Technical Note No 1

Transport and Highways Appraisal: Proposed Residential Developments, Woods Farm

1. Introduction

This Technical Note has been drafted by The Transportation Consultancy (ttc) on behalf of the client 'Woods Farm' to support a potential residential development on land located to the south of Bills Lane in Solihull.

1.1 Background

The proposed development site is included in Solihull Metropolitan Borough Council's (MBC) Draft Local Plan (DLP). The site has been allocated as 'Site 26' and is known as 'Whitlock's End Farm'. The capacity of the site has been outlined at 300 dwellings.

1.2 Purpose of Report

The purpose of this Technical Note is to:

- Support the promotion of 'Site 26' in the DLP;
- Demonstrate that safe and suitable access from the local highway network can be achieved; and
- Demonstrate that the site could accommodate a greater number of dwellings than has currently been included within the DLP and establish that the impact on the local highway network would not be severe. For testing purposes, consideration has been given to the impact of a 500 dwelling scheme and a 750 dwelling scheme.

1.3 Scope of Report

The structure of this Technical Note is as follows:

- **Chapter 2: Site Audit** – a description of the site location, the highway network, the results of the traffic surveys and speed survey and a summary of the Non-Motorised User Audit.
- **Chapter 3: Site Access Proposals** – a description of the site access proposals, visibility splays and associated drawings.
- **Chapter 4: Traffic Generation** – a summary of the proposed trip rates and traffic generation.
- **Chapter 5: Junction Modelling** – as summary of the impact of the vehicle generation from the proposed development and the impact on the local highway network.
- **Chapter 6: Local and National Policies** – a summary of key national and local policies.
- **Chapter 7: Summary and Conclusions** – summarises the findings of the report and provides a conclusion.

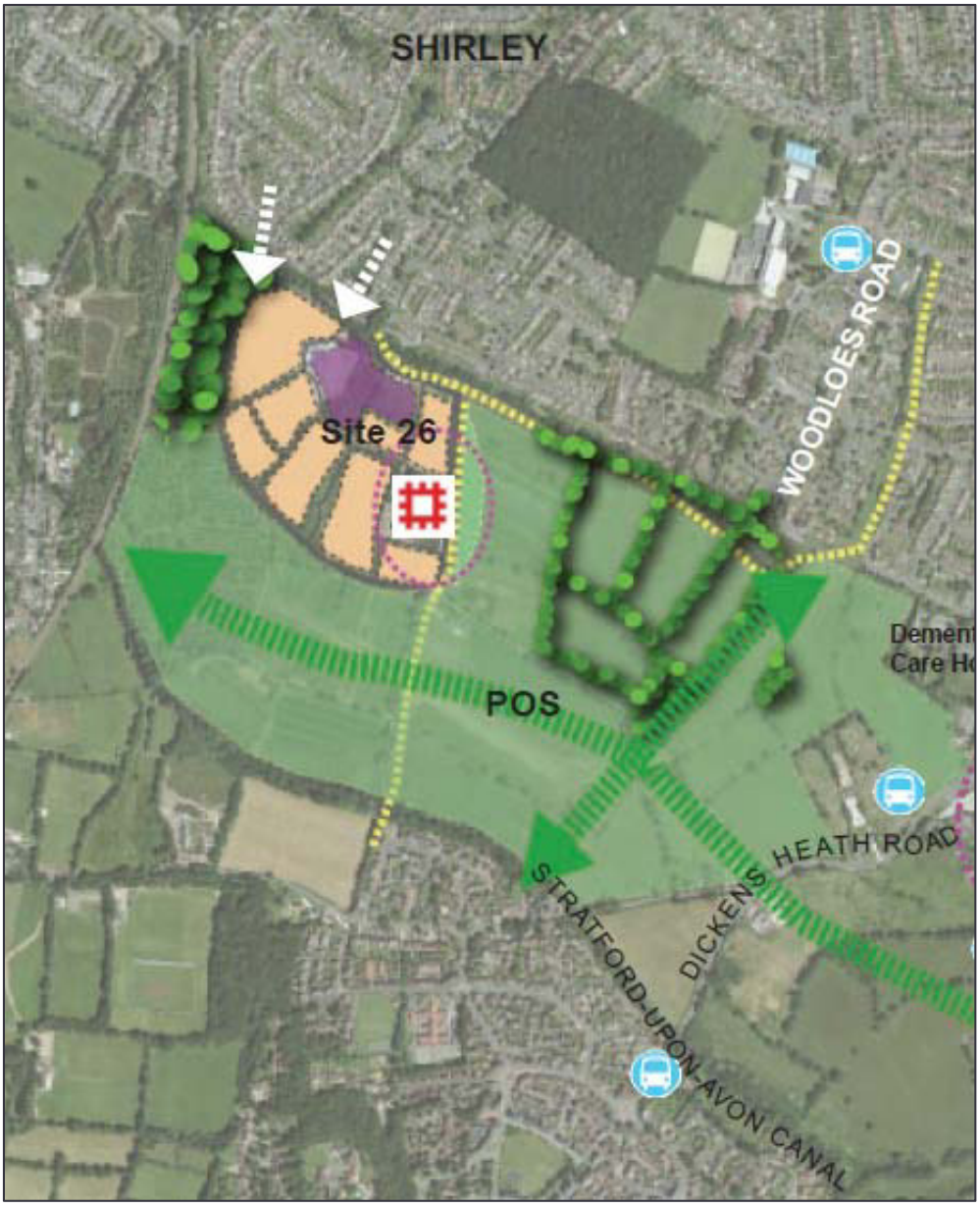
2. Site Audit

This section of the Technical Note describes the site's location in regard to the local highway network, a summary of the Non-Motorised User Audit and a review of the highway safety record.

2.1 Site Location and Description

The proposed development site is located on 'Woods Farm', which is a Christmas Tree wholesaler situated to the south of Shirley. The location of 'Site 26' is displayed in **Figure 2.1** below.

Figure 2.1 Site Location Plan



The site is currently occupied by a combination of residential dwellings, farm buildings and agricultural land, which is used to cultivate Christmas Trees. The site currently benefits from three existing points of access onto Bills Lane.

The site is bordered by Bills Land to the north and by agricultural land to the east, south and west. However, the site is situated on the fringe of large existing residential areas located further to the north, south, east and west, which include Shirley, Dickens Heath and Majors Green.

2.2 Local Highway Network

Bills Lane runs on an east to west alignment along the site frontage and routes between the junction with Haslucks Green Road to the west and the A34 Stratford Road to the north. Bills Lane fronts the site on the northern boundary and within the vicinity of the site, Bills Lane is a single carriageway road, with a typical carriageway width of approximately 5.5m.

The road is lit and subject to 30mph speed limit with a pedestrian footway provided on the northern side of the carriageway. Traffic flow and speed data was captured using an Automatic Traffic Counter (ATC), which was laid between the 29th January 2019 and 4th February 2019. The results of the survey are summarised within **Table 2.1**.

Table 2.1 Traffic Survey Results: Bills Lane

Period/Data Type	Northbound	Southbound	Two Way
Traffic Flow AM Peak (0800 – 0900) [Weekday]	261	404	665
Traffic Flow PM Peak (1700 – 1800) [Weekday]	427	311	738
AADT	3,349	3,503	6,852
Average Speed	31.6	31.9	-
85th Percentile Speed	37.1	38.5	-

As can be seen from the above, the level of traffic using Bills Lane is relatively low both within the peak hours and during a typical day, with the peak hour two-way flow equating to 12 vehicles every minute.

On average, vehicles using Bills Lane travel in accordance with the speed limit, however, it is noted that the 85th percentile speeds are higher than the speed limit.

Given the recorded speeds, the visibility splay at the proposed junction would need to conform to the standards contained with the Design Manual for Roads and Bridges (DMRB). With reference to DMRB TD 42/95 the required visibility for the recorded speeds is 2.4m x 90m.

2.3 Local Services and Facilities

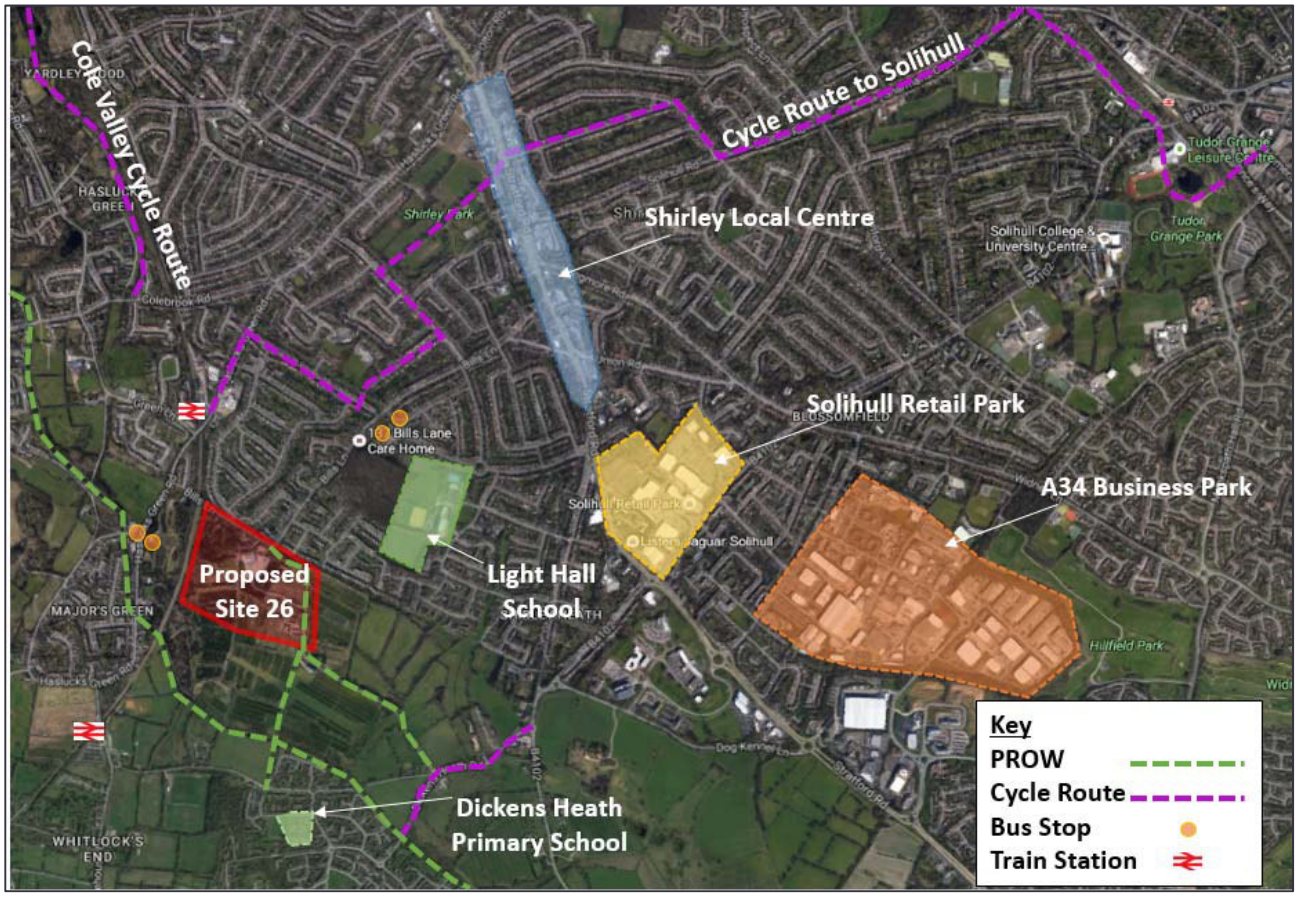
The proposed development site is situated within close proximity to key local services and facilities, which will reduce the need for car usage. It is also likely that a development of this size will include a selection of facilities to ensure that the development site is sustainable, though the precise development mix will be determined at the Planning Application stage through discussions with SMBC.

In terms of existing services and facilities, the development site is situated within the vicinity Shirley Local Centre, Solihull Retail Park, A34 Stratford Road Business Park, Dickens Heath Primary School, Light Hall School, a dentist and a doctor's surgery. All the services and facilities are accessible via sustainable modes of transport, which will reduce the need to travel by private car. The location of surrounding local facilities is illustrated with in **Figure 2.2**.

2.4 Site Accessibility

A plan illustrating the location of existing key cycle routes, bus stops and railway stations in close proximity to the site is presented within **Figure 2.2**.

Figure 2.2 Site Locations and Accessibility



Footway Network

Bills Lane benefits from an existing footway, which is present along the northern side of the carriageway and extends along its length. It provides access to the A34 Stratford Road corridor and Shirley local centre to the north-east and Shirley Railway Station to the north west, via Haslucks Green Road.

Haslucks Green Road is afforded a footway along its eastern side, which routes towards Major's Green to the south and Shirley Railway Station to the north, where a zebra crossing across Haslucks Green Road is provided to ensure safe access to the railway station. The railway station is situated 750m from the site and represents an 8 minute journey by foot.

Shirley local centre and the A34 Stratford Road corridor is located approximately a 1.6km walk from the site, which represents a journey time of 20 minutes.

A number of Public Right of Ways (PRoW) traverse the site (illustrated within **Figure 2.2**), with an access point located on Bills Lane at the existing vehiclar access with Whitlocks End Farm. The PRoW traverses through the site and splits into two separate PRoW, emerging from the site at Dickens Heath Road and Tythe Barn Lane, which are illustrated within **Figure 2.3**.

Figure 2.3 PRoW Access Points from Dickens Heath Road and Tythe Barn Lane

PROW emerging on Tythe Barn Lane *PROW emerging on Dickens Heath Road*

The Stratford-upon-Avon Canal routes to the south of the site boundary and the canal towpath provides a dedicated 'traffic free' route for pedestrians, which can be accessed by the PRoW network. The towpath can be used as a leisure walk route, but also provides access to the residential areas of Major's Green and Dickens Heath which have educational, health and leisure facilities. Images of the towpath are displayed within **Figure 2.4**.

Figure 2.4 Images of the Towpath

Stratford Upon Avon Canal Near Tythe Barn Lane

Cycle Routes

Cycling facilities within close proximity to the site are of a reasonable standard and the proposed development is well situated to benefit from the existing cycle network.

Stratford-Upon-Avon Canal tow path provides a traffic free cycle route, which is accessible from the PRoW network described above.

