# M1J15 NORTHAMPTON GATEWAY
# STRATEGIC RAIL FREIGHT INTERCHANGE

# TECHNICAL NOTE 12: CUMULATIVE IMPACT ASSESSMENT WITH RAIL CENTRAL STRATEGIC RAIL FREIGHT INTERCHANGE

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## 1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd is commissioned by Roxhill (Junction 15) Ltd to provide transport advice with regards to their Nationally Significant Infrastructure Project (NSIP) for the development of a Strategic Rail Freight Interchange (SRFI) facility adjacent to M1 Junction 15 in Northamptonshire (known as Northampton Gateway SRFI).

1.2 As required by Northamptonshire County Council (NCC) and agreed by the Transport Working Group (TWG), the transport impacts of the Northampton Gateway SRFI development have been modelled using the Northamptonshire Strategic Transport Model (NSTM2) which is maintained on NCC's behalf by WSP. It was agreed that the NSTM2 is an appropriate base model from which the future year reference case and development case scenarios be developed for the assessment of the Northampton Gateway SRFI. These future year scenarios are as follows and are summarised in the table provided below:

- 2021 opening year
  - Circular 02/2013[1] compliant scenario for assessment of the traffic impacts on the strategic road network (SRN)
  - opening year scenario, for assessment of the environmental impacts of the proposed development in the opening year
- 2031 future assessment year, consistent with the end of the Local Plan period.

| Scenario | ID | Description |
|---|---|---|
| Reference Case | B1 | 2021 Opening Year |
| | C1 | 2021 DfT 02/2013 Circular Compliant |
| | D1 | 2031 Future Year |
| Development Case without highway mitigation | E1 | 2021 Opening Year |
| | F1 | 2021 DfT 02/2013 Circular Compliant |
| | G1 | 2031 Future Year |
| Development Case with highway mitigation | H1 | 2021 Opening Year |
| | I1 | 2021 DfT 02/2013 Circular Compliant |
| | J1d | 2031 Future Year |

1.3 The NSTM2 includes all committed development and allocated sites within the Northamptonshire area. The model also includes the committed infrastructure schemes and those highly likely to come forward before the forecast assessment years. This includes Highways England's Smart Motorway Projects. The cumulative impacts of the Northampton Gateway development in combination with other defined land uses and infrastructure schemes has therefore been assessed as part of the overall modelling work undertaken.

1.4 There is a proposed NSIP project on an adjacent site known as 'Rail Central'. Although not a committed development, an assessment of the potential cumulative effects of that emerging proposal in addition to the Northampton Gateway SRFI proposed development has been undertaken based on the information available in respect of Rail Central.

1.5 A prerequisite to modelling the Rail Central SRFI scheme in the NSTM2 is an understanding of the scheme details, specifically the vehicle trip generation and proposed highway mitigation. ADC Infrastructure Ltd therefore wrote to Transport Planning Associates, who are undertaking the transport work for Rail Central, on 6 October 2016 requesting this information. There has been no response to this letter.

1.6 In the absence of a response from Rail Central, there was an ongoing dialogue with the TWG regarding the approach to the assessment of the cumulative impacts of the two schemes. Given NCC's position on both the Northampton Gateway and Rail Central Transport Working Groups, it was suggested that NCC should adopt a 'ringmaster' role and

[1] DfT Circular 02/2013 'The Strategic Road Network and the Delivery of Sustainable Development', 10 September 2013

oversee the cumulative assessment deciding upon the relevant assumptions. NCC discussed this with Rail Central, who indicated an in-principle agreement to this approach. Nevertheless, in September 2017 Rail Central cancelled their Stage 2 Consultation, citing delays with their transport modelling and no further information was forthcoming regarding the Rail Central scheme. The TWG also reported that Rail Central had postponed their scheduled meetings with them.

1.7 At the meeting of 19 December 2017, the TWG confirmed that they supported the view that the absence of final information from Rail Central was not an acceptable reason to delay the Northampton Gateway DCO application.

1.8 Therefore, to ensure the submission of the Northampton Gateway DCO application was not unduly delayed, preparations were made to assess the cumulative impact of the Northampton Gateway and Rail Central SRFI schemes based on publicly available information regarding the Rail Central scheme. The cumulative assessment using the NSTM2 was therefore progressed based on the most up to date transport modelling information for the Rail Central scheme, which was that contained within their 'Transport and Access' 24 May 2017 Local Liaison Group Meeting presentation that is available on their website (**Appendix A**).

1.9 WSP were commissioned in December 2017 to undertake NSTM2 cumulative impact assessment (scenario J3) runs based on this publicly available information. WSP completed this work and provided the NSTM2 outputs at the end of January 2018.

1.10 The outputs from the NSTM2 cumulative impact assessment (J3) scenario were used to undertake detailed modelling of the Northampton Gateway study area junctions, including assessment using the VISSIM micro-simulation model that was updated to include the Rail Central proposals at M1 Junction 15A. The micro-simulation modelling was concluded on 28 February 2018.

1.11 After the conclusion of the above work, but prior to submission of the Northampton Gateway SRFI DCO, Rail Central undertook their Stage 2 Statutory Consultation between 15 of March 2018 and 23 April 2018. As part of that consultation, Rail Central released further information into the public domain regarding their proposed scheme, which included changes to their emerging highway mitigation proposals. However, Rail Central are yet to complete their VISSIM micro-simulation modelling at M1 Junction 15 and Junction 15A and have not yet modelled all of their highway mitigation in the NSTM2. This further work may lead to changes to their highway mitigation strategy from that set out in the Stage 2 Statutory Consultation material.

1.12 For these reasons, and due to the timescales involved, it was not appropriate to update the NSTM2, VISSIM micro-simulation, or detailed junction modelling cumulative assessment work to incorporate the changes to the emerging Rail Central proposals. However, where relevant, the potential implications of the changes to their emerging proposals on the conclusions of the cumulative assessment are discussed.

## 2.0 CUMULATIVE IMPACT ASSESSMENT APPROACH – NSTM2 SCENARIO J3

2.1 At a meeting on 19 December 2017, it was agreed with the TWG that the NSTM2 should be used as the base model to undertake assessment of the potential cumulative transport impacts of the Northampton Gateway SRFI and Rail Central SRFI schemes (scenario J3).

2.2 It was also agreed that the cumulative impact scenario J3 model should include the following highway mitigation:

- The proposed Rail Central grade-separated site access junction onto the A43, as per the Rail Central presentation of 24 May 2017;
- The proposed Rail Central improvement scheme at M1 J15A, as per the Rail Central presentation of 24 May 2017[2]. This is instead of the proposed Northampton Gateway SRFI improvement at this junction;
- The proposed Rail Central improvement scheme at A43/Trove roundabout, as per the Rail Central presentation of 24 May 2017;
- All Northampton Gateway highway mitigation (other than M1 J15A);
- The Rail Central proposals at the A45 Queen Eleanor Interchange, as per the Rail Central presentation of 24 May 2017[3], are excluded as NCC are known to be preparing their own scheme at this location.

2.3 At the same meeting, Highways England (HE) confirmed that since the DfT Circular 02/2013 only requires committed and allocated schemes to be considered, they do not require the cumulative impact of Rail Central to be considered and therefore there is no requirement for a cumulative 2021 DfT 02/2013 Circular compliant case.

2.4 The following assessment approach was agreed by the TWG for the 2031 cumulative impact assessment scenario J3:

- Assess the cumulative impact using the NSTM2 based on the Rail Central information currently available in the public domain.
- The impacts of the combined schemes should be assessed based on comparison to the Northampton Gateway SRFI 2031 D1 Reference Case scenario.
- Undertake detailed modelling of the Northampton Gateway study area junctions for the cumulative impact scenario J3.
- No new study area junctions would be modelled in detail, but it should be possible to draw conclusions from the NSTM2 data about potential traffic impacts at other locations.
- The M1 J15 to M1 J15A VISSIM model would be updated with the Rail Central M1 J15A proposal and cumulative assessment J3 scenario VISSIM cordon traffic flows. This will allow the impact of the combined schemes to be determined based on comparison to the 2031 D1 Reference Case scenario.
- AADT and AAWT traffic flow data for the cumulative assessment J3 scenario were also output by WSP from the NSTM2 for assessment of the potential cumulative impacts on air quality and noise impact.

2.5 WSP provided a short note confirming the above, which is included at **Appendix B**.

2.6 It should be noted that NCC instructed WSP not to release SLA plots for the alternate sites to either party as this *"could potentially be used to seek commercial advantage by either party".* Therefore, the following requested NSTM2 outputs are not available for review as part of the cumulative impact scenario J3:

[2] Following the completion of the strategic modelling for the cumulative impact scenario J3, a revised M1 J15A improvement scheme was presented by Rail Central as part of their Stage 2 Statutory consultation. Rail Central have not completed assessment of their M1 J15A mitigation proposals and therefore however, it is not anticipated that the revised M1 J15A layout would significantly change the results of the NSTM2 modelling undertaken as part of this study.
[3] Following the completion of the strategic modelling for the cumulative impact scenario J3, information provided for the Rail Central Stage 2 Statutory consultation indicated that Rail Central are no longer proposing a mitigation scheme at the Queen Eleanor Interchange. It is not clear what the basis for this is.

- Reassignment plots (J3 vs D1);
- Turning counts at Rail Central A43 site access;
- Select link analysis (SLA) (vehicle trip assignment) for Rail Central; and
- Reassignment plots (J3 vs J1d).

# 3.0 NSTM2 SCENARIO J3 ANALYSIS

## Introduction

3.1 To understand the potential cumulative impact in Northampton and the surrounding area due to the proposed Northampton Gateway SRFI and Rail Central SRFI developments, data from the following NSTM2 scenarios has been supplied by WSP:

- 2031 Reference Case (scenario D1 – no development and no mitigation);
- 2031 Development Case (scenario J1d – with the Northampton Gateway development and the proposed Northampton Gateway highway mitigation works: M1J15, M1J15A, Roade Bypass, A508/Courteenhall left-in left-out, A508/Rookery Road/Ashton Road, A508/Pury Road mitigation schemes);
- 2031 Cumulative Case (scenario J3 – Northampton Gateway J1d plus the traffic due to Rail Central, the Rail Central site access junction and the Rail central mitigation proposals at M1J15A and the A43 Trove roundabout).

3.2 Of specific interest to this analysis are the flow difference plots showing the change in traffic flows between the D1 and J3 scenarios, provided at **Appendix C**. Further, delay plots, showing the delays on individual links, volume/capacity plots and actual traffic flow plots for scenario J3 are also provided at **Appendix C**.

3.3 In addition, **Appendix D** shows flow difference and volume/capacity plots comparing the J3 scenario to the 2031 Northampton Gateway with highway mitigation (J1d) scenario to provide the context to the 2031 J3 cumulative impact scenario.

3.4 This data has been interrogated to indicate any remaining material impacts due to the combination of the two SRFI developments and/or reassignment effects associated with the highway mitigation schemes.

## 2031 flow difference analysis

3.5 An extract of the morning peak hour 2031 D1 reference case versus the 2031 J3 cumulative impact scenario flow difference plot is shown at **Figure 1. Figure 2** shows an extract from the flow difference plot for the evening peak hour.

3.6 **Figures 1 and 2** show a significant increase in traffic on the A508 corridor (highlighted yellow) in both the morning and evening peak hours. As discussed in the Northampton Gateway Transport Assessment, whilst this increase is in part due to development traffic, it is largely due to the proposed A508 Roade Bypass and the improvement works at M1 J15 releasing existing bottlenecks on the A508 and drawing traffic which would have previously used alternate routes, back onto the primary route.

3.7 Further, **Figures 1 and 2** show significant traffic increases on the A43 and A5 corridors (highlighted in red), with some rat-running through adjacent villages (highlighted blue). The proposed Rail Central development accesses the highway network from the A43 and so large traffic increases would be expected on these corridors. Further, proposed junction improvements at M1 J15A and the A43 Trove roundabout would encourage traffic to use these routes.

3.8 It is evident from **Figures 1 and 2**, and the flow difference plots included in **Appendices C and D** that there is generally little interaction between the A508 and A43 corridors south of the M1. However, the flow difference plots provided at **Appendix D** compare the 2031 J3 cumulative impact scenario with the 2031 J1d development case scenario and show that there would be a reduction of traffic around 140 trips northbound on the A508 corridor in the morning peak hour and a reduction of around 60 northbound trips in the evening peak hour in the cumulative impact scenario, suggesting that the proposed mitigation schemes

at the A43 Trove roundabout and M1 J15A are drawing some traffic onto the A43 and A5 strategic routes.

3.9 The analysis provided in the Northampton Gateway SRFI Transport Assessment showed that as a result of the proposed highway mitigation scheme there would be reductions in traffic through Blisworth, Milton Malsor and Roade. **Figures 1 and 2** also show that in general in the 2031 J3 cumulative impact scenario there would be comparable reductions through these villages, although there is a high westbound flow forecast along Watering Lane through Collingtree and Milton Malsor.

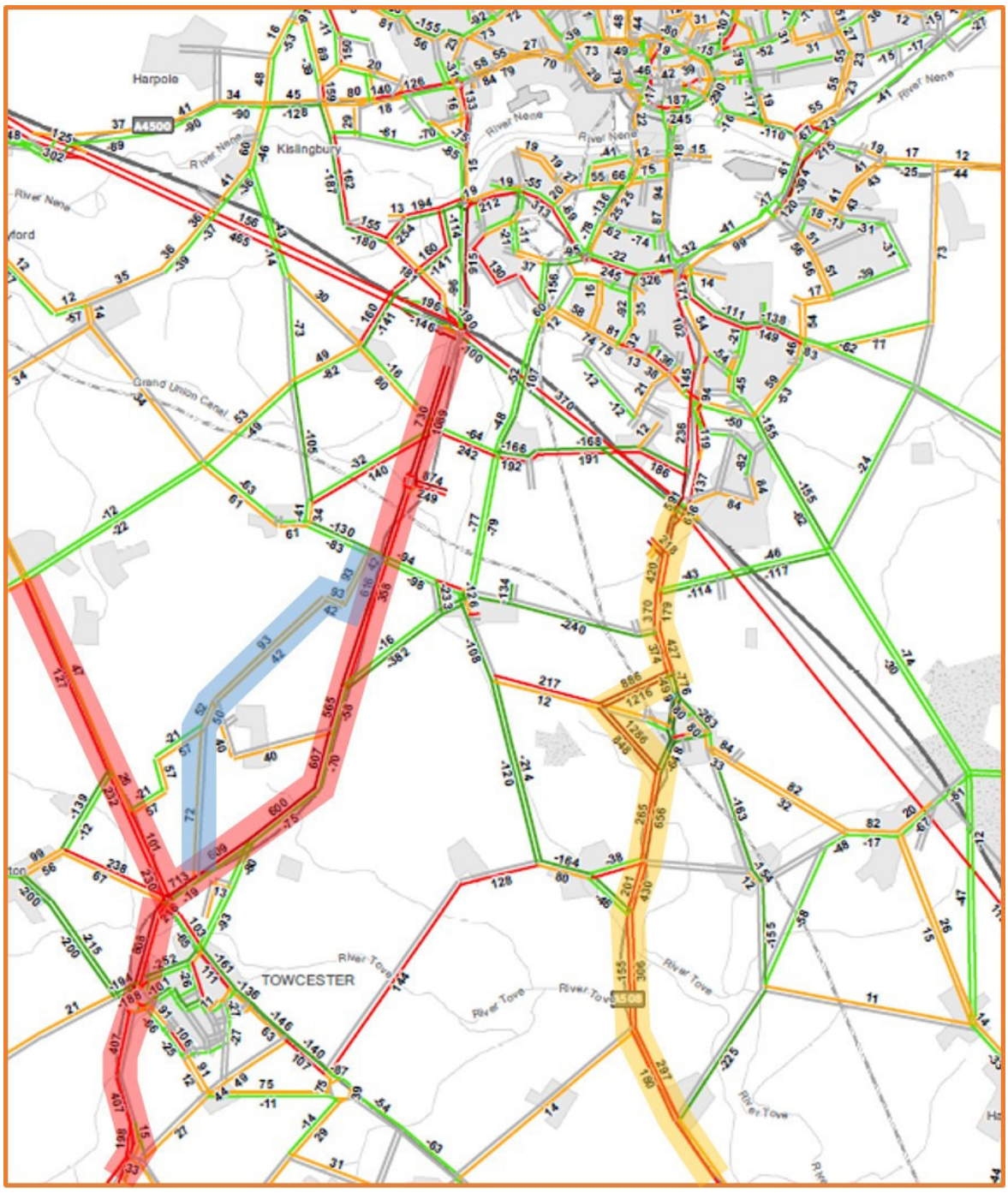



**Figure 1: extract of the 2031 morning peak hour flow difference plot (in pcus)**

3.10 To the north of the M1, **Figure 1** shows that there is a large increase in the westbound flow along the A5076 Mere Way from the A45 Queen Eleanor Interchange. There are further westbound traffic increases from the A45 Wootton Interchange through the residential areas of Wootton and East Hunsbury and westbound along Watering Lane through Collingtree.

There are also significant increases on the A5123, the A5076 Upton Way and Swan Valley Way, as traffic routes towards the Rail Central development, Swan Valley industrial estate and the M1 and A43 strategic routes.

