| | | | |
|---|---|---|---|
| Project : | South West Milton Keynes (SWMK) | | |
| Date: | 14-02-2017 | Ref: | 1067760/TN14 |
| Subject: | **Technical Note 14 –** Response to Objection by Steve Heath | | |

This Technical Note has been prepared in response to the objection submitted by Mr Steve Heath, a Newton Longville resident, to the planning application ref: 15/00619/FUL. The objection relates to the impact of traffic upon the local highway network under the control of Milton Keynes Council (MKC). A response is provided to the points raised under each section of the objection by Mr Heath.

## 1 Introduction

The application will provide physical amendments to the local highway network at the proposed access points and at Bottle Dump roundabout as part of a Section 278[1] Agreement related to a planning permission. Other improvements required to the local highway network to mitigate the proposed development will be provided by way of a Section 106[2] Contribution to both MKC and Buckinghamshire County Council (BCC).

Reference to queues actually getting longer following improvements to Bottle Dump roundabout are correct however where they occur, the increases are negligible at less than 1 vehicle. The increases are coupled with overwhelming benefits created on other arms with reductions in queues of over 100 vehicles. This point regarding increased queuing is therefore highly misleading.

The differences in queue length are set out in Table 1 and Table 2:

| Arm | **Current Roundabout Geometry** | | **Revised Roundabout Geometry** | | **Difference** | |
|---|---|---|---|---|---|---|
| | **AM** | **PM** | **AM** | **PM** | **AM** | **PM** |
| Arm 1 | 2.52 | 2.91 | 2.6 | 2.92 | 0.08 | 0.01 |
| Arm 2 | 1.02 | 0.31 | 1.03 | 0.31 | 0.01 | 0 |
| Arm 3 | 81.46 | 4.66 | 15.8 | 2.72 | -65.66 | -1.94 |

*Table 1 - Bottle Dump Roundabout – '2026 Base' queue length results (vehicles)*

| Arm | **Current Roundabout Geometry** | | **Revised Roundabout Geometry** | | **Difference** | |
|---|---|---|---|---|---|---|
| | **AM** | **PM** | **AM** | **PM** | **AM** | **PM** |
| Arm 1 | 2.5 | 5.06 | 2.64 | 5.17 | 0.14 | 0.11 |
| Arm 2 | 9.43 | 0.44 | 10 | 0.45 | 0.57 | 0.01 |
| Arm 3 | 148.71 | 11.36 | 46.02 | 4.72 | -102.69 | -6.64 |

*Table 2 - Bottle Dump Roundabout – '2026 Base plus development' queue length results (vehicles)*

## 2 Current Status

Mouchel has not had sight of any data from the Newton Longville MVAS. The survey data used within the Transport Assessment (TA) of August 2016 have been procured by Mouchel in consultation with both Milton Keynes Council (MKC) and Buckingham County Council (BCC). Mr

[1] Highways Act 1980
[2] Town and Country Planning Act 1990

Heath indicates that there has been a 50% increase in traffic flows over two years although this has not been substantiated with any supporting data.

The comment from Richard Smith of Jacobs regarding the model flows and journey times not being calibrated or validated relates to data within the Milton Keynes Traffic Model (MKTM) specifically for the corridor of A421 within Buckinghamshire. It does not refer to data for Newton Longville. For this reason, a separate traffic analysis was requested by BCC for junctions within the County Council's jurisdiction, as included within the TA.

The MKTM is an MKC model calibrated and validated for use within the MKC area. As such, it was agreed with MKC that it would be entirely appropriate to use the MKTM to generate traffic flows for the assessment of junctions within Milton Keynes. The validation of assessments within Buckinghamshire has not been completed using the MKTM.

Responses to the 'flawed TA' have been provided previously, and are discussed throughout this Technical Note.

## 3 Scope of the application

The objection correctly states that the development only has two exits; however it has three points of access. The objection compares this to other developments in Milton Keynes which have "about 9". For avoidance of doubt - the proposed three points of access and two points of egress are entirely acceptable given the size and nature of the proposed development. The principles of access/egress have now been agreed following exhaustive discussions with BCC and MKC.

## 4 Whaddon Road Exit

The distribution of development traffic north towards Bottle Dump roundabout has been determined based on the MKTM, including a sophisticated dynamic Variable Demand Model (VDM), as agreed with MKC, BCC and their consultants. A large proportion of the residents of the development would be expected to travel towards Milton Keynes for employment, hence the distribution of traffic is considered appropriate for the location.

The objection by Mr Heath raised a concern over the modelling of the junction of Whaddon Road. In this regard, a minor correction has been made to the vehicle trips travelling along Whaddon Road and this now been included within the Junctions8 model as contained within this Technical Note.

The visibility splays included within the previous Junctions8 modelling were set to 160m in both directions; the visibility as required by the standard set out in Manual for Streets (MfS). In reality, the actual available visibility along Whaddon Road is 240m to the left and 180m to the right of the proposed access, as detailed on Drawing D007C attached to this Note. These actual visibilities have been input to the revised Junctions8 modelling. Revised results for the Whaddon Road junction, including all Whaddon Road traffic, are provided in Tables 3a and 3b.

| Arm | AM Peak | | PM Peak | |
|---|---|---|---|---|
| | RFC | Queue | RFC | Queue |
| Whaddon Road (N) | - | - | - | - |
| Development Access | 0.98 | 13.4 | 0.18 | 0.2 |
| Whaddon Road (S) | 0.05 | 0.06 | 0.14 | 0.2 |

*Table 3a - Whaddon Road access – '2026 Base plus development'*

| Arm | AM Peak | |
|---|---|---|
| | RFC | Queue |
| 0745-0800 | 0.52 | 1.2 |
| 0800-0815 | 0.72 | 2.6 |
| 0815-0830 | 0.98 | 10.0 |
| 0830-0845 | 0.98 | 13.4 |
| 0845-0900 | 0.72 | 3.1 |
| 0900-0915 | 0.54 | 1.3 |

*Table 3b- Whaddon Road access – '2026 Base plus development'*

The revised modelling results for 2026 show that the junction would operate with an RFC of 0.98 during the busiest 0815-0845 30 minute period, and with an RFC of under 0.72 between 0745-0815 and 0845-0915. Therefore for the majority of the peak period, the junction will operate well below capacity, with a little pressure and a minor queue at the junction for a short period of half an hour.

However, within the modelling assumptions, as agreed with BCC and MKC, no allowance has been made in our modelling for mode shift to alternative transport other than the private car, which will occur following the implementation of a comprehensive site-wide Travel Plan. On this basis, as no allowance has been made hitherto for modal shift, the modelling assumptions agreed with BCC and MKC and as contained with the TA are extremely robust.

The Framework Travel Plan, agreed with MKC, BCC and Highways England, suggests a reduction in car mode share from 82% to 74% in the first 5 years of the development. This 8%-point mode shift is equivalent to a 10% reduction in traffic from the development. Over time, it is anticipated that the development will influence a higher shift in travel mode to alternative travel modes of between 11-13%-points as behavioural changes occur across the development and residents become accustomed to the opportunities to use alternative travel modes.

The concept design of the junction is to minimum lane width standards, with 3.0m 'through lanes' (Drawing D014C). The 'passing' lanes could be widened to 3.2m as a detailed design amendment following grant of planning permission to allow a small amount of additional capacity at the junction.

