAST SUSSEX
	Edge of Town Residential Zone Total No of Dwellings:	212	
	Survey date: MONDAY	11/07/16	Survey Type: MANUAL
3	HC-03-A-34 STONEHAM LANE EASTLEIGH	MIXED HOUSES & FLATS	HAMPSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	243	
	Survey date: TUESDAY	14/11/23	Survey Type: MANUAL
4	HC-03-A-35 EAGLE AVENUE WATERLOOVILLE LOVEDEAN	MIXED HOUSES & FLATS	HAMPSHIRE
	Edge of Town Residential Zone Total No of Dwellings:	289	
	Survey date: TUESDAY	31/10/23	Survey Type: MANUAL
5	KC-03-A-07 RECULVER ROAD HERNE BAY	MIXED HOUSES	KENT
	Edge of Town Residential Zone Total No of Dwellings:	288	
	Survey date: WEDNESDAY	27/09/17	Survey Type: MANUAL
6	KC-03-A-11 COLDHARBOUR ROAD GRAVESEND	MIXED HOUSES & FLATS	KENT
	Edge of Town No Sub Category Total No of Dwellings:	375	
	Survey date: MONDAY	20/03/23	Survey Type: MANUAL
7	NF-03-A-06 BEAUFORT WAY GREAT YARMOUTH BRADWELL	MIXED HOUSES	NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:	275	
	Survey date: MONDAY	23/09/19	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	NF-03-A-23 SILFIELD ROAD WYMONDHAM	MIXED HOUSES & FLATS		NORFOLK
	Edge of Town Out of Town Total No of Dwellings:		514	
	Survey date: WEDNESDAY		22/09/21	Survey Type: MANUAL
9	NF-03-A-30 BRANDON ROAD SWAFFHAM	MIXED HOUSES		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		266	
	Survey date: THURSDAY		23/09/21	Survey Type: MANUAL
10	NF-03-A-38 BEAUFORT WAY GREAT YARMOUTH BRADWELL	MIXED HOUSES		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		537	
	Survey date: TUESDAY		20/09/22	Survey Type: MANUAL
11	NF-03-A-39 HEATH DRIVE HOLT	MIXED HOUSES		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		212	
	Survey date: TUESDAY		27/09/22	Survey Type: MANUAL
12	NF-03-A-46 BURGH ROAD AYLSHAM	MIXED HOUSES & FLATS		NORFOLK
	Edge of Town Residential Zone Total No of Dwellings:		300	
	Survey date: TUESDAY		14/09/21	Survey Type: MANUAL
13	SC-03-A-05 REIGATE ROAD HORLEY	MIXED HOUSES		SURREY
	Edge of Town Residential Zone Total No of Dwellings:		207	
	Survey date: MONDAY		01/04/19	Survey Type: MANUAL
14	SP-03-A-02 BARNFIELD WAY NEAR SOUTHAMPTON HEDGE END	MIXED HOUSES & FLATS		SOUTHAMPTON
	Edge of Town Out of Town Total No of Dwellings:		250	
	Survey date: TUESDAY		12/10/21	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	ST-03-A-07 BEACONSIDE STAFFORD MARSTON GATE Edge of Town Residential Zone Total No of Dwellings: Survey date: WEDNESDAY	DETACHED & SEMI-DETACHED 248 22/11/17	STAFFORDSHIRE Survey Type: MANUAL
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This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 MULTI-MODAL TOTAL PEOPLE
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period
 Total People to Total Vehicles ratio (all time periods and directions): 1.71

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	15	306	0.108	15	306	0.511	15	306	0.619
08:00 - 09:00	15	306	0.212	15	306	0.765	15	306	0.977
09:00 - 10:00	15	306	0.185	15	306	0.278	15	306	0.463
10:00 - 11:00	15	306	0.164	15	306	0.214	15	306	0.378
11:00 - 12:00	15	306	0.187	15	306	0.238	15	306	0.425
12:00 - 13:00	15	306	0.228	15	306	0.222	15	306	0.450
13:00 - 14:00	15	306	0.229	15	306	0.213	15	306	0.442
14:00 - 15:00	15	306	0.244	15	306	0.275	15	306	0.519
15:00 - 16:00	15	306	0.563	15	306	0.285	15	306	0.848
16:00 - 17:00	15	306	0.546	15	306	0.279	15	306	0.825
17:00 - 18:00	15	306	0.618	15	306	0.271	15	306	0.889
18:00 - 19:00	15	306	0.461	15	306	0.266	15	306	0.727
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.745			3.817			7.562

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

Calculation Reference: AUDIT-529507-250514-0509

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 04 - EDUCATION
Category : A - PRIMARY
MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

02	SOUTH EAST	
	HF HERTFORDSHIRE	1 days
	ON LUTON	1 days
06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	3 days
09	NORTH	
	TW TYNE & WEAR	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of pupils
 Actual Range: 156 to 420 (units:)
 Range Selected by User: 92 to 538 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 20/06/24

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday 2 days
 Tuesday 3 days
 Friday 2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 7 days
 Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre 4
 Edge of Town 3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone 4
 Built-Up Zone 1
 No Sub Category 2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 7 days - Selected
 Servicing vehicles Excluded 2 days - Selected

Secondary Filtering selection:

Use Class:

F1(a) 7 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

10,001 to 15,000	2 days
15,001 to 20,000	1 days
20,001 to 25,000	2 days
25,001 to 50,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	6 days
1.1 to 1.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	7 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	7 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	HF-04-A-01 BAKER STREET POTTERS BAR	PRIMARY SCHOOL	HERTFORDSHIRE
	Edge of Town Residential Zone Total Number of pupils: 208 Survey date: TUESDAY 26/03/24		Survey Type: MANUAL
2	NY-04-A-04 GARGRAVE ROAD SKIPTON	CATHOLIC PRIMARY SCHOOL	NORTH YORKSHIRE
	Edge of Town Centre Built-Up Zone Total Number of pupils: 243 Survey date: FRIDAY 15/03/19		Survey Type: MANUAL
3	NY-04-A-05 CHURCH LANE RIPON	PRIMARY SCHOOL	NORTH YORKSHIRE
	Edge of Town Centre No Sub Category Total Number of pupils: 156 Survey date: TUESDAY 17/05/22		Survey Type: MANUAL
4	NY-04-A-06 CHURCH LANE RIPON	PRIMARY SCHOOL	NORTH YORKSHIRE
	Edge of Town Centre No Sub Category Total Number of pupils: 245 Survey date: MONDAY 23/05/22		Survey Type: MANUAL
5	ON-04-A-01 TENNYSON ROAD LUTON	PRIMARY SCHOOL	LUTON
	Edge of Town Residential Zone Total Number of pupils: 210 Survey date: FRIDAY 17/11/23		Survey Type: MANUAL
6	TW-04-A-03 SUMMERHILL TERRACE NEWCASTLE UPON TYNE CITY CENTRE	PRIMARY SCHOOL	TYNE & WEAR
	Edge of Town Centre Residential Zone Total Number of pupils: 233 Survey date: MONDAY 11/09/23		Survey Type: MANUAL
7	WK-04-A-01 PLANTAGENET DRIVE RUGBY	C OF E JUNIOR SCHOOL	WARWICKSHIRE
	Edge of Town Residential Zone Total Number of pupils: 420 Survey date: TUESDAY 15/11/22		Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
HC-04-A-01	Total person trip rates too low. Check accumulations
TV-04-A-02	Total person trip rates too low. Check accumulations

SLR Consulting Brew House Bristol

Licence No: 529507

TRIP RATE for Land Use 04 - EDUCATION/A - PRIMARY

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 PUPILS

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.96

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate	No. Days	Ave. PUPILS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	245	0.097	7	245	0.017	7	245	0.114
08:00 - 09:00	7	245	1.253	7	245	0.322	7	245	1.575
09:00 - 10:00	7	245	0.050	7	245	0.037	7	245	0.087
10:00 - 11:00	7	245	0.027	7	245	0.032	7	245	0.059
11:00 - 12:00	7	245	0.017	7	245	0.012	7	245	0.029
12:00 - 13:00	7	245	0.049	7	245	0.062	7	245	0.111
13:00 - 14:00	7	245	0.016	7	245	0.107	7	245	0.123
14:00 - 15:00	7	245	0.014	7	245	0.031	7	245	0.045
15:00 - 16:00	7	245	0.248	7	245	1.039	7	245	1.287
16:00 - 17:00	7	245	0.027	7	245	0.119	7	245	0.146
17:00 - 18:00	7	245	0.025	7	245	0.044	7	245	0.069
18:00 - 19:00	7	245	0.000	7	245	0.003	7	245	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.823			1.825			3.648

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

Calculation Reference: AUDIT-529507-241016-1018

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
Category : G - GP SURGERIES
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	IW ISLE OF WIGHT	1 days
03	SOUTH WEST	
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	DY DERBY	2 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
 Actual Range: 676 to 2150 (units: sqm)
 Range Selected by User: 200 to 2900 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 11/10/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Wednesday 3 days
 Thursday 1 days
 Friday 1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 5 days
 Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre) 3
 Edge of Town 2

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone 4
 No Sub Category 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 5 days - Selected
 Servicing vehicles Excluded X days - Selected

Secondary Filtering selection:

Use Class:

E(e) 5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

15,001 to 20,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 100,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

50,001 to 75,000	2 days
125,001 to 250,000	1 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	4 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	5 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	5 days
-----------------	--------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CA-05-G-01	MEDICAL CENTRE		CAMBRIDGESHIRE
	NUFFIELD ROAD			
	CAMBRIDGE			
	CHESTERTON			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	1046 sqm		
	Survey date: FRIDAY	23/06/23	Survey Type: MANUAL	
2	DY-05-G-01	GP SURGERY		DERBY
	OSMASTON ROAD			
	DERBY			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Gross floor area:	676 sqm		
	Survey date: WEDNESDAY	25/09/19	Survey Type: MANUAL	
3	DY-05-G-02	GP SURGERY		DERBY
	ST THOMAS ROAD			
	DERBY			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Gross floor area:	2000 sqm		
	Survey date: WEDNESDAY	11/10/23	Survey Type: MANUAL	
4	IW-05-G-01	GP SURGERY		ISLE OF WIGHT
	NEWPORT ROAD			
	COWES			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:	1400 sqm		
	Survey date: WEDNESDAY	26/06/19	Survey Type: MANUAL	
5	WL-05-G-01	MEDICAL CENTRE		WILTSHIRE
	MIDDLEFIELD ROAD			
	CHIPPENHAM			
	Edge of Town			
	Residential Zone			
	Total Gross floor area:	2150 sqm		
	Survey date: THURSDAY	11/05/23	Survey Type: MANUAL	

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 05 - HEALTH/G - GP SURGERIES

MULTI-MODAL TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.72

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	1532	1.437	4	1532	0.196	4	1532	1.633
08:00 - 09:00	5	1434	3.737	5	1434	1.701	5	1434	5.438
09:00 - 10:00	5	1434	3.653	5	1434	3.235	5	1434	6.888
10:00 - 11:00	5	1434	3.137	5	1434	2.803	5	1434	5.940
11:00 - 12:00	5	1434	2.984	5	1434	2.970	5	1434	5.954
12:00 - 13:00	5	1434	2.844	5	1434	3.291	5	1434	6.135
13:00 - 14:00	5	1434	2.579	5	1434	2.747	5	1434	5.326
14:00 - 15:00	5	1434	3.151	5	1434	3.012	5	1434	6.163
15:00 - 16:00	5	1434	2.566	5	1434	2.719	5	1434	5.285
16:00 - 17:00	5	1434	2.231	5	1434	3.305	5	1434	5.536
17:00 - 18:00	5	1434	1.074	5	1434	2.370	5	1434	3.444
18:00 - 19:00	5	1434	0.669	5	1434	1.255	5	1434	1.924
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			30.062			29.604			59.666

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 676 - 2150 (units: sqm)
 Survey date range: 01/01/16 - 11/10/23
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 05 - HEALTH/G - GP SURGERIES

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.72

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	1532	2.204	4	1532	0.245	4	1532	2.449
08:00 - 09:00	5	1434	6.023	5	1434	2.970	5	1434	8.993
09:00 - 10:00	5	1434	6.567	5	1434	5.717	5	1434	12.284
10:00 - 11:00	5	1434	5.549	5	1434	5.605	5	1434	11.154
11:00 - 12:00	5	1434	5.424	5	1434	5.508	5	1434	10.932
12:00 - 13:00	5	1434	4.699	5	1434	5.089	5	1434	9.788
13:00 - 14:00	5	1434	4.532	5	1434	4.518	5	1434	9.050
14:00 - 15:00	5	1434	5.396	5	1434	5.173	5	1434	10.569
15:00 - 16:00	5	1434	4.462	5	1434	4.741	5	1434	9.203
16:00 - 17:00	5	1434	3.974	5	1434	5.577	5	1434	9.551
17:00 - 18:00	5	1434	1.938	5	1434	3.960	5	1434	5.898
18:00 - 19:00	5	1434	1.046	5	1434	1.924	5	1434	2.970
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			51.814			51.027			102.841

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

Calculation Reference: AUDIT-529507-241105-1125

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
Category : F - CARE HOME (ELDERLY RESIDENTIAL)
MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

02	SOUTH EAST	
	WS WEST SUSSEX	1 days
05	EAST MIDLANDS	
	NN NORTH NORTHAMPTONSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
09	NORTH	
	TW TYNE & WEAR	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of residents
 Actual Range: 52 to 75 (units:)
 Range Selected by User: 40 to 125 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 19/06/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday 2 days
 Tuesday 1 days
 Thursday 1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 4 days
 Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre) 3
 Edge of Town 1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone 3
 No Sub Category 1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 4 days - Selected
 Servicing vehicles Excluded X days - Selected

Secondary Filtering selection:

Use Class:

C2 4 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

10,001 to 15,000	1 days
25,001 to 50,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

75,001 to 100,000	1 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	3 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	4 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	4 days
-----------------	--------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	NN-05-F-01 MALHAM DRIVE KETTERING	NURSING HOME		NORTH NORTHAMPTONSHIRE
	Edge of Town No Sub Category Total Number of residents:	60		
	Survey date: MONDAY	13/06/22	Survey Type: MANUAL	
2	NY-05-F-06 HAMBLETON GROVE KNARESBOROUGH	CARE HOME		NORTH YORKSHIRE
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of residents:	75		
	Survey date: MONDAY	19/06/23	Survey Type: MANUAL	
3	TW-05-F-03 MOORE STREET GATESHEAD FELLING SHORE	NURSING HOME		TYNE & WEAR
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of residents:	52		
	Survey date: THURSDAY	02/05/19	Survey Type: MANUAL	
4	WS-05-F-02 WYKEHAM ROAD WORTHING	NURSING HOME		WEST SUSSEX
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of residents:	54		
	Survey date: TUESDAY	17/05/22	Survey Type: MANUAL	

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 RESIDE
BOLD print indicates peak (busiest) period
Total People to Total Vehicles ratio (all time periods and directions): 2.08

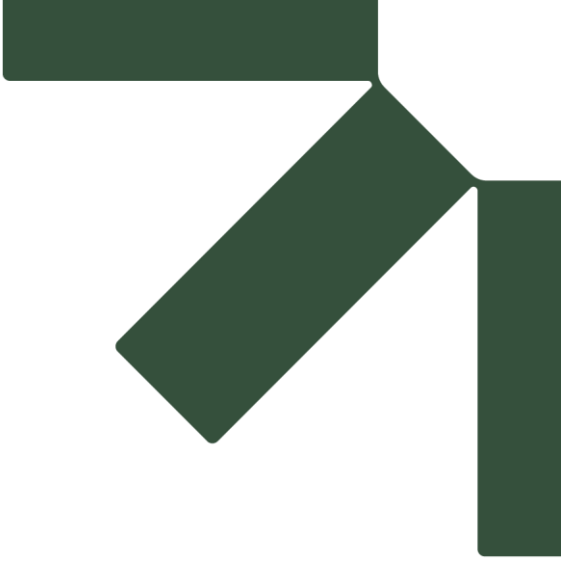
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	4	60	0.266	4	60	0.071	4	60	0.337
08:00 - 09:00	4	60	0.154	4	60	0.133	4	60	0.287
09:00 - 10:00	4	60	0.145	4	60	0.116	4	60	0.261
10:00 - 11:00	4	60	0.124	4	60	0.087	4	60	0.211
11:00 - 12:00	4	60	0.120	4	60	0.095	4	60	0.215
12:00 - 13:00	4	60	0.120	4	60	0.145	4	60	0.265
13:00 - 14:00	4	60	0.158	4	60	0.091	4	60	0.249
14:00 - 15:00	4	60	0.116	4	60	0.162	4	60	0.278
15:00 - 16:00	4	60	0.174	4	60	0.253	4	60	0.427
16:00 - 17:00	4	60	0.137	4	60	0.162	4	60	0.299
17:00 - 18:00	4	60	0.087	4	60	0.129	4	60	0.216
18:00 - 19:00	4	60	0.091	4	60	0.158	4	60	0.249
19:00 - 20:00	4	60	0.166	4	60	0.191	4	60	0.357
20:00 - 21:00	4	60	0.071	4	60	0.129	4	60	0.200
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.929			1.922			3.851

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Making Sustainability Happen



Appendix I Trip Distribution Methodology Note

Transport Assessment

**Land North East of Harpenden between Lower Luton Road, Bower Heath Lane
and Common Lane**

Crest Nicholson

SLR Project No.: 141499

24 February 2026

Crest Nicholson

Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane

SLR Project No.: 141499

10 December 2025

Revision: 1

RE: TRIP DISTRIBUTION METHODOLOGY

1.0 Introduction

- 1.1 This note has been prepared by SLR Consulting Ltd on behalf of Crest Nicholson to provide additional information in respect to the methodology used to determine the trip distribution of vehicle trips associated with the proposed site at Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane.
- 1.2 It is recommended that this note is read in conjunction with the Trip Generation Methodology Note which has been prepared separately. The Trip Generation Methodology Note details how the number of trips by all modes have been calculated for each journey purpose and land use. This note builds on this and provides a distribution for each land use and each residential journey purpose.
- 1.3 Distributions have been calculated based on publicly available data or on a first principles approach using professional judgement.
- 1.4 This note purely focuses on the distribution of vehicle trips.
- 1.5 The Transport Assessment (TA) and Trip Generation Methodology Note considers the impact of two scenarios. Scenario 1 considers the trip generation of the proposed development, whilst Scenario 2 considers the full allocation.
- 1.6 The vehicle distribution that has been calculated is identical for traffic associated with both the proposed development and full allocation. As such, it is assumed that all traffic from the full allocation will utilise the proposed site access junction to Lower Luton Road. Future applications for the remaining parts of the allocation may provide their own vehicular access and this will be subject to individual assessments at the necessary time. The adopted approach allows for a robust assessment of the site access junction in particular.
- 1.7 Google journey planner has been used within the following distribution exercises to understand the likely routes that future residents, visitors and staff would be likely to take

from the site. Where multiple route choices were available for the same journey trips have been split across routes or professional judgement has been used to estimate the preferred route. The professional judgement assumes that drivers will act to avoid inconvenience by balancing journey time with journey distance. For example, drivers are likely to travel for a slightly longer distance to save time or avoid a congested part of the local highway network.

2.0 Residential Distribution

- 2.1 The vehicle trips generated by the residential aspect of the proposed development have been distributed onto the local highway network using a choice of methods depending on the journey purpose. The Trip Generation Methodology Note provides further information regarding the split of residential trips by journey purposes, however to summarise, all residential trips have been categorised as commuting, education (either primary or secondary/further education), leisure or shopping.
- 2.2 Typically, residential journeys are distributed onto local highway networks using census journey to work origin/destination information which only relates to commuting trips. For larger schemes such as the proposed development this is not considered appropriate and an alternative approach has been undertaken whereby each journey purpose has been assigned an appropriate distribution.

Residential Commuting Trips

- 2.3 Residential trips for the purpose of commuting have been distributed based on journey to work origin/destination data.
- 2.4 The Middle Super Output Area (MSOA) that the site resides within (St Albans 002) has been selected as the location of usual residency. All MSOAs within St Albans, all Local Authority areas within the South East of England (other than St Albans which is broken into MSOAs) and all Regions (excluding South East which is broken into Local Authority Areas) were selected as the place of work. Only origin/destination information for car drivers was obtained for the purpose of estimating the distribution of future trips generated by car drivers from the proposed development.
- 2.5 To avoid an overly complex assessment which includes areas which attract a negligible proportion of trips, any destination which attracted fewer than 1% of all commuting trips from St Albans 002 were removed. The removed percentages were reapplied proportionally to the remaining destinations to ensure that 100% of trips were accounted for.
- 2.6 This methodology resulted in the consideration of 22 destination locations. The estimated proportion to and from each area is contained within **Table 2.1**.



Table 2.1 - Residential Commuting Distribution Destinations

Destination	Proportion
Welwyn Hatfield	13.6%
Luton	10.5%
London	10.2%
St Albans 003	10.0%
South East	8.1%
Dacorum	7.0%
St Albans 002	6.0%
St Albans 012	5.7%
St Albans 001	4.3%
Central Bedfordshire	3.9%
Stevenage	2.8%
Hertsmere	2.5%
Watford	2.3%
North Hertfordshire	2.0%
St Albans 007	1.7%
St Albans 014	1.5%
St Albans 006	1.4%
St Albans 004	1.3%
St Albans 009	1.3%
St Albans 017	1.3%
St Albans 005	1.3%
St Albans 011	1.3%
TOTAL	100.0%

- 2.7 Flow diagrams are contained within **Appendix A** which demonstrate the forecast distribution of residential trips for the purpose of commuting in percentage terms.

Residential Primary Education Trips

- 2.8 As set out within the Trip Generation Methodology Note the majority of residential trips for the purpose of primary education will be internalised within the site. However, it is acknowledged that for a variety of reasons some future residents may enrol their children in off-site schools. Reasons for this may include personal or religious reasons or desire to remain within the school the child is already enrolled within upon moving to the site.
- 2.9 External residential trips for the purpose of primary education have been distributed using a first principles approach. A selection of local primary schools have been considered and trips distributed to these locations using professional judgement based on distance. It is considered reasonable that the majority of residents enrolled at off-site primary schools would attend other primary schools within Harpenden.
- 2.10 The following destinations have been considered for off-site primary education/further education trips made by residents as car drivers:
- Sauncey Wood Primary School;
 - The Lea Primary School & Nursery; and



- Manland Primary School;

2.11 Residential trips for the purpose of primary education have been distributed using the proportions shown in **Table 2.2**.

Table 2.2 - Forecast Distribution Proportions of Residential Primary Education Trips

Nearby Education Facility	Expected Proportion
Sauncey Wood Primary School	50%
The Lea Primary School & Nursery	35%
Manland Primary School	15%

2.12 Flow diagrams are contained within **Appendix A** which demonstrate the forecast distribution of residential trips for the purpose of primary education in percentage terms.

Residential Secondary Education/Further Education Trips

2.13 Residential trips for the purpose of secondary education and further education have been distributed using a first principles approach. A selection of local secondary schools and further education facilities have been considered and trips distributed to these locations using professional judgement based on offering available and distance.

2.14 The following destinations have been considered for off-site secondary education/further education trips made by residents as car drivers:

- Katherine Warrington School (Secondary School and Sixth Form);
- St George's School (Religious Secondary School and Sixth Form);
- Sir John Lawes School (Secondary School and Sixth Form);
- The LC College; and
- St Albans Independent College.

2.15 The selection of schools presented includes a variety of secondary and further education facilities. It is expected that all secondary school students would be enrolled in one of the three secondary schools included, whilst further education students who reside within the site may attend any of the listed colleges or a sixth-forms.

2.16 Residential trips for the purpose of secondary education have been distributed using the proportions shown in **Table 2.3**.



Table 2.3 - Forecast Distribution Proportions of Residential Secondary/Further Education Trips

Nearby Education Facility	Expected Proportion
Katherine Warrington School	40%
St George's School	20%
Sir John Lawes School	20%
The LC College	15%
St Albans Independent College	5%

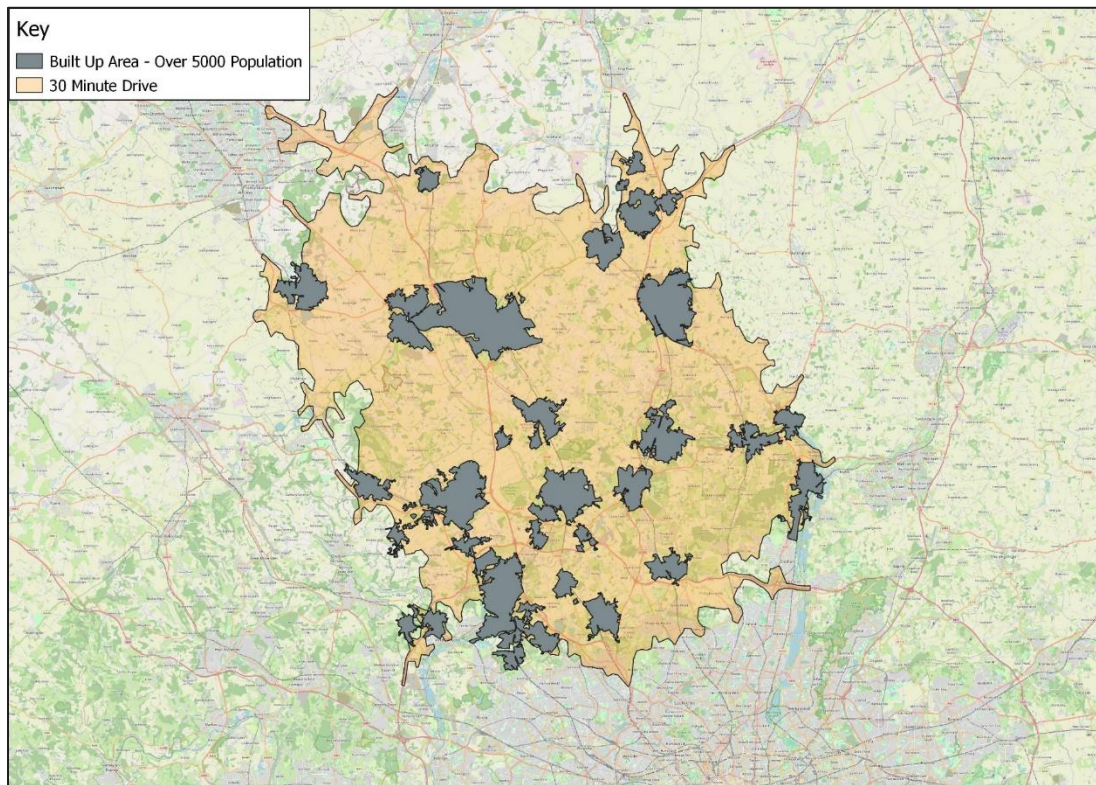
- 2.17 Flow diagrams are contained within **Appendix A** which demonstrate the forecast distribution of residential trips for the purpose of secondary education in percentage terms.

Residential Leisure Trips

- 2.18 Residential trips for the purpose of leisure have been distributed through the use of a GRAVITY P/T^2 model.
- 2.19 The model considers that leisure trips made by car drivers would be undertaken to any census Built Up Area (BUA) within a 30-minute drive time from the site, as determined by GIS (Google journey planner may suggest longer journey times as GIS does not take account of peak hour delays), which also has a population greater than 5,000.
- 2.20 In reality leisure trips will be made to a variety of additional locations including some further afield, however, this methodology is considered to present a reasonable proxy for the estimation of the distribution of all residential trips for the purpose of leisure.
- 2.21 The GRAVITY model considers the population of each BUA and the approximate journey time to each area. This methodology favours destinations that are closer and have higher populations than those further away and with fewer residents.
- 2.22 **Figure 2.1** presents a plan showing a 30-minute drive-time isochrone from the site and the BUA that are within this area.



Figure 2.1 - BUA Within 30-Minute Drive



2.23 In total there are 30 destinations with populations of over 5,000 that are within a 30-minute drive from the site. The BUAs contained within **Figure 2.1** are listed within **Table 2.4** along with population data and estimated journey time (based on Google journey planner) and the resultant estimated distribution proportions.



Table 2.4 - Residential Leisure Distribution Destinations

Destination	Population	Journey Time (mins)	Proportion
Luton	233,525	19	19.9%
Watford	131,325	32	3.9%
Hemel Hempstead	95,985	23	5.6%
Stevenage	94,470	28	3.7%
St Albans	75,540	22	4.8%
Welwyn Garden City	51,505	16	6.2%
Leighton Buzzard	42,735	39	0.9%
Hatfield	41,560	18	3.9%
Hoddesdon	40,615	40	0.8%
Borehamwood	39,765	38	0.8%
Hitchin	35,220	29	1.3%
Dunstable	34,500	25	1.7%
Letchworth	33,990	36	0.8%
Harpenden	30,965	5	38.1%
Hertford	28,800	31	0.9%
Bushey	28,425	33	0.8%
Potters Bar	23,400	35	0.6%
Berkhamsted	21,240	33	0.6%
Ware	19,625	43	0.3%
Houghton Regis	18,820	27	0.8%
Abbots Langley and Kings Langley	18,205	29	0.7%
Flitwick	13,660	37	0.3%
Chorleywood	12,630	34	0.3%
Stotfold	12,310	42	0.2%
Baldock	10,615	36	0.3%
Radlett	8,185	34	0.2%
London Colney	7,930	26	0.4%
Chiswell Green	6,680	23	0.4%
Bovingdon	5,310	33	0.1%
Redbourn	5,185	15	0.7%

2.24 In a number of instances the distribution to larger areas has been split across a number of sub-divisions. For example, trips to Harpenden have been split to four different areas (Harpenden Town Centre, Harpenden Common and areas in the east and west of Harpenden) to account for the various route choices available.

2.25 Flow diagrams are contained within **Appendix A** which demonstrate the forecast distribution of residential trips for the purpose of leisure in percentage terms.

Residential Shopping Trips

2.26 Residential trips for the purpose of shopping have been distributed using a first principles approach. A selection of retail offerings has been considered and trips distributed to these locations using professional judgement based on offering available and distance.



- 2.27 The following destinations have been considered for off-site shopping trips made by residents as car drivers:
- Tesco Express (most local convenience store located 2.1km from the site);
 - Harpenden Town Centre (most local superstores and other retail facilities located approximately 2.2km from the site);
 - Luton Town Centre (local large town located 7.5km from the site); and
 - St Albans City Centre (local large city located 10km from the site).
- 2.28 No car driver trips have been considered to be made to the Co-op located on Lower Luton Road given the proximity to the site (within approximately 500m walk) and the likelihood that the majority of trips to this retail facility would be made on-foot from the site.
- 2.29 Whilst shopping trips may be made to additional destinations, the aforementioned locations are expected to attract the majority of trips and therefore is considered to be an appropriate method for distributing residential shopping trips.
- 2.30 Residential trips for the purpose of shopping have been distributed using the proportions shown in **Table 2.5**.

Table 2.5 - Forecast Distribution Proportions of Residential Shopping Trips

Nearby Shopping Facility	Expected Proportion
Tesco Express	5%
Harpenden Town Centre	50%
Luton Town Centre	25%
St Albans City Centre	20%

- 2.31 Flow diagrams are contained within **Appendix A** which demonstrate the forecast distribution of residential trips for the purpose of shopping in percentage terms.

3.0 Non-Residential Distribution

Primary School Distribution

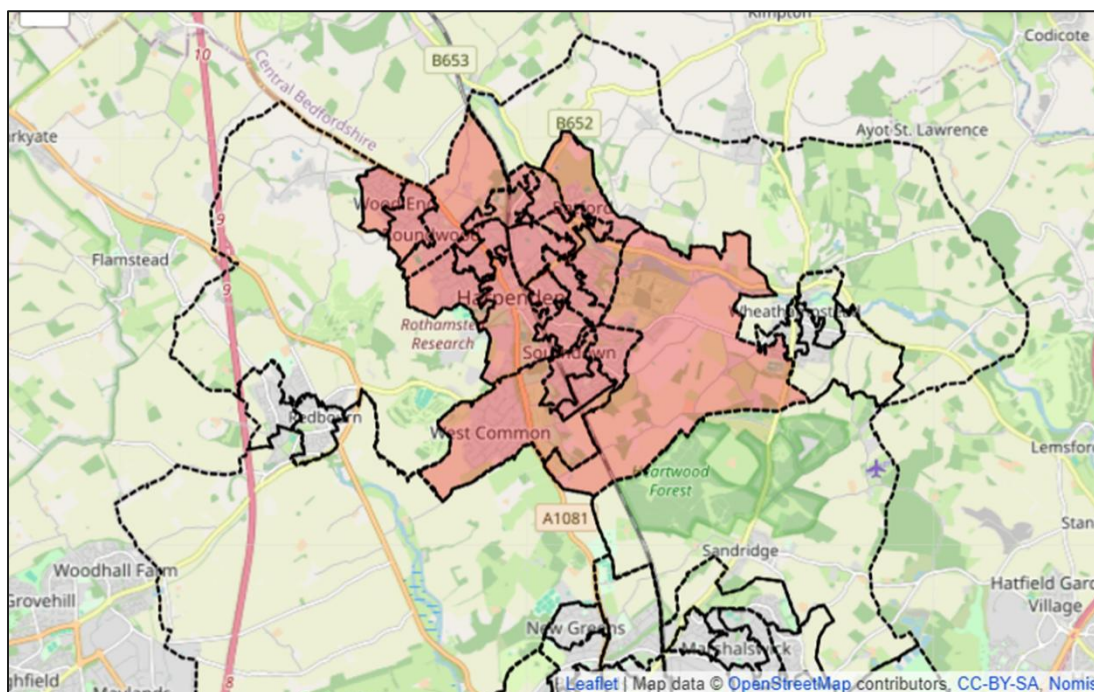
- 3.1 The expectation is that the on-site primary school will predominantly be provided to serve the residents within the site. It is however expected that some students from outside of the site will be enrolled to bring the school to capacity.
- 3.2 It is likely that the students enrolled will derive from local areas and in all cases within Harpenden.
- 3.3 A GRAVITY P/T^2 model has been prepared which covers all the Census Lower Super Output Areas (LSOA) that cover Harpenden. This model utilises 2021 Census population data for each LSOA. The proportion of students residing from each of these areas is determined based on the population divided by journey time (minutes) squared. This methodology favours



destinations that are closer and have higher populations than those further away and with fewer residents.

- 3.4 **Figure 3.1** shows the selected LSOAs whereby students may derive from. The area shown includes a total of 20 LSOAs.

Figure 3.1 - Primary School Distribution LSOAs



- 3.5 The LSOAs contained within **Figure 3.1** are listed within **Table 3.1** along with population data and estimated journey time (based on Google journey planner) and the resultant estimated distribution proportions. All LSOAs that have been considered are within a 10-minute journey time from the site based on Google Maps journey planner tool.



Table 3.1 - Primary School Distribution Origins

Origin (LSOA)	Population	Journey Time (mins)	Proportion
E01023690 : St Albans 001A	1740	6	2.5%
E01023691 : St Albans 001B	1475	6	2.1%
E01023692 : St Albans 001C	1252	2	16.4%
E01023693 : St Albans 001D	1519	4	5.0%
E01023694 : St Albans 001E	1742	6	2.5%
E01023685 : St Albans 002A	1733	4	5.7%
E01023686 : St Albans 002B	1593	4	5.2%
E01023687 : St Albans 002C	1517	2	19.9%
E01023688 : St Albans 002D	1541	4	5.1%
E01023689 : St Albans 002E	1494	4	4.9%
E01023699 : St Albans 003A	1622	5	3.4%
E01023700 : St Albans 003B	1375	6	2.0%
E01023701 : St Albans 003C	1932	4	6.3%
E01023702 : St Albans 003D	1656	4	5.4%
E01023703 : St Albans 003E	1516	6	2.2%
E01023749 : St Albans 004D	1898	4	6.2%
E01023695 : St Albans 005A	1660	7	1.8%
E01023696 : St Albans 005B	1805	10	0.9%
E01023697 : St Albans 005C	1883	8	1.5%
E01023698 : St Albans 005D	1524	10	0.8%

- 3.6 Flow diagrams are contained within **Appendix A** which demonstrate the forecast distribution of primary school trips in percentage terms.

Care Home Distribution

- 3.7 It is anticipated that trips generated by the care home aspect of the proposed development during the peak hour periods will be made by staff travelling to or from the facility.
- 3.8 On this basis, a similar methodology has been used as was applied to the trips generated by residential dwellings for the purpose of commuting.
- 3.9 Census journey to work origin/destination data has been used with the MSOA in which the site resides within (St Albans 002) selected as the place of work. This is contrary to the residential commuting distribution which uses St Albans 002 as the usual residency.
- 3.10 The Middle Super Output Area (MSOA) that the site resides within (St Albans 002) has been selected as the place of work. All MSOAs within St Albans, all Local Authority areas within the South East of England (other than St Albans which is broken into MSOAs) and all Regions (excluding South East which is broken into Local Authority Areas) were selected as the location of usual residency. Only origin/destination information for car drivers was obtained for the purpose of estimating the distribution of future trips generated by car drivers from the proposed development.



- 3.11 Similarly to the residential commuting distribution, to avoid an overly complex assessment, all origin locations which contributed fewer than 1% of all journeys to St Albans 002 for work were removed and the removed percentages reapplied proportionally to the remaining origin locations. This resulted in the consideration of trips to 22 destinations. The estimated proportions to and from each area is contained within **Table 3.2**.

Table 3.2 - Care Home Distribution Origins

Destination	Proportion
Luton	12.3%
St Albans 002	11.5%
Central Bedfordshire	11.2%
St Albans 001	8.3%
Dacorum	7.4%
St Albans 003	6.7%
Welwyn Hatfield	6.6%
St Albans 005	5.6%
North Hertfordshire	5.3%
St Albans 004	3.6%
St Albans 006	3.6%
St Albans 007	2.1%
Stevenage	2.1%
South East	2.1%
Watford	2.0%
St Albans 008	1.6%
St Albans 012	1.5%
London	1.5%
Hertsmere	1.3%
St Albans 009	1.2%
St Albans 011	1.2%
St Albans 014	1.2%

- 3.12 Flow diagrams are contained within **Appendix A** which demonstrate the forecast distribution of care home trips in percentage terms.

Medical Centre Distribution

- 3.13 The purpose of the medical centre will be to serve local residents within the site and within Harpenden.
- 3.14 It is not expected that any of the registered users of the medical centre will reside outside of Harpenden.
- 3.15 As such, the distribution for the medical centre is identical to that applied to the primary school. This uses a GRAVITY P/T^2 model based on 2021 census population data and approximate journey time to/from LSOAs that cover the Harpenden area. The estimated proportions to and from each area was presented within **Table 3.1**.



- 3.16 Flow diagrams are contained within **Appendix A** which demonstrate the forecast distribution of medical centre trips in percentage terms.

Local Centre Distribution

- 3.17 It is expected that the local centre will serve those who reside within the site or existing local residents who would be able to access on foot or by bicycle. It is therefore expected that a negligible number of car driver trips would be generated by this land use during peak hours and therefore no consideration of this land use has been made within the trip generation assessment and no distribution of vehicle trips is required.

4.0 Total Distribution

- 4.1 **Appendix B** presents flow diagrams showing the forecast number of turning movements for the proposed development for each journey purpose and land use in the AM and PM peak hours.
- 4.2 **Appendix C** presents the same flow diagrams, however accounts for the delivery of the full NE Harpenden allocation. The only variation between the flow diagrams at **Appendix C** and those included at **Appendix B** relating to the proposed development is the number of movements forecast for the residential purposes (owing to the uplift in dwellings provided) and the number of external trips generated by the on-site primary school as a higher proportion of these trips can be internalised by the additional students that will reside within the site.

5.0 Bower Heath Lane Diversion

- 5.1 Following the original production of this note and the calculations that informed it, and as a result of discussions with HCC, it is now proposed that the development will enable the diversion of Bower Heath Lane into the proposed development. Only a single residential dwelling will remain accessible from the existing Bower Heath Lane/Lower Luton Road junction.
- 5.2 On this basis, all development trips forecast to use Bower Heath Lane will instead navigate through the proposed development and exit from the west of the site.
- 5.3 The resultant adjustments to the development traffic flows at the site access and the Bower Heath Lane/Lower Luton Road junction are shown within the traffic flow diagrams at **Appendix B** (proposed development) and **Appendix C** (full allocation).

6.0 Summary

- 6.1 This note has been prepared by SLR Consulting Ltd on behalf of Crest Nicholson to provide additional information in respect to the methodology used to determine the trip distribution for vehicle trips generated by the proposed site at Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane. It is suggested that this note



should be read in conjunction with the supporting Transport Assessment and Trip Generation Methodology Note.

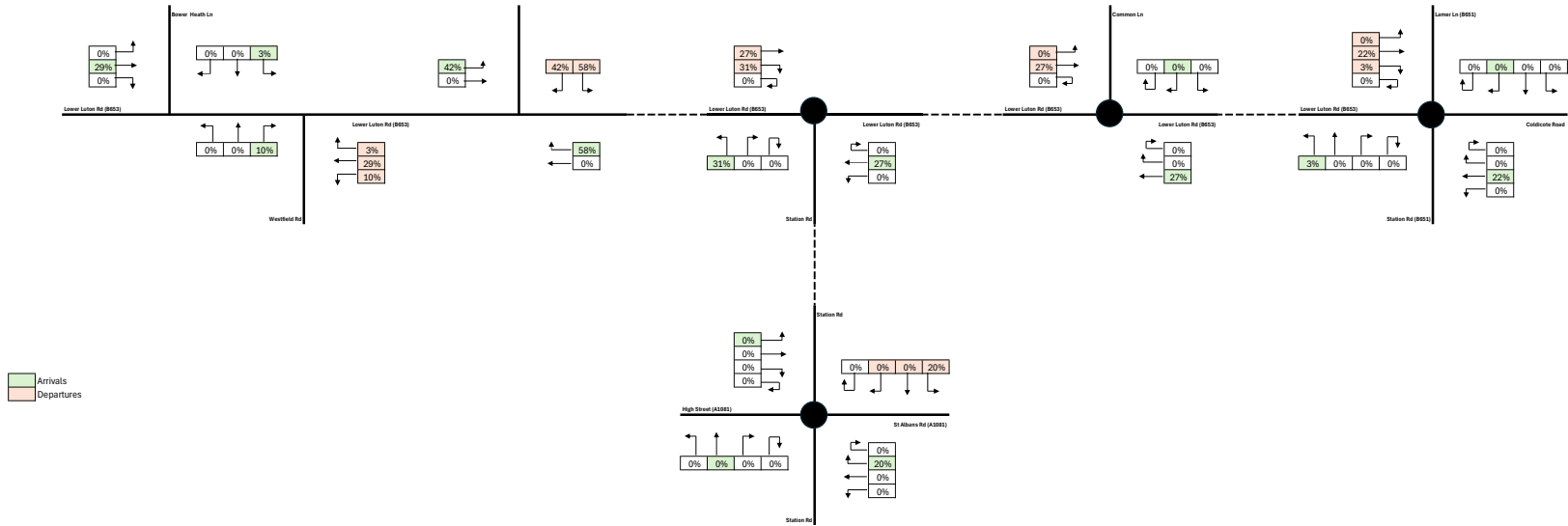
- 6.2 Trips associated with a variety of residential journey purposes and proposed land uses have been distributed across the local highway network using a combination of publicly available data and professional judgement.
- 6.3 It is considered that this trip distribution methodology provides a more comprehensive approach to distributing development trips than the simple application of Census journey to work distributions. The methodology used allows for a more accurate estimation of the likely turning movements within the local highway network for the purposes of detailed junction modelling.
- 6.4 The trip distributions contained within this note have been used to inform the junction modelling work contained within the Transport Assessment.