The Cole Valley Cycle Route provides a route to central Birmingham, which can be accessed from the Stratford-Upon-Avon Canal and there are several local advisory routes (**Figure 2.6**), which traverse the surrounding residential areas and includes a shared cycle route, which runs along the northernside of

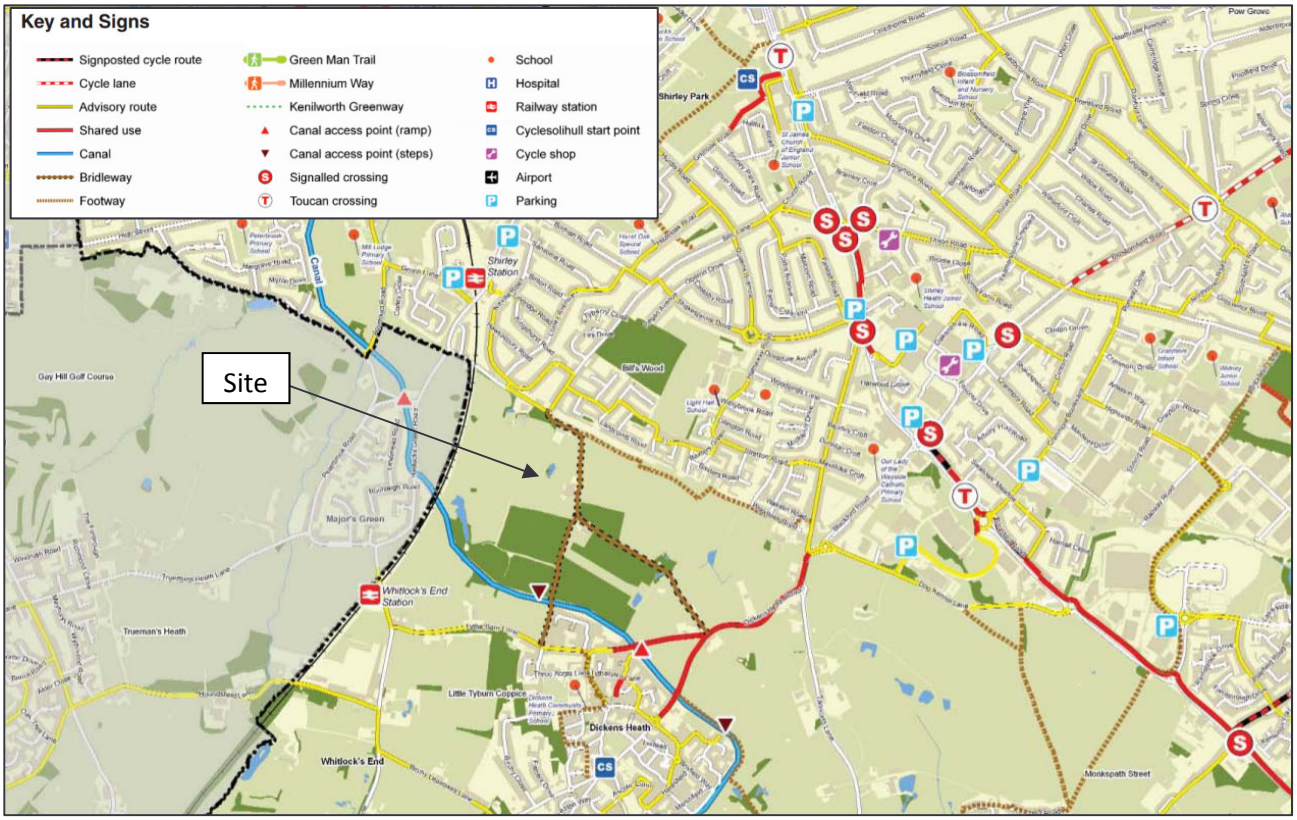
Dickens Heath Road, which provides a link between Dickens Heath and Shirley. Images of the aforementioned are illustrated within **Figure 2.5** along with an image of the Tythe Barn Lane access onto the canal.

Figure 2.5 Access from the Canal and the Cycleway on Dickens Heath Lane

Stepped Access from Canal to Tythe Barn Lane

Cycleway on Dickens Heath Road

Figure 2.6 Local Cycle Network (Extract from Solihull Cycle Network Map)



Bus Services

At present there are no bus services which operate along Bills Lane, although bus services are accessible from Haslucks Green Road and Shakespeare Drive, which are within close proximity to the site. A summary of the available bus services is presented within **Table 2.2**.

Table 2.2 Bus Service Summary

Bus Stop	Service Number	Route Description	Mon – Fri Peak Frequency
Haslucks Green Road (North)	865	Bransons Cross – Blossomfield	1 a day (08:15)
Haslucks Green Road (South)	865	Blossomfield – Bransons Cross	1 a day (15:47)
Shakespeare Drive	A4	Solihull – Inkford Brook	Every hour
	A5	Solihull – Dickens Heath	Every Hour
	863	Blossomfield – Bransons Cross	1 a day (08:22)
Shakespeare Drive	A4	Inkford Brook - Solihull	Every hour
	A5	Dickens Heath - Solihull	Every Hour
	863	Bransons Cross - Blossomfield	1 a day (15:59)

As can be seen from the above, Services A4 and A5 are frequent and provide access to Solihull town centre, services 863 and 865 provide school services. The bus stops along Haslucks Green Road consist of flag poles and timetables as do the bus stops on Shakespeare Drive. **Figure 2.2** displays the location of the nearby bus stops in relation to the site.

Train Services

Shirley Railway Station is situated approximately 750 metres to the north of the site, is managed by West Midlands Railway (WMR) and operates services between Kidderminster and Stratford via Birmingham Moor Street and Birmingham Snow Hill, with a frequency of every 20 minutes in both directions. The services also provide access to Stratford-upon-Avon, Kidderminster, Stourbridge and Worcester.

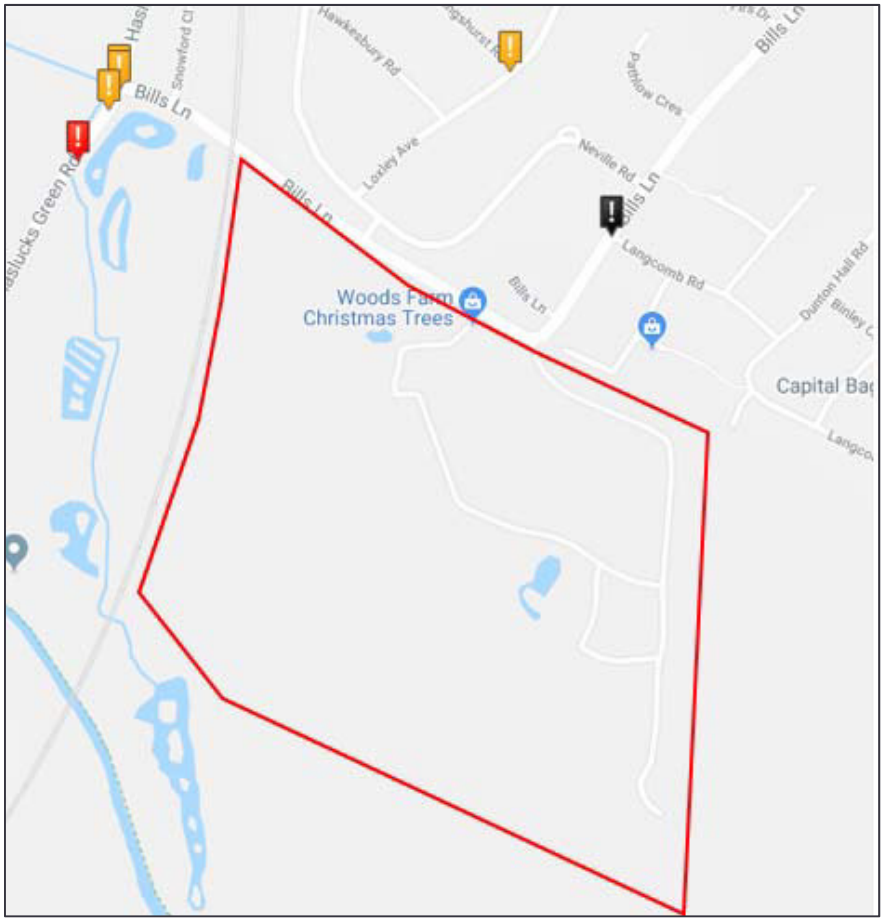
With regards to the proposed development site, the most direct route to the railway station is via the footway network along Bills Lane and Haslucks Green Road with an approximate journey time of 8 minutes by foot. In regard to cycling the most direct route is along Bills Lane and Haslucks Green Road which represents a journey time of approximately 2 minutes, there is also cycle parking at the railway station in the form of stands and lockers. The railway station in relation to the site is displayed in **Figure 2.2**.

2.5 Highway Safety

Personal Injury Accident (PIA) data has been extracted from Crashmap (www.crashmap.com) for the latest 5 year period, the data is collected by the police and is approved by the National Statistics Authority and audited by the Department for Transport each year.

Figure 2.7 displays the location of the accidents in relation to the proposed development (marked in red).

Figure 2.7 Personal Injury Accident Data



As can be seen from above, there have been no recorded accidents along the site frontage on Bills Lane.

With regards to the highway safety records for off-site junctions there have been three 'slight' accidents recorded at the junction of Bills Lane and Haslucks Green Road and one serious accident, which occurred approximately 50 metres to the south of the junction. A fatal accident was recorded on Bills Lane, within the vicinity of the Langcomb Road junction.

Due to the inherent accident level expected at links and junctions, only links or junction clusters which exhibit an accident rate of more than one accident per annum is considered to be significant. At the junction of Bills Lane and Haslucks Green Road, the number of accidents that have occurred within a 5 year period equates to 0.6 accidents per annum, which is therefore not considered to be significant. The fatal accident on Bills Lane occurred in 2014 and the fact that no accidents have been recorded either before or since would suggest that it was a highly unusual occurrence and therefore not considered to be a specific highway safety issue.

2.6 Conclusions

It can be seen that the site is situated within close proximity to the existing footway, cycleway and public transport network. The close proximity to good public transport links in particular Shirley Railway Station will mean that future residents have fast and reliable access to Birmingham city centre. There are no outstanding highway safety issues which the proposed development is expected to exacerbate.

3. Site Access Proposals

3.1 Vehicle Access Arrangements

In order to the serve the proposed site, two primary points of access have been identified. The first is situated to the east of the site and comprises a mini-roundabout, which has been designed in accordance with the DMRB TD 54/07. This access arrangement has already been discussed with the Local Highway Authority and agreed in principle.

The second access would be situated to the west of the site and it would be proposed to provide a ghost island right turn lane to serve the site, which has been designed in accordance with DMRB TD 42/95. The provision of this junction form ensures that right turning development traffic can safely shelter from the main running lanes and therefore maintain link capacity.

There is a pronounced crest along Bills Lane, which is situated adjacent to the Bills Lane/Neville Road junction. In order to avoid this and to ensure that adequate forward visibility can be achieved, the location of the second access has been situated to the west of the crest.

In terms of visibility requirements, consideration has been given to the results of the speed survey summarised within **Table 2.1**, which indicate that 85th percentile speeds along Bills Lane are 37.1mph northbound and 38.5mph southbound. As noted, the recorded speeds necessitate a visibility splay of 2.4m x 90m. This level of visibility is achievable in all instances and has been marked on the access designs. A copy of which is included within **Appendix A**.

3.2 Non-Motorised User Access

Walking

In order to connect the site with the existing footway network, it would be proposed to provide a partial footway along the southern side of Bills Lane, within the vicinity of the site access points. At the second access (ghost island right turn lane), a pedestrian refuge island would be provided to facilitate access onto the northern footway. At the mini-roundabout access a dropped kerb would be provided.

Internally, footways would be provided throughout the site and connections onto the existing PRoW network would be afforded to maximise accessibility.

Cycling

Between the Bills Lane/Neville Road junction and the eastern corner of the site, Bills Lane is recognised by the Local Highway Authority as an advisory cycle route, as such connections from the internal estate roads would be made with Bills Lane and where appropriate further connections could be provided to support access to the tow paths referenced within **Section 2.4**. Details of the precise cycling strategy for the site would be discussed and agreed with the Local Highway Authority.

Public Transport

As noted within **Section 2.4**, there are currently no bus services in operation along the site frontage. The presence of the development and the proposed site access arrangements could enable a new bus service to be provided, which would not only benefit the proposed development, but also benefit the surrounding residential area. Details of the precise public transport strategy for the site would be discussed and agreed with the Local Highway Authority.

4. Traffic Generation

In order to determine the likely impact of the proposed development on the adjacent highway network, a trip rate assessment has been undertaken using the industry standard TRICS database. TRICS (Trip Rate Information Computer System) is a nationally recognised database of traffic surveys covering a multitude of different development types.

Using the TRICS database, an assessment of similar sites to determine trip rates for the proposed development has been extracted from the latest TRICS database. Sites were selected for TRICS category 03/A "Residential –Privately Owned Houses". The characteristics of the area have also been examined, including populations within 1 mile and 5 miles as well as the other following key parameters;

- Surveys conducted in England only, excluding Greater London;
- Surveys conducted in Edge of Town locations;
- Population within 1 mile; 5,000 – 20,000; Population within 5 miles; 50,000 – 250,000.
- Weekdays only (Monday to Friday); and
- Surveys conducted for sites with between 110 and 805 dwellings.

The resultant trip rates are summarised within **Table 4.1** and a copy of the TRICS output is included within **Appendix B**.

Table 4.1 Trip Rates

Time Period	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	0.158	0.418	0.576
PM Peak (1700 – 1800)	0.356	0.158	0.514
Daily	2.406	2.437	4.843

Based on the trips rates identified above, the traffic generation for a 500 dwelling scheme and a 750 dwelling scheme is summarised within **Table 4.2** and **4.3** respectively.

Table 4.2 Traffic Generation (500 dwellings)

Time Period	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	79	209	288
PM Peak (1700 – 1800)	178	79	257
Daily	1,203	1,219	2,422

Table 4.3 Traffic Generation (750 dwellings)

Time Period	Arrivals	Departures	Two-Way
AM Peak (0800 – 0900)	119	314	432
PM Peak (1700 – 1800)	267	119	386

Time Period	Arrivals	Departures	Two-Way
Daily	**1,805**	**1,828**	**3,632**

In order to determine the impact that the proposed development will have on the local highway network a capacity assessment has been undertaken. Details of which are presented within the following section.

5. Junction Modelling

5.1 Introduction

The junction capacity assessment has been undertaken using TRLs Junctions 8, which is the industry standard software used for testing priority-controlled junctions and mini-roundabouts.

The junction modelling provides an assessment of the capacity and operation of a junction as a ratio of flow to capacity (RFC) and an estimate of maximum queue and delay. For priority-controlled junctions and mini-roundabouts, an RFC of 0.85 or less indicates the junction operates within desirable capacity. This allows for the standard error of prediction of the entry capacity by formula of + or -15% (DMRB vol. 6 TA 23/81).

With an RFC between 0.85 and 1.00 a junction would be considered to operate within its theoretical capacity but would at times experience some operational problems resulting in queues and delays. An RFC of greater than 1.00 indicates the junction is over capacity and would experience queuing and delays.

The junction models have been constructed using the geometric layout of the junction designs, which has been taken from a combination of onsite measurements and measurements of the proposed junction arrangement as designed.

The junctions being tested are:

- **Junction 1:** Eastern Site Access (Proposed Mini-Roundabout) with Bills Lane
- **Junction 2:** Western Site Access (Proposed Ghost Island Right Turn Lane) with Bills Lane

In addition to the above, it is also considered appropriate at this stage to test the impact of the development on the following junction, given its proximity to the site:

- **Junction 3:** Haslucks Green Road and Bills Lane Priority Junction

For the proposed site access points, the following scenario are being tested:

- **Scenario 1:** Future Year 2029 AM & PM Peak + Development (500 dwellings)
- **Scenario 2:** Future Year 2029 AM & PM Peak + Development Sensitivity (750 Dwellings)

For Junction 3 and in addition to the above, a 2029 Future Base Year has also been tested in order to determine the impact of the proposed development.

5.2 Future Traffic Year

The traffic flows, for the future year, have been derived from a combination of the traffic flows recorded on Bills Lane and at the junction with Haslucks Green Road, which were undertaken in 2019. To growth the traffic, factors from TEMPRO for the local Solihull area have been applied to the AM and PM peak hours to determine a future year scenario. The following growth factors have been used:

- **AM Peak Hour 2019 – 2029:** 1.074962
- **PM Peak Hour 2019 – 2029:** 1.077616

5.3 Development Traffic

Development traffic highlighted in **Tables 4.2** and **4.3** have been distributed onto the local highway network using the existing distribution of traffic flows taken from the traffic surveys. For the purposes of

this assessment, it has been assumed that each of the development access points would accommodate approximately 50% of the traffic from the site on the basis that distribution between the access points would equal regardless of the direction of travel.

5.4 Modelling Assessment

Junction 1 – Eastern Site Access and Bills Lane

The results from the Junctions 8 modelling assessment for Junction 1, the eastern site access, is displayed in **Table 5.1**. A copy of the model output is included within **Appendix C**.

