Proposed Residential Development Former Butterfly Park, Little London, Long Sutton, Lincolnshire

Transport Assessment

May 2024

Client: D. Brown Building Contractors Limited

Ref: RHC-24-015-TA

Roberts Highway Consultants Limited
Company Number: 13958498

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Revision History

Revision	Comments	Written By
- May 2024	Initial submission	Andrew Roberts BA (Hons) MCIHT MTPS

1.0 INTRODUCTION

1.1 Roberts Highway Consultants Limited has been appointed by D. Brown Building Contractors Limited to provide transport planning support in relation to a planning application for the proposed residential development at land known as The Butterfly Park, Little London, Long Sutton.

1.2 The proposed application seeks full panning permission for 123 dwellings which will provide 57 new affordable homes and 66 market housing.

1.3 The broad extent of the site is outlined on **Plan 1**, with a proposed site plan contained within **Appendix A**.

Plan 1: Contextual Site Location Plan



© Google Maps

1.4 The site is located within the authority of South Holland District Council, who act as the local planning authority for the area. Lincolnshire County Council are the local highway authority for the area. This report will be submitted to South Holland District Council for consultation.

Planning History

1.5 The site benefits from an extant planning permission for 87 dwellings granted in 2014 (planning application reference H11-0398-12). The proposals therefore seek to increase the development size by 36 dwellings.

1.6 A planning application for the proposed 123 dwellings was submitted to South Holland District Council in February 2024, under planning application reference H11-0120-24.

1.7 As part of the planning submission, a historic Transport Assessment, which was completed by Royal Haskoning dated November 2012, was submitted however, the Local Authority have requested that an updated Transport Assessment be competed.

1.8 This Transport Assessment has therefore been completed upon the request of the Local Authority.

Methodology and Scoping

1.9 This Transport Assessment has been prepared in accordance with the National Planning Policy Framework (NPPF) and seeks to demonstrate that:

- Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all users; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

1.10 In addition to the above, this report has been prepared with reference to the following national policy/guidance documents:

- National Planning Policy Framework (revised December 2023).
- Inclusive Mobility - A Guide to Best Practice on Access to Pedestrian and Transport Infrastructure.
- Design Manual for Roads and Bridges.
- Manual for Streets / Manual for Streets 2.
- Lincolnshire Development Roads and Sustainable Design Approach 2021 Edition document.

1.11 The scope of this Transport Assessment has been assumed to be similar to that previously agreed with Lincolnshire County Council as part of the original Transport Assessment submitted. This has included for an assessment of the London Road/Roman Bank junction which was specifically requested as part of the previous planning application.

1.12 To provide an accurate reflection of the existing highway conditions, a site visit was undertaken on Wednesday 15th May 2024, between 10:30 and 11:15. During the site visit, a series of photographs were taken, some of which have been used as evidence within this report. Further photographs which were undertaken during the site visit can be made available upon request.

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Report Structure

1.13 This Transport Assessment will review all existing and proposed highway elements, providing appropriate conclusions to assess the impact of proposed development upon the local highway network. The structure of this report is as follows:

- A summary of relevant national and local planning policy and guidance is located within **Chapter 2.0**.
- A review of the existing site, alongside the local highway network, collisions records and accessibility are covered within **Chapter 3.0**.
- The development proposals, which will include for: development quantum, the proposed site access and car parking arrangements are included within **Chapter 4.0**.
- Analysis of the projected vehicle movements associated with the development proposals and their distribution onto the highway network will be outlined within **Chapter 5.0**.
- Junction Capacity Assessments are included within **Chapter 6.0**.
- Mitigation Measures can be found within **Chapter 7.0**.
- The summary and conclusions of the report can be found within **Chapter 8.0**.

1.14 A separate Travel Plan document has been prepared by Roberts Highway Consultants for the proposed development (report reference: RHC-24-015-TP), and this should be read in conjunction with this Transport Assessment.

Disclaimer

1.15 Roberts Highway Consultants Limited has completed this report for the benefit of the individuals referred to in paragraph 1.1, and any relevant statutory authority, which may require reference in relation to approvals for the proposed development. Other third parties should not use or rely upon the contents of this report unless explicit written approval has been gained from Roberts Highway Consultants Limited.

1.16 Roberts Highway Consultants Limited accepts no responsibility or liability for:

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2.0 PLANNING POLICY

2.1 This section provides a summary of key national and local policy and guidance relevant to the development and it demonstrates how the development proposals align with these policies and guidance.

National Planning Policy Framework

2.2 The National Planning Policy Framework (NPPF) constitutes guidance for local planning authorities and decision-takers both in drawing up development plans and as a material consideration in determining applications.

2.3 The revised NPPF came into force in December 2023 which updated the September 2023 edition of the NPPF. The presumption in favour of sustainable development remains the core objective of the NPPF.

2.4 Section 9 of the NPPF covers 'Promoting Sustainable Transport'. The NPPF advises that developments should be located and designed where practical to:

- Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use.
- Address the needs of people with disabilities and reduced mobility in relation to all modes of transport.
- Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards.
- Allow for the efficient delivery of goods, and access by service and emergency vehicles; and;
- Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

2.5 The NPPF states, in paragraph 117, that all developments which generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a Transport Statement or Transport Assessment so that the likely impacts of the proposal can be assessed.

2.6 The document also states that development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.

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2.7 It is considered that the proposed development accords with the aims and policies of the NPPF, with the residual cumulative impacts of the development considered to be negligible.

Planning Practice Guidance

2.8 The Planning Practice Guidance (PPG) supports the NPPF by stating that:

> *"Transport Assessments and Statements are ways of assessing the potential transport impacts of developments…The Transport Assessment or Transport Statement may propose mitigation measures where these are necessary to avoid unacceptable or "severe" impacts. Travel Plans can play a pivotal role in taking forward those mitigation measures which relate to on-going and operation of the development".*

2.9 Transport Statements, Transport Assessments and Travel Plans are important as they:

- promote and encourage sustainable travel;
- create "accessible, connected, inclusive communities";
- reduce the impact of trip generation;
- reduce the impact on the environment through reducing carbon emissions;
- improve quality of life, health and road safety, and;
- reduce "the need for new development to increase existing road capacity or provide new roads".

Planning Practice Guidance

2.10 The DfT's Local Transport White Paper "Creating Growth, Cutting Carbon – Making Sustainable Transport Happen" set out the framework within which detailed policies could be taken forward with the aim of creating:

> *"…a transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities."*

2.11 The document supports the continued development of integrated transport policies and seeks to deliver growth whilst reducing the environmental impacts of transport. It also particularly targets shorter journeys, many of which could be undertaken by non-car modes where realistic alternatives are provided, and where interchange between modes can be readily achieved.

Lincolnshire Local Transport Plan 5

2.12 The Lincolnshire Local Transport Plan 5 (LTP) is designed to cover the short term (2022 to 2026), medium term (up to 2034) and long term (up to 2050) times for transport and highways for the entire county.

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2.13 The LTP provides links from the spatially based local plans and transport policy into higher level policy strategy documents covering socio-economic, environmental and health agendas. The LTP 5 aims to provide a comprehensive and integrated transport system that is safe, sustainable and accessible to all users.

2.14 The main objectives of the Lincolnshire LTP 5 are:

1) Supporting economic growth.
    a) Support the vitality and viability of our town centres and rural communities.
    b) Improve connectivity to jobs and employment opportunities.
2) Future ready, green transport.
    a) Deliver sustainable development by ensuring that new developments are designed to reduce the need to travel, minimise car use and support the use of more sustainable modes.
3) Promote thriving environments.
    a) Develop opportunities to both protect and enhance the built and natural environment.
    b) Minimise waste and make the best the use of available resources.
    c) Provide sustainable access to Lincolnshire's wonderful environment and heritage.
4) Supporting safety, security and a healthy lifestyle.
    a) Increase confidence in a safer and more secure transport network.
    b) Improve the health of our communities through the provision for active travel.
5) Promoting high aspirations.
    a) Improve connectivity and access to education, healthcare and leisure.
    b) Improve the accessibility of the transport system and in particular access onto public transport.
6) Improve quality of life.
    a) Improve the quality of place and reduce the overall negative impacts of transport on people's lives.

South East Lincolnshire Local Plan 2011-2036

2.15 The South East Lincolnshire Local Plan 2011-2036 is a strategic planning document that was adopted on 8th March 2019. It provides a revised suite of planning policies to help deliver growth in South East Lincolnshire up to 2036. The plan includes proposed sites for housing, employment, and shopping development, as well as areas identified for protection.

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2.16 There are two main transport priorities stated in the local plan. These are:

- To improve accessibility for all to jobs, services and facilities by sustainable and public transport, to make travel as easy and affordable as possible, both within the area and along key links to and from South East Lincolnshire.
- To improve South East Lincolnshire's highway infrastructure, to tackle congestion, improve road safety and make journeys as easy as possible particularly for those living in rural areas and to enhance efficiencies for business.

2.17 The Local Plan reinforces the national approach promoting sustainable alternatives to the car through new development, whilst recognising that as a predominantly rural area, the private car will remain the dominant form of transport, and as such, improvements to the highway network will be needed.

2.18 For the road-based transport network relevant to the development, this will be by:

- working with the Local Highway Authority to militate against congestion at pinch points and continuing to actively manage roads under its control.
- securing the delivery of new local access roads to open-up allocations and other locations for development.

2.19 For cycling, walking and other sustainable transport relevant to the development, this will be by:

- protecting existing footpaths, cycle routes and public rights of way from development.

2.20 The local plan sets out an approach to parking provision for vehicles and cycles with the aim of promoting sustainable transport choices and providing attractive and safe environments whilst ensuring that sufficient parking is provided to meet local needs. Policy 36 states that:

"All new development, including change of use, should provide vehicle and cycle parking, in accordance with the minimum Parking Standards adopted by the Local Planning Authorities."

2.21 Policy 36 mentions that parking for residents, employees and visitors should be integral to the design and form of all new development and should ensure that:

- parking spaces are fit for their intended use in terms of size and design.

2.22 For major residential developments, the policy states:

- a balanced provision of allocated and communal parking is provided, overlooked and accessible to the development it serves.

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- off-curtilage parking is designed to maximise levels of security and safety for vehicles, drivers and pedestrians; and,

- a secure, covered, convenient space to store at least two bicycles is provided within each residential plot; in the case of flatted developments this may be provided as a communal facility within the curtilage of the building containing the flats.

2.23 The proposed site benefits from an extant planning permission for 87 dwellings and therefore, the site is marked as a Housing Commitment in the South East Lincs Local Plan (see **Appendix B**).

Lincolnshire Development Roads and Sustainable Design Approach 2021 Edition

2.24 Lincolnshire Development Roads and Sustainable Design Approach 2021 Edition document provides car parking standards for new or change of use developments (Page 63).

2.25 For residential developments, the council adopt the following standards:

- Two spaces for a dwelling with three or less bedrooms.

- Three spaces for dwellings with four or more bedrooms.

2.26 If the dwellings are in a sustainable location, the Highways and Lead Local Flood Authority may restrict car parking provision or accept a reduction in spaces to those recommended.

2.27 Garages will only be considered as parking provision when they are of a size that will accommodate general storage (such as lawn mowers, hedge trimmers, ladders etc.) and have garage doors that are wide enough to accommodate the modern car.

2.28 The minimum length of any driveway fronting a domestic garage should be six metres, where an up and over type garage door is provided. If a vertically open door (roller type) is to be provided, the length of the driveway may be reduced to five metres.

Policy Summary

2.29 This Transport Assessment and accompanying Travel Plan have been prepared in accordance with the sustainable development principles set out in national and local policy documents.

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3.0 EXISTING CONDITIONS

Existing Site

3.1 The development site is located on the north-eastern edge of the market town of Long Sutton in Lincolnshire, approximately 20km west of the town of King's Lynn, 18km east of the town of Spalding and 33km north-east of the cathedral city of Peterborough.

3.2 The site is an irregular shape comprised of overgrown wasteland. It was formerly The Long Sutton Butterfly and Wildlife Park which closed in October 2012.

3.3 To the north, the site is bound by an open drainage ditch beyond which are sports pitches and playing fields for the Peele Leisure Centre and Lincoln University Academy, Long Sutton. A solar farm forms the boundary to the east of the site with Little London, a single carriageway road, forming the western boundary.

3.4 An access road to the solar farm forms the boundary to the south of the site, with an open drainage ditch and agricultural land beyond. A further solar farm bounds the southeastern corner of the site as can be made out within **Plan 1**.

3.5 Access into the site is currently available directly via Little London through a previously constructed bell mouth junction. The access is located to the west of the site between number 64, a residential property to the north, and property number 54 Hall Marsh House, a period property with historic character, to the south. **Photograph 1** outlines the existing access arrangements.

Photograph 1: Existing Site Access



Photograph Dated May 2024

Surrounding Highway Network

3.6 Little London is a single carriageway road, approximately five to six metres wide with a speed limit of 30mph.

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3.7 Approximately 175 metres from the site entrance in a northerly direction there is an advisory speed limit of 20mph outside The Peele Leisure Centre, Rainbow Nursery and University Academy Long Sutton. Continuing in a northerly direction, at the junction with Daniel's Gate, Little London merges into Lutton Gowts which provides links to several small fenland villages.

3.8 Within the vicinity of the site, there are no parking restrictions on Little London apart from the aforementioned advisory speed limit zone where road markings indicate no stopping during school times. There is limited off-road parking on the western side of the carriageway and vehicles can be seen parked along the carriageway.

3.9 At the site entrance, on the western side of the carriageway, there is a lit footway approximately one to two metres wide that fronts residential properties. On the eastern side of the carriageway in a northerly direction there is an unlit footway before reaching residential properties. In a southerly direction, the eastern side of the carriageway abuts against residential gardens, grass verges and hedges. **Photograph 2** and **Photograph 3** depict the observed highway conditions along Little London.

Photograph 2: Little London Northbound



Photograph 3: Little London Southbound



Photographs Dated May 2024

3.10 To understand vehicle flows and speeds passing the site frontage, a seven-day Automatic Traffic Count (ATC) survey was undertaken by Road Data Services Ltd commencing Tuesday 30th April 2024. The survey, which took the form of pneumatic tubes, was located approximately 25 metres to the north of the access, fastened to a telegraph pole.

3.11 A summary of the results can be found within **Table 1**, with full recordings attached within **Appendix C**.

Table 1: ATC Speed Survey Results (Average Weekday)

	Northbound	Southbound
Average Vehicle Speed	27.5mph	28.7mph
85%ile Vehicle Speed	34.3mph	35.8mph
HGV %	2%	1%
Daily Flow (24hr)	941	1,041

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3.12 Whilst average vehicle speeds along Little London were below the 30mph speed limit, 85th percentile vehicle speeds were noted to be around 35mph. HGV movements along the carriageway were very low with an average two-way daily flow of nearly 2,000 movements.

3.13 Approximately 360 metres from the site entrance in a southerly direction, Park Road leads off the Little London carriageway in a westerly direction. At this juncture, Little London merges into Roman Bank.

3.14 Roman Bank is a single carriageway road, approximately five to six metres wide with a speed limit of 30mph. Both sides of the carriageway are lit and are bound by residential properties. There is a footway approximately one metre wide along the western side of the carriageway. The eastern side of the carriageway predominantly consists of the grass frontages of residential properties interspersed with the occasional footway. In a northerly direction, Roman Bank forms part of a crossroad junction with Royal Standard Close, which continues in a southerly direction, and the B1359 which runs in an east-west direction perpendicular to Roman Bank.

3.15 Park Road is a single carriageway road in a residential area with a speed limit of 30mph. It has lit footways on both sides of the carriageway. In a westerly direction, at the junction with Daniel's Gate on the northern side of the carriageway, Park Road merges into Park Lane.

3.16 Park Lane is a single carriageway road in a residential area with a speed limit of 30mph. Continuing from Park Road in a south westerly direction it forms a T-junction with Market Street in Long Sutton town centre. At this juncture, Market Street is subject to a 7.5T weight restriction except for access until, in a north westerly direction, it reaches the junction with Swapcoat Lane.

3.17 The B1359 provides links with the A17 and the A1101. It is a single carriageway road varying in width from approximately seven to ten metres and is the main road through the village of Long Sutton. At the junction with Roman Bank, the B1359 is subject to a speed limit of 30mph and is known as London Road.

3.18 In a westerly direction the B1359 London Road merges into High Street and then Market Street, Gedney Road and Main Road until forming part of a five-arm roundabout, the A17 being the major road. In an easterly direction the B1359 London Road merges into Bridge Road towards the village of Sutton Bridge. At this point, the B1359 continues in a southerly direction as Wisbech Road until forming part of a four-arm roundabout, the A17 again being the major road.

Road Collision Data

3.19 Personal Injury Collision (PIC) data has been obtained from Crashmap.co.uk for collisions recorded by local police forces using the STATS19 form. The results acquired demonstrate the latest five-year period available (01/01/2018 to 31/12/2022), which highlight 13 collisions occurred within the chosen study area.

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3.20 A summary of the collisions by year can be found within **Table 2**, with a collision map provided within **Appendix D**.

Table 2: Summary of Collisions within Study Area

Year	Collision Classification			Total
	Slight	Serious	Fatal	
2018	3	0	0	3
2019	5	1	0	6
2020	1	0	0	1
2021	2	0	0	2
2022	1	0	0	1

3.21 All but one of the recorded collisions were classified as being 'slight' in severity, with three collisions occurring at the B1359 High Street/Market Place junction. The only 'serious' collision occurred within the study areas at the B1359 Market Street/Park Lane/Bull Lane crossroad junction in 2019.

3.22 With only 13 collisions occurring within the study area over the five-year period, with the majority occurring at different locations along the highway network, it is considered that there are no highway safety issues within the study area which will be exacerbated by the proposed development.

Sustainable Transport Opportunities

3.23 An accessibility assessment has been undertaken to determine the location of key local facilities and amenities in relation to walking and cycling to highlight travel time to these services. **Table 3** provides a summary of key amenities and facilities using these travel modes.

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Table 3: Accessibility Assessment to Local Amenities/Facilities

Amenity/Facility	Approx. Distance (m)	Approx. Walking Time	Approx. Cycling Time
Retail			
Long Sutton Tyres and Exhausts	800	10	3
One Stop Convenience Store	1000	12	4
Premier Convenience Store	1200	14	5
Lincolnshire Co-Op Long Sutton	1300	15	5
SPAR Long Sutton Convenience Store	1300	15	5
Education			
Rainbow Nursery	210	3	1
University Academy Long Sutton	280	3	1
Cinder Ash Pre-School	500	6	2
Long Sutton CP School and Nursery	1400	17	6
Leisure & Hospitality			
Peele Leisure Centre	300	4	1
Long Sutton Scout and Guide Hall	700	8	3
The Granary Bar and Grill	950	11	4
The Crown and Wolfpack Pub	1000	12	4
New Sutton House Chinese Takeaway	1000	12	4
San San Chinese Takeaway	1000	12	4
Palmers Ale House and Kitchen	1100	13	5
Domino's Pizza Long Sutton	1100	13	5
The Ship Long Sutton Pub	1300	15	5
Health			
Boots Pharmacy	1000	12	4
Coakley Opticians	1000	12	4
The Suttons Medical Group GP Practice	1300	15	5
Transport			
Market Court Bus Stop	1000	12	4
Employment			
Princes Ltd Food Products Supplier	2400	29	10

**Assumes a walking speed of 1.4m/s (3.2mph or 5.0kph) taken from the Guidance for Providing for Journeys on Foot (IHT, 2000) and cycling speed of 4m/s (9mph or 14.4kph), taken from Local Transport Note 1/86.*

3.24 **Table 3** highlights that there are several facilities and amenities located throughout the local area of Long Sutton which prospective residents would be able to utilise, with these facilities in context to the site outlined on the Key Facilities & Amenities Plan within **Appendix E**.

3.25 Additional facilities are located along Market Place which include a butchers, barbers, takeaways, a café and a post office.

Accessibility on Foot

3.26 Guidelines for "Providing for Journeys on Foot" commissioned by the Institution of Highways Engineers (IHT) suggest that for pedestrians without a mobility impairment, the following average distances are considered acceptable and should be used for planning and evaluation purposes. **Table 4** replicates those distances on the IHT guidance.

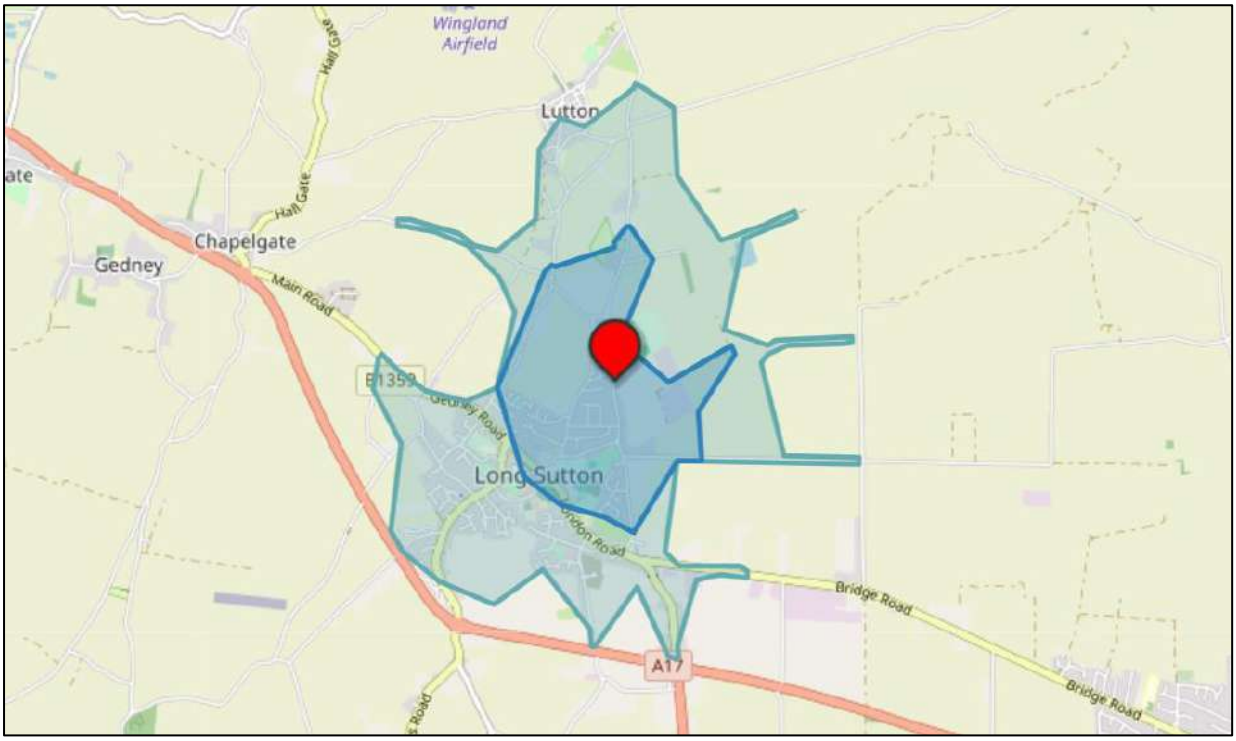
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Table 4: **IHT Suggested Walking Distances**

Suggested Acceptable Walking Distances			
	Town Centres	Commuting and School	Elsewhere
Desirable	200m	500m	400m
Acceptable	400m	1000m	800m
Maximum	800m	2000m	1200m

3.27 For purposes of planning and evaluation, and in the absence of any other anecdotal evidence, it is generally accepted that the 'suggested' distances highlighted in the above table are used. To understand how these distances relate to the site and the surrounding infrastructure available to accommodate journeys by foot, an iso-distance map indicating a 2km iso-distance has been produced and presented in **Plan 2.**

Plan 2: 2km Walking Map Shown in 1km Isochrones



© Openrouteservice.org

3.28 **Plan 2** illustrates that the centre of Long Sutton is situated within 1.6km walking distance of the site. A range of facilities and amenities residents could utilise as part of a walking journey are situated along Market Place and High Street as previously mentioned.