Appendix A Distribution Proportion Flow Diagrams



Resi Commuting Distribution



Crest Nicholson - Lower Luton Road Harpenden Site



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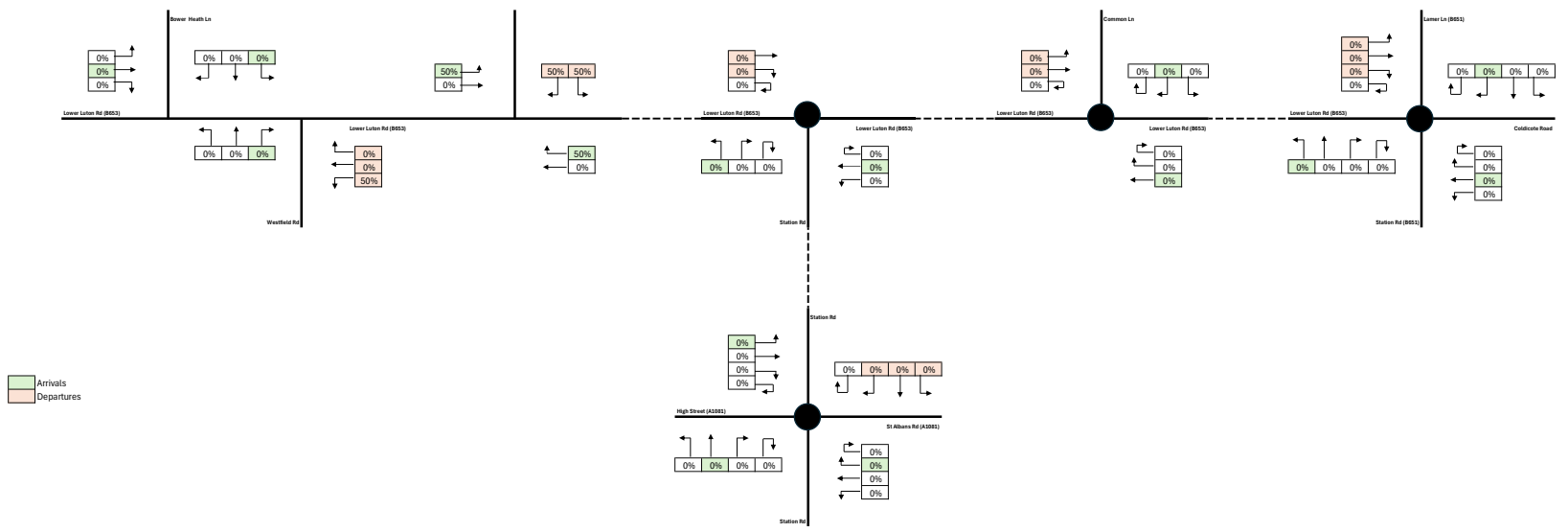
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Resi Primary Education Distribution

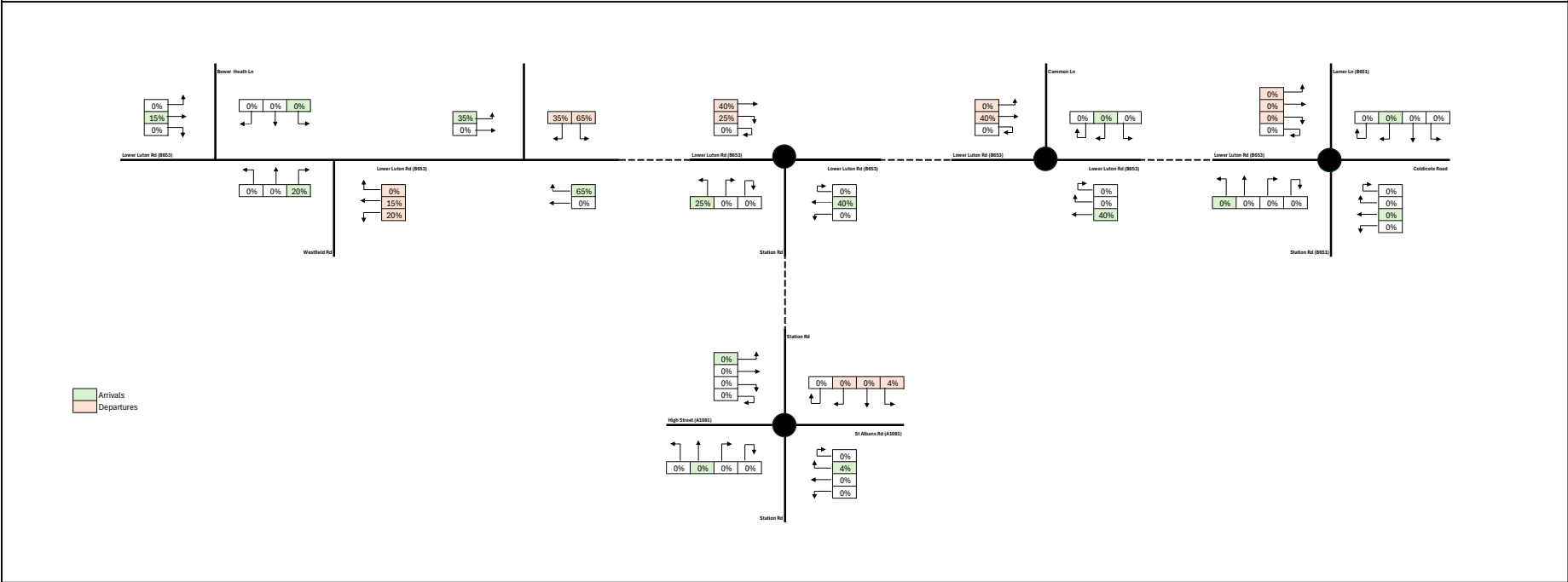


Arrivals
Departures

Crest Nicholson - Lower Luton Road Harpenden Site

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Crest Nicholson - Lower Luton Road Harpenden Site



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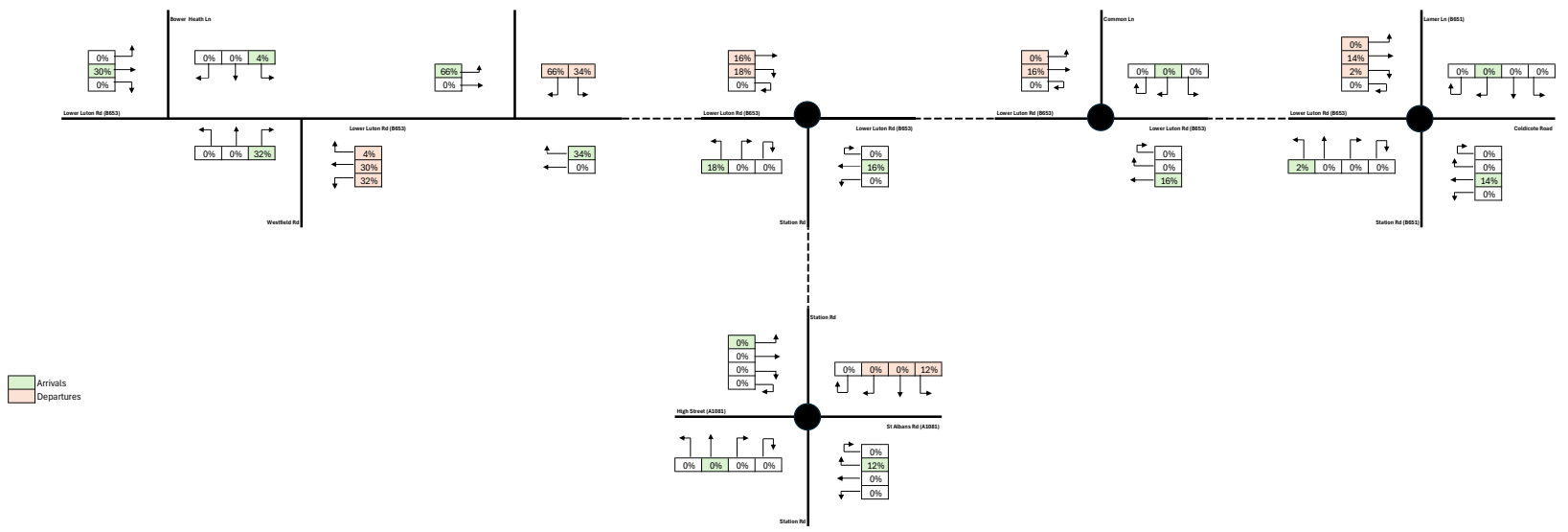
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Resi Leisure Distribution



Crest Nicholson - Lower Luton Road Harpenden Site



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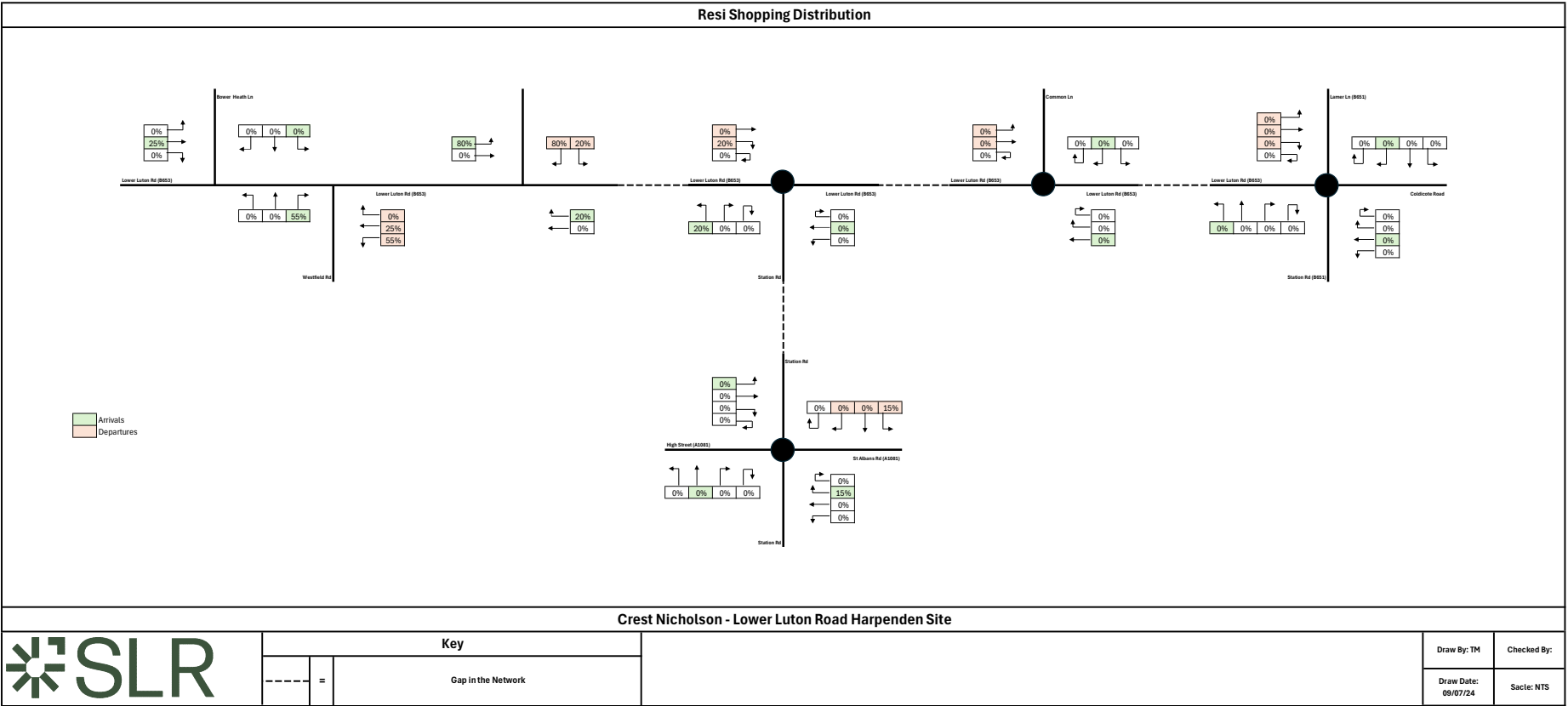
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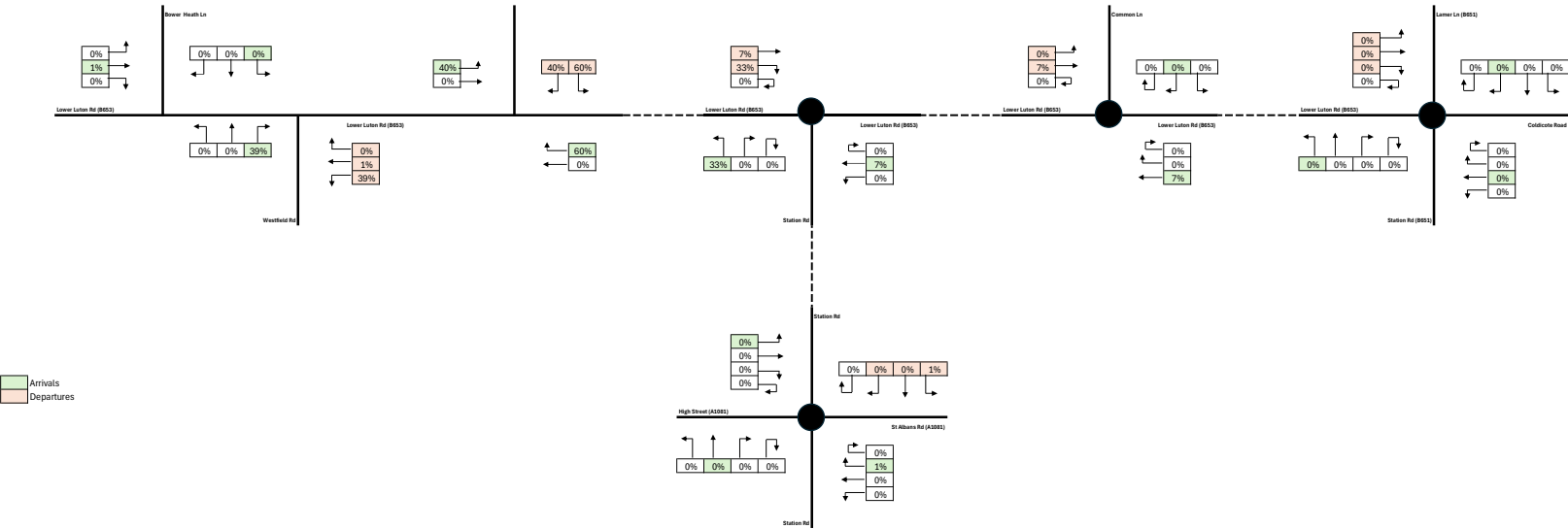
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Primary School Distribution



Crest Nicholson - Lower Luton Road Harpenden Site



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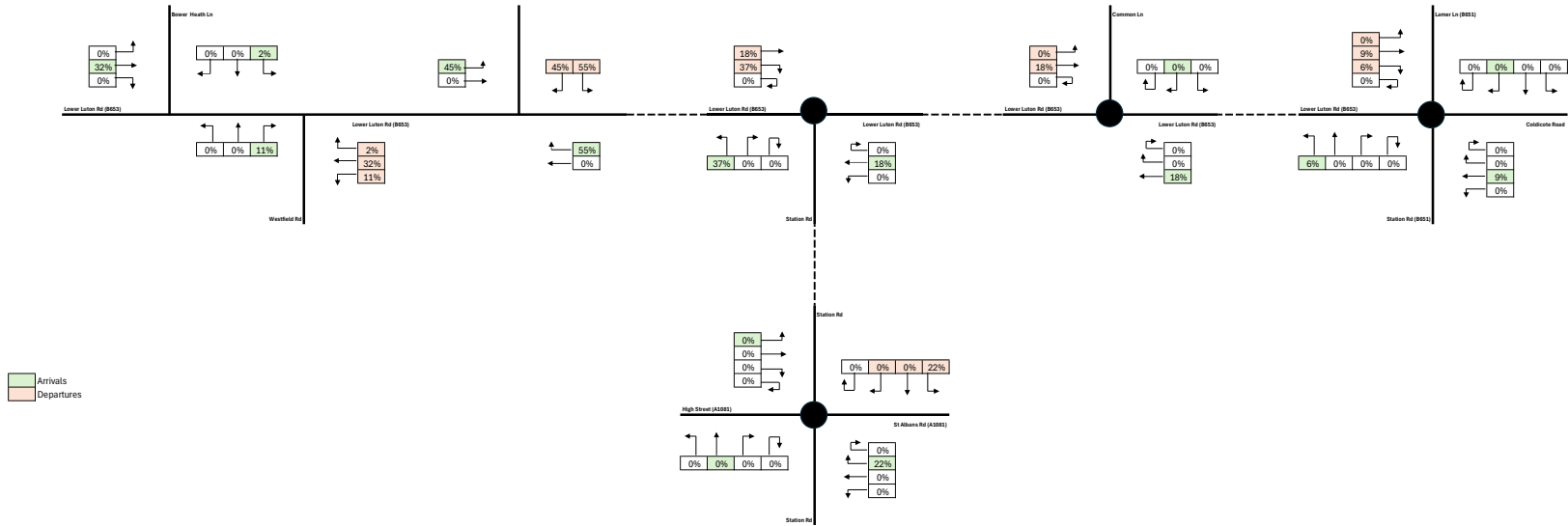
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Care Home Distribution



Crest Nicholson - Lower Luton Road Harpenden Site



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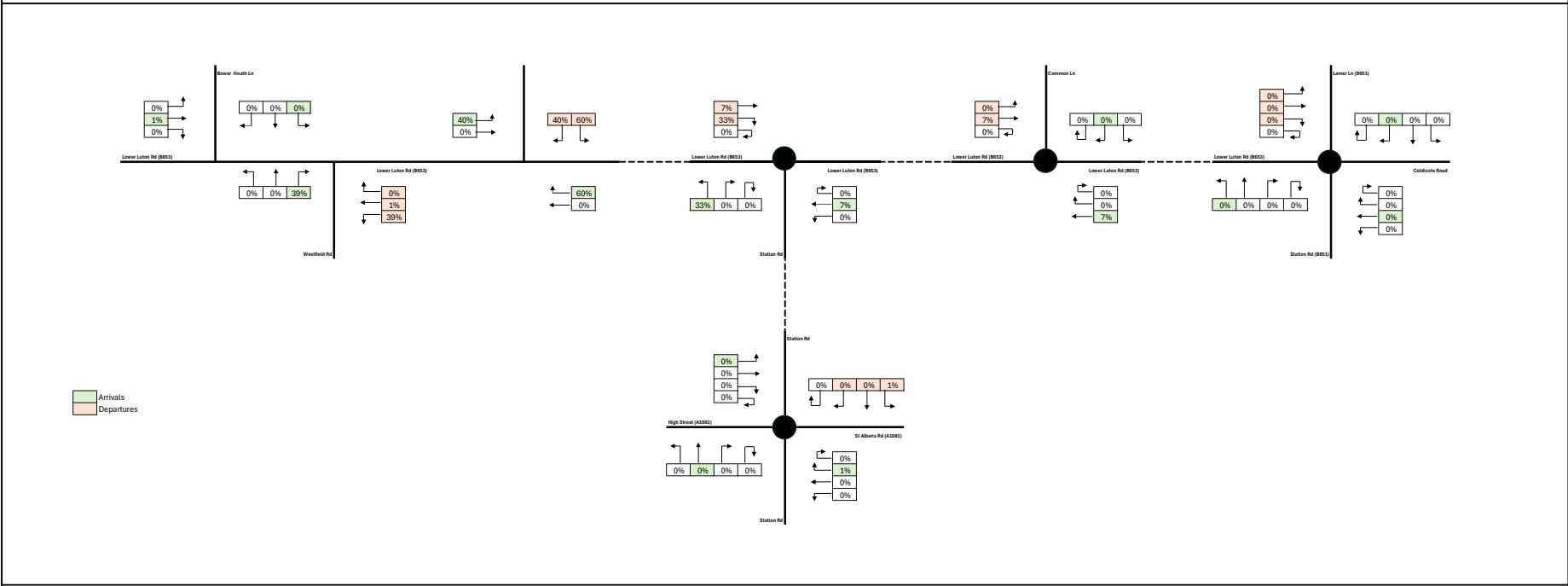
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Crest Nicholson - Lower Luton Road Harpenden Site



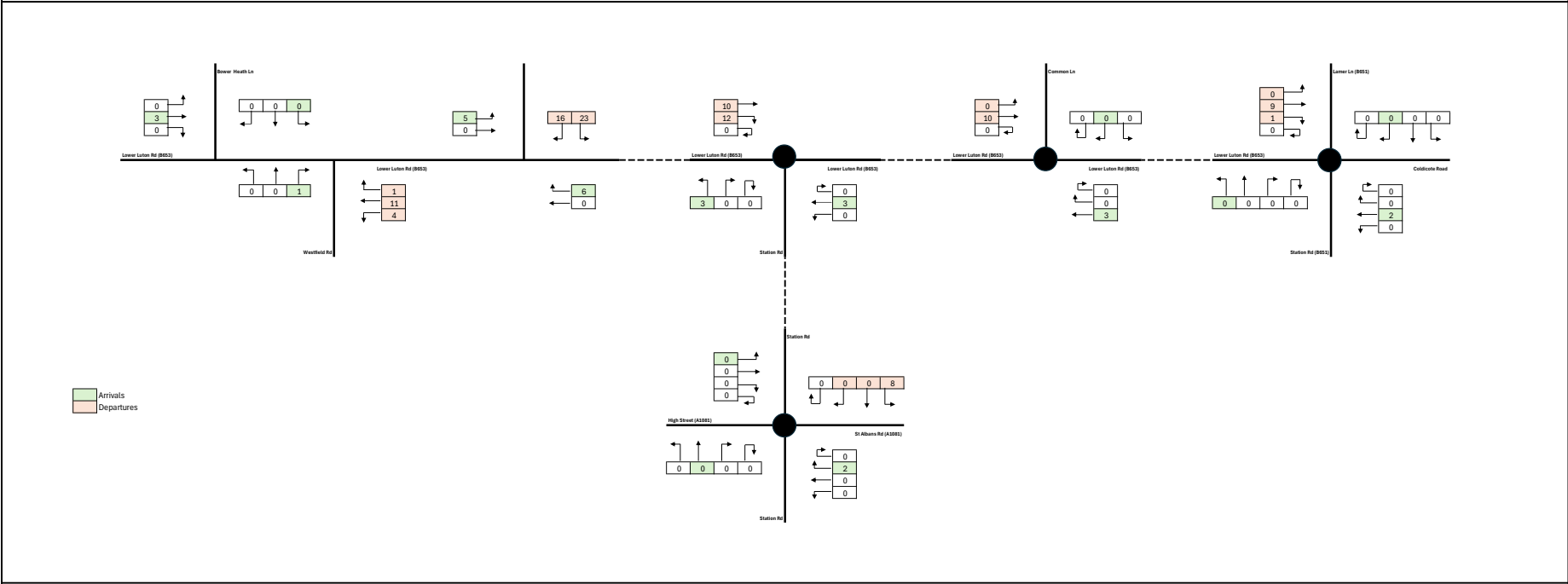
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Appendix B Proposed Development Forecast Turning Movements



Resi Commuting AM Peak



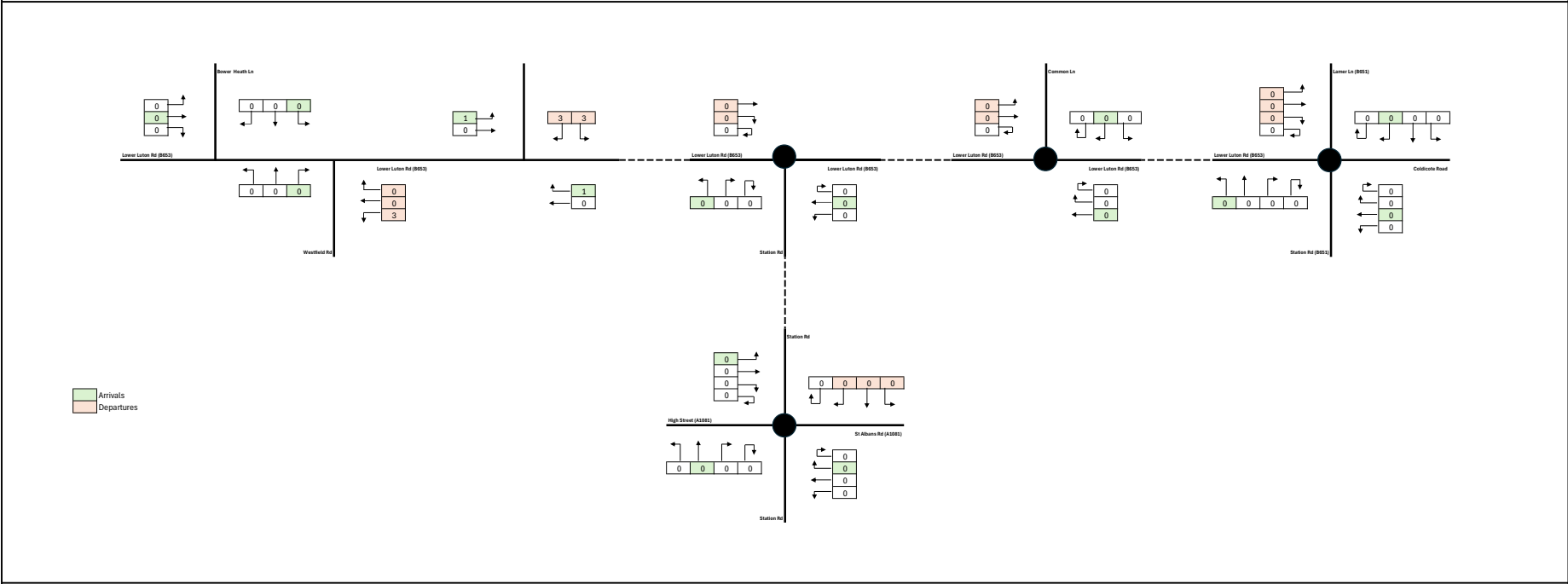
Crest Nicholson - Lower Luton Road Harpenden Site



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Resi Primary Education AM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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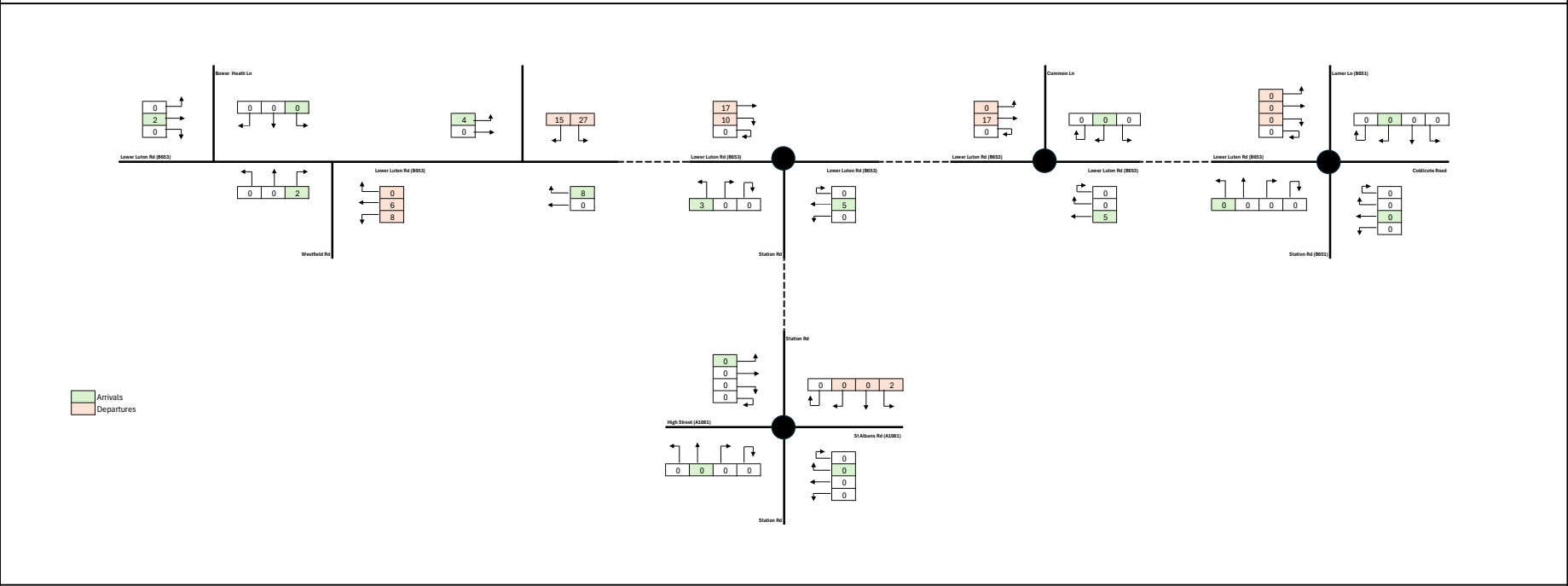
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Resi Secondary/Further Education AM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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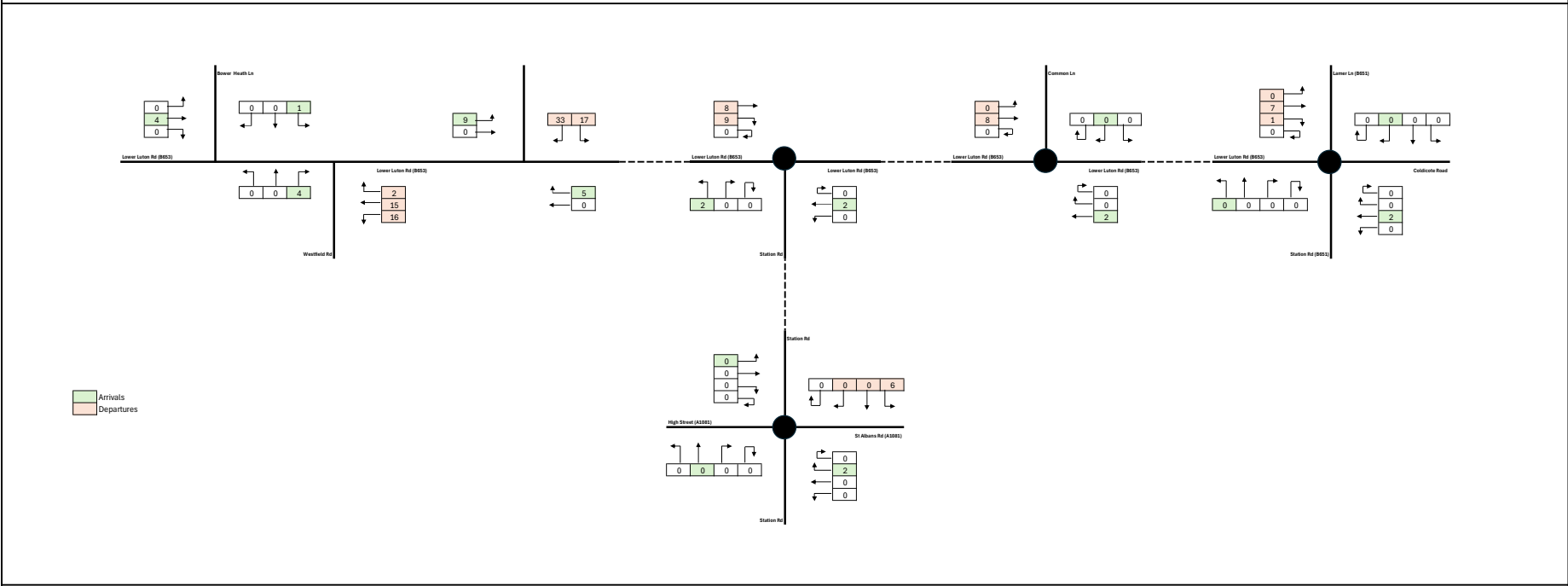
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Resi Leisure AM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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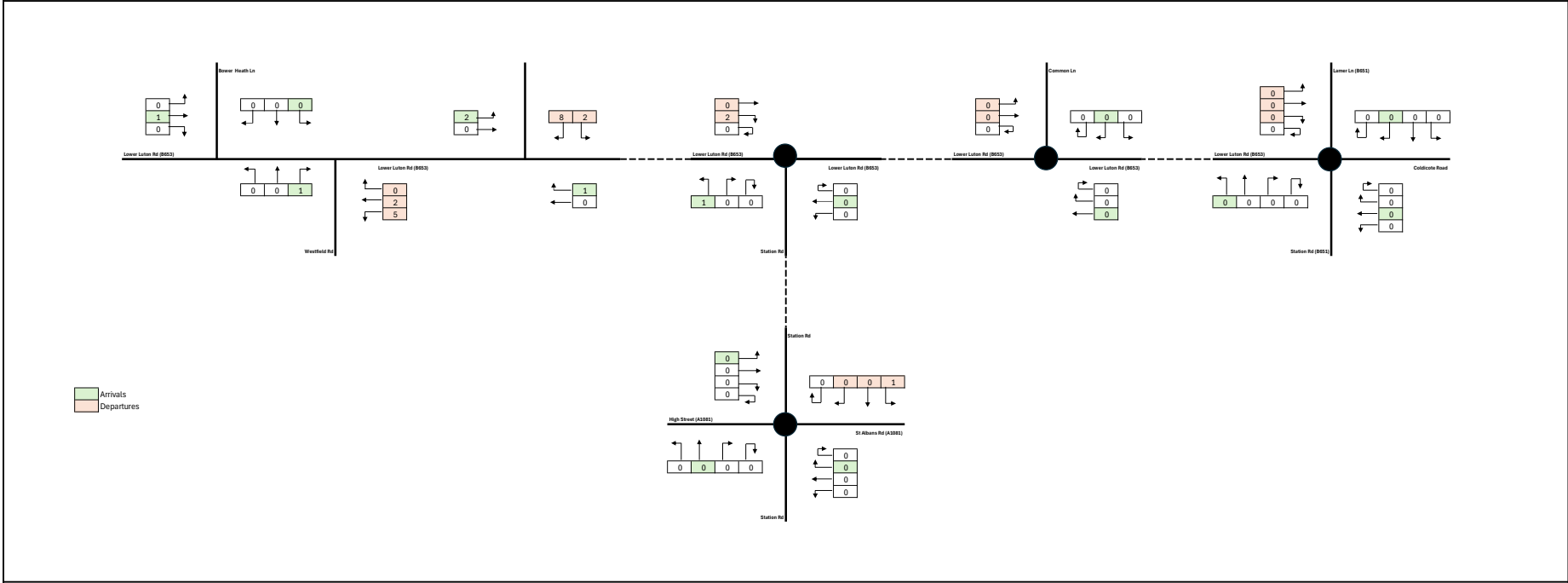
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Resi Shopping AM Peak	
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Crest Nicholson - Lower Luton Road Harpenden Site									
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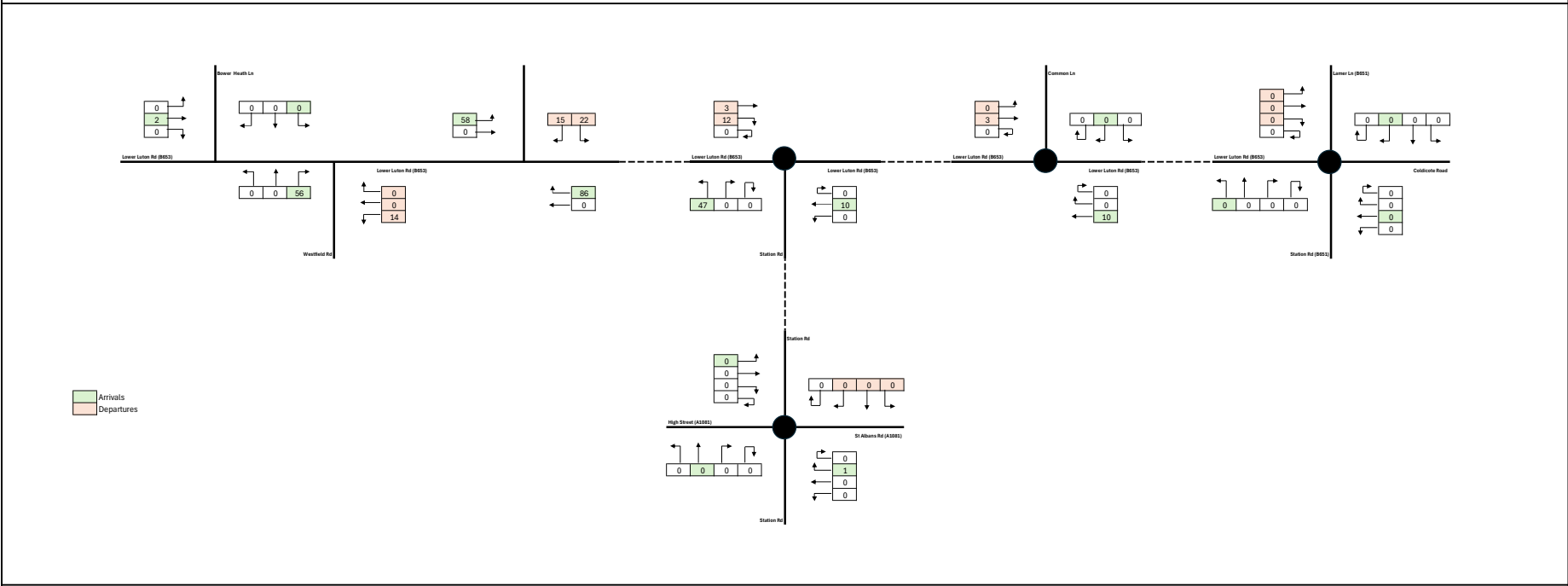
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Primary School AM Peak	
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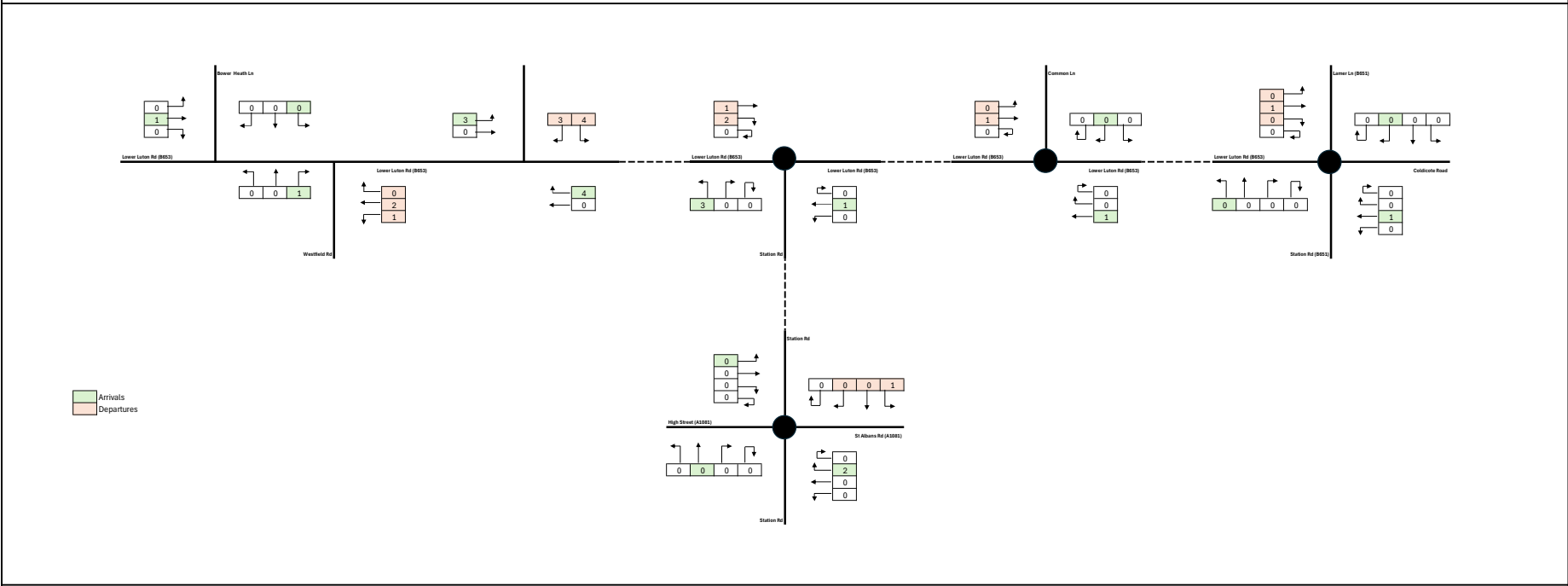
Crest Nicholson - Lower Luton Road Harpenden Site



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Crest Nicholson - Lower Luton Road Harpenden Site



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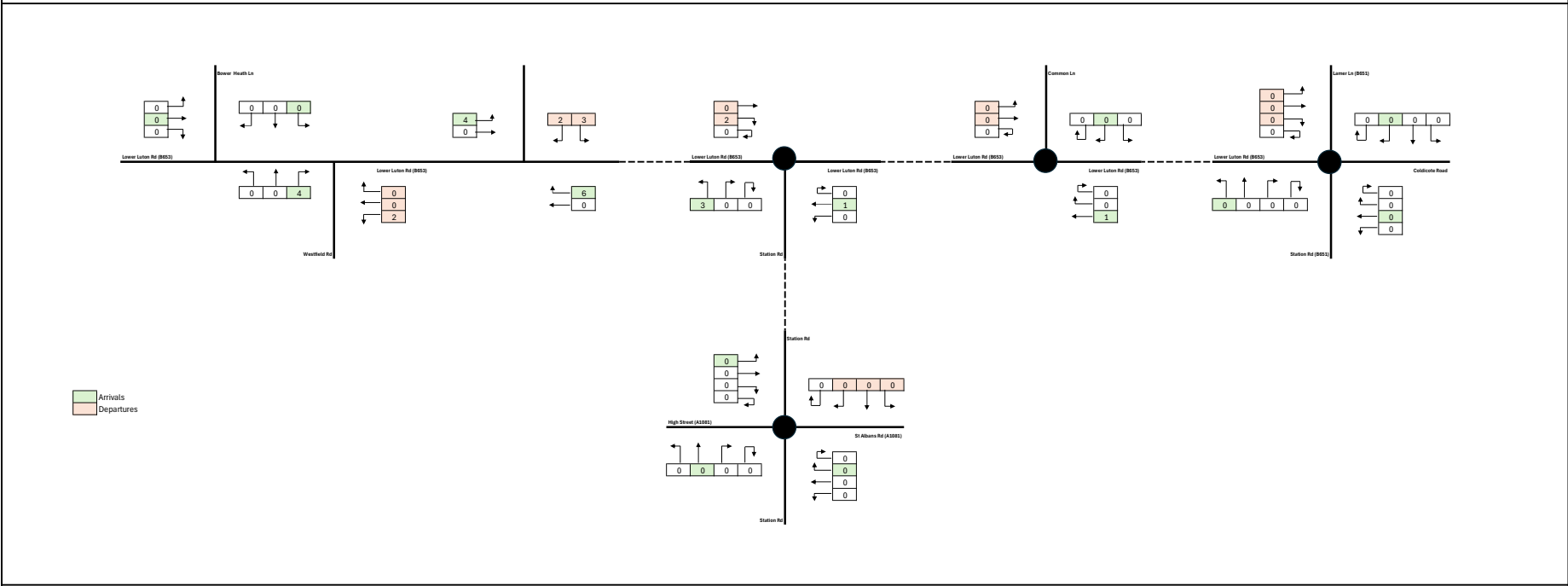
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Medical Centre AM Peak	
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Crest Nicholson - Lower Luton Road Harpenden Site



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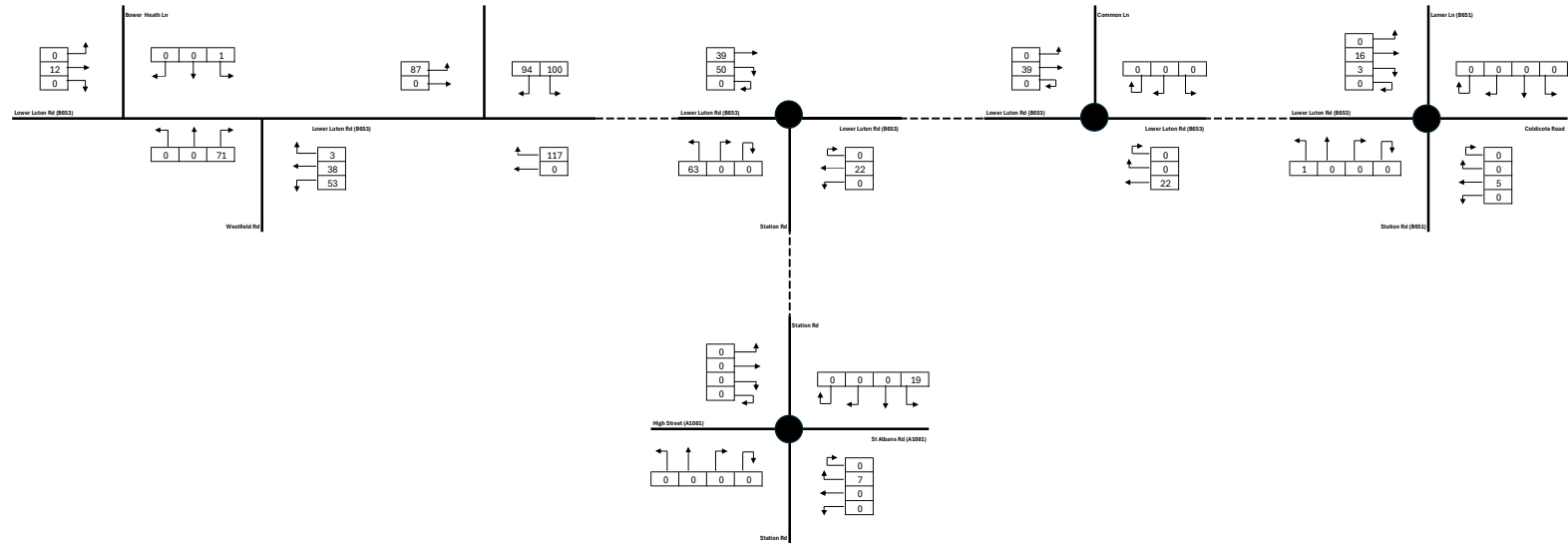
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Total Development AM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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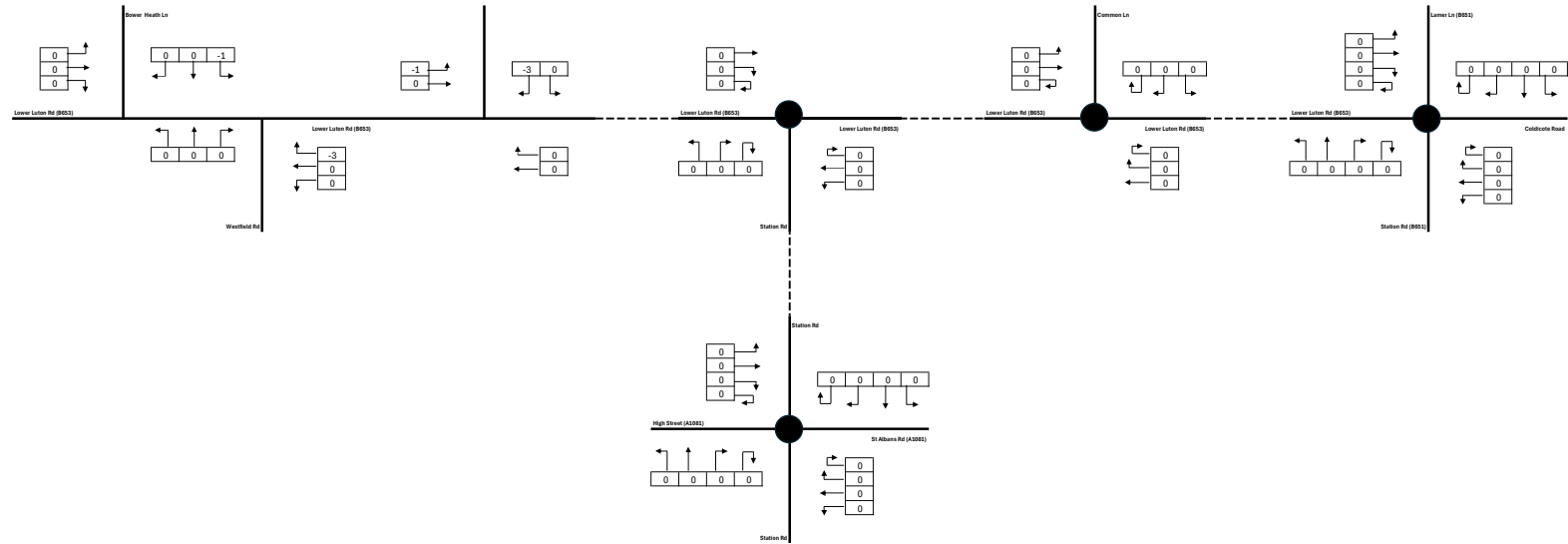
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Total Development AM Peak - Excluding Bower Heath Lane Traffic



Crest Nicholson - Lower Luton Road Harpenden Site



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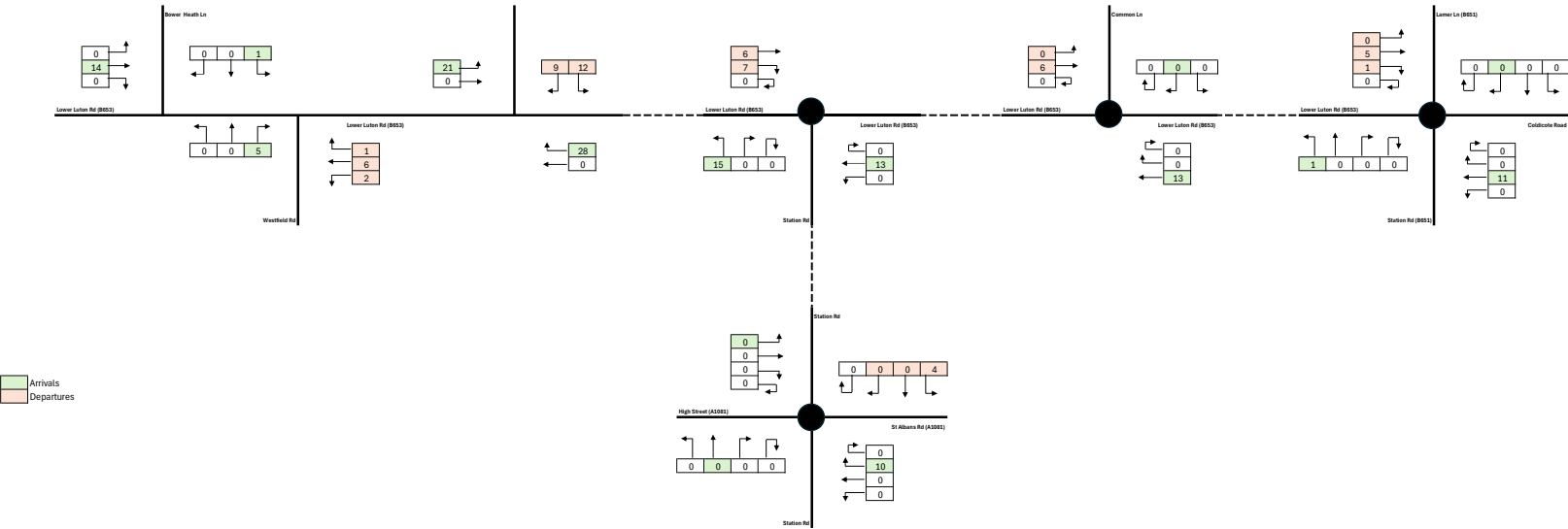
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Resi Commuting PM Peak