Table 5.1 Junction 1: Eastern Site Access: Proposed Mini-Roundabout

Arm	Queue (PCU)	Delay (s)	RFC
Scenario 1 AM Peak			
1 – Bills Lane (N)	**0.70**	**7.42**	**0.38**
2 – Site Access	**0.24**	**7.71**	**0.20**
3 – Bills Lane (W)	**2.82**	**18.24**	**0.73**
Scenario 1 PM Peak			
1 – Bills Lane (N)	**2.24**	**13.71**	**0.68**
2 – Site Access	**0.10**	**8.62**	**0.10**
3 – Bills Lane (W)	**1.21**	**10.27**	**0.53**
Scenario 2 AM Peak			
1 – Bills Lane (N)	**0.77**	**7.73**	**0.40**
2 – Site Access	**0.42**	**8.91**	**0.30**
3 – Bills Lane (W)	**4.30**	**26.09**	**0.81**
Scenario 2 PM Peak			
1 – Bills Lane (N)	**2.99**	**17.08**	**0.74**
2 – Site Access	**0.17**	**9.42**	**0.15**
3 – Bills Lane (W)	**1.41**	**11.20**	**0.57**

It can be seen from the above, that the eastern access mini roundabout junction operates within capacity for the future year scenario, including a scenario where the proposed development quantum would consist of 750 residential dwellings (Scenario 2).

Junction 2 – Western Site Access and Bills Lane

The results from the Junctions 8 modelling assessment for Junction 2, the western site access, is displayed in **Table 5.2**. The arm naming convention is as follows; **A**: Bills Lane (E), **B**: Site Access and **C**: Bills Lane (W). A copy of the model output is included within **Appendix D**.

Table 5.2 Junction 2: Western Site Access: Proposed Ghost Island Right Turn Lane

Stream	Queue (PCU)	Delay (s)	RFC
Scenario 1 AM Peak			
B – AC	**0.40**	**12.81**	**0.29**
C - AB	**0.05**	**6.47**	**0.05**
Scenario 1 PM Peak			
B – AC	**0.13**	**10.43**	**0.11**
C – AB	**0.09**	**7.42**	**0.08**
Scenario 2 AM Peak			
B – AC	**0.81**	**17.03**	**0.45**
C - AB	**0.07**	**6.71**	**0.07**
Scenario 2 PM Peak			
B – AC	**0.21**	**11.56**	**0.17**
C - AB	**0.14**	**7.89**	**0.12**

It can be seen from the above, that the western access ghost island right turn lane junction operates within capacity for the future year scenario, including a scenario where the proposed development quantum would consist of 750 residential dwellings (Scenario 2).

Junction 3 – Haslucks Green Road / Bills Lane Priority Junction

The results from the Junctions 8 modelling assessment for Junction 3, the priority junction with Haslucks Green Road and Bills Lane, is displayed in **Table 5.3** and is inclusive of 2029 Future Baseline. The arm naming convention is as follows; **A**: Haslucks Green Road (N), **B**: Bills Lane and **C**: Haslucks Green Road (S). A copy of the model output is included within **Appendix E**.

Table 5.3 Junction 3: Haslucks Green Road / Bills Lane Junction

Stream	Queue (PCU)	Delay (s)	RFC
2029 AM Peak Baseline			
B - C	**2.83**	**34.91**	**0.76**
B - A	**2.30**	**106.43**	**0.71**
C - AB	**37.88**	**163.52**	**1.06**
2029 PM Peak Baseline			
B - C	**4.47**	**43.64**	**0.84**
B - A	**2.00**	**78.98**	**0.70**
C - AB	**3.46**	**15.58**	**0.71**
Scenario 1 AM Peak			

Stream	Queue (PCU)	Delay (s)	RFC
2029 AM Peak Baseline			
B - C	**31.64**	**279.80**	**1.24**
B - A	**10.13**	**365.61**	**1.17**
C - AB	**64.69**	**279.94**	**1.15**
Scenario 1 PM Peak			
B - C	**31.64**	**279.80**	**1.24**
B - A	**10.13**	**365.61**	**1.17**
C - AB	**64.69**	**279.94**	**1.15**
Scenario 2 AM Peak			
B - C	**58.60**	**607.54**	**1.44**
B - A	**17.25**	**657.61**	**1.38**
C - AB	**79.96**	**370.90**	**1.19**
Scenario 2 PM Peak			
B - C	**32.83**	**242.04**	**1.16**
B - A	**9.66**	**325.66**	**1.09**
C - AB	**15.04**	**64.12**	**0.95**

As can be seen from the above, the junction is expected to exceed its theoretical capacity (an RFC greater than 1.00) in the 2029 future year assessment during the AM peak on the northbound Haslucks Green Lane arm. Following the inclusion of the development traffic, in both Scenarios 1 and 2, the junction is expected to exceed its theoretical capacity threshold on all arms, with the exception of Arm C in the PM Peak for Scenario 2.

In order to adequately ensure the impact can be mitigated, a preliminary solution has been identified. Details of which are presented within the following section.

5.5 Mitigation Measures

From a review of the flows on Haslucks Greens Lane and Bills Lane junction, it has been determined that the volumes are relatively similar on all arms and that the existing priory-controlled T-Junction arrangement is not best suited to accommodate this type of traffic flow profile. As a result, and based on best practice, the provision of a roundabout junction is considered to be the most appropriate.

Since the speed limits on both Bills Lane and Haslucks Green Road are 30mph and given the location of the junction on the edge of an urban area, it is considered that a mini-roundabout would be the most appropriate option. Consideration was given to providing either ‘compact’ or ‘normal’ roundabout, but the land required would be excessive and a junction of this size within this location is not considered to be appropriate.

The mini-roundabout option has been designed in accordance with DMRB TD 54/07 and a copy of the design is included within **Appendix F**.

To demonstrate that the proposed mitigation option provides an improvement, a revised traffic modelling exercise has been undertaken, with the results summarised within **Table 5.4**. A copy of the model output is included within **Appendix G**.

Table 5.4 Junction 3: Haslucks Green Road / Bills Lane Junction

Stream	Queue (PCU)	Delay (s)	RFC
2029 AM Peak Baseline			
B - C	**1.98**	**12.85**	**0.66**
B - A	**2.51**	**23.84**	**0.72**
C - AB	**10.75**	**53.06**	**0.94**
2029 PM Peak Baseline			
B - C	**1.08**	**7.80**	**0.52**
B - A	**5.19**	**40.47**	**0.86**
C - AB	**4.90**	**26.86**	**0.84**
Scenario 1 AM Peak			
B - C	**2.14**	**13.65**	**0.69**
B - A	**6.12**	**48.85**	**0.88**
C - AB	**20.32**	**90.14**	**1.00**
Scenario 1 PM Peak			
B - C	**1.31**	**9.03**	**0.57**
B - A	**10.10**	**71.18**	**0.94**
C - AB	**8.61**	**44.39**	**0.92**
Scenario 2 AM Peak			
B - C	**2.28**	**14.39**	**0.70**
B - A	**11.77**	**84.09**	**0.96**
C - AB	**28.08**	**116.76**	**1.03**
Scenario 2 PM Peak			
B - C	**1.45**	**9.78**	**0.60**
B - A	**15.01**	**97.69**	**0.99**
C - AB	**12.24**	**60.09**	**0.95**

As can be seen from the above, the preliminary mitigation option significantly improves capacity for Scenarios 1 and 2 when compared with the existing priority-controlled T-Junction arrangement. In all but one instance, the junction would be expected to operate within its theoretical capacity, and therefore an arrangement similar to the one presented could be implemented as part of a future planning application. A final scheme would be discussed and agreed with the Local Highway Authority.

5.6 Conclusions

It has been demonstrated that the proposed site access junctions can accommodate the development proposals of up to 750 dwellings, with ample reserve capacity. It has also been demonstrate that the nearby junction of Bills Lane and Haslucks Green Road can be upgraded to adequately accommodate a large scale development on the site.

6. Policy Context

6.1 Introduction

This section of the Transport and Highway Feasibility Assessment outlines the relevant national and local policy guidance that the proposed development contributes to.

6.2 National Planning Policy Framework

In July 2018 the Ministry of Housing, Communities and Local Government published the revised **National Planning Policy Framework (NPPF)**, which sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced. The NPPF must be taken into account in the preparation of local and neighbourhood plans and is a material consideration in planning decisions.

At the heart of the NPPF is a presumption in favour of sustainable development, an approach which should be followed by local planning authorities in their plan making and decision taking. Decision takers at every level are encouraged, where appropriate, to consider favourably applications for sustainable development and an emphasis is also made within the NPPF on local planning authorities working proactively with applicants at pre-application stage to secure this.

One of the core land-use planning principles, underpinning plan-making and decision-taking, is that planning should 'actively manage patterns of growth to opportunities to promote walking, cycling and public transport are identified and pursued.'

The NPPF sets out how sustainable development will be delivered, which includes promoting sustainable transport (Paragraphs 102 - 111). Within this section of the NPPF it is recognised that transport policies have an important role to play in facilitating sustainable development and contribute to wider sustainability and health objectives. The NPPF identifies the need to favour sustainable transport modes to enhance travel choice, and to locate developments that generate significant movement where the need to travel will be minimised and the use of sustainable transport modes can be maximised. The NPPF sets out that all developments that generate significant amounts of movement should be supported by a Transport Statement or a Transport Assessment and a Travel Plan (Paragraph 111), the latter being identified as a key tool to deliver sustainable transport objectives.

The location of residential developments is also an important factor and Paragraph 85, notes that planning policies should 'recognise that residential development often plays an important role in ensuring the vitality of centres and encourage residential development on appropriate sites.'

Paragraph 108 identifies that plans and decisions should take account of whether:

- '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 people; 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.'

Paragraph 110 identifies 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.'

With regards to impacts on highways, Paragraph 109 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.'

As covered in detail in Chapter 2, the site will be well located in terms of proximity to key facilities and sustainable transport links and its central location makes the best possible use of existing services and facilities, which can be accessed by foot or bicycle. A development in this location would therefore be compliant with NPPF as it would promote sustainable transport modes.

6.3 Local Planning Policy

Solihull Local Plan Review

The current local plan was adopted in December 2013 and covers the period 2011 to 2028. Since the Local Plan was adopted, a legal challenge has resulted in the overall housing requirement being deleted and remitted back to the Council for reconsideration.

It is intended that this deficiency be addressed through a review of the Solihull Local Plan. The first stage of undertaking the review was a scope, issues and options consultation, which highlighted that a housing target of 13,500 dwellings over the plan period should be accommodated together with a comprehensive review of the Green Belt through a Green Belt Assessment.

The local plan review is building on the evidence base used to support the adopted Local Plan (2013), and a 'Sustainability Appraisal' has been produced for the Scope, Issues and Option stage which is currently out to consultation. An interim Sustainability Appraisal of the Local Plan Review will be undertaken as part of the process.

Strategic Housing and Economic Land Availability Assessment (SHELAA) to support the local plan review SMBC have called for an assessment of land availability identified a future supply of land which is suitable, available and achievable for housing and economic development over the Local Plan period. The assessment of land availability is an important step in the preparation of the revised Local Plan and is a requirement set out by NPPF as identified above. SMBC undertook a SHLAA in 2012 to inform the preparation of the Solihull Local Plan 2013.

The council has also launched a 'Call for Sites' to inform the SHELAA between the 30th November 2015 and the 22nd January 2016, in order to ensure there was an up to date evidence base for the Local Plan Review, SMBC have published the schedule of sites that have been submitted under the 'call for sites' and this site was put forward for the SHELAA.

6.4 Conclusions

It can be concluded that a proposed development would fully accord with the transport aspects of both the national planning policy and has long been on the council's plans for strategic housing sites.

7. Summary and Conclusions

This Technical Note has been produced to promote Site 26 as part of the Draft Solihull Local Plan and to demonstrate that the site could accommodate a higher number of dwellings than has currently been outlined. The report has demonstrated the following:

- The site is situated on the fringe of an existing urban area and therefore is well placed to take advantage of the existing sustainable transport network, as well existing local services and facilities. As part of any future planning application there would be scope to enhance the public transport and active travel offering as well as provide additional services and facilities to the benefit of both future and existing residents.
- A search of the latest five year accident history has been undertaken and has revealed that there are no existing prevalent road safety issues, which the proposed development is expected to exacerbate.
- Two points of access have been designed into the Site, which have been designed in accordance with standards contained with DMRB and therefore allow safe and suitable access for all users.
- The anticipated vehicle generation from the site has been determined and is considered robust for the site.
- A modelling assessment has revealed that for the future year scenario, the site access points have reserve capacity for up to 750 residential dwellings. The off-site junction of Bills Lane and Haslucks Green Road operates over capacity with the addition of the development traffic, but a suitable mitigation strategy has been identified.

As a result of the information presented above it has been clearly and robustly demonstrated that Site 26 could accommodate up to 750 dwellings.

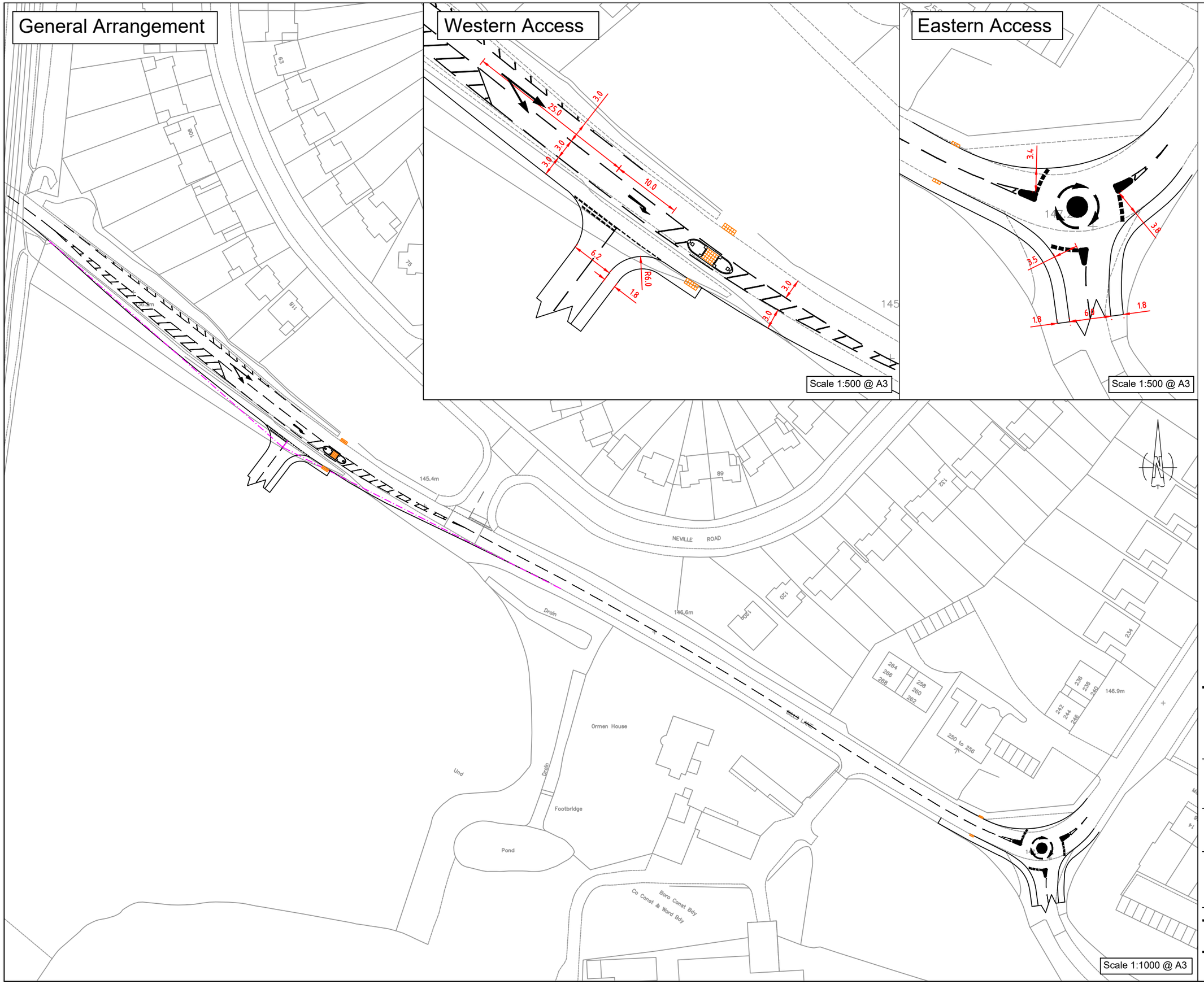
The site conforms with national planning policy, where by it provides safe and suitable access for all and does not have an unacceptable impact on highway safety or create a scenario where the residual cumulative impacts on the road network would be severe.