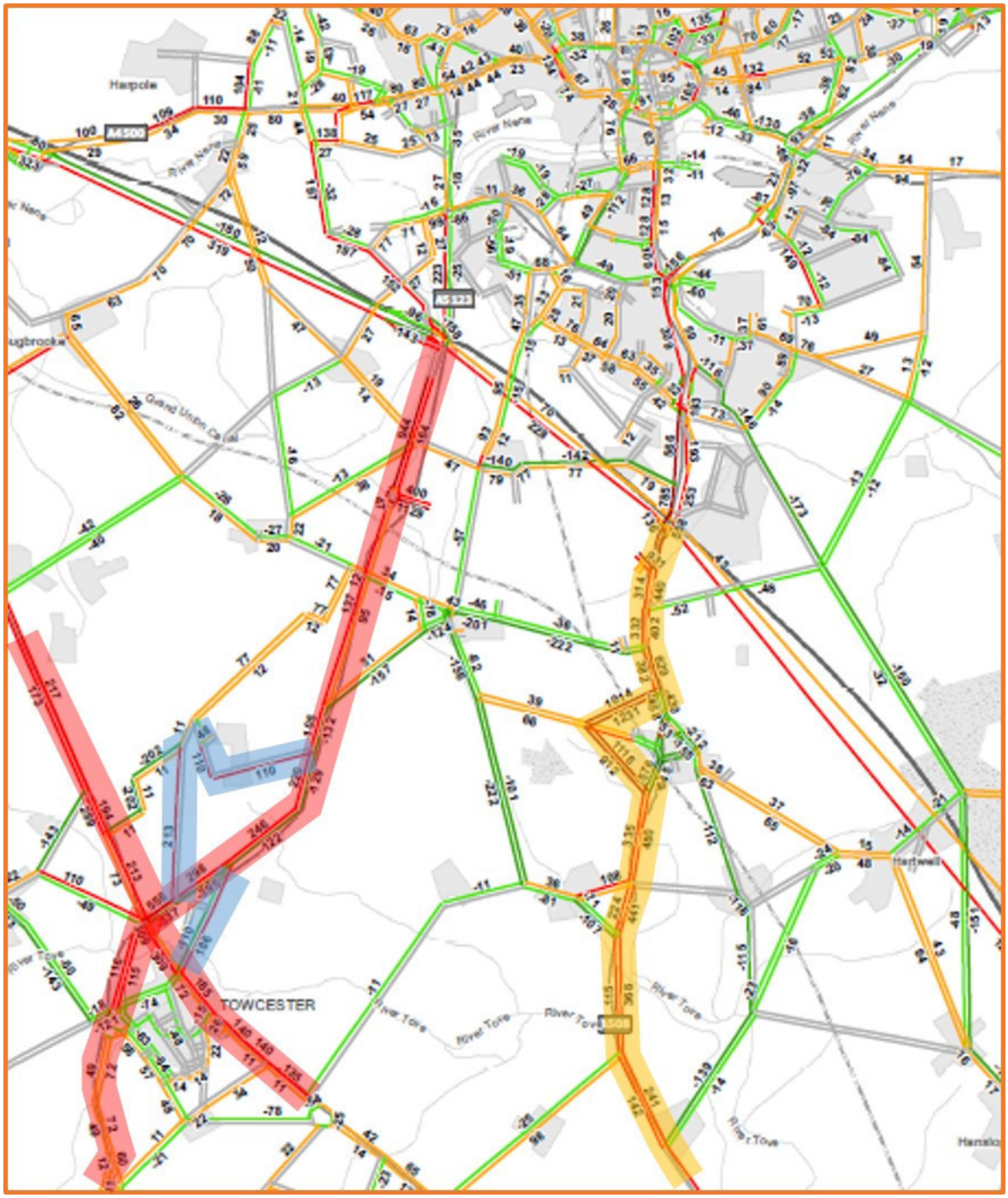



**Figure 2: extract from the 2031 evening peak hour flow difference plot (in vehicles)**

3.11 The traffic increases associated with the Northampton Gateway SRFI on the A5076 corridor are relatively modest when compared to the 2031 D1 reference case, as Northampton Gateway SRFI development traffic north of the M1 largely stays on the A45 corridor north of the Queen Eleanor Interchange. However, there is some reassignment of background traffic onto the A5076 Ring Road corridor, along with the A5123 and Swan Valley Way.

3.12 The flow difference plots provided at **Appendix D** compare the 2031 J3 cumulative impact scenario with the 2031 J1d development case scenario and show that the Rail Central SRFI development would significantly increase traffic flows along the A5123. A5076 and Swan

Valley Way corridors. Therefore, due to interactions between traffic generated by both SRFI developments and reassigning background traffic, **Figure 1** shows that the traffic increases on these routes are now more significant in the (J3) cumulative impact assessment, especially along the A5076 Ring Road and through Wootton and East Hunsbury.

3.13 **Figure 2** shows that whilst a similar interaction occurs along east-west routes between the A45 and A5123 corridors in the evening peak hour, they are less pronounced.

# 4.0 DETAILED JUNCTION MODELLING

## Study Area and Junction Models

4.1 The agreed study area for the Northampton Gateway SRFI is shown at **Figure 3** below.

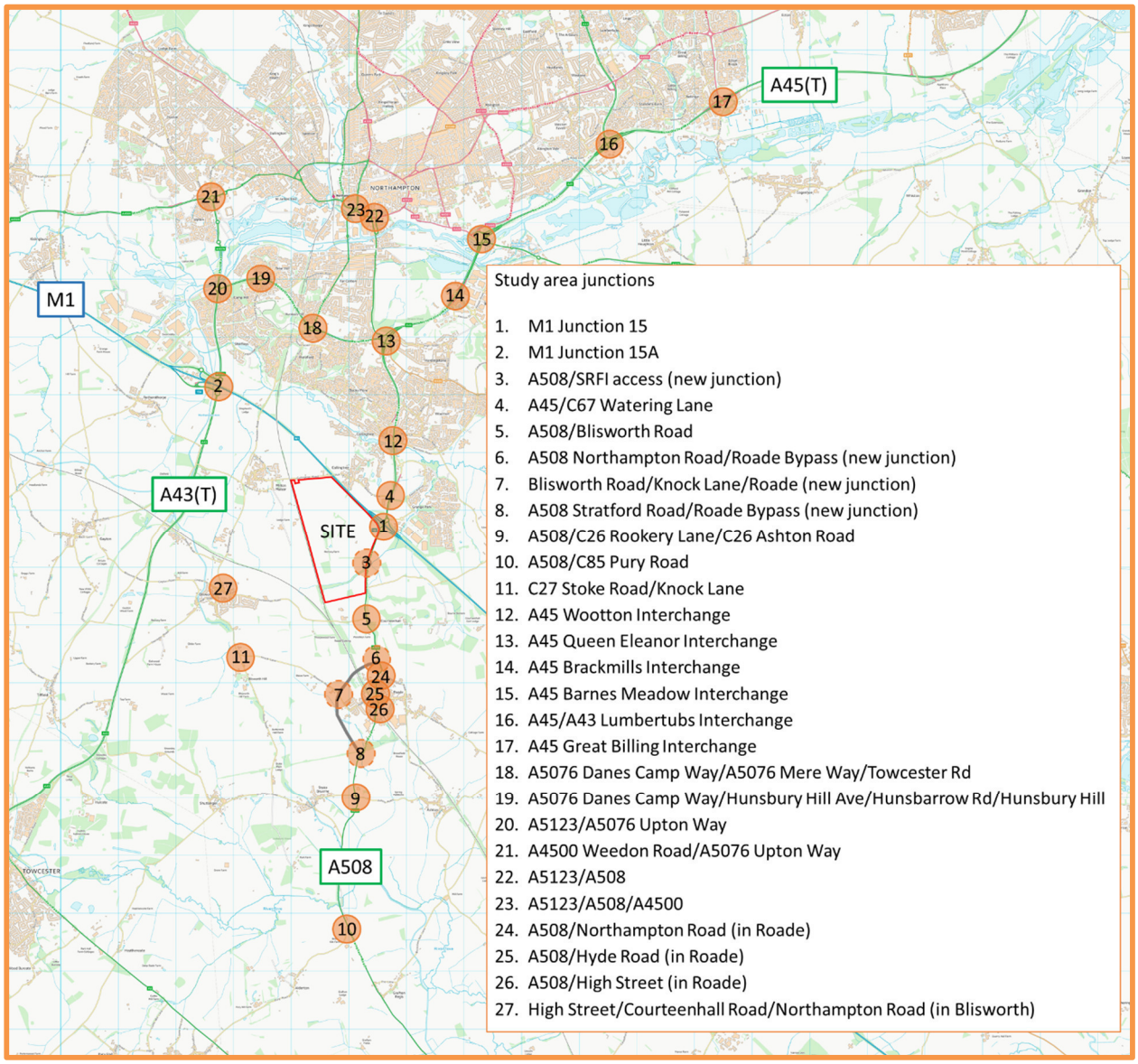



**Figure 3: Northampton Gateway SRFI identified study area**

4.2 To consider the impact of the proposed Northampton Gateway SRFI development on junction performance within the study area, detailed junction models have been constructed, including use of a micro-simulation model for junctions 1 to 4. Information regarding the construction of the detailed models and discussions on the junction performance are provide in the Northampton Gateway Transport Assessment.

4.3 These models have been used to assess the potential cumulative impact of the Rail Central SRFI development in addition to the Northampton Gateway SRFI, using the traffic flows output from the NSTM2.

4.4 Junctions 24, 25 and 26 have been excluded from this cumulative impact assessment since, as shown on **Figures 1 and 2** in Secton 3, the proposed Roade Bypass is shown to be successful in significantly reducing traffic flows through Roade. Therefore, the performance

of these junction would significantly improve when compared to the 2031 D1 Reference Case scenario.

4.5 Further, junction 11 has also been excluded from the following assessment as the junction does not suffer from capacity constraints in any of the future year scenarios.

### Traffic Flows

4.6 Morning and evening peak hour turning movements at the study area junctions have been extracted from the NSTM2 for the 2031 cumulative impact scenario J3. The turning flows are provided at **Appendix E**. Further, WSP also provided matrix traffic flows from a cordoned model suitable for the VISSIM modelling, as shown at **Appendix E**.

4.7 Turning flows for the 2031 D1 Reference Case scenario are provided at **Appendix F** for convenience.

4.8 After considering the detailed junction modelling presented in TN10, NCC identified several turning movements at junctions within the Northampton Gateway SRFI study area which they consider materially differ from single day observed turning count data such that manual corrections should be made.

4.9 Technical Note 10 Addendum (ref. ADC1475 TN10A), which is Appendix 16 of the Northampton Gateway Transport Assessment, considers appropriate manual corrections to the anomalous turning movements highlighted by NCC and presents the findings of sensitivity capacity assessments at the effected junctions. A similar approach has therefore been undertaken here and the adjusted traffic flows are shown at **Appendix G**.

### Detailed Model Results

4.10 The detailed models for the study area junctions have been run with the 2031 cumulative impact scenario J3 traffic flows for the morning and evening peak hours. The model results are provided at **Appendix H** and summarised in **Table 2** below. The table provides a comparison between the ratio of flow to capacity (RFC) or Practical Reserve Capacity (PRC) on the worst performing arm of a junction in the 2031 (D1) Reference Case and the 2031 (J3) Cumulative Case.

4.11 The results in **Table 2** have been colour coded. In comparison to the 2031 (D1) Reference Case scenario, junctions which are predicted to operate within capacity, or where a material improvement in performance is forecast are shown **green**. Junctions which show a clear deterioration in performance in the 2031 (J3) Cumulative Case, compared to the 2031 (D1) Reference Case are shown **red**.

4.12 **Table 2** shows that both M1 J15 and M1 J15A (**junctions 1 and 2**) are green for the 2031 (J3) Cumulative Case, indicating that both the Northampton Gateway mitigation scheme at M1 J15 and the Rail Central mitigation scheme at M1 J15A offer significant benefit over the existing junction arrangements.

4.13 These junctions are considered further in the VISSIM model and the results are discussed later in this section.

4.14 **Table 2** shows that the proposed Northampton Gateway site access junction (**junction 3**) would operate acceptably in the 2031 J3 cumulative impact scenario. Further, all three roundabouts on the proposed A508 Roade Bypass (**junctions 6, 7 and 8**) would also operate acceptably with both SRFI developments in place

| Junction | | Morning Peak Hour | | | | Evening Peak Hour | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | D1 | | J3 | | D1 | | J3 | |
| | | PRC | RFC | PRC | RFC | PRC | RFC | PRC | RFC |
| 1 | M1 Junction 15 | -100.1% | | -24.9% | | -54.7% | | -3.6% | |
| 2 | M1 Junction 15a | | 156.0% | -47.2% | | | 203.0% | -33.2% | |
| 3 | Site Access | | N/A | | 83.0% | | N/A | | 73.0% |
| 5 | A508/Blisworth Road | | 154.0% | | 72.0% | | ∞ | | 30.0% |
| 6 | Roade Bypass northern roundabout | | N/A | | 71.0% | | N/A | | 77.0% |
| 7 | Roade Bypass/Blisworth Road | | N/A | | 75.0% | | N/A | | 71.0% |
| 8 | Roade Bypass southern roundabout | | N/A | | 80.0% | | N/A | | 71.0% |
| 9 | A508/Rookery Lane/Ashton Road | | 72.0% | | 58.0% | | 92.0% | | 73.0% |
| 10 | A508/Pury Road | | 96.0% | | 106.0% | | 61.0% | | 154.0% |
| 12 | A45 Wootton Interchange | | 111.0% | | 131.0% | | 141.0% | | 160.0% |
| 13 | A45 Queen Eleanor Interchange | -82.6% | | -93.4% | | -84.4% | | -85.1% | |
| 14 | A45 Brackmills Interchange | -0.3% | | -0.7% | | -37.5% | | -36.7% | |
| 15 | A45 Barnes Meadow Interchange | -16.8% | | -16.4% | | -58.6% | | -66.3% | |
| 16 | A45 Lumbertubs Interchange | -48.0% | | -55.8% | | -25.4% | | -26.0% | |
| 17 | A45 Great Billing Way Interchange | -2.5% | | -2.9% | | 23.1% | | 14.2% | |
| 18 | A5076/Towcester Road/Tesco | -32.3% | | -45.7% | | -48.0% | | -22.8% | |
| 19 | A5076/Hunsbury Hill | | 135.0% | | 135.0% | | 165.0% | | 167.0% |
| 20 | A5123/A5076 gyratory | -62.8% | | -84.6% | | -68.1% | | -75.5% | |
| 21 | A4500/A5076 gyratory | -23.8% | | -24.5% | | 1.6% | | -6.3% | |
| 22 | Plough gyratory | 9.2% | | -4.9% | | -1.2% | | -8.5% | |
| 23 | A4500/A508 gyratory | -43.6% | | -41.2% | | -47.7% | | -42.5% | |
| 27 | Bliworth Rd/High Street/Northampton Rd | | 127.0% | | 96.0% | | 156.0% | | 123.0% |

**Table 2: capacity assessment results for the 2031 cumulative impact assessment scenario J3**

4.15 Elsewhere on the A508 corridor, the mitigated A508/Blisworth Road (**junction 5**) and A508/Rookery Lane/Ashton Road (**junction 9**) junctions are coded green and would also operate acceptably with both development in place.

4.16 Junction 27 is the Blisworth Road/High Street/Northampton Road priority controlled T-junction in the centre of Blisworth. **Table 2** shows that the performance of the junction would improve significantly in the 2031 J3 cumulative impact scenario. This supports the conclusion form paragraph 3.9 that the mitigation on the A508 corridor associated with the Northampton Gateway SRFI development successfully reduces traffic travelling through Blisworth and that this result is also achieved in the 2031 J3 cumulative impact scenario.

4.17 The only study area junction on the A508 corridor which is shown red is the A508/Pury Road junction (**junction 10**). As discussed in the Northampton Gateway Transport Assessment, the operation of the junction is sensitive to fluctuations in right turning traffic flow from Pury Road that are not fully represented in the NSTM2. Therefore, it is likely that drivers would seek other routes to avoid a known delay and without the high right turn traffic flow blocking left turners, the junction would operate with an improved RFC.

4.18 North of the M1, the following junction are coded red and therefore experience a material impact in the 2031 J3 cumulative impact scenario:

- Junction 12 A45 Wootton Interchange;
- Junction 13 A45 Queen Eleanor Interchange;
- Junction 15 A45 Barnes Meadow Interchange;
- Junction 16 A45 Lumbertubs Interchange;
- Junction 18 A5076/Towcester Road/Tesco roundabout;
- Junction 20 A5123/A5076 gyratory;
- Junction 21 A4500/A5075 gyratory;
- Junction 22 Plough gyratory.

4.19 As part the assessment of the transport associated with the Northampton Gateway development, TN7 and TN10 conclude that the modelled impact at the A45 Wootton

Interchange (**junction 12**) is likely to be a result of rat-running traffic which is avoiding the A45 Queen Eleanor Interchange. Therefore, it has been agreed with the TWG that rather than promoting an improvement at the junction that risks encouraging additional rat-running, it would be appropriate for the Northampton Gateway SRFI development to promote an improvement at the Queen Eleanor Interchange which would help to draw traffic away from the Wootton Interchange and discourage any additional rat-running through residential areas. Such a scheme is detailed in the Northampton Gateway Transport Assessment.

4.20 NCC have confirmed that they plan to implement a comprehensive improvement scheme at the A45 Queen Eleanor Interchange. This would assist in drawing rat-running traffic away from the Wootton Interchange. Therefore, it has been agreed with NCC that a financial contribution towards their comprehensive improvement scheme at the A45 Queen Eleanor Interchange improvement be secured as part of the Northampton Gateway SRFI development. This contribution would be equivalent to the cost of implementing the identified Northampton Gateway improvement scheme. Highways England have also confirmed this this is acceptable.

4.21 The results in **Table 2** show that performance of the Wootton Interchange would deteriorate further in the 2031 J3 cumulative impact scenario. However, it is considered that the above strategy remains valid and appropriate to address with this impact in J3 cumulative impact scenario.

4.22 It is noted that whilst Rail Central in their May 2017 publicly availably highway mitigation proposals were promoting an improvement scheme of their own at the A45 Queen Eleanor Interchange, this scheme has been removed from the mitigation proposals identified in the draft Transport Assessment presented by Rail Central at their stage 2 statutory consultation. Based on the above, it is consistent that Rail Central should also provide a financial contribution towards the comprehensive NCC improvement scheme at this junction.

4.23 **Table 2** shows that there would be impacts at both the A45 Barnes Meadow Interchange (**junction 15**) and the A45 Lumbertubs Interchange (**junction 16**) in the 2031 J3 cumulative impact scenario. There are not impacts at these junctions in the Northampton Gateway only scenario. However, the draft Rail Central Transport Assessment issued for the stage 2 statutory consultation shows that mitigation schemes are proposed at both junctions as part of the emerging Rail Central proposal. It is considered that proposed Rail Central mitigation schemes at these junctions could potentially mitigate the cumulative impact. However, it is noted that the emerging A45 Barnes Meadow scheme, presented as part of the Rail Central stage 2 statutory consultation, includes a high number of circulatory lanes on the gyratory. This aspect of the scheme may need to be subject to review as part of the road safety audit and scheme development.

4.24 The results in **Table 2** shows that there would be an impact at the A5076 Danes Camp Way/Towcester Road/Tesco gyratory (**junction 18**) in the J3 cumulative impact scenario.

4.25 A mitigation scheme is promoted at the junction to mitigate the impact of the Northampton Gateway SRFI, as detailed in the Northampton Gateway Transport Assessment. It has been agreed with NCC that a financial contribution to improving the wider A5076 corridor should be made, equivalent to the cost of implementing the identified Northampton Gateway mitigation scheme. This scale of the identified scheme is relative to the impact of the Northampton Gateway SRFI and would be unlikely to mitigate the cumulative impact of the two SRFI developments. However, the draft Rail Central Transport Assessment issued for the Rail Central stage 2 statutory consultation promotes a comprehensive mitigation scheme at this junction, which includes the highway works promoted by the Northampton Gateway SRFI scheme. It is considered that the identified Rail Central scheme could potentially mitigate the cumulative impact.

4.26 The summary results in **Table 2** show that there would be a significant impact at the A5123/A5076 (**junction 20**) gyratory in the 2031 J3 cumulative impact scenario.

