



HAVANT ROAD, EMSWORTH

ADDENDUM TRANSPORT ASSESSMENT

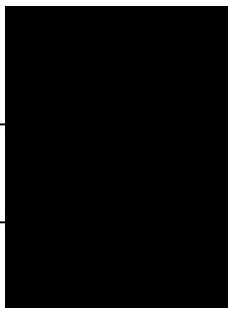
March 2017

Barratt Homes Ltd

RESIDENTIAL DEVELOPMENT  
HAVANT ROAD, EMSWORTH

ADDENDUM TRANSPORT ASSESSMENT

CONTROLLED DOCUMENT

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| Prepared by:               | Beth Wilson |  | March 2017 |
| Checked:                   | Mark Smith  |                                                                                      | March 2017 |
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**BARRATT**  
HOMES

Barratt Homes Ltd  
Tollbar House  
Tollbar Way  
Hedge End  
Southampton  
SO30 2UH



Paul Basham Associates Ltd  
Lancaster Court  
8 Barnes Wallis Road  
Fareham  
Hampshire  
PO15 5TU

# RESIDENTIAL DEVELOPMENT HAVANT ROAD, EMSWORTH

## ADDENDUM TRANSPORT ASSESSMENT

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## 1. INTRODUCTION

- 1.1 This Addendum Transport Assessment (ATA) has been prepared by Paul Basham Associates (PBA) on behalf of Barratt Homes (BH) Ltd to support a revised application for a proposed residential development comprising 161 dwellings at Havant Road, Emsworth.
- 1.2 The previous application was submitted in July 2016 for the '*erection of 192 dwellings with associated parking, access, landscaping and surface water drainage, pumping station and substation*' (application reference APP/16/00774). The application was supported by a full Transport Assessment (TA) and Travel Plan (TP) prepared by PBA, with pre-application advice also sought from Hampshire County Council (HCC).
- 1.3 Subsequent to the application being submitted HCC and Highways England (HE) were consulted to assess the highways implications of such a development. Discussions have been ongoing between HCC, HE and PBA via e-mail, telephone and formal written correspondence throughout the process. In addition Havant Borough Council have been consulted, and provided comments on, the internal site layout
- 1.4 The correspondence between all parties is referred to throughout this report. The correspondence demonstrates that a number of issues which were raised at an early stage have been addressed and overcome, and one of the aims of this report is to provide an overview of the information which has been agreed, as well as to provide further information/ clarification on that which is still outstanding. Whilst correspondence is not appended to this report, it is referred to where relevant and appropriate, and each document can be provided on request.
- 1.5 In addition, this report addresses changes to the site layout which includes the reduction in unit numbers from 192 to 161, an updated accommodation schedule, updated car parking layout & numbers and updated internal road layout (and therefore revised details of internal visibility & tracking).
- 1.6 Details of the existing Local Road Network, Site Accessibility and Personal Injury Accident (PIA) data were assessed in detail as part of the previous application. As there are no outstanding issues or concerns raised by either HCC or HE relating to these points and these points are not affected by the site layout or unit number changes, this ATA does not include any further information in this regard.

1.7 An Addendum Travel Plan has also been prepared by PBA to respond to comments made by HCC and HE on the full Travel Plan which was submitted as part of the original application. This is a separate document and should be read in conjunction with this report.

1.8 The remainder of this ATA will be structured in the following manner:

**Chapter 2:** Proposed Revised Scheme

**Chapter 3:** Site Access

**Chapter 4:** Development Traffic Impact

**Chapter 5:** Trip Distribution

**Chapter 6:** TEMPRO Growth Factors

**Chapter 7:** Junction Capacity Assessments

**Chapter 8:** Contributions

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## 2. PROPOSED REVISED SCHEME

### Accommodation Schedule

- 2.1 The revised scheme comprises 161 dwellings (compared to the former 192), of which 30% would be affordable. The revised accommodation schedule is summarised in **Table 1**, with the revised site layout included as **Appendix A**.

|            | Unit Type             | Number of Dwellings |
|------------|-----------------------|---------------------|
| Affordable | 1 Bedroom Flat        | 3                   |
|            | 2 Bedroom Flat        | 12                  |
|            | 2 Bedroom Coach House | 4                   |
|            | 2 Bedroom House       | 10                  |
|            | 3 Bedroom House       | 19                  |
|            | <b>TOTAL</b>          | <b>48</b>           |
| Private    | 1 Bedroom Flat        | 3                   |
|            | 2 Bedroom Flat        | 18                  |
|            | 2 Bedroom Coach House | 5                   |
|            | 2 Bedroom House       | 18                  |
|            | 3 Bedroom House       | 56                  |
|            | 4 Bedroom House       | 13                  |
|            | <b>TOTAL</b>          | <b>113</b>          |
|            | <b>Total</b>          | <b>161</b>          |

**Table 1:** Revised Accommodation Schedule

### Car Parking Provision

- 2.2 As per the previous TA (July 2016), Havant Borough Council's Parking Supplementary Planning Document (adopted in July 2016) has been used to assess the revised parking provision associated with this revised scheme. The standards are outlined (along with the associated car parking requirements for the site) in **Table 2**.

| Size of Dwelling | Car Parking Requirements per Dwelling | Total Units | Total Requirements |
|------------------|---------------------------------------|-------------|--------------------|
| 1 Bedroom        | 1 space                               | 6           | 6                  |
| 2 Bedroom        | 2 spaces                              | 67          | 134                |
| 3 Bedroom        | 2 spaces                              | 75          | 150                |
| 4+ Bedroom       | 3 spaces                              | 13          | 39                 |
| <b>TOTAL</b>     | <b>-</b>                              | <b>161</b>  | <b>329</b>         |

**Table 2:** HBC Adopted Car Parking Standards & Requirements

- 2.3 In addition to these minimum requirements an additional 20% unallocated parking provision for visitors is required.
- 2.4 The revised development provides a total of 326 residential spaces, of which 1 space would be provided for the 1 bedroom units, 1-2 spaces for the 2 bedrooms units, 2 spaces per 3 bedroom units and 3 spaces per 4 bedroom unit. A further 27 spaces are intended for formal visitor parking spaces, totalling 353 spaces.

- 2.5 The slight shortfall below the standards relates to plots 110, 117 and 129 (all 2 bedroom Coach Houses) and additional visitor parking is provided near each of these plots. The parking layout is provided as **Appendix B**.

#### **Cycle Parking Provision**

- 2.6 As detailed in the previous TA, long-stay cycle parking will be provided for each unit within a dedicated cycle shed in the rear of each garden, or a garage (where provided and measuring at least 6m x 3m). For the flats, secure, communal cycle stores are proposed, which will be overlooked and well-lit to ensure that the stores are safe and user-friendly. Cycle storage is demonstrated on the Cycle Parking and Bin Storage layout, included as **Appendix C**.

#### **Internal Road Layout**

- 2.7 As per the previous layout the parameters have been designed to create an attractive and permeable pedestrian and cycle environment and have been tailored through the application process to further achieve this by providing a 'Trim Trail' around the perimeter of the site and ensure that sufficient open space is provided.
- 2.8 The development site's spine road measures 5.5m in width, after which the carriageways become narrower and more reflective of Manual for Streets (MfS) design guidance principles, with 4.8m being sufficient for a car and larger vehicle to pass. To summarise the design principles on which the scheme is based:
- Site access measures 7.2m in width to allow for the proposed signalised site access, after which the internal spine road narrows to 5.5m. Adjacent to plot 69 the spine road narrows to 4.8m, with a continued width beyond this point to the rear of the site.
  - The entire length of the spine road is supported by a 2m wide footways on the northern side, with at least a 1m wide and in most places a 2m wide footway on the southern side.
  - The southern loop road leading off the spine road measures 4.8m in width, supported by 2m wide footways on either side.
  - A 2m wide 'Trim Trail' is provided around the perimeter of the site.
- 2.9 In accordance with MfS design guidelines, all carriageway bends within the peripheries of the proposed internal site design (i.e. away from the spine road) would achieve the required inter-visibility for vehicles travelling up to 15mph within the site, supported by planting maintained below 600m in height. Visibility along the length of the spine road is achieved for vehicles travelling up to 20mph. Internal visibility and forward visibility splays are demonstrated in **Appendix D**.

### **Servicing and Emergency Access**

- 2.10 Tracking has been undertaken on the revised site layout, demonstrating a 'super large' refuse vehicle successfully manoeuvring through the site, as demonstrated in **Appendix E**. In keeping with MfS (paragraph 6.8.9) and Building Regulation guidance, no resident would be required to carry their bins greater than 30m to a collection point or kerb edge, and the refuse vehicle would be able to get within 25m of each property or collection point.
- 2.11 The revised access has also been assessed to ensure that a fire tender can successfully turn on-site, and get within 45m of each building, in line with Building Regulation requirements.
- 2.12 As per the previous application, further pedestrian and cycle access is proposed via a separate access on Selangor Avenue, in the location of the existing gated access. The pedestrian/ cycle access is demonstrated on the site layout and measures 3m in width and will be supported by lockable bollards.

### 3. SITE ACCESS

- 3.1 The TA (July 2016) outlined the site access discussions to date and proposed that, based on the anticipated peak movements from the site, a simple priority bellmouth arrangement should be provided. This was supported by modelling using PICADY software which identified that this type of access would operate within capacity without impacting on the existing operation of Havant Road.
- 3.2 PBA also provided modelling results within the TA to demonstrate the comparable impact of a signalised junction which was identified by HCC in their pre-application correspondence as the preferred access arrangement. The signalised junction modelling results identified a queue length of 25.2 vehicles on Havant Road (WB) in the AM Peak, and 26.2 vehicles on Havant Road (EB) in the PM Peak, compared to queue lengths of 0-1 vehicles on Havant Road when modelling a simple priority junction.
- 3.3 Whilst a simple priority site access was identified by PBA as the most appropriate based on the above queue length differences, HCC also provided further feedback on the impact of the site access in their formal consultation response. Their response states, *'It [the modelling of the signalised crossing] does not acknowledge the safety benefit the controlled operation would provide for those vehicles existing the development.'* HCC went on to request that further modelling was undertaken to refine the scenarios to be more reflective of the potential junction operation.
- 3.4 Revised modelling of the signal junction was requested by HCC's ITS team on 15<sup>th</sup> December 2016. The revised modelling was requested in order to understand the potential difference between providing a 90 second and a 120 second cycle time, with a pedestrian phase every other cycle. Further modelling was undertaken using each scenario (90 seconds and 120 seconds), and whilst longer queues are experienced on the site access arm using the 120 second cycle time, the queues on Havant Road are shorter, and are therefore considered more suitable to ensure that as little delay as possible is experienced on the busiest arm.
- 3.5 In addition, a further modelling scenario was requested on 16<sup>th</sup> February 2017 to understand the impact of the 2036 future year. However the current version of TEMPRO does not take into account the committed developments outlined in Havant Borough Council's Housing Statement (adopted in December 2016), and therefore the '2036 future year' scenario is unrepresentative of the future Local Road Network.

3.6 The modelling of the site access has now been updated to reflect the change in unit numbers to 161 units, with the resulting 120 cycle time outputs (with a pedestrian phase every other cycle) provided in **Table 3** ('2021 with development' scenario) and **Table 4** ('2026 with development' scenario) and also included as **Appendix F**. Whilst the 2036 scenario has not been provided, the models have been updated to reflect the 2026 scenario (the future year scenario requested for the Havant Road/ A27 junction, to provide consistency in assessment). In addition, the 90 second cycle time outputs have also been included in **Appendix F** for information purposes.

| 2021 With Development<br>(120 second cycle time) | AM Peak              |                           |                      | PM Peak              |                           |                      |
|--------------------------------------------------|----------------------|---------------------------|----------------------|----------------------|---------------------------|----------------------|
|                                                  | Mean Max Queue (pcu) | Av. Delay Per PCU (s/pcu) | Degree of Saturation | Mean Max Queue (pcu) | Av. Delay Per PCU (s/pcu) | Degree of Saturation |
| Havant Road (WB)                                 | 25.7                 | 11.4                      | 73.5%                | 11.8                 | 7.4                       | 49.7%                |
| Havant Road (EB)                                 | 12.9                 | 7.4                       | 52.5%                | 26.0                 | 11.5                      | 74.2%                |
| Site Access                                      | 2.3                  | 80.0                      | 45.9%                | 1.0                  | 71.3                      | 22.1%                |

**Table 3:** Proposed Site Access Linsig Outputs ('2021 with development')

| 2026 With Development<br>(120 second cycle time) | AM Peak              |                           |                      | PM Peak              |                           |                      |
|--------------------------------------------------|----------------------|---------------------------|----------------------|----------------------|---------------------------|----------------------|
|                                                  | Mean Max Queue (pcu) | Av. Delay Per PCU (s/pcu) | Degree of Saturation | Mean Max Queue (pcu) | Av. Delay Per PCU (s/pcu) | Degree of Saturation |
| Havant Road (WB)                                 | 41.8                 | 17.8                      | 78.5%                | 15.9                 | 9.7                       | 53.2%                |
| Havant Road (EB)                                 | 16.8                 | 9.3                       | 56.0%                | 41.8                 | 17.8                      | 79.4%                |
| Site Access                                      | 3.8                  | 118.0                     | 45.9%                | 1.8                  | 108.7                     | 22.1%                |

**Table 4:** Proposed Site Access Linsig Outputs ('2026 with development')

3.7 As demonstrated in **Table 3**, in the AM Peak period the signalised junction arrangement is expected to generate maximum queues of 26 vehicles (on the Havant Road WB arm), with 13 vehicles demonstrated on the Havant Road EB arm and 3 vehicles at the site access. In the PM Peak period, the junction is expected to generate maximum queues of 26 vehicles (on the Havant Road EB arm), with 13 vehicles on the Havant Road EB arm and 1 vehicle at the site access.

3.8 **Table 4** demonstrates the proposed access outputs in the PM Peak, with a maximum queue of 41 vehicles (on the Havant Road WB arm), with 17 vehicles demonstrated on the Havant Road EB arm and 4 vehicles at the site access. In the PM Peak period, the junction is expected to generate maximum queues of 42 vehicles (on the Havant Road EB arm), with 16 vehicles on the Havant Road EB arm and 2 vehicles at the site access.

- 3.9 It was requested by HCC that the modelling should ensure that the queuing vehicles at the signalised junction do not encroach on the A27 roundabouts or affect its operation. The roundabouts are located 370m from the proposed site access, and the maximum queue length on the Havant Road (EB) arm of 42 vehicles (in the 2026, PM Peak) would equate to a distance of 252m. The site access is therefore expected to have no impact on the A27 linked roundabouts.
- 3.10 Due to the overriding safety benefit of providing a signalised crossing over a simple priority junction arrangement, it is expected that the above modelling will be considered sufficient to justify the proposed site access, particularly given that comments from HCC have already been addressed. In addition, the 120 cycle time with a pedestrian phase every other cycle is considered a worst case scenario, with pedestrians unlikely to cross this often.

#### 4. DEVELOPMENT TRAFFIC IMPACT

- 4.1 As previously described, the revised layout incorporates 31 fewer dwellings than previously assessed (in terms of traffic impact), and it is therefore considered that the revised unit numbers will be considered acceptable by HCC and HE.
- 4.2 Nonetheless and for the sake of clarity, the revised trip generation (using the previously agreed trip rates) are included in **Table 5**.

|                      | AM Peak (0800—0900) |              | PM Peak (1700-1800) |              | Total Daily  |
|----------------------|---------------------|--------------|---------------------|--------------|--------------|
|                      | Arrivals            | Departures   | Arrivals            | Departures   |              |
| <b>Trip Rate</b>     | <b>0.145</b>        | <b>0.362</b> | <b>0.329</b>        | <b>0.174</b> | <b>4.479</b> |
| <b>161 Dwellings</b> | <b>23</b>           | <b>58</b>    | <b>53</b>           | <b>28</b>    | <b>721</b>   |

**Table 5:** TRICS Trip Rates & Development Traffic Impact

- 4.3 The revised trip rate analysis indicates likely trip generation of 721 daily vehicle trips, with 81 vehicle trips in the AM Peak (0800-0900) and in the PM Peak (1700-1800). This trip generation is a reduction compared to the previously proposed 860 daily trips (with 98 trips in the AM Peak and 96 trips in the PM Peak).

## 5. TRIP DISTRIBUTION

- 5.1 The TA provided details of the anticipated trip distribution from the site based on ATC surveys which were undertaken on Havant Road, the turning count surveys undertaken at the A27 linked roundabouts and the Emsworth Road roundabout and validated by Census Data. A 70%/30% split was concluded, whereby the majority of traffic would turn right out of the site towards the A27 in the AM Peak with the opposite occurring in the peak period.
- 5.2 This trip distribution was agreed in writing at the pre-application stage by HCC, and was subsequently noted as acceptable in HCC's consultee response.
- 5.3 HE's first response stated, *'it is noted that no analysis of Census data, indicating where people currently living in the ward are travelling to get to their place of work, has been undertaken to consider what percentage of vehicle trips shall be using the SRN...it is unclear where the 70% figure has come from and this should be clarified'*.
- 5.4 Subsequently and as a direct response to HE's concerns, further information was provided via e-mail. This provided further details on the validity of the trip distribution figure and gave details of the Census Data which was used at the time of assessment. It also noted that the 70% figure was considered a robust approach when compared to the Havant Road ATC data, directing more traffic through the A27 roundabouts to ensure the 'worst case' scenario was tested.
- 5.5 In HE's second response it was agreed that the trip distribution methodology is robust, and therefore that the forecasted development impact assessments are appropriate.
- 5.6 The revised trip distribution diagrams based on this approach and using the revised unit numbers are included as **Appendix G**.

## 6. TEMPRO GROWTH FACTORS

- 6.1 The TA provided a growth factor for the 2016-2021 period, using the NTEM adjusted growth factor for the Emsworth district.
- 6.2 The 2016-2021 growth rates were agreed by HCC at the pre-application stage and again referred to in their formal consultee response. These growth rates were also agreed by HE.
- 6.3 As HE requested additional information to be provided in the form of further modelling at the A27 linked roundabouts for the 2026 future year scenario, a further growth factor was required from 2021-2026. The 2021-2026 growth rates are presented in **Table 6**, with the associated TEMPRO outputs included as **Appendix H**.

| Period    | Growth Rate |         |
|-----------|-------------|---------|
|           | AM Peak     | PM Peak |
| 2021-2026 | 1.0683      | 1.0731  |

**Table 6:** 2021-2026 TEMPRO Growth Outputs

- 6.4 As the growth rate parameters are the same as those previously used, it is anticipated that they will be considered acceptable. The revised modelling has been completed on this basis.

## 7. JUNCTION CAPACITY ASSESSMENTS

### Scope of Junction Assessment

- 7.1 The TA undertook junction capacity assessments of five junctions, as requested at the pre-application stage by HCC. These were:
- Proposed Site Access (further assessment included within **Chapter 3** of this report)
  - Southleigh Road/ Emsworth Road Junction
  - Victoria Road/ North Street Junction
  - Emsworth Roundabout;
  - Havant Road/ A27 Slip Road/ church Lane Roundabout and Emsworth Road/ Havant Road/ A27 Slip Road Roundabout (A27 linked roundabouts)
- 7.2 The Southleigh Road/ Emsworth Road junction and the Victoria Road/ North Street junction were first assessed in terms of the percentage increase of traffic expected on these junctions based on the turning count surveys and distribution assessments. As the percentage increase in traffic was extremely low at both junctions, neither were further assessed.
- 7.3 It was agreed by HCC in their consultee response that no further modelling work was required at either junction.
- 7.4 The site access was assessed using PICADY 5 modelling software, with the results presented in the TA (July 2016). Whilst no issues with the modelling itself was found by either HCC or HE, the junction is now proposed to be signalised, and therefore the modelling contained in the TA is superseded. The site access modelling is contained within **Chapter 3** of this report.

### Modelling Scenarios

- 7.5 The modelling scenarios that were presented in the original TA are as follows:
- Future Year 2021;
  - Future Year 2021 + Development;
  - Future Year 2021 + Development + Mitigation (where required).
- 7.6 Whilst the modelling scenarios were not discussed in HCC's consultee response, HE requested that further modelling should be undertaken in the following scenarios also:
- The development and construction phase;
  - The opening year, assuming full build out and occupation; and
  - Either a date ten years after the date of registration of the associated planning application or the end of the Local Plan period (whichever is greater).

- 7.7 PBA's response stated, *'the scope of modelling assessment was agreed with HCC through the pre-application process, presuming a full build out and occupation year of 2021. If required by Highways England, a 2026 year modelling scenario could be provided – although this would only identify additional traffic on the network through wider growth rather than development related impact.'*
- 7.8 Nonetheless, in the interest of obtaining a solution on the matter, PBA undertook further modelling of the 2026 period. The results of this revised modelling was included in an e-mail to HE and HCC.
- 7.9 As the revised scheme comprises 161 units, rather than the previously submitted 192, all updated modelling has been undertaken in the following scenarios:
- 2016 Baseline
  - 2021 Baseline
  - 2021 'with development'
  - 2026 Baseline
  - 2026 'with development'
  - 2021 'with development + mitigation' (where appropriate)
  - 2026 'with development + mitigation' (where appropriate).
- 7.10 The modelling was originally undertaken using ARCADY 7 (for each roundabout) and PICADY 5 (for the site access).
- 7.11 Whilst not specifically mentioned in the HCC's consultee response, HCC asked for the A27 linked roundabout junction models to be re-run using Junction 9 rather than ARCADY 8 in an e-mail dated 31<sup>st</sup> October 2016. All models have since been re-run using Junctions 9, and so slightly different results can be seen (including for the baseline scenarios) than those originally submitted. This is because Junctions 9 enables the user to 'link' the roundabouts, and also to assign flows to particular lanes.

## Modelling Results

### Emsworth Roundabout

- 7.12 The TA provided modelling of the Havant Road/ North Street/ High Street Roundabout (Emsworth Roundabout), which demonstrated that the roundabout would operate within capacity in all scenarios. This was accepted by HCC within their consultee response, where it was stated that, *'As the junction will be operating within capacity, no capacity improvement works are required at this junction.'* As HE did not comment on this roundabout, it is assumed that they also accept this stance.
- 7.13 The Emsworth Roundabout has been re-modelled to include the revised unit numbers (161 units). As the unit numbers are less than those previously submitted and agreed, it is anticipated that the revised modelling will be accepted. The following modelling scenarios for the Emsworth Roundabout are included in **Appendix I**:
- 2016 Baseline;
  - 2021 Baseline;
  - 2026 Baseline;
  - 2021 'with development';
  - 2026 'with development'.

### A27 Linked Roundabouts

- 7.14 The TA provided modelling of the A27/ Emsworth Road Roundabout and the A27/ Havant Road Roundabout using ARCADY 8, which uses separate models and cannot 'link' roundabouts. As previously described, HCC requested the modelling to be updated using Junctions 9 software, which allows users to 'link' the roundabouts, and also assign lanes to traffic movements.
- 7.15 As a direct response to HCC's comments, PBA updated all models to use Junction 9, which enabled the 'link' function and the lane assignment. In addition, the model was updated to reflect the recently undertaken topographical survey (rather than OS mapping) and the revised models were therefore considered much more accurate.
- 7.16 As the modelling was updated subsequent to HCC's consultee response the comments made in this response do not apply to the revised modelling. Rather, e-mail comments from HCC relating to the A27 linked roundabouts relate to e-mails dated 17<sup>th</sup> November 2016 and 16<sup>th</sup> February 2017.

- 7.17 Once comments were provided by HE PBA were able to update the junction models to address all outstanding comments. The comments from HE were broadly positive, however suggested a few amendments which could be made to the model.
- 7.18 PBA updated all modelling using the updated unit numbers, as well as the suggestions made by HE in their response. These included:
- Junction 1 Arm 3 modelled with a consistent approach width and entry width (7.3m) with no flare;
  - Junction 2 Arm 1 modelled with a consistent approach and entry width (6.08m) with no flare;
  - HGV percentages to match survey outputs;
- 7.19 PBA were also asked by HE to validate all models using queue length surveys. Queue length surveys are being undertaken, and the results will be provided subsequently.
- 7.20 The results of the updated modelling were provided in an e-mail to HCC & HE. The A27 linked roundabout modelling results are contained in the remainder of this Chapter. For clarity, the baseline scenarios have been grouped, as have the 'with development + mitigation' scenarios. Again for clarity, the 'with development' (and no mitigation) scenarios have not been included in this assessment, as the development would not come forward without the associated mitigation works. All updated modelling for the A27 linked roundabouts is included in **Appendix J**.

### **Analysis of Baseline Scenarios**

#### 2016 Baseline

- 7.21 **Table 7** demonstrates the 2016 Baseline modelling outputs. As shown, the junction operates within capacity, with an RFC of less than 0.85 on each arm and maximum queues of 6 vehicles on one arm (Junction 2 – Havant Road) in the PM Peak and 5 vehicles on one arm (Junction 1 – A27 Off-Slip) in the PM Peak.

| 2016 Baseline                          | AM Peak      |       |       | PM Peak      |       |       |
|----------------------------------------|--------------|-------|-------|--------------|-------|-------|
|                                        | Queue Length | Delay | RFC   | Queue Length | Delay | RFC   |
| <b>Junction 1 (A27/ Emsworth Road)</b> |              |       |       |              |       |       |
| Arm 2 – Emsworth Road (S)              | 0.4          | 5.06  | 0.272 | 0.4          | 5.23  | 0.284 |
| Arm 3 – A27 Off-Slip                   | 1.9          | 6.30  | 0.567 | 4.6          | 11.23 | 0.778 |
| Arm 4 – Emsworth Road (N)              | 3.4          | 19.57 | 0.752 | 3.6          | 25.42 | 0.750 |
| <b>Junction 2 (A27/ Havant Road)</b>   |              |       |       |              |       |       |
| Arm 1 – A27 Off-slip                   | 0.1          | 4.02  | 0.076 | 0.2          | 5.09  | 0.157 |
| Arm 2 – Havant Road                    | 5.7          | 15.58 | 0.826 | 1.6          | 6.74  | 0.527 |
| Arm 3 – Church Lane                    | 0.0          | 0.00  | 0.000 | 0.0          | 0.00  | 0.000 |
| Arm 5 – Emsworth Road (S)              | 3.3          | 8.98  | 0.725 | 4.4          | 10.58 | 0.802 |

**Table 7:** 2016 Baseline Scenario (A27 Roundabouts)

### 2021 Baseline

7.22 As demonstrated in **Table 8** in the 2021 future year Baseline scenario, the Emsworth Road (N) arm and the Havant Road arm are shown to be approaching capacity in the AM Peak, with the A27 Off-Slip (Junction 1), the Emsworth Road (S) arm and the Emsworth Road (N) arm approaching capacity in the PM Peak.

| 2021 Baseline                          | AM Peak      |       |       | PM Peak      |       |       |
|----------------------------------------|--------------|-------|-------|--------------|-------|-------|
|                                        | Queue Length | Delay | RFC   | Queue Length | Delay | RFC   |
| <b>Junction 1 (A27/ Emsworth Road)</b> |              |       |       |              |       |       |
| Arm 2 – Emsworth Road (S)              | 0.4          | 5.20  | 0.292 | 0.5          | 5.54  | 0.311 |
| Arm 3 – A27 Off-Slip                   | 2.5          | 7.39  | 0.632 | 9.7          | 19.76 | 0.871 |
| Arm 4 – Emsworth Road (N)              | 8.2          | 41.79 | 0.874 | 10.0         | 63.30 | 0.901 |
| <b>Junction 2 (A27/ Havant Road)</b>   |              |       |       |              |       |       |
| Arm 1 – A27 Off-slip                   | 0.1          | 4.36  | 0.092 | 0.3          | 5.84  | 0.184 |
| Arm 2 – Havant Road                    | 12.3         | 32.23 | 0.928 | 2.0          | 7.72  | 0.594 |
| Arm 3 – Church Lane                    | 0.0          | 0.00  | 0.000 | 0.0          | 0.00  | 0.000 |
| Arm 5 – Emsworth Road (S)              | 4.4          | 10.70 | 0.794 | 6.2          | 12.92 | 0.877 |

**Table 8:** 2021 Baseline Scenario (A27 Roundabouts)

7.23 In the AM Peak, the Emsworth Road (N) arm demonstrates an increase in queue length from 3.4 vehicles in the 2016 Baseline scenario to 8.2 vehicles (an increase of 4.8 vehicles). In addition, the delay in seconds increases from 19.57 to 41.79 (an increase of 22.22 seconds), with the RFC increased by 0.122 from the 2016 Baseline scenario. The Havant Road arm shows an increase in queue length from 5.7 vehicles to 12.3 vehicles (an increase of 6.6 vehicles). The delay in seconds increases compared to the 2016 Baseline scenario from 32.23 to 60.79 (an increase of 28.56 seconds), with the RFC increased by 0.04 from the 2016 Baseline scenario.

7.24 In the PM Peak, the A27 Off-slip (Junction 1) demonstrates an increase in queue length from 4.6 vehicles in the 2016 Baseline scenario to 9.7 vehicles (an increase of 5.1 vehicles). In addition, the delay in seconds increases from 11.23 to 19.76 (an increase of 8.53 seconds), with the RFC increased by 0.093 from the 2016 Baseline scenario. The Emsworth Road (S) arm shows an increase in queue length from 4.4 vehicles to 6.2 vehicles (an increase of 1.8 vehicles). The delay in seconds increases compared to the 2016 Baseline scenario from 10.58 to 12.92 (an increase of 2.34 seconds), with the RFC increased by 0.075 from the 2016 Baseline scenario. The Emsworth Road (N) arm demonstrates an increase in queue length from 3.6 vehicles to 10 vehicles (an increase of 6.4 vehicles). The delay in seconds increases compared to the 2016 Baseline scenario from 25.42 to 63.30 (an increase of 37.88 seconds), with the RFC increased by 0.151 from the 2016 Baseline scenario.

#### 2026 Baseline

7.25 As shown in **Table 9**, in the 2026 future year Baseline scenario, the Emsworth Road (N) arm and the Havant Road arm are shown to be approaching capacity in the AM Peak, with the A27 Off-Slip (Junction 1), the Emsworth Road (S) arm and the Emsworth Road (N) arm approaching capacity in the PM Peak, as per the 2021 scenario.

| 2026 Baseline                          | AM Peak      |       |       | PM Peak      |        |       |
|----------------------------------------|--------------|-------|-------|--------------|--------|-------|
|                                        | Queue Length | Delay | RFC   | Queue Length | Delay  | RFC   |
| <b>Junction 1 (A27/ Emsworth Road)</b> |              |       |       |              |        |       |
| Arm 2 – Emsworth Road (S)              | 0.4          | 5.26  | 0.305 | 0.5          | 5.73   | 0.337 |
| Arm 3 – A27 Off-Slip                   | 3.1          | 8.51  | 0.678 | 24.1         | 44.17  | 0.946 |
| Arm 4 – Emsworth Road (N)              | 17.0         | 81.72 | 0.964 | 26.0         | 146.14 | 1.009 |
| <b>Junction 2 (A27/ Havant Road)</b>   |              |       |       |              |        |       |
| Arm 1 – A27 Off-slip                   | 0.1          | 4.90  | 0.099 | 0.3          | 6.37   | 0.210 |
| Arm 2 – Havant Road                    | 26.0         | 60.79 | 0.968 | 2.3          | 8.57   | 0.640 |
| Arm 3 – Church Lane                    | 0.0          | 0.00  | 0.000 | 0.0          | 0.00   | 0.000 |
| Arm 5 – Emsworth Road (S)              | 4.8          | 11.93 | 0.835 | 6.8          | 14.73  | 0.911 |

**Table 9:** 2026 Baseline Scenario (A27 Roundabouts)

- 7.26 In the AM Peak, the Emsworth Road (N) arm demonstrates an increase in queue length from 8.2 vehicles in the 2021 Baseline scenario to 17.0 vehicles (an increase of 8 vehicles). In addition, the delay in seconds increases from 41.79 to 81.72 (an increase of 39.93 seconds), with the RFC increased by 0.09 from the 2021 Baseline scenario. The Havant Road arm shows an increase in queue length from 12.3 vehicles to 26 vehicles (an increase of 13.7 vehicles). The delay in seconds increases compared to the 2021 Baseline scenario from 32.23 to 60.79 (an increase of 28.56 seconds), with the RFC increased by 0.04 from the 2021 Baseline scenario.
- 7.27 In the PM Peak, the A27 Off-slip (Junction 1) demonstrates an increase in queue length from 9.7 vehicles in the 2021 Baseline scenario to 24.1 vehicles (an increase of 14.4 vehicles). In addition, the delay in seconds increases from 19.76 to 44.17 (an increase of 24.41 seconds), with the RFC increased by 0.075 from the 2021 Baseline scenario. The Emsworth Road (S) arm shows an increase in queue length from 6.2 vehicles to 6.8 vehicles (an increase of 0.6 vehicles). The delay in seconds increases compared to the 2021 Baseline scenario from 12.92 to 14.73 (an increase of 1.81 seconds), with the RFC increased by 0.034 from the 2021 Baseline scenario. The Emsworth Road (N) arm demonstrates an increase in queue length from 10 vehicles to 26 vehicles (an increase of 16 vehicles). The delay in seconds increases compared to the 2021 Baseline scenario from 63.30 to 146.14 (an increase of 82.84 seconds), with the RFC increased by 0.108 from the 2021 Baseline scenario.

#### Summary

- 7.28 To summarise the baseline scenarios, **Table 10** demonstrates the increase in queue length, delay and RFC over time, if no development were to come forward in the AM Peak, with **Table 11** demonstrating this in the PM Peak. The queue length figures have been rounded up to the nearest vehicle, and the delays have also been rounded to the nearest second.

| AM (Baseline)                   | 2016         | 2021         | 2026         | TOTAL INCREASE (2016-2026) | 2016  | 2021  | 2026  | TOTAL INCREASE (2016-2026) | 2016  | 2021  | 2026  | TOTAL INCREASE (2016-2026) |
|---------------------------------|--------------|--------------|--------------|----------------------------|-------|-------|-------|----------------------------|-------|-------|-------|----------------------------|
|                                 | Queue Length | Queue Length | Queue Length |                            | Delay | Delay | Delay |                            | RFC   | RFC   | RFC   |                            |
| Junction 1 (A27/ Emsworth Road) |              |              |              |                            |       |       |       |                            |       |       |       |                            |
| Arm 2 – Emsworth Road (S)       | 1            | 1            | 1            | 0                          | 5     | 5     | 5     | 0                          | 0.272 | 0.292 | 0.305 | +0.033                     |
| Arm 3 – A27 Off-Slip            | 2            | 3            | 4            | +2                         | 6     | 7     | 9     | +3                         | 0.567 | 0.632 | 0.678 | +0.111                     |
| Arm 4 – Emsworth Road (N)       | 4            | 9            | 17           | +13                        | 20    | 42    | 82    | +62                        | 0.752 | 0.874 | 0.964 | +0.212                     |
| Junction 2 (A27/ Havant Road)   |              |              |              |                            |       |       |       |                            |       |       |       |                            |
| Arm 1 – A27 Off-slip            | 1            | 1            | 1            | 0                          | 4     | 4     | 5     | +1                         | 0.076 | 0.092 | 0.099 | +0.023                     |
| Arm 2 – Havant Road             | 6            | 13           | 26           | +20                        | 16    | 32    | 61    | +45                        | 0.826 | 0.928 | 0.968 | +0.142                     |
| Arm 3 – Church Lane             | 0            | 0            | 0            | 0                          | 0     | 0     | 0     | 0                          | 0.000 | 0.000 | 0.000 | 0.00                       |
| Arm 5 – Emsworth Road (S)       | 4            | 5            | 5            | +1                         | 9     | 11    | 12    | +3                         | 0.725 | 0.794 | 0.835 | +0.11                      |

**Table 10:** Summary of Baseline Scenarios (AM Peak) (A27 Roundabouts)

| PM (Baseline)                   | 2016         | 2021         | 2026         | TOTAL INCREASE (2016-2026) | 2016  | 2021  | 2026  | TOTAL INCREASE (2016-2026) | 2016  | 2021  | 2026  | TOTAL INCREASE (2016-2026) |
|---------------------------------|--------------|--------------|--------------|----------------------------|-------|-------|-------|----------------------------|-------|-------|-------|----------------------------|
|                                 | Queue Length | Queue Length | Queue Length |                            | Delay | Delay | Delay |                            | RFC   | RFC   | RFC   |                            |
| Junction 1 (A27/ Emsworth Road) |              |              |              |                            |       |       |       |                            |       |       |       |                            |
| Arm 2 – Emsworth Road (S)       | 1            | 1            | 1            | 0                          | 5     | 6     | 6     | +1                         | 0.284 | 0.311 | 0.337 | +0.053                     |
| Arm 3 – A27 Off-Slip            | 5            | 10           | 25           | +20                        | 11    | 20    | 44    | +33                        | 0.778 | 0.871 | 0.946 | +0.168                     |
| Arm 4 – Emsworth Road (N)       | 4            | 10           | 26           | +22                        | 25    | 63    | 146   | +121                       | 0.750 | 0.901 | 1.009 | +0.259                     |
| Junction 2 (A27/ Havant Road)   |              |              |              |                            |       |       |       |                            |       |       |       |                            |
| Arm 1 – A27 Off-slip            | 1            | 1            | 1            | 0                          | 5     | 6     | 6     | +1                         | 0.157 | 0.184 | 0.210 | +0.053                     |
| Arm 2 – Havant Road             | 2            | 2            | 3            | +1                         | 7     | 8     | 9     | +2                         | 0.527 | 0.594 | 0.640 | +0.113                     |
| Arm 3 – Church Lane             | 0            | 0            | 0            | 0                          | 0     | 0     | 0     | 0                          | 0.000 | 0.000 | 0.000 | 0.000                      |
| Arm 5 – Emsworth Road (S)       | 5            | 7            | 7            | +2                         | 11    | 13    | 15    | +4                         | 0.802 | 0.877 | 0.911 | +0.109                     |

**Table 11:** Summary of Baseline Scenarios (PM Peak) (A27 Roundabouts)

7.29 **Tables 10 and 11** demonstrate that, if the development weren't to come forward, the Emsworth Road (N) arm and the Havant Road arm would be considered to be approaching capacity' in the AM Peak, with the A27 Off-Slip (Junction 1), the Emsworth Road (N) arm and the Emsworth Road (S) arm approaching/ at capacity in the PM Peak in both the 2021 and the 2026 Baseline scenarios.

## Proposed Mitigation Works

- 7.30 The proposed extent of mitigation works on the Havant Road arm and the Emsworth Road (S) arm have been agreed by HCC, and are demonstrated in **Appendix K**.
- 7.31 It should be noted that HCC were at first concerned that the Emsworth Road arm of the roundabout in the PM Peak would operate over capacity in the 2021 'with development' scenario, and therefore that further mitigation works on this arm would be desired. Further analysis was provided to HCC, which summarised the proposed justification which this ATA would provide to alleviate these potential concerns raised by HCC. This justification is presented within the remainder of this Chapter.

## Analysis of 'With Development + Mitigation' Scenarios

### 2021 'with Development + Mitigation'

- 7.32 **Table 12** demonstrates the '2021 future year with Development + Mitigation scenario.

| 2021 With Development + Mitigation     | AM Peak      |       |       | PM Peak      |       |       |
|----------------------------------------|--------------|-------|-------|--------------|-------|-------|
|                                        | Queue Length | Delay | RFC   | Queue Length | Delay | RFC   |
| <b>Junction 1 (A27/ Emsworth Road)</b> |              |       |       |              |       |       |
| Arm 2 – Emsworth Road (S)              | 0.4          | 5.34  | 0.303 | 0.5          | 5.57  | 0.320 |
| Arm 3 – A27 Off-Slip                   | 2.4          | 7.27  | 0.635 | 9.6          | 20.04 | 0.893 |
| Arm 4 – Emsworth Road (N)              | 7.2          | 38.00 | 0.878 | 12.3         | 72.98 | 0.938 |
| <b>Junction 2 (A27/ Havant Road)</b>   |              |       |       |              |       |       |
| Arm 1 – A27 Off-slip                   | 0.1          | 4.61  | 0.093 | 0.2          | 6.13  | 0.193 |
| Arm 2 – Havant Road                    | 6.5          | 16.42 | 0.844 | 1.7          | 6.13  | 0.540 |
| Arm 3 – Church Lane                    | 0.0          | 0.00  | 0.000 | 0.0          | 0.00  | 0.000 |
| Arm 5 – Emsworth Road (S)              | 3.2          | 8.03  | 0.710 | 4.6          | 9.93  | 0.790 |

**Table 12:** 2021 with Development + Mitigation Scenario (A27 Roundabouts)

7.33 As demonstrated in **Table 12** the Emsworth Road (N) arm is shown to be approaching capacity in the AM Peak, with the impact of the development successfully mitigated on the Havant Road Arm to below the '2021 Baseline' scenario. The Emsworth Road (N) arm demonstrates a decrease in queue length from 8.2 vehicles to 7.2 vehicles when compared with the 2021 Baseline scenario, with a decrease in delay of 3.79 seconds (from 41.79 to 38 seconds). The RFC does however, slightly increase from 0.874 to 0.878 (an increase of 0.04).

7.34 In the PM peak, the 2021 future year with development + mitigation scenario demonstrates the A27 Off-slip and the Emsworth Road (N) arm approaching capacity, with the impact of the development successfully mitigated on the Emsworth Road (S) arm. In the PM Peak, the A27 Off-Slip (Junction 1) demonstrates a decrease in vehicles from 9.7 to 9.6 (a decrease of 0.1 vehicles). The delay is increased slightly from 19.76 to 20.04 seconds (an increase of 0.28 seconds), with the RFC also increases slightly (by 0.037) when comparing to the 2021 Baseline scenario. The Havant Road arm demonstrates a decrease in vehicles from 2 to 1.7, with a decrease also demonstrated when looking at queue length and RFC. The Emsworth Road (S) arm shows an increase in queue length from 10 vehicles to 12.3 vehicles (an increase of 2.3 vehicles). The delay in seconds increases compared to the 2021 Baseline scenario from 63.30 to 72.98 (an increase of 9.68 seconds), with the RFC increased by 0.037 from the 2021 Baseline scenario.

#### 2026 'with development'

7.35 **Table 13** demonstrates the '2026 future year with Development + Mitigation scenario.

| 2026 With Development + Mitigation     | AM Peak      |       |       | PM Peak      |        |       |
|----------------------------------------|--------------|-------|-------|--------------|--------|-------|
|                                        | Queue Length | Delay | RFC   | Queue Length | Delay  | RFC   |
| <b>Junction 1 (A27/ Emsworth Road)</b> |              |       |       |              |        |       |
| Arm 2 – Emsworth Road (S)              | 0.5          | 5.53  | 0.325 | 0.5          | 5.73   | 0.342 |
| Arm 3 – A27 Off-Slip                   | 3.2          | 7.96  | 0.691 | 21.2         | 40.68  | 0.966 |
| Arm 4 – Emsworth Road (N)              | 17.0         | 80.51 | 0.982 | 30.4         | 166.95 | 1.068 |
| <b>Junction 2 (A27/ Havant Road)</b>   |              |       |       |              |        |       |
| Arm 1 – A27 Off-slip                   | 0.1          | 5.01  | 0.108 | 0.3          | 6.67   | 0.222 |
| Arm 2 – Havant Road                    | 9.7          | 24.41 | 0.900 | 1.9          | 6.63   | 0.577 |
| Arm 3 – Church Lane                    | 0.0          | 0.00  | 0.000 | 0.0          | 0.00   | 0.000 |
| Arm 5 – Emsworth Road (S)              | 3.8          | 8.87  | 0.756 | 4.9          | 11.36  | 0.833 |

**Table 13:** 2026 with Development + Mitigation Scenario (A27 Roundabouts)

- 7.36 In the 2026 future year with Development + Mitigation scenario, the Emsworth Road (N) arm and the Havant Road arm are shown to be approaching capacity in the AM Peak. The Emsworth Road (N) arm demonstrates no increase in queue length compared to the 2026 Baseline scenario, with a slight increase in delay from 80.51 seconds to 81.72 seconds (an increase of 1.12 seconds). The RFC shows a slight increase from 0.964 in the Baseline scenario to 0.982 (an increase of 0.018). The Havant Road arm demonstrates a decrease in queue length compared to the baseline scenario of 16.3 vehicles (from 26 vehicles to 9.7 vehicles), with a decrease in delay from 60.79 seconds to 24.41 seconds (a decrease of 36.38 seconds). The RFC is also decreased from the 2026 Baseline scenario, from 0.968 to 0.900 (a decrease of 0.068).
- 7.37 In the PM peak, the 2026 future year with development + mitigation scenario demonstrates the A27 Off-slip approaching capacity, with the Emsworth Road (N) arm considered 'over capacity'. In the PM Peak, the A27 Off-Slip (Junction 1) demonstrates a decrease in queue length from 24.1 to 21.2 (a decrease of 2.9 vehicles). The delay is also reduced, from 44.17 seconds to 40.48 seconds (a decrease of 3.69 seconds) with the RFC slightly increased from 0.966 to 0.946 (an increase of 0.02). The Havant Road Arm demonstrates a decrease in queue length from 2.3 vehicles to 1.9 vehicles, with the delay time and RFC also reduced. The Emsworth Road (N) arm shows an increase in queue length from 26 vehicles to 30.4 vehicles (an increase of 4.4 vehicles). The delay in seconds increases compared to the 2026 Baseline scenario from 146.14 to 166.95 (an increase of 20.81 seconds), with the RFC increased by 0.059 from the 2026 Baseline scenario.

#### Summary

- 7.38 To summarise the 'with Development + Mitigation scenarios against the Baseline scenarios, **Table 14** demonstrates the changes in queue length, delay and RFC in the AM Peak, with **Table 15** demonstrating the same in the PM Peak in the 2021 scenarios. **Table 16** and **Table 17** demonstrate the same in the 2026 scenarios. The queue length figures have been rounded up to the nearest vehicle, and the delays have also been rounded to the nearest second.

| AM Peak                         | 2021 Baseline | 2021 with development + mitigation | TOTAL CHANGE | 2021 Baseline | 2021 with development + mitigation | TOTAL CHANGE | 2021 Baseline | 2021 with development + mitigation | TOTAL CHANGE |
|---------------------------------|---------------|------------------------------------|--------------|---------------|------------------------------------|--------------|---------------|------------------------------------|--------------|
|                                 | Queue Length  | Queue Length                       |              | Delay         | Delay                              |              | RFC           | RFC                                |              |
| Junction 1 (A27/ Emsworth Road) |               |                                    |              |               |                                    |              |               |                                    |              |
| Arm 2 – Emsworth Road (S)       | 1             | 1                                  | 0            | 5             | 5                                  | 0            | 0.292         | 0.303                              | +0.011       |
| Arm 3 – A27 Off-Slip            | 3             | 3                                  | 0            | 7             | 7                                  | 0            | 0.632         | 0.635                              | +0.003       |
| Arm 4 – Emsworth Road (N)       | 9             | 8                                  | -1           | 42            | 38                                 | -4           | 0.874         | 0.878                              | +0.004       |
| Junction 2 (A27/ Havant Road)   |               |                                    |              |               |                                    |              |               |                                    |              |
| Arm 1 – A27 Off-slip            | 1             | 1                                  | 0            | 4             | 5                                  | +1           | 0.092         | 0.093                              | +0.001       |
| Arm 2 – Havant Road             | 13            | 7                                  | -6           | 32            | 16                                 | -16          | 0.928         | 0.844                              | -0.084       |
| Arm 3 – Church Lane             | 0             | 0                                  | 0            | 0             | 0                                  | 0            | 0.000         | 0.000                              | 0.000        |
| Arm 5 – Emsworth Road (S)       | 5             | 4                                  | -1           | 11            | 8                                  | -3           | 0.794         | 0.710                              | -0.084       |

**Table 14:** Summary of 2021 ‘with and without development’ Scenarios (AM Peak) (A27 Roundabouts)

| PM Peak                         | 2021<br>Baseline | 2021 with<br>development +<br>mitigation | TOTAL<br>CHANGE | 2021<br>Baseline | 2021 with<br>development +<br>mitigation | TOTAL<br>CHANGE | 2021<br>Baseline | 2021 with<br>development +<br>mitigation | TOTAL<br>CHANGE |
|---------------------------------|------------------|------------------------------------------|-----------------|------------------|------------------------------------------|-----------------|------------------|------------------------------------------|-----------------|
|                                 | Queue<br>Length  | Queue Length                             |                 | Delay            | Delay                                    |                 | RFC              | RFC                                      |                 |
| Junction 1 (A27/ Emsworth Road) |                  |                                          |                 |                  |                                          |                 |                  |                                          |                 |
| Arm 2 –<br>Emsworth<br>Road (S) | 1                | 1                                        | 0               | 6                | 6                                        | 0               | 0.311            | 0.320                                    | +0.009          |
| Arm 3 –<br>A27 Off-Slip         | 10               | 10                                       | 0               | 20               | 20                                       | 0               | 0.871            | 0.893                                    | +0.022          |
| Arm 4 –<br>Emsworth<br>Road (N) | 10               | 13                                       | +3              | 63               | 73                                       | +10             | 0.901            | 0.938                                    | +0.037          |
| Junction 2 (A27/ Havant Road)   |                  |                                          |                 |                  |                                          |                 |                  |                                          |                 |
| Arm 1 –<br>A27 Off-slip         | 1                | 1                                        | 0               | 6                | 6                                        | 0               | 0.184            | 0.193                                    | +0.009          |
| Arm 2 –<br>Havant<br>Road       | 2                | 2                                        | 0               | 8                | 6                                        | -2              | 0.594            | 0.540                                    | -0.054          |
| Arm 3 –<br>Church<br>Lane       | 0                | 0                                        | 0               | 0                | 0                                        | 0               | 0.000            | 0.000                                    | 0.000           |
| Arm 5 –<br>Emsworth<br>Road (S) | 7                | 5                                        | -2              | 13               | 10                                       | -3              | 0.877            | 0.790                                    | -0.087          |

**Table 15:** Summary of 2021 ‘with and without development’ Scenarios (PM Peak) (A27 Roundabouts)

| AM                              | 2026<br>Baseline | 2026 with<br>development +<br>mitigation | TOTAL<br>CHANGE | 2026<br>Baseline | 2026 with<br>development +<br>mitigation | TOTAL<br>CHANGE | 2026<br>Baseline | 2026 with<br>development +<br>mitigation | TOTAL<br>CHANGE |
|---------------------------------|------------------|------------------------------------------|-----------------|------------------|------------------------------------------|-----------------|------------------|------------------------------------------|-----------------|
|                                 | Queue<br>Length  | Queue Length                             |                 | Delay            | Delay                                    |                 | RFC              | RFC                                      |                 |
| Junction 1 (A27/ Emsworth Road) |                  |                                          |                 |                  |                                          |                 |                  |                                          |                 |
| Arm 2 –<br>Emsworth<br>Road (S) | 1                | 1                                        | 0               | 5                | 6                                        | +1              | 0.305            | 0.325                                    | +0.020          |
| Arm 3 –<br>A27 Off-Slip         | 4                | 4                                        | 0               | 9                | 8                                        | -1              | 0.678            | 0.691                                    | +0.013          |
| Arm 4 –<br>Emsworth<br>Road (N) | 17               | 17                                       | 0               | 82               | 81                                       | -1              | 0.964            | 0.982                                    | +0.018          |
| Junction 2 (A27/ Havant Road)   |                  |                                          |                 |                  |                                          |                 |                  |                                          |                 |
| Arm 1 –<br>A27 Off-slip         | 1                | 1                                        | 0               | 5                | 5                                        | 0               | 0.099            | 0.108                                    | +0.009          |
| Arm 2 –<br>Havant<br>Road       | 26               | 10                                       | -16             | 61               | 24                                       | -37             | 0.968            | 0.900                                    | -0.068          |
| Arm 3 –<br>Church<br>Lane       | 0                | 0                                        | 0               | 0                | 0                                        | 0               | 0.000            | 0.000                                    | 0.000           |
| Arm 5 –<br>Emsworth<br>Road (S) | 5                | 4                                        | -1              | 12               | 9                                        | -3              | 0.855            | 0.756                                    | -0.099          |

**Table 16:** Summary of 2026 ‘with and without development’ Scenarios (AM Peak) (A27 Roundabouts)

| PM                              | 2026<br>Baseline | 2026 with<br>development +<br>mitigation | TOTAL<br>CHANGE | 2026<br>Baseline | 2026 with<br>development +<br>mitigation | TOTAL<br>CHANGE | 2026<br>Baseline | 2026 with<br>development +<br>mitigation | TOTAL<br>CHANGE |
|---------------------------------|------------------|------------------------------------------|-----------------|------------------|------------------------------------------|-----------------|------------------|------------------------------------------|-----------------|
|                                 | Queue<br>Length  | Queue Length                             |                 | Delay            | Delay                                    |                 | RFC              | RFC                                      |                 |
| Junction 1 (A27/ Emsworth Road) |                  |                                          |                 |                  |                                          |                 |                  |                                          |                 |
| Arm 2 –<br>Emsworth<br>Road (S) | 1                | 1                                        | 0               | 6                | 6                                        | 0               | 0.337            | 0.342                                    | +0.005          |
| Arm 3 –<br>A27 Off-Slip         | 25               | 22                                       | -3              | 44               | 41                                       | -3              | 0.946            | 0.966                                    | +0.020          |
| Arm 4 –<br>Emsworth<br>Road (N) | 26               | 31                                       | +5              | 146              | 167                                      | +21             | 1.009            | 1.068                                    | +0.059          |
| Junction 2 (A27/ Havant Road)   |                  |                                          |                 |                  |                                          |                 |                  |                                          |                 |
| Arm 1 –<br>A27 Off-slip         | 1                | 1                                        | 0               | 6                | 7                                        | +1              | 0.210            | 0.222                                    | +0.012          |
| Arm 2 –<br>Havant<br>Road       | 3                | 3                                        | 0               | 9                | 7                                        | -2              | 0.640            | 0.577                                    | -0.063          |
| Arm 3 –<br>Church<br>Lane       | 0                | 0                                        | 0               | 0                | 0                                        | 0               | 0.000            | 0.000                                    | 0.000           |
| Arm 5 –<br>Emsworth<br>Road (S) | 7                | 7                                        | 0               | 15               | 11                                       | -4              | 0.911            | 0.833                                    | -0.078          |

**Table 17:** Summary of 2026 ‘with and without development’ Scenarios (PM Peak) (A27 Roundabouts)

- 7.39 **Tables 14 and 15** show that, if the development were to come forward with the proposed mitigation, the 5-year future (2021) queue length on the Emsworth Road (N) arm would be less than existing in the AM Peak, with delay also reduced. In the PM Peak, a queue of an additional 3 vehicles can be expected, with additional delay of 10 seconds. All other arms show either a decrease or no increase in traffic compared to the 2021 Baseline, apart from a marginal 1 second increase in delay on the A27 Off-Slip (Junction 1).
- 7.40 **Tables 16 and 17** show that, if the development were to come forward with the proposed mitigation, the 10 year future (2026) queue length on the Emsworth Road (N) arm would not increase compared with the 2026 Baseline scenario, with the delay reduced by 1 second. In the PM Peak, an increase of up to 5 vehicles can be expected on this arm, with additional queuing time of 21 seconds. Again, all other arms show either a decrease or no increase in traffic compared to the 2026 Baseline, apart from a marginal 1 second increase in delay on the A27 Off-Slip (Junction 1).
- 7.41 Whilst it is understood that there is a modest increase in queue/delay on the Emsworth Road (N) in the PM peak only (nil detriment in the AM peak), it is felt that the decreases in queuing, delay and RFC on the other arms outweigh the slight increase here.

#### Total increases in traffic

- 7.42 **Table 18** demonstrates the net impact of the proposed development traffic on the whole linked junction. This is important to note, as the roundabout is as defined by the model a single linked junction, and therefore mitigation works applied to certain arms have an impact on other arms also and the operation of the roundabout as a whole.

|      | Baseline        | with development<br>+ mitigation | TOTAL<br>CHANGE | Baseline | with development<br>+ mitigation | TOTAL<br>CHANGE |
|------|-----------------|----------------------------------|-----------------|----------|----------------------------------|-----------------|
|      | Queue<br>Length | Queue Length                     |                 | Delay    | Delay                            |                 |
| AM   |                 |                                  |                 |          |                                  |                 |
| 2021 | 32              | 24                               | -8              | 101      | 79                               | -22             |
| 2026 | 54              | 37                               | -17             | 174      | 133                              | -41             |
| PM   |                 |                                  |                 |          |                                  |                 |
| 2021 | 31              | 32                               | +1              | 116      | 121                              | +5              |
| 2026 | 63              | 65                               | +2              | 226      | 239                              | +13             |

**Table 18:** Net Impact of Proposed Development on Linked Junction

- 7.43 As demonstrated in **Table 18**, the 'net impact' of development (and the proposed mitigation) on the linked roundabout is 2 queuing vehicles in the 2026 PM scenario, with a substantial decrease of 17 vehicles queuing on the roundabout in the AM Peak. The net impact in terms of delay is a 41 second reduction compared to the 2026 baseline in the AM peak and only a 13 second increase in the 2026 PM peak.
- 7.44 It is also worth noting that the additional traffic shown on the Emsworth Road arm will most likely be returning residents travelling back from Havant, having travelled to Havant in the AM peak. Given the mitigation works on the Havant Road arm, vehicles travelling towards Havant in the AM Peak can expect a decrease in delay of 37 seconds (in the 2026 scenario), and the increase of 21 seconds on the Emsworth Road arm on their return would still lead to an overall modest decrease in total journey time to/from work across the course of the day. This can also be shown with queue lengths, with a decrease in the AM (2026) Peak of 16 vehicles on the Havant Road arm, and an increase of just 5 vehicles on the Emsworth Road arm in the PM Peak.
- 7.45 In further correspondence dated 16<sup>th</sup> February 2017 HCC agreed that, based on a summary of the above further interrogation of the modelling results, the *'improvements proposed are therefore considered to suitably mitigate the impact of the development on these roundabouts'*, subject to the agreement of HE.
- 7.46 It is therefore concluded that the required extent of highway works to mitigate the impact of the development proposals at the A27 Linked Roundabouts is that previously agreed by HCC and contained within **Appendix K** of this report.

## 8. CONTRIBUTIONS

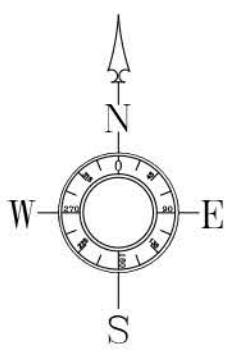
- 8.1 In e-mail correspondence with HCC and based on previous on-going discussions regarding HCC's requirements for sustainable improvements in the area, a contribution (rather than S278 works) would be sought to improve pedestrian access to Emsworth Primary School.
- 8.2 HCC requested that a contribution should be sought towards additional traffic calming measures outside Emsworth Primary School in the form of road surfacing and the installation of dropped kerbs and tactile paving on both Victoria Road and the school access. The extent of the works have been suggested by HCC within a sketch (included as **Appendix L**), and a contribution of £30,000 has been offered by Barratt Homes to help HCC deliver these works.
- 8.3 In addition, the mitigation works at the A27 linked roundabouts, as well as the installation of the site access which includes a signalised crossing on Havant Road, has been recognised as a positive additional benefit to the community.

## 9. SUMMARY AND CONCLUSIONS

- 9.1 This ATA has been prepared by PBA on behalf of BH to support a revised application for a proposed residential development comprising 161 dwellings at Havant Road, Emsworth. A previous application was submitted in July 2016 for 192 dwellings, and ongoing discussions have taken place between PBA, HE and HCC, and it is understood that Havant Borough Council were consulted to assess the internal site layout, however no comments have yet been received.
- 9.2 The correspondence between PBA, HE and HCC demonstrates that a number of issues which were raised at an early stage have been addressed and overcome, and the aim of this report was to address any outstanding issues, as well as update all previous information to relate to the revised 161 units.
- 9.3 The revised scheme comprises 161 dwellings (compared to the former 192), of which 30% would be affordable. The revised development provides a total of 326 residential spaces, of which 1 space would be provided for the 1 bedroom units, 1-2 spaces for the 2 bedrooms units, 2 spaces per 3 bedroom units and 3 spaces per 4 bedroom unit. A further 27 spaces are intended for formal visitor parking spaces, totalling 353 spaces. In addition, cycle parking is provided for each plot, with communal cycle stores proposed for the blocks of flats.
- 9.4 The internal road layout has been updated to reflect comments received as part of the application, with a 'Trim Trail' now provided around the entire perimeter of the site. Internal visibility has been assessed, which demonstrates achievable visibility for speeds of up to 20mph along the spine road, and 15mph within the site's peripheries. Refuse vehicle tracking has also been undertaken, which demonstrates that refuse vehicles can get to within the required carry distances of each property, with carry distances for residents also achievable. Fire tenders are able to get within 45m of each property.
- 9.5 A signalled junction is proposed to access the site. The modelling of the site access has been updated to reflect the change in unit numbers to 161 units. The revised modelling and resulting outputs have been agreed as acceptable by HCC.
- 9.6 Revised trip rate analysis indicates likely trip generation of 721 daily vehicle trips, with 81 vehicle trips in the AM Peak (0800-0900) and in the PM Peak (1700-1800). This trip generation is a reduction compared to the previously consented 860 daily trips (with 98 trips in the AM Peak and 96 trips in the PM Peak). The anticipated trip distribution from the site has been agreed by both HCC and HE.

- 9.7 In order to undertake further modelling of the A27 Linked Roundabouts, a further TEMPRO growth rate assessment was undertaken for the 2021-2026 period. It is anticipated that this figure will be considered acceptable, as the parameters used have been previously agreed with both HCC and HE for the 2016-2021 scenario.
- 9.8 Revised modelling for the Emsworth Roundabout has been undertaken, using the revised unit numbers and the requested 2026 scenario. As the roundabout is shown to be operating within capacity in all scenarios, no mitigation works are proposed. This has been agreed by HCC.
- 9.9 Revised modelling of the A27 linked roundabouts has been undertaken to address the change in unit numbers, the requested modelling changes by HE, the further 2026 scenarios requested by HE and the updating of the model to Junctions 9.
- 9.10 The results demonstrate that, due to the mitigation works proposed on the southern A27 roundabout, in the 2026 'future year' scenario (with mitigation) the vehicle queues and delay on the Havant Road arm are substantially reduced, with reductions occurring on most other arms at the junction also. The Emsworth Road (N) arm demonstrates a slight increase in queue length and delay, however this is minimal with up to 5 additional vehicles in the 2026 PM Peak and no additional vehicles in the AM Peak.
- 9.11 In addition, the 'net' impact of the development traffic on the linked junction when taking into account the proposed mitigation works is negligible. The modelling parameters, outcome and mitigation works have been agreed by HCC.
- 9.12 A contribution to support sustainable infrastructure improvements to the school of £30,000 (based on the HCC design) has been proposed by Barratt Homes (in addition to the A27 roundabout mitigation works and the installation of the signalised crossing on Havant Road).

## Appendix A

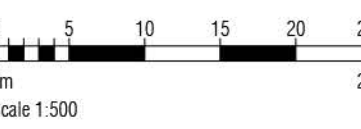


## HAVANT ROAD EMSWORTH 161

### SCHEDULE OF DWELLINGS

| BARRATT   |                    |                   |        |       |     | Comments |
|-----------|--------------------|-------------------|--------|-------|-----|----------|
| REF       | TYPE               | DESCRIPTION       | STOREY | SQ.FT | NO  |          |
| WD        | WOODCROFT          | 4 BED TOWN HOUSE  | 2.5    | 1309  | 9   | 11781    |
| KI        | KINGSLEY           | 4 BED HOUSE       | 2.0    | 1080  | 4   | 4320     |
| ES        | ESKDALE            | 3 BED HOUSE       | 2.0    | 1058  | 5   | 5290     |
| EN        | ENNERDALE          | 3 BED HOUSE       | 2.0    | 917   | 17  | 15589    |
| BU        | BUCHANAN           | 3 BED HOUSE       | 2.0    | 875   | 4   | 3500     |
| MA        | MAIDSTONE          | 3 BED HOUSE       | 2.0    | 830   | 17  | 14110    |
| FO        | FOLKSTONE          | 3 BED HOUSE       | 2.0    | 830   | 13  | 10790    |
| RO        | ROSEBERRY          | 2 BED HOUSE       | 2.0    | 679   | 18  | 12222    |
| AV+       | ALVERTON (SPECIAL) | 2 BED COACH HOUSE | 2.0    | 706   | 5   | 3530     |
| CO        | COLEFORD           | 2 BED FLAT        | 3.0    | 692   | 3   | 2076     |
| MN        | MALDON             | 2 BED FLAT        | 3.0    | 676   | 6   | 4056     |
| HO        | HORNSEA            | 2 BED FLAT        | 3.0    | 655   | 3   | 1965     |
| AM        | AMBERSHAM          | 2 BED FLAT        | 3.0    | 584   | 6   | 3504     |
| LO        | LOUGHTON           | 1 BED FLAT        | 3.0    | 472   | 3   | 1416     |
| SUB TOTAL |                    |                   |        |       | 113 | 94149    |

| AFFORDABLE             |                     |                   |        |       |     | Comments |              |
|------------------------|---------------------|-------------------|--------|-------|-----|----------|--------------|
| REF                    | TYPE                | DESCRIPTION       | STOREY | SQ.FT | NO  |          |              |
| SOCIAL HOUSING (30%) * |                     |                   |        |       |     |          |              |
| 3BH                    | ESKDALE (SPECIAL)   | 3 BED HOUSE       | 2.0    | 1058  | 1   | 1058     | No En-Suite  |
| T69                    | TYPE 69             | 3 BED HOUSE       | 2.0    | 787   | 12  | 9444     | Standard NGF |
| T64                    | TYPE 64             | 3 BED HOUSE       | 2.0    | 733   | 6   | 4398     | Standard NGF |
| T73                    | TYPE 73             | 2 BED COACH HOUSE | 2.0    | 704   | 4   | 2816     | Standard NGF |
| 2BFA                   | COLEFORD (SPECIAL)  | 2 BED FLAT        | 3.0    | 692   | 3   | 2076     | No En-Suite  |
| 2BFC                   | MALDON (SPECIAL)    | 2 BED FLAT        | 3.0    | 676   | 3   | 2028     | No En-Suite  |
| 2BFB                   | HORNSEA (SPECIAL)   | 2 BED FLAT        | 3.0    | 655   | 3   | 1965     | No En-Suite  |
| T67                    | TYPE 67             | 2 BED HOUSE       | 2.0    | 602   | 10  | 6020     | Standard NGF |
| 2BFD                   | AMBERSHAM (SPECIAL) | 2 BED FLAT        | 3.0    | 584   | 3   | 1752     | No En-Suite  |
| 1BFA                   | LOUGHTON (SPECIAL)  | 1 BED FLAT        | 3.0    | 472   | 3   | 1416     | No En-Suite  |
| SUB TOTAL              |                     |                   |        |       | 48  | 32973    |              |
| GRAND TOTAL            |                     |                   |        |       | 161 | 127122   |              |



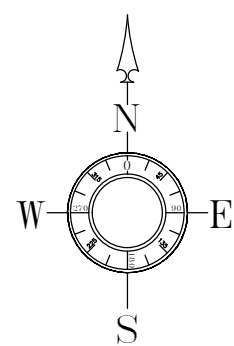
Project: HAVANT ROAD, EMSWORTH, HAMPSHIRE

Drawing Title: PLANNING LAYOUT

Client: BARRATT HOMES



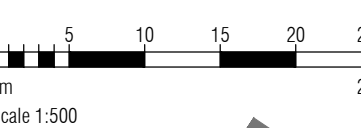
## Appendix B



KEY

- ALLOCATED  
= 250 SPACES
- GARAGES  
= 61 SPACES
- CAR PORTS  
= 15 SPACES
- VISITOR  
= 27 SPACES

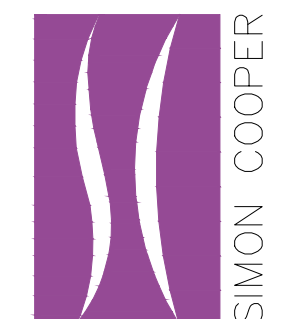
TOTAL = 353 SPACES



Project: HAYWORTH ROAD, EMSWORTH, LEICESTERSHIRE

Drawn: BARRATT HOMES  
Checked: BARRATT HOMES

BARRATT HOMES

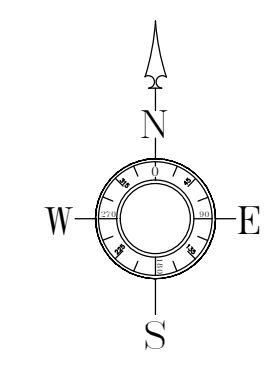


Simon Cooper Associates Limited  
Company House, 22/24 Grafton Road,  
Bristol, GL2 2DT  
Telephone: 0117 455 0039  
info@simoncooper.co.uk www.simoncooper.co.uk

Org No: 10-2559-107

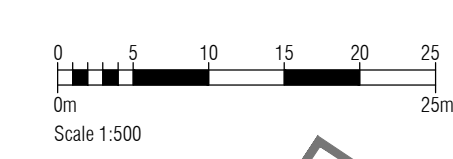
Scale: @ 1:500 Rev: 1

## Appendix C



## KEY

- g Rear gate access
- d Garage door access
- Cycle Storage within Garage or Store
- 1.8m x 1.2m Shed for Cycle Storage
- Area of handstanding for Refuse and Recycle Bins



Project: HAYWORTH ROAD, EMSWORTH, LEICESTERSHIRE  
Drawn: JMMH  
BARRATT HOMES



## Appendix D



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  6. 25m JUNCTION VISIBILITY SPLAYS AND 17m FORWARD VISIBILITY SPLAYS ARE BASED ON DESIGN SPEEDS OF 20MPH (WITH 15MPH ON ROAD BENDS) IN ACCORDANCE WITH MANUAL FOR STREETS DESIGN PRINCIPLES.



|     |                     |          |    |      |
|-----|---------------------|----------|----|------|
| A   | REVISED APPLICATION | 14.02.17 | BW | MS   |
| Rev | Description         | Date     | By | Chkd |

**Paul Basham Associates Ltd**  
Lancaster Court  
8 Barnes Wallis Road  
Fareham Hampshire  
PO15 5TU  
T +44 (0) 1489 668134  
E info@paulbashamassociates.com  
W www.paulbashamassociates.com

Client

**BARRATT HOMES**

Project Name  
HAVANT ROAD, EMSWORTH

Title  
INTERNAL VISIBILITY SPLAYS

Project Phase  
PRELIMINARY

|            |              |          |            |
|------------|--------------|----------|------------|
| Checked By | Checked Date | Drawn By | Drawn Date |
| JH         | 19.07.16     | SB/SG    | 19.07.16   |

|                    |        |              |
|--------------------|--------|--------------|
| Client Drawing No. | Scale  | (AT A1 SIZE) |
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| PBA Drawing No. | Revision |
| 041.0025.007    | A        |

## Appendix E

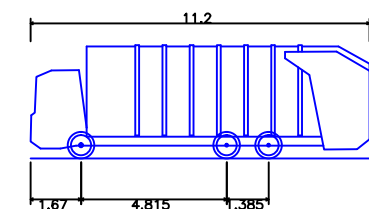


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REFUSE VEHICLE PROFILE



Phoenix 2 Duo (P2-15W with Elite 6x4 chassis)  
Overall Length 11.200m  
Overall Width 2.475m  
Overall Body Height 2.475m  
Min Body Ground Clearance 0.200m  
Track Width 2.500m  
Lock-to-lock time 4.500m  
Curb to curb Turning Radius 9.500m



|     |                     |          |    |      |
|-----|---------------------|----------|----|------|
| A   | REVISED APPLICATION | 14.02.17 | BW | MS   |
| Rev | Description         | Date     | By | Chkd |



**paulbasham**  
ASSOCIATES

Paul Basham Associates Ltd  
Lancaster Court  
8 Barnes Wallis Road  
Fareham Hampshire  
PO15 5TU  
T +44 (0) 1489 668134  
E info@paulbashamassociates.com  
W www.paulbashamassociates.com

Client



Project Name  
HAVANT ROAD, EMSWORTH

Title  
INTERNAL REFUSE TRACKING

Project Phase  
PRELIMINARY

|            |              |          |            |
|------------|--------------|----------|------------|
| Checked By | Checked Date | Drawn By | Drawn Date |
| JH         | 19.07.16     | BW       | 19.07.16   |

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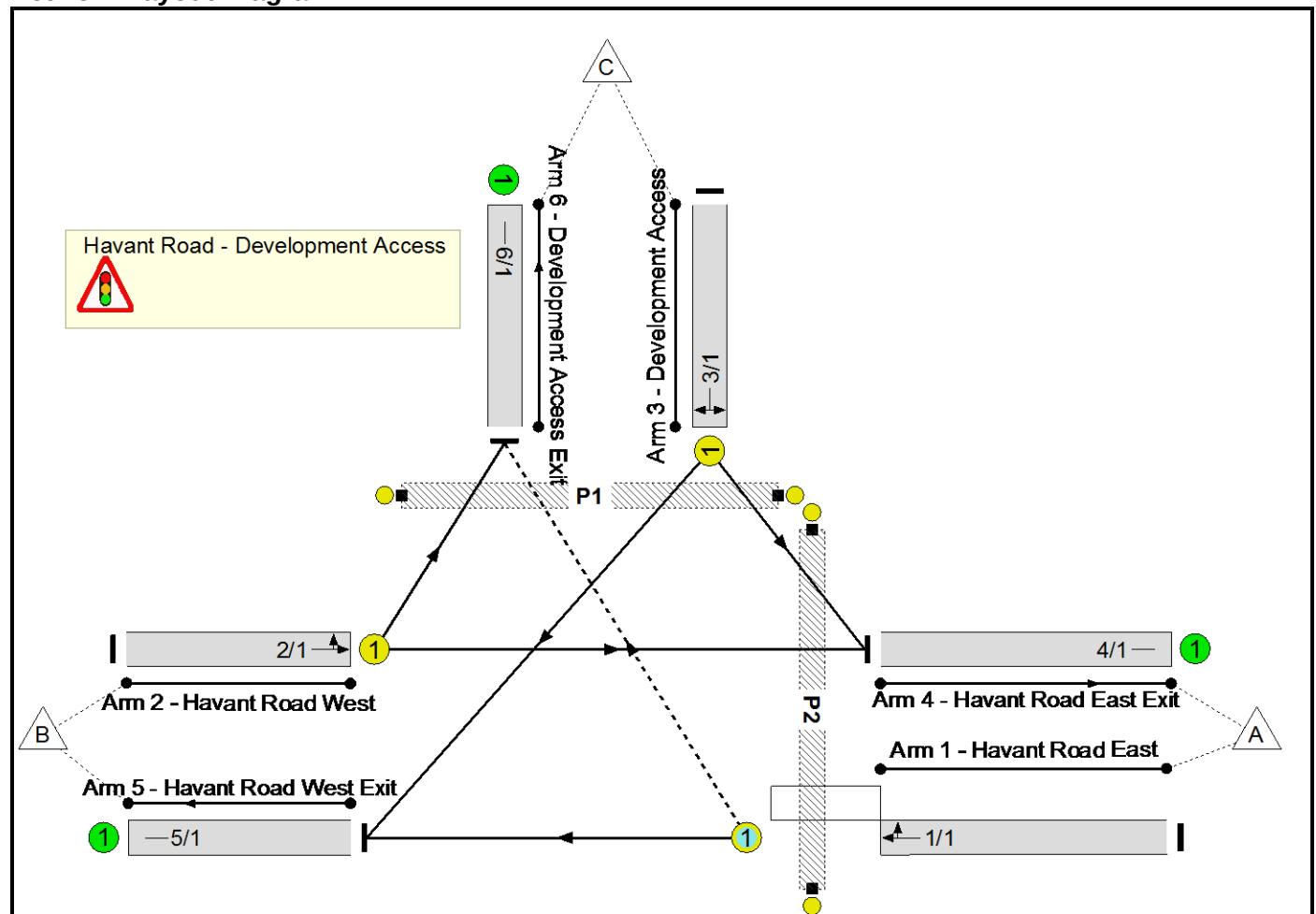
## Appendix F

## Full Input Data And Results

## User and Project Details

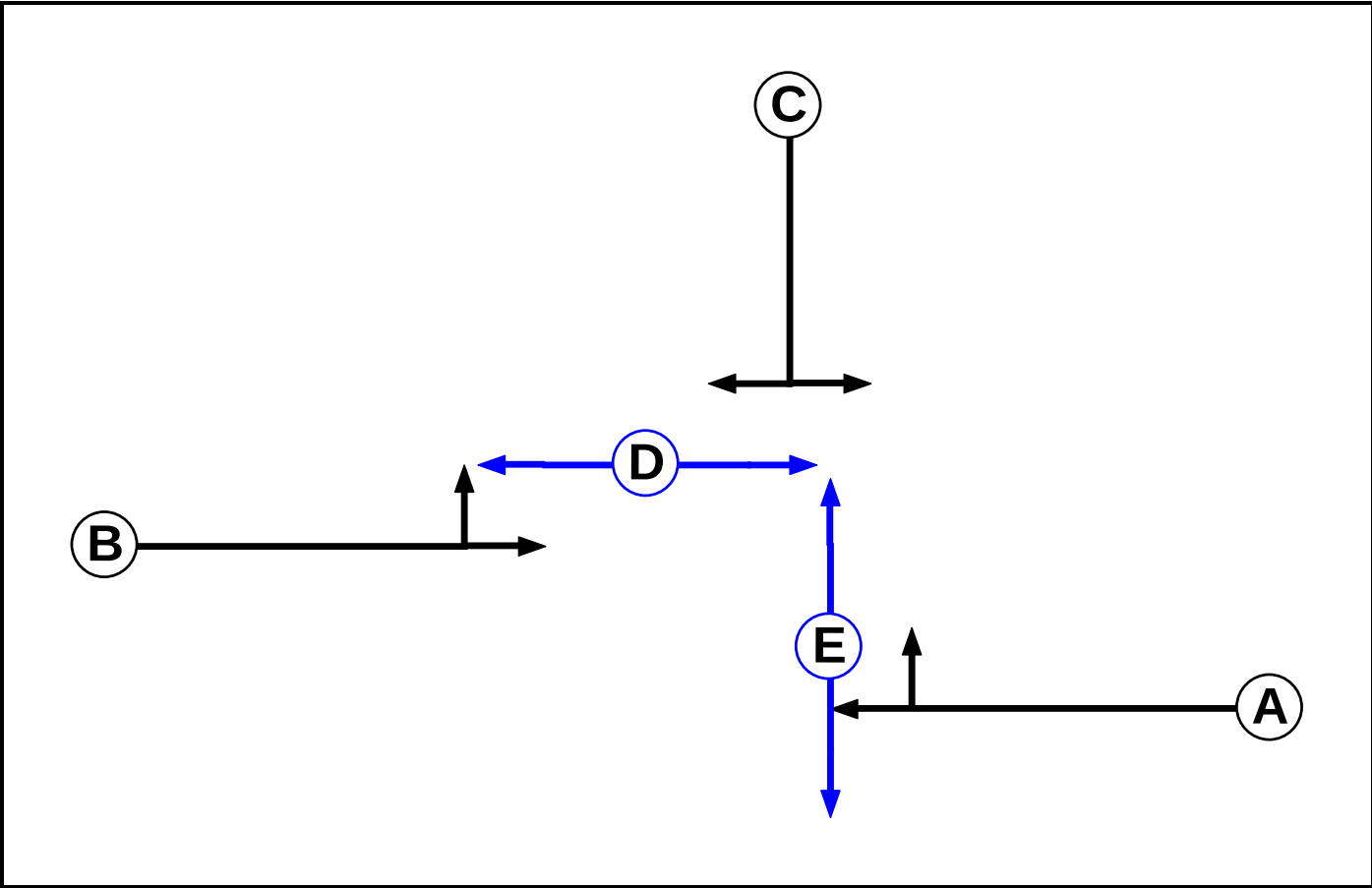
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| Location:  |                                           |
| File name: | Havant Road - Development Access v3.lsg3x |
| Author:    | JR                                        |
| Company:   | PBA                                       |
| Address:   |                                           |
| Notes:     |                                           |