It is therefore concluded that there are no reasons why the site should not be included within the Local Plan allocation for housing and for a higher allocation than has currently been identified.

Issued by	**Approved by**
George Bailes	James McGavin
.....	.....

Appendix A
Site Access Designs

General Arrangement



Western Access

Eastern Access

Notes

Dimensions shown are in metres unless stated otherwise.

The design shown is aligned with ordinance survey data.

Visibility Splays shown are taken from 'DMRB' and accord with a 70kph Design Speed.

Road markings & traffic signs are to be in accordance with 'The Traffic Signs Regulations and General Directions 2016'.

Tactile paving is to be provided in accordance with 'Guidance on the use of tactile paving surfaces'.

Key

- Base Mapping
- Design
- Visibility (2.4m x 90m)
- Tactile Paving
- Dimensions

Rev.

the transportation consultancy

397 Birmingham Road |Bordesley |Redditch |Worcs | B97 6RH
T: +447803894686
E: info@ttc-transportplanning.com

Client

-

Project

Woods Farm

Drawing

Preliminary Access Designs

Drawn by	Date	Scale
JM	Mar 19	AS SHOWN

Drawing No.	Revision
210166-07	-

File: D:\TTC Share\TTC Transport\planning\TTC Transport\planning Team Site - Documents\Working Files\Projects\210166 - Woods Farm, Shirley\Drawings\ACAD\210166-07.dwg

Appendix B
TRICS Output

Calculation Reference: AUDIT-154301-190214-0257

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED

VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
	KC	KENT	2 days
	WS	WEST SUSSEX	3 days
06	**WEST MIDLANDS**		
	ST	STAFFORDSHIRE	1 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
Actual Range: 110 to 805 (units:)
Range Selected by User: 100 to 1000 (units:)

Parking Spaces Range: Selected: 12 to 1726 Actual: 12 to 1726

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/10 to 05/07/18

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

Selected survey days:

Monday	1 days
Wednesday	2 days
Thursday	3 days
Friday	1 days

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

Selected survey types:

Manual count	7 days
Directional ATC Count	0 days

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

Selected Locations:

Edge of Town	7

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	7

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.

Secondary Filtering selection:

Use Class:

C3	7 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	2 days
10,001 to 15,000	4 days
15,001 to 20,000	1 days

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

Population within 5 miles:

50,001 to 75,000	1 days
75,001 to 100,000	3 days
125,001 to 250,000	3 days

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

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	6 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	3 days
No	4 days

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

PTAL Rating:

No PTAL Present	7 days

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

LIST OF SITES relevant to selection parameters

1 **ES-03-A-03** **MIXED HOUSES & FLATS** **EAST SUSSEX**
SHEPHAM LANE
POLEGATE

Edge of Town
Residential Zone
Total Number of dwellings: 212
Survey date: MONDAY *11/07/16* *Survey Type: MANUAL*

2 **KC-03-A-04** **SEMI-DETACHED & TERRACED** **KENT**
KILN BARN ROAD
AYLESFORD
DITTON
Edge of Town
Residential Zone
Total Number of dwellings: 110
Survey date: FRIDAY *22/09/17* *Survey Type: MANUAL*

3 **KC-03-A-07** **MIXED HOUSES** **KENT**
RECULVER ROAD
HERNE BAY

Edge of Town
Residential Zone
Total Number of dwellings: 288
Survey date: WEDNESDAY *27/09/17* *Survey Type: MANUAL*

4 **ST-03-A-07** **DETACHED & SEMI-DETACHED** **STAFFORDSHIRE**
BEACONSIDE
STAFFORD
MARSTON GATE
Edge of Town
Residential Zone
Total Number of dwellings: 248
Survey date: WEDNESDAY *22/11/17* *Survey Type: MANUAL*

5 **WS-03-A-04** **MIXED HOUSES** **WEST SUSSEX**
HILLS FARM LANE
HORSHAM
BROADBRIDGE HEATH
Edge of Town
Residential Zone
Total Number of dwellings: 151
Survey date: THURSDAY *11/12/14* *Survey Type: MANUAL*

6 **WS-03-A-06** **MIXED HOUSES** **WEST SUSSEX**
ELLIS ROAD
WEST HORSHAM
S BROADBRIDGE HEATH
Edge of Town
Residential Zone
Total Number of dwellings: 805
Survey date: THURSDAY *02/03/17* *Survey Type: MANUAL*

7 **WS-03-A-08** **MIXED HOUSES** **WEST SUSSEX**
ROUNDSTONE LANE
ANGMERING

Edge of Town
Residential Zone
Total Number of dwellings: 180
Survey date: THURSDAY *19/04/18* *Survey Type: MANUAL*

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

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	7	285	0.101	7	285	0.324	7	285	0.425
08:00 - 09:00	7	285	0.158	**7**	**285**	**0.418**	**7**	**285**	**0.576**
09:00 - 10:00	7	285	0.157	7	285	0.177	7	285	0.334
10:00 - 11:00	7	285	0.125	7	285	0.149	7	285	0.274
11:00 - 12:00	7	285	0.144	7	285	0.169	7	285	0.313
12:00 - 13:00	7	285	0.153	7	285	0.151	7	285	0.304
13:00 - 14:00	7	285	0.172	7	285	0.160	7	285	0.332
14:00 - 15:00	7	285	0.172	7	285	0.190	7	285	0.362
15:00 - 16:00	7	285	0.270	7	285	0.181	7	285	0.451
16:00 - 17:00	7	285	0.271	7	285	0.173	7	285	0.444
17:00 - 18:00	**7**	**285**	**0.356**	7	285	0.158	7	285	0.514
18:00 - 19:00	7	285	0.327	7	285	0.187	7	285	0.514
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.406			2.437			4.843

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.*

Parameter summary

Trip rate parameter range selected:	110 - 805 (units:)
Survey date date range:	01/01/10 - 05/07/18
Number of weekdays (Monday-Friday):	7
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

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

Appendix C
Junction1 Modelling Results

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: J1. Mini-Roundabout Access.arc8
Path: C:\Users\George\TTC Transportplanning\TTC Transportplanning Team Site - Documents\Working Files\Projects\210166 - Woods Farm, Shirley\Data\Modelling
Report generation date: 15/03/2019 12:39:24

» (Default Analysis Set) - 2029 + Dev 500, AM
» (Default Analysis Set) - 2029 + Dev 500, PM
» (Default Analysis Set) - 2029 + Dev 750, AM
» (Default Analysis Set) - 2029 + Dev 750, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2029 + Dev 500							
Arm 1	0.70	7.42	0.38	A	2.24	13.71	0.68	B
Arm 2	0.24	7.71	0.20	A	0.10	8.62	0.10	A
Arm 3	2.82	18.24	0.73	C	1.21	10.27	0.53	B
	A1 - 2029 + Dev 750							
Arm 1	0.77	7.73	0.40	A	2.99	17.08	0.74	C
Arm 2	0.42	8.91	0.30	A	0.17	9.42	0.15	A
Arm 3	4.30	26.09	0.81	D	1.41	11.20	0.57	B

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

"D1 - 2029 + Dev 500, AM " model duration: 08:00 - 09:30
"D2 - 2029 + Dev 500, PM" model duration: 17:00 - 18:30
"D3 - 2029 + Dev 750, AM" model duration: 08:00 - 09:30
"D4 - 2029 + Dev 750, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 15/03/2019 12:39:23

File summary

Title	Eastern Site Acess
Location	
Site Number	J1
Date	14/02/2019
Version	
Status	Proposed
Identifier	
Client	
Jobnumber	210166
Enumerator	james
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2029 + Dev 500, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 500, AM	2029 + Dev 500	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Eastern Access	Mini-roundabout	1,2,3	13.47	B

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
1	1	Bills Lane (N)	
2	2	Site Access	
3	3	Bills Lane (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	3.00	3.00	3.80	18.00	9.00	7.00	0.00	
2	2.80	2.80	3.50	1.00	9.40	7.90	0.00	
3	3.00	3.00	3.40	1.70	11.10	10.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	910.687
2		(calculated)	(calculated)	0.506	746.127
3		(calculated)	(calculated)	0.519	822.791

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	312.00	100.000
2	ONE HOUR	✓	104.00	100.000
3	ONE HOUR	✓	521.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	16.000	296.000
	2	63.000	0.000	41.000
	3	497.000	24.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.05	0.95
	2	0.61	0.00	0.39
	3	0.95	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.000	1.148
	2	1.000	1.000	1.000
	3	1.091	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.0	14.8
	2	0.0	0.0	0.0
	3	9.1	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.38	7.42	0.70	A
2	0.20	7.71	0.24	A
3	0.73	18.24	2.82	C

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	234.89	233.30	17.88	0.00	901.03	0.261	0.40	6.126	A
2	78.30	77.74	221.33	0.00	634.10	0.123	0.14	6.463	A
3	392.24	388.12	47.09	0.00	798.34	0.491	1.03	9.446	A

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	280.48	280.03	21.49	0.00	899.09	0.312	0.51	6.620	A
2	93.49	93.34	265.67	0.00	611.66	0.153	0.18	6.944	A
3	468.37	466.40	56.54	0.00	793.43	0.590	1.52	11.887	B

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	343.52	342.77	26.20	0.00	896.54	0.383	0.70	7.394	A
2	114.51	114.25	325.19	0.00	581.53	0.197	0.24	7.700	A
3	573.63	568.76	69.21	0.00	786.85	0.729	2.74	17.540	C

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	343.52	343.50	26.41	0.00	896.43	0.383	0.70	7.416	A
2	114.51	114.50	325.89	0.00	581.18	0.197	0.24	7.713	A
3	573.63	573.29	69.36	0.00	786.77	0.729	2.82	18.242	C

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	280.48	281.21	21.80	0.00	898.92	0.312	0.52	6.646	A
2	93.49	93.74	266.79	0.00	611.09	0.153	0.18	6.963	A
3	468.37	473.20	56.79	0.00	793.30	0.590	1.61	12.397	B

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	234.89	235.36	18.17	0.00	900.88	0.261	0.41	6.168	A
2	78.30	78.46	223.29	0.00	633.11	0.124	0.14	6.491	A
3	392.24	394.41	47.53	0.00	798.11	0.491	1.07	9.743	A

(Default Analysis Set) - 2029 + Dev 500, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 500, PM	2029 + Dev 500	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Eastern Access	Mini-roundabout	1,2,3	12.13	B

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
1	1	Bills Lane (N)	
2	2	Site Access	
3	3	Bills Lane (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	3.00	3.00	3.80	18.00	9.00	7.00	0.00	
2	2.80	2.80	3.50	1.00	9.40	7.90	0.00	
3	3.00	3.00	3.40	1.70	11.10	10.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	910.687
2		(calculated)	(calculated)	0.506	746.127
3		(calculated)	(calculated)	0.519	822.791

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	546.00	100.000
2	ONE HOUR	✓	40.00	100.000
3	ONE HOUR	✓	390.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	35.000	511.000
	2	17.000	0.000	23.000
	3	352.000	38.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.06	0.94
	2	0.43	0.00	0.58
	3	0.90	0.10	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.000	1.103
	2	1.000	1.000	1.000
	3	1.107	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.0	10.3
	2	0.0	0.0	0.0
	3	10.7	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.68	13.71	2.24	B
2	0.10	8.62	0.10	A
3	0.53	10.27	1.21	B

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	411.06	407.40	28.37	0.00	895.37	0.459	0.91	8.022	A
2	30.11	29.89	381.28	0.00	553.14	0.054	0.06	6.876	A
3	293.61	291.18	12.70	0.00	816.20	0.360	0.61	7.476	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	490.84	489.26	34.08	0.00	892.29	0.550	1.31	9.743	A
2	35.96	35.89	457.90	0.00	514.36	0.070	0.07	7.524	A
3	350.60	349.77	15.25	0.00	814.87	0.430	0.81	8.463	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	601.16	597.60	41.69	0.00	888.18	0.677	2.20	13.402	B
2	44.04	43.92	559.30	0.00	463.03	0.095	0.10	8.588	A
3	429.40	427.86	18.67	0.00	813.10	0.528	1.20	10.193	B

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	601.16	600.97	41.83	0.00	888.10	0.677	2.24	13.709	B
2	44.04	44.04	562.45	0.00	461.44	0.095	0.10	8.624	A
3	429.40	429.34	18.72	0.00	813.07	0.528	1.21	10.272	B

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	490.84	494.33	34.31	0.00	892.17	0.550	1.37	9.999	A
2	35.96	36.07	462.65	0.00	511.95	0.070	0.08	7.565	A
3	350.60	352.09	15.33	0.00	814.83	0.430	0.84	8.548	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	411.06	412.76	28.69	0.00	895.20	0.459	0.95	8.204	A
2	30.11	30.19	386.30	0.00	550.60	0.055	0.06	6.920	A
3	293.61	294.48	12.83	0.00	816.13	0.360	0.62	7.570	A

(Default Analysis Set) - 2029 + Dev 750, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 750, AM	2029 + Dev 750	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Eastern Access	Mini-roundabout	1,2,3	17.79	C

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
1	1	Bills Lane (N)	
2	2	Site Access	
3	3	Bills Lane (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	3.00	3.00	3.80	18.00	9.00	7.00	0.00	
2	2.80	2.80	3.50	1.00	9.40	7.90	0.00	
3	3.00	3.00	3.40	1.70	11.10	10.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	910.687
2		(calculated)	(calculated)	0.506	746.127
3		(calculated)	(calculated)	0.519	822.791

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	327.00	100.000
2	ONE HOUR	✓	157.00	100.000
3	ONE HOUR	✓	565.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	23.000	304.000
	2	95.000	0.000	62.000
	3	529.000	36.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.07	0.93
	2	0.61	0.00	0.39
	3	0.94	0.06	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.000	1.148
	2	1.000	1.000	1.000
	3	1.091	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.0	14.8
	2	0.0	0.0	0.0
	3	9.1	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.40	7.73	0.77	A
2	0.30	8.91	0.42	A
3	0.81	26.09	4.30	D

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	246.18	244.48	26.78	0.00	896.23	0.275	0.43	6.258	A
2	118.20	117.28	227.28	0.00	631.09	0.187	0.23	6.996	A
3	425.36	420.37	70.97	0.00	785.94	0.541	1.25	10.547	B

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	293.97	293.47	32.18	0.00	893.31	0.329	0.55	6.811	A
2	141.14	140.86	272.82	0.00	608.03	0.232	0.30	7.701	A
3	507.92	505.10	85.23	0.00	778.53	0.652	1.95	14.130	B

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	360.03	359.19	39.10	0.00	889.58	0.405	0.76	7.698	A
2	172.86	172.37	333.93	0.00	577.11	0.300	0.42	8.884	A
3	622.08	613.62	104.30	0.00	768.63	0.809	4.07	23.940	C

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	360.03	360.01	39.58	0.00	889.32	0.405	0.77	7.726	A
2	172.86	172.85	334.69	0.00	576.72	0.300	0.42	8.913	A
3	622.08	621.14	104.59	0.00	768.48	0.809	4.30	26.089	D

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	293.97	294.78	32.92	0.00	892.91	0.329	0.56	6.848	A
2	141.14	141.62	274.05	0.00	607.42	0.232	0.31	7.737	A
3	507.92	516.62	85.69	0.00	778.29	0.653	2.13	15.384	C