4.27 As part of the Northampton Gateway SRFI a mitigation scheme is identified at A5123/A5076 junction. However, to provide NCC with flexibility regarding the implementation of improvement works at this location, it has been agreed that a financial contribution should be made equivalent to the cost of implementing the identified mitigation scheme. The scale of the identified scheme is relative to the impact of the Northampton Gateway SRFI and would be unlikely to mitigate the cumulative impact of the two developments. However, the draft Rail Central Transport Assessment issued for the Rail Central stage 2 statutory consultation promotes a comprehensive mitigation scheme at the junction, which includes the highway mitigation works promoted by the Northampton Gateway SRFI scheme. It is considered that the identified Rail Central scheme could potentially mitigate the cumulative impact.

4.28 At the A4500/A5076 gyratory (junction 21), **Table 2** shows that there would be an impact in the 2031 J3 cumulative impact scenario. There would not be an impact at this junction associated with just the Northampton Gateway SRFI development. However, the draft Rail Central Transport Assessment issued for the stage 2 statutory consultation shows that a mitigation scheme is proposed at this junction. Therefore, it is considered that identified Rail Central improvement scheme is likely to mitigate the cumulative impact.

4.29 As part of NCC's proposals to improve capacity and connectivity around Northampton Town Centre, there is a committed improvement scheme at the Plough Gyratory (**junction 22**). This scheme has been included in the NSTM2 for the reference case, development case and cumulative impact scenarios.

4.30 **Table 2** shows that there would be an impact at the Plough Gyratory in the 2031 J3 cumulative impact scenario, though there would not be an impact at this junction associated with just the Northampton Gateway SRFI development. Due to land constraints it is unlikely that a further material improvement could be made at this junction beyond that being delivered by the committed scheme. However, the Plough Gyratory would operate within 100% of its theoretical capacity in the 2031 J3 cumulative impact scenario, and therefore the residual cumulative impacts are unlikely be significant.

### VISSIM Micro-Simulation Model Results

4.31 VISSIM micro-simulation modelling has been undertaken to demonstrate the operation of the Northampton Gateway SRFI proposals at M1 J15 and M1J15A, using HE's VISSIM modal. The resulting VISSIM models and technical notes have been agreed with the TWG and is detailed in the Northampton Gateway SRFI Transport Assessment.

4.32 The 2031 VISSIM model has been amended to incorporate the May 2017 Rail Central proposals from M1 Junction 15A. All other aspects of the VISSIM modal are as per the Northampton Gateway highway mitigation strategy. The model has been run with the 2031 J3 cumulative impact scenario NSTM2 traffic flows. To assess the ability of the combined mitigation schemes to accommodate the traffic due to both SRFI developments key results from the 2031 J3 cumulative impact scenario have been collated and compared to the results from the 2031 D1 Reference Case model.

4.33 The following sections provides a summary of the VISSIM results, and full details, including the traffic flow matrices, are provided at the VISSIM3 TN at **Appendix I**.

#### *Network Performance*

4.34 The network performance indicators of average speed, average delay per vehicle, total delay and total travel time have been compared for each of the modelled scenarios.

4.35 **Figure 4** below shows that in the morning peak period the average delay per vehicle would be significantly reduced by 34% (from 141 seconds per vehicle to 93 seconds per vehicle) with the two SRFI developments and highway mitigation in place. **Figure 4** also shows that average vehicle speed would increase (from 35 mph to 37 mph), and total delay would reduce. Whilst total travel time is shown to increase, this is due to an increase in the number of vehicles using the strategic road network in the 2031 J3 cumulative impact model and hence total travel time increases.

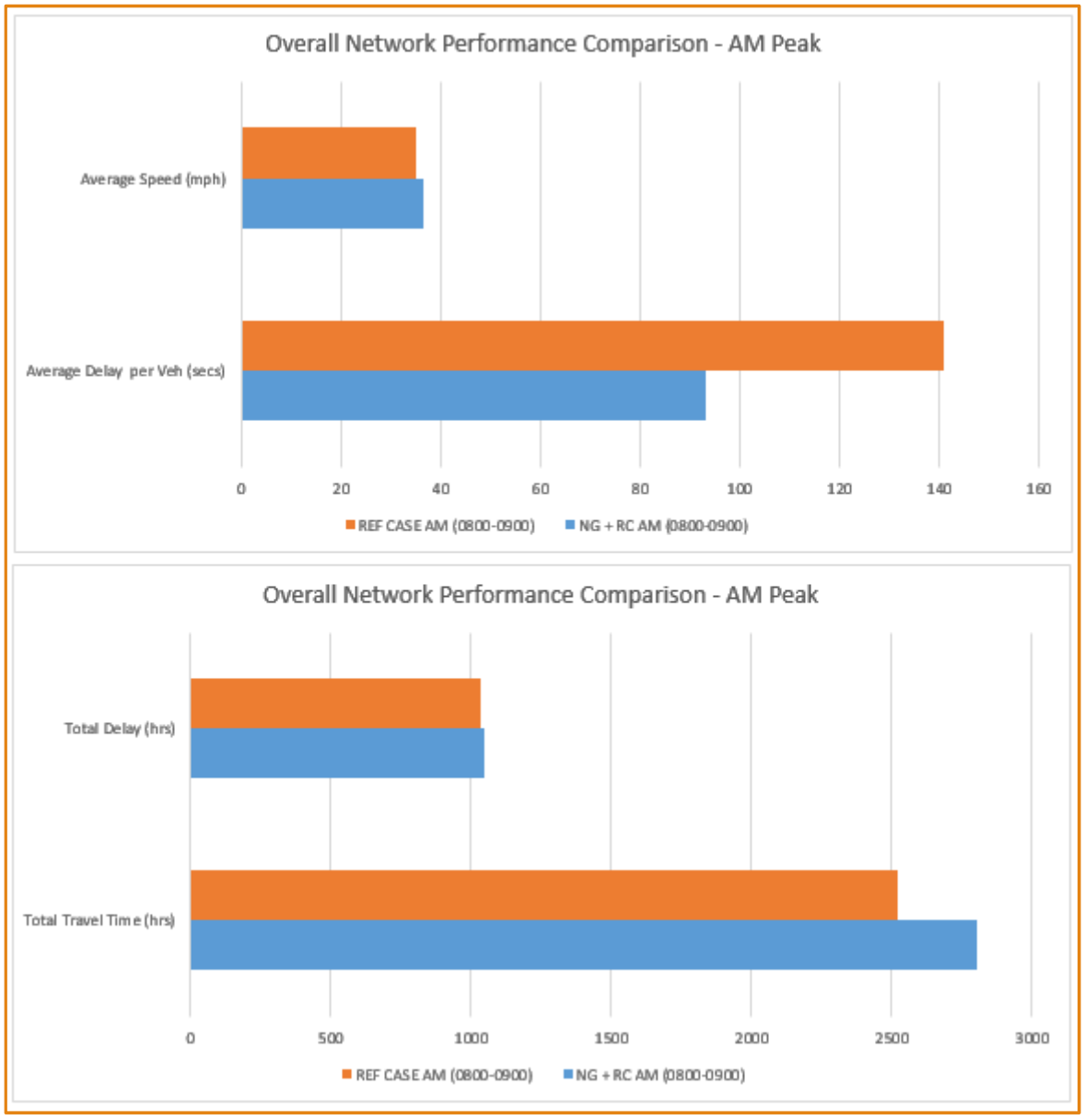



**Figure 4: 2031 morning peak network performance comparison**

4.36 **Figure 5** shows that in the evening peak period the average delay per vehicle would be significantly reduced by approximately 67% (from 249 seconds per vehicles to 83 seconds per vehicle) with the two SRFI developments and mitigation in place. **Figure 5** also shows that average vehicle speed would increase by 46% (from 27 mph to 39 mph) and total delay would be reduced by 51%. In the evening peak hour total travel time is shown to decrease despite the increased number of vehicles in the 2031 J3 cumulative impact model. This is due to the significant queuing at M1 Junction 15A in the 2031 D1 reference case scenario which causes flow break-down on the M1 mainline, significantly increasing journey time.

4.37 The improvement in the 2031 J3 cumulative impact scenario is achieved with the additional traffic due to the Northampton Gateway SRFI and Rail Central SRFI developments and

additional traffic which is drawn into the network as a result of the highway mitigation proposals at M1 J15 and M1 J15A. Hence, the respective M1 J15 and M1J15A improvement schemes would be sufficient to cater for the traffic demands of both SRFI developments and there would be significant betterment to the network as a whole.

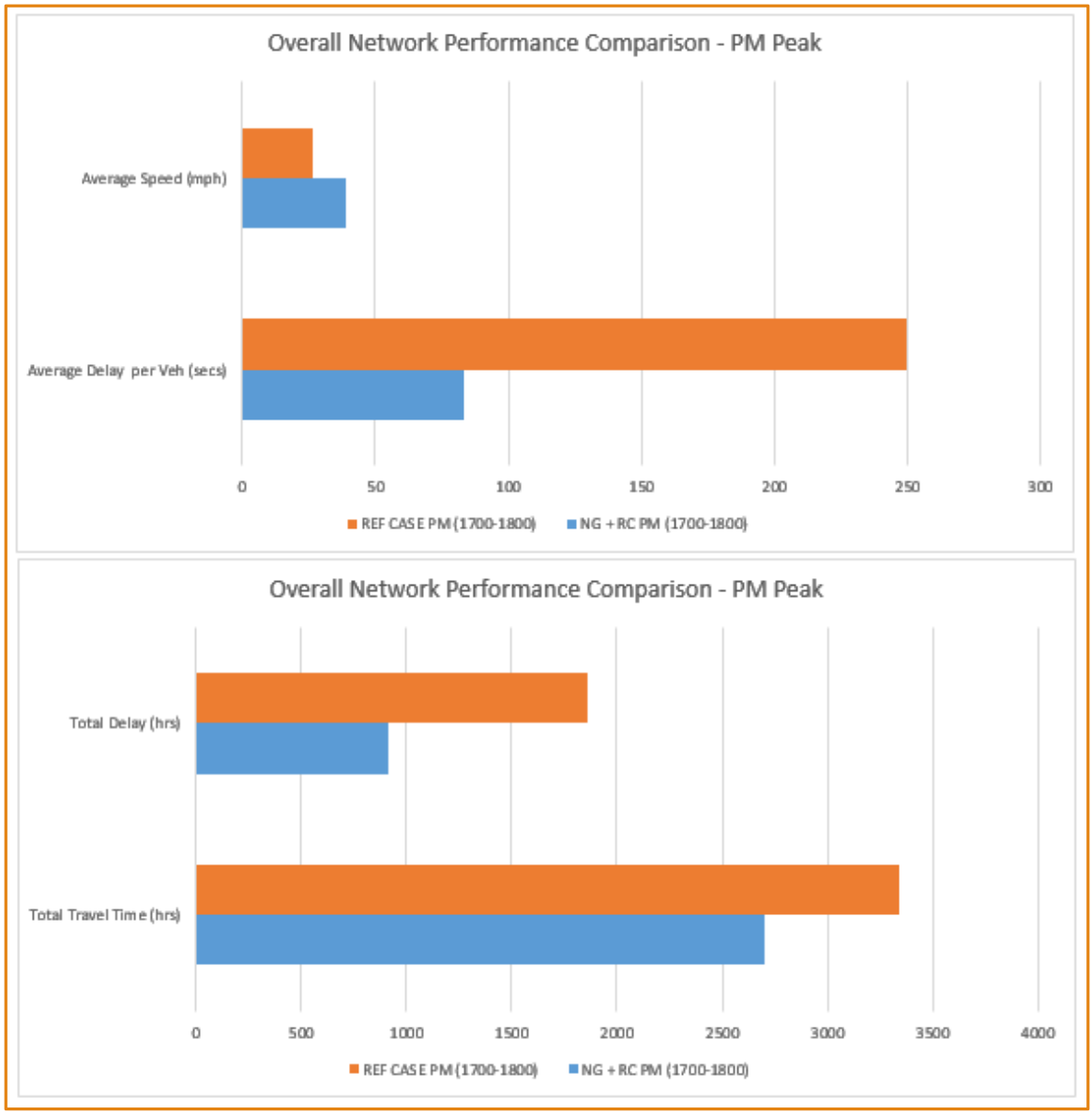



**Figure 5: 2031 evening peak network performance comparison**

*Journey time analysis*

4.38 Tables 1 and 3 in the VISSIM3 TN (**Appendix F**) provide a detailed comparison of journey times for cars and HGVs, respectively, across the VISSIM model network for the 2032 D1 reference case and the 2031 J3 cumulative impact scenarios for the morning peak period.

4.39 In general, the journey times for both cars and HGVs are reduced with the development traffic and proposed mitigation strategies in place, with an average journey time reduction of 18% for cars and 11% for HGVs when compared to the 2031 D1 reference case scenario.

4.40 The positive impact of the proposed mitigation schemes at M1Junction 15 and M1 Junction 15A are particularly evident when considering the journey time comparisons on routes from the A508 (all routes), M1 South (to A43 & A5123), A45 (all routes) and the M1 North (to A43 & A5123), where the journey times are reduced by around 60% in the morning peak period when compared to the 2031 D1 reference case scenario.

4.41 In the evening peak period, Tables 2 and 4 of the VISSIM3 report (**Appendix I**) show that in general, the journey times for both cars and HGVs are reduced with the development traffic and proposed mitigation strategies in place, with an average journey time reduction of 41% for cars and 36% for HGVs when compared to the 2031 D1 reference case scenario.

4.42 The positive impact of the proposed mitigation schemes at M1 Junction 15 and M1 Junction 15A are particularly evident when considering the journey time comparisons on routes from the A508 (all routes), M1 South (to A43 & A5123), A45 (all routes) and the M1 North (to A43 & A5123), where the journey times are reduced by up to 90% in the evening peak period when compared to the 2031 D1 reference case scenario.

4.43 There are a relatively small number of routes in the morning and evening peak hours where journey times see a notable increase. In the morning peak hour, there would be increases from M1 South to the A45, from Saxon Avenue to the A45 and Watering Lane, from A5123 to the M1 North and from Watering Lane to the A45. In the evening peak hour, there would be increases on routes from Saxon Avenue to the A45 and from Watering Lane to the A45.

4.44 These increases are a result of vehicles having to negotiate the larger M1 Junction 15 layout and because the improvements signalise both the Saxon Avenue and Watering Lane approaches, which adds some delay to these routes.

*Queue length assessment*

4.45 The average and maximum (average) queue lengths during the morning and evening peak periods has been compared on the approaches to M1 Junction 15 and M1 Junction 15A in the modelled network for the 2031 D1 reference case and 2031 J3 cumulative impact scenarios. A detailed analysis of the queueing results is provided at paragraphs 5.1.19 to 5.1.38, Figueres 7 to 15 and Appendix D of the VISSIM3 TN (**Appendix I**), and a summary is set out in the following sections.

4.46 Figures 7 and 12 of the VISSIM3 TN summarise the forecast queuing at M1 Junction 15 in the morning and evening peak hours, respectively.

4.47 During the morning peak hour average queue lengths on the A45 approach to M1 Junction 15 are forecast to reduce from around 2.5km in the 2031 D1 reference case to around 520 metres in the 2031 J3 cumulative impact scenario. Queues on the A508 approach are forecast to reduce from around 1.5km in the 2031 D1 reference case to around 15 metres in the 2031 J3 cumulative impact scenario.

4.48 During the evening peak hour queue lengths on the A45 approach to M1 Junction 15 are forecast to reduce from around 2.4km in the 2031 D1 reference case to around 65 metres in the 2031 J3 cumulative impact scenario. Queues on the A508 approach are forecast to reduce from around 105 metres in the 2031 D1 reference case to around 25 metres in the 2031 J3 cumulative impact scenario.

4.49 Queue lengths on Saxon Avenue approach to M1 Junction 15 would increase when compared to the 2031 D1 reference case scenario, due to the signalisation of the Saxon Avenue approach. However, Figure 7 and Appendix D of the VISSIM3 TN shows that the maximum queue length would be between 20 and 30 metres which would equate to approximately 4-5 pcus. This is not significant and would be expected to clear every cycle. In the evening peak hour, there is no significant difference between the queue lengths on Saxon Avenue in the 2031 D1 reference case and 2031 J3 cumulative impact scenarios.

4.50 The morning peak hour maximum queue length on the M1 northbound diverge at M1 Junction 15 is forecast to exceed the storage capacity on slip road and could potentially impact on the M1 mainline in the 2031 J3 cumulative impact scenario, as shown on **Figure**

**6**. This is largely due to an increased flow from the A45 to the M1 northbound on-slip which requires additional signal green time at the circulating stopline with the M1 northbound diverge approach. The average queue length in the 2031 J3 cumulative impact scenario can be accommodated with in the available space, which suggests that the issue would be intermittent. However, this impact is not present the Northampton Gateway scheme, and is therefore a result of the cumulative impact of both developments. The issue is not evident in the evening peak hour in the J3 cumulative assessment, with the forecast queue comfortably stored within the available space.