## Network Layout Diagram



Scenario 1: '2021 with Dev AM Peds every other 90 cycle time' (FG2: '2021 with Dev AM', Plan 2: 'Network Control Plan 2')

Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Pedestrian |              | 7          | 7        |
| E          | Pedestrian |              | 7          | 7        |

Full Input Data And Results

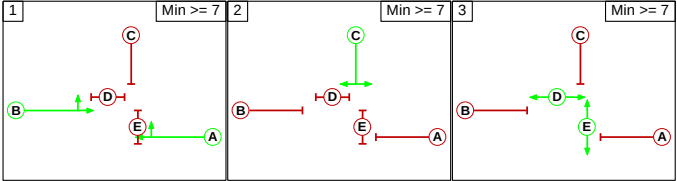
Phase Intergreens Matrix

| Terminating Phase | Starting Phase |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 6 | 9 | 5 |
|                   | B              | - |   | 5 | 7 | 8 |
|                   | C              | 6 | 5 |   | 8 | 8 |
|                   | D              | 6 | 6 | 6 |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | C               |
| 3         | D E             |

Stage Diagram



Phase Delays

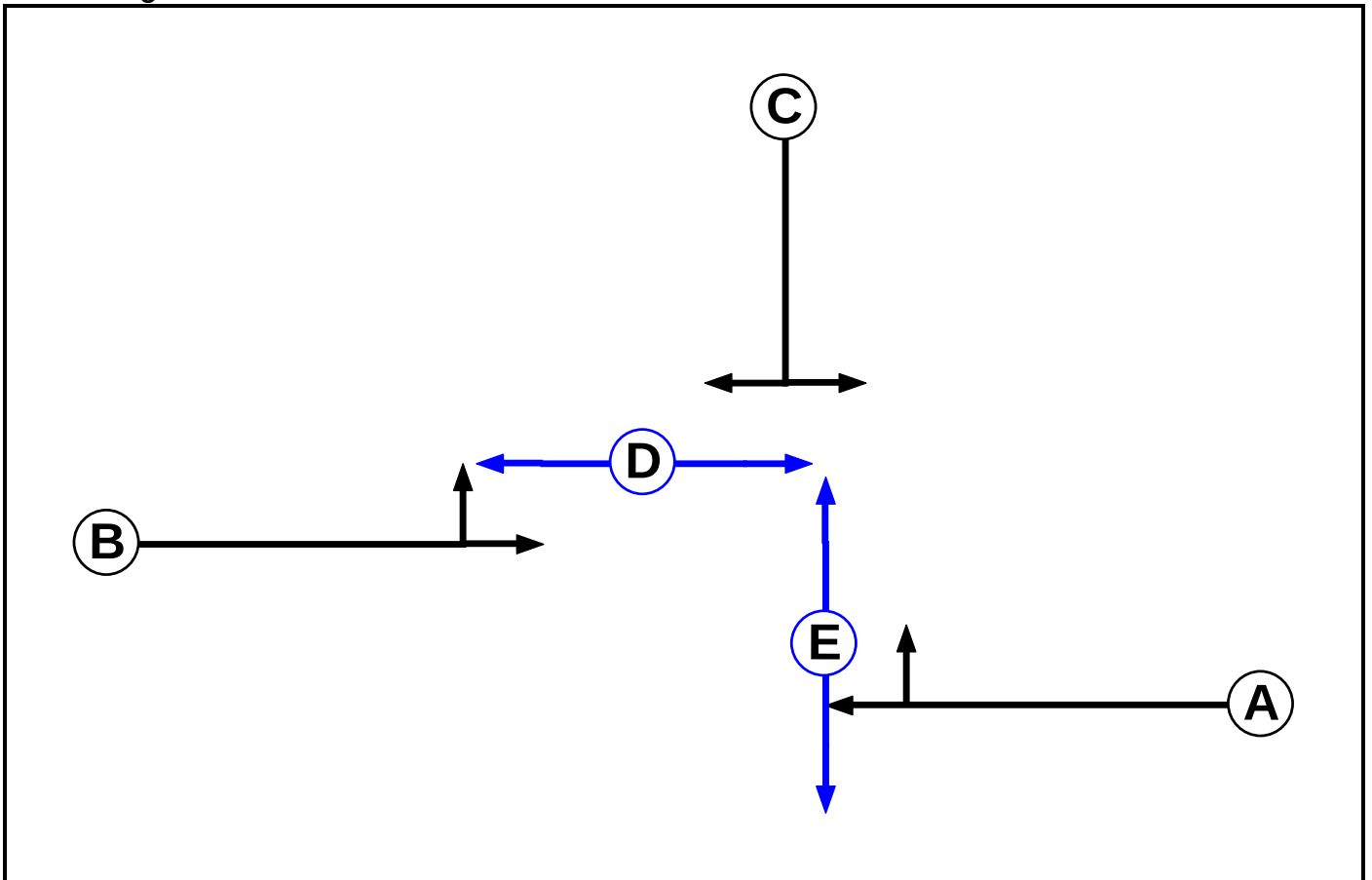
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|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

Prohibited Stage Change

|            |   | To Stage |   |   |
|------------|---|----------|---|---|
| From Stage |   | 1        | 2 | 3 |
|            | 1 |          | 6 | 9 |
|            | 2 | 6        |   | 8 |
|            | 3 | 6        | 6 |   |

**Scenario 2: '2021 with Dev PM Peds every other 90 cycle time'** (FG1: '2021 with Dev PM', Plan 2: 'Network Control Plan 2')

**Phase Diagram**



**Phase Input Data**

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Pedestrian |              | 7          | 7        |
| E          | Pedestrian |              | 7          | 7        |

Full Input Data And Results

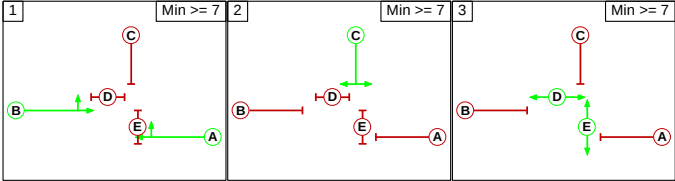
Phase Intergreens Matrix

|                   |                |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
| Terminating Phase | Starting Phase |   |   |   |   |   |
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 6 | 9 | 5 |
|                   | B              | - |   | 5 | 7 | 8 |
|                   | C              | 6 | 5 |   | 8 | 8 |
|                   | D              | 6 | 6 | 6 |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | C               |
| 3         | D E             |

Stage Diagram



Phase Delays

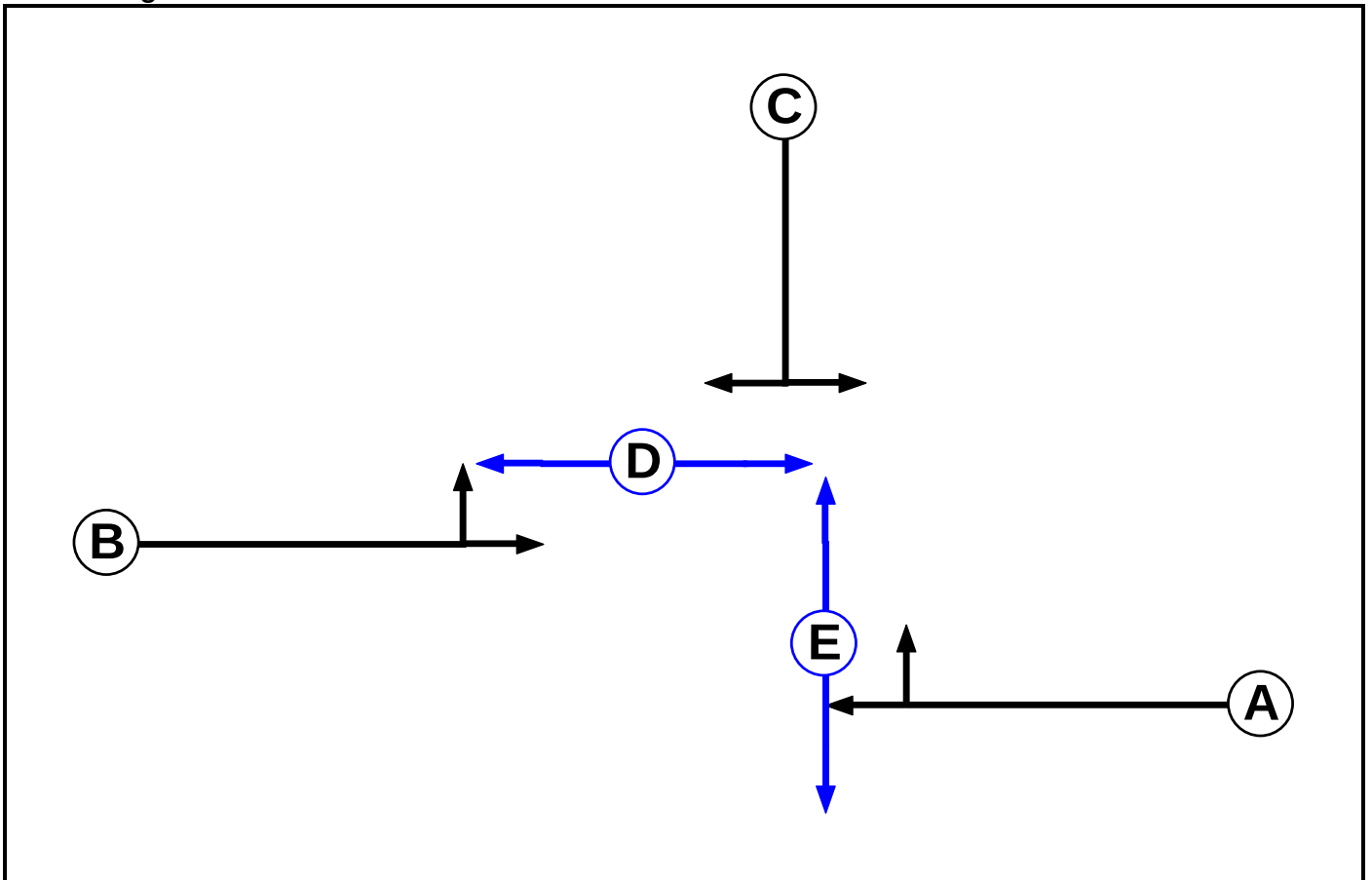
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|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

Prohibited Stage Change

|            |          |   |   |   |
|------------|----------|---|---|---|
| From Stage | To Stage |   |   |   |
|            |          | 1 | 2 | 3 |
|            | 1        |   | 6 | 9 |
|            | 2        | 6 |   | 8 |
|            | 3        | 6 | 6 |   |

**Scenario 3: '2021 with Dev AM Peds every other 120 cycle time'** (FG2: '2021 with Dev AM', Plan 2: 'Network Control Plan 2')

### Phase Diagram



### Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Pedestrian |              | 7          | 7        |
| E          | Pedestrian |              | 7          | 7        |

Full Input Data And Results

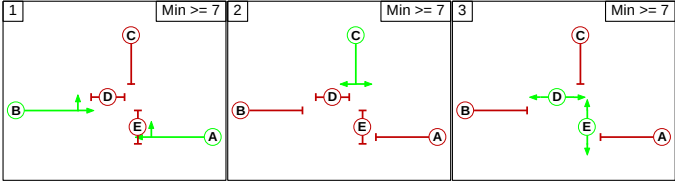
Phase Intergreens Matrix

|                   |                |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
| Terminating Phase | Starting Phase |   |   |   |   |   |
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 6 | 9 | 5 |
|                   | B              | - |   | 5 | 7 | 8 |
|                   | C              | 6 | 5 |   | 8 | 8 |
|                   | D              | 6 | 6 | 6 |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | C               |
| 3         | D E             |

Stage Diagram



Phase Delays

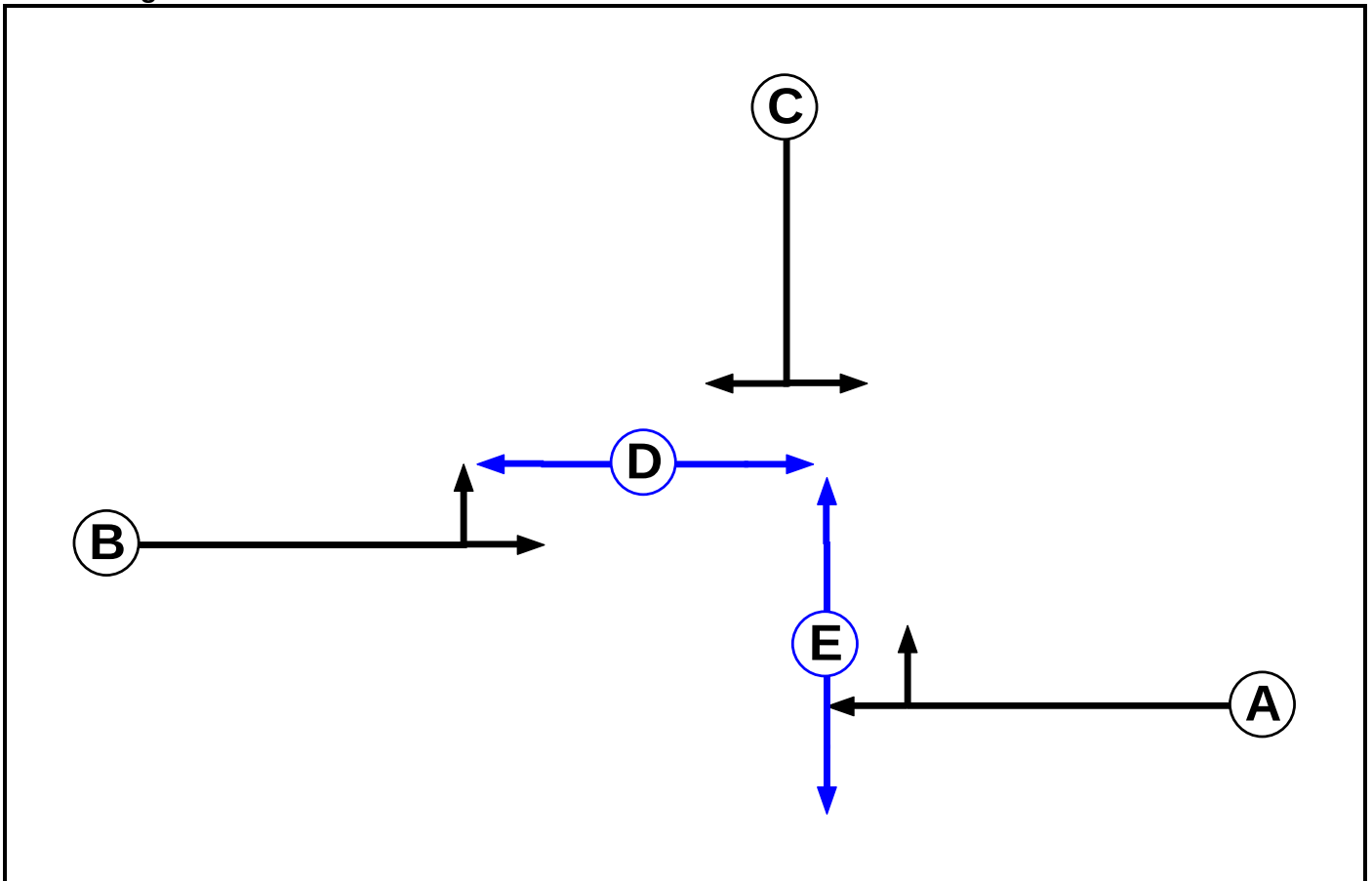
| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

Prohibited Stage Change

|            |          |   |   |   |
|------------|----------|---|---|---|
| From Stage | To Stage |   |   |   |
|            |          | 1 | 2 | 3 |
|            | 1        |   | 6 | 9 |
|            | 2        | 6 |   | 8 |
|            | 3        | 6 | 6 |   |

**Scenario 4: '2021 with Dev PM Peds every other 120 cycle time'** (FG1: '2021 with Dev PM', Plan 2: 'Network Control Plan 2')

### Phase Diagram



### Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Pedestrian |              | 7          | 7        |
| E          | Pedestrian |              | 7          | 7        |

Full Input Data And Results

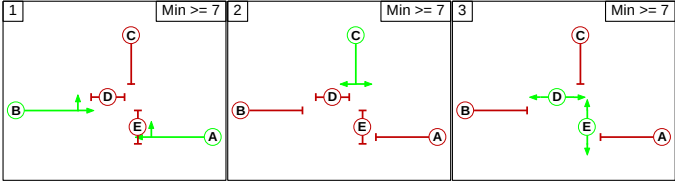
Phase Intergreens Matrix

|                   |                |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
| Terminating Phase | Starting Phase |   |   |   |   |   |
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 6 | 9 | 5 |
|                   | B              | - |   | 5 | 7 | 8 |
|                   | C              | 6 | 5 |   | 8 | 8 |
|                   | D              | 6 | 6 | 6 |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | C               |
| 3         | D E             |

Stage Diagram



Phase Delays

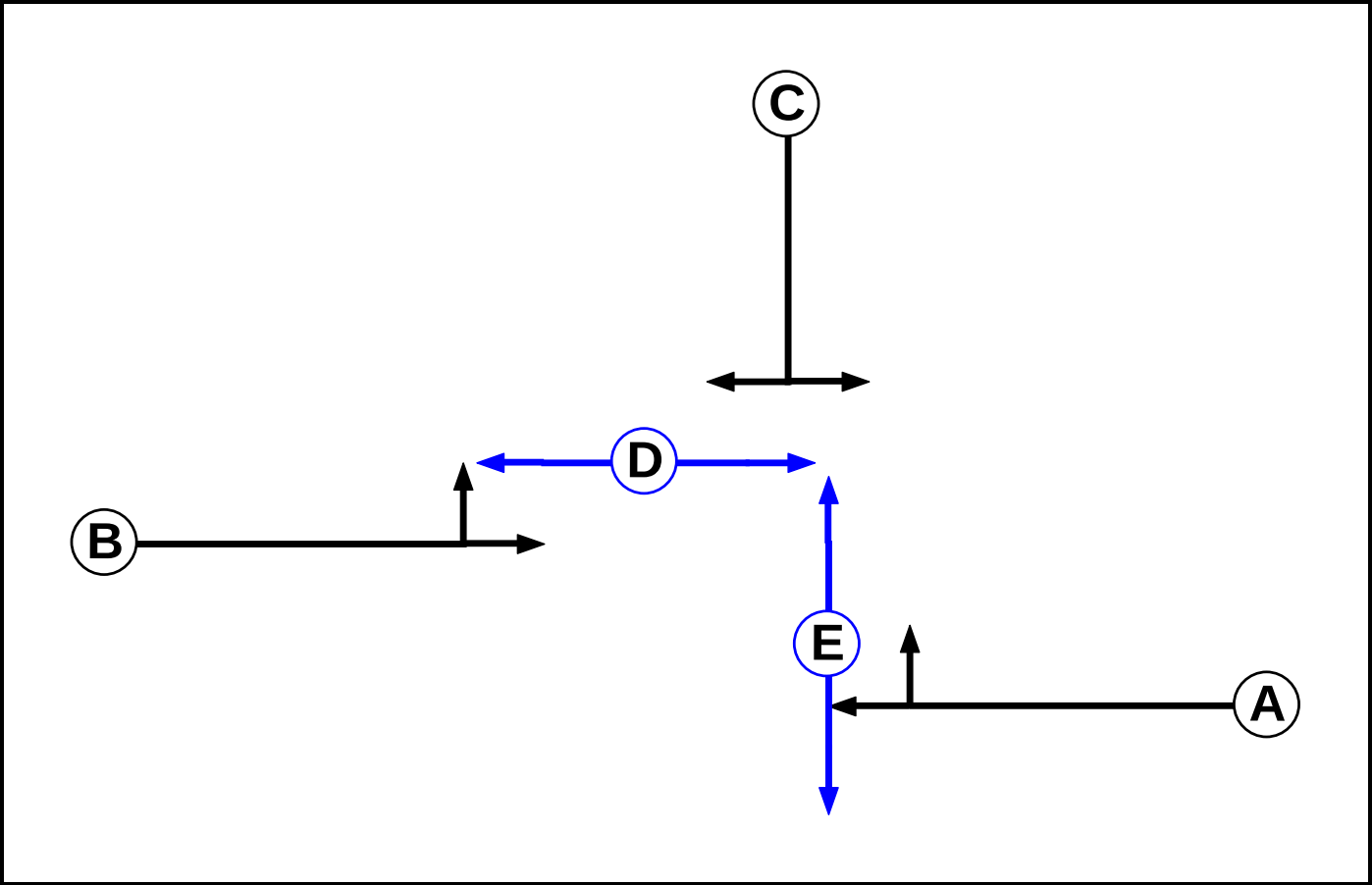
| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

Prohibited Stage Change

|            |          |   |   |   |
|------------|----------|---|---|---|
| From Stage | To Stage |   |   |   |
|            |          | 1 | 2 | 3 |
|            | 1        |   | 6 | 9 |
|            | 2        | 6 |   | 8 |
|            | 3        | 6 | 6 |   |

Scenario 5: '2026 with Dev AM Peds every other 90 CT' (FG3: '2026 with Dev AM', Plan 2: 'Network Control Plan 2')

Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Pedestrian |              | 7          | 7        |
| E          | Pedestrian |              | 7          | 7        |

Full Input Data And Results

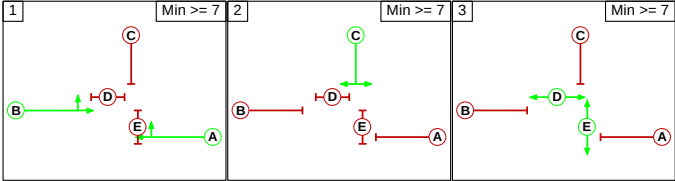
Phase Intergreens Matrix

|                   |                |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
| Terminating Phase | Starting Phase |   |   |   |   |   |
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 6 | 9 | 5 |
|                   | B              | - |   | 5 | 7 | 8 |
|                   | C              | 6 | 5 |   | 8 | 8 |
|                   | D              | 6 | 6 | 6 |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | C               |
| 3         | D E             |

Stage Diagram



Phase Delays

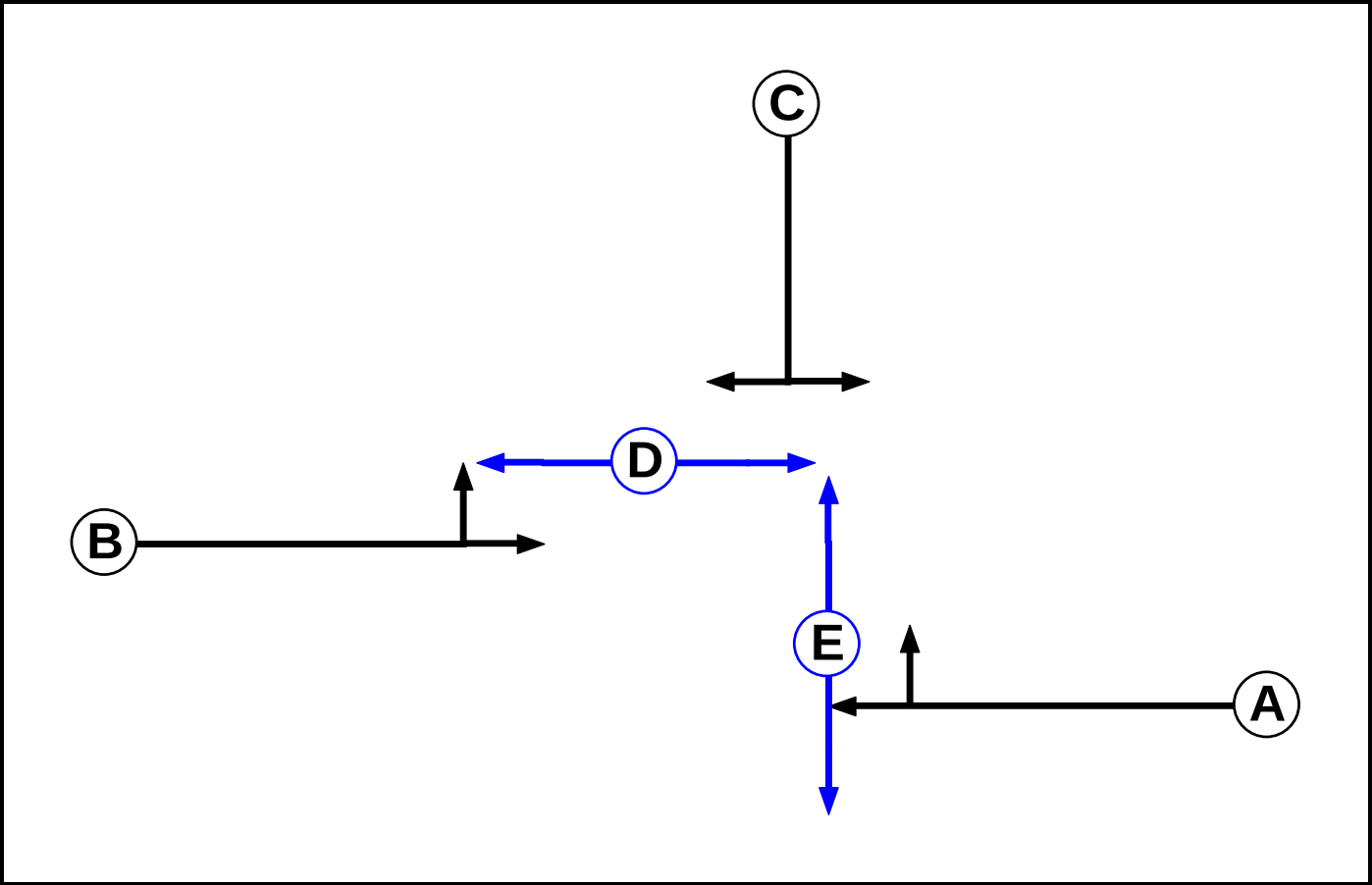
| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

Prohibited Stage Change

|            |          |     |     |
|------------|----------|-----|-----|
| From Stage | To Stage |     |     |
|            | 1        | 2   | 3   |
|            | 1        |     | 6 9 |
|            | 2        | 6   |     |
|            | 3        | 6 6 |     |

Scenario 6: '2026 with Dev PM Peds every other 90 CT' (FG4: '2026 with Dev PM', Plan 2: 'Network Control Plan 2')

Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Pedestrian |              | 7          | 7        |
| E          | Pedestrian |              | 7          | 7        |

Full Input Data And Results

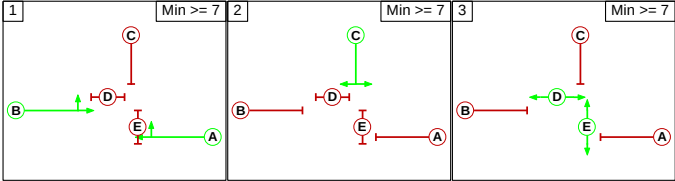
Phase Intergreens Matrix

|                   |                |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
| Terminating Phase | Starting Phase |   |   |   |   |   |
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 6 | 9 | 5 |
|                   | B              | - |   | 5 | 7 | 8 |
|                   | C              | 6 | 5 |   | 8 | 8 |
|                   | D              | 6 | 6 | 6 |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | C               |
| 3         | D E             |

Stage Diagram



Phase Delays

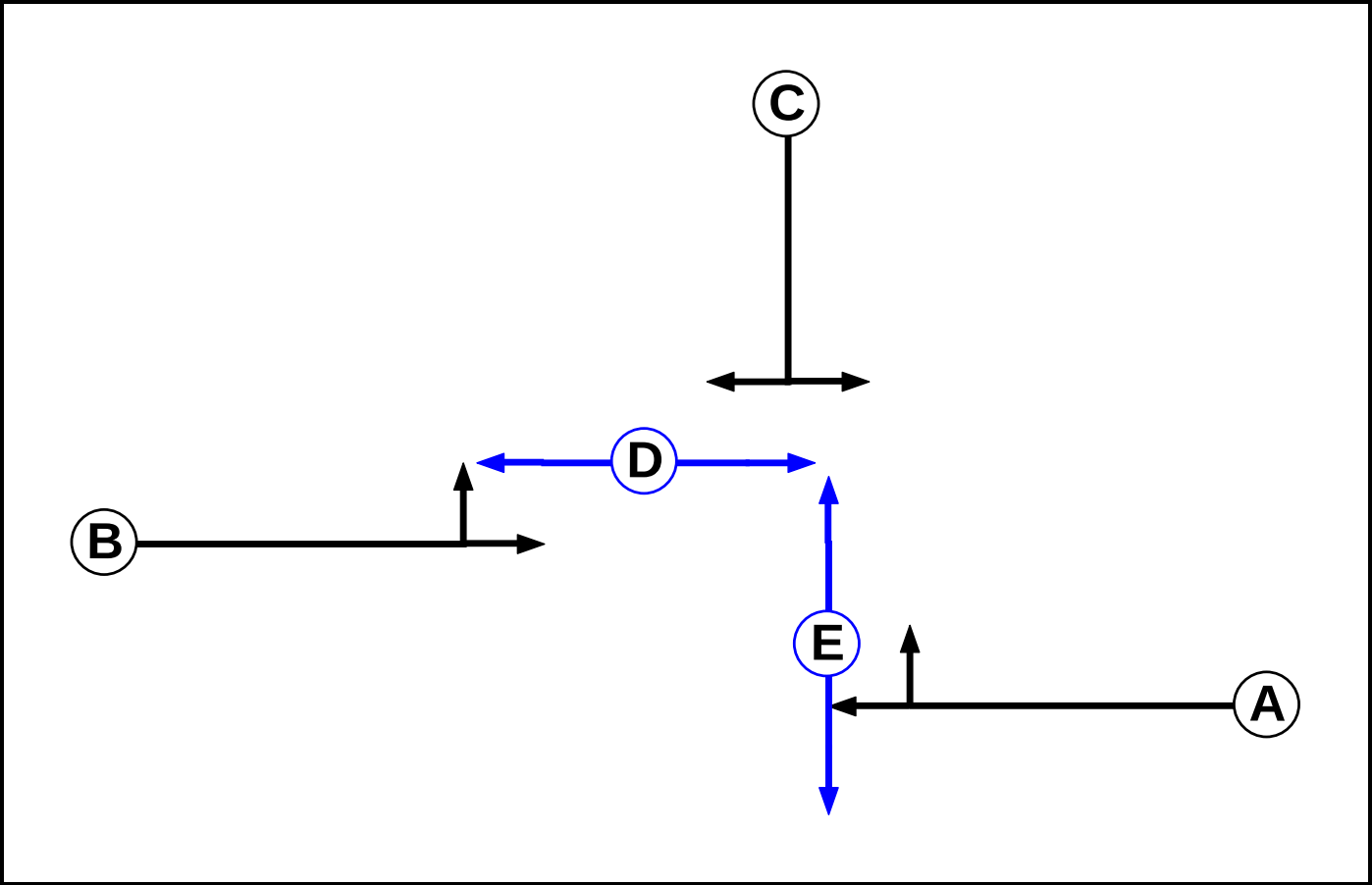
| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

Prohibited Stage Change

|            |          |   |   |   |
|------------|----------|---|---|---|
| From Stage | To Stage |   |   |   |
|            |          | 1 | 2 | 3 |
|            | 1        |   | 6 | 9 |
|            | 2        | 6 |   | 8 |
|            | 3        | 6 | 6 |   |

Scenario 7: '2026 with Dev AM Peds every other 120 CT' (FG3: '2026 with Dev AM', Plan 2: 'Network Control Plan 2')

Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Pedestrian |              | 7          | 7        |
| E          | Pedestrian |              | 7          | 7        |

Full Input Data And Results

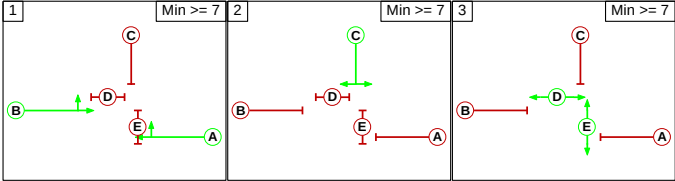
Phase Intergreens Matrix

|                   |                |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
| Terminating Phase | Starting Phase |   |   |   |   |   |
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 6 | 9 | 5 |
|                   | B              | - |   | 5 | 7 | 8 |
|                   | C              | 6 | 5 |   | 8 | 8 |
|                   | D              | 6 | 6 | 6 |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | C               |
| 3         | D E             |

Stage Diagram



Phase Delays

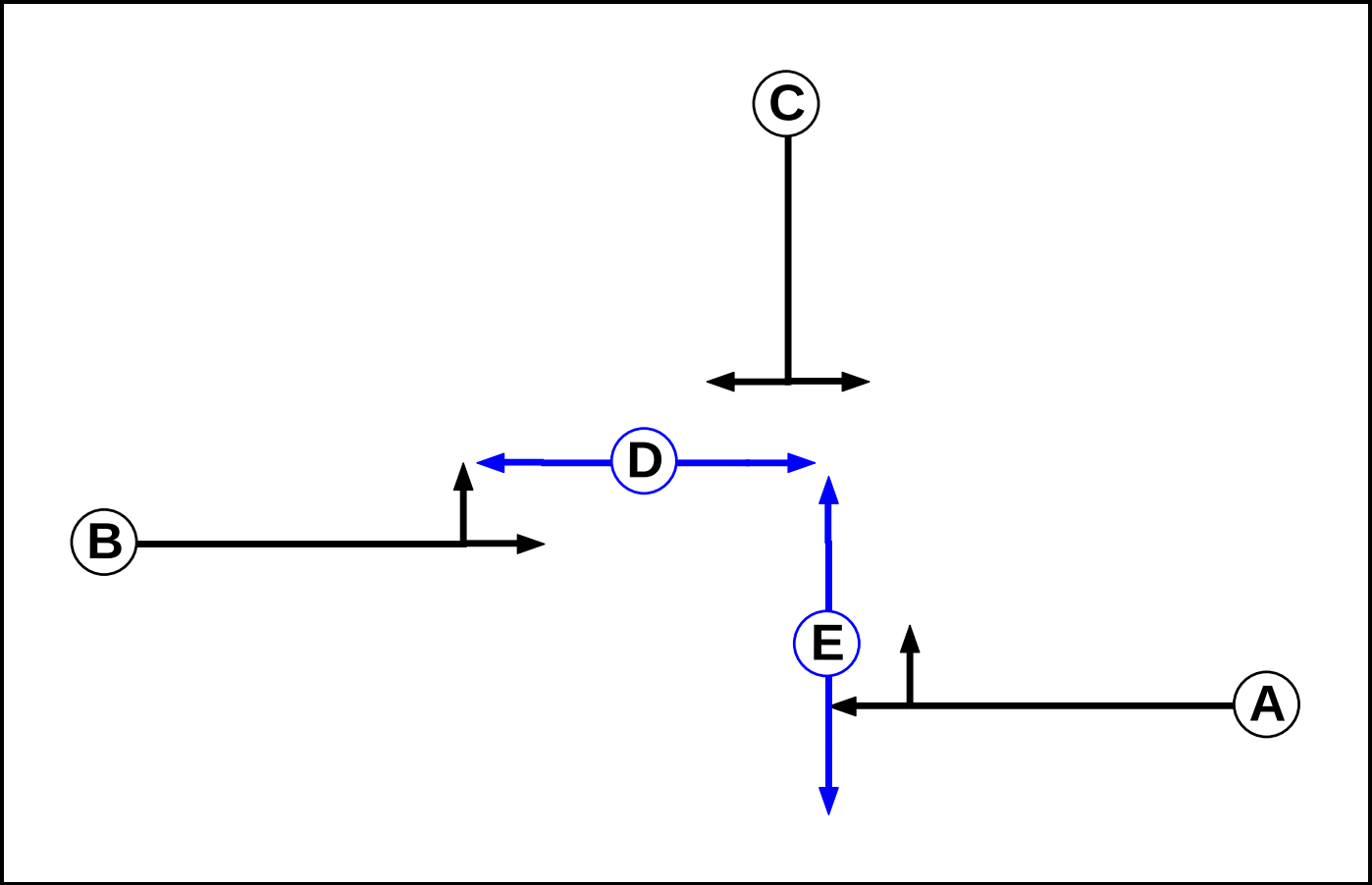
| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

Prohibited Stage Change

|            |          |   |   |   |
|------------|----------|---|---|---|
| From Stage | To Stage |   |   |   |
|            |          | 1 | 2 | 3 |
|            | 1        |   | 6 | 9 |
|            | 2        | 6 |   | 8 |
|            | 3        | 6 | 6 |   |

Scenario 8: '2026 with Dev PM Peds every other 120 CT' (FG4: '2026 with Dev PM', Plan 2: 'Network Control Plan 2')

Phase Diagram



Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|------------|------------|--------------|------------|----------|
| A          | Traffic    |              | 7          | 7        |
| B          | Traffic    |              | 7          | 7        |
| C          | Traffic    |              | 7          | 7        |
| D          | Pedestrian |              | 7          | 7        |
| E          | Pedestrian |              | 7          | 7        |

Full Input Data And Results

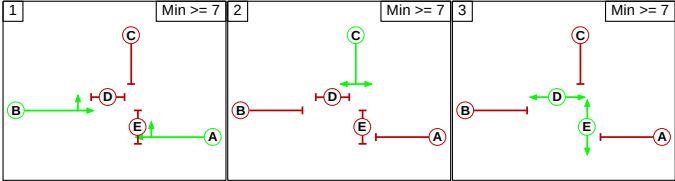
Phase Intergreens Matrix

|                   |                |   |   |   |   |   |
|-------------------|----------------|---|---|---|---|---|
| Terminating Phase | Starting Phase |   |   |   |   |   |
|                   |                | A | B | C | D | E |
|                   | A              |   | - | 6 | 9 | 5 |
|                   | B              | - |   | 5 | 7 | 8 |
|                   | C              | 6 | 5 |   | 8 | 8 |
|                   | D              | 6 | 6 | 6 |   | - |
|                   | E              | 6 | 6 | 6 | - |   |

Phases in Stage

| Stage No. | Phases in Stage |
|-----------|-----------------|
| 1         | A B             |
| 2         | C               |
| 3         | D E             |

Stage Diagram



Phase Delays

| Term. Stage                       | Start Stage | Phase | Type | Value | Cont value |
|-----------------------------------|-------------|-------|------|-------|------------|
| There are no Phase Delays defined |             |       |      |       |            |

Prohibited Stage Change

|            |          |   |   |
|------------|----------|---|---|
| From Stage | To Stage |   |   |
|            | 1        | 2 | 3 |
|            | 1        | 6 | 9 |
|            | 2        | 6 | 8 |
|            | 3        | 6 | 6 |

Full Input Data And Results

**Give-Way Lane Input Data**

| Junction: Havant Road - Development Access |             |                                   |                                   |               |                  |              |                          |                            |      |                        |                               |
|--------------------------------------------|-------------|-----------------------------------|-----------------------------------|---------------|------------------|--------------|--------------------------|----------------------------|------|------------------------|-------------------------------|
| Lane                                       | Movement    | Max Flow when Giving Way (PCU/Hr) | Min Flow when Giving Way (PCU/Hr) | Opposing Lane | Opp. Lane Coeff. | Opp. Mvmnts. | Right Turn Storage (PCU) | Non-Blocking Storage (PCU) | RTF  | Right Turn Move up (s) | Max Turns in Intergreen (PCU) |
| 1/1<br>(Havant Road East)                  | 6/1 (Right) | 1439                              | 0                                 | 2/1           | 1.09             | All          | 4.80                     | 4.80                       | 0.50 | 5                      | 2.00                          |

Full Input Data And Results

Lane Input Data

| Junction: Havant Road - Development Access |           |        |             |           |                       |               |                                   |                |          |               |             |                    |
|--------------------------------------------|-----------|--------|-------------|-----------|-----------------------|---------------|-----------------------------------|----------------|----------|---------------|-------------|--------------------|
| Lane                                       | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Def User Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns       | Turning Radius (m) |
| 1/1<br>(Havant Road East)                  | O         | A      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.25           | 0.00     | Y             | Arm 5 Ahead | Inf                |
|                                            |           |        |             |           |                       |               |                                   |                |          |               | Arm 6 Right | 16.00              |
| 2/1<br>(Havant Road West)                  | U         | B      | 2           | 3         | 60.0                  | Geom          | -                                 | 3.00           | 0.00     | Y             | Arm 4 Ahead | Inf                |
|                                            |           |        |             |           |                       |               |                                   |                |          |               | Arm 6 Left  | 17.00              |
| 3/1<br>(Development Access)                | U         | C      | 2           | 3         | 60.0                  | Geom          | -                                 | 4.40           | 0.00     | Y             | Arm 4 Left  | 13.50              |
|                                            |           |        |             |           |                       |               |                                   |                |          |               | Arm 5 Right | 20.80              |
| 4/1<br>(Havant Road East Exit)             | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 5/1<br>(Havant Road West Exit)             | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |
| 6/1<br>(Development Access Exit)           | U         |        | 2           | 3         | 60.0                  | Inf           | -                                 | -              | -        | -             | -           | -                  |

Traffic Flow Groups

| Flow Group            | Start Time | End Time | Duration | Formula |
|-----------------------|------------|----------|----------|---------|
| 1: '2021 with Dev PM' | 17:00      | 18:00    | 01:00    |         |
| 2: '2021 with Dev AM' | 08:00      | 09:00    | 01:00    |         |
| 3: '2026 with Dev AM' | 08:00      | 09:00    | 01:00    |         |
| 4: '2026 with Dev PM' | 17:00      | 18:00    | 01:00    |         |

Scenario 1: '2021 with Dev AM Peds every other 90 cycle time' (FG2: '2021 with Dev AM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

| Origin | Destination |     |      |    |      |
|--------|-------------|-----|------|----|------|
|        |             | A   | B    | C  | Tot. |
|        | A           | 0   | 1115 | 7  | 1122 |
|        | B           | 778 | 0    | 16 | 794  |
|        | C           | 18  | 40   | 0  | 58   |
|        | Tot.        | 796 | 1155 | 23 | 1974 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                       | Scenario 1:<br>2021 with Dev AM Peds every<br>other 90 cycle time |
|--------------------------------------------|-------------------------------------------------------------------|
| Junction: Havant Road - Development Access |                                                                   |
| 1/1                                        | 1122                                                              |
| 2/1                                        | 794                                                               |
| 3/1                                        | 58                                                                |
| 4/1                                        | 796                                                               |
| 5/1                                        | 1155                                                              |
| 6/1                                        | 23                                                                |

### Lane Saturation Flows

| Junction: Havant Road - Development Access |                          |          |               |               |                    |               |                   |                          |
|--------------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                       | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Havant Road East)                  | 3.25                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 99.4 %        | 1939              | 1939                     |
|                                            |                          |          |               | Arm 6 Right   | 16.00              | 0.6 %         |                   |                          |
| 2/1<br>(Havant Road West)                  | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 98.0 %        | 1912              | 1912                     |
|                                            |                          |          |               | Arm 6 Left    | 17.00              | 2.0 %         |                   |                          |
| 3/1<br>(Development Access)                | 4.40                     | 0.00     | Y             | Arm 4 Left    | 13.50              | 31.0 %        | 1895              | 1895                     |
|                                            |                          |          |               | Arm 5 Right   | 20.80              | 69.0 %        |                   |                          |
| 4/1<br>(Havant Road East Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1<br>(Havant Road West Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1<br>(Development Access Exit Lane 1)    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 2: '2021 with Dev PM Peds every other 90 cycle time'** (FG1: '2021 with Dev PM', Plan 2: 'Network Control Plan 2')

### Traffic Flows, Desired

#### Desired Flow :

| Origin | Destination |      |     |      |      |
|--------|-------------|------|-----|------|------|
|        | A           | B    | C   | Tot. |      |
|        | A           | 0    | 740 | 17   | 757  |
|        | B           | 1086 | 0   | 36   | 1122 |
|        | C           | 8    | 20  | 0    | 28   |
|        | Tot.        | 1094 | 760 | 53   | 1907 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                       | Scenario 2:<br>2021 with Dev PM Peds every<br>other 90 cycle time |
|--------------------------------------------|-------------------------------------------------------------------|
| Junction: Havant Road - Development Access |                                                                   |
| 1/1                                        | 757                                                               |
| 2/1                                        | 1122                                                              |
| 3/1                                        | 28                                                                |
| 4/1                                        | 1094                                                              |
| 5/1                                        | 760                                                               |
| 6/1                                        | 53                                                                |

### Lane Saturation Flows

| Junction: Havant Road - Development Access |                          |          |               |               |                    |               |                   |                          |
|--------------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                       | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Havant Road East)                  | 3.25                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 97.8 %        | 1936              | 1936                     |
|                                            |                          |          |               | Arm 6 Right   | 16.00              | 2.2 %         |                   |                          |
| 2/1<br>(Havant Road West)                  | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 96.8 %        | 1910              | 1910                     |
|                                            |                          |          |               | Arm 6 Left    | 17.00              | 3.2 %         |                   |                          |
| 3/1<br>(Development Access)                | 4.40                     | 0.00     | Y             | Arm 4 Left    | 13.50              | 28.6 %        | 1897              | 1897                     |
|                                            |                          |          |               | Arm 5 Right   | 20.80              | 71.4 %        |                   |                          |
| 4/1<br>(Havant Road East Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1<br>(Havant Road West Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1<br>(Development Access Exit Lane 1)    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 3: '2021 with Dev AM Peds every other 120 cycle time'** (FG2: '2021 with Dev AM', Plan 2: 'Network Control Plan 2')

### Traffic Flows, Desired

#### Desired Flow :

| Origin | Destination |     |      |    |      |
|--------|-------------|-----|------|----|------|
|        |             | A   | B    | C  | Tot. |
|        | A           | 0   | 1115 | 7  | 1122 |
|        | B           | 778 | 0    | 16 | 794  |
|        | C           | 18  | 40   | 0  | 58   |
|        | Tot.        | 796 | 1155 | 23 | 1974 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                       | Scenario 3:<br>2021 with Dev AM Peds every<br>other 120 cycle time |
|--------------------------------------------|--------------------------------------------------------------------|
| Junction: Havant Road - Development Access |                                                                    |
| 1/1                                        | 1122                                                               |
| 2/1                                        | 794                                                                |
| 3/1                                        | 58                                                                 |
| 4/1                                        | 796                                                                |
| 5/1                                        | 1155                                                               |
| 6/1                                        | 23                                                                 |

### Lane Saturation Flows

| Junction: Havant Road - Development Access |                          |          |               |               |                    |               |                   |                          |
|--------------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                       | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Havant Road East)                  | 3.25                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 99.4 %        | 1939              | 1939                     |
|                                            |                          |          |               | Arm 6 Right   | 16.00              | 0.6 %         |                   |                          |
| 2/1<br>(Havant Road West)                  | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 98.0 %        | 1912              | 1912                     |
|                                            |                          |          |               | Arm 6 Left    | 17.00              | 2.0 %         |                   |                          |
| 3/1<br>(Development Access)                | 4.40                     | 0.00     | Y             | Arm 4 Left    | 13.50              | 31.0 %        | 1895              | 1895                     |
|                                            |                          |          |               | Arm 5 Right   | 20.80              | 69.0 %        |                   |                          |
| 4/1<br>(Havant Road East Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1<br>(Havant Road West Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1<br>(Development Access Exit Lane 1)    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 4: '2021 with Dev PM Peds every other 120 cycle time'** (FG1: '2021 with Dev PM', Plan 2: 'Network Control Plan 2')

### Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination |      |     |    |      |
|--------|-------------|------|-----|----|------|
|        |             | A    | B   | C  | Tot. |
|        | A           | 0    | 740 | 17 | 757  |
|        | B           | 1086 | 0   | 36 | 1122 |
|        | C           | 8    | 20  | 0  | 28   |
|        | Tot.        | 1094 | 760 | 53 | 1907 |

## Full Input Data And Results

### Traffic Lane Flows

| Lane                                       | Scenario 4:<br>2021 with Dev PM Peds every<br>other 120 cycle time |
|--------------------------------------------|--------------------------------------------------------------------|
| Junction: Havant Road - Development Access |                                                                    |
| 1/1                                        | 757                                                                |
| 2/1                                        | 1122                                                               |
| 3/1                                        | 28                                                                 |
| 4/1                                        | 1094                                                               |
| 5/1                                        | 760                                                                |
| 6/1                                        | 53                                                                 |

### Lane Saturation Flows

| Junction: Havant Road - Development Access |                          |          |               |               |                    |               |                   |                          |
|--------------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                       | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Havant Road East)                  | 3.25                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 97.8 %        | 1936              | 1936                     |
|                                            |                          |          |               | Arm 6 Right   | 16.00              | 2.2 %         |                   |                          |
| 2/1<br>(Havant Road West)                  | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 96.8 %        | 1910              | 1910                     |
|                                            |                          |          |               | Arm 6 Left    | 17.00              | 3.2 %         |                   |                          |
| 3/1<br>(Development Access)                | 4.40                     | 0.00     | Y             | Arm 4 Left    | 13.50              | 28.6 %        | 1897              | 1897                     |
|                                            |                          |          |               | Arm 5 Right   | 20.80              | 71.4 %        |                   |                          |
| 4/1<br>(Havant Road East Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1<br>(Havant Road West Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1<br>(Development Access Exit Lane 1)    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

**Scenario 5: '2026 with Dev AM Peds every other 90 CT' (FG3: '2026 with Dev AM', Plan 2: 'Network Control Plan 2')**

### Traffic Flows, Desired

#### Desired Flow :

| Origin | Destination |     |      |    |      |
|--------|-------------|-----|------|----|------|
|        |             | A   | B    | C  | Tot. |
|        | A           | 0   | 1191 | 7  | 1198 |
|        | B           | 831 | 0    | 16 | 847  |
|        | C           | 18  | 40   | 0  | 58   |
|        | Tot.        | 849 | 1231 | 23 | 2103 |

Traffic Lane Flows

| Lane                                       | Scenario 5:<br>2026 with Dev AM Peds every<br>other 90 CT |
|--------------------------------------------|-----------------------------------------------------------|
| Junction: Havant Road - Development Access |                                                           |
| 1/1                                        | 1198                                                      |
| 2/1                                        | 847                                                       |
| 3/1                                        | 58                                                        |
| 4/1                                        | 849                                                       |
| 5/1                                        | 1231                                                      |
| 6/1                                        | 23                                                        |

Lane Saturation Flows

| Junction: Havant Road - Development Access |                          |          |               |               |                    |               |                   |                          |
|--------------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                       | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Havant Road East)                  | 3.25                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 99.4 %        | 1939              | 1939                     |
|                                            |                          |          |               | Arm 6 Right   | 16.00              | 0.6 %         |                   |                          |
| 2/1<br>(Havant Road West)                  | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 98.1 %        | 1912              | 1912                     |
|                                            |                          |          |               | Arm 6 Left    | 17.00              | 1.9 %         |                   |                          |
| 3/1<br>(Development Access)                | 4.40                     | 0.00     | Y             | Arm 4 Left    | 13.50              | 31.0 %        | 1895              | 1895                     |
|                                            |                          |          |               | Arm 5 Right   | 20.80              | 69.0 %        |                   |                          |
| 4/1<br>(Havant Road East Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1<br>(Havant Road West Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1<br>(Development Access Exit Lane 1)    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

Scenario 6: '2026 with Dev PM Peds every other 90 CT' (FG4: '2026 with Dev PM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

| Origin | Destination |      |     |    |      |
|--------|-------------|------|-----|----|------|
|        |             | A    | B   | C  | Tot. |
|        | A           | 0    | 794 | 17 | 811  |
|        | B           | 1165 | 0   | 36 | 1201 |
|        | C           | 8    | 20  | 0  | 28   |
|        | Tot.        | 1173 | 814 | 53 | 2040 |

Traffic Lane Flows

| Lane                                       | Scenario 6:<br>2026 with Dev PM Peds every<br>other 90 CT |
|--------------------------------------------|-----------------------------------------------------------|
| Junction: Havant Road - Development Access |                                                           |
| 1/1                                        | 811                                                       |
| 2/1                                        | 1201                                                      |
| 3/1                                        | 28                                                        |
| 4/1                                        | 1173                                                      |
| 5/1                                        | 814                                                       |
| 6/1                                        | 53                                                        |

Lane Saturation Flows

| Junction: Havant Road - Development Access |                          |          |               |               |                    |               |                   |                          |
|--------------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                       | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Havant Road East)                  | 3.25                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 97.9 %        | 1936              | 1936                     |
|                                            |                          |          |               | Arm 6 Right   | 16.00              | 2.1 %         |                   |                          |
| 2/1<br>(Havant Road West)                  | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 97.0 %        | 1910              | 1910                     |
|                                            |                          |          |               | Arm 6 Left    | 17.00              | 3.0 %         |                   |                          |
| 3/1<br>(Development Access)                | 4.40                     | 0.00     | Y             | Arm 4 Left    | 13.50              | 28.6 %        | 1897              | 1897                     |
|                                            |                          |          |               | Arm 5 Right   | 20.80              | 71.4 %        |                   |                          |
| 4/1<br>(Havant Road East Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1<br>(Havant Road West Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1<br>(Development Access Exit Lane 1)    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

Scenario 7: '2026 with Dev AM Peds every other 120 CT' (FG3: '2026 with Dev AM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

| Origin | Destination |     |      |    |      |
|--------|-------------|-----|------|----|------|
|        |             | A   | B    | C  | Tot. |
|        | A           | 0   | 1191 | 7  | 1198 |
|        | B           | 831 | 0    | 16 | 847  |
|        | C           | 18  | 40   | 0  | 58   |
|        | Tot.        | 849 | 1231 | 23 | 2103 |

Traffic Lane Flows

| Lane                                       | Scenario 7:<br>2026 with Dev AM Peds every<br>other 120 CT |
|--------------------------------------------|------------------------------------------------------------|
| Junction: Havant Road - Development Access |                                                            |
| 1/1                                        | 1198                                                       |
| 2/1                                        | 847                                                        |
| 3/1                                        | 58                                                         |
| 4/1                                        | 849                                                        |
| 5/1                                        | 1231                                                       |
| 6/1                                        | 23                                                         |

Lane Saturation Flows

| Junction: Havant Road - Development Access |                          |          |               |               |                    |               |                   |                          |
|--------------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                       | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Havant Road East)                  | 3.25                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 99.4 %        | 1939              | 1939                     |
|                                            |                          |          |               | Arm 6 Right   | 16.00              | 0.6 %         |                   |                          |
| 2/1<br>(Havant Road West)                  | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 98.1 %        | 1912              | 1912                     |
|                                            |                          |          |               | Arm 6 Left    | 17.00              | 1.9 %         |                   |                          |
| 3/1<br>(Development Access)                | 4.40                     | 0.00     | Y             | Arm 4 Left    | 13.50              | 31.0 %        | 1895              | 1895                     |
|                                            |                          |          |               | Arm 5 Right   | 20.80              | 69.0 %        |                   |                          |
| 4/1<br>(Havant Road East Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1<br>(Havant Road West Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1<br>(Development Access Exit Lane 1)    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

Scenario 8: '2026 with Dev PM Peds every other 120 CT' (FG4: '2026 with Dev PM', Plan 2: 'Network Control Plan 2')

Traffic Flows, Desired

Desired Flow :

| Origin | Destination |      |     |    |      |
|--------|-------------|------|-----|----|------|
|        |             | A    | B   | C  | Tot. |
|        | A           | 0    | 794 | 17 | 811  |
|        | B           | 1165 | 0   | 36 | 1201 |
|        | C           | 8    | 20  | 0  | 28   |
|        | Tot.        | 1173 | 814 | 53 | 2040 |

Traffic Lane Flows

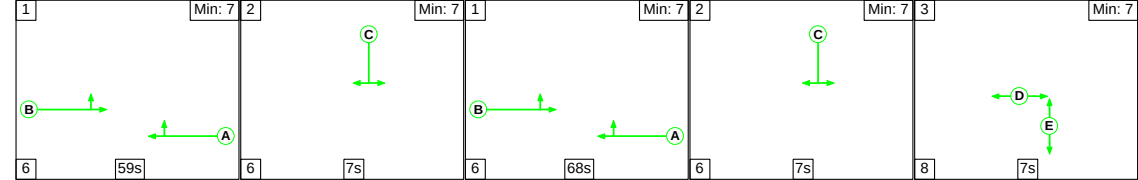
| Lane                                       | Scenario 8:<br>2026 with Dev PM Peds every<br>other 120 CT |
|--------------------------------------------|------------------------------------------------------------|
| Junction: Havant Road - Development Access |                                                            |
| 1/1                                        | 811                                                        |
| 2/1                                        | 1201                                                       |
| 3/1                                        | 28                                                         |
| 4/1                                        | 1173                                                       |
| 5/1                                        | 814                                                        |
| 6/1                                        | 53                                                         |

Lane Saturation Flows

| Junction: Havant Road - Development Access |                          |          |               |               |                    |               |                   |                          |
|--------------------------------------------|--------------------------|----------|---------------|---------------|--------------------|---------------|-------------------|--------------------------|
| Lane                                       | Lane Width (m)           | Gradient | Nearside Lane | Allowed Turns | Turning Radius (m) | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
| 1/1<br>(Havant Road East)                  | 3.25                     | 0.00     | Y             | Arm 5 Ahead   | Inf                | 97.9 %        | 1936              | 1936                     |
|                                            |                          |          |               | Arm 6 Right   | 16.00              | 2.1 %         |                   |                          |
| 2/1<br>(Havant Road West)                  | 3.00                     | 0.00     | Y             | Arm 4 Ahead   | Inf                | 97.0 %        | 1910              | 1910                     |
|                                            |                          |          |               | Arm 6 Left    | 17.00              | 3.0 %         |                   |                          |
| 3/1<br>(Development Access)                | 4.40                     | 0.00     | Y             | Arm 4 Left    | 13.50              | 28.6 %        | 1897              | 1897                     |
|                                            |                          |          |               | Arm 5 Right   | 20.80              | 71.4 %        |                   |                          |
| 4/1<br>(Havant Road East Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 5/1<br>(Havant Road West Exit Lane 1)      | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |
| 6/1<br>(Development Access Exit Lane 1)    | Infinite Saturation Flow |          |               |               |                    |               | Inf               | Inf                      |

Scenario 1: '2021 with Dev AM Peds every other 90 cycle time' (FG2: '2021 with Dev AM', Plan 2: 'Network Control Plan 2')

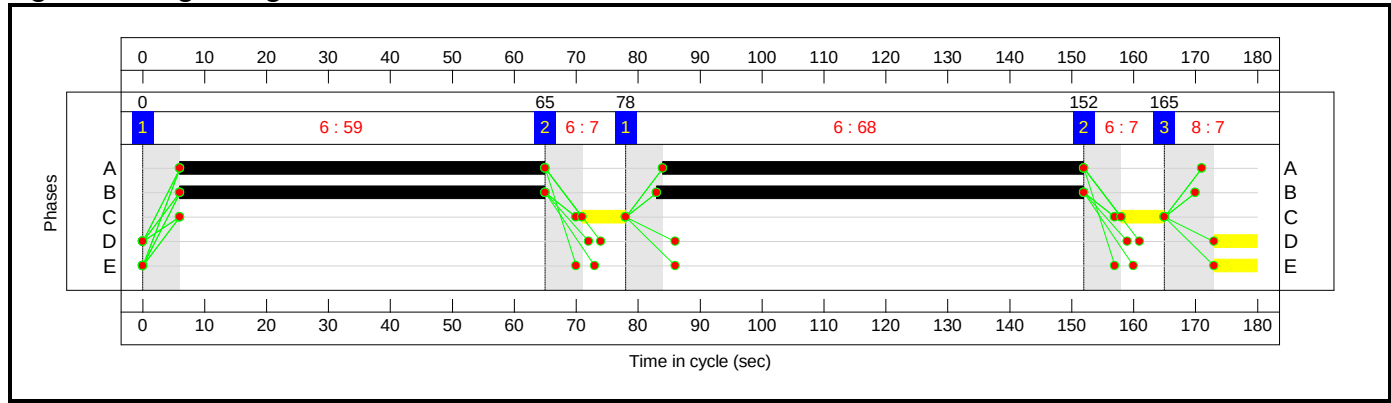
Stage Sequence Diagram



Stage Timings

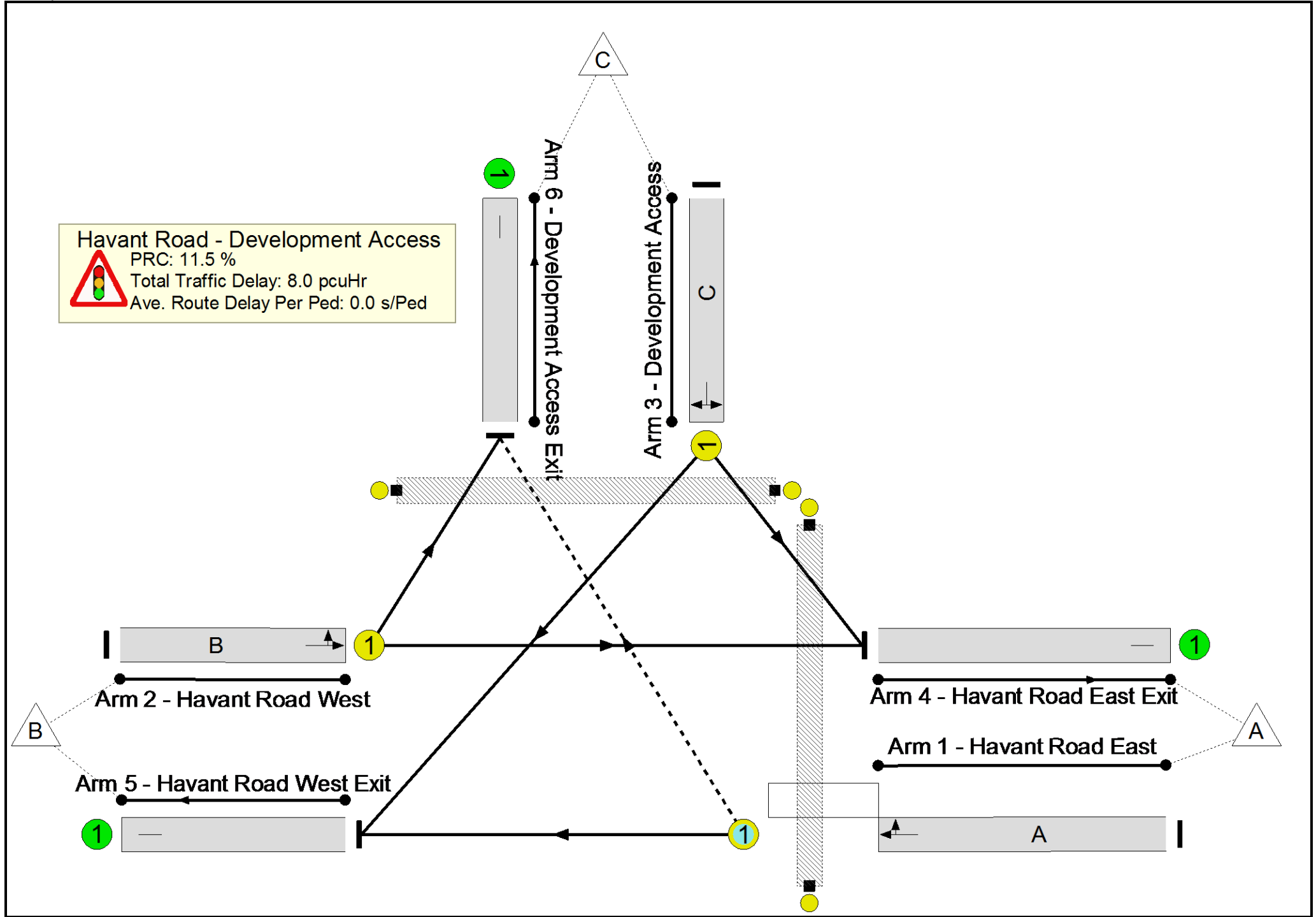
| Stage        | 1  | 2  | 1  | 2   | 3   |
|--------------|----|----|----|-----|-----|
| Duration     | 59 | 7  | 68 | 7   | 7   |
| Change Point | 0  | 65 | 78 | 152 | 165 |

Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



## Full Input Data And Results

### Network Results

| Item                                          | Lane Description              | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-----------------------------------------------|-------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|
| Network: Havant Road - Development Access Jct | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 80.7%       |
| Havant Road - Development Access              | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 80.7%       |
| 1/1                                           | Havant Road East Ahead Right  | O         | N/A               | N/A                        | A          |             | 2          | 127             | -               | 1122              | 1939              | 1390           | 80.7%       |
| 2/1                                           | Havant Road West Ahead Left   | U         | N/A               | N/A                        | B          |             | 2          | 128             | -               | 794               | 1912              | 1381           | 57.5%       |
| 3/1                                           | Development Access Left Right | U         | N/A               | N/A                        | C          |             | 2          | 14              | -               | 58                | 1895              | 168            | 34.4%       |
| 4/1                                           | Havant Road East Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 796               | Inf               | Inf            | 0.0%        |
| 5/1                                           | Havant Road West Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1155              | Inf               | Inf            | 0.0%        |
| 6/1                                           | Development Access Exit       | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 23                | Inf               | Inf            | 0.0%        |
| Ped Link: P1                                  | Unnamed Ped Link              | -         | N/A               | -                          | D          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |
| Ped Link: P2                                  | Unnamed Ped Link              | -         | N/A               | -                          | E          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |

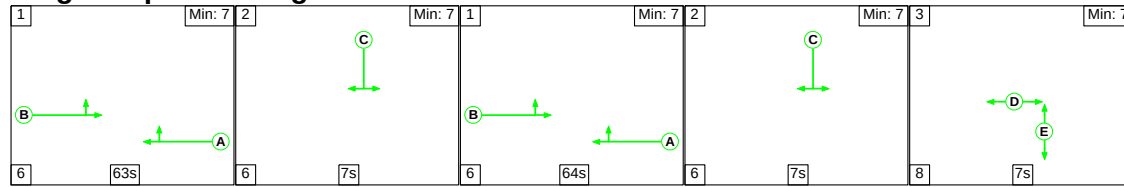
## Full Input Data And Results

[illegible]

## Full Input Data And Results

**Scenario 2: '2021 with Dev PM Peds every other 90 cycle time'** (FG1: '2021 with Dev PM', Plan 2: 'Network Control Plan 2')

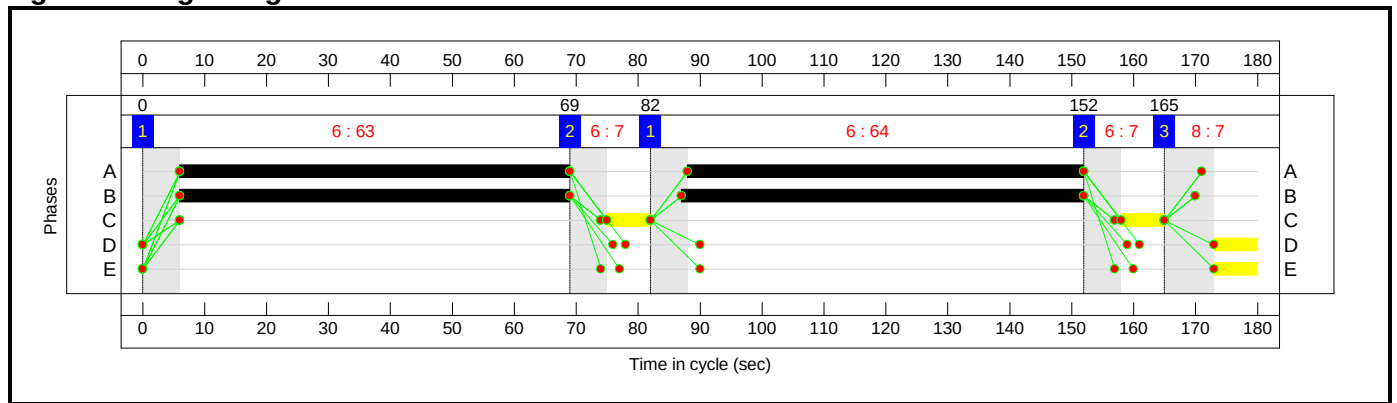
### Stage Sequence Diagram



### Stage Timings

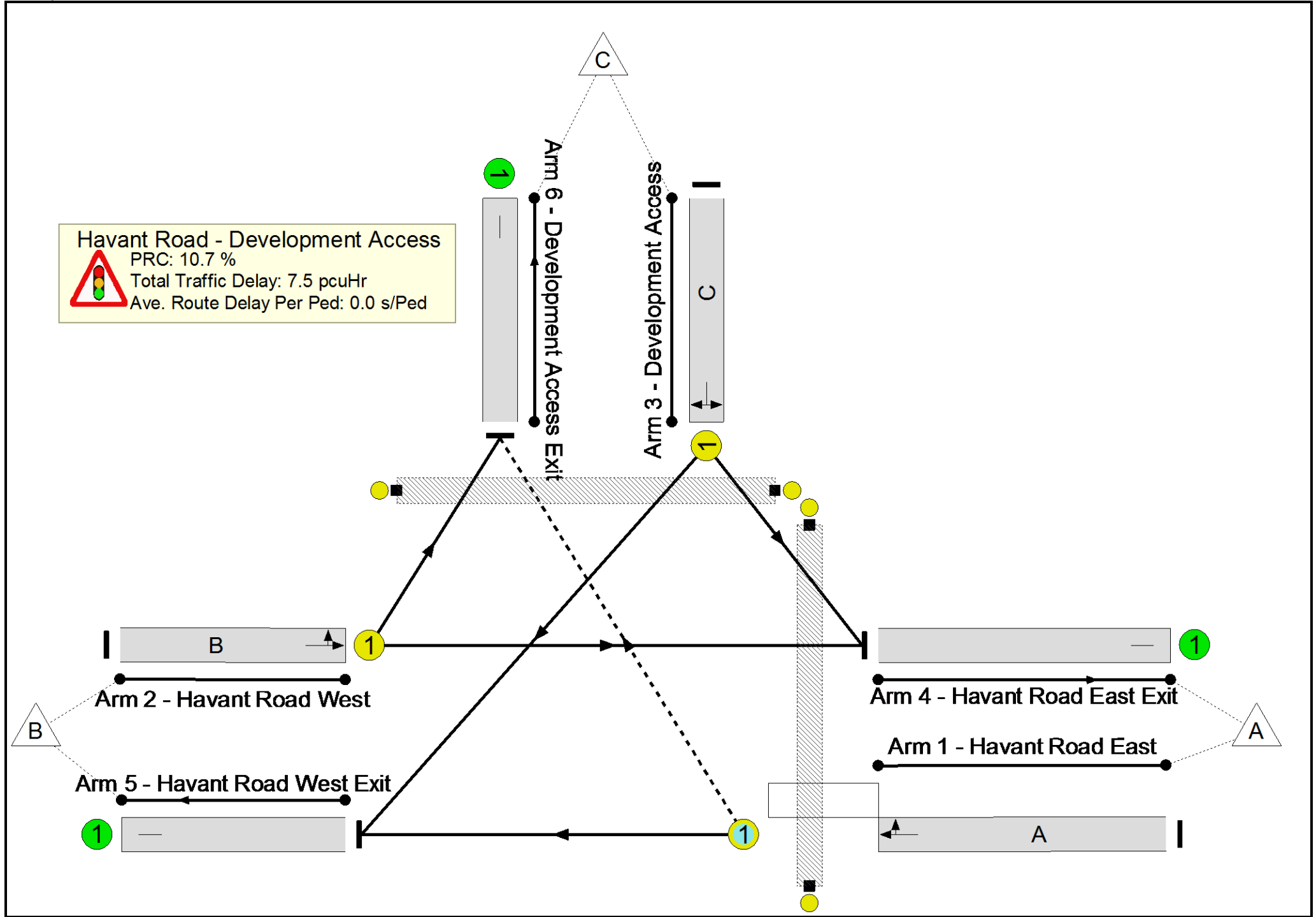
| Stage        | 1  | 2  | 1  | 2   | 3   |
|--------------|----|----|----|-----|-----|
| Duration     | 63 | 7  | 64 | 7   | 7   |
| Change Point | 0  | 69 | 82 | 152 | 165 |

### Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

Network Results

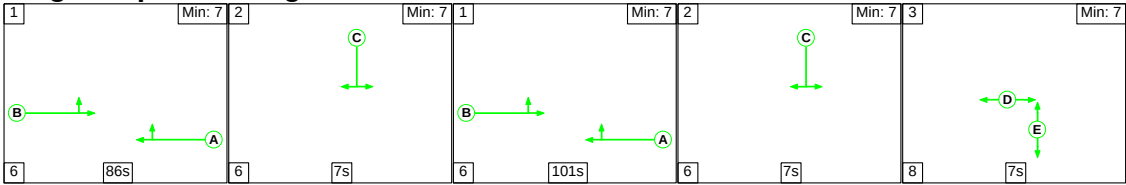
| Item                                          | Lane Description              | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-----------------------------------------------|-------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|
| Network: Havant Road - Development Access Jct | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 81.3%       |
| Havant Road - Development Access              | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 81.3%       |
| 1/1                                           | Havant Road East Ahead Right  | O         | N/A               | N/A                        | A          |             | 2          | 127             | -               | 757               | 1936              | 1387           | 54.6%       |
| 2/1                                           | Havant Road West Ahead Left   | U         | N/A               | N/A                        | B          |             | 2          | 128             | -               | 1122              | 1910              | 1379           | 81.3%       |
| 3/1                                           | Development Access Left Right | U         | N/A               | N/A                        | C          |             | 2          | 14              | -               | 28                | 1897              | 169            | 16.6%       |
| 4/1                                           | Havant Road East Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1094              | Inf               | Inf            | 0.0%        |
| 5/1                                           | Havant Road West Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 760               | Inf               | Inf            | 0.0%        |
| 6/1                                           | Development Access Exit       | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 53                | Inf               | Inf            | 0.0%        |
| Ped Link: P1                                  | Unnamed Ped Link              | -         | N/A               | -                          | D          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |
| Ped Link: P2                                  | Unnamed Ped Link              | -         | N/A               | -                          | E          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |

### Full Input Data And Results

[illegible]

Full Input Data And Results  
**Scenario 3: '2021 with Dev AM Peds every other 120 cycle time'** (FG2: '2021 with Dev AM', Plan 2: 'Network Control Plan 2')