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	246.18	246.70	27.31	0.00	895.94	0.275	0.43	6.303	A
2	118.20	118.49	229.35	0.00	630.04	0.188	0.23	7.043	A
3	425.36	428.61	71.70	0.00	785.56	0.541	1.31	11.039	B

(Default Analysis Set) - 2029 + Dev 750, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 750, PM	2029 + Dev 750	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Eastern Access	Mini-roundabout	1,2,3	14.36	B

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
1	1	Bills Lane (N)	
2	2	Site Access	
3	3	Bills Lane (W)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
1	0.00	99999.00
2	0.00	99999.00
3	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
1	3.00	3.00	3.80	18.00	9.00	7.00	0.00	
2	2.80	2.80	3.50	1.00	9.40	7.90	0.00	
3	3.00	3.00	3.40	1.70	11.10	10.00	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
1		(calculated)	(calculated)	0.540	910.687
2		(calculated)	(calculated)	0.506	746.127
3		(calculated)	(calculated)	0.519	822.791

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
1	ONE HOUR	✓	589.00	100.000
2	ONE HOUR	✓	59.00	100.000
3	ONE HOUR	✓	416.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.000	52.000	537.000
	2	25.000	0.000	34.000
	3	360.000	56.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.00	0.09	0.91
	2	0.42	0.00	0.58
	3	0.87	0.13	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		1	2	3
From	1	1.000	1.000	1.103
	2	1.000	1.000	1.000
	3	1.107	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		1	2	3
From	1	0.0	0.0	10.3
	2	0.0	0.0	0.0
	3	10.7	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1	0.74	17.08	2.99	C
2	0.15	9.42	0.17	A
3	0.57	11.20	1.41	B

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	443.43	439.15	41.80	0.00	888.12	0.499	1.07	8.683	A
2	44.42	44.07	400.38	0.00	543.47	0.082	0.09	7.204	A
3	313.19	310.49	18.67	0.00	813.10	0.385	0.67	7.775	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	529.50	527.42	50.21	0.00	883.58	0.599	1.59	10.978	B
2	53.04	52.93	480.86	0.00	502.74	0.106	0.12	8.002	A
3	373.98	373.00	22.43	0.00	811.15	0.461	0.92	8.943	A

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	648.50	643.25	61.40	0.00	877.54	0.739	2.90	16.418	C
2	64.96	64.76	586.46	0.00	449.28	0.145	0.17	9.357	A
3	458.02	456.14	27.44	0.00	808.54	0.566	1.39	11.084	B

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	648.50	648.14	61.65	0.00	877.40	0.739	2.99	17.084	C
2	64.96	64.95	590.92	0.00	447.03	0.145	0.17	9.422	A
3	458.02	457.95	27.52	0.00	808.50	0.567	1.41	11.197	B

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	529.50	534.73	50.59	0.00	883.37	0.599	1.68	11.445	B
2	53.04	53.23	487.52	0.00	499.36	0.106	0.12	8.072	A
3	373.98	375.80	22.56	0.00	811.08	0.461	0.95	9.062	A

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
1	443.43	445.72	42.30	0.00	887.85	0.499	1.11	8.944	A
2	44.42	44.54	406.37	0.00	540.44	0.082	0.09	7.260	A
3	313.19	314.21	18.87	0.00	812.99	0.385	0.69	7.892	A

Appendix D
Junction 2 Modelling Results

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
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Filename: J2. Ghost Island Access.arc8
Path: C:\Users\George\TTC Transportplanning\TTC Transportplanning Team Site - Documents\Working Files\Projects\210166 - Woods Farm, Shirley\Data\Modelling
Report generation date: 15/03/2019 12:42:41

Summary of junction performance

	AM + Dev 500				AM + Dev 750				PM + Dev 500				PM + Dev 750			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LO
	A1 - 2029															
Stream B-AC	0.40	12.81	0.29	B	0.81	17.03	0.45	C	0.13	10.43	0.11	B	0.21	11.56	0.17	B
Stream C-AB	0.05	6.47	0.05	A	0.07	6.71	0.07	A	0.09	7.42	0.08	A	0.14	7.89	0.12	A
Stream C-A	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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

"D1 - 2029, AM + Dev 500 " model duration: 08:00 - 09:30
"D2 - 2029, PM + Dev 500" model duration: 17:00 - 18:30
"D3 - 2029, AM + Dev 750" model duration: 08:00 - 09:30
"D4 - 2029, PM + Dev 750" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 15/03/2019 12:42:39

File summary

Title	Western Site Access
Location	
Site Number	J2
Date	05/02/2019
Version	
Status	Proposed
Identifier	
Client	
Jobnumber	210166
Enumerator	james
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2029, AM + Dev 500

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029, AM + Dev 500	2029	AM + Dev 500		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	A,B,C	11.62	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Bills Lane (E)		Major
B	B	Site Access		Minor
C	C	Bills Lane (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00	✓	3.00	90.00	✓	2.00

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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane	3.00										32	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.257	0.091	0.230	0.145	0.328
1	B-C	638.416	0.098	0.247	-	-
1	C-B	680.595	0.264	0.264	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	338.00	100.000
B	ONE HOUR	✓	104.00	100.000
C	ONE HOUR	✓	482.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	16.000	322.000
	B	63.000	0.000	41.000
	C	458.000	24.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.05	0.95
	B	0.61	0.00	0.39
	C	0.95	0.05	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.148
	B	1.000	1.000	1.000
	C	1.091	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	14.8
	B	0.0	0.0	0.0
	C	9.1	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.29	12.81	0.40	B
C-AB	0.05	6.47	0.05	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	78.30	77.45	0.00	444.52	0.176	0.21	9.785	A
C-AB	18.08	17.96	0.00	613.69	0.029	0.03	6.041	A
C-A	344.80	344.80	0.00	-	-	-	-	-
A-B	12.05	12.05	0.00	-	-	-	-	-
A-C	242.42	242.42	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	93.49	93.22	0.00	424.09	0.220	0.28	10.871	B
C-AB	21.59	21.57	0.00	600.81	0.036	0.04	6.214	A
C-A	411.71	411.71	0.00	-	-	-	-	-
A-B	14.38	14.38	0.00	-	-	-	-	-
A-C	289.47	289.47	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	114.51	114.02	0.00	395.43	0.290	0.40	12.767	B
C-AB	26.47	26.43	0.00	583.14	0.045	0.05	6.466	A
C-A	504.22	504.22	0.00	-	-	-	-	-
A-B	17.62	17.62	0.00	-	-	-	-	-
A-C	354.53	354.53	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	114.51	114.49	0.00	395.42	0.290	0.40	12.812	B
C-AB	26.47	26.47	0.00	583.16	0.045	0.05	6.466	A
C-A	504.22	504.22	0.00	-	-	-	-	-
A-B	17.62	17.62	0.00	-	-	-	-	-
A-C	354.53	354.53	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	93.49	93.96	0.00	424.07	0.220	0.29	10.920	B
C-AB	21.59	21.63	0.00	600.85	0.036	0.04	6.218	A
C-A	411.71	411.71	0.00	-	-	-	-	-
A-B	14.38	14.38	0.00	-	-	-	-	-
A-C	289.47	289.47	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	78.30	78.58	0.00	444.48	0.176	0.22	9.846	A
C-AB	18.08	18.11	0.00	613.70	0.029	0.03	6.046	A
C-A	344.80	344.80	0.00	-	-	-	-	-
A-B	12.05	12.05	0.00	-	-	-	-	-
A-C	242.42	242.42	0.00	-	-	-	-	-

(Default Analysis Set) - 2029, PM + Dev 500

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029, PM + Dev 500	2029	PM + Dev 500		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	A,B,C	8.96	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Bills Lane (E)		Major
B	B	Site Access		Minor
C	C	Bills Lane (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00	✓	3.00	90.00	✓	2.00

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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane	3.00										32	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.257	0.091	0.230	0.145	0.328
1	B-C	638.416	0.098	0.247	-	-
1	C-B	680.595	0.264	0.264	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	534.00	100.000
B	ONE HOUR	✓	40.00	100.000
C	ONE HOUR	✓	411.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	51.000	483.000
	B	17.000	0.000	23.000
	C	373.000	38.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.10	0.90
	B	0.43	0.00	0.58
	C	0.91	0.09	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.103
	B	1.000	1.000	1.000
	C	1.107	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	10.3
	B	0.0	0.0	0.0
	C	10.7	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.11	10.43	0.13	B
C-AB	0.08	7.42	0.09	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	30.11	29.83	0.00	448.63	0.067	0.07	8.591	A
C-AB	28.64	28.43	0.00	575.06	0.050	0.05	6.585	A
C-A	280.78	280.78	0.00	-	-	-	-	-
A-B	38.40	38.40	0.00	-	-	-	-	-
A-C	363.63	363.63	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	35.96	35.88	0.00	423.95	0.085	0.09	9.274	A
C-AB	34.24	34.19	0.00	554.86	0.062	0.07	6.915	A
C-A	335.24	335.24	0.00	-	-	-	-	-
A-B	45.85	45.85	0.00	-	-	-	-	-
A-C	434.21	434.21	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	44.04	43.90	0.00	389.17	0.113	0.13	10.422	B
C-AB	42.05	41.96	0.00	527.33	0.080	0.09	7.419	A
C-A	410.47	410.47	0.00	-	-	-	-	-
A-B	56.15	56.15	0.00	-	-	-	-	-
A-C	531.79	531.79	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	44.04	44.04	0.00	389.15	0.113	0.13	10.431	B
C-AB	42.05	42.04	0.00	527.39	0.080	0.09	7.419	A
C-A	410.47	410.47	0.00	-	-	-	-	-
A-B	56.15	56.15	0.00	-	-	-	-	-
A-C	531.79	531.79	0.00	-	-	-	-	-

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	35.96	36.09	0.00	423.92	0.085	0.09	9.287	A
C-AB	34.24	34.32	0.00	554.96	0.062	0.07	6.920	A
C-A	335.24	335.24	0.00	-	-	-	-	-
A-B	45.85	45.85	0.00	-	-	-	-	-
A-C	434.21	434.21	0.00	-	-	-	-	-

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	30.11	30.20	0.00	448.57	0.067	0.07	8.607	A
C-AB	28.64	28.70	0.00	575.09	0.050	0.05	6.589	A
C-A	280.78	280.78	0.00	-	-	-	-	-
A-B	38.40	38.40	0.00	-	-	-	-	-
A-C	363.63	363.63	0.00	-	-	-	-	-

(Default Analysis Set) - 2029, AM + Dev 750

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029, AM + Dev 750	2029	AM + Dev 750		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	A,B,C	15.10	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Bills Lane (E)		Major
B	B	Site Access		Minor
C	C	Bills Lane (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00	✓	3.00	90.00	✓	2.00

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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane	3.00										32	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.257	0.091	0.230	0.145	0.328
1	B-C	638.416	0.098	0.247	-	-
1	C-B	680.595	0.264	0.264	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	365.00	100.000
B	ONE HOUR	✓	157.00	100.000
C	ONE HOUR	✓	506.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	23.000	342.000
	B	95.000	0.000	62.000
	C	470.000	36.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.06	0.94
	B	0.61	0.00	0.39
	C	0.93	0.07	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.148
	B	1.000	1.000	1.000
	C	1.091	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	14.8
	B	0.0	0.0	0.0
	C	9.1	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.45	17.03	0.81	C
C-AB	0.07	6.71	0.07	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	118.20	116.74	0.00	437.05	0.270	0.36	11.190	B
C-AB	27.13	26.95	0.00	608.60	0.045	0.05	6.188	A
C-A	353.81	353.81	0.00	-	-	-	-	-
A-B	17.32	17.32	0.00	-	-	-	-	-
A-C	257.48	257.48	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	141.14	140.58	0.00	415.01	0.340	0.50	13.090	B
C-AB	32.43	32.39	0.00	594.89	0.055	0.06	6.400	A
C-A	422.45	422.45	0.00	-	-	-	-	-
A-B	20.68	20.68	0.00	-	-	-	-	-
A-C	307.45	307.45	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	172.86	171.71	0.00	384.05	0.450	0.79	16.859	C
C-AB	39.81	39.74	0.00	576.25	0.069	0.07	6.711	A
C-A	517.31	517.31	0.00	-	-	-	-	-
A-B	25.32	25.32	0.00	-	-	-	-	-
A-C	376.55	376.55	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	172.86	172.81	0.00	384.03	0.450	0.81	17.032	C
C-AB	39.81	39.81	0.00	576.30	0.069	0.07	6.711	A
C-A	517.31	517.31	0.00	-	-	-	-	-
A-B	25.32	25.32	0.00	-	-	-	-	-
A-C	376.55	376.55	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	141.14	142.25	0.00	414.98	0.340	0.53	13.253	B
C-AB	32.43	32.50	0.00	594.97	0.055	0.06	6.402	A
C-A	422.45	422.45	0.00	-	-	-	-	-
A-B	20.68	20.68	0.00	-	-	-	-	-
A-C	307.45	307.45	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	118.20	118.80	0.00	436.99	0.270	0.38	11.337	B
C-AB	27.13	27.18	0.00	608.62	0.045	0.05	6.194	A
C-A	353.81	353.81	0.00	-	-	-	-	-
A-B	17.32	17.32	0.00	-	-	-	-	-
A-C	257.48	257.48	0.00	-	-	-	-	-

(Default Analysis Set) - 2029, PM + Dev 750

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029, PM + Dev 750	2029	PM + Dev 750		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Western Site Access	T-Junction	Two-way	A,B,C	9.76	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Bills Lane (E)		Major
B	B	Site Access		Minor
C	C	Bills Lane (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00	✓	3.00	90.00	✓	2.00

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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane	3.00										32	23

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	499.257	0.091	0.230	0.145	0.328
1	B-C	638.416	0.098	0.247	-	-
1	C-B	680.595	0.264	0.264	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	571.00	100.000
B	ONE HOUR	✓	59.00	100.000
C	ONE HOUR	✓	448.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	77.000	494.000
	B	25.000	0.000	34.000
	C	392.000	56.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.13	0.87
	B	0.42	0.00	0.58
	C	0.88	0.13	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.103
	B	1.000	1.000	1.000
	C	1.107	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	10.3
	B	0.0	0.0	0.0
	C	10.7	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.17	11.56	0.21	B
C-AB	0.12	7.89	0.14	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	44.42	43.97	0.00	440.62	0.101	0.11	9.066	A
C-AB	42.28	41.96	0.00	568.35	0.074	0.08	6.836	A
C-A	295.00	295.00	0.00	-	-	-	-	-
A-B	57.97	57.97	0.00	-	-	-	-	-
A-C	371.91	371.91	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	53.04	52.90	0.00	414.07	0.128	0.15	9.968	A
C-AB	50.62	50.53	0.00	547.26	0.093	0.10	7.250	A
C-A	352.12	352.12	0.00	-	-	-	-	-
A-B	69.22	69.22	0.00	-	-	-	-	-
A-C	444.10	444.10	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	64.96	64.72	0.00	376.49	0.173	0.21	11.529	B
C-AB	62.40	62.26	0.00	519.07	0.120	0.14	7.884	A
C-A	430.86	430.86	0.00	-	-	-	-	-
A-B	84.78	84.78	0.00	-	-	-	-	-
A-C	543.90	543.90	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	64.96	64.95	0.00	376.45	0.173	0.21	11.556	B
C-AB	62.40	62.40	0.00	519.22	0.120	0.14	7.889	A
C-A	430.86	430.86	0.00	-	-	-	-	-
A-B	84.78	84.78	0.00	-	-	-	-	-
A-C	543.90	543.90	0.00	-	-	-	-	-

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	53.04	53.27	0.00	414.02	0.128	0.15	9.987	A
C-AB	50.62	50.76	0.00	547.51	0.092	0.10	7.254	A
C-A	352.12	352.12	0.00	-	-	-	-	-
A-B	69.22	69.22	0.00	-	-	-	-	-
A-C	444.10	444.10	0.00	-	-	-	-	-