When applying the widened lanes and mode shift to the development flows at the Whaddon Road access, the junction modelling results are as shown in Tables 4a and 4b.

| Arm | AM Peak | | PM Peak | |
|---|---|---|---|---|
| | RFC | Queue | RFC | Queue |
| Whaddon Road (N) | - | - | - | - |
| Development Access | 0.87 | 6.1 | 0.16 | 0.2 |
| Whaddon Road (S) | 0.05 | 0.06 | 0.14 | 0.2 |

*Table 4a - Whaddon Road access – '2026 Base plus development' – including Travel Plan mode shift*

| Arm | AM Peak | |
|---|---|---|
| | RFC | Queue |
| 0745-0800 | 0.46 | 0.9 |
| 0800-0815 | 0.64 | 1.9 |
| 0815-0830 | 0.87 | 5.3 |
| 0830-0845 | 0.87 | 6.1 |
| 0845-0900 | 0.64 | 2.1 |
| 0900-0915 | 0.48 | 1.0 |

*Table 4b - Whaddon Road access – '2026 Base plus development' – including Travel Plan mode shift*

The proposed access at Whaddon Road is therefore predicted to operate with an RFC of 0.87 for a 30 minute period in the AM peak in 2026, with plenty of capacity in the time segments either side. This shows that in reality, residents unhappy with sitting in a queue of 6 vehicles, could modify their travel time slightly, and not have to queue to leave the junction.

Furthermore, during the AM Peak in 2026 when the Whaddon Road access may have a maximum queue of 6 vehicles, the Buckingham Road access operates with sufficient spare capacity for some residents to change their route choice if they so desired. This is a sensible possibility for some of the c.200 vehicle trips predicted to leave the development via Whaddon Road and travel north then east at Bottle Dump roundabout towards Milton Keynes.

The proposed access junction operates well within capacity in the PM peak in 2026.

## 5 Effect on Buckinghamshire Road

The Buckingham Road junction will have sufficient spare capacity to accommodate some redistribution of traffic away from the Whaddon Road access, if needed. However, a queue of 6 vehicles during the busiest part of the peak hour is minor and does not constitute major congestion necessitating route changes as claimed by Mr Heath!

The traffic that is likely to redistribute to the Buckingham Road access (if any does), will be those trips heading towards Milton Keynes from the western part of the development. Circa 200 vehicles turn northbound onto Whaddon Road, then eastbound at Bottle Dump roundabout towards Milton Keynes. It is those vehicles that would change their route, not those travelling to destinations further to the south of the proposed development.

The objection by Mr Heath raises concerns about 'several hundred' trips redistributing causing 'gridlock' with residents 'stuck within the development' – this is not based on any data, remodelling, or sensible assumptions. The distribution within the modelling originates in the MKTM and is agreed with both MKC and BCC as being an appropriate prediction of what may occur in 2026.

The objection suggests that 'much of the traffic' will want to use the Buckingham Road access to then travel westwards on H8 and southwards onto Whaddon Road. The agreed traffic data suggests that only 198 vehicles are destined to leave the development and travel along Whaddon Road southbound in the AM peak. It is far more likely that those 198 trips would be the vehicles that continue to use the Whaddon Road access, via the designated left turn lane, rather than divert through the whole development and around the perimeter to get back to Whaddon Road.

There will be no 'follow on effect' to Bottle Dump roundabout. There is some 650m between the proposed access point along Whaddon Road and Bottle Dump roundabout. For avoidance of doubt

– there will be no queuing occurs on Whaddon Road as a result of any potential queuing within the development site.

## 6 The effect on the Bottle Dump Roundabout

The distribution of traffic through the proposed development and onto the local highway network originates from the MKTM, which is a sophisticated dynamic VDM which takes into account travel behaviours and patterns from the local area. The distribution using the MKTM is agreed with MKC and BCC.

It is agreed that traffic is unlikely to use the Buckingham Road access, travel westbound on H8 and then southbound on Whaddon Road, as suggested in Mr Heath's objection. Traffic wishing to access Whaddon Road will do so via the Whaddon Road access. This routing involves negotiating only one access junction, rather than one access junction and two major roundabouts as per the routing suggested in the objection.

The increased delay and distance encountered on the routing suggested in the objection would be a major disincentive for traffic thinking about using that route. Hence, the VDM used to create the distribution does not identify this as an appropriate route choice within the model.

Traffic leaving the Whaddon Road access would queue within the development to leave the site. No queuing would occur on Whaddon Road. The development access is the minor arm of the junction, and whilst the odd vehicle on the major arm (Whaddon Road) may allow vehicles from the minor arm to exit, this would not be the normal way that the junction should operate.

No queuing would therefore occur on Whaddon Road itself, and the traffic flows would not be interrupted as a result of the development access. Bottle Dump roundabout is around 650m to the north of the development access, and there is no way that any queuing from the development access would block the exit from Bottle Dump roundabout on the Whaddon Road arm. There will be absolutely no interaction between the Bottle Dump roundabout and the development access on Whaddon Road.

The development access location along Whaddon Road is suitable, appropriate and meets both vertical and horizontal visibility requirements, and is considered acceptable by an independent Stage 1 Road Safety Auditor. For avoidance of doubt - the location of the access point does not have ANY effect on traffic and safety at Bottle Dump roundabout.

## 7 The models are inaccurate, incorrect and unreliable

The Junctions8 modelling of Bottle Dump roundabout is acceptable and appropriate. The geometries and parameters were discussed and agreed with MKB, BCC and their consultants prior to completion of the modelling.

The queuing from the junction models shows that the roundabouts along A421 DO NOT queue sufficiently to interact with each other during the peak hours, therefore producing complicated linked junction models is not necessary. The use of individual static junction models was agreed with MKC and BCC prior to completion of the modelling assessments.

The traffic data used as a basis for the modelling assessments are taken from traffic counts completed in 2015 at the request of BCC. The scope of the traffic surveys was agreed with both BC and MKC prior to the surveys being undertaken. An independent professional traffic survey company was used to collect the data. The data was verified and checked and validated using other

data available in the area at the time and was considered to be appropriate for use in the modelling assessments.

There could be many reasons why the Newton Longville MVAS is showing higher traffic flows at the Whaddon Road/Stoke Road crossroads. The suggested increases may not be a reflection of the traffic patterns on the wider highway network. We have not been provided with any data from the MVAS to be able to verify the claims of increases of 50% in two years.

Data from the DfT (*Traffic Growth in Buckinghamshire)*[3] shows the increases in traffic over recent years. As a reference, the 2000 traffic flow is set at an index of 100[4]. Traffic in Buckinghamshire actually reduced to An index level of 96 in 2011, with flows increasing and reaching the same level as in 2000 in 2013. Traffic in Buckinghamshire has increased from an index level of 102 in 2014 to 105 in 2015; approximately a 3% increase.

Furthermore, the count site quoted within Mr Heath's objection (i.e: DfT site 38092), does state an Annual Average Daily Traffic (AADT) level of 20,051 in 2015, but it also states an AADT of 19,215 in 2014. This represents a 4% increase in traffic, similar to that previously indicated. None of this evidence from the DfT supports a 50% increase in traffic flows as suggested by Mr Heath.

The traffic models were not 'validated' using Google Traffic. Google Traffic screenshots were captured on the day of traffic surveys to provide a **check only** that the junction models were providing sensible, representative results. This approach was agreed with MKC and BCC prior to completion. Furthermore, a BCC engineer attended site to review the queuing that occurred at the Whaddon Crossroads roundabout and confirmed that the modelling was providing representative queuing results, hence the models are acceptable and suitable for use.

A summary of the raw data is provided within the TA on the network diagrams and provides sufficient information to allow a review of the TA.

## 8 So what does this mean?

The traffic modelling is appropriate and does represent the prediction for traffic in 2026 within the local area. The methodology is agreed with BCC and MKC, including the distribution of traffic using the dynamic VDM and based on extensive traffic surveys completed in 2015.