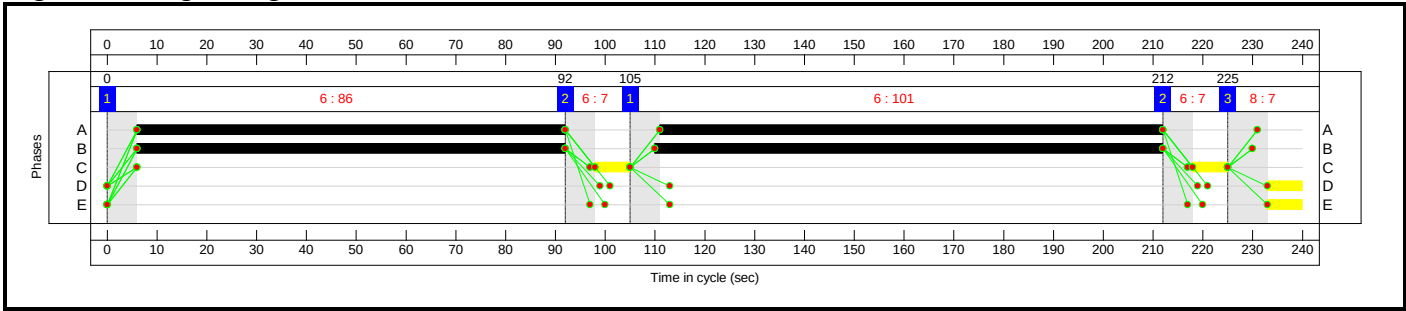
**Stage Sequence Diagram**



**Stage Timings**

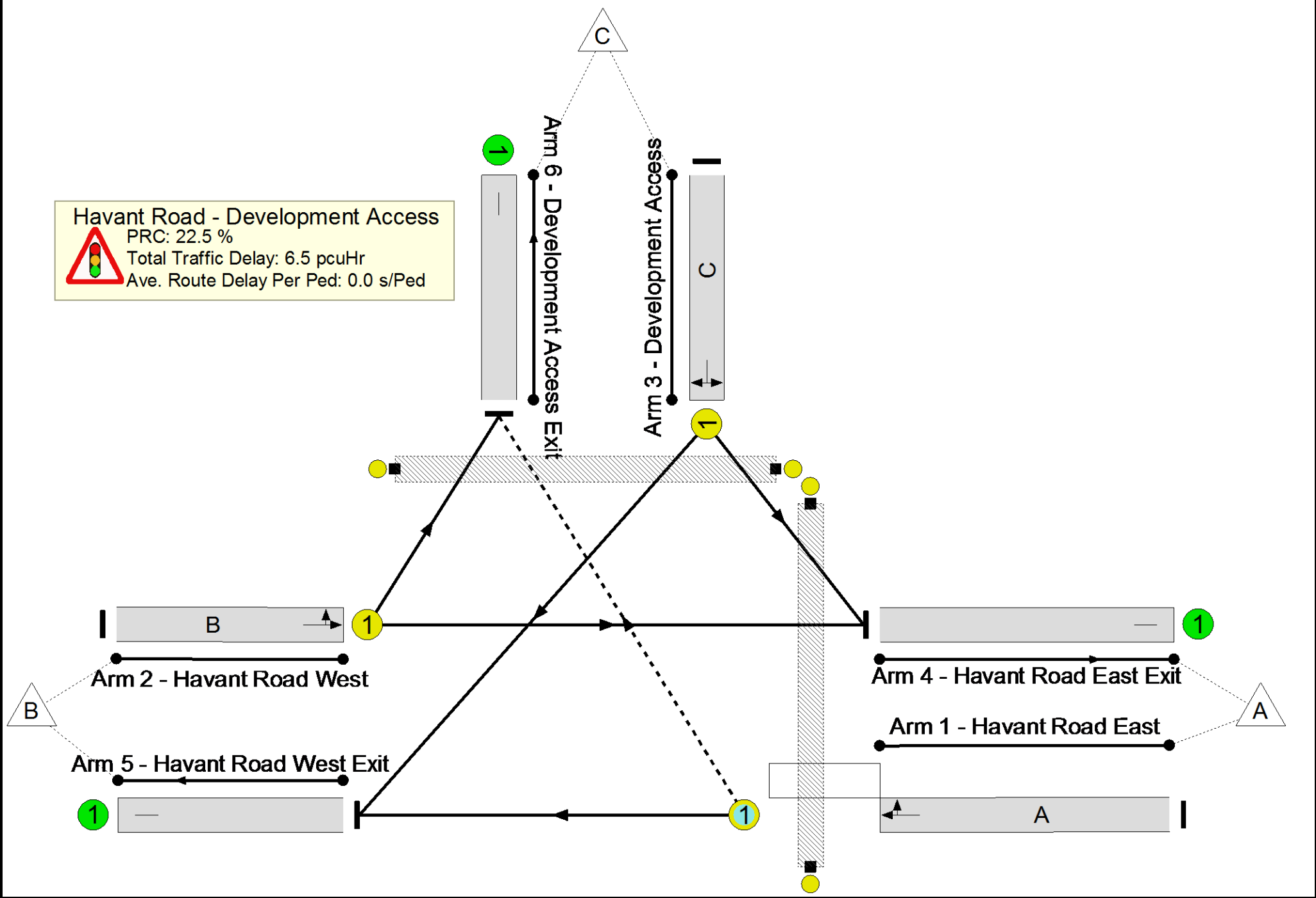
| Stage        | 1  | 2  | 1   | 2   | 3   |
|--------------|----|----|-----|-----|-----|
| Duration     | 86 | 7  | 101 | 7   | 7   |
| Change Point | 0  | 92 | 105 | 212 | 225 |

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

Network Results

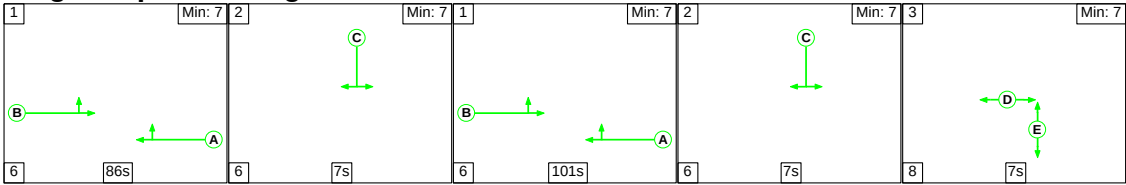
| Item                                          | Lane Description              | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-----------------------------------------------|-------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|
| Network: Havant Road - Development Access Jct | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 73.5%       |
| Havant Road - Development Access              | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 73.5%       |
| 1/1                                           | Havant Road East Ahead Right  | O         | N/A               | N/A                        | A          |             | 2          | 187             | -               | 1122              | 1939              | 1527           | 73.5%       |
| 2/1                                           | Havant Road West Ahead Left   | U         | N/A               | N/A                        | B          |             | 2          | 188             | -               | 794               | 1912              | 1514           | 52.5%       |
| 3/1                                           | Development Access Left Right | U         | N/A               | N/A                        | C          |             | 2          | 14              | -               | 58                | 1895              | 126            | 45.9%       |
| 4/1                                           | Havant Road East Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 796               | Inf               | Inf            | 0.0%        |
| 5/1                                           | Havant Road West Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1155              | Inf               | Inf            | 0.0%        |
| 6/1                                           | Development Access Exit       | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 23                | Inf               | Inf            | 0.0%        |
| Ped Link: P1                                  | Unnamed Ped Link              | -         | N/A               | -                          | D          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |
| Ped Link: P2                                  | Unnamed Ped Link              | -         | N/A               | -                          | E          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |

## Full Input Data And Results

[illegible]

Full Input Data And Results  
**Scenario 4: '2021 with Dev PM Peds every other 120 cycle time'** (FG1: '2021 with Dev PM', Plan 2: 'Network Control Plan 2')

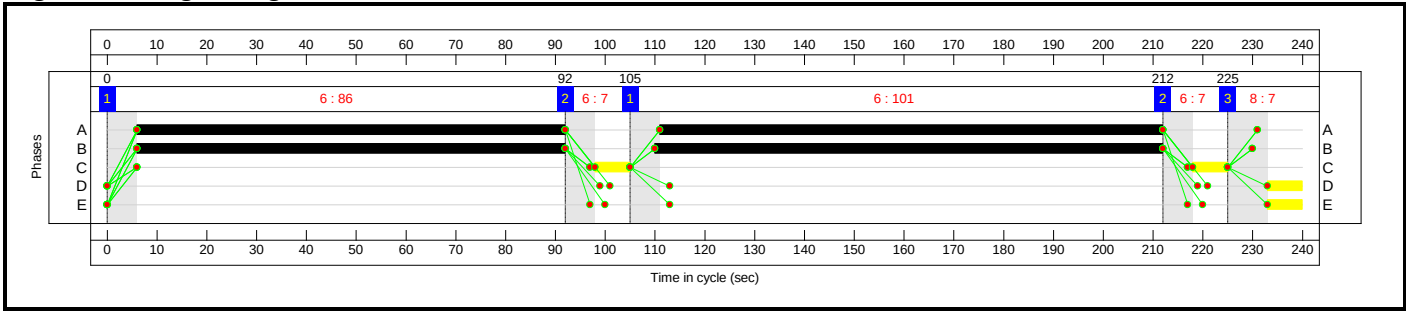
**Stage Sequence Diagram**



**Stage Timings**

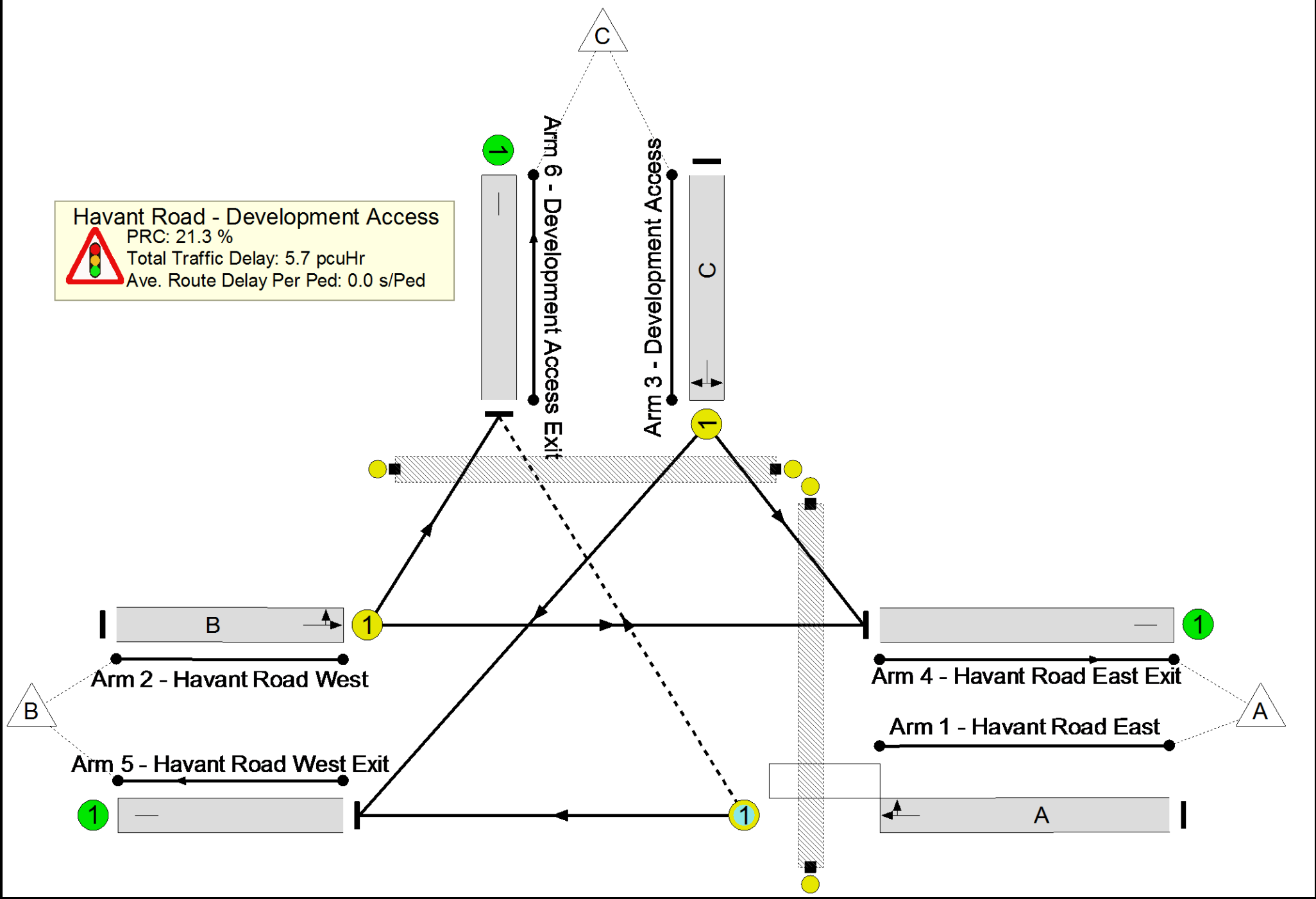
| Stage        | 1  | 2  | 1   | 2   | 3   |
|--------------|----|----|-----|-----|-----|
| Duration     | 86 | 7  | 101 | 7   | 7   |
| Change Point | 0  | 92 | 105 | 212 | 225 |

**Signal Timings Diagram**



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

Network Results

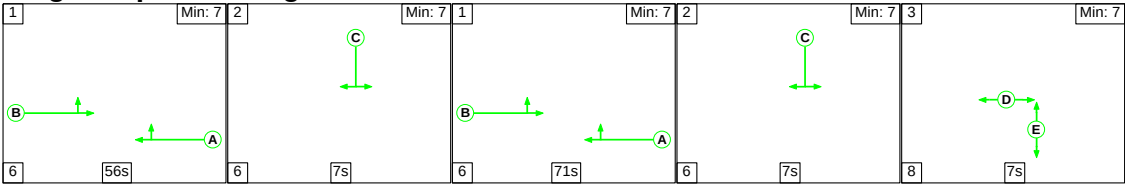
| Item                                          | Lane Description              | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-----------------------------------------------|-------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|
| Network: Havant Road - Development Access Jct | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 74.2%       |
| Havant Road - Development Access              | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 74.2%       |
| 1/1                                           | Havant Road East Ahead Right  | O         | N/A               | N/A                        | A          |             | 2          | 187             | -               | 757               | 1936              | 1525           | 49.7%       |
| 2/1                                           | Havant Road West Ahead Left   | U         | N/A               | N/A                        | B          |             | 2          | 188             | -               | 1122              | 1910              | 1512           | 74.2%       |
| 3/1                                           | Development Access Left Right | U         | N/A               | N/A                        | C          |             | 2          | 14              | -               | 28                | 1897              | 126            | 22.1%       |
| 4/1                                           | Havant Road East Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1094              | Inf               | Inf            | 0.0%        |
| 5/1                                           | Havant Road West Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 760               | Inf               | Inf            | 0.0%        |
| 6/1                                           | Development Access Exit       | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 53                | Inf               | Inf            | 0.0%        |
| Ped Link: P1                                  | Unnamed Ped Link              | -         | N/A               | -                          | D          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |
| Ped Link: P2                                  | Unnamed Ped Link              | -         | N/A               | -                          | E          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |

### Full Input Data And Results

[illegible]

Full Input Data And Results  
**Scenario 5: '2026 with Dev AM Peds every other 90 CT'** (FG3: '2026 with Dev AM', Plan 2: 'Network Control Plan 2')

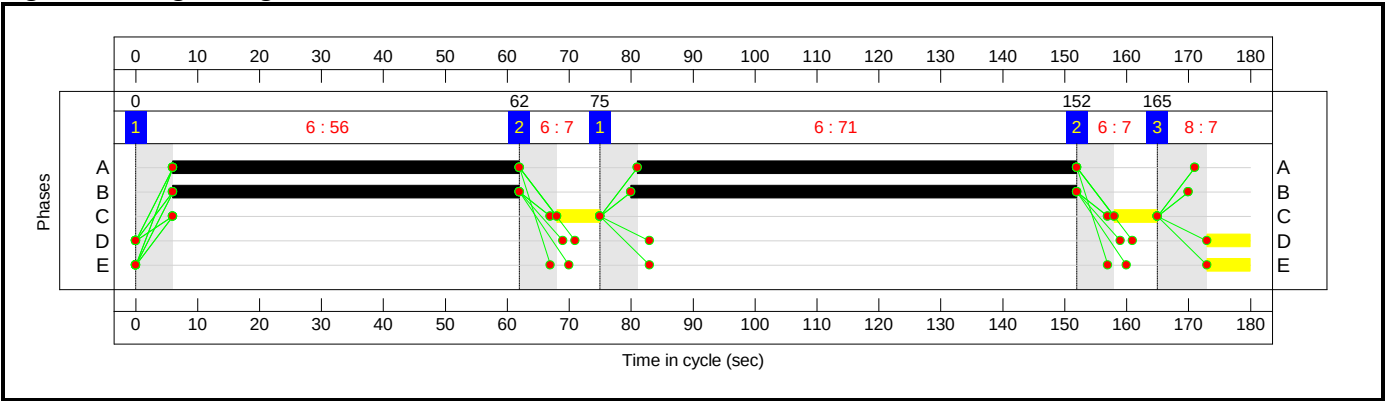
Stage Sequence Diagram



Stage Timings

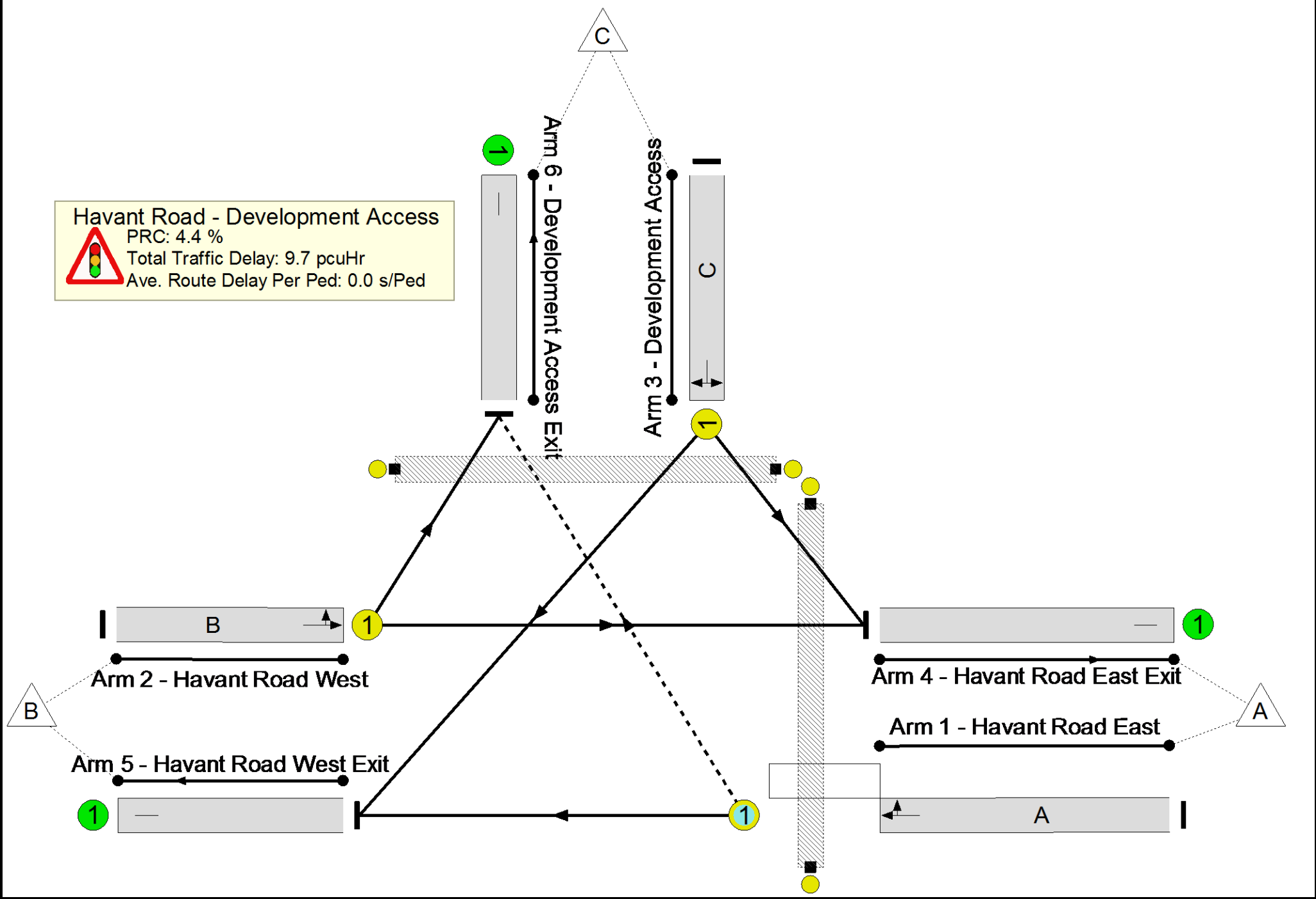
| Stage        | 1  | 2  | 1  | 2   | 3   |
|--------------|----|----|----|-----|-----|
| Duration     | 56 | 7  | 71 | 7   | 7   |
| Change Point | 0  | 62 | 75 | 152 | 165 |

Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

Network Results

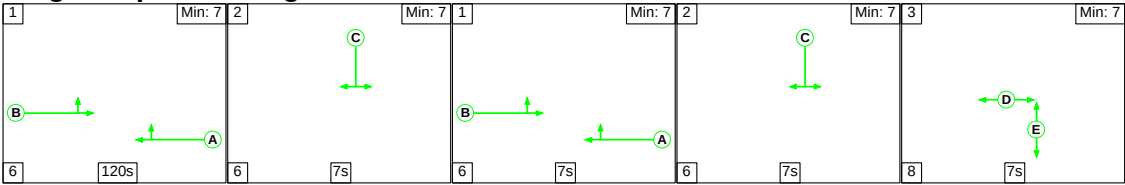
| Item                                          | Lane Description              | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-----------------------------------------------|-------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|
| Network: Havant Road - Development Access Jct | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 86.2%       |
| Havant Road - Development Access              | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 86.2%       |
| 1/1                                           | Havant Road East Ahead Right  | O         | N/A               | N/A                        | A          |             | 2          | 127             | -               | 1198              | 1939              | 1390           | 86.2%       |
| 2/1                                           | Havant Road West Ahead Left   | U         | N/A               | N/A                        | B          |             | 2          | 128             | -               | 847               | 1912              | 1381           | 61.3%       |
| 3/1                                           | Development Access Left Right | U         | N/A               | N/A                        | C          |             | 2          | 14              | -               | 58                | 1895              | 168            | 34.4%       |
| 4/1                                           | Havant Road East Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 849               | Inf               | Inf            | 0.0%        |
| 5/1                                           | Havant Road West Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1231              | Inf               | Inf            | 0.0%        |
| 6/1                                           | Development Access Exit       | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 23                | Inf               | Inf            | 0.0%        |
| Ped Link: P1                                  | Unnamed Ped Link              | -         | N/A               | -                          | D          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |
| Ped Link: P2                                  | Unnamed Ped Link              | -         | N/A               | -                          | E          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |

### Full Input Data And Results

[illegible]

Full Input Data And Results  
**Scenario 6: '2026 with Dev PM Peds every other 90 CT'** (FG4: '2026 with Dev PM', Plan 2: 'Network Control Plan 2')

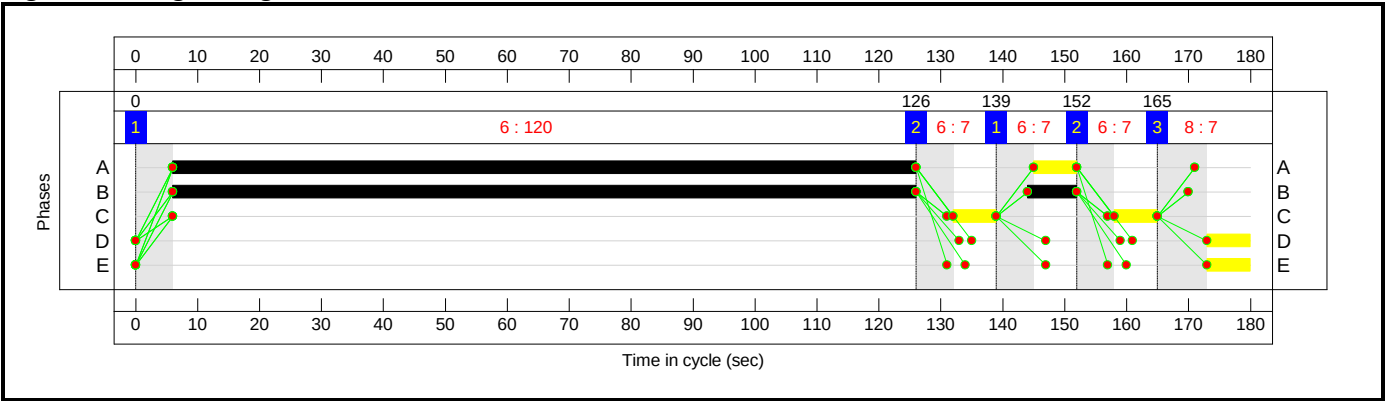
Stage Sequence Diagram



Stage Timings

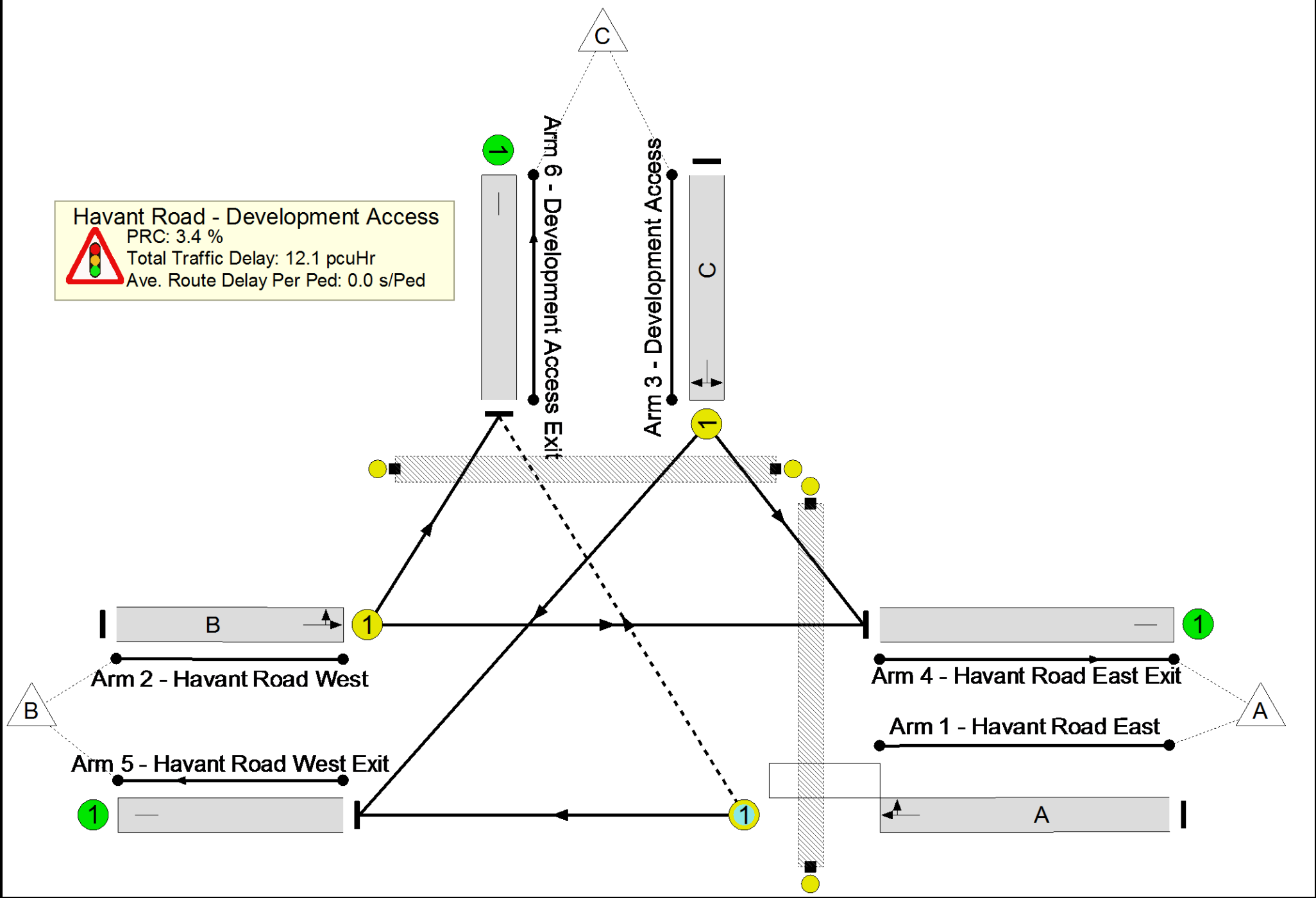
| Stage        | 1   | 2   | 1   | 2   | 3   |
|--------------|-----|-----|-----|-----|-----|
| Duration     | 120 | 7   | 7   | 7   | 7   |
| Change Point | 0   | 126 | 139 | 152 | 165 |

Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



## Full Input Data And Results

### Network Results

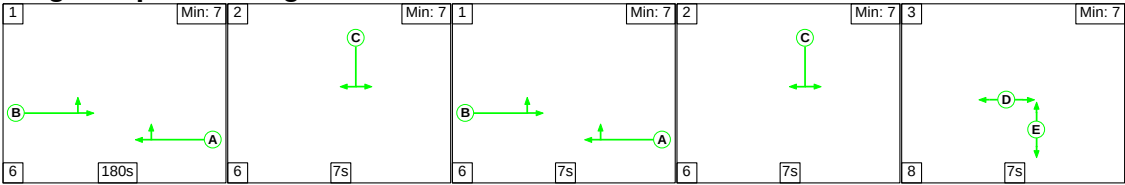
| Item                                          | Lane Description              | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-----------------------------------------------|-------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|
| Network: Havant Road - Development Access Jct | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 87.1%       |
| Havant Road - Development Access              | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 87.1%       |
| 1/1                                           | Havant Road East Ahead Right  | O         | N/A               | N/A                        | A          |             | 2          | 127             | -               | 811               | 1936              | 1387           | 58.5%       |
| 2/1                                           | Havant Road West Ahead Left   | U         | N/A               | N/A                        | B          |             | 2          | 128             | -               | 1201              | 1910              | 1379           | 87.1%       |
| 3/1                                           | Development Access Left Right | U         | N/A               | N/A                        | C          |             | 2          | 14              | -               | 28                | 1897              | 169            | 16.6%       |
| 4/1                                           | Havant Road East Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1173              | Inf               | Inf            | 0.0%        |
| 5/1                                           | Havant Road West Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 814               | Inf               | Inf            | 0.0%        |
| 6/1                                           | Development Access Exit       | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 53                | Inf               | Inf            | 0.0%        |
| Ped Link: P1                                  | Unnamed Ped Link              | -         | N/A               | -                          | D          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |
| Ped Link: P2                                  | Unnamed Ped Link              | -         | N/A               | -                          | E          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |

## Full Input Data And Results

| Item                                          | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu)        | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr)                    | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|-----------------------------------------------|----------------|---------------|------------------------------|------------------------------|-----------------------------|------------------------------------------|------------------------------|------------------------------------|---------------------|---------------------------|----------------------------------|----------------------------|----------------------|
| Network: Havant Road - Development Access Jct | -              | -             | 15                           | 0                            | 2                           | 7.9                                      | 4.0                          | 0.2                                | 12.1                | -                         | -                                | -                          | -                    |
| Havant Road - Development Access              | -              | -             | 15                           | 0                            | 2                           | 7.9                                      | 4.0                          | 0.2                                | 12.1                | -                         | -                                | -                          | -                    |
| 1/1                                           | 811            | 811           | 15                           | 0                            | 2                           | 2.0                                      | 0.7                          | 0.2                                | 2.9                 | 12.7                      | 15.3                             | 0.7                        | 16.0                 |
| 2/1                                           | 1201           | 1201          | -                            | -                            | -                           | 5.4                                      | 3.2                          | -                                  | 8.6                 | 25.8                      | 39.9                             | 3.2                        | 43.2                 |
| 3/1                                           | 28             | 28            | -                            | -                            | -                           | 0.5                                      | 0.1                          | -                                  | 0.6                 | 73.9                      | 1.2                              | 0.1                        | 1.3                  |
| 4/1                                           | 1173           | 1173          | -                            | -                            | -                           | 0.0                                      | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 5/1                                           | 814            | 814           | -                            | -                            | -                           | 0.0                                      | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| 6/1                                           | 53             | 53            | -                            | -                            | -                           | 0.0                                      | 0.0                          | -                                  | 0.0                 | 0.0                       | 0.0                              | 0.0                        | 0.0                  |
| Ped Link: P1                                  | 0              | 0             | -                            | -                            | -                           | -                                        | -                            | -                                  | -                   | -                         | -                                | -                          | -                    |
| Ped Link: P2                                  | 0              | 0             | -                            | -                            | -                           | -                                        | -                            | -                                  | -                   | -                         | -                                | -                          | -                    |
| Summary                                       |                |               |                              |                              |                             |                                          |                              |                                    |                     |                           |                                  |                            |                      |
| C1                                            |                |               | PRC for Signalled Lanes (%): |                              | 3.4                         | Total Delay for Signalled Lanes (pcuHr): |                              |                                    | 12.06               | Cycle Time (s): 180       |                                  |                            |                      |
|                                               |                |               | PRC Over All Lanes (%):      |                              | 3.4                         | Total Delay Over All Lanes(pcuHr):       |                              |                                    | 12.06               |                           |                                  |                            |                      |

Full Input Data And Results  
**Scenario 7: '2026 with Dev AM Peds every other 120 CT' (FG3: '2026 with Dev AM', Plan 2: 'Network Control Plan 2')**

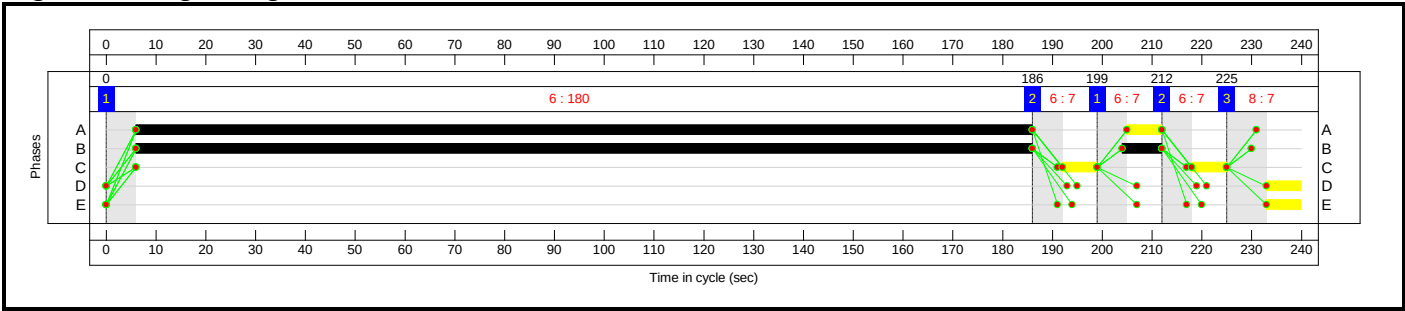
Stage Sequence Diagram



Stage Timings

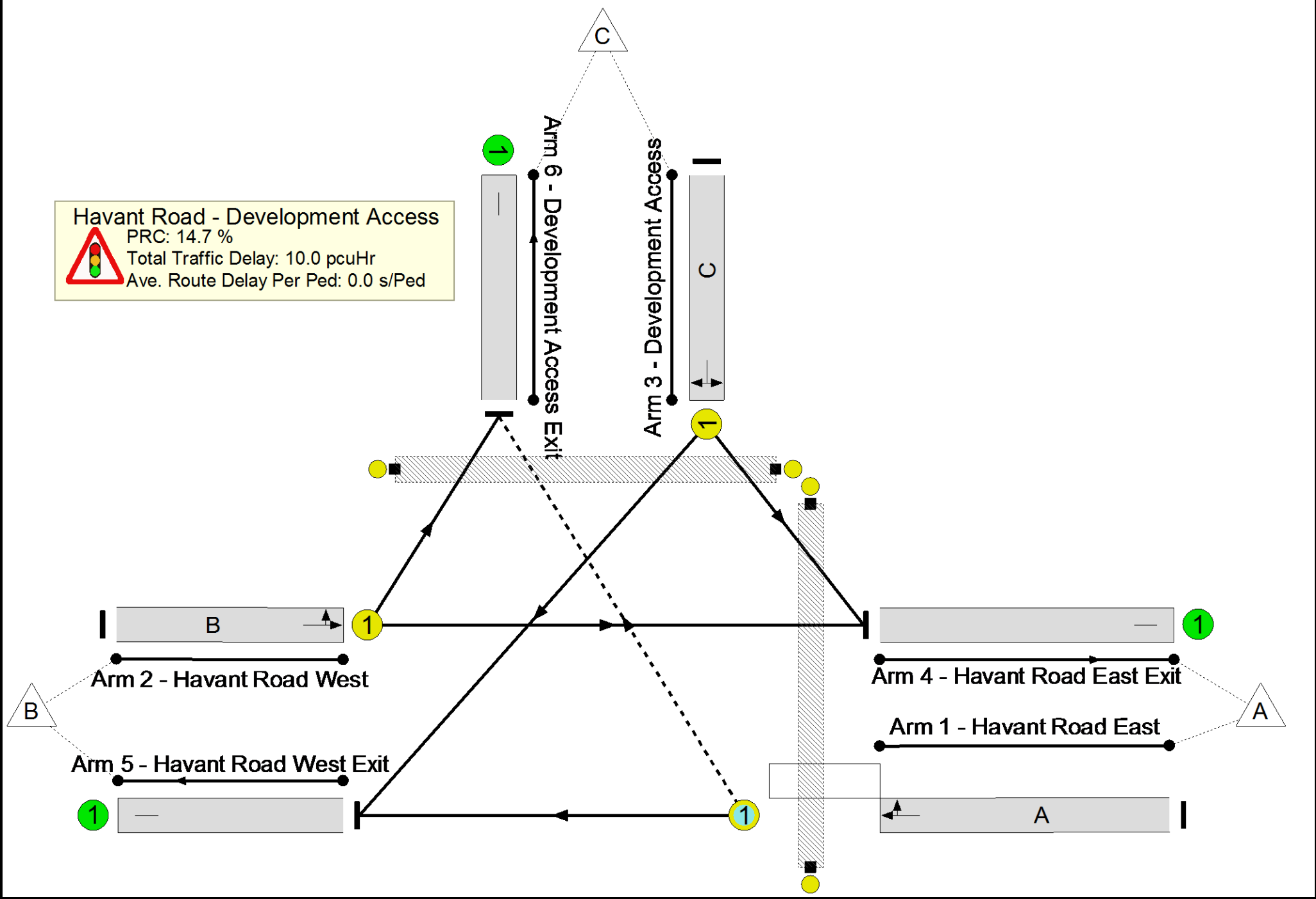
| Stage        | 1   | 2   | 1   | 2   | 3   |
|--------------|-----|-----|-----|-----|-----|
| Duration     | 180 | 7   | 7   | 7   | 7   |
| Change Point | 0   | 186 | 199 | 212 | 225 |

Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

Network Results

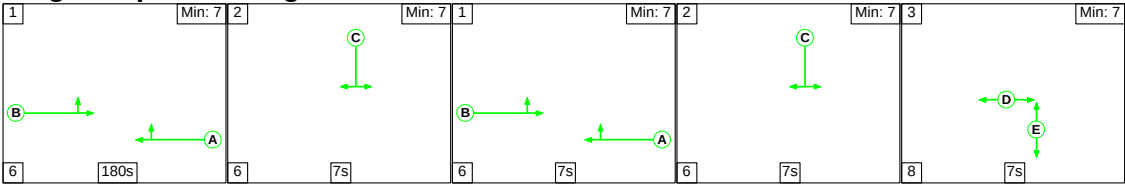
| Item                                          | Lane Description              | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-----------------------------------------------|-------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|
| Network: Havant Road - Development Access Jct | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 78.5%       |
| Havant Road - Development Access              | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 78.5%       |
| 1/1                                           | Havant Road East Ahead Right  | O         | N/A               | N/A                        | A          |             | 2          | 187             | -               | 1198              | 1939              | 1527           | 78.5%       |
| 2/1                                           | Havant Road West Ahead Left   | U         | N/A               | N/A                        | B          |             | 2          | 188             | -               | 847               | 1912              | 1514           | 56.0%       |
| 3/1                                           | Development Access Left Right | U         | N/A               | N/A                        | C          |             | 2          | 14              | -               | 58                | 1895              | 126            | 45.9%       |
| 4/1                                           | Havant Road East Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 849               | Inf               | Inf            | 0.0%        |
| 5/1                                           | Havant Road West Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1231              | Inf               | Inf            | 0.0%        |
| 6/1                                           | Development Access Exit       | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 23                | Inf               | Inf            | 0.0%        |
| Ped Link: P1                                  | Unnamed Ped Link              | -         | N/A               | -                          | D          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |
| Ped Link: P2                                  | Unnamed Ped Link              | -         | N/A               | -                          | E          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |

### Full Input Data And Results

[illegible]

Full Input Data And Results  
**Scenario 8: '2026 with Dev PM Peds every other 120 CT'** (FG4: '2026 with Dev PM', Plan 2: 'Network Control Plan 2')

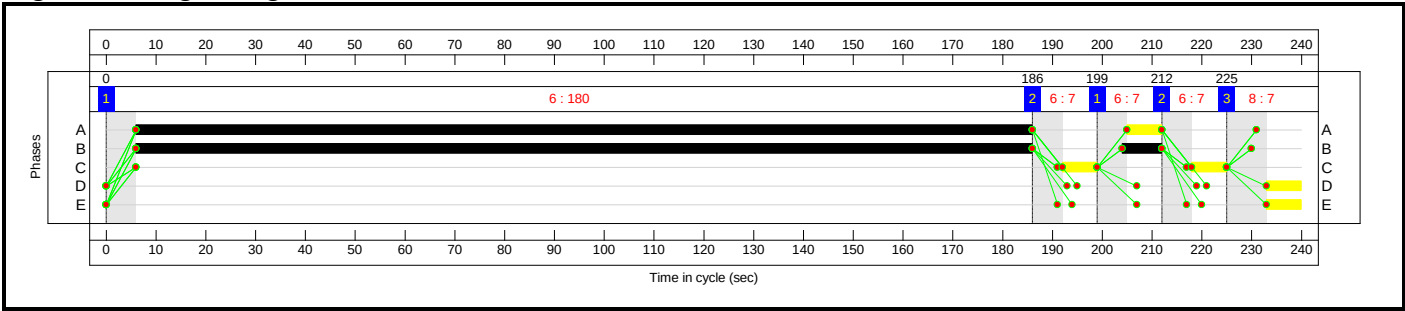
Stage Sequence Diagram



Stage Timings

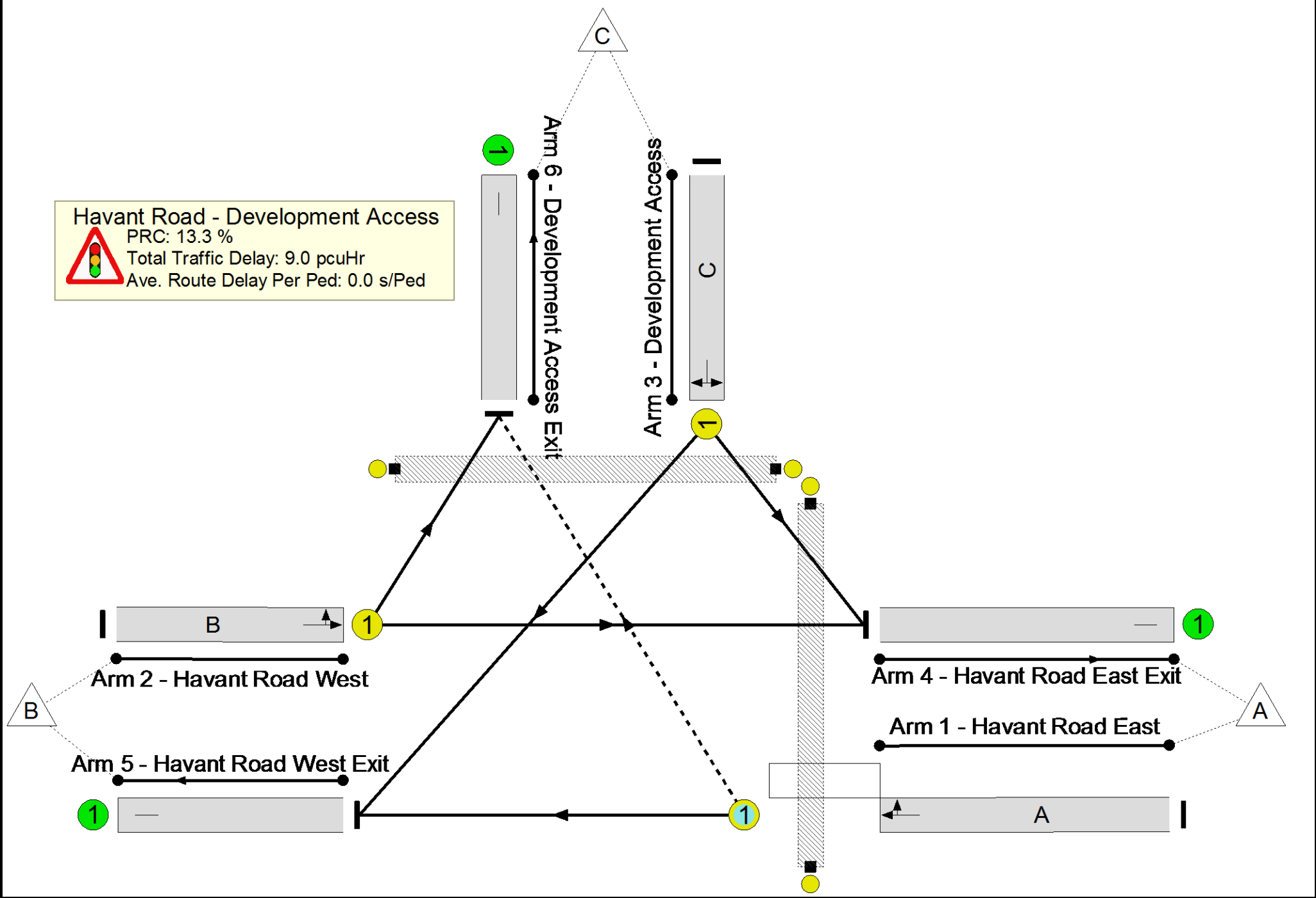
| Stage        | 1   | 2   | 1   | 2   | 3   |
|--------------|-----|-----|-----|-----|-----|
| Duration     | 180 | 7   | 7   | 7   | 7   |
| Change Point | 0   | 186 | 199 | 212 | 225 |

Signal Timings Diagram



Full Input Data And Results

**Network Layout Diagram**



Full Input Data And Results

Network Results

| Item                                          | Lane Description              | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|-----------------------------------------------|-------------------------------|-----------|-------------------|----------------------------|------------|-------------|------------|-----------------|-----------------|-------------------|-------------------|----------------|-------------|
| Network: Havant Road - Development Access Jct | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 79.4%       |
| Havant Road - Development Access              | -                             | -         | N/A               | -                          | -          |             | -          | -               | -               | -                 | -                 | -              | 79.4%       |
| 1/1                                           | Havant Road East Ahead Right  | O         | N/A               | N/A                        | A          |             | 2          | 187             | -               | 811               | 1936              | 1525           | 53.2%       |
| 2/1                                           | Havant Road West Ahead Left   | U         | N/A               | N/A                        | B          |             | 2          | 188             | -               | 1201              | 1910              | 1512           | 79.4%       |
| 3/1                                           | Development Access Left Right | U         | N/A               | N/A                        | C          |             | 2          | 14              | -               | 28                | 1897              | 126            | 22.1%       |
| 4/1                                           | Havant Road East Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 1173              | Inf               | Inf            | 0.0%        |
| 5/1                                           | Havant Road West Exit         | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 814               | Inf               | Inf            | 0.0%        |
| 6/1                                           | Development Access Exit       | U         | N/A               | N/A                        | -          |             | -          | -               | -               | 53                | Inf               | Inf            | 0.0%        |
| Ped Link: P1                                  | Unnamed Ped Link              | -         | N/A               | -                          | D          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |
| Ped Link: P2                                  | Unnamed Ped Link              | -         | N/A               | -                          | E          |             | 1          | 7               | -               | 0                 | -                 | 0              | 0.0%        |

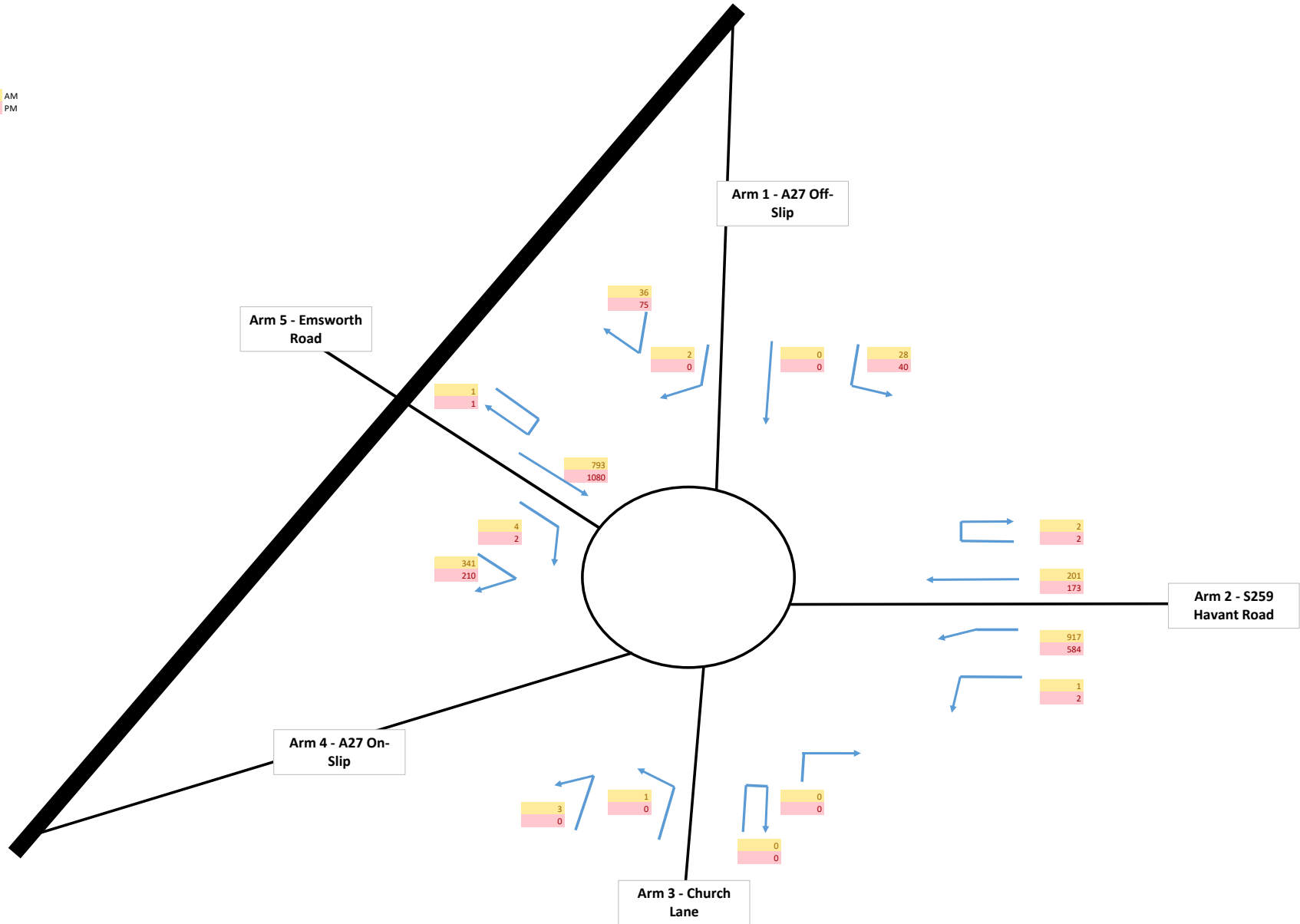
## Full Input Data And Results

[illegible]

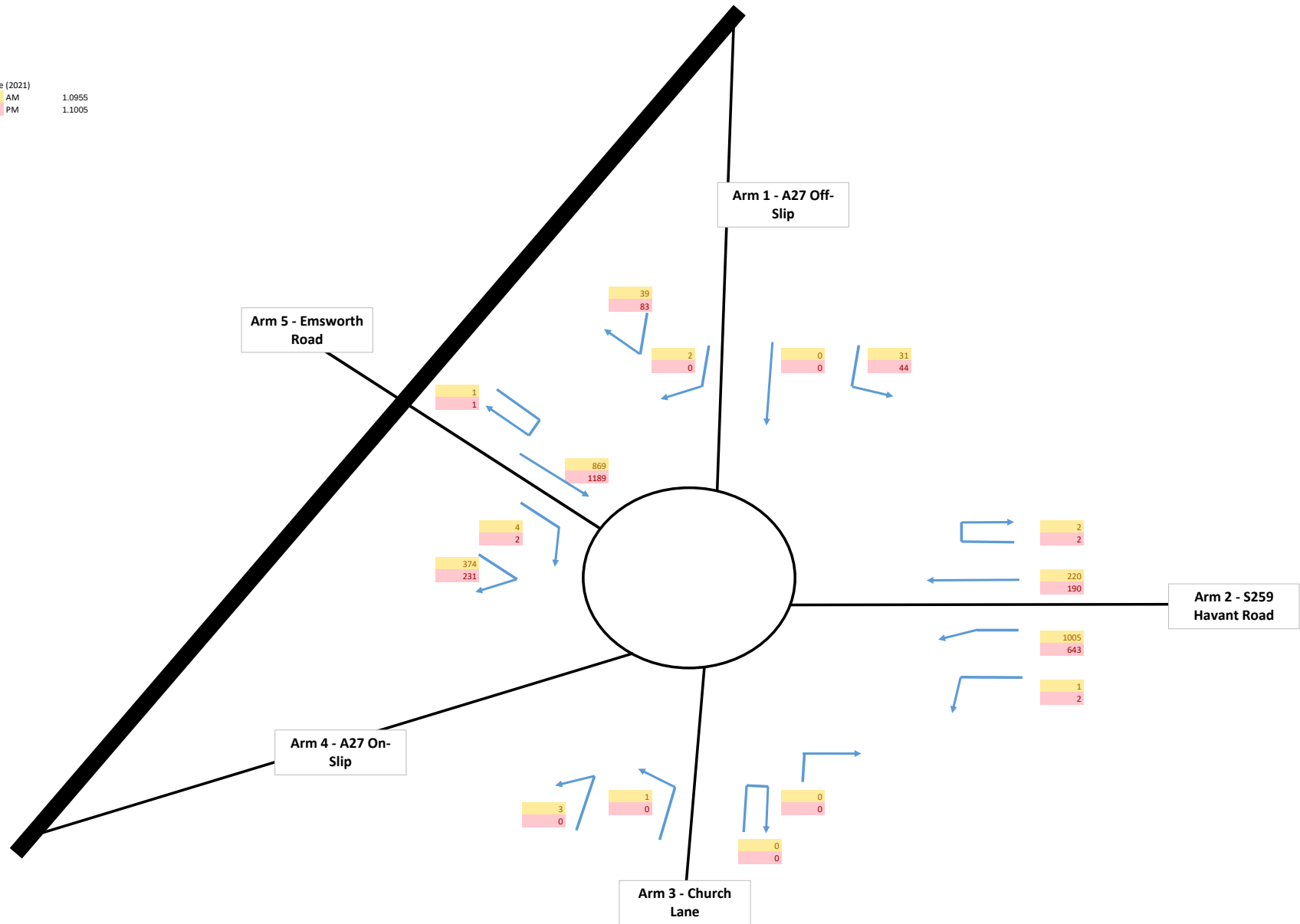
## Appendix G

2016 Baseline

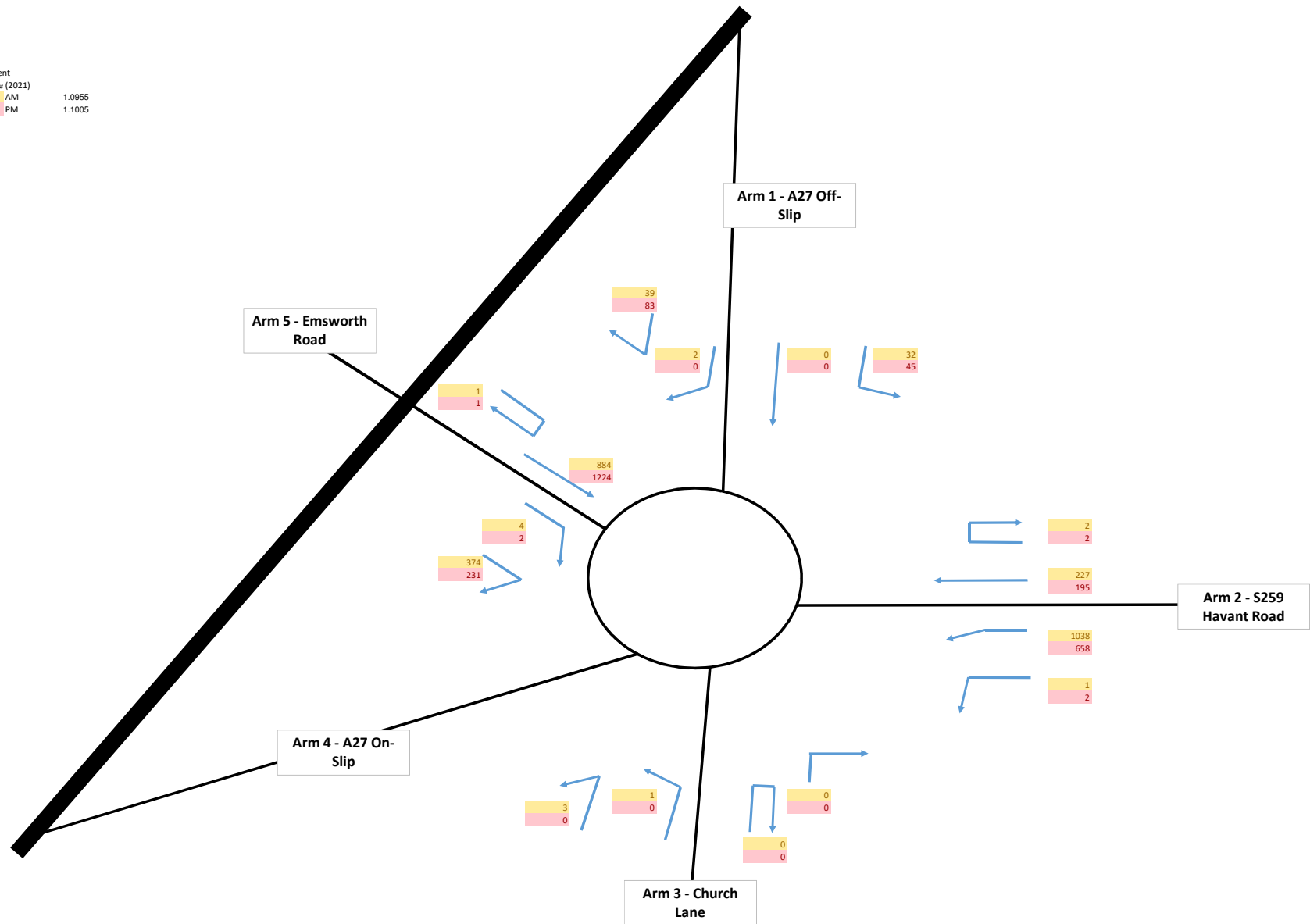
| Time Period | AM     | PM     |
|-------------|--------|--------|
| AM          | Yellow | Yellow |
| PM          | Yellow | Pink   |



2021 Baseline  
 TEMPRO Growth Rate (2021)  
 AM 1.0955  
 PM 1.1005

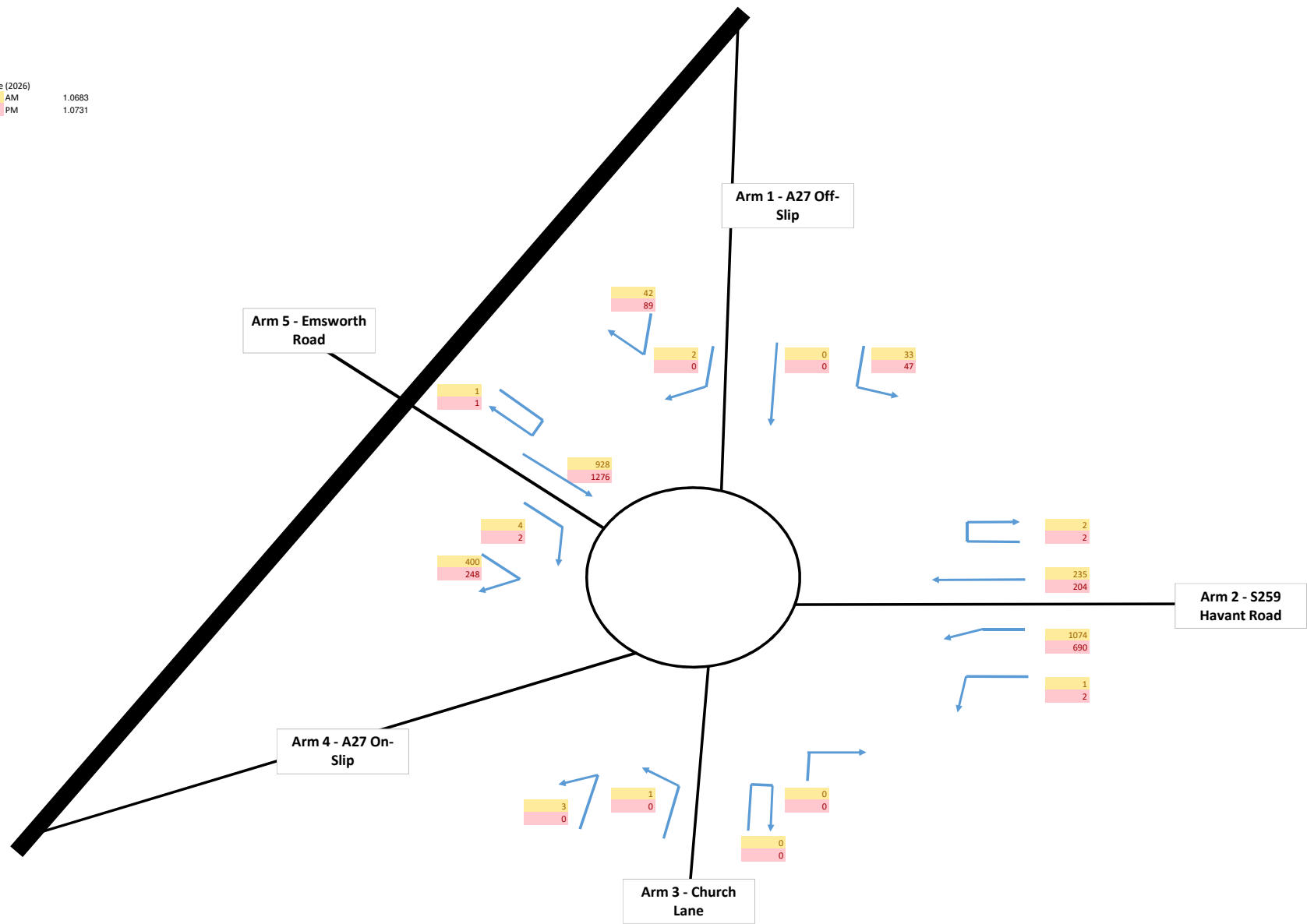


2021 with development  
TEMPRO Growth Rate (2021)  
AM 1.0955  
PM 1.1005



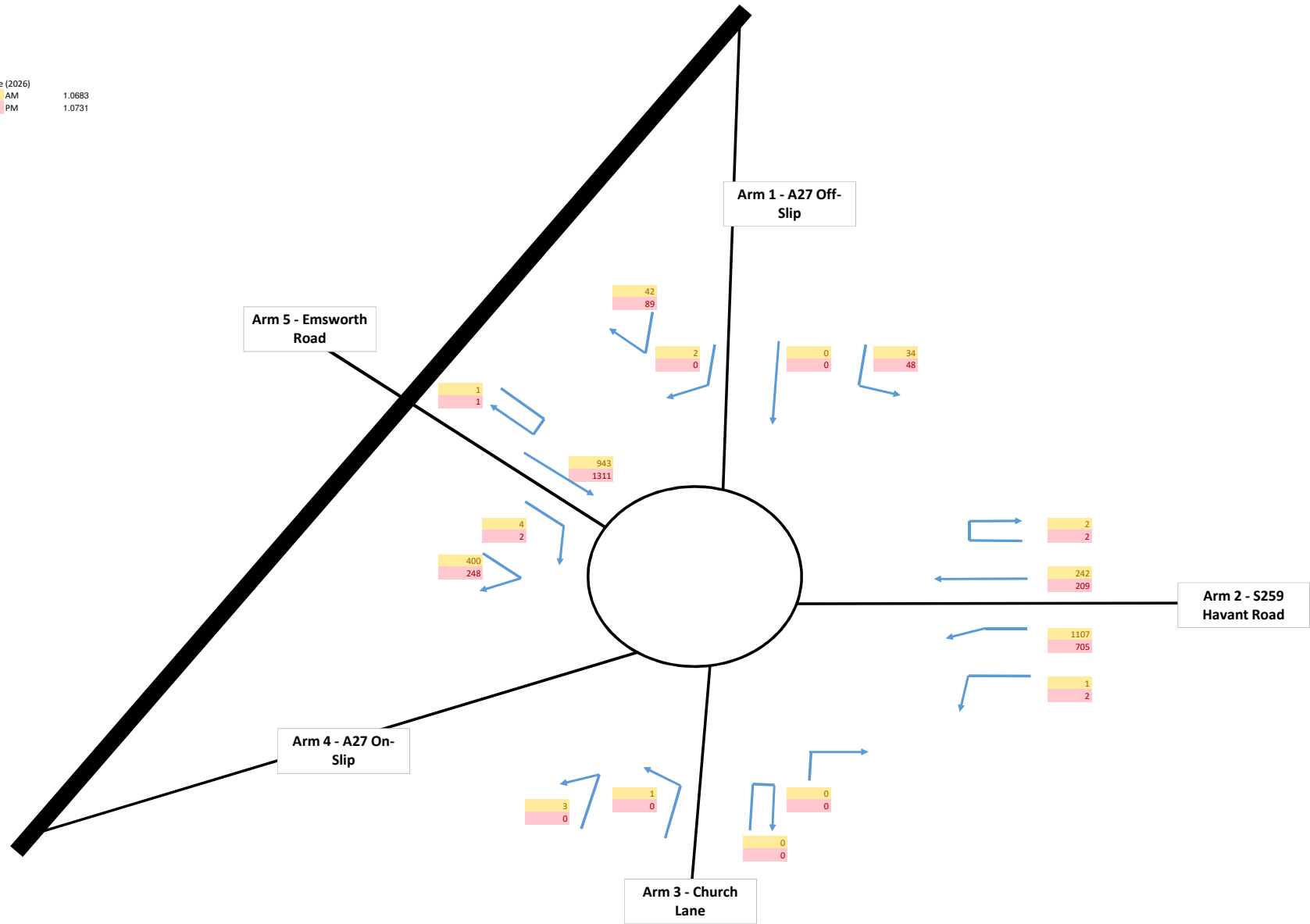
TEMPRO Growth Rate (2026)

|    |        |
|----|--------|
| AM | 1.0683 |
| PM | 1.0731 |

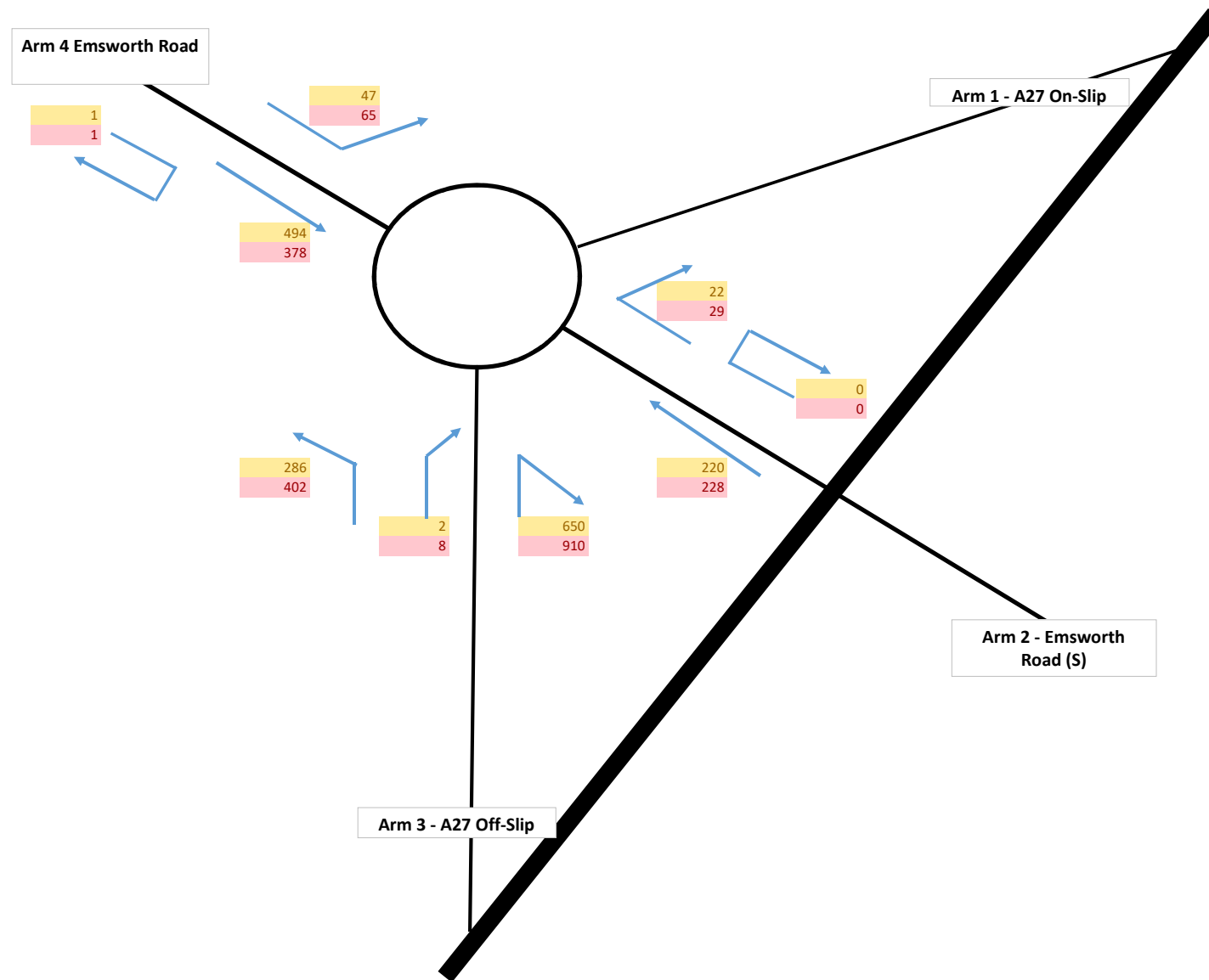


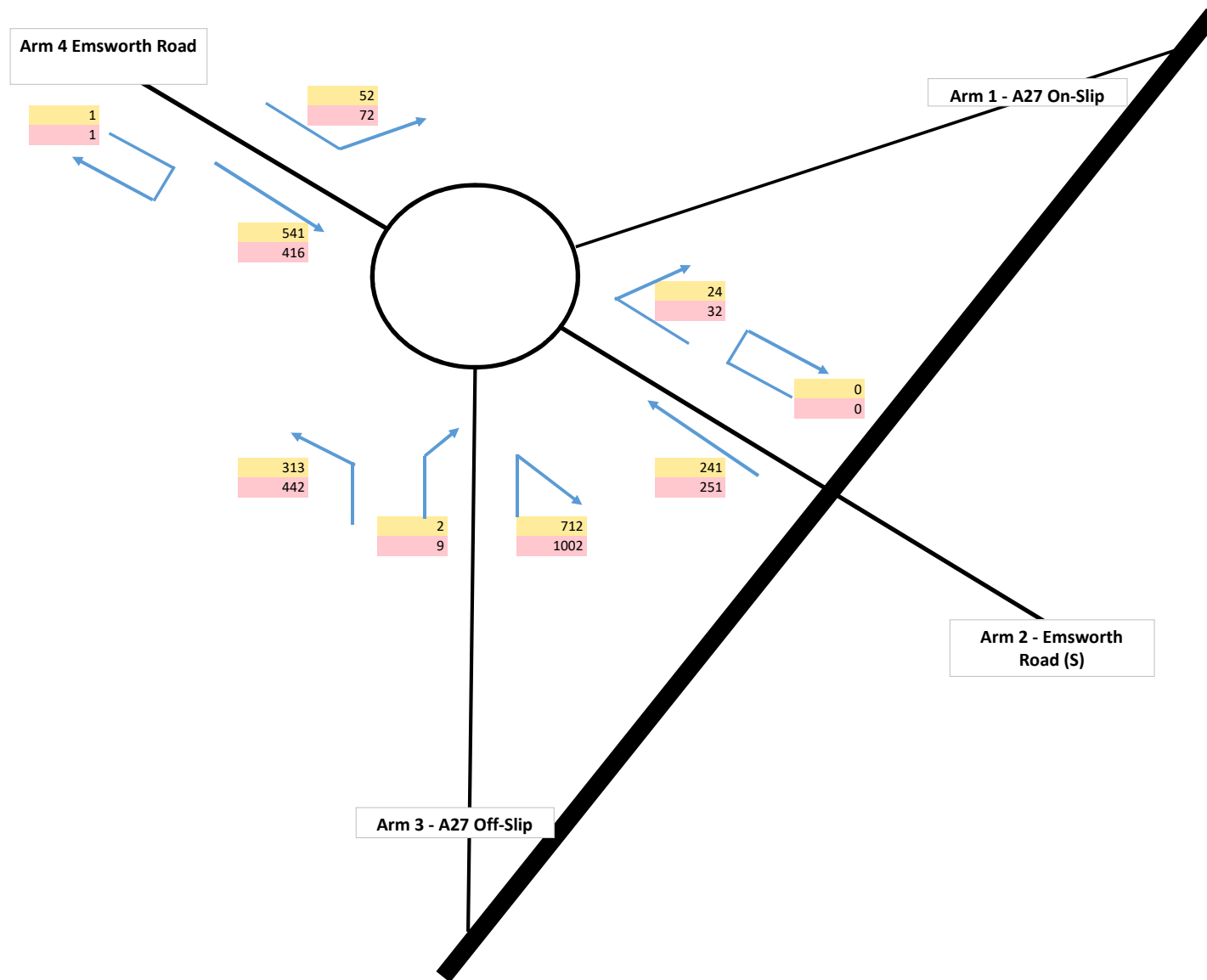
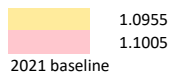
TEMPRO Growth Rate (2026)

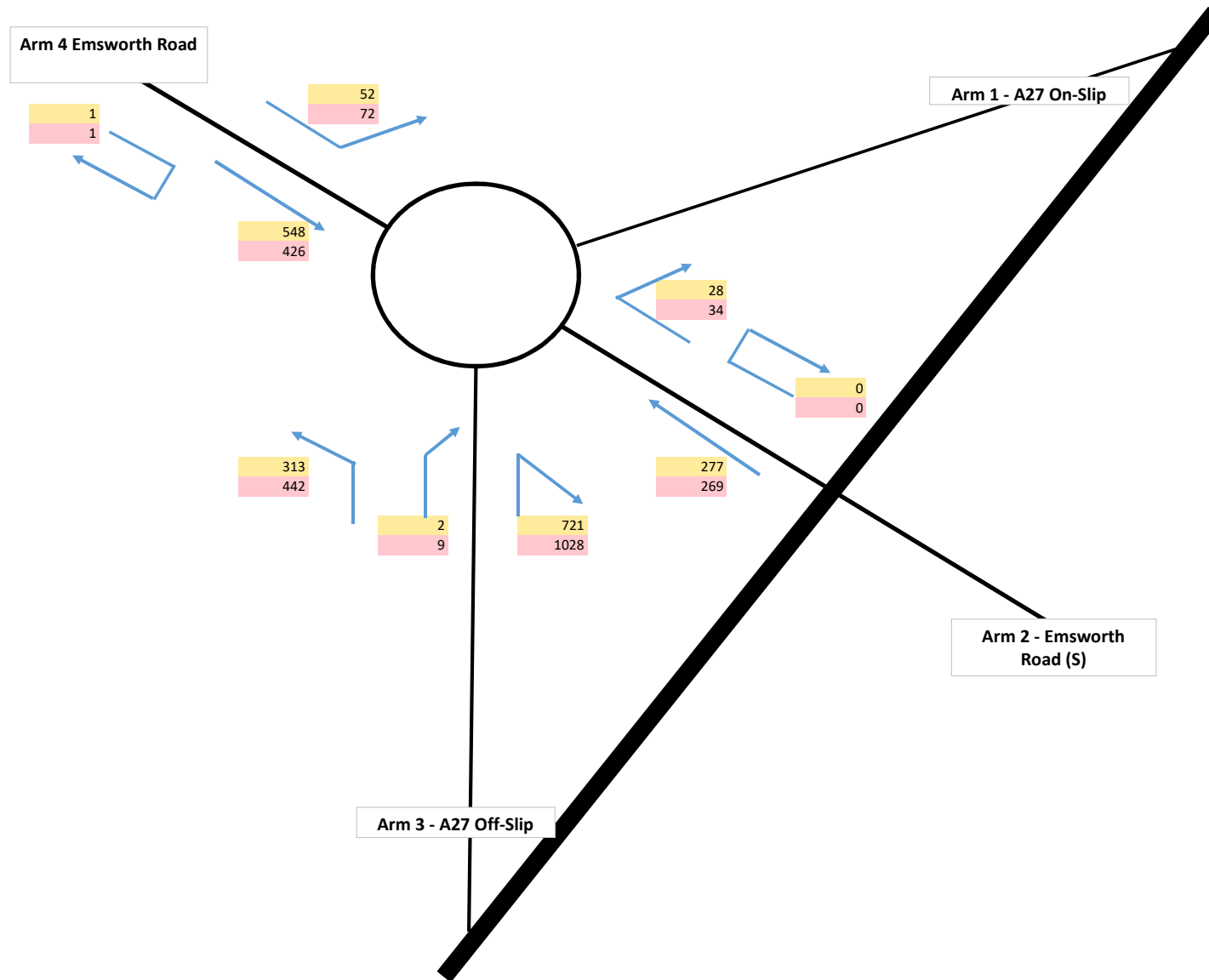
|    |        |
|----|--------|
| AM | 1.0683 |
| PM | 1.0731 |