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	44.42	44.56	0.00	440.54	0.101	0.11	9.094	A
C-AB	42.28	42.37	0.00	568.43	0.074	0.08	6.846	A
C-A	295.00	295.00	0.00	-	-	-	-	-
A-B	57.97	57.97	0.00	-	-	-	-	-
A-C	371.91	371.91	0.00	-	-	-	-	-

Appendix E
Junction 3 Modelling Results

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: J3. Haslucks Green Road Junction.arc8
Path: C:\Users\George\TTC Transportplanning\TTC Transportplanning Team Site - Documents\Working Files\Projects\210166 - Woods Farm, Shirley\Data\Modelling
Report generation date: 15/03/2019 12:48:19

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2029							
Stream B-C	2.83	34.91	0.76	D	4.47	43.64	0.84	E
Stream B-A	2.30	106.43	0.71	F	2.00	79.98	0.70	F
Stream C-AB	37.88	163.52	1.06	F	3.46	15.58	0.71	C
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	A1 - 2029 + Dev 500							
Stream B-C	31.64	279.80	1.24	F	19.83	156.91	1.06	F
Stream B-A	10.13	365.61	1.17	F	6.90	240.83	1.01	F
Stream C-AB	64.69	279.94	1.15	F	7.92	33.68	0.87	D
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-
	A1 - 2029 + Dev 750							
Stream B-C	58.60	607.54	1.44	F	32.83	242.04	1.16	F
Stream B-A	17.25	657.61	1.38	F	9.66	325.66	1.09	F
Stream C-AB	79.96	370.90	1.19	F	15.04	64.12	0.95	F
Stream C-A	-	-	-	-	-	-	-	-
Stream A-B	-	-	-	-	-	-	-	-
Stream A-C	-	-	-	-	-	-	-	-

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

"D1 - 2029, AM " model duration: 08:00 - 09:30
"D2 - 2029, PM" model duration: 17:00 - 18:30
"D3 - 2029 + Dev 500, AM" model duration: 08:00 - 09:30
"D4 - 2029 + Dev 500, PM" model duration: 17:00 - 18:30
"D5 - 2029 + Dev 750, AM" model duration: 08:00 - 09:30
"D6 - 2029 + Dev 750, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 15/03/2019 12:48:16

File summary

Title	Haslucks Green Road Junction
Location	
Site Number	J3
Date	14/02/2019
Version	
Status	Existsing
Identifier	
Client	
Jobnumber	210266
Enumerator	james
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2029, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029, AM	2029	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane Junction	T-Junction	Two-way	A,B,C	124.18	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Haslucks Green Road (N)		Major
B	B	Bills Lane		Minor
C	C	Haslucks Green Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	96.00	✓	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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane plus flare				6.90	4.30	4.30	4.20	4.10		1.00	38	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	457.870	0.083	0.211	0.133	0.301
1	B-C	745.966	0.114	0.289	-	-
1	C-B	629.558	0.244	0.244	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	514.00	100.000
B	ONE HOUR	✓	357.00	100.000
C	ONE HOUR	✓	708.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	129.000	385.000
	B	78.000	0.000	279.000
	C	321.000	387.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.25	0.75
	B	0.22	0.00	0.78
	C	0.45	0.55	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.081
	B	1.206	1.000	1.008
	C	1.000	1.042	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	8.1
	B	20.6	0.0	0.8
	C	0.0	4.2	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.76	34.91	2.83	D
B-A	0.71	106.43	2.30	F
C-AB	1.06	163.52	37.88	F
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	210.05	207.94	0.00	605.86	0.347	0.53	9.069	A
B-A	58.72	57.35	0.00	258.60	0.227	0.34	21.427	C
C-AB	442.03	433.66	0.00	704.63	0.627	2.09	13.427	B
C-A	90.99	90.99	0.00	-	-	-	-	-
A-B	97.12	97.12	0.00	-	-	-	-	-
A-C	289.85	289.85	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	250.82	249.72	0.00	559.26	0.448	0.80	11.677	B
B-A	70.12	69.21	0.00	211.57	0.331	0.57	30.292	D
C-AB	582.85	572.20	0.00	724.47	0.805	4.75	23.897	C
C-A	53.62	53.62	0.00	-	-	-	-	-
A-B	115.97	115.97	0.00	-	-	-	-	-
A-C	346.11	346.11	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	307.18	302.40	0.00	450.39	0.682	2.00	23.782	C
B-A	85.88	81.76	0.00	139.91	0.614	1.60	70.316	F
C-AB	779.52	703.16	0.00	732.20	1.065	23.84	84.627	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	142.03	142.03	0.00	-	-	-	-	-
A-C	423.89	423.89	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	307.18	303.86	0.00	403.82	0.761	2.83	34.911	D
B-A	85.88	83.07	0.00	120.59	0.712	2.30	106.427	F
C-AB	779.52	723.38	0.00	733.15	1.063	37.88	163.518	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	142.03	142.03	0.00	-	-	-	-	-
A-C	423.89	423.89	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	250.82	258.34	0.00	524.55	0.478	0.95	13.987	B
B-A	70.12	75.97	0.00	177.57	0.395	0.84	44.731	E
C-AB	636.48	740.01	0.00	763.67	0.833	12.00	125.863	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	115.97	115.97	0.00	-	-	-	-	-
A-C	346.11	346.11	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	210.05	211.64	0.00	599.74	0.350	0.55	9.384	A
B-A	58.72	60.54	0.00	247.29	0.237	0.39	23.449	C
C-AB	459.10	497.42	0.00	720.20	0.637	2.42	19.510	C
C-A	73.92	73.92	0.00	-	-	-	-	-
A-B	97.12	97.12	0.00	-	-	-	-	-
A-C	289.85	289.85	0.00	-	-	-	-	-

(Default Analysis Set) - 2029, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029, PM	2029	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane Junction	T-Junction	Two-way	A,B,C	32.90	D

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Haslucks Green Road (N)		Major
B	B	Bills Lane		Minor
C	C	Haslucks Green Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	96.00	✓	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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane plus flare				6.90	4.30	4.30	4.20	4.10		1.00	38	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	457.870	0.083	0.211	0.133	0.301
1	B-C	745.966	0.114	0.289	-	-
1	C-B	629.558	0.244	0.244	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	455.00	100.000
B	ONE HOUR	✓	448.00	100.000
C	ONE HOUR	✓	629.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	114.000	341.000
	B	89.000	0.000	359.000
	C	381.000	248.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.25	0.75
	B	0.20	0.00	0.80
	C	0.61	0.39	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.017	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	1.7	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.84	43.64	4.47	E
B-A	0.70	79.98	2.00	F
C-AB	0.71	15.58	3.46	C
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	270.27	267.19	0.00	613.19	0.441	0.77	10.317	B
B-A	67.00	65.78	0.00	280.10	0.239	0.31	16.707	C
C-AB	301.88	298.15	0.00	745.15	0.405	0.93	8.109	A
C-A	171.66	171.66	0.00	-	-	-	-	-
A-B	85.83	85.83	0.00	-	-	-	-	-
A-C	256.72	256.72	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	322.73	320.79	0.00	570.39	0.566	1.26	14.308	B
B-A	80.01	79.19	0.00	230.70	0.347	0.51	23.629	C
C-AB	402.30	399.93	0.00	772.23	0.521	1.52	9.799	A
C-A	163.16	163.16	0.00	-	-	-	-	-
A-B	102.48	102.48	0.00	-	-	-	-	-
A-C	306.55	306.55	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	395.27	385.41	0.00	483.29	0.818	3.72	33.862	D
B-A	97.99	93.54	0.00	148.29	0.661	1.62	61.549	F
C-AB	569.42	562.26	0.00	809.86	0.703	3.31	14.735	B
C-A	123.13	123.13	0.00	-	-	-	-	-
A-B	125.52	125.52	0.00	-	-	-	-	-
A-C	375.45	375.45	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	395.27	392.27	0.00	469.97	0.841	4.47	43.638	E
B-A	97.99	96.48	0.00	139.24	0.704	2.00	79.979	F
C-AB	573.44	572.85	0.00	812.83	0.705	3.46	15.578	C
C-A	119.10	119.10	0.00	-	-	-	-	-
A-B	125.52	125.52	0.00	-	-	-	-	-
A-C	375.45	375.45	0.00	-	-	-	-	-

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	322.73	334.95	0.00	559.11	0.577	1.42	16.859	C
B-A	80.01	85.65	0.00	221.85	0.361	0.59	27.408	D
C-AB	406.41	413.68	0.00	776.32	0.524	1.64	10.309	B
C-A	159.05	159.05	0.00	-	-	-	-	-
A-B	102.48	102.48	0.00	-	-	-	-	-
A-C	306.55	306.55	0.00	-	-	-	-	-

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	270.27	272.71	0.00	610.41	0.443	0.81	10.736	B
B-A	67.00	68.05	0.00	277.08	0.242	0.33	17.307	C
C-AB	304.30	306.94	0.00	747.19	0.407	0.98	8.344	A
C-A	169.25	169.25	0.00	-	-	-	-	-
A-B	85.83	85.83	0.00	-	-	-	-	-
A-C	256.72	256.72	0.00	-	-	-	-	-

(Default Analysis Set) - 2029 + Dev 500, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 500, AM	2029 + Dev 500	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane Junction	T-Junction	Two-way	A,B,C	286.96	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Haslucks Green Road (N)		Major
B	B	Bills Lane		Minor
C	C	Haslucks Green Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	96.00	✓	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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane plus flare				6.90	4.30	4.30	4.20	4.10		1.00	38	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	457.870	0.083	0.211	0.133	0.301
1	B-C	745.966	0.114	0.289	-	-
1	C-B	629.558	0.244	0.244	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	526.00	100.000
B	ONE HOUR	✓	440.00	100.000
C	ONE HOUR	✓	744.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	141.000	385.000
	B	96.000	0.000	344.000
	C	321.000	423.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.27	0.73
	B	0.22	0.00	0.78
	C	0.43	0.57	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	1.24	279.80	31.64	F
B-A	1.17	365.61	10.13	F
C-AB	1.15	279.94	64.69	F
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	258.98	255.88	0.00	585.74	0.442	0.78	10.816	B
B-A	72.27	70.61	0.00	240.47	0.301	0.42	21.001	C
C-AB	485.06	474.57	0.00	703.03	0.690	2.62	15.385	C
C-A	75.06	75.06	0.00	-	-	-	-	-
A-B	106.15	106.15	0.00	-	-	-	-	-
A-C	289.85	289.85	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	309.25	306.68	0.00	518.19	0.597	1.42	16.815	C
B-A	86.30	84.63	0.00	182.99	0.472	0.83	35.998	E
C-AB	639.09	620.96	0.00	722.80	0.884	7.15	33.277	D
C-A	29.76	29.76	0.00	-	-	-	-	-
A-B	126.76	126.76	0.00	-	-	-	-	-
A-C	346.11	346.11	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	378.75	334.04	0.00	356.20	1.063	12.60	100.525	F
B-A	105.70	87.43	0.00	101.02	1.046	5.40	179.627	F
C-AB	819.16	698.65	0.00	711.55	1.151	37.28	127.189	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	155.24	155.24	0.00	-	-	-	-	-
A-C	423.89	423.89	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	378.75	302.58	0.00	305.07	1.242	31.64	277.797	F
B-A	105.70	86.79	0.00	90.50	1.168	10.13	365.610	F
C-AB	819.16	709.51	0.00	712.22	1.150	64.69	267.200	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	155.24	155.24	0.00	-	-	-	-	-
A-C	423.89	423.89	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	309.25	343.59	0.00	354.46	0.872	23.05	279.803	F
B-A	86.30	96.73	0.00	103.14	0.837	7.52	336.853	F
C-AB	668.84	728.71	0.00	743.30	0.900	49.73	279.943	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	126.76	126.76	0.00	-	-	-	-	-
A-C	346.11	346.11	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	258.98	346.49	0.00	491.74	0.527	1.17	41.829	E
B-A	72.27	98.92	0.00	164.51	0.439	0.86	71.643	F
C-AB	556.89	736.46	0.00	763.28	0.730	4.83	133.473	F
C-A	3.23	3.23	0.00	-	-	-	-	-
A-B	106.15	106.15	0.00	-	-	-	-	-
A-C	289.85	289.85	0.00	-	-	-	-	-

(Default Analysis Set) - 2029 + Dev 500, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 500, PM	2029 + Dev 500	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane Junction	T-Junction	Two-way	A,B,C	98.90	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Haslucks Green Road (N)		Major
B	B	Bills Lane		Minor
C	C	Haslucks Green Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	96.00	✓	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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane plus flare				6.90	4.30	4.30	4.20	4.10		1.00	38	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	457.870	0.083	0.211	0.133	0.301
1	B-C	745.966	0.114	0.289	-	-
1	C-B	629.558	0.244	0.244	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	479.00	100.000
B	ONE HOUR	✓	494.00	100.000
C	ONE HOUR	✓	680.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	138.000	341.000
	B	99.000	0.000	395.000
	C	381.000	299.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.29	0.71
	B	0.20	0.00	0.80
	C	0.56	0.44	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	1.06	156.91	19.83	F
B-A	1.01	240.83	6.90	F
C-AB	0.87	33.68	7.92	D
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	297.38	293.54	0.00	599.28	0.496	0.96	11.631	B
B-A	74.53	72.97	0.00	259.62	0.287	0.39	19.135	C
C-AB	366.63	361.47	0.00	742.02	0.494	1.29	9.402	A
C-A	145.31	145.31	0.00	-	-	-	-	-
A-B	103.89	103.89	0.00	-	-	-	-	-
A-C	256.72	256.72	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	355.10	351.82	0.00	544.11	0.653	1.78	18.405	C
B-A	89.00	87.56	0.00	200.75	0.443	0.75	31.405	D
C-AB	487.59	483.49	0.00	768.37	0.635	2.31	12.673	B
C-A	123.71	123.71	0.00	-	-	-	-	-
A-B	124.06	124.06	0.00	-	-	-	-	-
A-C	306.55	306.55	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	434.90	397.48	0.00	427.48	1.017	11.13	79.362	F
B-A	109.00	92.21	0.00	108.32	1.006	4.95	156.282	F
C-AB	692.59	674.14	0.00	805.95	0.859	6.92	26.724	D
C-A	56.11	56.11	0.00	-	-	-	-	-
A-B	151.94	151.94	0.00	-	-	-	-	-
A-C	375.45	375.45	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	434.90	400.13	0.00	409.22	1.063	19.83	156.906	F
B-A	109.00	101.18	0.00	109.93	0.992	6.90	240.833	F
C-AB	703.93	699.94	0.00	813.35	0.865	7.92	33.677	D
C-A	44.77	44.77	0.00	-	-	-	-	-
A-B	151.94	151.94	0.00	-	-	-	-	-
A-C	375.45	375.45	0.00	-	-	-	-	-

Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	355.10	420.71	0.00	479.03	0.741	3.42	81.563	F
B-A	89.00	108.87	0.00	144.68	0.615	1.94	118.195	F
C-AB	499.19	520.27	0.00	778.85	0.641	2.65	15.329	C
C-A	112.12	112.12	0.00	-	-	-	-	-
A-B	124.06	124.06	0.00	-	-	-	-	-
A-C	306.55	306.55	0.00	-	-	-	-	-

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	297.38	306.88	0.00	588.88	0.505	1.05	13.171	B
B-A	74.53	80.55	0.00	252.11	0.296	0.43	21.660	C
C-AB	370.67	375.73	0.00	745.43	0.497	1.38	9.943	A
C-A	141.27	141.27	0.00	-	-	-	-	-
A-B	103.89	103.89	0.00	-	-	-	-	-
A-C	256.72	256.72	0.00	-	-	-	-	-