The proposed improvements to the local highway network are intended to provide a 'nil detriment' solution to mitigate the impact of the proposed development. This approach goes much further than what is required by paragraph 32 of the National Planning Policy Framework (NPPF) which requires the impact of the development to be mitigated to a level which is not severe. By providing a 'nil detriment' solution, the proposals remove ANY impact of the development on the A421 junctions, not just the impact that might be considered severe. Furthermore, in 2026 the local highway network will have MORE CAPACITY following the proposed improvements than without the development being built.

The equivalent cost of the proposed highway improvements will be commuted as a Section 106[5] contribution to both MKC and BCC as appropriate. It will be up to BCC and MKC to decide how to use the contribution, and decide which improvements on the local highway network would be

[3] https://www.dft.gov.uk/traffic-counts/area.php?region=South+East&la=Buckinghamshire accessed 13/02/2017

[4] Assumes 2000 as the 'base' year at a level of 100, for comparative purposes

[5] Town & Country Planning Act, 1990

appropriate, although the improvements must be related to the A421 corridor in the vicinity of the site. It is therefore likely that the contributions will be spent on a larger improvement at a particular junction, which will have a greater effect on the local area than the 'cosmetic changes' as described in the objection.

The approach to provide a contribution (based on the cost of 'nil detriment' scheme) was suggested by both MKC and BCC, and was not initially proposed by the applicant. Part of the reason for this approach is the current uncertainty on future improvements for A421 in relation to the 'Expressway' and potential to create a high speed link in the area, which will undoubtedly effect the traffic flows on A421. Both BCC and MKC are therefore taking a wider, more holistic view of improvements in the local area as a result of not just the proposed development, but other developments and highway improvements planned for the future.

The agreed planning obligations under Section 106 and Section 278[6] are significant and are 'necessary to make the development acceptable in planning terms' and 'fairly and reasonably related in scale and kind to the development' as required by paragraph 204 of the NPPF and the Community Infrastructure Levy Regulations, 2010.

## 9 Conclusions

The methodology used to complete the assessment of the junctions related to the SWMK development was agreed with MKC and BCC prior to completion of the assessments. The modelling is accurate and reflective of the impact of the proposed development. The exception to this is the Whaddon Road access, where a model error has occurred, and revised modelling presented within this Technical Note proves that the junction will still operate well during the peak demand hours.

The operation of the junction at the Whaddon Road access does not affect the 'partitioning of the traffic within the development'; the distribution of traffic is calculated independently based on a sophisticated and complex dynamic VDM.

'Flow control' i.e. we assume this to mean traffic signals is not necessary at the Whaddon Road access, and BCC will not be implementing any control of traffic at that location. Traffic WILL NOT queue on Whaddon Road to the Bottle Dump roundabout some 650m from the access point, therefore there will not be any 'traffic and safety implications' at the Bottle Dump roundabout.

Traffic data from DfT suggests a 4% increase in traffic in Buckinghamshire between 2014 and 2015, not a 50% increase as suggested without evidence in the objection.

The traffic models are a tool to assess the impact of a development in order to provide a reasonable mitigation scheme. The difference between the 'base 2026'and 'base 2026 + development' scenarios is what is important. The traffic models serve as a tool for professionals and experts to discuss and agree impacts and appropriate mitigation. This is the process that has been followed with Officers and consultants from BCC and MKC, and Mouchel. Methodologies are agreed and impacts and mitigation have been carefully considered and accepted by both local authorities.

[6] Highways Act, 1980

**The proposed development has been assessed in accordance with local and national policies and approved methodologies, and the impact of development mitigated to 'nil detriment', which is greater than required by NPPF. As such, Mouchel are confident about the predicted outcomes of the modelling in 2026, and the mitigation package agreed, and there is no reason to refuse the planning application based on highways and transport grounds.**

End.

Enclosed:

D007C Vertical Visibility Whaddon Road

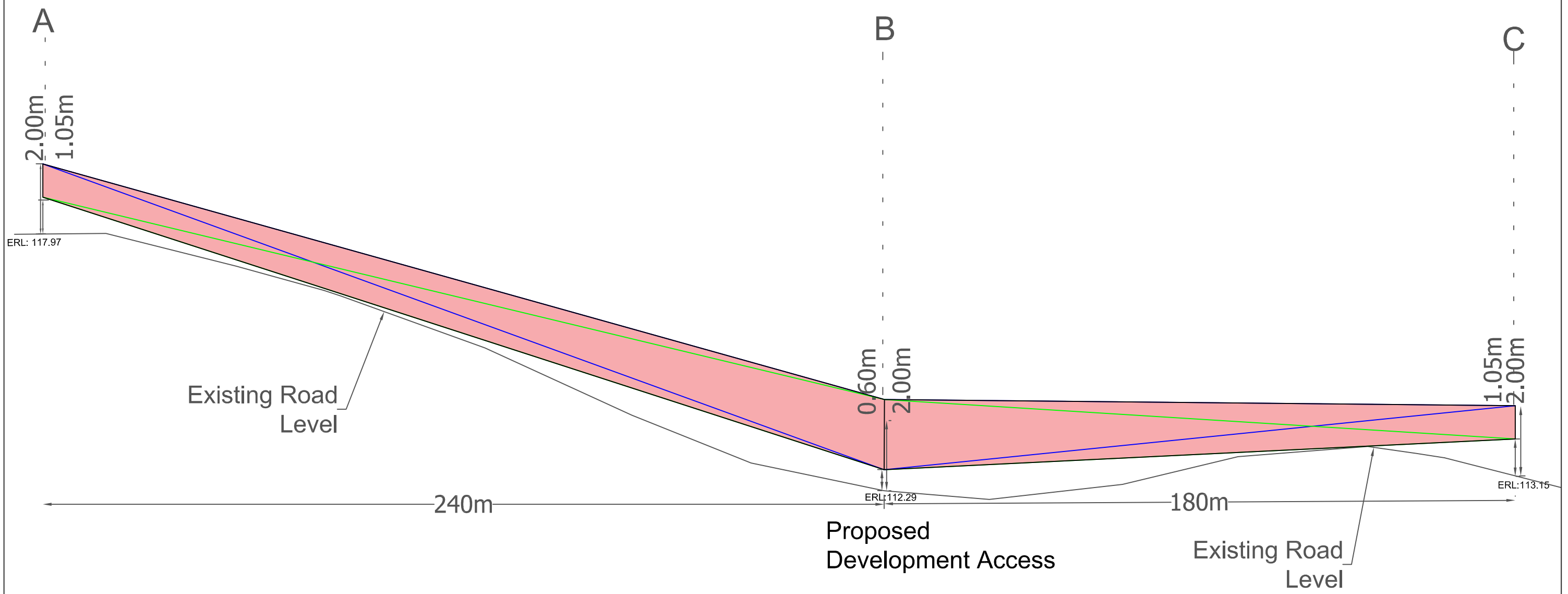
Whaddon Road access – revised modelling results

Newton Longville

Bottle Dump Roundabout

VISIBILITY APPROACHING FROM THE SOUTH

VISIBILITY APPROACHING FROM THE NORTH




## Manual for Streets 2

85th Percentile Speed = 51.9mph

Sight Stopping Distance = 159m

(calculated as per Manual for Streets 2 Sections 10.1 and 10.2)

## DMRB TD 9/93

Speed Limit = 60mph

Sight Stopping Distance = 160m

(one step below desirable minimum)

Vertical Scale 1:100

Horizontal Scale 1:1000

At original drawing size (A3) this line measures 50mm

Notes

Driver eye height of 2.0m (HGV)

Driver eye height of 1.05m (car)

PRELIMINARY FOR APPROVAL

| Rev. | Amendment | By | Chkd. | Date | Appd. |
|---|---|---|---|---|---|
| C | Amended visibilities | EC | SH | 13-02-17 | MP |
| B | Minor Amendment | SH | SH | 04-08-16 | MP |
| A | Amended Vertical Scale | CEW | SH | 07-01-16 | MP |