3.29 Educational facilities are found within a 300m walking distance of the site to the north and south, with the southern aspect of Lutton Village located within 2km walking distance north of the site, which takes in Lutton St Nicholas Primary School.

3.30 Opposite the site, a Public Right of Way shown within **Photograph 4**, connects Queensway with Little London, providing residents with a more direct route to facilities to the west.

Photograph 4: Little London/Queensway Right of Way



Photograph Dated May 2024

3.31 Adjacent to the site, a footway can be found along the northbound side of Little London, whereas a footway on the southbound side of the carriageway is only in situ to the north of the site. Dropped kerbs and street lighting can be found in situ at various junctions.

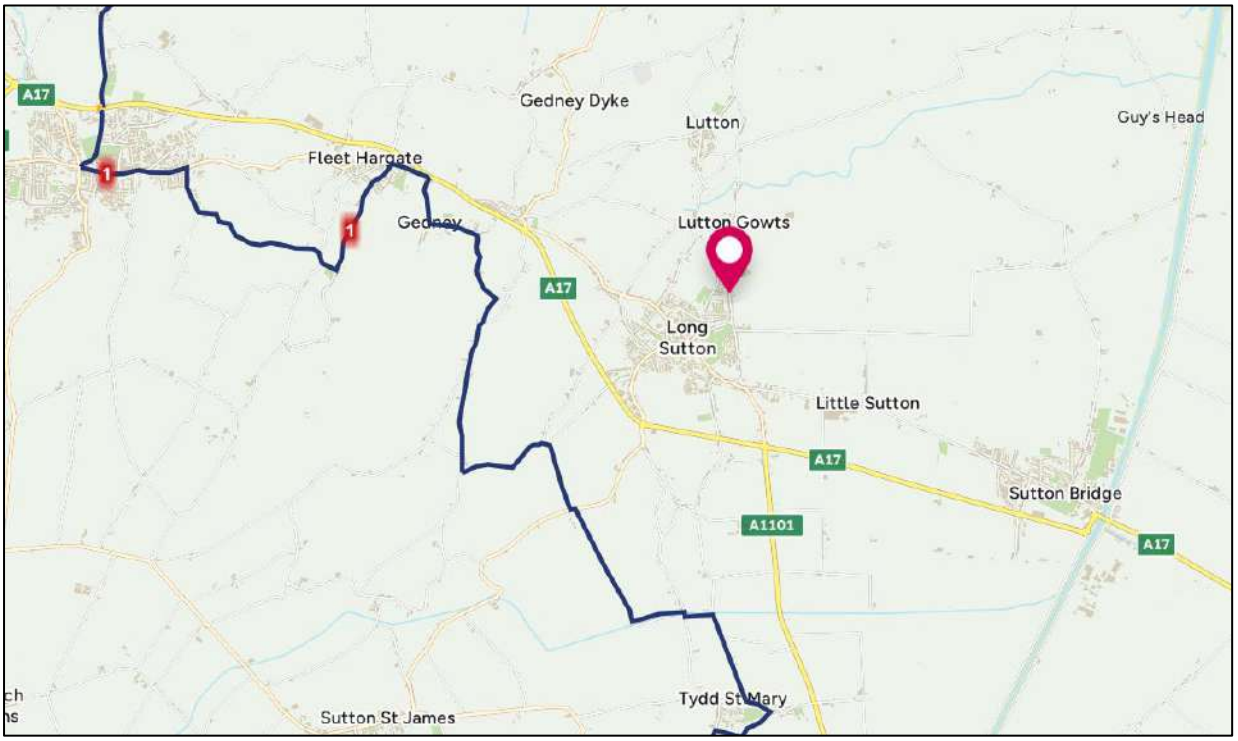
Accessibility by Cycle

3.32 A review of Sustrans.org.uk indicates that National Cycle Route 1 is the closest in proximity to the site and is located approximately 2.8km to the west. This route bypasses Long Sutton, connecting Wisbech, south of the site, with Boston to the north. **Plan 3** outlines the location of National Cycle Route 1 in relation to the site.

3.33 In addition to the National Cycle Network, cyclists could choose to cycle on the surrounding roads. A review of these roads suggests that cycling would be a suitable form of travel for residents due to their quiet nature and low vehicle speed limits (30mph).

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Plan 3: National Cycle Network Route Map



© Sustrans.org / Map Layer: OS Maps

Accessibility by Bus

3.34 Located approximately 1km walking distance southwest of the site access, the Market Court bus stops provide services travelling both northbound and southbound from Long Sutton.

3.35 The bus stop on the southbound side of the carriageway (**Photograph 5**) comprises of a flag-and-pole with attached bus timetable information. Kassell kerbs can be found in situ to aid transfers and a bus cage is situated along the carriageway to assist with identifying the stop. The northbound stop (**Photograph 6**) comprises similar but also benefits from a bus shelter.

Photograph 5: Market Ct Southbound Stop



Photograph 6: Market Ct Northbound Stop



Photographs Dated May 2024

3.36 A summary of the bus services which operate from Market Court can be found within **Table 5**, with a Public Transport Plan attached within **Appendix F**.

Table 5: Summary of Bus Services Along Market Court

Service	Operating Days	Approx. Operating Times	Approx. Frequency (up to)	Route	Provider
50	Mon-Fri	09:10-13:20	2 Services	Long Sutton-Wisbech	Stagecoach East Midlands
	Sat	07:40-17:20	4 Services		
505	Mon-Fri	05:53-20:21	Hourly	Spalding-Kings Lynn	
	Sat	07:31-20:21			
	Sun	09:23-18:24			
505A	Mon-Fri	14:24	Single Service		
505B	Mon-Fri	14:54			
NG1	Mon-Fri	16:21		Spalding-Sutton Bridge	

Timetable data taken from 'traveline.info' accessed 04/05/2024

3.37 The bus timetable information demonstrates that residents will be able to use the bus services along the B1359 to access local villages, towns, and educational facilities.

3.38 There is also a ghost stop situated along the site frontage with Little London (Butterfly Park). This stop provides a school-only service operated by Fowlers Travel, operating to/from University Academy Long Sutton to Gedney Hill, Monday to Friday.

Sustainability Conclusion

3.39 Upon reviewing the information within this chapter, the site can be described as being in accordance with Paragraph 109 of the NPPF which states;

> *'Significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.*
>
> *Opportunities to maximise sustainable transport solutions will vary between urban and rural areas, and this should be taken into account in both plan-making and decision-making.'*

3.40 It is apparent that the proposed residential development would be accommodated by the existing infrastructure within the site's locale, with direct access to public transport links as well as existing amenities.

4.0 PROPOSED DEVELOPMENT

Schedule of Accommodation

4.1 The development proposals will seek planning permission for 123 dwellings which will provide 57 new affordable homes and 66 market housing. A breakdown of the development schedule can be found within **Table 6**.

Table 6: Schedule of Accommodation

Dwelling Type	Number
Affordable Houses	57
Market Houses	56
Bungalows	10
Total	**123**

Vehicle and Pedestrian Access

4.2 Access to the site will be taken onto Little London, utilising the already constructed bell mouth access for the site shown within **Photograph 1**.

4.3 The access into the site will measure five and a half metres in width, with footways of two metres width provided along either side of the road. As shown within **Photograph 1**, the existing bell mouth benefits from a dropped kerb with tactile paving, which will allow for a suitable point of crossing for pedestrians across the access.

4.4 In addition, a new dropped kerb crossing will be provided along Little London to the south of the site access to provide a suitable point of crossing over the carriageway. Drawing Number RHC-24-015-01, attached within **Appendix G**, depicts the site access and proposed uncontrolled crossing.

4.5 In the context of road safety, visibility splays refer to clear lines of sight for drivers at intersections or junctions. They are critical for ensuring that drivers have adequate visibility of approaching vehicles, pedestrians, and other potential hazards, reducing the risk of road collisions.

4.6 Manual for Streets outlines that for carriageways of 30mph, a Sight Stopping Distance (SSD) of 43m is considered safe and suitable. However, recorded 85th percentile vehicle speeds were noted to be close to 35mph and therefore, greater visibility splays than those typically used for 30mph roads would be recommended.

4.7 Appropriate visibility splays have been calculated using the dry weather 85th percentile speeds recorded on Little London. Chapter 10 of Manual for Streets (MfS2) provides detailed formulae for calculating visibility splays, taking into account vehicle speeds, the percentage of HGVs and the carriageway gradient. The results of the speed survey show that 85th percentile dry weather vehicle speeds are below 60kph (37.2mph) and HGVs constituted less than 5% of the overall readings in both directions. Therefore, a 1.5

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second reaction time and a 4.41m/s^2 deceleration rate have been used. As to ensure for a robust assessment, no gradients have been considered. A summary of the calculated visibility splays can be found within **Appendix G**.

4.8 Calculations outline that visibility splays of 52 metres to the north of the site access and 56 metres to the south of the site access would be suitable when adopting the above methodology, based on the recorded vehicle speeds.

4.9 Drawing Number RHC-24-015-01 demonstrates how these visibility splays appear to be contained solely within land under the ownership of the client, or land under the control of the Highway Authority.

4.10 Access to the site for pedestrians will be via the existing footway along Little London, as already constructed. A footway of two metres width will be provided within the site which will provide a continuous pedestrian link to the wider footway network along Little London.

4.11 Furthermore, a newly designated pedestrian crossing with a dropped kerb will be installed outside the site frontage. This crossing, enhanced with tactile paving, will provide residents with an appropriate location to cross over Little London.

Vehicle Parking

4.12 As previously outlined within Chapter 2.0, Lincolnshire Development Roads and Sustainable Design Approach 2021 Edition document provides parking levels for new developments. Vehicle parking numbers will therefore adhere to these standards based on the number of bedrooms within each dwelling.

Cycle Parking/Storage

4.13 It is expected that bicycles would be stored within the boundary of each property, in garages, sheds or similar storage facilities. Each of the dwellings will have enough enclosed garden space for this to be achieved.

Servicing

4.14 Servicing will be carried out within the site. Refuse vehicles and delivery vehicles will therefore need access to the site via the proposed access point previously mentioned.

4.15 Tracking of a large refuse vehicle outlines that entry and exit to/from the site can be achieved within a forward gear, utilising the road arrangement within the site. Drawing RHC-24-015-02, attached within **Appendix H**, demonstrates this tracking.

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5.0 VEHICLE IMPACT

5.1 When considering a residential development, it is generally accepted that the critical periods in terms of traffic impact on the adjacent highway network are the weekday morning (08:00-09:00) and evening (17:00-18:00) peak hours, when traffic flows associated with the site combined with the traffic flows on the adjacent highway network are at their greatest. Should the impact of development traffic on the local road network be considered acceptable during these periods, then it would also be acceptable during other, less busy, periods of the week.

Traffic Generation

5.2 To ascertain the number of vehicle movements generated by the proposed development, an analysis of the Trip Rate Information Computer System (TRICS), a computer program which assists in estimating person trip rates to and from sites, has been undertaken.

5.3 Given the site will be split into private and affordable dwellings, the land use '03-Residential, Category M-Mixed Private/Affordable Housing' was assessed for sites of similar size to the proposals.

5.4 Sites located within Greater London, Ireland, Scotland and Wales were discounted from the assessment, along with all sites not situated in 'Suburban' locations. Any surveys which were undertaken during the Covid-19 pandemic lockdown restrictions were also removed, in addition to sites which were situated on the edge of large settlements.

5.5 The TRICS assessment identified two surveys from two separate sites which would be replicable to the proposed development. A summary of the person trip rates can be found within **Table 7**, with the full TRICS data available in **Appendix I**.

Table 7: TRICS Total Person Trip Rate Analysis for the Proposed Development

	AM Peak (8am to 9am)			PM Peak (5pm to 6pm)		
	Arrival	Departure	Two-Way	Arrival	Departure	Two-Way
Trip Rates (per dwelling)	0.164	0.814	0.957	0.636	0.208	0.844

5.6 The 2011 census modal split results for the South Holland 008C super output area – lower layer, in which the site is situated, have been applied to the total person trips presented in **Table 7** to provide a forecast of trips for each travel mode. The resulting vehicular trip rates and trip generation for the site can be found within **Table 8**, with a breakdown of the multimodal trips associated with the site attached within **Appendix J**.

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Table 8: Development Vehicle Trip Rates and Trip Generation

	Trip Rates (per unit)			Trip Generation (123 units)		
	Arrival	Departure	Two-Way	Arrival	Departure	Two-Way
AM Peak (08:00-09:00)	0.118	0.587	0.706	15	72	87
PM Peak (17:00-18:00)	0.459	0.150	0.609	56	18	74
Daily (07:00-19:00)	2.330	2.345	4.676	287	288	575

5.7 As outlined within **Table 8**, the proposed development could generate 87 two-way vehicle movements during the generic AM peak hour, and 74 two-way vehicle movements during the generic PM peak hour during an average weekday. These trip rates are slightly greater than the previously approved trip rates which formed part of the Royal Haskoning Transport Assessment. Over an average weekday, the site could generate in the region of 575 two-way vehicle trips.

Butterfly Park Vehicle Flows

5.8 Information submitted as part of the previously approved planning application demonstrated that the Butterfly Park generated an average of 164 vehicle movements per day during the parks opening times (March to October). This information was provided by the occupier of the park over a three-year period and was subsequently considered acceptable during the 2012 planning application.

5.9 As the park generated an average of 164 vehicle movements per day, the proposed development would generate an increase of 411 movements per day when compared to the previous operation at the site. This is a net increase of 117 daily movements when compared to the previously approved 87 dwellings at the site.

Development Distribution & Assignment

5.10 The distribution and assignment of traffic associated with the proposed development has been predicted utilising a gravity model derived from analysis of travel to work patterns for residents.

5.11 Traffic generated from the proposed development has been distributed onto the local highway network based on 2011 Travel-to-Work Census data for Medium Super Output Area (MSOA). A MSOA is an administrative area somewhat larger than a ward but significantly smaller than a district.

5.12 The development will be accessed via Little London therefore, this will be the point where all development traffic joins the highway network. The site itself lies within MSOA 008 of the South Holland district. The resulting distribution model considers traffic travelling between the site and MSOAs for the Districts of: South Holland, coupled with all districts throughout the rest of the UK.

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5.13 Google Maps route finder has been used to make route choices based on the distance and/or time taken. Details of proposed assigned distributions are included in **Appendix K**, along with the results of the gravity model. A summary of the distribution is shown in **Table 9**.

Table 9: Gravity Model Results

Route	Route	Percentage Split
A	Roman Bank/London Road (East)	66.5%
B	Park Lane/London Road (West)	30.7%
C	Daniel's Gate	2.8%
		100.0%

5.14 To assess whether material traffic flow increases would occur in or beyond the above study area, the advice provided within the former DfT 'Guidance on Transportation Assessment' has been followed as a simple guide to the degree of influence of the proposed development. Although this guidance has been superseded, no replacement criteria for the assessment of material traffic flow increases have been made available and the former thresholds are still considered to be informative to the relative degree of impact of a scheme.

5.15 The former DfT guidelines provide no specific thresholds and do not advocate the use of percentage thresholds alone to determine where there is a material increase in traffic flow. However, they suggest that a two-way increase in traffic flow of more than 30 vehicles over a peak hour may require further consideration or a more detailed assessment.

5.16 When applying the above guidance, and using the results of the gravity model, it is considered that the London Road (B1359)/Roman Bank/Royal Standard Close crossroads junction will require further assessment, based on traffic movements attributed to the proposed development.

5.17 The following section of the report considers the impact of the proposed development on the London Road (B1359)/Roman Bank/Royal Standard Close crossroads junction.

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6.0 JUNCTION CAPACITY ASSESSMENTS

6.1 This section of the report includes a summary of the performance of the London Road (B1359)/Roman Bank/Royal Standard Close crossroads junction.

Traffic Surveys

6.2 Manual Classified Turning Counts (CTCs) were undertaken by Road Data Services Ltd on Tuesday 30th April 2024, to determine the vehicle movements (by classification) at the London Road (B1359)/Roman Bank/Royal Standard Close crossroads junction.

6.3 The traffic survey was undertaken on a neutral weekday within a neutral month (during school terms time) and therefore it is considered that the data is representative of typical traffic conditions. **Plan 4** outlines the location of the CTCs undertaken, with full traffic survey data contained within **Appendix L**.

Plan 4: Traffic Survey Locations



© Google Maps

Peak Hours

6.4 To establish baseline peak hours, the total volume of traffic at the surveyed at the junction has been analysed, with the results disaggregated to 15-minute accuracy in accordance with industry practice. The results of the survey indicated that the junction peak hours were 08:00-09:00 during the weekday AM (733 movements) and 16:30-17:30 during the weekday PM (794 movements). These peak hours reflect the largest total number of vehicle movements, in terms of Passenger Car Units (PCUs), recorded.

TEMPro Factors

6.5 The baseline traffic survey results have been factored using NTM adjusted TEMPro generated factors for the local area. Subject to the grant of planning, it is anticipated the development would be completed within five years therefore, the 2024 survey has been factored using rates obtained from TEMPro 8.1/Core Scenario for the South Holland 008 Medium Super Output Area. These growth rates are illustrated below.

AM Peak = 1.053

PM Peak = 1.056

Modelling Software

6.6 Junctions 10 software has been used to undertake standalone junction capacity assessments to determine the baseline operation of the junctions located within the project study area. Junctions 10 software allows a range of traffic flow profiles to be adopted when undertaking peak period model runs. Generally, an RFC (Ratio of Flow to Capacity) of below 0.85 (for roundabout and priority junctions) indicates that a junction operates within capacity for the assessed flows. An RFC of over 1.0 indicates that a junction is operating over capacity.

6.7 Arms exceeding a ratio of 0.85 (i.e. 85% capacity utilised) but under an RFC of 1.0 are considered to be approaching capacity and characteristically may result in occasions during the period modelled when queues develop and delays occur. An RFC of over 1.0 indicates that a junction is operating over capacity.

6.8 The geometry measurements entered into the Junctions 10 model have been measured using Ordnance Survey mapping measured in AutoCAD.

Assessment Scenarios

6.9 The operational capacity of the study area junctions has been assessed in the following traffic flow scenarios:

- 2024 Base Year
- 2029 Do Minimum (without the proposed development but with wider approved developments)
- 2029 Do Something (as above but with proposed development flows).

6.10 As outlined above, the assessment will consider junction operation at a base survey year of 2024 and a future year of 2029 (with and without development).

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Junction 1 Assessment

6.11 An assessment of the London Road (B1359)/Roman Bank/Royal Standard Close crossroads junction has been undertaken using the industry recognised Junctions 10 modelling software. The junction is located circa 1.1km to the south of the site and comprises of four arms. The layout of the junction is shown within **Plan 5**.

Plan 5: Aerial Image of London Road (B1359)/Roman Bank/Royal Standard Close crossroads



© Google Maps

6.12 **Table 10** provides a summary of predicted RFC values and queue lengths for the London Road (B1359)/Roman Bank/Royal Standard Close crossroads junction during all three scenarios.

6.13 A geometry measurement drawing, along with traffic flow diagrams and the capacity assessment results, can be found in **Appendix M**.

Table 10: Assessment Results of Roman Bank Crossroads Junction

Junction Arm	AM (08:00-09:00)		PM (17:00-18:00)	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2024 Base Survey				
Royal Standard Close – All Movements	0.0	0.00	0.0	0.00
B1359 London Road (N) – All Movements	0.5	0.25	0.6	0.27
Roman Bank – Left & Ahead	0.4	0.26	0.3	0.21
Roman Bank – Ahead & Right	0.1	0.10	0.1	0.08
B1359 London Road (S) – All Movements	0.0	0.01	0.0	0.00
2029 Do Minimum				
Royal Standard Close – All Movements	0.0	0.00	0.0	0.00
B1359 London Road (N) – All Movements	0.5	0.27	0.6	0.29
Roman Bank – Left & Ahead	0.4	0.27	0.3	0.22
Roman Bank – Ahead & Right	0.1	0.11	0.1	0.09
B1359 London Road (S) – All Movements	0.0	0.01	0.0	0.00
2029 Do Something				
Royal Standard Close – All Movements	0.0	0.00	0.0	0.00
B1359 London Road (N) – All Movements	0.6	0.29	0.9	0.38
Roman Bank – Left & Ahead	0.6	0.36	0.3	0.24
Roman Bank – Ahead & Right	0.1	0.12	0.1	0.09
B1359 London Road (S) – All Movements	0.0	0.01	0.0	0.00

6.14 **Table 10** demonstrates how the crossroad junction operates within capacity during the busiest hourly period over an average weekday.

6.15 Paragraph 115 of the NPPF states *'Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe'*. It is considered that the development traffic upon this junction cannot be considered as 'severe' and therefore, no further analysis work is required.

Site Access

6.16 To confirm that the site access junction is suitable to cater for anticipated use, without resulting in detriment to the operation of Little London, a further modelling assessment has been undertaken using the industry recognised Junctions 10 modelling software.

6.17 **Table 11** provides a summary of predicted RFC values and queue lengths for the site access junction during the 2029 Do Something scenario. Capacity assessment results can be found in **Appendix N**.

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Table 11: Assessment Results of Site Access

Junction Arm	AM (08:00-09:00)		PM (17:00-18:00)	
	Queue (PCU)	RFC	Queue (PCU)	RFC
Site Access – All Movements	0.2	0.13	0.0	0.03
Little London (S) – All Movements	0.0	0.03	0.1	0.10

6.18 **Table 11** demonstrates how the site access junction operates within capacity during the typical AM and PM weekday peak hours. It is considered that the development flows will have negligible impact upon the operational capacity of Little London and therefore, no further assessment work has been undertaken.

6.19 Given the projected traffic flows outlined within this chapter, it is considered that the proposed development will not result in a severe impact on the highway network and is therefore acceptable on transport grounds in accordance with Paragraph 115 of the NPPF.

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7.0 MITIGATION PROPOSALS

7.1 Based on the information provided in this report, this section will list all improvements to help facilitate the development.

Pedestrian Improvements

7.2 A new pedestrian dropped kerb crossing will be provided outside the site frontage which will provide residents and existing highway users a place to cross the Little London carriageway. This crossing will be a simple dropped kerb crossing with tactile paving and will be delivered as part of a S278 agreement.

Travel Plan

7.3 A Travel Plan has been prepared alongside this Transport Assessment to assist in reducing the number of single car occupancy vehicle trips associated with the application site.

7.4 The Travel Plan provides a package of measures to encourage all residents to use sustainable transport modes, reducing the sites impact upon the immediate highway network.

7.5 A Travel Plan can offer substantial gains towards sustainable transport objectives of central and local government, as well as providing several benefits to residents. The overarching aim of the Travel Plan is:

> *"To create a sustainable, community-driven environment that promotes a range of lifestyle and travel choices and reduces reliance on the private car."*

7.6 Travel planning is an on-going process which will grow and develop with time. The Travel Plan will reflect the changing circumstances faced by residents, and the environment in which they operate.