(Default Analysis Set) - 2029 + Dev 750, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 750, AM	2029 + Dev 750	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane Junction	T-Junction	Two-way	A,B,C	467.91	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Haslucks Green Road (N)		Major
B	B	Bills Lane		Minor
C	C	Haslucks Green Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	96.00	✓	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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane plus flare				6.90	4.30	4.30	4.20	4.10		1.00	38	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	457.870	0.083	0.211	0.133	0.301
1	B-C	745.966	0.114	0.289	-	-
1	C-B	629.558	0.244	0.244	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	532.00	100.000
B	ONE HOUR	✓	481.00	100.000
C	ONE HOUR	✓	762.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	147.000	385.000
	B	105.000	0.000	376.000
	C	321.000	441.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.28	0.72
	B	0.22	0.00	0.78
	C	0.42	0.58	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	1.44	607.54	58.60	F
B-A	1.38	657.61	17.25	F
C-AB	1.19	370.90	79.96	F
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (08:00-08:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	283.07	279.27	0.00	573.34	0.494	0.95	12.093	B
B-A	79.05	77.03	0.00	229.72	0.344	0.50	23.292	C
C-AB	506.06	494.10	0.00	702.07	0.721	2.99	16.805	C
C-A	67.61	67.61	0.00	-	-	-	-	-
A-B	110.67	110.67	0.00	-	-	-	-	-
A-C	289.85	289.85	0.00	-	-	-	-	-

Main results: (08:15-08:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	338.02	333.57	0.00	490.21	0.690	2.06	22.366	C
B-A	94.39	91.63	0.00	165.03	0.572	1.20	47.382	E
C-AB	667.51	642.79	0.00	722.06	0.924	9.17	40.834	E
C-A	17.52	17.52	0.00	-	-	-	-	-
A-B	132.15	132.15	0.00	-	-	-	-	-
A-C	346.11	346.11	0.00	-	-	-	-	-

Main results: (08:30-08:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	413.98	330.39	0.00	340.27	1.217	22.96	165.133	F
B-A	115.61	88.69	0.00	97.02	1.192	7.93	245.576	F
C-AB	838.98	693.71	0.00	702.18	1.195	45.49	154.700	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	161.85	161.85	0.00	-	-	-	-	-
A-C	423.89	423.89	0.00	-	-	-	-	-

Main results: (08:45-09:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	413.98	287.16	0.00	287.78	1.439	54.67	487.005	F
B-A	115.61	82.42	0.00	83.81	1.379	16.22	565.530	F
C-AB	838.98	701.08	0.00	702.65	1.194	79.96	328.918	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	161.85	161.85	0.00	-	-	-	-	-
A-C	423.89	423.89	0.00	-	-	-	-	-

Main results: (09:00-09:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	338.02	322.29	0.00	323.58	1.045	58.60	607.537	F
B-A	94.39	90.26	0.00	92.58	1.020	17.25	657.610	F
C-AB	685.02	722.47	0.00	734.00	0.933	70.60	370.897	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	132.15	132.15	0.00	-	-	-	-	-
A-C	346.11	346.11	0.00	-	-	-	-	-

Main results: (09:15-09:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	283.07	382.32	0.00	388.85	0.728	33.78	438.839	F
B-A	79.05	105.17	0.00	111.27	0.710	10.72	490.038	F
C-AB	573.67	742.74	0.00	756.33	0.759	28.33	241.010	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	110.67	110.67	0.00	-	-	-	-	-
A-C	289.85	289.85	0.00	-	-	-	-	-

(Default Analysis Set) - 2029 + Dev 750, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 750, PM	2029 + Dev 750	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane Junction	T-Junction	Two-way	A,B,C	152.43	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Haslucks Green Road (N)		Major
B	B	Bills Lane		Minor
C	C	Haslucks Green Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	96.00	✓	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)	Lane Width (Left) (m)	Lane Width (Right) (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	One lane plus flare				6.90	4.30	4.30	4.20	4.10		1.00	38	50

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	457.870	0.083	0.211	0.133	0.301
1	B-C	745.966	0.114	0.289	-	-
1	C-B	629.558	0.244	0.244	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

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 Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	491.00	100.000
B	ONE HOUR	✓	517.00	100.000
C	ONE HOUR	✓	706.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	150.000	341.000
	B	103.000	0.000	414.000
	C	381.000	325.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.31	0.69
	B	0.20	0.00	0.80
	C	0.54	0.46	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	1.16	242.04	32.83	F
B-A	1.09	325.66	9.66	F
C-AB	0.95	64.12	15.04	F
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (17:00-17:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	311.68	307.36	0.00	592.11	0.526	1.08	12.465	B
B-A	77.54	75.79	0.00	248.61	0.312	0.44	20.635	C
C-AB	399.14	393.04	0.00	740.17	0.539	1.52	10.287	B
C-A	132.37	132.37	0.00	-	-	-	-	-
A-B	112.93	112.93	0.00	-	-	-	-	-
A-C	256.72	256.72	0.00	-	-	-	-	-

Main results: (17:15-17:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	372.18	367.71	0.00	529.44	0.703	2.20	21.669	C
B-A	92.59	90.61	0.00	184.24	0.503	0.93	37.670	E
C-AB	531.49	525.86	0.00	766.50	0.693	2.93	14.979	B
C-A	103.19	103.19	0.00	-	-	-	-	-
A-B	134.85	134.85	0.00	-	-	-	-	-
A-C	306.55	306.55	0.00	-	-	-	-	-

Main results: (17:30-17:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	455.82	397.99	0.00	416.05	1.096	16.65	107.722	F
B-A	113.41	92.57	0.00	104.90	1.081	6.14	186.146	F
C-AB	756.65	723.18	0.00	804.29	0.941	11.30	40.581	E
C-A	20.67	20.67	0.00	-	-	-	-	-
A-B	165.15	165.15	0.00	-	-	-	-	-
A-C	375.45	375.45	0.00	-	-	-	-	-

Main results: (17:45-18:00)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	455.82	391.11	0.00	394.28	1.156	32.83	242.035	F
B-A	113.41	99.32	0.00	104.13	1.089	9.66	325.656	F
C-AB	777.32	762.37	0.00	815.82	0.953	15.04	64.115	F
C-A	0.00	0.00	0.00	-	-	-	-	-
A-B	165.15	165.15	0.00	-	-	-	-	-
A-C	375.45	375.45	0.00	-	-	-	-	-

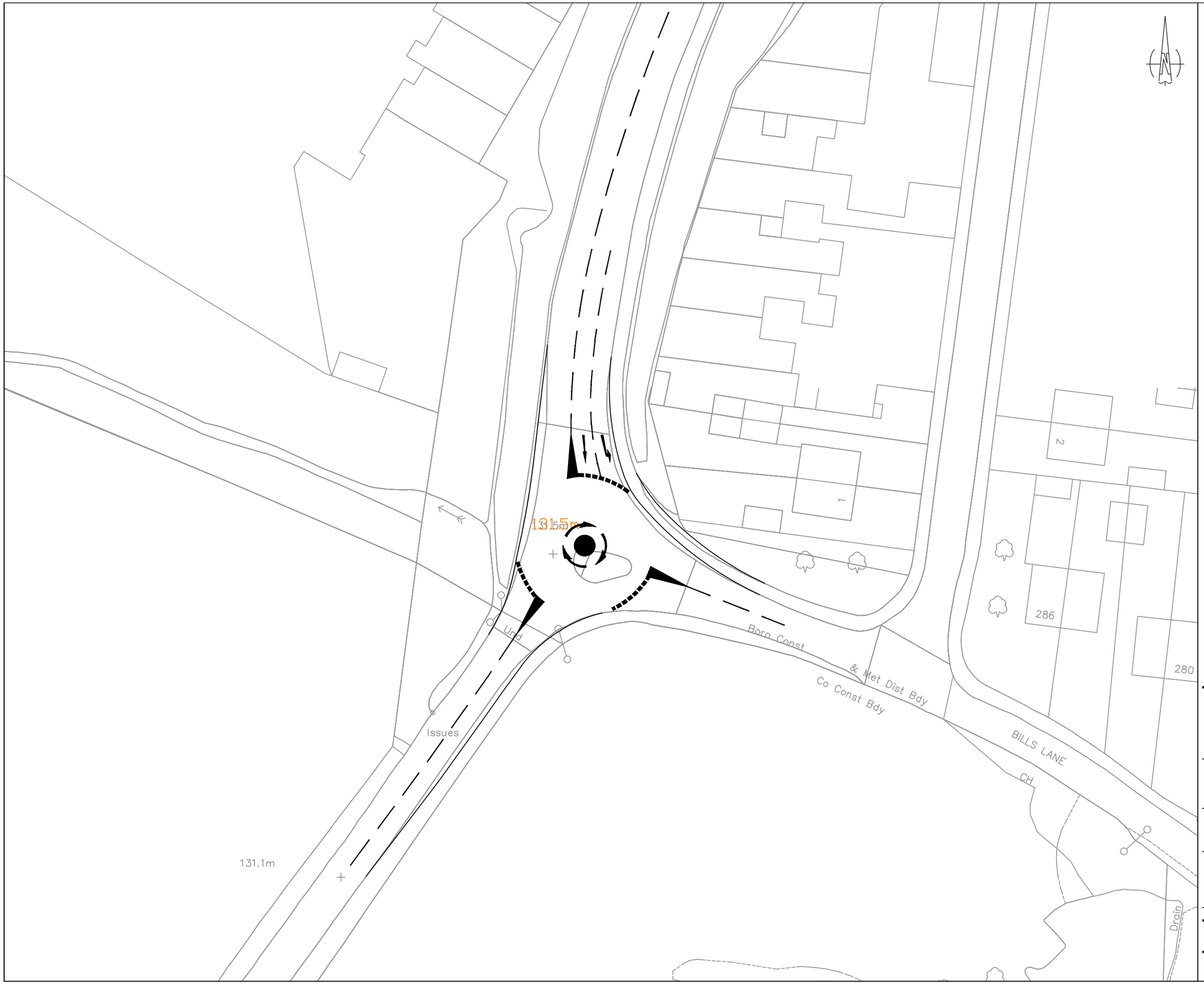
Main results: (18:00-18:15)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	372.18	435.54	0.00	448.80	0.829	16.99	209.014	F
B-A	92.59	107.86	0.00	116.99	0.791	5.85	269.307	F
C-AB	555.99	601.63	0.00	787.75	0.706	3.63	24.579	C
C-A	78.68	78.68	0.00	-	-	-	-	-
A-B	134.85	134.85	0.00	-	-	-	-	-
A-C	306.55	306.55	0.00	-	-	-	-	-

Main results: (18:15-18:30)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	311.68	374.24	0.00	553.38	0.563	1.35	27.389	D
B-A	77.54	98.53	0.00	213.51	0.363	0.60	36.537	E
C-AB	404.66	412.53	0.00	744.98	0.543	1.66	11.188	B
C-A	126.86	126.86	0.00	-	-	-	-	-
A-B	112.93	112.93	0.00	-	-	-	-	-
A-C	256.72	256.72	0.00	-	-	-	-	-

Appendix F
Junction 3 Mitigation Design



Notes

The design shown is aligned with ordinance survey data.

Road markings & traffic signs are to be in accordance with 'The Traffic Signs Regulations and General Directions 2016'.

Key

Base Mapping

Design

Rev.

ttc the transportation consultancy

397 Birmingham Road |Bordesley |Redditch |Worcs | B97 6RH
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Client

-

Project

Woods Farm

Drawing

Haslucks Green Road / Bills Lane Draft Junction Improvement

Drawn by	Date	Scale
JM	Mar 19	1:500 @ A3

Drawing No. 210166-06

Revision -

File: D:\TTC Share\TTC Transport\planning\TTC Transportplanning Team Site - Documents\Working Files\Projects\210166 - Woods Farm, Shirley\Drawings\ACAD\210166-06.dwg

Appendix G
Junction 3 Mitigation Design Modelling Results

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: J3. Haslucks Green Road Junction_Mini Roundabout.arc8
Path: C:\Users\George\TTC Transportplanning\TTC Transportplanning Team Site - Documents\Working Files\Projects\210166 - Woods Farm, Shirley\Data\Modelling
Report generation date: 15/03/2019 12:53:04

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2029							
Arm A	1.98	12.85	0.66	B	1.08	7.80	0.52	A
Arm B	2.51	23.84	0.72	C	5.19	40.47	0.86	E
Arm C	10.75	53.06	0.94	F	4.90	26.86	0.84	D
	A1 - 2029 + Dev 500							
Arm A	2.14	13.65	0.69	B	1.31	9.03	0.57	A
Arm B	6.12	48.85	0.88	E	10.10	71.18	0.94	F
Arm C	20.32	90.14	1.00	F	8.61	44.39	0.92	E
	A1 - 2029 + Dev 750							
Arm A	2.28	14.39	0.70	B	1.45	9.78	0.60	A
Arm B	11.77	84.09	0.96	F	15.01	97.69	0.99	F
Arm C	28.03	116.76	1.03	F	12.24	60.09	0.95	F

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

"D1 - 2029, AM " model duration: 08:00 - 09:30
"D2 - 2029, PM" model duration: 17:00 - 18:30
"D3 - 2029 + Dev 500, AM" model duration: 08:00 - 09:30
"D4 - 2029 + Dev 500, PM" model duration: 17:00 - 18:30
"D5 - 2029 + Dev 750, AM" model duration: 08:00 - 09:30
"D6 - 2029 + Dev 750, PM" model duration: 17:00 - 18:30

Run using Junctions 8.0.4.487 at 15/03/2019 12:53:02

File summary

Title	Haslucks Green Road Junction
Location	
Site Number	J3
Date	14/02/2019
Version	
Status	Proposed
Identifier	
Client	
Jobnumber	210166
Enumerator	james
Description	

Analysis Options

Vehicle Length (m)	Do Queue Variations	Calculate Residual Capacity	Residual Capacity Criteria Type	RFC Threshold	Average Delay Threshold (s)	Queue Threshold (PCU)
5.75			N/A	0.85	36.00	20.00

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

(Default Analysis Set) - 2029, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029, AM	2029	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane/Bills Lane	Mini-roundabout	A,B,C	33.36	D

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
A	A	Haslucks Green Lane (N)	
B	B	Bills Lane	
C	C	Haslucks Green Lane (S)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
A	0.00	99999.00
B	0.00	99999.00
C	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	4.20	3.80	6.30	33.00	17.50	13.80	0.00	
B	2.50	2.50	5.00	7.70	16.20	12.20	0.00	
C	3.00	3.00	4.00	15.00	18.00	16.80	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.671	1145.098
B		(calculated)	(calculated)	0.552	783.259
C		(calculated)	(calculated)	0.662	887.517

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	514.00	100.000
B	ONE HOUR	✓	357.00	100.000
C	ONE HOUR	✓	708.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	129.000	385.000
	B	78.000	0.000	279.000
	C	321.000	387.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.25	0.75
	B	0.22	0.00	0.78
	C	0.45	0.55	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.081
	B	1.206	1.000	1.008
	C	1.000	1.042	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	8.1
	B	20.6	0.0	0.8
	C	0.0	4.2	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.66	12.85	1.98	B
B	0.72	23.84	2.51	C
C	0.94	53.06	10.75	F

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	386.97	384.10	287.71	0.00	952.16	0.406	0.72	6.681	A
B	268.77	265.67	287.70	0.00	624.45	0.430	0.77	10.402	B
C	533.02	526.35	58.05	0.00	849.11	0.628	1.67	11.187	B

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	462.08	460.68	345.08	0.00	913.69	0.506	1.06	8.393	A
B	320.94	319.25	345.06	0.00	592.79	0.541	1.20	13.666	B
C	636.48	631.31	69.75	0.00	841.36	0.756	2.96	17.096	C

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	565.92	562.54	412.99	0.00	868.15	0.652	1.91	12.343	B
B	393.06	388.23	421.36	0.00	550.67	0.714	2.41	22.501	C
C	779.52	755.55	84.82	0.00	831.39	0.938	8.95	39.548	E

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	565.92	565.66	422.16	0.00	862.00	0.657	1.98	12.846	B
B	393.06	392.64	423.70	0.00	549.38	0.715	2.51	23.841	C
C	779.52	772.33	85.79	0.00	830.75	0.938	10.75	53.055	F