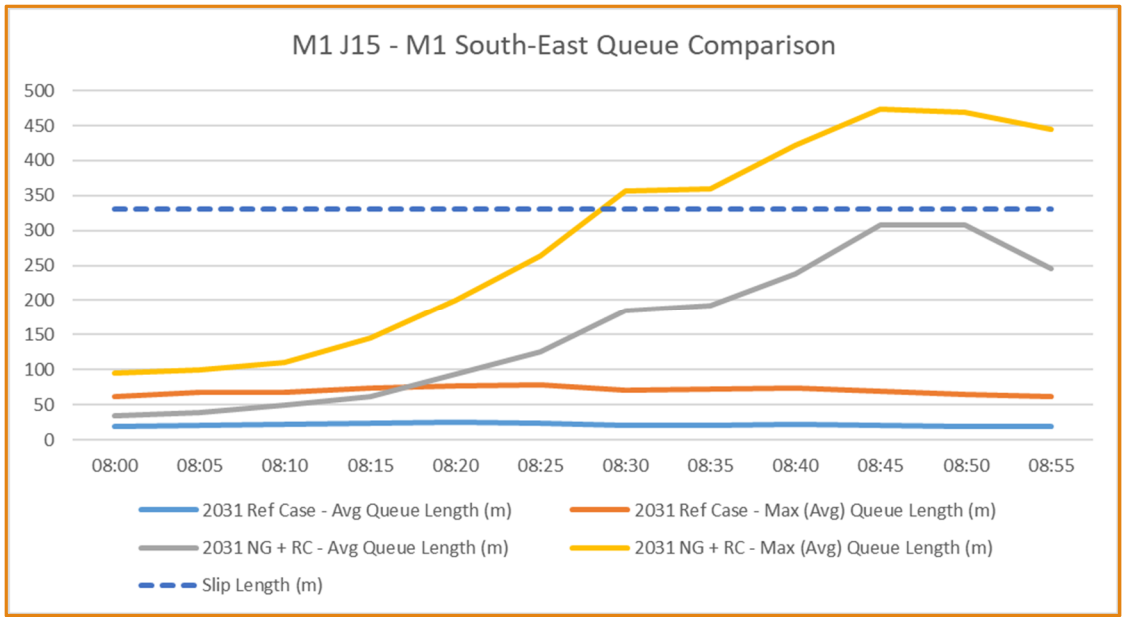



**Figure 6: morning peak hour M1 northbound diverge queue comparison, M1 J15**

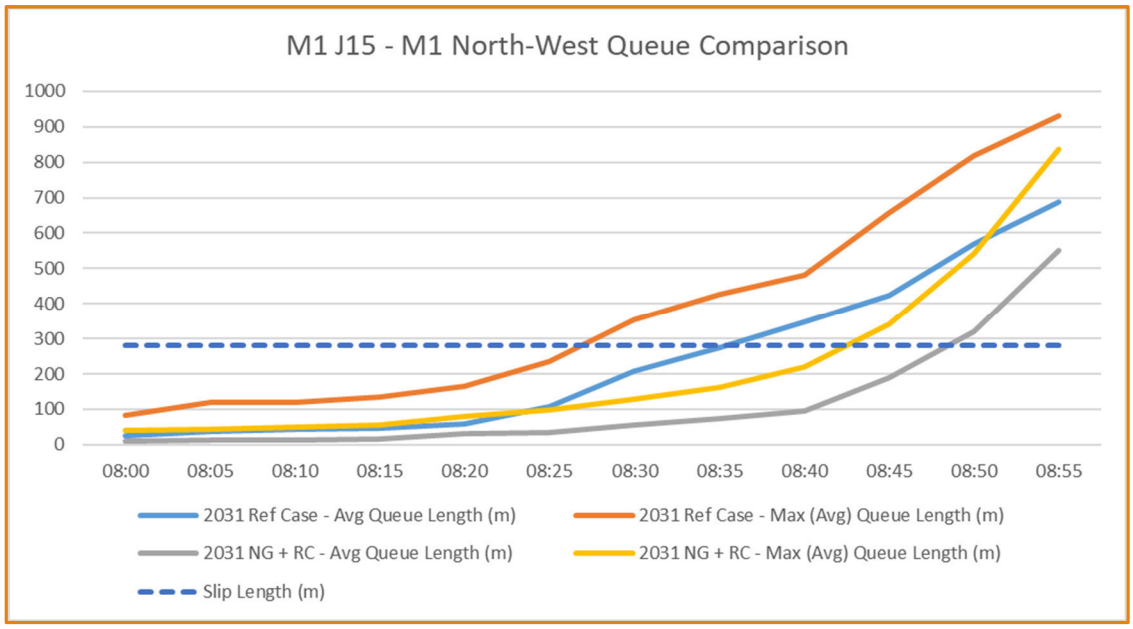



**Figure 7: morning peak hour M1 southbound diverge queue comparison, M1 J15**

4.51 At the M1 southbound diverge at M1 Junction 15, it is demonstrated that the forecast queue would be comfortably stored on the slip road during the evening peak hour in both the 2031 D1 reference case of 2031 J3 cumulative impact scenarios. However, in the morning peak hour **Figure7** shows that in the 2031 D1 reference case and 2031 J3 cumulative impact scenarios the average queue would reach back beyond the end of the slip road where it would impact on the M1 mainline flow, as shown at Figure 8 of the VISSIM3 TN. The VISSIM modelling undertaken for just the Northampton Gateway SRFI demonstrated that

in the mitigation scenario, the queue would be contained within the slip road and would not reach back to the M1 mainline.

4.52 Figures 10 and 13 of the VISSIM3 TN summarise the forecast queuing at M1 Junction 15A in the morning and evening peak hours, respectively.

4.53 It is shown that there are similar average queue lengths on the A5123 approach in the 2031 D1 reference case and 2031 J3 cumulative impact scenarios in the morning peak hour, with a modest increase in the average queue length in the evening peak hour due to the 2031 J3 cumulative impact scenario.

4.54 In the 2031 D1 reference case scenario, **Figure 8** shows that the average and maximum queue lengths on the M1 northbound diverge to M1 Junction 15A would steadily rise during the morning peak hour to a length of circa. 2.0km. **Figure 9** shows that in the evening peak hour these queues would already extend beyond the end of the slip road at the start of the peak hour, reaching back onto the M1 mainline and increasing to a length approaching 4km by the end of the peak period. This queue length would cause the flow to breakdown on the M1 mainline, as demonstrated on the VISSIM screenshots provided at Figures 11, 14 and 15 of the VISSIM1 TN.

4.55 With the proposed Rail Central mitigation in place in the 2031 J3 cumulative impact scenario for the morning peak hour, the average and maximum queue lengths would be significantly reduced, comfortably contained within the available storage space, as also shown on **Figure 8.** However, **Figure 9** shows that whilst still a significant improvement compared to the 2031 D1 reference case scenario, in the evening peak hour the queue in the 2031 J3 cumulative impact scenario would extend back to the M1 mainline before the end of the peak hour, as illustrated at Figure 15 of the VISSIM3 TN. The VISSIM modelling undertaken for just the Northampton Gateway SRFI demonstrated that in the mitigation scenario, the queue would be contained within the slip road and would not reach back to the M1 mainline.

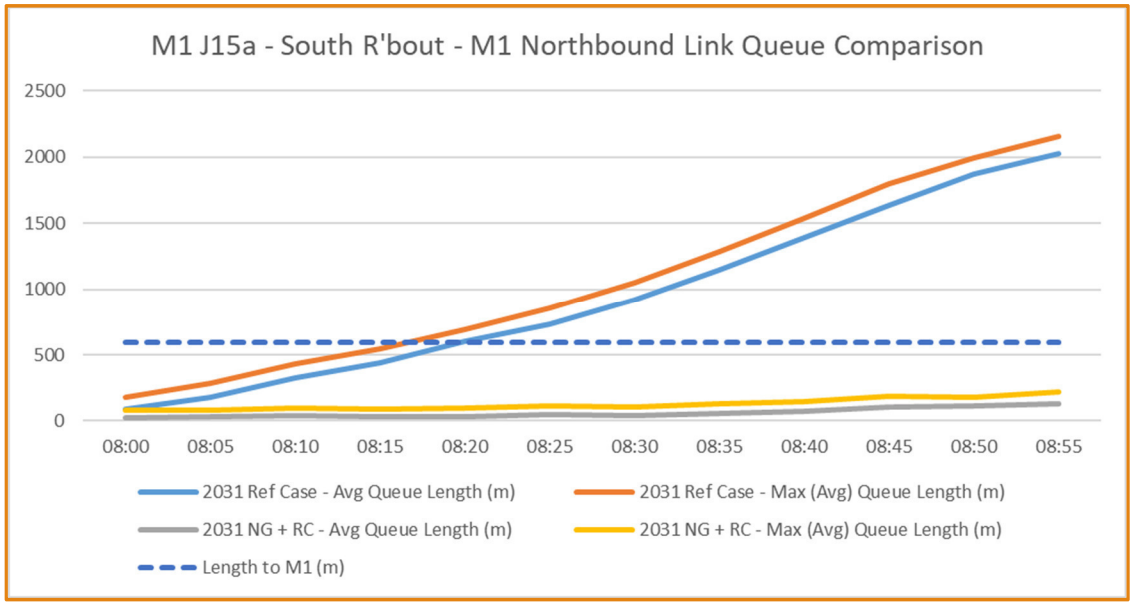



**Figure 8: morning peak hour M1 northbound diverge queue comparison, M1 J15A**

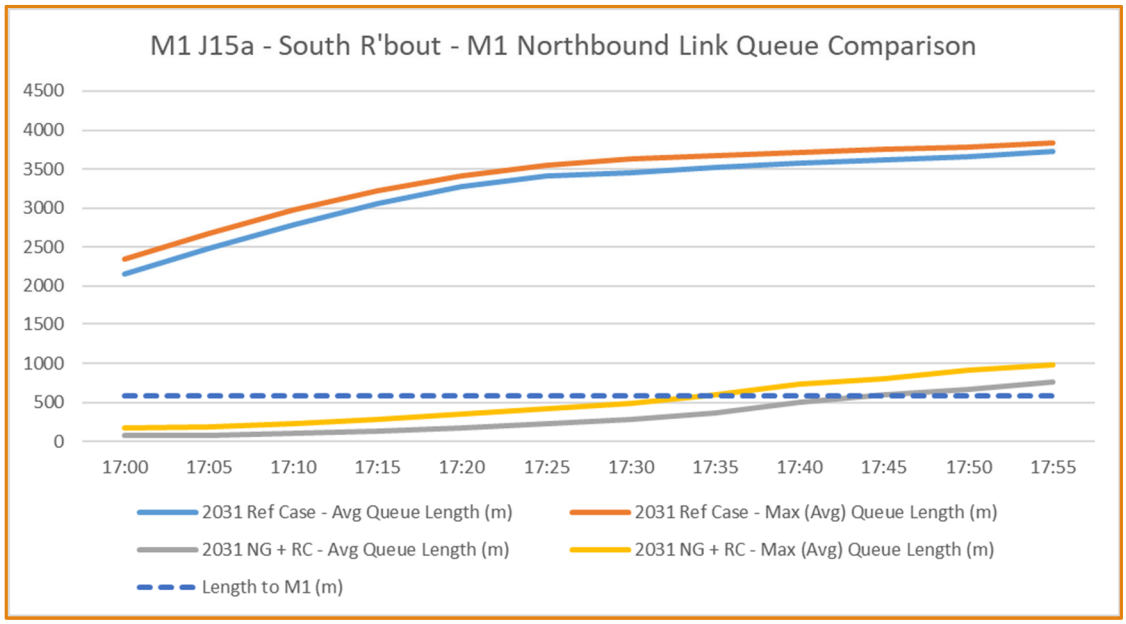



**Figure 9: evening peak hour M1 northbound diverge queue comparison, M1 J15A**

4.56 Similarly, for the 2031 D1 reference case scenario Figure 10 in the VISSIM3 TN show that the average and maximum queue lengths on the M1 southbound diverge approach to M1 Junction 15A would steadily rise during the morning peak hour to a length of circa. 3.0km. This queue length would extend back to the M1 mainline. In the evening peak hour, Figure 13 in the VISSIM3 TN shows that the queue would already extend beyond the end of the slip road at the start of the peak, and for forecast to increase to a length of 5km by the end of the peak period.

4.57 In the 2031 J3 cumulative impact scenario, with the proposed Rail Central mitigation at M1 Junction 15A, the average and maximum queue lengths would be reduced, comfortably contained within the available storage space in both peak hours, as shown on Figures 10 and 13 in the VISSIM3 TN.

4.58 On the A43 approach to M1 Junction 15A the average and maximum queue lengths in the morning peak hour would increase modestly in the 2031 J3 cumulative impact scenario when compared to the 2031 (D1) Reference Case scenario, which is a consequence of signalisation of the A43 approach. However, as shown on **Figure 10** below, in the evening peak hour the average and maximum queue lengths on the A43 are shown to increase significantly. This is not forecast to occur in the VISSIM modelling for just the Northampton Gateway scheme.

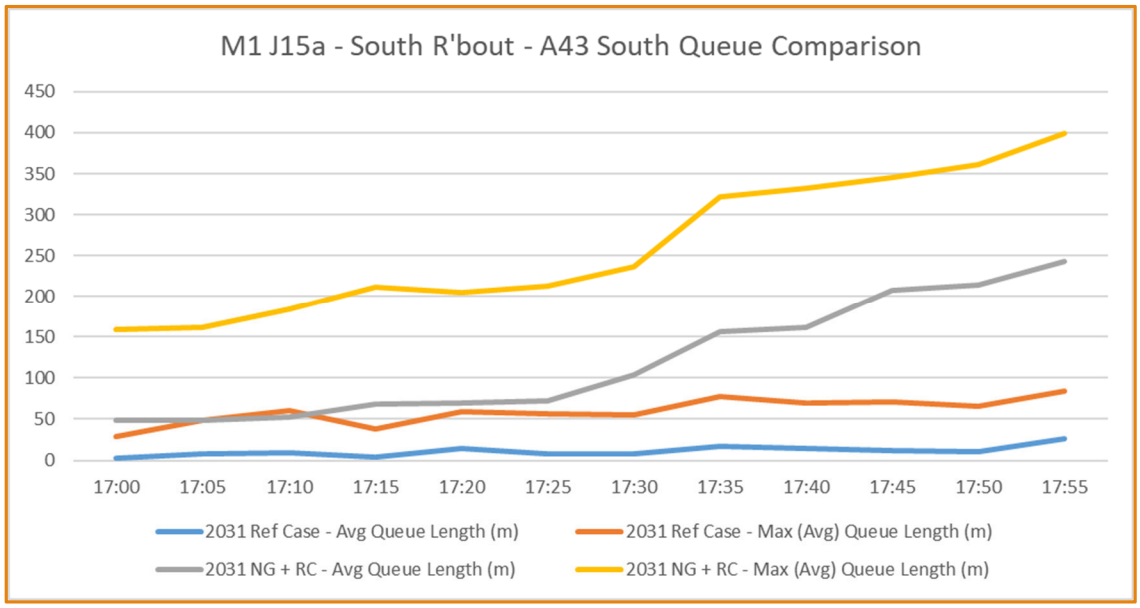



**Figure 10: evening peak hour A43 queue comparison, M1 J15A**

4.59 As discussed earlier in this technical note, a revised M1 J15A improvement scheme to that included in the J3 VISSIM modelling was presented by Rail Central as part of their stage 2 statutory consultation. This revised mitigation scheme reduces the scale of the mitigation proposals. Instead of replacing the northern roundabout with the proposed signal controlled T-junction, the roundabout is retained but signalised, similar in scale to the Northampton Gateway proposals at this location. The proposals for the southern junction, although altered in layout, retain the key operational features and capacity improvements, with the M1 northbound diverge and A43 remaining largely as previously proposed.

4.60 It is not anticipated that the revised layout would materially change the conclusions drawn from the VISSIM modelling presented in this section as the alterations to the scheme do not substantially change the proposals for the M1 slip roads.

# 5.0 PUBLIC TRANSPORT AND PUBLIC RIGHTS OF WAY

## Public Transport Strategy

5.1 The public transport strategy for the Northampton Gateway SRFI is set out in detail in the Transport Assessment. The public transport strategy and cost plan has been agreed with the Transport Working Group.

5.2 The strategy proposes a new, developer funder, bus service which would run from Northampton Town Centre and access into the heart of the development. It is anticipated that as the development is built-out and employee numbers grow, the bus service would become commercially viable. Further, new bus stops would be provided at the site access roundabout provide access to the existing bus services on the A508 corridor.

5.3 The emerging public transport strategy for the Rail Central SRFI is reliant on a bus interchange accessed off Northampton Road which will enable existing bus services running along this road to drop off employees at the site. There is currently no consensus on whether the existing bus services would have sufficient capacity, or whether new bus services would also be required.

5.4 However, it is clear that there would not be any interaction between the public transport strategies for the two SRFI developments.

## Public Rights of Way (PRoW)

5.5 The walking and cycling strategy for the proposed Northampton Gateway SRFI development are described within Transport Assessment, as are the proposed changes to the PRoW on non-motorised users (pedestrian, cyclists and equestrians). The walking and cycling strategy and PRoW diversions have been agreed with the Transport Working Group.

5.6 Upon inspection of the of the walking and cycling strategy and PRoW diversions proposed by the Rail Central SRFI development there are no overlaps or conflicts with those proposed by the Northampton Gateway SRFI, with the exception of PRoW KX17 which straddles both SRFI sites.

5.7 Within the Northampton Gateway SRFI site, public footpaths KX17 and KX13 that cross the main site would be diverted and extended to form a loop within the landscape bunding. To the south of Zone A4 a public footpath would complete the new loop arrangement linking with the existing public footpath and bridge over the West Coast Mainline railway.

5.8 The emerging Rail Central proposal also includes for a footpath over the railway line with the path then tracking alongside the railway line before crossing again to the north. However, the respective strategies for PRoW KX17 are incompatible.

5.9 Further to the above, the stage 2 statutory consultation material in support of the Rail Central SRFI provides no details of the likely impacts on existing PRoW KX2/LA13 south of Junction 15A, and how this route will be accommodated and/or amended as a result of the highways mitigation works that are proposed by Rail Central at M1 Junction 15A.

# 6.0 SUMMARY AND CONCLUSIONS

## Background and Modelling Approach

6.1 As required by Northamptonshire County Council and agreed by the Transport Working Group, the impacts of the Northampton Gateway SRFI development have been modelled using the Northamptonshire Strategic Transport Model (NSTM2). The NSTM2 includes all committed development and allocated sites within the Northamptonshire area and therefore, the cumulative impacts of the Northampton Gateway SRFI have been assessed.

6.2 There is a proposed NSIP project on an adjacent site known as 'Rail Central'. Although not a committed development, an assessment of the potential cumulative effects of that emerging proposal in addition to the Northampton Gateway SRFI has been undertaken.

6.3 Modelling the Rail Central scheme in the NSTM2 requires an understanding of the vehicle trip generation and proposed highway mitigation. At the meeting of 19 December 2017, the TWG agreed that the absence of information from Rail Central was not an acceptable reason to delay the Northampton Gateway DCO application. Therefore, the cumulative assessment was progressed based on the most up to date data for the Rail Central scheme, which was that contained within their 'Transport and Access' 24 May 2017 Local Liaison Group Meeting presentation. The NSTM2 cumulative impact assessment therefore included the traffic generated by the Rail Central SRFI and the proposed highway mitigation schemes at M1 Junction 15A and the A43 Tove roundabout.

6.4 WSP were commissioned in December 2017 to undertake the NSTM2 cumulative impact assessment which was completed at the end of January 2018. The outputs from the NSTM2 cumulative impact assessment were used to undertake detailed modelling of the Northampton Gateway study area junctions, including use of the VISSIM model which was updated to include the Rail Central proposals at M1 Junction 15A.

6.5 After the conclusion of the above work, but prior to submission of the Northampton Gateway SRFI DCO, Rail Central undertook their Stage 2 Statutory Consultation between 15 of March 2018 and 23 April 2018. As part of that consultation, Rail Central released further information into the public domain regarding their proposed scheme, including changes to their emerging highway mitigation proposals. However, Rail Central are yet to complete the VISSIM modelling at M1 Junction 15 and Junction 15A and have not yet modelled all of their highway mitigation in the NSTM2. This work may lead to further changes to the Rail Central highway mitigation strategy which in turn could alter the cumulative effects.

## NSTM2 Cumulative Impact Assessment Results

6.6 Analysis of the NSTM2 cumulative impact assessment has been undertaken for the study area junctions identified in the Northampton Gateway TA. The assessment shows a significant increase in traffic on the A508 corridor which, as discussed in the Northampton Gateway SRFI Transport Assessment, is largely due to the proposed A508 Roade Bypass and the improvement works at M1 Junction 15 releasing existing bottlenecks and drawing traffic which would have previously used alternate routes back onto the A508.