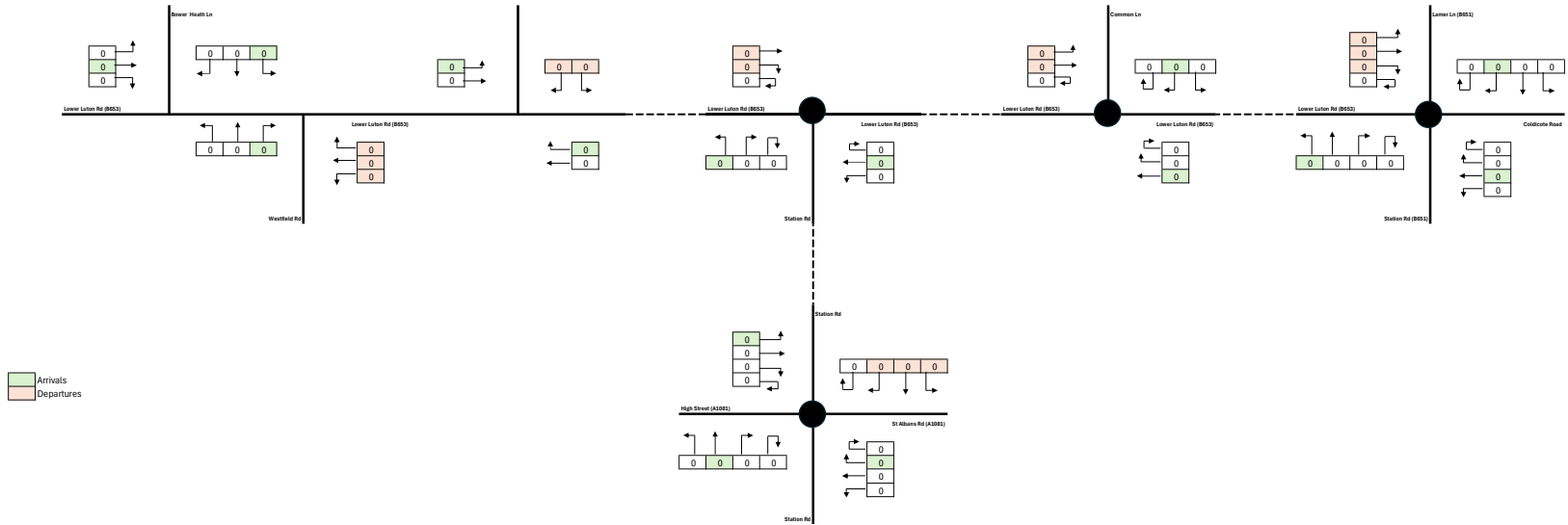
Crest Nicholson - Lower Luton Road Harpenden Site



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Resi Primary Education PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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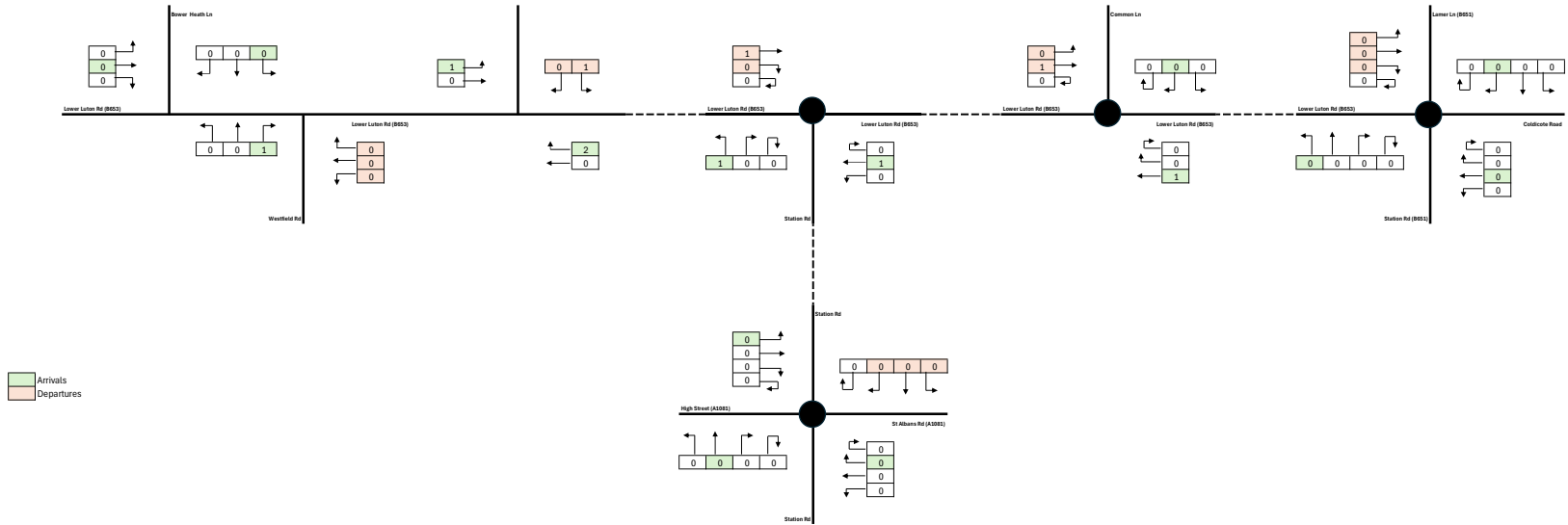
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Resi Secondary/Further Education PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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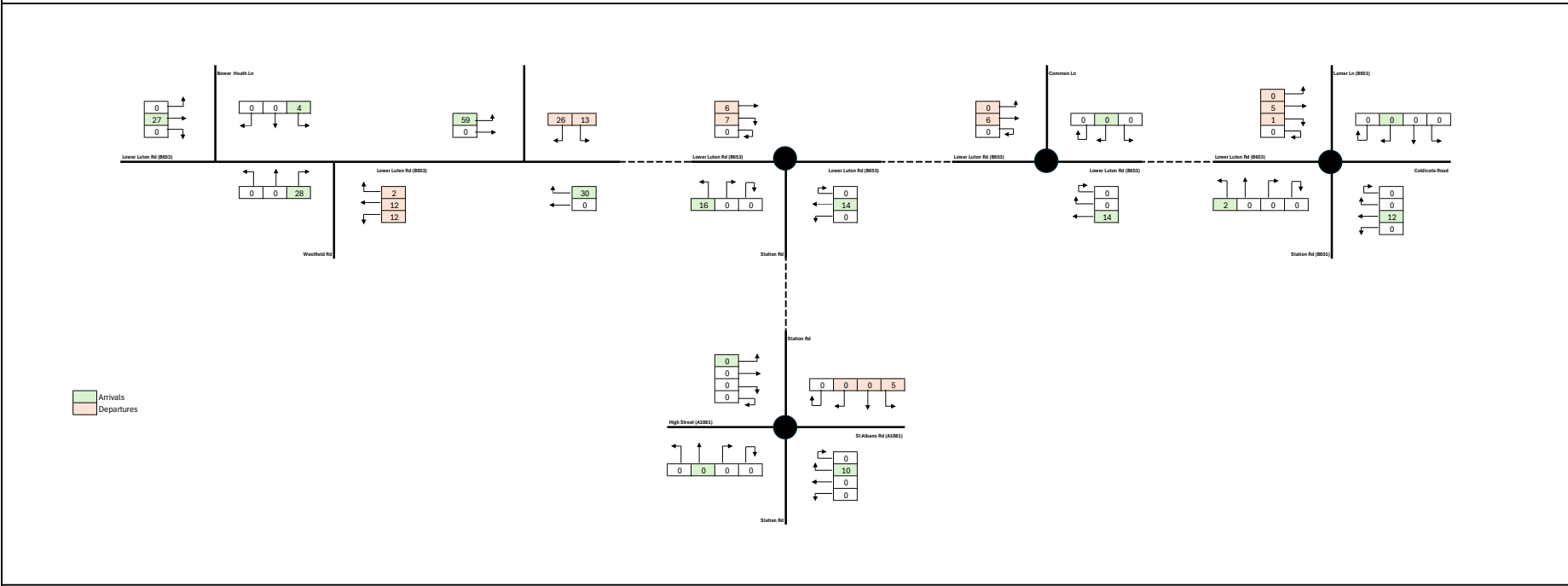
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Resi Leisure PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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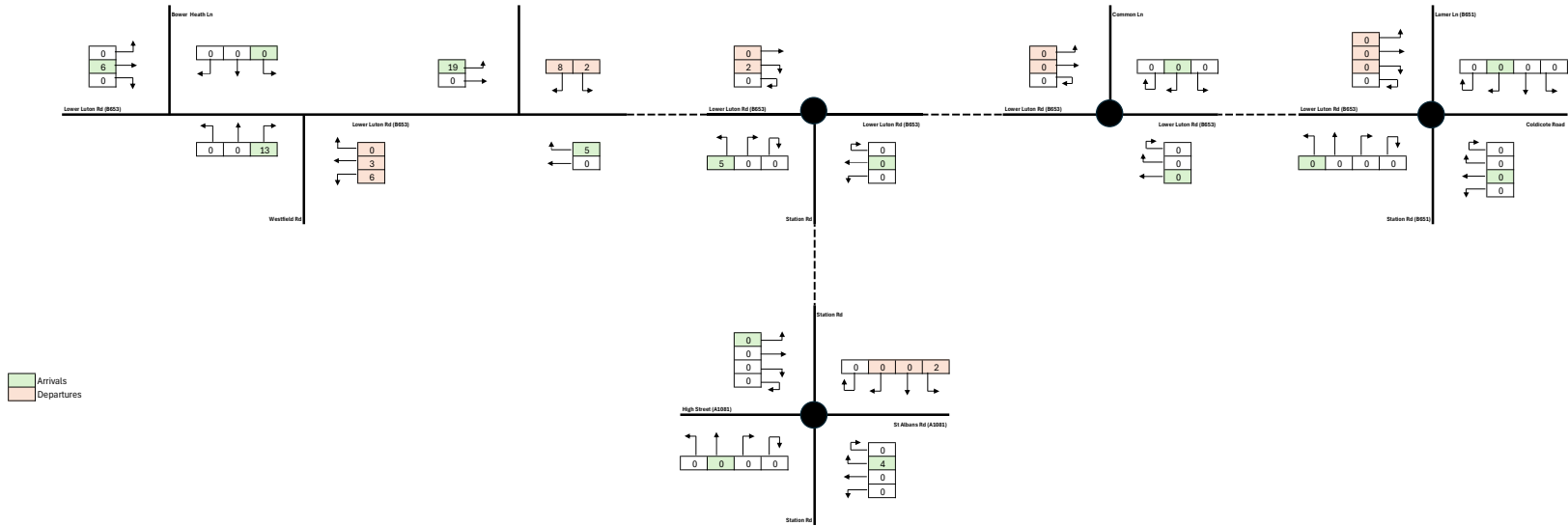
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Resi Shopping PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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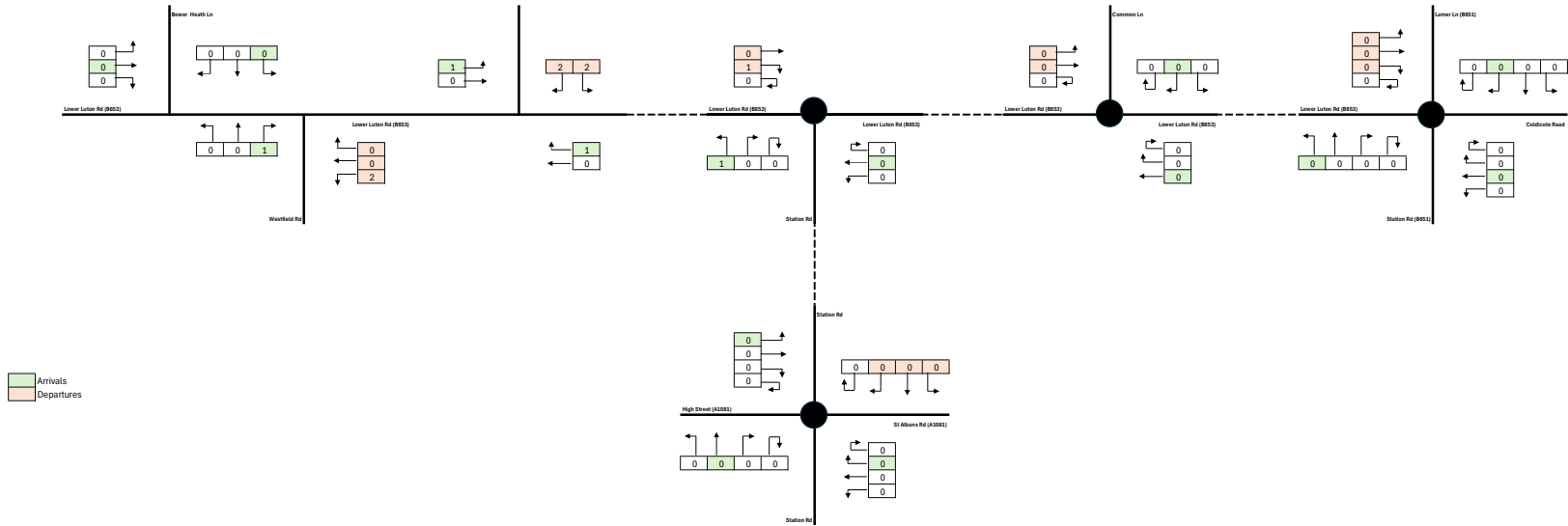
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Primary School PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



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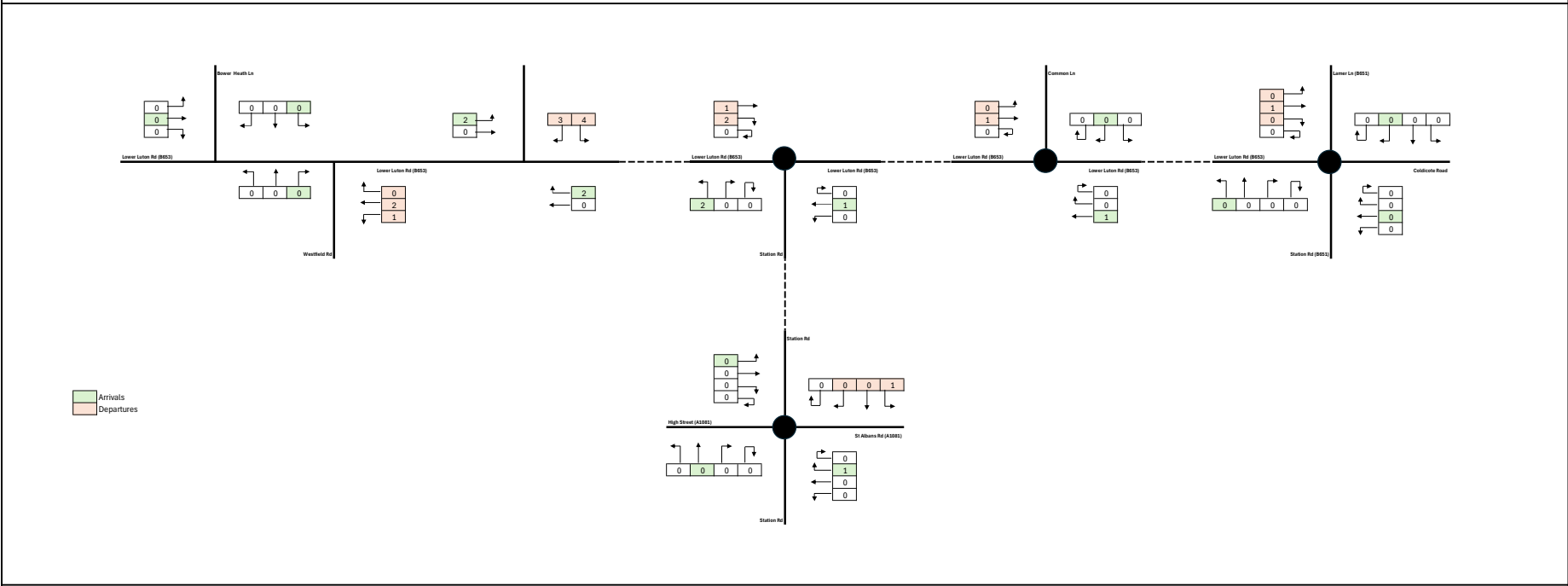
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09/07/24

Scale: NTS

Care Home PM Peak	
1	10
2	10
3	10
4	10
5	10
6	10
7	10
8	10
9	10
10	10
11	10
12	10
13	10
14	10
15	10
16	10
17	10
18	10
19	10
20	10
21	10
22	10
23	10
24	10
25	10
26	10
27	10
28	10
29	10
30	10
31	10
32	10
33	10
34	10
35	10
36	10
37	10
38	10
39	10
40	10
41	10
42	10
43	10
44	10
45	10
46	10
47	10
48	10
49	10
50	10
51	10
52	10
53	10
54	10
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56	10
57	10
58	10
59	10
60	10
61	10
62	10
63	10
64	10
65	10
66	10
67	10
68	10
69	10
70	10
71	10
72	10
73	10
74	10
75	10
76	10
77	10
78	10
79	10
80	10
81	10
82	10
83	10
84	10
85	10
86	10
87	10
88	10
89	10
90	10
91	10
92	10
93	10
94	10
95	10
96	10
97	10
98	10
99	10
100	10



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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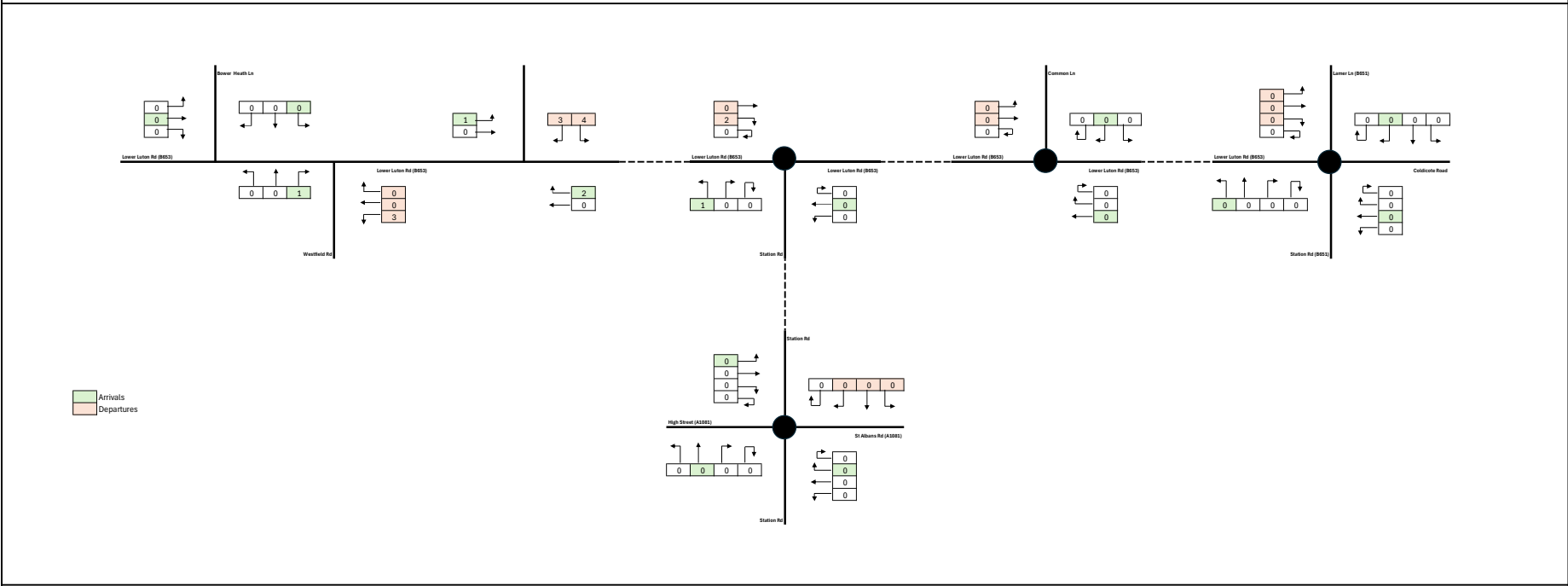
Draw By: TM	Checked By:
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Checked By:

Draw Date: 09/07/24	Sacle: NTS
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Sacle: NTS

Medical Centre PM Peak	
1	100
2	100
3	100
4	100
5	100
6	100
7	100
8	100
9	100
10	100
11	100
12	100
13	100
14	100
15	100
16	100
17	100
18	100
19	100
20	100
21	100
22	100
23	100
24	100
25	100
26	100
27	100
28	100
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31	100
32	100
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36	100
37	100
38	100
39	100
40	100
41	100
42	100
43	100
44	100
45	100
46	100
47	100
48	100
49	100
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51	100
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62	100
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64	100
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66	100
67	100
68	100
69	100
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71	100
72	100
73	100
74	100
75	100
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77	100
78	100
79	100
80	100
81	100
82	100
83	100
84	100
85	100
86	100
87	100
88	100
89	100
90	100
91	100
92	100
93	100
94	100
95	100
96	100
97	100
98	100
99	100
100	100



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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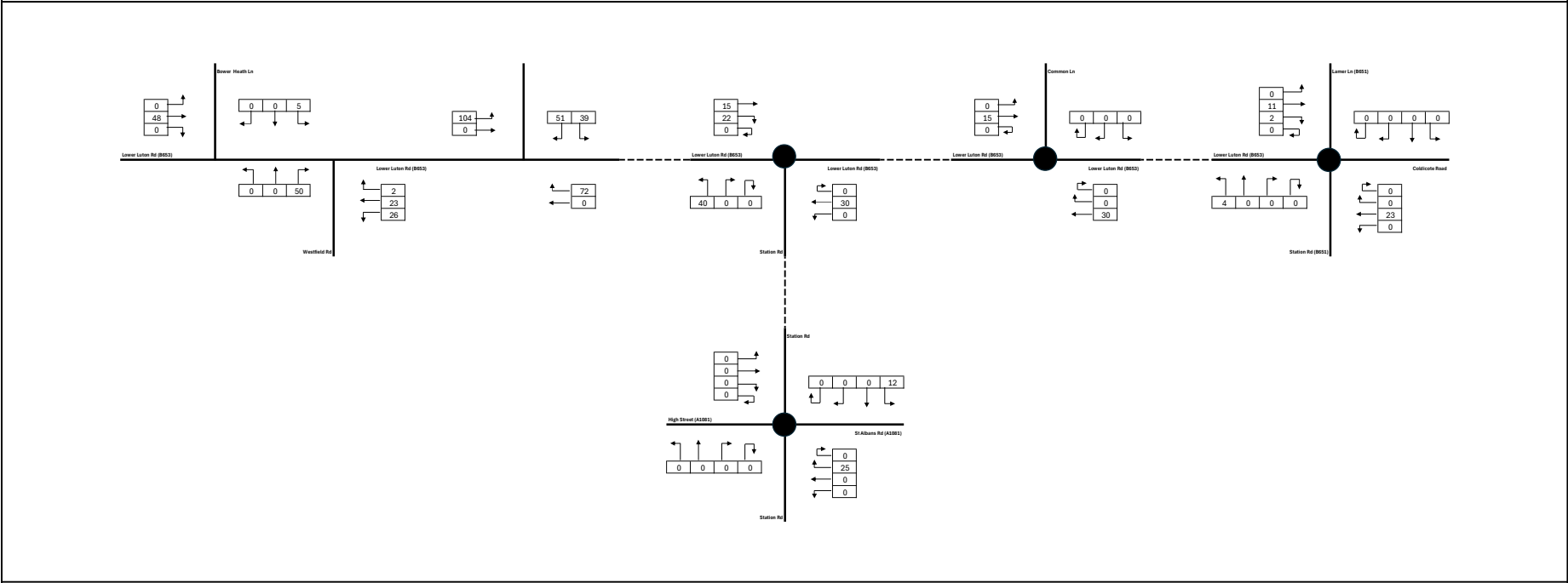
Draw By: TM	Checked By:
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Checked By:

Draw Date: 09/07/24	Sacle: NTS
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Sacle: NTS

Total Development PM Peak	
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Crest Nicholson - Lower Luton Road Harpenden Site



Key	
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-----	=	Gap in the Network
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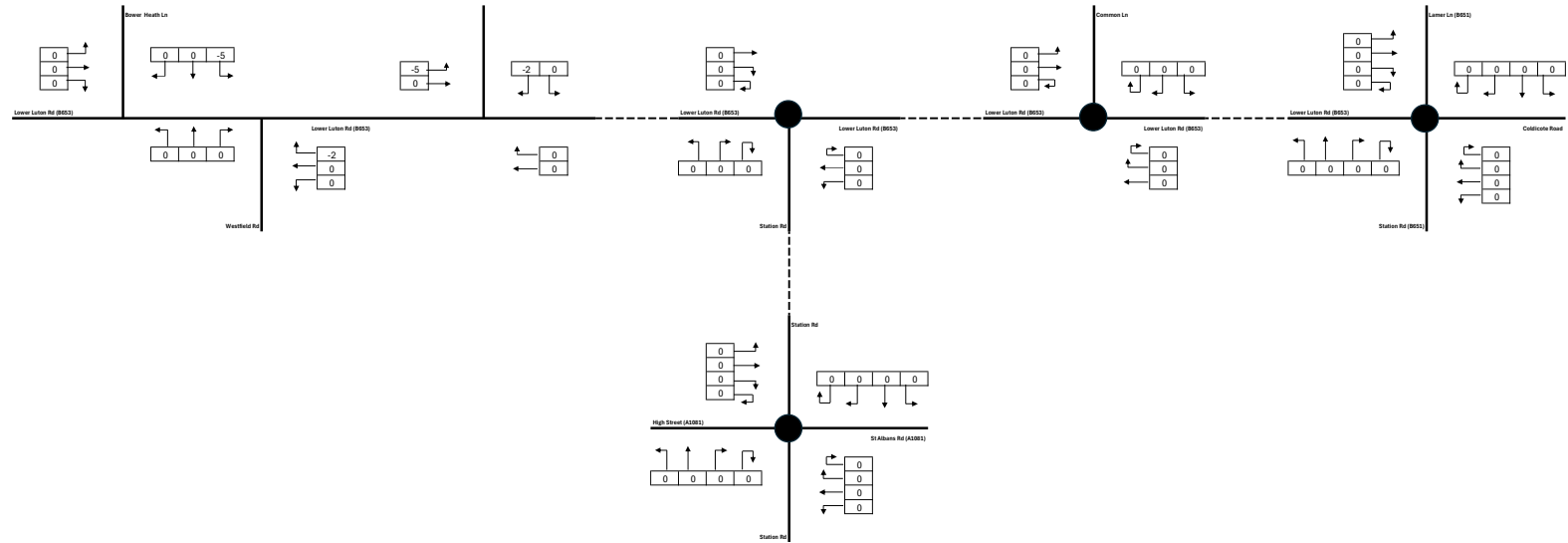
Draw By: TM

Checked By:

Draw Date:
09/07/24

Sacle: NTS

Total Development PM Peak - Excluding Bower Heath Lane Traffic



Crest Nicholson - Lower Luton Road Harpenden Site



Key

--- = Gap in the Network

Draw By: TM

Checked By:

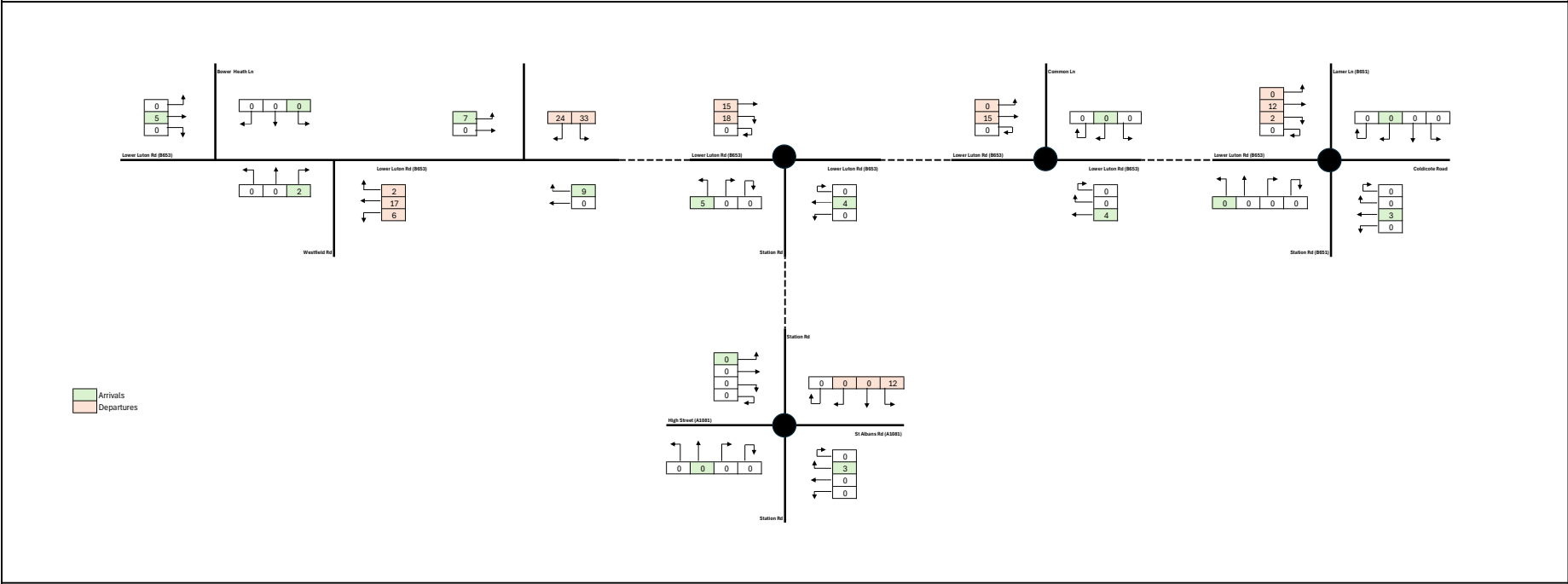
Draw Date:
09/07/24

Scale: NTS

Appendix C Full Allocation Forecast Turning Movements



Resi Commuting AM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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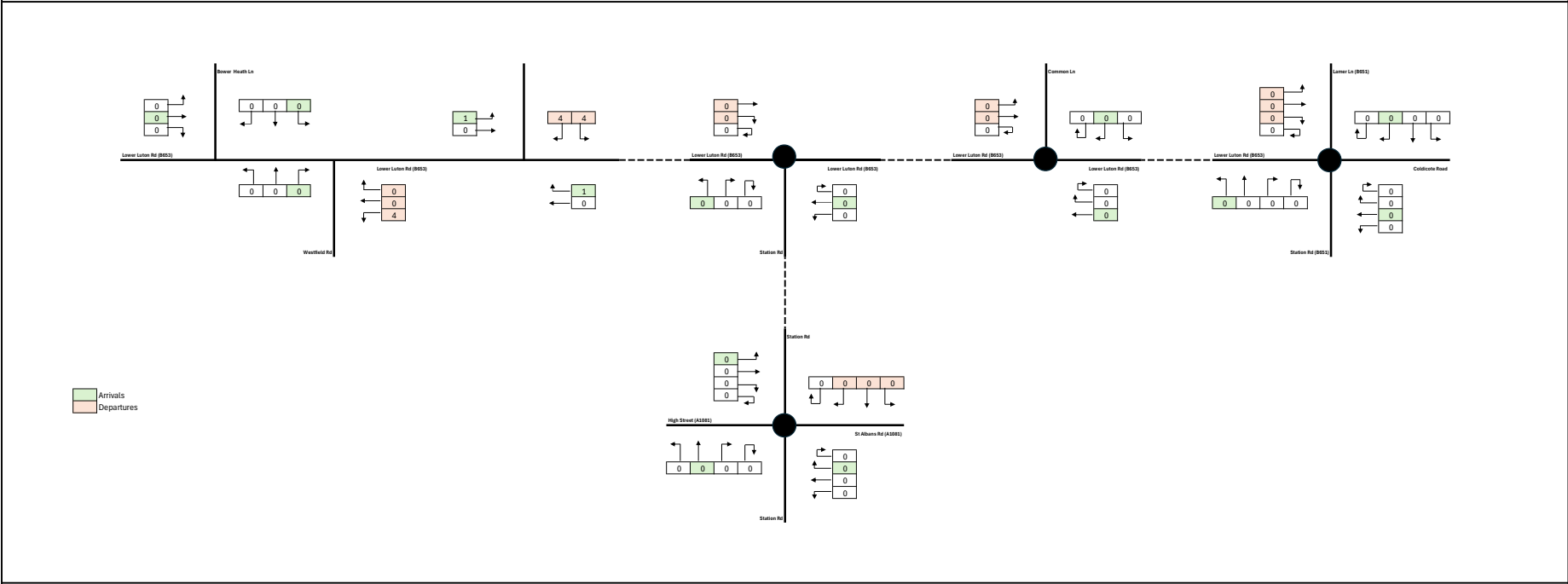
Draw By: TM	Checked By:
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Checked By:

Draw Date: 09/07/24	Sacle: NTS
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Sacle: NTS

Resi Primary Education AM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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Draw Date:
09/07/24

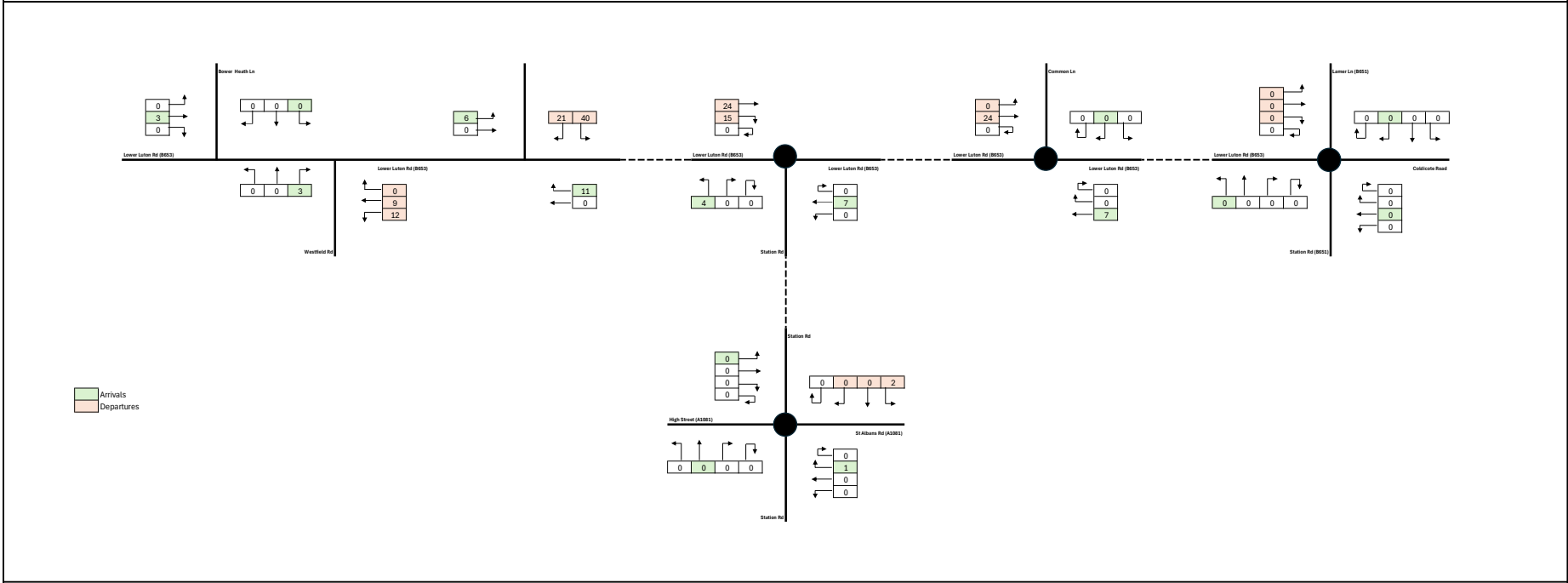
Checked By:

Sacle: NTS

Draw Date:
09/07/24

Sacle: NTS

Resi Secondary/Further Education AM Peak	
--	--



Crest Nicholson - Lower Luton Road Harpenden Site	
---	--



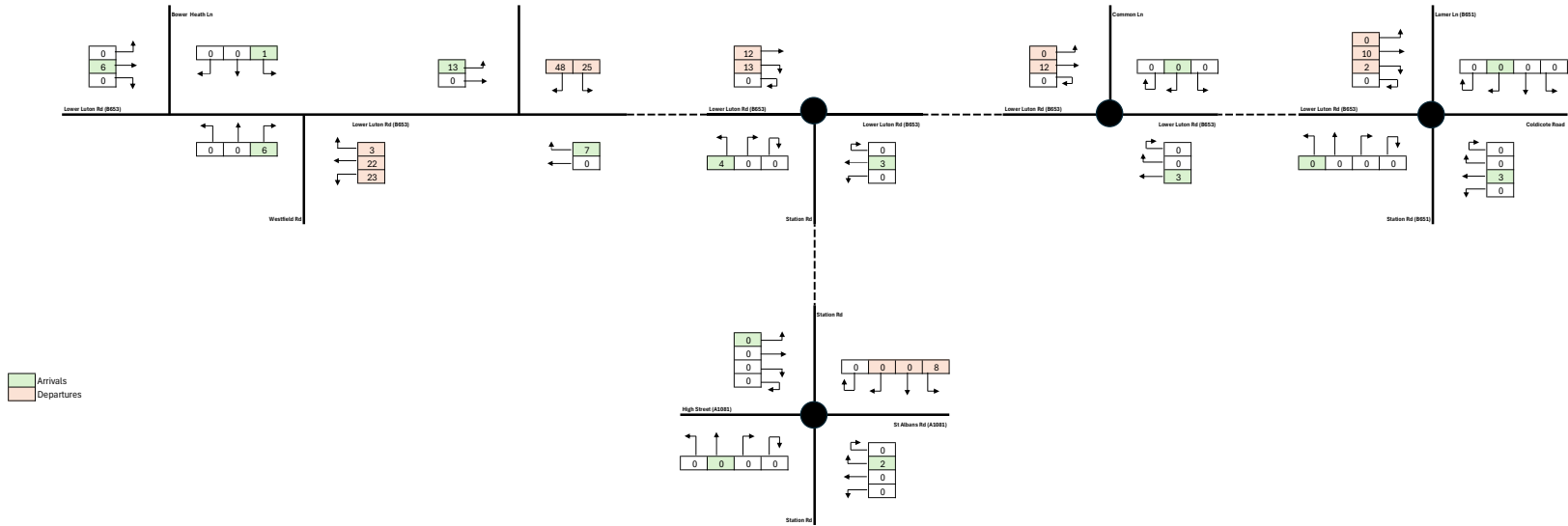
Key		
-----	=	Gap in the Network

Draw By: TM	Checked By:
Draw Date: 09/07/24	Sacle: NTS

Checked By:

Sacle: NTS

Resi Leisure AM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



Key

Gap in the Network

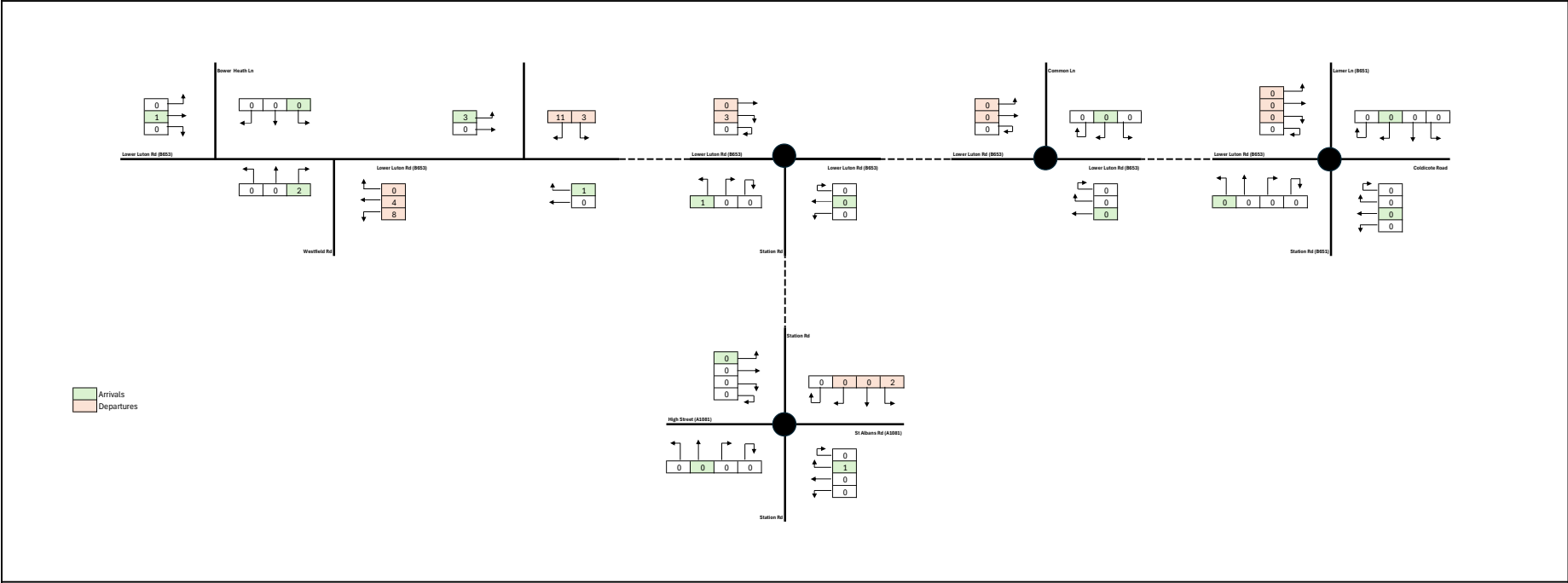
Draw By: TM

Checked By:

Draw Date:
09/07/24

Sacle: NTS

Resi Shopping AM Peak	
1	1
2	2
3	3
4	4
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6	6
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99	99
100	100



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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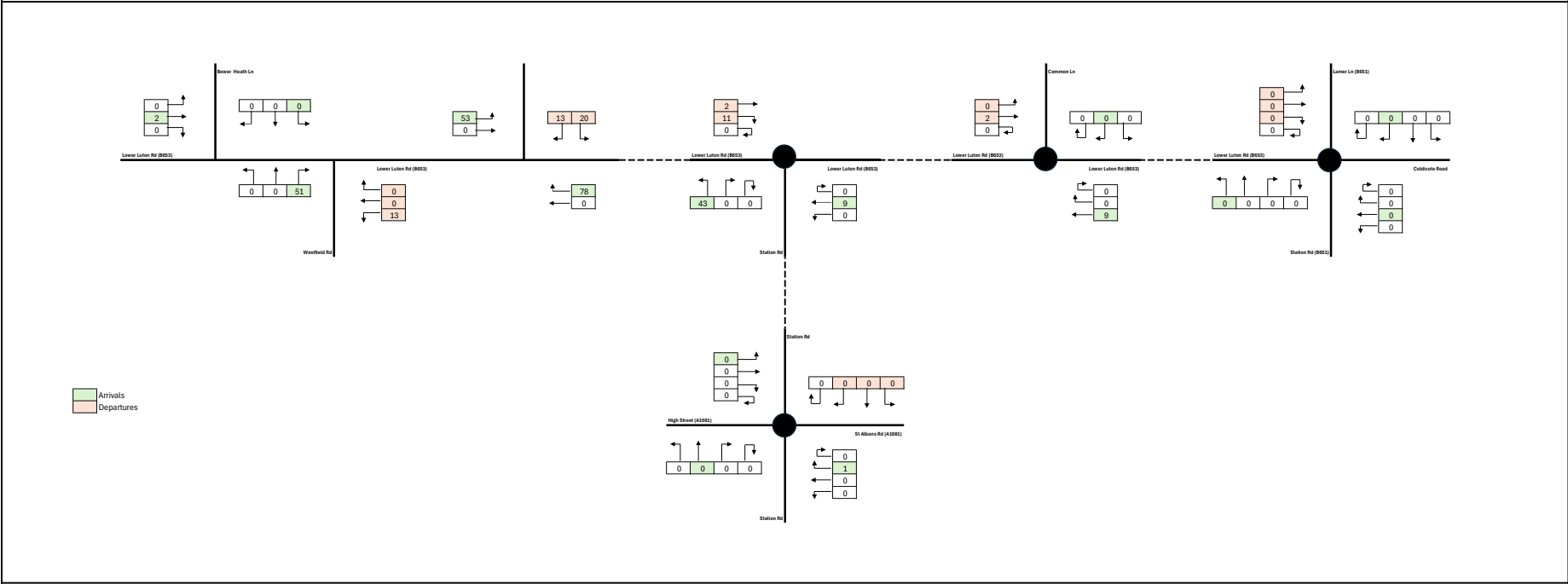
Draw By: TM	Checked By:
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Checked By:

Draw Date: 09/07/24	Sacle: NTS
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Sacle: NTS

Primary School AM Peak	
1	1
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3	3
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99	99
100	100