Cad Ref. No. L:\106xxx\1067760 South West Milton Keynes\12 Dwgs

| Drawn | Date | Checked | Date | Approved | Date |
|---|---|---|---|---|---|
| CEW | 11-11-2015 | SH | 17-12-15 | MP | 18-12-15 |

Project: SOUTH WEST MILTON KEYNES

Title: WHADDON ROAD PROPOSED ACCESS VERTICAL VISIBILITY ENVELOPE

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Client: SWMK Consortium

Drawing No.: D007

Rev.: C

# Junctions 8

## PICADY 8 - Priority Intersection Module



**Filename:** 2017-02-10 Priority Site Access_SH.arc8
**Path:** L:\106xxx\1067760 South West Milton Keynes\09 Docs\C-Cals\02 Jn Modelling\Access Junctions\Corrected Flows\SH Nov 2016
**Report generation date:** 10/02/2017 15:00:23

» (Default Analysis Set) - 2026 Base + Dev, AM
» (Default Analysis Set) - 2026 Base + Dev, PM

## Summary of junction performance

| | AM | | | |
|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS |
| | A1 - 2026 Base + Dev | | | |
| Stream B-C | 0.71 | 11.92 | 0.40 | B |
| Stream B-A | 13.39 | 104.34 | 0.98 | F |
| Stream C-A | - | - | - | - |
| Stream C-B | 0.06 | 6.55 | 0.05 | 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 - 2026 Base + Dev, AM " model duration: 07:45 - 09:15*
*'D2 - 2026 Base + Dev, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.6.541 at 10/02/2017 15:00:21*

## File summary

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site Number | |
| Date | 08/03/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | rsanthak |
| 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) - 2026 Base + Dev, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Profile Type | D1 - 2026 Base + Dev, AM | 'Turning counts vary over time' option has been selected but all arms use ONE HOUR profile types. Are you sure this is correct? |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2026 Base + Dev, AM | 2026 Base + Dev | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | 71.21 | F |

## Junction Network Options

| Driving Side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| A | A | Whaddon Road (North) | | Major |
| B | B | Development Access | | Minor |
| C | C | Whaddon Road (South) | | 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 | ✓ | 3.50 | 180.00 | | |

*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 | Two lanes | | 5.00 | 5.00 | | | | | | | | 240 | 180 |

## 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 | 784.936 | 0.143 | 0.361 | 0.227 | 0.516 |
| 1 | B-C | 884.876 | 0.136 | 0.343 | - | - |
| 1 | C-B | 774.158 | 0.300 | 0.300 | - | - |

*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 | | 415.00 | 100.000 |
| B | ONE HOUR | | 635.00 | 100.000 |
| C | ONE HOUR | | 494.00 | 100.000 |

# Direct/Resultant Flows

## Direct Flows Data

| Time Segment | Arm | Direct Demand Entry Flow (PCU/hr) | DirectDemandEntryFlowInPCU (PCU/hr) | Direct Demand Exit Flow (PCU/hr) | Direct Demand Pedestrian Flow (Ped/hr) |
|---|---|---|---|---|---|
| 07:45-08:00 | A | 312.43 | 312.43 | | |
| 07:45-08:00 | B | 478.06 | 478.06 | | |
| 07:45-08:00 | C | 371.91 | 371.91 | | |
| 08:00-08:15 | A | 373.08 | 373.08 | | |
| 08:00-08:15 | B | 570.85 | 570.85 | | |
| 08:00-08:15 | C | 444.10 | 444.10 | | |
| 08:15-08:30 | A | 456.92 | 456.92 | | |
| 08:15-08:30 | B | 699.15 | 699.15 | | |
| 08:15-08:30 | C | 543.90 | 543.90 | | |
| 08:30-08:45 | A | 456.92 | 456.92 | | |
| 08:30-08:45 | B | 699.15 | 699.15 | | |
| 08:30-08:45 | C | 543.90 | 543.90 | | |
| 08:45-09:00 | A | 373.08 | 373.08 | | |
| 08:45-09:00 | B | 570.85 | 570.85 | | |
| 08:45-09:00 | C | 444.10 | 444.10 | | |
| 09:00-09:15 | A | 312.43 | 312.43 | | |
| 09:00-09:15 | B | 478.06 | 478.06 | | |
| 09:00-09:15 | C | 371.91 | 371.91 | | |

# Turning Proportions

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (07:45-08:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 36.560 | 419.970 |
| | B | 453.880 | 0.000 | 259.830 |
| | C | 452.800 | 33.060 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (07:45-08:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.08 | 0.92 |
| | B | 0.64 | 0.00 | 0.36 |
| | C | 0.93 | 0.07 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (08:00-08:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 28.730 | 453.120 |
| | B | 507.280 | 0.000 | 230.130 |
| | C | 539.500 | 34.470 | 0.000 |

## Turning Proportions (PCU) - Junction 1 - (08:00-08:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.06 | 0.94 |
| | B | 0.69 | 0.00 | 0.31 |
| | C | 0.94 | 0.06 | 0.00 |

## Turning Counts / Proportions (PCU/hr) - Junction 1 - (08:15-08:30)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 28.200 | 444.810 |
| | B | 497.970 | 0.000 | 225.910 |
| | C | 529.600 | 33.840 | 0.000 |

## Turning Proportions (PCU) - Junction 1 - (08:15-08:30)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.06 | 0.94 |
| | B | 0.69 | 0.00 | 0.31 |
| | C | 0.94 | 0.06 | 0.00 |

## Turning Counts / Proportions (PCU/hr) - Junction 1 - (08:30-08:45)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 23.850 | 376.220 |
| | B | 421.180 | 0.000 | 191.070 |
| | C | 447.910 | 28.620 | 0.000 |

## Turning Proportions (PCU) - Junction 1 - (08:30-08:45)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.06 | 0.94 |
| | B | 0.69 | 0.00 | 0.31 |
| | C | 0.94 | 0.06 | 0.00 |

## Turning Counts / Proportions (PCU/hr) - Junction 1 - (08:45-09:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 18.180 | 286.840 |
| | B | 321.120 | 0.000 | 145.680 |
| | C | 341.520 | 21.820 | 0.000 |

## Turning Proportions (PCU) - Junction 1 - (08:45-09:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.06 | 0.94 |
| | B | 0.69 | 0.00 | 0.31 |
| | C | 0.94 | 0.06 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (09:00-09:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 12.120 | 223.100 |
| | B | 224.790 | 0.000 | 119.190 |
| | C | 357.040 | 29.940 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (09:00-09:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.05 | 0.95 |
| | B | 0.65 | 0.00 | 0.35 |
| | C | 0.92 | 0.08 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.100 | 1.100 | 1.100 |
| | B | 1.100 | 1.100 | 1.100 |
| | C | 1.100 | 1.100 | 1.100 |

### Heavy Vehicle Percentages - Junction 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 10.0 | 10.0 | 10.0 |
| | B | 10.0 | 10.0 | 10.0 |
| | C | 10.0 | 10.0 | 10.0 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 0.40 | 11.92 | 0.71 | B |
| B-A | 0.98 | 104.34 | 13.39 | F |
| C-A | - | - | - | - |
| C-B | 0.05 | 6.55 | 0.06 | A |
| A-B | - | - | - | - |
| A-C | - | - | - | - |

# Main Results for each time segment

## Main results: (07:45-08:00)

| 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 | 174.04 | 172.55 | 0.00 | 681.33 | 0.255 | 0.37 | 7.761 | A |
| B-A | 304.02 | 299.42 | 0.00 | 585.64 | 0.519 | 1.15 | 13.629 | B |
| C-A | 346.60 | 346.60 | 0.00 | - | - | - | - | - |
| C-B | 25.31 | 25.14 | 0.00 | 680.44 | 0.037 | 0.04 | 6.041 | A |
| A-B | 25.02 | 25.02 | 0.00 | - | - | - | - | - |
| A-C | 287.41 | 287.41 | 0.00 | - | - | - | - | - |