6.7 The NSTM2 cumulative impact assessment outputs also show significant traffic increases on the A43 and A5 corridors. The proposed Rail Central development accesses the highway network from the A43 and so large traffic increases would be expected on these corridors The Northampton Gateway study area does not extend to include the A43 and A5 corridors and therefore detailed assessment of the impact of the additional Rail Central traffic at these locations has not been possible.

6.8 The analysis provided in the Northampton Gateway SRFI Transport Assessment showed that as a result of the proposed highway mitigation there would be reductions in traffic

through Blisworth, Milton Malsor and Roade. The results of the NSTM2 cumulative impact assessment shows that in general there would be comparable reductions through these villages, although there is a high westbound flow forecast along Watering Lane through Collingtree and Milton Malsor.

6.9 Therefore, the NSTM2 cumulative impact assessment demonstrates that there is generally little interaction between the A508 and A43 corridors south of the M1.

6.10 To the north of the M1, the NSTM2 cumulative impact assessment shows a large increase in the westbound flow along the A5076 Mere Way from the A45 Queen Eleanor Interchange, with further westbound traffic increases from the A45 Wootton Interchange through the residential areas of Wootton and East Hunsbury.

6.11 The Transport Assessment for the Northampton Gateway SRFI shows that traffic increases on the A5076 corridor are relatively modest when compared to the 2031 (D1) reference case, as development traffic north of the M1 largely stays on the A45 corridor. However, there is some reassignment of background traffic onto the A5076 Ring Road corridor. The NSTM2 cumulative impact assessment shows that when compared to the Northampton Gateway SRFI, the Rail Central SRFI would significantly increase traffic flows along the A5123, A5076 and Swan Valley Way corridors.

6.12 Therefore, due to interactions between traffic generated by both SRFI developments and reassigning background traffic, the NSTM2 cumulative impact assessment shows that the traffic increases on these routes are now more significant, especially along the A5076 Ring Road and through Wootton and East Hunsbury.

### Detailed Modelling Results

6.13 The Transport Assessment for the Northampton Gateway SRFI concludes that the modelled impact at the Wootton Interchange is a result of rat-running traffic which is avoiding the Queen Eleanor Interchange. NCC have confirmed that they plan to implement a comprehensive improvement scheme at the Queen Eleanor Interchange which could draw traffic away from the Wootton Interchange. It has been agreed with the TWG that rather than promoting an improvement at the Wootton Interchange, it would be appropriate for a financial contribution towards this comprehensive scheme to be secured as part of the Northampton Gateway SRFI development. Highways England have also confirmed this this is acceptable.

6.14 The cumulative impact assessment results show that the performance of the Wootton Interchange would deteriorate. However, it is considered that the above strategy remains valid and appropriate to address this impact in the cumulative impact scenario.

6.15 In their May 2017 publicly availably highway mitigation proposals, Rail Central promoted an improvement scheme at the Queen Eleanor Interchange. This scheme has been removed from the mitigation proposals presented at their Stage 2 Statutory Consultation, though the basis for this is not given. Based on the above, it is consistent that Rail Central should also provide a financial contribution towards the comprehensive NCC improvement scheme at this junction.

6.16 The cumulative impact assessment model results show that there would be impacts at the A45 Barnes Meadow Interchange, the A45 Lumbertubs Interchange and the A4500/A5076 gyratory. There are no impacts at these junctions in the Northampton Gateway only scenario. However, the draft Rail Central Transport Assessment issued for the Stage 2 Statutory Consultation shows that mitigation schemes are proposed at these junctions and it is considered that proposed Rail Central mitigation schemes at these junctions could potentially mitigate the cumulative impact.

6.17 The cumulative impact assessment results show that there would be impacts at the A5076 Danes Camp Way/Towcester Road/Tesco gyratory and at the A5123/A5076 gyratory. Highway improvement schemes are promoted at both of these junctions to mitigate the impact of the Northampton Gateway SRFI, as detailed in the Transport Assessment. It has been agreed with NCC that a financial contribution to improving the wider A5076 corridor should be made, equivalent to the cost of implementing the identified Northampton Gateway mitigation schemes. The scale of the identified schemes would be unlikely to mitigate the cumulative impact of the two SRFI developments. However, the draft Rail Central Transport Assessment issued for the Rail Central Stage 2 Statutory Consultation promotes larger mitigation schemes at these locations, due to Rail Central having a greater traffic impact than Northampton Gateway at these junctions. It is considered that the identified Rail Central schemes could potentially mitigate the cumulative impact.

6.18 The detailed modelling therefore supports the conclusions of the strategic NSTM2 modelling that there is generally little interaction between the A508 and A43 corridors south of the M1, and that the addition of the Rail Central SRFI would not adversely impact upon the benefits to the A508 corridor provided by the Northampton Gateway SRFI highway mitigation strategy.

6.19 The results of the VISSIM micro-simulation modelling of M1 Junction 15 and 15A show that network performance is significantly improved in the cumulative impact scenario in comparison to the Reference Case, with the Northampton Gateway and Rail Central developments and associated junction improvements in place.

6.20 The cumulative impact assessment VISSIM results show that journey times for both cars and HGVs are reduced, with an average journey time reduction of 18% for cars and 11% for HGVs in the morning peak hour when compared to the Reference Case scenario. In the evening peak period, the journey times are reduced by 41% for cars and by 36% for HGVs.

6.21 Nonetheless, there would be some impacts in terms of queueing in the cumulative impact assessment scenario, not present in the Northampton Gateway only modelling, detailed as follows:

- In the morning peak hour the maximum queue length on the M1 northbound diverge at M1 Junction 15 is forecast to exceed the storage capacity on the slip road and could potentially impact on the M1 mainline. This is not present in the Reference Case.
- In the morning peak hour the average queue on the M1 southbound diverge at M1 Junction 15 would reach back beyond the end of the slip road where it would impact on the M1 mainline flow. This occurs to a greater extent in the Reference Case and so would still represent an improvement.
- Although still an improvement on the Reference Case scenario, the queue lengths on the M1 northbound diverge at M1 Junction 15A would extend back to the M1 mainline before the end of the cumulative impact assessment evening peak hour.
- On the A43 approach to M1 Junction 15A the average and maximum queue lengths in the evening peak hour on the A43 are shown to increase significantly in the cumulative impact assessment scenario.

6.22 A revised M1 Junction 15A improvement scheme to that included in the cumulative impact VISSIM modelling was presented by Rail Central as part of their Stage 2 Statutory Consultation. This revised mitigation scheme reduces the scale of the mitigation proposals. However, it is not anticipated that the revised layout would materially change the conclusions drawn from the VISSIM modelling presented in this section as the alterations to the scheme do not substantially change the proposals for the M1 slip roads.

## Public Transport Strategy and Public Rights of Way (PRoW)

6.23 There would not be any interaction between the public transport strategies for the two SRFI developments and therefore there would not be an adverse impact.

6.24 Within the Northampton Gateway SRFI site, public footpaths KX17 and KX13 that cross the main site would be diverted and extended to form a loop within the landscape bunding. To the south, a public footpath would complete the new loop arrangement linking with the existing public footpath and bridge over the West Coast Mainline railway. The Rail Central proposal also includes for a footpath over the railway line with the path then tracking alongside the railway line before crossing again to the north. However, the respective strategies for PRoW KX17 are incompatible.

6.25 The Rail Central Stage 2 Statutory Consultation material provides no details of the likely impacts on existing PRoW KX2/LA13 south of Junction 15A, or how this route will be accommodated within the highways mitigation works that are proposed by Rail Central at M1 Junction 15A.

# APPENDIX A

# RAIL CENTRAL 'TRANSPORT AND ACCESS' 24 MAY 2017 LOCAL LIAISON GROUP MEETING PRESENTATION

Local Liaison Group Meeting No.4

Wednesday, 24 May 2017

# *Transport and Accessibility*

Rupert Lyons
Michelle Berrington

- Rupert Lyons MSc CMILT MIoD

  *Director*

- Michelle Berrington BA (Hons) MSc MCIHT CMILT

  *Regional Director*

# Transport and Accessibility

- Our brief
- The evidence base:
  - The statutory consultees that we are working with
  - The modelling tools being used
  - The baseline data that has been obtained
  - The forecast trip attraction that has been determined
  - The site access strategy that we've developed
  - The assessments that are being undertaken
  - The mitigation measures that are being designed
  - The milestones achieved

# Statutory Consultees

Northamptonshire County Council

highways england

Canal & River Trust

wsp

AECOM

# Modelling Tools

The modelling tools being used:

- Northamptonshire Strategic Transport Model (NSTM)
  - the Highway Authority's strategic traffic model
  - WSP's Local Model Validation Report (LMVR), March 2017
  - Forecast year 2031 with AM peak (0800-0900) and PM peak (1700-1800)
  - SATURN version 11.3.12

- VISSIM – a microsimulation traffic model
- Junctions9 – isolated uncontrolled junction modelling program
- LinSig – isolated or linked signal controlled junction modelling program



Agreed with Northamptonshire County Council and Highways England

# Baseline Data

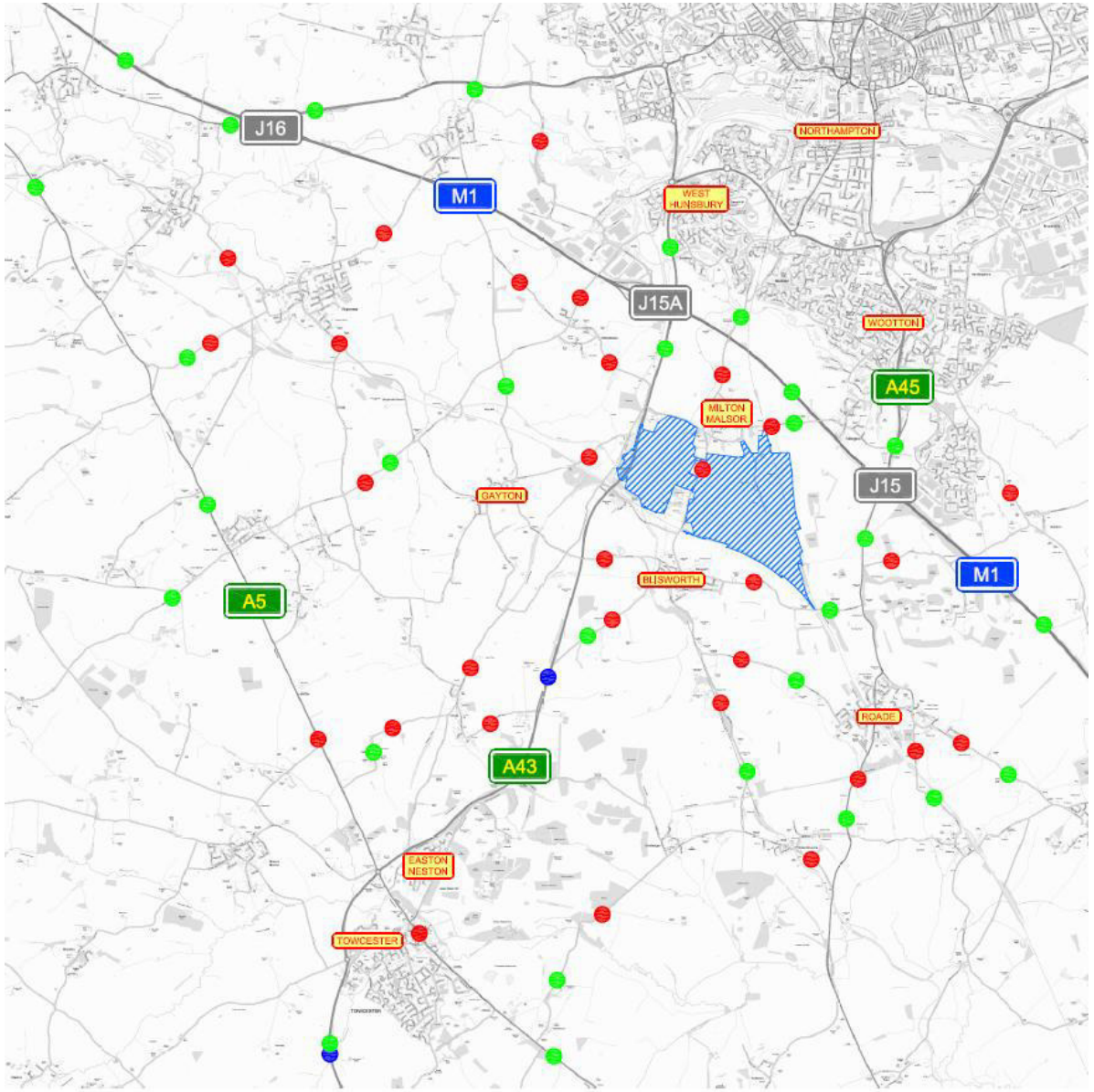
The baseline data that has been obtained:

- NSTM coverage in vicinity of Rail Central site was previously limited
- Data collection exercise (June / July 2016)
  - 30 week-long automatic traffic counter (ATC) surveys
  - 2 four-week long ATC surveys
  - 28 automatic number plate recognition (ANPR) survey locations



Agreed with Northamptonshire County Council and Highways England

# Survey Locations




- Automatic traffic count locations (One Week)
- Automatic traffic count locations (Four Weeks)
- Automatic number plate recognition locations

# Forecast Trip Attraction



- Separate assessment of:

1. Heavy Goods Vehicle (HGV) movements
   - GB Freight Model – developed by MDS Transmodal (on behalf of the Department for Transport)
2. All other traffic
   - Based on trip attraction at a proxy sites (East Midlands Gateway, DIRFT and Radlett)
   - Method of travel





Agreed with Northamptonshire County Council and Highways England

# Daily Vehicle Movements

- 21,379 total vehicle movements
- 3,385 HGV arrivals and 3,385 HGV departures
- 7,363 other vehicle arrivals and 7,246 other vehicle departures

Agreed with Northamptonshire County Council and Highways England

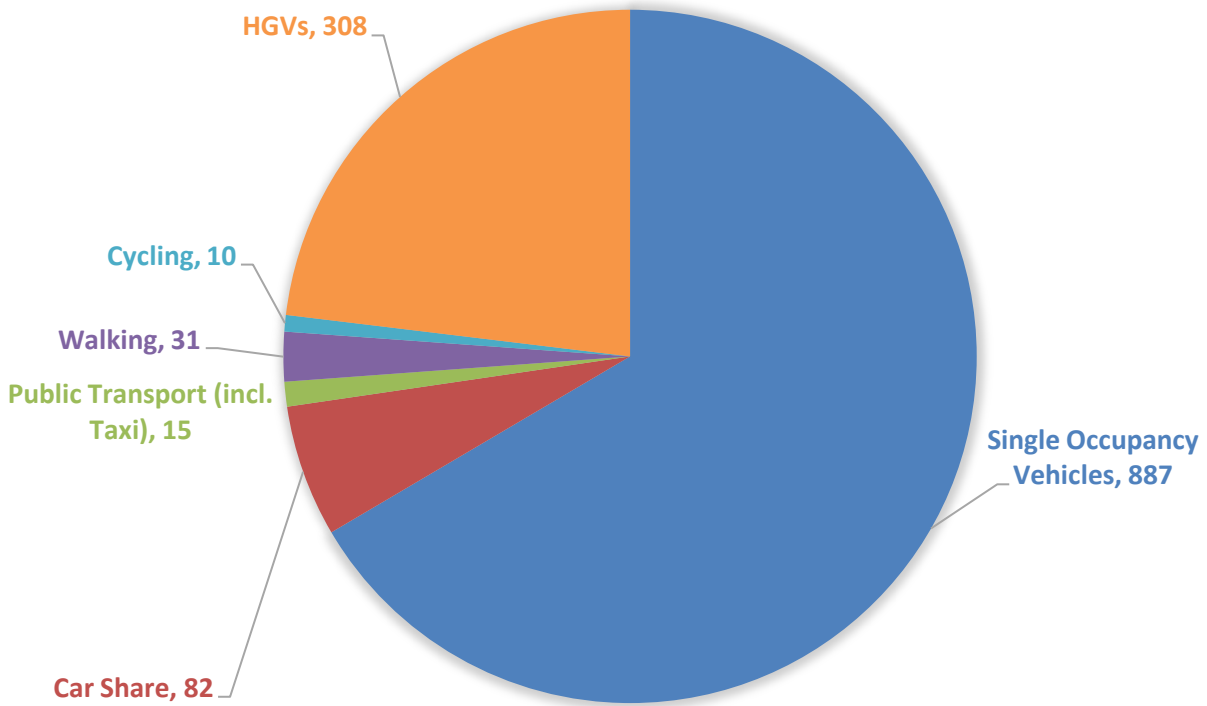
# Peak Hour Vehicle Movements

- AM peak (0800-0900)
  - 1,237 total vehicle movements
  - 143 HGV arrivals and 165 HGV departures
  - 837 other vehicle arrivals and 92 other vehicle departures
- PM peak (1700-1800)
  - 1,570 total vehicle movements
  - 156 HGV arrivals and 178 HGV departures
  - 275 other vehicle arrivals and 961 other vehicle departures

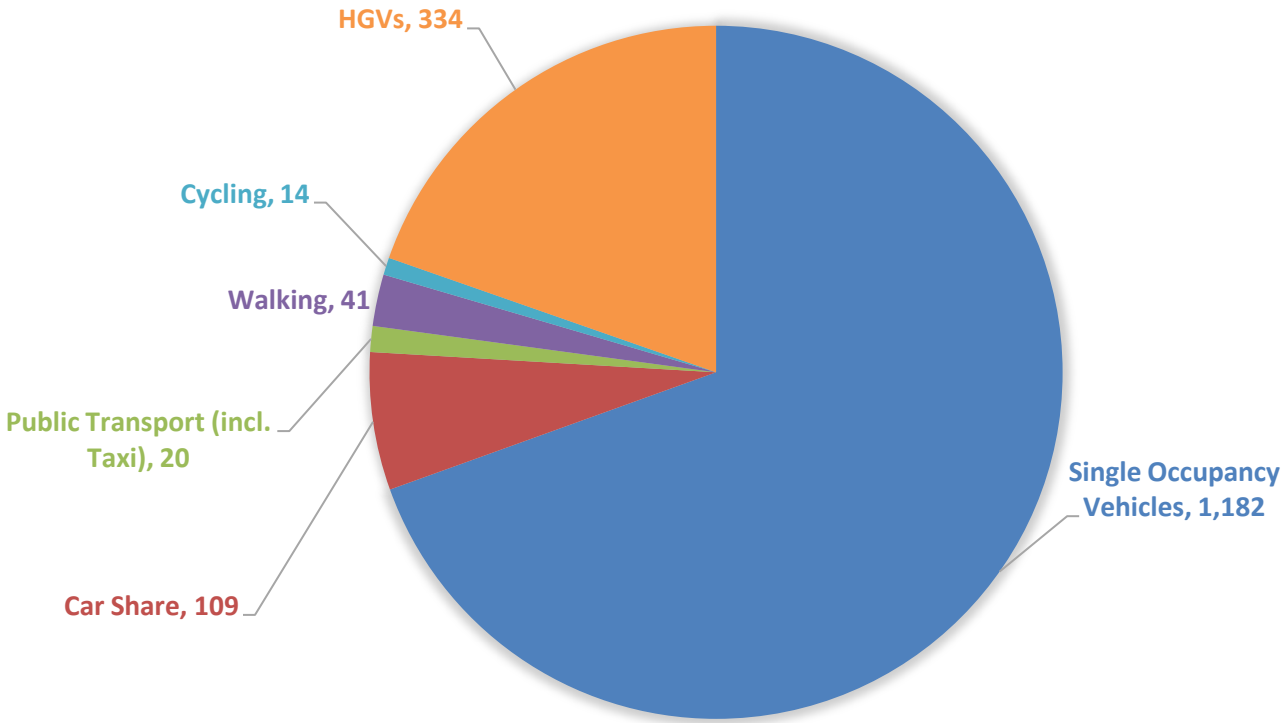
Agreed with Northamptonshire County Council and Highways England