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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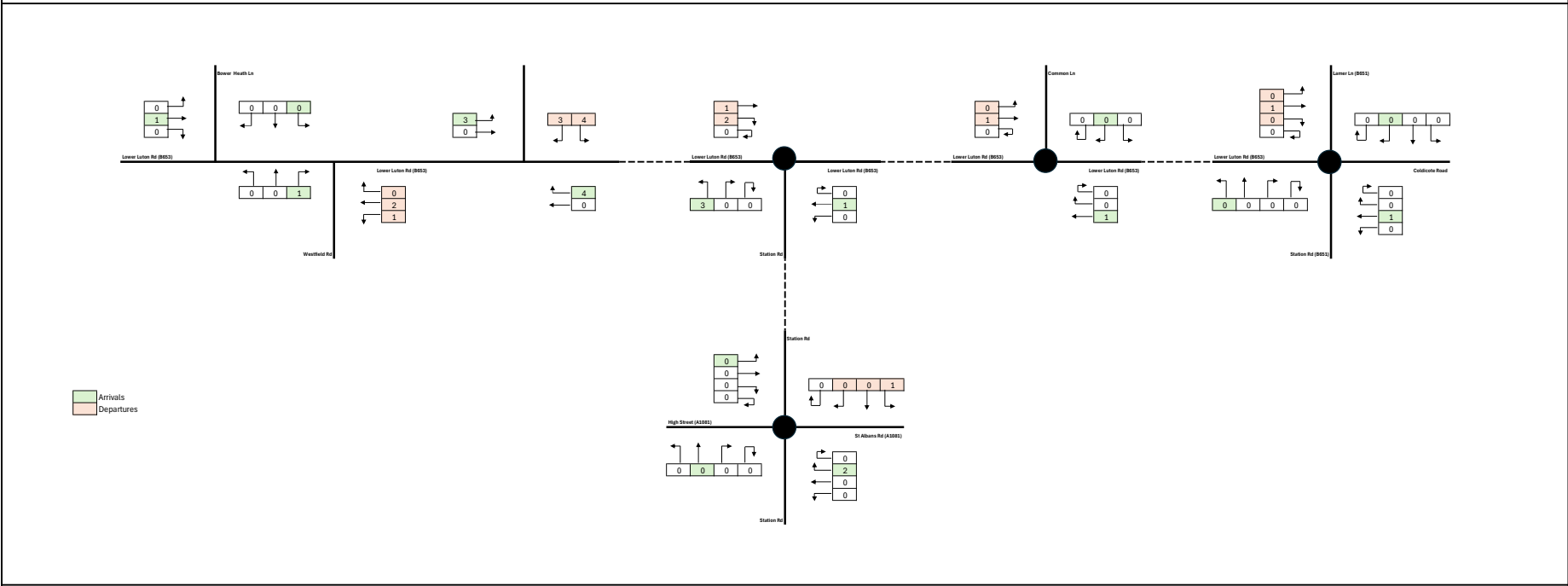
Draw By: TM	Checked By:
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Checked By:

Draw Date: 09/07/24	Sacle: NTS
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Sacle: NTS

Care Home AM Peak	
1	10
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5	10
6	10
7	10
8	10
9	10
10	10
11	10
12	10
13	10
14	10
15	10
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Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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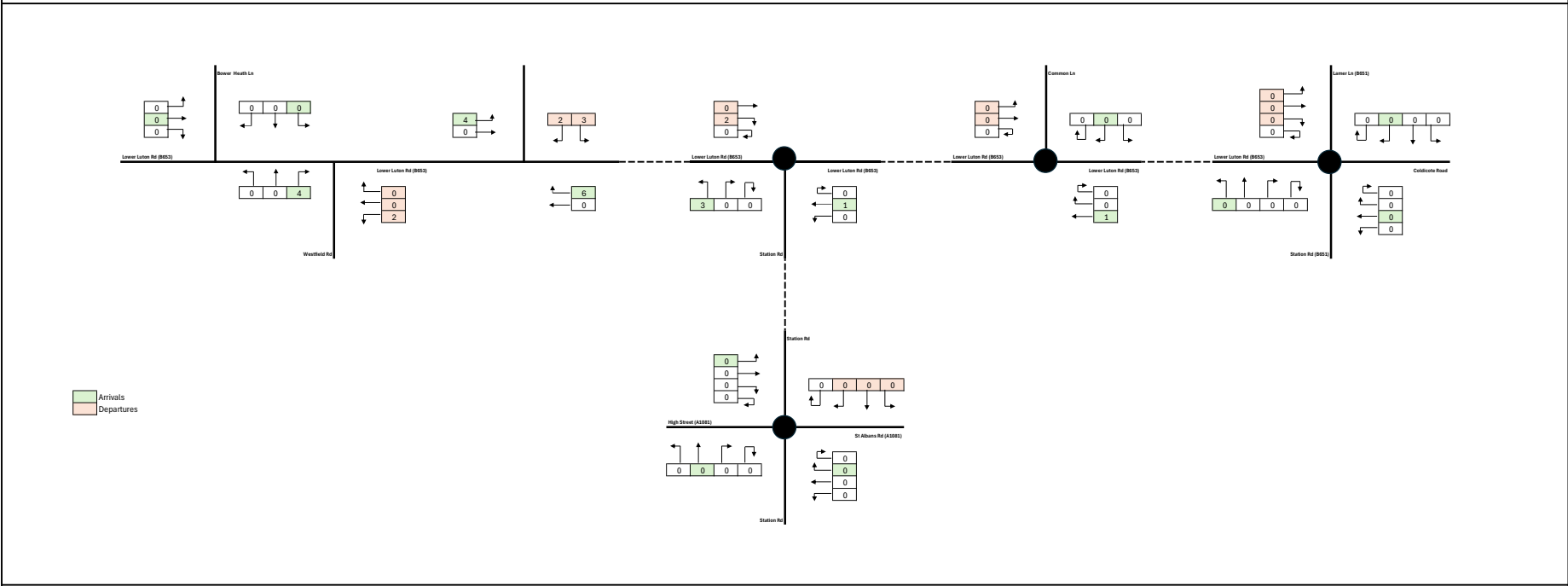
Draw By: TM	Checked By:
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Checked By:

Draw Date: 09/07/24	Sacle: NTS
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Sacle: NTS

Medical Centre AM Peak	
------------------------	--



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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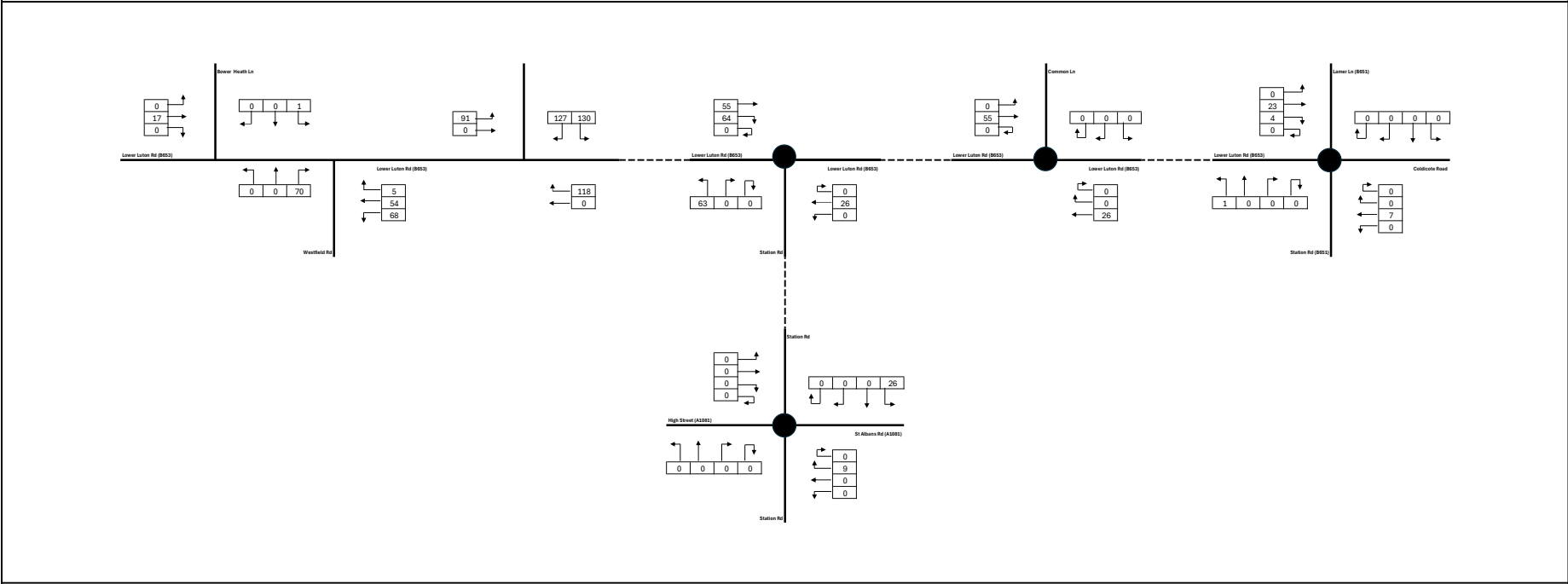
Draw By: TM

Checked By:

Draw Date:	09/07/24
------------	----------

Sacle: NTS

Total Development AM Peak	
1	1
2	2
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4	4
5	5
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10	10
11	11
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78	78
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80	80
81	81
82	82
83	83
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89	89
90	90
91	91
92	92
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97	97
98	98
99	99
100	100



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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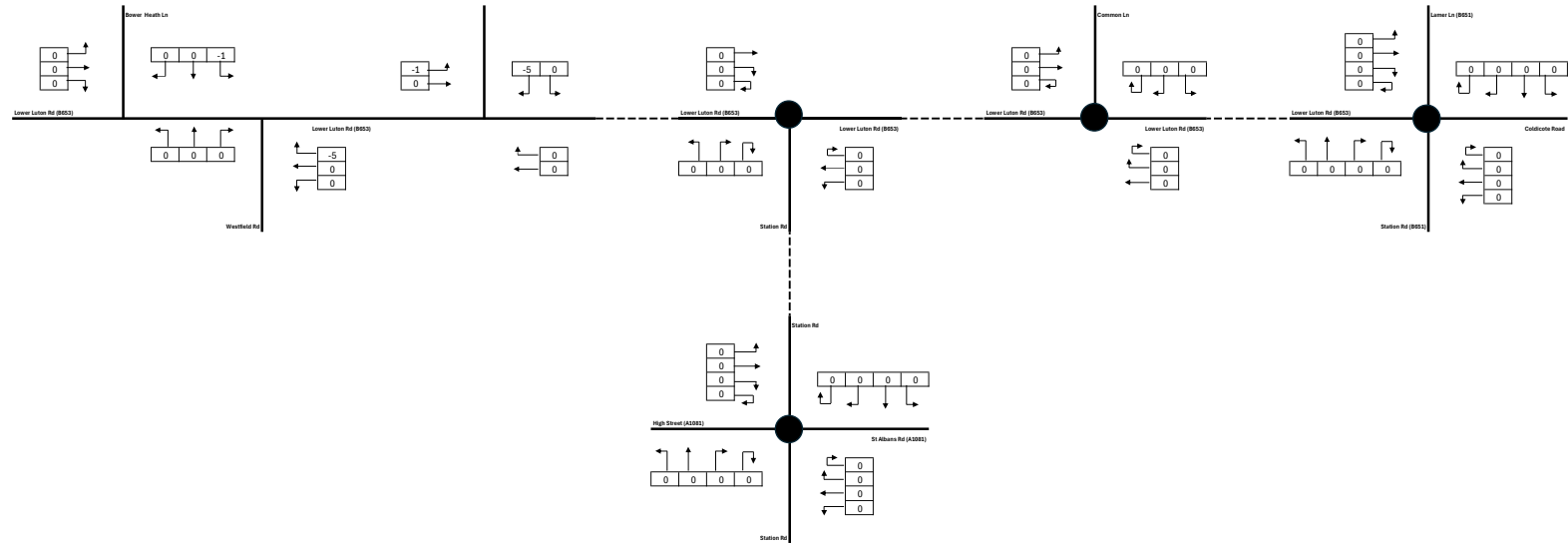
Draw By: TM	Checked By:
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Checked By:

Draw Date: 09/07/24	Sacle: NTS
------------------------	------------

Sacle: NTS

Total Development AM Peak - Excluding Bower Heath Lane Traffic



Crest Nicholson - Lower Luton Road Harpenden Site



Key

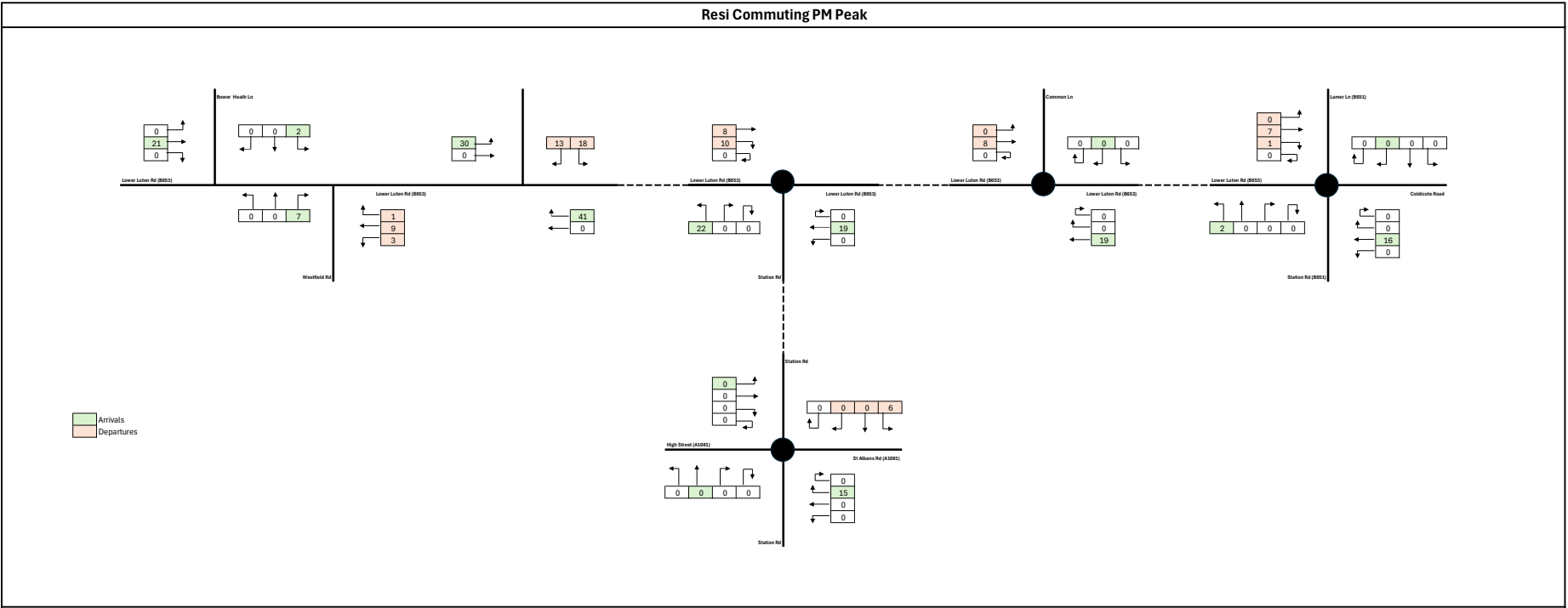
--- = Gap in the Network

Draw By: TM

Checked By:

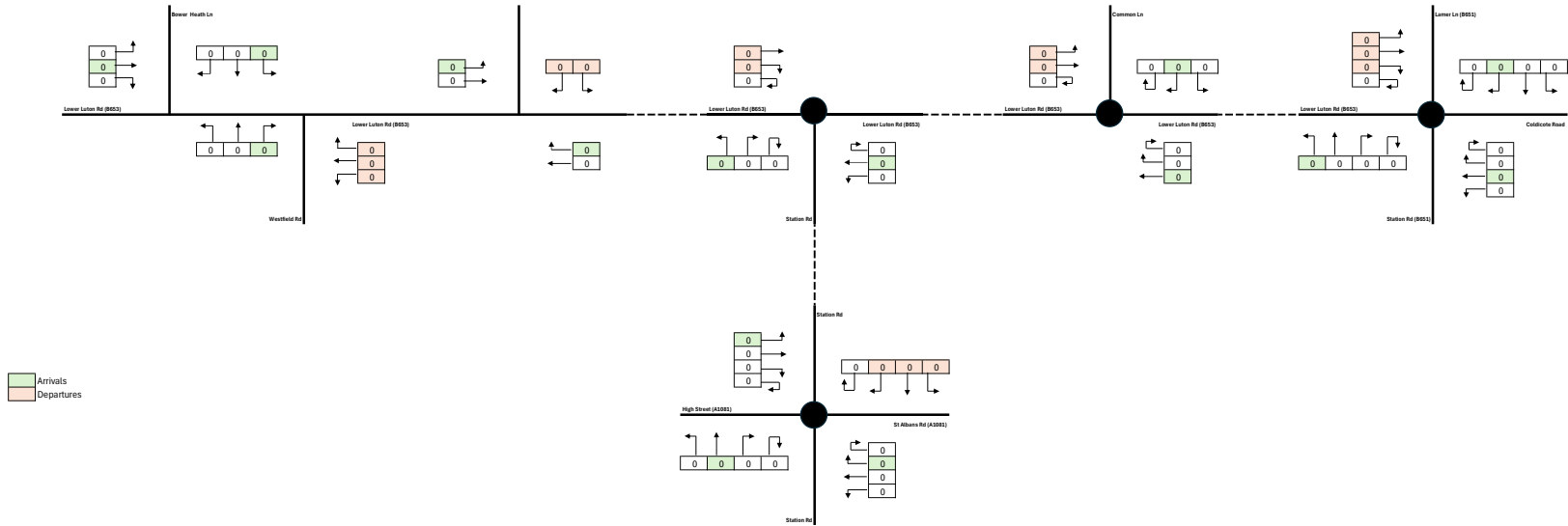
Draw Date:
09/07/24

Scale: NTS



Crest Nicholson - Lower Luton Road Harpenden Site			
	Key		Draw By: TM
	Gap in the Network		Checked By:
			Draw Date: 09/07/24
			Sacle: NTS

Resi Primary Education PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



Key

--- = Gap in the Network

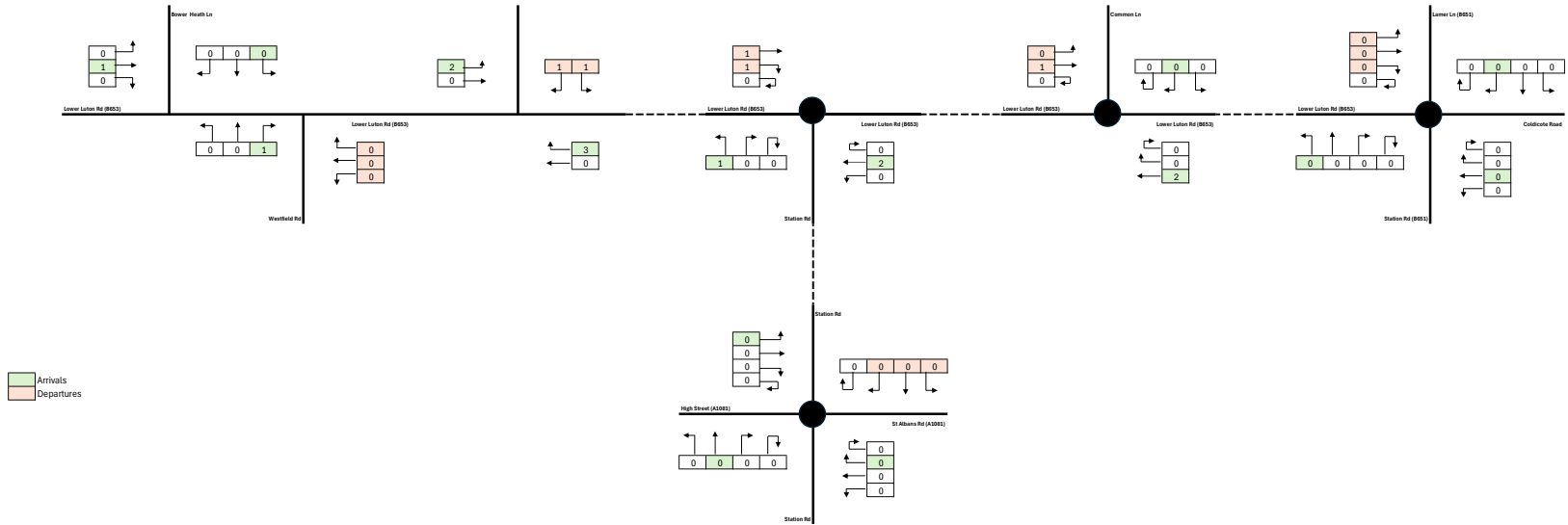
Draw By: TM

Checked By:

Draw Date:
09/07/24

Scale: NTS

Resi Secondary/Further Education PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



Key

--- = Gap in the Network

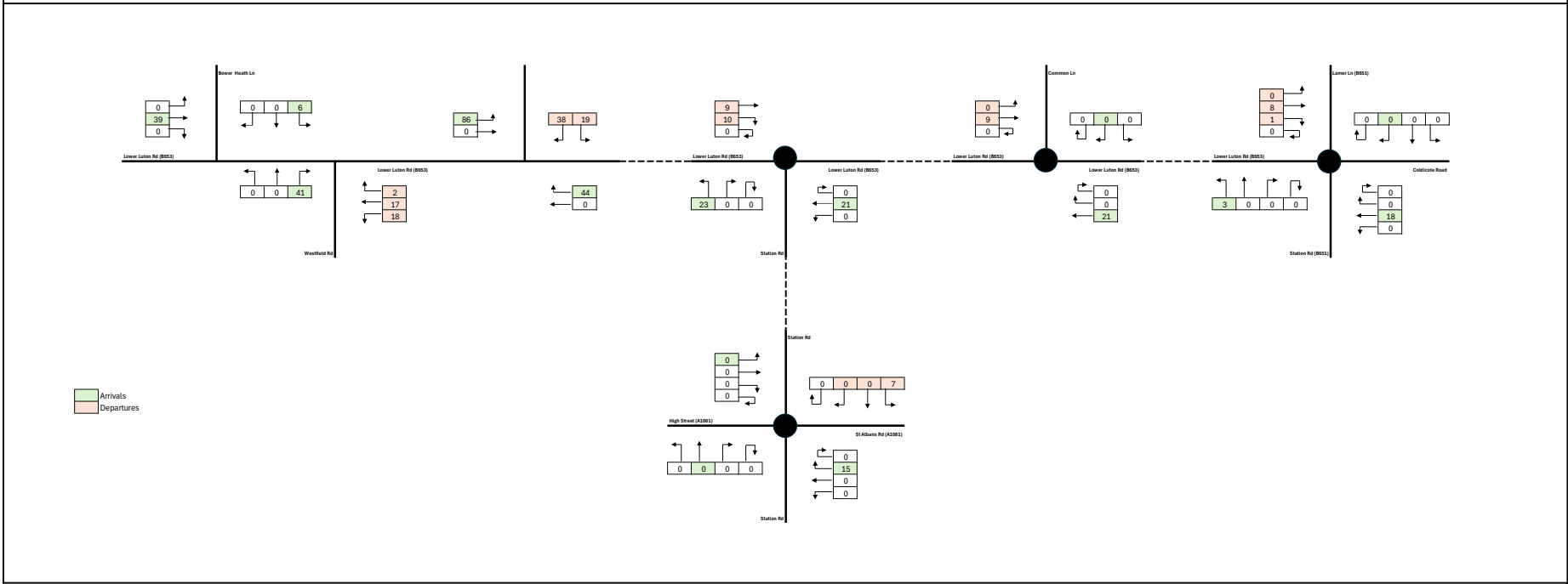
Draw By: TM

Draw Date: 09/07/24

Checked By:

Sacle: NTS

Resi Leisure PM Peak	
----------------------	--



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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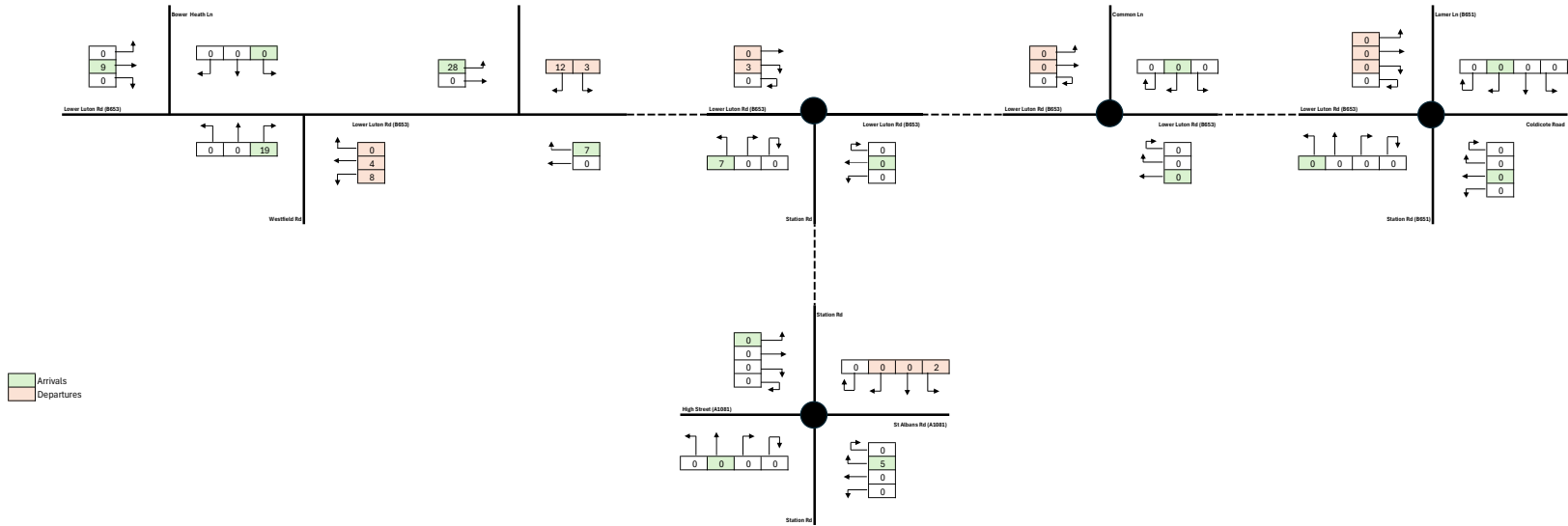
Draw By: TM

Draw Date:
09/07/24

Checked By:
Sacle: NTS

Sacle: NTS

Resi Shopping PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



Key

--- = Gap in the Network

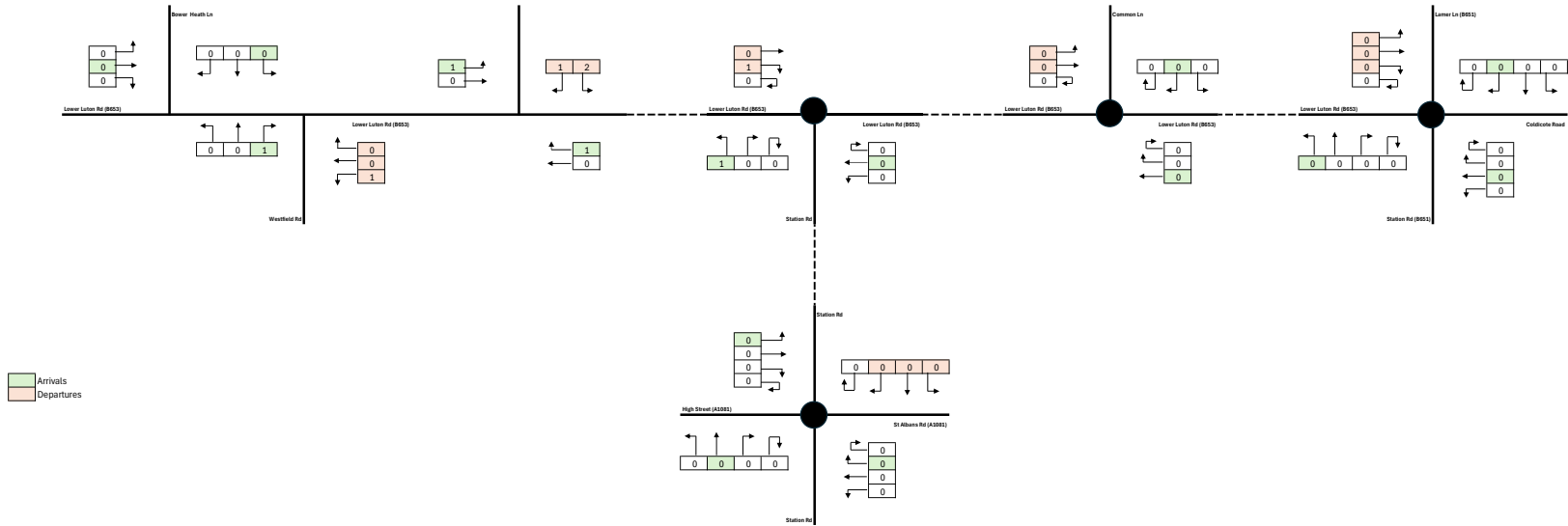
Draw By: TM

Checked By:

Draw Date:
09/07/24

Scale: NTS

Primary School PM Peak



Crest Nicholson - Lower Luton Road Harpenden Site



Key

--- = Gap in the Network

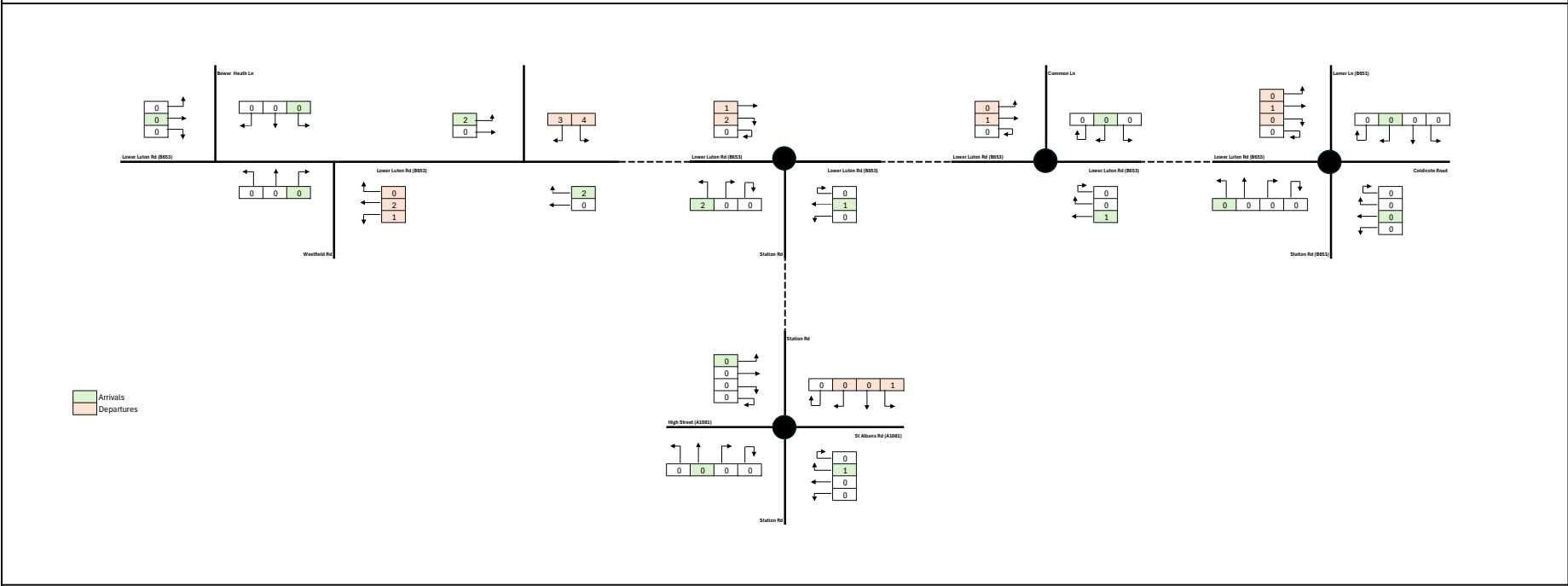
Draw By: TM

Checked By:

Draw Date:
09/07/24

Scale: NTS

Care Home PM Peak	
1	10
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Crest Nicholson - Lower Luton Road Harpenden Site



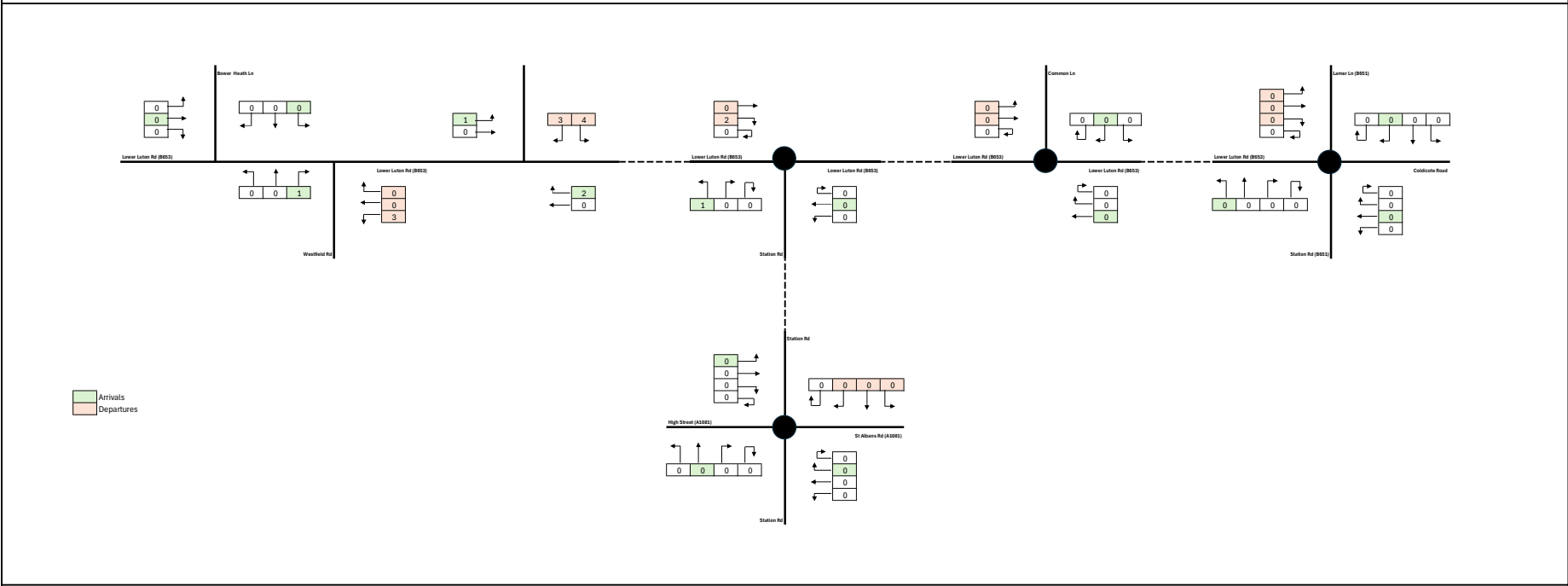
Key		
-----	=	Gap in the Network

Draw By: TM	Checked By:
Draw Date: 09/07/24	Sacle: NTS

Checked By:

Sacle: NTS

Medical Centre PM Peak	
------------------------	--



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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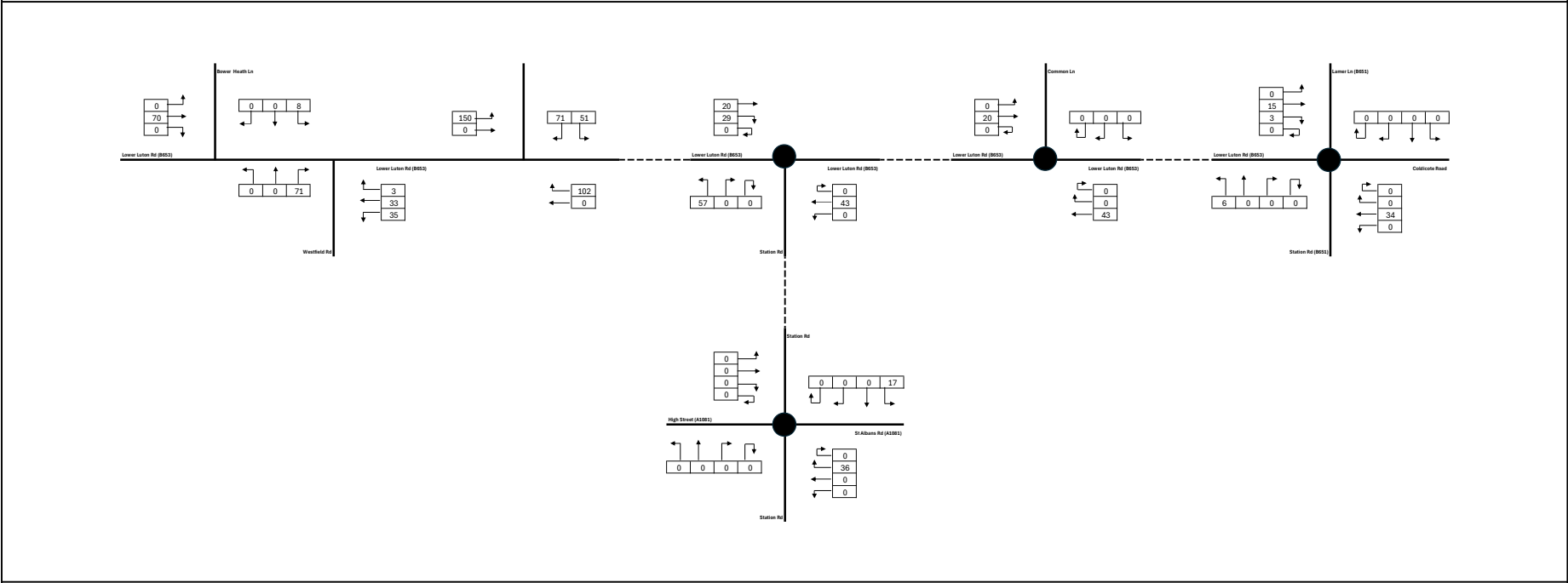
Draw By: TM

Checked By:

Draw Date:
09/07/24

Sacle: NTS

Total Development PM Peak	
---------------------------	--



Crest Nicholson - Lower Luton Road Harpenden Site



Key

-----	=	Gap in the Network
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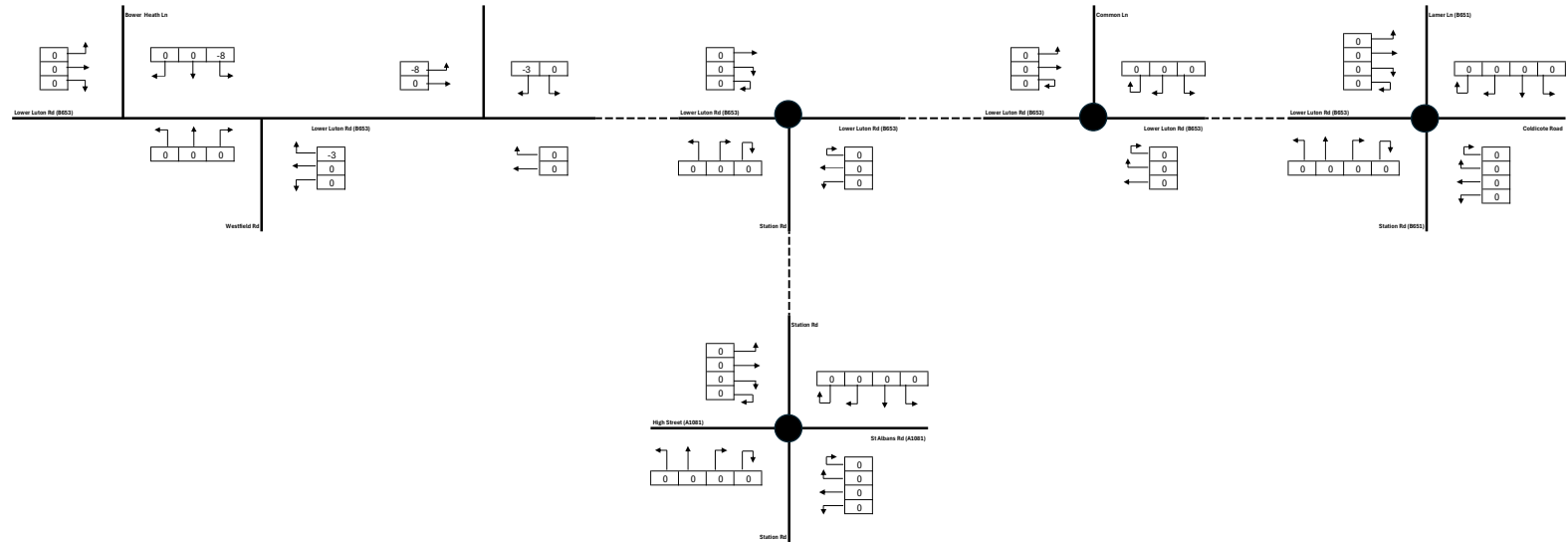
Draw By: TM	Checked By:
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Checked By:

Draw Date: 09/07/24	Sacle: NTS
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Sacle: NTS

Total Development PM Peak - Excluding Bower Heath Lane Traffic



Crest Nicholson - Lower Luton Road Harpenden Site



Key

--- = Gap in the Network

Draw By: TM

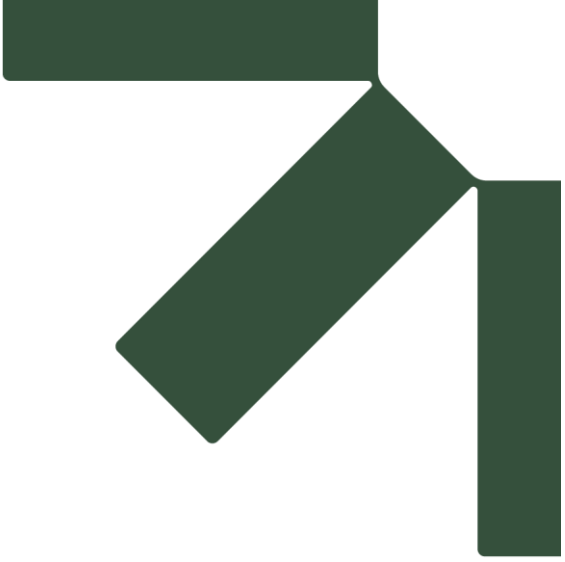
Checked By:

Draw Date:
09/07/24

Scale: NTS



Making Sustainability Happen



Appendix J Junctions 11 Model Output Reports

Transport Assessment

**Land North East of Harpenden between Lower Luton Road, Bower Heath Lane
and Common Lane**

Crest Nicholson

SLR Project No.: 141499

24 February 2026

Junctions 11		
PICADY 11 - Priority Intersection Module		
Version: 11.1.0.2307		
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For sales and distribution information, program advice and maintenance, contact TRL Software:		
+44 (0)1344 379777 software@trl.co.uk trlsoftware.com		
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution		

Filename: 141499-Lower Luton Road Access Test-V3.j11

Path: O:\London\Vectos\Projects\Projects\140000\141499 - Lower Luton Rd Harpenden site\MODELLING\J11

Report generation date: 05/12/2025 12:14:55

-
- »D13 - 2036 | +Crest | AM
 - »D14 - 2036 | +Crest | PM
 - »D15 - 2036 | +Crest+BHL Diversion | AM
 - »D16 - 2036 | +Crest+BHL Diversion | PM
 - »D17 - 2036 | +Crest+BHL Diversion+Miller Homes | AM
 - »D18 - 2036 | +Crest+BHL Diversion+Miller Homes | PM
 - »D19 - 2036 | +Crest+BHL Diversion+Wimms & Scott | AM
 - »D20 - 2036 | +Crest+BHL Diversion+Wimms & Scott | PM
 - »D21 - 2036 | +Crest+BHL Diversion+Miller Homes+Wimms & Scott | AM
 - »D22 - 2036 | +Crest+BHL Diversion+Miller Homes+Wimms & Scott | PM
 - »D23 - 2036 | +Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott | AM
 - »D24 - 2036 | +Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott | PM

Summary of junction performance

	AM			PM		
	Queue (Veh)	Delay (s)	RFC	Queue (Veh)	Delay (s)	RFC
	2036 - +Crest					
Stream B-C	0.3	9.72	0.21	0.1	6.75	0.07
Stream B-A	0.6	22.06	0.37	0.2	11.64	0.14
Stream C-AB	0.3	10.62	0.26	0.2	7.74	0.13
Stream A-BC	1.7	7.19	0.62	0.6	4.30	0.39
	2036 - +Crest+BHL Diversion					
Stream B-C	0.7	21.45	0.40	0.1	7.65	0.11
Stream B-A	3.3	59.71	0.78	0.4	14.15	0.29
Stream C-AB	0.4	11.17	0.28	0.2	8.55	0.19
Stream A-BC	1.8	7.62	0.65	0.8	4.60	0.43
	2036 - +Crest+BHL Diversion+Miller Homes					
Stream B-C	1.2	35.70	0.56	0.1	7.87	0.13
Stream B-A	4.7	79.24	0.84	0.5	15.18	0.33
Stream C-AB	0.4	11.22	0.28	0.3	8.91	0.21
Stream A-BC	1.8	7.66	0.65	0.8	4.72	0.45
	2036 - +Crest+BHL Diversion+Wimms & Scott					
Stream B-C	1.6	46.02	0.63	0.1	7.92	0.13
Stream B-A	5.2	87.03	0.86	0.5	15.47	0.33
Stream C-AB	0.4	11.22	0.28	0.3	9.03	0.22
Stream A-BC	1.8	7.66	0.65	0.8	4.76	0.45
	2036 - +Crest+BHL Diversion+Miller Homes+Wimms & Scott					
Stream B-C	6.2	169.57	0.94	0.2	8.17	0.14
Stream B-A	8.5	134.45	0.93	0.6	16.71	0.37
Stream C-AB	0.4	11.27	0.28	0.3	9.43	0.25
Stream A-BC	1.8	7.69	0.65	0.9	4.90	0.47
	2036 - +Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott					
Stream B-C	3.6	104.19	0.83	0.2	8.04	0.14
Stream B-A	6.5	106.18	0.89	0.5	16.07	0.35
Stream C-AB	0.4	11.24	0.28	0.3	9.22	0.24
Stream A-BC	1.8	7.67	0.65	0.8	4.83	0.46

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	18/08/2025
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SLR\Taylor.Davis
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

PICADY short flare model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
PICADY 4.1	5.75						0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2024	Observed	AM	FLAT	07:45	08:45	60	15			
D2	2024	Observed	PM	FLAT	17:00	18:00	60	15			
D3	2036	Base	AM	FLAT	07:45	08:45	60	15		Simple	D1
D4	2036	Base	PM	FLAT	17:00	18:00	60	15		Simple	D2
D5		Crest	AM	FLAT	07:45	08:45	60	15			
D6		Crest	PM	FLAT	17:00	18:00	60	15			
D7		BHL Diversion	AM	FLAT	07:45	08:45	60	15			
D8		BHL Diversion	PM	FLAT	17:00	18:00	60	15			
D9		Miller Homes	AM	FLAT	07:45	08:45	60	15			
D10		Miller Homes	PM	FLAT	17:00	18:00	60	15			
D11		Wimms & Scott	AM	FLAT	07:45	08:45	60	15			
D12		Wimms & Scott	PM	FLAT	17:00	18:00	60	15			
D13	2036	+Crest	AM	FLAT	07:45	08:45	60	15	✓	Simple	D3
D14	2036	+Crest	PM	FLAT	17:00	18:00	60	15	✓	Simple	D4
D15	2036	+Crest+BHL Diversion	AM	FLAT	07:45	08:45	60	15	✓	Simple	D13
D16	2036	+Crest+BHL Diversion	PM	FLAT	17:00	18:00	60	15	✓	Simple	D14
D17	2036	+Crest+BHL Diversion+Miller Homes	AM	FLAT	07:45	08:45	60	15	✓	Simple	D15
D18	2036	+Crest+BHL Diversion+Miller Homes	PM	FLAT	17:00	18:00	60	15	✓	Simple	D16
D19	2036	+Crest+BHL Diversion+Wimms & Scott	AM	FLAT	07:45	08:45	60	15	✓	Simple	D15
D20	2036	+Crest+BHL Diversion+Wimms & Scott	PM	FLAT	17:00	18:00	60	15	✓	Simple	D16
D21	2036	+Crest+BHL Diversion+Miller Homes+Wimms & Scott	AM	FLAT	07:45	08:45	60	15	✓	Simple	D17
D22	2036	+Crest+BHL Diversion+Miller Homes+Wimms & Scott	PM	FLAT	17:00	18:00	60	15	✓	Simple	D18
D23	2036	+Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott	AM	FLAT	07:45	08:45	60	15	✓	Simple	D21 (D9)
D24	2036	+Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott	PM	FLAT	17:00	18:00	60	15	✓	Simple	D22- (D1)

Growth Factors

ID	Description	Use TEMPRO	Growth Factor
G1	2024 to 2036 AM Peak		1.0523
G2	2024 to 2036 PM Peak		1.0445

Growth factors are only active if a Demand Set references them in a Relationship.