7.7 The impacts of the Travel Plan upon the highway network, through the proposed 10% reduction in single car occupancy vehicle trips, would likely result in a lesser impact at the London Road (B1359)/Roman Bank/Royal Standard Close crossroads junction and site access junction.

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8.0 SUMMARY AND CONCLUSIONS

Summary

8.1 This Transport Assessment has been produced to provide information in support of a proposed residential development of 123 dwellings at land known as The Butterfly Park, Little London, Long Sutton.

8.2 A review of available collision data supplied by crashmap.co.uk highlights that there are no road safety concerns within the study area.

8.3 A review of the accessibility and sustainability of the site has been carried out, where it has been demonstrated that a range of facilities and amenities can be found within a reasonable walking/cycling distances from the site centre.

8.4 The proposed site access arrangements are suitable to cater for the development proposals, with suitable visibility splays achievable when based on recorded vehicle speeds.

8.5 Improvements will be made to the existing pedestrian infrastructure outside of the site frontage through the provision of a dropped kerb crossing with tactile paving.

8.6 Swept path analysis confirms that a large refuse vehicle can enter, turn and exit the site within a forward gear, demonstrating the site can be serviced by the council.

8.7 Proposed parking provision on-site will be in line with the Lincolnshire Development Roads and Sustainable Design Approach 2021 Edition document, which will ensure that there is no adverse impact upon the local highway network.

8.8 Formal assessments of the London Road (B1359)/Roman Bank/Royal Standard Close crossroads junction and site access junction demonstrate that the proposed development traffic will have negligible impacts upon their operation at a 2029 'Do Something' scenario.

8.9 The Travel Plan that accompanies this Transport Assessment sets out, in detail, a package of measures which will be adopted by the client to encourage residents to use sustainable transport, reducing the number of single car occupancy vehicle trips.

Conclusions

8.10 Based on the assessments undertaken, it is regarded that the proposed development would not be expected to have a severe impact on the operation of the local highway network. The proposals are therefore considered to be in accordance with the 'National Planning Policy Framework' (NPPF) which states that: "development should only be prevented or refused on highways grounds if there would be

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an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe".

8.11 In this context, it is concluded from this report that the development accords with all prevailing policies and that refusal from a transport perspective would be unwarranted.

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Appendix A: -



BOUNDARY TREATMENT

- **TYP 1** – 1.8m high robust close boarded timber fence, the fence will have no footholds and the rails and posts will be positioned to face the properties/within the gardens.
- **TYP 2** – 1.2m high Uncrainable timber post and rail fencing, rails and posts will be positioned to face the properties/within the gardens.
- **TYP 4** – 0.6m Timber knee rail to POS to avoid vehicular access
- **TYP 5** – 1-2 metal railing where site has key corners and in front of hedging
- **BOLLARDS**

HARD SURFACING

- **Denotes Highway** Tarmac
- **Denotes drive ways/parking** Block paving
- **Denotes Footpath** Tarmac
- **Denotes private patio area** concrete slab
- **Denotes orchard footpath** Breedon self-binding gravel path
- **Black Paved Road Surface** Constructed of pedestrian crossings on highway.

SOFT LANDSCAPING

- **Denotes rough grassland** Amenity rough grassland mix from Emorsgate Seeds
- **Denotes mowed grassland** Quality hard-wearing lawn seed mix 80% Perennial Ryegrass, 20% Creeping Red Fescue
- **Denotes proposed shrub planting**

GRASS & WILDFLOWER MAINTENANCE PLAN & SCHEDULE

AMENITY GRASS

Bracket sweep, repair, rotovate to level, re-seed if required, seed with BS4 mix 13	May-September	As required
Grass cut, leave arisings, trim edges and collect trimmings	April-October	Every 2 weeks
Fertiliser-Spring	April	Annually
Fertiliser-Autumn	October	Annually
Scarification	March	Annually
Spiking	Autumn	Twice Annually
Reforming of edges to paths and planting	Autumn	Annually

WILDFLOWER & WILDGRASS

These grasses will comprise of a native species mix and permitted to grow longer in order to provide habitat for wildlife and provide an attractive wild grass area. The maintenance is proposed and as follows:

Year 1 After Installation

Cut as necessary to keep the height of 15cm until the end of March, when the vegetation is cut to 5cm. Arisings to be removed. Cutting helps to weaken the annual species in favour to establish Perennials well enough to compete with more vigorous grass species.

Year 2 and Beyond

The number of cuts can be much reduced. Instead, the purpose will be to try and create a varied sward structure, encouraging a variety of plants. Cutting is still an important factor in successful grassland establishment. As the vegetation starts to die back in autumn, cut to 5cm and remove arisings. Repeat cut in autumn using mower/strimmer in October when the vegetation has died back.

The grassland should only be cut once plants and grasses have set and shed their seeds. The grassland should be cut to a length of 2-3 inches to ensure re-growth occurs. Cutting should be undertaken in July, August, or September. The first cut should be cuttings to dry in the cut for a day or two. This promotes any invertebrates that have colonised with an opportunity to disperse. Remove all cuttings before they begin to break down otherwise that breakdown will inadvertently increase soil fertility.

An open sward over the winter ensures healthy, disease free plants which can benefit from the low winter sun and frosts. Cutting in March will also help to control any early wildflowers and grasses are in the perfect position to develop flowers and seed heads quickly to expand their perennial cycle thus guaranteeing a wildflower meadow year after year.

NEW TREES

All new trees to be standard size 8-10cm girth, or 20 litre containers unless specified.

No.	Species	Root	Girth (cm)	Height (m)	25yr Height (m)
T1	Tilia cordata 'Greenspire'	BR	8-10	2.5-3.0	10
T2	Betula pendula 'Silver Birch'	BR	8-10	2.5-3.0	10
T3	Carpinus betulus 'Streetwise'	BR	8-10	2.5-3.0	9
T4	Sorbus aria 'Majestica'	BR	8-10	2.5-3.0	7
T5	Acer pseudoplatnus	BR	8-10	2.5-3.0	15
T6	Acer Campestre 'Streetwise'	BR	8-10	2.5-3.0	7
T7	Acer Campestre 'Field Maple'	BR	8-10	2.5-3.0	10
T8	Salix alba 'White Willow'	BR	8-10	2.5-3.0	12

PLANTING SPECIFICATION

All planting stock shall comply with the requirements of the British Standards 3936, and shall be healthy, strong with a well developed root system and shall be supplied in accordance with National plant specification. The native plants are to be of local provenance and be well tubaked. Trees and shrubs are to be lifted from the open ground in the nursery. They are not to be handled and transported in accordance with relevant codes of practice, with roots kept moist and wrapped to protect them from adverse weather conditions.

Additional topsoil to be supplied where required and to ensure that all tree pits are backfilled with a suitable quality soil ready for grass areas, 300mm deep for hedges and shrubs, and 750 deep x 1500 square for tree planting.

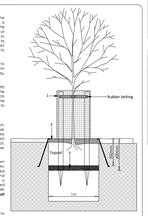
All planting operations shall be carried out in accordance with BS 4428. Planting pits are to be dug at a size in excess of the root ball of the plant. Trees and shrubs are to be lifted from the are to be planted at their natural depth as they existed in the nursery. Peat free planting compost or well rotted manure is to be incorporated in the backfill of all tree pits.

TREE PLANTING

Bare root trees are to be planted November - to - March. If planting is to be carried out at other times then container grown stock should be used, if planted in late spring or early summer then irrigation should be provided. Stakes are to be 1500mm long, 750mm into the ground and the tree secured by one tree tie. All plants are to have rabbit spirals and individual guards as well as a 600mm diameter mulch mat or bark mulch. 'In diameter round' the base of each standard tree is to be mulched 750mm deep with medium grade bark mulch. **Trees are to be planted 5m away from adoptable road objectes to prevent lateral damage to the highway.**

HEDGE PLANTING

Excavated trench to be 400mm wide and cultivated to 300mm deep. All pernicious weeds are to be eradicated. Plants are to be set out in a double staggered row, 300mm x 4 plants to the metre. Hedging is either to be planted through a weed control geo textile or mulched with 75mm of bark mulch. All hedging thus to be protected with rabbit guards.



1. Weld Mesh guard (12 gauge wire with a 25mm x 75mm grid size), secure with galvanised staples or ratchet ties
2. 80mm mulch to aid moisture retention and weed suppression
3. Dig and loosen base to aid drainage and root growth

NEW HEDGES

Plant at 4 plants per metre in double staggered row, species mix 3-7 at random - bare root plants

Species	Type	Roof	Size (mm)
Fagus Sylvatica 'copper beech'	n/a	BR	450-600

SUDS MAINTENANCE PLAN & SCHEDULE

Attenuation Basin

Schedule	Work to be carried out	Frequency
Regular maintenance	Remove litter and debris	Monthly
	Cut grass to spillways and access	Monthly (or as required)
	Cut meadow grass to specified areas and remove cuttings	Half-yearly (spring & autumn)
	Manage other vegetation & remove nuisance plants	Monthly (or as required)
	Inspect inlet, outlet and overflow arrangements to ensure they are working effectively and remove debris as necessary	Monthly
	Inspect bankstables, structures, pipework etc for damage	Monthly
	Top up of level gauge below level of planting stream	Annually
	Manage nuisance plants	Annually
Occasional maintenance	Weed control of any vegetation growth	As required
	Prune and trim any trees and remove cuttings	Every 2 years or as required
	Remove sediment from inlet basin	Every 5 years
Remedial Actions	Repair erosion or other damage by reseeding or re-turfing	As required
	Realignment of basin slopes and bankside design levels	As required
	Repair of inlets, outlets and overflows	As required

SUDS systems are to be managed and maintained by the Management Co.

LANDSCAPING MANAGEMENT PLAN & MAINTENANCE SCHEDULE

Description	Work to be carried out	Responsibility	Frequency
Unadopted parking areas	Apply approved weed killer Clean / Jetwash Fascia	Housing association	As required
Unadopted street lighting	Repair / relamp	Housing association	As required
Unadopted roads	Repair	Housing association	As required
Private gardens	Maintenance / repair	Property occupier	As required
Grass	Maintenance as noted	Management Co.	See notes
Hedging	Maintenance as noted	Management Co.	See notes

TREES MAINTENANCE SCHEDULE

Task	Time of Year	Frequency
Inspection of mature trees	March-September	Annually
Selective felling of over mature/ declining species	October to February	As required
New planting to broaden/ supplement diversity of tree stock	October to March	Annually
Other works- removal of debris trapped in branches etc.	As necessary	Annually
Removal of self self seedlings	January	Annually
Selective thinning and pruning to be undertaken to ensure there is sufficient light through the tree canopy	As necessary	As required

HEDGES

Task		
Trimming	April to October	3 times
Reshaping	Hard prune Oct-Feb	Annually
Chemical weed control along base	In winter and summer only when other methods have failed	Annually
Fertilising	Spring	Annually
New Planting	October-March	Annually
Litter/Debris	Throughout	Daily
Watering	As necessary, depending on weather	

Proposed Street Elevation A-A
Scale 1:200

Proposed Landscape Plan
Scale 1:500

Rev B- 22/05/2024- Pond Amends
Rev A- 12/04/2024- boundary amend adj.64

DRAWING ISSUES AND REVISIONS

John Dean Consultancy | 10 Vickers Lane | Louth | Lincolnshire | LN11 8EZ |
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ldc

PROJECT :	Residential Development The Old Butterfly Park Long Sutton
DATE :	July 2023
TITLE :	Proposed Landscaping & Boundary Treatments
SCALE :	1:500
ORIGINAL SIZE	A0 (Landscape)
DRAWING NUMBER	LDC3963-PL-02_B

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All Details and Specification on this drawing and in relation to this specific project should be adhered to. If any deviations occur the contractor / client should inform John Dean Consultancy as we cannot be held responsible for errors resulting from unchecked detail and specification changes.

Appendix B: -

South East Lincolnshire
Local Plan 2011-2036

Adopted March 2019

Policies Map Inset Map No 7

Long Sutton

Main Service Centre

Scale 1:8,000 @A2

N

- Inset Map Boundary
- Countryside.....Policy 1,9,19,22,23
- Settlement Boundary.....Policy 1,9,22,23
- Town Centre Boundary.....Policy 24,26,27
- Conservation Area.....Policy 29
- Housing Commitments.....Policy 11
- Housing Allocation.....Policy 11
- Existing Main Employment Area.....Policy 7
- Proposed Main Employment Area.....Policy 7
- Established Employment Sites.....Policy 7
- Prestige Employment Site.....Policy 8
- Primary Shopping Area.....Policy 24
- Local Nature Reserve.....Policy 28
- Recreational Open Space.....Policy 32
- Green Infrastructure.....Policy 32

Scale 1:4,000

South East Lincolnshire
Joint Strategic Planning Committee

Ordnance Survey
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Appendix C: -

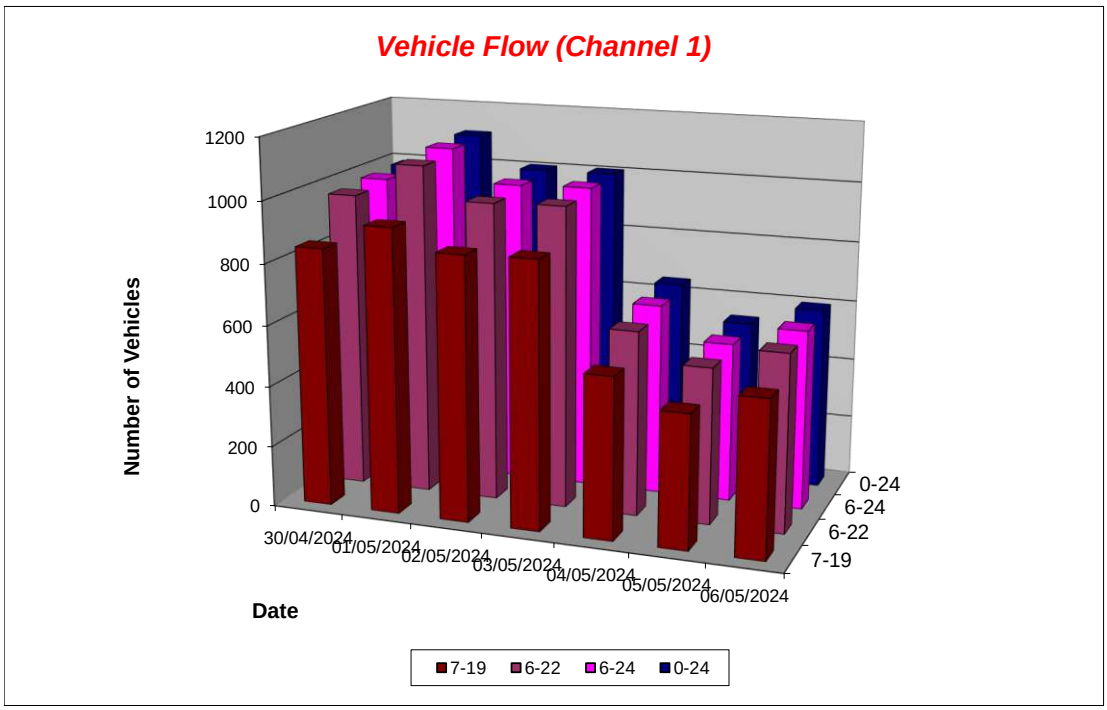
Long Sutton ATC, Little London

Produced by Road Data Services Ltd.

Channel 1 - Northbound **Vehicle Flow** **Week 1**

Hr Ending	30/04/2024 Tuesday	01/05/2024 Wednesday	02/05/2024 Thursday	03/05/2024 Friday	04/05/2024 Saturday	05/05/2024 Sunday	06/05/2024 Monday	Weekday Average	Average
1	1	0	0	1	8	6	4	1	3
2	1	1	0	0	3	2	0	0	1
3	0	0	1	1	2	1	0	0	1
4	0	0	1	1	0	0	0	0	0
5	0	1	1	1	1	0	1	1	1
6	4	5	7	1	1	0	3	4	3
7	19	27	21	18	11	9	8	19	16
8	42	51	59	44	16	7	11	41	33
9	123	135	116	118	26	15	24	103	80
10	51	66	64	42	27	21	35	52	44
11	48	52	37	59	40	27	43	48	44
12	42	47	59	48	48	54	37	47	48
13	71	60	46	53	59	47	42	54	54
14	56	53	40	68	56	63	50	53	55
15	68	79	84	75	50	36	73	76	66
16	114	102	98	101	51	40	53	94	80
17	87	110	81	82	72	52	50	82	76
18	88	73	104	95	47	39	56	83	72
19	56	103	75	83	35	35	34	70	60
20	53	64	41	60	33	34	31	50	45
21	32	38	34	25	21	22	18	29	27
22	22	23	19	14	14	11	17	19	17
23	9	14	14	7	19	8	8	10	11
24	3	4	2	8	6	5	1	4	4

7-19	846	931	863	868	527	436	508	803	711
6-22	972	1083	978	985	606	512	582	920	817
6-24	984	1101	994	1000	631	525	591	934	832
0-24	990	1108	1004	1005	646	534	599	941	841



Long Sutton ATC, Little London

Produced by Road Data Services Ltd.

Channel 1 - Northbound **Average Speed** **Week 1**

Hr Ending	30/04/2024 Tuesday	01/05/2024 Wednesday	02/05/2024 Thursday	03/05/2024 Friday	04/05/2024 Saturday	05/05/2024 Sunday	06/05/2024 Monday
1	38.5	-	-	21.8	28.6	30.8	33.4
2	27.7	25.6	-	-	30.5	30.0	-
3	-	-	37.0	44.8	28.6	25.8	-
4	-	-	26.5	33.1	-	-	-
5	-	31.4	38.3	24.2	26.0	-	29.3
6	32.7	28.9	32.1	32.7	26.6	-	30.3
7	28.9	29.3	30.0	30.2	25.7	25.0	30.2
8	26.6	28.6	29.3	30.2	27.3	27.2	27.9
9	26.8	27.3	25.8	27.5	29.0	26.5	27.6
10	27.2	27.6	28.2	28.6	28.3	25.4	26.7
11	26.7	26.3	28.2	27.6	26.5	25.4	26.2
12	25.8	25.3	26.7	29.5	30.6	25.0	24.7
13	27.0	29.8	30.2	28.6	30.5	27.7	26.8
14	25.6	25.7	28.0	28.6	26.8	26.2	28.5
15	27.7	27.5	27.6	28.9	27.3	26.0	25.4
16	26.6	24.4	24.8	24.6	29.4	29.1	25.4
17	30.7	25.7	28.3	29.0	26.9	26.1	24.8
18	28.7	25.8	28.8	27.6	27.1	26.8	25.8
19	27.5	26.8	29.1	28.3	27.3	27.0	27.3
20	27.9	26.2	30.3	27.9	29.8	27.9	26.5
21	29.3	25.9	27.4	28.4	27.3	25.6	28.0
22	28.9	27.1	27.2	30.3	24.2	26.5	31.3
23	32.6	28.5	27.1	34.5	31.1	28.4	30.1
24	32.8	33.9	32.6	32.1	31.3	31.6	58.1
10-12	26.3	25.8	27.3	28.5	28.7	25.1	25.5
14-16	27.0	25.7	26.1	26.4	28.3	27.6	25.4
0-24	27.6	26.7	27.8	28.2	28.2	26.7	26.6

Average (ALL)	27.5
Weekday Inter-Peak	26.4

Channel 1 - Northbound **85th Percentile**

Hr Ending	30/04/2024 Tuesday	01/05/2024 Wednesday	02/05/2024 Thursday	03/05/2024 Friday	04/05/2024 Saturday	05/05/2024 Sunday	06/05/2024 Monday
1	-	-	-	-	31.4	35.8	47.4
2	-	-	-	-	32.5	31.5	-
3	-	-	-	-	30.9	-	-
4	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-
6	40.3	39.3	36.7	-	-	-	32.8
7	35.0	34.6	36.3	39.0	34.4	33.8	39.9
8	32.2	34.2	35.8	35.8	33.6	37.8	36.5
9	32.4	32.0	32.4	33.0	36.2	32.0	34.4
10	35.2	35.1	34.3	35.7	35.0	32.1	33.2
11	32.8	32.4	36.1	32.3	33.6	34.1	32.7
12	30.3	32.1	33.0	36.1	38.5	31.5	31.9
13	31.7	35.6	35.1	34.1	36.9	34.6	33.3
14	33.1	33.7	35.8	36.3	33.5	32.8	34.4
15	33.9	35.4	33.2	34.6	34.1	31.4	33.1
16	34.1	30.6	33.0	31.9	35.3	38.2	32.1
17	36.3	31.4	34.8	35.4	32.1	34.0	30.7
18	35.2	32.4	35.2	35.0	33.3	33.6	31.5
19	34.1	32.8	37.2	34.4	33.4	33.7	33.2
20	33.8	31.7	37.1	33.1	35.6	34.1	34.2
21	33.3	32.8	34.3	35.7	34.6	32.4	34.2
22	35.9	33.1	34.1	35.9	30.2	34.6	39.2
23	42.5	36.4	34.0	39.5	38.7	37.3	34.8
24	34.6	39.1	33.1	35.6	33.7	36.2	-
10-12	31.7	32.2	34.3	34.2	36.5	32.4	32.4
14-16	34.0	32.9	33.4	33.4	34.7	35.3	32.7
0-24	34.1	33.2	34.8	34.8	34.9	34.0	33.7

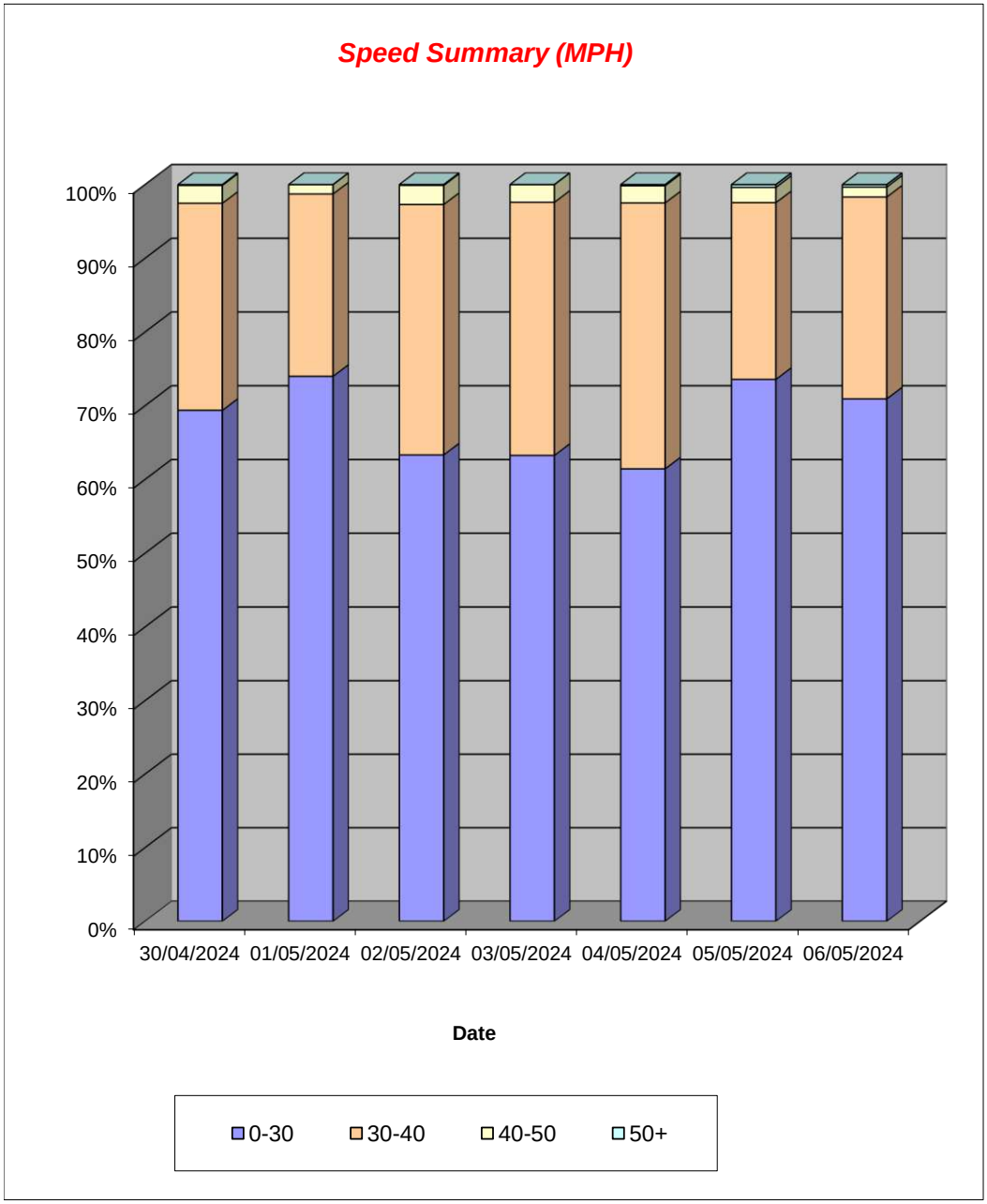
85th %ile (ALL)	34.3
Weekday Inter-Peak	33.3

Long Sutton ATC, Little London

Produced by Road Data Services Ltd.