# Peak Hour Person Trips

AM PEAK (0800-0900)




PM PEAK (1700-1800)




Agreed with Northamptonshire County Council and Highways England

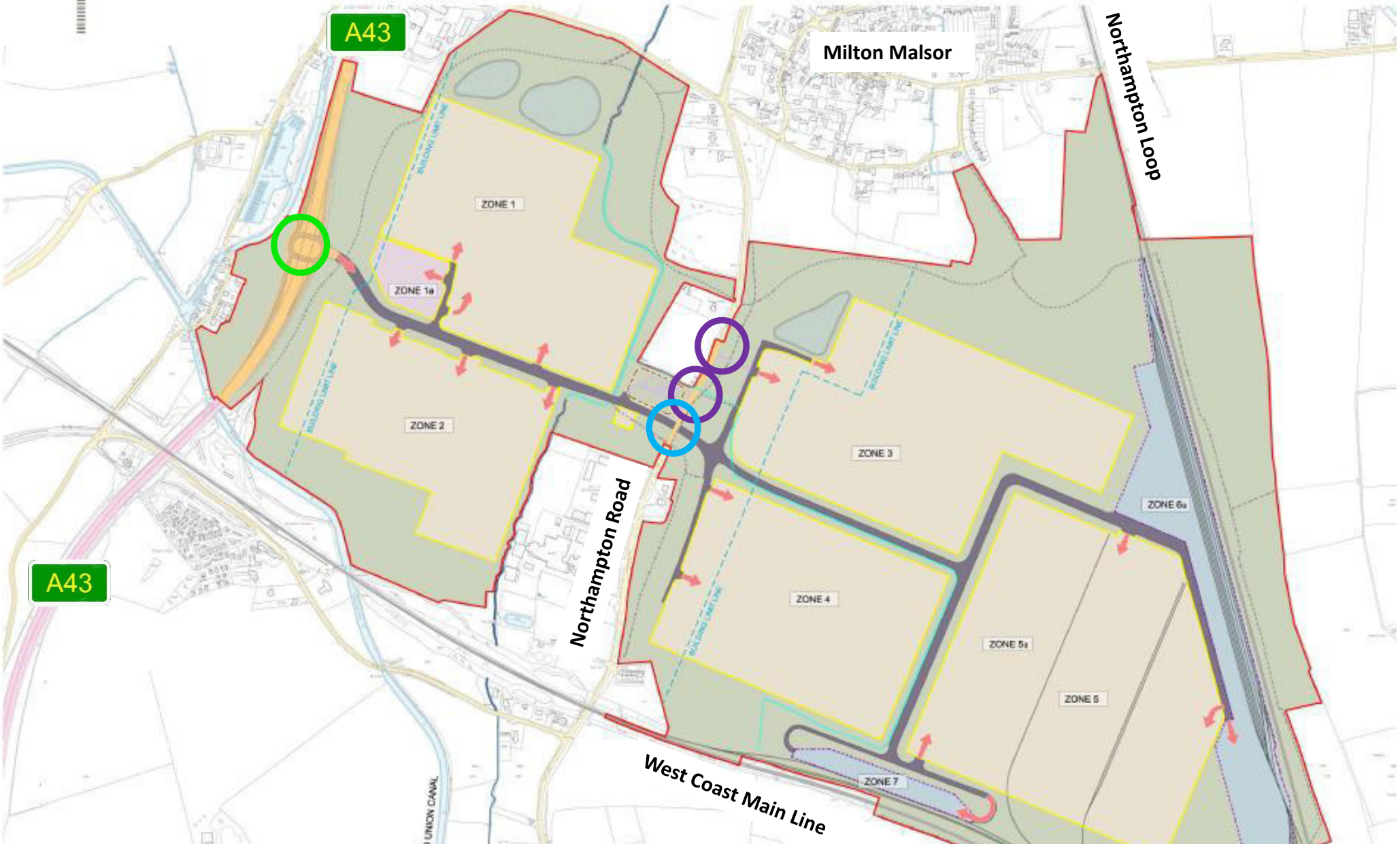
# Site Access Strategy

- A43 – *site traffic access*
  - New grade separated roundabout junction
- Northampton Road – *no site traffic access*
  - Underpass
  - Emergency Services' access
  - Pedestrian and cycle access
- New and higher frequency bus services
- Travel Planning and sustainable travel initiatives



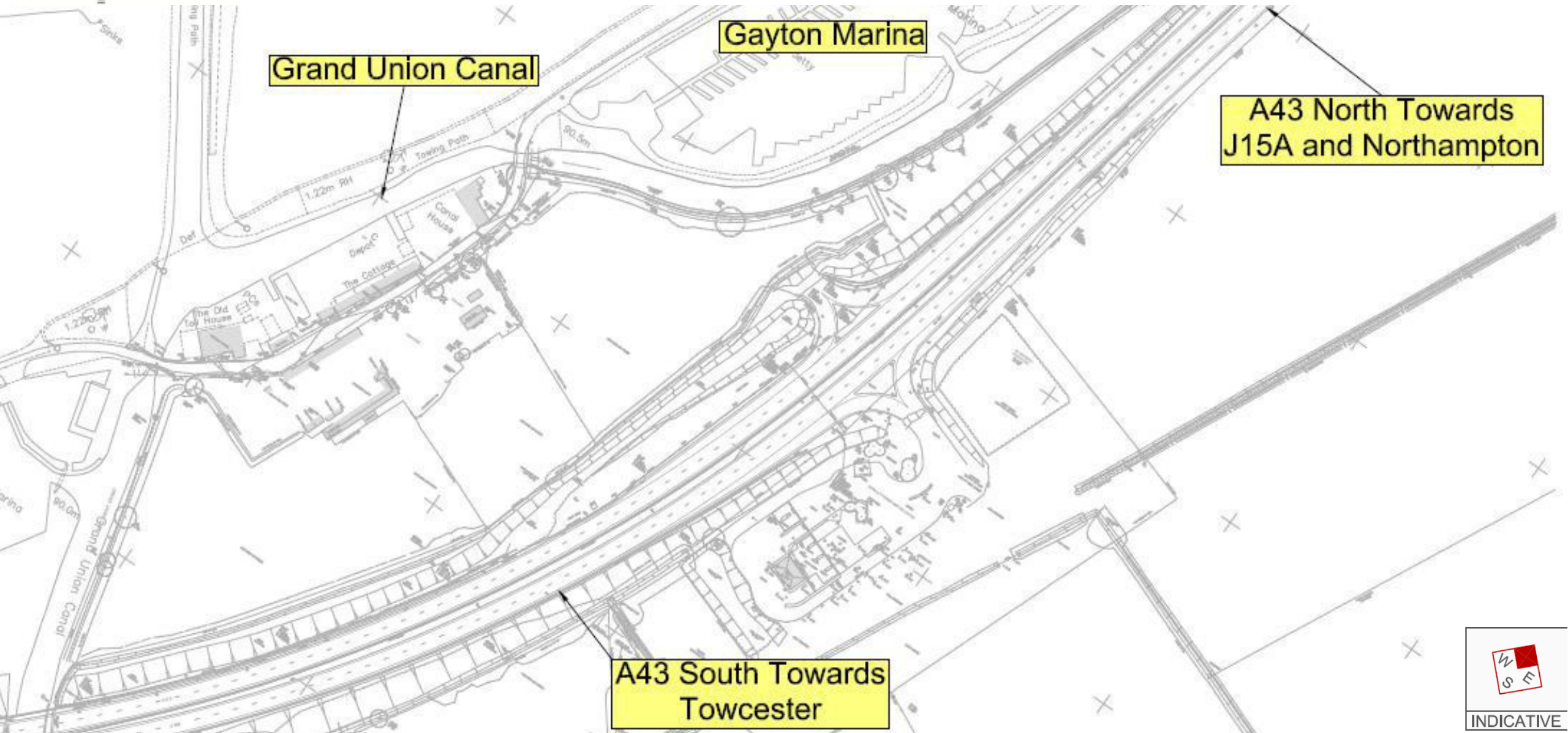
Agreed with Northamptonshire County Council and Highways England

# Parameters Plan

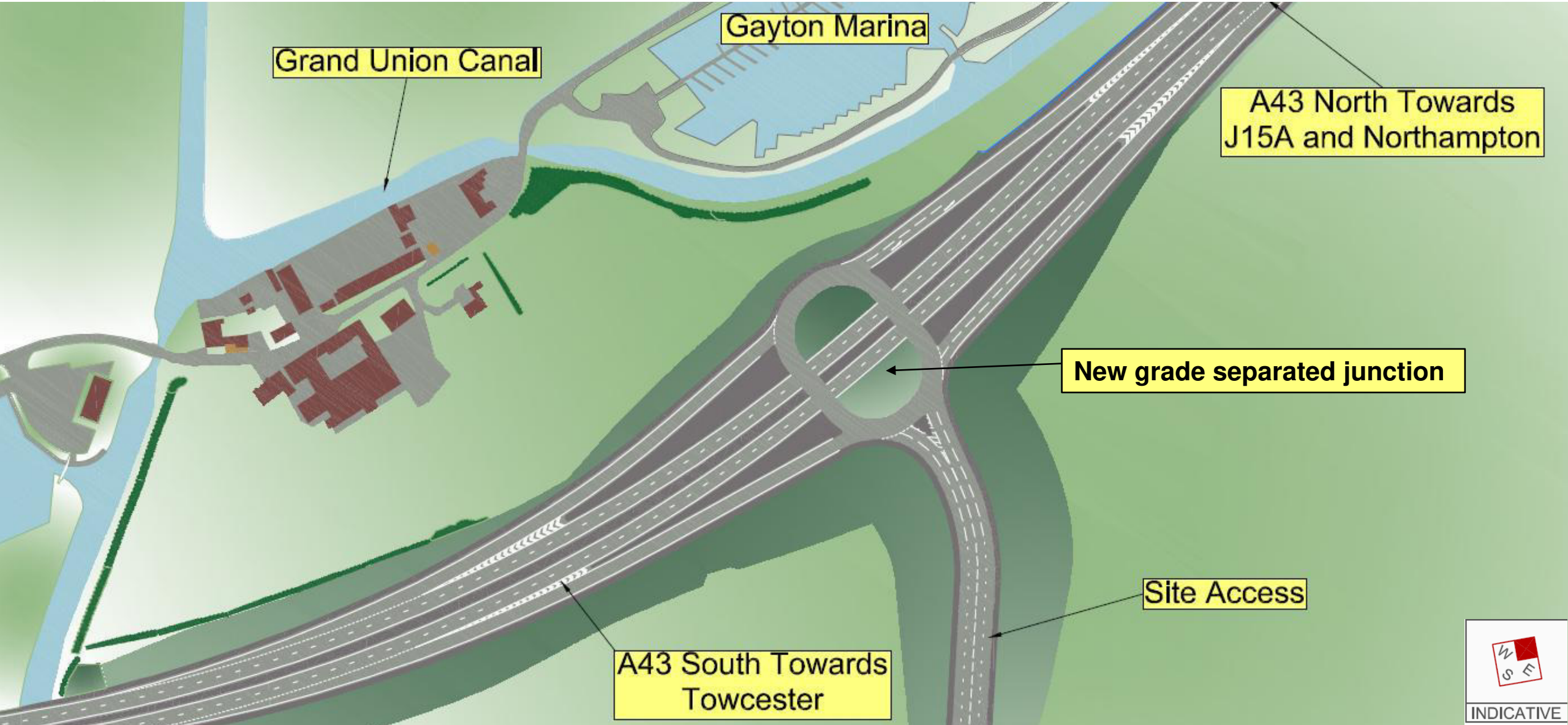



- A43 Site Access Junction
- Northampton Road Underpass
- Emergency Vehicles' access

# A43 Existing Arrangement



# A43 Proposed Site Access Junction



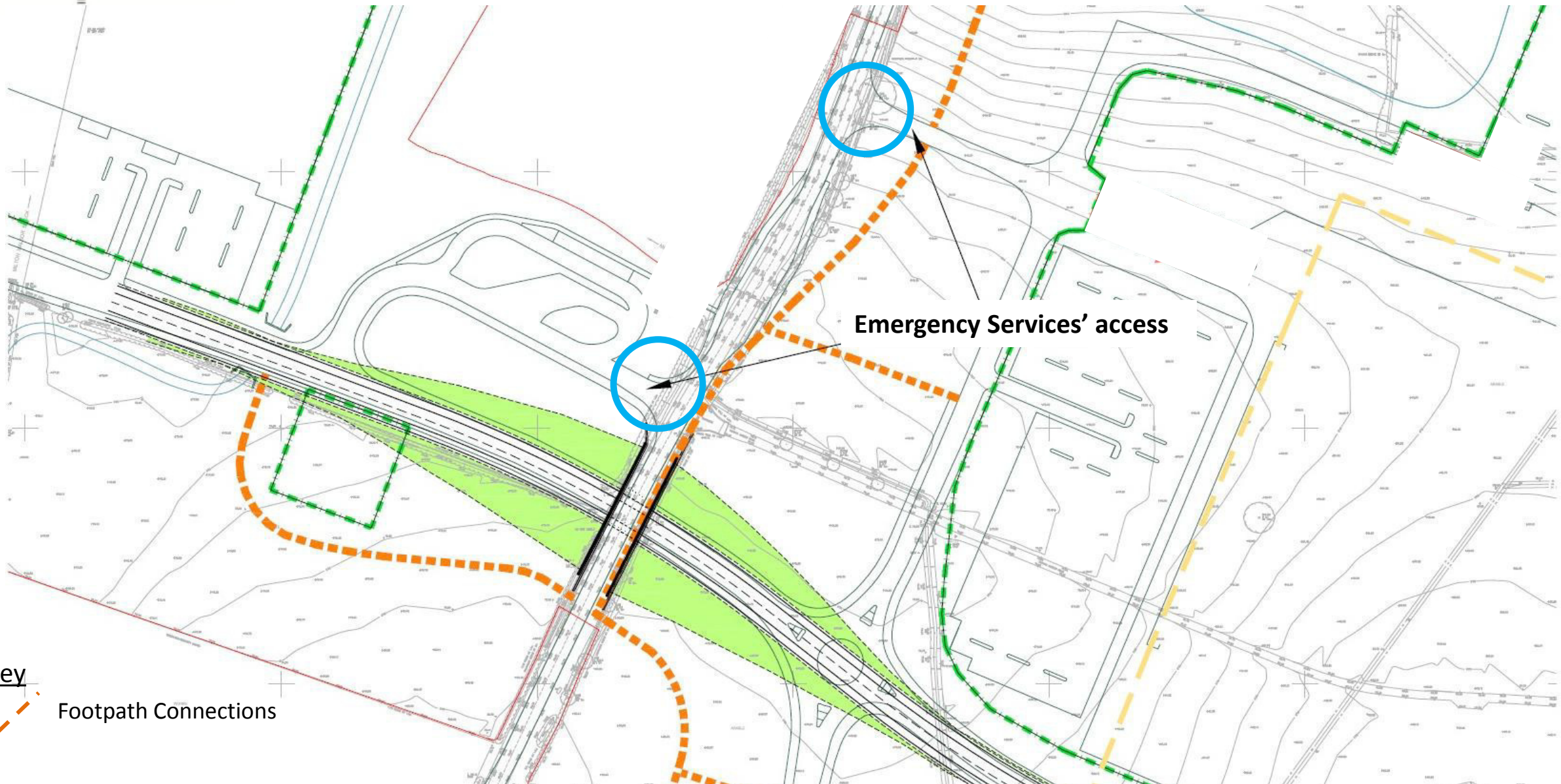
# Northampton Road - Underpass



Key

Footpath Connections

# Northampton Road – Emergency Services' Access



# Northampton Road – Pedestrian and cycle access



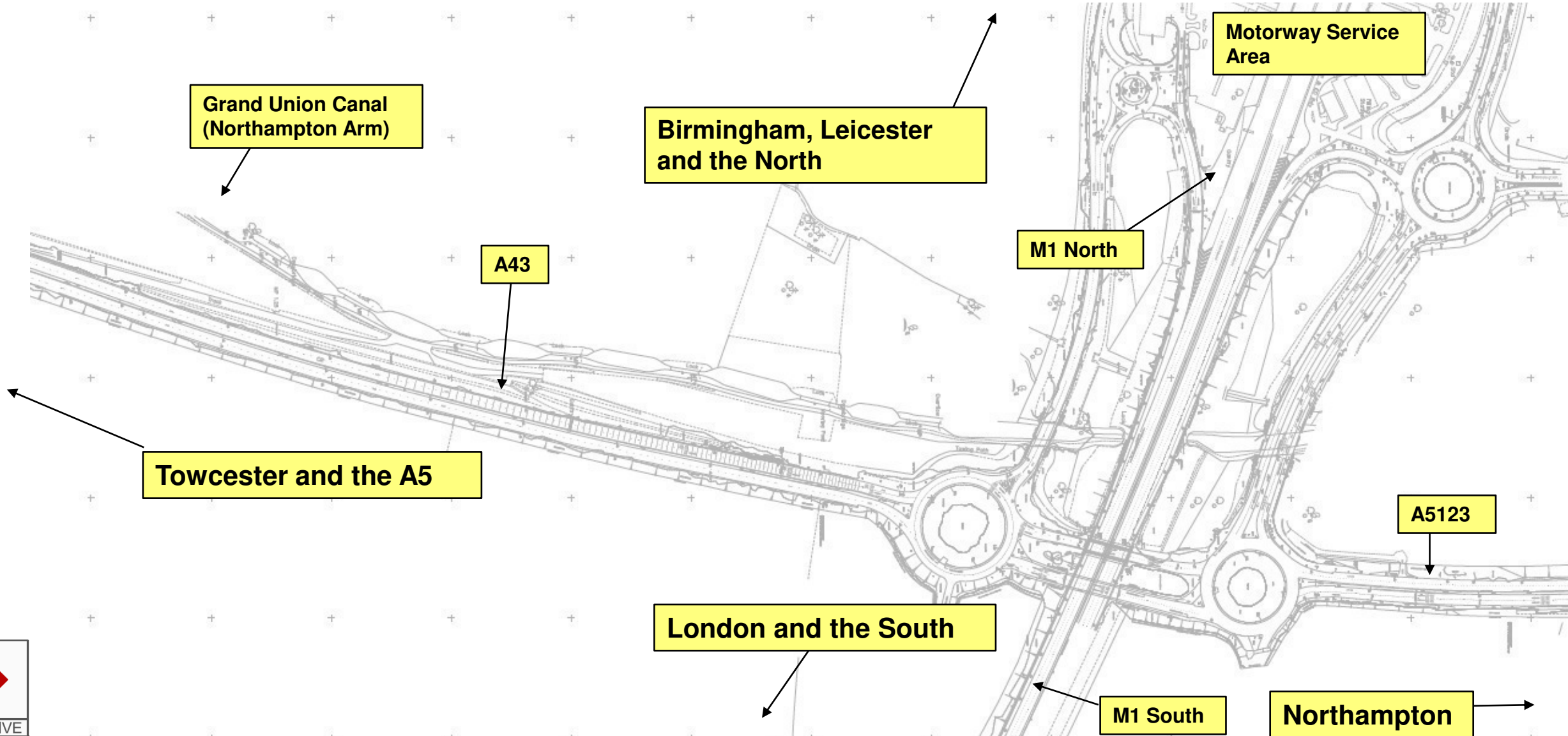
# Assessment

Forecast traffic flows and junction turning movements predicted by the NSTM (by WSP on behalf of NCC):