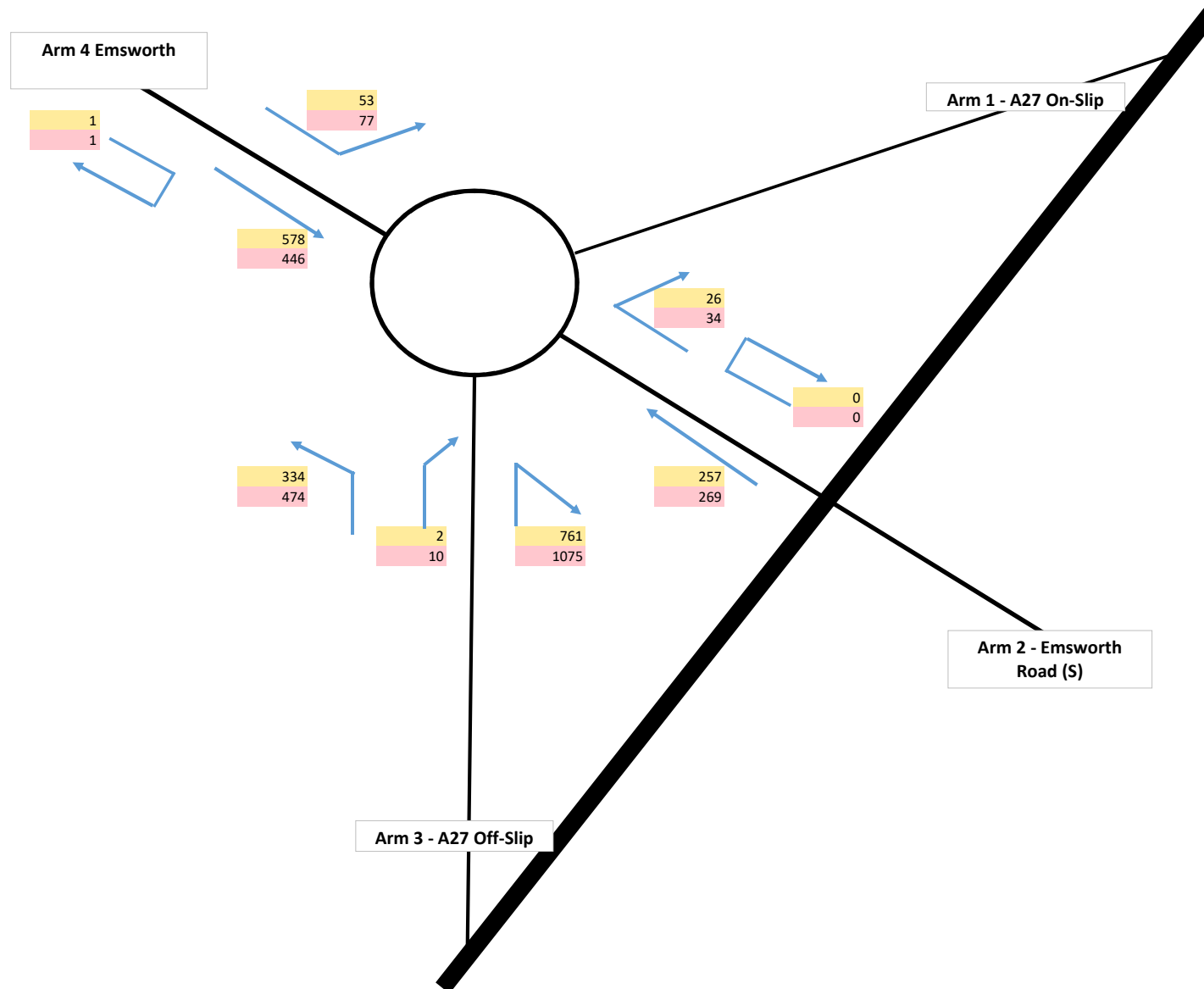
2016 baseline



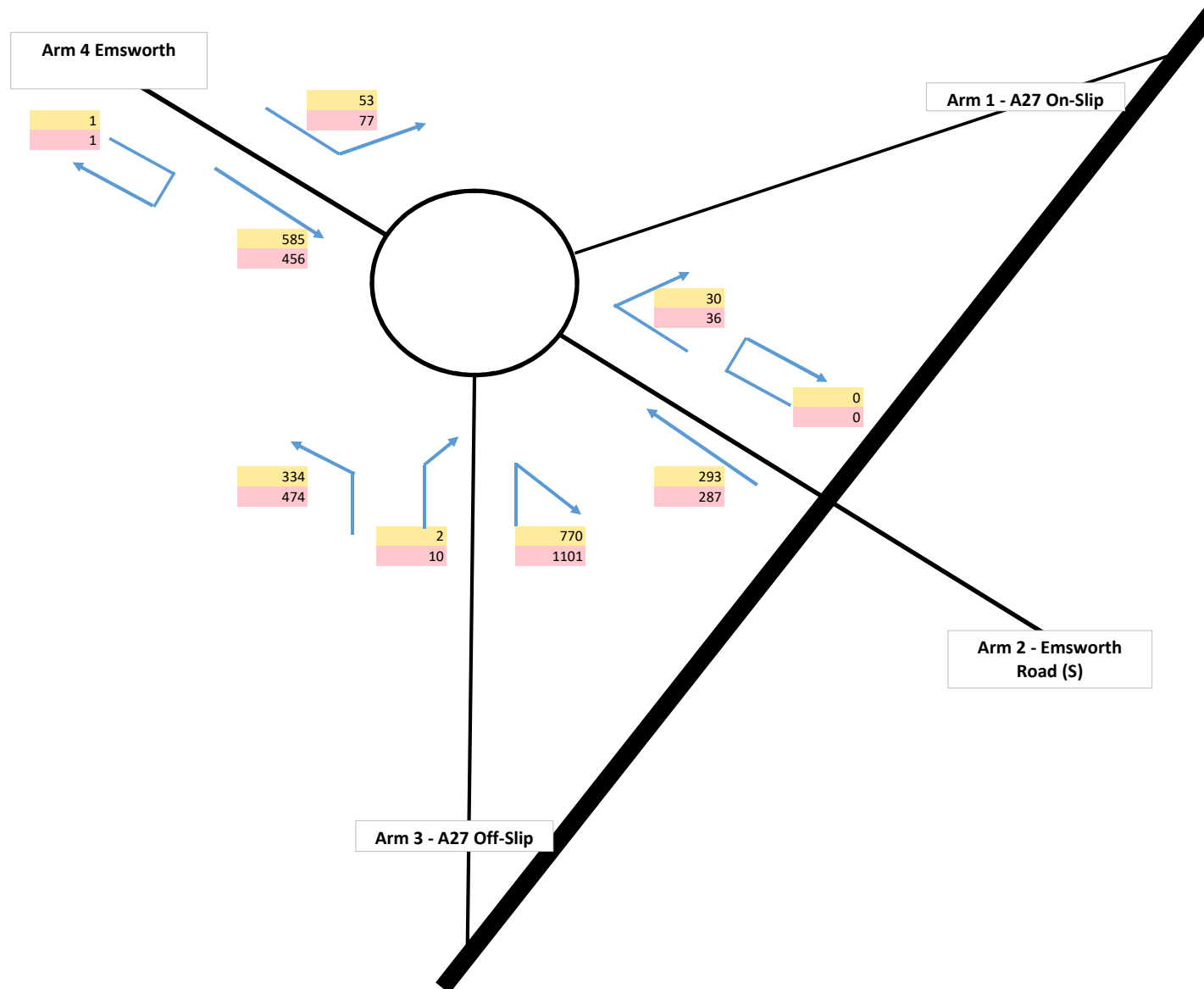




1.0683 (TEMPO 2026)  
1.0731  
2026 base



1.0683 (TEMPO 2026)  
1.0731  
2026 with dev



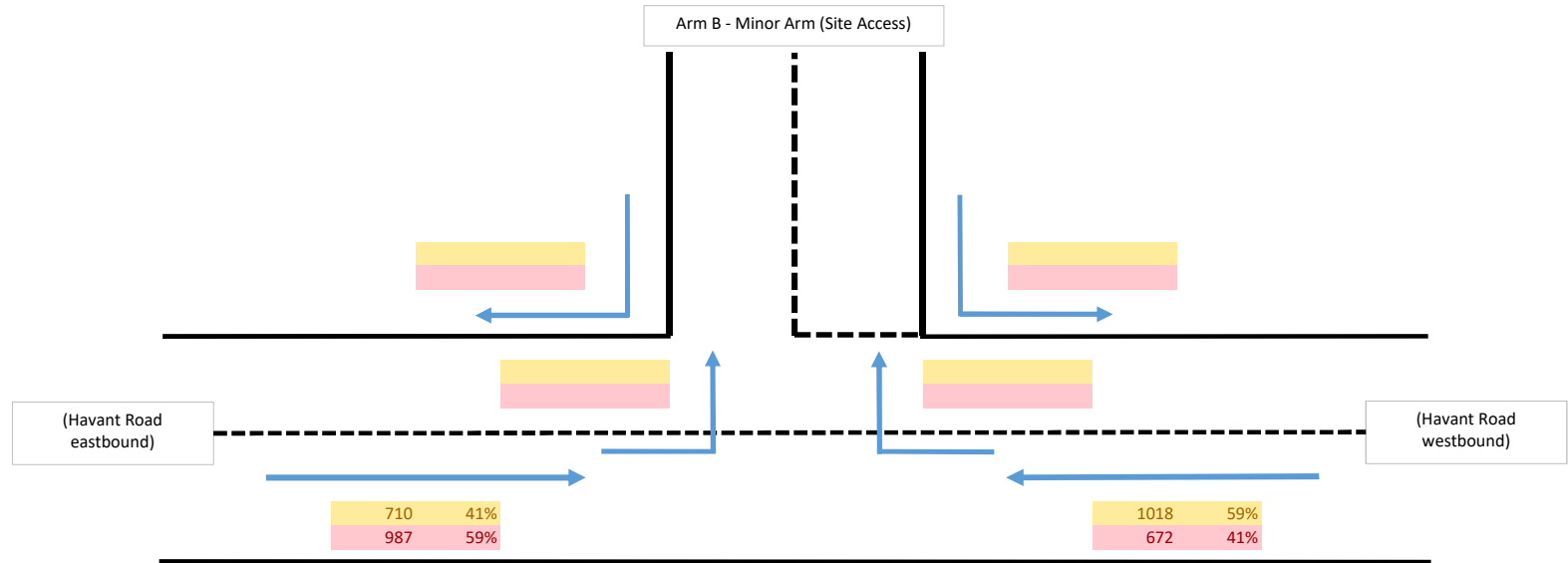
## 2016 Base

### AM Peak Distribution

| ATC Survey | No. Vehicles | %    |
|------------|--------------|------|
| westbound  | 1018         | 59%  |
| eastbound  | 710          | 41%  |
| Total      | 1728         | 100% |

### PM Peak Distribution

| ATC Survey | No. Vehicles | %    |
|------------|--------------|------|
| westbound  | 672          | 41%  |
| eastbound  | 987          | 59%  |
| Total      | 1659         | 100% |



## 2016 Base with Development

### AM Peak Distribution

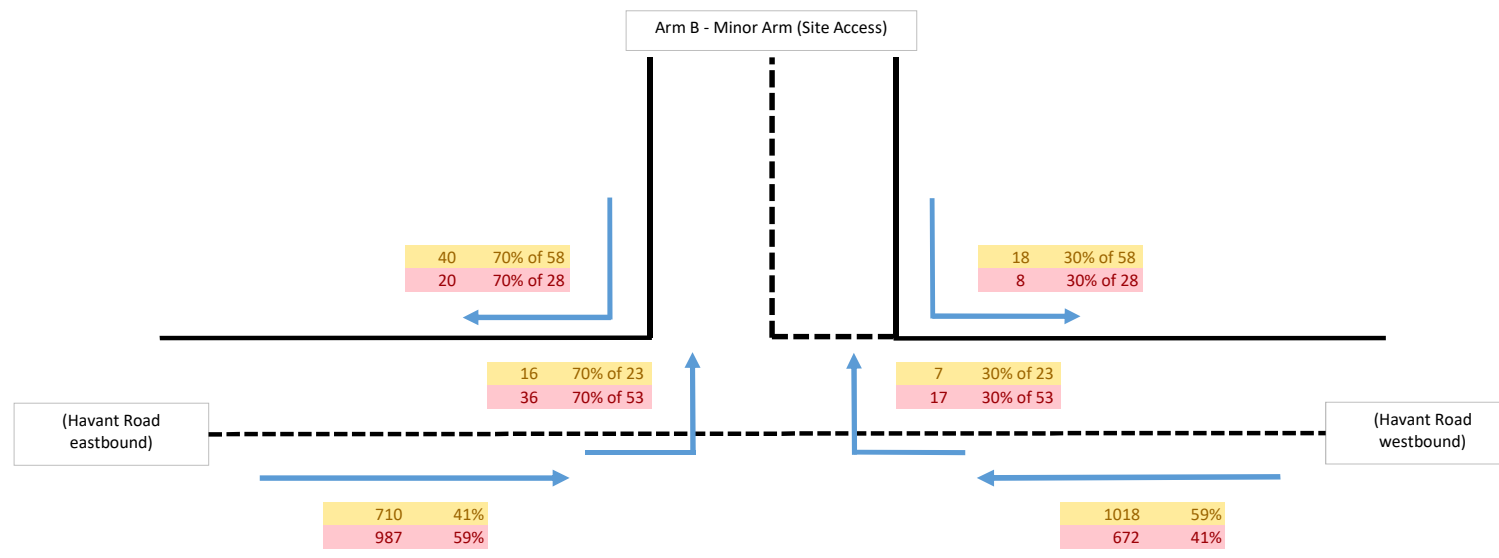
| ATC Survey | No. Vehicles | %    |
|------------|--------------|------|
| westbound  | 1018         | 59%  |
| eastbound  | 710          | 41%  |
| Total      | 1728         | 100% |

| TRICS      | No. Vehicles |
|------------|--------------|
| Arrivals   | 23           |
| Departures | 58           |

### PM Peak Distribution

| ATC Survey | No. Vehicles | %    |
|------------|--------------|------|
| westbound  | 672          | 41%  |
| eastbound  | 987          | 59%  |
| Total      | 1659         | 100% |

| TRICS      | No. Vehicles |
|------------|--------------|
| Arrivals   | 53           |
| Departures | 28           |



## 2021 Base with Development

### AM Peak Distribution

| ATC Survey | No. Vehicles | %    |
|------------|--------------|------|
| westbound  | 1115         | 59%  |
| eastbound  | 778          | 41%  |
| Total      | 1893         | 100% |

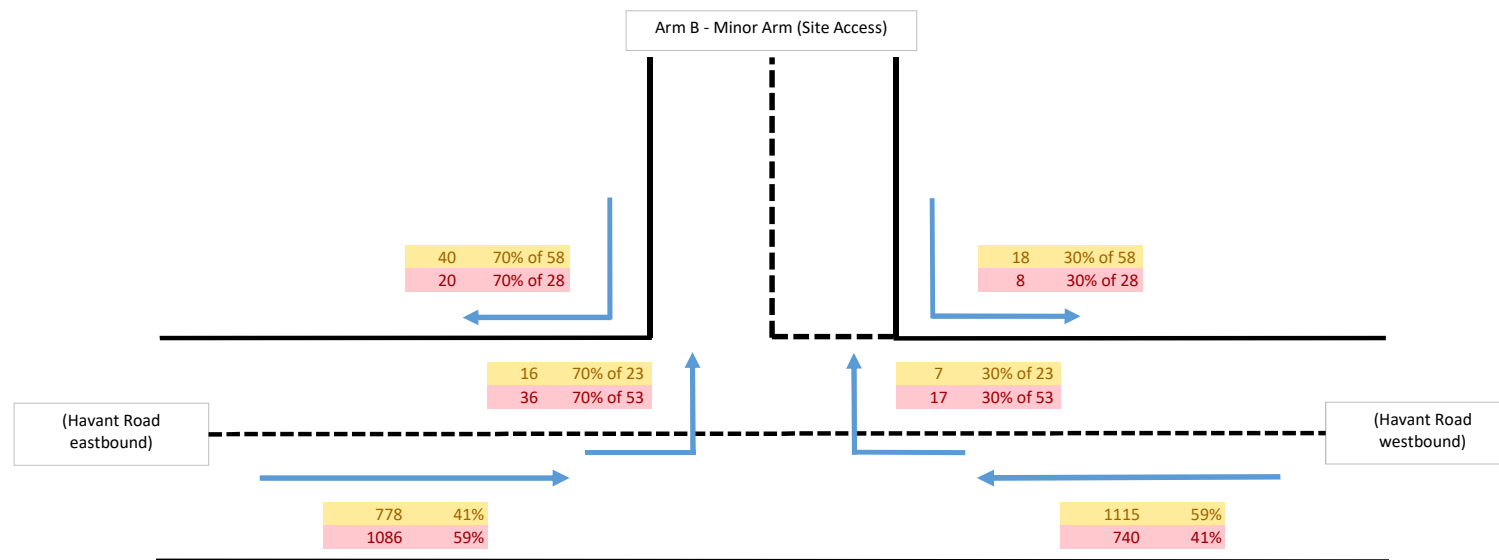
| TRICS      | No. Vehicles |
|------------|--------------|
| Arrivals   | 23           |
| Departures | 58           |

### PM Peak Distribution

| ATC Survey | No. Vehicles | %    |
|------------|--------------|------|
| westbound  | 740          | 41%  |
| eastbound  | 1086         | 59%  |
| Total      | 1826         | 100% |

| TRICS      | No. Vehicles |
|------------|--------------|
| Arrivals   | 53           |
| Departures | 28           |

| TEMPRO Growth Rate | (2016-2021) |
|--------------------|-------------|
| AM                 | PM          |
| 1.0955             | 1.1005      |



## 2026 Base with Development

### AM Peak Distribution

| ATC Survey | No. Vehicles | %    |
|------------|--------------|------|
| westbound  | 1191         | 59%  |
| eastbound  | 831          | 41%  |
| Total      | 2022         | 100% |

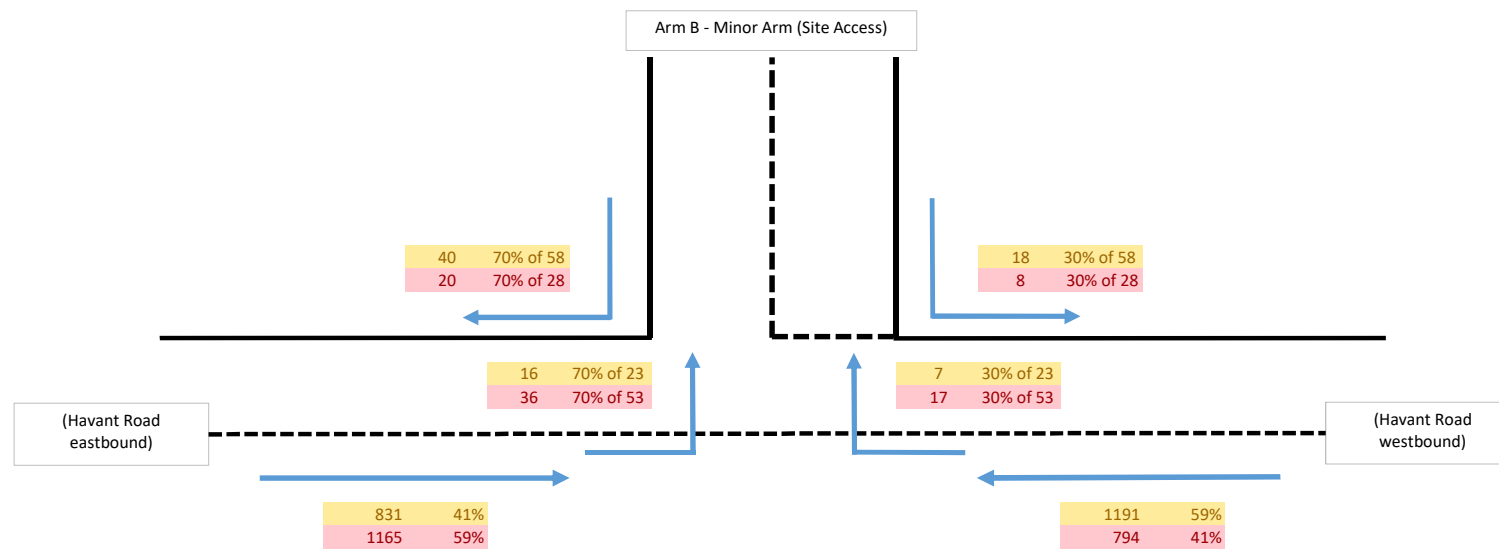
| TRICS      | No. Vehicles |
|------------|--------------|
| Arrivals   | 23           |
| Departures | 58           |

### PM Peak Distribution

| ATC Survey | No. Vehicles | %    |
|------------|--------------|------|
| westbound  | 794          | 41%  |
| eastbound  | 1165         | 59%  |
| Total      | 1959         | 100% |

| TRICS      | No. Vehicles |
|------------|--------------|
| Arrivals   | 53           |
| Departures | 28           |

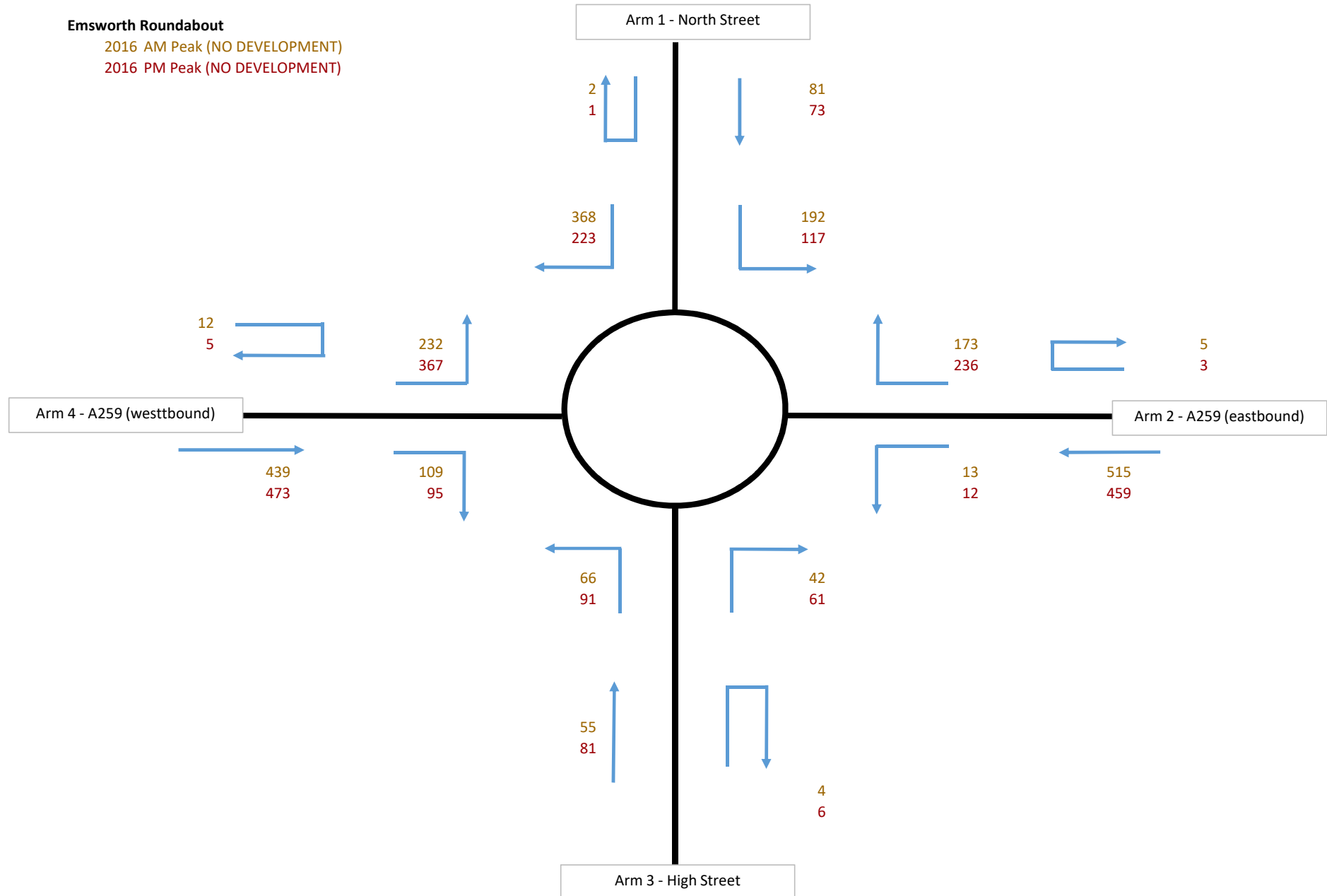
| TEMPRO Growth Rate | 2021-2026 |
|--------------------|-----------|
| AM                 | PM        |
| 1.0683             | 1.0731    |



# Emsworth Roundabout

2016 AM Peak (NO DEVELOPMENT)

2016 PM Peak (NO DEVELOPMENT)



# Emsworth Roundabout

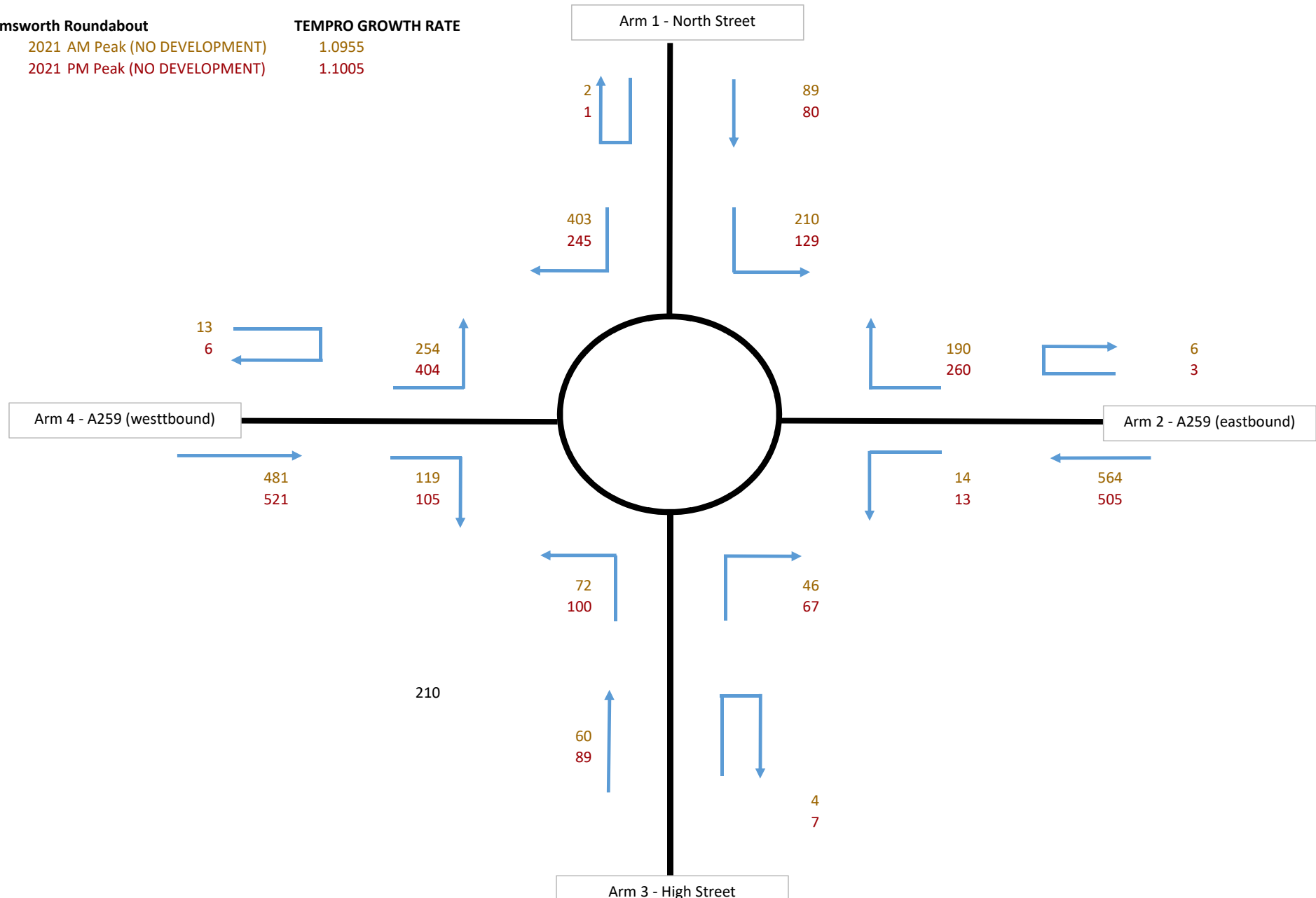
2021 AM Peak (NO DEVELOPMENT)

2021 PM Peak (NO DEVELOPMENT)

## TEMPO GROWTH RATE

1.0955

1.1005

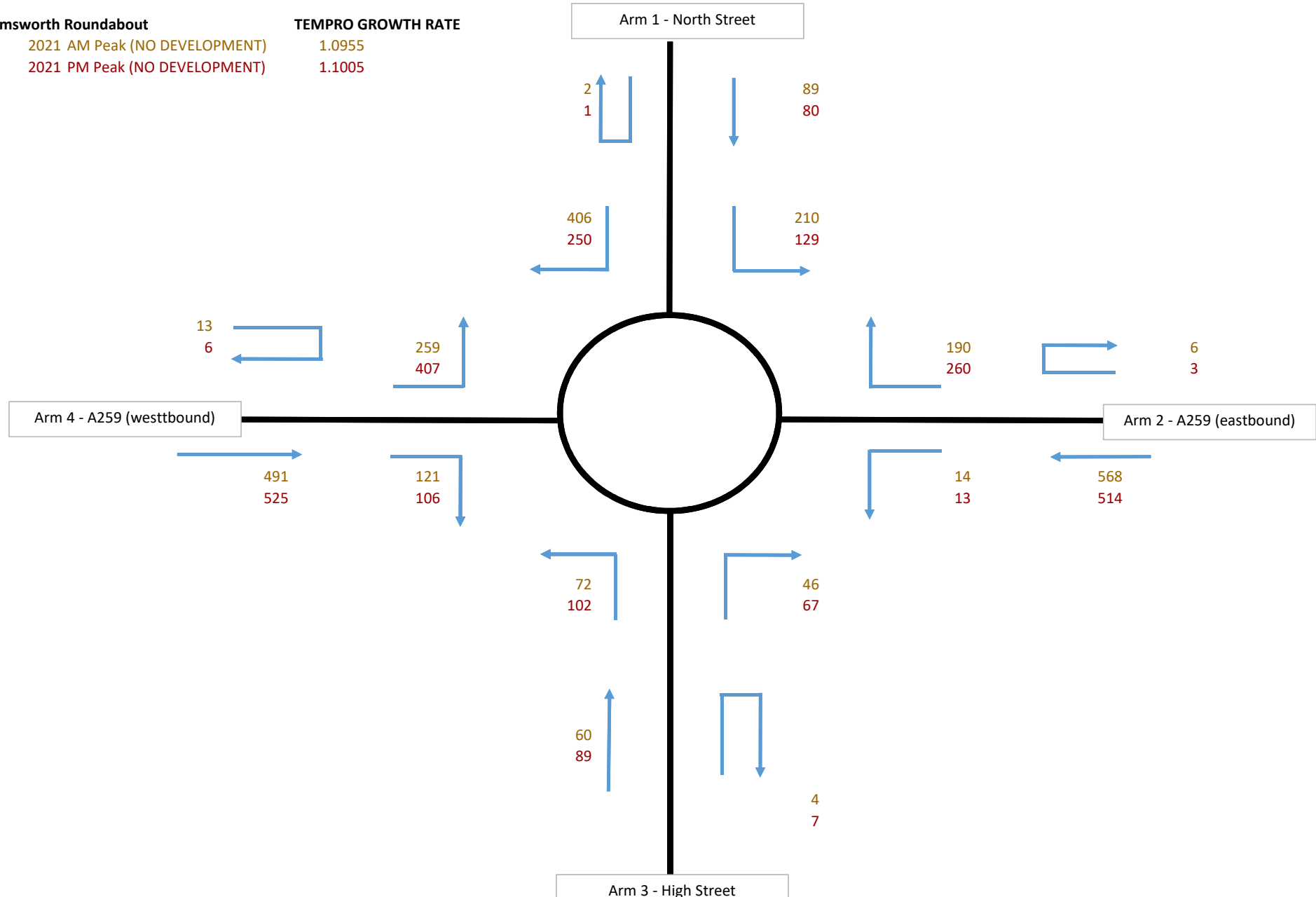


# Emsworth Roundabout

2021 AM Peak (NO DEVELOPMENT)  
2021 PM Peak (NO DEVELOPMENT)

## TEMPO GROWTH RATE

1.0955  
1.1005



**Emsworth Roundabout**

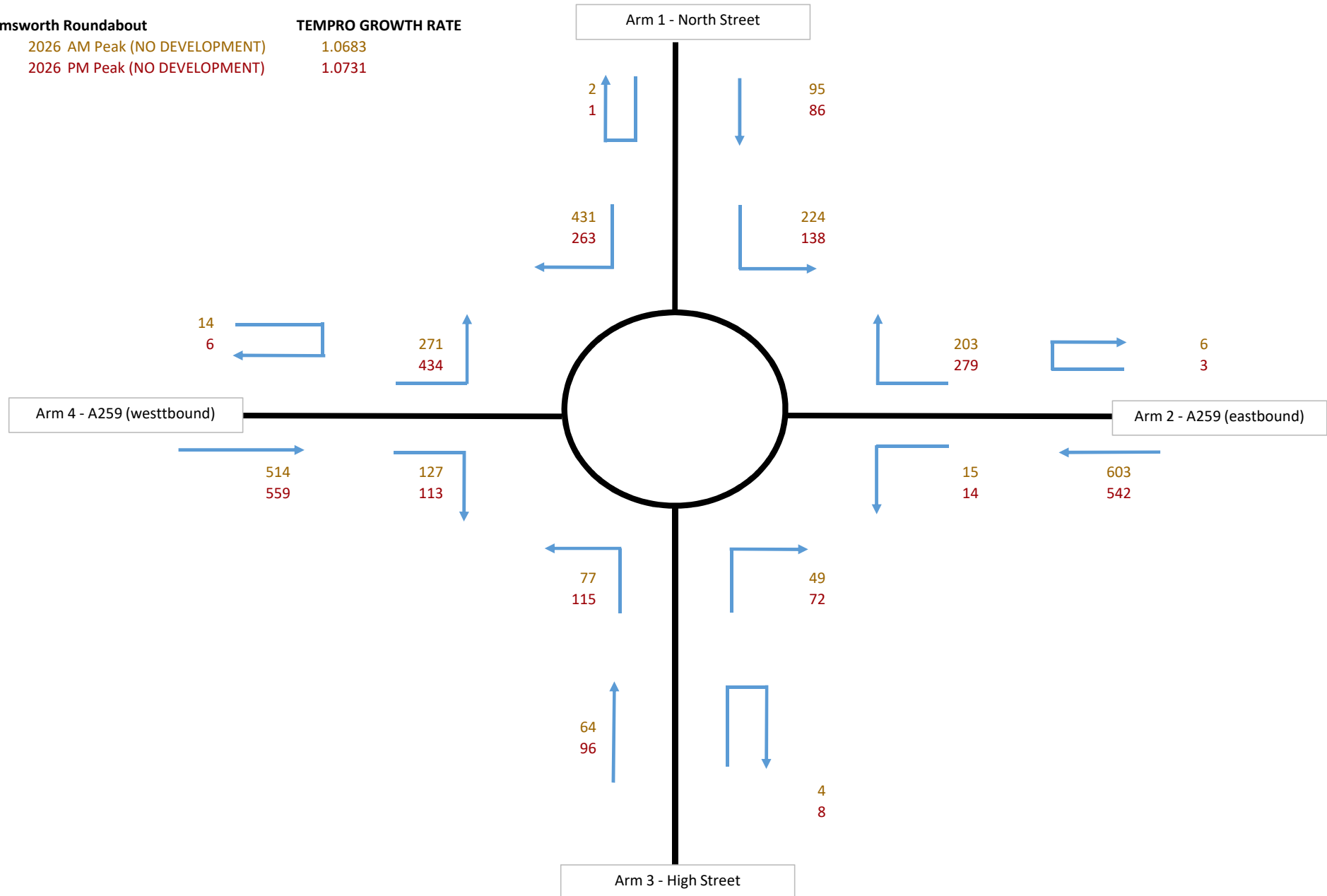
2026 AM Peak (NO DEVELOPMENT)

2026 PM Peak (NO DEVELOPMENT)

**TEMPRO GROWTH RATE**

1.0683

1.0731



**Emsworth Roundabout**

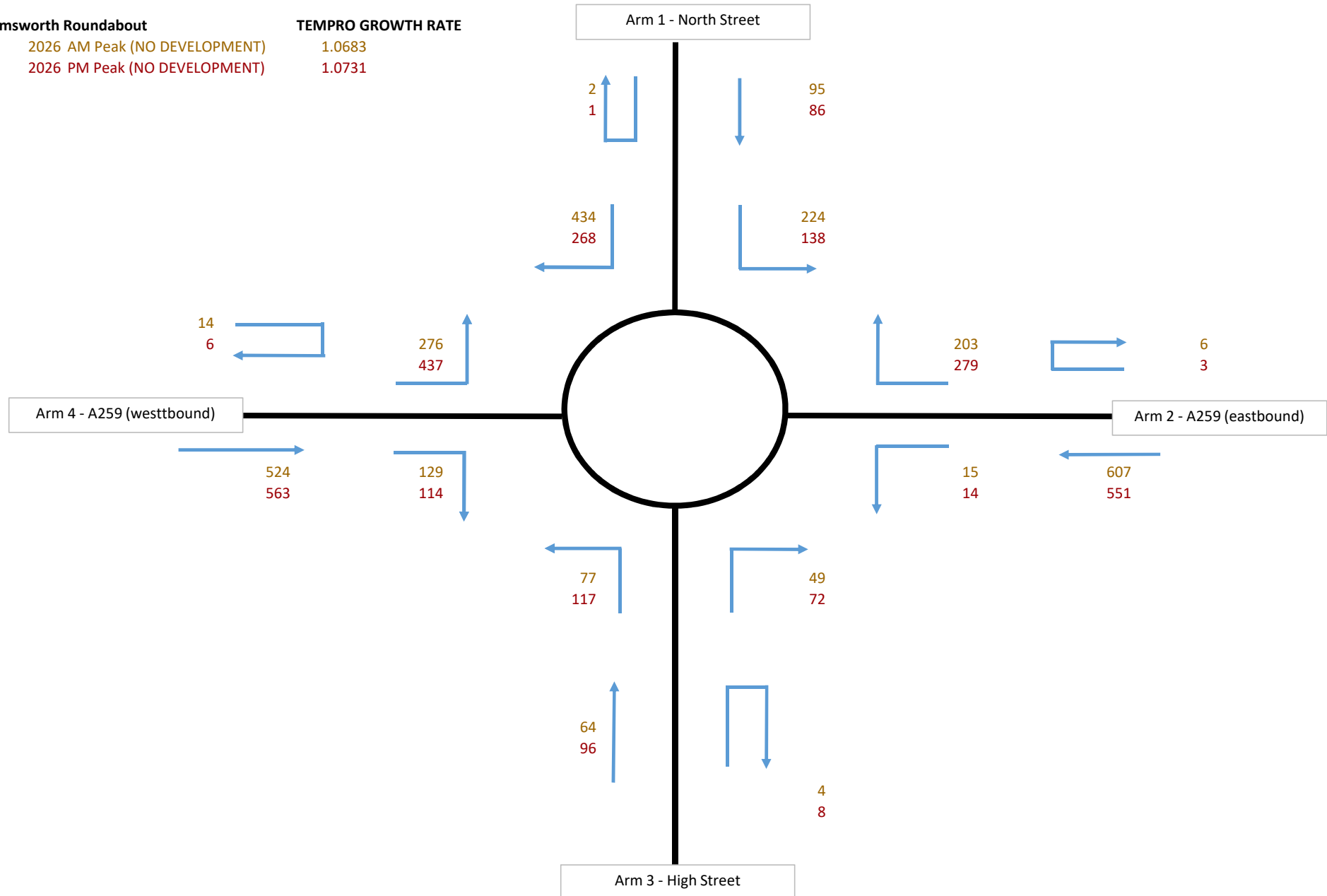
2026 AM Peak (NO DEVELOPMENT)

2026 PM Peak (NO DEVELOPMENT)

**TEMPRO GROWTH RATE**

1.0683

1.0731



## Appendix H

The screenshot shows the 'NTMPRO main form' with a 'Results' window open. The 'Results' window displays 'NTM Traffic Growth Calculations' for the 'Havant' area, showing a local growth figure of 1.0683. The background shows the main form with various input fields and a table of 'All Purposes'.

**NTM Traffic Growth Calculations**

**1. Select NTM Dataset:**

| NTM Dataset Description | From | To   |
|-------------------------|------|------|
| NTM AF09 Dataset        | 2003 | 2015 |
| NTM AF08 Dataset        |      |      |

**2. Select Areas to make up the geographic region:**

☒ SE  
☒ Hampshire  
☒ Havant  
☒ Havant (24,346)

**3. Select area type:**

☐ Urban  
☒ Rural  
☐ All

**4. Select road type:**

☐ Motorway  
☐ Trunk  
☐ Principal  
☐ Minor  
☒ All

**5. Select which area it serves:**

☐ Region  
☒ England

**Calculate the adjusted local growth figure**

**Results**

| Level     | Area      | Local Growth Figure |
|-----------|-----------|---------------------|
| Region    | SE        | 1.0754              |
| County    | Hampshire | 1.0722              |
| Authority | Havant    | 1.0683              |

**All Purposes**

| Purposes | Destination |
|----------|-------------|
|          | 1.0266      |
|          | 1.0232      |
|          | 1.0294      |
|          | 1.0303      |

## Appendix I

| Junctions 9                                                                                                                                                                 |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk |  |  |  |  |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |  |  |  |

Filename: 2016 BASELINE.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\Emsworth Roundabout

Report generation date: 10/01/2017 13:01:46

»2016 - 2017, AM

»2016 - 2017, PM

### Summary of junction performance

|             | AM          |           |      |     | PM          |           |      |     |
|-------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|             | Queue (Veh) | Delay (s) | RFC  | LOS | Queue (Veh) | Delay (s) | RFC  | LOS |
| 2016 - 2017 |             |           |      |     |             |           |      |     |
| Arm 1       | 1.3         | 6.48      | 0.56 | A   | 0.6         | 4.40      | 0.36 | A   |
| Arm 2       | 2.9         | 13.56     | 0.75 | B   | 1.0         | 4.60      | 0.50 | A   |
| Arm 3       | 0.5         | 10.29     | 0.34 | B   | 0.4         | 5.02      | 0.27 | A   |
| Arm 4       | 1.1         | 4.73      | 0.53 | A   | 1.7         | 5.94      | 0.63 | A   |

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

### File summary

#### File Description

|             |                     |
|-------------|---------------------|
| Title       | Emsworth Roundabout |
| Location    |                     |
| Site number |                     |
| Date        | 10/01/2017          |
| Version     |                     |
| Status      | (new file)          |
| Identifier  |                     |
| Client      |                     |
| Jobnumber   | 041.0025            |
| Enumerator  | Beth                |
| Description |                     |

### Units

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

### Analysis Options

| Calculate Queue Percentiles | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
|                             |                             | 0.85          | 36.00                       | 20.00                 |

### Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

### Analysis Set Details

| ID   | Name | Network flow scaling factor (%) |
|------|------|---------------------------------|
| A1-1 | 2016 | 100.000                         |

# 2016 - 2017, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 8.32               | A            |

### Junction Network Options

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

## Arms

### Arms

| Arm | Name                   | Description |
|-----|------------------------|-------------|
| 1   | ARM 1 NORTH STREET     |             |
| 2   | ARM 2 A259 EAST STREET |             |
| 3   | ARM 3 HIGH STREET      |             |
| 4   | ARM 4 A259 WEST STREET |             |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.90                             | 8.10                | 13.3                            | 33.8                 | 29.0                              | 45.0                               |           |
| 2   | 3.45                             | 7.82                | 29.2                            | 62.5                 | 29.0                              | 49.0                               |           |
| 3   | 3.81                             | 7.33                | 14.8                            | 10.0                 | 29.0                              | 38.0                               |           |
| 4   | 4.10                             | 7.78                | 24.1                            | 18.1                 | 29.0                              | 35.0                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Final slope | Final intercept (PCU/hr) |
|-----|-------------|--------------------------|
| 1   | 0.660       | 1756                     |
| 2   | 0.685       | 1877                     |
| 3   | 0.620       | 1626                     |
| 4   | 0.702       | 1946                     |

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 643                     | 100.000            |
| 2   |            | ✓            | 706                     | 100.000            |
| 3   |            | ✓            | 167                     | 100.000            |
| 4   |            | ✓            | 792                     | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      |    | 1   | 2   | 3   | 4   |
| From | 1  | 2   | 192 | 81  | 368 |
|      | 2  | 173 | 5   | 13  | 515 |
|      | 3  | 55  | 42  | 4   | 66  |
|      | 4  | 232 | 12  | 109 | 439 |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |    |    |   |   |
|------|----|----|----|---|---|
|      |    | 1  | 2  | 3 | 4 |
| From | 1  | 50 | 1  | 3 | 1 |
|      | 2  | 2  | 20 | 0 | 5 |
|      | 3  | 0  | 5  | 0 | 6 |
|      | 4  | 2  | 5  | 3 | 8 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.56    | 6.48          | 1.3             | A       |
| 2   | 0.75    | 13.56         | 2.9             | B       |
| 3   | 0.34    | 10.29         | 0.5             | B       |
| 4   | 0.53    | 4.73          | 1.1             | A       |

### Main Results for each time segment

#### 07:45 - 08:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 484                   | 458                       | 1413              | 0.343 | 482                 | 0.5             | 3.858     | A   |
| 2   | 532                   | 752                       | 1283              | 0.414 | 529                 | 0.7             | 4.754     | A   |
| 3   | 126                   | 1126                      | 864               | 0.146 | 125                 | 0.2             | 4.867     | A   |
| 4   | 596                   | 210                       | 1701              | 0.351 | 594                 | 0.5             | 3.248     | A   |

### 08:00 - 08:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 578                   | 549                       | 1350              | 0.428 | 577                 | 0.7             | 4.650     | A   |
| 2   | 635                   | 900                       | 1181              | 0.537 | 633                 | 1.1             | 6.542     | A   |
| 3   | 150                   | 1348                      | 725               | 0.207 | 150                 | 0.3             | 6.253     | A   |
| 4   | 712                   | 252                       | 1672              | 0.426 | 711                 | 0.7             | 3.742     | A   |

### 08:15 - 08:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 708                   | 671                       | 1265              | 0.560 | 706                 | 1.3             | 6.419     | A   |
| 2   | 777                   | 1102                      | 1043              | 0.745 | 771                 | 2.8             | 12.915    | B   |
| 3   | 184                   | 1645                      | 539               | 0.341 | 183                 | 0.5             | 10.091    | B   |
| 4   | 872                   | 307                       | 1635              | 0.534 | 870                 | 1.1             | 4.702     | A   |

### 08:30 - 08:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 708                   | 673                       | 1264              | 0.560 | 708                 | 1.3             | 6.475     | A   |
| 2   | 777                   | 1104                      | 1042              | 0.746 | 777                 | 2.9             | 13.562    | B   |
| 3   | 184                   | 1653                      | 534               | 0.345 | 184                 | 0.5             | 10.290    | B   |
| 4   | 872                   | 309                       | 1633              | 0.534 | 872                 | 1.1             | 4.729     | A   |

### 08:45 - 09:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 578                   | 551                       | 1349              | 0.429 | 580                 | 0.8             | 4.697     | A   |
| 2   | 635                   | 904                       | 1179              | 0.538 | 641                 | 1.2             | 6.776     | A   |
| 3   | 150                   | 1359                      | 718               | 0.209 | 151                 | 0.3             | 6.363     | A   |
| 4   | 712                   | 255                       | 1670              | 0.426 | 714                 | 0.7             | 3.771     | A   |

### 09:00 - 09:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 484                   | 461                       | 1411              | 0.343 | 485                 | 0.5             | 3.891     | A   |
| 2   | 532                   | 756                       | 1280              | 0.415 | 533                 | 0.7             | 4.830     | A   |
| 3   | 126                   | 1134                      | 859               | 0.146 | 126                 | 0.2             | 4.913     | A   |
| 4   | 596                   | 212                       | 1699              | 0.351 | 597                 | 0.5             | 3.270     | A   |

# 2016 - 2017, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 5.15               | A            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 414                     | 100.000            |
| 2   |            | ✓            | 710                     | 100.000            |
| 3   |            | ✓            | 239                     | 100.000            |
| 4   |            | ✓            | 940                     | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |    |     |
|------|----|-----|-----|----|-----|
|      | 1  | 2   | 3   | 4  |     |
| From | 1  | 1   | 117 | 73 | 223 |
|      | 2  | 236 | 3   | 12 | 459 |
|      | 3  | 81  | 61  | 6  | 91  |
|      | 4  | 367 | 473 | 95 | 5   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |   |
|------|----|---|---|---|---|
|      | 1  | 2 | 3 | 4 |   |
| From | 1  | 0 | 2 | 0 | 1 |
|      | 2  | 1 | 0 | 1 | 0 |
|      | 3  | 3 | 0 | 0 | 0 |
|      | 4  | 0 | 0 | 1 | 0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.36    | 4.40          | 0.6             | A       |
| 2   | 0.50    | 4.60          | 1.0             | A       |
| 3   | 0.27    | 5.02          | 0.4             | A       |
| 4   | 0.63    | 5.94          | 1.7             | A       |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 312                   | 482                       | 1422              | 0.219 | 311                 | 0.3             | 3.237     | A   |
| 2   | 535                   | 302                       | 1662              | 0.322 | 533                 | 0.5             | 3.181     | A   |
| 3   | 180                   | 695                       | 1181              | 0.152 | 179                 | 0.2             | 3.594     | A   |
| 4   | 708                   | 291                       | 1737              | 0.407 | 705                 | 0.7             | 3.478     | A   |

#### 17:00 - 17:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 372                   | 577                       | 1360              | 0.274 | 372                 | 0.4             | 3.644     | A   |
| 2   | 638                   | 362                       | 1621              | 0.394 | 638                 | 0.6             | 3.658     | A   |
| 3   | 215                   | 832                       | 1096              | 0.196 | 215                 | 0.2             | 4.083     | A   |
| 4   | 845                   | 348                       | 1697              | 0.498 | 844                 | 1.0             | 4.215     | A   |

#### 17:15 - 17:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 456                   | 706                       | 1275              | 0.357 | 455                 | 0.6             | 4.385     | A   |
| 2   | 782                   | 443                       | 1566              | 0.499 | 780                 | 1.0             | 4.578     | A   |
| 3   | 263                   | 1019                      | 981               | 0.268 | 263                 | 0.4             | 5.008     | A   |
| 4   | 1035                  | 426                       | 1641              | 0.631 | 1032                | 1.7             | 5.884     | A   |

#### 17:30 - 17:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 456                   | 708                       | 1274              | 0.358 | 456                 | 0.6             | 4.398     | A   |
| 2   | 782                   | 444                       | 1565              | 0.500 | 782                 | 1.0             | 4.595     | A   |
| 3   | 263                   | 1021                      | 980               | 0.269 | 263                 | 0.4             | 5.021     | A   |
| 4   | 1035                  | 427                       | 1641              | 0.631 | 1035                | 1.7             | 5.942     | A   |

#### 17:45 - 18:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 372                   | 580                       | 1358              | 0.274 | 373                 | 0.4             | 3.656     | A   |
| 2   | 638                   | 363                       | 1620              | 0.394 | 640                 | 0.7             | 3.677     | A   |
| 3   | 215                   | 835                       | 1094              | 0.196 | 215                 | 0.2             | 4.098     | A   |
| 4   | 845                   | 350                       | 1696              | 0.498 | 848                 | 1.0             | 4.260     | A   |

**18:00 - 18:15**

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 312                   | 485                       | 1420              | 0.219 | 312                 | 0.3             | 3.249     | A   |
| 2   | 535                   | 304                       | 1661              | 0.322 | 535                 | 0.5             | 3.200     | A   |
| 3   | 180                   | 699                       | 1178              | 0.153 | 180                 | 0.2             | 3.609     | A   |
| 4   | 708                   | 293                       | 1736              | 0.408 | 709                 | 0.7             | 3.507     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk |  |  |  |  |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |  |  |  |

Filename: 2021 BASELINE.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\Emsworth Roundabout\2021 Baseline

Report generation date: 10/01/2017 13:55:46

»2021 Baseline - 2017, AM

»2021 Baseline - 2017, PM

### Summary of junction performance

|                      | AM          |           |      |     | PM          |           |      |     |
|----------------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|                      | Queue (Veh) | Delay (s) | RFC  | LOS | Queue (Veh) | Delay (s) | RFC  | LOS |
| 2021 Baseline - 2017 |             |           |      |     |             |           |      |     |
| Arm 1                | 1.7         | 7.92      | 0.63 | A   | 0.7         | 4.96      | 0.41 | A   |
| Arm 2                | 1.7         | 7.45      | 0.64 | A   | 1.3         | 5.34      | 0.56 | A   |
| Arm 3                | 0.4         | 6.35      | 0.26 | A   | 0.5         | 5.74      | 0.32 | A   |
| Arm 4                | 1.4         | 5.27      | 0.58 | A   | 2.4         | 7.66      | 0.71 | A   |

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

### File summary

#### File Description

|             |                     |
|-------------|---------------------|
| Title       | Emsworth Roundabout |
| Location    |                     |
| Site number |                     |
| Date        | 10/01/2017          |
| Version     |                     |
| Status      | (new file)          |
| Identifier  |                     |
| Client      |                     |
| Jobnumber   | 041.0025            |
| Enumerator  | Beth                |
| Description |                     |

### Units

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

### Analysis Options

| Calculate Queue Percentiles | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
|                             |                             | 0.85          | 36.00                       | 20.00                 |

### Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

### Analysis Set Details

| ID   | Name          | Network flow scaling factor (%) |
|------|---------------|---------------------------------|
| A1-1 | 2021 Baseline | 100.000                         |

# 2021 Baseline - 2017, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 6.75               | A            |

### Junction Network Options

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

## Arms

### Arms

| Arm | Name                   | Description |
|-----|------------------------|-------------|
| 1   | ARM 1 NORTH STREET     |             |
| 2   | ARM 2 A259 EAST STREET |             |
| 3   | ARM 3 HIGH STREET      |             |
| 4   | ARM 4 A259 WEST STREET |             |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.90                             | 8.10                | 13.3                            | 33.8                 | 29.0                              | 45.0                               |           |
| 2   | 3.45                             | 7.82                | 29.2                            | 62.5                 | 29.0                              | 49.0                               |           |
| 3   | 3.81                             | 7.33                | 14.8                            | 10.0                 | 29.0                              | 38.0                               |           |
| 4   | 4.10                             | 7.78                | 24.1                            | 18.1                 | 29.0                              | 35.0                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Final slope | Final intercept (PCU/hr) |
|-----|-------------|--------------------------|
| 1   | 0.660       | 1756                     |
| 2   | 0.685       | 1877                     |
| 3   | 0.620       | 1626                     |
| 4   | 0.702       | 1946                     |

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 704                     | 100.000            |
| 2   |            | ✓            | 774                     | 100.000            |
| 3   |            | ✓            | 182                     | 100.000            |
| 4   |            | ✓            | 867                     | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      |    | 1   | 2   | 3   | 4   |
| From | 1  | 2   | 210 | 89  | 403 |
|      | 2  | 190 | 6   | 14  | 564 |
|      | 3  | 60  | 46  | 4   | 72  |
|      | 4  | 254 | 481 | 119 | 13  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |    |    |   |   |
|------|----|----|----|---|---|
|      |    | 1  | 2  | 3 | 4 |
| From | 1  | 50 | 1  | 3 | 1 |
|      | 2  | 2  | 20 | 0 | 5 |
|      | 3  | 0  | 5  | 0 | 6 |
|      | 4  | 2  | 5  | 3 | 8 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.63    | 7.92          | 1.7             | A       |
| 2   | 0.64    | 7.45          | 1.7             | A       |
| 3   | 0.26    | 6.35          | 0.4             | A       |
| 4   | 0.58    | 5.27          | 1.4             | A       |

### Main Results for each time segment

#### 07:45 - 08:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 530                   | 502                       | 1390              | 0.381 | 528                 | 0.6             | 4.163     | A   |
| 2   | 583                   | 472                       | 1483              | 0.393 | 580                 | 0.6             | 3.974     | A   |
| 3   | 137                   | 883                       | 1023              | 0.134 | 136                 | 0.2             | 4.058     | A   |
| 4   | 653                   | 231                       | 1713              | 0.381 | 650                 | 0.6             | 3.381     | A   |

### 08:00 - 08:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 633                   | 601                       | 1322              | 0.479 | 632                 | 0.9             | 5.205     | A   |
| 2   | 696                   | 565                       | 1421              | 0.490 | 695                 | 0.9             | 4.948     | A   |
| 3   | 164                   | 1057                      | 915               | 0.179 | 163                 | 0.2             | 4.786     | A   |
| 4   | 779                   | 276                       | 1681              | 0.464 | 778                 | 0.9             | 3.983     | A   |

### 08:15 - 08:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 775                   | 735                       | 1231              | 0.630 | 772                 | 1.7             | 7.800     | A   |
| 2   | 852                   | 691                       | 1337              | 0.638 | 849                 | 1.7             | 7.335     | A   |
| 3   | 200                   | 1292                      | 770               | 0.260 | 200                 | 0.3             | 6.309     | A   |
| 4   | 955                   | 338                       | 1639              | 0.583 | 953                 | 1.4             | 5.232     | A   |

### 08:30 - 08:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 775                   | 737                       | 1229              | 0.630 | 775                 | 1.7             | 7.918     | A   |
| 2   | 852                   | 694                       | 1335              | 0.638 | 852                 | 1.7             | 7.449     | A   |
| 3   | 200                   | 1297                      | 767               | 0.261 | 200                 | 0.4             | 6.351     | A   |
| 4   | 955                   | 339                       | 1638              | 0.583 | 955                 | 1.4             | 5.268     | A   |

### 08:45 - 09:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 633                   | 603                       | 1321              | 0.479 | 636                 | 0.9             | 5.279     | A   |
| 2   | 696                   | 569                       | 1419              | 0.490 | 699                 | 1.0             | 5.021     | A   |
| 3   | 164                   | 1064                      | 911               | 0.180 | 164                 | 0.2             | 4.822     | A   |
| 4   | 779                   | 278                       | 1680              | 0.464 | 781                 | 0.9             | 4.016     | A   |

### 09:00 - 09:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 530                   | 504                       | 1388              | 0.382 | 531                 | 0.6             | 4.209     | A   |
| 2   | 583                   | 475                       | 1481              | 0.393 | 584                 | 0.7             | 4.017     | A   |
| 3   | 137                   | 889                       | 1019              | 0.134 | 137                 | 0.2             | 4.083     | A   |
| 4   | 653                   | 232                       | 1712              | 0.381 | 654                 | 0.6             | 3.404     | A   |

# 2021 Baseline - 2017, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 6.26               | A            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 455                     | 100.000            |
| 2   |            | ✓            | 781                     | 100.000            |
| 3   |            | ✓            | 263                     | 100.000            |
| 4   |            | ✓            | 1036                    | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      | 1  | 2   | 3   | 4   |     |
| From | 1  | 129 | 80  | 245 |     |
|      | 2  | 260 | 3   | 13  | 505 |
|      | 3  | 89  | 67  | 7   | 100 |
|      | 4  | 404 | 521 | 105 | 6   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |   |
|------|----|---|---|---|---|
|      | 1  | 2 | 3 | 4 |   |
| From | 1  | 0 | 2 | 0 | 1 |
|      | 2  | 1 | 0 | 1 | 0 |
|      | 3  | 3 | 0 | 0 | 0 |
|      | 4  | 0 | 0 | 1 | 0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.41    | 4.96          | 0.7             | A       |
| 2   | 0.56    | 5.34          | 1.3             | A       |
| 3   | 0.32    | 5.74          | 0.5             | A       |
| 4   | 0.71    | 7.66          | 2.4             | A       |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 343                   | 532                       | 1390              | 0.247 | 341                 | 0.3             | 3.429     | A   |
| 2   | 588                   | 333                       | 1641              | 0.358 | 586                 | 0.6             | 3.403     | A   |
| 3   | 198                   | 765                       | 1138              | 0.174 | 197                 | 0.2             | 3.824     | A   |
| 4   | 780                   | 320                       | 1717              | 0.454 | 777                 | 0.8             | 3.817     | A   |

#### 17:00 - 17:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 409                   | 636                       | 1321              | 0.310 | 409                 | 0.4             | 3.944     | A   |
| 2   | 702                   | 399                       | 1596              | 0.440 | 701                 | 0.8             | 4.019     | A   |
| 3   | 236                   | 916                       | 1045              | 0.226 | 236                 | 0.3             | 4.450     | A   |
| 4   | 931                   | 383                       | 1672              | 0.557 | 930                 | 1.2             | 4.840     | A   |

#### 17:15 - 17:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 501                   | 778                       | 1228              | 0.408 | 500                 | 0.7             | 4.936     | A   |
| 2   | 860                   | 488                       | 1535              | 0.560 | 858                 | 1.3             | 5.304     | A   |
| 3   | 290                   | 1121                      | 918               | 0.315 | 289                 | 0.5             | 5.714     | A   |
| 4   | 1141                  | 469                       | 1611              | 0.708 | 1136                | 2.4             | 7.513     | A   |

#### 17:30 - 17:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 501                   | 781                       | 1227              | 0.408 | 501                 | 0.7             | 4.960     | A   |
| 2   | 860                   | 489                       | 1534              | 0.561 | 860                 | 1.3             | 5.340     | A   |
| 3   | 290                   | 1123                      | 917               | 0.316 | 290                 | 0.5             | 5.738     | A   |
| 4   | 1141                  | 470                       | 1610              | 0.708 | 1141                | 2.4             | 7.660     | A   |

#### 17:45 - 18:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 409                   | 640                       | 1318              | 0.310 | 410                 | 0.5             | 3.968     | A   |
| 2   | 702                   | 400                       | 1595              | 0.440 | 704                 | 0.8             | 4.050     | A   |
| 3   | 236                   | 919                       | 1042              | 0.227 | 237                 | 0.3             | 4.473     | A   |
| 4   | 931                   | 385                       | 1671              | 0.557 | 936                 | 1.3             | 4.927     | A   |

**18:00 - 18:15**

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 343                   | 535                       | 1387              | 0.247 | 343                 | 0.3             | 3.448     | A   |
| 2   | 588                   | 335                       | 1640              | 0.359 | 589                 | 0.6             | 3.427     | A   |
| 3   | 198                   | 769                       | 1135              | 0.174 | 198                 | 0.2             | 3.844     | A   |
| 4   | 780                   | 322                       | 1715              | 0.455 | 782                 | 0.8             | 3.862     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk |  |  |  |  |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |  |  |  |

Filename: 2021 with dev.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\Emsworth Roundabout\2021 with dev

Report generation date: 10/01/2017 13:59:30

»2021 with development - 2017, AM

»2021 with development - 2017, PM

### Summary of junction performance

|                              | AM          |           |      |     | PM          |           |      |     |
|------------------------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|                              | Queue (Veh) | Delay (s) | RFC  | LOS | Queue (Veh) | Delay (s) | RFC  | LOS |
| 2021 with development - 2017 |             |           |      |     |             |           |      |     |
| Arm 1                        | 1.7         | 8.14      | 0.64 | A   | 0.7         | 5.02      | 0.41 | A   |
| Arm 2                        | 1.8         | 7.58      | 0.64 | A   | 1.3         | 5.46      | 0.57 | A   |
| Arm 3                        | 0.4         | 6.41      | 0.26 | A   | 0.5         | 5.85      | 0.32 | A   |
| Arm 4                        | 1.5         | 5.42      | 0.59 | A   | 2.5         | 7.80      | 0.71 | A   |

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

### File summary

#### File Description

|             |                     |
|-------------|---------------------|
| Title       | Emsworth Roundabout |
| Location    |                     |
| Site number |                     |
| Date        | 10/01/2017          |
| Version     |                     |
| Status      | (new file)          |
| Identifier  |                     |
| Client      |                     |
| Jobnumber   | 041.0025            |
| Enumerator  | Beth                |
| Description |                     |

### Units

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

### Analysis Options

| Calculate Queue Percentiles | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
|                             |                             | 0.85          | 36.00                       | 20.00                 |

### Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

### Analysis Set Details

| ID   | Name                  | Network flow scaling factor (%) |
|------|-----------------------|---------------------------------|
| A1-1 | 2021 with development | 100.000                         |

# 2021 with development - 2017, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 6.89               | A            |

### Junction Network Options

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

## Arms

### Arms

| Arm | Name                   | Description |
|-----|------------------------|-------------|
| 1   | ARM 1 NORTH STREET     |             |
| 2   | ARM 2 A259 EAST STREET |             |
| 3   | ARM 3 HIGH STREET      |             |
| 4   | ARM 4 A259 WEST STREET |             |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.90                             | 8.10                | 13.3                            | 33.8                 | 29.0                              | 45.0                               |           |
| 2   | 3.45                             | 7.82                | 29.2                            | 62.5                 | 29.0                              | 49.0                               |           |
| 3   | 3.81                             | 7.33                | 14.8                            | 10.0                 | 29.0                              | 38.0                               |           |
| 4   | 4.10                             | 7.78                | 24.1                            | 18.1                 | 29.0                              | 35.0                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Final slope | Final intercept (PCU/hr) |
|-----|-------------|--------------------------|
| 1   | 0.660       | 1756                     |
| 2   | 0.685       | 1877                     |
| 3   | 0.620       | 1626                     |
| 4   | 0.702       | 1946                     |

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 707                     | 100.000            |
| 2   |            | ✓            | 778                     | 100.000            |
| 3   |            | ✓            | 182                     | 100.000            |
| 4   |            | ✓            | 884                     | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      |    | 1   | 2   | 3   | 4   |
| From | 1  | 2   | 210 | 89  | 406 |
|      | 2  | 190 | 6   | 14  | 568 |
|      | 3  | 60  | 46  | 4   | 72  |
|      | 4  | 259 | 491 | 121 | 13  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |    |    |   |   |
|------|----|----|----|---|---|
|      |    | 1  | 2  | 3 | 4 |
| From | 1  | 50 | 1  | 3 | 1 |
|      | 2  | 2  | 20 | 0 | 5 |
|      | 3  | 0  | 5  | 0 | 6 |
|      | 4  | 2  | 5  | 3 | 8 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.64    | 8.14          | 1.7             | A       |
| 2   | 0.64    | 7.58          | 1.8             | A       |
| 3   | 0.26    | 6.41          | 0.4             | A       |
| 4   | 0.59    | 5.42          | 1.5             | A       |

### Main Results for each time segment

#### 07:45 - 08:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 532                   | 511                       | 1384              | 0.385 | 530                 | 0.6             | 4.204     | A   |
| 2   | 586                   | 476                       | 1481              | 0.396 | 583                 | 0.6             | 3.999     | A   |
| 3   | 137                   | 888                       | 1020              | 0.134 | 136                 | 0.2             | 4.073     | A   |
| 4   | 666                   | 231                       | 1713              | 0.389 | 663                 | 0.6             | 3.420     | A   |

### 08:00 - 08:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 636                   | 611                       | 1315              | 0.483 | 634                 | 0.9             | 5.279     | A   |
| 2   | 699                   | 570                       | 1418              | 0.493 | 698                 | 1.0             | 4.993     | A   |
| 3   | 164                   | 1063                      | 911               | 0.180 | 163                 | 0.2             | 4.811     | A   |
| 4   | 795                   | 276                       | 1681              | 0.473 | 794                 | 0.9             | 4.049     | A   |

### 08:15 - 08:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 778                   | 748                       | 1222              | 0.637 | 775                 | 1.7             | 8.007     | A   |
| 2   | 857                   | 697                       | 1333              | 0.643 | 853                 | 1.8             | 7.456     | A   |
| 3   | 200                   | 1300                      | 765               | 0.262 | 200                 | 0.4             | 6.361     | A   |
| 4   | 973                   | 338                       | 1639              | 0.594 | 971                 | 1.4             | 5.375     | A   |

### 08:30 - 08:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 778                   | 750                       | 1220              | 0.638 | 778                 | 1.7             | 8.136     | A   |
| 2   | 857                   | 699                       | 1331              | 0.643 | 856                 | 1.8             | 7.577     | A   |
| 3   | 200                   | 1305                      | 762               | 0.263 | 200                 | 0.4             | 6.405     | A   |
| 4   | 973                   | 339                       | 1638              | 0.594 | 973                 | 1.5             | 5.417     | A   |

### 08:45 - 09:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 636                   | 614                       | 1313              | 0.484 | 639                 | 0.9             | 5.361     | A   |
| 2   | 699                   | 573                       | 1416              | 0.494 | 703                 | 1.0             | 5.070     | A   |
| 3   | 164                   | 1070                      | 907               | 0.180 | 164                 | 0.2             | 4.848     | A   |
| 4   | 795                   | 278                       | 1680              | 0.473 | 797                 | 0.9             | 4.087     | A   |

### 09:00 - 09:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 532                   | 514                       | 1382              | 0.385 | 534                 | 0.6             | 4.251     | A   |
| 2   | 586                   | 479                       | 1479              | 0.396 | 587                 | 0.7             | 4.044     | A   |
| 3   | 137                   | 894                       | 1016              | 0.135 | 137                 | 0.2             | 4.097     | A   |
| 4   | 666                   | 232                       | 1712              | 0.389 | 667                 | 0.6             | 3.449     | A   |

# 2021 with development - 2017, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 6.37               | A            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 460                     | 100.000            |
| 2   |            | ✓            | 790                     | 100.000            |
| 3   |            | ✓            | 265                     | 100.000            |
| 4   |            | ✓            | 1044                    | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      | 1  | 2   | 3   | 4   |     |
| From | 1  | 129 | 80  | 250 |     |
|      | 2  | 260 | 3   | 13  | 514 |
|      | 3  | 89  | 67  | 7   | 102 |
|      | 4  | 407 | 525 | 106 | 6   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |   |
|------|----|---|---|---|---|
|      | 1  | 2 | 3 | 4 |   |
| From | 1  | 0 | 2 | 0 | 1 |
|      | 2  | 1 | 0 | 1 | 0 |
|      | 3  | 3 | 0 | 0 | 0 |
|      | 4  | 0 | 0 | 1 | 0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.41    | 5.02          | 0.7             | A       |
| 2   | 0.57    | 5.46          | 1.3             | A       |
| 3   | 0.32    | 5.85          | 0.5             | A       |
| 4   | 0.71    | 7.80          | 2.5             | A       |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 346                   | 535                       | 1387              | 0.250 | 345                 | 0.3             | 3.450     | A   |
| 2   | 595                   | 337                       | 1638              | 0.363 | 592                 | 0.6             | 3.435     | A   |
| 3   | 200                   | 775                       | 1131              | 0.176 | 199                 | 0.2             | 3.857     | A   |
| 4   | 786                   | 320                       | 1717              | 0.458 | 783                 | 0.8             | 3.840     | A   |

#### 17:00 - 17:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 414                   | 641                       | 1318              | 0.314 | 413                 | 0.5             | 3.976     | A   |
| 2   | 710                   | 404                       | 1592              | 0.446 | 709                 | 0.8             | 4.072     | A   |
| 3   | 238                   | 928                       | 1037              | 0.230 | 238                 | 0.3             | 4.503     | A   |
| 4   | 939                   | 383                       | 1672              | 0.561 | 937                 | 1.3             | 4.890     | A   |

#### 17:15 - 17:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 506                   | 783                       | 1225              | 0.413 | 505                 | 0.7             | 4.998     | A   |
| 2   | 870                   | 494                       | 1530              | 0.568 | 868                 | 1.3             | 5.418     | A   |
| 3   | 292                   | 1136                      | 909               | 0.321 | 291                 | 0.5             | 5.821     | A   |
| 4   | 1149                  | 469                       | 1611              | 0.714 | 1145                | 2.4             | 7.648     | A   |

#### 17:30 - 17:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 506                   | 786                       | 1223              | 0.414 | 506                 | 0.7             | 5.023     | A   |
| 2   | 870                   | 495                       | 1529              | 0.569 | 870                 | 1.3             | 5.456     | A   |
| 3   | 292                   | 1138                      | 907               | 0.322 | 292                 | 0.5             | 5.846     | A   |
| 4   | 1149                  | 470                       | 1610              | 0.714 | 1149                | 2.5             | 7.804     | A   |

#### 17:45 - 18:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 414                   | 645                       | 1315              | 0.314 | 414                 | 0.5             | 4.000     | A   |
| 2   | 710                   | 406                       | 1591              | 0.446 | 712                 | 0.8             | 4.104     | A   |
| 3   | 238                   | 932                       | 1035              | 0.230 | 239                 | 0.3             | 4.529     | A   |
| 4   | 939                   | 385                       | 1671              | 0.562 | 943                 | 1.3             | 4.980     | A   |

**18:00 - 18:15**

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 346                   | 539                       | 1385              | 0.250 | 347                 | 0.3             | 3.469     | A   |
| 2   | 595                   | 339                       | 1637              | 0.363 | 596                 | 0.6             | 3.460     | A   |
| 3   | 200                   | 780                       | 1129              | 0.177 | 200                 | 0.2             | 3.878     | A   |
| 4   | 786                   | 322                       | 1715              | 0.458 | 788                 | 0.9             | 3.889     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk |  |  |  |  |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |  |  |  |

Filename: 2026 Baseline.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\Emsworth Roundabout\2026 Baseline

Report generation date: 10/01/2017 14:03:24

»2026 Bsaeline - 2017, AM

»2026 Bsaeline - 2017, PM

### Summary of junction performance

|                      | AM          |           |      |     | PM          |           |      |     |
|----------------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|                      | Queue (Veh) | Delay (s) | RFC  | LOS | Queue (Veh) | Delay (s) | RFC  | LOS |
| 2026 Bsaeline - 2017 |             |           |      |     |             |           |      |     |
| Arm 1                | 2.2         | 9.77      | 0.69 | A   | 0.8         | 5.52      | 0.45 | A   |
| Arm 2                | 2.3         | 9.14      | 0.70 | A   | 1.6         | 6.14      | 0.61 | A   |
| Arm 3                | 0.4         | 7.22      | 0.30 | A   | 0.6         | 6.59      | 0.37 | A   |
| Arm 4                | 1.7         | 5.97      | 0.63 | A   | 3.3         | 9.94      | 0.77 | A   |

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

### File summary

#### File Description

|             |                     |
|-------------|---------------------|
| Title       | Emsworth Roundabout |
| Location    |                     |
| Site number |                     |
| Date        | 10/01/2017          |
| Version     |                     |
| Status      | (new file)          |
| Identifier  |                     |
| Client      |                     |
| Jobnumber   | 041.0025            |
| Enumerator  | Beth                |
| Description |                     |

### Units

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

### Analysis Options

| Calculate Queue Percentiles | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
|                             |                             | 0.85          | 36.00                       | 20.00                 |

### Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

### Analysis Set Details

| ID   | Name          | Network flow scaling factor (%) |
|------|---------------|---------------------------------|
| A1-1 | 2026 Bsaeline | 100.000                         |

# 2026 Bsaeline - 2017, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 8.08               | A            |

### Junction Network Options

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

## Arms

### Arms

| Arm | Name                   | Description |
|-----|------------------------|-------------|
| 1   | ARM 1 NORTH STREET     |             |
| 2   | ARM 2 A259 EAST STREET |             |
| 3   | ARM 3 HIGH STREET      |             |
| 4   | ARM 4 A259 WEST STREET |             |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.90                             | 8.10                | 13.3                            | 33.8                 | 29.0                              | 45.0                               |           |
| 2   | 3.45                             | 7.82                | 29.2                            | 62.5                 | 29.0                              | 49.0                               |           |
| 3   | 3.81                             | 7.33                | 14.8                            | 10.0                 | 29.0                              | 38.0                               |           |
| 4   | 4.10                             | 7.78                | 24.1                            | 18.1                 | 29.0                              | 35.0                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Final slope | Final intercept (PCU/hr) |
|-----|-------------|--------------------------|
| 1   | 0.660       | 1756                     |
| 2   | 0.685       | 1877                     |
| 3   | 0.620       | 1626                     |
| 4   | 0.702       | 1946                     |

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 752                     | 100.000            |
| 2   |            | ✓            | 827                     | 100.000            |
| 3   |            | ✓            | 194                     | 100.000            |
| 4   |            | ✓            | 926                     | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      |    | 1   | 2   | 3   | 4   |
| From | 1  | 2   | 224 | 95  | 431 |
|      | 2  | 203 | 6   | 15  | 603 |
|      | 3  | 64  | 49  | 4   | 77  |
|      | 4  | 271 | 514 | 127 | 14  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |    |    |   |   |
|------|----|----|----|---|---|
|      |    | 1  | 2  | 3 | 4 |
| From | 1  | 50 | 1  | 3 | 1 |
|      | 2  | 2  | 20 | 0 | 5 |
|      | 3  | 0  | 5  | 0 | 6 |
|      | 4  | 2  | 5  | 3 | 8 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.69    | 9.77          | 2.2             | A       |
| 2   | 0.70    | 9.14          | 2.3             | A       |
| 3   | 0.30    | 7.22          | 0.4             | A       |
| 4   | 0.63    | 5.97          | 1.7             | A       |

### Main Results for each time segment

#### 07:45 - 08:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 566                   | 535                       | 1367              | 0.414 | 563                 | 0.7             | 4.465     | A   |
| 2   | 623                   | 504                       | 1462              | 0.426 | 620                 | 0.7             | 4.259     | A   |
| 3   | 146                   | 943                       | 986               | 0.148 | 145                 | 0.2             | 4.280     | A   |
| 4   | 697                   | 246                       | 1703              | 0.409 | 694                 | 0.7             | 3.562     | A   |

### 08:00 - 08:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 676                   | 641                       | 1295              | 0.522 | 675                 | 1.1             | 5.789     | A   |
| 2   | 743                   | 604                       | 1395              | 0.533 | 742                 | 1.1             | 5.495     | A   |
| 3   | 174                   | 1129                      | 871               | 0.200 | 174                 | 0.2             | 5.166     | A   |
| 4   | 832                   | 294                       | 1669              | 0.499 | 831                 | 1.0             | 4.291     | A   |

### 08:15 - 08:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 828                   | 784                       | 1197              | 0.692 | 824                 | 2.2             | 9.524     | A   |
| 2   | 911                   | 737                       | 1306              | 0.697 | 906                 | 2.2             | 8.921     | A   |
| 3   | 214                   | 1379                      | 716               | 0.298 | 213                 | 0.4             | 7.142     | A   |
| 4   | 1020                  | 360                       | 1624              | 0.628 | 1017                | 1.7             | 5.907     | A   |