Channel 1 - Northbound | **Speed Summary** | **Week 1**

Speed (MPH)	30/04/2024 Tuesday	01/05/2024 Wednesday	02/05/2024 Thursday	03/05/2024 Friday	04/05/2024 Saturday	05/05/2024 Sunday	06/05/2024 Monday
0-30	687	820	636	636	397	393	425
30-40	278	274	341	345	233	128	164
40-50	24	14	26	24	15	11	8
50+	1	0	1	0	1	2	2
TOTAL	**990**	**1108**	**1004**	**1005**	**646**	**534**	**599**



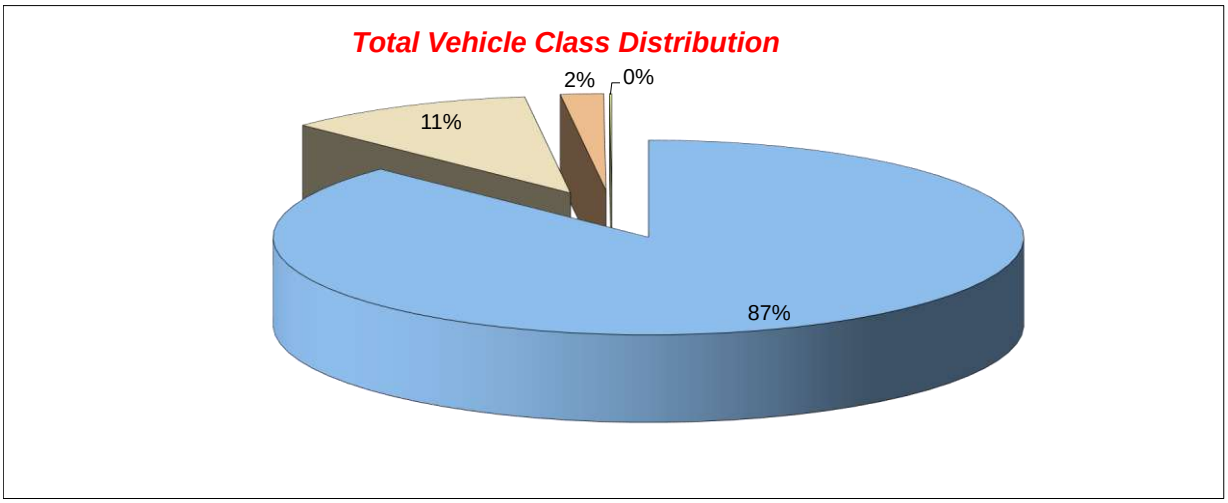
Long Sutton ATC, Little London

Produced by Road Data Services Ltd.

Channel 1 - Northbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	MGV - 2	OGV1 / Bus - 3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
30/04/2024					
7-19	712	109	24	1	846
6-22	819	124	28	1	972
6-24	831	124	28	1	984
0-24	836	125	28	-1	988
01/05/2024					
7-19	809	100	20	2	931
6-22	940	115	26	2	1083
6-24	955	117	27	2	1101
0-24	961	118	27	2	1108
02/05/2024					
7-19	745	93	21	4	863
6-22	853	100	21	4	978
6-24	867	101	22	4	994
0-24	877	101	22	4	1004
03/05/2024					
7-19	748	105	15	0	868
6-22	849	121	15	0	985
6-24	862	123	15	0	1000
0-24	866	124	15	0	1005
04/05/2024					
7-19	468	54	4	1	527
6-22	537	64	4	1	606
6-24	560	66	4	1	631
0-24	574	67	4	1	646
05/05/2024					
7-19	400	32	4	0	436
6-22	468	39	5	0	512
6-24	480	40	5	0	525
0-24	489	40	5	0	534
06/05/2024					
7-19	461	41	6	0	508
6-22	519	56	7	0	582
6-24	528	56	7	0	591
0-24	535	56	8	0	599

Average					
7-19	620	76	13	1	711
6-22	712	88	15	1	817
6-24	726	90	15	1	832
0-24	734	90	16	1	841

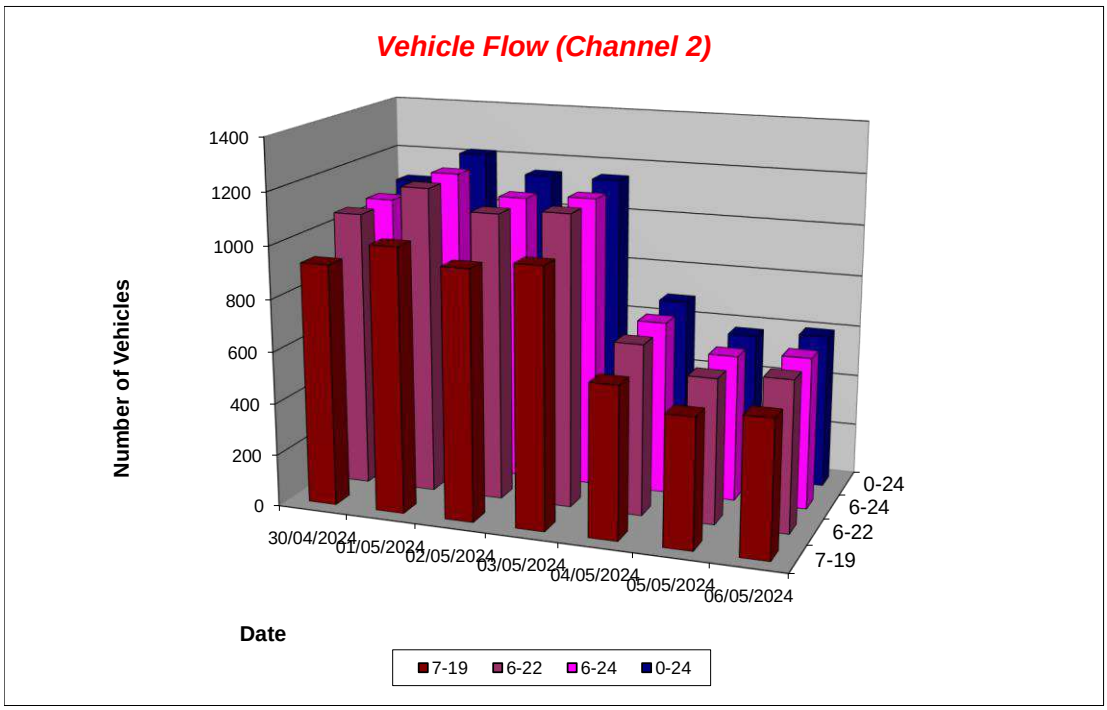


Long Sutton ATC, Little London

Produced by Road Data Services Ltd.

Channel 2 - Southbound **Vehicle Flow** **Week 1**

Hr Ending	30/04/2024 Tuesday	01/05/2024 Wednesday	02/05/2024 Thursday	03/05/2024 Friday	04/05/2024 Saturday	05/05/2024 Sunday	06/05/2024 Monday	Weekday Average	Average
1	0	0	1	0	2	3	2	1	1
2	0	1	2	0	4	1	0	1	1
3	2	0	0	0	0	0	0	0	0
4	0	0	2	0	0	0	0	0	0
5	6	5	3	1	3	0	2	3	3
6	19	25	30	21	6	4	7	20	16
7	38	38	38	30	12	3	10	31	24
8	63	68	65	64	33	15	26	57	48
9	142	163	156	153	44	31	23	127	102
10	78	86	83	79	74	43	42	74	69
11	72	67	50	57	51	78	66	62	63
12	55	74	67	69	57	59	51	63	62
13	58	53	69	59	55	40	59	60	56
14	63	62	50	61	61	40	41	55	54
15	62	58	57	53	59	67	44	55	57
16	122	136	148	119	40	36	49	115	93
17	84	105	88	80	34	34	52	82	68
18	86	71	60	112	39	35	46	75	64
19	42	72	64	84	36	19	24	57	49
20	42	55	65	52	33	25	26	48	43
21	41	37	25	22	19	16	12	27	25
22	14	34	17	28	11	17	11	21	19
23	4	5	5	4	8	2	4	4	5
24	1	2	3	0	4	6	0	1	2
7-19	927	1015	957	990	583	497	523	882	785
6-22	1062	1179	1102	1122	658	558	582	1009	895
6-24	1067	1186	1110	1126	670	566	586	1015	902
0-24	1094	1217	1148	1148	685	574	597	1041	923



Long Sutton ATC, Little London

Produced by Road Data Services Ltd.

Channel 2 - Southbound **Average Speed** **Week 1**

Hr Ending	30/04/2024 Tuesday	01/05/2024 Wednesday	02/05/2024 Thursday	03/05/2024 Friday	04/05/2024 Saturday	05/05/2024 Sunday	06/05/2024 Monday
1	-	-	11.4	-	31.8	31.3	25.0
2	-	31.7	20.5	-	29.8	37.3	-
3	29.6	-	-	-	-	-	-
4	-	-	22.0	-	-	-	-
5	37.0	34.3	43.6	17.8	37.6	-	29.1
6	28.0	29.4	31.7	29.5	27.1	32.2	32.3
7	31.6	28.6	33.3	29.9	31.0	31.5	30.7
8	28.5	30.1	31.2	31.3	33.0	32.4	31.6
9	28.1	28.4	27.9	28.6	29.1	28.1	28.2
10	29.3	27.4	28.5	27.8	29.1	29.6	30.8
11	26.8	29.4	28.5	27.1	30.2	27.2	29.8
12	26.1	28.0	27.6	27.6	30.5	28.3	25.6
13	27.5	31.0	28.8	28.0	31.2	29.2	27.6
14	29.2	27.5	28.0	29.8	27.8	26.5	29.8
15	28.3	29.8	30.7	29.6	28.9	26.8	29.5
16	26.7	26.6	25.3	26.2	28.9	28.1	27.6
17	30.8	27.0	30.0	30.0	27.6	28.7	27.9
18	30.7	28.4	29.6	29.1	31.4	29.4	28.1
19	30.3	29.2	28.9	28.7	28.3	29.2	29.7
20	29.1	26.5	29.2	28.5	27.7	29.1	27.1
21	27.9	27.5	30.8	33.6	29.1	25.6	27.6
22	29.2	28.6	30.6	27.9	28.9	30.0	32.6
23	24.8	30.5	31.5	29.2	26.2	27.5	36.5
24	40.6	30.1	28.6	-	26.7	29.7	-
10-12	26.5	28.7	28.0	27.4	30.3	27.7	27.9
14-16	27.3	27.6	26.8	27.3	28.9	27.3	28.5
0-24	28.6	28.3	28.8	28.7	29.5	28.3	28.8

Average (ALL)	28.7
Weekday Inter-Peak	27.5

Channel 2 - Southbound **85th Percentile**

Hr Ending	30/04/2024 Tuesday	01/05/2024 Wednesday	02/05/2024 Thursday	03/05/2024 Friday	04/05/2024 Saturday	05/05/2024 Sunday	06/05/2024 Monday
1	-	-	-	-	32.2	36.1	28.4
2	-	-	20.6	-	32.7	-	-
3	31.4	-	-	-	-	-	-
4	-	-	23.0	-	-	-	-
5	47.9	39.6	52.1	-	52.4	-	36.5
6	36.4	37.8	39.1	38.1	31.4	36.6	37.6
7	36.8	37.1	39.5	36.6	39.5	34.9	40.2
8	37.0	38.0	37.9	39.0	38.2	37.1	37.1
9	34.6	33.9	35.3	34.6	37.5	35.9	35.2
10	35.4	33.2	34.8	34.3	36.3	37.3	36.9
11	33.9	35.2	35.3	33.5	36.6	34.0	36.0
12	32.7	33.7	34.6	34.3	38.9	34.7	34.0
13	34.1	37.9	37.7	36.5	38.3	37.1	34.1
14	34.9	34.5	34.1	35.8	35.8	33.0	38.0
15	35.2	36.9	38.6	36.2	37.0	35.3	37.4
16	32.7	32.6	32.5	33.7	37.0	34.8	34.1
17	36.0	33.5	36.8	35.0	36.3	36.3	34.8
18	36.4	34.6	36.6	36.0	36.4	37.0	34.7
19	36.9	35.6	37.0	35.2	34.6	35.2	37.5
20	35.5	33.0	36.3	34.6	35.9	36.9	32.3
21	34.2	33.0	37.9	40.6	34.2	33.1	39.3
22	36.6	35.4	37.6	33.8	34.7	34.1	37.3
23	26.1	40.9	37.7	31.4	33.7	45.4	45.6
24	-	33.9	36.2	-	35.1	34.1	-
10-12	33.4	34.5	34.9	33.9	37.8	34.4	35.5
14-16	33.7	34.1	34.6	34.7	37.0	35.2	35.8
0-24	35.3	34.9	36.3	35.5	37.1	35.6	36.1

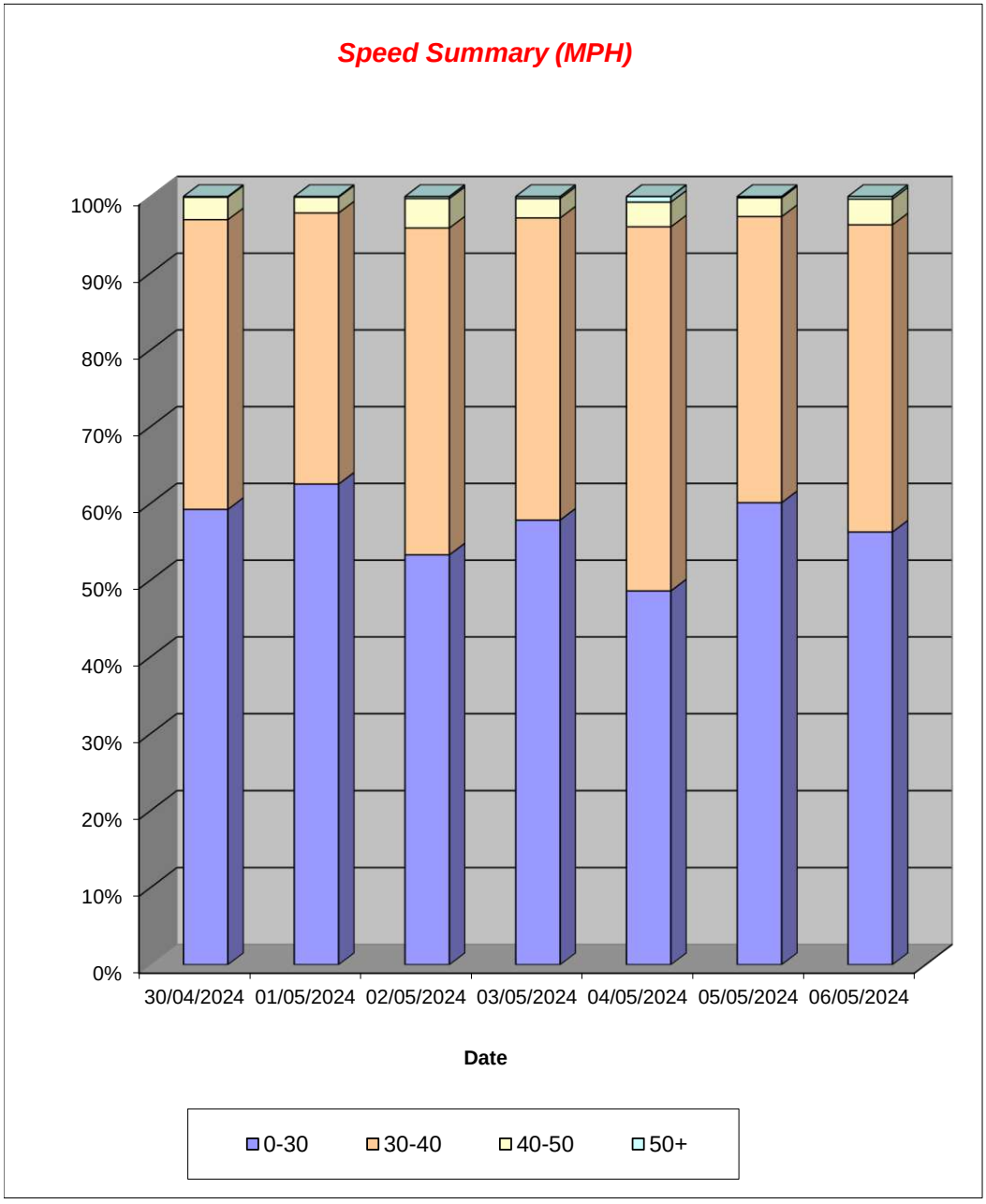
85th %ile (ALL)	35.8
Weekday Inter-Peak	34.5

Long Sutton ATC, Little London

Produced by Road Data Services Ltd.

Channel 2 - Southbound | **Speed Summary** | **Week 1**

Speed (MPH)	30/04/2024 Tuesday	01/05/2024 Wednesday	02/05/2024 Thursday	03/05/2024 Friday	04/05/2024 Saturday	05/05/2024 Sunday	06/05/2024 Monday
0-30	648	761	612	664	333	345	336
30-40	413	430	489	452	325	214	239
40-50	32	25	44	29	22	14	20
50+	1	1	3	3	5	1	2
TOTAL	**1094**	**1217**	**1148**	**1148**	**685**	**574**	**597**



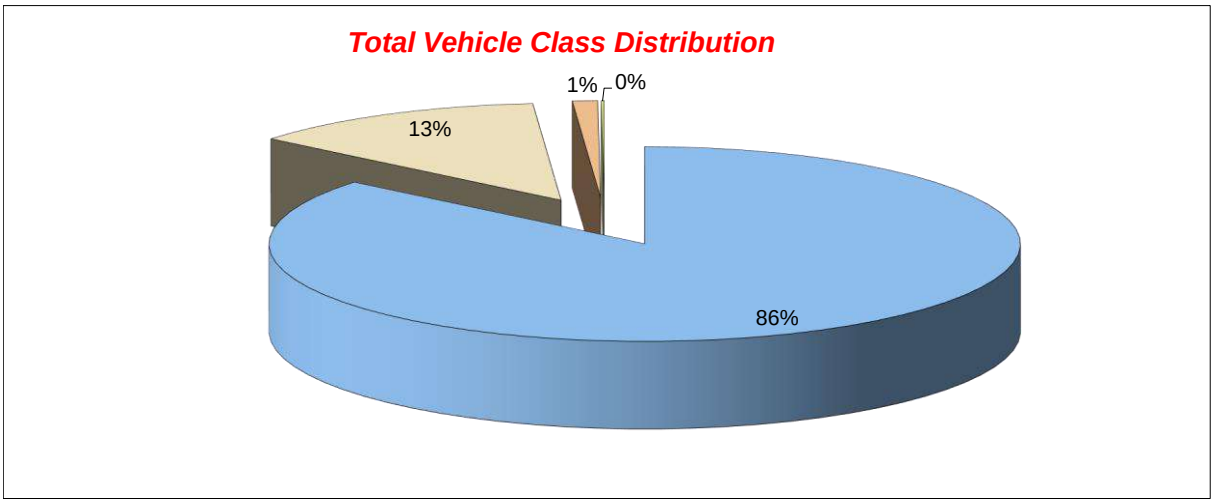
Long Sutton ATC, Little London

Produced by Road Data Services Ltd.