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

D13 - 2036 | +Crest | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		6.25	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.25	A

Arms

Arms

Arm	Name	Description	Arm type
A	Lower Luton Road (W)		Major
B	Site Access		Minor
C	Lower Luton Road (E)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Lower Luton Road (E)	6.48		✓	3.00	86.5	✓	4.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane plus flare	10.00	9.58	7.96	7.38	6.74	✓	3.00	144	76

Pelican/Puffin Crossings

Arm	Space between crossing and junc. entry (Signalised) (PCU)	Amber time preceding red (s)	Amber time regarded as green (s)	Time from traffic red start to green man start (s)	Time period green man shown (s)	Clearance Period (s)	Traffic minimum green (s)
A - Lower Luton Road (W)	3.00	3.00	2.90	1.00	6.00	6.00	7.00

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	624	0.111	0.281	0.177	0.402
B-C	757	0.114	0.287	-	-
C-B	678	0.257	0.257	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D13	2036	+Crest	AM	FLAT	07:45	08:45	60	15	✓	Simple	D3+D5

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	834	100.000
B - Site Access		FLAT	✓	194	100.000
C - Lower Luton Road (E)		FLAT	✓	603	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
From	A - Lower Luton Road (W)	0	87	747
	B - Site Access	94	0	100
	C - Lower Luton Road (E)	486	117	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
From	A - Lower Luton Road (W)	0	0	4
	B - Site Access	0	0	0
	C - Lower Luton Road (E)	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.21	9.72	0.3	A	100	100
B-A	0.37	22.06	0.6	C	94	94
C-AB	0.26	10.62	0.3	B	118	118
C-A					486	486
A-BC	0.62	7.19	1.7	A	834	834

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	100	25	0.00	475	0.211	99	0.0	0.3	9.557	A
B-A	94	24	0.00	259	0.363	92	0.0	0.5	21.271	C
C-AB	118	29	0.00	458	0.257	116	0.0	0.3	10.495	B
C-A	486	121	0.00			486				
A-BC	834	209	248.00	1335	0.625	828	0.0	1.6	7.011	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	100	25	0.00	470	0.213	100	0.3	0.3	9.720	A
B-A	94	24	0.00	257	0.366	94	0.5	0.6	22.042	C
C-AB	118	29	0.00	456	0.258	118	0.3	0.3	10.622	B
C-A	486	121	0.00			486				
A-BC	834	209	248.00	1335	0.625	834	1.6	1.6	7.185	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	100	25	0.00	470	0.213	100	0.3	0.3	9.722	A
B-A	94	24	0.00	257	0.366	94	0.6	0.6	22.058	C
C-AB	118	29	0.00	456	0.258	118	0.3	0.3	10.623	B
C-A	486	121	0.00			486				
A-BC	834	209	248.00	1335	0.625	834	1.6	1.7	7.188	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	100	25	0.00	470	0.213	100	0.3	0.3	9.723	A
B-A	94	24	0.00	257	0.366	94	0.6	0.6	22.063	C
C-AB	118	29	0.00	456	0.258	118	0.3	0.3	10.623	B
C-A	486	121	0.00			486				
A-BC	834	209	248.00	1335	0.625	834	1.7	1.7	7.188	A

D14 - 2036 | +Crest | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		2.81	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.81	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D14	2036	+Crest	PM	FLAT	17:00	18:00	60	15	✓	Simple	D4+D6

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	542	100.000
B - Site Access		FLAT	✓	90	100.000
C - Lower Luton Road (E)		FLAT	✓	684	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	From			
	A - Lower Luton Road (W)	0	104	438
	B - Site Access	51	0	39
	C - Lower Luton Road (E)	612	72	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	0	1
	B - Site Access	0	0	0
	C - Lower Luton Road (E)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.07	6.75	0.1	A	39	39
B-A	0.14	11.64	0.2	B	51	51
C-AB	0.13	7.74	0.2	A	72	72
C-A					612	612
A-BC	0.39	4.30	0.6	A	542	542

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	39	10	0.00	573	0.068	39	0.0	0.1	6.732	A
B-A	51	13	0.00	361	0.141	50	0.0	0.2	11.563	B
C-AB	72	18	0.00	538	0.134	71	0.0	0.2	7.704	A
C-A	612	153	0.00			612				
A-BC	542	135	248.00	1379	0.393	539	0.0	0.6	4.274	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	39	10	0.00	572	0.068	39	0.1	0.1	6.753	A
B-A	51	13	0.00	360	0.142	51	0.2	0.2	11.639	B
C-AB	72	18	0.00	537	0.134	72	0.2	0.2	7.735	A
C-A	612	153	0.00			612				
A-BC	542	135	248.00	1379	0.393	542	0.6	0.6	4.299	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	39	10	0.00	572	0.068	39	0.1	0.1	6.753	A
B-A	51	13	0.00	360	0.142	51	0.2	0.2	11.639	B
C-AB	72	18	0.00	537	0.134	72	0.2	0.2	7.735	A
C-A	612	153	0.00			612				
A-BC	542	135	248.00	1379	0.393	542	0.6	0.6	4.299	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	39	10	0.00	572	0.068	39	0.1	0.1	6.753	A
B-A	51	13	0.00	360	0.142	51	0.2	0.2	11.639	B
C-AB	72	18	0.00	537	0.134	72	0.2	0.2	7.735	A
C-A	612	153	0.00			612				
A-BC	542	135	248.00	1379	0.393	542	0.6	0.6	4.299	A

D15 - 2036 | +Crest+BHL Diversion | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		12.66	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.66	B

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2036	+Crest+BHL Diversion	AM	FLAT	07:45	08:45	60	15	✓	Simple	D13+D7

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	860	100.000
B - Site Access		FLAT	✓	324	100.000
C - Lower Luton Road (E)		FLAT	✓	603	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
From	A - Lower Luton Road (W)	0	126	734
	B - Site Access	211	0	113
	C - Lower Luton Road (E)	480	123	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	2	4
	B - Site Access	0.55	0	0.92
	C - Lower Luton Road (E)	4	0.83	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.40	21.45	0.7	C	113	113
B-A	0.78	59.71	3.3	F	211	211
C-AB	0.28	11.17	0.4	B	124	124
C-A					479	479
A-BC	0.65	7.62	1.8	A	860	860

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	113	28	0.00	317	0.356	111	0.0	0.5	17.278	C
B-A	211	53	0.00	272	0.775	200	0.0	2.8	44.872	E
C-AB	124	31	0.00	448	0.276	122	0.0	0.4	11.002	B
C-A	479	120	0.00			479				
A-BC	860	215	248.00	1332	0.646	853	0.0	1.8	7.406	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	113	28	0.00	286	0.395	113	0.5	0.6	20.728	C
B-A	211	53	0.00	270	0.782	210	2.8	3.1	57.293	F
C-AB	124	31	0.00	446	0.278	124	0.4	0.4	11.166	B
C-A	479	120	0.00			479				
A-BC	860	215	248.00	1332	0.646	860	1.8	1.8	7.621	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	113	28	0.00	282	0.400	113	0.6	0.7	21.248	C
B-A	211	53	0.00	270	0.783	210	3.1	3.3	59.016	F
C-AB	124	31	0.00	446	0.278	124	0.4	0.4	11.167	B
C-A	479	120	0.00			479				
A-BC	860	215	248.00	1332	0.646	860	1.8	1.8	7.624	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	113	28	0.00	281	0.403	113	0.7	0.7	21.446	C
B-A	211	53	0.00	270	0.783	211	3.3	3.3	59.706	F
C-AB	124	31	0.00	446	0.278	124	0.4	0.4	11.169	B
C-A	479	120	0.00			479				
A-BC	860	215	248.00	1332	0.646	860	1.8	1.8	7.624	A

D16 - 2036 | +Crest+BHL Diversion | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		3.79	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.79	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2036	+Crest+BHL Diversion	PM	FLAT	17:00	18:00	60	15	✓	Simple	D14+D8

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	595	100.000
B - Site Access		FLAT	✓	167	100.000
C - Lower Luton Road (E)		FLAT	✓	684	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
From	A - Lower Luton Road (W)	0	179	416
	B - Site Access	106	0	61
	C - Lower Luton Road (E)	587	97	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	1	1
	B - Site Access	0	0	0
	C - Lower Luton Road (E)	3	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.11	7.65	0.1	A	61	61
B-A	0.29	14.15	0.4	B	106	106
C-AB	0.19	8.55	0.2	A	97	97
C-A					587	587
A-BC	0.43	4.60	0.8	A	595	595

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	61	15	0.00	533	0.114	60	0.0	0.1	7.611	A
B-A	106	27	0.00	361	0.293	104	0.0	0.4	13.924	B
C-AB	97	24	0.00	519	0.187	96	0.0	0.2	8.496	A
C-A	587	147	0.00			587				
A-BC	595	149	248.00	1377	0.432	592	0.0	0.8	4.565	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	61	15	0.00	531	0.115	61	0.1	0.1	7.653	A
B-A	106	27	0.00	360	0.294	106	0.4	0.4	14.151	B
C-AB	97	24	0.00	518	0.187	97	0.2	0.2	8.547	A
C-A	587	147	0.00			587				
A-BC	595	149	248.00	1377	0.432	595	0.8	0.8	4.600	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	61	15	0.00	531	0.115	61	0.1	0.1	7.654	A
B-A	106	27	0.00	360	0.294	106	0.4	0.4	14.154	B
C-AB	97	24	0.00	518	0.187	97	0.2	0.2	8.547	A
C-A	587	147	0.00			587				
A-BC	595	149	248.00	1377	0.432	595	0.8	0.8	4.600	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	61	15	0.00	531	0.115	61	0.1	0.1	7.654	A
B-A	106	27	0.00	360	0.294	106	0.4	0.4	14.154	B
C-AB	97	24	0.00	518	0.187	97	0.2	0.2	8.547	A
C-A	587	147	0.00			587				
A-BC	595	149	248.00	1377	0.432	595	0.8	0.8	4.600	A

D17 - 2036 | +Crest+BHL Diversion+Miller Homes | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		16.42	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	16.42	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D17	2036	+Crest+BHL Diversion+Miller Homes	AM	FLAT	07:45	08:45	60	15	✓	Simple	D15+D9

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	862	100.000
B - Site Access		FLAT	✓	351	100.000
C - Lower Luton Road (E)		FLAT	✓	604	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	128	734
	B - Site Access	225	0	126
	C - Lower Luton Road (E)	480	124	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	2	4
	B - Site Access	0.52	0	0.83
	C - Lower Luton Road (E)	4	0.82	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.56	35.70	1.2	E	126	126
B-A	0.84	79.24	4.7	F	225	225
C-AB	0.28	11.22	0.4	B	125	125
C-A					479	479
A-BC	0.65	7.66	1.8	A	862	862

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	126	32	0.00	286	0.441	123	0.0	0.8	21.775	C
B-A	225	56	0.00	270	0.833	211	0.0	3.6	52.451	F
C-AB	125	31	0.00	448	0.279	123	0.0	0.4	11.048	B
C-A	479	120	0.00			479				
A-BC	862	216	248.00	1332	0.647	855	0.0	1.8	7.434	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	126	32	0.00	238	0.529	125	0.8	1.1	31.384	D
B-A	225	56	0.00	267	0.841	222	3.6	4.2	72.870	F
C-AB	125	31	0.00	446	0.280	125	0.4	0.4	11.215	B
C-A	479	120	0.00			479				
A-BC	862	216	248.00	1332	0.647	862	1.8	1.8	7.653	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	126	32	0.00	230	0.548	126	1.1	1.1	34.275	D
B-A	225	56	0.00	267	0.842	224	4.2	4.5	77.201	F
C-AB	125	31	0.00	446	0.280	125	0.4	0.4	11.216	B
C-A	479	120	0.00			479				
A-BC	862	216	248.00	1332	0.647	862	1.8	1.8	7.656	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	126	32	0.00	226	0.557	126	1.1	1.2	35.701	E
B-A	225	56	0.00	267	0.842	224	4.5	4.7	79.243	F
C-AB	125	31	0.00	446	0.280	125	0.4	0.4	11.219	B
C-A	479	120	0.00			479				
A-BC	862	216	248.00	1332	0.647	862	1.8	1.8	7.656	A

D18 - 2036 | +Crest+BHL Diversion+Miller Homes | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		4.08	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.08	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D18	2036	+Crest+BHL Diversion+Miller Homes	PM	FLAT	17:00	18:00	60	15	✓	Simple	D16+D10

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	615	100.000
B - Site Access		FLAT	✓	182	100.000
C - Lower Luton Road (E)		FLAT	✓	697	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
From	A - Lower Luton Road (W)	0	199	416
	B - Site Access	115	0	67
	C - Lower Luton Road (E)	587	110	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	1	1
	B - Site Access	0	0	0
	C - Lower Luton Road (E)	3	0.91	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.13	7.87	0.1	A	67	67
B-A	0.33	15.18	0.5	C	115	115
C-AB	0.21	8.91	0.3	A	110	110
C-A					587	587
A-BC	0.45	4.72	0.8	A	615	615

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	67	17	0.00	526	0.127	66	0.0	0.1	7.819	A
B-A	115	29	0.00	353	0.326	113	0.0	0.5	14.889	B
C-AB	110	28	0.00	515	0.214	109	0.0	0.3	8.846	A
C-A	587	147	0.00			587				
A-BC	615	154	248.00	1377	0.446	611	0.0	0.8	4.684	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	67	17	0.00	524	0.128	67	0.1	0.1	7.871	A
B-A	115	29	0.00	352	0.327	115	0.5	0.5	15.179	C
C-AB	110	28	0.00	514	0.214	110	0.3	0.3	8.909	A
C-A	587	147	0.00			587				
A-BC	615	154	248.00	1377	0.446	615	0.8	0.8	4.723	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	67	17	0.00	524	0.128	67	0.1	0.1	7.871	A
B-A	115	29	0.00	352	0.327	115	0.5	0.5	15.182	C
C-AB	110	28	0.00	514	0.214	110	0.3	0.3	8.909	A
C-A	587	147	0.00			587				
A-BC	615	154	248.00	1377	0.446	615	0.8	0.8	4.723	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	67	17	0.00	524	0.128	67	0.1	0.1	7.871	A
B-A	115	29	0.00	352	0.327	115	0.5	0.5	15.185	C
C-AB	110	28	0.00	514	0.214	110	0.3	0.3	8.909	A
C-A	587	147	0.00			587				
A-BC	615	154	248.00	1377	0.446	615	0.8	0.8	4.723	A

D19 - 2036 | +Crest+BHL Diversion+Wimms & Scott | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		18.27	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	18.27	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D19	2036	+Crest+BHL Diversion+Wimms & Scott	AM	FLAT	07:45	08:45	60	15	✓	Simple	D15+D11

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	862	100.000
B - Site Access		FLAT	✓	359	100.000
C - Lower Luton Road (E)		FLAT	✓	604	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	128	734
	B - Site Access	229	0	130
	C - Lower Luton Road (E)	480	124	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	2	4
	B - Site Access	0.51	0	0.80
	C - Lower Luton Road (E)	4	0.82	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.63	46.02	1.6	E	130	130
B-A	0.86	87.03	5.2	F	229	229
C-AB	0.28	11.22	0.4	B	125	125
C-A					479	479
A-BC	0.65	7.66	1.8	A	862	862

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	130	33	0.00	276	0.471	127	0.0	0.8	23.639	C
B-A	229	57	0.00	270	0.849	214	0.0	3.8	54.893	F
C-AB	125	31	0.00	448	0.279	123	0.0	0.4	11.048	B
C-A	479	120	0.00			479				
A-BC	862	216	248.00	1332	0.647	855	0.0	1.8	7.434	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	130	33	0.00	222	0.584	128	0.8	1.3	37.436	E
B-A	229	57	0.00	267	0.858	226	3.8	4.6	78.433	F
C-AB	125	31	0.00	446	0.280	125	0.4	0.4	11.215	B
C-A	479	120	0.00			479				
A-BC	862	216	248.00	1332	0.647	862	1.8	1.8	7.653	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	130	33	0.00	212	0.613	129	1.3	1.5	42.913	E
B-A	229	57	0.00	267	0.859	227	4.6	5.0	84.144	F
C-AB	125	31	0.00	446	0.280	125	0.4	0.4	11.216	B
C-A	479	120	0.00			479				
A-BC	862	216	248.00	1332	0.647	862	1.8	1.8	7.656	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	130	33	0.00	207	0.629	130	1.5	1.6	46.023	E
B-A	229	57	0.00	267	0.859	228	5.0	5.2	87.026	F
C-AB	125	31	0.00	446	0.280	125	0.4	0.4	11.219	B
C-A	479	120	0.00			479				
A-BC	862	216	248.00	1332	0.647	862	1.8	1.8	7.656	A

D20 - 2036 | +Crest+BHL Diversion+Wimms & Scott | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		4.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.16	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D20	2036	+Crest+BHL Diversion+Wimms & Scott	PM	FLAT	17:00	18:00	60	15	✓	Simple	D16+D12

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	621	100.000
B - Site Access		FLAT	✓	185	100.000
C - Lower Luton Road (E)		FLAT	✓	701	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	205	416
	B - Site Access	117	0	68
	C - Lower Luton Road (E)	587	114	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	1	1
	B - Site Access	0	0	0
	C - Lower Luton Road (E)	3	0.88	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.13	7.92	0.1	A	68	68
B-A	0.33	15.47	0.5	C	117	117
C-AB	0.22	9.03	0.3	A	114	114
C-A					587	587
A-BC	0.45	4.76	0.8	A	621	621

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	68	17	0.00	524	0.130	67	0.0	0.1	7.869	A
B-A	117	29	0.00	351	0.334	115	0.0	0.5	15.152	C
C-AB	114	29	0.00	514	0.222	113	0.0	0.3	8.958	A
C-A	587	147	0.00			587				
A-BC	621	155	248.00	1377	0.451	617	0.0	0.8	4.723	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	68	17	0.00	522	0.130	68	0.1	0.1	7.923	A
B-A	117	29	0.00	350	0.335	117	0.5	0.5	15.467	C
C-AB	114	29	0.00	513	0.223	114	0.3	0.3	9.026	A
C-A	587	147	0.00			587				
A-BC	621	155	248.00	1377	0.451	621	0.8	0.8	4.762	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	68	17	0.00	522	0.130	68	0.1	0.1	7.924	A
B-A	117	29	0.00	350	0.335	117	0.5	0.5	15.470	C
C-AB	114	29	0.00	513	0.223	114	0.3	0.3	9.026	A
C-A	587	147	0.00			587				
A-BC	621	155	248.00	1377	0.451	621	0.8	0.8	4.762	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	68	17	0.00	522	0.130	68	0.1	0.1	7.924	A
B-A	117	29	0.00	350	0.335	117	0.5	0.5	15.472	C
C-AB	114	29	0.00	513	0.223	114	0.3	0.3	9.026	A
C-A	587	147	0.00			587				
A-BC	621	155	248.00	1377	0.451	621	0.8	0.8	4.762	A

D21 - 2036 | +Crest+BHL Diversion+Miller Homes+Wimms & Scott | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		34.35	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	34.35	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D21	2036	+Crest+BHL Diversion+Miller Homes+Wimms & Scott	AM	FLAT	07:45	08:45	60	15	✓	Simple	D17+D11

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	864	100.000
B - Site Access		FLAT	✓	386	100.000
C - Lower Luton Road (E)		FLAT	✓	605	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	130	734
	B - Site Access	243	0	143
	C - Lower Luton Road (E)	480	125	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	2	4
	B - Site Access	0.48	0	0.73
	C - Lower Luton Road (E)	4	0.82	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.94	169.57	6.2	F	143	143
B-A	0.93	134.45	8.5	F	243	243
C-AB	0.28	11.27	0.4	B	126	126
C-A					479	479
A-BC	0.65	7.69	1.8	A	864	864

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	143	36	0.00	235	0.609	137	0.0	1.4	35.204	E
B-A	243	61	0.00	267	0.909	223	0.0	5.0	65.355	F
C-AB	126	31	0.00	447	0.281	124	0.0	0.4	11.097	B
C-A	479	120	0.00			479				
A-BC	864	216	248.00	1332	0.649	857	0.0	1.8	7.465	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	143	36	0.00	151	0.944	129	1.4	4.8	120.424	F
B-A	243	61	0.00	264	0.921	237	5.0	6.6	105.240	F
C-AB	126	31	0.00	445	0.283	126	0.4	0.4	11.265	B
C-A	479	120	0.00			479				
A-BC	864	216	248.00	1332	0.649	864	1.8	1.8	7.684	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	143	36	0.00	158	0.907	140	4.8	5.7	157.030	F
B-A	243	61	0.00	261	0.930	239	6.6	7.7	123.010	F
C-AB	126	31	0.00	445	0.283	126	0.4	0.4	11.266	B
C-A	479	120	0.00			479				
A-BC	864	216	248.00	1332	0.649	864	1.8	1.8	7.687	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	143	36	0.00	158	0.904	141	5.7	6.2	169.572	F
B-A	243	61	0.00	261	0.930	240	7.7	8.5	134.446	F
C-AB	126	31	0.00	445	0.283	126	0.4	0.4	11.266	B
C-A	479	120	0.00			479				
A-BC	864	216	248.00	1332	0.649	864	1.8	1.8	7.687	A

D22 - 2036 | +Crest+BHL Diversion+Miller Homes+Wimms & Scott | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		4.49	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.49	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D22	2036	+Crest+BHL Diversion+Miller Homes+Wimms & Scott	PM	FLAT	17:00	18:00	60	15	✓	Simple	D18+D12

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	641	100.000
B - Site Access		FLAT	✓	200	100.000
C - Lower Luton Road (E)		FLAT	✓	714	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	225	416
	B - Site Access	126	0	74
	C - Lower Luton Road (E)	587	127	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	1	1
	B - Site Access	0	0	0
	C - Lower Luton Road (E)	3	0.79	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.14	8.17	0.2	A	74	74
B-A	0.37	16.71	0.6	C	126	126
C-AB	0.25	9.43	0.3	A	128	128
C-A					586	586
A-BC	0.47	4.90	0.9	A	641	641

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	74	19	0.00	517	0.143	73	0.0	0.2	8.103	A
B-A	126	32	0.00	343	0.368	124	0.0	0.6	16.290	C
C-AB	128	32	0.00	510	0.250	126	0.0	0.3	9.346	A
C-A	586	147	0.00			586				
A-BC	641	160	248.00	1376	0.466	637	0.0	0.9	4.851	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	74	19	0.00	515	0.144	74	0.2	0.2	8.170	A
B-A	126	32	0.00	341	0.369	126	0.6	0.6	16.700	C
C-AB	128	32	0.00	509	0.251	128	0.3	0.3	9.430	A
C-A	586	147	0.00			586				
A-BC	641	160	248.00	1376	0.466	641	0.9	0.9	4.895	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	74	19	0.00	515	0.144	74	0.2	0.2	8.171	A
B-A	126	32	0.00	341	0.369	126	0.6	0.6	16.706	C
C-AB	128	32	0.00	509	0.251	128	0.3	0.3	9.430	A
C-A	586	147	0.00			586				
A-BC	641	160	248.00	1376	0.466	641	0.9	0.9	4.895	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	74	19	0.00	515	0.144	74	0.2	0.2	8.171	A
B-A	126	32	0.00	341	0.369	126	0.6	0.6	16.708	C
C-AB	128	32	0.00	509	0.251	128	0.3	0.3	9.430	A
C-A	586	147	0.00			586				
A-BC	641	160	248.00	1376	0.466	641	0.9	0.9	4.895	A

D23 - 2036 | +Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		25.24	D

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	25.24	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relati
D23	2036	+Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott	AM	FLAT	07:45	08:45	60	15	✓	Simple	D21 (D9)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	863	100.000
B - Site Access		FLAT	✓	373	100.000
C - Lower Luton Road (E)		FLAT	✓	605	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
From	A - Lower Luton Road (W)	0	129	734
	B - Site Access	236	0	137
	C - Lower Luton Road (E)	480	125	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	2	4
	B - Site Access	0.50	0	0.76
	C - Lower Luton Road (E)	4	0.82	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.83	104.19	3.6	F	136	136
B-A	0.89	106.18	6.5	F	236	236
C-AB	0.28	11.24	0.4	B	125	125
C-A					479	479
A-BC	0.65	7.67	1.8	A	863	863

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	136	34	0.00	256	0.532	132	0.0	1.1	28.152	D
B-A	236	59	0.00	269	0.879	219	0.0	4.4	59.777	F
C-AB	125	31	0.00	447	0.280	124	0.0	0.4	11.073	B
C-A	479	120	0.00			479				
A-BC	863	216	248.00	1332	0.648	856	0.0	1.8	7.450	A

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	136	34	0.00	190	0.719	132	1.1	2.1	58.539	F
B-A	236	59	0.00	265	0.889	232	4.4	5.5	90.338	F
C-AB	125	31	0.00	446	0.281	125	0.4	0.4	11.240	B
C-A	479	120	0.00			479				
A-BC	863	216	248.00	1332	0.648	863	1.8	1.8	7.669	A

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	136	34	0.00	173	0.787	133	2.1	2.9	82.228	F
B-A	236	59	0.00	265	0.892	234	5.5	6.1	100.108	F
C-AB	125	31	0.00	446	0.281	125	0.4	0.4	11.241	B
C-A	479	120	0.00			479				
A-BC	863	216	248.00	1332	0.648	863	1.8	1.8	7.672	A

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	136	34	0.00	164	0.832	134	2.9	3.6	104.191	F
B-A	236	59	0.00	264	0.894	234	6.1	6.5	106.181	F
C-AB	125	31	0.00	446	0.281	125	0.4	0.4	11.241	B
C-A	479	120	0.00			479				
A-BC	863	216	248.00	1332	0.648	863	1.8	1.8	7.672	A

D24 - 2036 | +Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Site Access - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.
Warning	Demand Set Relationship	D13 - 2036 +Crest AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Site Access Junction	T-Junction	Two-way	Two-way	Two-way		4.32	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.32	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relati
D24	2036	+Crest+BHL Diversion+Miller Homes (50%)+Wimms & Scott	PM	FLAT	17:00	18:00	60	15	✓	Simple	D22-(D1

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A - Lower Luton Road (W)		FLAT	✓	631	100.000
B - Site Access		FLAT	✓	193	100.000
C - Lower Luton Road (E)		FLAT	✓	708	100.000

Demand overview (Pedestrians)

Arm	Profile type	Average pedestrian flow (Ped/hr)
A - Lower Luton Road (W)	[FLAT]	248.00
B - Site Access		
C - Lower Luton Road (E)		

Origin-Destination Data

Demand (Veh/hr)

	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
From	A - Lower Luton Road (W)	0	215	416
	B - Site Access	122	0	71
	C - Lower Luton Road (E)	587	121	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		A - Lower Luton Road (W)	B - Site Access	C - Lower Luton Road (E)
	A - Lower Luton Road (W)	0	1	1
	B - Site Access	0	0	0
	C - Lower Luton Road (E)	3	0.83	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-C	0.14	8.04	0.2	A	71	71
B-A	0.35	16.07	0.5	C	122	122
C-AB	0.24	9.22	0.3	A	121	121
C-A					587	587
A-BC	0.46	4.83	0.8	A	631	631

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	71	18	0.00	521	0.136	70	0.0	0.2	7.982	A
B-A	122	30	0.00	347	0.350	119	0.0	0.5	15.701	C
C-AB	121	30	0.00	512	0.236	120	0.0	0.3	9.148	A
C-A	587	147	0.00			587				
A-BC	631	158	248.00	1376	0.458	627	0.0	0.8	4.786	A

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	71	18	0.00	519	0.137	71	0.2	0.2	8.043	A
B-A	122	30	0.00	346	0.352	121	0.5	0.5	16.061	C
C-AB	121	30	0.00	511	0.237	121	0.3	0.3	9.224	A
C-A	587	147	0.00			587				
A-BC	631	158	248.00	1376	0.458	631	0.8	0.8	4.828	A

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	71	18	0.00	519	0.137	71	0.2	0.2	8.044	A
B-A	122	30	0.00	346	0.352	121	0.5	0.5	16.065	C
C-AB	121	30	0.00	511	0.237	121	0.3	0.3	9.224	A
C-A	587	147	0.00			587				
A-BC	631	158	248.00	1376	0.458	631	0.8	0.8	4.828	A

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Pedestrian demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	71	18	0.00	519	0.137	71	0.2	0.2	8.044	A
B-A	122	30	0.00	346	0.352	121	0.5	0.5	16.067	C
C-AB	121	30	0.00	511	0.237	121	0.3	0.3	9.224	A
C-A	587	147	0.00			587				
A-BC	631	158	248.00	1376	0.458	631	0.8	0.8	4.828	A

Junctions 11	
PICADY 11 - Priority Intersection Module	
Version: 11.0.0.2177	
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Filename: Bower Heath Lane, Lower Luton (Staggered Crossroads) v2.j11

Path: O:\London\Vectos\Projects\Projects\140000\141499 - Lower Luton Rd Harpenden site\MODELLING\J11

Report generation date: 13/10/2025 14:05:14

-
- »2024 | 1-Baseline | AM
 - »2024 | 1-Baseline | PM
 - »2036 | 2-Future Baseline | AM
 - »2036 | 2-Future Baseline | PM
 - »2036 | 3-Future + Proposed Development | AM
 - »2036 | 3-Future + Proposed Development | PM
 - »2036 | 4-Future + Full Allocation | AM
 - »2036 | 4-Future + Full Allocation | PM

Summary of junction performance

	AM					PM				
	Set ID	Q (Veh)	Delay (s)	RFC	LOS	Set ID	Q (Veh)	Delay (s)	RFC	LOS
	2024 - 1-Baseline									
Stream B-CD	D1	0.1	7.58	0.12	A	D2	0.5	10.44	0.32	B
Stream B-A		0.2	17.92	0.19	C		0.2	15.43	0.17	C
Stream AB-CD		0.2	5.51	0.09	A		0.7	5.17	0.25	A
Stream D-ABC		0.3	9.87	0.25	A		0.2	7.83	0.14	A
Stream CD-AB		4.0	13.13	0.70	B		0.4	5.74	0.17	A
	2036 - 2-Future Baseline									
Stream B-CD	D3	0.1	7.79	0.12	A	D4	0.5	10.94	0.34	B
Stream B-A		0.3	19.57	0.21	C		0.2	16.28	0.19	C
Stream AB-CD		0.2	5.49	0.09	A		0.8	5.22	0.27	A
Stream D-ABC		0.4	10.42	0.27	B		0.2	8.04	0.15	A
Stream CD-AB		5.7	17.09	0.77	C		0.4	5.77	0.18	A
	2036 - 3-Future + Proposed Development									
Stream B-CD	D5	0.1	11.15	0.12	B	D6	0.4	13.50	0.28	B
Stream B-A		1.2	31.39	0.55	D		1.2	26.49	0.54	D
Stream AB-CD		0.0	5.76	0.00	A		0.0	4.29	0.00	A
Stream D-ABC		0.0	0.00	0.00	A		0.0	0.00	0.00	A
Stream CD-AB		2.1	7.80	0.51	A		0.2	5.10	0.09	A
	2036 - 4-Future + Full Allocation									
Stream B-CD	D7	0.1	11.46	0.12	B	D8	0.5	16.37	0.32	C
Stream B-A		1.3	32.86	0.56	D		1.7	33.25	0.63	D
Stream AB-CD		0.0	5.64	0.00	A		0.0	4.26	0.00	A
Stream D-ABC		0.0	0.00	0.00	A		0.0	0.00	0.00	A
Stream CD-AB		2.2	7.99	0.52	A		0.2	5.03	0.09	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	11/10/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SLR\Tom.Monk
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Av. delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
5.75						0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2024	1-Baseline	AM	FLAT	07:30	08:30	60	15	✓		
D2	2024	1-Baseline	PM	FLAT	16:45	17:45	60	15	✓		
D3	2036	2-Future Baseline	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523) +D13
D4	2036	2-Future Baseline	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445) +D14
D5	2036	3-Future + Proposed Development	AM		07:30	08:30	60	15	✓	Advanced	D3+D9+D15
D6	2036	3-Future + Proposed Development	PM		16:45	17:45	60	15	✓	Advanced	D4+D10+D16
D7	2036	4-Future + Full Allocation	AM		07:30	08:30	60	15	✓	Advanced	D3+D11+D15
D8	2036	4-Future + Full Allocation	PM		16:45	17:45	60	15	✓	Advanced	D4+D12+D16
D9		DEV	AM	FLAT	07:30	08:30	60	15			
D10		DEV	PM	FLAT	16:45	17:45	60	15			
D11		FULL ALLOCATION	AM	FLAT	07:30	08:30	60	15			
D12		FULL ALLOCATION	PM	FLAT	16:45	17:45	60	15			
D13		COMM	AM	FLAT	07:30	08:30	60	15			
D14		COMM	PM	FLAT	16:45	17:45	60	15			
D15		BHL Diversion	AM	FLAT	07:30	08:30	60	15			
D16		BHL Diversion	PM	FLAT	16:45	17:45	60	15			

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2024 | 1-Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Left-Right Stagger	Two-way	Two-way	Two-way	Two-way		4.32	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.32	A

Arms

Arms

Arm	Name	Description	Arm type
A	B653 Lower Luton Rd (E)		Major
B	Westfield Rd		Minor
C	B653 Lower Luton Rd (W)		Major
D	Bower Heath Ln		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - B653 Lower Luton Rd (E)	6.64			104.9	✓	0.00
C - B653 Lower Luton Rd (W)	6.92			87.5	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Westfield Rd	One lane plus flare		10.00	6.29	3.48	3.33	3.14	✓	1.00	25	36
D - Bower Heath Ln	One lane	5.00								24	18

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B
AB-D	635	-	-	-	-	-	0.239	0.239	0.239	-	-
B-A	548	0.096	0.242	0.242	-	-	0.152	0.346	-	0.152	0.346
B-CD	691	0.102	0.257	0.257	-	-	-	-	-	-	-
CD-B	625	0.232	0.232	0.232	-	-	-	-	-	-	-
D-AB	762	-	-	-	-	-	0.287	0.287	0.114	-	-
D-C	593	-	0.167	0.379	0.167	0.379	0.265	0.265	0.105	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	1-Baseline	AM	FLAT	07:30	08:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A - B653 Lower Luton Rd (E)		FLAT	✓	427	100.000
B - Westfield Rd		FLAT	✓	108	100.000
C - B653 Lower Luton Rd (W)		FLAT	✓	754	100.000
D - Bower Heath Ln		FLAT	✓	123	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From A - B653 Lower Luton Rd (E)	0	69	352	6
From B - Westfield Rd	46	0	40	22
From C - B653 Lower Luton Rd (W)	599	140	0	15
From D - Bower Heath Ln	12	96	15	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To			
	A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From A - B653 Lower Luton Rd (E)	0	7	3	17
From B - Westfield Rd	9	0	3	5
From C - B653 Lower Luton Rd (W)	3	0	0	13
From D - Bower Heath Ln	8	0	7	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.12	7.58	0.1	A	62	62
B-A	0.19	17.92	0.2	C	46	46
A-B					69	69
A-C					352	352
A-D					6	6
AB-CD	0.09	5.51	0.2	A	62	62
AB-C					358	358
D-ABC	0.25	9.87	0.3	A	123	123
C-D					15	15
C-A					599	599
C-B					140	140
CD-AB	0.70	13.13	4.0	B	668	668
CD-A					179	179

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	62	15	0.00	538	0.115	61	0.0	0.1	7.541	A
B-A	46	12	0.00	250	0.184	45	0.0	0.2	17.471	C
A-B	69	17	0.00			69				
A-C	352	88	0.00			352				
A-D	6	2	0.00			6				
AB-CD	61	15	0.00	716	0.086	61	0.0	0.2	5.494	A
AB-C	358	90	0.00			358				
D-ABC	123	31	0.00	488	0.252	122	0.0	0.3	9.798	A
C-D	15	4	0.00			15				
C-A	599	150	0.00			599				
C-B	140	35	0.00			140				
CD-AB	658	165	0.00	950	0.693	644	0.0	3.7	11.672	B
CD-A	188	47	0.00			188				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	62	15	0.00	537	0.115	62	0.1	0.1	7.577	A
B-A	46	12	0.00	247	0.186	46	0.2	0.2	17.892	C
A-B	69	17	0.00			69				
A-C	352	88	0.00			352				
A-D	6	2	0.00			6				
AB-CD	62	15	0.00	717	0.086	62	0.2	0.2	5.506	A
AB-C	358	90	0.00			358				
D-ABC	123	31	0.00	488	0.252	123	0.3	0.3	9.870	A
C-D	15	4	0.00			15				
C-A	599	150	0.00			599				
C-B	140	35	0.00			140				
CD-AB	670	168	0.00	957	0.701	669	3.7	3.9	13.015	B
CD-A	177	44	0.00			177				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	62	15	0.00	537	0.115	62	0.1	0.1	7.577	A
B-A	46	12	0.00	247	0.186	46	0.2	0.2	17.911	C
A-B	69	17	0.00			69				
A-C	352	88	0.00			352				
A-D	6	2	0.00			6				
AB-CD	62	15	0.00	717	0.086	62	0.2	0.2	5.505	A
AB-C	358	90	0.00			358				
D-ABC	123	31	0.00	488	0.252	123	0.3	0.3	9.870	A
C-D	15	4	0.00			15				
C-A	599	150	0.00			599				
C-B	140	35	0.00			140				
CD-AB	671	168	0.00	957	0.701	671	3.9	4.0	13.103	B
CD-A	176	44	0.00			176				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	62	15	0.00	537	0.115	62	0.1	0.1	7.578	A
B-A	46	12	0.00	247	0.186	46	0.2	0.2	17.919	C
A-B	69	17	0.00			69				
A-C	352	88	0.00			352				
A-D	6	2	0.00			6				
AB-CD	62	15	0.00	717	0.086	62	0.2	0.2	5.505	A
AB-C	358	90	0.00			358				
D-ABC	123	31	0.00	488	0.252	123	0.3	0.3	9.870	A
C-D	15	4	0.00			15				
C-A	599	150	0.00			599				
C-B	140	35	0.00			140				
CD-AB	671	168	0.00	957	0.701	671	4.0	4.0	13.131	B
CD-A	176	44	0.00			176				

2024 | 1-Baseline | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Left-Right Stagger	Two-way	Two-way	Two-way	Two-way		2.10	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.10	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2024	1-Baseline	PM	FLAT	16:45	17:45	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A - B653 Lower Luton Rd (E)		FLAT	✓	586	100.000
B - Westfield Rd		FLAT	✓	208	100.000
C - B653 Lower Luton Rd (W)		FLAT	✓	392	100.000
D - Bower Heath Ln		FLAT	✓	74	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	54	508	24
	B - Westfield Rd	49	0	101	58
	C - B653 Lower Luton Rd (W)	349	29	0	14
	D - Bower Heath Ln	21	34	19	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
	A - B653 Lower Luton Rd (E)	0	4	2	17
	B - Westfield Rd	7	0	5	5
	C - B653 Lower Luton Rd (W)	1	1	0	7
	D - Bower Heath Ln	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.32	10.44	0.5	B	159	159
B-A	0.17	15.43	0.2	C	49	49
A-B					54	54
A-C					508	508
A-D					24	24
AB-CD	0.25	5.17	0.7	A	236	236
AB-C					455	455
D-ABC	0.14	7.83	0.2	A	74	74
C-D					14	14
C-A					349	349
C-B					29	29
CD-AB	0.17	5.74	0.4	A	124	124
CD-A					309	309

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	159	40	0.00	505	0.315	157	0.0	0.5	10.311	B
B-A	49	12	0.00	283	0.173	48	0.0	0.2	15.284	C
A-B	54	14	0.00			54				
A-C	508	127	0.00			508				
A-D	24	6	0.00			24				
AB-CD	233	58	0.00	933	0.250	231	0.0	0.7	5.126	A
AB-C	456	114	0.00			456				
D-ABC	74	19	0.00	535	0.138	73	0.0	0.2	7.796	A
C-D	14	4	0.00			14				
C-A	349	87	0.00			349				
C-B	29	7	0.00			29				
CD-AB	123	31	0.00	752	0.164	122	0.0	0.4	5.710	A
CD-A	309	77	0.00			309				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	159	40	0.00	504	0.316	159	0.5	0.5	10.437	B
B-A	49	12	0.00	282	0.174	49	0.2	0.2	15.430	C
A-B	54	14	0.00			54				
A-C	508	127	0.00			508				
A-D	24	6	0.00			24				
AB-CD	236	59	0.00	935	0.253	236	0.7	0.7	5.172	A
AB-C	455	114	0.00			455				
D-ABC	74	19	0.00	534	0.139	74	0.2	0.2	7.827	A
C-D	14	4	0.00			14				
C-A	349	87	0.00			349				
C-B	29	7	0.00			29				
CD-AB	124	31	0.00	753	0.165	124	0.4	0.4	5.740	A
CD-A	309	77	0.00			309				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	159	40	0.00	504	0.316	159	0.5	0.5	10.438	B
B-A	49	12	0.00	282	0.174	49	0.2	0.2	15.432	C
A-B	54	14	0.00			54				
A-C	508	127	0.00			508				
A-D	24	6	0.00			24				
AB-CD	236	59	0.00	935	0.253	236	0.7	0.7	5.173	A
AB-C	455	114	0.00			455				
D-ABC	74	19	0.00	534	0.139	74	0.2	0.2	7.827	A
C-D	14	4	0.00			14				
C-A	349	87	0.00			349				
C-B	29	7	0.00			29				
CD-AB	124	31	0.00	753	0.165	124	0.4	0.4	5.741	A
CD-A	309	77	0.00			309				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	159	40	0.00	504	0.316	159	0.5	0.5	10.438	B
B-A	49	12	0.00	282	0.174	49	0.2	0.2	15.432	C
A-B	54	14	0.00			54				
A-C	508	127	0.00			508				
A-D	24	6	0.00			24				
AB-CD	236	59	0.00	935	0.253	236	0.7	0.7	5.173	A
AB-C	455	114	0.00			455				
D-ABC	74	19	0.00	534	0.139	74	0.2	0.2	7.827	A
C-D	14	4	0.00			14				
C-A	349	87	0.00			349				
C-B	29	7	0.00			29				
CD-AB	124	31	0.00	753	0.165	124	0.4	0.4	5.741	A
CD-A	309	77	0.00			309				

2036 | 2-Future Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Left-Right Stagger	Two-way	Two-way	Two-way	Two-way		5.65	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.65	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D3	2036	2-Future Baseline	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523) +D13

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A - B653 Lower Luton Rd (E)		FLAT	✓	449	100.000
B - Westfield Rd		FLAT	✓	114	100.000
C - B653 Lower Luton Rd (W)		FLAT	✓	793	100.000
D - Bower Heath Ln		FLAT	✓	129	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	73	370	6
	B - Westfield Rd	48	0	42	23
	C - B653 Lower Luton Rd (W)	630	147	0	16
	D - Bower Heath Ln	13	101	16	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
	A - B653 Lower Luton Rd (E)	0	7	3	17
	B - Westfield Rd	9	0	3	5
	C - B653 Lower Luton Rd (W)	3	0	0	13
	D - Bower Heath Ln	8	0	7	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.12	7.79	0.1	A	65	65
B-A	0.21	19.57	0.3	C	48	48
A-B					73	73
A-C					370	370
A-D					6	6
AB-CD	0.09	5.49	0.2	A	68	68
AB-C					374	374
D-ABC	0.27	10.42	0.4	B	129	129
C-D					16	16
C-A					630	630
C-B					147	147
CD-AB	0.77	17.09	5.7	C	748	748
CD-A					143	143

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	65	16	0.00	529	0.123	65	0.0	0.1	7.736	A
B-A	48	12	0.00	237	0.204	47	0.0	0.2	18.887	C
A-B	73	18	0.00			73				
A-C	370	93	0.00			370				
A-D	6	2	0.00			6				
AB-CD	68	17	0.00	725	0.094	67	0.0	0.2	5.473	A
AB-C	374	93	0.00			374				
D-ABC	129	32	0.00	475	0.273	128	0.0	0.4	10.336	B
C-D	16	4	0.00			16				
C-A	630	158	0.00			630				
C-B	147	37	0.00			147				
CD-AB	734	184	0.00	969	0.758	715	0.0	4.9	14.018	B
CD-A	156	39	0.00			156				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	65	16	0.00	528	0.124	65	0.1	0.1	7.784	A
B-A	48	12	0.00	233	0.208	48	0.2	0.3	19.507	C
A-B	73	18	0.00			73				
A-C	370	93	0.00			370				
A-D	6	2	0.00			6				
AB-CD	68	17	0.00	725	0.094	68	0.2	0.2	5.488	A
AB-C	373	93	0.00			373				
D-ABC	129	32	0.00	475	0.273	129	0.4	0.4	10.425	B
C-D	16	4	0.00			16				
C-A	630	158	0.00			630				
C-B	147	37	0.00			147				
CD-AB	752	188	0.00	978	0.768	750	4.9	5.4	16.714	C
CD-A	140	35	0.00			140				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	65	16	0.00	528	0.124	65	0.1	0.1	7.786	A
B-A	48	12	0.00	232	0.208	48	0.3	0.3	19.550	C
A-B	73	18	0.00			73				
A-C	370	93	0.00			370				
A-D	6	2	0.00			6				
AB-CD	68	17	0.00	725	0.094	68	0.2	0.2	5.485	A
AB-C	373	93	0.00			373				
D-ABC	129	32	0.00	475	0.273	129	0.4	0.4	10.425	B
C-D	16	4	0.00			16				
C-A	630	158	0.00			630				
C-B	147	37	0.00			147				
CD-AB	753	188	0.00	979	0.769	752	5.4	5.6	16.996	C
CD-A	138	35	0.00			138				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	65	16	0.00	528	0.124	65	0.1	0.1	7.787	A
B-A	48	12	0.00	232	0.208	48	0.3	0.3	19.567	C
A-B	73	18	0.00			73				
A-C	370	93	0.00			370				
A-D	6	2	0.00			6				
AB-CD	68	17	0.00	725	0.094	68	0.2	0.2	5.485	A
AB-C	373	93	0.00			373				
D-ABC	129	32	0.00	475	0.273	129	0.4	0.4	10.425	B
C-D	16	4	0.00			16				
C-A	630	158	0.00			630				
C-B	147	37	0.00			147				
CD-AB	753	188	0.00	979	0.769	753	5.6	5.7	17.095	C
CD-A	138	34	0.00			138				