### 08:30 - 08:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 828                   | 786                       | 1196              | 0.692 | 828                 | 2.2             | 9.771     | A   |
| 2   | 911                   | 741                       | 1304              | 0.698 | 910                 | 2.3             | 9.143     | A   |
| 3   | 214                   | 1386                      | 712               | 0.300 | 214                 | 0.4             | 7.221     | A   |
| 4   | 1020                  | 361                       | 1623              | 0.628 | 1019                | 1.7             | 5.966     | A   |

### 08:45 - 09:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 676                   | 644                       | 1293              | 0.523 | 680                 | 1.1             | 5.921     | A   |
| 2   | 743                   | 609                       | 1392              | 0.534 | 748                 | 1.2             | 5.624     | A   |
| 3   | 174                   | 1139                      | 865               | 0.202 | 175                 | 0.3             | 5.223     | A   |
| 4   | 832                   | 296                       | 1667              | 0.499 | 835                 | 1.0             | 4.338     | A   |

### 09:00 - 09:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 566                   | 539                       | 1365              | 0.415 | 568                 | 0.7             | 4.524     | A   |
| 2   | 623                   | 508                       | 1460              | 0.427 | 624                 | 0.7             | 4.319     | A   |
| 3   | 146                   | 950                       | 981               | 0.149 | 146                 | 0.2             | 4.313     | A   |
| 4   | 697                   | 248                       | 1701              | 0.410 | 698                 | 0.7             | 3.592     | A   |

# 2026 Bsaeline - 2017, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 7.62               | A            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 488                     | 100.000            |
| 2   |            | ✓            | 838                     | 100.000            |
| 3   |            | ✓            | 291                     | 100.000            |
| 4   |            | ✓            | 1112                    | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      | 1  | 2   | 3   | 4   |     |
| From | 1  | 138 | 86  | 263 |     |
|      | 2  | 279 | 3   | 14  | 542 |
|      | 3  | 96  | 72  | 8   | 115 |
|      | 4  | 434 | 559 | 113 | 6   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |   |
|------|----|---|---|---|---|
|      | 1  | 2 | 3 | 4 |   |
| From | 1  | 0 | 2 | 0 | 1 |
|      | 2  | 1 | 0 | 1 | 0 |
|      | 3  | 3 | 0 | 0 | 0 |
|      | 4  | 0 | 0 | 1 | 0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.45    | 5.52          | 0.8             | A       |
| 2   | 0.61    | 6.14          | 1.6             | A       |
| 3   | 0.37    | 6.59          | 0.6             | A       |
| 4   | 0.77    | 9.94          | 3.3             | A       |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 367                   | 570                       | 1364              | 0.269 | 366                 | 0.4             | 3.602     | A   |
| 2   | 631                   | 358                       | 1624              | 0.388 | 628                 | 0.6             | 3.606     | A   |
| 3   | 219                   | 820                       | 1104              | 0.198 | 218                 | 0.2             | 4.060     | A   |
| 4   | 837                   | 344                       | 1700              | 0.493 | 833                 | 1.0             | 4.137     | A   |

#### 17:00 - 17:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 439                   | 683                       | 1291              | 0.340 | 438                 | 0.5             | 4.220     | A   |
| 2   | 753                   | 428                       | 1576              | 0.478 | 752                 | 0.9             | 4.367     | A   |
| 3   | 262                   | 982                       | 1004              | 0.261 | 261                 | 0.3             | 4.844     | A   |
| 4   | 1000                  | 412                       | 1651              | 0.605 | 997                 | 1.5             | 5.485     | A   |

#### 17:15 - 17:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 537                   | 833                       | 1192              | 0.451 | 536                 | 0.8             | 5.478     | A   |
| 2   | 923                   | 524                       | 1510              | 0.611 | 920                 | 1.5             | 6.075     | A   |
| 3   | 320                   | 1201                      | 869               | 0.369 | 319                 | 0.6             | 6.544     | A   |
| 4   | 1224                  | 504                       | 1586              | 0.772 | 1217                | 3.2             | 9.587     | A   |

#### 17:30 - 17:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 537                   | 838                       | 1189              | 0.452 | 537                 | 0.8             | 5.521     | A   |
| 2   | 923                   | 525                       | 1509              | 0.611 | 923                 | 1.6             | 6.139     | A   |
| 3   | 320                   | 1204                      | 867               | 0.370 | 320                 | 0.6             | 6.587     | A   |
| 4   | 1224                  | 505                       | 1585              | 0.772 | 1224                | 3.3             | 9.945     | A   |

#### 17:45 - 18:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 439                   | 689                       | 1287              | 0.341 | 440                 | 0.5             | 4.258     | A   |
| 2   | 753                   | 430                       | 1574              | 0.479 | 756                 | 0.9             | 4.412     | A   |
| 3   | 262                   | 987                       | 1001              | 0.261 | 263                 | 0.4             | 4.879     | A   |
| 4   | 1000                  | 414                       | 1650              | 0.606 | 1007                | 1.6             | 5.656     | A   |

**18:00 - 18:15**

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 367                   | 574                       | 1361              | 0.270 | 368                 | 0.4             | 3.625     | A   |
| 2   | 631                   | 360                       | 1623              | 0.389 | 632                 | 0.6             | 3.637     | A   |
| 3   | 219                   | 825                       | 1101              | 0.199 | 220                 | 0.2             | 4.087     | A   |
| 4   | 837                   | 346                       | 1698              | 0.493 | 839                 | 1.0             | 4.204     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk |  |  |  |  |
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Filename: 2026 with dev.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\Emsworth Roundabout\2026 with dev

Report generation date: 10/01/2017 14:06:57

»2026 with development - 2017, AM

»2026 with development - 2017, PM

### Summary of junction performance

|                              | AM          |           |      |     | PM          |           |      |     |
|------------------------------|-------------|-----------|------|-----|-------------|-----------|------|-----|
|                              | Queue (Veh) | Delay (s) | RFC  | LOS | Queue (Veh) | Delay (s) | RFC  | LOS |
| 2026 with development - 2017 |             |           |      |     |             |           |      |     |
| Arm 1                        | 2.3         | 10.06     | 0.70 | B   | 0.8         | 5.60      | 0.46 | A   |
| Arm 2                        | 2.3         | 9.30      | 0.70 | A   | 1.6         | 6.29      | 0.62 | A   |
| Arm 3                        | 0.4         | 7.29      | 0.30 | A   | 0.6         | 6.73      | 0.38 | A   |
| Arm 4                        | 1.7         | 6.13      | 0.64 | A   | 3.4         | 10.19     | 0.78 | B   |

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

### File summary

#### File Description

|             |                     |
|-------------|---------------------|
| Title       | Emsworth Roundabout |
| Location    |                     |
| Site number |                     |
| Date        | 10/01/2017          |
| Version     |                     |
| Status      | (new file)          |
| Identifier  |                     |
| Client      |                     |
| Jobnumber   | 041.0025            |
| Enumerator  | Beth                |
| Description |                     |

### Units

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

### Analysis Options

| Calculate Queue Percentiles | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|-----------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
|                             |                             | 0.85          | 36.00                       | 20.00                 |

### Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

### Analysis Set Details

| ID   | Name                  | Network flow scaling factor (%) |
|------|-----------------------|---------------------------------|
| A1-1 | 2026 with development | 100.000                         |

# 2026 with development - 2017, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 8.26               | A            |

### Junction Network Options

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

## Arms

### Arms

| Arm | Name                   | Description |
|-----|------------------------|-------------|
| 1   | ARM 1 NORTH STREET     |             |
| 2   | ARM 2 A259 EAST STREET |             |
| 3   | ARM 3 HIGH STREET      |             |
| 4   | ARM 4 A259 WEST STREET |             |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1   | 3.90                             | 8.10                | 13.3                            | 33.8                 | 29.0                              | 45.0                               |           |
| 2   | 3.45                             | 7.82                | 29.2                            | 62.5                 | 29.0                              | 49.0                               |           |
| 3   | 3.81                             | 7.33                | 14.8                            | 10.0                 | 29.0                              | 38.0                               |           |
| 4   | 4.10                             | 7.78                | 24.1                            | 18.1                 | 29.0                              | 35.0                               |           |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Final slope | Final intercept (PCU/hr) |
|-----|-------------|--------------------------|
| 1   | 0.660       | 1756                     |
| 2   | 0.685       | 1877                     |
| 3   | 0.620       | 1626                     |
| 4   | 0.702       | 1946                     |

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D1 | 2017          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

## Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 755                     | 100.000            |
| 2   |            | ✓            | 831                     | 100.000            |
| 3   |            | ✓            | 194                     | 100.000            |
| 4   |            | ✓            | 941                     | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      |    | 1   | 2   | 3   | 4   |
| From | 1  | 2   | 224 | 95  | 434 |
|      | 2  | 203 | 6   | 15  | 607 |
|      | 3  | 64  | 49  | 4   | 77  |
|      | 4  | 276 | 524 | 127 | 14  |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |    |    |   |   |
|------|----|----|----|---|---|
|      |    | 1  | 2  | 3 | 4 |
| From | 1  | 50 | 1  | 3 | 1 |
|      | 2  | 2  | 20 | 0 | 5 |
|      | 3  | 0  | 5  | 0 | 6 |
|      | 4  | 2  | 5  | 3 | 8 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.70    | 10.06         | 2.3             | B       |
| 2   | 0.70    | 9.30          | 2.3             | A       |
| 3   | 0.30    | 7.29          | 0.4             | A       |
| 4   | 0.64    | 6.13          | 1.7             | A       |

### Main Results for each time segment

#### 07:45 - 08:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 568                   | 543                       | 1362              | 0.417 | 566                 | 0.7             | 4.504     | A   |
| 2   | 626                   | 506                       | 1461              | 0.428 | 623                 | 0.7             | 4.282     | A   |
| 3   | 146                   | 949                       | 982               | 0.149 | 145                 | 0.2             | 4.297     | A   |
| 4   | 708                   | 246                       | 1703              | 0.416 | 706                 | 0.7             | 3.600     | A   |

### 08:00 - 08:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 679                   | 650                       | 1289              | 0.527 | 677                 | 1.1             | 5.870     | A   |
| 2   | 747                   | 606                       | 1394              | 0.536 | 745                 | 1.1             | 5.541     | A   |
| 3   | 174                   | 1136                      | 867               | 0.201 | 174                 | 0.3             | 5.195     | A   |
| 4   | 846                   | 294                       | 1669              | 0.507 | 845                 | 1.0             | 4.362     | A   |

### 08:15 - 08:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 831                   | 795                       | 1190              | 0.699 | 827                 | 2.2             | 9.793     | A   |
| 2   | 915                   | 741                       | 1304              | 0.702 | 910                 | 2.3             | 9.048     | A   |
| 3   | 214                   | 1387                      | 712               | 0.300 | 213                 | 0.4             | 7.208     | A   |
| 4   | 1036                  | 360                       | 1624              | 0.638 | 1033                | 1.7             | 6.069     | A   |

### 08:30 - 08:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 831                   | 797                       | 1188              | 0.700 | 831                 | 2.3             | 10.065    | B   |
| 2   | 915                   | 744                       | 1301              | 0.703 | 915                 | 2.3             | 9.300     | A   |
| 3   | 214                   | 1394                      | 707               | 0.302 | 214                 | 0.4             | 7.290     | A   |
| 4   | 1036                  | 361                       | 1623              | 0.639 | 1036                | 1.7             | 6.135     | A   |

### 08:45 - 09:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 679                   | 653                       | 1287              | 0.528 | 683                 | 1.1             | 6.011     | A   |
| 2   | 747                   | 611                       | 1390              | 0.537 | 752                 | 1.2             | 5.675     | A   |
| 3   | 174                   | 1145                      | 861               | 0.203 | 175                 | 0.3             | 5.257     | A   |
| 4   | 846                   | 296                       | 1667              | 0.507 | 849                 | 1.0             | 4.414     | A   |

### 09:00 - 09:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 568                   | 546                       | 1360              | 0.418 | 570                 | 0.7             | 4.568     | A   |
| 2   | 626                   | 510                       | 1458              | 0.429 | 627                 | 0.8             | 4.343     | A   |
| 3   | 146                   | 956                       | 978               | 0.149 | 146                 | 0.2             | 4.332     | A   |
| 4   | 708                   | 248                       | 1701              | 0.416 | 710                 | 0.7             | 3.637     | A   |

# 2026 with development - 2017, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

| Junction | Name     | Junction Type       | Junction Delay (s) | Junction LOS |
|----------|----------|---------------------|--------------------|--------------|
| 1        | untitled | Standard Roundabout | 7.79               | A            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|
| D2 | 2017          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        |

| Vehicle mix source | PCU Factor for a HV (PCU) |
|--------------------|---------------------------|
| HV Percentages     | 2.00                      |

### Demand overview (Traffic)

| Arm | Linked arm | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|-----|------------|--------------|-------------------------|--------------------|
| 1   |            | ✓            | 493                     | 100.000            |
| 2   |            | ✓            | 847                     | 100.000            |
| 3   |            | ✓            | 293                     | 100.000            |
| 4   |            | ✓            | 1120                    | 100.000            |

## Origin-Destination Data

### Demand (Veh/hr)

|      | To |     |     |     |     |
|------|----|-----|-----|-----|-----|
|      | 1  | 2   | 3   | 4   |     |
| From | 1  | 138 | 86  | 268 |     |
|      | 2  | 279 | 3   | 14  | 551 |
|      | 3  | 96  | 72  | 8   | 117 |
|      | 4  | 437 | 563 | 114 | 6   |

## Vehicle Mix

### Heavy Vehicle Percentages

|      | To |   |   |   |   |
|------|----|---|---|---|---|
|      | 1  | 2 | 3 | 4 |   |
| From | 1  | 0 | 2 | 0 | 1 |
|      | 2  | 1 | 0 | 1 | 0 |
|      | 3  | 3 | 0 | 0 | 0 |
|      | 4  | 0 | 0 | 1 | 0 |

## Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max delay (s) | Max Queue (Veh) | Max LOS |
|-----|---------|---------------|-----------------|---------|
| 1   | 0.46    | 5.60          | 0.8             | A       |
| 2   | 0.62    | 6.29          | 1.6             | A       |
| 3   | 0.38    | 6.73          | 0.6             | A       |
| 4   | 0.78    | 10.19         | 3.4             | B       |

### Main Results for each time segment

#### 16:45 - 17:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 371                   | 574                       | 1362              | 0.273 | 370                 | 0.4             | 3.624     | A   |
| 2   | 638                   | 362                       | 1621              | 0.393 | 635                 | 0.6             | 3.642     | A   |
| 3   | 221                   | 831                       | 1097              | 0.201 | 220                 | 0.3             | 4.097     | A   |
| 4   | 843                   | 344                       | 1700              | 0.496 | 839                 | 1.0             | 4.166     | A   |

#### 17:00 - 17:15

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 443                   | 687                       | 1288              | 0.344 | 443                 | 0.5             | 4.257     | A   |
| 2   | 761                   | 434                       | 1572              | 0.484 | 760                 | 0.9             | 4.428     | A   |
| 3   | 263                   | 995                       | 996               | 0.264 | 263                 | 0.4             | 4.905     | A   |
| 4   | 1007                  | 412                       | 1651              | 0.610 | 1005                | 1.5             | 5.547     | A   |

#### 17:15 - 17:30

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 543                   | 839                       | 1189              | 0.457 | 542                 | 0.8             | 5.554     | A   |
| 2   | 933                   | 530                       | 1506              | 0.619 | 930                 | 1.6             | 6.225     | A   |
| 3   | 323                   | 1217                      | 859               | 0.375 | 322                 | 0.6             | 6.682     | A   |
| 4   | 1233                  | 504                       | 1586              | 0.777 | 1226                | 3.3             | 9.802     | A   |

#### 17:30 - 17:45

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 543                   | 843                       | 1186              | 0.458 | 543                 | 0.8             | 5.599     | A   |
| 2   | 933                   | 532                       | 1504              | 0.620 | 932                 | 1.6             | 6.291     | A   |
| 3   | 323                   | 1220                      | 857               | 0.376 | 323                 | 0.6             | 6.730     | A   |
| 4   | 1233                  | 505                       | 1585              | 0.778 | 1233                | 3.4             | 10.192    | B   |

#### 17:45 - 18:00

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 443                   | 693                       | 1284              | 0.345 | 444                 | 0.5             | 4.297     | A   |
| 2   | 761                   | 436                       | 1570              | 0.485 | 764                 | 1.0             | 4.480     | A   |
| 3   | 263                   | 999                       | 993               | 0.265 | 264                 | 0.4             | 4.943     | A   |
| 4   | 1007                  | 414                       | 1650              | 0.610 | 1014                | 1.6             | 5.724     | A   |

**18:00 - 18:15**

| Arm | Total Demand (Veh/hr) | Circulating flow (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | End queue (Veh) | Delay (s) | LOS |
|-----|-----------------------|---------------------------|-------------------|-------|---------------------|-----------------|-----------|-----|
| 1   | 371                   | 578                       | 1359              | 0.273 | 372                 | 0.4             | 3.648     | A   |
| 2   | 638                   | 364                       | 1620              | 0.394 | 639                 | 0.7             | 3.676     | A   |
| 3   | 221                   | 836                       | 1094              | 0.202 | 221                 | 0.3             | 4.125     | A   |
| 4   | 843                   | 346                       | 1698              | 0.497 | 846                 | 1.0             | 4.233     | A   |

## Appendix J

| Junctions 9                                                                                                                                                                 |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk |  |  |  |  |  |  |  |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |  |  |  |  |  |  |

Filename: 2016 Base using entry lane analysis.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\A27 Roundabouts\2016 Baseline

Report generation date: 11/01/2017 14:59:34

»2016 Baseline - 2016, AM

»2016 Baseline - 2016, PM

### Summary of junction performance

|                                        | AM          |           |     |     | PM          |           |     |     |
|----------------------------------------|-------------|-----------|-----|-----|-------------|-----------|-----|-----|
|                                        | Queue (Veh) | Delay (s) | RFC | LOS | Queue (Veh) | Delay (s) | RFC | LOS |
| 2016 Baseline [Lane Simulation] - 2016 |             |           |     |     |             |           |     |     |
| Junction 1 - Arm 2                     | 0.4         | 5.06      |     | A   | 0.4         | 5.23      |     | A   |
| Junction 1 - Arm 3                     | 1.9         | 6.30      |     | A   | 4.6         | 11.23     |     | B   |
| Junction 1 - Arm 4                     | 3.4         | 19.57     |     | C   | 3.6         | 25.42     |     | D   |
| Junction 2 - Arm 1                     | 0.1         | 4.02      |     | A   | 0.2         | 5.09      |     | A   |
| Junction 2 - Arm 2                     | 5.7         | 15.58     |     | C   | 1.6         | 6.74      |     | A   |
| Junction 2 - Arm 3                     | 0.0         | 0.00      |     | A   | 0.0         | 0.00      |     | A   |
| Junction 2 - Arm 5                     | 3.3         | 8.98      |     | A   | 4.4         | 10.58     |     | B   |

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

### File summary

#### File Description

|             |                         |
|-------------|-------------------------|
| Title       | 2016 Baseline           |
| Location    | A27 Roundabouts, Havant |
| Site number |                         |
| Date        | 31/10/2016              |
| Version     |                         |
| Status      | (new file)              |
| Identifier  |                         |
| Client      | Barratts                |
| Jobnumber   | 041.0039                |
| Enumerator  | Shannon                 |
| Description |                         |

### Units

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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Lane Simulation options

| Stop criteria (%) | Stop criteria time (s) | Stop criteria number of trials | Random seed | Results refresh speed (s) | Individual vehicle animation number of trials | Use crossings quick response | Last run random seed | Last run number of trials | Last run time taken (s) |
|-------------------|------------------------|--------------------------------|-------------|---------------------------|-----------------------------------------------|------------------------------|----------------------|---------------------------|-------------------------|
| 1.00              | 100000                 | 100000                         | -1          | 3                         | 1                                             | ✓                            | 1895055370           | 350                       | 131.70                  |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2016          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |
| D2 | 2016          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

## Analysis Set Details

| ID | Name          | Use Lane Simulation | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|---------------|---------------------|-------------------|---------------------------------|-------------------------------------|
| A1 | 2016 Baseline | ✓                   | ✓                 | 100.000                         | 100.000                             |

# 2016 Baseline - 2016, AM

## Data Errors and Warnings

| Severity | Area            | Item                                     | Description                                                                                                                                               |
|----------|-----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2016 Baseline [Lane Simulation]     | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results. |
| Warning  | Geometry        | Junction 2 - Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                          |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 10.29              | B            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 12.02              | B            |

### Junction Network Options

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

## Arms

### Arms

| Junction | Arm | Name              | Description |
|----------|-----|-------------------|-------------|
| 1        | 1   | A27 On-Slip       |             |
|          | 2   | Emsworth Road (S) |             |
|          | 3   | A27 Off-Slip      |             |
|          | 4   | untitled          |             |
| 2        | 1   | A27 Off-Slip      |             |
|          | 2   | Havant Road       |             |
|          | 3   | Church Lane       |             |
|          | 4   | A27 On-Slip       |             |
|          | 5   | Emsworth Road     |             |

### Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|----------|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1        | 1   |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|          | 2   | 3.70                             | 3.70                | 0.0                             | 12.2                 | 35.0                              | 53.0                               |           |
|          | 3   | 7.30                             | 7.30                | 0.0                             | 24.3                 | 35.0                              | 49.0                               |           |
|          | 4   | 4.17                             | 5.20                | 0.5                             | 23.6                 | 35.0                              | 46.0                               |           |
| 2        | 1   | 6.08                             | 6.08                | 0.0                             | 19.0                 | 40.0                              | 27.1                               |           |
|          | 2   | 3.69                             | 6.74                | 42.0                            | 13.0                 | 40.0                              | 26.5                               |           |
|          | 3   | 3.14                             | 6.18                | 4.0                             | 12.0                 | 40.0                              | 46.0                               |           |
|          | 4   |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|          | 5   | 5.06                             | 7.40                | 12.0                            | 15.0                 | 40.0                              | 48.9                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction | Arm | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------|--------------------------|
| 1        | 1   |             |                          |
|          | 2   | 0.475       | 997                      |
|          | 3   | 0.712       | 2085                     |
|          | 4   | 0.544       | 1242                     |
| 2        | 1   | 0.675       | 1856                     |
|          | 2   | 0.666       | 1841                     |
|          | 3   | 0.498       | 1112                     |
|          | 4   |             |                          |
|          | 5   | 0.639       | 1808                     |

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

### Lane Simulation: Arm options

| Junction | Arm | Lane capacity source | Traffic Considering Secondary Lanes (%) |
|----------|-----|----------------------|-----------------------------------------|
| 1        | 1   | Evenly split         | 10.00                                   |
|          | 2   | Evenly split         | 10.00                                   |
|          | 3   | Evenly split         | 10.00                                   |
|          | 4   | Evenly split         | 10.00                                   |
| 2        | 1   | Evenly split         | 10.00                                   |
|          | 2   | Evenly split         | 10.00                                   |
|          | 3   | Evenly split         | 10.00                                   |
|          | 4   | Evenly split         | 10.00                                   |
|          | 5   | Evenly split         | 10.00                                   |

### Lanes

| Junction | Arm | Lane level        | Lane | Destination arms | Has limited storage | Storage (PCU) | Minimum capacity (PCU/hr) | Maximum capacity (PCU/hr) |
|----------|-----|-------------------|------|------------------|---------------------|---------------|---------------------------|---------------------------|
| 1        | 2   | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 7.00          | 0                         | 99999                     |
|          | 3   | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|          |     |                   | 2    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|          | 4   | 2                 | 1    | (1,2,3,4)        |                     | Infinity      |                           |                           |
|          |     |                   | 1    | 1,2,4            |                     | Infinity      | 0                         | 99999                     |
| 2        | 1   | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|          | 2   | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 10.43         | 0                         | 99999                     |
|          |     |                   | 2    | 2,3,4,5          | ✓                   | 9.57          | 0                         | 99999                     |
|          |     |                   | 1    | (1,2,3,4,5)      |                     | Infinity      |                           |                           |
|          | 3   | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|          | 5   | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 4.00          | 0                         | 99999                     |
|          |     |                   | 2    | 2,3,4,5          | ✓                   | 4.00          | 0                         | 99999                     |
|          |     |                   | 1    | (1,2,3,4,5)      | ✓                   | 3.00          |                           |                           |

### Entry Lane slope and intercept

| Junction | Arm | Lane level        | Lane | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------------|------|-------------|--------------------------|
| 1        | 2   | 1 [Give-way line] | 1    | 0.475       | 997                      |
|          | 3   | 1 [Give-way line] | 1    | 0.356       | 1043                     |
|          |     |                   | 2    | 0.356       | 1043                     |
|          | 4   | 1 [Give-way line] | 1    | 0.544       | 1242                     |
| 2        | 1   | 1 [Give-way line] | 1    | 0.675       | 1856                     |
|          | 2   | 1 [Give-way line] | 1    | 0.333       | 921                      |
|          |     |                   | 2    | 0.333       | 921                      |
|          | 3   | 1 [Give-way line] | 1    | 0.498       | 1112                     |
|          | 5   | 1 [Give-way line] | 1    | 0.319       | 904                      |
|          |     |                   | 2    | 0.319       | 904                      |

## Lane Movements

| Junction | Arm | Lane Level        | Lane | Destination arm |   |   |   |
|----------|-----|-------------------|------|-----------------|---|---|---|
|          |     |                   |      | 1               | 2 | 3 | 4 |
| 1        | 2   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |
|          | 3   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |
|          |     |                   | 2    | ✓               | ✓ |   | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ |
|          | 4   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |

## Lane Movements

| Junction | Arm | Lane Level        | Lane | Destination arm |   |   |   |   |
|----------|-----|-------------------|------|-----------------|---|---|---|---|
|          |     |                   |      | 1               | 2 | 3 | 4 | 5 |
| 2        | 1   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          | 2   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     |                   | 2    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ | ✓ |
|          | 3   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          | 5   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     |                   | 2    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ | ✓ |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2016          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1        | 2   | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2        | 5   | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|--------------|-------------------------|--------------------|
| 1        | 1   |            |              |              |                         |                    |
|          | 2   | ✓          |              |              |                         |                    |
|          | 3   |            | ONE HOUR     | ✓            | 938                     | 100.000            |
|          | 4   |            | ONE HOUR     | ✓            | 542                     | 100.000            |
| 2        | 1   |            | ONE HOUR     | ✓            | 66                      | 100.000            |
|          | 2   |            | ONE HOUR     | ✓            | 1121                    | 100.000            |
|          | 3   |            | ONE HOUR     | ✓            | 4                       | 100.000            |
|          | 4   |            |              |              |                         |                    |
|          | 5   | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 22        | 0         | 0         | 220       |
|      | 3 | 2         | 650       | 0         | 286       |
|      | 4 | 47        | 494       | 0         | 1         |

### Demand (Veh/hr)

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 28        | 0         | 2         | 36        |
|      | 2 | 0         | 2         | 1         | 917       | 201       |
|      | 3 | 0         | 0         | 0         | 3         | 1         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 793       | 4         | 341       | 1         |

## Vehicle Mix

### Heavy Vehicle Percentages

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 5         | 0         | 0         | 2         |
|      | 3 | 50        | 4         | 0         | 3         |
|      | 4 | 4         | 3         | 0         | 0         |

### Heavy Vehicle Percentages

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 0         | 0         | 0         | 0         |
|      | 2 | 0         | 0         | 0         | 3         | 2         |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 2         | 0         | 2         | 0         |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|----------|-----|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1        | 1   |               |                 |         |                         |                               |
|          | 2   | 5.06          | 0.4             | A       | 220                     | 330                           |
|          | 3   | 6.30          | 1.9             | A       | 857                     | 1285                          |
|          | 4   | 19.57         | 3.4             | C       | 495                     | 742                           |
| 2        | 1   | 4.02          | 0.1             | A       | 61                      | 92                            |
|          | 2   | 15.58         | 5.7             | C       | 1032                    | 1548                          |
|          | 3   | 0.00          | 0.0             | A       | 0                       | 0                             |
|          | 4   |               |                 |         |                         |                               |
|          | 5   | 8.98          | 3.3             | A       | 1047                    | 1571                          |

## Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 53                              |                   |                 |           |     |
|          | 2   | 177                   | 44                      | 0.72                      | 177                 | 857                             | 0.0               | 0.2             | 4.367     | A   |
|          | 3   | 700                   | 175                     | 178                       | 701                 | 0                               | 0.0               | 0.9             | 4.622     | A   |
|          | 4   | 408                   | 102                     | 503                       | 407                 | 376                             | 0.0               | 0.7             | 6.493     | A   |
| 2        | 1   | 52                    | 13                      | 856                       | 52                  | 0                               | 0.0               | 0.0             | 2.776     | A   |
|          | 2   | 842                   | 210                     | 292                       | 842                 | 616                             | 0.0               | 1.5             | 6.439     | A   |
|          | 3   | 0                     | 0                       | 1131                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 952                             |                   |                 |           |     |
|          | 5   | 857                   | 214                     | 2                         | 854                 | 177                             | 0.0               | 1.4             | 5.693     | A   |

### 08:00 - 08:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 67                              |                   |                 |           |     |
|          | 2   | 216                   | 54                      | 0.96                      | 216                 | 1029                            | 0.2               | 0.3             | 4.741     | A   |
|          | 3   | 840                   | 210                     | 217                       | 841                 | 0                               | 0.9               | 1.3             | 5.221     | A   |
|          | 4   | 487                   | 122                     | 607                       | 489                 | 451                             | 0.7               | 1.3             | 9.287     | A   |
| 2        | 1   | 59                    | 15                      | 1029                      | 59                  | 0                               | 0.0               | 0.1             | 3.310     | A   |
|          | 2   | 1012                  | 253                     | 346                       | 1014                | 743                             | 1.5               | 2.3             | 8.465     | A   |
|          | 3   | 0                     | 0                       | 1355                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1137                            |                   |                 |           |     |
|          | 5   | 1029                  | 257                     | 2                         | 1027                | 216                             | 1.4               | 2.1             | 6.793     | A   |

### 08:15 - 08:30

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 77                              |                   |                 |           |     |
|          | 2   | 265                   | 66                      | 1                         | 265                 | 1261                            | 0.3               | 0.3             | 5.056     | A   |
|          | 3   | 1024                  | 256                     | 266                       | 1025                | 0                               | 1.3               | 1.8             | 6.173     | A   |
|          | 4   | 600                   | 150                     | 738                       | 601                 | 553                             | 1.3               | 3.4             | 18.446    | C   |
| 2        | 1   | 74                    | 18                      | 1262                      | 74                  | 0                               | 0.1               | 0.1             | 3.943     | A   |
|          | 2   | 1231                  | 308                     | 421                       | 1232                | 914                             | 2.3               | 5.3             | 14.464    | B   |
|          | 3   | 0                     | 0                       | 1648                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1380                            |                   |                 |           |     |
|          | 5   | 1261                  | 315                     | 3                         | 1260                | 265                             | 2.1               | 3.1             | 8.613     | A   |

### 08:30 - 08:45

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 80                              |                   |                 |           |     |
|          | 2   | 266                   | 67                      | 0.93                      | 266                 | 1247                            | 0.3               | 0.4             | 4.970     | A   |
|          | 3   | 1032                  | 258                     | 267                       | 1035                | 0                               | 1.8               | 1.8             | 6.297     | A   |
|          | 4   | 585                   | 146                     | 743                       | 585                 | 559                             | 3.4               | 3.1             | 19.568    | C   |
| 2        | 1   | 72                    | 18                      | 1246                      | 72                  | 0                               | 0.1               | 0.1             | 4.019     | A   |
|          | 2   | 1244                  | 311                     | 422                       | 1243                | 896                             | 5.3               | 5.7             | 15.581    | C   |
|          | 3   | 0                     | 0                       | 1660                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1392                            |                   |                 |           |     |
|          | 5   | 1247                  | 312                     | 2                         | 1244                | 266                             | 3.1               | 3.2             | 8.984     | A   |

### 08:45 - 09:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 63                              |                   |                 |           |     |
|          | 2   | 215                   | 54                      | 0.89                      | 215                 | 1025                            | 0.4               | 0.3             | 4.701     | A   |
|          | 3   | 841                   | 210                     | 216                       | 842                 | 0                               | 1.8               | 1.2             | 5.257     | A   |
|          | 4   | 481                   | 120                     | 604                       | 485                 | 454                             | 3.1               | 1.1             | 10.889    | B   |
| 2        | 1   | 58                    | 14                      | 1029                      | 58                  | 0                               | 0.1               | 0.1             | 3.469     | A   |
|          | 2   | 1010                  | 252                     | 341                       | 1012                | 746                             | 5.7               | 2.3             | 9.424     | A   |
|          | 3   | 0                     | 0                       | 1349                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1132                            |                   |                 |           |     |
|          | 5   | 1025                  | 256                     | 2                         | 1028                | 215                             | 3.2               | 1.7             | 6.884     | A   |

### 09:00 - 09:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 52                              |                   |                 |           |     |
|          | 2   | 182                   | 45                      | 0.82                      | 182                 | 868                             | 0.3               | 0.2             | 4.508     | A   |
|          | 3   | 705                   | 176                     | 182                       | 707                 | 0                               | 1.2               | 0.9             | 4.730     | A   |
|          | 4   | 407                   | 102                     | 513                       | 407                 | 376                             | 1.1               | 0.8             | 7.202     | A   |
| 2        | 1   | 52                    | 13                      | 870                       | 52                  | 0                               | 0.1               | 0.0             | 3.089     | A   |
|          | 2   | 851                   | 213                     | 293                       | 849                 | 629                             | 2.3               | 1.6             | 6.811     | A   |
|          | 3   | 0                     | 0                       | 1139                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 956                             |                   |                 |           |     |
|          | 5   | 868                   | 217                     | 1                         | 869                 | 182                             | 1.7               | 1.4             | 5.841     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

#### 07:45 - 08:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 53                    |                   |       | 53                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 177                   | 980               | 0.181 | 177                 | 0.0               | 0.2             | 4.367     | A   |
|          |     | Exit  | 1          | 1    |                  | 857                   |                   |       | 857                 | 0.0               | 0.0             | 0.004     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 351                   | 943               | 0.373 | 351                 | 0.0               | 0.5             | 4.644     | A   |
|          |     |       |            | 2    | 1,2,4            | 349                   | 941               | 0.371 | 350                 | 0.0               | 0.4             | 4.599     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 700                   |                   |       | 700                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 408                   | 930               | 0.439 | 407                 | 0.0               | 0.7             | 6.493     | A   |
|          |     | Exit  | 1          | 1    |                  | 376                   |                   |       | 376                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 52                    | 1258              | 0.041 | 52                  | 0.0               | 0.0             | 2.776     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 420                   | 796               | 0.528 | 420                 | 0.0               | 0.7             | 6.409     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 421                   | 796               | 0.530 | 422                 | 0.0               | 0.8             | 6.469     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 842                   |                   |       | 842                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 616                   |                   |       | 616                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 532               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 952                   |                   |       | 952                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  |                       |                   |       |                     |                   |                 |           |     |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 427                   | 872               | 0.489 | 426                 | 0.0               | 0.7             | 5.658     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 430                   | 873               | 0.492 | 428                 | 0.0               | 0.7             | 5.683     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 857                   |                   |       | 857                 | 0.0               | 0.0             | 0.022     | A   |
|          |     |       |            | 1    |                  | 177                   |                   |       | 177                 | 0.0               | 0.0             | 0.000     | A   |

## 08:00 - 08:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 67                    |                   |       | 67                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 216                   | 982               | 0.220 | 216                 | 0.2               | 0.3             | 4.741     | A   |
|          |     | Exit  | 1          | 1    |                  | 1029                  |                   |       | 1029                | 0.0               | 0.0             | 0.041     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 419                   | 932               | 0.450 | 420                 | 0.5               | 0.6             | 5.234     | A   |
|          |     |       |            | 2    | 1,2,4            | 421                   | 930               | 0.452 | 421                 | 0.4               | 0.7             | 5.207     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 840                   |                   |       | 840                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 487                   | 873               | 0.558 | 489                 | 0.7               | 1.3             | 9.287     | A   |
|          |     | Exit  | 1          | 1    |                  | 451                   |                   |       | 451                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 59                    | 1137              | 0.052 | 59                  | 0.0               | 0.1             | 3.310     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 504                   | 780               | 0.646 | 505                 | 0.7               | 1.2             | 8.516     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 508                   | 781               | 0.652 | 509                 | 0.8               | 1.1             | 8.414     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1012                  |                   |       | 1012                | 0.0               | 0.0             | 0.001     | A   |
|          |     |       |            | 1    |                  | 743                   |                   |       | 743                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 418               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1137                  |                   |       | 1137                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 512                   | 873               | 0.586 | 511                 | 0.7               | 1.1             | 6.700     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 516                   | 874               | 0.591 | 516                 | 0.7               | 1.0             | 6.660     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1029                  |                   |       | 1029                | 0.0               | 0.0             | 0.112     | A   |
|          |     |       |            | 1    |                  | 216                   |                   |       | 216                 | 0.0               | 0.0             | 0.000     | A   |

## 08:15 - 08:30

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 77                    |                   |       | 77                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 265                   | 978               | 0.271 | 265                 | 0.3               | 0.3             | 5.056     | A   |
|          |     | Exit  | 1          | 1    |                  | 1260                  |                   |       | 1261                | 0.0               | 0.1             | 0.221     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 512                   | 910               | 0.563 | 512                 | 0.6               | 1.0             | 6.170     | A   |
|          |     |       |            | 2    | 1,2,4            | 512                   | 912               | 0.561 | 513                 | 0.7               | 0.9             | 6.175     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1024                  |                   |       | 1024                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 600                   | 799               | 0.752 | 601                 | 1.3               | 3.4             | 18.446    | C   |
|          |     | Exit  | 1          | 1    |                  | 553                   |                   |       | 553                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 74                    | 973               | 0.076 | 74                  | 0.1               | 0.1             | 3.943     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 611                   | 755               | 0.808 | 611                 | 1.2               | 2.6             | 14.350    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 620                   | 756               | 0.820 | 620                 | 1.1               | 2.5             | 14.081    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1231                  |                   |       | 1230                | 0.0               | 0.2             | 0.231     | A   |
|          |     |       |            | 1    |                  | 914                   |                   |       | 914                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 269               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1380                  |                   |       | 1380                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    | 2,3,4,5          | 634                   | 873               | 0.725 | 633                 | 1.1               | 1.5             | 8.181     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 627                   | 870               | 0.721 | 626                 | 1.0               | 1.5             | 8.197     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1261                  |                   |       | 1260                | 0.0               | 0.2             | 0.421     | A   |
|          |     |       |            | 1    |                  | 265                   |                   |       | 265                 | 0.0               | 0.0             | 0.000     | A   |

08:30 - 08:45

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 80                    |                   |       | 80                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 266                   | 980               | 0.272 | 266                 | 0.3               | 0.4             | 4.970     | A   |
|          |     | Exit  | 1          | 1    |                  | 1247                  |                   |       | 1247                | 0.1               | 0.1             | 0.245     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 517                   | 911               | 0.567 | 518                 | 1.0               | 0.9             | 6.261     | A   |
|          |     |       |            | 2    | 1,2,4            | 515                   | 911               | 0.566 | 517                 | 0.9               | 0.9             | 6.333     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4)        | 1032                  |                   |       | 1032                | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 585                   | 796               | 0.734 | 585                 | 3.4               | 3.1             | 19.568    | C   |
|          |     | Exit  | 1          | 1    |                  | 559                   |                   |       | 559                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 72                    | 985               | 0.073 | 72                  | 0.1               | 0.1             | 4.019     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 623                   | 756               | 0.825 | 622                 | 2.6               | 2.8             | 15.097    | C   |
|          |     |       |            | 2    | 2,3,4,5          | 623                   | 754               | 0.826 | 622                 | 2.5               | 2.7             | 14.960    | B   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1244                  |                   |       | 1246                | 0.2               | 0.2             | 0.553     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 262               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1392                  |                   |       | 1392                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 625                   | 873               | 0.717 | 624                 | 1.5               | 1.5             | 8.482     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 621                   | 873               | 0.711 | 620                 | 1.5               | 1.5             | 8.488     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1247                  |                   |       | 1246                | 0.2               | 0.2             | 0.499     | A   |
|          | 5   | Exit  | 1          | 1    |                  | 266                   |                   |       | 266                 | 0.0               | 0.0             | 0.001     | A   |

08:45 - 09:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 63                    |                   |       | 63                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 215                   | 981               | 0.219 | 215                 | 0.4               | 0.3             | 4.701     | A   |
|          |     | Exit  | 1          | 1    |                  | 1024                  |                   |       | 1025                | 0.1               | 0.0             | 0.052     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 418                   | 931               | 0.449 | 419                 | 0.9               | 0.6             | 5.270     | A   |
|          |     |       |            | 2    | 1,2,4            | 423                   | 930               | 0.455 | 423                 | 0.9               | 0.6             | 5.244     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4)        | 841                   |                   |       | 841                 | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 481                   | 875               | 0.550 | 485                 | 3.1               | 1.1             | 10.889    | B   |
|          |     | Exit  | 1          | 1    |                  | 454                   |                   |       | 454                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 58                    | 1137              | 0.051 | 58                  | 0.1               | 0.1             | 3.469     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 503                   | 781               | 0.645 | 505                 | 2.8               | 1.2             | 9.387     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 506                   | 781               | 0.648 | 507                 | 2.7               | 1.2             | 9.383     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1010                  |                   |       | 1010                | 0.2               | 0.0             | 0.064     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 421               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1132                  |                   |       | 1132                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 516                   | 874               | 0.590 | 517                 | 1.5               | 0.9             | 6.733     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 509                   | 873               | 0.583 | 511                 | 1.5               | 0.8             | 6.777     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1025                  |                   |       | 1025                | 0.2               | 0.0             | 0.135     | A   |
|          | 5   | Exit  | 1          | 1    |                  | 215                   |                   |       | 215                 | 0.0               | 0.0             | 0.000     | A   |

09:00 - 09:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 52                    |                   |       | 52                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 182                   | 978               | 0.186 | 182                 | 0.3               | 0.2             | 4.508     | A   |
|          |     | Exit  | 1          | 1    |                  | 867                   |                   |       | 868                 | 0.0               | 0.0             | 0.009     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 356                   | 940               | 0.379 | 357                 | 0.6               | 0.4             | 4.718     | A   |
|          |     |       |            | 2    | 1,2,4            | 350                   | 941               | 0.372 | 350                 | 0.6               | 0.4             | 4.741     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 705                   |                   |       | 705                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 407                   | 922               | 0.442 | 407                 | 1.1               | 0.8             | 7.202     | A   |
|          |     | Exit  | 1          | 1    |                  | 376                   |                   |       | 376                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 52                    | 1247              | 0.042 | 52                  | 0.1               | 0.0             | 3.089     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 426                   | 797               | 0.535 | 425                 | 1.2               | 0.8             | 6.746     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 425                   | 800               | 0.531 | 424                 | 1.2               | 0.8             | 6.877     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 851                   |                   |       | 851                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 629                   |                   |       | 629                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 529               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 956                   |                   |       | 956                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 436                   | 873               | 0.500 | 437                 | 0.9               | 0.7             | 5.789     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 432                   | 871               | 0.495 | 432                 | 0.8               | 0.7             | 5.828     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 868                   |                   |       | 868                 | 0.0               | 0.0             | 0.033     | A   |
|          |     |       |            | 1    |                  | 182                   |                   |       | 182                 | 0.0               | 0.0             | 0.000     | A   |

# 2016 Baseline - 2016, PM

## Data Errors and Warnings

| Severity | Area            | Item                                     | Description                                                                                                                                               |
|----------|-----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2016 Baseline [Lane Simulation]     | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results. |
| Warning  | Geometry        | Junction 2 - Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                          |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 13.62              | B            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 8.93               | A            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2016          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1        | 2   | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2        | 5   | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|--------------|-------------------------|--------------------|
| 1        | 1   |            |              |              |                         |                    |
|          | 2   | ✓          |              |              |                         |                    |
|          | 3   |            | ONE HOUR     | ✓            | 1320                    | 100.000            |
|          | 4   |            | ONE HOUR     | ✓            | 444                     | 100.000            |
| 2        | 1   |            | ONE HOUR     | ✓            | 115                     | 100.000            |
|          | 2   |            | ONE HOUR     | ✓            | 761                     | 100.000            |
|          | 3   |            | ONE HOUR     | ✓            | 0                       | 100.000            |
|          | 4   |            |              |              |                         |                    |
|          | 5   | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 29        | 0         | 0         | 228       |
|      | 3 | 8         | 910       | 0         | 402       |
|      | 4 | 65        | 378       | 0         | 1         |

### Demand (Veh/hr)

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 40        | 0         | 0         | 75        |
|      | 2 | 0         | 2         | 2         | 584       | 173       |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 1080      | 2         | 210       | 1         |

## Vehicle Mix

### Heavy Vehicle Percentages

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 4         | 0         | 0         | 2         |
|      | 3 | 0         | 1         | 0         | 1         |
|      | 4 | 0         | 2         | 0         | 0         |

### Heavy Vehicle Percentages

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 3         | 0         | 0         | 4         |
|      | 2 | 0         | 0         | 0         | 2         | 3         |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 1         | 0         | 1         | 0         |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|----------|-----|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1        | 1   |               |                 |         |                         |                               |
|          | 2   | 5.23          | 0.4             | A       | 229                     | 343                           |
|          | 3   | 11.23         | 4.6             | B       | 1213                    | 1819                          |
|          | 4   | 25.42         | 3.6             | D       | 409                     | 613                           |
| 2        | 1   | 5.09          | 0.2             | A       | 107                     | 160                           |
|          | 2   | 6.74          | 1.6             | A       | 697                     | 1046                          |
|          | 3   | 0.00          | 0.0             | A       | 0                       | 0                             |
|          | 4   |               |                 |         |                         |                               |
|          | 5   | 10.58         | 4.4             | B       | 1188                    | 1782                          |

## Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 77                              |                   |                 |           |     |
|          | 2   | 190                   | 48                      | 0.74                      | 190                 | 977                             | 0.0               | 0.3             | 4.598     | A   |
|          | 3   | 1000                  | 250                     | 190                       | 1000                | 0                               | 0.0               | 1.5             | 5.385     | A   |
|          | 4   | 338                   | 85                      | 717                       | 337                 | 473                             | 0.0               | 0.7             | 6.566     | A   |
| 2        | 1   | 87                    | 22                      | 980                       | 87                  | 0                               | 0.0               | 0.1             | 3.160     | A   |
|          | 2   | 581                   | 145                     | 218                       | 581                 | 849                             | 0.0               | 0.8             | 5.090     | A   |
|          | 3   | 0                     | 0                       | 797                       | 0                   | 2                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 605                             |                   |                 |           |     |
|          | 5   | 977                   | 244                     | 2                         | 978                 | 190                             | 0.0               | 1.6             | 6.031     | A   |

### 17:00 - 17:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 91                              |                   |                 |           |     |
|          | 2   | 223                   | 56                      | 0.51                      | 222                 | 1165                            | 0.3               | 0.4             | 4.882     | A   |
|          | 3   | 1189                  | 297                     | 222                       | 1191                | 0                               | 1.5               | 2.3             | 6.812     | A   |
|          | 4   | 405                   | 101                     | 852                       | 404                 | 561                             | 0.7               | 1.1             | 10.060    | B   |
| 2        | 1   | 103                   | 26                      | 1164                      | 103                 | 0                               | 0.1               | 0.2             | 3.911     | A   |
|          | 2   | 680                   | 170                     | 255                       | 682                 | 1012                            | 0.8               | 1.1             | 5.709     | A   |
|          | 3   | 0                     | 0                       | 933                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 708                             |                   |                 |           |     |
|          | 5   | 1165                  | 291                     | 2                         | 1162                | 223                             | 1.6               | 2.5             | 7.350     | A   |

### 17:15 - 17:30

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 108                             |                   |                 |           |     |
|          | 2   | 274                   | 68                      | 0.97                      | 274                 | 1432                            | 0.4               | 0.4             | 5.227     | A   |
|          | 3   | 1459                  | 365                     | 275                       | 1464                | 0                               | 2.3               | 4.6             | 11.230    | B   |
|          | 4   | 490                   | 123                     | 1050                      | 491                 | 688                             | 1.1               | 2.8             | 19.587    | C   |
| 2        | 1   | 133                   | 33                      | 1429                      | 133                 | 0                               | 0.2               | 0.2             | 4.881     | A   |
|          | 2   | 830                   | 208                     | 324                       | 832                 | 1238                            | 1.1               | 1.6             | 6.618     | A   |
|          | 3   | 0                     | 0                       | 1152                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 876                             |                   |                 |           |     |
|          | 5   | 1432                  | 358                     | 2                         | 1427                | 274                             | 2.5               | 4.3             | 10.140    | B   |

### 17:30 - 17:45

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 108                             |                   |                 |           |     |
|          | 2   | 273                   | 68                      | 0.88                      | 274                 | 1416                            | 0.4               | 0.4             | 5.123     | A   |
|          | 3   | 1449                  | 362                     | 275                       | 1450                | 0                               | 4.6               | 4.3             | 10.871    | B   |
|          | 4   | 490                   | 123                     | 1036                      | 489                 | 689                             | 2.8               | 3.6             | 25.421    | D   |
| 2        | 1   | 126                   | 31                      | 1416                      | 125                 | 0                               | 0.2               | 0.2             | 5.087     | A   |
|          | 2   | 837                   | 209                     | 316                       | 840                 | 1225                            | 1.6               | 1.4             | 6.736     | A   |
|          | 3   | 0                     | 0                       | 1153                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 878                             |                   |                 |           |     |
|          | 5   | 1416                  | 354                     | 2                         | 1414                | 273                             | 4.3               | 4.4             | 10.577    | B   |

### 17:45 - 18:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 87                              |                   |                 |           |     |
|          | 2   | 224                   | 56                      | 0.83                      | 225                 | 1158                            | 0.4               | 0.3             | 4.873     | A   |
|          | 3   | 1178                  | 295                     | 225                       | 1179                | 0                               | 4.3               | 2.3             | 6.981     | A   |
|          | 4   | 399                   | 100                     | 846                       | 401                 | 558                             | 3.6               | 1.3             | 12.851    | B   |
| 2        | 1   | 104                   | 26                      | 1157                      | 104                 | 0                               | 0.2               | 0.1             | 4.276     | A   |
|          | 2   | 679                   | 170                     | 258                       | 678                 | 1003                            | 1.4               | 1.1             | 5.770     | A   |
|          | 3   | 0                     | 0                       | 933                       | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 706                             |                   |                 |           |     |
|          | 5   | 1158                  | 290                     | 2                         | 1154                | 224                             | 4.4               | 2.6             | 7.826     | A   |

### 18:00 - 18:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 74                              |                   |                 |           |     |
|          | 2   | 188                   | 47                      | 0.42                      | 188                 | 981                             | 0.3               | 0.3             | 4.657     | A   |
|          | 3   | 1000                  | 250                     | 188                       | 1003                | 0                               | 2.3               | 1.5             | 5.561     | A   |
|          | 4   | 330                   | 82                      | 725                       | 331                 | 466                             | 1.3               | 0.6             | 7.500     | A   |
| 2        | 1   | 87                    | 22                      | 982                       | 87                  | 0                               | 0.1               | 0.1             | 3.471     | A   |
|          | 2   | 575                   | 144                     | 220                       | 577                 | 849                             | 1.1               | 0.7             | 5.236     | A   |
|          | 3   | 0                     | 0                       | 794                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 604                             |                   |                 |           |     |
|          | 5   | 981                   | 245                     | 1                         | 981                 | 188                             | 2.6               | 1.7             | 6.045     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 77                    |                   |       | 77                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 190                   | 965               | 0.197 | 190                 | 0.0               | 0.3             | 4.598     | A   |
|          |     | Exit  | 1          | 1    |                  | 977                   |                   |       | 977                 | 0.0               | 0.0             | 0.009     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 499                   | 964               | 0.517 | 499                 | 0.0               | 0.7             | 5.384     | A   |
|          |     |       |            | 2    | 1,2,4            | 502                   | 962               | 0.521 | 501                 | 0.0               | 0.8             | 5.386     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1000                  |                   |       | 1000                | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 338                   | 833               | 0.406 | 337                 | 0.0               | 0.7             | 6.566     | A   |
|          |     | Exit  | 1          | 1    |                  | 473                   |                   |       | 473                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 87                    | 1147              | 0.076 | 87                  | 0.0               | 0.1             | 3.160     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 288                   | 827               | 0.349 | 288                 | 0.0               | 0.4             | 5.068     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 293                   | 830               | 0.353 | 293                 | 0.0               | 0.4             | 5.112     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 581                   |                   |       | 581                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 849                   |                   |       | 849                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 707               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 2                     |                   |       | 2                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 605                   |                   |       | 605                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 489                   | 892               | 0.549 | 490                 | 0.0               | 0.8             | 5.947     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 487                   | 892               | 0.546 | 488                 | 0.0               | 0.8             | 6.017     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 977                   |                   |       | 977                 | 0.0               | 0.0             | 0.048     | A   |
|          |     |       |            | 1    |                  | 190                   |                   |       | 190                 | 0.0               | 0.0             | 0.000     | A   |

## 17:00 - 17:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 91                    |                   |       | 91                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 223                   | 963               | 0.232 | 222                 | 0.3               | 0.4             | 4.882     | A   |
|          |     | Exit  | 1          | 1    |                  | 1165                  |                   |       | 1165                | 0.0               | 0.0             | 0.065     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 598                   | 951               | 0.629 | 599                 | 0.7               | 1.1             | 6.812     | A   |
|          |     |       |            | 2    | 1,2,4            | 591                   | 952               | 0.621 | 592                 | 0.8               | 1.1             | 6.813     | A   |
|          |     |       |            | 2    | (1,2,3,4)        | 1189                  |                   |       | 1189                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 405                   | 760               | 0.533 | 404                 | 0.7               | 1.1             | 10.060    | B   |
|          |     | Exit  | 1          | 1    |                  | 561                   |                   |       | 561                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 103                   | 1020              | 0.101 | 103                 | 0.1               | 0.2             | 3.911     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 344                   | 818               | 0.421 | 345                 | 0.4               | 0.5             | 5.684     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 336                   | 815               | 0.412 | 336                 | 0.4               | 0.6             | 5.735     | A   |
|          |     |       |            | 2    | (1,2,3,4,5)      | 680                   |                   |       | 680                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 1012                  |                   |       | 1012                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 637               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 708                   |                   |       | 708                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 585                   | 893               | 0.655 | 583                 | 0.8               | 1.3             | 7.163     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 579                   | 891               | 0.650 | 579                 | 0.8               | 1.2             | 7.167     | A   |
|          |     |       |            | 2    | (1,2,3,4,5)      | 1165                  |                   |       | 1164                | 0.0               | 0.1             | 0.184     | A   |
|          |     | Exit  | 1          | 1    |                  | 223                   |                   |       | 223                 | 0.0               | 0.0             | 0.001     | A   |

## 17:15 - 17:30

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 108                   |                   |       | 108                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 274                   | 964               | 0.284 | 274                 | 0.4               | 0.4             | 5.227     | A   |
|          |     | Exit  | 1          | 1    |                  | 1433                  |                   |       | 1432                | 0.0               | 0.3             | 0.491     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 731                   | 933               | 0.783 | 734                 | 1.1               | 2.3             | 11.200    | B   |
|          |     |       |            | 2    | 1,2,4            | 728                   | 933               | 0.781 | 730                 | 1.1               | 2.3             | 11.261    | B   |
|          |     |       |            | 2    | (1,2,3,4)        | 1459                  |                   |       | 1459                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 490                   | 653               | 0.750 | 491                 | 1.1               | 2.8             | 19.587    | C   |
|          |     | Exit  | 1          | 1    |                  | 688                   |                   |       | 688                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 133                   | 847               | 0.157 | 133                 | 0.2               | 0.2             | 4.881     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 416                   | 793               | 0.524 | 416                 | 0.5               | 0.8             | 6.623     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 415                   | 795               | 0.522 | 416                 | 0.6               | 0.8             | 6.613     | A   |
|          |     |       |            | 2    | (1,2,3,4,5)      | 830                   |                   |       | 830                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 1238                  |                   |       | 1238                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 527               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 876                   |                   |       | 876                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 715                   | 893               | 0.801 | 713                 | 1.3               | 2.0             | 9.404     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 715                   | 892               | 0.802 | 714                 | 1.2               | 1.9             | 9.329     | A   |
|          |     |       |            | 2    | (1,2,3,4,5)      | 1432                  |                   |       | 1430                | 0.1               | 0.4             | 0.767     | A   |
|          |     | Exit  | 1          | 1    |                  | 274                   |                   |       | 274                 | 0.0               | 0.0             | 0.001     | A   |

## 17:30 - 17:45

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 108                   |                   |       | 108                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 273                   | 964               | 0.284 | 274                 | 0.4               | 0.4             | 5.123     | A   |
|          |     | Exit  | 1          | 1    |                  | 1415                  |                   |       | 1416                | 0.3               | 0.2             | 0.625     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 726                   | 933               | 0.778 | 725                 | 2.3               | 2.2             | 10.854    | B   |
|          |     |       |            | 2    | 1,2,4            | 723                   | 932               | 0.775 | 725                 | 2.3               | 2.1             | 10.888    | B   |
|          |     | Exit  | 2          | 1    | (1,2,3,4)        | 1449                  |                   |       | 1449                | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 490                   | 662               | 0.740 | 489                 | 2.8               | 3.6             | 25.421    | D   |
|          |     | Exit  | 1          | 1    |                  | 689                   |                   |       | 689                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 126                   | 854               | 0.147 | 125                 | 0.2               | 0.2             | 5.087     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 420                   | 797               | 0.527 | 422                 | 0.8               | 0.7             | 6.783     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 417                   | 794               | 0.526 | 418                 | 0.8               | 0.7             | 6.688     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 837                   |                   |       | 837                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1225                  |                   |       | 1225                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 526               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 878                   |                   |       | 878                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 704                   | 893               | 0.788 | 702                 | 2.0               | 2.1             | 9.737     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 713                   | 892               | 0.798 | 712                 | 1.9               | 2.0             | 9.574     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1416                  |                   |       | 1417                | 0.4               | 0.4             | 0.922     | A   |
|          |     |       |            | 1    |                  | 273                   |                   |       | 273                 | 0.0               | 0.0             | 0.002     | A   |

## 17:45 - 18:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 87                    |                   |       | 87                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 224                   | 962               | 0.233 | 225                 | 0.4               | 0.3             | 4.873     | A   |
|          |     | Exit  | 1          | 1    |                  | 1158                  |                   |       | 1158                | 0.2               | 0.0             | 0.136     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 589                   | 950               | 0.620 | 588                 | 2.2               | 1.2             | 7.010     | A   |
|          |     |       |            | 2    | 1,2,4            | 589                   | 950               | 0.620 | 590                 | 2.1               | 1.0             | 6.952     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4)        | 1178                  |                   |       | 1178                | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 399                   | 764               | 0.522 | 401                 | 3.6               | 1.3             | 12.851    | B   |
|          |     | Exit  | 1          | 1    |                  | 558                   |                   |       | 558                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 104                   | 1028              | 0.101 | 104                 | 0.2               | 0.1             | 4.276     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 342                   | 815               | 0.420 | 342                 | 0.7               | 0.6             | 5.811     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 336                   | 812               | 0.414 | 336                 | 0.7               | 0.6             | 5.730     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 679                   |                   |       | 679                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1003                  |                   |       | 1003                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 637               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 706                   |                   |       | 706                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 582                   | 893               | 0.652 | 580                 | 2.1               | 1.2             | 7.522     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 576                   | 892               | 0.646 | 574                 | 2.0               | 1.3             | 7.553     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1158                  |                   |       | 1158                | 0.4               | 0.1             | 0.295     | A   |
|          |     |       |            | 1    |                  | 224                   |                   |       | 224                 | 0.0               | 0.0             | 0.002     | A   |

18:00 - 18:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 74                    |                   |       | 74                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 188                   | 965               | 0.195 | 188                 | 0.3               | 0.3             | 4.657     | A   |
|          |     | Exit  | 1          | 1    |                  | 981                   |                   |       | 981                 | 0.0               | 0.0             | 0.011     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 499                   | 965               | 0.517 | 500                 | 1.2               | 0.8             | 5.606     | A   |
|          |     |       |            | 2    | 1,2,4            | 502                   | 964               | 0.520 | 502                 | 1.0               | 0.7             | 5.516     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1000                  |                   |       | 1000                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 330                   | 831               | 0.397 | 331                 | 1.3               | 0.6             | 7.500     | A   |
|          |     | Exit  | 1          | 1    |                  | 466                   |                   |       | 466                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 87                    | 1143              | 0.077 | 87                  | 0.1               | 0.1             | 3.471     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 287                   | 827               | 0.347 | 288                 | 0.6               | 0.3             | 5.220     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 288                   | 830               | 0.347 | 289                 | 0.6               | 0.4             | 5.252     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 575                   |                   |       | 575                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 849                   |                   |       | 849                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 709               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 604                   |                   |       | 604                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 494                   | 892               | 0.554 | 493                 | 1.2               | 0.9             | 6.052     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 487                   | 894               | 0.545 | 488                 | 1.3               | 0.8             | 5.952     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 981                   |                   |       | 981                 | 0.1               | 0.0             | 0.048     | A   |
|          |     |       |            | 1    |                  | 188                   |                   |       | 188                 | 0.0               | 0.0             | 0.005     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |  |  |  |
| For sales and distribution information, program advice and maintenance, contact TRL:<br>Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk |  |  |  |  |  |  |  |
| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |  |  |  |  |  |  |

Filename: 2021 Base + Devusing entry lane analysis.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\A27 Roundabouts\2021 with dev

Report generation date: 10/02/2017 11:00:06

»2021 + Dev - 2021 + Dev, AM

»2021 + Dev - 2021 + Dev, PM

### Summary of junction performance

|                                           | AM          |           |     |     | PM          |           |     |     |
|-------------------------------------------|-------------|-----------|-----|-----|-------------|-----------|-----|-----|
|                                           | Queue (Veh) | Delay (s) | RFC | LOS | Queue (Veh) | Delay (s) | RFC | LOS |
| 2021 + Dev [Lane Simulation] - 2021 + Dev |             |           |     |     |             |           |     |     |
| Junction 1 - Arm 2                        | 0.4         | 5.23      |     | A   | 0.5         | 5.55      |     | A   |
| Junction 1 - Arm 3                        | 2.4         | 7.57      |     | A   | 11.5        | 24.82     |     | C   |
| Junction 1 - Arm 4                        | 8.4         | 43.30     |     | E   | 15.0        | 87.28     |     | F   |
| Junction 2 - Arm 1                        | 0.1         | 4.57      |     | A   | 0.3         | 6.14      |     | A   |
| Junction 2 - Arm 2                        | 16.3        | 38.90     |     | E   | 2.0         | 7.77      |     | A   |
| Junction 2 - Arm 3                        | 0.0         | 0.00      |     | A   | 0.0         | 0.00      |     | A   |
| Junction 2 - Arm 5                        | 4.2         | 10.72     |     | B   | 6.3         | 13.98     |     | B   |

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

### File summary

#### File Description

|             |                         |
|-------------|-------------------------|
| Title       | 2021 + Dev              |
| Location    | A27 Roundabouts, Havant |
| Site number |                         |
| Date        | 31/10/2016              |
| Version     |                         |
| Status      | (new file)              |
| Identifier  |                         |
| Client      | Barratts                |
| Jobnumber   | 041.0039                |
| Enumerator  | Shannon                 |
| Description |                         |

### Units

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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Lane Simulation options

| Stop criteria (%) | Stop criteria time (s) | Stop criteria number of trials | Random seed | Results refresh speed (s) | Individual vehicle animation number of trials | Use crossings quick response | Last run random seed | Last run number of trials | Last run time taken (s) |
|-------------------|------------------------|--------------------------------|-------------|---------------------------|-----------------------------------------------|------------------------------|----------------------|---------------------------|-------------------------|
| 1.00              | 100000                 | 100000                         | -1          | 3                         | 1                                             | ✓                            | 534690446            | 515                       | 218.30                  |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2021 + Dev    | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |
| D2 | 2021 + Dev    | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

## Analysis Set Details

| ID | Name       | Use Lane Simulation | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|------------|---------------------|-------------------|---------------------------------|-------------------------------------|
| A1 | 2021 + Dev | ✓                   | ✓                 | 100.000                         | 100.000                             |

# 2021 + Dev - 2021 + Dev, AM

## Data Errors and Warnings

| Severity | Area            | Item                                     | Description                                                                                                                                               |
|----------|-----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2021 + Dev [Lane Simulation]        | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results. |
| Warning  | Geometry        | Junction 2 - Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                          |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 18.52              | C            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 24.25              | C            |

### Junction Network Options

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

## Arms

### Arms

| Junction | Arm | Name              | Description |
|----------|-----|-------------------|-------------|
| 1        | 1   | A27 On-Slip       |             |
|          | 2   | Emsworth Road (S) |             |
|          | 3   | A27 Off-Slip      |             |
|          | 4   | untitled          |             |
| 2        | 1   | A27 Off-Slip      |             |
|          | 2   | Havant Road       |             |
|          | 3   | Church Lane       |             |
|          | 4   | A27 On-Slip       |             |
|          | 5   | Emsworth Road     |             |

### Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|----------|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1        | 1   |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|          | 2   | 3.70                             | 3.70                | 0.0                             | 12.2                 | 35.0                              | 53.0                               |           |
|          | 3   | 7.30                             | 7.30                | 0.0                             | 24.3                 | 35.0                              | 49.0                               |           |
|          | 4   | 4.17                             | 5.20                | 0.5                             | 23.6                 | 35.0                              | 46.0                               |           |
| 2        | 1   | 6.08                             | 6.08                | 0.0                             | 19.0                 | 40.0                              | 27.1                               |           |
|          | 2   | 3.69                             | 6.74                | 42.0                            | 13.0                 | 40.0                              | 26.5                               |           |
|          | 3   | 3.14                             | 6.18                | 4.0                             | 12.0                 | 40.0                              | 46.0                               |           |
|          | 4   |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|          | 5   | 5.06                             | 7.40                | 12.0                            | 15.0                 | 40.0                              | 48.9                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction | Arm | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------|--------------------------|
| 1        | 1   |             |                          |
|          | 2   | 0.475       | 997                      |
|          | 3   | 0.712       | 2085                     |
|          | 4   | 0.544       | 1242                     |
| 2        | 1   | 0.675       | 1856                     |
|          | 2   | 0.666       | 1841                     |
|          | 3   | 0.498       | 1112                     |
|          | 4   |             |                          |
|          | 5   | 0.639       | 1808                     |

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

### Lane Simulation: Arm options

| Junction | Arm | Lane capacity source | Traffic Considering Secondary Lanes (%) |
|----------|-----|----------------------|-----------------------------------------|
| 1        | 1   | Evenly split         | 10.00                                   |
|          | 2   | Evenly split         | 10.00                                   |
|          | 3   | Evenly split         | 10.00                                   |
|          | 4   | Evenly split         | 10.00                                   |
| 2        | 1   | Evenly split         | 10.00                                   |
|          | 2   | Evenly split         | 10.00                                   |
|          | 3   | Evenly split         | 10.00                                   |
|          | 4   | Evenly split         | 10.00                                   |
|          | 5   | Evenly split         | 10.00                                   |

### Lanes

| Junction | Arm | Lane level        | Lane | Destination arms | Has limited storage | Storage (PCU) | Minimum capacity (PCU/hr) | Maximum capacity (PCU/hr) |
|----------|-----|-------------------|------|------------------|---------------------|---------------|---------------------------|---------------------------|
| 1        | 2   | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 7.00          | 0                         | 99999                     |
|          | 3   | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|          |     |                   | 2    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|          |     | 2                 | 1    | (1,2,3,4)        |                     | Infinity      |                           |                           |
|          | 4   | 1 [Give-way line] | 1    | 1,2,4            |                     | Infinity      | 0                         | 99999                     |
| 2        | 1   | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|          | 2   | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 10.43         | 0                         | 99999                     |
|          |     |                   | 2    | 2,3,4,5          | ✓                   | 9.57          | 0                         | 99999                     |
|          |     | 2                 | 1    | (1,2,3,4,5)      |                     | Infinity      |                           |                           |
|          | 3   | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|          | 5   | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 4.00          | 0                         | 99999                     |
|          |     |                   | 2    | 2,3,4,5          | ✓                   | 4.00          | 0                         | 99999                     |
|          |     | 2                 | 1    | (1,2,3,4,5)      | ✓                   | 3.00          |                           |                           |

### Entry Lane slope and intercept

| Junction | Arm | Lane level        | Lane | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------------|------|-------------|--------------------------|
| 1        | 2   | 1 [Give-way line] | 1    | 0.475       | 997                      |
|          | 3   | 1 [Give-way line] | 1    | 0.356       | 1043                     |
|          |     |                   | 2    | 0.356       | 1043                     |
|          | 4   | 1 [Give-way line] | 1    | 0.544       | 1242                     |
| 2        | 1   | 1 [Give-way line] | 1    | 0.675       | 1856                     |
|          | 2   | 1 [Give-way line] | 1    | 0.333       | 921                      |
|          |     |                   | 2    | 0.333       | 921                      |
|          | 3   | 1 [Give-way line] | 1    | 0.498       | 1112                     |
|          | 5   | 1 [Give-way line] | 1    | 0.319       | 904                      |
|          |     |                   | 2    | 0.319       | 904                      |

### Lane Movements

| Junction | Arm | Lane Level        | Lane | Destination arm |   |   |   |
|----------|-----|-------------------|------|-----------------|---|---|---|
|          |     |                   |      | 1               | 2 | 3 | 4 |
| 1        | 2   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |
|          | 3   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |
|          |     |                   | 2    | ✓               | ✓ |   | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ |
|          | 4   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |

### Lane Movements

| Junction | Arm | Lane Level        | Lane | Destination arm |   |   |   |   |
|----------|-----|-------------------|------|-----------------|---|---|---|---|
|          |     |                   |      | 1               | 2 | 3 | 4 | 5 |
| 2        | 1   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          | 2   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     |                   | 2    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ | ✓ |
|          | 3   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          | 5   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     |                   | 2    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ | ✓ |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2021 + Dev    | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1        | 2   | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2        | 5   | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|--------------|-------------------------|--------------------|
| 1        | 1   |            |              |              |                         |                    |
|          | 2   | ✓          |              |              |                         |                    |
|          | 3   |            | ONE HOUR     | ✓            | 1036                    | 100.000            |
|          | 4   |            | ONE HOUR     | ✓            | 601                     | 100.000            |
| 2        | 1   |            | ONE HOUR     | ✓            | 73                      | 100.000            |
|          | 2   |            | ONE HOUR     | ✓            | 1268                    | 100.000            |
|          | 3   |            | ONE HOUR     | ✓            | 4                       | 100.000            |
|          | 4   |            |              |              |                         |                    |
|          | 5   | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 28        | 0         | 0         | 277       |
|      | 3 | 2         | 721       | 0         | 313       |
|      | 4 | 52        | 548       | 0         | 1         |

### Demand (Veh/hr)

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 32        | 0         | 2         | 39        |
|      | 2 | 0         | 2         | 1         | 1038      | 227       |
|      | 3 | 0         | 0         | 0         | 3         | 1         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 884       | 4         | 374       | 1         |

## Vehicle Mix

### Heavy Vehicle Percentages

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 5         | 0         | 0         | 2         |
|      | 3 | 50        | 4         | 0         | 3         |
|      | 4 | 4         | 3         | 0         | 0         |

### Heavy Vehicle Percentages

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 0         | 0         | 0         | 0         |
|      | 2 | 0         | 0         | 0         | 3         | 2         |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 2         | 0         | 2         | 0         |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|----------|-----|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1        | 1   |               |                 |         |                         |                               |
|          | 2   | 5.23          | 0.4             | A       | 244                     | 366                           |
|          | 3   | 7.57          | 2.4             | A       | 949                     | 1424                          |
|          | 4   | 43.30         | 8.4             | E       | 551                     | 827                           |
| 2        | 1   | 4.57          | 0.1             | A       | 67                      | 100                           |
|          | 2   | 38.90         | 16.3            | E       | 1166                    | 1748                          |
|          | 3   | 0.00          | 0.0             | A       | 0                       | 0                             |
|          | 4   |               |                 |         |                         |                               |
|          | 5   | 10.72         | 4.2             | B       | 1159                    | 1739                          |

## Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 58                              |                   |                 |           |     |
|          | 2   | 206                   | 52                      | 0.86                      | 207                 | 952                             | 0.0               | 0.2             | 4.711     | A   |
|          | 3   | 778                   | 195                     | 208                       | 779                 | 0                               | 0.0               | 1.1             | 4.880     | A   |
|          | 4   | 448                   | 112                     | 561                       | 449                 | 426                             | 0.0               | 1.0             | 7.610     | A   |
| 2        | 1   | 55                    | 14                      | 954                       | 55                  | 0                               | 0.0               | 0.0             | 2.989     | A   |
|          | 2   | 961                   | 240                     | 316                       | 960                 | 693                             | 0.0               | 2.2             | 7.439     | A   |
|          | 3   | 0                     | 0                       | 1272                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1065                            |                   |                 |           |     |
|          | 5   | 952                   | 238                     | 2                         | 952                 | 206                             | 0.0               | 1.7             | 6.295     | A   |

### 08:00 - 08:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 69                              |                   |                 |           |     |
|          | 2   | 238                   | 59                      | 0.77                      | 238                 | 1132                            | 0.2               | 0.3             | 4.860     | A   |
|          | 3   | 924                   | 231                     | 239                       | 925                 | 0                               | 1.1               | 1.5             | 5.650     | A   |
|          | 4   | 538                   | 135                     | 662                       | 539                 | 502                             | 1.0               | 1.9             | 12.307    | B   |
| 2        | 1   | 63                    | 16                      | 1135                      | 63                  | 0                               | 0.0               | 0.1             | 3.556     | A   |
|          | 2   | 1134                  | 283                     | 377                       | 1137                | 821                             | 2.2               | 3.4             | 10.906    | B   |
|          | 3   | 0                     | 0                       | 1509                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1269                            |                   |                 |           |     |
|          | 5   | 1132                  | 283                     | 2                         | 1133                | 238                             | 1.7               | 2.4             | 7.606     | A   |

### 08:15 - 08:30

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 86                              |                   |                 |           |     |
|          | 2   | 288                   | 72                      | 1                         | 288                 | 1377                            | 0.3               | 0.4             | 5.235     | A   |
|          | 3   | 1135                  | 284                     | 289                       | 1135                | 0                               | 1.5               | 2.3             | 7.213     | A   |
|          | 4   | 661                   | 165                     | 819                       | 646                 | 605                             | 1.9               | 7.2             | 29.644    | D   |
| 2        | 1   | 80                    | 20                      | 1376                      | 80                  | 0                               | 0.1               | 0.1             | 4.376     | A   |
|          | 2   | 1405                  | 351                     | 457                       | 1386                | 999                             | 3.4               | 13.4            | 27.361    | D   |
|          | 3   | 0                     | 0                       | 1838                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1548                            |                   |                 |           |     |
|          | 5   | 1377                  | 344                     | 2                         | 1375                | 288                             | 2.4               | 4.0             | 10.148    | B   |

### 08:30 - 08:45

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 84                              |                   |                 |           |     |
|          | 2   | 291                   | 73                      | 1                         | 291                 | 1399                            | 0.4               | 0.4             | 5.222     | A   |
|          | 3   | 1144                  | 286                     | 292                       | 1145                | 0                               | 2.3               | 2.4             | 7.575     | A   |
|          | 4   | 665                   | 166                     | 822                       | 662                 | 615                             | 7.2               | 8.3             | 43.304    | E   |
| 2        | 1   | 81                    | 20                      | 1401                      | 81                  | 0                               | 0.1               | 0.1             | 4.571     | A   |
|          | 2   | 1394                  | 349                     | 468                       | 1388                | 1014                            | 13.4              | 16.2            | 38.900    | E   |
|          | 3   | 0                     | 0                       | 1850                      | 0                   | 6                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1558                            |                   |                 |           |     |
|          | 5   | 1399                  | 350                     | 2                         | 1398                | 291                             | 4.0               | 4.1             | 10.717    | B   |

### 08:45 - 09:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 71                              |                   |                 |           |     |
|          | 2   | 243                   | 61                      | 0.93                      | 243                 | 1137                            | 0.4               | 0.3             | 4.911     | A   |
|          | 3   | 928                   | 232                     | 244                       | 929                 | 0                               | 2.4               | 1.5             | 5.819     | A   |
|          | 4   | 541                   | 135                     | 666                       | 542                 | 507                             | 8.3               | 2.2             | 19.185    | C   |
| 2        | 1   | 66                    | 16                      | 1139                      | 66                  | 0                               | 0.1               | 0.1             | 3.882     | A   |
|          | 2   | 1138                  | 285                     | 380                       | 1150                | 825                             | 16.2              | 3.5             | 18.531    | C   |
|          | 3   | 0                     | 0                       | 1525                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1280                            |                   |                 |           |     |
|          | 5   | 1137                  | 284                     | 2                         | 1137                | 243                             | 4.1               | 2.3             | 8.162     | A   |

### 09:00 - 09:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 59                              |                   |                 |           |     |
|          | 2   | 200                   | 50                      | 0.93                      | 200                 | 958                             | 0.3               | 0.3             | 4.638     | A   |
|          | 3   | 785                   | 196                     | 201                       | 786                 | 0                               | 1.5               | 1.1             | 5.008     | A   |
|          | 4   | 453                   | 113                     | 564                       | 454                 | 423                             | 2.2               | 1.0             | 8.857     | A   |
| 2        | 1   | 54                    | 14                      | 958                       | 54                  | 0                               | 0.1               | 0.0             | 3.284     | A   |
|          | 2   | 961                   | 240                     | 314                       | 958                 | 698                             | 3.5               | 2.2             | 8.013     | A   |
|          | 3   | 0                     | 0                       | 1268                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1066                            |                   |                 |           |     |
|          | 5   | 958                   | 240                     | 2                         | 956                 | 200                             | 2.3               | 1.7             | 6.436     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 58                    |                   |       | 58                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 206                   | 979               | 0.211 | 207                 | 0.0               | 0.2             | 4.711     | A   |
|          |     | Exit  | 1          | 1    |                  | 952                   |                   |       | 952                 | 0.0               | 0.0             | 0.014     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 388                   | 931               | 0.417 | 388                 | 0.0               | 0.6             | 4.877     | A   |
|          |     |       |            | 2    | 1,2,4            | 390                   | 932               | 0.418 | 391                 | 0.0               | 0.5             | 4.883     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 778                   |                   |       | 778                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 448                   | 898               | 0.499 | 449                 | 0.0               | 1.0             | 7.610     | A   |
|          |     | Exit  | 1          | 1    |                  | 426                   |                   |       | 426                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 55                    | 1189              | 0.046 | 55                  | 0.0               | 0.0             | 2.989     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 480                   | 790               | 0.608 | 479                 | 0.0               | 1.1             | 7.383     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 481                   | 789               | 0.609 | 481                 | 0.0               | 1.1             | 7.489     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 961                   |                   |       | 961                 | 0.0               | 0.0             | 0.003     | A   |
|          |     |       |            | 1    |                  | 693                   |                   |       | 693                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 460               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1065                  |                   |       | 1065                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 476                   | 873               | 0.545 | 475                 | 0.0               | 0.8             | 6.218     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 476                   | 873               | 0.545 | 477                 | 0.0               | 0.8             | 6.247     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 952                   |                   |       | 952                 | 0.0               | 0.0             | 0.062     | A   |
|          |     |       |            | 1    |                  | 206                   |                   |       | 206                 | 0.0               | 0.0             | 0.000     | A   |