- Modelling scenarios:
  - 2021 (opening year) and 2031 (design year)
  - Future Forecast Flows (including all of Northamptonshire's District and Borough Council's Local Plan allocations)
  - Future Forecast Flows + Rail Central
  - Future Forecast Flows + Rail Central + M1 J15A improvements

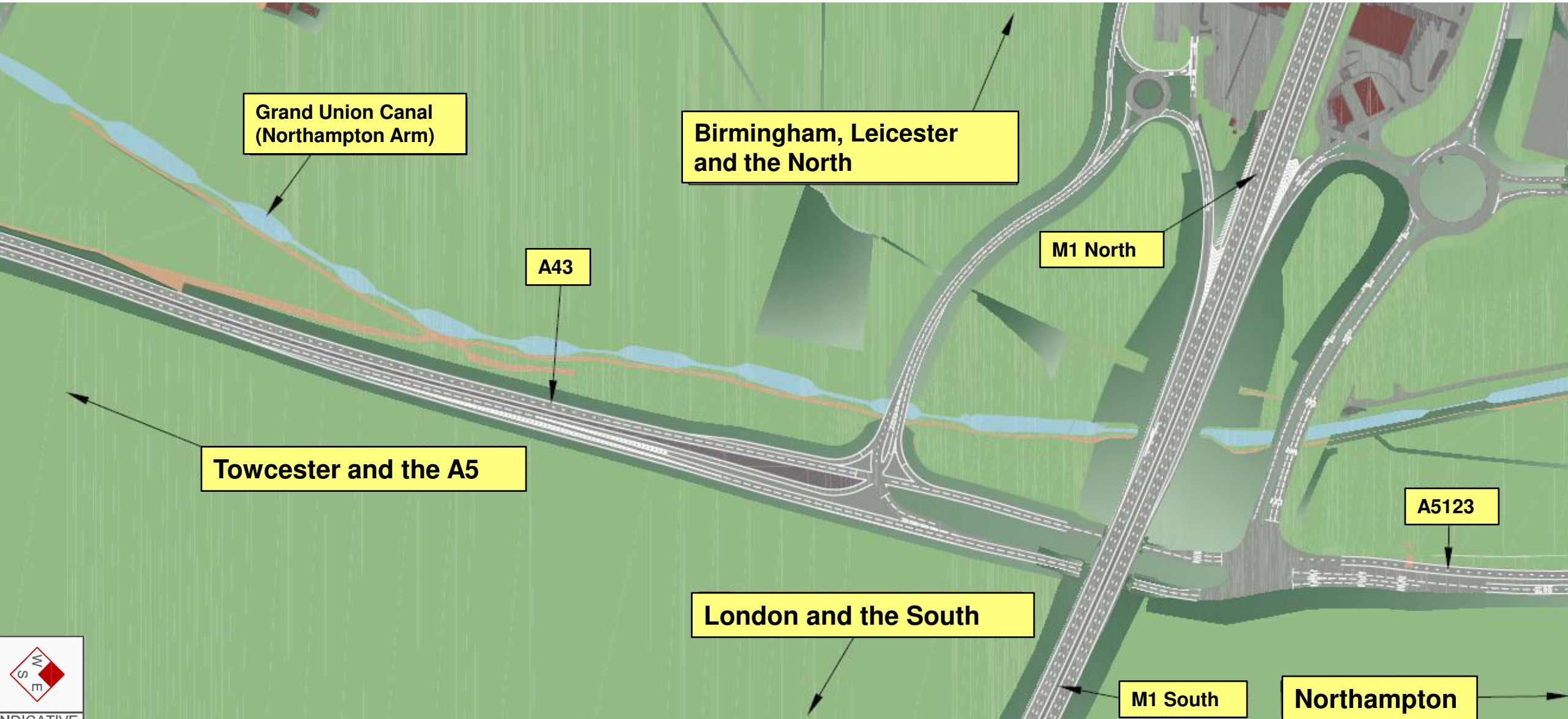
Agreed with Northamptonshire County Council and Highways England

# M1 J15A Existing Arrangement

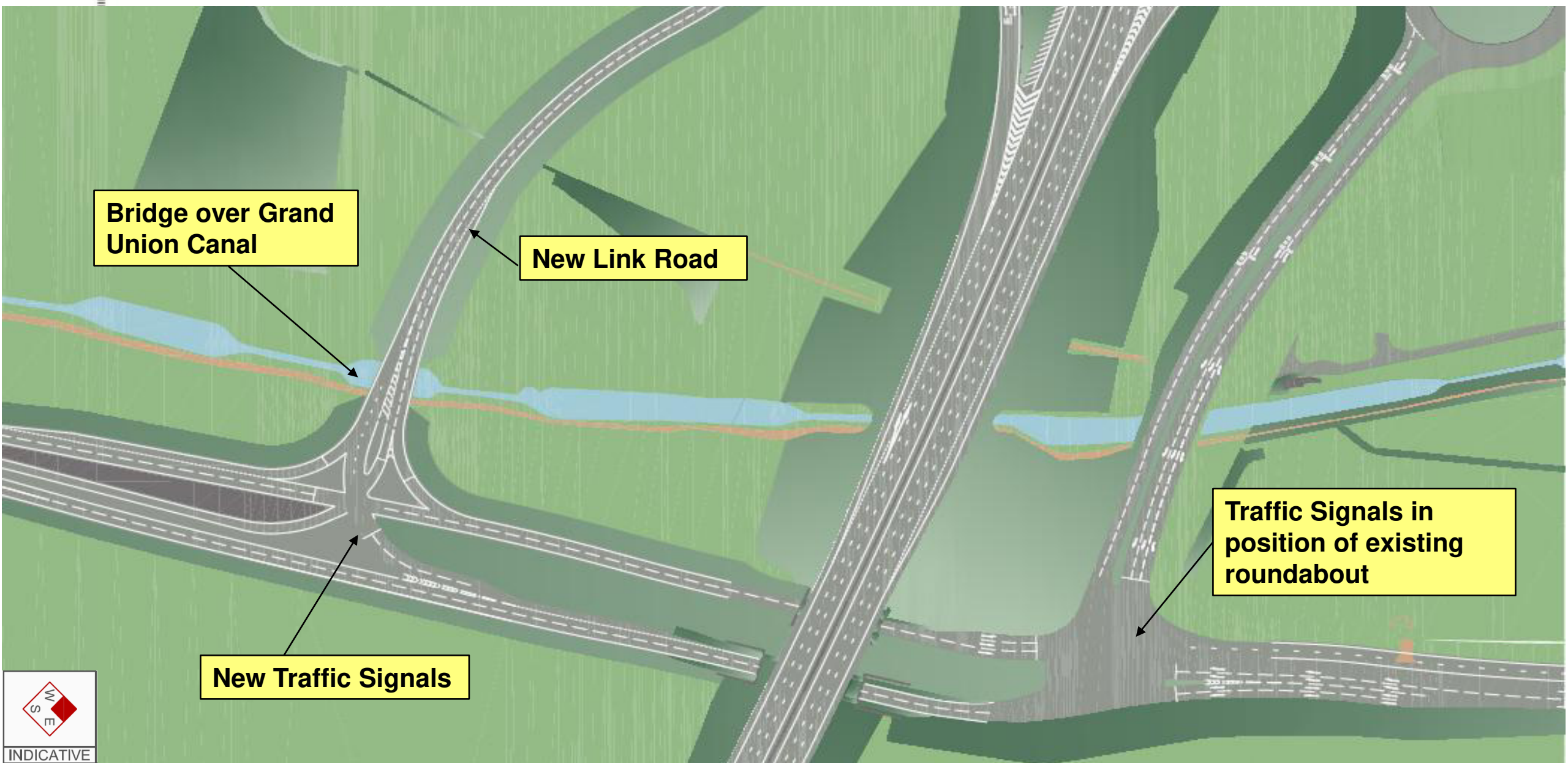



INDICATIVE

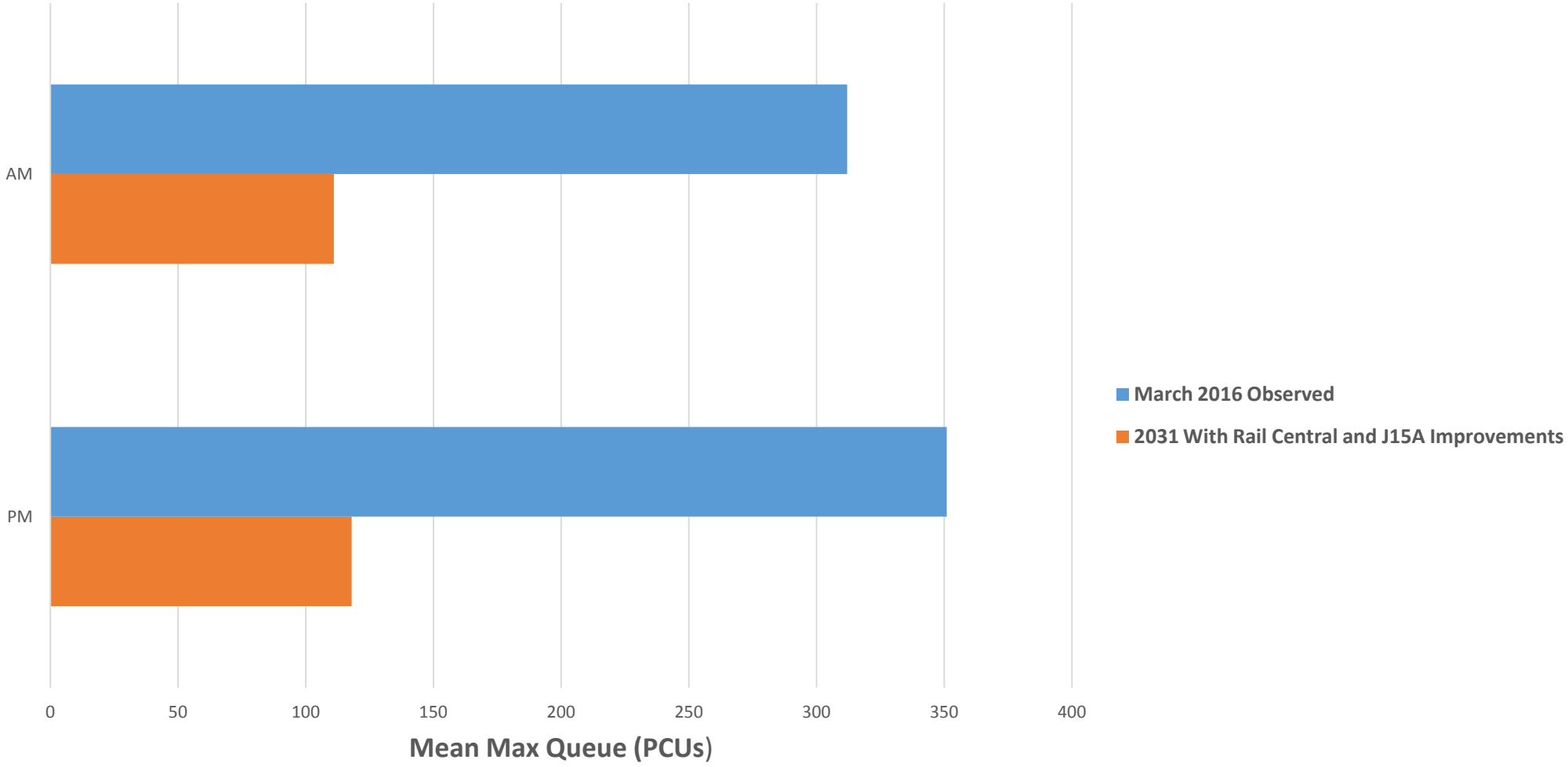
# M1 J15A Proposed Junction Improvement



# M1 J15A Proposed Junction Improvement



# J15A Improvements – Comparison of Queues



# Study Area



Plus the following junctions:
14- A43 / A5 Tove Roundabout

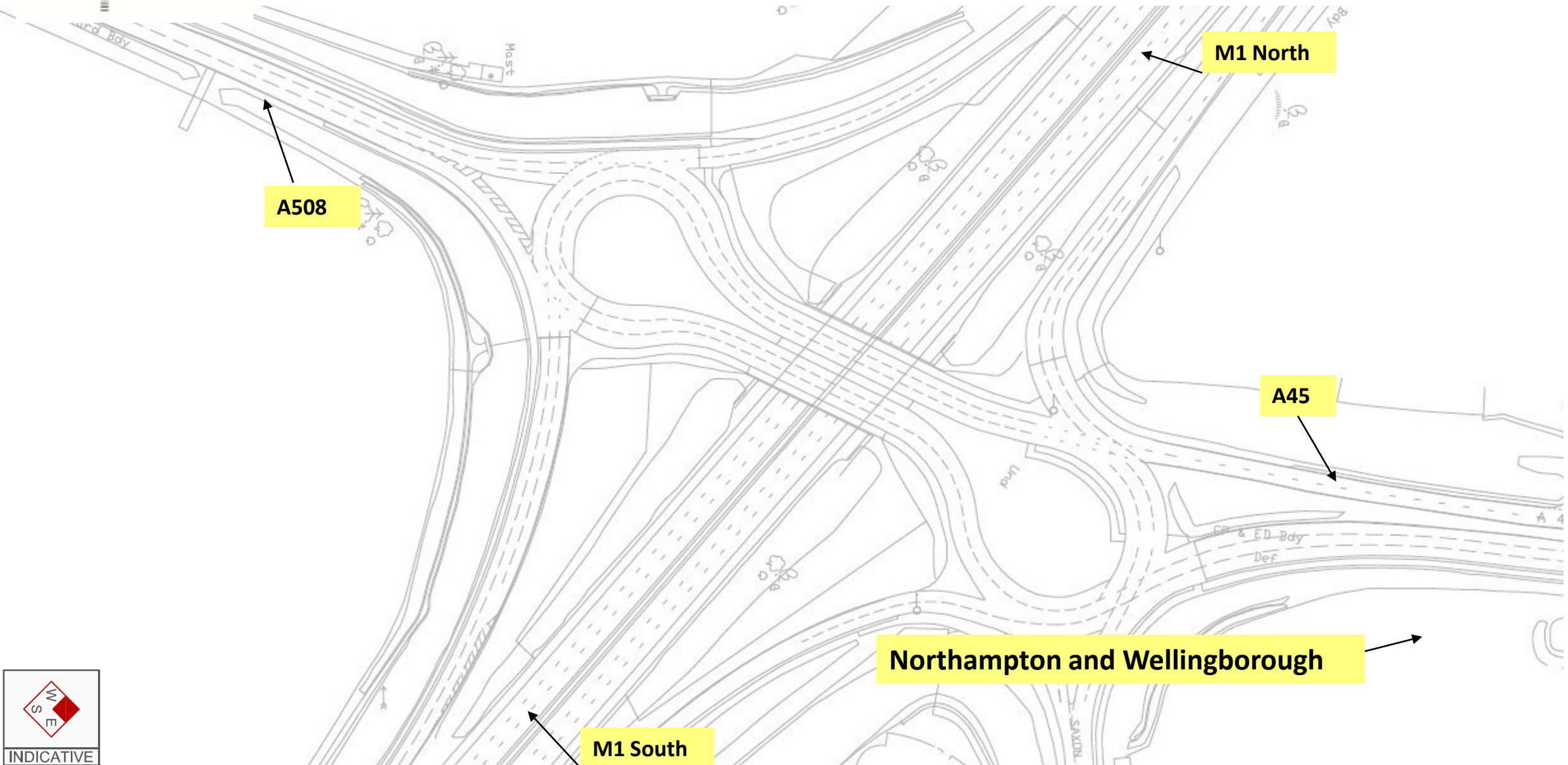
15- A43 Abthorpe Roundabout

16- A5 / A508 Stony Stratford Roundabout



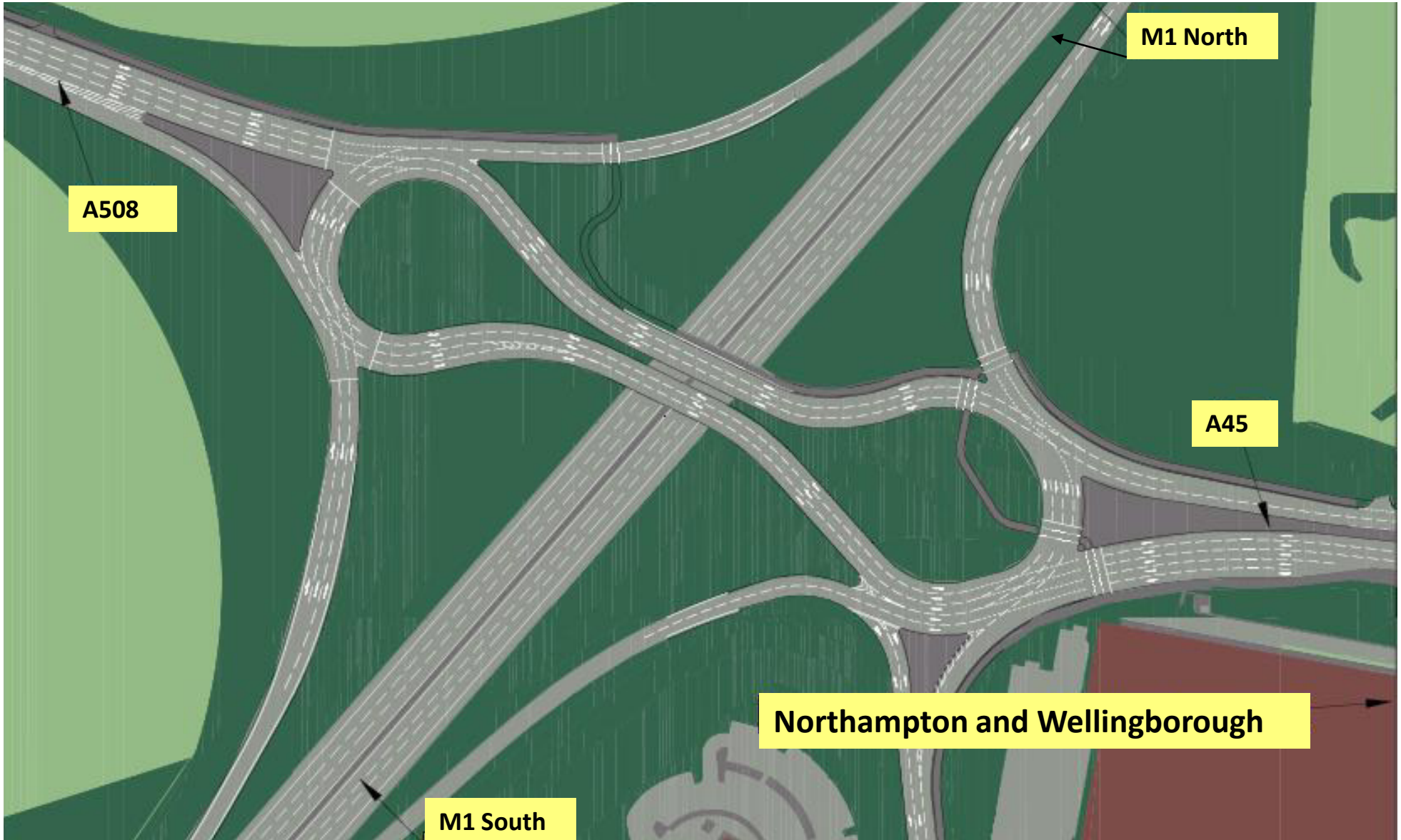
Agreed with Northamptonshire County Council and Highways England