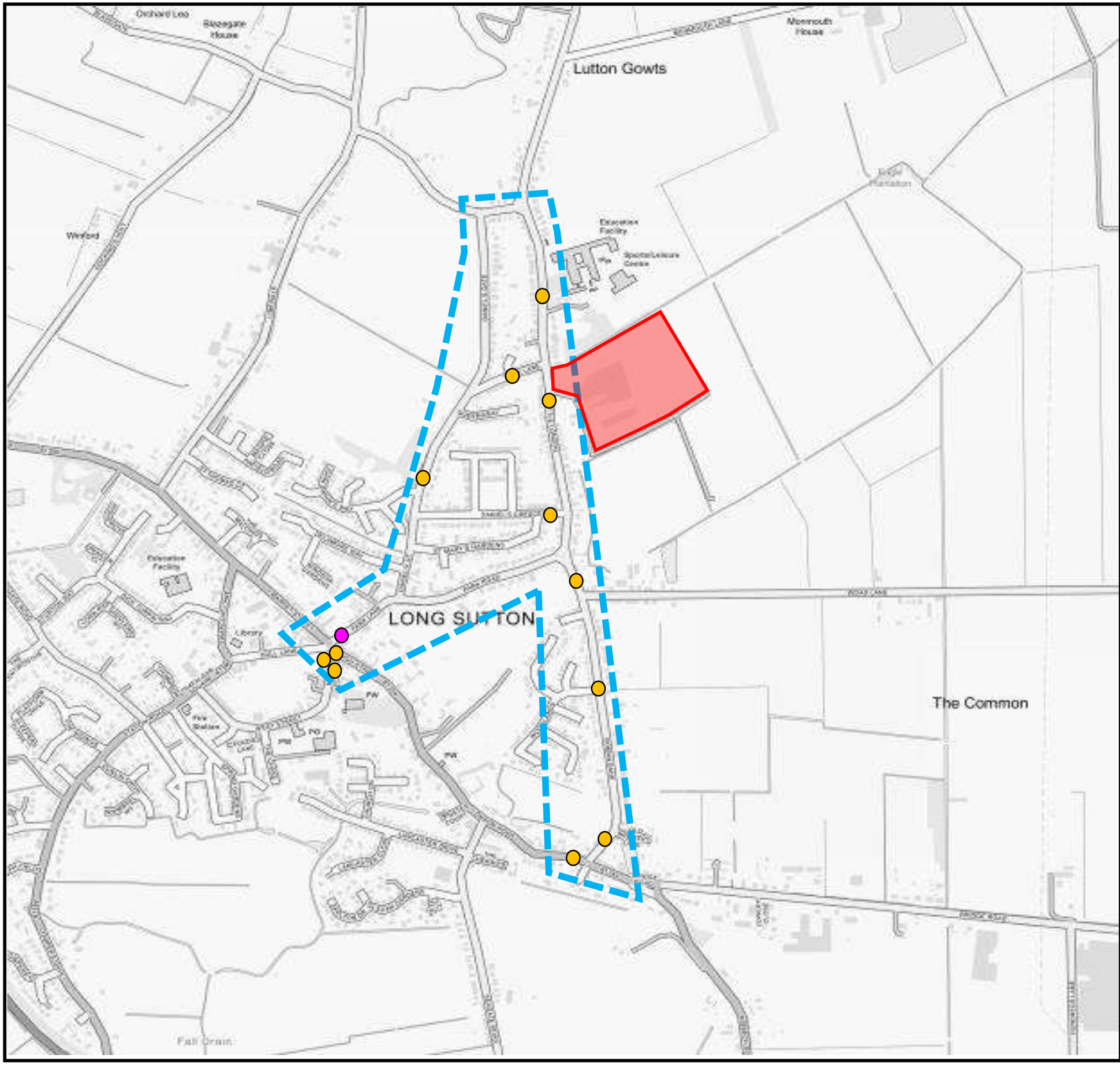
Channel 2 - Southbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	MGV - 2	OGV1 / Bus - 3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
30/04/2024					
7-19	806	107	13	1	927
6-22	917	131	13	1	1062
6-24	922	131	13	1	1067
0-24	946	133	14	1	1094
01/05/2024					
7-19	851	150	13	1	1015
6-22	995	169	14	1	1179
6-24	1001	170	14	1	1186
0-24	1024	178	14	1	1217
02/05/2024					
7-19	825	119	12	1	957
6-22	952	137	12	1	1102
6-24	960	137	12	1	1110
0-24	993	141	13	1	1148
03/05/2024					
7-19	838	134	18	0	990
6-22	949	155	18	0	1122
6-24	953	155	18	0	1126
0-24	972	158	18	0	1148
04/05/2024					
7-19	507	72	4	0	583
6-22	574	80	4	0	658
6-24	584	82	4	0	670
0-24	595	86	4	0	685
05/05/2024					
7-19	436	55	3	3	497
6-22	488	63	3	4	558
6-24	494	65	3	4	566
0-24	502	65	3	4	574
06/05/2024					
7-19	456	64	2	1	523
6-22	509	69	3	1	582
6-24	513	69	3	1	586
0-24	521	71	4	1	597

Average					
7-19	674	100	9	1	785
6-22	769	115	10	1	895
6-24	775	116	10	1	902
0-24	793	119	10	1	923



Appendix D: -



Scale:

Not To Scale.

N

Notes:

1. Do Not Scale From This Figure.
2. This Figure May Include Data Provided By 3rd Parties No Liability Is Accepted For The Accuracy Of Such Data.

Site Location

Each number represents an individual collision that has taken place.

Key:

= Slight

= Serious

= Fatal

= Study Area

Client:
D. Brown Building Contractors Limited

Project:
Little London
Long Sutton
Lincolnshire

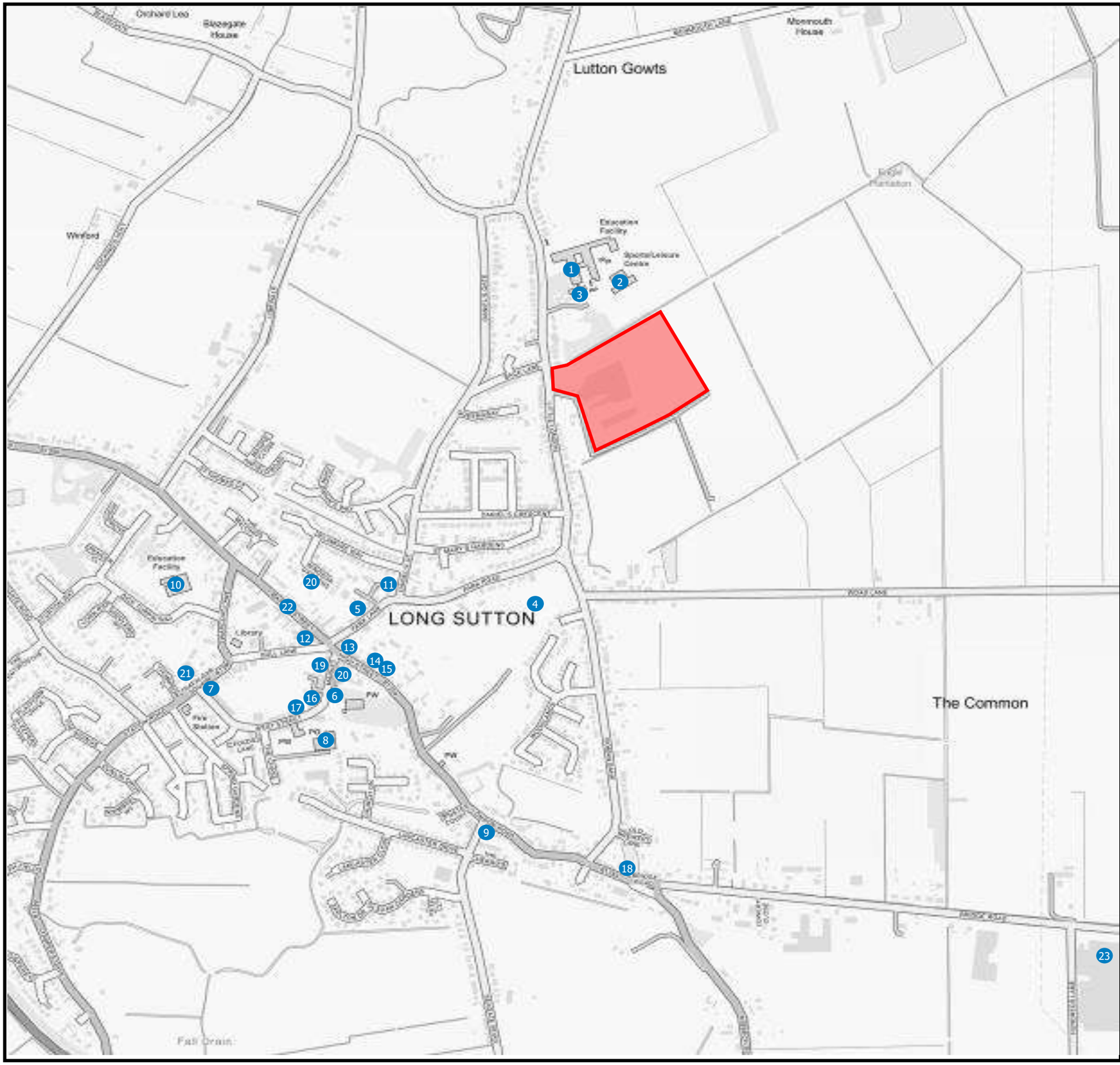
Diagram Title:
Collision Analysis

Drawn & Checked By:	Date:
AR	01/05/2024

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Roberts Highway Consultants

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Appendix E: -



Scale:

Not To Scale.

N

Notes:

1. Do Not Scale From This Figure.
2. This Figure May Include Data Provided By 3rd Parties No Liability Is Accepted For The Accuracy Of Such Data.
3. This Figure Is Not Intended As A Comprehensive Listing, And Shows Only Selected Local Facilities Considered Of Significance.
4. Paved Footways May Not Be Available On All Routes.

Site Location

Local Facilities Key

1. University Academy Long Sutton
2. Peele Leisure Centre
3. Rainbow Nursery
4. Cinder Ash Pre-School
5. Long Sutton Tyres and Exhausts
6. One Stop Convenience Store
7. Premier Convenience Store
8. Lincolnshire Co-Op
9. SPAR Convenience Store
10. Long Sutton CP School and Nursery
11. Long Sutton Scout and Guide Hall
12. The Granary Bar and Grill
13. The Crown and Wolfpack
14. New Sutton House Chinese Takeaway
15. San San Chinese Takeaway
16. Palmers Ale House and Kitchen
17. Domino's Pizza
18. The Ship Long Sutton Pub
19. Boots Pharmacy
20. Coakley Opticians
21. The Suttons Medical Group
22. Market Court Bus Stop
23. Princes Food Supplier

Client:
D. Brown Building Contractors Limited

Project:
Little London
Long Sutton
Lincolnshire

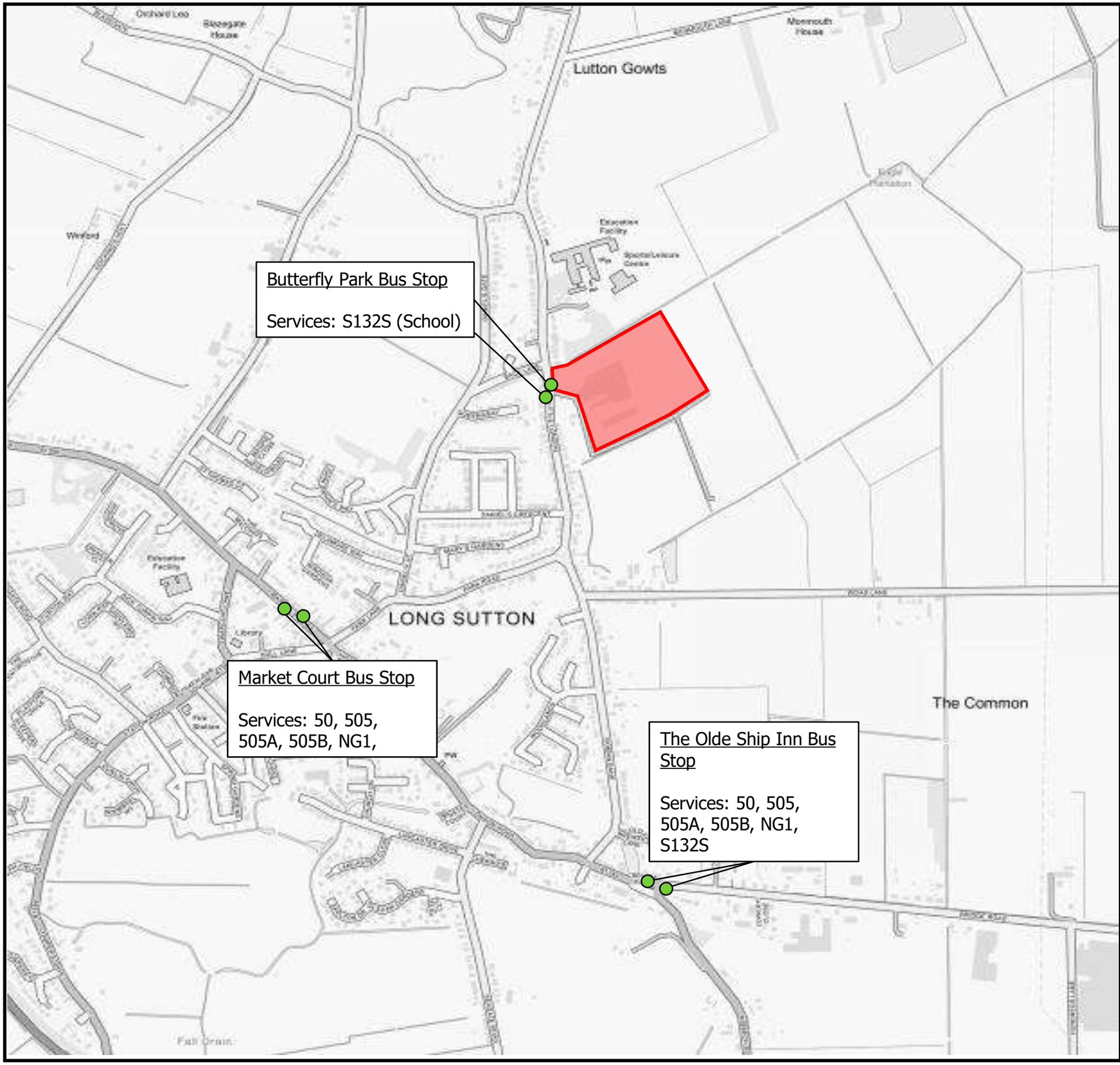
Diagram Title:
Facilities & Amenities Plan

Drawn & Checked By:	Date:
AR	01/05/2024

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Appendix F: -



Scale:

Not To Scale.

N

Notes:

1. Do Not Scale From This Figure.
2. This Figure May Include Data Provided By 3rd Parties No Liability Is Accepted For The Accuracy Of Such Data.

Site Location

Selected Bus Stops Close To Site

Client:
D. Brown Building Contractors Limited

Project:
Little London
Long Sutton
Lincolnshire

Diagram Title:
Public Transport Plan

Drawn & Checked By:	Date:
AR	01/05/2024

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Appendix G: -

N

2.4m x 56m
Visibility Splay

ATC Location



New Dropped Kerb
PedestrianCrossing

2.4m x 52m
Visibility Splay

Little London

LITTLE LONDON

Notes:

1. Do Not Scale This Drawing Unless For Planning Purposes Only. Any Dimensions Shown Are Indicative Only And Are Subject To Verification Onsite.
2. The Design Shown Is Aligned With Ordnance Survey ProMap Data And Not Topographical Survey Data. This Drawing Is For Information Only And Should Not Be Used For Construction.
3. Layout Drawing Prepaired By Lincs Design Consultancy Drawing Number ldc-3963-PL-03E Dated 08/02/2024.

30 Carriageway Speed Limit

Recorded Vehicle Speeds		
	Northbound	Southbound
Average Speeds	27.5mph	28.7mph
85th%ile Speeds	34.3mph	35.8mph

Rev	Description	Date

Client: D. Brown Building Contractors Limited

Project: Little London
Long Sutton
Lincolnshire

Drawing Title: Access Design & Visibility Extents

Drawing Number: RHC-24-015-01

Revision:	Sheet Size:	Scale:
-	A3	1:500
Drawn & Checked By: AR	Date: 14/05/2024	Status: Information

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Roberts Highway Consultants

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Roberts Highway Consultants	Scheme:	Little London, Long Sutton	Page No :
	Client:	D. Brown Building Contractors Ltd	1 of 1
	Job Ref:	RHC-24-015	
	Date:	14/05/2024	
	Calcs By:	AR	

Visibility to the South (towards Northbound traffic)

v	15.33	Speed in m/s	Dry ATC 85th %ile Speed	34.30	mph
t	1.5	Reaction time (seconds)			
d	4.41	Deceleration rate (m/s²)	Heavy veh % flow	2.0	%
a	0.0	Longitudinal gradient (%)	Gradient	0.0	%

SSD= vt + v2/2(d+0.1a) From Manual For Streets 2

vt	23.00			
v2	235.01			
2(d-0.1a)	8.82	Downhill approach visibility length (m)	52.14	m
2(d+0.1a)	8.82	Uphill approach visibility length (m)	52.14	m

Visibility to the North (towards Southbound traffic)

v	16.00	Speed in m/s	Dry ATC 85th %ile Speed	35.80	mph
t	1.50	Reaction time (seconds)			
d	4.41	Deceleration rate (m/s²)	Heavy veh % flow	1.0	%
a	0.00	Longitudinal gradient (%)	Gradient	0.0	%

SSD= vt + v2/2(d+0.1a) From Manual For Streets 2

vt	24.00			
v2	256.02			
2(d-0.1a)	8.82	Downhill approach visibility length (m)	55.53	m
2(d+0.1a)	8.82	Uphill approach visibility length (m)	55.53	m

Design Speed	**Vehicle Type**	**Reaction Time**	**Decel. Rate** (where g=9.81m/s²)	
60 kph and below	Light vehicles	1.5s	4.41 m/s²	
	HGV's	1.5s	3.68 m/s²	
	Buses	1.5s	3.68 m/s²	
Above 60kph	All	2.0s	3.68 m/s²	(Absolute min SSD)
	All	2.0s	2.45 m/s²	(Desirable min SSD)

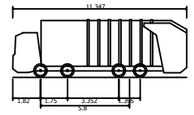
Paragraph 10.2.5 of Manual for Streets outlines that it is recommended for assessments of Sight Stopping Distance, an allowance is made by adding 2.4m to the distance calculated. Roberts Highway Consultants Limited have applied a 2.5m increase for robustness.
Paragraph 1.3.2 of Manual for Streets 2 stipulates that for all design purposes, it is recommended that as a starting point for any scheme affecting non-trunk roads, designers should start with MfS (including the formula for calculating Sight Stopping Distance).
No gradient has been shown to ensure for a robust assessment.

Appendix H: -

Notes:

1. Do Not Scale This Drawing Unless For Planning Purposes Only. Any Dimensions Shown Are Indicative Only And Are Subject To Verification Onsite.

3. Layout Drawing Prepaired By Lincs Design Consultancy Drawing Number ldc-3963-PL-03E Dated 08/02/2024.



Large Refuse Vehicle (4 axle)	
Overall Length	11.347m
Overall Width	2.500m
Overall Body Height	3.751m
Min Body Ground Clearance	0.304m
Track Width	2.500m
Lock to lock time	6.00s
Wall to Wall Turning Radius	11.330m

Rev	Description	Date

Client:
D. Brown Building Contractors Limited

Project:
Little London
Long Sutton
Lincolnshire

Drawing Title:
Swept Path Analysis (Refuse)

Drawing Number:
RHC-24-015-02

Revision:	Sheet Size:	Scale:
-	A3	1:500
Drawn & Checked By:	**Date:**	**Status:**
AR	14/05/2024	Information

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Roberts Highway Consultants

Appendix I: -

Roberts Highway Consultants Limited 154 Rothley Road Leicestershire Licence No: 608801

Calculation Reference: AUDIT-608801-240514-0554

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : M - MIXED PRIVATE/AFFORDABLE HOUSING
MULTI-MODAL TOTAL PEOPLE

Selected regions and areas:

02	SOUTH EAST		
	WS	WEST SUSSEX	1 days
03	SOUTH WEST		
	DC	DORSET	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: 37 to 194 (units:)
Range Selected by User: 30 to 250 (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 23/11/23

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:

Wednesday	1 days
Friday	1 days

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

Selected survey types:

Manual count	2 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 undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	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	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	6 days - Selected
Servicing vehicles Excluded	3 days - Selected

Secondary Filtering selection:

Use Class:

C3	2 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

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

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	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	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	1 days
No	1 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	2 days

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

LIST OF SITES relevant to selection parameters

1 DC-03-M-02 TERRACED & BUNGALOWS DORSET
KINGS ROAD
DORCHESTER
FORDINGTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 37
Survey date: FRIDAY *16/09/16* *Survey Type: MANUAL*

2 WS-03-M-10 MIXED FLATS & HOUSES WEST SUSSEX
BROYLE ROAD
CHICHESTER

Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 194
Survey date: WEDNESDAY *23/03/16* *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
CA-03-M-02	Covid Site

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/AFFORDABLE HOUSING
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): 2.58

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	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	2	116	0.065	2	116	0.286	2	116	0.351
08:00 - 09:00	2	116	0.143	2	116	0.814	2	116	0.957
09:00 - 10:00	2	116	0.147	2	116	0.251	2	116	0.398
10:00 - 11:00	2	116	0.152	2	116	0.169	2	116	0.321
11:00 - 12:00	2	116	0.165	2	116	0.169	2	116	0.334
12:00 - 13:00	2	116	0.173	2	116	0.199	2	116	0.372
13:00 - 14:00	2	116	0.225	2	116	0.242	2	116	0.467
14:00 - 15:00	2	116	0.268	2	116	0.260	2	116	0.528
15:00 - 16:00	2	116	0.494	2	116	0.242	2	116	0.736
16:00 - 17:00	2	116	0.403	2	116	0.182	2	116	0.585
17:00 - 18:00	2	116	0.636	2	116	0.208	2	116	0.844
18:00 - 19:00	2	116	0.359	2	116	0.229	2	116	0.588
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.230			3.251			6.481

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.*

Appendix J: -

Roberts Highway Consultants

QS701EW - Method of travel to work

ONS Crown Copyright Reserved [from Nomis on 13 May 2024]

population	All usual residents aged 16 to 74
units	Persons
area type	2011 super output areas - lower layer
area name	E01026256 : South Holland 008C
rural urban	Total

Dwellings	
	123
Total	718
Working Population	

TRICS PERSON RATES PEAK			
	Arr	Dep	Two-Way
AM	0.164	0.814	0.978
PM	0.636	0.208	0.844
Day	3.23	3.251	6.481

Arrive AM	Arrive PM	Day Arrive	Dep AM	Dep PM	Day Dep
20	78	397	100	26	400

Method of Travel to Work	**2011**	**%age**						
All categories: Method of travel to work	1,202							
Work mainly at or from home	55	7.7%	2	6	30	8	2	31
Underground, metro, light rail, tram	0	0.0%	0	0	0	0	0	0
Train	2	0.3%	0	0	1	0	0	1
Bus, minibus or coach	15	2.1%	0	2	8	2	1	8
Taxi	1	0.1%	0	0	1	0	0	1
Motorcycle, scooter or moped	6	0.8%	0	1	3	1	0	3
Driving a car or van	518	72.1%	15	56	287	72	18	288
Passenger in a car or van	51	7.1%	1	6	28	7	2	28
Bicycle	30	4.2%	1	3	17	4	1	17
On foot	35	4.9%	1	4	19	5	1	19
Other method of travel to work	5	0.7%	0	1	3	1	0	3
Not in employment	484							

CENSUS VEHICLE RATES PEAK			
	Arr	Dep	Two-Way
AM	0.118	0.587	0.706
PM	0.459	0.150	0.609
Day	2.330	2.345	4.676

In order to protect against disclosure of personal information, records have been swapped between different geographic areas.
Some counts will be affected, particularly small counts at the lowest geographies.