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	462.08	465.44	363.86	0.00	901.09	0.513	1.14	8.820	A
B	320.94	325.85	348.62	0.00	590.82	0.543	1.28	14.450	B
C	636.48	665.67	71.19	0.00	840.41	0.757	3.45	23.855	C

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	386.97	388.55	295.00	0.00	947.27	0.409	0.74	6.847	A
B	268.77	270.66	291.03	0.00	622.61	0.432	0.81	10.747	B
C	533.02	539.69	59.14	0.00	848.39	0.628	1.79	12.170	B

(Default Analysis Set) - 2029, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029, PM	2029	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane/Bills Lane	Mini-roundabout	A,B,C	25.18	D

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
A	A	Haslucks Green Lane (N)	
B	B	Bills Lane	
C	C	Haslucks Green Lane (S)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
A	0.00	99999.00
B	0.00	99999.00
C	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	4.20	3.80	6.30	33.00	17.50	13.80	0.00	
B	2.50	2.50	5.00	7.70	16.20	12.20	0.00	
C	3.00	3.00	4.00	15.00	18.00	16.80	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.671	1145.098
B		(calculated)	(calculated)	0.552	783.259
C		(calculated)	(calculated)	0.662	887.517

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	455.00	100.000
B	ONE HOUR	✓	448.00	100.000
C	ONE HOUR	✓	629.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	114.000	341.000
	B	89.000	0.000	359.000
	C	381.000	248.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.25	0.75
	B	0.20	0.00	0.80
	C	0.61	0.39	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.017	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	1.7	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.52	7.80	1.08	A
B	0.86	40.47	5.19	E
C	0.84	26.86	4.90	D

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	342.55	340.55	184.73	0.00	1021.22	0.335	0.50	5.274	A
B	337.28	332.97	255.22	0.00	642.38	0.525	1.08	11.483	B
C	473.54	468.52	66.15	0.00	843.75	0.561	1.26	9.536	A

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	409.04	408.28	221.74	0.00	996.40	0.411	0.69	6.113	A
B	402.74	399.80	305.99	0.00	614.36	0.656	1.81	16.544	C
C	565.46	562.38	79.42	0.00	834.96	0.677	2.03	13.141	B

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	500.96	499.47	269.05	0.00	964.67	0.519	1.06	7.713	A
B	493.26	481.70	374.33	0.00	576.63	0.855	4.70	34.328	D
C	692.54	682.39	95.69	0.00	824.20	0.840	4.56	23.955	C

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	500.96	500.91	272.52	0.00	962.35	0.521	1.08	7.798	A
B	493.26	491.29	375.41	0.00	576.04	0.856	5.19	40.466	E
C	692.54	691.19	97.60	0.00	822.94	0.842	4.90	26.857	D

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	409.04	410.50	227.17	0.00	992.76	0.412	0.71	6.200	A
B	402.74	415.46	307.65	0.00	613.44	0.657	2.01	19.215	C
C	565.46	576.17	82.54	0.00	832.90	0.679	2.22	14.652	B

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	342.55	343.34	188.13	0.00	1018.94	0.336	0.51	5.334	A
B	337.28	340.77	257.32	0.00	641.22	0.526	1.14	12.118	B
C	473.54	477.15	67.70	0.00	842.72	0.562	1.32	10.007	B

(Default Analysis Set) - 2029 + Dev 500, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 500, AM	2029 + Dev 500	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane/Bills Lane	Mini-roundabout	A,B,C	55.98	F

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
A	A	Haslucks Green Lane (N)	
B	B	Bills Lane	
C	C	Haslucks Green Lane (S)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
A	0.00	99999.00
B	0.00	99999.00
C	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	4.20	3.80	6.30	33.00	17.50	13.80	0.00	
B	2.50	2.50	5.00	7.70	16.20	12.20	0.00	
C	3.00	3.00	4.00	15.00	18.00	16.80	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.671	1145.098
B		(calculated)	(calculated)	0.552	783.259
C		(calculated)	(calculated)	0.662	887.517

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	526.00	100.000
B	ONE HOUR	✓	440.00	100.000
C	ONE HOUR	✓	744.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	141.000	385.000
	B	96.000	0.000	344.000
	C	321.000	423.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.27	0.73
	B	0.22	0.00	0.78
	C	0.43	0.57	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.69	13.65	2.14	B
B	0.88	48.85	6.12	E
C	1.00	90.14	20.32	F

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	396.00	393.10	314.09	0.00	934.47	0.424	0.73	6.616	A
B	331.26	326.86	287.72	0.00	624.44	0.530	1.10	11.930	B
C	560.12	552.45	71.32	0.00	840.33	0.667	1.92	12.204	B

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	472.86	471.35	376.17	0.00	892.84	0.530	1.10	8.509	A
B	395.55	392.35	345.00	0.00	592.82	0.667	1.90	17.666	C
C	668.84	661.64	85.60	0.00	830.87	0.805	3.72	20.411	C

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	579.14	575.33	441.52	0.00	849.01	0.682	2.06	12.973	B
B	484.45	470.59	421.11	0.00	550.81	0.880	5.36	39.392	E
C	819.16	776.57	102.68	0.00	819.58	0.999	14.37	55.882	F

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	579.14	578.79	452.19	0.00	841.86	0.688	2.14	13.645	B
B	484.45	481.43	423.64	0.00	549.41	0.882	6.12	48.846	E
C	819.16	795.35	105.04	0.00	818.01	1.001	20.32	90.140	F

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	472.86	476.52	415.41	0.00	866.52	0.546	1.23	9.314	A
B	395.55	411.43	348.79	0.00	590.73	0.670	2.15	21.610	C
C	668.84	730.65	89.77	0.00	828.12	0.808	4.87	47.396	E

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	396.00	397.89	324.77	0.00	927.31	0.427	0.75	6.825	A
B	331.26	335.17	291.23	0.00	622.50	0.532	1.17	12.695	B
C	560.12	571.22	73.13	0.00	839.13	0.668	2.09	13.947	B

(Default Analysis Set) - 2029 + Dev 500, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 500, PM	2029 + Dev 500	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane/Bills Lane	Mini-roundabout	A,B,C	42.15	E

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
A	A	Haslucks Green Lane (N)	
B	B	Bills Lane	
C	C	Haslucks Green Lane (S)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
A	0.00	99999.00
B	0.00	99999.00
C	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	4.20	3.80	6.30	33.00	17.50	13.80	0.00	
B	2.50	2.50	5.00	7.70	16.20	12.20	0.00	
C	3.00	3.00	4.00	15.00	18.00	16.80	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.671	1145.098
B		(calculated)	(calculated)	0.552	783.259
C		(calculated)	(calculated)	0.662	887.517

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	479.00	100.000
B	ONE HOUR	✓	494.00	100.000
C	ONE HOUR	✓	680.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	138.000	341.000
	B	99.000	0.000	395.000
	C	381.000	299.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.29	0.71
	B	0.20	0.00	0.80
	C	0.56	0.44	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.57	9.03	1.31	A
B	0.94	71.18	10.10	F
C	0.92	44.39	8.61	E

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	360.62	358.37	222.43	0.00	995.94	0.362	0.56	5.628	A
B	371.91	366.59	255.12	0.00	642.43	0.579	1.33	12.820	B
C	511.94	505.86	73.47	0.00	838.90	0.610	1.52	10.627	B

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	430.61	429.68	266.83	0.00	966.16	0.446	0.79	6.700	A
B	444.10	439.72	305.89	0.00	614.41	0.723	2.42	20.098	C
C	611.31	606.83	88.12	0.00	829.21	0.737	2.64	15.861	C

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	527.39	525.44	320.83	0.00	929.95	0.567	1.28	8.856	A
B	543.90	521.10	374.06	0.00	576.78	0.943	8.12	50.896	F
C	748.69	729.65	104.43	0.00	818.42	0.915	7.40	34.705	D

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	527.39	527.29	327.07	0.00	925.76	0.570	1.31	9.029	A
B	543.90	535.99	375.38	0.00	576.05	0.944	10.10	71.179	F
C	748.69	743.84	107.41	0.00	816.44	0.917	8.61	44.393	E

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	430.61	432.53	278.55	0.00	958.30	0.449	0.83	6.873	A
B	444.10	473.09	307.92	0.00	613.29	0.724	2.86	29.768	D
C	611.31	633.50	94.81	0.00	824.78	0.741	3.06	20.641	C

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	360.62	361.62	227.64	0.00	992.44	0.363	0.58	5.717	A
B	371.91	377.62	257.44	0.00	641.16	0.580	1.43	13.938	B
C	511.94	517.72	75.68	0.00	837.44	0.611	1.62	11.455	B

(Default Analysis Set) - 2029 + Dev 750, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 750, AM	2029 + Dev 750	AM		ONE HOUR	08:00	09:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane/Bills Lane	Mini-roundabout	A,B,C	77.23	F

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
A	A	Haslucks Green Lane (N)	
B	B	Bills Lane	
C	C	Haslucks Green Lane (S)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
A	0.00	99999.00
B	0.00	99999.00
C	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	4.20	3.80	6.30	33.00	17.50	13.80	0.00	
B	2.50	2.50	5.00	7.70	16.20	12.20	0.00	
C	3.00	3.00	4.00	15.00	18.00	16.80	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.671	1145.098
B		(calculated)	(calculated)	0.552	783.259
C		(calculated)	(calculated)	0.662	887.517

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	532.00	100.000
B	ONE HOUR	✓	481.00	100.000
C	ONE HOUR	✓	762.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	147.000	385.000
	B	105.000	0.000	376.000
	C	321.000	441.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.28	0.72
	B	0.22	0.00	0.78
	C	0.42	0.58	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.70	14.39	2.28	B
B	0.96	84.09	11.77	F
C	1.03	116.76	28.03	F

Main Results for each time segment

Main results: (08:00-08:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	400.52	397.51	327.17	0.00	925.70	0.433	0.75	6.778	A
B	362.12	356.79	287.67	0.00	624.47	0.580	1.33	13.204	B
C	573.67	565.32	77.89	0.00	835.98	0.686	2.09	12.935	B

Main results: (08:15-08:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	478.26	476.63	391.40	0.00	882.62	0.542	1.16	8.831	A
B	432.41	427.78	344.93	0.00	592.86	0.729	2.49	21.211	C
C	685.02	676.30	93.38	0.00	825.73	0.830	4.27	22.817	C

Main results: (08:30-08:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	585.74	581.63	453.23	0.00	841.16	0.696	2.19	13.653	B
B	529.59	503.46	420.91	0.00	550.92	0.961	9.02	56.987	F
C	838.98	783.14	109.90	0.00	814.79	1.030	18.23	66.533	F

Main results: (08:45-09:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	585.74	585.37	462.86	0.00	834.70	0.702	2.28	14.391	B
B	529.59	518.59	423.62	0.00	549.42	0.964	11.77	84.094	F
C	838.98	799.77	113.21	0.00	812.61	1.032	28.03	116.758	F

Main results: (09:00-09:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	478.26	482.05	446.15	0.00	845.91	0.565	1.33	9.996	A
B	432.41	467.47	348.85	0.00	590.69	0.732	3.01	35.194	E
C	685.02	770.91	102.05	0.00	819.99	0.835	6.56	78.531	F

Main results: (09:15-09:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	400.52	402.70	341.85	0.00	915.85	0.437	0.79	7.043	A
B	362.12	368.40	291.42	0.00	622.40	0.582	1.44	14.502	B
C	573.67	590.68	80.42	0.00	834.30	0.688	2.31	15.702	C

(Default Analysis Set) - 2029 + Dev 750, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)	ARCADY			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2029 + Dev 750, PM	2029 + Dev 750	PM		ONE HOUR	17:00	18:30	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Junction Delay (s)	Junction LOS
1	Haslucks Green Lane/Bills Lane	Mini-roundabout	A,B,C	57.02	F

Junction Network Options

Driving Side	Lighting	Road Surface	In London
Left	Normal/unknown	Normal/unknown	

Arms

Arms

Arm	Arm	Name	Description
A	A	Haslucks Green Lane (N)	
B	B	Bills Lane	
C	C	Haslucks Green Lane (S)	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)
A	0.00	99999.00
B	0.00	99999.00
C	0.00	99999.00

Mini Roundabout Geometry

Arm	Approach road half-width (m)	Minimum approach road half-width (m)	Entry width (m)	Effective flare length (m)	Distance to next arm (m)	Entry corner kerb line distance (m)	Gradient over 50m (%)	Kerbed central island
A	4.20	3.80	6.30	33.00	17.50	13.80	0.00	
B	2.50	2.50	5.00	7.70	16.20	12.20	0.00	
C	3.00	3.00	4.00	15.00	18.00	16.80	0.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.671	1145.098
B		(calculated)	(calculated)	0.552	783.259
C		(calculated)	(calculated)	0.662	887.517

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

Traffic Flows

Demand Set Data Options

Default Vehicle Mix	Vehicle Mix Varies Over Time	Vehicle Mix Varies Over Turn	Vehicle Mix Varies Over Entry	Vehicle Mix Source	PCU Factor for a HV (PCU)	Default Turning Proportions	Estimate from entry/exit counts	Turning Proportions Vary Over Time	Turning Proportions Vary Over Turn	Turning Proportions Vary Over Entry
		✓	✓	HV Percentages	2.00				✓	✓

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	491.00	100.000
B	ONE HOUR	✓	517.00	100.000
C	ONE HOUR	✓	706.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.000	150.000	341.000
	B	103.000	0.000	414.000
	C	381.000	325.000	0.000

Turning Proportions (PCU) - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.00	0.31	0.69
	B	0.20	0.00	0.80
	C	0.54	0.46	0.00

Vehicle Mix

Average PCU Per Vehicle - Junction 1 (for whole period)

		To		
		A	B	C
From	A	1.000	1.000	1.000
	B	1.000	1.000	1.000
	C	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To		
		A	B	C
From	A	0.0	0.0	0.0
	B	0.0	0.0	0.0
	C	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A	0.60	9.78	1.45	A
B	0.99	97.69	15.01	F
C	0.95	60.09	12.24	F

Main Results for each time segment

Main results: (17:00-17:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	369.65	367.27	241.58	0.00	983.09	0.376	0.60	5.824	A
B	389.22	383.31	255.07	0.00	642.47	0.606	1.48	13.604	B
C	531.51	524.79	76.37	0.00	836.99	0.635	1.68	11.303	B

Main results: (17:15-17:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	441.40	440.37	289.63	0.00	950.87	0.464	0.85	7.037	A
B	464.77	459.36	305.84	0.00	614.44	0.756	2.83	22.434	C
C	634.68	629.18	91.52	0.00	826.96	0.767	3.06	17.701	C

Main results: (17:30-17:45)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	540.60	538.36	345.46	0.00	913.43	0.592	1.41	9.540	A
B	569.23	536.73	373.89	0.00	576.87	0.987	10.96	62.725	F
C	777.32	750.45	106.93	0.00	816.76	0.952	9.78	42.653	E

Main results: (17:45-18:00)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	540.60	540.47	353.29	0.00	908.18	0.595	1.45	9.783	A
B	569.23	553.01	375.36	0.00	576.07	0.988	15.01	97.688	F
C	777.32	767.46	110.17	0.00	814.61	0.954	12.24	60.093	F

Main results: (18:00-18:15)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	441.40	443.59	307.80	0.00	938.69	0.470	0.90	7.305	A
B	464.77	510.68	308.07	0.00	613.21	0.758	3.53	44.469	E
C	634.68	668.64	101.74	0.00	820.20	0.774	3.75	27.681	D

Main results: (18:15-18:30)

Arm	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A	369.65	370.80	248.25	0.00	978.62	0.378	0.61	5.935	A
B	389.22	396.94	257.52	0.00	641.11	0.607	1.60	15.173	C
C	531.51	539.28	79.08	0.00	835.19	0.636	1.81	12.467	B