2036 | 2-Future Baseline | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Left-Right Stagger	Two-way	Two-way	Two-way	Two-way		2.20	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.20	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2036	2-Future Baseline	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445) +D14

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A - B653 Lower Luton Rd (E)		FLAT	✓	612	100.000
B - Westfield Rd		FLAT	✓	217	100.000
C - B653 Lower Luton Rd (W)		FLAT	✓	409	100.000
D - Bower Heath Ln		FLAT	✓	77	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	56	531	25
	B - Westfield Rd	51	0	105	61
	C - B653 Lower Luton Rd (W)	365	30	0	15
	D - Bower Heath Ln	22	36	20	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
	A - B653 Lower Luton Rd (E)	0	4	2	17
	B - Westfield Rd	7	0	5	5
	C - B653 Lower Luton Rd (W)	1	1	0	7
	D - Bower Heath Ln	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.34	10.94	0.5	B	166	166
B-A	0.19	16.28	0.2	C	51	51
A-B					56	56
A-C					531	531
A-D					25	25
AB-CD	0.27	5.22	0.8	A	259	259
AB-C					463	463
D-ABC	0.15	8.04	0.2	A	77	77
C-D					15	15
C-A					365	365
C-B					30	30
CD-AB	0.18	5.77	0.4	A	134	134
CD-A					318	318

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	166	42	0.00	496	0.335	164	0.0	0.5	10.789	B
B-A	51	13	0.00	273	0.187	50	0.0	0.2	16.096	C
A-B	56	14	0.00			56				
A-C	531	133	0.00			531				
A-D	25	6	0.00			25				
AB-CD	256	64	0.00	950	0.270	253	0.0	0.8	5.167	A
AB-C	464	116	0.00			464				
D-ABC	77	19	0.00	526	0.147	77	0.0	0.2	8.004	A
C-D	15	4	0.00			15				
C-A	365	91	0.00			365				
C-B	30	8	0.00			30				
CD-AB	133	33	0.00	759	0.176	132	0.0	0.4	5.736	A
CD-A	318	80	0.00			318				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	166	42	0.00	495	0.335	166	0.5	0.5	10.939	B
B-A	51	13	0.00	272	0.188	51	0.2	0.2	16.275	C
A-B	56	14	0.00			56				
A-C	531	133	0.00			531				
A-D	25	6	0.00			25				
AB-CD	260	65	0.00	952	0.273	260	0.8	0.8	5.221	A
AB-C	462	116	0.00			462				
D-ABC	77	19	0.00	525	0.147	77	0.2	0.2	8.041	A
C-D	15	4	0.00			15				
C-A	365	91	0.00			365				
C-B	30	8	0.00			30				
CD-AB	134	34	0.00	760	0.177	134	0.4	0.4	5.766	A
CD-A	318	79	0.00			318				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	166	42	0.00	495	0.335	166	0.5	0.5	10.942	B
B-A	51	13	0.00	272	0.188	51	0.2	0.2	16.280	C
A-B	56	14	0.00			56				
A-C	531	133	0.00			531				
A-D	25	6	0.00			25				
AB-CD	260	65	0.00	952	0.273	260	0.8	0.8	5.223	A
AB-C	462	116	0.00			462				
D-ABC	77	19	0.00	525	0.147	77	0.2	0.2	8.042	A
C-D	15	4	0.00			15				
C-A	365	91	0.00			365				
C-B	30	8	0.00			30				
CD-AB	134	34	0.00	760	0.177	134	0.4	0.4	5.766	A
CD-A	318	79	0.00			318				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	166	42	0.00	495	0.335	166	0.5	0.5	10.942	B
B-A	51	13	0.00	272	0.188	51	0.2	0.2	16.280	C
A-B	56	14	0.00			56				
A-C	531	133	0.00			531				
A-D	25	6	0.00			25				
AB-CD	260	65	0.00	952	0.273	260	0.8	0.8	5.223	A
AB-C	462	116	0.00			462				
D-ABC	77	19	0.00	525	0.147	77	0.2	0.2	8.042	A
C-D	15	4	0.00			15				
C-A	365	91	0.00			365				
C-B	30	8	0.00			30				
CD-AB	134	34	0.00	760	0.177	134	0.4	0.4	5.766	A
CD-A	318	79	0.00			318				

2036 | 3-Future + Proposed Development | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.
Warning	O-D data		O-D matrix contains negative demand. Matrix should only be used as a development matrix for Demand Set relationships and should not be run on its own.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Left-Right Stagger	Two-way	Two-way	Two-way	Two-way		3.00	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.00	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2036	3-Future + Proposed Development	AM	07:30	08:30	60	15	✓	Advanced	D3+D9+D15

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - B653 Lower Luton Rd (E)		DIRECT		100.000
B - Westfield Rd		DIRECT		100.000
C - B653 Lower Luton Rd (W)		DIRECT		100.000
D - Bower Heath Ln		DIRECT		100.000

Origin-Destination Data

Demand (Veh/hr)

07:30 -
07:45

		To			
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	227	424	0.31
	B - Westfield Rd	142	0	42	0.15
	C - B653 Lower Luton Rd (W)	658	147	0	0
	D - Bower Heath Ln	0	0.02	0	0

Demand (Veh/hr)

07:45 -
08:00

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	227	424	0.31
	B - Westfield Rd	142	0	42	0.15
	C - B653 Lower Luton Rd (W)	658	147	0	0
	D - Bower Heath Ln	0	0.02	0	0

Demand (Veh/hr)

08:00 -
08:15

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	227	424	0.31
	B - Westfield Rd	142	0	42	0.15
	C - B653 Lower Luton Rd (W)	658	147	0	0
	D - Bower Heath Ln	0	0.02	0	0

Demand (Veh/hr)

08:15 -
08:30

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	227	424	0.31
	B - Westfield Rd	142	0	42	0.15
	C - B653 Lower Luton Rd (W)	658	147	0	0
	D - Bower Heath Ln	0	0.02	0	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

07:30 -
07:45

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	3	100
	B - Westfield Rd	3	0	3	100
	C - B653 Lower Luton Rd (W)	3	0	0	0
	D - Bower Heath Ln	8	0	0	0

Heavy Vehicle %

07:45 -
08:00

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	3	100
	B - Westfield Rd	3	0	3	100
	C - B653 Lower Luton Rd (W)	3	0	0	0
	D - Bower Heath Ln	8	0	0	0

Heavy Vehicle %

08:00 -
08:15

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	3	100
	B - Westfield Rd	3	0	3	100
	C - B653 Lower Luton Rd (W)	3	0	0	0
	D - Bower Heath Ln	8	0	0	0

Heavy Vehicle %

08:15 -
08:30

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	3	100
	B - Westfield Rd	3	0	3	100
	C - B653 Lower Luton Rd (W)	3	0	0	0
	D - Bower Heath Ln	8	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.12	11.15	0.1	B	42	42
B-A	0.55	31.39	1.2	D	142	142
A-B					227	227
A-C					424	424
A-D					0.31	0.31
AB-CD	0.00	5.76	0.0	A	2	2
AB-C					465	465
D-ABC	0.00	0.00	0.0	A	0	0
C-D					0	0
C-A					658	658
C-B					147	147
CD-AB	0.51	7.80	2.1	A	484	484
CD-A					322	322

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	11	0.00	376	0.112	42	0.0	0.1	10.742	B
B-A	142	36	0.00	259	0.551	138	0.0	1.1	28.859	D
A-B	227	57	0.00			227				
A-C	424	106	0.00			424				
A-D	0.31	0.08	0.00			0.31				
AB-CD	2	0.45	0.00	627	0.003	2	0.0	0.0	5.760	A
AB-C	465	116	0.00			465				
D-ABC	0	0	0.00	370	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	658	165	0.00			658				
C-B	147	37	0.00			147				
CD-AB	479	120	0.00	951	0.503	471	0.0	2.0	7.493	A
CD-A	327	82	0.00			327				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	11	0.00	366	0.115	42	0.1	0.1	11.127	B
B-A	142	36	0.00	257	0.554	142	1.1	1.2	31.248	D
A-B	227	57	0.00			227				
A-C	424	106	0.00			424				
A-D	0.31	0.08	0.00			0.31				
AB-CD	2	0.45	0.00	627	0.003	2	0.0	0.0	5.757	A
AB-C	465	116	0.00			465				
D-ABC	0	0	0.00	370	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	658	165	0.00			658				
C-B	147	37	0.00			147				
CD-AB	486	121	0.00	955	0.509	485	2.0	2.1	7.792	A
CD-A	320	80	0.00			320				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	11	0.00	365	0.116	42	0.1	0.1	11.143	B
B-A	142	36	0.00	257	0.554	142	1.2	1.2	31.357	D
A-B	227	57	0.00			227				
A-C	424	106	0.00			424				
A-D	0.31	0.08	0.00			0.31				
AB-CD	2	0.45	0.00	627	0.003	2	0.0	0.0	5.755	A
AB-C	465	116	0.00			465				
D-ABC	0	0	0.00	370	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	658	165	0.00			658				
C-B	147	37	0.00			147				
CD-AB	486	121	0.00	955	0.509	486	2.1	2.1	7.800	A
CD-A	320	80	0.00			320				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	11	0.00	365	0.116	42	0.1	0.1	11.148	B
B-A	142	36	0.00	257	0.554	142	1.2	1.2	31.394	D
A-B	227	57	0.00			227				
A-C	424	106	0.00			424				
A-D	0.31	0.08	0.00			0.31				
AB-CD	2	0.45	0.00	627	0.003	2	0.0	0.0	5.755	A
AB-C	465	116	0.00			465				
D-ABC	0	0	0.00	370	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	658	165	0.00			658				
C-B	147	37	0.00			147				
CD-AB	486	121	0.00	955	0.509	486	2.1	2.1	7.803	A
CD-A	320	80	0.00			320				

2036 | 3-Future + Proposed Development | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.
Warning	O-D data		O-D matrix contains negative demand. Matrix should only be used as a development matrix for Demand Set relationships and should not be run on its own.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Left-Right Stagger	Two-way	Two-way	Two-way	Two-way		2.40	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.40	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2036	3-Future + Proposed Development	PM	16:45	17:45	60	15	✓	Advanced	D4+D10+D16

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - B653 Lower Luton Rd (E)		DIRECT		100.000
B - Westfield Rd		DIRECT		100.000
C - B653 Lower Luton Rd (W)		DIRECT		100.000
D - Bower Heath Ln		DIRECT		100.000

Origin-Destination Data

Demand (Veh/hr)

16:45 -
17:00

		To			
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	118	574	0.07
	B - Westfield Rd	162	0	105	0
	C - B653 Lower Luton Rd (W)	428	30	0	0
	D - Bower Heath Ln	0	0	0	0

Demand (Veh/hr)

17:00 -
17:15

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	118	574	0.07
	B - Westfield Rd	162	0	105	0
	C - B653 Lower Luton Rd (W)	428	30	0	0
	D - Bower Heath Ln	0	0	0	0

Demand (Veh/hr)

17:15 -
17:30

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	118	574	0.07
	B - Westfield Rd	162	0	105	0
	C - B653 Lower Luton Rd (W)	428	30	0	0
	D - Bower Heath Ln	0	0	0	0

Demand (Veh/hr)

17:30 -
17:45

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	118	574	0.07
	B - Westfield Rd	162	0	105	0
	C - B653 Lower Luton Rd (W)	428	30	0	0
	D - Bower Heath Ln	0	0	0	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

16:45 -
17:00

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	2	100
	B - Westfield Rd	2	0	5	0
	C - B653 Lower Luton Rd (W)	1	1	0	0
	D - Bower Heath Ln	0	0	0	0

Heavy Vehicle %

17:00 -
17:15

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	2	100
	B - Westfield Rd	2	0	5	0
	C - B653 Lower Luton Rd (W)	1	1	0	0
	D - Bower Heath Ln	0	0	0	0

Heavy Vehicle %

17:15 -
17:30

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	2	100
	B - Westfield Rd	2	0	5	0
	C - B653 Lower Luton Rd (W)	1	1	0	0
	D - Bower Heath Ln	0	0	0	0

Heavy Vehicle %

17:30 -
17:45

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	2	100
	B - Westfield Rd	2	0	5	0
	C - B653 Lower Luton Rd (W)	1	1	0	0
	D - Bower Heath Ln	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.28	13.50	0.4	B	105	105
B-A	0.54	26.49	1.2	D	162	162
A-B					118	118
A-C					574	574
A-D					0.07	0.07
AB-CD	0.00	4.29	0.0	A	0.36	0.36
AB-C					678	678
D-ABC	0.00	0.00	0.0	A	0	0
C-D					0	0
C-A					428	428
C-B					30	30
CD-AB	0.09	5.10	0.2	A	68	68
CD-A					390	390

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	105	26	0.00	379	0.278	104	0.0	0.4	13.004	B
B-A	162	41	0.00	299	0.543	158	0.0	1.1	24.851	C
A-B	118	30	0.00			118				
A-C	574	143	0.00			574				
A-D	0.07	0.02	0.00			0.07				
AB-CD	0.35	0.09	0.00	839	0.000	0.35	0.0	0.0	4.293	A
AB-C	677	169	0.00			677				
D-ABC	0	0	0.00	454	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	428	107	0.00			428				
C-B	30	8	0.00			30				
CD-AB	68	17	0.00	775	0.087	67	0.0	0.2	5.088	A
CD-A	390	98	0.00			390				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	105	26	0.00	372	0.283	105	0.4	0.4	13.479	B
B-A	162	41	0.00	298	0.544	162	1.1	1.2	26.417	D
A-B	118	30	0.00			118				
A-C	574	143	0.00			574				
A-D	0.07	0.02	0.00			0.07				
AB-CD	0.36	0.09	0.00	840	0.000	0.36	0.0	0.0	4.286	A
AB-C	679	170	0.00			679				
D-ABC	0	0	0.00	453	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	428	107	0.00			428				
C-B	30	8	0.00			30				
CD-AB	68	17	0.00	775	0.088	68	0.2	0.2	5.097	A
CD-A	390	97	0.00			390				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	105	26	0.00	372	0.283	105	0.4	0.4	13.496	B
B-A	162	41	0.00	298	0.544	162	1.2	1.2	26.473	D
A-B	118	30	0.00			118				
A-C	574	143	0.00			574				
A-D	0.07	0.02	0.00			0.07				
AB-CD	0.36	0.09	0.00	841	0.000	0.36	0.0	0.0	4.284	A
AB-C	679	170	0.00			679				
D-ABC	0	0	0.00	453	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	428	107	0.00			428				
C-B	30	8	0.00			30				
CD-AB	68	17	0.00	775	0.088	68	0.2	0.2	5.099	A
CD-A	390	97	0.00			390				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	105	26	0.00	372	0.283	105	0.4	0.4	13.500	B
B-A	162	41	0.00	298	0.544	162	1.2	1.2	26.492	D
A-B	118	30	0.00			118				
A-C	574	143	0.00			574				
A-D	0.07	0.02	0.00			0.07				
AB-CD	0.36	0.09	0.00	841	0.000	0.36	0.0	0.0	4.286	A
AB-C	679	170	0.00			679				
D-ABC	0	0	0.00	453	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	428	107	0.00			428				
C-B	30	8	0.00			30				
CD-AB	68	17	0.00	775	0.088	68	0.2	0.2	5.099	A
CD-A	390	97	0.00			390				

2036 | 4-Future + Full Allocation | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.
Warning	O-D data		O-D matrix contains negative demand. Matrix should only be used as a development matrix for Demand Set relationships and should not be run on its own.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Left-Right Stagger	Two-way	Two-way	Two-way	Two-way		3.06	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.06	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2036	4-Future + Full Allocation	AM	07:30	08:30	60	15	✓	Advanced	D3+D11+D15

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - B653 Lower Luton Rd (E)		DIRECT		100.000
B - Westfield Rd		DIRECT		100.000
C - B653 Lower Luton Rd (W)		DIRECT		100.000
D - Bower Heath Ln		DIRECT		100.000

Origin-Destination Data

Demand (Veh/hr)

07:30 -
07:45

		To			
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	242	440	0.31
	B - Westfield Rd	141	0	42	0.15
	C - B653 Lower Luton Rd (W)	663	147	0	0
	D - Bower Heath Ln	0	0.02	0	0

Demand (Veh/hr)

07:45 -
08:00

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	242	440	0.31
	B - Westfield Rd	141	0	42	0.15
	C - B653 Lower Luton Rd (W)	663	147	0	0
	D - Bower Heath Ln	0	0.02	0	0

Demand (Veh/hr)

08:00 -
08:15

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	242	440	0.31
	B - Westfield Rd	141	0	42	0.15
	C - B653 Lower Luton Rd (W)	663	147	0	0
	D - Bower Heath Ln	0	0.02	0	0

Demand (Veh/hr)

08:15 -
08:30

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	242	440	0.31
	B - Westfield Rd	141	0	42	0.15
	C - B653 Lower Luton Rd (W)	663	147	0	0
	D - Bower Heath Ln	0	0.02	0	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

07:30 -
07:45

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	3	100
	B - Westfield Rd	3	0	3	100
	C - B653 Lower Luton Rd (W)	3	0	0	0
	D - Bower Heath Ln	8	0	0	0

Heavy Vehicle %

07:45 -
08:00

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	3	100
	B - Westfield Rd	3	0	3	100
	C - B653 Lower Luton Rd (W)	3	0	0	0
	D - Bower Heath Ln	8	0	0	0

Heavy Vehicle %

08:00 -
08:15

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	3	100
	B - Westfield Rd	3	0	3	100
	C - B653 Lower Luton Rd (W)	3	0	0	0
	D - Bower Heath Ln	8	0	0	0

Heavy Vehicle %

08:15 -
08:30

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	3	100
	B - Westfield Rd	3	0	3	100
	C - B653 Lower Luton Rd (W)	3	0	0	0
	D - Bower Heath Ln	8	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.12	11.46	0.1	B	42	42
B-A	0.56	32.86	1.3	D	141	141
A-B					242	242
A-C					440	440
A-D					0.31	0.31
AB-CD	0.00	5.64	0.0	A	2	2
AB-C					481	481
D-ABC	0.00	0.00	0.0	A	0	0
C-D					0	0
C-A					663	663
C-B					147	147
CD-AB	0.52	7.99	2.2	A	494	494
CD-A					317	317

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	11	0.00	368	0.115	42	0.0	0.1	11.004	B
B-A	141	35	0.00	253	0.560	137	0.0	1.2	30.009	D
A-B	242	60	0.00			242				
A-C	440	110	0.00			440				
A-D	0.31	0.08	0.00			0.31				
AB-CD	2	0.47	0.00	640	0.003	2	0.0	0.0	5.638	A
AB-C	481	120	0.00			481				
D-ABC	0	0	0.00	366	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	663	166	0.00			663				
C-B	147	37	0.00			147				
CD-AB	488	122	0.00	950	0.513	479	0.0	2.1	7.647	A
CD-A	323	81	0.00			323				

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	11	0.00	357	0.118	42	0.1	0.1	11.437	B
B-A	141	35	0.00	251	0.564	141	1.2	1.2	32.693	D
A-B	242	60	0.00			242				
A-C	440	110	0.00			440				
A-D	0.31	0.08	0.00			0.31				
AB-CD	2	0.47	0.00	641	0.003	2	0.0	0.0	5.635	A
AB-C	481	120	0.00			481				
D-ABC	0	0	0.00	366	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	663	166	0.00			663				
C-B	147	37	0.00			147				
CD-AB	495	124	0.00	955	0.519	495	2.1	2.2	7.975	A
CD-A	315	79	0.00			315				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	11	0.00	356	0.119	42	0.1	0.1	11.456	B
B-A	141	35	0.00	251	0.564	141	1.2	1.3	32.812	D
A-B	242	60	0.00			242				
A-C	440	110	0.00			440				
A-D	0.31	0.08	0.00			0.31				
AB-CD	2	0.47	0.00	641	0.003	2	0.0	0.0	5.631	A
AB-C	481	120	0.00			481				
D-ABC	0	0	0.00	366	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	663	166	0.00			663				
C-B	147	37	0.00			147				
CD-AB	496	124	0.00	955	0.519	496	2.2	2.2	7.985	A
CD-A	315	79	0.00			315				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	42	11	0.00	356	0.119	42	0.1	0.1	11.463	B
B-A	141	35	0.00	251	0.564	141	1.3	1.3	32.856	D
A-B	242	60	0.00			242				
A-C	440	110	0.00			440				
A-D	0.31	0.08	0.00			0.31				
AB-CD	2	0.47	0.00	641	0.003	2	0.0	0.0	5.633	A
AB-C	481	120	0.00			481				
D-ABC	0	0	0.00	366	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	663	166	0.00			663				
C-B	147	37	0.00			147				
CD-AB	496	124	0.00	955	0.519	496	2.2	2.2	7.990	A
CD-A	315	79	0.00			315				

2036 | 4-Future + Full Allocation | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.
Warning	O-D data		O-D matrix contains negative demand. Matrix should only be used as a development matrix for Demand Set relationships and should not be run on its own.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Arm D Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Left-Right Stagger	Two-way	Two-way	Two-way	Two-way		3.11	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.11	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2036	4-Future + Full Allocation	PM	16:45	17:45	60	15	✓	Advanced	D4+D12+D16

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - B653 Lower Luton Rd (E)		DIRECT		100.000
B - Westfield Rd		DIRECT		100.000
C - B653 Lower Luton Rd (W)		DIRECT		100.000
D - Bower Heath Ln		DIRECT		100.000

Origin-Destination Data

Demand (Veh/hr)

16:45 -
17:00

	To				
From		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
	A - B653 Lower Luton Rd (E)	0	127	584	0.07
	B - Westfield Rd	183	0	105	0
	C - B653 Lower Luton Rd (W)	450	30	0	0
	D - Bower Heath Ln	0	0	0	0

Demand (Veh/hr)

17:00 -
17:15

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	127	584	0.07
	B - Westfield Rd	183	0	105	0
	C - B653 Lower Luton Rd (W)	450	30	0	0
	D - Bower Heath Ln	0	0	0	0

Demand (Veh/hr)

17:15 -
17:30

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	127	584	0.07
	B - Westfield Rd	183	0	105	0
	C - B653 Lower Luton Rd (W)	450	30	0	0
	D - Bower Heath Ln	0	0	0	0

Demand (Veh/hr)

17:30 -
17:45

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	127	584	0.07
	B - Westfield Rd	183	0	105	0
	C - B653 Lower Luton Rd (W)	450	30	0	0
	D - Bower Heath Ln	0	0	0	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

16:45 -
17:00

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	2	100
	B - Westfield Rd	2	0	5	0
	C - B653 Lower Luton Rd (W)	1	1	0	0
	D - Bower Heath Ln	0	0	0	0

Heavy Vehicle %

17:00 -
17:15

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	2	100
	B - Westfield Rd	2	0	5	0
	C - B653 Lower Luton Rd (W)	1	1	0	0
	D - Bower Heath Ln	0	0	0	0

Heavy Vehicle %

17:15 -
17:30

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	2	100
	B - Westfield Rd	2	0	5	0
	C - B653 Lower Luton Rd (W)	1	1	0	0
	D - Bower Heath Ln	0	0	0	0

Heavy Vehicle %

17:30 -
17:45

	To				
		A - B653 Lower Luton Rd (E)	B - Westfield Rd	C - B653 Lower Luton Rd (W)	D - Bower Heath Ln
From	A - B653 Lower Luton Rd (E)	0	2	2	100
	B - Westfield Rd	2	0	5	0
	C - B653 Lower Luton Rd (W)	1	1	0	0
	D - Bower Heath Ln	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-CD	0.32	16.37	0.5	C	105	105
B-A	0.63	33.25	1.7	D	183	183
A-B					127	127
A-C					584	584
A-D					0.07	0.07
AB-CD	0.00	4.26	0.0	A	0.37	0.37
AB-C					688	688
D-ABC	0.00	0.00	0.0	A	0	0
C-D					0	0
C-A					450	450
C-B					30	30
CD-AB	0.09	5.03	0.2	A	71	71
CD-A					409	409

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	105	26	0.00	337	0.313	104	0.0	0.4	15.303	C
B-A	183	46	0.00	292	0.627	177	0.0	1.5	29.925	D
A-B	127	32	0.00			127				
A-C	584	146	0.00			584				
A-D	0.07	0.02	0.00			0.07				
AB-CD	0.36	0.09	0.00	845	0.000	0.36	0.0	0.0	4.259	A
AB-C	687	172	0.00			687				
D-ABC	0	0	0.00	446	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	450	112	0.00			450				
C-B	30	8	0.00			30				
CD-AB	71	18	0.00	788	0.090	70	0.0	0.2	5.015	A
CD-A	409	102	0.00			409				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	105	26	0.00	326	0.323	105	0.4	0.5	16.296	C
B-A	183	46	0.00	291	0.629	183	1.5	1.6	33.024	D
A-B	127	32	0.00			127				
A-C	584	146	0.00			584				
A-D	0.07	0.02	0.00			0.07				
AB-CD	0.37	0.09	0.00	847	0.000	0.37	0.0	0.0	4.252	A
AB-C	689	172	0.00			689				
D-ABC	0	0	0.00	446	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	450	112	0.00			450				
C-B	30	8	0.00			30				
CD-AB	71	18	0.00	788	0.090	71	0.2	0.2	5.026	A
CD-A	409	102	0.00			409				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	105	26	0.00	326	0.324	105	0.5	0.5	16.354	C
B-A	183	46	0.00	291	0.629	183	1.6	1.6	33.193	D
A-B	127	32	0.00			127				
A-C	584	146	0.00			584				
A-D	0.07	0.02	0.00			0.07				
AB-CD	0.37	0.09	0.00	847	0.000	0.37	0.0	0.0	4.251	A
AB-C	689	172	0.00			689				
D-ABC	0	0	0.00	446	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	450	112	0.00			450				
C-B	30	8	0.00			30				
CD-AB	71	18	0.00	788	0.090	71	0.2	0.2	5.026	A
CD-A	409	102	0.00			409				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Ped demand (Ped/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-CD	105	26	0.00	325	0.324	105	0.5	0.5	16.370	C
B-A	183	46	0.00	291	0.629	183	1.6	1.7	33.250	D
A-B	127	32	0.00			127				
A-C	584	146	0.00			584				
A-D	0.07	0.02	0.00			0.07				
AB-CD	0.37	0.09	0.00	847	0.000	0.37	0.0	0.0	4.249	A
AB-C	689	172	0.00			689				
D-ABC	0	0	0.00	446	0.000	0	0.0	0.0	0.000	A
C-D	0	0	0.00			0				
C-A	450	112	0.00			450				
C-B	30	8	0.00			30				
CD-AB	71	18	0.00	788	0.090	71	0.2	0.2	5.026	A
CD-A	409	102	0.00			409				

Junctions 11		
ARCADY 11 - Roundabout Module		
Version: 11.0.0.2177		
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Filename: Import of Lower Luton Road, Station Road, B653.j11

Path: O:\London\Vectos\Projects\Projects\140000\141499 - Lower Luton Rd Harpenden site\MODELLING\J11

Report generation date: 02/07/2025 08:28:41

-
- »2024 | 1-Baseline | AM
 - »2024 | 1-Baseline | PM
 - »2036 | 2-Future Baseline | AM
 - »2036 | 2-Future Baseline | PM
 - »2036 | 3-Future + Proposed Development | AM
 - »2036 | 3-Future + Proposed Development | PM
 - »2036 | 4-Future + Full Allocation | AM
 - »2036 | 4-Future + Full Allocation | PM
 - »2036 | 5-Future + Development with TP | AM
 - »2036 | 5-Future + Development with TP | PM
 - »2036 | 6-Future + Full Allocation with TP | AM
 - »2036 | 6-Future + Full Allocation with TP | PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2024 - 1-Baseline									
1 - B653 Lower Luton Rd (E)	D1	2.9	15.28	0.75	C	D2	1.6	9.56	0.62	A
2 - Station Rd		1.9	16.24	0.66	C		3.1	24.59	0.76	C
3 - B653 Lower Luton Rd (W)		2.6	14.38	0.73	B		0.8	6.87	0.45	A
	2036 - 2-Future Baseline									
1 - B653 Lower Luton Rd (E)	D3	3.9	19.24	0.80	C	D4	1.9	10.64	0.66	B
2 - Station Rd		2.4	19.35	0.71	C		4.6	34.50	0.83	D
3 - B653 Lower Luton Rd (W)		3.3	17.52	0.77	C		0.9	7.32	0.48	A
	2036 - 3-Future + Proposed Development									
1 - B653 Lower Luton Rd (E)	D5	5.3	25.43	0.85	D	D6	2.3	12.07	0.70	B
2 - Station Rd		4.4	32.10	0.82	D		9.9	69.53	0.93	F
3 - B653 Lower Luton Rd (W)		6.3	29.89	0.87	D		1.1	7.91	0.52	A
	2036 - 4-Future + Full Allocation									
1 - B653 Lower Luton Rd (E)	D7	5.7	27.33	0.86	D	D8	2.4	12.76	0.71	B
2 - Station Rd		4.5	32.59	0.82	D		15.5	105.19	0.97	F
3 - B653 Lower Luton Rd (W)		8.3	38.55	0.90	E		1.1	8.12	0.53	A
	2036 - 5-Future + Development with TP									
1 - B653 Lower Luton Rd (E)	D15	5.1	24.64	0.84	C	D16	2.2	11.92	0.69	B
2 - Station Rd		4.1	30.14	0.81	D		9.0	63.70	0.92	F
3 - B653 Lower Luton Rd (W)		5.8	27.96	0.86	D		1.1	7.85	0.52	A
	2036 - 6-Future + Full Allocation with TP									
1 - B653 Lower Luton Rd (E)	D17	5.4	26.24	0.85	D	D18	2.4	12.51	0.71	B
2 - Station Rd		4.1	30.53	0.81	D		13.2	90.76	0.95	F
3 - B653 Lower Luton Rd (W)		7.4	34.61	0.89	D		1.1	8.04	0.53	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	11/10/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SLR\Tom.Monk
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
JUNCTIONS 9	5.75						0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2024	1-Baseline	AM	FLAT	07:30	08:30	60	15	✓		
D2	2024	1-Baseline	PM	FLAT	16:45	17:45	60	15	✓		
D3	2036	2-Future Baseline	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523)+D13
D4	2036	2-Future Baseline	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445)+D14
D5	2036	3-Future + Proposed Development	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D9
D6	2036	3-Future + Proposed Development	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D10
D7	2036	4-Future + Full Allocation	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D11
D8	2036	4-Future + Full Allocation	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D12
D9		DEV	AM	FLAT	07:30	08:30	60	15			
D10		DEV	PM	FLAT	16:45	17:45	60	15			
D11		FULL ALLOCATION	AM	FLAT	07:30	08:30	60	15			
D12		FULL ALLOCATION	PM	FLAT	16:45	17:45	60	15			
D13		COMM	AM	FLAT	07:30	08:30	60	15			
D14		COMM	PM	FLAT	16:45	17:45	60	15			
D15	2036	5-Future + Development with TP	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+(D9*0.9)
D16	2036	5-Future + Development with TP	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+(D10*0.9)
D17	2036	6-Future + Full Allocation with TP	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+(D11*0.9)
D18	2036	6-Future + Full Allocation with TP	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+(D12*0.9)

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2024 | 1-Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	15.17	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		15.17	C

Arms

Arms

Arm	Name	Description
1	B653 Lower Luton Rd (E)	
2	Station Rd	
3	B653 Lower Luton Rd (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - B653 Lower Luton Rd (E)	3.74	3.74	4.29	8.8	7.97	10.33	0.0	✓
2 - Station Rd	2.64	2.64	4.70	2.8	8.09	10.91	0.0	
3 - B653 Lower Luton Rd (W)	3.98	3.98	4.20	2.5	13.05	14.65	0.0	✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - B653 Lower Luton Rd (E)	0.527	1104
2 - Station Rd	0.603	879
3 - B653 Lower Luton Rd (W)	0.544	1115

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	1-Baseline	AM	FLAT	07:30	08:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	704	100.000
2 - Station Rd		FLAT	✓	422	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	663	100.000

Origin-Destination Data

Demand (Veh/hr)

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
1 - B653 Lower Luton Rd (E)		0	363	341
2 - Station Rd		316	0	106
3 - B653 Lower Luton Rd (W)		453	210	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
1 - B653 Lower Luton Rd (E)		0	6	5
2 - Station Rd		3	0	3
3 - B653 Lower Luton Rd (W)		3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.75	15.28	2.9	C	704	704
2 - Station Rd	0.66	16.24	1.9	C	422	422
3 - B653 Lower Luton Rd (W)	0.73	14.38	2.6	B	663	663

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	704	176	207	941	0.748	693	757	0.0	2.8	13.959	B
2 - Station Rd	422	106	336	647	0.653	415	564	0.0	1.8	15.098	C
3 - B653 Lower Luton Rd (W)	663	166	311	916	0.724	653	440	0.0	2.5	13.240	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	704	176	210	939	0.750	704	769	2.8	2.9	15.217	C
2 - Station Rd	422	106	341	644	0.656	422	573	1.8	1.9	16.189	C
3 - B653 Lower Luton Rd (W)	663	166	316	913	0.726	663	447	2.5	2.6	14.323	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	704	176	210	939	0.750	704	769	2.9	2.9	15.264	C
2 - Station Rd	422	106	341	643	0.656	422	573	1.9	1.9	16.227	C
3 - B653 Lower Luton Rd (W)	663	166	316	913	0.726	663	447	2.6	2.6	14.363	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	704	176	210	939	0.750	704	769	2.9	2.9	15.280	C
2 - Station Rd	422	106	341	643	0.656	422	573	1.9	1.9	16.239	C
3 - B653 Lower Luton Rd (W)	663	166	316	913	0.726	663	447	2.6	2.6	14.375	B

2024 | 1-Baseline | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	13.40	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		13.40	B

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2024	1-Baseline	PM	FLAT	16:45	17:45	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	614	100.000
2 - Station Rd		FLAT	✓	469	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	434	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
From	1 - B653 Lower Luton Rd (E)	1	202	411
	2 - Station Rd	276	0	193
	3 - B653 Lower Luton Rd (W)	282	151	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
From	1 - B653 Lower Luton Rd (E)	0	2	4
	2 - Station Rd	0	0	2
	3 - B653 Lower Luton Rd (W)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.62	9.56	1.6	A	614	614
2 - Station Rd	0.76	24.59	3.1	C	469	469
3 - B653 Lower Luton Rd (W)	0.45	6.87	0.8	A	434	434

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	614	153	151	991	0.619	608	550	0.0	1.6	9.240	A
2 - Station Rd	469	117	409	617	0.760	458	350	0.0	2.9	21.249	C
3 - B653 Lower Luton Rd (W)	434	108	270	961	0.451	431	596	0.0	0.8	6.746	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	614	153	152	991	0.620	614	559	1.6	1.6	9.549	A
2 - Station Rd	469	117	413	615	0.763	468	353	2.9	3.0	24.329	C
3 - B653 Lower Luton Rd (W)	434	108	277	958	0.453	434	605	0.8	0.8	6.870	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	614	153	152	991	0.620	614	559	1.6	1.6	9.553	A
2 - Station Rd	469	117	413	615	0.763	469	353	3.0	3.1	24.521	C
3 - B653 Lower Luton Rd (W)	434	108	277	958	0.453	434	605	0.8	0.8	6.872	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	614	153	152	991	0.620	614	559	1.6	1.6	9.555	A
2 - Station Rd	469	117	413	615	0.763	469	353	3.1	3.1	24.587	C
3 - B653 Lower Luton Rd (W)	434	108	277	958	0.453	434	605	0.8	0.8	6.873	A

2036 | 2-Future Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	18.64	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		18.64	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D3	2036	2-Future Baseline	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523) +D13

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	748	100.000
2 - Station Rd		FLAT	✓	447	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	698	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
From	1 - B653 Lower Luton Rd (E)	0	389	359
	2 - Station Rd	336	0	112
	3 - B653 Lower Luton Rd (W)	477	221	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	6	5
	2 - Station Rd	3	0	3
	3 - B653 Lower Luton Rd (W)	3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.80	19.24	3.9	C	748	748
2 - Station Rd	0.71	19.35	2.4	C	447	447
3 - B653 Lower Luton Rd (W)	0.77	17.52	3.3	C	698	698

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	748	187	217	936	0.799	733	797	0.0	3.6	16.745	C
2 - Station Rd	447	112	352	637	0.702	438	598	0.0	2.2	17.437	C
3 - B653 Lower Luton Rd (W)	698	174	329	906	0.770	685	461	0.0	3.1	15.539	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	748	187	221	934	0.801	747	811	3.6	3.8	19.061	C
2 - Station Rd	447	112	358	633	0.706	447	609	2.2	2.3	19.238	C
3 - B653 Lower Luton Rd (W)	698	174	335	903	0.773	697	470	3.1	3.3	17.392	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	748	187	221	934	0.801	748	812	3.8	3.9	19.194	C
2 - Station Rd	447	112	359	633	0.707	447	610	2.3	2.3	19.329	C
3 - B653 Lower Luton Rd (W)	698	174	335	903	0.773	697	470	3.3	3.3	17.489	C

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	748	187	221	934	0.801	748	812	3.9	3.9	19.241	C
2 - Station Rd	447	112	359	633	0.707	447	610	2.3	2.4	19.349	C
3 - B653 Lower Luton Rd (W)	698	174	335	902	0.773	698	470	3.3	3.3	17.521	C

2036 | 2-Future Baseline | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	17.09	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		17.09	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2036	2-Future Baseline	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445) +D14

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	649	100.000
2 - Station Rd		FLAT	✓	501	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	453	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
From	1 - B653 Lower Luton Rd (E)	1	219	429
	2 - Station Rd	299	0	202
	3 - B653 Lower Luton Rd (W)	295	158	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	2	4
	2 - Station Rd	0	0	2
	3 - B653 Lower Luton Rd (W)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.66	10.64	1.9	B	649	649
2 - Station Rd	0.83	34.50	4.6	D	501	501
3 - B653 Lower Luton Rd (W)	0.48	7.32	0.9	A	453	453

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	649	162	158	988	0.657	642	583	0.0	1.9	10.189	B
2 - Station Rd	501	125	426	606	0.826	485	373	0.0	4.0	26.914	D
3 - B653 Lower Luton Rd (W)	453	113	291	950	0.477	450	621	0.0	0.9	7.148	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	649	162	159	988	0.657	649	594	1.9	1.9	10.626	B
2 - Station Rd	501	125	431	603	0.830	499	377	4.0	4.4	33.502	D
3 - B653 Lower Luton Rd (W)	453	113	299	946	0.479	453	631	0.9	0.9	7.311	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	649	162	159	988	0.657	649	595	1.9	1.9	10.635	B
2 - Station Rd	501	125	431	603	0.830	500	377	4.4	4.5	34.223	D
3 - B653 Lower Luton Rd (W)	453	113	300	945	0.480	453	632	0.9	0.9	7.316	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	649	162	159	988	0.657	649	595	1.9	1.9	10.637	B
2 - Station Rd	501	125	431	603	0.830	501	377	4.5	4.6	34.505	D
3 - B653 Lower Luton Rd (W)	453	113	300	945	0.480	453	632	0.9	0.9	7.318	A

2036 | 3-Future + Proposed Development | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	28.74	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		28.74	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2036	3-Future + Proposed Development	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D9

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	771	100.000
2 - Station Rd		FLAT	✓	511	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	788	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	389	382
	2 - Station Rd	336	0	176
	3 - B653 Lower Luton Rd (W)	517	271	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	6	5
	2 - Station Rd	3	0	2
	3 - B653 Lower Luton Rd (W)	3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.85	25.43	5.3	D	771	771
2 - Station Rd	0.82	32.10	4.4	D	511	511
3 - B653 Lower Luton Rd (W)	0.87	29.89	6.3	D	788	788

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	771	193	264	914	0.843	752	828	0.0	4.6	20.375	C
2 - Station Rd	511	128	373	627	0.815	496	643	0.0	3.8	25.170	D
3 - B653 Lower Luton Rd (W)	788	197	326	911	0.865	766	543	0.0	5.3	22.453	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	771	193	270	911	0.846	769	850	4.6	5.0	24.815	C
2 - Station Rd	511	128	381	622	0.822	509	658	3.8	4.2	31.154	D
3 - B653 Lower Luton Rd (W)	788	197	334	906	0.870	785	556	5.3	5.9	28.725	D

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	771	193	271	911	0.847	770	851	5.0	5.2	25.257	D
2 - Station Rd	511	128	382	622	0.822	510	659	4.2	4.3	31.846	D
3 - B653 Lower Luton Rd (W)	788	197	335	905	0.870	787	557	5.9	6.2	29.556	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	771	193	271	910	0.847	770	852	5.2	5.3	25.425	D
2 - Station Rd	511	128	382	621	0.822	511	660	4.3	4.4	32.102	D
3 - B653 Lower Luton Rd (W)	788	197	335	905	0.870	787	557	6.2	6.3	29.889	D

2036 | 3-Future + Proposed Development | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	28.91	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		28.91	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2036	3-Future + Proposed Development	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D10

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	679	100.000
2 - Station Rd		FLAT	✓	542	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	491	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	From			
	1 - B653 Lower Luton Rd (E)	1	219	459
	2 - Station Rd	299	0	243
	3 - B653 Lower Luton Rd (W)	310	181	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	2	4
	2 - Station Rd	0	0	2
	3 - B653 Lower Luton Rd (W)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.70	12.07	2.3	B	679	679
2 - Station Rd	0.93	69.53	9.9	F	542	542
3 - B653 Lower Luton Rd (W)	0.52	7.91	1.1	A	491	491

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	679	170	180	978	0.695	671	592	0.0	2.2	11.410	B
2 - Station Rd	542	135	455	589	0.919	514	395	0.0	6.9	39.470	E
3 - B653 Lower Luton Rd (W)	491	123	285	954	0.515	487	685	0.0	1.0	7.649	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	679	170	182	977	0.695	679	606	2.2	2.2	12.054	B
2 - Station Rd	542	135	461	586	0.925	535	400	6.9	8.5	60.381	F
3 - B653 Lower Luton Rd (W)	491	123	297	947	0.519	491	700	1.0	1.1	7.888	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	679	170	182	977	0.695	679	608	2.2	2.2	12.068	B
2 - Station Rd	542	135	461	586	0.925	539	400	8.5	9.3	66.288	F
3 - B653 Lower Luton Rd (W)	491	123	298	947	0.519	491	701	1.1	1.1	7.906	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	679	170	182	977	0.695	679	609	2.2	2.3	12.073	B
2 - Station Rd	542	135	461	586	0.925	540	400	9.3	9.9	69.526	F
3 - B653 Lower Luton Rd (W)	491	123	299	946	0.519	491	702	1.1	1.1	7.914	A

2036 | 4-Future + Full Allocation | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	32.91	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		32.91	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2036	4-Future + Full Allocation	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D11

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	774	100.000
2 - Station Rd		FLAT	✓	511	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	818	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	389	385
	2 - Station Rd	336	0	176
	3 - B653 Lower Luton Rd (W)	532	286	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	6	5
	2 - Station Rd	3	0	2
	3 - B653 Lower Luton Rd (W)	3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.86	27.33	5.7	D	774	774
2 - Station Rd	0.82	32.59	4.5	D	511	511
3 - B653 Lower Luton Rd (W)	0.90	38.55	8.3	E	818	818

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	774	193	277	908	0.852	754	840	0.0	4.9	21.311	C
2 - Station Rd	511	128	375	626	0.817	496	656	0.0	3.8	25.383	D
3 - B653 Lower Luton Rd (W)	818	204	325	911	0.897	791	545	0.0	6.6	26.010	D

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	774	193	285	904	0.856	772	863	4.9	5.4	26.490	D
2 - Station Rd	511	128	384	620	0.824	509	673	3.8	4.2	31.563	D
3 - B653 Lower Luton Rd (W)	818	204	334	907	0.902	814	559	6.6	7.6	35.867	E

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	774	193	285	903	0.857	773	866	5.4	5.6	27.089	D
2 - Station Rd	511	128	384	620	0.825	510	674	4.2	4.4	32.309	D
3 - B653 Lower Luton Rd (W)	818	204	335	906	0.902	816	560	7.6	8.1	37.708	E

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	774	193	286	903	0.857	773	866	5.6	5.7	27.327	D
2 - Station Rd	511	128	385	620	0.825	511	674	4.4	4.5	32.586	D
3 - B653 Lower Luton Rd (W)	818	204	335	906	0.902	817	560	8.1	8.3	38.546	E

2036 | 4-Future + Full Allocation | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	40.61	E

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		40.61	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2036	4-Future + Full Allocation	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D12

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	692	100.000
2 - Station Rd		FLAT	✓	559	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	504	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	1	219	472
	2 - Station Rd	299	0	260
	3 - B653 Lower Luton Rd (W)	316	188	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	2	4
	2 - Station Rd	0	0	2
	3 - B653 Lower Luton Rd (W)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.71	12.76	2.4	B	692	692
2 - Station Rd	0.97	105.19	15.5	F	559	559
3 - B653 Lower Luton Rd (W)	0.53	8.12	1.1	A	504	504

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	692	173	187	975	0.710	683	594	0.0	2.3	11.973	B
2 - Station Rd	559	140	468	582	0.960	523	402	0.0	8.9	47.222	E
3 - B653 Lower Luton Rd (W)	504	126	281	956	0.528	500	710	0.0	1.1	7.821	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	692	173	189	974	0.711	692	609	2.3	2.4	12.731	B
2 - Station Rd	559	140	474	578	0.967	546	407	8.9	12.0	81.174	F
3 - B653 Lower Luton Rd (W)	504	126	294	949	0.531	504	727	1.1	1.1	8.085	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	692	173	189	974	0.711	692	612	2.4	2.4	12.751	B
2 - Station Rd	559	140	474	578	0.967	551	407	12.0	14.0	95.438	F
3 - B653 Lower Luton Rd (W)	504	126	296	948	0.532	504	729	1.1	1.1	8.111	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	692	173	189	974	0.711	692	613	2.4	2.4	12.757	B
2 - Station Rd	559	140	474	578	0.967	553	407	14.0	15.5	105.190	F
3 - B653 Lower Luton Rd (W)	504	126	297	947	0.532	504	730	1.1	1.1	8.124	A