Appendix K: -

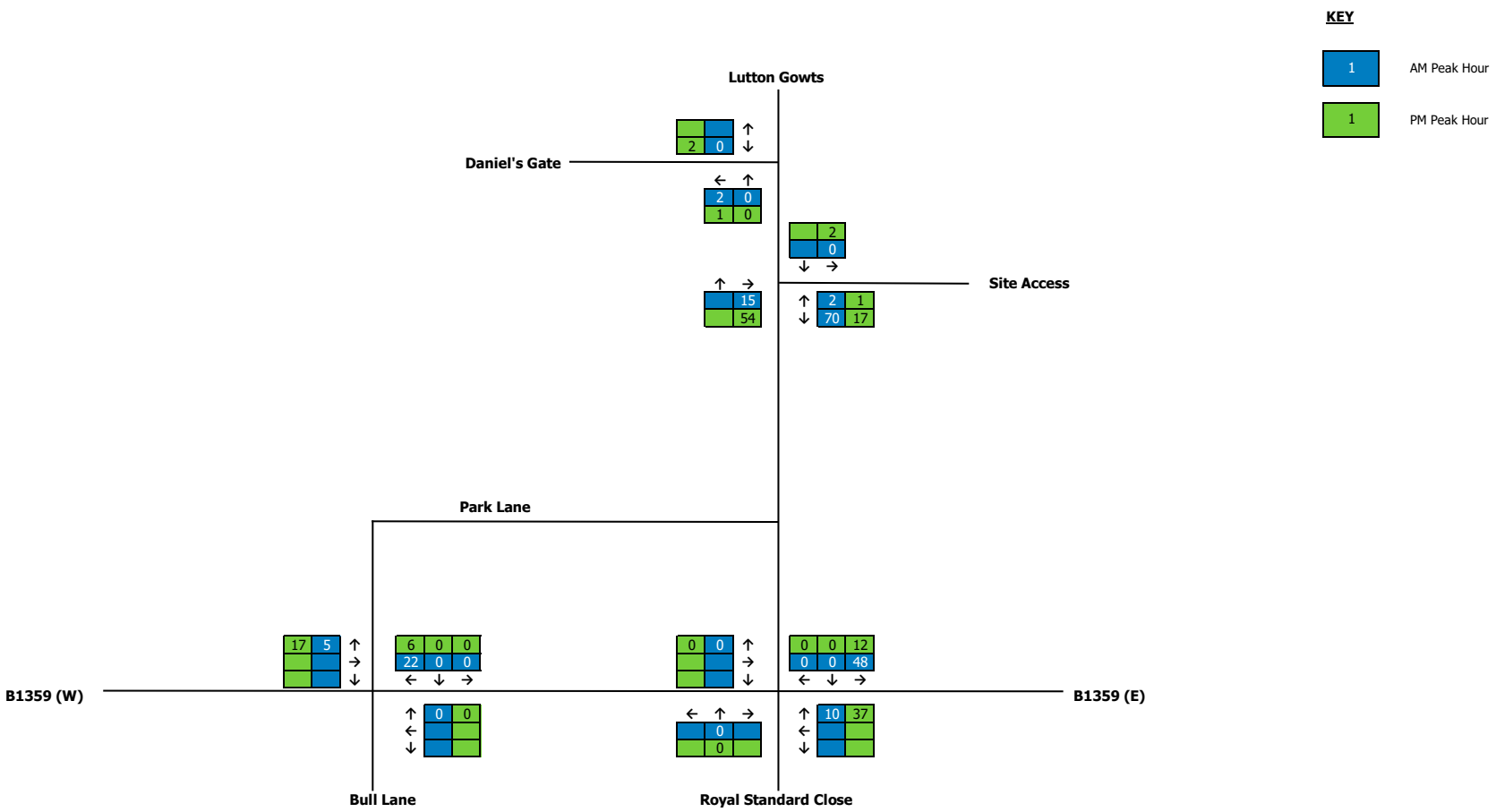
GRAVITY MODEL

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

ONS Crown Copyright Reserved [from Nomis on 14 May 2024]

area of residence E02005472 : South Holland 008 (2011 super output area - middle layer)
date 2011

area of workplace : pre-2009 local authority: district / unitary	All categories: Method of travel to work (2001 specification)	Driving a car or van	% of allCar Trips	A Roman Bank/London Road East	B Park Lane/London Road West	C Daniel's Gate	TOTAL ALL	A Roman Bank/London Road East	B Park Lane/London Road West	C Daniel's Gate	TOTAL ALL
E02005465 : South Holland 001	7	6	0.2%		100%		**100%**	0	6	0	**6**
E02005466 : South Holland 002	185	139	5.5%		50%	50%	**100%**	0	70	70	**139**
E02005467 : South Holland 003	108	92	3.6%		100%		**100%**	0	92	0	**92**
E02005468 : South Holland 004	113	63	2.5%		100%		**100%**	0	63	0	**63**
E02005469 : South Holland 005	94	75	3.0%		100%		**100%**	0	75	0	**75**
E02005470 : South Holland 006	182	131	5.2%		100%		**100%**	0	131	0	**131**
E02005471 : South Holland 007	70	54	2.1%		100%		**100%**	0	54	0	**54**
E02005472 : South Holland 008	1.083	696	27.6%	100%			**100%**	696	0	0	**696**
E02005473 : South Holland 009	12	10	0.4%		100%		**100%**	0	10	0	**10**
E02005474 : South Holland 010	106	95	3.8%	50%	50%		**100%**	48	48	0	**95**
E02005475 : South Holland 011	5	5	0.2%	100%			**100%**	5	0	0	**5**
Districts											
King's Lynn and West Norfolk	506	436	17.3%	100%			**100%**	436	0	0	**436**
Fenland	429	382	15.1%	100%			**100%**	382	0	0	**382**
Peterborough	105	94	3.7%		100%		**100%**	0	94	0	**94**
Boston	72	62	2.5%		100%		**100%**	0	62	0	**62**
South Kesteven	34	25	1.0%		100%		**100%**	0	25	0	**25**
Huntingdonshire	21	19	0.8%	50%	50%		**100%**	10	10	0	**19**
Breckland	14	13	0.5%	100%			**100%**	13	0	0	**13**
East Cambridgeshire	12	10	0.4%	100%			**100%**	10	0	0	**10**
North Kesteven	13	10	0.4%	100%			**100%**	10	0	0	**10**
South Cambridgeshire	7	7	0.3%	100%			**100%**	7	0	0	**7**
North Norfolk	7	7	0.3%	100%			**100%**	7	0	0	**7**
Lincoln	14	7	0.3%		100%		**100%**	0	7	0	**7**
East Lindsey	6	6	0.2%		100%		**100%**	0	6	0	**6**
Norwich	6	6	0.2%	100%			**100%**	6	0	0	**6**
Broadland	4	4	0.2%	100%			**100%**	4	0	0	**4**
Harborough	3	3	0.1%		100%		**100%**	0	3	0	**3**
AUTHORITIES WITH <2 DISREGARDED											
Rutland	2	2	0.1%								
Hinckley and Bosworth	2	2	0.1%								
West Lindsey	2	2	0.1%								
Corby	2	2	0.1%								
Rushcliffe	2	2	0.1%								
Brentwood	2	2	0.1%								
South Norfolk	2	2	0.1%								
Milton Keynes	2	2	0.1%								
Spelthorne	2	2	0.1%								
Forest Heath	3	2	0.1%								
Cambridge	5	2	0.1%								
Westminster,City of London	10	2	0.1%								
East Riding of Yorkshire	1	1	0.0%								
Hambleton	1	1	0.0%								
Richmondshire	1	1	0.0%								
Sheffield	1	1	0.0%								
Calderdale	1	1	0.0%								
Leeds	1	1	0.0%								
Blaby	1	1	0.0%								
Melton	1	1	0.0%								
East Northamptonshire	1	1	0.0%								
Kettering	1	1	0.0%								
Wellingborough	1	1	0.0%								
Ashfield	1	1	0.0%								
Newark and Sherwood	1	1	0.0%								
East Staffordshire	1	1	0.0%								
Birmingham	1	1	0.0%								
Thurrock	1	1	0.0%								
Chelmsford	1	1	0.0%								
Uttlesford	1	1	0.0%								
Broxbourne	1	1	0.0%								
East Hertfordshire	1	1	0.0%								
Watford	1	1	0.0%								
Mid Suffolk	1	1	0.0%								
St Edmundsbury	1	1	0.0%								
Brent	1	1	0.0%								
Hammersmith and Fulham	1	1	0.0%								
Hillingdon	1	1	0.0%								
Merton	1	1	0.0%								
Redbridge	1	1	0.0%								
Wandsworth	1	1	0.0%								
Bracknell Forest	1	1	0.0%								
Southampton	1	1	0.0%								
Hart	1	1	0.0%								
Dover	1	1	0.0%								
West Oxfordshire	1	1	0.0%								
Epsom and Ewell	1	1	0.0%								
Waverley	1	1	0.0%								
Horsham	1	1	0.0%								
North Somerset	1	1	0.0%								
Nottingham	2	1	0.0%								
Central Bedfordshire	2	1	0.0%								
Mid Sussex	2	1	0.0%								
Bedford	3	1	0.0%								
Camden	3	1	0.0%								
Wiltshire	3	1	0.0%								
Leicester	1	0	0.0%								
Colchester	1	0	0.0%								
Epping Forest	1	0	0.0%								
Tendring	1	0	0.0%								
Bexley	1	0	0.0%								
Enfield	1	0	0.0%								
Southwark	1	0	0.0%								
Cheltenham	1	0	0.0%								
Vale of White Horse	2	0	0.0%								
Total	**3,317**	**2,525**	**100%**								
Total (less disregarded areas)	3,218	2,457	**97%**					**1,633**	**755**	**70**	**2,457**
								66.5%	**30.7%**	**2.8%**	**100.0%**



Notes

All Flows Provided in PCUs

Distribution Based on 2011 Travel To Workplace Census Data

Diagram 01: Development Flows

Project Title: Former Butterfly Park, Little London, Long Sutton

Roberts Highway Consultants

Appendix L: -

Road Data Services Ltd

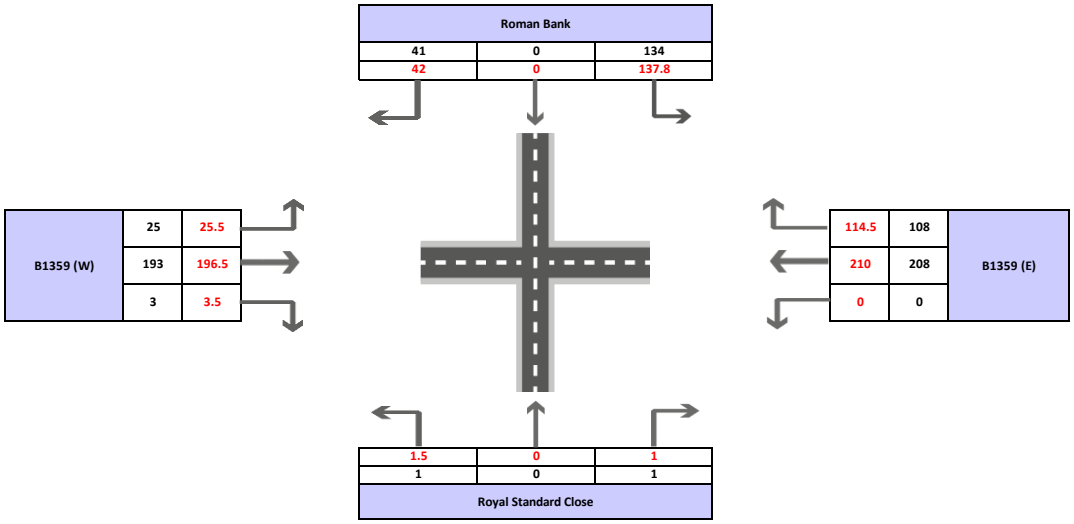
From: 1) 08:00 Show Peak Hour:

To: 1) 09:00 Show PCUs:

Class: All Vehicles Show Session 2

Tuesday 30th April 2024

PCUs



Road Data Services Ltd

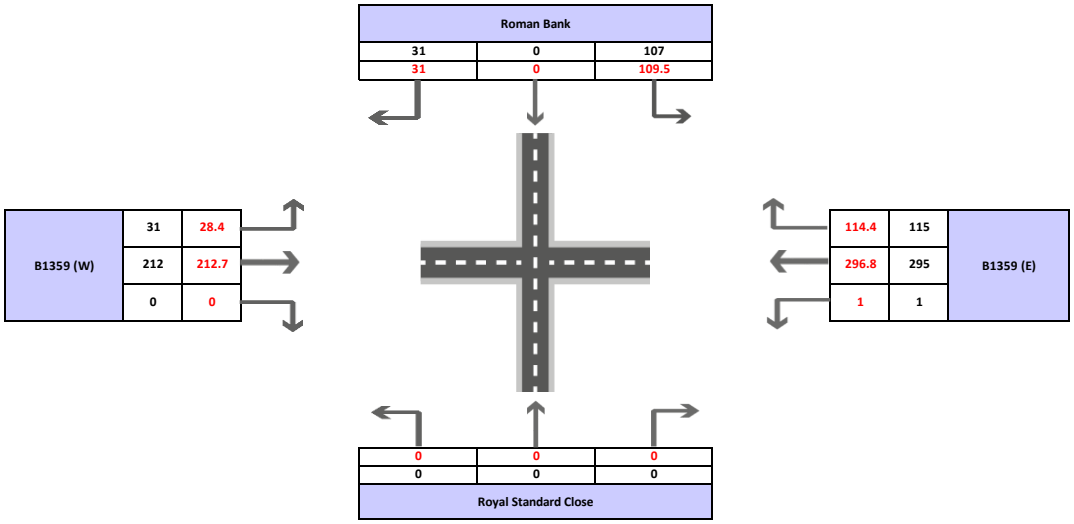
From: 2) 16:30 Show Peak Hour: ☑

To: 2) 17:30 Show PCUs: ☑

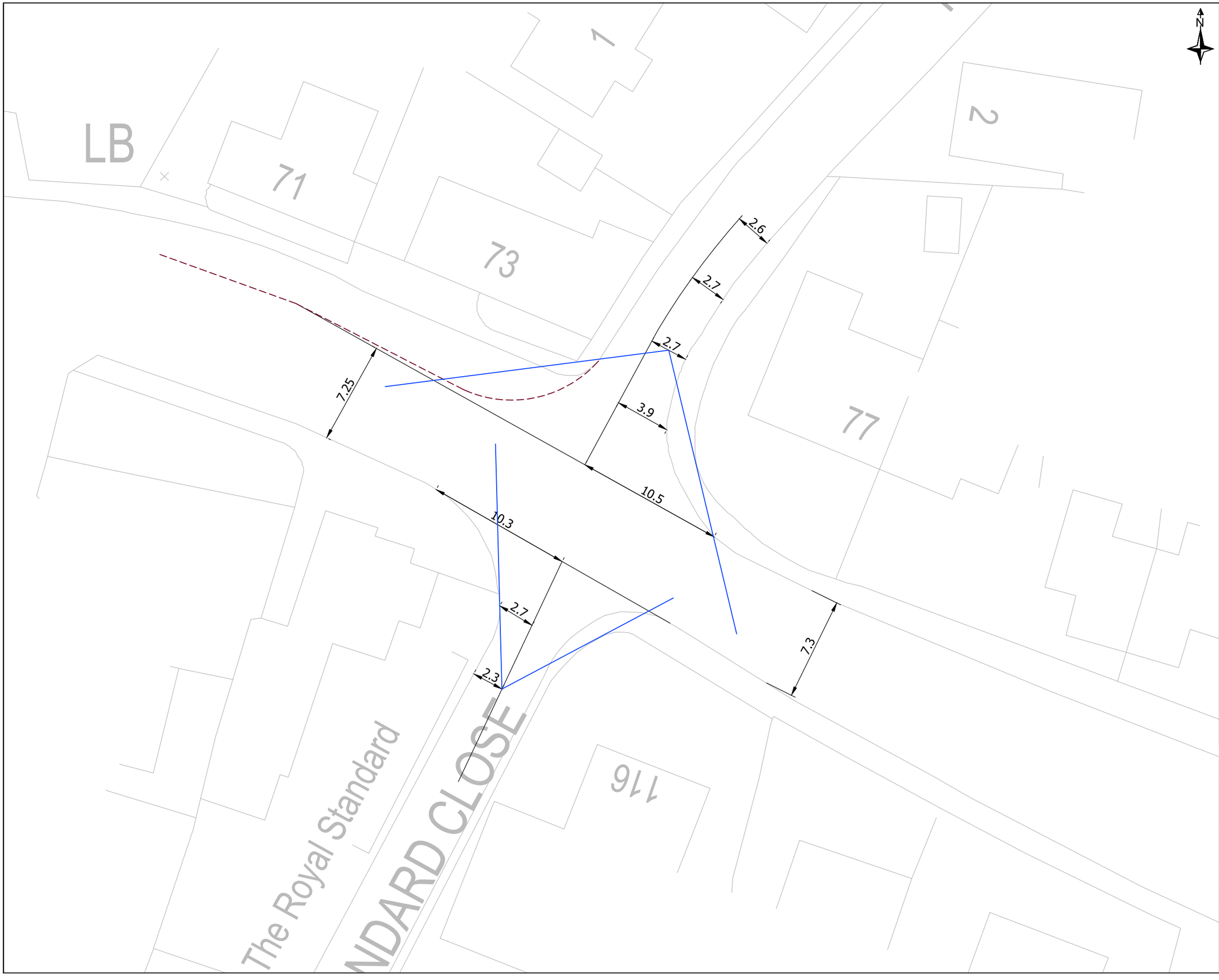
Class: All Vehicles Show Session 2

Tuesday 30th April 2024

PCUs



Appendix M: -



N

Notes:

1. Do Not Scale This Drawing Unless For Planning Purposes Only. Any Dimensions Shown Are Indicative Only And Are Subject To Verification Onsite.
2. The Design Shown Is Aligned With Ordnance Survey ProMap Data And Not Topographical Survey Data. This Drawing Is For Information Only And Should Not Be Used For Construction.

Manual Alterations To OS Mapping Based On Approx. Measurements

Rev	Description	Date

Client: D. Brown Building Contractors Limited

Project: Little London, Long Sutton, Lincolnshire

Drawing Title: London Road (B1359)/Roman Bank/Royal Standard Close crossroads Geometry Drawing

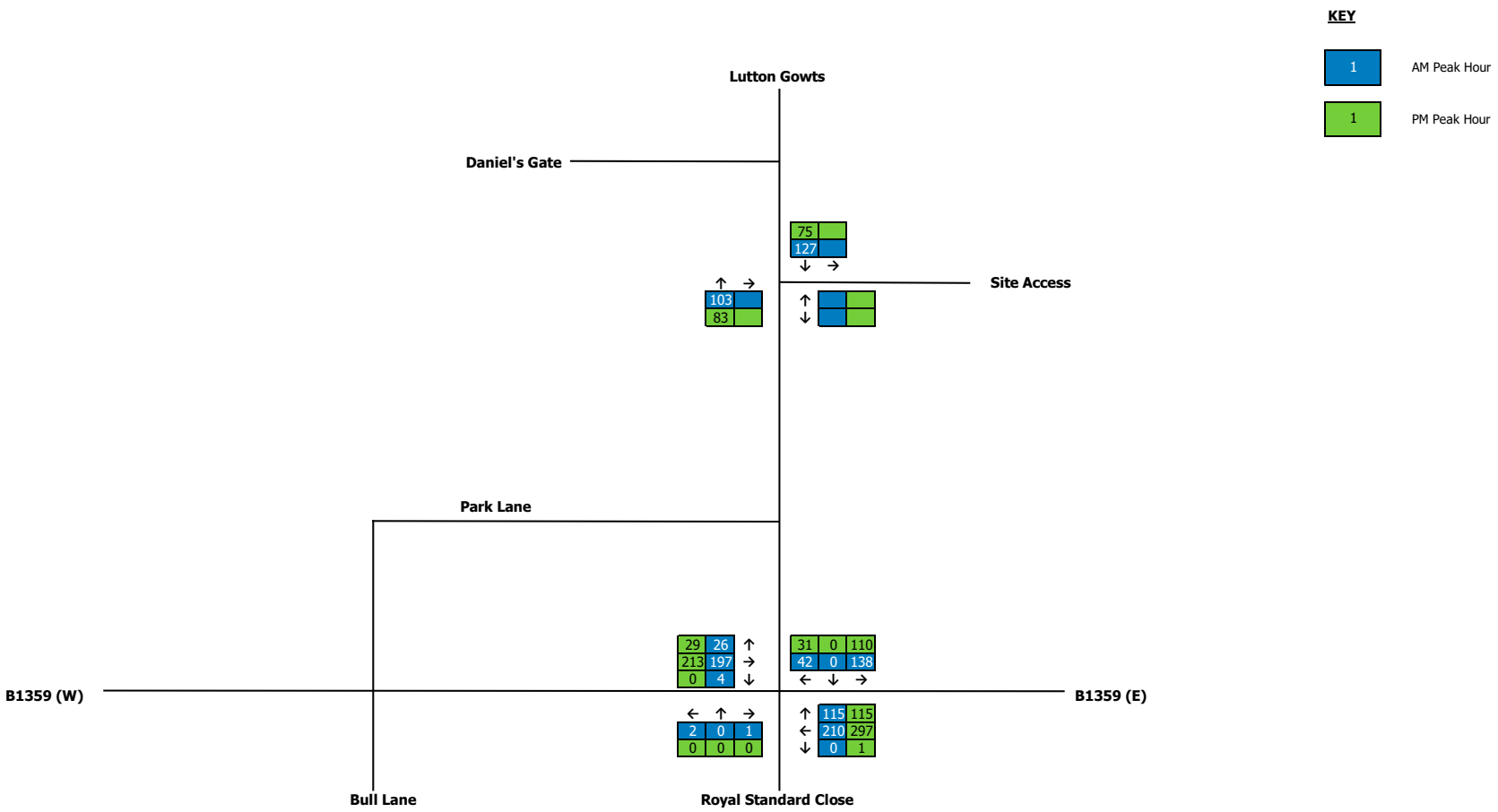
Drawing Number: RHC-24-015-03

Revision:	Sheet Size:	Scale:
-	A3	1:500
Drawn & Checked By:	**Date:**	**Status:**
AR	15/05/2024	Information

E: enquiries@robertshighwayconsultants.co.uk
P: +44 (0)7935 229255
W: www.robertshighwayconsultants.co.uk

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Roberts Highway Consultants



Notes

All Flows Provided in PCUs

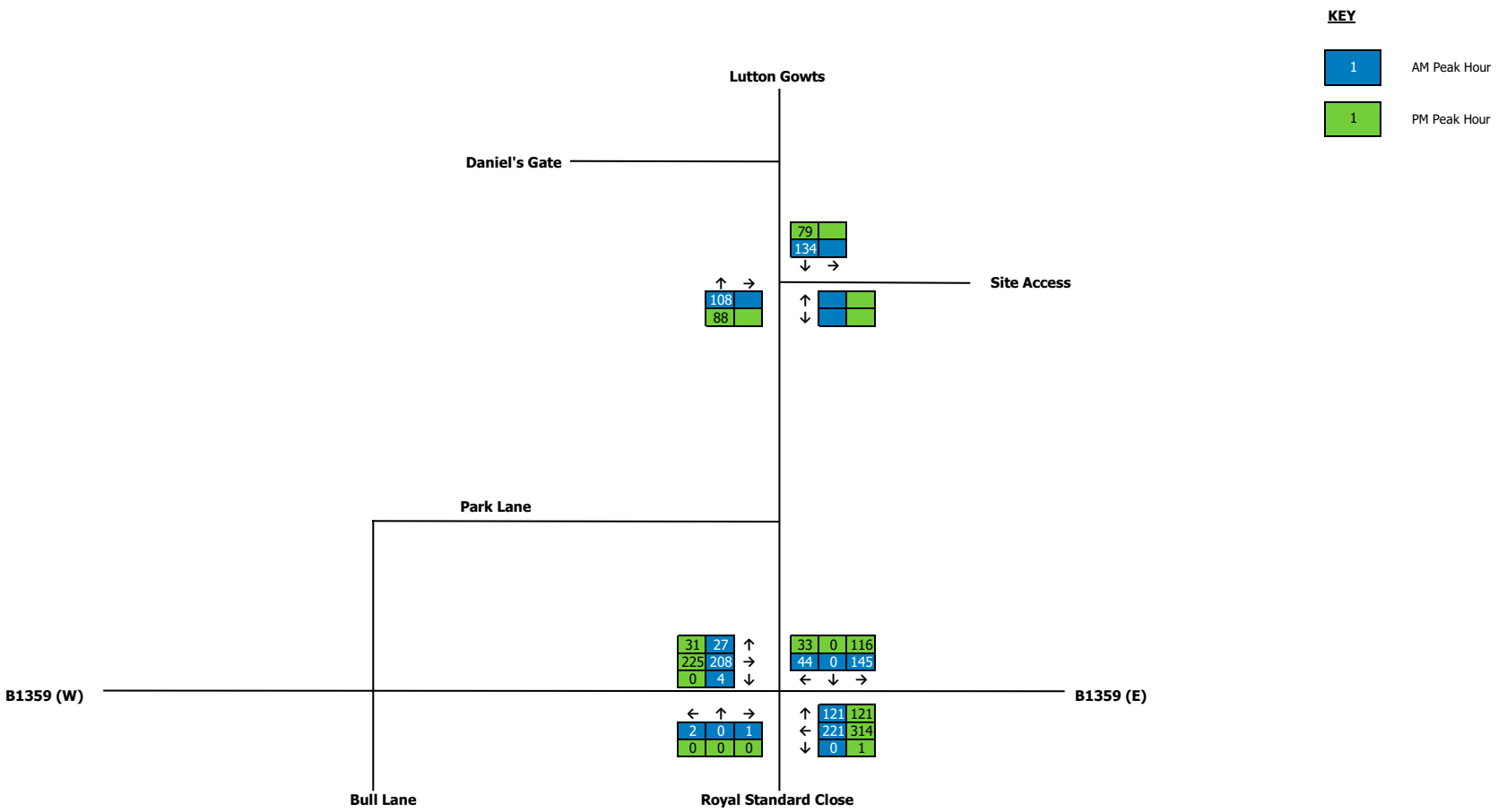
Traffic Survey Data Provided By Road Data Services Ltd 30th April 2024