## 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 | 178.15 | 177.90 | 0.00 | 623.09 | 0.286 | 0.43 | 8.888 | A |
| B-A | 392.70 | 387.00 | 0.00 | 546.23 | 0.719 | 2.58 | 24.042 | C |
| C-A | 417.43 | 417.43 | 0.00 | - | - | - | - | - |
| C-B | 26.67 | 26.66 | 0.00 | 662.25 | 0.040 | 0.05 | 6.229 | A |
| A-B | 22.24 | 22.24 | 0.00 | - | - | - | - | - |
| A-C | 350.83 | 350.83 | 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 | 218.19 | 217.11 | 0.00 | 550.89 | 0.396 | 0.71 | 11.825 | B |
| B-A | 480.96 | 451.26 | 0.00 | 492.59 | 0.976 | 10.00 | 68.813 | F |
| C-A | 511.24 | 511.24 | 0.00 | - | - | - | - | - |
| C-B | 32.67 | 32.61 | 0.00 | 637.10 | 0.051 | 0.06 | 6.550 | A |
| A-B | 27.24 | 27.24 | 0.00 | - | - | - | - | - |
| A-C | 429.68 | 429.68 | 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 | 218.19 | 218.16 | 0.00 | 550.40 | 0.396 | 0.71 | 11.917 | B |
| B-A | 480.96 | 467.42 | 0.00 | 492.56 | 0.976 | 13.39 | 104.341 | F |
| C-A | 511.24 | 511.24 | 0.00 | - | - | - | - | - |
| C-B | 32.67 | 32.67 | 0.00 | 637.10 | 0.051 | 0.06 | 6.550 | A |
| A-B | 27.24 | 27.24 | 0.00 | - | - | - | - | - |
| A-C | 429.68 | 429.68 | 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 | 178.15 | 179.15 | 0.00 | 606.02 | 0.294 | 0.46 | 9.299 | A |
| B-A | 392.70 | 433.69 | 0.00 | 546.19 | 0.719 | 3.14 | 43.690 | E |
| C-A | 417.43 | 417.43 | 0.00 | - | - | - | - | - |
| C-B | 26.67 | 26.72 | 0.00 | 662.25 | 0.040 | 0.05 | 6.230 | A |
| A-B | 22.24 | 22.24 | 0.00 | - | - | - | - | - |
| A-C | 350.84 | 350.84 | 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 | 165.65 | 166.05 | 0.00 | 672.17 | 0.246 | 0.36 | 7.831 | A |
| B-A | 312.41 | 319.70 | 0.00 | 582.59 | 0.536 | 1.32 | 15.451 | C |
| C-A | 343.14 | 343.14 | 0.00 | - | - | - | - | - |
| C-B | 28.77 | 28.77 | 0.00 | 680.44 | 0.042 | 0.05 | 6.076 | A |
| A-B | 16.10 | 16.10 | 0.00 | - | - | - | - | - |
| A-C | 296.34 | 296.34 | 0.00 | - | - | - | - | - |

# (Default Analysis Set) - 2026 Base + Dev, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Profile Type | D2 - 2026 Base + Dev, PM | 'Turning counts vary over time' option has been selected but all arms use ONE HOUR profile types. Are you sure this is correct? |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2026 Base + Dev, PM | 2026 Base + Dev | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | 8.14 | A |

## Junction Network Options

| Driving Side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| A | A | Whaddon Road (North) | | Major |
| B | B | Development Access | | Minor |
| C | C | Whaddon Road (South) | | 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 | ✓ | 3.50 | 180.00 | | |

*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 | Two lanes | | 5.00 | 5.00 | | | | | | | | 240 | 180 |

## 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 | 784.936 | 0.143 | 0.361 | 0.227 | 0.516 |
| 1 | B-C | 884.876 | 0.136 | 0.343 | - | - |
| 1 | C-B | 774.158 | 0.300 | 0.300 | - | - |

*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 | | 578.00 | 100.000 |
| B | ONE HOUR | | 134.00 | 100.000 |
| C | ONE HOUR | | 255.00 | 100.000 |

# Direct/Resultant Flows

## Direct Flows Data

| Time Segment | Arm | Direct Demand Entry Flow (PCU/hr) | DirectDemandEntryFlowInPCU (PCU/hr) | Direct Demand Exit Flow (PCU/hr) | Direct Demand Pedestrian Flow (Ped/hr) |
|---|---|---|---|---|---|
| 16:45-17:00 | A | 435.15 | 435.15 | | |
| 16:45-17:00 | B | 100.88 | 100.88 | | |
| 16:45-17:00 | C | 191.98 | 191.98 | | |
| 17:00-17:15 | A | 519.61 | 519.61 | | |
| 17:00-17:15 | B | 120.46 | 120.46 | | |
| 17:00-17:15 | C | 229.24 | 229.24 | | |
| 17:15-17:30 | A | 636.39 | 636.39 | | |
| 17:15-17:30 | B | 147.54 | 147.54 | | |
| 17:15-17:30 | C | 280.76 | 280.76 | | |
| 17:30-17:45 | A | 636.39 | 636.39 | | |
| 17:30-17:45 | B | 147.54 | 147.54 | | |
| 17:30-17:45 | C | 280.76 | 280.76 | | |
| 17:45-18:00 | A | 519.61 | 519.61 | | |
| 17:45-18:00 | B | 120.46 | 120.46 | | |
| 17:45-18:00 | C | 229.24 | 229.24 | | |
| 18:00-18:15 | A | 435.15 | 435.15 | | |
| 18:00-18:15 | B | 100.88 | 100.88 | | |
| 18:00-18:15 | C | 191.98 | 191.98 | | |

# Turning Proportions

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (16:45-17:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 165.990 | 254.800 |
| | B | 62.750 | 0.000 | 53.630 |
| | C | 295.950 | 133.800 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (16:45-17:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.39 | 0.61 |
| | B | 0.54 | 0.00 | 0.46 |
| | C | 0.69 | 0.31 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (17:00-17:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 165.990 | 415.780 |
| | B | 83.660 | 0.000 | 51.640 |
| | C | 361.710 | 152.920 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (17:00-17:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.29 | 0.71 |
| | B | 0.62 | 0.00 | 0.38 |
| | C | 0.70 | 0.30 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (17:15-17:30)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 203.700 | 510.140 |
| | B | 102.650 | 0.000 | 63.360 |
| | C | 443.800 | 187.620 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (17:15-17:30)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.29 | 0.71 |
| | B | 0.62 | 0.00 | 0.38 |
| | C | 0.70 | 0.30 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (17:30-17:45)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 154.220 | 386.290 |
| | B | 77.730 | 0.000 | 47.980 |
| | C | 336.060 | 142.070 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (17:30-17:45)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.29 | 0.71 |
| | B | 0.62 | 0.00 | 0.38 |
| | C | 0.70 | 0.30 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (17:45-18:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 135.390 | 339.110 |
| | B | 68.230 | 0.000 | 42.120 |
| | C | 295.010 | 124.720 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (17:45-18:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.29 | 0.71 |
| | B | 0.62 | 0.00 | 0.38 |
| | C | 0.70 | 0.30 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (18:00-18:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 135.390 | 376.790 |
| | B | 48.330 | 0.000 | 50.540 |
| | C | 350.330 | 163.090 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (18:00-18:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.26 | 0.74 |
| | B | 0.49 | 0.00 | 0.51 |
| | C | 0.68 | 0.32 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.100 | 1.100 | 1.100 |
| | B | 1.100 | 1.100 | 1.100 |
| | C | 1.100 | 1.100 | 1.100 |