2036 | 5-Future + Development with TP | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	27.23	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		27.23	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2036	5-Future + Development with TP	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+(D9*0.9)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	769	100.000
2 - Station Rd		FLAT	✓	505	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	779	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	From			
	1 - B653 Lower Luton Rd (E)	0	389	380
	2 - Station Rd	336	0	169
	3 - B653 Lower Luton Rd (W)	513	266	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	6	5
	2 - Station Rd	3	0	2
	3 - B653 Lower Luton Rd (W)	3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.84	24.64	5.1	C	769	769
2 - Station Rd	0.81	30.14	4.1	D	505	505
3 - B653 Lower Luton Rd (W)	0.86	27.96	5.8	D	779	779

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	769	192	259	916	0.839	750	826	0.0	4.5	19.960	C
2 - Station Rd	505	126	371	628	0.804	490	639	0.0	3.6	24.152	C
3 - B653 Lower Luton Rd (W)	779	195	326	910	0.856	759	535	0.0	5.0	21.556	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	769	192	265	913	0.842	767	846	4.5	4.9	24.108	C
2 - Station Rd	505	126	379	623	0.810	503	654	3.6	3.9	29.396	D
3 - B653 Lower Luton Rd (W)	779	195	335	905	0.860	777	548	5.0	5.5	27.053	D

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	769	192	266	913	0.842	768	847	4.9	5.0	24.495	C
2 - Station Rd	505	126	379	623	0.810	504	654	3.9	4.0	29.944	D
3 - B653 Lower Luton Rd (W)	779	195	335	905	0.860	778	548	5.5	5.7	27.708	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	769	192	266	913	0.842	768	848	5.0	5.1	24.643	C
2 - Station Rd	505	126	379	623	0.811	504	655	4.0	4.1	30.143	D
3 - B653 Lower Luton Rd (W)	779	195	335	905	0.860	778	548	5.7	5.8	27.960	D

2036 | 5-Future + Development with TP | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	26.98	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		26.98	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2036	5-Future + Development with TP	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+(D10*0.9)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	676	100.000
2 - Station Rd		FLAT	✓	538	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	488	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	1	219	456
	2 - Station Rd	299	0	238
	3 - B653 Lower Luton Rd (W)	308	178	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	2	4
	2 - Station Rd	0	0	2
	3 - B653 Lower Luton Rd (W)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.69	11.92	2.2	B	676	676
2 - Station Rd	0.92	63.70	9.0	F	538	538
3 - B653 Lower Luton Rd (W)	0.52	7.85	1.1	A	488	488

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	676	169	178	979	0.691	668	591	0.0	2.1	11.275	B
2 - Station Rd	538	134	453	591	0.910	512	393	0.0	6.5	37.874	E
3 - B653 Lower Luton Rd (W)	488	122	286	953	0.511	483	679	0.0	1.0	7.597	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	676	169	179	978	0.691	676	605	2.1	2.2	11.895	B
2 - Station Rd	538	134	458	588	0.915	532	397	6.5	7.9	56.457	F
3 - B653 Lower Luton Rd (W)	488	122	297	947	0.515	487	693	1.0	1.0	7.828	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	676	169	179	978	0.691	676	607	2.2	2.2	11.909	B
2 - Station Rd	538	134	458	587	0.915	535	397	7.9	8.5	61.213	F
3 - B653 Lower Luton Rd (W)	488	122	299	946	0.515	487	695	1.0	1.1	7.844	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	676	169	179	978	0.691	676	607	2.2	2.2	11.917	B
2 - Station Rd	538	134	458	587	0.915	536	397	8.5	9.0	63.698	F
3 - B653 Lower Luton Rd (W)	488	122	299	946	0.515	488	695	1.1	1.1	7.851	A

2036 | 6-Future + Full Allocation with TP | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	30.47	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		30.47	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D17	2036	6-Future + Full Allocation with TP	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+(D11*0.9)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	771	100.000
2 - Station Rd		FLAT	✓	505	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	806	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	389	382
	2 - Station Rd	336	0	169
	3 - B653 Lower Luton Rd (W)	526	279	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	6	5
	2 - Station Rd	3	0	2
	3 - B653 Lower Luton Rd (W)	3	2	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.85	26.24	5.4	D	771	771
2 - Station Rd	0.81	30.53	4.1	D	505	505
3 - B653 Lower Luton Rd (W)	0.89	34.61	7.4	D	806	806

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	771	193	271	910	0.847	752	836	0.0	4.8	20.779	C
2 - Station Rd	505	126	373	627	0.805	490	650	0.0	3.6	24.702	C
3 - B653 Lower Luton Rd (W)	806	201	326	911	0.885	782	537	0.0	6.0	24.522	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	771	193	278	907	0.851	770	859	4.8	5.2	25.538	D
2 - Station Rd	505	126	381	621	0.812	503	666	3.6	3.9	29.731	D
3 - B653 Lower Luton Rd (W)	806	201	335	906	0.889	802	550	6.0	6.9	32.724	D

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	771	193	279	906	0.851	771	860	5.2	5.3	26.048	D
2 - Station Rd	505	126	382	621	0.813	504	668	3.9	4.1	30.318	D
3 - B653 Lower Luton Rd (W)	806	201	335	906	0.889	804	551	6.9	7.2	34.043	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	771	193	279	906	0.851	771	861	5.3	5.4	26.244	D
2 - Station Rd	505	126	382	621	0.813	504	668	4.1	4.1	30.530	D
3 - B653 Lower Luton Rd (W)	806	201	335	906	0.890	805	551	7.2	7.4	34.608	D

2036 | 6-Future + Full Allocation with TP | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	35.89	E

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		35.89	E

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D18	2036	6-Future + Full Allocation with TP	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+(D12*0.9)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - B653 Lower Luton Rd (E)		FLAT	✓	688	100.000
2 - Station Rd		FLAT	✓	553	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	499	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	1	219	468
	2 - Station Rd	299	0	254
	3 - B653 Lower Luton Rd (W)	313	185	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - B653 Lower Luton Rd (E)	2 - Station Rd	3 - B653 Lower Luton Rd (W)
	1 - B653 Lower Luton Rd (E)	0	2	4
	2 - Station Rd	0	0	2
	3 - B653 Lower Luton Rd (W)	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - B653 Lower Luton Rd (E)	0.71	12.51	2.4	B	688	688
2 - Station Rd	0.95	90.76	13.2	F	553	553
3 - B653 Lower Luton Rd (W)	0.53	8.04	1.1	A	499	499

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	688	172	184	976	0.705	679	593	0.0	2.3	11.768	B
2 - Station Rd	553	138	464	584	0.946	521	399	0.0	8.1	44.411	E
3 - B653 Lower Luton Rd (W)	499	125	283	955	0.523	495	702	0.0	1.1	7.751	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	688	172	186	976	0.705	688	608	2.3	2.3	12.483	B
2 - Station Rd	553	138	470	581	0.952	543	404	8.1	10.6	73.321	F
3 - B653 Lower Luton Rd (W)	499	125	295	949	0.526	499	718	1.1	1.1	8.006	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	688	172	186	976	0.705	688	611	2.3	2.4	12.501	B
2 - Station Rd	553	138	470	581	0.953	547	404	10.6	12.1	83.993	F
3 - B653 Lower Luton Rd (W)	499	125	297	947	0.527	499	720	1.1	1.1	8.030	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - B653 Lower Luton Rd (E)	688	172	186	976	0.705	688	612	2.4	2.4	12.508	B
2 - Station Rd	553	138	470	581	0.953	549	404	12.1	13.2	90.756	F
3 - B653 Lower Luton Rd (W)	499	125	298	947	0.527	499	721	1.1	1.1	8.041	A

Junctions 11				
ARCADY 11 - Roundabout Module				
Version: 11.0.0.2177				
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Filename: Lower Luton Road, Common Lane.j11

Path: O:\London\Vectos\Projects\Projects\140000\141499 - Lower Luton Rd Harpenden site\MODELLING\J11

Report generation date: 02/07/2025 08:20:05

- »2024 | 1-Baseline | AM
- »2024 | 1-Baseline | PM
- »2036 | 2-Future Baseline | AM
- »2036 | 2-Future Baseline | PM
- »2036 | 3-Future + Proposed Development | AM
- »2036 | 3-Future + Proposed Development | PM
- »2036 | 4-Future + Full Allocation | AM
- »2036 | 4-Future + Full Allocation | PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (Veh)	Delay (s)	RFC	LOS	Set ID	Queue (Veh)	Delay (s)	RFC	LOS
	2024 - 1-Baseline									
1 - Common Ln	D1	0.5	14.60	0.35	B	D2	0.1	7.62	0.11	A
2 - B653 Lower Luton Rd (E)		2.1	11.50	0.67	B		1.6	9.34	0.62	A
3 - B653 Lower Luton Rd (W)		4.0	19.05	0.80	C		1.3	8.64	0.57	A
	2036 - 2-Future Baseline									
1 - Common Ln	D3	0.6	16.80	0.39	C	D4	0.1	8.02	0.12	A
2 - B653 Lower Luton Rd (E)		2.5	13.31	0.72	B		1.9	10.30	0.65	B
3 - B653 Lower Luton Rd (W)		5.3	24.64	0.85	C		1.5	9.47	0.61	A
	2036 - 3-Future + Proposed Development									
1 - Common Ln	D5	0.7	18.94	0.42	C	D6	0.1	8.19	0.12	A
2 - B653 Lower Luton Rd (E)		2.8	14.44	0.74	B		2.1	11.22	0.68	B
3 - B653 Lower Luton Rd (W)		7.4	32.95	0.89	D		1.6	9.85	0.62	A
	2036 - 4-Future + Full Allocation									
1 - Common Ln	D7	0.8	19.88	0.43	C	D8	0.1	8.26	0.12	A
2 - B653 Lower Luton Rd (E)		2.9	14.60	0.74	B		2.3	11.68	0.69	B
3 - B653 Lower Luton Rd (W)		8.6	37.53	0.90	E		1.7	10.01	0.63	B

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	11/10/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SLR\Tom.Monk
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
JUNCTIONS 9	5.75						0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2024	1-Baseline	AM	FLAT	07:30	08:30	60	15	✓		
D2	2024	1-Baseline	PM	FLAT	16:45	17:45	60	15	✓		
D3	2036	2-Future Baseline	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523) +D13
D4	2036	2-Future Baseline	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445) +D14
D5	2036	3-Future + Proposed Development	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D9
D6	2036	3-Future + Proposed Development	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D10
D7	2036	4-Future + Full Allocation	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D11
D8	2036	4-Future + Full Allocation	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D12
D9		DEV	AM	FLAT	07:30	08:30	60	15			
D10		DEV	PM	FLAT	16:45	17:45	60	15			
D11		FULL ALLOCATION	AM	FLAT	07:30	08:30	60	15			
D12		FULL ALLOCATION	PM	FLAT	16:45	17:45	60	15			
D13		COMM	AM	FLAT	07:30	08:30	60	15			
D14		COMM	PM	FLAT	16:45	17:45	60	15			

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2024 | 1-Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 91% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	15.45	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		15.45	C

Arms

Arms

Arm	Name	Description
1	Common Ln	
2	B653 Lower Luton Rd (E)	
3	B653 Lower Luton Rd (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Common Ln	3.68	3.68	5.70	1.0	5.73	11.42	0.0	
2 - B653 Lower Luton Rd (E)	3.20	3.20	3.26	8.2	16.99	16.72	0.0	
3 - B653 Lower Luton Rd (W)	2.93	2.93	3.54	0.9	7.74	10.17	0.0	✓

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Common Ln	0.630	860
2 - B653 Lower Luton Rd (E)	0.659	1061
3 - B653 Lower Luton Rd (W)	0.486	998

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	1-Baseline	AM	FLAT	07:30	08:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Common Ln		FLAT	✓	132	100.000
2 - B653 Lower Luton Rd (E)		FLAT	✓	648	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	763	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
From	1 - Common Ln	3	69	60
	2 - B653 Lower Luton Rd (E)	35	0	613
	3 - B653 Lower Luton Rd (W)	40	719	4

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
From	1 - Common Ln	0	6	0
	2 - B653 Lower Luton Rd (E)	3	0	6
	3 - B653 Lower Luton Rd (W)	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Common Ln	0.35	14.60	0.5	B	132	132
2 - B653 Lower Luton Rd (E)	0.67	11.50	2.1	B	648	648
3 - B653 Lower Luton Rd (W)	0.80	19.05	4.0	C	763	763

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	132	33	709	387	0.341	130	77	0.0	0.5	13.882	B
2 - B653 Lower Luton Rd (E)	648	162	66	961	0.674	640	773	0.0	2.0	10.951	B
3 - B653 Lower Luton Rd (W)	763	191	38	951	0.802	748	668	0.0	3.7	16.699	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	132	33	722	379	0.348	132	78	0.5	0.5	14.565	B
2 - B653 Lower Luton Rd (E)	648	162	67	961	0.674	648	787	2.0	2.0	11.490	B
3 - B653 Lower Luton Rd (W)	763	191	38	951	0.802	762	677	3.7	3.9	18.897	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	132	33	723	379	0.349	132	78	0.5	0.5	14.589	B
2 - B653 Lower Luton Rd (E)	648	162	67	961	0.674	648	788	2.0	2.0	11.502	B
3 - B653 Lower Luton Rd (W)	763	191	38	951	0.802	763	677	3.9	3.9	19.010	C

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	132	33	723	379	0.349	132	78	0.5	0.5	14.596	B
2 - B653 Lower Luton Rd (E)	648	162	67	961	0.674	648	788	2.0	2.1	11.504	B
3 - B653 Lower Luton Rd (W)	763	191	38	951	0.802	763	677	3.9	4.0	19.051	C

2024 | 1-Baseline | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 95% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	8.95	A

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		8.95	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2024	1-Baseline	PM	FLAT	16:45	17:45	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Common Ln		FLAT	✓	56	100.000
2 - B653 Lower Luton Rd (E)		FLAT	✓	622	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	547	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	5	26	25
	2 - B653 Lower Luton Rd (E)	46	0	576
	3 - B653 Lower Luton Rd (W)	42	503	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	0	4	0
	2 - B653 Lower Luton Rd (E)	6	0	3
	3 - B653 Lower Luton Rd (W)	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Common Ln	0.11	7.62	0.1	A	56	56
2 - B653 Lower Luton Rd (E)	0.62	9.34	1.6	A	622	622
3 - B653 Lower Luton Rd (W)	0.57	8.64	1.3	A	547	547

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	56	14	500	531	0.105	56	92	0.0	0.1	7.560	A
2 - B653 Lower Luton Rd (E)	622	155	32	1008	0.617	616	524	0.0	1.6	9.049	A
3 - B653 Lower Luton Rd (W)	547	137	50	964	0.568	542	597	0.0	1.3	8.436	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	56	14	505	528	0.106	56	93	0.1	0.1	7.619	A
2 - B653 Lower Luton Rd (E)	622	155	32	1007	0.617	622	529	1.6	1.6	9.332	A
3 - B653 Lower Luton Rd (W)	547	137	51	963	0.568	547	603	1.3	1.3	8.641	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	56	14	505	528	0.106	56	93	0.1	0.1	7.620	A
2 - B653 Lower Luton Rd (E)	622	155	32	1007	0.617	622	529	1.6	1.6	9.336	A
3 - B653 Lower Luton Rd (W)	547	137	51	963	0.568	547	603	1.3	1.3	8.642	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	56	14	505	528	0.106	56	93	0.1	0.1	7.620	A
2 - B653 Lower Luton Rd (E)	622	155	32	1007	0.617	622	529	1.6	1.6	9.338	A
3 - B653 Lower Luton Rd (W)	547	137	51	963	0.568	547	603	1.3	1.3	8.644	A

2036 | 2-Future Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 91% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	19.13	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		19.13	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D3	2036	2-Future Baseline	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523) +D13

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Common Ln		FLAT	✓	139	100.000
2 - B653 Lower Luton Rd (E)		FLAT	✓	689	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	806	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
From	1 - Common Ln	3	73	63
	2 - B653 Lower Luton Rd (E)	37	0	652
	3 - B653 Lower Luton Rd (W)	42	760	4

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	0	6	0
	2 - B653 Lower Luton Rd (E)	3	0	6
	3 - B653 Lower Luton Rd (W)	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Common Ln	0.39	16.80	0.6	C	139	139
2 - B653 Lower Luton Rd (E)	0.72	13.31	2.5	B	689	689
3 - B653 Lower Luton Rd (W)	0.85	24.64	5.3	C	806	806

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	746	364	0.381	137	81	0.0	0.6	15.643	C
2 - B653 Lower Luton Rd (E)	689	172	69	960	0.718	679	813	0.0	2.4	12.436	B
3 - B653 Lower Luton Rd (W)	806	201	39	950	0.848	787	709	0.0	4.8	20.108	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	763	354	0.393	139	82	0.6	0.6	16.729	C
2 - B653 Lower Luton Rd (E)	689	172	70	959	0.718	689	831	2.4	2.5	13.276	B
3 - B653 Lower Luton Rd (W)	806	201	40	950	0.848	805	719	4.8	5.1	24.176	C

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	763	353	0.393	139	82	0.6	0.6	16.787	C
2 - B653 Lower Luton Rd (E)	689	172	70	959	0.718	689	832	2.5	2.5	13.299	B
3 - B653 Lower Luton Rd (W)	806	201	40	950	0.848	805	719	5.1	5.3	24.510	C

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	764	353	0.393	139	82	0.6	0.6	16.802	C
2 - B653 Lower Luton Rd (E)	689	172	70	959	0.718	689	832	2.5	2.5	13.307	B
3 - B653 Lower Luton Rd (W)	806	201	40	950	0.848	806	719	5.3	5.3	24.642	C

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 95% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	9.83	A

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		9.83	A

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2036	2-Future Baseline	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445) +D14

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Common Ln		FLAT	✓	58	100.000
2 - B653 Lower Luton Rd (E)		FLAT	✓	658	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	582	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
From		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	5	27	26
	2 - B653 Lower Luton Rd (E)	48	0	610
	3 - B653 Lower Luton Rd (W)	44	536	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	0	4	0
	2 - B653 Lower Luton Rd (E)	6	0	3
	3 - B653 Lower Luton Rd (W)	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Common Ln	0.12	8.02	0.1	A	58	58
2 - B653 Lower Luton Rd (E)	0.65	10.30	1.9	B	658	658
3 - B653 Lower Luton Rd (W)	0.61	9.47	1.5	A	582	582

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	533	511	0.114	58	96	0.0	0.1	7.938	A
2 - B653 Lower Luton Rd (E)	658	164	33	1007	0.653	650	558	0.0	1.8	9.902	A
3 - B653 Lower Luton Rd (W)	582	146	53	963	0.605	576	631	0.0	1.5	9.182	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	538	508	0.115	58	97	0.1	0.1	8.016	A
2 - B653 Lower Luton Rd (E)	658	164	33	1007	0.653	658	563	1.8	1.9	10.296	B
3 - B653 Lower Luton Rd (W)	582	146	53	962	0.605	582	638	1.5	1.5	9.463	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	538	508	0.115	58	97	0.1	0.1	8.016	A
2 - B653 Lower Luton Rd (E)	658	164	33	1007	0.653	658	564	1.9	1.9	10.302	B
3 - B653 Lower Luton Rd (W)	582	146	53	962	0.605	582	638	1.5	1.5	9.466	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	538	508	0.115	58	97	0.1	0.1	8.016	A
2 - B653 Lower Luton Rd (E)	658	164	33	1007	0.653	658	564	1.9	1.9	10.304	B
3 - B653 Lower Luton Rd (W)	582	146	53	962	0.605	582	638	1.5	1.5	9.468	A

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 91% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	23.93	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		23.93	C

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2036	3-Future + Proposed Development	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D9

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Common Ln		FLAT	✓	139	100.000
2 - B653 Lower Luton Rd (E)		FLAT	✓	712	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	846	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
From	1 - Common Ln	3	73	63
	2 - B653 Lower Luton Rd (E)	37	0	675
	3 - B653 Lower Luton Rd (W)	42	800	4

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	0	6	0
	2 - B653 Lower Luton Rd (E)	3	0	6
	3 - B653 Lower Luton Rd (W)	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Common Ln	0.42	18.94	0.7	C	139	139
2 - B653 Lower Luton Rd (E)	0.74	14.44	2.8	B	712	712
3 - B653 Lower Luton Rd (W)	0.89	32.95	7.4	D	846	846

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	780	343	0.404	136	80	0.0	0.7	17.171	C
2 - B653 Lower Luton Rd (E)	712	178	69	962	0.740	701	847	0.0	2.7	13.324	B
3 - B653 Lower Luton Rd (W)	846	211	39	952	0.889	821	731	0.0	6.3	24.162	C

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	801	330	0.421	139	82	0.7	0.7	18.775	C
2 - B653 Lower Luton Rd (E)	712	178	70	961	0.741	712	870	2.7	2.8	14.391	B
3 - B653 Lower Luton Rd (W)	846	211	40	951	0.889	843	742	6.3	7.0	31.540	D

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	803	329	0.422	139	82	0.7	0.7	18.901	C
2 - B653 Lower Luton Rd (E)	712	178	70	961	0.741	712	871	2.8	2.8	14.428	B
3 - B653 Lower Luton Rd (W)	846	211	40	951	0.889	845	742	7.0	7.3	32.522	D

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	803	329	0.422	139	82	0.7	0.7	18.939	C
2 - B653 Lower Luton Rd (E)	712	178	70	961	0.741	712	872	2.8	2.8	14.440	B
3 - B653 Lower Luton Rd (W)	846	211	40	951	0.889	845	742	7.3	7.4	32.954	D

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Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 95% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	10.49	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		10.49	B

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2036	3-Future + Proposed Development	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D10

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Common Ln		FLAT	✓	58	100.000
2 - B653 Lower Luton Rd (E)		FLAT	✓	688	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	597	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
From	1 - Common Ln	5	27	26
	2 - B653 Lower Luton Rd (E)	48	0	640
	3 - B653 Lower Luton Rd (W)	44	551	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	0	4	0
	2 - B653 Lower Luton Rd (E)	6	0	3
	3 - B653 Lower Luton Rd (W)	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Common Ln	0.12	8.19	0.1	A	58	58
2 - B653 Lower Luton Rd (E)	0.68	11.22	2.1	B	688	688
3 - B653 Lower Luton Rd (W)	0.62	9.85	1.6	A	597	597

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	548	502	0.117	58	96	0.0	0.1	8.103	A
2 - B653 Lower Luton Rd (E)	688	172	33	1008	0.682	679	572	0.0	2.1	10.692	B
3 - B653 Lower Luton Rd (W)	597	149	53	963	0.620	591	660	0.0	1.6	9.524	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	553	498	0.117	58	97	0.1	0.1	8.185	A
2 - B653 Lower Luton Rd (E)	688	172	33	1008	0.682	688	578	2.1	2.1	11.209	B
3 - B653 Lower Luton Rd (W)	597	149	53	963	0.621	597	668	1.6	1.6	9.846	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	553	498	0.117	58	97	0.1	0.1	8.185	A
2 - B653 Lower Luton Rd (E)	688	172	33	1008	0.682	688	579	2.1	2.1	11.220	B
3 - B653 Lower Luton Rd (W)	597	149	53	963	0.621	597	668	1.6	1.6	9.850	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	553	498	0.117	58	97	0.1	0.1	8.185	A
2 - B653 Lower Luton Rd (E)	688	172	33	1008	0.682	688	579	2.1	2.1	11.222	B
3 - B653 Lower Luton Rd (W)	597	149	53	963	0.621	597	668	1.6	1.6	9.851	A

2036 | 4-Future + Full Allocation | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 91% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	26.41	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		26.41	D

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2036	4-Future + Full Allocation	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D11

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Common Ln		FLAT	✓	139	100.000
2 - B653 Lower Luton Rd (E)		FLAT	✓	715	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	861	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
From	1 - Common Ln	3	73	63
	2 - B653 Lower Luton Rd (E)	37	0	678
	3 - B653 Lower Luton Rd (W)	42	815	4

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	0	6	0
	2 - B653 Lower Luton Rd (E)	3	0	6
	3 - B653 Lower Luton Rd (W)	3	3	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Common Ln	0.43	19.88	0.8	C	139	139
2 - B653 Lower Luton Rd (E)	0.74	14.60	2.9	B	715	715
3 - B653 Lower Luton Rd (W)	0.90	37.53	8.6	E	861	861

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	792	336	0.413	136	80	0.0	0.7	17.788	C
2 - B653 Lower Luton Rd (E)	715	179	69	962	0.743	704	859	0.0	2.7	13.446	B
3 - B653 Lower Luton Rd (W)	861	215	39	952	0.904	833	734	0.0	7.0	26.013	D

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	815	322	0.432	139	82	0.7	0.7	19.651	C
2 - B653 Lower Luton Rd (E)	715	179	70	961	0.744	715	884	2.7	2.8	14.551	B
3 - B653 Lower Luton Rd (W)	861	215	40	952	0.904	857	745	7.0	7.9	35.324	E

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	817	320	0.434	139	82	0.7	0.8	19.822	C
2 - B653 Lower Luton Rd (E)	715	179	70	961	0.744	715	886	2.8	2.8	14.588	B
3 - B653 Lower Luton Rd (W)	861	215	40	952	0.904	859	745	7.9	8.3	36.833	E

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	139	35	818	320	0.434	139	82	0.8	0.8	19.878	C
2 - B653 Lower Luton Rd (E)	715	179	70	961	0.744	715	886	2.8	2.9	14.603	B
3 - B653 Lower Luton Rd (W)	861	215	40	952	0.904	860	745	8.3	8.6	37.535	E

2036 | 4-Future + Full Allocation | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 3 have 95% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3	10.80	B

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		10.80	B

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2036	4-Future + Full Allocation	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D12

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Common Ln		FLAT	✓	58	100.000
2 - B653 Lower Luton Rd (E)		FLAT	✓	701	100.000
3 - B653 Lower Luton Rd (W)		FLAT	✓	603	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
From	1 - Common Ln	5	27	26
	2 - B653 Lower Luton Rd (E)	48	0	653
	3 - B653 Lower Luton Rd (W)	44	557	2

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

From	To			
		1 - Common Ln	2 - B653 Lower Luton Rd (E)	3 - B653 Lower Luton Rd (W)
	1 - Common Ln	0	4	0
	2 - B653 Lower Luton Rd (E)	6	0	3
	3 - B653 Lower Luton Rd (W)	0	1	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Common Ln	0.12	8.26	0.1	A	58	58
2 - B653 Lower Luton Rd (E)	0.69	11.68	2.3	B	701	701
3 - B653 Lower Luton Rd (W)	0.63	10.01	1.7	B	603	603

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	553	498	0.117	58	96	0.0	0.1	8.165	A
2 - B653 Lower Luton Rd (E)	701	175	33	1009	0.694	692	578	0.0	2.2	11.073	B
3 - B653 Lower Luton Rd (W)	603	151	53	963	0.626	597	672	0.0	1.6	9.666	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	559	495	0.118	58	97	0.1	0.1	8.254	A
2 - B653 Lower Luton Rd (E)	701	175	33	1009	0.695	700	584	2.2	2.2	11.657	B
3 - B653 Lower Luton Rd (W)	603	151	53	963	0.627	603	681	1.6	1.7	10.006	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	559	495	0.118	58	97	0.1	0.1	8.255	A
2 - B653 Lower Luton Rd (E)	701	175	33	1009	0.695	701	585	2.2	2.2	11.671	B
3 - B653 Lower Luton Rd (W)	603	151	53	963	0.627	603	681	1.7	1.7	10.012	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Common Ln	58	15	559	495	0.118	58	97	0.1	0.1	8.255	A
2 - B653 Lower Luton Rd (E)	701	175	33	1009	0.695	701	585	2.2	2.3	11.676	B
3 - B653 Lower Luton Rd (W)	603	151	53	963	0.627	603	681	1.7	1.7	10.014	B

Junctions 11	
ARCADY 11 - Roundabout Module	
Version: 11.0.0.2177	
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Filename: Import of Lower Luton Road, Lamer Lane (Calibrated).j11

Path: O:\London\Vectos\Projects\Projects\140000\141499 - Lower Luton Rd Harpenden site\MODELLING\J11

Report generation date: 02/07/2025 08:22:07

-
- »AM Calibration - 2024 | Baseline | AM
 - »AM Calibration - 2036 | Future Base | AM
 - »AM Calibration - 2036 | + Proposed Development | AM
 - »AM Calibration - 2036 | + Full Allocation | AM
 - »PM Calibration - 2024 | Baseline | PM
 - »PM Calibration - 2036 | Future Base | PM
 - »PM Calibration - 2036 | + Proposed Development | PM
 - »PM Calibration - 2036 | + Full Allocation | PM

Summary of junction performance

	AM		
	Queue (Veh)	Delay (s)	RFC
	AM Calibration - 2024 - Baseline		
1 - Lamer Ln N	3.0	39.37	0.76
2 - Coldicote Rd E	1.5	7.19	0.60
3 - Station Rd S	2.0	27.30	0.67
4 - Lower Luton Rd W	2.0	9.01	0.67
	AM Calibration - 2036 - Future Base		
1 - Lamer Ln N	4.8	61.25	0.84
2 - Coldicote Rd E	1.8	8.21	0.65
3 - Station Rd S	2.6	34.80	0.73
4 - Lower Luton Rd W	2.4	10.45	0.71
	AM Calibration - 2036 - + Proposed Development		
1 - Lamer Ln N	5.3	67.85	0.86
2 - Coldicote Rd E	1.9	8.34	0.65
3 - Station Rd S	2.7	35.63	0.73
4 - Lower Luton Rd W	2.6	11.01	0.73
	AM Calibration - 2036 - + Full Allocation		
1 - Lamer Ln N	5.6	71.01	0.86
2 - Coldicote Rd E	1.9	8.39	0.66
3 - Station Rd S	2.7	35.83	0.74
4 - Lower Luton Rd W	2.7	11.26	0.73

	PM		
	Queue (Veh)	Delay (s)	RFC
	PM Calibration - 2024 - Baseline		
1 - Lamer Ln N	1.0	21.85	0.51
2 - Coldicote Rd E	1.1	5.96	0.53
3 - Station Rd S	2.0	25.13	0.67
4 - Lower Luton Rd W	0.8	4.51	0.44
	PM Calibration - 2036 - Future Base		
1 - Lamer Ln N	1.2	24.85	0.56
2 - Coldicote Rd E	1.3	6.53	0.57
3 - Station Rd S	2.5	31.00	0.72
4 - Lower Luton Rd W	0.9	4.88	0.48
	PM Calibration - 2036 - + Proposed Development		
1 - Lamer Ln N	1.3	25.36	0.56
2 - Coldicote Rd E	1.4	6.81	0.59
3 - Station Rd S	2.8	34.23	0.75
4 - Lower Luton Rd W	0.9	4.96	0.49
	PM Calibration - 2036 - + Full Allocation		
1 - Lamer Ln N	1.3	25.57	0.56
2 - Coldicote Rd E	1.5	6.96	0.60
3 - Station Rd S	3.0	36.04	0.76
4 - Lower Luton Rd W	1.0	5.00	0.49

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	20/11/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SLR\Tom.Monk
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
5.75						0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2024	Baseline	AM	FLAT	07:30	08:30	60	15	✓		
D2	2024	Baseline	PM	FLAT	16:45	17:45	60	15	✓		
D3	2036	Future Base	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523) +D13
D4	2036	Future Base	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445) +D14
D5	2036	+ Proposed Development	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D9
D6	2036	+ Proposed Development	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D10
D7	2036	+ Full Allocation	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D11
D8	2036	+ Full Allocation	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D12
D9		DEV	AM	FLAT	07:30	08:30	60	15			
D10		DEV	PM	FLAT	16:45	17:45	60	15			
D11		FULL ALLOCATION	AM	FLAT	07:30	08:30	60	15			
D12		FULL ALLOCATION	PM	FLAT	16:45	17:45	60	15			
D13		COMM	AM	FLAT	07:30	08:30	60	15			
D14		COMM	PM	FLAT	16:45	17:45	60	15			

AM Calibration - 2024 | Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	14.65	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	14.65	B

Arms

Arms

Arm	Name	Description	No give-way line
1	Lamer Ln N		
2	Coldicote Rd E		
3	Station Rd S		
4	Lower Luton Rd W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Lamer Ln N	2.95	6.09	3.6	15.0	27.0	32.5		
2 - Coldicote Rd E	3.26	5.17	11.2	29.0	27.0	15.6		
3 - Station Rd S	2.99	5.14	2.4	25.0	27.0	32.0		
4 - Lower Luton Rd W	3.45	7.81	7.6	29.0	27.0	16.4		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lamer Ln N	0.533	1118
2 - Coldicote Rd E	0.630	1451
3 - Station Rd S	0.534	1080
4 - Lower Luton Rd W	0.661	1607

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lamer Ln N	Percentage		65.00
3 - Station Rd S	Percentage		54.25
4 - Lower Luton Rd W	Percentage		86.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	Baseline	AM	FLAT	07:30	08:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Lamer Ln N		FLAT	✓	285	100.000
2 - Coldicote Rd E		FLAT	✓	757	100.000
3 - Station Rd S		FLAT	✓	262	100.000
4 - Lower Luton Rd W		FLAT	✓	801	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	180	70	35
	2 - Coldicote Rd E	39	13	159	546
	3 - Station Rd S	12	134	2	114
	4 - Lower Luton Rd W	23	674	103	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	4	2	7
	2 - Coldicote Rd E	2	0	0	5
	3 - Station Rd S	0	0	0	0
	4 - Lower Luton Rd W	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Lamer Ln N	0.76	39.37	3.0	E	285	285
2 - Coldicote Rd E	0.60	7.19	1.5	A	757	757
3 - Station Rd S	0.67	27.30	2.0	D	262	262
4 - Lower Luton Rd W	0.67	9.01	2.0	A	801	801

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	285	71	916	379	0.751	275	73	0.0	2.6	31.833	D
2 - Coldicote Rd E	757	189	206	1261	0.600	751	984	0.0	1.5	6.984	A
3 - Station Rd S	262	66	628	395	0.663	255	329	0.0	1.8	24.555	C
4 - Lower Luton Rd W	801	200	195	1203	0.666	793	687	0.0	1.9	8.638	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	285	71	927	375	0.759	284	74	2.6	2.9	38.475	E
2 - Coldicote Rd E	757	189	211	1258	0.602	757	1000	1.5	1.5	7.182	A
3 - Station Rd S	262	66	634	393	0.666	262	334	1.8	1.9	27.165	D
4 - Lower Luton Rd W	801	200	200	1200	0.667	801	696	1.9	2.0	9.004	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	285	71	927	375	0.759	285	74	2.9	3.0	39.136	E
2 - Coldicote Rd E	757	189	211	1258	0.602	757	1001	1.5	1.5	7.187	A
3 - Station Rd S	262	66	634	393	0.666	262	334	1.9	1.9	27.299	D
4 - Lower Luton Rd W	801	200	200	1200	0.667	801	696	2.0	2.0	9.011	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	285	71	927	375	0.759	285	74	3.0	3.0	39.370	E
2 - Coldicote Rd E	757	189	211	1258	0.602	757	1001	1.5	1.5	7.187	A
3 - Station Rd S	262	66	634	393	0.666	262	334	1.9	2.0	27.299	D
4 - Lower Luton Rd W	801	200	200	1200	0.667	801	696	2.0	2.0	9.013	A

AM Calibration - 2036 | Future Base | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	19.32	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	19.32	C

Arms

Arms

Arm	Name	Description	No give-way line
1	Lamer Ln N		
2	Coldicote Rd E		
3	Station Rd S		
4	Lower Luton Rd W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Lamer Ln N	2.95	6.09	3.6	15.0	27.0	32.5		
2 - Coldicote Rd E	3.26	5.17	11.2	29.0	27.0	15.6		
3 - Station Rd S	2.99	5.14	2.4	25.0	27.0	32.0		
4 - Lower Luton Rd W	3.45	7.81	7.6	29.0	27.0	16.4		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lamer Ln N	0.533	1118
2 - Coldicote Rd E	0.630	1451
3 - Station Rd S	0.534	1080
4 - Lower Luton Rd W	0.661	1607

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lamer Ln N	Percentage		65.00
3 - Station Rd S	Percentage		54.25
4 - Lower Luton Rd W	Percentage		86.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D3	2036	Future Base	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523) +D13

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Lamer Ln N		FLAT	✓	300	100.000
2 - Coldicote Rd E		FLAT	✓	813	100.000
3 - Station Rd S		FLAT	✓	276	100.000
4 - Lower Luton Rd W		FLAT	✓	851	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	189	74	37
	2 - Coldicote Rd E	41	14	167	591
	3 - Station Rd S	13	141	2	120
	4 - Lower Luton Rd W	24	717	108	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	4	2	7
	2 - Coldicote Rd E	2	0	0	5
	3 - Station Rd S	0	0	0	0
	4 - Lower Luton Rd W	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Lamer Ln N	0.84	61.25	4.8	F	300	300
2 - Coldicote Rd E	0.65	8.21	1.8	A	813	813
3 - Station Rd S	0.73	34.80	2.6	D	276	276
4 - Lower Luton Rd W	0.71	10.45	2.4	B	851	851

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	969	361	0.832	285	77	0.0	3.8	41.784	E
2 - Coldicote Rd E	813	203	215	1256	0.648	806	1039	0.0	1.8	7.888	A
3 - Station Rd S	276	69	676	381	0.724	266	345	0.0	2.3	29.526	D
4 - Lower Luton Rd W	851	213	205	1198	0.710	841	738	0.0	2.4	9.846	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	983	356	0.843	297	78	3.8	4.4	57.095	F
2 - Coldicote Rd E	813	203	221	1252	0.650	813	1059	1.8	1.8	8.199	A
3 - Station Rd S	276	69	683	378	0.728	275	351	2.3	2.5	34.299	D
4 - Lower Luton Rd W	851	213	210	1195	0.712	851	748	2.4	2.4	10.425	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	983	356	0.843	299	78	4.4	4.7	59.993	F
2 - Coldicote Rd E	813	203	222	1252	0.650	813	1060	1.8	1.8	8.211	A
3 - Station Rd S	276	69	684	378	0.729	275	351	2.5	2.6	34.669	D
4 - Lower Luton Rd W	851	213	210	1195	0.712	851	749	2.4	2.4	10.443	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	983	356	0.843	299	78	4.7	4.8	61.251	F
2 - Coldicote Rd E	813	203	222	1251	0.650	813	1061	1.8	1.8	8.214	A
3 - Station Rd S	276	69	684	378	0.729	276	351	2.6	2.6	34.802	D
4 - Lower Luton Rd W	851	213	210	1195	0.712	851	749	2.4	2.4	10.448	B

AM Calibration - 2036 | + Proposed Development | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	20.47	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	20.47	C

Arms

Arms

Arm	Name	Description	No give-way line
1	Lamer Ln N		
2	Coldicote Rd E		
3	Station Rd S		
4	Lower Luton Rd W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Lamer Ln N	2.95	6.09	3.6	15.0	27.0	32.5		
2 - Coldicote Rd E	3.26	5.17	11.2	29.0	27.0	15.6		
3 - Station Rd S	2.99	5.14	2.4	25.0	27.0	32.0		
4 - Lower Luton Rd W	3.45	7.81	7.6	29.0	27.0	16.4		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lamer Ln N	0.533	1118
2 - Coldicote Rd E	0.630	1451
3 - Station Rd S	0.534	1080
4 - Lower Luton Rd W	0.661	1607

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lamer Ln N	Percentage		65.00
3 - Station Rd S	Percentage		54.25
4 - Lower Luton Rd W	Percentage		86.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2036	+ Proposed Development	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D9

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Lamer Ln N		FLAT	✓	300	100.000
2 - Coldicote Rd E		FLAT	✓	818	100.000
3 - Station Rd S		FLAT	✓	277	100.000
4 - Lower Luton Rd W		FLAT	✓	870	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	189	74	37
	2 - Coldicote Rd E	41	14	167	596
	3 - Station Rd S	13	141	2	121
	4 - Lower Luton Rd W	24	733	111	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	4	2	7
	2 - Coldicote Rd E	2	0	0	5
	3 - Station Rd S	0	0	0	0
	4 - Lower Luton Rd W	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Lamer Ln N	0.86	67.85	5.3	F	300	300
2 - Coldicote Rd E	0.65	8.34	1.9	A	818	818
3 - Station Rd S	0.73	35.63	2.7	E	277	277
4 - Lower Luton Rd W	0.73	11.01	2.6	B	870	870

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	988	355	0.846	284	77	0.0	4.0	44.210	E
2 - Coldicote Rd E	818	205	218	1254	0.652	811	1054	0.0	1.8	7.993	A
3 - Station Rd S	277	69	681	379	0.730	267	348	0.0	2.4	30.032	D
4 - Lower Luton Rd W	870	217	205	1200	0.725	860	744	0.0	2.5	10.306	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	1002	350	0.858	297	78	4.0	4.8	62.210	F
2 - Coldicote Rd E	818	205	224	1250	0.654	818	1075	1.8	1.9	8.321	A
3 - Station Rd S	277	69	688	377	0.734	276	354	2.4	2.6	35.068	E
4 - Lower Luton Rd W	870	217	210	1197	0.727	870	754	2.5	2.6	10.980	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	1002	349	0.858	299	78	4.8	5.1	66.090	F
2 - Coldicote Rd E	818	205	225	1250	0.655	818	1076	1.9	1.9	8.334	A
3 - Station Rd S	277	69	689	377	0.734	276	354	2.6	2.6	35.479	E
4 - Lower Luton Rd W	870	217	210	1197	0.727	870	755	2.6	2.6	11.002	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	1002	349	0.858	299	78	5.1	5.3	67.851	F
2 - Coldicote Rd E	818	205	225	1250	0.655	818	1077	1.9	1.9	8.338	A
3 - Station Rd S	277	69	689	377	0.734	277	354	2.6	2.7	35.626	E
4 - Lower Luton Rd W	870	217	210	1197	0.727	870	755	2.6	2.6	11.010	B

AM Calibration - 2036 | + Full Allocation | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	20.98	C

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	20.98	C

Arms

Arms

Arm	Name	Description	No give-way line
1	Lamer Ln N		
2	Coldicote Rd E		
3	Station Rd S		
4	Lower Luton Rd W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Lamer Ln N	2.95	6.09	3.6	15.0	27.0	32.5		
2 - Coldicote Rd E	3.26	5.17	11.2	29.0	27.0	15.6		
3 - Station Rd S	2.99	5.14	2.4	25.0	27.0	32.0		
4 - Lower Luton Rd W	3.45	7.81	7.6	29.0	27.0	16.4		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lamer Ln N	0.533	1118
2 - Coldicote Rd E	0.630	1451
3 - Station Rd S	0.534	1080
4 - Lower Luton Rd W	0.661	1607

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lamer Ln N	Percentage		65.00
3 - Station Rd S	Percentage		54.25
4 - Lower Luton Rd W	Percentage		86.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2036	+ Full Allocation	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D11

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Lamer Ln N		FLAT	✓	300	100.000
2 - Coldicote Rd E		FLAT	✓	820	100.000
3 - Station Rd S		FLAT	✓	277	100.000
4 - Lower Luton Rd W		FLAT	✓	878	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	189	74	37
	2 - Coldicote Rd E	41	14	167	598
	3 - Station Rd S	13	141	2	121
	4 - Lower Luton Rd W	24	740	112	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	4	2	7
	2 - Coldicote Rd E	2	0	0	5
	3 - Station Rd S	0	0	0	0
	4 - Lower Luton Rd W	3	4	16	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Lamer Ln N	0.86	71.01	5.6	F	300	300
2 - Coldicote Rd E	0.66	8.39	1.9	A	820	820
3 - Station Rd S	0.74	35.83	2.7	E	277	277
4 - Lower Luton Rd W	0.73	11.26	2.7	B	878	878

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	995	352	0.852	283	77	0.0	4.1	45.297	E
2 - Coldicote Rd E	820	205	219	1254	0.654	813	1060	0.0	1.8	8.033	A
3 - Station Rd S	277	69	683	379	0.731	267	348	0.0	2.4	30.153	D
4 - Lower Luton Rd W	878	219	205	1200	0.731	867	745	0.0	2.6	10.513	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	1010	347	0.864	297	78	4.1	5.0	64.583	F
2 - Coldicote Rd E	820	205	225	1250	0.656	820	1082	1.8	1.9	8.368	A
3 - Station Rd S	277	69	690	376	0.735	276	355	2.4	2.6	35.254	E
4 - Lower Luton Rd W	878	219	210	1197	0.733	878	756	2.6	2.7	11.233	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	1010	347	0.865	298	78	5.0	5.4	68.966	F
2 - Coldicote Rd E	820	205	225	1250	0.656	820	1083	1.9	1.9	8.382	A
3 - Station Rd S	277	69	691	376	0.735	276	355	2.6	2.6	35.674	E
4 - Lower Luton Rd W	878	219	210	1197	0.733	878	757	2.7	2.7	11.256	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	300	75	1010	347	0.865	299	78	5.4	5.6	71.013	F
2 - Coldicote Rd E	820	205	226	1249	0.657	820	1084	1.9	1.9	8.387	A
3 - Station Rd S	277	69	691	376	0.735	277	355	2.6	2.7	35.826	E
4 - Lower Luton Rd W	878	219	210	1197	0.733	878	757	2.7	2.7	11.264	B

PM Calibration - 2024 | Baseline | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	10.09	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	10.09	B

Arms

Arms

Arm	Name	Description	No give-way line
1	Lamer Ln N		
2	Coldicote Rd E		
3	Station Rd S		
4	Lower Luton Rd W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Lamer Ln N	2.95	6.09	3.6	15.0	27.0	32.5		
2 - Coldicote Rd E	3.26	5.17	11.2	29.0	27.0	15.6		
3 - Station Rd S	2.99	5.14	2.4	25.0	27.0	32.0		
4 - Lower Luton Rd W	3.45	7.81	7.6	29.0	27.0	16.4		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lamer Ln N	0.533	1118
2 - Coldicote Rd E	0.630	1451
3 - Station Rd S	0.534	1080
4 - Lower Luton Rd W	0.661	1607

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lamer Ln N	Percentage		43.00
3 - Station Rd S	Percentage		58.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2024	Baseline	PM	FLAT	16:45	17:45	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Lamer Ln N		FLAT	✓	173	100.000
2 - Coldicote Rd E		FLAT	✓	677	100.000
3 - Station Rd S		FLAT	✓	289	100.000
4 - Lower Luton Rd W		FLAT	✓	619	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	80	71	22
	2 - Coldicote Rd E	70	4	82	521
	3 - Station Rd S	93	73	7	116
	4 - Lower Luton Rd W	108	417	94	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	1	2	1
	2 - Coldicote Rd E	0	0	17	2
	3 - Station Rd S	0	0	0	0
	4 - Lower Luton Rd W	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Lamer Ln N	0.51	21.85	1.0	C	173	173
2 - Coldicote Rd E	0.53	5.96	1.1	A	677	677
3 - Station Rd S	0.67	25.13	2.0	D	289	289
4 - Lower Luton Rd W	0.44	4.51	0.8	A	619	619