## 08:00 - 08:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 69                    |                   |       | 69                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 238                   | 978               | 0.243 | 238                 | 0.2               | 0.3             | 4.860     | A   |
|          |     | Exit  | 1          | 1    |                  | 1132                  |                   |       | 1132                | 0.0               | 0.0             | 0.099     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 460                   | 920               | 0.500 | 460                 | 0.6               | 0.8             | 5.662     | A   |
|          |     |       |            | 2    | 1,2,4            | 464                   | 921               | 0.504 | 465                 | 0.5               | 0.8             | 5.638     | A   |
|          |     |       |            | 2    | (1,2,3,4)        | 924                   |                   |       | 924                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 538                   | 841               | 0.640 | 539                 | 1.0               | 1.9             | 12.307    | B   |
|          |     | Exit  | 1          | 1    |                  | 502                   |                   |       | 502                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 63                    | 1062              | 0.059 | 63                  | 0.0               | 0.1             | 3.556     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 569                   | 769               | 0.740 | 571                 | 1.1               | 1.7             | 10.923    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 565                   | 770               | 0.734 | 566                 | 1.1               | 1.7             | 10.793    | B   |
|          |     |       | 2          | 1    | (1,2,3,4,5)      | 1134                  |                   |       | 1133                | 0.0               | 0.0             | 0.046     | A   |
|          |     | Exit  |            | 1    |                  | 821                   |                   |       | 821                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 339               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1269                  |                   |       | 1269                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 566                   | 872               | 0.649 | 566                 | 0.8               | 1.2             | 7.365     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 566                   | 873               | 0.649 | 567                 | 0.8               | 1.2             | 7.388     | A   |
|          |     |       | 2          | 1    | (1,2,3,4,5)      | 1132                  |                   |       | 1132                | 0.0               | 0.1             | 0.227     | A   |
|          |     | Exit  |            | 1    |                  | 238                   |                   |       | 238                 | 0.0               | 0.0             | 0.000     | A   |

## 08:15 - 08:30

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 86                    |                   |       | 86                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 288                   | 979               | 0.294 | 288                 | 0.3               | 0.4             | 5.235     | A   |
|          |     | Exit  | 1          | 1    |                  | 1378                  |                   |       | 1377                | 0.0               | 0.2             | 0.520     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 567                   | 904               | 0.627 | 567                 | 0.8               | 1.1             | 7.200     | A   |
|          |     |       |            | 2    | 1,2,4            | 569                   | 905               | 0.628 | 568                 | 0.8               | 1.2             | 7.227     | A   |
|          |     |       | 2          | 1    | (1,2,3,4)        | 1135                  |                   |       | 1135                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 661                   | 755               | 0.875 | 646                 | 1.9               | 7.2             | 29.644    | D   |
|          |     | Exit  | 1          | 1    |                  | 605                   |                   |       | 605                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 80                    | 894               | 0.089 | 80                  | 0.1               | 0.1             | 4.376     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 699                   | 744               | 0.940 | 694                 | 1.7               | 5.3             | 23.677    | C   |
|          |     |       |            | 2    | 2,3,4,5          | 698                   | 744               | 0.938 | 693                 | 1.7               | 5.1             | 22.547    | C   |
|          |     |       | 2          | 1    | (1,2,3,4,5)      | 1405                  |                   |       | 1397                | 0.0               | 3.0             | 4.074     | A   |
|          |     | Exit  |            | 1    |                  | 999                   |                   |       | 999                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 172               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1548                  |                   |       | 1548                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 686                   | 874               | 0.785 | 685                 | 1.2               | 1.8             | 9.364     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 691                   | 872               | 0.792 | 690                 | 1.2               | 1.8             | 9.316     | A   |
|          |     |       | 2          | 1    | (1,2,3,4,5)      | 1377                  |                   |       | 1377                | 0.1               | 0.3             | 0.802     | A   |
|          |     | Exit  |            | 1    |                  | 288                   |                   |       | 288                 | 0.0               | 0.0             | 0.002     | A   |

## 08:30 - 08:45

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 84                    |                   |       | 84                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 291                   | 980               | 0.296 | 291                 | 0.4               | 0.4             | 5.222     | A   |
|          |     | Exit  | 1          | 1    |                  | 1399                  |                   |       | 1399                | 0.2               | 0.2             | 0.627     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 574                   | 905               | 0.634 | 574                 | 1.1               | 1.1             | 7.579     | A   |
|          |     |       |            | 2    | 1,2,4            | 571                   | 903               | 0.631 | 571                 | 1.2               | 1.2             | 7.571     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4)        | 1144                  |                   |       | 1144                | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 665                   | 754               | 0.883 | 662                 | 7.2               | 8.3             | 43.304    | E   |
|          |     | Exit  | 1          | 1    |                  | 615                   |                   |       | 615                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 81                    | 878               | 0.092 | 81                  | 0.1               | 0.1             | 4.571     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 700                   | 739               | 0.946 | 698                 | 5.3               | 5.9             | 28.841    | D   |
|          |     |       |            | 2    | 2,3,4,5          | 691                   | 740               | 0.934 | 690                 | 5.1               | 5.6             | 27.265    | D   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1394                  |                   |       | 1391                | 3.0               | 4.8             | 10.743    | B   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 165               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 6                     |                   |       | 6                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1558                  |                   |       | 1558                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 698                   | 874               | 0.799 | 698                 | 1.8               | 1.8             | 9.742     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 701                   | 873               | 0.803 | 701                 | 1.8               | 1.9             | 9.787     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1399                  |                   |       | 1399                | 0.3               | 0.4             | 0.951     | A   |
|          | 5   | Exit  | 1          | 1    |                  | 291                   |                   |       | 291                 | 0.0               | 0.0             | 0.000     | A   |

## 08:45 - 09:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 71                    |                   |       | 71                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 243                   | 980               | 0.248 | 243                 | 0.4               | 0.3             | 4.911     | A   |
|          |     | Exit  | 1          | 1    |                  | 1136                  |                   |       | 1137                | 0.2               | 0.0             | 0.189     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 465                   | 921               | 0.505 | 466                 | 1.1               | 0.7             | 5.800     | A   |
|          |     |       |            | 2    | 1,2,4            | 463                   | 917               | 0.504 | 463                 | 1.2               | 0.8             | 5.839     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4)        | 928                   |                   |       | 928                 | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 541                   | 838               | 0.645 | 542                 | 8.3               | 2.2             | 19.185    | C   |
|          |     | Exit  | 1          | 1    |                  | 507                   |                   |       | 507                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 66                    | 1059              | 0.062 | 66                  | 0.1               | 0.1             | 3.882     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 573                   | 770               | 0.744 | 577                 | 5.9               | 1.7             | 16.131    | C   |
|          |     |       |            | 2    | 2,3,4,5          | 569                   | 768               | 0.741 | 573                 | 5.6               | 1.7             | 15.680    | C   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1138                  |                   |       | 1142                | 4.8               | 0.0             | 3.118     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 331               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1280                  |                   |       | 1280                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 568                   | 871               | 0.651 | 569                 | 1.8               | 1.1             | 7.833     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 569                   | 872               | 0.653 | 569                 | 1.9               | 1.2             | 7.810     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1137                  |                   |       | 1137                | 0.4               | 0.1             | 0.352     | A   |
|          | 5   | Exit  | 1          | 1    |                  | 243                   |                   |       | 243                 | 0.0               | 0.0             | 0.000     | A   |

09:00 - 09:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 59                    |                   |       | 59                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 200                   | 981               | 0.204 | 200                 | 0.3               | 0.3             | 4.638     | A   |
|          |     | Exit  | 1          | 1    |                  | 958                   |                   |       | 958                 | 0.0               | 0.0             | 0.020     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 393                   | 934               | 0.421 | 393                 | 0.7               | 0.6             | 5.011     | A   |
|          |     |       |            | 2    | 1,2,4            | 392                   | 933               | 0.421 | 393                 | 0.8               | 0.5             | 5.005     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 785                   |                   |       | 785                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 453                   | 896               | 0.506 | 454                 | 2.2               | 1.0             | 8.857     | A   |
|          |     | Exit  | 1          | 1    |                  | 423                   |                   |       | 423                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 54                    | 1187              | 0.046 | 54                  | 0.1               | 0.0             | 3.284     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 482                   | 791               | 0.610 | 480                 | 1.7               | 1.1             | 8.048     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 479                   | 790               | 0.606 | 478                 | 1.7               | 1.1             | 7.985     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 961                   |                   |       | 961                 | 0.0               | 0.0             | 0.001     | A   |
|          |     |       |            | 1    |                  | 698                   |                   |       | 698                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 462               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1066                  |                   |       | 1066                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 479                   | 874               | 0.548 | 478                 | 1.1               | 0.8             | 6.365     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 479                   | 873               | 0.549 | 478                 | 1.2               | 0.8             | 6.360     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 958                   |                   |       | 958                 | 0.1               | 0.0             | 0.075     | A   |
|          |     |       |            | 1    |                  | 200                   |                   |       | 200                 | 0.0               | 0.0             | 0.000     | A   |

# 2021 + Dev - 2021 + Dev, PM

## Data Errors and Warnings

| Severity | Area            | Item                                     | Description                                                                                                                                               |
|----------|-----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2021 + Dev [Lane Simulation]        | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results. |
| Warning  | Geometry        | Junction 2 - Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                          |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 36.28              | E            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 11.37              | B            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2021 + Dev    | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1        | 2   | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2        | 5   | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|--------------|-------------------------|--------------------|
| 1        | 1   |            |              |              |                         |                    |
|          | 2   | ✓          |              |              |                         |                    |
|          | 3   |            | ONE HOUR     | ✓            | 1479                    | 100.000            |
|          | 4   |            | ONE HOUR     | ✓            | 499                     | 100.000            |
| 2        | 1   |            | ONE HOUR     | ✓            | 128                     | 100.000            |
|          | 2   |            | ONE HOUR     | ✓            | 857                     | 100.000            |
|          | 3   |            | ONE HOUR     | ✓            | 0                       | 100.000            |
|          | 4   |            |              |              |                         |                    |
|          | 5   | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 34        | 0         | 0         | 269       |
|      | 3 | 9         | 1028      | 0         | 442       |
|      | 4 | 72        | 426       | 0         | 1         |

### Demand (Veh/hr)

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 45        | 0         | 0         | 83        |
|      | 2 | 0         | 2         | 2         | 658       | 195       |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 1224      | 2         | 231       | 1         |

## Vehicle Mix

### Heavy Vehicle Percentages

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 4         | 0         | 0         | 2         |
|      | 3 | 0         | 1         | 0         | 1         |
|      | 4 | 0         | 2         | 0         | 0         |

### Heavy Vehicle Percentages

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 3         | 0         | 0         | 4         |
|      | 2 | 0         | 0         | 0         | 2         | 3         |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 1         | 0         | 1         | 0         |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|----------|-----|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1        | 1   |               |                 |         |                         |                               |
|          | 2   | 5.55          | 0.5             | A       | 256                     | 384                           |
|          | 3   | 24.82         | 11.5            | C       | 1358                    | 2036                          |
|          | 4   | 87.28         | 15.0            | F       | 459                     | 689                           |
| 2        | 1   | 6.14          | 0.3             | A       | 117                     | 175                           |
|          | 2   | 7.77          | 2.0             | A       | 783                     | 1175                          |
|          | 3   | 0.00          | 0.0             | A       | 0                       | 0                             |
|          | 4   |               |                 |         |                         |                               |
|          | 5   | 13.98         | 6.3             | B       | 1331                    | 1997                          |

## Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 85                              |                   |                 |           |     |
|          | 2   | 211                   | 53                      | 0.78                      | 211                 | 1095                            | 0.0               | 0.3             | 4.833     | A   |
|          | 3   | 1112                  | 278                     | 212                       | 1110                | 0                               | 0.0               | 2.0             | 5.974     | A   |
|          | 4   | 377                   | 94                      | 802                       | 379                 | 520                             | 0.0               | 0.9             | 8.055     | A   |
| 2        | 1   | 98                    | 24                      | 1097                      | 98                  | 0                               | 0.0               | 0.1             | 3.438     | A   |
|          | 2   | 649                   | 162                     | 238                       | 648                 | 957                             | 0.0               | 1.1             | 5.425     | A   |
|          | 3   | 0                     | 0                       | 882                       | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 669                             |                   |                 |           |     |
|          | 5   | 1095                  | 274                     | 1                         | 1096                | 211                             | 0.0               | 2.1             | 6.798     | A   |

### 17:00 - 17:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 101                             |                   |                 |           |     |
|          | 2   | 251                   | 63                      | 0.84                      | 252                 | 1317                            | 0.3               | 0.3             | 5.025     | A   |
|          | 3   | 1332                  | 333                     | 253                       | 1337                | 0                               | 2.0               | 2.8             | 8.134     | A   |
|          | 4   | 452                   | 113                     | 965                       | 455                 | 625                             | 0.9               | 1.9             | 14.499    | B   |
| 2        | 1   | 117                   | 29                      | 1317                      | 118                 | 0                               | 0.1               | 0.1             | 4.301     | A   |
|          | 2   | 762                   | 190                     | 284                       | 761                 | 1150                            | 1.1               | 1.4             | 6.099     | A   |
|          | 3   | 0                     | 0                       | 1042                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 789                             |                   |                 |           |     |
|          | 5   | 1317                  | 329                     | 2                         | 1315                | 251                             | 2.1               | 3.4             | 8.886     | A   |

### 17:15 - 17:30

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 122                             |                   |                 |           |     |
|          | 2   | 304                   | 76                      | 0.91                      | 304                 | 1578                            | 0.3               | 0.5             | 5.514     | A   |
|          | 3   | 1630                  | 408                     | 305                       | 1626                | 0                               | 2.8               | 10.9            | 20.200    | C   |
|          | 4   | 550                   | 137                     | 1171                      | 532                 | 760                             | 1.9               | 9.3             | 44.547    | E   |
| 2        | 1   | 136                   | 34                      | 1579                      | 136                 | 0                               | 0.1               | 0.3             | 5.583     | A   |
|          | 2   | 948                   | 237                     | 343                       | 946                 | 1372                            | 1.4               | 2.0             | 7.473     | A   |
|          | 3   | 0                     | 0                       | 1285                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 978                             |                   |                 |           |     |
|          | 5   | 1578                  | 395                     | 2                         | 1577                | 304                             | 3.4               | 6.1             | 12.835    | B   |

### 17:30 - 17:45

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 121                             |                   |                 |           |     |
|          | 2   | 309                   | 77                      | 0.91                      | 309                 | 1583                            | 0.5               | 0.5             | 5.547     | A   |
|          | 3   | 1633                  | 408                     | 310                       | 1623                | 0                               | 10.9              | 11.5            | 24.823    | C   |
|          | 4   | 549                   | 137                     | 1174                      | 531                 | 758                             | 9.3               | 15.0            | 87.279    | F   |
| 2        | 1   | 141                   | 35                      | 1578                      | 141                 | 0                               | 0.3               | 0.2             | 6.138     | A   |
|          | 2   | 938                   | 234                     | 342                       | 940                 | 1377                            | 2.0               | 1.9             | 7.769     | A   |
|          | 3   | 0                     | 0                       | 1278                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 967                             |                   |                 |           |     |
|          | 5   | 1583                  | 396                     | 2                         | 1576                | 309                             | 6.1               | 6.3             | 13.982    | B   |

### 17:45 - 18:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 104                             |                   |                 |           |     |
|          | 2   | 252                   | 63                      | 0.61                      | 253                 | 1324                            | 0.5               | 0.3             | 5.047     | A   |
|          | 3   | 1333                  | 333                     | 254                       | 1333                | 0                               | 11.5              | 3.0             | 10.654    | B   |
|          | 4   | 452                   | 113                     | 961                       | 469                 | 626                             | 15.0              | 2.4             | 45.924    | E   |
| 2        | 1   | 113                   | 28                      | 1332                      | 113                 | 0                               | 0.2               | 0.2             | 5.167     | A   |
|          | 2   | 764                   | 191                     | 289                       | 763                 | 1156                            | 1.9               | 1.4             | 6.249     | A   |
|          | 3   | 0                     | 0                       | 1049                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 795                             |                   |                 |           |     |
|          | 5   | 1324                  | 331                     | 2                         | 1330                | 252                             | 6.3               | 3.4             | 10.549    | B   |

### 18:00 - 18:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 83                              |                   |                 |           |     |
|          | 2   | 207                   | 52                      | 0.74                      | 206                 | 1088                            | 0.3               | 0.3             | 4.764     | A   |
|          | 3   | 1104                  | 276                     | 207                       | 1108                | 0                               | 3.0               | 1.8             | 6.324     | A   |
|          | 4   | 375                   | 94                      | 797                       | 375                 | 518                             | 2.4               | 0.9             | 9.950     | A   |
| 2        | 1   | 95                    | 24                      | 1088                      | 95                  | 0                               | 0.2               | 0.1             | 3.917     | A   |
|          | 2   | 640                   | 160                     | 236                       | 639                 | 947                             | 1.4               | 1.0             | 5.550     | A   |
|          | 3   | 0                     | 0                       | 872                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 663                             |                   |                 |           |     |
|          | 5   | 1088                  | 272                     | 2                         | 1086                | 207                             | 3.4               | 2.2             | 7.215     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 85                    |                   |       | 85                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 211                   | 966               | 0.219 | 211                 | 0.0               | 0.3             | 4.833     | A   |
|          |     | Exit  | 1          | 1    |                  | 1095                  |                   |       | 1095                | 0.0               | 0.0             | 0.031     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 553                   | 956               | 0.578 | 552                 | 0.0               | 1.0             | 5.973     | A   |
|          |     |       |            | 2    | 1,2,4            | 559                   | 957               | 0.585 | 558                 | 0.0               | 1.0             | 5.975     | A   |
|          |     |       | 2          | 1    | (1,2,3,4)        | 1112                  |                   |       | 1112                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 377                   | 788               | 0.479 | 379                 | 0.0               | 0.9             | 8.055     | A   |
|          |     | Exit  | 1          | 1    |                  | 520                   |                   |       | 520                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 98                    | 1067              | 0.092 | 98                  | 0.0               | 0.1             | 3.438     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 327                   | 824               | 0.397 | 327                 | 0.0               | 0.5             | 5.414     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 322                   | 822               | 0.392 | 321                 | 0.0               | 0.6             | 5.436     | A   |
|          |     |       | 2          | 1    | (1,2,3,4,5)      | 649                   |                   |       | 649                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 957                   |                   |       | 957                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 664               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 669                   |                   |       | 669                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 551                   | 893               | 0.617 | 552                 | 0.0               | 1.0             | 6.647     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 544                   | 893               | 0.609 | 544                 | 0.0               | 1.1             | 6.731     | A   |
|          |     |       | 2          | 1    | (1,2,3,4,5)      | 1095                  |                   |       | 1095                | 0.0               | 0.1             | 0.108     | A   |
|          |     | Exit  | 1          | 1    |                  | 211                   |                   |       | 211                 | 0.0               | 0.0             | 0.000     | A   |

## 17:00 - 17:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 101                   |                   |       | 101                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 251                   | 965               | 0.260 | 252                 | 0.3               | 0.3             | 5.025     | A   |
|          |     | Exit  | 1          | 1    |                  | 1318                  |                   |       | 1317                | 0.0               | 0.2             | 0.230     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 664                   | 939               | 0.707 | 667                 | 1.0               | 1.4             | 8.206     | A   |
|          |     |       |            | 2    | 1,2,4            | 668                   | 940               | 0.710 | 670                 | 1.0               | 1.4             | 8.063     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1332                  |                   |       | 1332                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 452                   | 699               | 0.648 | 455                 | 0.9               | 1.9             | 14.499    | B   |
|          |     | Exit  | 1          | 1    |                  | 625                   |                   |       | 625                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 117                   | 921               | 0.127 | 118                 | 0.1               | 0.1             | 4.301     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 381                   | 806               | 0.472 | 381                 | 0.5               | 0.7             | 6.110     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 381                   | 807               | 0.472 | 380                 | 0.6               | 0.7             | 6.088     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 762                   |                   |       | 762                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1150                  |                   |       | 1150                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 582               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 789                   |                   |       | 789                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 658                   | 892               | 0.737 | 656                 | 1.0               | 1.6             | 8.416     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 659                   | 892               | 0.739 | 659                 | 1.1               | 1.6             | 8.449     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1317                  |                   |       | 1317                | 0.1               | 0.2             | 0.450     | A   |
|          |     |       |            | 1    |                  | 251                   |                   |       | 251                 | 0.0               | 0.0             | 0.000     | A   |

## 17:15 - 17:30

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 122                   |                   |       | 122                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 304                   | 965               | 0.315 | 304                 | 0.3               | 0.5             | 5.514     | A   |
|          |     | Exit  | 1          | 1    |                  | 1580                  |                   |       | 1578                | 0.2               | 0.8             | 1.308     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 816                   | 922               | 0.885 | 815                 | 1.4               | 5.4             | 20.174    | C   |
|          |     |       |            | 2    | 1,2,4            | 814                   | 921               | 0.884 | 811                 | 1.4               | 5.5             | 20.227    | C   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1630                  |                   |       | 1630                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 550                   | 589               | 0.933 | 532                 | 1.9               | 9.3             | 44.547    | E   |
|          |     | Exit  | 1          | 1    |                  | 760                   |                   |       | 760                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 136                   | 749               | 0.182 | 136                 | 0.1               | 0.3             | 5.583     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 470                   | 786               | 0.597 | 469                 | 0.7               | 1.0             | 7.470     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 478                   | 788               | 0.607 | 476                 | 0.7               | 1.0             | 7.475     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 948                   |                   |       | 948                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1372                  |                   |       | 1372                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 459               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 978                   |                   |       | 978                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 787                   | 893               | 0.882 | 787                 | 1.6               | 2.6             | 11.192    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 790                   | 892               | 0.886 | 790                 | 1.6               | 2.6             | 11.227    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1578                  |                   |       | 1578                | 0.2               | 0.8             | 1.616     | A   |
|          |     |       |            | 1    |                  | 304                   |                   |       | 304                 | 0.0               | 0.0             | 0.003     | A   |

## 17:30 - 17:45

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 121                   |                   |       | 121                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 309                   | 966               | 0.320 | 309                 | 0.5               | 0.5             | 5.547     | A   |
|          |     | Exit  | 1          | 1    |                  | 1583                  |                   |       | 1583                | 0.8               | 0.8             | 1.856     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 816                   | 919               | 0.888 | 811                 | 5.4               | 5.7             | 24.893    | C   |
|          |     |       |            | 2    | 1,2,4            | 817                   | 920               | 0.888 | 812                 | 5.5               | 5.7             | 24.754    | C   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1633                  |                   |       | 1633                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 549                   | 585               | 0.939 | 531                 | 9.3               | 15.0            | 87.279    | F   |
|          |     | Exit  | 1          | 1    |                  | 758                   |                   |       | 758                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 141                   | 749               | 0.188 | 141                 | 0.3               | 0.2             | 6.138     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 468                   | 787               | 0.595 | 470                 | 1.0               | 0.9             | 7.767     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 470                   | 787               | 0.597 | 470                 | 1.0               | 1.0             | 7.770     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 938                   |                   |       | 938                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1377                  |                   |       | 1377                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 462               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 967                   |                   |       | 967                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            |      |                  |                       |                   |       |                     |                   |                 |           |     |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 796                   | 892               | 0.892 | 793                 | 2.6               | 2.7             | 11.880    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 786                   | 892               | 0.881 | 783                 | 2.6               | 2.6             | 11.979    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1583                  |                   |       | 1581                | 0.8               | 1.0             | 2.052     | A   |
|          |     |       |            | 1    |                  | 309                   |                   |       | 309                 | 0.0               | 0.0             | 0.003     | A   |

## 17:45 - 18:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 104                   |                   |       | 104                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 252                   | 962               | 0.262 | 253                 | 0.5               | 0.3             | 5.047     | A   |
|          |     | Exit  | 1          | 1    |                  | 1325                  |                   |       | 1324                | 0.8               | 0.2             | 0.685     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 671                   | 940               | 0.714 | 672                 | 5.7               | 1.5             | 10.668    | B   |
|          |     |       |            | 2    | 1,2,4            | 662                   | 939               | 0.705 | 662                 | 5.7               | 1.5             | 10.640    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1333                  |                   |       | 1333                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 452                   | 701               | 0.645 | 469                 | 15.0              | 2.4             | 45.924    | E   |
|          |     | Exit  | 1          | 1    |                  | 626                   |                   |       | 626                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 113                   | 906               | 0.125 | 113                 | 0.2               | 0.2             | 5.167     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 382                   | 804               | 0.476 | 382                 | 0.9               | 0.7             | 6.270     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 382                   | 804               | 0.475 | 381                 | 1.0               | 0.7             | 6.229     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 764                   |                   |       | 764                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1156                  |                   |       | 1156                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 578               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 795                   |                   |       | 795                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            |      |                  |                       |                   |       |                     |                   |                 |           |     |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 666                   | 892               | 0.747 | 669                 | 2.7               | 1.6             | 9.566     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 659                   | 892               | 0.738 | 661                 | 2.6               | 1.6             | 9.648     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1324                  |                   |       | 1325                | 1.0               | 0.2             | 0.959     | A   |
|          |     |       |            | 1    |                  | 252                   |                   |       | 252                 | 0.0               | 0.0             | 0.005     | A   |

18:00 - 18:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 83                    |                   |       | 83                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 207                   | 964               | 0.215 | 206                 | 0.3               | 0.3             | 4.764     | A   |
|          |     | Exit  | 1          | 1    |                  | 1089                  |                   |       | 1088                | 0.2               | 0.0             | 0.077     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 550                   | 954               | 0.576 | 551                 | 1.5               | 0.9             | 6.322     | A   |
|          |     |       |            | 2    | 1,2,4            | 554                   | 957               | 0.579 | 556                 | 1.5               | 0.9             | 6.327     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1104                  |                   |       | 1104                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 375                   | 791               | 0.474 | 375                 | 2.4               | 0.9             | 9.950     | A   |
|          |     | Exit  | 1          | 1    |                  | 518                   |                   |       | 518                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 95                    | 1069              | 0.089 | 95                  | 0.2               | 0.1             | 3.917     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 319                   | 822               | 0.387 | 318                 | 0.7               | 0.5             | 5.550     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 321                   | 821               | 0.392 | 321                 | 0.7               | 0.5             | 5.550     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 640                   |                   |       | 640                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 947                   |                   |       | 947                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 668               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 663                   |                   |       | 663                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 545                   | 892               | 0.611 | 544                 | 1.6               | 1.1             | 7.036     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 543                   | 892               | 0.609 | 542                 | 1.6               | 1.1             | 7.048     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1088                  |                   |       | 1088                | 0.2               | 0.1             | 0.179     | A   |
|          |     |       |            | 1    |                  | 207                   |                   |       | 207                 | 0.0               | 0.0             | 0.000     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |  |  |  |
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Filename: 2021 Base using entry lane analysis.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\A27 Roundabouts\2021 Baseline

Report generation date: 11/01/2017 15:04:41

»2021 Baseline - 2021, AM

»2021 Baseline - 2021, PM

### Summary of junction performance

|                                        | AM          |           |     |     | PM          |           |     |     |
|----------------------------------------|-------------|-----------|-----|-----|-------------|-----------|-----|-----|
|                                        | Queue (Veh) | Delay (s) | RFC | LOS | Queue (Veh) | Delay (s) | RFC | LOS |
| 2021 Baseline [Lane Simulation] - 2021 |             |           |     |     |             |           |     |     |
| Junction 1 - Arm 2                     | 0.4         | 5.20      |     | A   | 0.5         | 5.54      |     | A   |
| Junction 1 - Arm 3                     | 2.5         | 7.39      |     | A   | 9.7         | 19.76     |     | C   |
| Junction 1 - Arm 4                     | 8.2         | 41.79     |     | E   | 10.0        | 63.30     |     | F   |
| Junction 2 - Arm 1                     | 0.1         | 4.36      |     | A   | 0.3         | 5.84      |     | A   |
| Junction 2 - Arm 2                     | 12.3        | 32.23     |     | D   | 2.0         | 7.72      |     | A   |
| Junction 2 - Arm 3                     | 0.0         | 0.00      |     | A   | 0.0         | 0.00      |     | A   |
| Junction 2 - Arm 5                     | 4.4         | 10.70     |     | B   | 6.2         | 12.92     |     | B   |

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

### File summary

#### File Description

|             |                         |
|-------------|-------------------------|
| Title       | 2021 Baseline           |
| Location    | A27 Roundabouts, Havant |
| Site number |                         |
| Date        | 31/10/2016              |
| Version     |                         |
| Status      | (new file)              |
| Identifier  |                         |
| Client      | Barratts                |
| Jobnumber   | 041.0039                |
| Enumerator  | Shannon                 |
| Description |                         |

### Units

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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Lane Simulation options

| Stop criteria (%) | Stop criteria time (s) | Stop criteria number of trials | Random seed | Results refresh speed (s) | Individual vehicle animation number of trials | Use crossings quick response | Last run random seed | Last run number of trials | Last run time taken (s) |
|-------------------|------------------------|--------------------------------|-------------|---------------------------|-----------------------------------------------|------------------------------|----------------------|---------------------------|-------------------------|
| 1.00              | 100000                 | 100000                         | -1          | 3                         | 1                                             | ✓                            | 828722743            | 282                       | 120.86                  |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2021          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |
| D2 | 2021          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

## Analysis Set Details

| ID | Name          | Use Lane Simulation | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|---------------|---------------------|-------------------|---------------------------------|-------------------------------------|
| A1 | 2021 Baseline | ✓                   | ✓                 | 100.000                         | 100.000                             |

# 2021 Baseline - 2021, AM

## Data Errors and Warnings

| Severity | Area            | Item                                     | Description                                                                                                                                               |
|----------|-----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2021 Baseline [Lane Simulation]     | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results. |
| Warning  | Geometry        | Junction 2 - Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                          |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 18.01              | C            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 20.87              | C            |

### Junction Network Options

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

## Arms

### Arms

| Junction | Arm | Name              | Description |
|----------|-----|-------------------|-------------|
| 1        | 1   | A27 On-Slip       |             |
|          | 2   | Emsworth Road (S) |             |
|          | 3   | A27 Off-Slip      |             |
|          | 4   | untitled          |             |
| 2        | 1   | A27 Off-Slip      |             |
|          | 2   | Havant Road       |             |
|          | 3   | Church Lane       |             |
|          | 4   | A27 On-Slip       |             |
|          | 5   | Emsworth Road     |             |

### Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|----------|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1        | 1   |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|          | 2   | 3.70                             | 3.70                | 0.0                             | 12.2                 | 35.0                              | 53.0                               |           |
|          | 3   | 7.30                             | 7.30                | 0.0                             | 24.3                 | 35.0                              | 49.0                               |           |
|          | 4   | 4.17                             | 5.20                | 0.5                             | 23.6                 | 35.0                              | 46.0                               |           |
| 2        | 1   | 6.08                             | 6.08                | 0.0                             | 19.0                 | 40.0                              | 27.1                               |           |
|          | 2   | 3.69                             | 6.74                | 42.0                            | 13.0                 | 40.0                              | 26.5                               |           |
|          | 3   | 3.14                             | 6.18                | 4.0                             | 12.0                 | 40.0                              | 46.0                               |           |
|          | 4   |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|          | 5   | 5.06                             | 7.40                | 12.0                            | 15.0                 | 40.0                              | 48.9                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction | Arm | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------|--------------------------|
| 1        | 1   |             |                          |
|          | 2   | 0.475       | 997                      |
|          | 3   | 0.712       | 2085                     |
|          | 4   | 0.544       | 1242                     |
| 2        | 1   | 0.675       | 1856                     |
|          | 2   | 0.666       | 1841                     |
|          | 3   | 0.498       | 1112                     |
|          | 4   |             |                          |
|          | 5   | 0.639       | 1808                     |

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

### Lane Simulation: Arm options

| Junction | Arm | Lane capacity source | Traffic Considering Secondary Lanes (%) |
|----------|-----|----------------------|-----------------------------------------|
| 1        | 1   | Evenly split         | 10.00                                   |
|          | 2   | Evenly split         | 10.00                                   |
|          | 3   | Evenly split         | 10.00                                   |
|          | 4   | Evenly split         | 10.00                                   |
| 2        | 1   | Evenly split         | 10.00                                   |
|          | 2   | Evenly split         | 10.00                                   |
|          | 3   | Evenly split         | 10.00                                   |
|          | 4   | Evenly split         | 10.00                                   |
|          | 5   | Evenly split         | 10.00                                   |

### Lanes

| Junction | Arm | Lane level        | Lane | Destination arms | Has limited storage | Storage (PCU) | Minimum capacity (PCU/hr) | Maximum capacity (PCU/hr) |
|----------|-----|-------------------|------|------------------|---------------------|---------------|---------------------------|---------------------------|
| 1        | 2   | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 7.00          | 0                         | 99999                     |
|          | 3   | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|          |     |                   | 2    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|          |     | 2                 | 1    | (1,2,3,4)        |                     | Infinity      |                           |                           |
|          | 4   | 1 [Give-way line] | 1    | 1,2,4            |                     | Infinity      | 0                         | 99999                     |
| 2        | 1   | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|          | 2   | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 10.43         | 0                         | 99999                     |
|          |     |                   | 2    | 2,3,4,5          | ✓                   | 9.57          | 0                         | 99999                     |
|          |     | 2                 | 1    | (1,2,3,4,5)      |                     | Infinity      |                           |                           |
|          | 3   | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|          | 5   | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 4.00          | 0                         | 99999                     |
|          |     |                   | 2    | 2,3,4,5          | ✓                   | 4.00          | 0                         | 99999                     |
|          |     | 2                 | 1    | (1,2,3,4,5)      | ✓                   | 3.00          |                           |                           |

### Entry Lane slope and intercept

| Junction | Arm | Lane level        | Lane | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------------|------|-------------|--------------------------|
| 1        | 2   | 1 [Give-way line] | 1    | 0.475       | 997                      |
|          | 3   | 1 [Give-way line] | 1    | 0.356       | 1043                     |
|          |     |                   | 2    | 0.356       | 1043                     |
|          | 4   | 1 [Give-way line] | 1    | 0.544       | 1242                     |
| 2        | 1   | 1 [Give-way line] | 1    | 0.675       | 1856                     |
|          | 2   | 1 [Give-way line] | 1    | 0.333       | 921                      |
|          |     |                   | 2    | 0.333       | 921                      |
|          | 3   | 1 [Give-way line] | 1    | 0.498       | 1112                     |
|          | 5   | 1 [Give-way line] | 1    | 0.319       | 904                      |
|          |     |                   | 2    | 0.319       | 904                      |

### Lane Movements

| Junction | Arm | Lane Level        | Lane | Destination arm |   |   |   |
|----------|-----|-------------------|------|-----------------|---|---|---|
|          |     |                   |      | 1               | 2 | 3 | 4 |
| 1        | 2   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |
|          | 3   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |
|          |     |                   | 2    | ✓               | ✓ |   | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ |
|          | 4   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |

### Lane Movements

| Junction | Arm | Lane Level        | Lane | Destination arm |   |   |   |   |
|----------|-----|-------------------|------|-----------------|---|---|---|---|
|          |     |                   |      | 1               | 2 | 3 | 4 | 5 |
| 2        | 1   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          | 2   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     |                   | 2    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ | ✓ |
|          | 3   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          | 5   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     |                   | 2    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ | ✓ |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2021          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1        | 2   | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2        | 5   | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|--------------|-------------------------|--------------------|
| 1        | 1   |            |              |              |                         |                    |
|          | 2   | ✓          |              |              |                         |                    |
|          | 3   |            | ONE HOUR     | ✓            | 1027                    | 100.000            |
|          | 4   |            | ONE HOUR     | ✓            | 594                     | 100.000            |
| 2        | 1   |            | ONE HOUR     | ✓            | 72                      | 100.000            |
|          | 2   |            | ONE HOUR     | ✓            | 1228                    | 100.000            |
|          | 3   |            | ONE HOUR     | ✓            | 4                       | 100.000            |
|          | 4   |            |              |              |                         |                    |
|          | 5   | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 24        | 0         | 0         | 241       |
|      | 3 | 2         | 712       | 0         | 313       |
|      | 4 | 52        | 541       | 0         | 1         |

### Demand (Veh/hr)

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 31        | 0         | 2         | 39        |
|      | 2 | 0         | 2         | 1         | 1005      | 220       |
|      | 3 | 0         | 0         | 0         | 3         | 1         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 869       | 4         | 374       | 1         |

## Vehicle Mix

### Heavy Vehicle Percentages

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 5         | 0         | 0         | 2         |
|      | 3 | 50        | 4         | 0         | 3         |
|      | 4 | 4         | 3         | 0         | 0         |

### Heavy Vehicle Percentages

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 0         | 0         | 0         | 0         |
|      | 2 | 0         | 0         | 0         | 3         | 2         |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 2         | 0         | 2         | 0         |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|----------|-----|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1        | 1   |               |                 |         |                         |                               |
|          | 2   | 5.20          | 0.4             | A       | 238                     | 357                           |
|          | 3   | 7.39          | 2.5             | A       | 942                     | 1413                          |
|          | 4   | 41.79         | 8.2             | E       | 549                     | 823                           |
| 2        | 1   | 4.36          | 0.1             | A       | 67                      | 100                           |
|          | 2   | 32.23         | 12.3            | D       | 1131                    | 1697                          |
|          | 3   | 0.00          | 0.0             | A       | 0                       | 0                             |
|          | 4   |               |                 |         |                         |                               |
|          | 5   | 10.70         | 4.4             | B       | 1153                    | 1729                          |

## Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 59                              |                   |                 |           |     |
|          | 2   | 194                   | 49                      | 0.72                      | 194                 | 947                             | 0.0               | 0.3             | 4.551     | A   |
|          | 3   | 776                   | 194                     | 195                       | 776                 | 0                               | 0.0               | 1.2             | 4.884     | A   |
|          | 4   | 449                   | 112                     | 558                       | 449                 | 413                             | 0.0               | 1.1             | 7.558     | A   |
| 2        | 1   | 56                    | 14                      | 947                       | 56                  | 0                               | 0.0               | 0.0             | 2.917     | A   |
|          | 2   | 919                   | 230                     | 315                       | 921                 | 688                             | 0.0               | 1.7             | 7.350     | A   |
|          | 3   | 0                     | 0                       | 1232                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1036                            |                   |                 |           |     |
|          | 5   | 947                   | 237                     | 2                         | 945                 | 194                             | 0.0               | 1.7             | 6.245     | A   |

### 08:00 - 08:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 69                              |                   |                 |           |     |
|          | 2   | 234                   | 59                      | 0.64                      | 234                 | 1130                            | 0.3               | 0.3             | 4.896     | A   |
|          | 3   | 925                   | 231                     | 234                       | 926                 | 0                               | 1.2               | 1.5             | 5.597     | A   |
|          | 4   | 535                   | 134                     | 668                       | 532                 | 493                             | 1.1               | 2.2             | 11.931    | B   |
| 2        | 1   | 66                    | 17                      | 1130                      | 66                  | 0                               | 0.0               | 0.1             | 3.503     | A   |
|          | 2   | 1106                  | 277                     | 376                       | 1106                | 820                             | 1.7               | 3.3             | 10.419    | B   |
|          | 3   | 0                     | 0                       | 1477                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1241                            |                   |                 |           |     |
|          | 5   | 1130                  | 282                     | 2                         | 1128                | 234                             | 1.7               | 2.3             | 7.409     | A   |

### 08:15 - 08:30

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 83                              |                   |                 |           |     |
|          | 2   | 284                   | 71                      | 1                         | 284                 | 1383                            | 0.3               | 0.4             | 5.174     | A   |
|          | 3   | 1139                  | 285                     | 285                       | 1139                | 0                               | 1.5               | 2.4             | 7.287     | A   |
|          | 4   | 658                   | 164                     | 817                       | 651                 | 608                             | 2.2               | 6.8             | 29.082    | D   |
| 2        | 1   | 81                    | 20                      | 1384                      | 81                  | 0                               | 0.1               | 0.1             | 4.362     | A   |
|          | 2   | 1368                  | 342                     | 469                       | 1347                | 997                             | 3.3               | 11.7            | 23.861    | C   |
|          | 3   | 0                     | 0                       | 1811                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1525                            |                   |                 |           |     |
|          | 5   | 1383                  | 346                     | 2                         | 1382                | 284                             | 2.3               | 4.1             | 10.171    | B   |

### 08:30 - 08:45

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 84                              |                   |                 |           |     |
|          | 2   | 286                   | 71                      | 1                         | 286                 | 1384                            | 0.4               | 0.4             | 5.199     | A   |
|          | 3   | 1118                  | 279                     | 287                       | 1120                | 0                               | 2.4               | 2.2             | 7.391     | A   |
|          | 4   | 666                   | 167                     | 808                       | 661                 | 600                             | 6.8               | 8.3             | 41.792    | E   |
| 2        | 1   | 78                    | 19                      | 1382                      | 78                  | 0                               | 0.1               | 0.1             | 4.342     | A   |
|          | 2   | 1358                  | 339                     | 464                       | 1356                | 996                             | 11.7              | 12.2            | 32.231    | D   |
|          | 3   | 0                     | 0                       | 1814                      | 0                   | 6                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1526                            |                   |                 |           |     |
|          | 5   | 1384                  | 346                     | 2                         | 1380                | 286                             | 4.1               | 4.4             | 10.702    | B   |

### 08:45 - 09:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 73                              |                   |                 |           |     |
|          | 2   | 232                   | 58                      | 0.98                      | 231                 | 1124                            | 0.4               | 0.3             | 4.809     | A   |
|          | 3   | 916                   | 229                     | 232                       | 918                 | 0                               | 2.2               | 1.4             | 5.714     | A   |
|          | 4   | 539                   | 135                     | 656                       | 541                 | 494                             | 8.3               | 1.7             | 18.742    | C   |
| 2        | 1   | 63                    | 16                      | 1128                      | 64                  | 0                               | 0.1               | 0.0             | 3.837     | A   |
|          | 2   | 1108                  | 277                     | 377                       | 1109                | 815                             | 12.2              | 3.0             | 14.390    | B   |
|          | 3   | 0                     | 0                       | 1482                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1248                            |                   |                 |           |     |
|          | 5   | 1124                  | 281                     | 1                         | 1126                | 232                             | 4.4               | 2.4             | 8.071     | A   |

### 09:00 - 09:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 59                              |                   |                 |           |     |
|          | 2   | 199                   | 50                      | 0.68                      | 198                 | 948                             | 0.3               | 0.2             | 4.660     | A   |
|          | 3   | 777                   | 194                     | 199                       | 776                 | 0                               | 1.4               | 1.1             | 5.020     | A   |
|          | 4   | 448                   | 112                     | 559                       | 448                 | 416                             | 1.7               | 1.1             | 8.649     | A   |
| 2        | 1   | 55                    | 14                      | 947                       | 55                  | 0                               | 0.0               | 0.1             | 3.311     | A   |
|          | 2   | 928                   | 232                     | 314                       | 926                 | 688                             | 3.0               | 2.1             | 7.696     | A   |
|          | 3   | 0                     | 0                       | 1237                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1037                            |                   |                 |           |     |
|          | 5   | 948                   | 237                     | 1                         | 945                 | 199                             | 2.4               | 1.8             | 6.279     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 59                    |                   |       | 59                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 194                   | 979               | 0.199 | 194                 | 0.0               | 0.3             | 4.551     | A   |
|          |     | Exit  | 1          | 1    |                  | 947                   |                   |       | 947                 | 0.0               | 0.0             | 0.014     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 385                   | 940               | 0.410 | 386                 | 0.0               | 0.6             | 4.874     | A   |
|          |     |       |            | 2    | 1,2,4            | 391                   | 936               | 0.418 | 390                 | 0.0               | 0.6             | 4.895     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 776                   |                   |       | 776                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 449                   | 897               | 0.500 | 449                 | 0.0               | 1.1             | 7.558     | A   |
|          |     | Exit  | 1          | 1    |                  | 413                   |                   |       | 413                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 56                    | 1193              | 0.047 | 56                  | 0.0               | 0.0             | 2.917     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 456                   | 788               | 0.578 | 458                 | 0.0               | 0.8             | 7.379     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 463                   | 791               | 0.585 | 463                 | 0.0               | 0.9             | 7.314     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 919                   |                   |       | 919                 | 0.0               | 0.0             | 0.003     | A   |
|          |     |       |            | 1    |                  | 688                   |                   |       | 688                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 480               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1036                  |                   |       | 1036                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 473                   | 872               | 0.542 | 472                 | 0.0               | 0.9             | 6.195     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 474                   | 873               | 0.543 | 474                 | 0.0               | 0.8             | 6.161     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 947                   |                   |       | 947                 | 0.0               | 0.0             | 0.067     | A   |
|          |     |       |            | 1    |                  | 194                   |                   |       | 194                 | 0.0               | 0.0             | 0.000     | A   |

## 08:00 - 08:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 69                    |                   |       | 69                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 234                   | 980               | 0.239 | 234                 | 0.3               | 0.3             | 4.896     | A   |
|          |     | Exit  | 1          | 1    |                  | 1130                  |                   |       | 1130                | 0.0               | 0.0             | 0.047     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 464                   | 923               | 0.503 | 465                 | 0.6               | 0.7             | 5.569     | A   |
|          |     |       |            | 2    | 1,2,4            | 461                   | 924               | 0.499 | 461                 | 0.6               | 0.8             | 5.626     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 925                   |                   |       | 925                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 535                   | 837               | 0.639 | 532                 | 1.1               | 2.2             | 11.931    | B   |
|          |     | Exit  | 1          | 1    |                  | 493                   |                   |       | 493                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 66                    | 1066              | 0.062 | 66                  | 0.0               | 0.1             | 3.503     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 552                   | 770               | 0.716 | 552                 | 0.8               | 1.6             | 10.505    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 555                   | 770               | 0.720 | 554                 | 0.9               | 1.7             | 10.250    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1106                  |                   |       | 1106                | 0.0               | 0.0             | 0.042     | A   |
|          |     |       |            | 1    |                  | 820                   |                   |       | 820                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 356               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1241                  |                   |       | 1241                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 561                   | 871               | 0.644 | 561                 | 0.9               | 1.2             | 7.241     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 568                   | 874               | 0.650 | 568                 | 0.8               | 1.1             | 7.219     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1130                  |                   |       | 1130                | 0.0               | 0.0             | 0.178     | A   |
|          |     |       |            | 1    |                  | 234                   |                   |       | 234                 | 0.0               | 0.0             | 0.000     | A   |

## 08:15 - 08:30

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 83                    |                   |       | 83                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 284                   | 977               | 0.290 | 284                 | 0.3               | 0.4             | 5.174     | A   |
|          |     | Exit  | 1          | 1    |                  | 1383                  |                   |       | 1383                | 0.0               | 0.2             | 0.533     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 572                   | 904               | 0.632 | 571                 | 0.7               | 1.3             | 7.296     | A   |
|          |     |       |            | 2    | 1,2,4            | 567                   | 905               | 0.627 | 568                 | 0.8               | 1.2             | 7.278     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1139                  |                   |       | 1139                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 658                   | 756               | 0.870 | 651                 | 2.2               | 6.8             | 29.082    | D   |
|          |     | Exit  | 1          | 1    |                  | 608                   |                   |       | 608                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 81                    | 888               | 0.092 | 81                  | 0.1               | 0.1             | 4.362     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 686                   | 740               | 0.928 | 680                 | 1.6               | 5.0             | 21.610    | C   |
|          |     |       |            | 2    | 2,3,4,5          | 672                   | 736               | 0.912 | 667                 | 1.7               | 4.7             | 20.867    | C   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1368                  |                   |       | 1358                | 0.0               | 2.0             | 2.472     | A   |
|          |     |       |            | 1    |                  | 997                   |                   |       | 997                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 184               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1525                  |                   |       | 1525                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 691                   | 873               | 0.792 | 691                 | 1.2               | 1.9             | 9.329     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 691                   | 871               | 0.793 | 691                 | 1.1               | 1.8             | 9.382     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1383                  |                   |       | 1382                | 0.0               | 0.4             | 0.806     | A   |
|          |     |       |            | 1    |                  | 284                   |                   |       | 284                 | 0.0               | 0.0             | 0.004     | A   |

## 08:30 - 08:45

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 84                    |                   |       | 84                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 286                   | 980               | 0.292 | 286                 | 0.4               | 0.4             | 5.199     | A   |
|          |     | Exit  | 1          | 1    |                  | 1384                  |                   |       | 1384                | 0.2               | 0.3             | 0.631     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 552                   | 906               | 0.609 | 554                 | 1.3               | 1.1             | 7.450     | A   |
|          |     |       |            | 2    | 1,2,4            | 566                   | 906               | 0.624 | 566                 | 1.2               | 1.1             | 7.333     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1118                  |                   |       | 1118                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 666                   | 761               | 0.874 | 661                 | 6.8               | 8.3             | 41.792    | E   |
|          |     | Exit  | 1          | 1    |                  | 600                   |                   |       | 600                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 78                    | 890               | 0.088 | 78                  | 0.1               | 0.1             | 4.342     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 687                   | 740               | 0.928 | 685                 | 5.0               | 5.0             | 26.288    | D   |
|          |     |       |            | 2    | 2,3,4,5          | 671                   | 741               | 0.906 | 670                 | 4.7               | 4.6             | 24.938    | C   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1358                  |                   |       | 1358                | 2.0               | 2.6             | 6.583     | A   |
|          |     |       |            | 1    |                  | 996                   |                   |       | 996                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 183               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 6                     |                   |       | 6                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1526                  |                   |       | 1526                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 690                   | 873               | 0.790 | 688                 | 1.9               | 1.9             | 9.727     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 694                   | 873               | 0.794 | 692                 | 1.8               | 2.0             | 9.788     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1384                  |                   |       | 1383                | 0.4               | 0.4             | 0.946     | A   |
|          |     |       |            | 1    |                  | 286                   |                   |       | 286                 | 0.0               | 0.0             | 0.003     | A   |

## 08:45 - 09:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 73                    |                   |       | 73                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 232                   | 980               | 0.237 | 231                 | 0.4               | 0.3             | 4.809     | A   |
|          |     | Exit  | 1          | 1    |                  | 1124                  |                   |       | 1124                | 0.3               | 0.0             | 0.192     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 459                   | 927               | 0.495 | 461                 | 1.1               | 0.7             | 5.675     | A   |
|          |     |       |            | 2    | 1,2,4            | 457                   | 926               | 0.493 | 458                 | 1.1               | 0.7             | 5.753     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 916                   |                   |       | 916                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 539                   | 844               | 0.639 | 541                 | 8.3               | 1.7             | 18.742    | C   |
|          |     | Exit  | 1          | 1    |                  | 494                   |                   |       | 494                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 63                    | 1068              | 0.059 | 64                  | 0.1               | 0.0             | 3.837     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 554                   | 769               | 0.720 | 555                 | 5.0               | 1.5             | 13.560    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 554                   | 768               | 0.721 | 553                 | 4.6               | 1.5             | 13.358    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1108                  |                   |       | 1108                | 2.6               | 0.0             | 1.239     | A   |
|          |     |       |            | 1    |                  | 815                   |                   |       | 815                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 352               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1248                  |                   |       | 1248                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 562                   | 875               | 0.642 | 563                 | 1.9               | 1.2             | 7.758     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 563                   | 872               | 0.645 | 563                 | 2.0               | 1.1             | 7.716     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1124                  |                   |       | 1125                | 0.4               | 0.0             | 0.346     | A   |
|          |     |       |            | 1    |                  | 232                   |                   |       | 232                 | 0.0               | 0.0             | 0.001     | A   |

09:00 - 09:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 59                    |                   |       | 59                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 199                   | 980               | 0.203 | 198                 | 0.3               | 0.2             | 4.660     | A   |
|          |     | Exit  | 1          | 1    |                  | 948                   |                   |       | 948                 | 0.0               | 0.0             | 0.023     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 386                   | 934               | 0.413 | 385                 | 0.7               | 0.5             | 5.009     | A   |
|          |     |       |            | 2    | 1,2,4            | 392                   | 935               | 0.419 | 392                 | 0.7               | 0.5             | 5.031     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 777                   |                   |       | 777                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 448                   | 896               | 0.500 | 448                 | 1.7               | 1.1             | 8.649     | A   |
|          |     | Exit  | 1          | 1    |                  | 416                   |                   |       | 416                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 55                    | 1193              | 0.046 | 55                  | 0.0               | 0.1             | 3.311     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 465                   | 790               | 0.589 | 464                 | 1.5               | 1.0             | 7.707     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 463                   | 788               | 0.588 | 462                 | 1.5               | 1.0             | 7.685     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 928                   |                   |       | 928                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 688                   |                   |       | 688                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 478               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1037                  |                   |       | 1037                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 477                   | 873               | 0.547 | 475                 | 1.2               | 1.0             | 6.186     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 470                   | 871               | 0.540 | 470                 | 1.1               | 0.8             | 6.237     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 948                   |                   |       | 948                 | 0.0               | 0.0             | 0.070     | A   |
|          |     |       |            | 1    |                  | 199                   |                   |       | 199                 | 0.0               | 0.0             | 0.000     | A   |

# 2021 Baseline - 2021, PM

## Data Errors and Warnings

| Severity | Area            | Item                                     | Description                                                                                                                                               |
|----------|-----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2021 Baseline [Lane Simulation]     | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results. |
| Warning  | Geometry        | Junction 2 - Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                          |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 27.60              | D            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 10.70              | B            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2021          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1        | 2   | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2        | 5   | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|--------------|-------------------------|--------------------|
| 1        | 1   |            |              |              |                         |                    |
|          | 2   | ✓          |              |              |                         |                    |
|          | 3   |            | ONE HOUR     | ✓            | 1453                    | 100.000            |
|          | 4   |            | ONE HOUR     | ✓            | 489                     | 100.000            |
| 2        | 1   |            | ONE HOUR     | ✓            | 127                     | 100.000            |
|          | 2   |            | ONE HOUR     | ✓            | 837                     | 100.000            |
|          | 3   |            | ONE HOUR     | ✓            | 0                       | 100.000            |
|          | 4   |            |              |              |                         |                    |
|          | 5   | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 32        | 0         | 0         | 251       |
|      | 3 | 9         | 1002      | 0         | 442       |
|      | 4 | 72        | 416       | 0         | 1         |

### Demand (Veh/hr)

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 44        | 0         | 0         | 83        |
|      | 2 | 0         | 2         | 2         | 643       | 190       |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 1189      | 2         | 231       | 1         |

## Vehicle Mix

### Heavy Vehicle Percentages

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 4         | 0         | 0         | 2         |
|      | 3 | 0         | 1         | 0         | 1         |
|      | 4 | 0         | 2         | 0         | 0         |

### Heavy Vehicle Percentages

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 3         | 0         | 0         | 4         |
|      | 2 | 0         | 0         | 0         | 2         | 3         |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 1         | 0         | 1         | 0         |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|----------|-----|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1        | 1   |               |                 |         |                         |                               |
|          | 2   | 5.54          | 0.5             | A       | 251                     | 377                           |
|          | 3   | 19.76         | 9.7             | C       | 1336                    | 2004                          |
|          | 4   | 63.30         | 10.0            | F       | 449                     | 674                           |
| 2        | 1   | 5.84          | 0.3             | A       | 118                     | 177                           |
|          | 2   | 7.72          | 2.0             | A       | 770                     | 1155                          |
|          | 3   | 0.00          | 0.0             | A       | 0                       | 0                             |
|          | 4   |               |                 |         |                         |                               |
|          | 5   | 12.92         | 6.2             | B       | 1303                    | 1954                          |

## Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 84                              |                   |                 |           |     |
|          | 2   | 209                   | 52                      | 0.56                      | 210                 | 1071                            | 0.0               | 0.3             | 4.728     | A   |
|          | 3   | 1089                  | 272                     | 211                       | 1091                | 0                               | 0.0               | 1.8             | 5.949     | A   |
|          | 4   | 368                   | 92                      | 787                       | 368                 | 515                             | 0.0               | 1.0             | 7.930     | A   |
| 2        | 1   | 101                   | 25                      | 1075                      | 101                 | 0                               | 0.0               | 0.1             | 3.431     | A   |
|          | 2   | 640                   | 160                     | 239                       | 639                 | 936                             | 0.0               | 1.0             | 5.339     | A   |
|          | 3   | 0                     | 0                       | 875                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 664                             |                   |                 |           |     |
|          | 5   | 1071                  | 268                     | 2                         | 1073                | 209                             | 0.0               | 1.9             | 6.821     | A   |

### 17:00 - 17:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 104                             |                   |                 |           |     |
|          | 2   | 251                   | 63                      | 0.93                      | 251                 | 1273                            | 0.3               | 0.3             | 5.108     | A   |
|          | 3   | 1307                  | 327                     | 252                       | 1307                | 0                               | 1.8               | 2.9             | 7.952     | A   |
|          | 4   | 441                   | 110                     | 941                       | 437                 | 618                             | 1.0               | 1.8             | 12.586    | B   |
| 2        | 1   | 117                   | 29                      | 1273                      | 117                 | 0                               | 0.1               | 0.2             | 4.333     | A   |
|          | 2   | 753                   | 188                     | 281                       | 753                 | 1109                            | 1.0               | 1.3             | 6.028     | A   |
|          | 3   | 0                     | 0                       | 1031                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 778                             |                   |                 |           |     |
|          | 5   | 1273                  | 318                     | 2                         | 1271                | 251                             | 1.9               | 3.0             | 8.291     | A   |

### 17:15 - 17:30

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 118                             |                   |                 |           |     |
|          | 2   | 296                   | 74                      | 1                         | 296                 | 1554                            | 0.3               | 0.5             | 5.313     | A   |
|          | 3   | 1602                  | 401                     | 297                       | 1597                | 0                               | 2.9               | 8.5             | 16.599    | C   |
|          | 4   | 543                   | 136                     | 1145                      | 526                 | 749                             | 1.8               | 8.1             | 39.174    | E   |
| 2        | 1   | 140                   | 35                      | 1562                      | 140                 | 0                               | 0.2               | 0.3             | 5.534     | A   |
|          | 2   | 919                   | 230                     | 347                       | 916                 | 1354                            | 1.3               | 2.0             | 7.334     | A   |
|          | 3   | 0                     | 0                       | 1259                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 962                             |                   |                 |           |     |
|          | 5   | 1554                  | 388                     | 2                         | 1560                | 296                             | 3.0               | 5.3             | 12.337    | B   |

### 17:30 - 17:45

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 123                             |                   |                 |           |     |
|          | 2   | 300                   | 75                      | 0.87                      | 299                 | 1561                            | 0.5               | 0.4             | 5.540     | A   |
|          | 3   | 1605                  | 401                     | 300                       | 1609                | 0                               | 8.5               | 9.7             | 19.757    | C   |
|          | 4   | 537                   | 134                     | 1156                      | 532                 | 753                             | 8.1               | 10.0            | 63.299    | F   |
| 2        | 1   | 138                   | 35                      | 1557                      | 138                 | 0                               | 0.3               | 0.2             | 5.837     | A   |
|          | 2   | 915                   | 229                     | 344                       | 914                 | 1350                            | 2.0               | 2.0             | 7.719     | A   |
|          | 3   | 0                     | 0                       | 1253                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 952                             |                   |                 |           |     |
|          | 5   | 1561                  | 390                     | 2                         | 1555                | 300                             | 5.3               | 6.1             | 12.924    | B   |

### 17:45 - 18:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 104                             |                   |                 |           |     |
|          | 2   | 244                   | 61                      | 0.93                      | 245                 | 1282                            | 0.4               | 0.3             | 5.026     | A   |
|          | 3   | 1308                  | 327                     | 246                       | 1311                | 0                               | 9.7               | 2.7             | 9.290     | A   |
|          | 4   | 441                   | 110                     | 943                       | 443                 | 613                             | 10.0              | 1.9             | 26.068    | D   |
| 2        | 1   | 114                   | 29                      | 1286                      | 115                 | 0                               | 0.2               | 0.1             | 4.694     | A   |
|          | 2   | 750                   | 187                     | 290                       | 751                 | 1110                            | 2.0               | 1.2             | 6.248     | A   |
|          | 3   | 0                     | 0                       | 1038                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 791                             |                   |                 |           |     |
|          | 5   | 1282                  | 320                     | 2                         | 1284                | 244                             | 6.1               | 3.0             | 9.932     | A   |

### 18:00 - 18:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 88                              |                   |                 |           |     |
|          | 2   | 209                   | 52                      | 0.99                      | 211                 | 1076                            | 0.3               | 0.2             | 4.765     | A   |
|          | 3   | 1104                  | 276                     | 212                       | 1106                | 0                               | 2.7               | 1.8             | 6.155     | A   |
|          | 4   | 366                   | 92                      | 800                       | 365                 | 518                             | 1.9               | 1.0             | 9.531     | A   |
| 2        | 1   | 96                    | 24                      | 1075                      | 96                  | 0                               | 0.1               | 0.1             | 3.982     | A   |
|          | 2   | 643                   | 161                     | 243                       | 643                 | 928                             | 1.2               | 0.9             | 5.440     | A   |
|          | 3   | 0                     | 0                       | 884                       | 0                   | 2                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 673                             |                   |                 |           |     |
|          | 5   | 1076                  | 269                     | 2                         | 1073                | 209                             | 3.0               | 2.1             | 6.914     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 16:45 - 17:00

| Junction | Am | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS   |
|----------|----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------|
| 1        | 1  | Exit  | 1          | 1    |                  | 84                    |                   |       | 84                  | 0.0               | 0.0             | 0.000     | A     |
|          | 2  | Entry | 1          | 1    | 1,2,4            | 209                   | 962               | 0.217 | 210                 | 0.0               | 0.3             | 4.728     | A     |
|          |    | Exit  | 1          | 1    |                  | 1071                  |                   |       | 1071                | 0.0               | 0.0             | 0.023     | A     |
|          | 3  | Entry | 1          | 1    | 1,2,4            | 547                   | 956               | 0.572 | 548                 | 0.0               | 0.9             | 5.919     | A     |
|          |    |       |            | 2    | 1,2,4            | 542                   | 957               | 0.567 | 543                 | 0.0               | 0.9             | 5.979     | A     |
|          |    |       | 2          | 1    | (1,2,3,4)        | 1089                  |                   |       | 1089                | 0.0               | 0.0             | 0.000     | A     |
|          |    | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A     |
|          | 4  | Entry | 1          | 1    | 1,2,4            | 368                   | 795               | 0.462 | 368                 | 0.0               | 1.0             | 7.930     | A     |
|          |    | Exit  | 1          | 1    |                  | 515                   |                   |       | 515                 | 0.0               | 0.0             | 0.000     | A     |
|          | 2  | 1     | Entry      | 1    | 1                | 2,3,4,5               | 101               | 1085  | 0.093               | 101               | 0.0             | 0.1       | 3.431 |
| Exit     |    |       | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A     |
| 2        |    | Entry | 1          | 1    | 2,3,4,5          | 318                   | 822               | 0.387 | 318                 | 0.0               | 0.5             | 5.299     | A     |
|          |    |       |            | 2    | 2,3,4,5          | 322                   | 820               | 0.392 | 321                 | 0.0               | 0.5             | 5.379     | A     |
|          |    |       | 2          | 1    | (1,2,3,4,5)      | 640                   |                   |       | 640                 | 0.0               | 0.0             | 0.000     | A     |
|          |    | Exit  | 1          | 1    |                  | 936                   |                   |       | 936                 | 0.0               | 0.0             | 0.000     | A     |
| 3        |    | Entry | 1          | 1    | 2,3,4,5          | 0                     | 667               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A     |
|          |    | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A     |
| 4        |    | Exit  | 1          | 1    |                  | 664                   |                   |       | 664                 | 0.0               | 0.0             | 0.000     | A     |
| 5        |    | Entry | 1          | 1    | 2,3,4,5          | 539                   | 893               | 0.603 | 539                 | 0.0               | 1.0             | 6.723     | A     |
|          |    |       |            | 2    | 2,3,4,5          | 532                   | 892               | 0.597 | 534                 | 0.0               | 0.9             | 6.683     | A     |
|          |    |       | 2          | 1    | (1,2,3,4,5)      | 1071                  |                   |       | 1071                | 0.0               | 0.0             | 0.118     | A     |
|          |    | Exit  | 1          | 1    |                  | 209                   |                   |       | 209                 | 0.0               | 0.0             | 0.003     | A     |

## 17:00 - 17:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 104                   |                   |       | 104                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 251                   | 967               | 0.259 | 251                 | 0.3               | 0.3             | 5.108     | A   |
|          |     | Exit  | 1          | 1    |                  | 1273                  |                   |       | 1273                | 0.0               | 0.0             | 0.169     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 655                   | 942               | 0.695 | 655                 | 0.9               | 1.4             | 7.991     | A   |
|          |     |       |            | 2    | 1,2,4            | 652                   | 941               | 0.693 | 652                 | 0.9               | 1.5             | 7.913     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1307                  |                   |       | 1307                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 441                   | 713               | 0.619 | 437                 | 1.0               | 1.8             | 12.586    | B   |
|          |     | Exit  | 1          | 1    |                  | 618                   |                   |       | 618                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 117                   | 953               | 0.124 | 117                 | 0.1               | 0.2             | 4.333     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 376                   | 807               | 0.466 | 376                 | 0.5               | 0.7             | 6.088     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 377                   | 806               | 0.468 | 377                 | 0.5               | 0.7             | 5.967     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 753                   |                   |       | 753                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1109                  |                   |       | 1109                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 588               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 778                   |                   |       | 778                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 637                   | 894               | 0.712 | 636                 | 1.0               | 1.4             | 7.884     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 637                   | 892               | 0.714 | 635                 | 0.9               | 1.5             | 7.994     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1273                  |                   |       | 1274                | 0.0               | 0.1             | 0.350     | A   |
|          |     |       |            | 1    |                  | 251                   |                   |       | 251                 | 0.0               | 0.0             | 0.007     | A   |

## 17:15 - 17:30

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 118                   |                   |       | 118                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 296                   | 969               | 0.305 | 296                 | 0.3               | 0.5             | 5.313     | A   |
|          |     | Exit  | 1          | 1    |                  | 1552                  |                   |       | 1554                | 0.0               | 0.6             | 1.182     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 804                   | 925               | 0.870 | 804                 | 1.4               | 4.2             | 16.630    | C   |
|          |     |       |            | 2    | 1,2,4            | 798                   | 924               | 0.864 | 794                 | 1.5               | 4.2             | 16.568    | C   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1602                  |                   |       | 1602                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 543                   | 603               | 0.901 | 526                 | 1.8               | 8.1             | 39.174    | E   |
|          |     | Exit  | 1          | 1    |                  | 749                   |                   |       | 749                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 140                   | 761               | 0.184 | 140                 | 0.2               | 0.3             | 5.534     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 459                   | 786               | 0.584 | 459                 | 0.7               | 1.0             | 7.316     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 460                   | 787               | 0.585 | 458                 | 0.7               | 1.0             | 7.352     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 919                   |                   |       | 919                 | 0.0               | 0.0             | 0.001     | A   |
|          |     |       |            | 1    |                  | 1354                  |                   |       | 1354                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 472               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 962                   |                   |       | 962                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    | 2,3,4,5          | 771                   | 892               | 0.865 | 774                 | 1.4               | 2.3             | 10.894    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 783                   | 893               | 0.877 | 786                 | 1.5               | 2.2             | 10.774    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1554                  |                   |       | 1555                | 0.1               | 0.7             | 1.496     | A   |
|          |     |       |            | 1    |                  | 296                   |                   |       | 296                 | 0.0               | 0.0             | 0.005     | A   |

## 17:30 - 17:45

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 123                   |                   |       | 123                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 300                   | 964               | 0.311 | 299                 | 0.5               | 0.4             | 5.540     | A   |
|          |     | Exit  | 1          | 1    |                  | 1564                  |                   |       | 1561                | 0.6               | 0.7             | 1.489     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 800                   | 924               | 0.866 | 802                 | 4.2               | 4.8             | 19.736    | C   |
|          |     |       |            | 2    | 1,2,4            | 805                   | 924               | 0.871 | 807                 | 4.2               | 4.9             | 19.777    | C   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1605                  |                   |       | 1605                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 537                   | 596               | 0.901 | 532                 | 8.1               | 10.0            | 63.299    | F   |
|          |     | Exit  | 1          | 1    |                  | 753                   |                   |       | 753                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 138                   | 765               | 0.181 | 138                 | 0.3               | 0.2             | 5.837     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 465                   | 786               | 0.591 | 466                 | 1.0               | 1.0             | 7.642     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 449                   | 786               | 0.572 | 448                 | 1.0               | 1.0             | 7.797     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 915                   |                   |       | 915                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1350                  |                   |       | 1350                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 475               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 952                   |                   |       | 952                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 775                   | 892               | 0.868 | 774                 | 2.3               | 2.6             | 11.192    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 784                   | 893               | 0.877 | 781                 | 2.2               | 2.6             | 11.235    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1561                  |                   |       | 1559                | 0.7               | 0.9             | 1.706     | A   |
|          |     |       |            | 1    |                  | 300                   |                   |       | 300                 | 0.0               | 0.0             | 0.003     | A   |

## 17:45 - 18:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 104                   |                   |       | 104                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 244                   | 961               | 0.254 | 245                 | 0.4               | 0.3             | 5.026     | A   |
|          |     | Exit  | 1          | 1    |                  | 1282                  |                   |       | 1282                | 0.7               | 0.1             | 0.550     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 655                   | 941               | 0.696 | 656                 | 4.8               | 1.4             | 9.312     | A   |
|          |     |       |            | 2    | 1,2,4            | 652                   | 943               | 0.692 | 655                 | 4.9               | 1.3             | 9.268     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1308                  |                   |       | 1308                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 441                   | 712               | 0.620 | 443                 | 10.0              | 1.9             | 26.068    | D   |
|          |     | Exit  | 1          | 1    |                  | 613                   |                   |       | 613                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 114                   | 941               | 0.121 | 115                 | 0.2               | 0.1             | 4.694     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 372                   | 802               | 0.463 | 372                 | 1.0               | 0.6             | 6.314     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 378                   | 804               | 0.469 | 379                 | 1.0               | 0.6             | 6.181     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 750                   |                   |       | 750                 | 0.0               | 0.0             | 0.001     | A   |
|          |     |       |            | 1    |                  | 1110                  |                   |       | 1110                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 584               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 791                   |                   |       | 791                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 644                   | 893               | 0.721 | 645                 | 2.6               | 1.4             | 9.147     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 638                   | 892               | 0.715 | 639                 | 2.6               | 1.5             | 9.180     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1282                  |                   |       | 1282                | 0.9               | 0.1             | 0.785     | A   |
|          |     |       |            | 1    |                  | 244                   |                   |       | 244                 | 0.0               | 0.0             | 0.000     | A   |

18:00 - 18:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 88                    |                   |       | 88                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 209                   | 962               | 0.218 | 211                 | 0.3               | 0.2             | 4.765     | A   |
|          |     | Exit  | 1          | 1    |                  | 1076                  |                   |       | 1076                | 0.1               | 0.0             | 0.073     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 546                   | 955               | 0.572 | 547                 | 1.4               | 0.9             | 6.179     | A   |
|          |     |       |            | 2    | 1,2,4            | 558                   | 954               | 0.585 | 559                 | 1.3               | 0.9             | 6.131     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1104                  |                   |       | 1104                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 366                   | 785               | 0.466 | 365                 | 1.9               | 1.0             | 9.531     | A   |
|          |     | Exit  | 1          | 1    |                  | 518                   |                   |       | 518                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 96                    | 1073              | 0.089 | 96                  | 0.1               | 0.1             | 3.982     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 322                   | 819               | 0.393 | 322                 | 0.6               | 0.5             | 5.449     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 321                   | 820               | 0.392 | 321                 | 0.6               | 0.5             | 5.431     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 643                   |                   |       | 643                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 928                   |                   |       | 928                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 663               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 2                     |                   |       | 2                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 673                   |                   |       | 673                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 534                   | 891               | 0.599 | 533                 | 1.4               | 1.0             | 6.854     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 541                   | 891               | 0.608 | 540                 | 1.5               | 1.0             | 6.676     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1076                  |                   |       | 1076                | 0.1               | 0.0             | 0.156     | A   |
|          |     |       |            | 1    |                  | 209                   |                   |       | 209                 | 0.0               | 0.0             | 0.000     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |  |  |  |
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Filename: 2026 Base + Dev + Mitigation using entry lane analysis.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\A27 Roundabouts\2026 with dev + miti

Report generation date: 11/01/2017 15:18:20

»2026 + Dev + Mitigation - 2026 + Dev + Miti, AM

»2026 + Dev + Mitigation - 2026 + Dev + Miti, PM

### Summary of junction performance

|                                                               | AM          |           |     |     | PM          |           |     |     |
|---------------------------------------------------------------|-------------|-----------|-----|-----|-------------|-----------|-----|-----|
|                                                               | Queue (Veh) | Delay (s) | RFC | LOS | Queue (Veh) | Delay (s) | RFC | LOS |
| 2026 + Dev + Mitigation [Lane Simulation] - 2026 + Dev + Miti |             |           |     |     |             |           |     |     |
| 1 - A27/ Emsworth Road - 2 - Emsworth Road (S)                | 0.5         | 5.53      |     | A   | 0.5         | 5.73      |     | A   |
| 1 - A27/ Emsworth Road - 3 - A27 Off-Slip                     | 3.2         | 7.96      |     | A   | 21.2        | 40.68     |     | E   |
| 1 - A27/ Emsworth Road - 4 - untitled                         | 17.0        | 80.51     |     | F   | 30.4        | 166.95    |     | F   |
| 2 - A27/ Church Lane - 1 - A27 Off-Slip                       | 0.1         | 5.01      |     | A   | 0.3         | 6.67      |     | A   |
| 2 - A27/ Church Lane - 2 - Havant Road                        | 9.7         | 24.41     |     | C   | 1.9         | 6.63      |     | A   |
| 2 - A27/ Church Lane - 3 - Church Lane                        | 0.0         | 0.00      |     | A   | 0.0         | 0.00      |     | A   |
| 2 - A27/ Church Lane - 5 - Emsworth Road                      | 3.8         | 8.87      |     | A   | 4.9         | 11.36     |     | B   |

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

### File summary

#### File Description

|             |                         |
|-------------|-------------------------|
| Title       | 2026 + Dev + Mitigation |
| Location    | A27 Roundabouts, Havant |
| Site number |                         |
| Date        | 31/10/2016              |
| Version     |                         |
| Status      | (new file)              |
| Identifier  |                         |
| Client      | Barratts                |
| Jobnumber   | 041.0039                |
| Enumerator  | Shannon                 |
| Description |                         |

### Units

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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Lane Simulation options

| Stop criteria (%) | Stop criteria time (s) | Stop criteria number of trials | Random seed | Results refresh speed (s) | Individual vehicle animation number of trials | Use crossings quick response | Last run random seed | Last run number of trials | Last run time taken (s) |
|-------------------|------------------------|--------------------------------|-------------|---------------------------|-----------------------------------------------|------------------------------|----------------------|---------------------------|-------------------------|
| 1.00              | 100000                 | 100000                         | -1          | 3                         | 1                                             | ✓                            | 163811440            | 238                       | 114.87                  |

## Demand Set Summary

| ID | Scenario name     | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|-------------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2026 + Dev + Miti | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |
| D2 | 2026 + Dev + Miti | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

## Analysis Set Details

| ID | Name                    | Use Lane Simulation | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------------|---------------------|-------------------|---------------------------------|-------------------------------------|
| A1 | 2026 + Dev + Mitigation | ✓                   | ✓                 | 100.000                         | 100.000                             |

# 2026 + Dev + Mitigation - 2026 + Dev + Miti, AM

## Data Errors and Warnings

| Severity | Area            | Item                                           | Description                                                                                                                                                                                                         |
|----------|-----------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2026 + Dev + Mitigation [Lane Simulation] | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.                                                           |
| Warning  | Linked junction | 2 - A27/ Church Lane - 5 - Emsworth Road       | Linked arm: Junction 2 Arm 5 has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this) |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 30.39              | D            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 16.28              | C            |

### Junction Network Options

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

## Arms

### Arms

| Junction               | Arm | Name              | Description |
|------------------------|-----|-------------------|-------------|
| 1 - A27/ Emsworth Road | 1   | A27 On-Slip       |             |
|                        | 2   | Emsworth Road (S) |             |
|                        | 3   | A27 Off-Slip      |             |
|                        | 4   | untitled          |             |
| 2 - A27/ Church Lane   | 1   | A27 Off-Slip      |             |
|                        | 2   | Havant Road       |             |
|                        | 3   | Church Lane       |             |
|                        | 4   | A27 On-Slip       |             |
|                        | 5   | Emsworth Road     |             |