### Heavy Vehicle Percentages - Junction 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 10.0 | 10.0 | 10.0 |
| | B | 10.0 | 10.0 | 10.0 |
| | C | 10.0 | 10.0 | 10.0 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 0.08 | 6.43 | 0.10 | A |
| B-A | 0.18 | 9.54 | 0.24 | A |
| C-A | - | - | - | - |
| C-B | 0.14 | 7.92 | 0.18 | A |
| A-B | - | - | - | - |
| A-C | - | - | - | - |

# Main Results for each time segment

## Main results: (16:45-17:00)

| 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 | 46.49 | 46.20 | 0.00 | 753.90 | 0.062 | 0.07 | 5.592 | A |
| B-A | 54.39 | 53.96 | 0.00 | 604.27 | 0.090 | 0.11 | 7.196 | A |
| C-A | 132.21 | 132.21 | 0.00 | - | - | - | - | - |
| C-B | 59.77 | 59.32 | 0.00 | 643.64 | 0.093 | 0.11 | 6.773 | A |
| A-B | 171.65 | 171.65 | 0.00 | - | - | - | - | - |
| A-C | 263.49 | 263.49 | 0.00 | - | - | - | - | - |

## 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 | 45.98 | 45.96 | 0.00 | 712.68 | 0.065 | 0.08 | 5.939 | A |
| B-A | 74.49 | 74.25 | 0.00 | 557.52 | 0.134 | 0.17 | 8.189 | A |
| C-A | 161.12 | 161.12 | 0.00 | - | - | - | - | - |
| C-B | 68.12 | 68.02 | 0.00 | 618.30 | 0.110 | 0.14 | 7.196 | A |
| A-B | 148.25 | 148.25 | 0.00 | - | - | - | - | - |
| A-C | 371.36 | 371.36 | 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 | 56.31 | 56.21 | 0.00 | 672.37 | 0.084 | 0.10 | 6.427 | A |
| B-A | 91.23 | 90.94 | 0.00 | 506.42 | 0.180 | 0.24 | 9.524 | A |
| C-A | 197.34 | 197.34 | 0.00 | - | - | - | - | - |
| C-B | 83.43 | 83.24 | 0.00 | 583.27 | 0.143 | 0.18 | 7.917 | A |
| A-B | 181.60 | 181.60 | 0.00 | - | - | - | - | - |
| A-C | 454.79 | 454.79 | 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 | 56.31 | 56.31 | 0.00 | 672.26 | 0.084 | 0.10 | 6.428 | A |
| B-A | 91.23 | 91.22 | 0.00 | 506.32 | 0.180 | 0.24 | 9.539 | A |
| C-A | 197.34 | 197.34 | 0.00 | - | - | - | - | - |
| C-B | 83.42 | 83.42 | 0.00 | 583.27 | 0.143 | 0.18 | 7.922 | A |
| A-B | 181.58 | 181.58 | 0.00 | - | - | - | - | - |
| A-C | 454.81 | 454.81 | 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 | 45.98 | 46.08 | 0.00 | 712.50 | 0.065 | 0.08 | 5.942 | A |
| B-A | 74.48 | 74.76 | 0.00 | 557.38 | 0.134 | 0.17 | 8.209 | A |
| C-A | 161.12 | 161.12 | 0.00 | - | - | - | - | - |
| C-B | 68.12 | 68.30 | 0.00 | 618.30 | 0.110 | 0.14 | 7.204 | A |
| A-B | 148.26 | 148.26 | 0.00 | - | - | - | - | - |
| A-C | 371.35 | 371.35 | 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 | 51.57 | 51.55 | 0.00 | 743.46 | 0.069 | 0.08 | 5.722 | A |
| B-A | 49.31 | 49.60 | 0.00 | 591.27 | 0.083 | 0.10 | 7.316 | A |
| C-A | 130.99 | 130.99 | 0.00 | - | - | - | - | - |
| C-B | 60.98 | 61.07 | 0.00 | 643.64 | 0.095 | 0.12 | 6.800 | A |
| A-B | 115.03 | 115.03 | 0.00 | - | - | - | - | - |
| A-C | 320.12 | 320.12 | 0.00 | - | - | - | - | - |

# Junctions 8

## PICADY 8 - Priority Intersection Module

Version: 8.0.6.541 [19821,26/11/2015]


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:** 2017-02-10 Priority Site Access_SH_TP.arc8
**Path:** L:\106xxx\1067760 South West Milton Keynes\09 Docs\C-Cals\02 Jn Modelling\Access Junctions\Corrected Flows
**Report generation date:** 13/02/2017 10:38:38



## Summary of junction performance

| | AM | | | |
|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS |
| | A1 - 2026 Base + Dev | | | |
| Stream B-C | 0.57 | 10.64 | 0.35 | B |
| Stream B-A | 6.05 | 54.16 | 0.87 | F |
| Stream C-A | - | - | - | - |
| Stream C-B | 0.06 | 6.52 | 0.05 | 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 - 2026 Base + Dev, AM " model duration: 07:45 - 09:15*
*"D2 - 2026 Base + Dev, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.6.541 at 13/02/2017 10:38:37*

## File summary

| | |
|---|---|
| Title | (untitled) |
| Location | |
| Site Number | |
| Date | 08/03/2016 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | |
| Jobnumber | |
| Enumerator | rsanthak |
| 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) - 2026 Base + Dev, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Profile Type | D1 - 2026 Base + Dev, AM | 'Turning counts vary over time' option has been selected but all arms use ONE HOUR profile types. Are you sure this is correct? |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2026 Base + Dev, AM | 2026 Base + Dev | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | 38.32 | E |

## Junction Network Options

| Driving Side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | Whaddon Road (North) | | Major |
| **B** | B | Development Access | | Minor |
| **C** | C | Whaddon Road (South) | | 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 | 6.40 | | 0.00 | ✓ | 3.50 | 180.00 | | |

*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 | Two lanes | | 5.00 | 5.00 | | | | | | | | 240 | 180 |

### 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 | 784.936 | 0.140 | 0.355 | 0.223 | 0.507 |
| 1 | B-C | 884.876 | 0.133 | 0.337 | - | - |
| 1 | C-B | 774.158 | 0.295 | 0.295 | - | - |

*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 | | 415.00 | 100.000 |
| B | ONE HOUR | | 635.00 | 90.000 |
| C | ONE HOUR | | 494.00 | 100.000 |

# Direct/Resultant Flows

## Direct Flows Data

| Time Segment | Arm | Direct Demand Entry Flow (PCU/hr) | DirectDemandEntryFlowInPCU (PCU/hr) | Direct Demand Exit Flow (PCU/hr) | Direct Demand Pedestrian Flow (Ped/hr) |
|---|---|---|---|---|---|
| 07:45-08:00 | A | 312.43 | 312.43 | | |
| 07:45-08:00 | B | 478.06 | 478.06 | | |
| 07:45-08:00 | C | 371.91 | 371.91 | | |
| 08:00-08:15 | A | 373.08 | 373.08 | | |
| 08:00-08:15 | B | 570.85 | 570.85 | | |
| 08:00-08:15 | C | 444.10 | 444.10 | | |
| 08:15-08:30 | A | 456.92 | 456.92 | | |
| 08:15-08:30 | B | 699.15 | 699.15 | | |
| 08:15-08:30 | C | 543.90 | 543.90 | | |
| 08:30-08:45 | A | 456.92 | 456.92 | | |
| 08:30-08:45 | B | 699.15 | 699.15 | | |
| 08:30-08:45 | C | 543.90 | 543.90 | | |
| 08:45-09:00 | A | 373.08 | 373.08 | | |
| 08:45-09:00 | B | 570.85 | 570.85 | | |
| 08:45-09:00 | C | 444.10 | 444.10 | | |
| 09:00-09:15 | A | 312.43 | 312.43 | | |
| 09:00-09:15 | B | 478.06 | 478.06 | | |
| 09:00-09:15 | C | 371.91 | 371.91 | | |