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	173	43	590	339	0.511	169	268	0.0	1.0	20.781	C
2 - Coldicote Rd E	677	169	191	1283	0.528	673	568	0.0	1.1	5.855	A
3 - Station Rd S	289	72	613	433	0.667	282	251	0.0	1.9	22.762	C
4 - Lower Luton Rd W	619	155	242	1420	0.436	616	652	0.0	0.8	4.458	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	173	43	595	338	0.512	173	271	1.0	1.0	21.823	C
2 - Coldicote Rd E	677	169	194	1281	0.528	677	574	1.1	1.1	5.955	A
3 - Station Rd S	289	72	617	432	0.669	289	254	1.9	1.9	25.000	C
4 - Lower Luton Rd W	619	155	247	1417	0.437	619	659	0.8	0.8	4.508	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	173	43	595	338	0.513	173	271	1.0	1.0	21.851	C
2 - Coldicote Rd E	677	169	194	1281	0.528	677	574	1.1	1.1	5.955	A
3 - Station Rd S	289	72	617	432	0.669	289	254	1.9	2.0	25.098	D
4 - Lower Luton Rd W	619	155	247	1417	0.437	619	659	0.8	0.8	4.509	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	173	43	595	338	0.513	173	271	1.0	1.0	21.852	C
2 - Coldicote Rd E	677	169	194	1281	0.528	677	574	1.1	1.1	5.955	A
3 - Station Rd S	289	72	617	432	0.669	289	254	2.0	2.0	25.133	D
4 - Lower Luton Rd W	619	155	247	1417	0.437	619	659	0.8	0.8	4.509	A

PM Calibration - 2036 | Future Base | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	11.53	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	11.53	B

Arms

Arms

Arm	Name	Description	No give-way line
1	Lamer Ln N		
2	Coldicote Rd E		
3	Station Rd S		
4	Lower Luton Rd W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Lamer Ln N	2.95	6.09	3.6	15.0	27.0	32.5		
2 - Coldicote Rd E	3.26	5.17	11.2	29.0	27.0	15.6		
3 - Station Rd S	2.99	5.14	2.4	25.0	27.0	32.0		
4 - Lower Luton Rd W	3.45	7.81	7.6	29.0	27.0	16.4		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lamer Ln N	0.533	1118
2 - Coldicote Rd E	0.630	1451
3 - Station Rd S	0.534	1080
4 - Lower Luton Rd W	0.661	1607

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lamer Ln N	Percentage		43.00
3 - Station Rd S	Percentage		58.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2036	Future Base	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445) +D14

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Lamer Ln N		FLAT	✓	181	100.000
2 - Coldicote Rd E		FLAT	✓	726	100.000
3 - Station Rd S		FLAT	✓	302	100.000
4 - Lower Luton Rd W		FLAT	✓	674	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	84	74	23
	2 - Coldicote Rd E	73	4	86	563
	3 - Station Rd S	97	76	7	121
	4 - Lower Luton Rd W	113	463	98	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	1	2	1
	2 - Coldicote Rd E	0	0	17	2
	3 - Station Rd S	0	0	0	0
	4 - Lower Luton Rd W	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Lamer Ln N	0.56	24.85	1.2	C	181	181
2 - Coldicote Rd E	0.57	6.53	1.3	A	726	726
3 - Station Rd S	0.72	31.00	2.5	D	302	302
4 - Lower Luton Rd W	0.48	4.88	0.9	A	674	674

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	643	327	0.553	176	279	0.0	1.2	23.251	C
2 - Coldicote Rd E	726	182	199	1279	0.568	721	620	0.0	1.3	6.391	A
3 - Station Rd S	302	75	658	419	0.721	293	262	0.0	2.3	26.855	D
4 - Lower Luton Rd W	674	168	252	1415	0.476	670	699	0.0	0.9	4.808	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	648	325	0.555	181	283	1.2	1.2	24.778	C
2 - Coldicote Rd E	726	182	203	1277	0.569	726	626	1.3	1.3	6.531	A
3 - Station Rd S	302	75	663	417	0.723	301	265	2.3	2.5	30.671	D
4 - Lower Luton Rd W	674	168	258	1411	0.477	674	707	0.9	0.9	4.878	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	648	325	0.555	181	283	1.2	1.2	24.838	C
2 - Coldicote Rd E	726	182	203	1277	0.569	726	626	1.3	1.3	6.531	A
3 - Station Rd S	302	75	664	417	0.723	302	265	2.5	2.5	30.918	D
4 - Lower Luton Rd W	674	168	258	1411	0.477	674	707	0.9	0.9	4.879	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	648	325	0.555	181	283	1.2	1.2	24.850	C
2 - Coldicote Rd E	726	182	203	1277	0.569	726	627	1.3	1.3	6.531	A
3 - Station Rd S	302	75	664	417	0.723	302	265	2.5	2.5	31.005	D
4 - Lower Luton Rd W	674	168	258	1411	0.477	674	707	0.9	0.9	4.880	A

PM Calibration - 2036 | + Proposed Development | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	12.16	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.16	B

Arms

Arms

Arm	Name	Description	No give-way line
1	Lamer Ln N		
2	Coldicote Rd E		
3	Station Rd S		
4	Lower Luton Rd W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Lamer Ln N	2.95	6.09	3.6	15.0	27.0	32.5		
2 - Coldicote Rd E	3.26	5.17	11.2	29.0	27.0	15.6		
3 - Station Rd S	2.99	5.14	2.4	25.0	27.0	32.0		
4 - Lower Luton Rd W	3.45	7.81	7.6	29.0	27.0	16.4		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lamer Ln N	0.533	1118
2 - Coldicote Rd E	0.630	1451
3 - Station Rd S	0.534	1080
4 - Lower Luton Rd W	0.661	1607

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lamer Ln N	Percentage		43.00
3 - Station Rd S	Percentage		58.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2036	+ Proposed Development	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D10

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Lamer Ln N		FLAT	✓	181	100.000
2 - Coldicote Rd E		FLAT	✓	749	100.000
3 - Station Rd S		FLAT	✓	306	100.000
4 - Lower Luton Rd W		FLAT	✓	687	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	84	74	23
	2 - Coldicote Rd E	73	4	86	586
	3 - Station Rd S	97	76	7	125
	4 - Lower Luton Rd W	113	474	100	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	1	2	1
	2 - Coldicote Rd E	0	0	17	2
	3 - Station Rd S	0	0	0	0
	4 - Lower Luton Rd W	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Lamer Ln N	0.56	25.36	1.3	D	181	181
2 - Coldicote Rd E	0.59	6.81	1.4	A	749	749
3 - Station Rd S	0.75	34.23	2.8	D	306	306
4 - Lower Luton Rd W	0.49	4.96	0.9	A	687	687

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	656	324	0.558	176	279	0.0	1.2	23.667	C
2 - Coldicote Rd E	749	187	201	1279	0.586	744	630	0.0	1.4	6.653	A
3 - Station Rd S	306	76	681	412	0.743	296	264	0.0	2.5	28.913	D
4 - Lower Luton Rd W	687	172	251	1416	0.485	683	725	0.0	0.9	4.887	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	661	322	0.560	181	283	1.2	1.2	25.283	D
2 - Coldicote Rd E	749	187	205	1277	0.586	749	637	1.4	1.4	6.811	A
3 - Station Rd S	306	76	686	410	0.746	305	267	2.5	2.7	33.731	D
4 - Lower Luton Rd W	687	172	258	1412	0.486	687	734	0.9	0.9	4.962	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	661	322	0.560	181	283	1.2	1.2	25.343	D
2 - Coldicote Rd E	749	187	205	1277	0.587	749	637	1.4	1.4	6.814	A
3 - Station Rd S	306	76	687	410	0.746	306	267	2.7	2.8	34.096	D
4 - Lower Luton Rd W	687	172	258	1412	0.486	687	734	0.9	0.9	4.963	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	661	322	0.560	181	283	1.2	1.3	25.362	D
2 - Coldicote Rd E	749	187	205	1277	0.587	749	637	1.4	1.4	6.814	A
3 - Station Rd S	306	76	687	410	0.746	306	267	2.8	2.8	34.228	D
4 - Lower Luton Rd W	687	172	258	1412	0.486	687	734	0.9	0.9	4.964	A

PM Calibration - 2036 | + Full Allocation | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2036 + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	12.50	B

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	12.50	B

Arms

Arms

Arm	Name	Description	No give-way line
1	Lamer Ln N		
2	Coldicote Rd E		
3	Station Rd S		
4	Lower Luton Rd W		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Lamer Ln N	2.95	6.09	3.6	15.0	27.0	32.5		
2 - Coldicote Rd E	3.26	5.17	11.2	29.0	27.0	15.6		
3 - Station Rd S	2.99	5.14	2.4	25.0	27.0	32.0		
4 - Lower Luton Rd W	3.45	7.81	7.6	29.0	27.0	16.4		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Lamer Ln N	0.533	1118
2 - Coldicote Rd E	0.630	1451
3 - Station Rd S	0.534	1080
4 - Lower Luton Rd W	0.661	1607

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Lamer Ln N	Percentage		43.00
3 - Station Rd S	Percentage		58.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2036	+ Full Allocation	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D12

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Lamer Ln N		FLAT	✓	181	100.000
2 - Coldicote Rd E		FLAT	✓	760	100.000
3 - Station Rd S		FLAT	✓	308	100.000
4 - Lower Luton Rd W		FLAT	✓	692	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	84	74	23
	2 - Coldicote Rd E	73	4	86	597
	3 - Station Rd S	97	76	7	127
	4 - Lower Luton Rd W	113	478	101	0

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Lamer Ln N	2 - Coldicote Rd E	3 - Station Rd S	4 - Lower Luton Rd W
From	1 - Lamer Ln N	0	1	2	1
	2 - Coldicote Rd E	0	0	17	2
	3 - Station Rd S	0	0	0	0
	4 - Lower Luton Rd W	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Lamer Ln N	0.56	25.57	1.3	D	181	181
2 - Coldicote Rd E	0.60	6.96	1.5	A	760	760
3 - Station Rd S	0.76	36.04	3.0	E	308	308
4 - Lower Luton Rd W	0.49	5.00	1.0	A	692	692

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	660	323	0.560	176	279	0.0	1.2	23.838	C
2 - Coldicote Rd E	760	190	202	1279	0.594	754	634	0.0	1.4	6.785	A
3 - Station Rd S	308	77	692	409	0.754	297	265	0.0	2.7	30.014	D
4 - Lower Luton Rd W	692	173	251	1416	0.488	688	738	0.0	0.9	4.916	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	666	321	0.562	181	283	1.2	1.2	25.482	D
2 - Coldicote Rd E	760	190	206	1277	0.595	760	641	1.4	1.5	6.956	A
3 - Station Rd S	308	77	697	407	0.757	307	268	2.7	2.9	35.430	E
4 - Lower Luton Rd W	692	173	258	1412	0.490	692	747	0.9	1.0	4.995	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	666	321	0.562	181	283	1.2	1.3	25.548	D
2 - Coldicote Rd E	760	190	206	1277	0.595	760	641	1.5	1.5	6.959	A
3 - Station Rd S	308	77	698	407	0.757	308	268	2.9	2.9	35.876	E
4 - Lower Luton Rd W	692	173	258	1412	0.490	692	747	1.0	1.0	4.997	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Lamer Ln N	181	45	666	321	0.562	181	283	1.3	1.3	25.566	D
2 - Coldicote Rd E	760	190	206	1277	0.595	760	641	1.5	1.5	6.959	A
3 - Station Rd S	308	77	698	407	0.757	308	268	2.9	3.0	36.041	E
4 - Lower Luton Rd W	692	173	258	1412	0.490	692	747	1.0	1.0	4.997	A

Junctions 11			
ARCADY 11 - Roundabout Module			
Version: 11.0.0.2177			
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Filename: St Albans Road A1081, Station Road (Calibrated) (15% TP Reduction).j11

Path: O:\London\Vectos\Projects\Projects\140000\141499 - Lower Luton Rd Harpenden site\MODELLING\J11

Report generation date: 02/07/2025 08:35:00

- »AM Calibration - 2024 | 1-Baseline | AM
- »AM Calibration - 2036 | 2-Future Baseline | AM
- »AM Calibration - 2036 | 3-Future + Proposed Development | AM
- »AM Calibration - 2036 | 4-Future + Full Allocation | AM
- »AM Calibration - 2036 | 5-Future + Development with TP | AM
- »AM Calibration - 2036 | 6-Future + Full Allocation with TP | AM
- »PM Calibration - 2024 | 1-Baseline | PM
- »PM Calibration - 2036 | 2-Future Baseline | PM
- »PM Calibration - 2036 | 3-Future + Proposed Development | PM
- »PM Calibration - 2036 | 4-Future + Full Allocation | PM
- »PM Calibration - 2036 | 5-Future + Development with TP | PM
- »PM Calibration - 2036 | 6-Future + Full Allocation with TP | PM

Summary of junction performance

	AM		
	Queue (Veh)	Delay (s)	RFC
AM Calibration - 2024 - 1-Baseline			
1 - Station Rd (N)	3.2	29.48	0.77
2 - St Albans Rd (E)	3.0	15.59	0.76
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	1.9	9.94	0.66
AM Calibration - 2036 - 2-Future Baseline			
1 - Station Rd (N)	4.9	44.59	0.84
2 - St Albans Rd (E)	4.3	20.77	0.82
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.4	11.70	0.71
AM Calibration - 2036 - 3-Future + Proposed Development			
1 - Station Rd (N)	6.4	56.02	0.88
2 - St Albans Rd (E)	4.5	21.57	0.82
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.4	11.88	0.71
AM Calibration - 2036 - 4-Future + Full Allocation			
1 - Station Rd (N)	7.2	61.59	0.89
2 - St Albans Rd (E)	4.6	21.81	0.83
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.4	11.94	0.71
AM Calibration - 2036 - 5-Future + Development with TP			
1 - Station Rd (N)	6.2	53.99	0.87

2 - St Albans Rd (E)	4.5	21.45	0.82
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.4	11.86	0.71
AM Calibration - 2036 - 6-Future + Full Allocation with TP			
1 - Station Rd (N)	6.7	58.38	0.89
2 - St Albans Rd (E)	4.5	21.65	0.82
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.4	11.90	0.71

PM			
	Queue (Veh)	Delay (s)	RFC
PM Calibration - 2024 - 1-Baseline			
1 - Station Rd (N)	7.0	67.73	0.89
2 - St Albans Rd (E)	4.0	23.61	0.80
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	1.8	8.92	0.65
PM Calibration - 2036 - 2-Future Baseline			
1 - Station Rd (N)	18.2	167.37	0.99
2 - St Albans Rd (E)	6.1	34.28	0.87
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.4	10.63	0.71
PM Calibration - 2036 - 3-Future + Proposed Development			
1 - Station Rd (N)	24.7	216.44	1.02
2 - St Albans Rd (E)	7.9	42.84	0.90
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.5	11.19	0.72
PM Calibration - 2036 - 4-Future + Full Allocation			
1 - Station Rd (N)	27.8	240.01	1.03
2 - St Albans Rd (E)	8.9	47.84	0.91
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.5	11.45	0.72
PM Calibration - 2036 - 5-Future + Development with TP			
1 - Station Rd (N)	23.6	208.38	1.02
2 - St Albans Rd (E)	7.5	41.34	0.89
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.5	11.10	0.71
PM Calibration - 2036 - 6-Future + Full Allocation with TP			
1 - Station Rd (N)	26.2	227.77	1.03
2 - St Albans Rd (E)	8.4	45.28	0.90
3 - Station Rd (S)	0.0	0.00	0.00
4 - High Street (W)	2.5	11.32	0.72

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	
Location	
Site number	
Date	28/10/2024
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SLR\Tom.Monk
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

Analysis Options

Mini-roundabout model	Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use simulation for HCM roundabouts	Use iterations for HCM roundabouts
JUNCTIONS 9	5.75						0.85	36.00	20.00		

Demand Set Summary

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D1	2024	1-Baseline	AM	FLAT	07:30	08:30	60	15	✓		
D2	2024	1-Baseline	PM	FLAT	16:45	17:45	60	15	✓		
D3	2036	2-Future Baseline	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523)+D13
D4	2036	2-Future Baseline	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445)+D14
D5	2036	3-Future + Proposed Development	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D9
D6	2036	3-Future + Proposed Development	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D10
D7	2036	4-Future + Full Allocation	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D11
D8	2036	4-Future + Full Allocation	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D12
D9		DEV	AM	FLAT	07:30	08:30	60	15			
D10		DEV	PM	FLAT	16:45	17:45	60	15			
D11		FULL ALLOCATION	AM	FLAT	07:30	08:30	60	15			
D12		FULL ALLOCATION	PM	FLAT	16:45	17:45	60	15			
D13		COMM	AM	FLAT	07:30	08:30	60	15			
D14		COMM	PM	FLAT	16:45	17:45	60	15			
D15	2036	5-Future + Development with TP	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+(D9*0.85)
D16	2036	5-Future + Development with TP	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+(D10*0.85)
D17	2036	6-Future + Full Allocation with TP	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+(D11*0.85)
D18	2036	6-Future + Full Allocation with TP	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+(D12*0.85)

AM Calibration - 2024 | 1-Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 77% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7,D15,D17	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	16.49	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		16.49	C

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
2 - St Albans Rd (E)	Percentage		65.00
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	2024	1-Baseline	AM	FLAT	07:30	08:30	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	397	100.000
2 - St Albans Rd (E)		FLAT	✓	713	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	694	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	6	244	61	86
	2 - St Albans Rd (E)	288	1	6	418
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	198	489	6	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	0	4	2	7
	2 - St Albans Rd (E)	2	0	0	5
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	0.77	29.48	3.2	D	397	397
2 - St Albans Rd (E)	0.76	15.59	3.0	C	713	713
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.66	9.94	1.9	A	694	694

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	397	99	492	522	0.761	386	485	0.0	2.8	24.766	C
2 - St Albans Rd (E)	713	178	156	946	0.754	702	722	0.0	2.9	14.128	B
3 - Station Rd (S)	0	0	786	434	0.000	0	71	0.0	0.0	0.000	A
4 - High Street (W)	694	174	290	1059	0.655	687	496	0.0	1.8	9.487	A

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	397	99	497	518	0.766	396	492	2.8	3.1	29.035	D
2 - St Albans Rd (E)	713	178	160	944	0.756	713	733	2.9	3.0	15.506	C
3 - Station Rd (S)	0	0	799	426	0.000	0	73	0.0	0.0	0.000	A
4 - High Street (W)	694	174	295	1056	0.657	694	505	1.8	1.9	9.932	A

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	397	99	497	518	0.766	397	492	3.1	3.1	29.367	D
2 - St Albans Rd (E)	713	178	160	943	0.756	713	734	3.0	3.0	15.569	C
3 - Station Rd (S)	0	0	800	426	0.000	0	73	0.0	0.0	0.000	A
4 - High Street (W)	694	174	295	1056	0.657	694	505	1.9	1.9	9.942	A

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	397	99	497	518	0.766	397	492	3.1	3.2	29.480	D
2 - St Albans Rd (E)	713	178	160	943	0.756	713	734	3.0	3.0	15.588	C
3 - Station Rd (S)	0	0	800	426	0.000	0	73	0.0	0.0	0.000	A
4 - High Street (W)	694	174	295	1056	0.657	694	505	1.9	1.9	9.945	A

AM Calibration - 2036 | 2-Future Baseline | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 78% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7,D15,D17	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	22.49	C

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		22.49	C

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
2 - St Albans Rd (E)	Percentage		65.00
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D3	2036	2-Future Baseline	AM	FLAT	07:30	08:30	60	15	✓	Simple	(D1*1.0523) +D13

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	418	100.000
2 - St Albans Rd (E)		FLAT	✓	767	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	738	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	6	257	64	90
	2 - St Albans Rd (E)	303	1	6	457
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	208	523	6	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	0	4	2	7
	2 - St Albans Rd (E)	2	0	0	5
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	0.84	44.59	4.9	E	418	418
2 - St Albans Rd (E)	0.82	20.77	4.3	C	767	767
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.71	11.70	2.4	B	738	738

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	418	104	524	500	0.835	402	509	0.0	4.1	32.527	D
2 - St Albans Rd (E)	767	192	162	943	0.813	751	764	0.0	3.9	17.584	C
3 - Station Rd (S)	0	0	839	402	0.000	0	74	0.0	0.0	0.000	A
4 - High Street (W)	738	185	304	1050	0.703	729	535	0.0	2.3	10.933	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	418	104	531	496	0.842	416	517	4.1	4.6	42.511	E
2 - St Albans Rd (E)	767	192	168	940	0.816	766	779	3.9	4.2	20.467	C
3 - Station Rd (S)	0	0	857	391	0.000	0	76	0.0	0.0	0.000	A
4 - High Street (W)	738	185	310	1046	0.706	738	547	2.3	2.3	11.669	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	418	104	531	496	0.842	417	518	4.6	4.8	43.988	E
2 - St Albans Rd (E)	767	192	168	939	0.817	767	780	4.2	4.3	20.690	C
3 - Station Rd (S)	0	0	858	390	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	310	1046	0.706	738	548	2.3	2.4	11.695	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	418	104	531	496	0.842	417	518	4.8	4.9	44.588	E
2 - St Albans Rd (E)	767	192	168	939	0.817	767	780	4.3	4.3	20.769	C
3 - Station Rd (S)	0	0	858	390	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	310	1046	0.706	738	548	2.4	2.4	11.703	B

AM Calibration - 2036 | 3-Future + Proposed Development | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 77% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7,D15,D17	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	25.65	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		25.65	D

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
2 - St Albans Rd (E)	Percentage		65.00
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2036	3-Future + Proposed Development	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D9

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	437	100.000
2 - St Albans Rd (E)		FLAT	✓	774	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	738	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	6	276	64	90
	2 - St Albans Rd (E)	310	1	6	457
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	208	523	6	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	0	4	2	7
	2 - St Albans Rd (E)	2	0	0	5
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	0.88	56.02	6.4	F	437	437
2 - St Albans Rd (E)	0.82	21.57	4.5	C	774	774
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.71	11.88	2.4	B	738	738

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	437	109	524	501	0.871	417	515	0.0	4.9	36.898	E
2 - St Albans Rd (E)	774	193	161	944	0.820	758	780	0.0	4.1	18.032	C
3 - Station Rd (S)	0	0	845	398	0.000	0	74	0.0	0.0	0.000	A
4 - High Street (W)	738	185	311	1046	0.706	729	534	0.0	2.3	11.077	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	437	109	531	497	0.879	433	524	4.9	5.8	51.657	F
2 - St Albans Rd (E)	774	193	167	940	0.823	773	797	4.1	4.4	21.198	C
3 - Station Rd (S)	0	0	864	387	0.000	0	76	0.0	0.0	0.000	A
4 - High Street (W)	738	185	317	1041	0.709	738	547	2.3	2.4	11.848	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	437	109	531	497	0.879	435	525	5.8	6.2	54.646	F
2 - St Albans Rd (E)	774	193	168	940	0.824	774	798	4.4	4.5	21.473	C
3 - Station Rd (S)	0	0	865	386	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	317	1041	0.709	738	548	2.4	2.4	11.877	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	437	109	531	497	0.879	436	525	6.2	6.4	56.020	F
2 - St Albans Rd (E)	774	193	168	940	0.824	774	799	4.5	4.5	21.573	C
3 - Station Rd (S)	0	0	865	386	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	317	1041	0.709	738	548	2.4	2.4	11.884	B

AM Calibration - 2036 | 4-Future + Full Allocation | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 77% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7,D15,D17	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	27.13	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		27.13	D

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
2 - St Albans Rd (E)	Percentage		65.00
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D7	2036	4-Future + Full Allocation	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+D11

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	444	100.000
2 - St Albans Rd (E)		FLAT	✓	776	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	738	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	6	283	64	90
	2 - St Albans Rd (E)	312	1	6	457
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	208	523	6	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	0	4	2	7
	2 - St Albans Rd (E)	2	0	0	5
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	0.89	61.59	7.2	F	444	444
2 - St Albans Rd (E)	0.83	21.81	4.6	C	776	776
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.71	11.94	2.4	B	738	738

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	444	111	524	502	0.885	422	517	0.0	5.3	38.727	E
2 - St Albans Rd (E)	776	194	161	944	0.822	760	786	0.0	4.1	18.156	C
3 - Station Rd (S)	0	0	847	398	0.000	0	74	0.0	0.0	0.000	A
4 - High Street (W)	738	185	312	1044	0.707	729	534	0.0	2.3	11.119	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	444	111	531	497	0.892	440	526	5.3	6.4	55.804	F
2 - St Albans Rd (E)	776	194	167	940	0.825	775	803	4.1	4.4	21.409	C
3 - Station Rd (S)	0	0	865	386	0.000	0	76	0.0	0.0	0.000	A
4 - High Street (W)	738	185	319	1040	0.710	738	547	2.3	2.4	11.900	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	444	111	531	497	0.893	442	527	6.4	6.9	59.703	F
2 - St Albans Rd (E)	776	194	168	940	0.826	776	805	4.4	4.5	21.700	C
3 - Station Rd (S)	0	0	867	385	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	319	1040	0.710	738	547	2.4	2.4	11.930	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	444	111	531	497	0.893	443	527	6.9	7.2	61.594	F
2 - St Albans Rd (E)	776	194	168	940	0.826	776	806	4.5	4.6	21.809	C
3 - Station Rd (S)	0	0	867	385	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	319	1040	0.710	738	548	2.4	2.4	11.937	B

AM Calibration - 2036 | 5-Future + Development with TP | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 77% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7,D15,D17	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	25.09	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		25.09	D

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
2 - St Albans Rd (E)	Percentage		65.00
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D15	2036	5-Future + Development with TP	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+(D9*0.85)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	434	100.000
2 - St Albans Rd (E)		FLAT	✓	773	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	738	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	6	273	64	90
	2 - St Albans Rd (E)	309	1	6	457
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	208	523	6	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	0	4	2	7
	2 - St Albans Rd (E)	2	0	0	5
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	0.87	53.99	6.2	F	434	434
2 - St Albans Rd (E)	0.82	21.45	4.5	C	773	773
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.71	11.86	2.4	B	738	738

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	434	108	524	501	0.866	415	514	0.0	4.8	36.189	E
2 - St Albans Rd (E)	773	193	161	944	0.819	757	778	0.0	4.0	17.964	C
3 - Station Rd (S)	0	0	844	399	0.000	0	74	0.0	0.0	0.000	A
4 - High Street (W)	738	185	310	1046	0.706	729	535	0.0	2.3	11.055	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	434	108	531	497	0.873	431	523	4.8	5.6	50.097	F
2 - St Albans Rd (E)	773	193	167	940	0.822	772	794	4.0	4.3	21.087	C
3 - Station Rd (S)	0	0	863	388	0.000	0	76	0.0	0.0	0.000	A
4 - High Street (W)	738	185	316	1042	0.709	738	547	2.3	2.4	11.820	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	434	108	531	497	0.873	432	523	5.6	6.0	52.783	F
2 - St Albans Rd (E)	773	193	168	940	0.823	773	796	4.3	4.4	21.351	C
3 - Station Rd (S)	0	0	864	387	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	316	1042	0.709	738	548	2.4	2.4	11.849	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	434	108	531	497	0.874	433	524	6.0	6.2	53.991	F
2 - St Albans Rd (E)	773	193	168	939	0.823	773	796	4.4	4.5	21.449	C
3 - Station Rd (S)	0	0	864	387	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	316	1042	0.709	738	548	2.4	2.4	11.859	B

AM Calibration - 2036 | 6-Future + Full Allocation with TP | AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 77% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	AM Calibration	✓	✓	D1,D3,D5,D7,D15,D17	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	26.26	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		26.26	D

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
2 - St Albans Rd (E)	Percentage		65.00
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D17	2036	6-Future + Full Allocation with TP	AM	FLAT	07:30	08:30	60	15	✓	Simple	D3+ (D11*0.85)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	440	100.000
2 - St Albans Rd (E)		FLAT	✓	775	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	738	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	6	279	64	90
	2 - St Albans Rd (E)	311	1	6	457
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	208	523	6	1

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	0	4	2	7
	2 - St Albans Rd (E)	2	0	0	5
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	4	17	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	0.89	58.38	6.7	F	440	440
2 - St Albans Rd (E)	0.82	21.65	4.5	C	775	775
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.71	11.90	2.4	B	738	738

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	440	110	524	501	0.877	419	516	0.0	5.1	37.694	E
2 - St Albans Rd (E)	775	194	161	944	0.821	758	783	0.0	4.1	18.069	C
3 - Station Rd (S)	0	0	845	398	0.000	0	74	0.0	0.0	0.000	A
4 - High Street (W)	738	185	311	1045	0.706	729	534	0.0	2.3	11.090	B

07:45 - 08:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	440	110	531	497	0.885	436	525	5.1	6.1	53.436	F
2 - St Albans Rd (E)	775	194	167	940	0.824	773	800	4.1	4.4	21.266	C
3 - Station Rd (S)	0	0	864	387	0.000	0	76	0.0	0.0	0.000	A
4 - High Street (W)	738	185	318	1041	0.709	738	547	2.3	2.4	11.865	B

08:00 - 08:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	440	110	531	497	0.885	438	525	6.1	6.5	56.797	F
2 - St Albans Rd (E)	775	194	168	940	0.824	774	801	4.4	4.5	21.545	C
3 - Station Rd (S)	0	0	865	386	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	318	1041	0.710	738	548	2.4	2.4	11.894	B

08:15 - 08:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	440	110	531	497	0.885	439	525	6.5	6.7	58.378	F
2 - St Albans Rd (E)	775	194	168	940	0.824	774	802	4.5	4.5	21.649	C
3 - Station Rd (S)	0	0	866	386	0.000	0	77	0.0	0.0	0.000	A
4 - High Street (W)	738	185	318	1040	0.710	738	548	2.4	2.4	11.901	B

PM Calibration - 2024 | 1-Baseline | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 77% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8,D16,D18	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	27.08	D

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		27.08	D

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Station Rd (N)	Percentage		84.45
2 - St Albans Rd (E)	Percentage		54.70
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	2024	1-Baseline	PM	FLAT	16:45	17:45	60	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	392	100.000
2 - St Albans Rd (E)		FLAT	✓	624	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	750	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	6	194	94	98
	2 - St Albans Rd (E)	175	2	20	427
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	225	491	23	11

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	0	1	2	1
	2 - St Albans Rd (E)	0	0	17	2
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	0.89	67.73	7.0	F	392	392
2 - St Albans Rd (E)	0.80	23.61	4.0	C	624	624
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.65	8.92	1.8	A	750	750

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	392	98	522	443	0.885	371	400	0.0	5.2	42.436	E
2 - St Albans Rd (E)	624	156	221	780	0.800	610	672	0.0	3.6	19.715	C
3 - Station Rd (S)	0	0	700	499	0.000	0	131	0.0	0.0	0.000	A
4 - High Street (W)	750	188	179	1156	0.649	743	521	0.0	1.8	8.562	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	392	98	527	440	0.890	388	406	5.2	6.2	61.242	F
2 - St Albans Rd (E)	624	156	230	776	0.804	623	685	3.6	3.8	23.169	C
3 - Station Rd (S)	0	0	717	488	0.000	0	136	0.0	0.0	0.000	A
4 - High Street (W)	750	188	183	1154	0.650	750	534	1.8	1.8	8.907	A

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	392	98	527	440	0.890	390	406	6.2	6.7	65.567	F
2 - St Albans Rd (E)	624	156	231	775	0.805	624	686	3.8	3.9	23.488	C
3 - Station Rd (S)	0	0	718	487	0.000	0	137	0.0	0.0	0.000	A
4 - High Street (W)	750	188	183	1154	0.650	750	535	1.8	1.8	8.916	A

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	392	98	527	440	0.890	391	406	6.7	7.0	67.726	F
2 - St Albans Rd (E)	624	156	231	775	0.805	624	686	3.9	4.0	23.606	C
3 - Station Rd (S)	0	0	719	487	0.000	0	137	0.0	0.0	0.000	A
4 - High Street (W)	750	188	183	1154	0.650	750	536	1.8	1.8	8.919	A

PM Calibration - 2036 | 2-Future Baseline | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 78% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8,D16,D18	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	52.76	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		52.76	F

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Station Rd (N)	Percentage		84.45
2 - St Albans Rd (E)	Percentage		54.70
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D4	2036	2-Future Baseline	PM	FLAT	16:45	17:45	60	15	✓	Simple	(D2*1.0445) +D14

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	409	100.000
2 - St Albans Rd (E)		FLAT	✓	671	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	810	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	6	203	98	102
	2 - St Albans Rd (E)	183	2	21	465
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	235	540	24	11

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	0	1	2	1
	2 - St Albans Rd (E)	0	0	17	2
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	0.99	167.37	18.2	F	409	409
2 - St Albans Rd (E)	0.87	34.28	6.1	D	671	671
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.71	10.63	2.4	B	810	810

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	409	102	571	416	0.985	374	415	0.0	8.9	63.281	F
2 - St Albans Rd (E)	671	168	224	779	0.861	651	721	0.0	5.1	25.011	D
3 - Station Rd (S)	0	0	741	474	0.000	0	134	0.0	0.0	0.000	A
4 - High Street (W)	810	203	185	1153	0.703	801	556	0.0	2.3	9.996	A

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	409	102	577	412	0.993	394	423	8.9	12.9	116.933	F
2 - St Albans Rd (E)	671	168	234	774	0.866	668	737	5.1	5.7	32.473	D
3 - Station Rd (S)	0	0	763	461	0.000	0	139	0.0	0.0	0.000	A
4 - High Street (W)	810	203	190	1149	0.705	810	573	2.3	2.3	10.594	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	409	102	577	412	0.993	398	424	12.9	15.8	145.215	F
2 - St Albans Rd (E)	671	168	236	773	0.868	670	739	5.7	6.0	33.707	D
3 - Station Rd (S)	0	0	766	459	0.000	0	140	0.0	0.0	0.000	A
4 - High Street (W)	810	203	191	1149	0.705	810	575	2.3	2.4	10.616	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	409	102	577	412	0.993	400	424	15.8	18.2	167.372	F
2 - St Albans Rd (E)	671	168	237	773	0.868	670	740	6.0	6.1	34.280	D
3 - Station Rd (S)	0	0	767	458	0.000	0	141	0.0	0.0	0.000	A
4 - High Street (W)	810	203	191	1149	0.705	810	576	2.4	2.4	10.626	B

PM Calibration - 2036 | 3-Future + Proposed Development | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 78% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8,D16,D18	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	67.21	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		67.21	F

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Station Rd (N)	Percentage		84.45
2 - St Albans Rd (E)	Percentage		54.70
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2036	3-Future + Proposed Development	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D10

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	421	100.000
2 - St Albans Rd (E)		FLAT	✓	696	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	810	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	6	215	98	102
	2 - St Albans Rd (E)	208	2	21	465
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	235	540	24	11

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	0	1	2	1
	2 - St Albans Rd (E)	0	0	17	2
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	1.02	216.44	24.7	F	421	421
2 - St Albans Rd (E)	0.90	42.84	7.9	E	696	696
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.72	11.19	2.5	B	810	810

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	421	105	571	416	1.013	380	438	0.0	10.4	70.022	F
2 - St Albans Rd (E)	696	174	221	781	0.891	671	729	0.0	6.1	28.411	D
3 - Station Rd (S)	0	0	760	462	0.000	0	132	0.0	0.0	0.000	A
4 - High Street (W)	810	203	208	1137	0.713	801	552	0.0	2.4	10.435	B

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	421	105	577	412	1.022	399	447	10.4	16.0	137.994	F
2 - St Albans Rd (E)	696	174	231	776	0.896	692	745	6.1	7.1	39.392	E
3 - Station Rd (S)	0	0	785	448	0.000	0	138	0.0	0.0	0.000	A
4 - High Street (W)	810	203	215	1133	0.716	810	571	2.4	2.5	11.140	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	421	105	577	412	1.022	403	448	16.0	20.6	180.119	F
2 - St Albans Rd (E)	696	174	233	775	0.898	694	747	7.1	7.6	41.692	E
3 - Station Rd (S)	0	0	789	446	0.000	0	139	0.0	0.0	0.000	A
4 - High Street (W)	810	203	215	1132	0.716	810	573	2.5	2.5	11.174	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	421	105	577	412	1.022	405	448	20.6	24.7	216.438	F
2 - St Albans Rd (E)	696	174	234	775	0.898	695	748	7.6	7.9	42.841	E
3 - Station Rd (S)	0	0	790	445	0.000	0	139	0.0	0.0	0.000	A
4 - High Street (W)	810	203	216	1132	0.716	810	574	2.5	2.5	11.187	B

PM Calibration - 2036 | 4-Future + Full Allocation | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 78% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8,D16,D18	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	74.52	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		74.52	F

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Station Rd (N)	Percentage		84.45
2 - St Albans Rd (E)	Percentage		54.70
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D8	2036	4-Future + Full Allocation	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+D12

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	426	100.000
2 - St Albans Rd (E)		FLAT	✓	707	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	810	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From	1 - Station Rd (N)	6	220	98	102
	2 - St Albans Rd (E)	219	2	21	465
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	235	540	24	11

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	0	1	2	1
	2 - St Albans Rd (E)	0	0	17	2
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	1.03	240.01	27.8	F	426	426
2 - St Albans Rd (E)	0.91	47.84	8.9	E	707	707
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.72	11.45	2.5	B	810	810

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	426	107	570	416	1.024	382	448	0.0	11.1	73.000	F
2 - St Albans Rd (E)	707	177	220	782	0.904	680	732	0.0	6.7	30.123	D
3 - Station Rd (S)	0	0	769	458	0.000	0	132	0.0	0.0	0.000	A
4 - High Street (W)	810	203	218	1130	0.717	801	551	0.0	2.4	10.636	B

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	426	107	577	413	1.034	401	458	11.1	17.5	147.575	F
2 - St Albans Rd (E)	707	177	230	777	0.910	702	748	6.7	7.9	43.161	E
3 - Station Rd (S)	0	0	795	442	0.000	0	137	0.0	0.0	0.000	A
4 - High Street (W)	810	203	225	1125	0.720	810	570	2.4	2.5	11.395	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	426	107	577	412	1.034	405	459	17.5	22.9	196.500	F
2 - St Albans Rd (E)	707	177	232	776	0.911	704	750	7.9	8.5	46.240	E
3 - Station Rd (S)	0	0	798	440	0.000	0	138	0.0	0.0	0.000	A
4 - High Street (W)	810	203	226	1125	0.721	810	572	2.5	2.5	11.436	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	426	107	577	412	1.034	407	459	22.9	27.8	240.008	F
2 - St Albans Rd (E)	707	177	233	776	0.911	705	751	8.5	8.9	47.835	E
3 - Station Rd (S)	0	0	800	439	0.000	0	139	0.0	0.0	0.000	A
4 - High Street (W)	810	203	226	1124	0.721	810	573	2.5	2.5	11.451	B

PM Calibration - 2036 | 5-Future + Development with TP | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 78% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8,D16,D18	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	64.80	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		64.80	F

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Station Rd (N)	Percentage		84.45
2 - St Albans Rd (E)	Percentage		54.70
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D16	2036	5-Future + Development with TP	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+ (D10*0.85)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	420	100.000
2 - St Albans Rd (E)		FLAT	✓	692	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	810	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From 1 - Station Rd (N)	6	213	98	102
From 2 - St Albans Rd (E)	204	2	21	465
From 3 - Station Rd (S)	0	0	0	0
From 4 - High Street (W)	235	540	24	11

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To			
	1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
From 1 - Station Rd (N)	0	1	2	1
From 2 - St Albans Rd (E)	0	0	17	2
From 3 - Station Rd (S)	0	0	0	0
From 4 - High Street (W)	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	1.02	208.38	23.6	F	420	420
2 - St Albans Rd (E)	0.89	41.34	7.5	E	692	692
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.71	11.10	2.5	B	810	810

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	420	105	571	416	1.008	379	435	0.0	10.2	68.976	F
2 - St Albans Rd (E)	692	173	222	781	0.886	668	728	0.0	5.9	27.859	D
3 - Station Rd (S)	0	0	758	464	0.000	0	133	0.0	0.0	0.000	A
4 - High Street (W)	810	203	205	1139	0.711	801	553	0.0	2.4	10.367	B

17:00 - 17:15

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	420	105	577	412	1.017	398	444	10.2	15.5	134.657	F
2 - St Albans Rd (E)	692	173	232	776	0.892	688	744	5.9	6.9	38.209	E
3 - Station Rd (S)	0	0	782	449	0.000	0	138	0.0	0.0	0.000	A
4 - High Street (W)	810	203	211	1135	0.714	810	571	2.4	2.4	11.054	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	420	105	577	412	1.018	402	445	15.5	19.8	174.478	F
2 - St Albans Rd (E)	692	173	234	775	0.893	690	746	6.9	7.3	40.309	E
3 - Station Rd (S)	0	0	785	448	0.000	0	139	0.0	0.0	0.000	A
4 - High Street (W)	810	203	212	1135	0.714	810	574	2.4	2.5	11.087	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	420	105	577	412	1.018	404	445	19.8	23.6	208.383	F
2 - St Albans Rd (E)	692	173	235	774	0.894	691	747	7.3	7.5	41.337	E
3 - Station Rd (S)	0	0	786	447	0.000	0	140	0.0	0.0	0.000	A
4 - High Street (W)	810	203	212	1134	0.714	810	575	2.5	2.5	11.099	B

PM Calibration - 2036 | 6-Future + Full Allocation with TP | PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Mini-roundabout		Mini-roundabout appears to have unbalanced flows and may behave like a priority junction; treat results with caution. See User Guide for details.[Arms 2 and 4 have 78% of the total flow for the roundabout for one or more time segments]
Warning	Demand Set Relationship	D5 - 2036 3-Future + Proposed Development AM	Demand Set relationships are chained. This may slow down the file.

Analysis Set Details

ID	Name	Include in report	Use specific Demand Set (s)	Specific Demand Set (s)	Network flow scaling factor (%)	Network capacity scaling factor (%)
A2	PM Calibration	✓	✓	D2,D4,D6,D8,D16,D18	100.000	100.000

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Mini-roundabout		1, 2, 3, 4	70.73	F

Junction Network

Driving side	Lighting	Road surface	In London	Network delay (s)	Network LOS
Left	Normal/unknown	Normal/unknown		70.73	F

Arms

Arms

Arm	Name	Description
1	Station Rd (N)	
2	St Albans Rd (E)	
3	Station Rd (S)	
4	High Street (W)	

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1 - Station Rd (N)	3.57	3.57	5.01	3.6	9.05	14.94	0.0	
2 - St Albans Rd (E)	3.18	3.18	3.91	45.0	20.00	20.00	0.0	
3 - Station Rd (S)	3.00	3.00	3.00	0.0	5.00	2.00	0.0	
4 - High Street (W)	4.79	4.79	6.85	4.3	8.00	13.90	0.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Station Rd (N)	0.660	882
2 - St Albans Rd (E)	0.927	1662
3 - Station Rd (S)	0.590	917
4 - High Street (W)	0.703	1308

The slope and intercept shown above include any corrections and adjustments.

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Station Rd (N)	Percentage		84.45
2 - St Albans Rd (E)	Percentage		54.70
3 - Station Rd (S)	Percentage		100.00

Traffic Demand

Demand Set Details

ID	Year	Scenario	Time period	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D18	2036	6-Future + Full Allocation with TP	PM	FLAT	16:45	17:45	60	15	✓	Simple	D4+ (D12*0.85)

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1 - Station Rd (N)		FLAT	✓	424	100.000
2 - St Albans Rd (E)		FLAT	✓	701	100.000
3 - Station Rd (S)		FLAT	✓	0	100.000
4 - High Street (W)		FLAT	✓	810	100.000

Origin-Destination Data

Demand (Veh/hr)

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	6	217	98	102
	2 - St Albans Rd (E)	213	2	21	465
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	235	540	24	11

Vehicle Mix

HV data entry mode	PCU Factor for a HV (PCU)
HV Percentages	2.00

Heavy Vehicle %

	To				
From		1 - Station Rd (N)	2 - St Albans Rd (E)	3 - Station Rd (S)	4 - High Street (W)
	1 - Station Rd (N)	0	1	2	1
	2 - St Albans Rd (E)	0	0	17	2
	3 - Station Rd (S)	0	0	0	0
	4 - High Street (W)	3	2	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)
1 - Station Rd (N)	1.03	227.77	26.2	F	424	424
2 - St Albans Rd (E)	0.90	45.28	8.4	E	701	701
3 - Station Rd (S)	0.00	0.00	0.0	A	0	0
4 - High Street (W)	0.72	11.32	2.5	B	810	810

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	424	106	571	416	1.018	381	443	0.0	10.8	71.466	F
2 - St Albans Rd (E)	701	175	221	782	0.897	676	730	0.0	6.4	29.266	D
3 - Station Rd (S)	0	0	765	460	0.000	0	132	0.0	0.0	0.000	A
4 - High Street (W)	810	203	213	1133	0.715	801	551	0.0	2.4	10.538	B

17:00 - 17:15

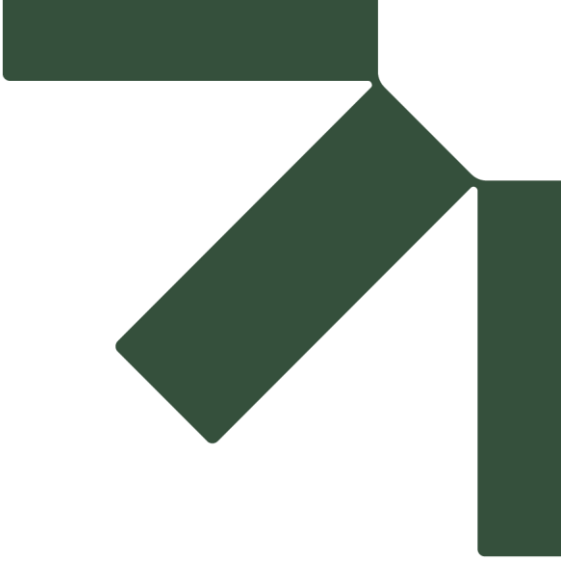
Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	424	106	577	412	1.028	400	453	10.8	16.7	142.629	F
2 - St Albans Rd (E)	701	175	231	777	0.903	697	747	6.4	7.5	41.247	E
3 - Station Rd (S)	0	0	790	445	0.000	0	137	0.0	0.0	0.000	A
4 - High Street (W)	810	203	220	1129	0.718	810	570	2.4	2.5	11.269	B

17:15 - 17:30

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	424	106	577	412	1.028	404	454	16.7	21.7	188.015	F
2 - St Albans Rd (E)	701	175	233	776	0.904	699	749	7.5	8.0	43.921	E
3 - Station Rd (S)	0	0	794	443	0.000	0	138	0.0	0.0	0.000	A
4 - High Street (W)	810	203	221	1128	0.718	810	573	2.5	2.5	11.307	B

17:30 - 17:45

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Throughput (exit side) (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
1 - Station Rd (N)	424	106	577	412	1.028	406	454	21.7	26.2	227.765	F
2 - St Albans Rd (E)	701	175	234	775	0.905	700	750	8.0	8.4	45.277	E
3 - Station Rd (S)	0	0	795	442	0.000	0	139	0.0	0.0	0.000	A
4 - High Street (W)	810	203	221	1128	0.718	810	574	2.5	2.5	11.319	B



Appendix K Model Geometries

Transport Assessment

Land North East of Harpenden between Lower Luton Road, Bower Heath Lane and Common Lane

Crest Nicholson

SLR Project No.: 141499

24 February 2026