### Roundabout Geometry

| Junction               | Arm                   | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|------------------------|-----------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|                        | 2 - Emsworth Road (S) | 3.70                             | 3.70                | 0.0                             | 12.2                 | 35.0                              | 53.0                               |           |
|                        | 3 - A27 Off-Slip      | 7.30                             | 7.30                | 0.0                             | 24.3                 | 35.0                              | 49.0                               |           |
|                        | 4 - untitled          | 4.17                             | 5.20                | 0.5                             | 23.6                 | 35.0                              | 46.0                               |           |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 6.08                             | 6.08                | 0.0                             | 19.0                 | 40.0                              | 27.1                               |           |
|                        | 2 - Havant Road       | 6.00                             | 7.00                | 24.0                            | 13.0                 | 40.0                              | 26.5                               |           |
|                        | 3 - Church Lane       | 3.14                             | 6.18                | 4.0                             | 12.0                 | 40.0                              | 46.0                               |           |
|                        | 4 - A27 On-Slip       |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|                        | 5 - Emsworth Road     | 6.00                             | 8.00                | 12.0                            | 15.0                 | 40.0                              | 48.9                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction               | Arm                   | Final slope | Final intercept (PCU/hr) |
|------------------------|-----------------------|-------------|--------------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |             |                          |
|                        | 2 - Emsworth Road (S) | 0.475       | 997                      |
|                        | 3 - A27 Off-Slip      | 0.712       | 2085                     |
|                        | 4 - untitled          | 0.544       | 1242                     |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 0.675       | 1856                     |
|                        | 2 - Havant Road       | 0.709       | 2056                     |
|                        | 3 - Church Lane       | 0.498       | 1112                     |
|                        | 4 - A27 On-Slip       |             |                          |
|                        | 5 - Emsworth Road     | 0.683       | 2032                     |

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

### Lane Simulation: Arm options

| Junction               | Arm                   | Lane capacity source | Traffic Considering Secondary Lanes (%) |
|------------------------|-----------------------|----------------------|-----------------------------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Evenly split         | 10.00                                   |
|                        | 2 - Emsworth Road (S) | Evenly split         | 10.00                                   |
|                        | 3 - A27 Off-Slip      | Evenly split         | 10.00                                   |
|                        | 4 - untitled          | Evenly split         | 10.00                                   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Evenly split         | 10.00                                   |
|                        | 2 - Havant Road       | Evenly split         | 10.00                                   |
|                        | 3 - Church Lane       | Evenly split         | 10.00                                   |
|                        | 4 - A27 On-Slip       | Evenly split         | 10.00                                   |
|                        | 5 - Emsworth Road     | Evenly split         | 10.00                                   |

### Lanes

| Junction               | Arm                   | Lane level        | Lane | Destination arms | Has limited storage | Storage (PCU) | Minimum capacity (PCU/hr) | Maximum capacity (PCU/hr) |
|------------------------|-----------------------|-------------------|------|------------------|---------------------|---------------|---------------------------|---------------------------|
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 7.00          | 0                         | 99999                     |
|                        | 3 - A27 Off-Slip      | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|                        |                       |                   | 2    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|                        |                       | 2                 | 1    | (1,2,3,4)        |                     | Infinity      |                           |                           |
| 2 - A27/ Church Lane   | 4 - untitled          | 1 [Give-way line] | 1    | 1,2,4            |                     | Infinity      | 0                         | 99999                     |
|                        | 1 - A27 Off-Slip      | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|                        | 2 - Havant Road       | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 10.43         | 0                         | 99999                     |
|                        |                       |                   | 2    | 2,3,4,5          | ✓                   | 9.57          | 0                         | 99999                     |
|                        |                       | 2                 | 1    | (1,2,3,4,5)      |                     | Infinity      |                           |                           |
|                        | 3 - Church Lane       | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|                        | 5 - Emsworth Road     | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 13.00         | 0                         | 99999                     |
|                        |                       |                   | 2    | 2,3,4,5          | ✓                   | 13.00         | 0                         | 99999                     |

### Entry Lane slope and intercept

| Junction               | Arm                   | Lane level        | Lane | Final slope | Final intercept (PCU/hr) |
|------------------------|-----------------------|-------------------|------|-------------|--------------------------|
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 1 [Give-way line] | 1    | 0.475       | 997                      |
|                        | 3 - A27 Off-Slip      | 1 [Give-way line] | 1    | 0.356       | 1043                     |
|                        |                       |                   | 2    | 0.356       | 1043                     |
|                        | 4 - untitled          | 1 [Give-way line] | 1    | 0.544       | 1242                     |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 1 [Give-way line] | 1    | 0.675       | 1856                     |
|                        | 2 - Havant Road       | 1 [Give-way line] | 1    | 0.354       | 1028                     |
|                        |                       |                   | 2    | 0.354       | 1028                     |
|                        | 3 - Church Lane       | 1 [Give-way line] | 1    | 0.498       | 1112                     |
|                        | 5 - Emsworth Road     | 1 [Give-way line] | 1    | 0.342       | 1016                     |
|                        |                       |                   | 2    | 0.342       | 1016                     |

### Lane Movements

| Junction               | Arm                   | Lane Level        | Lane | Destination arm |                   |              |          |
|------------------------|-----------------------|-------------------|------|-----------------|-------------------|--------------|----------|
|                        |                       |                   |      | A27 On-Slip     | Emsworth Road (S) | A27 Off-Slip | untitled |
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 1 [Give-way line] | 1    | ✓               | ✓                 |              | ✓        |
|                        | 3 - A27 Off-Slip      | 1 [Give-way line] | 1    | ✓               | ✓                 |              | ✓        |
|                        |                       |                   | 2    | ✓               | ✓                 |              | ✓        |
|                        |                       | 2                 | 1    | ✓               | ✓                 | ✓            | ✓        |
|                        | 4 - untitled          | 1 [Give-way line] | 1    | ✓               | ✓                 |              | ✓        |

### Lane Movements

| Junction             | Arm               | Lane Level        | Lane | Destination arm |             |             |             |               |
|----------------------|-------------------|-------------------|------|-----------------|-------------|-------------|-------------|---------------|
|                      |                   |                   |      | A27 Off-Slip    | Havant Road | Church Lane | A27 On-Slip | Emsworth Road |
| 2 - A27/ Church Lane | 1 - A27 Off-Slip  | 1 [Give-way line] | 1    |                 | ✓           | ✓           | ✓           | ✓             |
|                      | 2 - Havant Road   | 1 [Give-way line] | 1    |                 | ✓           | ✓           | ✓           | ✓             |
|                      |                   |                   | 2    |                 | ✓           | ✓           | ✓           | ✓             |
|                      |                   | 2                 | 1    | ✓               | ✓           | ✓           | ✓           | ✓             |
|                      | 3 - Church Lane   | 1 [Give-way line] | 1    |                 | ✓           | ✓           | ✓           | ✓             |
|                      | 5 - Emsworth Road | 1 [Give-way line] | 1    |                 | ✓           | ✓           | ✓           | ✓             |
|                      |                   |                   | 2    |                 | ✓           | ✓           | ✓           | ✓             |

## Traffic Demand

### Demand Set Details

| ID | Scenario name     | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|-------------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2026 + Dev + Miti | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction               | Arm                   | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|------------------------|-----------------------|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2 - A27/ Church Lane   | 5 - Emsworth Road     | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction               | Arm                   | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|------------------------|-----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |            |              |              |                         |                    |
|                        | 2 - Emsworth Road (S) | ✓          |              |              |                         |                    |
|                        | 3 - A27 Off-Slip      |            | ONE HOUR     | ✓            | 1106                    | 100.000            |
|                        | 4 - untitled          |            | ONE HOUR     | ✓            | 639                     | 100.000            |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      |            | ONE HOUR     | ✓            | 78                      | 100.000            |
|                        | 2 - Havant Road       |            | ONE HOUR     | ✓            | 1352                    | 100.000            |
|                        | 3 - Church Lane       |            | ONE HOUR     | ✓            | 4                       | 100.000            |
|                        | 4 - A27 On-Slip       |            |              |              |                         |                    |
|                        | 5 - Emsworth Road     | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### 1 - A27/ Emsworth Road

|      | To                    |                 |                       |                  |              |
|------|-----------------------|-----------------|-----------------------|------------------|--------------|
|      |                       | 1 - A27 On-Slip | 2 - Emsworth Road (S) | 3 - A27 Off-Slip | 4 - untitled |
| From | 1 - A27 On-Slip       | Exit-only       | Exit-only             | Exit-only        | Exit-only    |
|      | 2 - Emsworth Road (S) | 30              | 0                     | 0                | 293          |
|      | 3 - A27 Off-Slip      | 2               | 770                   | 0                | 334          |
|      | 4 - untitled          | 53              | 585                   | 0                | 1            |

### Demand (Veh/hr)

#### 2 - A27/ Church Lane

|      | To                |                  |                 |                 |                 |                   |
|------|-------------------|------------------|-----------------|-----------------|-----------------|-------------------|
|      |                   | 1 - A27 Off-Slip | 2 - Havant Road | 3 - Church Lane | 4 - A27 On-Slip | 5 - Emsworth Road |
| From | 1 - A27 Off-Slip  | 0                | 34              | 0               | 2               | 42                |
|      | 2 - Havant Road   | 0                | 2               | 1               | 1107            | 242               |
|      | 3 - Church Lane   | 0                | 0               | 0               | 3               | 1                 |
|      | 4 - A27 On-Slip   | Exit-only        | Exit-only       | Exit-only       | Exit-only       | Exit-only         |
|      | 5 - Emsworth Road | 0                | 943             | 4               | 400             | 1                 |

## Vehicle Mix

### Heavy Vehicle Percentages

#### 1 - A27/ Emsworth Road

|      | To                    |                 |                       |                  |              |
|------|-----------------------|-----------------|-----------------------|------------------|--------------|
|      |                       | 1 - A27 On-Slip | 2 - Emsworth Road (S) | 3 - A27 Off-Slip | 4 - untitled |
| From | 1 - A27 On-Slip       | Exit-only       | Exit-only             | Exit-only        | Exit-only    |
|      | 2 - Emsworth Road (S) | 5               | 0                     | 0                | 2            |
|      | 3 - A27 Off-Slip      | 50              | 4                     | 0                | 3            |
|      | 4 - untitled          | 4               | 3                     | 0                | 0            |

### Heavy Vehicle Percentages

#### 2 - A27/ Church Lane

|      | To                |                  |                 |                 |                 |                   |
|------|-------------------|------------------|-----------------|-----------------|-----------------|-------------------|
|      |                   | 1 - A27 Off-Slip | 2 - Havant Road | 3 - Church Lane | 4 - A27 On-Slip | 5 - Emsworth Road |
| From | 1 - A27 Off-Slip  | 0                | 0               | 0               | 0               | 0                 |
|      | 2 - Havant Road   | 0                | 0               | 0               | 3               | 2                 |
|      | 3 - Church Lane   | 0                | 0               | 0               | 0               | 0                 |
|      | 4 - A27 On-Slip   | Exit-only        | Exit-only       | Exit-only       | Exit-only       | Exit-only         |
|      | 5 - Emsworth Road | 0                | 2               | 0               | 2               | 0                 |

## Results

### Results Summary for whole modelled period

| Junction               | Arm                   | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|------------------------|-----------------------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |               |                 |         |                         |                               |
|                        | 2 - Emsworth Road (S) | 5.53          | 0.5             | A       | 260                     | 390                           |
|                        | 3 - A27 Off-Slip      | 7.96          | 3.2             | A       | 1016                    | 1524                          |
|                        | 4 - untitled          | 80.51         | 17.0            | F       | 586                     | 879                           |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 5.01          | 0.1             | A       | 72                      | 108                           |
|                        | 2 - Havant Road       | 24.41         | 9.7             | C       | 1237                    | 1856                          |
|                        | 3 - Church Lane       | 0.00          | 0.0             | A       | 0                       | 0                             |
|                        | 4 - A27 On-Slip       |               |                 |         |                         |                               |
|                        | 5 - Emsworth Road     | 8.87          | 3.8             | A       | 1238                    | 1858                          |

## Main Results for each time segment

### 07:45 - 08:00

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 61                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 213                   | 53                      | 0.55                      | 212                 | 1035                            | 0.0               | 0.3             | 4.638     | A   |
|                        | 3 - A27 Off-Slip      | 844                   | 211                     | 213                       | 845                 | 0                               | 0.0               | 1.2             | 5.076     | A   |
|                        | 4 - untitled          | 487                   | 122                     | 610                       | 486                 | 448                             | 0.0               | 1.3             | 8.582     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 60                    | 15                      | 1035                      | 60                  | 0                               | 0.0               | 0.1             | 2.992     | A   |
|                        | 2 - Havant Road       | 1019                  | 255                     | 348                       | 1015                | 747                             | 0.0               | 2.0             | 6.421     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1360                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1146                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1035                  | 259                     | 1                         | 1034                | 213                             | 0.0               | 1.6             | 5.373     | A   |

### 08:00 - 08:15

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 73                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 257                   | 64                      | 1                         | 256                 | 1214                            | 0.3               | 0.3             | 5.029     | A   |
|                        | 3 - A27 Off-Slip      | 993                   | 248                     | 258                       | 993                 | 0                               | 1.2               | 1.6             | 5.956     | A   |
|                        | 4 - untitled          | 575                   | 144                     | 713                       | 574                 | 537                             | 1.3               | 2.4             | 13.847    | B   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 69                    | 17                      | 1214                      | 69                  | 0                               | 0.1               | 0.1             | 3.893     | A   |
|                        | 2 - Havant Road       | 1221                  | 305                     | 402                       | 1220                | 881                             | 2.0               | 3.1             | 9.110     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1617                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1359                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1214                  | 303                     | 2                         | 1212                | 257                             | 1.6               | 2.3             | 6.242     | A   |

### 08:15 - 08:30

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 86                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 311                   | 78                      | 1                         | 311                 | 1467                            | 0.3               | 0.5             | 5.365     | A   |
|                        | 3 - A27 Off-Slip      | 1232                  | 308                     | 312                       | 1231                | 0                               | 1.6               | 2.7             | 7.905     | A   |
|                        | 4 - untitled          | 702                   | 175                     | 889                       | 665                 | 653                             | 2.4               | 12.6            | 45.111    | E   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 86                    | 22                      | 1471                      | 86                  | 0                               | 0.1               | 0.1             | 4.616     | A   |
|                        | 2 - Havant Road       | 1484                  | 371                     | 487                       | 1472                | 1069                            | 3.1               | 9.6             | 19.708    | C   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1955                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1641                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1467                  | 367                     | 2                         | 1468                | 311                             | 2.3               | 3.8             | 8.533     | A   |

### 08:30 - 08:45

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 90                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 319                   | 80                      | 0.71                      | 320                 | 1472                            | 0.5               | 0.5             | 5.532     | A   |
|                        | 3 - A27 Off-Slip      | 1206                  | 302                     | 321                       | 1198                | 0                               | 2.7               | 3.2             | 7.956     | A   |
|                        | 4 - untitled          | 706                   | 176                     | 870                       | 692                 | 648                             | 12.6              | 17.0            | 80.512    | F   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 89                    | 22                      | 1478                      | 88                  | 0                               | 0.1               | 0.1             | 5.009     | A   |
|                        | 2 - Havant Road       | 1490                  | 372                     | 495                       | 1491                | 1071                            | 9.6               | 9.7             | 24.412    | C   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1981                      | 0                   | 6                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1660                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1472                  | 368                     | 2                         | 1476                | 319                             | 3.8               | 3.4             | 8.865     | A   |

### 08:45 - 09:00

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 76                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 257                   | 64                      | 0.55                      | 256                 | 1229                            | 0.5               | 0.4             | 5.096     | A   |
|                        | 3 - A27 Off-Slip      | 991                   | 248                     | 256                       | 991                 | 0                               | 3.2               | 1.8             | 6.198     | A   |
|                        | 4 - untitled          | 569                   | 142                     | 719                       | 587                 | 529                             | 17.0              | 3.7             | 43.944    | E   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 69                    | 17                      | 1233                      | 69                  | 0                               | 0.1               | 0.1             | 4.228     | A   |
|                        | 2 - Havant Road       | 1210                  | 303                     | 408                       | 1204                | 894                             | 9.7               | 3.5             | 11.346    | B   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1608                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1349                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1229                  | 307                     | 2                         | 1231                | 257                             | 3.4               | 2.2             | 7.054     | A   |

### 09:00 - 09:15

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 62                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 206                   | 51                      | 0.91                      | 206                 | 1014                            | 0.4               | 0.3             | 4.658     | A   |
|                        | 3 - A27 Off-Slip      | 832                   | 208                     | 207                       | 832                 | 0                               | 1.8               | 1.2             | 5.204     | A   |
|                        | 4 - untitled          | 479                   | 120                     | 595                       | 482                 | 444                             | 3.7               | 1.2             | 10.593    | B   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 59                    | 15                      | 1011                      | 59                  | 0                               | 0.1               | 0.0             | 3.485     | A   |
|                        | 2 - Havant Road       | 997                   | 249                     | 343                       | 997                 | 728                             | 3.5               | 1.8             | 6.617     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1336                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1129                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1014                  | 254                     | 2                         | 1010                | 206                             | 2.2               | 1.7             | 5.362     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 07:45 - 08:00

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 61                    |                   |       | 61                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 213                   | 983               | 0.216 | 212                 | 0.0               | 0.3             | 4.638     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1035                  |                   |       | 1035                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 421                   | 933               | 0.452 | 421                 | 0.0               | 0.6             | 5.076     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 422                   | 929               | 0.455 | 424                 | 0.0               | 0.6             | 5.075     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4)        | 844                   |                   |       | 844                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 487                   | 868               | 0.561 | 486                 | 0.0               | 1.3             | 8.582     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 448                   |                   |       | 448                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 60                    | 1131              | 0.053 | 60                  | 0.0               | 0.1             | 2.992     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 510                   | 876               | 0.582 | 508                 | 0.0               | 1.0             | 6.446     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 510                   | 875               | 0.582 | 508                 | 0.0               | 1.0             | 6.394     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4,5)      | 1019                  |                   |       | 1019                | 0.0               | 0.0             | 0.001     | A   |
|                        |                       |       |            | 1    |                  | 747                   |                   |       | 747                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 415               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1146                  |                   |       | 1146                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 518                   | 979               | 0.529 | 517                 | 0.0               | 0.8             | 5.336     | A   |
|                        |                       | Exit  |            | 1    | 2,3,4,5          | 517                   | 979               | 0.528 | 517                 | 0.0               | 0.8             | 5.410     | A   |
|                        |                       |       | 1          | 1    |                  | 213                   |                   |       | 213                 | 0.0               | 0.0             | 0.000     | A   |

08:00 - 08:15

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 73                    |                   |       | 73                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 257                   | 979               | 0.262 | 256                 | 0.3               | 0.3             | 5.029     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1214                  |                   |       | 1214                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 498                   | 913               | 0.546 | 499                 | 0.6               | 0.8             | 5.943     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 495                   | 914               | 0.541 | 494                 | 0.6               | 0.8             | 5.970     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 993                   |                   |       | 993                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 575                   | 815               | 0.705 | 574                 | 1.3               | 2.4             | 13.847    | B   |
|                        |                       | Exit  | 1          | 1    |                  | 537                   |                   |       | 537                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 69                    | 1007              | 0.069 | 69                  | 0.1               | 0.1             | 3.893     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 606                   | 857               | 0.708 | 605                 | 1.0               | 1.5             | 9.159     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 615                   | 860               | 0.716 | 615                 | 1.0               | 1.6             | 8.995     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1221                  |                   |       | 1221                | 0.0               | 0.0             | 0.033     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 881                   |                   |       | 881                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 285               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1359                  |                   |       | 1359                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 605                   | 981               | 0.617 | 605                 | 0.8               | 1.2             | 6.268     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 608                   | 980               | 0.620 | 607                 | 0.8               | 1.2             | 6.216     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 257                   |                   |       | 257                 | 0.0               | 0.0             | 0.001     | A   |

08:15 - 08:30

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 86                    |                   |       | 86                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 311                   | 980               | 0.317 | 311                 | 0.3               | 0.5             | 5.365     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1467                  |                   |       | 1467                | 0.0               | 0.0             | 0.002     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 617                   | 893               | 0.691 | 617                 | 0.8               | 1.3             | 7.876     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 614                   | 892               | 0.689 | 614                 | 0.8               | 1.4             | 7.934     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1232                  |                   |       | 1232                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 702                   | 714               | 0.982 | 665                 | 2.4               | 12.6            | 45.111    | E   |
|                        |                       | Exit  | 1          | 1    |                  | 653                   |                   |       | 653                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 86                    | 824               | 0.105 | 86                  | 0.1               | 0.1             | 4.616     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 744                   | 827               | 0.900 | 741                 | 1.5               | 4.1             | 17.991    | C   |
|                        |                       |       |            | 2    | 2,3,4,5          | 734                   | 826               | 0.888 | 731                 | 1.6               | 4.0             | 17.470    | C   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1484                  |                   |       | 1478                | 0.0               | 1.5             | 1.880     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1069                  |                   |       | 1069                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 113               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1641                  |                   |       | 1641                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 730                   | 976               | 0.748 | 731                 | 1.2               | 1.8             | 8.598     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 737                   | 978               | 0.753 | 737                 | 1.2               | 2.0             | 8.468     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 311                   |                   |       | 311                 | 0.0               | 0.0             | 0.000     | A   |

08:30 - 08:45

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 90                    |                   |       | 90                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 319                   | 979               | 0.325 | 320                 | 0.5               | 0.5             | 5.532     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1472                  |                   |       | 1472                | 0.0               | 0.0             | 0.002     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 602                   | 890               | 0.676 | 598                 | 1.3               | 1.6             | 8.019     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 604                   | 890               | 0.679 | 600                 | 1.4               | 1.6             | 7.893     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1206                  |                   |       | 1206                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 706                   | 726               | 0.972 | 692                 | 12.6              | 17.0            | 80.512    | F   |
|                        |                       | Exit  | 1          | 1    |                  | 648                   |                   |       | 648                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 89                    | 821               | 0.108 | 88                  | 0.1               | 0.1             | 5.009     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 745                   | 822               | 0.906 | 748                 | 4.1               | 4.2             | 21.240    | C   |
|                        |                       |       |            | 2    | 2,3,4,5          | 741                   | 825               | 0.899 | 743                 | 4.0               | 4.0             | 20.351    | C   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1490                  |                   |       | 1486                | 1.5               | 1.4             | 3.622     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1071                  |                   |       | 1071                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 98                | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 6                     |                   |       | 6                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1660                  |                   |       | 1660                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 732                   | 980               | 0.747 | 735                 | 1.8               | 1.7             | 8.890     | A   |
|                        |                       | Exit  | 1          | 2    | 2,3,4,5          | 740                   | 979               | 0.756 | 740                 | 2.0               | 1.7             | 8.841     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 318                   |                   |       | 319                 | 0.0               | 0.0             | 0.008     | A   |

08:45 - 09:00

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 76                    |                   |       | 76                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 257                   | 981               | 0.262 | 256                 | 0.5               | 0.4             | 5.096     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1229                  |                   |       | 1229                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 496                   | 915               | 0.542 | 495                 | 1.6               | 0.9             | 6.212     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 495                   | 914               | 0.542 | 496                 | 1.6               | 0.8             | 6.184     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 991                   |                   |       | 991                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 569                   | 811               | 0.701 | 587                 | 17.0              | 3.7             | 43.944    | E   |
|                        |                       | Exit  | 1          | 1    |                  | 529                   |                   |       | 529                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 69                    | 994               | 0.070 | 69                  | 0.1               | 0.1             | 4.228     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 605                   | 856               | 0.707 | 602                 | 4.2               | 1.7             | 11.074    | B   |
|                        |                       |       |            | 2    | 2,3,4,5          | 605                   | 853               | 0.709 | 603                 | 4.0               | 1.7             | 11.084    | B   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1210                  |                   |       | 1210                | 1.4               | 0.0             | 0.411     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 894                   |                   |       | 894                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 285               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1349                  |                   |       | 1349                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 614                   | 978               | 0.628 | 616                 | 1.7               | 1.1             | 7.102     | A   |
|                        |                       | Exit  | 1          | 2    | 2,3,4,5          | 614                   | 982               | 0.625 | 615                 | 1.7               | 1.2             | 7.005     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 257                   |                   |       | 257                 | 0.0               | 0.0             | 0.000     | A   |

09:00 - 09:15

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 62                    |                   |       | 62                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 206                   | 980               | 0.210 | 206                 | 0.4               | 0.3             | 4.658     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1014                  |                   |       | 1014                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 419                   | 933               | 0.449 | 418                 | 0.9               | 0.6             | 5.158     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 413                   | 932               | 0.443 | 414                 | 0.8               | 0.6             | 5.251     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 832                   |                   |       | 832                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 479                   | 879               | 0.546 | 482                 | 3.7               | 1.2             | 10.593    | B   |
|                        |                       | Exit  | 1          | 1    |                  | 444                   |                   |       | 444                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 59                    | 1150              | 0.051 | 59                  | 0.1               | 0.0             | 3.485     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 501                   | 878               | 0.571 | 500                 | 1.7               | 0.9             | 6.692     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 496                   | 878               | 0.566 | 497                 | 1.7               | 0.8             | 6.543     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 997                   |                   |       | 997                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 728                   |                   |       | 728                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 428               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1129                  |                   |       | 1129                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 509                   | 980               | 0.520 | 506                 | 1.1               | 0.9             | 5.361     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 505                   | 983               | 0.514 | 503                 | 1.2               | 0.8             | 5.362     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 206                   |                   |       | 206                 | 0.0               | 0.0             | 0.000     | A   |

# 2026 + Dev + Mitigation - 2026 + Dev + Miti, PM

## Data Errors and Warnings

| Severity | Area            | Item                                           | Description                                                                                                                                                                                                         |
|----------|-----------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2026 + Dev + Mitigation [Lane Simulation] | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.                                                           |
| Warning  | Linked junction | 2 - A27/ Church Lane - 5 - Emsworth Road       | Linked arm: Junction 2 Arm 5 has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this) |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 64.09              | F            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 9.43               | A            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name     | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|-------------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2026 + Dev + Miti | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction               | Arm                   | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|------------------------|-----------------------|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2 - A27/ Church Lane   | 5 - Emsworth Road     | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction               | Arm                   | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|------------------------|-----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |            |              |              |                         |                    |
|                        | 2 - Emsworth Road (S) | ✓          |              |              |                         |                    |
|                        | 3 - A27 Off-Slip      |            | ONE HOUR     | ✓            | 1585                    | 100.000            |
|                        | 4 - untitled          |            | ONE HOUR     | ✓            | 534                     | 100.000            |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      |            | ONE HOUR     | ✓            | 137                     | 100.000            |
|                        | 2 - Havant Road       |            | ONE HOUR     | ✓            | 918                     | 100.000            |
|                        | 3 - Church Lane       |            | ONE HOUR     | ✓            | 0                       | 100.000            |
|                        | 4 - A27 On-Slip       |            |              |              |                         |                    |
|                        | 5 - Emsworth Road     | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### 1 - A27/ Emsworth Road

|      | To                    |                 |                       |                  |              |
|------|-----------------------|-----------------|-----------------------|------------------|--------------|
|      |                       | 1 - A27 On-Slip | 2 - Emsworth Road (S) | 3 - A27 Off-Slip | 4 - untitled |
| From | 1 - A27 On-Slip       | Exit-only       | Exit-only             | Exit-only        | Exit-only    |
|      | 2 - Emsworth Road (S) | 36              | 0                     | 0                | 287          |
|      | 3 - A27 Off-Slip      | 10              | 1101                  | 0                | 474          |
|      | 4 - untitled          | 77              | 456                   | 0                | 1            |

### Demand (Veh/hr)

#### 2 - A27/ Church Lane

|      | To                |                  |                 |                 |                 |                   |
|------|-------------------|------------------|-----------------|-----------------|-----------------|-------------------|
|      |                   | 1 - A27 Off-Slip | 2 - Havant Road | 3 - Church Lane | 4 - A27 On-Slip | 5 - Emsworth Road |
| From | 1 - A27 Off-Slip  | 0                | 48              | 0               | 0               | 89                |
|      | 2 - Havant Road   | 0                | 2               | 2               | 705             | 209               |
|      | 3 - Church Lane   | 0                | 0               | 0               | 0               | 0                 |
|      | 4 - A27 On-Slip   | Exit-only        | Exit-only       | Exit-only       | Exit-only       | Exit-only         |
|      | 5 - Emsworth Road | 0                | 1311            | 2               | 248             | 1                 |

## Vehicle Mix

### Heavy Vehicle Percentages

#### 1 - A27/ Emsworth Road

|      | To                    |                 |                       |                  |              |
|------|-----------------------|-----------------|-----------------------|------------------|--------------|
|      |                       | 1 - A27 On-Slip | 2 - Emsworth Road (S) | 3 - A27 Off-Slip | 4 - untitled |
| From | 1 - A27 On-Slip       | Exit-only       | Exit-only             | Exit-only        | Exit-only    |
|      | 2 - Emsworth Road (S) | 4               | 0                     | 0                | 2            |
|      | 3 - A27 Off-Slip      | 0               | 1                     | 0                | 1            |
|      | 4 - untitled          | 0               | 2                     | 0                | 0            |

### Heavy Vehicle Percentages

#### 2 - A27/ Church Lane

|      | To                |                  |                 |                 |                 |                   |
|------|-------------------|------------------|-----------------|-----------------|-----------------|-------------------|
|      |                   | 1 - A27 Off-Slip | 2 - Havant Road | 3 - Church Lane | 4 - A27 On-Slip | 5 - Emsworth Road |
| From | 1 - A27 Off-Slip  | 0                | 3               | 0               | 0               | 4                 |
|      | 2 - Havant Road   | 0                | 0               | 0               | 2               | 3                 |
|      | 3 - Church Lane   | 0                | 0               | 0               | 0               | 0                 |
|      | 4 - A27 On-Slip   | Exit-only        | Exit-only       | Exit-only       | Exit-only       | Exit-only         |
|      | 5 - Emsworth Road | 0                | 1               | 0               | 1               | 0                 |

## Results

### Results Summary for whole modelled period

| Junction               | Arm                   | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|------------------------|-----------------------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |               |                 |         |                         |                               |
|                        | 2 - Emsworth Road (S) | 5.73          | 0.5             | A       | 274                     | 410                           |
|                        | 3 - A27 Off-Slip      | 40.68         | 21.2            | E       | 1462                    | 2192                          |
|                        | 4 - untitled          | 166.95        | 30.4            | F       | 488                     | 732                           |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 6.67          | 0.3             | A       | 126                     | 189                           |
|                        | 2 - Havant Road       | 6.63          | 1.9             | A       | 843                     | 1264                          |
|                        | 3 - Church Lane       | 0.00          | 0.0             | A       | 0                       | 0                             |
|                        | 4 - A27 On-Slip       |               |                 |         |                         |                               |
|                        | 5 - Emsworth Road     | 11.36         | 4.9             | B       | 1422                    | 2133                          |

## Main Results for each time segment

### 16:45 - 17:00

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 88                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 224                   | 56                      | 0.51                      | 224                 | 1183                            | 0.0               | 0.3             | 4.872     | A   |
|                        | 3 - A27 Off-Slip      | 1203                  | 301                     | 225                       | 1204                | 0                               | 0.0               | 2.2             | 6.599     | A   |
|                        | 4 - untitled          | 404                   | 101                     | 868                       | 404                 | 561                             | 0.0               | 1.1             | 8.982     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 105                   | 26                      | 1185                      | 105                 | 0                               | 0.0               | 0.1             | 3.584     | A   |
|                        | 2 - Havant Road       | 687                   | 172                     | 258                       | 689                 | 1033                            | 0.0               | 0.8             | 4.744     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 943                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 718                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1183                  | 296                     | 1                         | 1184                | 224                             | 0.0               | 2.0             | 5.880     | A   |

### 17:00 - 17:15

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 110                             |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 268                   | 67                      | 1                         | 269                 | 1404                            | 0.3               | 0.4             | 5.235     | A   |
|                        | 3 - A27 Off-Slip      | 1426                  | 356                     | 270                       | 1426                | 0                               | 2.2               | 3.8             | 9.434     | A   |
|                        | 4 - untitled          | 476                   | 119                     | 1033                      | 483                 | 664                             | 1.1               | 2.5             | 18.862    | C   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 126                   | 31                      | 1402                      | 126                 | 0                               | 0.1               | 0.2             | 4.829     | A   |
|                        | 2 - Havant Road       | 823                   | 206                     | 310                       | 824                 | 1218                            | 0.8               | 1.3             | 5.478     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1130                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 860                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1404                  | 351                     | 2                         | 1400                | 268                             | 2.0               | 3.2             | 7.426     | A   |

### 17:15 - 17:30

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 126                             |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 326                   | 82                      | 1                         | 327                 | 1648                            | 0.4               | 0.5             | 5.730     | A   |
|                        | 3 - A27 Off-Slip      | 1756                  | 439                     | 328                       | 1709                | 0                               | 3.8               | 17.6            | 27.054    | D   |
|                        | 4 - untitled          | 587                   | 147                     | 1238                      | 536                 | 799                             | 2.5               | 18.2            | 77.251    | F   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 151                   | 38                      | 1651                      | 152                 | 0                               | 0.2               | 0.2             | 5.972     | A   |
|                        | 2 - Havant Road       | 1004                  | 251                     | 364                       | 1005                | 1439                            | 1.3               | 1.8             | 6.518     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1365                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1037                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1648                  | 412                     | 2                         | 1649                | 326                             | 3.2               | 4.9             | 10.356    | B   |

### 17:30 - 17:45

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 125                             |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 329                   | 82                      | 1                         | 330                 | 1661                            | 0.5               | 0.5             | 5.533     | A   |
|                        | 3 - A27 Off-Slip      | 1750                  | 438                     | 331                       | 1736                | 0                               | 17.6              | 21.2            | 40.680    | E   |
|                        | 4 - untitled          | 583                   | 146                     | 1250                      | 536                 | 817                             | 18.2              | 30.4            | 166.949   | F   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 153                   | 38                      | 1674                      | 152                 | 0                               | 0.2               | 0.3             | 6.665     | A   |
|                        | 2 - Havant Road       | 1015                  | 254                     | 370                       | 1013                | 1457                            | 1.8               | 1.9             | 6.630     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1378                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1047                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1661                  | 415                     | 2                         | 1672                | 329                             | 4.9               | 4.9             | 11.364    | B   |

### 17:45 - 18:00

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 122                             |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 272                   | 68                      | 0.90                      | 272                 | 1460                            | 0.5               | 0.5             | 5.363     | A   |
|                        | 3 - A27 Off-Slip      | 1439                  | 360                     | 273                       | 1440                | 0                               | 21.2              | 4.3             | 17.325    | C   |
|                        | 4 - untitled          | 477                   | 119                     | 1037                      | 546                 | 676                             | 30.4              | 10.9            | 128.543   | F   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 124                   | 31                      | 1474                      | 124                 | 0                               | 0.3               | 0.2             | 5.691     | A   |
|                        | 2 - Havant Road       | 838                   | 210                     | 319                       | 838                 | 1278                            | 1.9               | 1.3             | 5.511     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1153                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 879                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1460                  | 365                     | 2                         | 1472                | 272                             | 4.9               | 2.9             | 9.445     | A   |

### 18:00 - 18:15

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 93                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 222                   | 55                      | 0.47                      | 222                 | 1176                            | 0.5               | 0.3             | 4.893     | A   |
|                        | 3 - A27 Off-Slip      | 1195                  | 299                     | 223                       | 1195                | 0                               | 4.3               | 2.3             | 6.903     | A   |
|                        | 4 - untitled          | 403                   | 101                     | 860                       | 409                 | 557                             | 10.9              | 1.1             | 23.391    | C   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 99                    | 25                      | 1178                      | 99                  | 0                               | 0.2               | 0.1             | 4.337     | A   |
|                        | 2 - Havant Road       | 689                   | 172                     | 259                       | 688                 | 1019                            | 1.3               | 1.0             | 4.909     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 944                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 720                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1176                  | 294                     | 2                         | 1176                | 222                             | 2.9               | 2.1             | 6.305     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 16:45 - 17:00

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 88                    |                   |       | 88                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 224                   | 962               | 0.233 | 224                 | 0.0               | 0.3             | 4.872     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1183                  |                   |       | 1183                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 601                   | 952               | 0.632 | 601                 | 0.0               | 1.1             | 6.640     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 602                   | 950               | 0.633 | 603                 | 0.0               | 1.1             | 6.559     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4)        | 1203                  |                   |       | 1203                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 404                   | 752               | 0.537 | 404                 | 0.0               | 1.1             | 8.982     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 561                   |                   |       | 561                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 105                   | 1006              | 0.105 | 105                 | 0.0               | 0.1             | 3.584     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 341                   | 912               | 0.374 | 342                 | 0.0               | 0.4             | 4.735     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 345                   | 918               | 0.377 | 347                 | 0.0               | 0.4             | 4.753     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4,5)      | 687                   |                   |       | 687                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 1033                  |                   |       | 1033                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 633               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 718                   |                   |       | 718                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 592                   | 1003              | 0.590 | 593                 | 0.0               | 1.0             | 5.871     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 591                   | 1004              | 0.588 | 591                 | 0.0               | 1.0             | 5.889     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 224                   |                   |       | 224                 | 0.0               | 0.0             | 0.000     | A   |

17:00 - 17:15

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 110                   |                   |       | 110                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 268                   | 964               | 0.278 | 269                 | 0.3               | 0.4             | 5.235     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1404                  |                   |       | 1404                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 712                   | 935               | 0.762 | 712                 | 1.1               | 1.9             | 9.434     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 714                   | 935               | 0.763 | 714                 | 1.1               | 1.9             | 9.434     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1426                  |                   |       | 1426                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 476                   | 661               | 0.720 | 483                 | 1.1               | 2.5             | 18.862    | C   |
|                        |                       | Exit  | 1          | 1    |                  | 664                   |                   |       | 664                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 126                   | 866               | 0.145 | 126                 | 0.1               | 0.2             | 4.829     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 413                   | 898               | 0.460 | 413                 | 0.4               | 0.6             | 5.497     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 411                   | 896               | 0.458 | 410                 | 0.4               | 0.6             | 5.460     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 823                   |                   |       | 823                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1218                  |                   |       | 1218                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 538               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 860                   |                   |       | 860                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 707                   | 1002              | 0.706 | 705                 | 1.0               | 1.6             | 7.411     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 697                   | 1002              | 0.696 | 695                 | 1.0               | 1.6             | 7.442     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 268                   |                   |       | 268                 | 0.0               | 0.0             | 0.001     | A   |

17:15 - 17:30

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 126                   |                   |       | 126                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 326                   | 963               | 0.338 | 327                 | 0.4               | 0.5             | 5.730     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1648                  |                   |       | 1648                | 0.0               | 0.0             | 0.005     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 878                   | 913               | 0.962 | 856                 | 1.9               | 8.8             | 27.032    | D   |
|                        |                       |       |            | 2    | 1,2,4            | 877                   | 912               | 0.961 | 854                 | 1.9               | 8.9             | 27.077    | D   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1756                  |                   |       | 1756                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 587                   | 551               | 1.065 | 536                 | 2.5               | 18.2            | 77.251    | F   |
|                        |                       | Exit  | 1          | 1    |                  | 799                   |                   |       | 799                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 151                   | 703               | 0.215 | 152                 | 0.2               | 0.2             | 5.972     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 500                   | 875               | 0.572 | 501                 | 0.6               | 0.9             | 6.517     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 503                   | 878               | 0.574 | 504                 | 0.6               | 0.9             | 6.519     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1004                  |                   |       | 1004                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1439                  |                   |       | 1439                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 418               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1037                  |                   |       | 1037                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 821                   | 1002              | 0.819 | 821                 | 1.6               | 2.4             | 10.387    | B   |
|                        |                       |       |            | 2    | 2,3,4,5          | 827                   | 1002              | 0.825 | 828                 | 1.6               | 2.4             | 10.325    | B   |
|                        |                       | Exit  | 1          | 1    |                  | 326                   |                   |       | 326                 | 0.0               | 0.0             | 0.019     | A   |

17:30 - 17:45

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 125                   |                   |       | 125                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 329                   | 961               | 0.342 | 330                 | 0.5               | 0.5             | 5.533     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1660                  |                   |       | 1661                | 0.0               | 0.0             | 0.008     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 871                   | 913               | 0.954 | 863                 | 8.8               | 10.7            | 40.692    | E   |
|                        |                       |       |            | 2    | 1,2,4            | 880                   | 912               | 0.966 | 874                 | 8.9               | 10.5            | 40.668    | E   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1750                  |                   |       | 1750                | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Entry | 1          | 1    | 1,2,4            | 583                   | 546               | 1.068 | 536                 | 18.2              | 30.4            | 166.949   | F   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 153                   | 686               | 0.222 | 152                 | 0.2               | 0.3             | 6.665     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 512                   | 873               | 0.586 | 511                 | 0.9               | 0.9             | 6.626     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 503                   | 873               | 0.577 | 502                 | 0.9               | 1.0             | 6.633     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1015                  |                   |       | 1015                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1457                  |                   |       | 1457                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 410               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1047                  |                   |       | 1047                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 824                   | 1003              | 0.821 | 831                 | 2.4               | 2.4             | 11.392    | B   |
|                        |                       |       |            | 2    | 2,3,4,5          | 837                   | 1004              | 0.833 | 841                 | 2.4               | 2.5             | 11.336    | B   |
|                        |                       | Exit  | 1          | 1    |                  | 329                   |                   |       | 329                 | 0.0               | 0.0             | 0.002     | A   |

17:45 - 18:00

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 122                   |                   |       | 122                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 272                   | 964               | 0.282 | 272                 | 0.5               | 0.5             | 5.363     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1460                  |                   |       | 1460                | 0.0               | 0.0             | 0.003     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 720                   | 934               | 0.771 | 719                 | 10.7              | 2.2             | 17.327    | C   |
|                        |                       |       |            | 2    | 1,2,4            | 720                   | 933               | 0.771 | 721                 | 10.5              | 2.1             | 17.322    | C   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1439                  |                   |       | 1439                | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Entry | 1          | 1    | 1,2,4            | 477                   | 662               | 0.721 | 546                 | 30.4              | 10.9            | 128.543   | F   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 124                   | 814               | 0.152 | 124                 | 0.3               | 0.2             | 5.691     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 420                   | 895               | 0.469 | 420                 | 0.9               | 0.6             | 5.521     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 418                   | 891               | 0.469 | 418                 | 1.0               | 0.7             | 5.501     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 838                   |                   |       | 838                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1278                  |                   |       | 1278                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 526               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 879                   |                   |       | 879                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 731                   | 1004              | 0.728 | 737                 | 2.4               | 1.4             | 9.428     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 729                   | 1002              | 0.728 | 735                 | 2.5               | 1.4             | 9.462     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 272                   |                   |       | 272                 | 0.0               | 0.0             | 0.015     | A   |

18:00 - 18:15

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 93                    |                   |       | 93                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 222                   | 967               | 0.229 | 222                 | 0.5               | 0.3             | 4.893     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1176                  |                   |       | 1176                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 595                   | 951               | 0.626 | 595                 | 2.2               | 1.2             | 6.876     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 600                   | 951               | 0.631 | 600                 | 2.1               | 1.1             | 6.930     | A   |
|                        |                       | Exit  | 2          | 1    | (1,2,3,4)        | 1195                  |                   |       | 1195                | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 403                   | 757               | 0.532 | 409                 | 10.9              | 1.1             | 23.391    | C   |
|                        |                       | Exit  | 1          | 1    |                  | 557                   |                   |       | 557                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 99                    | 1015              | 0.098 | 99                  | 0.2               | 0.1             | 4.337     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 341                   | 915               | 0.372 | 340                 | 0.6               | 0.5             | 4.915     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 348                   | 916               | 0.380 | 348                 | 0.7               | 0.5             | 4.904     | A   |
|                        |                       | Exit  | 2          | 1    | (1,2,3,4,5)      | 689                   |                   |       | 689                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    |                  | 1019                  |                   |       | 1019                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    | 2,3,4,5          | 0                     | 633               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Entry | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 720                   |                   |       | 720                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 585                   | 1003              | 0.584 | 586                 | 1.4               | 1.0             | 6.253     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 591                   | 1002              | 0.589 | 591                 | 1.4               | 1.0             | 6.358     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 222                   |                   |       | 222                 | 0.0               | 0.0             | 0.001     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |  |  |  |
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Filename: 2026 Base using entry lane analysis.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\A27 Roundabouts\2026 Baseline

Report generation date: 11/01/2017 15:16:50

»2026 Baseline - 2026, AM

»2026 Baseline - 2026, PM

### Summary of junction performance

|                                        | AM          |           |     |     | PM          |           |     |     |
|----------------------------------------|-------------|-----------|-----|-----|-------------|-----------|-----|-----|
|                                        | Queue (Veh) | Delay (s) | RFC | LOS | Queue (Veh) | Delay (s) | RFC | LOS |
| 2026 Baseline [Lane Simulation] - 2026 |             |           |     |     |             |           |     |     |
| Junction 1 - Arm 2                     | 0.4         | 5.26      |     | A   | 0.5         | 5.73      |     | A   |
| Junction 1 - Arm 3                     | 3.1         | 8.51      |     | A   | 24.1        | 44.17     |     | E   |
| Junction 1 - Arm 4                     | 17.0        | 81.72     |     | F   | 26.0        | 146.14    |     | F   |
| Junction 2 - Arm 1                     | 0.1         | 4.90      |     | A   | 0.3         | 6.37      |     | A   |
| Junction 2 - Arm 2                     | 26.0        | 60.79     |     | F   | 2.3         | 8.57      |     | A   |
| Junction 2 - Arm 3                     | 0.0         | 0.00      |     | A   | 0.0         | 0.00      |     | A   |
| Junction 2 - Arm 5                     | 4.8         | 11.93     |     | B   | 6.8         | 14.73     |     | B   |

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

### File summary

#### File Description

|             |                         |
|-------------|-------------------------|
| Title       | 2021 Baseline           |
| Location    | A27 Roundabouts, Havant |
| Site number |                         |
| Date        | 31/10/2016              |
| Version     |                         |
| Status      | (new file)              |
| Identifier  |                         |
| Client      | Barratts                |
| Jobnumber   | 041.0039                |
| Enumerator  | Shannon                 |
| Description |                         |

### Units

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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Lane Simulation options

| Stop criteria (%) | Stop criteria time (s) | Stop criteria number of trials | Random seed | Results refresh speed (s) | Individual vehicle animation number of trials | Use crossings quick response | Last run random seed | Last run number of trials | Last run time taken (s) |
|-------------------|------------------------|--------------------------------|-------------|---------------------------|-----------------------------------------------|------------------------------|----------------------|---------------------------|-------------------------|
| 1.00              | 100000                 | 100000                         | -1          | 3                         | 1                                             | ✓                            | 882523366            | 279                       | 136.38                  |

## Demand Set Summary

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2026          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |
| D2 | 2026          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

## Analysis Set Details

| ID | Name          | Use Lane Simulation | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|---------------|---------------------|-------------------|---------------------------------|-------------------------------------|
| A1 | 2026 Baseline | ✓                   | ✓                 | 100.000                         | 100.000                             |

# 2026 Baseline - 2026, AM

## Data Errors and Warnings

| Severity | Area            | Item                                     | Description                                                                                                                                               |
|----------|-----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2026 Baseline [Lane Simulation]     | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results. |
| Warning  | Geometry        | Junction 2 - Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                          |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 30.95              | D            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 35.20              | E            |

### Junction Network Options

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

## Arms

### Arms

| Junction | Arm | Name              | Description |
|----------|-----|-------------------|-------------|
| 1        | 1   | A27 On-Slip       |             |
|          | 2   | Emsworth Road (S) |             |
|          | 3   | A27 Off-Slip      |             |
|          | 4   | untitled          |             |
| 2        | 1   | A27 Off-Slip      |             |
|          | 2   | Havant Road       |             |
|          | 3   | Church Lane       |             |
|          | 4   | A27 On-Slip       |             |
|          | 5   | Emsworth Road     |             |

### Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|----------|-----|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1        | 1   |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|          | 2   | 3.70                             | 3.70                | 0.0                             | 12.2                 | 35.0                              | 53.0                               |           |
|          | 3   | 7.30                             | 7.30                | 0.0                             | 24.3                 | 35.0                              | 49.0                               |           |
|          | 4   | 4.17                             | 5.20                | 0.5                             | 23.6                 | 35.0                              | 46.0                               |           |
| 2        | 1   | 6.08                             | 6.08                | 0.0                             | 19.0                 | 40.0                              | 27.1                               |           |
|          | 2   | 3.69                             | 6.74                | 42.0                            | 13.0                 | 40.0                              | 26.5                               |           |
|          | 3   | 3.14                             | 6.18                | 4.0                             | 12.0                 | 40.0                              | 46.0                               |           |
|          | 4   |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|          | 5   | 5.06                             | 7.40                | 12.0                            | 15.0                 | 40.0                              | 48.9                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction | Arm | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------|--------------------------|
| 1        | 1   |             |                          |
|          | 2   | 0.475       | 997                      |
|          | 3   | 0.712       | 2085                     |
|          | 4   | 0.544       | 1242                     |
| 2        | 1   | 0.675       | 1856                     |
|          | 2   | 0.666       | 1841                     |
|          | 3   | 0.498       | 1112                     |
|          | 4   |             |                          |
|          | 5   | 0.639       | 1808                     |

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

### Lane Simulation: Arm options

| Junction | Arm | Lane capacity source | Traffic Considering Secondary Lanes (%) |
|----------|-----|----------------------|-----------------------------------------|
| 1        | 1   | Evenly split         | 10.00                                   |
|          | 2   | Evenly split         | 10.00                                   |
|          | 3   | Evenly split         | 10.00                                   |
|          | 4   | Evenly split         | 10.00                                   |
| 2        | 1   | Evenly split         | 10.00                                   |
|          | 2   | Evenly split         | 10.00                                   |
|          | 3   | Evenly split         | 10.00                                   |
|          | 4   | Evenly split         | 10.00                                   |
|          | 5   | Evenly split         | 10.00                                   |

### Lanes

| Junction | Arm | Lane level        | Lane | Destination arms | Has limited storage | Storage (PCU) | Minimum capacity (PCU/hr) | Maximum capacity (PCU/hr) |
|----------|-----|-------------------|------|------------------|---------------------|---------------|---------------------------|---------------------------|
| 1        | 2   | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 7.00          | 0                         | 99999                     |
|          | 3   | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|          |     |                   | 2    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|          | 4   | 2                 | 1    | (1,2,3,4)        |                     | Infinity      |                           |                           |
|          |     |                   | 1    | 1,2,4            |                     | Infinity      | 0                         | 99999                     |
| 2        | 1   | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|          | 2   | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 10.43         | 0                         | 99999                     |
|          |     |                   | 2    | 2,3,4,5          | ✓                   | 9.57          | 0                         | 99999                     |
|          |     |                   | 1    | (1,2,3,4,5)      |                     | Infinity      |                           |                           |
|          | 3   | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|          | 5   | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 4.00          | 0                         | 99999                     |
|          |     |                   | 2    | 2,3,4,5          | ✓                   | 4.00          | 0                         | 99999                     |
|          |     |                   | 1    | (1,2,3,4,5)      | ✓                   | 3.00          |                           |                           |

### Entry Lane slope and intercept

| Junction | Arm | Lane level        | Lane | Final slope | Final intercept (PCU/hr) |
|----------|-----|-------------------|------|-------------|--------------------------|
| 1        | 2   | 1 [Give-way line] | 1    | 0.475       | 997                      |
|          | 3   | 1 [Give-way line] | 1    | 0.356       | 1043                     |
|          |     |                   | 2    | 0.356       | 1043                     |
|          | 4   | 1 [Give-way line] | 1    | 0.544       | 1242                     |
| 2        | 1   | 1 [Give-way line] | 1    | 0.675       | 1856                     |
|          | 2   | 1 [Give-way line] | 1    | 0.333       | 921                      |
|          |     |                   | 2    | 0.333       | 921                      |
|          | 3   | 1 [Give-way line] | 1    | 0.498       | 1112                     |
|          | 5   | 1 [Give-way line] | 1    | 0.319       | 904                      |
|          |     |                   | 2    | 0.319       | 904                      |

### Lane Movements

| Junction | Arm | Lane Level        | Lane | Destination arm |   |   |   |
|----------|-----|-------------------|------|-----------------|---|---|---|
|          |     |                   |      | 1               | 2 | 3 | 4 |
| 1        | 2   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |
|          | 3   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |
|          |     |                   | 2    | ✓               | ✓ |   | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ |
|          | 4   | 1 [Give-way line] | 1    | ✓               | ✓ |   | ✓ |

### Lane Movements

| Junction | Arm | Lane Level        | Lane | Destination arm |   |   |   |   |
|----------|-----|-------------------|------|-----------------|---|---|---|---|
|          |     |                   |      | 1               | 2 | 3 | 4 | 5 |
| 2        | 1   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          | 2   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     |                   | 2    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ | ✓ |
|          | 3   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          | 5   | 1 [Give-way line] | 1    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     |                   | 2    |                 | ✓ | ✓ | ✓ | ✓ |
|          |     | 2                 | 1    | ✓               | ✓ | ✓ | ✓ | ✓ |

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2026          | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1        | 2   | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2        | 5   | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|--------------|-------------------------|--------------------|
| 1        | 1   |            |              |              |                         |                    |
|          | 2   | ✓          |              |              |                         |                    |
|          | 3   |            | ONE HOUR     | ✓            | 1097                    | 100.000            |
|          | 4   |            | ONE HOUR     | ✓            | 632                     | 100.000            |
| 2        | 1   |            | ONE HOUR     | ✓            | 77                      | 100.000            |
|          | 2   |            | ONE HOUR     | ✓            | 1312                    | 100.000            |
|          | 3   |            | ONE HOUR     | ✓            | 4                       | 100.000            |
|          | 4   |            |              |              |                         |                    |
|          | 5   | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 26        | 0         | 0         | 257       |
|      | 3 | 2         | 761       | 0         | 334       |
|      | 4 | 53        | 578       | 0         | 1         |

### Demand (Veh/hr)

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 33        | 0         | 2         | 42        |
|      | 2 | 0         | 2         | 1         | 1074      | 235       |
|      | 3 | 0         | 0         | 0         | 3         | 1         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 928       | 4         | 400       | 1         |

## Vehicle Mix

### Heavy Vehicle Percentages

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 5         | 0         | 0         | 2         |
|      | 3 | 50        | 4         | 0         | 3         |
|      | 4 | 4         | 3         | 0         | 0         |

### Heavy Vehicle Percentages

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 0         | 0         | 0         | 0         |
|      | 2 | 0         | 0         | 0         | 3         | 2         |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 2         | 0         | 2         | 0         |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|----------|-----|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1        | 1   |               |                 |         |                         |                               |
|          | 2   | 5.26          | 0.4             | A       | 252                     | 378                           |
|          | 3   | 8.51          | 3.1             | A       | 1011                    | 1516                          |
|          | 4   | 81.72         | 17.0            | F       | 576                     | 864                           |
| 2        | 1   | 4.90          | 0.1             | A       | 69                      | 103                           |
|          | 2   | 60.79         | 26.0            | F       | 1201                    | 1801                          |
|          | 3   | 0.00          | 0.0             | A       | 0                       | 0                             |
|          | 4   |               |                 |         |                         |                               |
|          | 5   | 11.93         | 4.8             | B       | 1223                    | 1835                          |

## Main Results for each time segment

### 07:45 - 08:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 61                              |                   |                 |           |     |
|          | 2   | 207                   | 52                      | 0.86                      | 207                 | 1005                            | 0.0               | 0.3             | 4.706     | A   |
|          | 3   | 833                   | 208                     | 208                       | 833                 | 0                               | 0.0               | 1.2             | 5.075     | A   |
|          | 4   | 469                   | 117                     | 599                       | 468                 | 442                             | 0.0               | 1.1             | 8.034     | A   |
| 2        | 1   | 56                    | 14                      | 1008                      | 56                  | 0                               | 0.0               | 0.0             | 3.011     | A   |
|          | 2   | 988                   | 247                     | 330                       | 988                 | 734                             | 0.0               | 2.4             | 7.906     | A   |
|          | 3   | 0                     | 0                       | 1314                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1106                            |                   |                 |           |     |
|          | 5   | 1005                  | 251                     | 2                         | 1006                | 207                             | 0.0               | 1.8             | 6.562     | A   |

### 08:00 - 08:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 72                              |                   |                 |           |     |
|          | 2   | 247                   | 62                      | 0.65                      | 247                 | 1198                            | 0.3               | 0.3             | 4.907     | A   |
|          | 3   | 989                   | 247                     | 248                       | 987                 | 0                               | 1.2               | 1.7             | 5.899     | A   |
|          | 4   | 565                   | 141                     | 708                       | 562                 | 526                             | 1.1               | 2.5             | 14.521    | B   |
| 2        | 1   | 68                    | 17                      | 1199                      | 69                  | 0                               | 0.0               | 0.1             | 3.768     | A   |
|          | 2   | 1187                  | 297                     | 404                       | 1177                | 863                             | 2.4               | 4.8             | 12.433    | B   |
|          | 3   | 0                     | 0                       | 1575                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1327                            |                   |                 |           |     |
|          | 5   | 1198                  | 299                     | 2                         | 1197                | 247                             | 1.8               | 2.7             | 7.976     | A   |

### 08:15 - 08:30

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 85                              |                   |                 |           |     |
|          | 2   | 299                   | 75                      | 1                         | 300                 | 1450                            | 0.3               | 0.4             | 5.261     | A   |
|          | 3   | 1211                  | 303                     | 301                       | 1209                | 0                               | 1.7               | 3.0             | 8.149     | A   |
|          | 4   | 699                   | 175                     | 869                       | 666                 | 640                             | 2.5               | 12.8            | 46.323    | E   |
| 2        | 1   | 83                    | 21                      | 1451                      | 83                  | 0                               | 0.1               | 0.1             | 4.592     | A   |
|          | 2   | 1441                  | 360                     | 485                       | 1403                | 1050                            | 4.8               | 20.7            | 37.854    | E   |
|          | 3   | 0                     | 0                       | 1883                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1582                            |                   |                 |           |     |
|          | 5   | 1450                  | 362                     | 2                         | 1449                | 299                             | 2.7               | 4.8             | 11.221    | B   |

### 08:30 - 08:45

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 89                              |                   |                 |           |     |
|          | 2   | 299                   | 75                      | 0.95                      | 300                 | 1457                            | 0.4               | 0.4             | 5.243     | A   |
|          | 3   | 1214                  | 303                     | 301                       | 1210                | 0                               | 3.0               | 3.0             | 8.512     | A   |
|          | 4   | 692                   | 173                     | 867                       | 679                 | 644                             | 12.8              | 16.9            | 81.723    | F   |
| 2        | 1   | 83                    | 21                      | 1461                      | 82                  | 0                               | 0.1               | 0.1             | 4.905     | A   |
|          | 2   | 1429                  | 357                     | 484                       | 1419                | 1060                            | 20.7              | 26.0            | 60.787    | F   |
|          | 3   | 0                     | 0                       | 1898                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1598                            |                   |                 |           |     |
|          | 5   | 1457                  | 364                     | 2                         | 1459                | 299                             | 4.8               | 4.8             | 11.927    | B   |

### 08:45 - 09:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 75                              |                   |                 |           |     |
|          | 2   | 253                   | 63                      | 0.95                      | 253                 | 1214                            | 0.4               | 0.3             | 5.062     | A   |
|          | 3   | 987                   | 247                     | 254                       | 990                 | 0                               | 3.0               | 1.5             | 6.247     | A   |
|          | 4   | 560                   | 140                     | 711                       | 578                 | 533                             | 16.9              | 2.7             | 38.513    | E   |
| 2        | 1   | 66                    | 17                      | 1221                      | 67                  | 0                               | 0.1               | 0.1             | 4.124     | A   |
|          | 2   | 1175                  | 294                     | 414                       | 1202                | 873                             | 26.0              | 5.4             | 31.964    | D   |
|          | 3   | 0                     | 0                       | 1612                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1358                            |                   |                 |           |     |
|          | 5   | 1214                  | 303                     | 2                         | 1219                | 253                             | 4.8               | 2.6             | 9.415     | A   |

### 09:00 - 09:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 58                              |                   |                 |           |     |
|          | 2   | 207                   | 52                      | 0.90                      | 207                 | 1016                            | 0.3               | 0.2             | 4.660     | A   |
|          | 3   | 833                   | 208                     | 208                       | 835                 | 0                               | 1.5               | 1.1             | 5.171     | A   |
|          | 4   | 471                   | 118                     | 603                       | 471                 | 440                             | 2.7               | 1.2             | 9.913     | A   |
| 2        | 1   | 56                    | 14                      | 1018                      | 56                  | 0                               | 0.1               | 0.1             | 3.439     | A   |
|          | 2   | 987                   | 247                     | 342                       | 983                 | 732                             | 5.4               | 2.4             | 9.224     | A   |
|          | 3   | 0                     | 0                       | 1321                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1113                            |                   |                 |           |     |
|          | 5   | 1016                  | 254                     | 1                         | 1017                | 207                             | 2.6               | 1.9             | 6.672     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

#### 07:45 - 08:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 61                    |                   |       | 61                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 207                   | 979               | 0.211 | 207                 | 0.0               | 0.3             | 4.706     | A   |
|          |     | Exit  | 1          | 1    |                  | 1006                  |                   |       | 1005                | 0.0               | 0.0             | 0.021     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 415                   | 934               | 0.445 | 415                 | 0.0               | 0.6             | 5.074     | A   |
|          |     |       |            | 2    | 1,2,4            | 418                   | 933               | 0.448 | 418                 | 0.0               | 0.6             | 5.075     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 833                   |                   |       | 833                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 469                   | 876               | 0.536 | 468                 | 0.0               | 1.1             | 8.034     | A   |
|          |     | Exit  | 1          | 1    |                  | 442                   |                   |       | 442                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 56                    | 1152              | 0.049 | 56                  | 0.0               | 0.0             | 3.011     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 493                   | 786               | 0.628 | 493                 | 0.0               | 1.2             | 7.883     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 495                   | 784               | 0.631 | 494                 | 0.0               | 1.3             | 7.928     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 988                   |                   |       | 988                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 734                   |                   |       | 734                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 439               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1106                  |                   |       | 1106                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 501                   | 875               | 0.573 | 502                 | 0.0               | 0.9             | 6.522     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 504                   | 872               | 0.578 | 505                 | 0.0               | 0.9             | 6.443     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1005                  |                   |       | 1005                | 0.0               | 0.0             | 0.079     | A   |
|          |     |       |            | 1    |                  | 207                   |                   |       | 207                 | 0.0               | 0.0             | 0.000     | A   |

## 08:00 - 08:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 72                    |                   |       | 72                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 247                   | 981               | 0.252 | 247                 | 0.3               | 0.3             | 4.907     | A   |
|          |     | Exit  | 1          | 1    |                  | 1198                  |                   |       | 1198                | 0.0               | 0.1             | 0.116     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 497                   | 917               | 0.543 | 496                 | 0.6               | 0.9             | 5.858     | A   |
|          |     |       |            | 2    | 1,2,4            | 491                   | 921               | 0.533 | 491                 | 0.6               | 0.8             | 5.940     | A   |
|          |     |       |            | 2    | (1,2,3,4)        | 989                   |                   |       | 989                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 565                   | 816               | 0.692 | 562                 | 1.1               | 2.5             | 14.521    | B   |
|          |     | Exit  | 1          | 1    |                  | 526                   |                   |       | 526                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 68                    | 1018              | 0.067 | 69                  | 0.0               | 0.1             | 3.768     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 587                   | 761               | 0.772 | 583                 | 1.2               | 2.4             | 12.490    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 599                   | 762               | 0.787 | 594                 | 1.3               | 2.4             | 12.241    | B   |
|          |     |       |            | 2    | (1,2,3,4,5)      | 1187                  |                   |       | 1187                | 0.0               | 0.0             | 0.066     | A   |
|          |     | Exit  | 1          | 1    |                  | 863                   |                   |       | 863                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 306               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1327                  |                   |       | 1327                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 600                   | 873               | 0.688 | 600                 | 0.9               | 1.3             | 7.708     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 598                   | 872               | 0.685 | 597                 | 0.9               | 1.3             | 7.676     | A   |
|          |     |       |            | 2    | (1,2,3,4,5)      | 1198                  |                   |       | 1198                | 0.0               | 0.1             | 0.282     | A   |
|          |     | Exit  | 1          | 1    |                  | 247                   |                   |       | 247                 | 0.0               | 0.0             | 0.001     | A   |

## 08:15 - 08:30

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 85                    |                   |       | 85                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 299                   | 979               | 0.305 | 300                 | 0.3               | 0.4             | 5.261     | A   |
|          |     | Exit  | 1          | 1    |                  | 1449                  |                   |       | 1450                | 0.1               | 0.4             | 0.792     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 605                   | 898               | 0.674 | 604                 | 0.9               | 1.5             | 8.156     | A   |
|          |     |       |            | 2    | 1,2,4            | 606                   | 899               | 0.674 | 605                 | 0.8               | 1.5             | 8.142     | A   |
|          |     |       |            | 2    | (1,2,3,4)        | 1211                  |                   |       | 1211                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 699                   | 725               | 0.964 | 666                 | 2.5               | 12.8            | 46.323    | E   |
|          |     | Exit  | 1          | 1    |                  | 640                   |                   |       | 640                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 83                    | 839               | 0.099 | 83                  | 0.1               | 0.1             | 4.592     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 701                   | 732               | 0.957 | 697                 | 2.4               | 6.7             | 28.613    | D   |
|          |     |       |            | 2    | 2,3,4,5          | 712                   | 734               | 0.968 | 706                 | 2.4               | 6.3             | 27.108    | D   |
|          |     |       |            | 2    | (1,2,3,4,5)      | 1441                  |                   |       | 1413                | 0.0               | 7.6             | 9.662     | A   |
|          |     | Exit  | 1          | 1    |                  | 1050                  |                   |       | 1050                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 147               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1582                  |                   |       | 1582                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 724                   | 869               | 0.833 | 724                 | 1.3               | 2.1             | 10.056    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 725                   | 873               | 0.831 | 725                 | 1.3               | 2.1             | 10.184    | B   |
|          |     |       |            | 2    | (1,2,3,4,5)      | 1450                  |                   |       | 1450                | 0.1               | 0.5             | 1.096     | A   |
|          |     | Exit  | 1          | 1    |                  | 299                   |                   |       | 299                 | 0.0               | 0.0             | 0.001     | A   |

## 08:30 - 08:45

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 89                    |                   |       | 89                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 299                   | 979               | 0.305 | 300                 | 0.4               | 0.4             | 5.243     | A   |
|          |     | Exit  | 1          | 1    |                  | 1456                  |                   |       | 1457                | 0.4               | 0.4             | 1.063     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 608                   | 898               | 0.678 | 607                 | 1.5               | 1.4             | 8.504     | A   |
|          |     |       |            | 2    | 1,2,4            | 605                   | 900               | 0.672 | 603                 | 1.5               | 1.5             | 8.521     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4)        | 1214                  |                   |       | 1214                | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 692                   | 731               | 0.948 | 679                 | 12.8              | 16.9            | 81.723    | F   |
|          |     | Exit  | 1          | 1    |                  | 644                   |                   |       | 644                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 83                    | 836               | 0.099 | 82                  | 0.1               | 0.1             | 4.905     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 710                   | 734               | 0.967 | 710                 | 6.7               | 7.1             | 35.697    | E   |
|          |     |       |            | 2    | 2,3,4,5          | 707                   | 736               | 0.960 | 709                 | 6.3               | 6.5             | 33.007    | D   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1429                  |                   |       | 1417                | 7.6               | 12.4            | 26.269    | D   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 142               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1598                  |                   |       | 1598                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 727                   | 873               | 0.833 | 728                 | 2.1               | 2.1             | 10.582    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 731                   | 875               | 0.835 | 731                 | 2.1               | 2.1             | 10.569    | B   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1457                  |                   |       | 1457                | 0.5               | 0.5             | 1.351     | A   |
|          | 5   | Exit  | 1          | 1    |                  | 299                   |                   |       | 299                 | 0.0               | 0.0             | 0.000     | A   |

## 08:45 - 09:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 75                    |                   |       | 75                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 253                   | 979               | 0.258 | 253                 | 0.4               | 0.3             | 5.062     | A   |
|          |     | Exit  | 1          | 1    |                  | 1213                  |                   |       | 1214                | 0.4               | 0.0             | 0.452     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 490                   | 915               | 0.535 | 491                 | 1.4               | 0.8             | 6.280     | A   |
|          |     |       |            | 2    | 1,2,4            | 498                   | 916               | 0.542 | 499                 | 1.5               | 0.7             | 6.215     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4)        | 987                   |                   |       | 987                 | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 560                   | 818               | 0.685 | 578                 | 16.9              | 2.7             | 38.513    | E   |
|          |     | Exit  | 1          | 1    |                  | 533                   |                   |       | 533                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 66                    | 1004              | 0.066 | 67                  | 0.1               | 0.1             | 4.124     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 599                   | 758               | 0.790 | 606                 | 7.1               | 2.4             | 22.441    | C   |
|          |     |       |            | 2    | 2,3,4,5          | 592                   | 759               | 0.780 | 596                 | 6.5               | 2.4             | 21.410    | C   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1175                  |                   |       | 1190                | 12.4              | 0.6             | 10.969    | B   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 286               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1358                  |                   |       | 1358                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 608                   | 875               | 0.695 | 611                 | 2.1               | 1.3             | 8.767     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 607                   | 874               | 0.695 | 609                 | 2.1               | 1.3             | 8.764     | A   |
|          |     | Exit  | 2          | 1    | (1,2,3,4,5)      | 1214                  |                   |       | 1215                | 0.5               | 0.1             | 0.658     | A   |
|          | 5   | Exit  | 1          | 1    |                  | 253                   |                   |       | 253                 | 0.0               | 0.0             | 0.001     | A   |

09:00 - 09:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 58                    |                   |       | 58                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 207                   | 981               | 0.211 | 207                 | 0.3               | 0.2             | 4.660     | A   |
|          |     | Exit  | 1          | 1    |                  | 1016                  |                   |       | 1016                | 0.0               | 0.0             | 0.026     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 417                   | 930               | 0.448 | 418                 | 0.8               | 0.5             | 5.172     | A   |
|          |     |       |            | 2    | 1,2,4            | 417                   | 929               | 0.448 | 417                 | 0.7               | 0.6             | 5.170     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 833                   |                   |       | 833                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 471                   | 870               | 0.541 | 471                 | 2.7               | 1.2             | 9.913     | A   |
|          |     | Exit  | 1          | 1    |                  | 440                   |                   |       | 440                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 56                    | 1142              | 0.049 | 56                  | 0.1               | 0.1             | 3.439     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 494                   | 780               | 0.633 | 490                 | 2.4               | 1.2             | 9.030     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 494                   | 780               | 0.633 | 492                 | 2.4               | 1.2             | 9.056     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 987                   |                   |       | 987                 | 0.6               | 0.0             | 0.248     | A   |
|          |     |       |            | 1    |                  | 732                   |                   |       | 732                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 434               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1113                  |                   |       | 1113                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 507                   | 868               | 0.584 | 507                 | 1.3               | 0.9             | 6.573     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 509                   | 872               | 0.584 | 510                 | 1.3               | 1.0             | 6.572     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1016                  |                   |       | 1016                | 0.1               | 0.0             | 0.105     | A   |
|          |     |       |            | 1    |                  | 207                   |                   |       | 207                 | 0.0               | 0.0             | 0.000     | A   |

# 2026 Baseline - 2026, PM

## Data Errors and Warnings

| Severity | Area            | Item                                     | Description                                                                                                                                               |
|----------|-----------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2026 Baseline [Lane Simulation]     | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results. |
| Warning  | Geometry        | Junction 2 - Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.                                          |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 61.75              | F            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 12.10              | B            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|---------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2026          | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction | Arm | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|----------|-----|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1        | 2   | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2        | 5   | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction | Arm | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|----------|-----|------------|--------------|--------------|-------------------------|--------------------|
| 1        | 1   |            |              |              |                         |                    |
|          | 2   | ✓          |              |              |                         |                    |
|          | 3   |            | ONE HOUR     | ✓            | 1559                    | 100.000            |
|          | 4   |            | ONE HOUR     | ✓            | 524                     | 100.000            |
| 2        | 1   |            | ONE HOUR     | ✓            | 136                     | 100.000            |
|          | 2   |            | ONE HOUR     | ✓            | 898                     | 100.000            |
|          | 3   |            | ONE HOUR     | ✓            | 0                       | 100.000            |
|          | 4   |            |              |              |                         |                    |
|          | 5   | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 34        | 0         | 0         | 269       |
|      | 3 | 10        | 1075      | 0         | 474       |
|      | 4 | 77        | 446       | 0         | 1         |

### Demand (Veh/hr)

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 47        | 0         | 0         | 89        |
|      | 2 | 0         | 2         | 2         | 690       | 204       |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 1276      | 2         | 248       | 1         |

## Vehicle Mix

### Heavy Vehicle Percentages

#### Junction 1

|      |   | To        |           |           |           |
|------|---|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         |
| From | 1 | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 2 | 4         | 0         | 0         | 2         |
|      | 3 | 0         | 1         | 0         | 1         |
|      | 4 | 0         | 2         | 0         | 0         |

### Heavy Vehicle Percentages

#### Junction 2

|      |   | To        |           |           |           |           |
|------|---|-----------|-----------|-----------|-----------|-----------|
|      |   | 1         | 2         | 3         | 4         | 5         |
| From | 1 | 0         | 3         | 0         | 0         | 4         |
|      | 2 | 0         | 0         | 0         | 2         | 3         |
|      | 3 | 0         | 0         | 0         | 0         | 0         |
|      | 4 | Exit-only | Exit-only | Exit-only | Exit-only | Exit-only |
|      | 5 | 0         | 1         | 0         | 1         | 0         |

## Results

### Results Summary for whole modelled period

| Junction | Arm | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|----------|-----|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1        | 1   |               |                 |         |                         |                               |
|          | 2   | 5.73          | 0.5             | A       | 270                     | 405                           |
|          | 3   | 44.17         | 24.1            | E       | 1430                    | 2145                          |
|          | 4   | 146.14        | 26.0            | F       | 478                     | 717                           |
| 2        | 1   | 6.37          | 0.3             | A       | 124                     | 186                           |
|          | 2   | 8.57          | 2.3             | A       | 825                     | 1238                          |
|          | 3   | 0.00          | 0.0             | A       | 0                       | 0                             |
|          | 4   |               |                 |         |                         |                               |
|          | 5   | 14.73         | 6.8             | B       | 1389                    | 2084                          |

## Main Results for each time segment

### 16:45 - 17:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 92                              |                   |                 |           |     |
|          | 2   | 224                   | 56                      | 0.62                      | 224                 | 1146                            | 0.0               | 0.3             | 4.889     | A   |
|          | 3   | 1165                  | 291                     | 225                       | 1165                | 0                               | 0.0               | 2.1             | 6.312     | A   |
|          | 4   | 404                   | 101                     | 836                       | 403                 | 554                             | 0.0               | 1.1             | 8.888     | A   |
| 2        | 1   | 103                   | 26                      | 1145                      | 104                 | 0                               | 0.0               | 0.1             | 3.536     | A   |
|          | 2   | 682                   | 170                     | 254                       | 681                 | 995                             | 0.0               | 1.0             | 5.407     | A   |
|          | 3   | 0                     | 0                       | 932                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 707                             |                   |                 |           |     |
|          | 5   | 1146                  | 287                     | 1                         | 1144                | 224                             | 0.0               | 2.5             | 7.208     | A   |

### 17:00 - 17:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 106                             |                   |                 |           |     |
|          | 2   | 269                   | 67                      | 0.70                      | 268                 | 1363                            | 0.3               | 0.4             | 5.226     | A   |
|          | 3   | 1398                  | 350                     | 269                       | 1395                | 0                               | 2.1               | 3.9             | 9.517     | A   |
|          | 4   | 470                   | 118                     | 1000                      | 469                 | 664                             | 1.1               | 2.6             | 17.256    | C   |
| 2        | 1   | 121                   | 30                      | 1364                      | 122                 | 0                               | 0.1               | 0.2             | 4.570     | A   |
|          | 2   | 815                   | 204                     | 302                       | 815                 | 1184                            | 1.0               | 1.5             | 6.395     | A   |
|          | 3   | 0                     | 0                       | 1113                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 843                             |                   |                 |           |     |
|          | 5   | 1363                  | 341                     | 2                         | 1362                | 269                             | 2.5               | 3.8             | 9.625     | A   |

### 17:15 - 17:30

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 124                             |                   |                 |           |     |
|          | 2   | 325                   | 81                      | 1                         | 326                 | 1616                            | 0.4               | 0.5             | 5.728     | A   |
|          | 3   | 1723                  | 431                     | 327                       | 1687                | 0                               | 3.9               | 16.6            | 25.318    | D   |
|          | 4   | 570                   | 142                     | 1214                      | 530                 | 801                             | 2.6               | 15.4            | 68.190    | F   |
| 2        | 1   | 151                   | 38                      | 1619                      | 152                 | 0                               | 0.2               | 0.2             | 5.941     | A   |
|          | 2   | 989                   | 247                     | 365                       | 988                 | 1405                            | 1.5               | 2.3             | 7.973     | A   |
|          | 3   | 0                     | 0                       | 1348                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1021                            |                   |                 |           |     |
|          | 5   | 1616                  | 404                     | 3                         | 1616                | 325                             | 3.8               | 6.2             | 13.468    | B   |

### 17:30 - 17:45

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 124                             |                   |                 |           |     |
|          | 2   | 319                   | 80                      | 0.97                      | 319                 | 1621                            | 0.5               | 0.5             | 5.630     | A   |
|          | 3   | 1721                  | 430                     | 320                       | 1694                | 0                               | 16.6              | 24.1            | 44.165    | E   |
|          | 4   | 567                   | 142                     | 1212                      | 531                 | 801                             | 15.4              | 26.0            | 146.138   | F   |
| 2        | 1   | 149                   | 37                      | 1619                      | 149                 | 0                               | 0.2               | 0.3             | 6.375     | A   |
|          | 2   | 992                   | 248                     | 366                       | 991                 | 1401                            | 2.3               | 2.3             | 8.567     | A   |
|          | 3   | 0                     | 0                       | 1353                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 1032                            |                   |                 |           |     |
|          | 5   | 1621                  | 405                     | 2                         | 1617                | 319                             | 6.2               | 6.8             | 14.734    | B   |