# Turning Proportions

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (07:45-08:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 36.560 | 419.970 |
| | B | 453.880 | 0.000 | 259.830 |
| | C | 452.800 | 33.060 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (07:45-08:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.08 | 0.92 |
| | B | 0.64 | 0.00 | 0.36 |
| | C | 0.93 | 0.07 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (08:00-08:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 28.730 | 453.120 |
| | B | 507.280 | 0.000 | 230.130 |
| | C | 539.500 | 34.470 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (08:00-08:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.06 | 0.94 |
| | B | 0.69 | 0.00 | 0.31 |
| | C | 0.94 | 0.06 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (08:15-08:30)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 28.200 | 444.810 |
| | B | 497.970 | 0.000 | 225.910 |
| | C | 529.600 | 33.840 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (08:15-08:30)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.06 | 0.94 |
| | B | 0.69 | 0.00 | 0.31 |
| | C | 0.94 | 0.06 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (08:30-08:45)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 23.850 | 376.220 |
| | B | 421.180 | 0.000 | 191.070 |
| | C | 447.910 | 28.620 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (08:30-08:45)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.06 | 0.94 |
| | B | 0.69 | 0.00 | 0.31 |
| | C | 0.94 | 0.06 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (08:45-09:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 18.180 | 286.840 |
| | B | 321.120 | 0.000 | 145.680 |
| | C | 341.520 | 21.820 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (08:45-09:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.06 | 0.94 |
| | B | 0.69 | 0.00 | 0.31 |
| | C | 0.94 | 0.06 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (09:00-09:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 12.120 | 223.100 |
| | B | 224.790 | 0.000 | 119.190 |
| | C | 357.040 | 29.940 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (09:00-09:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.05 | 0.95 |
| | B | 0.65 | 0.00 | 0.35 |
| | C | 0.92 | 0.08 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.100 | 1.100 | 1.100 |
| | B | 1.100 | 1.100 | 1.100 |
| | C | 1.100 | 1.100 | 1.100 |

### Heavy Vehicle Percentages - Junction 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 10.0 | 10.0 | 10.0 |
| | B | 10.0 | 10.0 | 10.0 |
| | C | 10.0 | 10.0 | 10.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 0.35 | 10.64 | 0.57 | B |
| B-A | 0.87 | 54.16 | 6.05 | F |
| C-A | - | - | - | - |
| C-B | 0.05 | 6.52 | 0.06 | A |
| A-B | - | - | - | - |
| A-C | - | - | - | - |

# Main Results for each time segment

## Main results: (07:45-08:00)

| 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 | 156.64 | 155.37 | 0.00 | 693.60 | 0.226 | 0.32 | 7.342 | A |
| B-A | 273.62 | 269.90 | 0.00 | 589.11 | 0.464 | 0.93 | 12.269 | B |
| C-A | 346.60 | 346.60 | 0.00 | - | - | - | - | - |
| C-B | 25.31 | 25.14 | 0.00 | 682.07 | 0.037 | 0.04 | 6.026 | A |
| A-B | 25.02 | 25.02 | 0.00 | - | - | - | - | - |
| A-C | 287.41 | 287.41 | 0.00 | - | - | - | - | - |

## 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 | 160.34 | 160.15 | 0.00 | 639.82 | 0.251 | 0.36 | 8.252 | A |
| B-A | 353.43 | 349.69 | 0.00 | 550.38 | 0.642 | 1.87 | 19.373 | C |
| C-A | 417.43 | 417.43 | 0.00 | - | - | - | - | - |
| C-B | 26.67 | 26.66 | 0.00 | 664.20 | 0.040 | 0.05 | 6.210 | A |
| A-B | 22.24 | 22.24 | 0.00 | - | - | - | - | - |
| A-C | 350.83 | 350.83 | 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 | 196.37 | 195.58 | 0.00 | 573.59 | 0.342 | 0.56 | 10.454 | B |
| B-A | 432.86 | 418.94 | 0.00 | 497.68 | 0.870 | 5.34 | 44.079 | E |
| C-A | 511.24 | 511.24 | 0.00 | - | - | - | - | - |
| C-B | 32.67 | 32.61 | 0.00 | 639.49 | 0.051 | 0.06 | 6.525 | A |
| A-B | 27.24 | 27.24 | 0.00 | - | - | - | - | - |
| A-C | 429.68 | 429.68 | 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 | 196.37 | 196.33 | 0.00 | 568.43 | 0.345 | 0.57 | 10.640 | B |
| B-A | 432.86 | 430.03 | 0.00 | 497.65 | 0.870 | 6.05 | 54.157 | F |
| C-A | 511.24 | 511.24 | 0.00 | - | - | - | - | - |
| C-B | 32.67 | 32.67 | 0.00 | 639.49 | 0.051 | 0.06 | 6.525 | A |
| A-B | 27.24 | 27.24 | 0.00 | - | - | - | - | - |
| A-C | 429.68 | 429.68 | 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 | 160.34 | 161.12 | 0.00 | 632.71 | 0.253 | 0.38 | 8.410 | A |
| B-A | 353.43 | 369.26 | 0.00 | 550.34 | 0.642 | 2.09 | 23.508 | C |
| C-A | 417.43 | 417.43 | 0.00 | - | - | - | - | - |
| C-B | 26.67 | 26.72 | 0.00 | 664.20 | 0.040 | 0.05 | 6.214 | A |
| A-B | 22.24 | 22.24 | 0.00 | - | - | - | - | - |
| A-C | 350.84 | 350.84 | 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 | 149.08 | 149.36 | 0.00 | 686.21 | 0.217 | 0.31 | 7.382 | A |
| B-A | 281.17 | 285.38 | 0.00 | 586.11 | 0.480 | 1.04 | 13.343 | B |
| C-A | 343.14 | 343.14 | 0.00 | - | - | - | - | - |
| C-B | 28.77 | 28.77 | 0.00 | 682.07 | 0.042 | 0.05 | 6.060 | A |
| A-B | 16.10 | 16.10 | 0.00 | - | - | - | - | - |
| A-C | 296.34 | 296.34 | 0.00 | - | - | - | - | - |

# (Default Analysis Set) - 2026 Base + Dev, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Profile Type | D2 - 2026 Base + Dev, PM | 'Turning counts vary over time' option has been selected but all arms use ONE HOUR profile types. Are you sure this is correct? |

## 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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 2026 Base + Dev, PM | 2026 Base + Dev | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | 7.97 | A |

## Junction Network Options

| Driving Side | Lighting |
|---|---|
| Left | Normal/unknown |

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| A | A | Whaddon Road (North) | | Major |
| B | B | Development Access | | Minor |
| C | C | Whaddon Road (South) | | 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 | 6.40 | | 0.00 | ✓ | 3.50 | 180.00 | | |

*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 | Two lanes | | 5.00 | 5.00 | | | | | | | | 240 | 180 |

### 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 | 784.936 | 0.140 | 0.355 | 0.223 | 0.507 |
| 1 | B-C | 884.876 | 0.133 | 0.337 | - | - |
| 1 | C-B | 774.158 | 0.295 | 0.295 | - | - |

*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 | | 578.00 | 100.000 |
| B | ONE HOUR | | 134.00 | 90.000 |
| C | ONE HOUR | | 255.00 | 100.000 |