Junction Peak Hours 08:00-09:00 & 16:30-17:30

Diagram 02: 2024 Base Year

Project Title: Former Butterfly Park, Little London, Long Sutton

Roberts Highway Consultants



Notes

All Flows Provided in PCUs

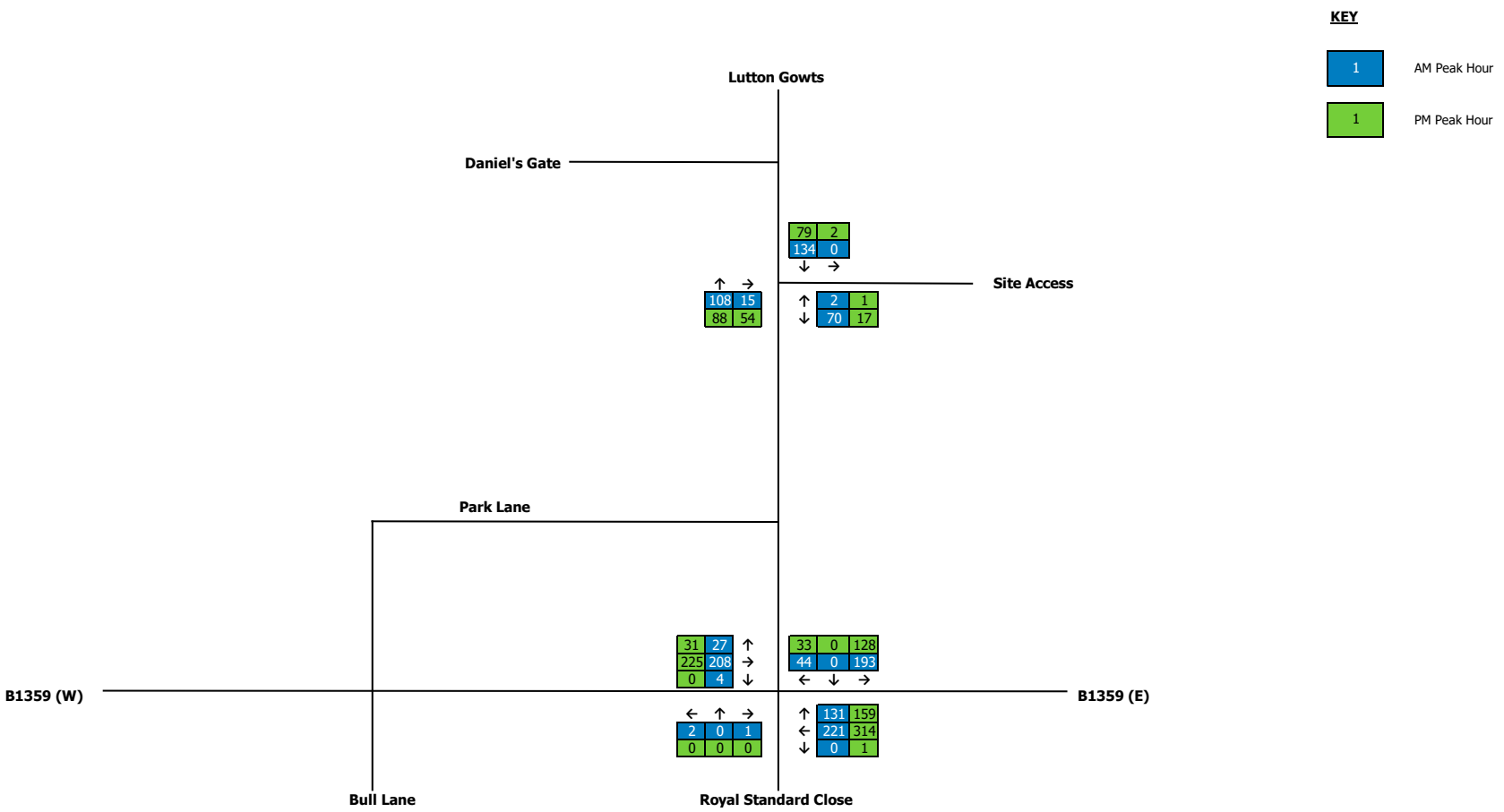
Traffic Survey Data Provided By Road Data Services Ltd 30th April 2024

Junction Peak Hours 08:00-09:00 & 16:30-17:30

Diagram 03: 2029 Do Minimum

Project Title: Former Butterfly Park, Little London, Long Sutton

Roberts Highway Consultants



Notes

All Flows Provided in PCUs

Traffic Survey Data Provided By Road Data Services Ltd 30th April 2024

Junction Peak Hours 08:00-09:00 & 16:30-17:30

Diagram 04: 2029 Do Something

Project Title: Former Butterfly Park, Little London, Long Sutton

Roberts Highway Consultants

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.1.1.1905
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+44 (0)1344 379777 software@trl.co.uk trlsoftware.com

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Filename: Junction 1.j10
Path: C:\Users\cland\Documents\Roberts Highway Consultants\Project Folder\2024\RHC-24-015 Little London, Long Sutton\Calculations\Junction Modelling
Report generation date: 15/05/2024 17:26:14

»2024 Survey, AM
»2024 Survey, PM
»2029 Do Minimum, AM
»2029 Do Minimum, PM
»2029 Do Something, AM
»2029 Do Something, PM

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	2024 Survey					
Stream B-ACD	0.0	0.00	0.00	0.0	0.00	0.00
Stream A-BCD	0.5	6.94	0.25	0.6	6.26	0.27
Stream D-AB	0.4	8.58	0.26	0.3	8.01	0.21
Stream D-BC	0.1	9.30	0.10	0.1	9.19	0.08
Stream C-ABD	0.0	6.59	0.01	0.0	0.00	0.00
	2029 Do Minimum					
Stream B-ACD	0.0	0.00	0.00	0.0	0.00	0.00
Stream A-BCD	0.5	7.04	0.27	0.6	6.36	0.29
Stream D-AB	0.4	8.82	0.27	0.3	8.21	0.22
Stream D-BC	0.1	9.57	0.11	0.1	9.48	0.09
Stream C-ABD	0.0	6.54	0.01	0.0	0.00	0.00
	2029 Do Something					
Stream B-ACD	0.0	0.00	0.00	0.0	0.00	0.00
Stream A-BCD	0.6	7.26	0.29	0.9	7.32	0.38
Stream D-AB	0.6	10.10	0.36	0.3	8.47	0.24
Stream D-BC	0.1	9.96	0.12	0.1	9.93	0.09
Stream C-ABD	0.0	6.56	0.01	0.0	0.00	0.00

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.

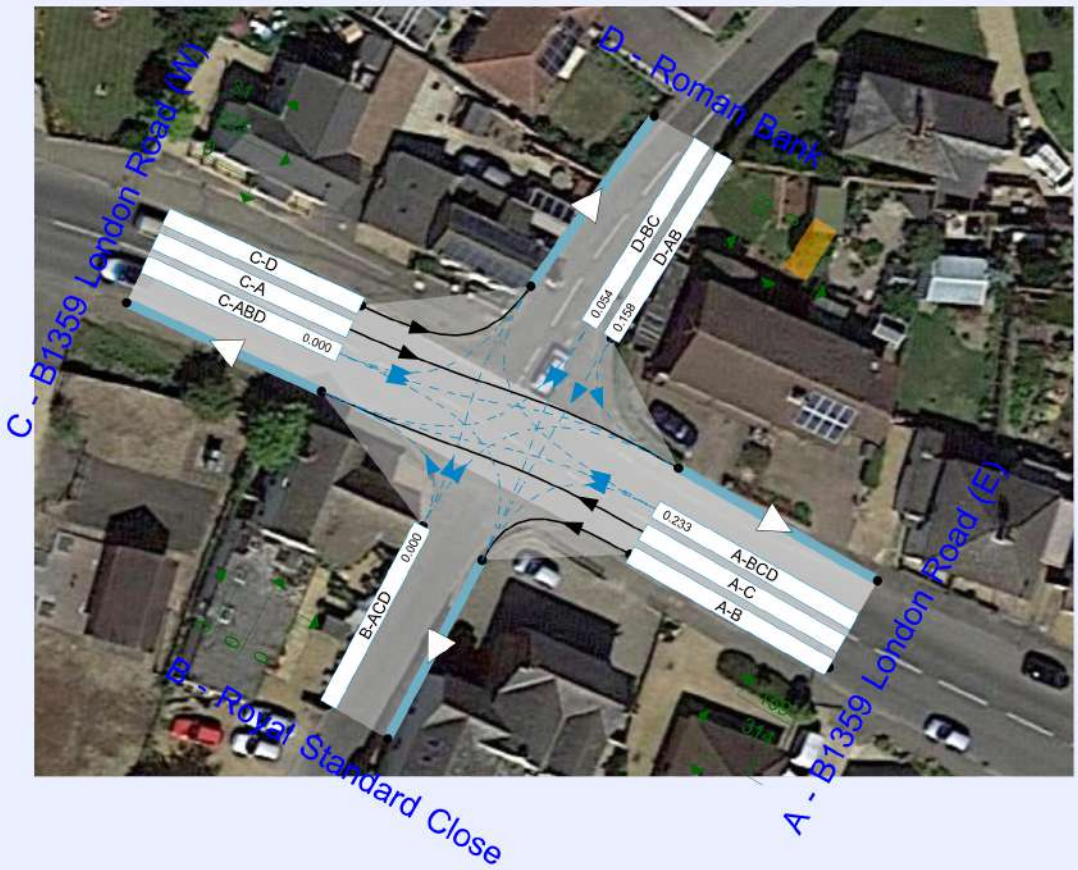
File summary

File Description

Title	London Road (B1359)/Roman Bank/Royal Standard Close crossroads
Location	Long Sutton
Site number	RHC-24-015
Date	15/05/2024
Version	
Status	(new file)
Identifier	
Client	D. Brown Building Contractors Limited
Jobnumber	RHC-24-015
Enumerator	ANDY\cland
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	PCU	PCU	perHour	s	-Min	perMin



Flows show original traffic demand (PCU/hr).
Streams (downstream end) show RFC ()

The junction diagram reflects the last run of Junctions.

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	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Survey	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 Survey	PM	ONE HOUR	16:45	18:15	15	✓
D3	2029 Do Minimum	AM	ONE HOUR	07:45	09:15	15	✓
D4	2029 Do Minimum	PM	ONE HOUR	16:45	18:15	15	✓
D5	2029 Do Something	AM	ONE HOUR	07:45	09:15	15	✓
D6	2029 Do Something	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2024 Survey, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	D - Roman Bank - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

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	London Road (B1359)/Roman Bank/Royal Standard Close crossroads	Crossroads	Two-way	Two-way	Two-way	Two-way		3.71	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.71	A

Arms

Arms

Arm	Name	Description	Arm type
A	B1359 London Road (E)		Major
B	Royal Standard Close		Minor
C	B1359 London Road (W)		Major
D	Roman Bank		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 - B1359 London Road (E)	7.30			100.0	✓	0.00
C - B1359 London Road (W)	7.30			100.0	✓	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 - Royal Standard Close	One lane	2.70								17	14
D - Roman Bank	One lane plus flare		10.00	3.90	2.70	2.70	2.60	✓	1.00	21	20

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	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	Slope for D-C
A-D	632	-	-	-	-	-	-	0.231	0.330	0.231	-	-	-
B-A	475	0.082	0.206	0.206	-	-	-	0.130	0.295	-	0.206	0.206	0.103
B-C	614	0.089	0.224	-	-	-	-	-	-	-	-	-	-
B-D, nearside lane	475	0.082	0.206	0.206	-	-	-	0.130	0.295	0.130	-	-	-
B-D, offside lane	475	0.082	0.206	0.206	-	-	-	0.130	0.295	0.130	-	-	-
C-B	632	0.231	0.231	0.330	-	-	-	-	-	-	-	-	-
D-A	661	-	-	-	-	-	-	0.242	-	0.096	-	-	-
D-B, nearside lane	513	0.140	0.140	0.318	-	-	-	0.223	0.223	0.088	-	-	-
D-B, offside lane	593	0.162	0.162	0.368	-	-	-	0.258	0.258	0.102	-	-	-
D-C	593	-	0.162	0.368	0.129	0.258	0.258	0.258	0.258	0.102	-	-	-

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	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2024 Survey	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B1359 London Road (E)		ONE HOUR	✓	325	100.000
B - Royal Standard Close		ONE HOUR	✓	3	100.000
C - B1359 London Road (W)		ONE HOUR	✓	227	100.000
D - Roman Bank		ONE HOUR	✓	180	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	210	115
	B - Royal Standard Close	1	0	2	0
	C - B1359 London Road (W)	197	4	0	26
	D - Roman Bank	138	0	42	0

Vehicle Mix

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

Heavy Vehicle %

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	1	7
	B - Royal Standard Close	0	0	100	0
	C - B1359 London Road (W)	3	33	0	4
	D - Roman Bank	4	0	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.25	6.94	0.5	A	146	219
A-B					0	0
A-C					152	228
D-AB	0.26	8.58	0.4	A	127	190
D-BC	0.10	9.30	0.1	A	39	58
C-ABD	0.01	6.59	0.0	A	5	8
C-D					24	36
C-A					179	269

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	428	0.000	0	0.0	0.0	0.000	A
A-BCD	112	28	698	0.160	111	0.0	0.3	6.467	A
A-B	0	0			0				
A-C	133	33			133				
D-AB	104	26	613	0.170	103	0.0	0.2	7.334	A
D-BC	32	8	492	0.064	31	0.0	0.1	7.958	A
C-ABD	4	1.00	682	0.006	4	0.0	0.0	6.592	A
C-D	19	5			19				
C-A	147	37			147				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	413	0.000	0	0.0	0.0	0.000	A
A-BCD	141	35	712	0.198	141	0.3	0.3	6.648	A
A-B	0	0			0				
A-C	151	38			151				
D-AB	124	31	603	0.206	124	0.2	0.3	7.816	A
D-BC	38	9	471	0.080	38	0.1	0.1	8.468	A
C-ABD	5	1	693	0.007	5	0.0	0.0	6.455	A
C-D	23	6			23				
C-A	176	44			176				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	392	0.000	0	0.0	0.0	0.000	A
A-BCD	186	46	731	0.254	185	0.3	0.5	6.937	A
A-B	0	0			0				
A-C	172	43			172				
D-AB	152	38	588	0.258	152	0.3	0.4	8.566	A
D-BC	46	12	441	0.105	46	0.1	0.1	9.287	A
C-ABD	7	2	709	0.010	7	0.0	0.0	6.236	A
C-D	28	7			28				
C-A	215	54			215				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	392	0.000	0	0.0	0.0	0.000	A
A-BCD	186	46	732	0.254	186	0.5	0.5	6.939	A
A-B	0	0			0				
A-C	172	43			172				
D-AB	152	38	588	0.258	152	0.4	0.4	8.581	A
D-BC	46	12	441	0.105	46	0.1	0.1	9.297	A
C-ABD	7	2	709	0.010	7	0.0	0.0	6.199	A
C-D	28	7			28				
C-A	215	54			215				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	413	0.000	0	0.0	0.0	0.000	A
A-BCD	141	35	712	0.198	142	0.5	0.3	6.647	A
A-B	0	0			0				
A-C	151	38			151				
D-AB	124	31	603	0.206	124	0.4	0.3	7.837	A
D-BC	38	9	471	0.080	38	0.1	0.1	8.480	A
C-ABD	5	1	692	0.007	5	0.0	0.0	6.369	A
C-D	23	6			23				
C-A	176	44			176				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	428	0.000	0	0.0	0.0	0.000	A
A-BCD	112	28	698	0.161	113	0.3	0.3	6.487	A
A-B	0	0			0				
A-C	132	33			132				
D-AB	104	26	613	0.170	104	0.3	0.2	7.366	A
D-BC	32	8	492	0.064	32	0.1	0.1	7.979	A
C-ABD	4	1	681	0.006	4	0.0	0.0	6.550	A
C-D	19	5			19				
C-A	147	37			147				

2024 Survey, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	D - Roman Bank - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

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	London Road (B1359)/Roman Bank/Royal Standard Close crossroads	Crossroads	Two-way	Two-way	Two-way	Two-way		2.90	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.90	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2024 Survey	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B1359 London Road (E)		ONE HOUR	✓	413	100.000
B - Royal Standard Close		ONE HOUR	✓	0	100.000
C - B1359 London Road (W)		ONE HOUR	✓	242	100.000
D - Roman Bank		ONE HOUR	✓	141	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	1	297	115
	B - Royal Standard Close	0	0	0	0
	C - B1359 London Road (W)	213	0	0	29
	D - Roman Bank	110	0	31	0

Vehicle Mix

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

Heavy Vehicle %

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	1	0
	B - Royal Standard Close	0	0	0	0
	C - B1359 London Road (W)	3	0	0	0
	D - Roman Bank	4	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.27	6.26	0.6	A	167	250
A-B					0.71	1
A-C					211	317
D-AB	0.21	8.01	0.3	A	101	151
D-BC	0.08	9.19	0.1	A	28	43
C-ABD	0.00	0.00	0.0	A	0	0
C-D					27	40
C-A					195	293

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	415	0.000	0	0.0	0.0	0.000	A
A-BCD	124	31	741	0.168	123	0.0	0.3	5.843	A
A-B	0.63	0.16			0.63				
A-C	186	47			186				
D-AB	83	21	612	0.135	82	0.0	0.2	7.054	A
D-BC	23	6	480	0.049	23	0.0	0.1	7.869	A
C-ABD	0	0	551	0.000	0	0.0	0.0	0.000	A
C-D	22	5			22				
C-A	160	40			160				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	398	0.000	0	0.0	0.0	0.000	A
A-BCD	160	40	763	0.209	159	0.3	0.4	5.985	A
A-B	0.71	0.18			0.71				
A-C	211	53			211				
D-AB	99	25	602	0.164	99	0.2	0.2	7.433	A
D-BC	28	7	458	0.061	28	0.1	0.1	8.376	A
C-ABD	0	0	536	0.000	0	0.0	0.0	0.000	A
C-D	26	7			26				
C-A	191	48			191				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	373	0.000	0	0.0	0.0	0.000	A
A-BCD	216	54	795	0.272	216	0.4	0.6	6.248	A
A-B	0.80	0.20			0.80				
A-C	238	59			238				
D-AB	121	30	588	0.206	121	0.2	0.3	8.006	A
D-BC	34	9	426	0.080	34	0.1	0.1	9.186	A
C-ABD	0	0	514	0.000	0	0.0	0.0	0.000	A
C-D	32	8			32				
C-A	235	59			235				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	373	0.000	0	0.0	0.0	0.000	A
A-BCD	217	54	795	0.273	217	0.6	0.6	6.263	A
A-B	0.80	0.20			0.80				
A-C	237	59			237				
D-AB	121	30	588	0.206	121	0.3	0.3	8.015	A
D-BC	34	9	426	0.080	34	0.1	0.1	9.194	A
C-ABD	0	0	514	0.000	0	0.0	0.0	0.000	A
C-D	32	8			32				
C-A	235	59			235				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	397	0.000	0	0.0	0.0	0.000	A
A-BCD	160	40	764	0.210	161	0.6	0.4	6.010	A
A-B	0.71	0.18			0.71				
A-C	211	53			211				
D-AB	99	25	602	0.164	99	0.3	0.2	7.444	A
D-BC	28	7	457	0.061	28	0.1	0.1	8.387	A
C-ABD	0	0	535	0.000	0	0.0	0.0	0.000	A
C-D	26	7			26				
C-A	191	48			191				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	415	0.000	0	0.0	0.0	0.000	A
A-BCD	125	31	741	0.168	125	0.4	0.3	5.875	A
A-B	0.63	0.16			0.63				
A-C	186	46			186				
D-AB	83	21	612	0.135	83	0.2	0.2	7.079	A
D-BC	23	6	480	0.049	23	0.1	0.1	7.887	A
C-ABD	0	0	551	0.000	0	0.0	0.0	0.000	A
C-D	22	5			22				
C-A	160	40			160				

2029 Do Minimum, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	D - Roman Bank - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

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	London Road (B1359)/Roman Bank/Royal Standard Close crossroads	Crossroads	Two-way	Two-way	Two-way	Two-way		3.82	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.82	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2029 Do Minimum	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B1359 London Road (E)		ONE HOUR	✓	342	100.000
B - Royal Standard Close		ONE HOUR	✓	3	100.000
C - B1359 London Road (W)		ONE HOUR	✓	239	100.000
D - Roman Bank		ONE HOUR	✓	189	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	221	121
	B - Royal Standard Close	1	0	2	0
	C - B1359 London Road (W)	208	4	0	27
	D - Roman Bank	145	0	44	0

Vehicle Mix

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

Heavy Vehicle %

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	1	7
	B - Royal Standard Close	0	0	100	0
	C - B1359 London Road (W)	3	33	0	4
	D - Roman Bank	4	0	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.27	7.04	0.5	A	157	235
A-B					0	0
A-C					157	236
D-AB	0.27	8.82	0.4	A	133	200
D-BC	0.11	9.57	0.1	A	40	61
C-ABD	0.01	6.54	0.0	A	5	8
C-D					25	37
C-A					189	284