### 17:45 - 18:00

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 115                             |                   |                 |           |     |
|          | 2   | 264                   | 66                      | 0.77                      | 264                 | 1436                            | 0.5               | 0.4             | 5.159     | A   |
|          | 3   | 1402                  | 350                     | 265                       | 1410                | 0                               | 24.1              | 4.3             | 20.697    | C   |
|          | 4   | 464                   | 116                     | 1019                      | 530                 | 656                             | 26.0              | 9.3             | 113.311   | F   |
| 2        | 1   | 117                   | 29                      | 1444                      | 117                 | 0                               | 0.3               | 0.2             | 5.638     | A   |
|          | 2   | 810                   | 202                     | 309                       | 810                 | 1251                            | 2.3               | 1.4             | 6.536     | A   |
|          | 3   | 0                     | 0                       | 1116                      | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 850                             |                   |                 |           |     |
|          | 5   | 1436                  | 359                     | 2                         | 1442                | 264                             | 6.8               | 4.3             | 12.329    | B   |

### 18:00 - 18:15

| Junction | Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   |                       |                         | 0                         |                     | 91                              |                   |                 |           |     |
|          | 2   | 221                   | 55                      | 0.70                      | 221                 | 1153                            | 0.4               | 0.3             | 4.867     | A   |
|          | 3   | 1174                  | 293                     | 222                       | 1177                | 0                               | 4.3               | 1.9             | 6.966     | A   |
|          | 4   | 394                   | 99                      | 844                       | 401                 | 555                             | 9.3               | 1.1             | 20.471    | C   |
| 2        | 1   | 102                   | 25                      | 1154                      | 102                 | 0                               | 0.2               | 0.1             | 4.278     | A   |
|          | 2   | 665                   | 166                     | 259                       | 667                 | 997                             | 1.4               | 1.0             | 5.713     | A   |
|          | 3   | 0                     | 0                       | 922                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|          | 4   |                       |                         | 0                         |                     | 700                             |                   |                 |           |     |
|          | 5   | 1153                  | 288                     | 1                         | 1153                | 221                             | 4.3               | 2.4             | 7.807     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 16:45 - 17:00

| Junction | Am | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS   |
|----------|----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-------|
| 1        | 1  | Exit  | 1          | 1    |                  | 92                    |                   |       | 92                  | 0.0               | 0.0             | 0.000     | A     |
|          | 2  | Entry | 1          | 1    | 1,2,4            | 224                   | 963               | 0.233 | 224                 | 0.0               | 0.3             | 4.889     | A     |
|          |    | Exit  | 1          | 1    |                  | 1147                  |                   |       | 1146                | 0.0               | 0.0             | 0.052     | A     |
|          | 3  | Entry | 1          | 1    | 1,2,4            | 587                   | 951               | 0.617 | 587                 | 0.0               | 1.1             | 6.270     | A     |
|          |    |       |            | 2    | 1,2,4            | 578                   | 952               | 0.607 | 578                 | 0.0               | 1.1             | 6.354     | A     |
|          |    |       | 2          | 1    | (1,2,3,4)        | 1165                  |                   |       | 1165                | 0.0               | 0.0             | 0.000     | A     |
|          |    | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A     |
|          | 4  | Entry | 1          | 1    | 1,2,4            | 404                   | 770               | 0.524 | 403                 | 0.0               | 1.1             | 8.888     | A     |
|          |    | Exit  | 1          | 1    |                  | 554                   |                   |       | 554                 | 0.0               | 0.0             | 0.000     | A     |
|          | 2  | 1     | Entry      | 1    | 1                | 2,3,4,5               | 103               | 1034  | 0.100               | 104               | 0.0             | 0.1       | 3.536 |
| Exit     |    |       | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A     |
| 2        |    | Entry | 1          | 1    | 2,3,4,5          | 342                   | 815               | 0.419 | 340                 | 0.0               | 0.5             | 5.455     | A     |
|          |    |       |            | 2    | 2,3,4,5          | 340                   | 817               | 0.417 | 341                 | 0.0               | 0.5             | 5.359     | A     |
|          |    |       | 2          | 1    | (1,2,3,4,5)      | 682                   |                   |       | 682                 | 0.0               | 0.0             | 0.000     | A     |
|          |    | Exit  | 1          | 1    |                  | 995                   |                   |       | 995                 | 0.0               | 0.0             | 0.000     | A     |
| 3        |    | Entry | 1          | 1    | 2,3,4,5          | 0                     | 638               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A     |
|          |    | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A     |
| 4        |    | Exit  | 1          | 1    |                  | 707                   |                   |       | 707                 | 0.0               | 0.0             | 0.000     | A     |
| 5        |    | Entry | 1          | 1    | 2,3,4,5          | 572                   | 893               | 0.640 | 571                 | 0.0               | 1.2             | 7.079     | A     |
|          |    |       |            | 2    | 2,3,4,5          | 574                   | 894               | 0.642 | 573                 | 0.0               | 1.2             | 7.018     | A     |
|          |    |       | 2          | 1    | (1,2,3,4,5)      | 1146                  |                   |       | 1146                | 0.0               | 0.1             | 0.158     | A     |
|          |    | Exit  | 1          | 1    |                  | 224                   |                   |       | 224                 | 0.0               | 0.0             | 0.000     | A     |

## 17:00 - 17:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 106                   |                   |       | 106                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 269                   | 965               | 0.278 | 268                 | 0.3               | 0.4             | 5.226     | A   |
|          |     | Exit  | 1          | 1    |                  | 1362                  |                   |       | 1363                | 0.0               | 0.1             | 0.427     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 698                   | 934               | 0.748 | 697                 | 1.1               | 1.9             | 9.500     | A   |
|          |     |       |            | 2    | 1,2,4            | 700                   | 934               | 0.749 | 698                 | 1.1               | 2.0             | 9.534     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1398                  |                   |       | 1398                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 470                   | 681               | 0.691 | 469                 | 1.1               | 2.6             | 17.256    | C   |
|          |     | Exit  | 1          | 1    |                  | 664                   |                   |       | 664                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 121                   | 893               | 0.136 | 122                 | 0.1               | 0.2             | 4.570     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 404                   | 800               | 0.505 | 404                 | 0.5               | 0.7             | 6.383     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 411                   | 801               | 0.513 | 411                 | 0.5               | 0.8             | 6.408     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 815                   |                   |       | 815                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1184                  |                   |       | 1184                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 546               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 843                   |                   |       | 843                 | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 680                   | 893               | 0.761 | 678                 | 1.2               | 1.8             | 8.956     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 685                   | 891               | 0.769 | 684                 | 1.2               | 1.8             | 8.964     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1363                  |                   |       | 1364                | 0.1               | 0.2             | 0.662     | A   |
|          |     |       |            | 1    |                  | 269                   |                   |       | 269                 | 0.0               | 0.0             | 0.004     | A   |

## 17:15 - 17:30

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 124                   |                   |       | 124                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 325                   | 964               | 0.337 | 326                 | 0.4               | 0.5             | 5.728     | A   |
|          |     | Exit  | 1          | 1    |                  | 1619                  |                   |       | 1616                | 0.1               | 0.9             | 1.577     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 865                   | 914               | 0.946 | 847                 | 1.9               | 8.3             | 25.358    | D   |
|          |     |       |            | 2    | 1,2,4            | 858                   | 913               | 0.940 | 841                 | 2.0               | 8.3             | 25.278    | D   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1723                  |                   |       | 1723                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 570                   | 565               | 1.009 | 530                 | 2.6               | 15.4            | 68.190    | F   |
|          |     | Exit  | 1          | 1    |                  | 801                   |                   |       | 801                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 151                   | 722               | 0.210 | 152                 | 0.2               | 0.2             | 5.941     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 497                   | 778               | 0.638 | 496                 | 0.7               | 1.1             | 7.935     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 492                   | 779               | 0.632 | 491                 | 0.8               | 1.2             | 8.011     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 989                   |                   |       | 989                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 1405                  |                   |       | 1405                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 426               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    |                  | 1021                  |                   |       | 1021                | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  |                       |                   |       |                     | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 803                   | 892               | 0.900 | 803                 | 1.8               | 2.6             | 11.648    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 813                   | 893               | 0.911 | 813                 | 1.8               | 2.6             | 11.597    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1616                  |                   |       | 1616                | 0.2               | 1.0             | 1.835     | A   |
|          |     |       |            | 1    |                  | 325                   |                   |       | 325                 | 0.0               | 0.0             | 0.008     | A   |

## 17:30 - 17:45

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 124                   |                   |       | 124                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 319                   | 962               | 0.332 | 319                 | 0.5               | 0.5             | 5.630     | A   |
|          |     | Exit  | 1          | 1    |                  | 1618                  |                   |       | 1621                | 0.9               | 1.0             | 2.217     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 856                   | 914               | 0.936 | 843                 | 8.3               | 12.1            | 44.272    | E   |
|          |     |       |            | 2    | 1,2,4            | 865                   | 915               | 0.945 | 851                 | 8.3               | 12.0            | 44.058    | E   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1721                  |                   |       | 1721                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 567                   | 565               | 1.004 | 531                 | 15.4              | 26.0            | 146.138   | F   |
|          |     | Exit  | 1          | 1    |                  | 801                   |                   |       | 801                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 149                   | 719               | 0.207 | 149                 | 0.2               | 0.3             | 6.375     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 497                   | 778               | 0.640 | 497                 | 1.1               | 1.1             | 8.536     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 494                   | 779               | 0.635 | 494                 | 1.2               | 1.1             | 8.572     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 992                   |                   |       | 992                 | 0.0               | 0.0             | 0.011     | A   |
|          |     |       |            | 1    |                  | 1401                  |                   |       | 1401                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 423               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 1032                  |                   |       | 1032                | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 811                   | 891               | 0.910 | 808                 | 2.6               | 2.9             | 12.399    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 809                   | 893               | 0.906 | 808                 | 2.6               | 2.7             | 12.386    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1621                  |                   |       | 1620                | 1.0               | 1.1             | 2.343     | A   |
|          |     |       |            | 1    |                  | 319                   |                   |       | 319                 | 0.0               | 0.0             | 0.003     | A   |

## 17:45 - 18:00

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 115                   |                   |       | 115                 | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 264                   | 968               | 0.273 | 264                 | 0.5               | 0.4             | 5.159     | A   |
|          |     | Exit  | 1          | 1    |                  | 1433                  |                   |       | 1436                | 1.0               | 0.2             | 1.331     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 700                   | 935               | 0.748 | 704                 | 12.1              | 2.1             | 20.592    | C   |
|          |     |       |            | 2    | 1,2,4            | 702                   | 937               | 0.750 | 706                 | 12.0              | 2.2             | 20.803    | C   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1402                  |                   |       | 1402                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 464                   | 670               | 0.694 | 530                 | 26.0              | 9.3             | 113.311   | F   |
|          |     | Exit  | 1          | 1    |                  | 656                   |                   |       | 656                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 117                   | 839               | 0.139 | 117                 | 0.3               | 0.2             | 5.638     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 405                   | 798               | 0.508 | 405                 | 1.1               | 0.7             | 6.543     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 405                   | 798               | 0.507 | 405                 | 1.1               | 0.7             | 6.532     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 810                   |                   |       | 810                 | 0.0               | 0.0             | 0.001     | A   |
|          |     |       |            | 1    |                  | 1251                  |                   |       | 1251                | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 545               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 850                   |                   |       | 850                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 721                   | 891               | 0.809 | 722                 | 2.9               | 2.0             | 10.759    | B   |
|          |     |       |            | 2    | 2,3,4,5          | 717                   | 892               | 0.805 | 720                 | 2.7               | 2.0             | 10.838    | B   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1436                  |                   |       | 1439                | 1.1               | 0.3             | 1.540     | A   |
|          |     |       |            | 1    |                  | 264                   |                   |       | 264                 | 0.0               | 0.0             | 0.003     | A   |

18:00 - 18:15

| Junction | Arm | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|----------|-----|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1        | 1   | Exit  | 1          | 1    |                  | 91                    |                   |       | 91                  | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 1,2,4            | 221                   | 971               | 0.228 | 221                 | 0.4               | 0.3             | 4.867     | A   |
|          |     | Exit  | 1          | 1    |                  | 1153                  |                   |       | 1153                | 0.2               | 0.0             | 0.156     | A   |
|          | 3   | Entry | 1          | 1    | 1,2,4            | 588                   | 952               | 0.617 | 589                 | 2.1               | 1.0             | 6.938     | A   |
|          |     |       |            | 2    | 1,2,4            | 586                   | 952               | 0.616 | 588                 | 2.2               | 0.9             | 6.995     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4)        | 1174                  |                   |       | 1174                | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Entry | 1          | 1    | 1,2,4            | 394                   | 765               | 0.515 | 401                 | 9.3               | 1.1             | 20.471    | C   |
|          |     | Exit  | 1          | 1    |                  | 555                   |                   |       | 555                 | 0.0               | 0.0             | 0.000     | A   |
| 2        | 1   | Entry | 1          | 1    | 2,3,4,5          | 102                   | 1035              | 0.098 | 102                 | 0.2               | 0.1             | 4.278     | A   |
|          |     | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          | 2   | Entry | 1          | 1    | 2,3,4,5          | 332                   | 818               | 0.406 | 332                 | 0.7               | 0.6             | 5.740     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 333                   | 814               | 0.409 | 334                 | 0.7               | 0.5             | 5.685     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 665                   |                   |       | 665                 | 0.0               | 0.0             | 0.000     | A   |
|          |     |       |            | 1    |                  | 997                   |                   |       | 997                 | 0.0               | 0.0             | 0.000     | A   |
|          | 3   | Entry | 1          | 1    | 2,3,4,5          | 0                     | 644               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|          |     | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|          | 4   | Exit  | 1          | 1    |                  | 700                   |                   |       | 700                 | 0.0               | 0.0             | 0.000     | A   |
|          | 5   | Entry | 1          | 1    | 2,3,4,5          | 578                   | 892               | 0.648 | 578                 | 2.0               | 1.2             | 7.479     | A   |
|          |     |       |            | 2    | 2,3,4,5          | 575                   | 892               | 0.644 | 575                 | 2.0               | 1.1             | 7.552     | A   |
|          |     | Exit  | 1          | 1    | (1,2,3,4,5)      | 1153                  |                   |       | 1153                | 0.3               | 0.0             | 0.300     | A   |
|          |     |       |            | 1    |                  | 221                   |                   |       | 221                 | 0.0               | 0.0             | 0.000     | A   |

| Junctions 9                                                                                                                                                                 |  |  |  |  |  |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|--|--|--|--|
| ARCADY 9 - Roundabout Module                                                                                                                                                |  |  |  |  |  |  |  |
| Version: 9.0.1.4646 []<br>© Copyright TRL Limited, 2017                                                                                                                     |  |  |  |  |  |  |  |
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| The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution            |  |  |  |  |  |  |  |

Filename: 2021 Base + Dev + Mitigation using entry lane analysis.j9

Path: Z:\Projects\040-049\041 Barratt Homes\041.0025 Warblington Meadows, Havant\Reports\MODELLING\Modelling January 2017\A27 Roundabouts\2021 with dev + miti

Report generation date: 10/02/2017 11:29:48

»2021 + Dev + Mitigation - 2021 + Dev + Miti, AM

»2021 + Dev + Mitigation - 2021 + Dev + Miti, PM

### Summary of junction performance

|                                                               | AM          |           |     |     | PM          |           |     |     |
|---------------------------------------------------------------|-------------|-----------|-----|-----|-------------|-----------|-----|-----|
|                                                               | Queue (Veh) | Delay (s) | RFC | LOS | Queue (Veh) | Delay (s) | RFC | LOS |
| 2021 + Dev + Mitigation [Lane Simulation] - 2021 + Dev + Miti |             |           |     |     |             |           |     |     |
| 1 - A27/ Emsworth Road - 2 - Emsworth Road (S)                | 0.4         | 5.34      |     | A   | 0.5         | 5.57      |     | A   |
| 1 - A27/ Emsworth Road - 3 - A27 Off-Slip                     | 2.4         | 7.27      |     | A   | 9.6         | 20.04     |     | C   |
| 1 - A27/ Emsworth Road - 4 - untitled                         | 7.2         | 38.00     |     | E   | 12.3        | 72.98     |     | F   |
| 2 - A27/ Church Lane - 1 - A27 Off-Slip                       | 0.1         | 4.61      |     | A   | 0.2         | 6.13      |     | A   |
| 2 - A27/ Church Lane - 2 - Havant Road                        | 6.5         | 16.42     |     | C   | 1.7         | 6.13      |     | A   |
| 2 - A27/ Church Lane - 3 - Church Lane                        | 0.0         | 0.00      |     | A   | 0.0         | 0.00      |     | A   |
| 2 - A27/ Church Lane - 5 - Emsworth Road                      | 3.2         | 8.03      |     | A   | 4.6         | 9.93      |     | A   |

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

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Arm and junction delays are averages for all movements, including movements with zero delay.

### File summary

#### File Description

|             |                         |
|-------------|-------------------------|
| Title       | 2021 + Dev + Mitigation |
| Location    | A27 Roundabouts, Havant |
| Site number |                         |
| Date        | 31/10/2016              |
| Version     |                         |
| Status      | (new file)              |
| Identifier  |                         |
| Client      | Barratts                |
| Jobnumber   | 041.0039                |
| Enumerator  | Shannon                 |
| Description |                         |

### Units

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

## Analysis Options

| Vehicle length (m) | Calculate Queue Percentiles | Calculate detailed queueing delay | Calculate residual capacity | RFC Threshold | Average Delay threshold (s) | Queue threshold (PCU) |
|--------------------|-----------------------------|-----------------------------------|-----------------------------|---------------|-----------------------------|-----------------------|
| 5.75               |                             |                                   |                             | 0.85          | 36.00                       | 20.00                 |

## Lane Simulation options

| Stop criteria (%) | Stop criteria time (s) | Stop criteria number of trials | Random seed | Results refresh speed (s) | Individual vehicle animation number of trials | Use crossings quick response | Last run random seed | Last run number of trials | Last run time taken (s) |
|-------------------|------------------------|--------------------------------|-------------|---------------------------|-----------------------------------------------|------------------------------|----------------------|---------------------------|-------------------------|
| 1.00              | 100000                 | 100000                         | -1          | 3                         | 1                                             | ✓                            | 883473852            | 485                       | 184.20                  |

## Demand Set Summary

| ID | Scenario name     | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|-------------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2021 + Dev + Miti | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |
| D2 | 2021 + Dev + Miti | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

## Analysis Set Details

| ID | Name                    | Use Lane Simulation | Include in report | Network flow scaling factor (%) | Network capacity scaling factor (%) |
|----|-------------------------|---------------------|-------------------|---------------------------------|-------------------------------------|
| A1 | 2021 + Dev + Mitigation | ✓                   | ✓                 | 100.000                         | 100.000                             |

# 2021 + Dev + Mitigation - 2021 + Dev + Miti, AM

## Data Errors and Warnings

| Severity | Area            | Item                                           | Description                                                                                                                                                                                                         |
|----------|-----------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2021 + Dev + Mitigation [Lane Simulation] | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.                                                           |
| Warning  | Linked junction | 2 - A27/ Church Lane - 5 - Emsworth Road       | Linked arm: Junction 2 Arm 5 has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this) |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 16.66              | C            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 12.00              | B            |

### Junction Network Options

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

## Arms

### Arms

| Junction               | Arm | Name              | Description |
|------------------------|-----|-------------------|-------------|
| 1 - A27/ Emsworth Road | 1   | A27 On-Slip       |             |
|                        | 2   | Emsworth Road (S) |             |
|                        | 3   | A27 Off-Slip      |             |
|                        | 4   | untitled          |             |
| 2 - A27/ Church Lane   | 1   | A27 Off-Slip      |             |
|                        | 2   | Havant Road       |             |
|                        | 3   | Church Lane       |             |
|                        | 4   | A27 On-Slip       |             |
|                        | 5   | Emsworth Road     |             |

### Roundabout Geometry

| Junction               | Arm                   | V - Approach road half-width (m) | E - Entry width (m) | I' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit only |
|------------------------|-----------------------|----------------------------------|---------------------|---------------------------------|----------------------|-----------------------------------|------------------------------------|-----------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|                        | 2 - Emsworth Road (S) | 3.70                             | 3.70                | 0.0                             | 12.2                 | 35.0                              | 53.0                               |           |
|                        | 3 - A27 Off-Slip      | 7.30                             | 7.30                | 0.0                             | 24.3                 | 35.0                              | 49.0                               |           |
|                        | 4 - untitled          | 4.17                             | 5.20                | 0.5                             | 23.6                 | 35.0                              | 46.0                               |           |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 6.08                             | 6.08                | 0.0                             | 19.0                 | 40.0                              | 27.1                               |           |
|                        | 2 - Havant Road       | 6.00                             | 7.00                | 24.0                            | 13.0                 | 40.0                              | 26.5                               |           |
|                        | 3 - Church Lane       | 3.14                             | 6.18                | 4.0                             | 12.0                 | 40.0                              | 46.0                               |           |
|                        | 4 - A27 On-Slip       |                                  |                     |                                 |                      |                                   |                                    | ✓         |
|                        | 5 - Emsworth Road     | 6.00                             | 8.00                | 12.0                            | 15.0                 | 40.0                              | 48.9                               |           |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction               | Arm                   | Final slope | Final intercept (PCU/hr) |
|------------------------|-----------------------|-------------|--------------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |             |                          |
|                        | 2 - Emsworth Road (S) | 0.475       | 997                      |
|                        | 3 - A27 Off-Slip      | 0.712       | 2085                     |
|                        | 4 - untitled          | 0.544       | 1242                     |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 0.675       | 1856                     |
|                        | 2 - Havant Road       | 0.709       | 2056                     |
|                        | 3 - Church Lane       | 0.498       | 1112                     |
|                        | 4 - A27 On-Slip       |             |                          |
|                        | 5 - Emsworth Road     | 0.683       | 2032                     |

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

### Lane Simulation: Arm options

| Junction               | Arm                   | Lane capacity source | Traffic Considering Secondary Lanes (%) |
|------------------------|-----------------------|----------------------|-----------------------------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Evenly split         | 10.00                                   |
|                        | 2 - Emsworth Road (S) | Evenly split         | 10.00                                   |
|                        | 3 - A27 Off-Slip      | Evenly split         | 10.00                                   |
|                        | 4 - untitled          | Evenly split         | 10.00                                   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Evenly split         | 10.00                                   |
|                        | 2 - Havant Road       | Evenly split         | 10.00                                   |
|                        | 3 - Church Lane       | Evenly split         | 10.00                                   |
|                        | 4 - A27 On-Slip       | Evenly split         | 10.00                                   |
|                        | 5 - Emsworth Road     | Evenly split         | 10.00                                   |

### Lanes

| Junction               | Arm                   | Lane level        | Lane | Destination arms | Has limited storage | Storage (PCU) | Minimum capacity (PCU/hr) | Maximum capacity (PCU/hr) |
|------------------------|-----------------------|-------------------|------|------------------|---------------------|---------------|---------------------------|---------------------------|
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 7.00          | 0                         | 99999                     |
|                        | 3 - A27 Off-Slip      | 1 [Give-way line] | 1    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|                        |                       |                   | 2    | 1,2,4            | ✓                   | 58.00         | 0                         | 99999                     |
|                        |                       | 2                 | 1    | (1,2,3,4)        |                     | Infinity      |                           |                           |
| 2 - A27/ Church Lane   | 4 - untitled          | 1 [Give-way line] | 1    | 1,2,4            |                     | Infinity      | 0                         | 99999                     |
|                        | 1 - A27 Off-Slip      | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|                        | 2 - Havant Road       | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 10.43         | 0                         | 99999                     |
|                        |                       |                   | 2    | 2,3,4,5          | ✓                   | 9.57          | 0                         | 99999                     |
|                        |                       | 2                 | 1    | (1,2,3,4,5)      |                     | Infinity      |                           |                           |
|                        | 3 - Church Lane       | 1 [Give-way line] | 1    | 2,3,4,5          |                     | Infinity      | 0                         | 99999                     |
|                        | 5 - Emsworth Road     | 1 [Give-way line] | 1    | 2,3,4,5          | ✓                   | 13.00         | 0                         | 99999                     |
|                        |                       |                   | 2    | 2,3,4,5          | ✓                   | 13.00         | 0                         | 99999                     |

### Entry Lane slope and intercept

| Junction               | Arm                   | Lane level        | Lane | Final slope | Final intercept (PCU/hr) |
|------------------------|-----------------------|-------------------|------|-------------|--------------------------|
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 1 [Give-way line] | 1    | 0.475       | 997                      |
|                        | 3 - A27 Off-Slip      | 1 [Give-way line] | 1    | 0.356       | 1043                     |
|                        |                       |                   | 2    | 0.356       | 1043                     |
|                        | 4 - untitled          | 1 [Give-way line] | 1    | 0.544       | 1242                     |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 1 [Give-way line] | 1    | 0.675       | 1856                     |
|                        | 2 - Havant Road       | 1 [Give-way line] | 1    | 0.354       | 1028                     |
|                        |                       |                   | 2    | 0.354       | 1028                     |
|                        | 3 - Church Lane       | 1 [Give-way line] | 1    | 0.498       | 1112                     |
|                        | 5 - Emsworth Road     | 1 [Give-way line] | 1    | 0.342       | 1016                     |
|                        |                       |                   | 2    | 0.342       | 1016                     |

### Lane Movements

| Junction               | Arm                   | Lane Level        | Lane | Destination arm |                   |              |          |
|------------------------|-----------------------|-------------------|------|-----------------|-------------------|--------------|----------|
|                        |                       |                   |      | A27 On-Slip     | Emsworth Road (S) | A27 Off-Slip | untitled |
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 1 [Give-way line] | 1    | ✓               | ✓                 |              | ✓        |
|                        | 3 - A27 Off-Slip      | 1 [Give-way line] | 1    | ✓               | ✓                 |              | ✓        |
|                        |                       |                   | 2    | ✓               | ✓                 |              | ✓        |
|                        |                       | 2                 | 1    | ✓               | ✓                 | ✓            | ✓        |
|                        | 4 - untitled          | 1 [Give-way line] | 1    | ✓               | ✓                 |              | ✓        |

### Lane Movements

| Junction             | Arm               | Lane Level        | Lane | Destination arm |             |             |             |               |
|----------------------|-------------------|-------------------|------|-----------------|-------------|-------------|-------------|---------------|
|                      |                   |                   |      | A27 Off-Slip    | Havant Road | Church Lane | A27 On-Slip | Emsworth Road |
| 2 - A27/ Church Lane | 1 - A27 Off-Slip  | 1 [Give-way line] | 1    |                 | ✓           | ✓           | ✓           | ✓             |
|                      | 2 - Havant Road   | 1 [Give-way line] | 1    |                 | ✓           | ✓           | ✓           | ✓             |
|                      |                   |                   | 2    |                 | ✓           | ✓           | ✓           | ✓             |
|                      |                   | 2                 | 1    | ✓               | ✓           | ✓           | ✓           | ✓             |
|                      | 3 - Church Lane   | 1 [Give-way line] | 1    |                 | ✓           | ✓           | ✓           | ✓             |
|                      | 5 - Emsworth Road | 1 [Give-way line] | 1    |                 | ✓           | ✓           | ✓           | ✓             |
|                      |                   |                   | 2    |                 | ✓           | ✓           | ✓           | ✓             |

## Traffic Demand

### Demand Set Details

| ID | Scenario name     | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|-------------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D1 | 2021 + Dev + Miti | AM               | ONE HOUR             | 07:45              | 09:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction               | Arm                   | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|------------------------|-----------------------|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2 - A27/ Church Lane   | 5 - Emsworth Road     | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction               | Arm                   | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|------------------------|-----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |            |              |              |                         |                    |
|                        | 2 - Emsworth Road (S) | ✓          |              |              |                         |                    |
|                        | 3 - A27 Off-Slip      |            | ONE HOUR     | ✓            | 1036                    | 100.000            |
|                        | 4 - untitled          |            | ONE HOUR     | ✓            | 601                     | 100.000            |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      |            | ONE HOUR     | ✓            | 73                      | 100.000            |
|                        | 2 - Havant Road       |            | ONE HOUR     | ✓            | 1268                    | 100.000            |
|                        | 3 - Church Lane       |            | ONE HOUR     | ✓            | 4                       | 100.000            |
|                        | 4 - A27 On-Slip       |            |              |              |                         |                    |
|                        | 5 - Emsworth Road     | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### 1 - A27/ Emsworth Road

|      | To                    |                 |                       |                  |              |
|------|-----------------------|-----------------|-----------------------|------------------|--------------|
|      |                       | 1 - A27 On-Slip | 2 - Emsworth Road (S) | 3 - A27 Off-Slip | 4 - untitled |
| From | 1 - A27 On-Slip       | Exit-only       | Exit-only             | Exit-only        | Exit-only    |
|      | 2 - Emsworth Road (S) | 28              | 0                     | 0                | 277          |
|      | 3 - A27 Off-Slip      | 2               | 721                   | 0                | 313          |
|      | 4 - untitled          | 52              | 548                   | 0                | 1            |

### Demand (Veh/hr)

#### 2 - A27/ Church Lane

|      | To                |                  |                 |                 |                 |                   |
|------|-------------------|------------------|-----------------|-----------------|-----------------|-------------------|
|      |                   | 1 - A27 Off-Slip | 2 - Havant Road | 3 - Church Lane | 4 - A27 On-Slip | 5 - Emsworth Road |
| From | 1 - A27 Off-Slip  | 0                | 32              | 0               | 2               | 39                |
|      | 2 - Havant Road   | 0                | 2               | 1               | 1038            | 227               |
|      | 3 - Church Lane   | 0                | 0               | 0               | 3               | 1                 |
|      | 4 - A27 On-Slip   | Exit-only        | Exit-only       | Exit-only       | Exit-only       | Exit-only         |
|      | 5 - Emsworth Road | 0                | 884             | 4               | 374             | 1                 |

## Vehicle Mix

### Heavy Vehicle Percentages

#### 1 - A27/ Emsworth Road

|      | To                    |                 |                       |                  |              |
|------|-----------------------|-----------------|-----------------------|------------------|--------------|
|      |                       | 1 - A27 On-Slip | 2 - Emsworth Road (S) | 3 - A27 Off-Slip | 4 - untitled |
| From | 1 - A27 On-Slip       | Exit-only       | Exit-only             | Exit-only        | Exit-only    |
|      | 2 - Emsworth Road (S) | 5               | 0                     | 0                | 2            |
|      | 3 - A27 Off-Slip      | 50              | 4                     | 0                | 3            |
|      | 4 - untitled          | 4               | 3                     | 0                | 0            |

### Heavy Vehicle Percentages

#### 2 - A27/ Church Lane

|      | To                |                  |                 |                 |                 |                   |
|------|-------------------|------------------|-----------------|-----------------|-----------------|-------------------|
|      |                   | 1 - A27 Off-Slip | 2 - Havant Road | 3 - Church Lane | 4 - A27 On-Slip | 5 - Emsworth Road |
| From | 1 - A27 Off-Slip  | 0                | 0               | 0               | 0               | 0                 |
|      | 2 - Havant Road   | 0                | 0               | 0               | 3               | 2                 |
|      | 3 - Church Lane   | 0                | 0               | 0               | 0               | 0                 |
|      | 4 - A27 On-Slip   | Exit-only        | Exit-only       | Exit-only       | Exit-only       | Exit-only         |
|      | 5 - Emsworth Road | 0                | 2               | 0               | 2               | 0                 |

## Results

### Results Summary for whole modelled period

| Junction               | Arm                   | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|------------------------|-----------------------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |               |                 |         |                         |                               |
|                        | 2 - Emsworth Road (S) | 5.34          | 0.4             | A       | 246                     | 369                           |
|                        | 3 - A27 Off-Slip      | 7.27          | 2.4             | A       | 950                     | 1425                          |
|                        | 4 - untitled          | 38.00         | 7.2             | E       | 550                     | 825                           |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 4.61          | 0.1             | A       | 68                      | 101                           |
|                        | 2 - Havant Road       | 16.42         | 6.5             | C       | 1164                    | 1746                          |
|                        | 3 - Church Lane       | 0.00          | 0.0             | A       | 0                       | 0                             |
|                        | 4 - A27 On-Slip       |               |                 |         |                         |                               |
|                        | 5 - Emsworth Road     | 8.03          | 3.2             | A       | 1162                    | 1744                          |

## Main Results for each time segment

### 07:45 - 08:00

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 59                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 202                   | 50                      | 0.67                      | 202                 | 956                             | 0.0               | 0.3             | 4.693     | A   |
|                        | 3 - A27 Off-Slip      | 778                   | 195                     | 202                       | 780                 | 0                               | 0.0               | 1.0             | 4.893     | A   |
|                        | 4 - untitled          | 451                   | 113                     | 564                       | 451                 | 419                             | 0.0               | 1.1             | 7.447     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 55                    | 14                      | 957                       | 55                  | 0                               | 0.0               | 0.1             | 2.931     | A   |
|                        | 2 - Havant Road       | 953                   | 238                     | 318                       | 951                 | 693                             | 0.0               | 1.8             | 5.963     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1266                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1063                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 956                   | 239                     | 2                         | 955                 | 202                             | 0.0               | 1.3             | 5.090     | A   |

### 08:00 - 08:15

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 69                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 238                   | 60                      | 0.79                      | 238                 | 1140                            | 0.3               | 0.3             | 4.801     | A   |
|                        | 3 - A27 Off-Slip      | 937                   | 234                     | 238                       | 937                 | 0                               | 1.0               | 1.4             | 5.662     | A   |
|                        | 4 - untitled          | 536                   | 134                     | 672                       | 538                 | 503                             | 1.1               | 2.0             | 12.188    | B   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 66                    | 16                      | 1143                      | 65                  | 0                               | 0.1               | 0.1             | 3.641     | A   |
|                        | 2 - Havant Road       | 1132                  | 283                     | 381                       | 1137                | 827                             | 1.8               | 2.4             | 7.911     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1514                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1274                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1140                  | 285                     | 2                         | 1141                | 238                             | 1.3               | 1.9             | 5.949     | A   |

### 08:15 - 08:30

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 87                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 295                   | 74                      | 0.96                      | 296                 | 1388                            | 0.3               | 0.4             | 5.342     | A   |
|                        | 3 - A27 Off-Slip      | 1137                  | 284                     | 297                       | 1137                | 0                               | 1.4               | 2.4             | 7.222     | A   |
|                        | 4 - untitled          | 661                   | 165                     | 823                       | 653                 | 611                             | 2.0               | 7.2             | 30.863    | D   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 81                    | 20                      | 1389                      | 81                  | 0                               | 0.1               | 0.1             | 4.293     | A   |
|                        | 2 - Havant Road       | 1396                  | 349                     | 467                       | 1395                | 1003                            | 2.4               | 6.2             | 14.216    | B   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1857                      | 0                   | 5                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1560                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1388                  | 347                     | 2                         | 1387                | 295                             | 1.9               | 3.0             | 7.827     | A   |

### 08:30 - 08:45

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 85                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 296                   | 74                      | 1                         | 296                 | 1392                            | 0.4               | 0.4             | 5.248     | A   |
|                        | 3 - A27 Off-Slip      | 1141                  | 285                     | 297                       | 1141                | 0                               | 2.4               | 2.3             | 7.268     | A   |
|                        | 4 - untitled          | 653                   | 163                     | 824                       | 654                 | 614                             | 7.2               | 6.8             | 38.003    | E   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 82                    | 21                      | 1393                      | 83                  | 0                               | 0.1               | 0.1             | 4.615     | A   |
|                        | 2 - Havant Road       | 1397                  | 349                     | 461                       | 1403                | 1014                            | 6.2               | 6.5             | 16.420    | C   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1858                      | 0                   | 6                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1560                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1392                  | 348                     | 2                         | 1391                | 296                             | 3.0               | 3.1             | 8.027     | A   |

### 08:45 - 09:00

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 70                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 241                   | 60                      | 1                         | 241                 | 1143                            | 0.4               | 0.3             | 4.925     | A   |
|                        | 3 - A27 Off-Slip      | 930                   | 232                     | 242                       | 931                 | 0                               | 2.3               | 1.4             | 5.688     | A   |
|                        | 4 - untitled          | 544                   | 136                     | 670                       | 545                 | 504                             | 6.8               | 2.0             | 17.638    | C   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 68                    | 17                      | 1145                      | 68                  | 0                               | 0.1               | 0.1             | 3.895     | A   |
|                        | 2 - Havant Road       | 1147                  | 287                     | 383                       | 1142                | 830                             | 6.5               | 2.7             | 8.943     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1521                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1278                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1143                  | 286                     | 2                         | 1143                | 241                             | 3.1               | 1.9             | 6.324     | A   |

### 09:00 - 09:15

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 58                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 202                   | 51                      | 0.62                      | 202                 | 955                             | 0.3               | 0.3             | 4.601     | A   |
|                        | 3 - A27 Off-Slip      | 776                   | 194                     | 203                       | 779                 | 0                               | 1.4               | 1.0             | 4.974     | A   |
|                        | 4 - untitled          | 453                   | 113                     | 561                       | 452                 | 421                             | 2.0               | 1.1             | 8.620     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 54                    | 13                      | 957                       | 54                  | 0                               | 0.1               | 0.0             | 3.270     | A   |
|                        | 2 - Havant Road       | 959                   | 240                     | 316                       | 960                 | 695                             | 2.7               | 1.6             | 6.217     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1272                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 1068                            |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 955                   | 239                     | 2                         | 956                 | 202                             | 1.9               | 1.3             | 5.171     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 07:45 - 08:00

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 59                    |                   |       | 59                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 202                   | 976               | 0.207 | 202                 | 0.0               | 0.3             | 4.693     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 956                   |                   |       | 956                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 389                   | 934               | 0.417 | 390                 | 0.0               | 0.5             | 4.895     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 389                   | 935               | 0.416 | 390                 | 0.0               | 0.5             | 4.892     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4)        | 778                   |                   |       | 778                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 451                   | 896               | 0.504 | 451                 | 0.0               | 1.1             | 7.447     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 419                   |                   |       | 419                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 55                    | 1188              | 0.046 | 55                  | 0.0               | 0.1             | 2.931     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 477                   | 887               | 0.538 | 476                 | 0.0               | 0.9             | 5.969     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 475                   | 887               | 0.536 | 475                 | 0.0               | 0.8             | 5.956     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4,5)      | 953                   |                   |       | 953                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 693                   |                   |       | 693                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 464               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1063                  |                   |       | 1063                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 479                   | 981               | 0.489 | 478                 | 0.0               | 0.7             | 5.062     | A   |
|                        |                       | Exit  |            | 1    | 2,3,4,5          | 477                   | 982               | 0.485 | 477                 | 0.0               | 0.7             | 5.118     | A   |
|                        |                       |       | 1          | 1    |                  | 202                   |                   |       | 202                 | 0.0               | 0.0             | 0.000     | A   |

08:00 - 08:15

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 69                    |                   |       | 69                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 238                   | 979               | 0.243 | 238                 | 0.3               | 0.3             | 4.801     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1140                  |                   |       | 1140                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 469                   | 919               | 0.510 | 469                 | 0.5               | 0.7             | 5.663     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 468                   | 921               | 0.508 | 468                 | 0.5               | 0.7             | 5.662     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 937                   |                   |       | 937                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 536                   | 835               | 0.642 | 538                 | 1.1               | 2.0             | 12.188    | B   |
|                        |                       | Exit  | 1          | 1    |                  | 503                   |                   |       | 503                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 66                    | 1056              | 0.062 | 65                  | 0.1               | 0.1             | 3.641     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 568                   | 865               | 0.657 | 570                 | 0.9               | 1.2             | 7.930     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 564                   | 864               | 0.653 | 567                 | 0.8               | 1.2             | 7.870     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1132                  |                   |       | 1132                | 0.0               | 0.0             | 0.010     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 827                   |                   |       | 827                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 336               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1274                  |                   |       | 1274                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 570                   | 979               | 0.582 | 570                 | 0.7               | 1.0             | 5.964     | A   |
|                        |                       | Exit  |            | 2    | 2,3,4,5          | 570                   | 980               | 0.583 | 572                 | 0.7               | 0.9             | 5.934     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 238                   |                   |       | 238                 | 0.0               | 0.0             | 0.000     | A   |

08:15 - 08:30

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 87                    |                   |       | 87                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 295                   | 978               | 0.302 | 296                 | 0.3               | 0.4             | 5.342     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1388                  |                   |       | 1388                | 0.0               | 0.0             | 0.001     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 569                   | 903               | 0.630 | 568                 | 0.7               | 1.2             | 7.189     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 568                   | 900               | 0.631 | 569                 | 0.7               | 1.2             | 7.256     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1137                  |                   |       | 1137                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 661                   | 753               | 0.878 | 653                 | 2.0               | 7.2             | 30.863    | D   |
|                        |                       | Exit  | 1          | 1    |                  | 611                   |                   |       | 611                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 81                    | 885               | 0.092 | 81                  | 0.1               | 0.1             | 4.293     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 700                   | 833               | 0.840 | 700                 | 1.2               | 2.9             | 13.731    | B   |
|                        |                       |       |            | 2    | 2,3,4,5          | 695                   | 834               | 0.834 | 695                 | 1.2               | 2.9             | 13.574    | B   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1396                  |                   |       | 1395                | 0.0               | 0.4             | 0.534     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1003                  |                   |       | 1003                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 162               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 5                     |                   |       | 5                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1560                  |                   |       | 1560                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 694                   | 980               | 0.708 | 693                 | 1.0               | 1.5             | 7.816     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 694                   | 982               | 0.707 | 694                 | 0.9               | 1.5             | 7.838     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 295                   |                   |       | 295                 | 0.0               | 0.0             | 0.006     | A   |

08:30 - 08:45

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 85                    |                   |       | 85                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 296                   | 977               | 0.303 | 296                 | 0.4               | 0.4             | 5.248     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1392                  |                   |       | 1392                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 572                   | 902               | 0.635 | 573                 | 1.2               | 1.1             | 7.260     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 569                   | 901               | 0.632 | 568                 | 1.2               | 1.2             | 7.277     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1141                  |                   |       | 1141                | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Entry | 1          | 1    | 1,2,4            | 653                   | 752               | 0.868 | 654                 | 7.2               | 6.8             | 38.003    | E   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Exit  | 1          | 1    |                  | 614                   |                   |       | 614                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Entry | 1          | 1    | 2,3,4,5          | 82                    | 882               | 0.093 | 83                  | 0.1               | 0.1             | 4.615     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 694                   | 834               | 0.832 | 695                 | 2.9               | 3.1             | 15.674    | C   |
|                        |                       |       |            | 2    | 2,3,4,5          | 707                   | 837               | 0.844 | 707                 | 2.9               | 3.1             | 15.275    | C   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1397                  |                   |       | 1400                | 0.4               | 0.2             | 0.957     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1014                  |                   |       | 1014                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 160               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 6                     |                   |       | 6                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1560                  |                   |       | 1560                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 696                   | 979               | 0.710 | 695                 | 1.5               | 1.6             | 8.009     | A   |
|                        |                       | Exit  |            | 2    | 2,3,4,5          | 696                   | 981               | 0.709 | 696                 | 1.5               | 1.5             | 8.046     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 296                   |                   |       | 296                 | 0.0               | 0.0             | 0.002     | A   |

08:45 - 09:00

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 70                    |                   |       | 70                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 241                   | 980               | 0.246 | 241                 | 0.4               | 0.3             | 4.925     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1143                  |                   |       | 1143                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 463                   | 921               | 0.503 | 463                 | 1.1               | 0.7             | 5.710     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 467                   | 920               | 0.508 | 468                 | 1.2               | 0.7             | 5.666     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 930                   |                   |       | 930                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Entry | 1          | 1    | 1,2,4            | 544                   | 837               | 0.649 | 545                 | 6.8               | 2.0             | 17.638    | C   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Exit  | 1          | 1    |                  | 504                   |                   |       | 504                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Entry | 1          | 1    | 2,3,4,5          | 68                    | 1056              | 0.065 | 68                  | 0.1               | 0.1             | 3.895     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 572                   | 864               | 0.662 | 570                 | 3.1               | 1.4             | 8.956     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 575                   | 863               | 0.666 | 573                 | 3.1               | 1.3             | 8.876     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 1147                  |                   |       | 1147                | 0.2               | 0.0             | 0.052     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 830                   |                   |       | 830                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 333               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1278                  |                   |       | 1278                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 571                   | 980               | 0.582 | 570                 | 1.6               | 0.9             | 6.354     | A   |
|                        |                       | Exit  |            | 2    | 2,3,4,5          | 572                   | 981               | 0.583 | 572                 | 1.5               | 0.9             | 6.296     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 241                   |                   |       | 241                 | 0.0               | 0.0             | 0.000     | A   |

09:00 - 09:15

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 58                    |                   |       | 58                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 202                   | 977               | 0.207 | 202                 | 0.3               | 0.3             | 4.601     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 955                   |                   |       | 955                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 388                   | 935               | 0.416 | 390                 | 0.7               | 0.5             | 4.972     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 388                   | 933               | 0.416 | 389                 | 0.7               | 0.5             | 4.975     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 776                   |                   |       | 776                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 453                   | 898               | 0.505 | 452                 | 2.0               | 1.1             | 8.620     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 421                   |                   |       | 421                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 54                    | 1187              | 0.045 | 54                  | 0.1               | 0.0             | 3.270     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 482                   | 888               | 0.543 | 482                 | 1.4               | 0.8             | 6.193     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 478                   | 886               | 0.539 | 478                 | 1.3               | 0.8             | 6.242     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 959                   |                   |       | 959                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 695                   |                   |       | 695                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 460               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 1068                  |                   |       | 1068                | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 477                   | 981               | 0.487 | 477                 | 0.9               | 0.7             | 5.181     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 478                   | 982               | 0.487 | 479                 | 0.9               | 0.6             | 5.161     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 202                   |                   |       | 202                 | 0.0               | 0.0             | 0.000     | A   |

# 2021 + Dev + Mitigation - 2021 + Dev + Miti, PM

## Data Errors and Warnings

| Severity | Area            | Item                                           | Description                                                                                                                                                                                                         |
|----------|-----------------|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Warning  | Lane Simulation | A1 - 2021 + Dev + Mitigation [Lane Simulation] | This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.                                                           |
| Warning  | Linked junction | 2 - A27/ Church Lane - 5 - Emsworth Road       | Linked arm: Junction 2 Arm 5 has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this) |

## Junction Network

### Junctions

| Junction | Name               | Junction Type       | Arm order | Junction Delay (s) | Junction LOS |
|----------|--------------------|---------------------|-----------|--------------------|--------------|
| 1        | A27/ Emsworth Road | Standard Roundabout | 1,2,3,4   | 29.88              | D            |
| 2        | A27/ Church Lane   | Standard Roundabout | 1,2,3,4,5 | 8.38               | A            |

### Junction Network Options

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

## Traffic Demand

### Demand Set Details

| ID | Scenario name     | Time Period name | Traffic profile type | Start time (HH:mm) | Finish time (HH:mm) | Time segment length (min) | Run automatically |
|----|-------------------|------------------|----------------------|--------------------|---------------------|---------------------------|-------------------|
| D2 | 2021 + Dev + Miti | PM               | ONE HOUR             | 16:45              | 18:15               | 15                        | ✓                 |

| Vehicle mix varies over turn | Vehicle mix varies over entry | Vehicle mix source | PCU Factor for a HV (PCU) |
|------------------------------|-------------------------------|--------------------|---------------------------|
| ✓                            | ✓                             | HV Percentages     | 2.00                      |

### Linked Arm Data

| Junction               | Arm                   | Feeding Junction | Feeding Arm | Link Type                  | Flow source | Uniform flow (Veh/hr) | Flow multiplier (%) | Internal storage space (PCU) |
|------------------------|-----------------------|------------------|-------------|----------------------------|-------------|-----------------------|---------------------|------------------------------|
| 1 - A27/ Emsworth Road | 2 - Emsworth Road (S) | 2                | 5           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |
| 2 - A27/ Church Lane   | 5 - Emsworth Road     | 1                | 2           | Simple (vertical queueing) | Normal      | 0                     | 100.00              |                              |

### Demand overview (Traffic)

| Junction               | Arm                   | Linked arm | Profile type | Use O-D data | Average Demand (Veh/hr) | Scaling Factor (%) |
|------------------------|-----------------------|------------|--------------|--------------|-------------------------|--------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |            |              |              |                         |                    |
|                        | 2 - Emsworth Road (S) | ✓          |              |              |                         |                    |
|                        | 3 - A27 Off-Slip      |            | ONE HOUR     | ✓            | 1479                    | 100.000            |
|                        | 4 - untitled          |            | ONE HOUR     | ✓            | 499                     | 100.000            |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      |            | ONE HOUR     | ✓            | 128                     | 100.000            |
|                        | 2 - Havant Road       |            | ONE HOUR     | ✓            | 857                     | 100.000            |
|                        | 3 - Church Lane       |            | ONE HOUR     | ✓            | 0                       | 100.000            |
|                        | 4 - A27 On-Slip       |            |              |              |                         |                    |
|                        | 5 - Emsworth Road     | ✓          |              |              |                         |                    |

## Origin-Destination Data

### Demand (Veh/hr)

#### 1 - A27/ Emsworth Road

|      | To                    |                 |                       |                  |              |
|------|-----------------------|-----------------|-----------------------|------------------|--------------|
|      |                       | 1 - A27 On-Slip | 2 - Emsworth Road (S) | 3 - A27 Off-Slip | 4 - untitled |
| From | 1 - A27 On-Slip       | Exit-only       | Exit-only             | Exit-only        | Exit-only    |
|      | 2 - Emsworth Road (S) | 34              | 0                     | 0                | 269          |
|      | 3 - A27 Off-Slip      | 9               | 1028                  | 0                | 442          |
|      | 4 - untitled          | 72              | 426                   | 0                | 1            |

### Demand (Veh/hr)

#### 2 - A27/ Church Lane

|      | To                |                  |                 |                 |                 |                   |
|------|-------------------|------------------|-----------------|-----------------|-----------------|-------------------|
|      |                   | 1 - A27 Off-Slip | 2 - Havant Road | 3 - Church Lane | 4 - A27 On-Slip | 5 - Emsworth Road |
| From | 1 - A27 Off-Slip  | 0                | 45              | 0               | 0               | 83                |
|      | 2 - Havant Road   | 0                | 2               | 2               | 658             | 195               |
|      | 3 - Church Lane   | 0                | 0               | 0               | 0               | 0                 |
|      | 4 - A27 On-Slip   | Exit-only        | Exit-only       | Exit-only       | Exit-only       | Exit-only         |
|      | 5 - Emsworth Road | 0                | 1224            | 2               | 231             | 1                 |

## Vehicle Mix

### Heavy Vehicle Percentages

#### 1 - A27/ Emsworth Road

|      | To                    |                 |                       |                  |              |
|------|-----------------------|-----------------|-----------------------|------------------|--------------|
|      |                       | 1 - A27 On-Slip | 2 - Emsworth Road (S) | 3 - A27 Off-Slip | 4 - untitled |
| From | 1 - A27 On-Slip       | Exit-only       | Exit-only             | Exit-only        | Exit-only    |
|      | 2 - Emsworth Road (S) | 4               | 0                     | 0                | 2            |
|      | 3 - A27 Off-Slip      | 0               | 1                     | 0                | 1            |
|      | 4 - untitled          | 0               | 2                     | 0                | 0            |

### Heavy Vehicle Percentages

#### 2 - A27/ Church Lane

|      | To                |                  |                 |                 |                 |                   |
|------|-------------------|------------------|-----------------|-----------------|-----------------|-------------------|
|      |                   | 1 - A27 Off-Slip | 2 - Havant Road | 3 - Church Lane | 4 - A27 On-Slip | 5 - Emsworth Road |
| From | 1 - A27 Off-Slip  | 0                | 3               | 0               | 0               | 4                 |
|      | 2 - Havant Road   | 0                | 0               | 0               | 2               | 3                 |
|      | 3 - Church Lane   | 0                | 0               | 0               | 0               | 0                 |
|      | 4 - A27 On-Slip   | Exit-only        | Exit-only       | Exit-only       | Exit-only       | Exit-only         |
|      | 5 - Emsworth Road | 0                | 1               | 0               | 1               | 0                 |

## Results

### Results Summary for whole modelled period

| Junction               | Arm                   | Max delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) |
|------------------------|-----------------------|---------------|-----------------|---------|-------------------------|-------------------------------|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |               |                 |         |                         |                               |
|                        | 2 - Emsworth Road (S) | 5.57          | 0.5             | A       | 257                     | 385                           |
|                        | 3 - A27 Off-Slip      | 20.04         | 9.6             | C       | 1354                    | 2031                          |
|                        | 4 - untitled          | 72.98         | 12.3            | F       | 454                     | 681                           |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 6.13          | 0.2             | A       | 118                     | 177                           |
|                        | 2 - Havant Road       | 6.13          | 1.7             | A       | 787                     | 1180                          |
|                        | 3 - Church Lane       | 0.00          | 0.0             | A       | 0                       | 0                             |
|                        | 4 - A27 On-Slip       |               |                 |         |                         |                               |
|                        | 5 - Emsworth Road     | 9.93          | 4.6             | A       | 1325                    | 1987                          |

## Main Results for each time segment

### 16:45 - 17:00

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 83                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 214                   | 54                      | 0.71                      | 214                 | 1092                            | 0.0               | 0.3             | 4.730     | A   |
|                        | 3 - A27 Off-Slip      | 1107                  | 277                     | 215                       | 1109                | 0                               | 0.0               | 1.7             | 5.929     | A   |
|                        | 4 - untitled          | 375                   | 94                      | 799                       | 376                 | 524                             | 0.0               | 0.8             | 7.828     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 97                    | 24                      | 1091                      | 97                  | 0                               | 0.0               | 0.1             | 3.364     | A   |
|                        | 2 - Havant Road       | 654                   | 163                     | 237                       | 652                 | 951                             | 0.0               | 0.9             | 4.588     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 886                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 670                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1092                  | 273                     | 2                         | 1090                | 214                             | 0.0               | 1.8             | 5.460     | A   |

### 17:00 - 17:15

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 96                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 255                   | 64                      | 0.89                      | 255                 | 1305                            | 0.3               | 0.4             | 5.170     | A   |
|                        | 3 - A27 Off-Slip      | 1328                  | 332                     | 255                       | 1329                | 0                               | 1.7               | 2.8             | 8.168     | A   |
|                        | 4 - untitled          | 438                   | 110                     | 961                       | 441                 | 624                             | 0.8               | 1.7             | 13.798    | B   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 117                   | 29                      | 1310                      | 117                 | 0                               | 0.1               | 0.1             | 4.230     | A   |
|                        | 2 - Havant Road       | 766                   | 191                     | 286                       | 766                 | 1140                            | 0.9               | 1.1             | 5.108     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1048                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 791                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1305                  | 326                     | 2                         | 1308                | 255                             | 1.8               | 2.3             | 6.626     | A   |

### 17:15 - 17:30

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 120                             |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 309                   | 77                      | 0.82                      | 308                 | 1580                            | 0.4               | 0.5             | 5.432     | A   |
|                        | 3 - A27 Off-Slip      | 1627                  | 407                     | 309                       | 1618                | 0                               | 2.8               | 9.1             | 16.878    | C   |
|                        | 4 - untitled          | 550                   | 137                     | 1165                      | 536                 | 762                             | 1.7               | 8.7             | 42.109    | E   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 144                   | 36                      | 1586                      | 144                 | 0                               | 0.1               | 0.2             | 5.644     | A   |
|                        | 2 - Havant Road       | 946                   | 236                     | 351                       | 947                 | 1380                            | 1.1               | 1.5             | 6.029     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1294                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 983                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1580                  | 395                     | 2                         | 1584                | 309                             | 2.3               | 4.2             | 9.583     | A   |

### 17:30 - 17:45

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 118                             |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 305                   | 76                      | 1                         | 306                 | 1595                            | 0.5               | 0.4             | 5.568     | A   |
|                        | 3 - A27 Off-Slip      | 1633                  | 408                     | 307                       | 1623                | 0                               | 9.1               | 9.5             | 20.042    | C   |
|                        | 4 - untitled          | 548                   | 137                     | 1175                      | 539                 | 755                             | 8.7               | 12.2            | 72.985    | F   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 140                   | 35                      | 1596                      | 140                 | 0                               | 0.2               | 0.2             | 6.128     | A   |
|                        | 2 - Havant Road       | 945                   | 236                     | 344                       | 943                 | 1392                            | 1.5               | 1.6             | 6.134     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1283                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 975                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1595                  | 399                     | 2                         | 1594                | 305                             | 4.2               | 4.6             | 9.925     | A   |

### 17:45 - 18:00

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 102                             |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 248                   | 62                      | 0.75                      | 247                 | 1298                            | 0.4               | 0.4             | 4.980     | A   |
|                        | 3 - A27 Off-Slip      | 1324                  | 331                     | 248                       | 1326                | 0                               | 9.5               | 3.0             | 9.538     | A   |
|                        | 4 - untitled          | 443                   | 111                     | 951                       | 449                 | 622                             | 12.2              | 1.9             | 34.788    | D   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 115                   | 29                      | 1304                      | 114                 | 0                               | 0.2               | 0.1             | 4.835     | A   |
|                        | 2 - Havant Road       | 768                   | 192                     | 285                       | 768                 | 1133                            | 1.6               | 1.1             | 5.280     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 1049                      | 0                   | 4                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 799                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1298                  | 324                     | 2                         | 1301                | 248                             | 4.6               | 2.4             | 7.476     | A   |

### 18:00 - 18:15

| Junction               | Arm                   | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Circulating flow (Veh/hr) | Throughput (Veh/hr) | Throughput (exit side) (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-----------------------|-------------------------|---------------------------|---------------------|---------------------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       |                       |                         | 0                         |                     | 84                              |                   |                 |           |     |
|                        | 2 - Emsworth Road (S) | 208                   | 52                      | 0.78                      | 208                 | 1079                            | 0.4               | 0.3             | 4.790     | A   |
|                        | 3 - A27 Off-Slip      | 1104                  | 276                     | 209                       | 1104                | 0                               | 3.0               | 2.0             | 6.347     | A   |
|                        | 4 - untitled          | 368                   | 92                      | 794                       | 369                 | 519                             | 1.9               | 0.9             | 9.562     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | 95                    | 24                      | 1082                      | 95                  | 0                               | 0.1               | 0.1             | 3.768     | A   |
|                        | 2 - Havant Road       | 643                   | 161                     | 235                       | 641                 | 943                             | 1.1               | 1.0             | 4.697     | A   |
|                        | 3 - Church Lane       | 0                     | 0                       | 872                       | 0                   | 3                               | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       |                       |                         | 0                         |                     | 662                             |                   |                 |           |     |
|                        | 5 - Emsworth Road     | 1079                  | 270                     | 2                         | 1080                | 208                             | 2.4               | 1.5             | 5.483     | A   |

## Lane Results

Lane Level notation: Lane Level 1 is always closest to the junction.

### Lanes: Main Results for each time segment

### 16:45 - 17:00

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 83                    |                   |       | 83                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 214                   | 961               | 0.223 | 214                 | 0.0               | 0.3             | 4.730     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1092                  |                   |       | 1092                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 557                   | 954               | 0.584 | 558                 | 0.0               | 0.9             | 5.947     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 550                   | 953               | 0.577 | 551                 | 0.0               | 0.8             | 5.912     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4)        | 1107                  |                   |       | 1107                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 375                   | 788               | 0.475 | 376                 | 0.0               | 0.8             | 7.828     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 524                   |                   |       | 524                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 97                    | 1070              | 0.091 | 97                  | 0.0               | 0.1             | 3.364     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 325                   | 921               | 0.353 | 325                 | 0.0               | 0.4             | 4.577     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 329                   | 920               | 0.358 | 328                 | 0.0               | 0.5             | 4.600     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4,5)      | 654                   |                   |       | 654                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 951                   |                   |       | 951                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 661               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 670                   |                   |       | 670                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 545                   | 1002              | 0.544 | 544                 | 0.0               | 0.9             | 5.450     | A   |
|                        |                       | Exit  |            | 2    | 2,3,4,5          | 547                   | 1002              | 0.545 | 546                 | 0.0               | 0.9             | 5.471     | A   |
|                        |                       |       | 1          | 1    |                  | 214                   |                   |       | 214                 | 0.0               | 0.0             | 0.000     | A   |

17:00 - 17:15

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 96                    |                   |       | 96                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 255                   | 962               | 0.266 | 255                 | 0.3               | 0.4             | 5.170     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1305                  |                   |       | 1305                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 664                   | 939               | 0.707 | 665                 | 0.9               | 1.4             | 8.202     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 664                   | 939               | 0.707 | 664                 | 0.8               | 1.4             | 8.135     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1328                  |                   |       | 1328                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 438                   | 700               | 0.626 | 441                 | 0.8               | 1.7             | 13.798    | B   |
|                        |                       | Exit  | 1          | 1    |                  | 624                   |                   |       | 624                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 117                   | 926               | 0.126 | 117                 | 0.1               | 0.1             | 4.230     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 382                   | 905               | 0.422 | 382                 | 0.4               | 0.6             | 5.145     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 383                   | 903               | 0.424 | 383                 | 0.5               | 0.5             | 5.072     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 766                   |                   |       | 766                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1140                  |                   |       | 1140                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 579               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 791                   |                   |       | 791                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 652                   | 1001              | 0.652 | 653                 | 0.9               | 1.2             | 6.607     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 653                   | 1002              | 0.651 | 655                 | 0.9               | 1.1             | 6.646     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 255                   |                   |       | 255                 | 0.0               | 0.0             | 0.000     | A   |

17:15 - 17:30

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 120                   |                   |       | 120                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 309                   | 966               | 0.320 | 308                 | 0.4               | 0.5             | 5.432     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1580                  |                   |       | 1580                | 0.0               | 0.0             | 0.003     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 818                   | 920               | 0.889 | 813                 | 1.4               | 4.5             | 16.852    | C   |
|                        |                       |       |            | 2    | 1,2,4            | 809                   | 920               | 0.879 | 804                 | 1.4               | 4.6             | 16.905    | C   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1627                  |                   |       | 1627                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 550                   | 591               | 0.930 | 536                 | 1.7               | 8.7             | 42.109    | E   |
|                        |                       | Exit  | 1          | 1    |                  | 762                   |                   |       | 762                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 144                   | 745               | 0.193 | 144                 | 0.1               | 0.2             | 5.644     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 469                   | 882               | 0.531 | 470                 | 0.6               | 0.7             | 6.059     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 477                   | 883               | 0.540 | 477                 | 0.5               | 0.8             | 5.999     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 946                   |                   |       | 946                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1380                  |                   |       | 1380                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 455               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 983                   |                   |       | 983                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 792                   | 1003              | 0.790 | 794                 | 1.2               | 2.1             | 9.597     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 787                   | 1002              | 0.786 | 789                 | 1.1               | 2.1             | 9.568     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 309                   |                   |       | 309                 | 0.0               | 0.0             | 0.005     | A   |

17:30 - 17:45

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 118                   |                   |       | 118                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 305                   | 965               | 0.316 | 306                 | 0.5               | 0.4             | 5.568     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1595                  |                   |       | 1595                | 0.0               | 0.0             | 0.002     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 811                   | 920               | 0.882 | 806                 | 4.5               | 4.8             | 20.017    | C   |
|                        |                       |       |            | 2    | 1,2,4            | 822                   | 920               | 0.893 | 817                 | 4.6               | 4.8             | 20.067    | C   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1633                  |                   |       | 1633                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 548                   | 584               | 0.938 | 539                 | 8.7               | 12.2            | 72.985    | F   |
|                        |                       | Exit  | 1          | 1    |                  | 755                   |                   |       | 755                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 140                   | 735               | 0.190 | 140                 | 0.2               | 0.2             | 6.128     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 473                   | 884               | 0.536 | 473                 | 0.7               | 0.8             | 6.125     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 471                   | 883               | 0.534 | 470                 | 0.8               | 0.8             | 6.143     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 945                   |                   |       | 945                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1392                  |                   |       | 1392                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 459               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 975                   |                   |       | 975                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 791                   | 1002              | 0.790 | 791                 | 2.1               | 2.3             | 9.972     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 803                   | 1000              | 0.803 | 803                 | 2.1               | 2.3             | 9.879     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 305                   |                   |       | 305                 | 0.0               | 0.0             | 0.008     | A   |

17:45 - 18:00

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 102                   |                   |       | 102                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 248                   | 961               | 0.258 | 247                 | 0.4               | 0.4             | 4.980     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1298                  |                   |       | 1298                | 0.0               | 0.0             | 0.001     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 659                   | 942               | 0.699 | 660                 | 4.8               | 1.5             | 9.595     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 665                   | 942               | 0.706 | 666                 | 4.8               | 1.5             | 9.481     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4)        | 1324                  |                   |       | 1324                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 443                   | 708               | 0.626 | 449                 | 12.2              | 1.9             | 34.788    | D   |
|                        |                       | Exit  | 1          | 1    |                  | 622                   |                   |       | 622                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 115                   | 930               | 0.123 | 114                 | 0.2               | 0.1             | 4.835     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 388                   | 904               | 0.429 | 388                 | 0.8               | 0.6             | 5.248     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 380                   | 904               | 0.420 | 380                 | 0.8               | 0.5             | 5.313     | A   |
|                        |                       |       | 2          | 1    | (1,2,3,4,5)      | 768                   |                   |       | 768                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1133                  |                   |       | 1133                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 578               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 4                     |                   |       | 4                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 799                   |                   |       | 799                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 646                   | 1003              | 0.644 | 647                 | 2.3               | 1.2             | 7.517     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 652                   | 1003              | 0.650 | 654                 | 2.3               | 1.2             | 7.434     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 248                   |                   |       | 248                 | 0.0               | 0.0             | 0.006     | A   |

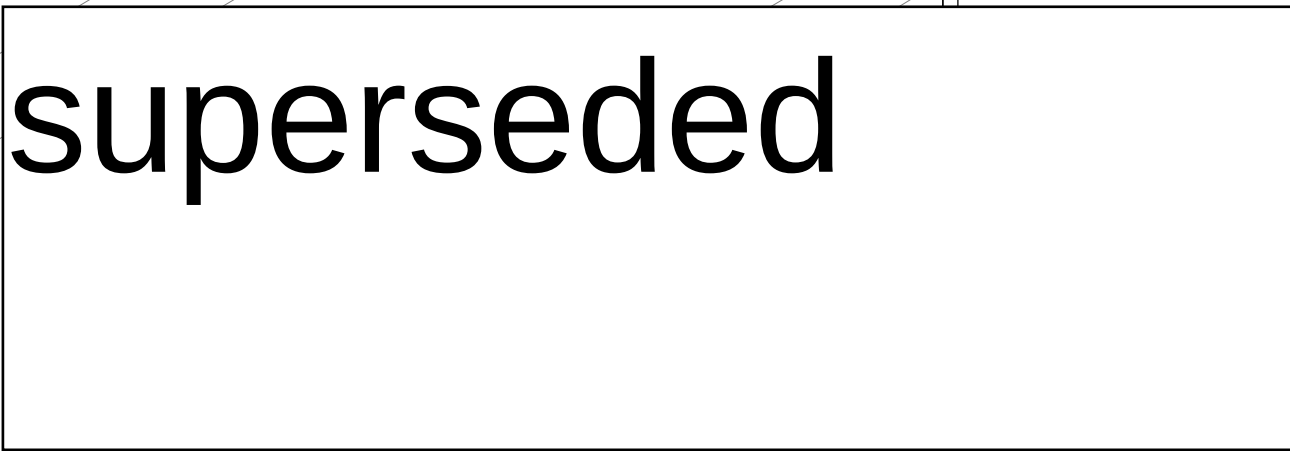
18:00 - 18:15

| Junction               | Arm                   | Side  | Lane level | Lane | Destination arms | Total Demand (Veh/hr) | Capacity (Veh/hr) | RFC   | Throughput (Veh/hr) | Start queue (Veh) | End queue (Veh) | Delay (s) | LOS |
|------------------------|-----------------------|-------|------------|------|------------------|-----------------------|-------------------|-------|---------------------|-------------------|-----------------|-----------|-----|
| 1 - A27/ Emsworth Road | 1 - A27 On-Slip       | Exit  | 1          | 1    |                  | 84                    |                   |       | 84                  | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Emsworth Road (S) | Entry | 1          | 1    | 1,2,4            | 208                   | 966               | 0.216 | 208                 | 0.4               | 0.3             | 4.790     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 1079                  |                   |       | 1079                | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - A27 Off-Slip      | Entry | 1          | 1    | 1,2,4            | 558                   | 958               | 0.582 | 558                 | 1.5               | 1.0             | 6.352     | A   |
|                        |                       |       |            | 2    | 1,2,4            | 546                   | 957               | 0.571 | 547                 | 1.5               | 1.0             | 6.342     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4)        | 1104                  |                   |       | 1104                | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - untitled          | Entry | 1          | 1    | 1,2,4            | 368                   | 792               | 0.465 | 369                 | 1.9               | 0.9             | 9.562     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 519                   |                   |       | 519                 | 0.0               | 0.0             | 0.000     | A   |
| 2 - A27/ Church Lane   | 1 - A27 Off-Slip      | Entry | 1          | 1    | 2,3,4,5          | 95                    | 1080              | 0.088 | 95                  | 0.1               | 0.1             | 3.768     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 0                     |                   |       | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 2 - Havant Road       | Entry | 1          | 1    | 2,3,4,5          | 321                   | 923               | 0.348 | 320                 | 0.6               | 0.5             | 4.740     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 321                   | 920               | 0.349 | 321                 | 0.5               | 0.5             | 4.654     | A   |
|                        |                       | Exit  | 1          | 1    | (1,2,3,4,5)      | 643                   |                   |       | 643                 | 0.0               | 0.0             | 0.000     | A   |
|                        |                       |       |            | 1    |                  | 943                   |                   |       | 943                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 3 - Church Lane       | Entry | 1          | 1    | 2,3,4,5          | 0                     | 668               | 0.000 | 0                   | 0.0               | 0.0             | 0.000     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 3                     |                   |       | 3                   | 0.0               | 0.0             | 0.000     | A   |
|                        | 4 - A27 On-Slip       | Exit  | 1          | 1    |                  | 662                   |                   |       | 662                 | 0.0               | 0.0             | 0.000     | A   |
|                        | 5 - Emsworth Road     | Entry | 1          | 1    | 2,3,4,5          | 541                   | 1003              | 0.539 | 542                 | 1.2               | 0.8             | 5.457     | A   |
|                        |                       |       |            | 2    | 2,3,4,5          | 538                   | 1004              | 0.536 | 539                 | 1.2               | 0.8             | 5.510     | A   |
|                        |                       | Exit  | 1          | 1    |                  | 208                   |                   |       | 208                 | 0.0               | 0.0             | 0.000     | A   |

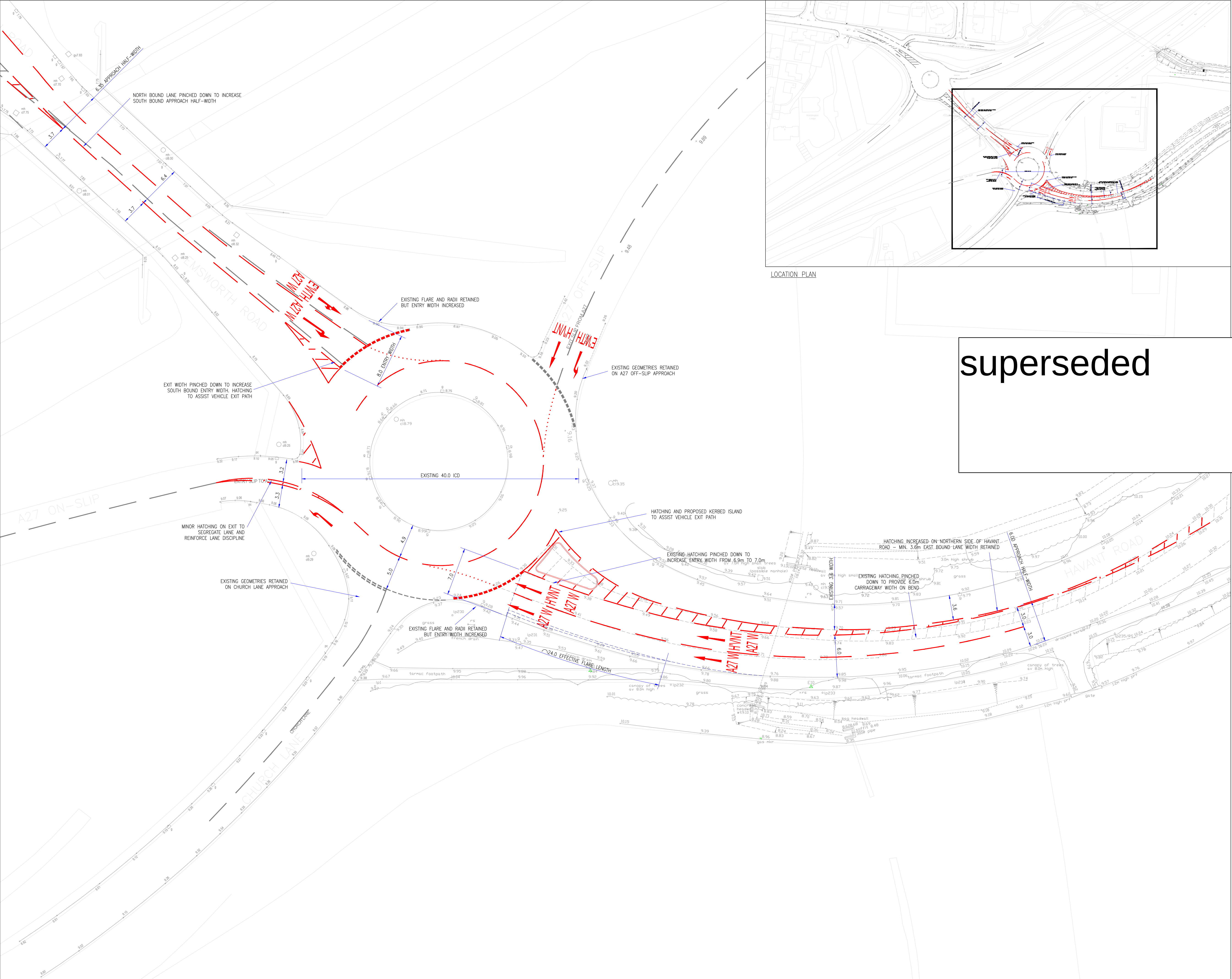
## Appendix K

## GENERAL NOTES

1. THIS DRAWING IS INTENDED TO BE VIEWED IN COMBINATION WITH ALL RELEVANT ARCHITECTS, ENGINEERS, SERVICES AND SPECIALIST DRAWINGS AND SPECIFICATION.
2. ANY VARIATIONS OR DISCREPANCIES BETWEEN THESE DRAWINGS IN TERMS OF DIMENSIONS OR DETAILS SHOULD BE DRAWN TO THE ATTENTION OF THE ARCHITECT AND/OR THE ENGINEER FOR CLARIFICATION.
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|                                                                                                                                                                                                                             |              |          |              |      |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------|--------------|------|
| Rev                                                                                                                                                                                                                         | Description  | Date     | By           | Chkd |
| <p>Paul Basham Associates Ltd<br/> Lancaster Court<br/> 8 Barnes Wallis Road<br/> Fareham Hampshire<br/> PO15 5TU</p> <p>T +44 (0) 1489 668134<br/> E info@paulbashamassociates.com<br/> W www.paulbashamassociates.com</p> |              |          |              |      |
| Client                                                                                                                                                                                                                      |              |          |              |      |
|  <p><b>BARRATT</b><br/> HOMES</p>                                                                                                      |              |          |              |      |
| Project Name                                                                                                                                                                                                                |              |          |              |      |
| LAND AT HAVANT ROAD,<br>EMSVAWTH                                                                                                                                                                                            |              |          |              |      |
| Title                                                                                                                                                                                                                       |              |          |              |      |
| EMSWORTH ROAD / A27 ROUNDABOUT -<br>MITIGATION PROPOSALS                                                                                                                                                                    |              |          |              |      |
| Project Phase                                                                                                                                                                                                               |              |          |              |      |
| PRELIMINARY                                                                                                                                                                                                                 |              |          |              |      |
| Checked By                                                                                                                                                                                                                  | Checked Date | Drawn By | Drawn Date   |      |
| BW                                                                                                                                                                                                                          | 19.07.16     | CL       | 15.07.16     |      |
| Client Drawn No.                                                                                                                                                                                                            |              | Scale    |              |      |
| -                                                                                                                                                                                                                           |              | 1:250    | (AT A1 SIZE) |      |
| PBA Drawn No.                                                                                                                                                                                                               |              |          | Revision     |      |
| 041.0025.005                                                                                                                                                                                                                |              |          | -            |      |



LOCATION PLAN

superseded

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|     |                                  |          |    |      |
|-----|----------------------------------|----------|----|------|
| D   | REVISED GEOMETRIES AND MARKINGS  | 07.11.16 | CL | BW   |
| C   | TOPOGRAPHICAL SURVEY ADDED       | 07.10.16 | CL | BW   |
| B   | REVISED ENTRY WIDTH ON HAVANT RD | 30.09.16 | CL | BW   |
| A   | ADDITIONAL RD MARKINGS           | 22.09.16 | CL | BW   |
| Rev | Description                      | Date     | By | Chkd |



Paul Basham Associates Ltd  
Lancaster Court  
8 Barnes Wallis Road  
Fareham Hampshire  
PO15 5TU  
T +44 (0) 1489 668134  
E info@paulbashamassociates.com  
W www.paulbashamassociates.com



**BARRATT**  
HOMES

Project Name  
LAND AT HAVANT ROAD,  
EMSWORTH

Title  
HAVANT ROAD / CHURCH LANE / A27 ROUNDABOUT -  
MITIGATION PROPOSALS

Project Phase  
PRELIMINARY

|                                 |                          |                |                        |
|---------------------------------|--------------------------|----------------|------------------------|
| Checked By<br>BW                | Checked Date<br>19.07.16 | Drawn By<br>CL | Drawn Date<br>15.07.16 |
| Client Drawing No.<br>-         | Scale<br>1:250           | (AT A1 SIZE)   |                        |
| PBA Drawing No.<br>041.0025.004 | Revision<br>D            |                |                        |