# Direct/Resultant Flows

## Direct Flows Data

| Time Segment | Arm | Direct Demand Entry Flow (PCU/hr) | DirectDemandEntryFlowInPCU (PCU/hr) | Direct Demand Exit Flow (PCU/hr) | Direct Demand Pedestrian Flow (Ped/hr) |
|---|---|---|---|---|---|
| 16:45-17:00 | A | 435.15 | 435.15 | | |
| 16:45-17:00 | B | 100.88 | 100.88 | | |
| 16:45-17:00 | C | 191.98 | 191.98 | | |
| 17:00-17:15 | A | 519.61 | 519.61 | | |
| 17:00-17:15 | B | 120.46 | 120.46 | | |
| 17:00-17:15 | C | 229.24 | 229.24 | | |
| 17:15-17:30 | A | 636.39 | 636.39 | | |
| 17:15-17:30 | B | 147.54 | 147.54 | | |
| 17:15-17:30 | C | 280.76 | 280.76 | | |
| 17:30-17:45 | A | 636.39 | 636.39 | | |
| 17:30-17:45 | B | 147.54 | 147.54 | | |
| 17:30-17:45 | C | 280.76 | 280.76 | | |
| 17:45-18:00 | A | 519.61 | 519.61 | | |
| 17:45-18:00 | B | 120.46 | 120.46 | | |
| 17:45-18:00 | C | 229.24 | 229.24 | | |
| 18:00-18:15 | A | 435.15 | 435.15 | | |
| 18:00-18:15 | B | 100.88 | 100.88 | | |
| 18:00-18:15 | C | 191.98 | 191.98 | | |

# Turning Proportions

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (16:45-17:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 165.990 | 254.800 |
| | B | 62.750 | 0.000 | 53.630 |
| | C | 295.950 | 133.800 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (16:45-17:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.39 | 0.61 |
| | B | 0.54 | 0.00 | 0.46 |
| | C | 0.69 | 0.31 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (17:00-17:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 165.990 | 415.780 |
| | B | 83.660 | 0.000 | 51.640 |
| | C | 361.710 | 152.920 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (17:00-17:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.29 | 0.71 |
| | B | 0.62 | 0.00 | 0.38 |
| | C | 0.70 | 0.30 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (17:15-17:30)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 203.700 | 510.140 |
| | B | 102.650 | 0.000 | 63.360 |
| | C | 443.800 | 187.620 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (17:15-17:30)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.29 | 0.71 |
| | B | 0.62 | 0.00 | 0.38 |
| | C | 0.70 | 0.30 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (17:30-17:45)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 154.220 | 386.290 |
| | B | 77.730 | 0.000 | 47.980 |
| | C | 336.060 | 142.070 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (17:30-17:45)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.29 | 0.71 |
| | B | 0.62 | 0.00 | 0.38 |
| | C | 0.70 | 0.30 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (17:45-18:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 135.390 | 339.110 |
| | B | 68.230 | 0.000 | 42.120 |
| | C | 295.010 | 124.720 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (17:45-18:00)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.29 | 0.71 |
| | B | 0.62 | 0.00 | 0.38 |
| | C | 0.70 | 0.30 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 1 - (18:00-18:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 135.390 | 376.790 |
| | B | 48.330 | 0.000 | 50.540 |
| | C | 350.330 | 163.090 | 0.000 |

### Turning Proportions (PCU) - Junction 1 - (18:00-18:15)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.26 | 0.74 |
| | B | 0.49 | 0.00 | 0.51 |
| | C | 0.68 | 0.32 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.100 | 1.100 | 1.100 |
| | B | 1.100 | 1.100 | 1.100 |
| | C | 1.100 | 1.100 | 1.100 |

### Heavy Vehicle Percentages - Junction 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 10.0 | 10.0 | 10.0 |
| | B | 10.0 | 10.0 | 10.0 |
| | C | 10.0 | 10.0 | 10.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS |
|---|---|---|---|---|
| B-C | 0.07 | 6.30 | 0.09 | A |
| B-A | 0.16 | 9.23 | 0.21 | A |
| C-A | - | - | - | - |
| C-B | 0.14 | 7.87 | 0.18 | A |
| A-B | - | - | - | - |
| A-C | - | - | - | - |

# Main Results for each time segment

## Main results: (16:45-17:00)

| 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 | 41.84 | 41.58 | 0.00 | 757.65 | 0.055 | 0.06 | 5.529 | A |
| B-A | 48.95 | 48.57 | 0.00 | 607.41 | 0.081 | 0.10 | 7.081 | A |
| C-A | 132.21 | 132.21 | 0.00 | - | - | - | - | - |
| C-B | 59.77 | 59.33 | 0.00 | 645.91 | 0.093 | 0.11 | 6.747 | A |
| A-B | 171.65 | 171.65 | 0.00 | - | - | - | - | - |
| A-C | 263.49 | 263.49 | 0.00 | - | - | - | - | - |

## 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 | 41.38 | 41.37 | 0.00 | 717.80 | 0.058 | 0.07 | 5.853 | A |
| B-A | 67.04 | 66.83 | 0.00 | 561.48 | 0.119 | 0.15 | 8.002 | A |
| C-A | 161.12 | 161.12 | 0.00 | - | - | - | - | - |
| C-B | 68.12 | 68.02 | 0.00 | 621.01 | 0.110 | 0.13 | 7.161 | A |
| A-B | 148.25 | 148.25 | 0.00 | - | - | - | - | - |
| A-C | 371.36 | 371.36 | 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 | 50.68 | 50.59 | 0.00 | 678.86 | 0.075 | 0.09 | 6.303 | A |
| B-A | 82.10 | 81.86 | 0.00 | 511.27 | 0.161 | 0.21 | 9.217 | A |
| C-A | 197.34 | 197.34 | 0.00 | - | - | - | - | - |
| C-B | 83.43 | 83.24 | 0.00 | 586.60 | 0.142 | 0.18 | 7.865 | A |
| A-B | 181.60 | 181.60 | 0.00 | - | - | - | - | - |
| A-C | 454.79 | 454.79 | 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 | 50.68 | 50.68 | 0.00 | 678.76 | 0.075 | 0.09 | 6.304 | A |
| B-A | 82.10 | 82.10 | 0.00 | 511.17 | 0.161 | 0.21 | 9.228 | A |
| C-A | 197.34 | 197.34 | 0.00 | - | - | - | - | - |
| C-B | 83.42 | 83.42 | 0.00 | 586.60 | 0.142 | 0.18 | 7.869 | A |
| A-B | 181.58 | 181.58 | 0.00 | - | - | - | - | - |
| A-C | 454.81 | 454.81 | 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 | 41.38 | 41.46 | 0.00 | 717.65 | 0.058 | 0.07 | 5.856 | A |
| B-A | 67.03 | 67.27 | 0.00 | 561.34 | 0.119 | 0.15 | 8.020 | A |
| C-A | 161.12 | 161.12 | 0.00 | - | - | - | - | - |
| C-B | 68.12 | 68.30 | 0.00 | 621.01 | 0.110 | 0.14 | 7.168 | A |
| A-B | 148.26 | 148.26 | 0.00 | - | - | - | - | - |
| A-C | 371.35 | 371.35 | 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 | 46.41 | 46.39 | 0.00 | 747.30 | 0.062 | 0.07 | 5.649 | A |
| B-A | 44.38 | 44.63 | 0.00 | 594.64 | 0.075 | 0.09 | 7.204 | A |
| C-A | 130.99 | 130.99 | 0.00 | - | - | - | - | - |
| C-B | 60.98 | 61.07 | 0.00 | 645.91 | 0.094 | 0.12 | 6.771 | A |
| A-B | 115.03 | 115.03 | 0.00 | - | - | - | - | - |
| A-C | 320.12 | 320.12 | 0.00 | - | - | - | - | - |