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	424	0.000	0	0.0	0.0	0.000	A
A-BCD	119	30	702	0.170	118	0.0	0.3	6.502	A
A-B	0	0			0				
A-C	138	35			138				
D-AB	109	27	610	0.179	108	0.0	0.2	7.448	A
D-BC	33	8	487	0.068	33	0.0	0.1	8.083	A
C-ABD	4	1	685	0.006	4	0.0	0.0	6.541	A
C-D	20	5			20				
C-A	156	39			156				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	408	0.000	0	0.0	0.0	0.000	A
A-BCD	151	38	717	0.211	150	0.3	0.4	6.707	A
A-B	0	0			0				
A-C	157	39			157				
D-AB	130	33	599	0.218	130	0.2	0.3	7.975	A
D-BC	40	10	464	0.085	39	0.1	0.1	8.639	A
C-ABD	5	1	696	0.007	5	0.0	0.0	6.398	A
C-D	24	6			24				
C-A	186	46			186				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	386	0.000	0	0.0	0.0	0.000	A
A-BCD	199	50	737	0.271	199	0.4	0.5	7.037	A
A-B	0	0			0				
A-C	177	44			177				
D-AB	160	40	584	0.273	159	0.3	0.4	8.807	A
D-BC	48	12	432	0.112	48	0.1	0.1	9.555	A
C-ABD	7	2	714	0.010	7	0.0	0.0	6.169	A
C-D	29	7			29				
C-A	227	57			227				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	386	0.000	0	0.0	0.0	0.000	A
A-BCD	200	50	737	0.271	200	0.5	0.5	7.038	A
A-B	0	0			0				
A-C	177	44			177				
D-AB	160	40	584	0.273	160	0.4	0.4	8.824	A
D-BC	48	12	432	0.112	48	0.1	0.1	9.566	A
C-ABD	7	2	714	0.010	7	0.0	0.0	6.128	A
C-D	29	7			29				
C-A	227	57			227				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	408	0.000	0	0.0	0.0	0.000	A
A-BCD	151	38	717	0.211	152	0.5	0.4	6.707	A
A-B	0	0			0				
A-C	156	39			156				
D-AB	130	33	599	0.218	131	0.4	0.3	8.000	A
D-BC	40	10	464	0.085	40	0.1	0.1	8.657	A
C-ABD	5	1	696	0.007	5	0.0	0.0	6.309	A
C-D	24	6			24				
C-A	186	46			186				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	424	0.000	0	0.0	0.0	0.000	A
A-BCD	120	30	702	0.171	120	0.4	0.3	6.526	A
A-B	0	0			0				
A-C	138	34			138				
D-AB	109	27	610	0.179	109	0.3	0.2	7.487	A
D-BC	33	8	486	0.068	33	0.1	0.1	8.107	A
C-ABD	4	1	685	0.006	4	0.0	0.0	6.497	A
C-D	20	5			20				
C-A	156	39			156				

2029 Do Minimum, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	D - Roman Bank - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

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	London Road (B1359)/Roman Bank/Royal Standard Close crossroads	Crossroads	Two-way	Two-way	Two-way	Two-way		2.99	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.99	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2029 Do Minimum	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B1359 London Road (E)		ONE HOUR	✓	436	100.000
B - Royal Standard Close		ONE HOUR	✓	0	100.000
C - B1359 London Road (W)		ONE HOUR	✓	256	100.000
D - Roman Bank		ONE HOUR	✓	149	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	1	314	121
	B - Royal Standard Close	0	0	0	0
	C - B1359 London Road (W)	225	0	0	31
	D - Roman Bank	116	0	33	0

Vehicle Mix

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

Heavy Vehicle %

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	1	0
	B - Royal Standard Close	0	0	0	0
	C - B1359 London Road (W)	3	0	0	0
	D - Roman Bank	4	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.29	6.36	0.6	A	181	271
A-B					0.70	1
A-C					219	328
D-AB	0.22	8.21	0.3	A	106	160
D-BC	0.09	9.48	0.1	A	30	45
C-ABD	0.00	0.00	0.0	A	0	0
C-D					28	43
C-A					206	310

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	410	0.000	0	0.0	0.0	0.000	A
A-BCD	133	33	747	0.179	132	0.0	0.3	5.868	A
A-B	0.62	0.15			0.62				
A-C	194	49			194				
D-AB	87	22	609	0.143	87	0.0	0.2	7.155	A
D-BC	25	6	474	0.052	25	0.0	0.1	8.008	A
C-ABD	0	0	547	0.000	0	0.0	0.0	0.000	A
C-D	23	6			23				
C-A	169	42			169				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	391	0.000	0	0.0	0.0	0.000	A
A-BCD	172	43	771	0.224	172	0.3	0.4	6.033	A
A-B	0.70	0.17			0.70				
A-C	219	55			219				
D-AB	104	26	599	0.174	104	0.2	0.2	7.568	A
D-BC	30	7	450	0.066	30	0.1	0.1	8.567	A
C-ABD	0	0	530	0.000	0	0.0	0.0	0.000	A
C-D	28	7			28				
C-A	202	51			202				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	365	0.000	0	0.0	0.0	0.000	A
A-BCD	235	59	805	0.292	234	0.4	0.6	6.342	A
A-B	0.78	0.19			0.78				
A-C	244	61			244				
D-AB	128	32	584	0.219	127	0.2	0.3	8.201	A
D-BC	36	9	416	0.087	36	0.1	0.1	9.475	A
C-ABD	0	0	507	0.000	0	0.0	0.0	0.000	A
C-D	34	9			34				
C-A	248	62			248				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	365	0.000	0	0.0	0.0	0.000	A
A-BCD	235	59	805	0.292	235	0.6	0.6	6.362	A
A-B	0.78	0.19			0.78				
A-C	244	61			244				
D-AB	128	32	584	0.219	128	0.3	0.3	8.211	A
D-BC	36	9	416	0.087	36	0.1	0.1	9.485	A
C-ABD	0	0	507	0.000	0	0.0	0.0	0.000	A
C-D	34	9			34				
C-A	248	62			248				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	391	0.000	0	0.0	0.0	0.000	A
A-BCD	173	43	772	0.224	174	0.6	0.4	6.063	A
A-B	0.70	0.17			0.70				
A-C	218	55			218				
D-AB	104	26	599	0.174	105	0.3	0.2	7.581	A
D-BC	30	7	449	0.066	30	0.1	0.1	8.581	A
C-ABD	0	0	530	0.000	0	0.0	0.0	0.000	A
C-D	28	7			28				
C-A	202	51			202				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	410	0.000	0	0.0	0.0	0.000	A
A-BCD	134	33	748	0.179	134	0.4	0.3	5.905	A
A-B	0.62	0.15			0.62				
A-C	194	48			194				
D-AB	87	22	609	0.143	88	0.2	0.2	7.181	A
D-BC	25	6	473	0.052	25	0.1	0.1	8.028	A
C-ABD	0	0	547	0.000	0	0.0	0.0	0.000	A
C-D	23	6			23				
C-A	169	42			169				

2029 Do Something, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	D - Roman Bank - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

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	London Road (B1359)/Roman Bank/Royal Standard Close crossroads	Crossroads	Two-way	Two-way	Two-way	Two-way		4.55	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.55	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	2029 Do Something	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B1359 London Road (E)		ONE HOUR	✓	352	100.000
B - Royal Standard Close		ONE HOUR	✓	3	100.000
C - B1359 London Road (W)		ONE HOUR	✓	239	100.000
D - Roman Bank		ONE HOUR	✓	237	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	221	131
	B - Royal Standard Close	1	0	2	0
	C - B1359 London Road (W)	208	4	0	27
	D - Roman Bank	193	0	44	0

Vehicle Mix

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

Heavy Vehicle %

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	1	7
	B - Royal Standard Close	0	0	100	0
	C - B1359 London Road (W)	3	33	0	4
	D - Roman Bank	4	0	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.29	7.26	0.6	A	170	254
A-B					0	0
A-C					153	230
D-AB	0.36	10.10	0.6	B	177	266
D-BC	0.12	9.96	0.1	A	40	61
C-ABD	0.01	6.56	0.0	A	5	8
C-D					25	37
C-A					189	284

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	421	0.000	0	0.0	0.0	0.000	A
A-BCD	129	32	702	0.184	128	0.0	0.3	6.612	A
A-B	0	0			0				
A-C	136	34			136				
D-AB	145	36	610	0.238	144	0.0	0.3	8.018	A
D-BC	33	8	481	0.069	33	0.0	0.1	8.196	A
C-ABD	4	1	683	0.006	4	0.0	0.0	6.561	A
C-D	20	5			20				
C-A	156	39			156				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	404	0.000	0	0.0	0.0	0.000	A
A-BCD	163	41	717	0.228	163	0.3	0.4	6.858	A
A-B	0	0			0				
A-C	153	38			153				
D-AB	174	43	599	0.290	173	0.3	0.4	8.785	A
D-BC	40	10	455	0.087	39	0.1	0.1	8.835	A
C-ABD	5	1	694	0.007	5	0.0	0.0	6.421	A
C-D	24	6			24				
C-A	186	46			186				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	380	0.000	0	0.0	0.0	0.000	A
A-BCD	216	54	737	0.293	215	0.4	0.6	7.257	A
A-B	0	0			0				
A-C	172	43			172				
D-AB	212	53	583	0.364	212	0.4	0.6	10.064	B
D-BC	48	12	417	0.116	48	0.1	0.1	9.943	A
C-ABD	7	2	711	0.010	7	0.0	0.0	6.194	A
C-D	29	7			29				
C-A	227	57			227				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	380	0.000	0	0.0	0.0	0.000	A
A-BCD	216	54	737	0.293	216	0.6	0.6	7.262	A
A-B	0	0			0				
A-C	171	43			171				
D-AB	212	53	583	0.364	212	0.6	0.6	10.100	B
D-BC	48	12	417	0.116	48	0.1	0.1	9.964	A
C-ABD	7	2	710	0.010	7	0.0	0.0	6.156	A
C-D	29	7			29				
C-A	227	57			227				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	403	0.000	0	0.0	0.0	0.000	A
A-BCD	164	41	717	0.228	164	0.6	0.4	6.861	A
A-B	0	0			0				
A-C	153	38			153				
D-AB	174	43	599	0.290	174	0.6	0.4	8.830	A
D-BC	40	10	454	0.087	40	0.1	0.1	8.857	A
C-ABD	5	1	694	0.007	5	0.0	0.0	6.332	A
C-D	24	6			24				
C-A	186	46			186				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	420	0.000	0	0.0	0.0	0.000	A
A-BCD	130	32	702	0.185	130	0.4	0.3	6.640	A
A-B	0	0			0				
A-C	135	34			135				
D-AB	145	36	610	0.238	146	0.4	0.3	8.079	A
D-BC	33	8	480	0.069	33	0.1	0.1	8.222	A
C-ABD	4	1	682	0.006	4	0.0	0.0	6.520	A
C-D	20	5			20				
C-A	156	39			156				

2029 Do Something, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	D - Roman Bank - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.

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	London Road (B1359)/Roman Bank/Royal Standard Close crossroads	Crossroads	Two-way	Two-way	Two-way	Two-way		3.71	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.71	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	2029 Do Something	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B1359 London Road (E)		ONE HOUR	✓	474	100.000
B - Royal Standard Close		ONE HOUR	✓	0	100.000
C - B1359 London Road (W)		ONE HOUR	✓	256	100.000
D - Roman Bank		ONE HOUR	✓	161	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	1	314	159
	B - Royal Standard Close	0	0	0	0
	C - B1359 London Road (W)	225	0	0	31
	D - Roman Bank	128	0	33	0

Vehicle Mix

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

Heavy Vehicle %

		To			
		A - B1359 London Road (E)	B - Royal Standard Close	C - B1359 London Road (W)	D - Roman Bank
From	A - B1359 London Road (E)	0	0	1	0
	B - Royal Standard Close	0	0	0	0
	C - B1359 London Road (W)	3	0	0	0
	D - Roman Bank	4	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	A	0	0
A-BCD	0.38	7.32	0.9	A	237	356
A-B					0.63	0.94
A-C					197	296
D-AB	0.24	8.47	0.3	A	117	176
D-BC	0.09	9.93	0.1	A	30	45
C-ABD	0.00	0.00	0.0	A	0	0
C-D					28	43
C-A					206	310

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	404	0.000	0	0.0	0.0	0.000	A
A-BCD	175	44	747	0.235	174	0.0	0.4	6.290	A
A-B	0.58	0.14			0.58				
A-C	181	45			181				
D-AB	96	24	609	0.158	96	0.0	0.2	7.281	A
D-BC	25	6	463	0.054	25	0.0	0.1	8.206	A
C-ABD	0	0	538	0.000	0	0.0	0.0	0.000	A
C-D	23	6			23				
C-A	169	42			169				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	384	0.000	0	0.0	0.0	0.000	A
A-BCD	227	57	771	0.294	226	0.4	0.6	6.631	A
A-B	0.63	0.16			0.63				
A-C	199	50			199				
D-AB	115	29	598	0.192	115	0.2	0.2	7.740	A
D-BC	30	7	436	0.068	30	0.1	0.1	8.849	A
C-ABD	0	0	519	0.000	0	0.0	0.0	0.000	A
C-D	28	7			28				
C-A	202	51			202				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	356	0.000	0	0.0	0.0	0.000	A
A-BCD	309	77	805	0.384	308	0.6	0.9	7.281	A
A-B	0.68	0.17			0.68				
A-C	212	53			212				
D-AB	141	35	583	0.242	141	0.2	0.3	8.457	A
D-BC	36	9	399	0.091	36	0.1	0.1	9.912	A
C-ABD	0	0	493	0.000	0	0.0	0.0	0.000	A
C-D	34	9			34				
C-A	248	62			248				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	356	0.000	0	0.0	0.0	0.000	A
A-BCD	309	77	805	0.384	309	0.9	0.9	7.319	A
A-B	0.67	0.17			0.67				
A-C	212	53			212				
D-AB	141	35	583	0.242	141	0.3	0.3	8.470	A
D-BC	36	9	399	0.091	36	0.1	0.1	9.928	A
C-ABD	0	0	493	0.000	0	0.0	0.0	0.000	A
C-D	34	9			34				
C-A	248	62			248				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	384	0.000	0	0.0	0.0	0.000	A
A-BCD	227	57	772	0.294	228	0.9	0.6	6.685	A
A-B	0.63	0.16			0.63				
A-C	198	50			198				
D-AB	115	29	598	0.192	115	0.3	0.3	7.760	A
D-BC	30	7	436	0.068	30	0.1	0.1	8.869	A
C-ABD	0	0	518	0.000	0	0.0	0.0	0.000	A
C-D	28	7			28				
C-A	202	51			202				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-ACD	0	0	404	0.000	0	0.0	0.0	0.000	A
A-BCD	176	44	748	0.236	177	0.6	0.4	6.344	A
A-B	0.57	0.14			0.57				
A-C	180	45			180				
D-AB	96	24	609	0.158	97	0.3	0.2	7.312	A
D-BC	25	6	462	0.054	25	0.1	0.1	8.231	A
C-ABD	0	0	537	0.000	0	0.0	0.0	0.000	A
C-D	23	6			23				
C-A	169	42			169				

Appendix N: -

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.1.1.1905
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Filename: Site Access.j10
Path: C:\Users\cland\Documents\Roberts Highway Consultants\Project Folder\2024\RHC-24-015 Little London, Long Sutton\Calculations\Junction Modelling
Report generation date: 15/05/2024 17:29:18

»2029 Do Something, AM
»2029 Do Something, PM

Summary of junction performance

	AM			PM		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
	2029 Do Something					
Stream B-AC	0.2	6.94	0.13	0.0	6.14	0.03
Stream C-AB	0.0	5.39	0.03	0.1	5.77	0.10

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

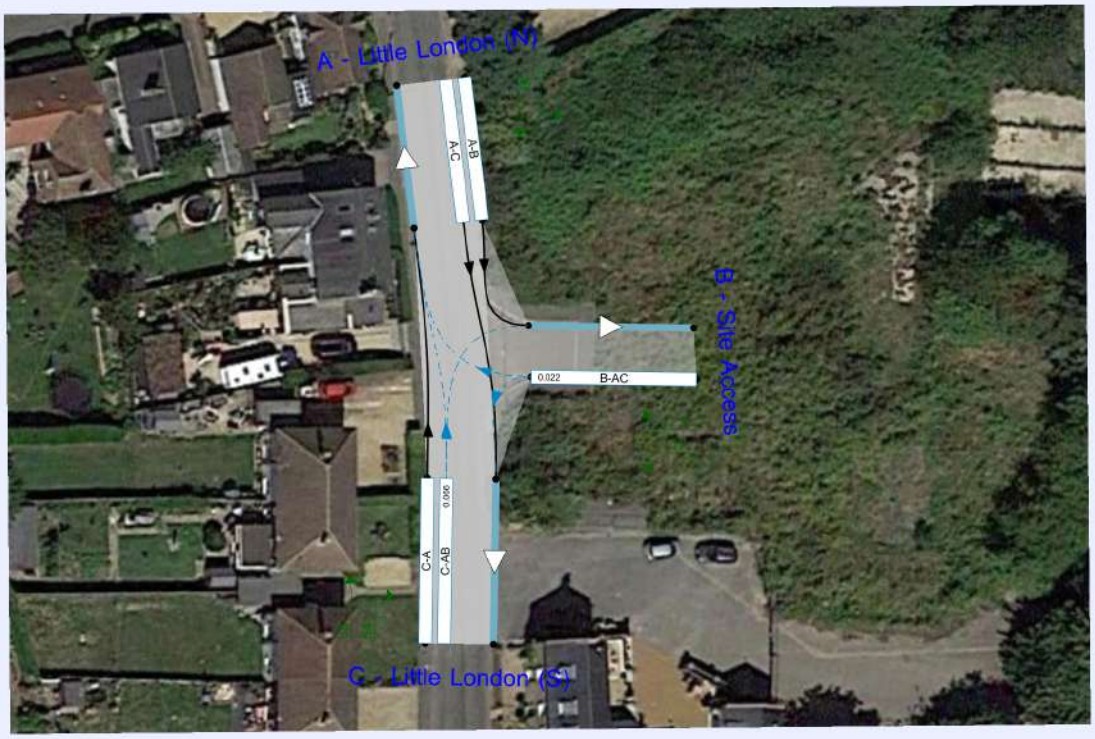
File summary

File Description

Title	Site Access
Location	Long Sutton
Site number	RHC-24-015
Date	15/05/2024
Version	
Status	(new file)
Identifier	
Client	D. Brown Building Contractors Limited
Jobnumber	RHC-24-015
Enumerator	ANDY\cland
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	PCU	PCU	perHour	s	-Min	perMin



Flows show original traffic demand (PCU/hr).
Streams (downstream end) show RFC ()

The junction diagram reflects the last run of Junctions.

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	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2029 Do Something	AM	ONE HOUR	07:45	09:15	15	✓
D2	2029 Do Something	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2029 Do Something, AM

Data Errors and Warnings

No errors or warnings

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	T-Junction	Two-way	Two-way	Two-way		1.81	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.81	A

Arms

Arms

Arm	Name	Description	Arm type
A	Little London (N)		Major
B	Site Access		Minor
C	Little London (S)		Major

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)
C - Little London (S)	6.00			140.0	✓	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)	Visibility to left (m)	Visibility to right (m)
B - Site Access	One lane	2.75	56	52

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	508	0.093	0.234	0.147	0.334
B-C	640	0.098	0.248	-	-
C-B	655	0.254	0.254	-	-

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	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2029 Do Something	AM	ONE HOUR	07:45	09:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Little London (N)		ONE HOUR	✓	134	100.000
B - Site Access		ONE HOUR	✓	72	100.000
C - Little London (S)		ONE HOUR	✓	123	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Little London (N)	B - Site Access	C - Little London (S)
From	A - Little London (N)	0	0	134
	B - Site Access	2	0	70
	C - Little London (S)	108	15	0

Vehicle Mix

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

Heavy Vehicle %

		To		
		A - Little London (N)	B - Site Access	C - Little London (S)
From	A - Little London (N)	0	0	1
	B - Site Access	0	0	0
	C - Little London (S)	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.13	6.94	0.2	A	66	99
C-AB	0.03	5.39	0.0	A	16	24
C-A					97	145
A-B					0	0
A-C					123	184

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	54	14	610	0.089	54	0.0	0.1	6.469	A
C-AB	13	3	682	0.019	13	0.0	0.0	5.389	A
C-A	80	20			80				
A-B	0	0			0				
A-C	101	25			101				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	16	605	0.107	65	0.1	0.1	6.663	A
C-AB	16	4	688	0.023	16	0.0	0.0	5.369	A
C-A	95	24			95				
A-B	0	0			0				
A-C	120	30			120				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	598	0.133	79	0.1	0.2	6.936	A
C-AB	20	5	696	0.029	20	0.0	0.0	5.343	A
C-A	115	29			115				
A-B	0	0			0				
A-C	148	37			148				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	598	0.133	79	0.2	0.2	6.939	A
C-AB	20	5	696	0.029	20	0.0	0.0	5.345	A
C-A	115	29			115				
A-B	0	0			0				
A-C	148	37			148				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	16	605	0.107	65	0.2	0.1	6.666	A
C-AB	16	4	688	0.023	16	0.0	0.0	5.374	A
C-A	95	24			95				
A-B	0	0			0				
A-C	120	30			120				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	54	14	610	0.089	54	0.1	0.1	6.481	A
C-AB	13	3	682	0.019	13	0.0	0.0	5.391	A
C-A	80	20			80				
A-B	0	0			0				
A-C	101	25			101				

2029 Do Something, PM

Data Errors and Warnings

No errors or warnings

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	T-Junction	Two-way	Two-way	Two-way		1.93	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.93	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2029 Do Something	PM	ONE HOUR	16:45	18:15	15	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Little London (N)		ONE HOUR	✓	81	100.000
B - Site Access		ONE HOUR	✓	18	100.000
C - Little London (S)		ONE HOUR	✓	142	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Little London (N)	B - Site Access	C - Little London (S)
From	A - Little London (N)	0	2	79
	B - Site Access	1	0	17
	C - Little London (S)	88	54	0

Vehicle Mix

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

Heavy Vehicle %

		To		
		A - Little London (N)	B - Site Access	C - Little London (S)
From	A - Little London (N)	0	0	1
	B - Site Access	0	0	0
	C - Little London (S)	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.03	6.14	0.0	A	17	25
C-AB	0.10	5.77	0.1	A	56	85
C-A					74	111
A-B					2	3
A-C					72	109

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	3	614	0.022	13	0.0	0.0	5.993	A
C-AB	45	11	682	0.066	45	0.0	0.1	5.655	A
C-A	62	15			62				
A-B	2	0.38			2				
A-C	59	15			59				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	16	4	611	0.026	16	0.0	0.0	6.053	A
C-AB	55	14	688	0.080	55	0.1	0.1	5.700	A
C-A	73	18			73				
A-B	2	0.45			2				
A-C	71	18			71				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20	5	606	0.033	20	0.0	0.0	6.138	A
C-AB	69	17	695	0.099	69	0.1	0.1	5.763	A
C-A	87	22			87				
A-B	2	0.55			2				
A-C	87	22			87				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20	5	606	0.033	20	0.0	0.0	6.138	A
C-AB	69	17	695	0.099	69	0.1	0.1	5.768	A
C-A	87	22			87				
A-B	2	0.55			2				
A-C	87	22			87				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	16	4	611	0.026	16	0.0	0.0	6.053	A
C-AB	55	14	688	0.080	55	0.1	0.1	5.705	A
C-A	73	18			73				
A-B	2	0.45			2				
A-C	71	18			71				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	14	3	614	0.022	14	0.0	0.0	5.993	A
C-AB	45	11	682	0.066	45	0.1	0.1	5.665	A
C-A	62	15			62				
A-B	2	0.38			2				
A-C	59	15			59				

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