# M1 J15 Existing Layout



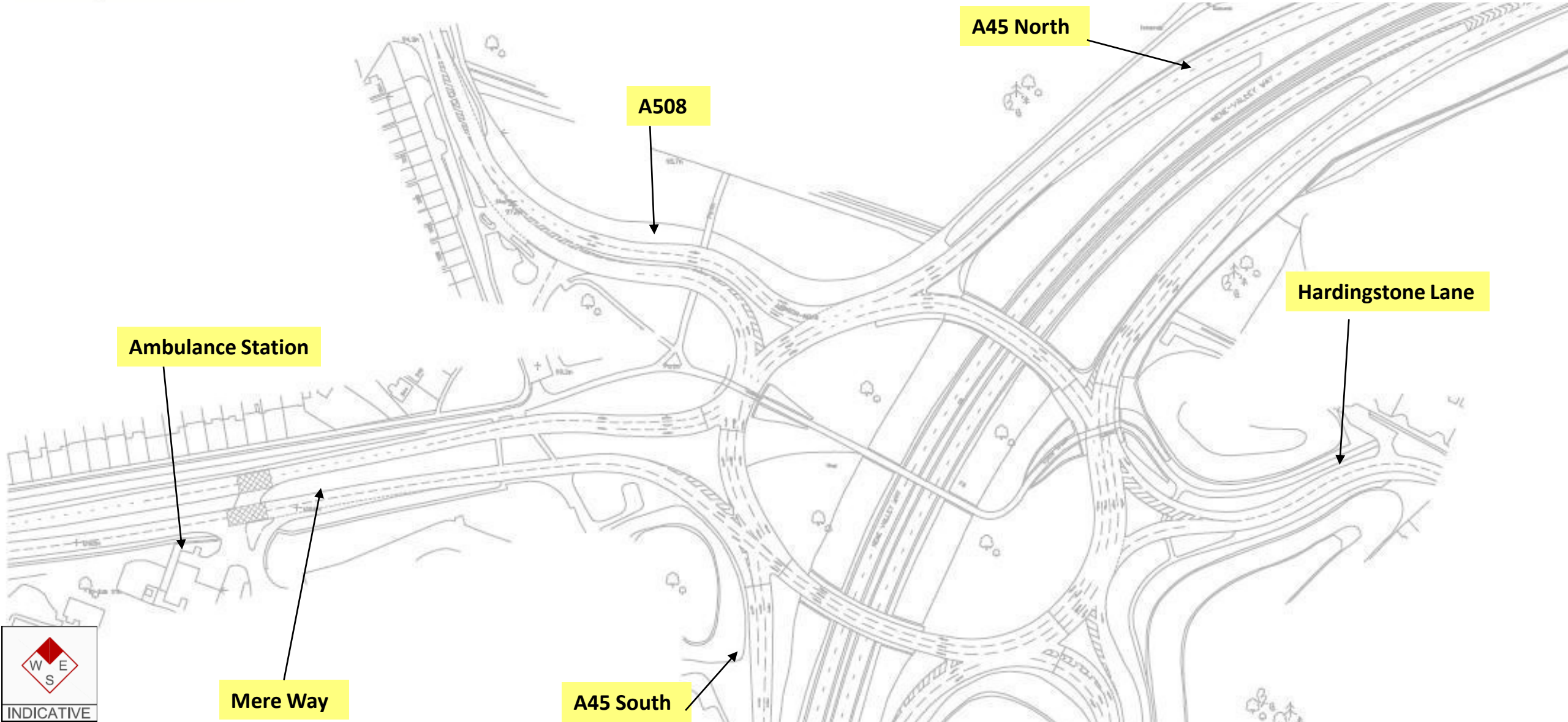

INDICATIVE

# M1 J15 Improvement




INDICATIVE

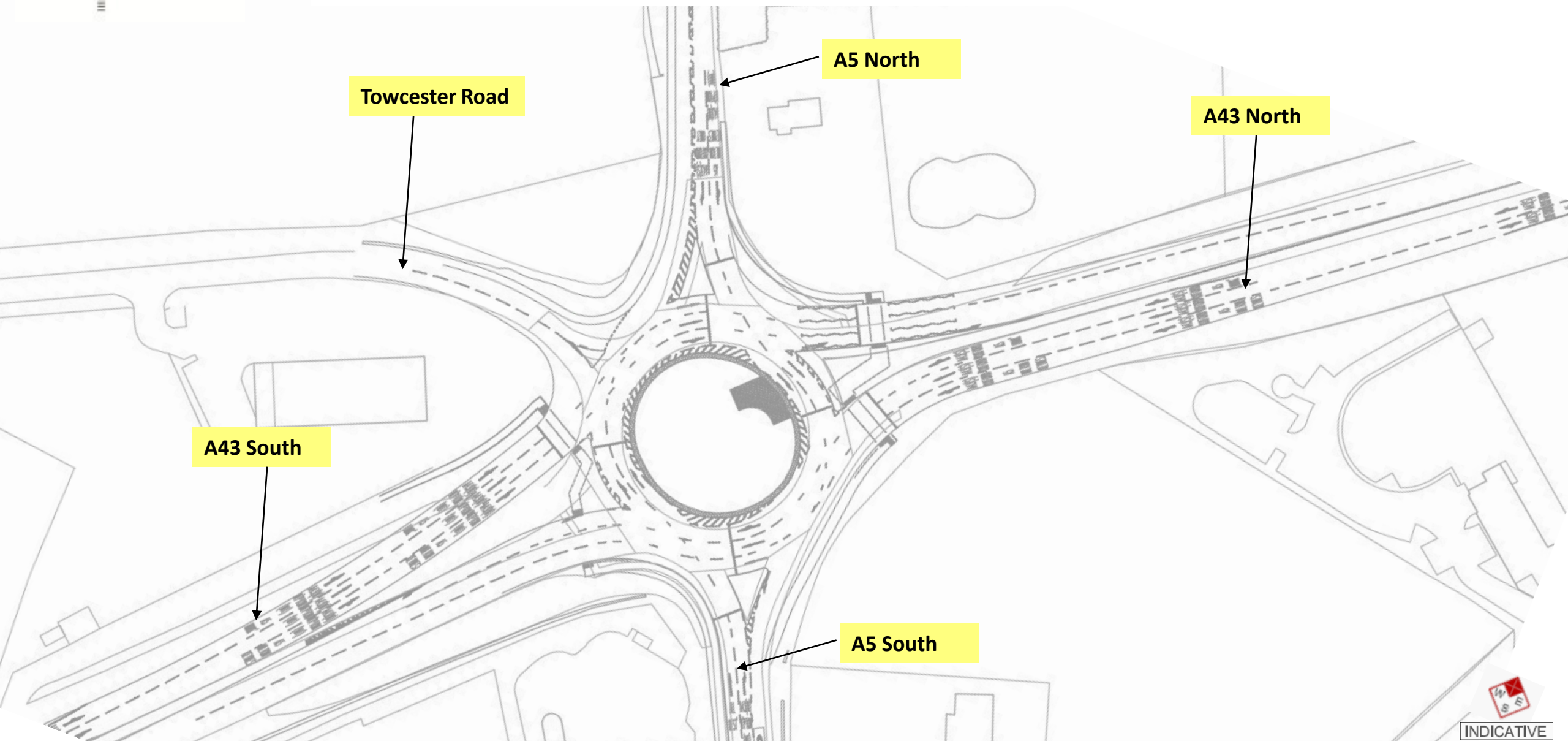
# Queen Eleanor Roundabout Existing Layout



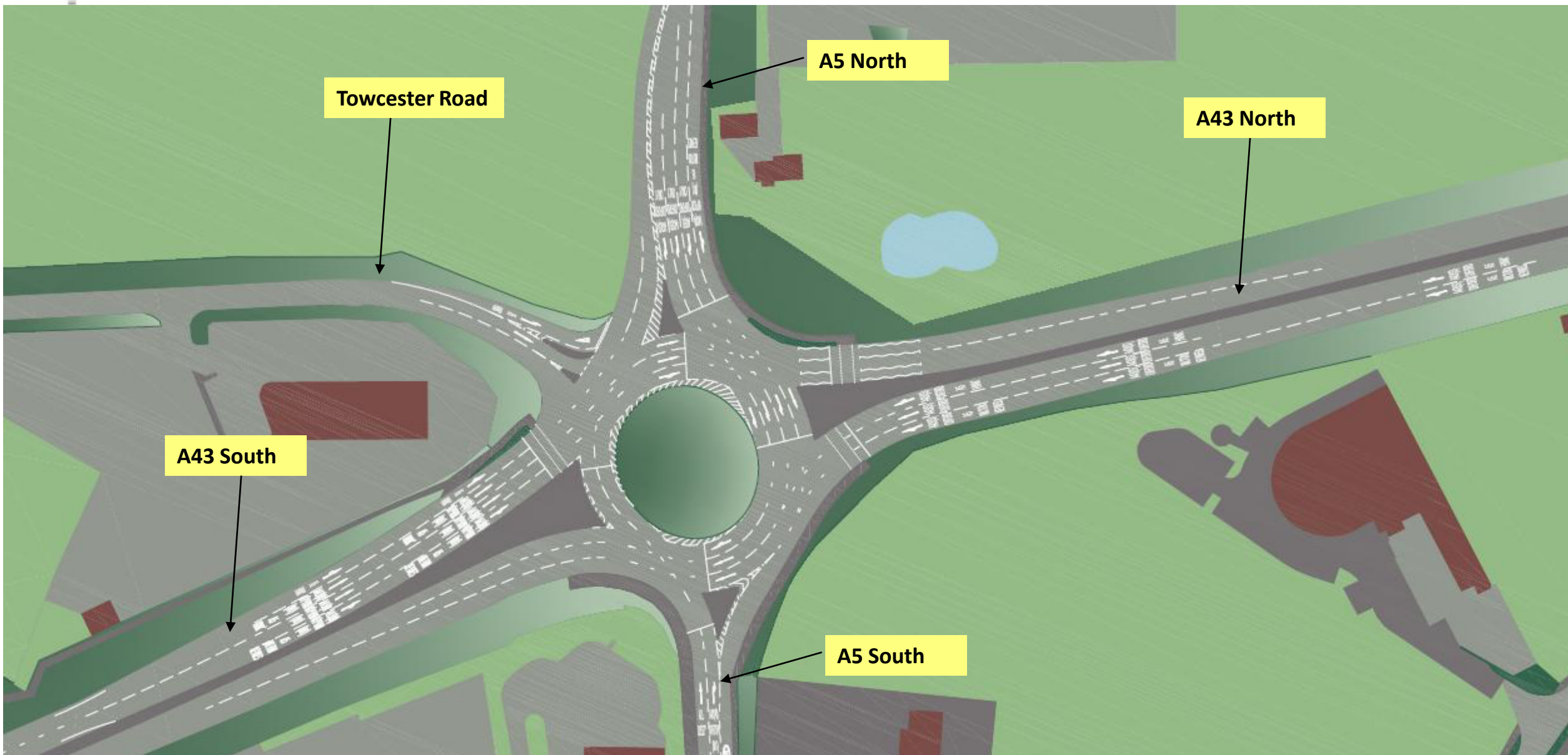
# Queen Eleanor Roundabout Improvement



# Tove Roundabout Existing Layout



# Tove Roundabout Improvement



# Village Enhancements

- Environmental Enhancement Schemes
  - Milton Malsor – presented to Milton Malsor Parish Council on 9th May 2017
  - Blisworth

Agreed with Northamptonshire County Council

# Key Milestones Achieved

- ☑ Baseline assessment – i.e. update to NSTM
- ☑ The site access strategy
- ☑ Number of vehicles travelling to and from the site
- ☑ Distribution of vehicles on to the local and strategic highway network
- ☑ Method of travel
- ☑ Study area
- ☑ Approach to assessment

# Next Steps to Stage Two Consultation

- ☐ Finalise highway mitigation schemes
- ☐ Agree Public Transport Strategy
- ☐ Finalise Travel Planning Measures
- ☐ Provide the final evidence base for the application for the Development Consent Order and its potential Examination

**You will find a copy of this presentation in the Project Library section of the Rail Central website**

www.railcentral.com

# APPENDIX B

# WSP SCENARIO J3 2031 MODEL CHANGES REPORT

ADC Infrastructures Ltd

# NORTHAMPTON GATEWAY SRFI

## Scenario J3 2031 Model Changes



70035256
APRIL 2018

CONFIDENTIAL

ADC Infrastructures **Ltd**

# NORTHAMPTON GATEWAY SRFI

## Scenario J3 2031 Model Changes

**TYPE OF DOCUMENT (VERSION) CONFIDENTIAL**

**PROJECT NO. 70035256**
**OUR REF. NO. 70035256**

**DATE: APRIL 2018**

WSP
Mountbatten House
Basing View
Basingstoke, Hampshire
RG21 4HJ
Phone: +44 1256 318 800
Fax: +44 1256318700
WSP.com

# QUALITY CONTROL

| Issue/revision | First issue | Revision 1 | Revision 2 | Revision 3 |
|---|---|---|---|---|
| Remarks | Draft | Final | | |
| Date | 12/02/2018 | 16/04/2018 | | |
| Prepared by | R Thomas | R Thomas | | |
| Signature | | | | |
| Checked by | | | | |
| Signature | | | | |
| Authorised by | | | | |
| Signature | | | | |
| Project number | | | | |
| Report number | | | | |
| File reference | v1 | v2 | | |

# CONTENTS


1 SCENARIO 2031 J3 1

1.1 BACKGROUND 1
1.2 SCENARIO 2031 J3 MODEL INPUTS 1
1.3 SCENARIO 2031 J3 MODEL OUTPUTS 1

# 1 SCENARIO 2031 J3

## 1.1 BACKGROUND

1.1.1. WSP has been commissioned by ADC Infrastructure Ltd, on behalf of Roxhill (Junction 15) Ltd, to undertake transport modelling work in relation to the Northampton Gateway SRFI (Strategic Rail Freight Interchange) development, hereafter referred to as "the Northampton Gateway development".

1.1.2. The Northampton Gateway development is situated in Northamptonshire, adjacent to Junction 15 of the M1. Due to the location of the development, the Northamptonshire Strategic Traffic Model (NSTM2) has been selected for the purpose of this modelling exercise. NSTM2 is the Northampton County Council's (NCC) strategic model, maintained and operated by WSP.

1.1.3. Scenario J3 is a 2031 development forecast model for the Northampton Gateway development that also includes the Rail Central SRFI, located south of the M1 Junction 15a.

1.1.4. The purpose of this note is to list the additional inputs into and outputs from the 2031 Scenario J3 model.

## 1.2 SCENARIO 2031 J3 MODEL INPUTS

1.2.1. Scenario J3 uses Scenario J1d 2031 as a base. This is the 2031 Future Assessment Development Case for the Northampton Gateway development.

1.2.2. Scenario J3 adds the Rail Central SRFI site and its accompanying major improvements of the road network in the local area.

1.2.3. The Rail Central site connects into the road network via a proposed A43 grade separated junction near Gayton Marina. Furthermore, junction improvements are proposed to the M1 Junction 15a and to Tove Roundabout. The improvement schemes were released in the Rail Central Transport and Accessibility statement dated May 2017.

1.2.4. Rail Central trips were taken from the publically available origin and destination site data, provided by Transport Planning Associates Ltd.

## 1.3 SCENARIO 2031 J3 MODEL OUTPUTS

1.3.1. Scenario J3 produced outputs are similar to the outputs produced for previous development forecast scenarios. All plots were produced to two scales, local and wider. These have been defined with previous scenario outputs.

1.3.2. Junction Turning Movements have been provided for study area junctions and the new Rail Central A43 grade separated junction.

1.3.3. Actual Flow and Delay plots have been produced. Actual flow plots have been produced in PCU as well as produced in light vehicles and heavy vehicles.

1.3.4. Volume over Capacity (V/C) plots have been produced showing junctions with a V/C over 75.

1.3.5. Select Link Analysis (SLA) plots have been produced for the Northampton Gateway development only. SLA plots have been made for total vehicles and for total HGVs.

1.3.6. Actual Flow and VC Difference plots have been produced; firstly comparing Scenario J3 with Scenario D1, and secondly comparing Scenario J3 with Scenario J1d.

1.3.7. Environmental Statement (ES) data has been provided for the defined links outlined in the ES Data Processing Note.



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**wsp.com**

# APPENDIX C

# NSTM2 CUMULATIVE IMPACT ASSESSMENT OUTPUTS

Drawn By: UKWMS001

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Diff wide 120118.mxd

## Key

**J3 vs D1 (AM Peak)**

**Actual Flow Difference (Veh)**

- < -500
- -500 - -100
- -100 - -10
- -10 - 10
- 10 - 100
- 100 - 500
- > 500

Harpole
Kislingbury
Weedon Bec
Nether Heyford
Grand Union Canal
Greens Norton
TOWCESTER
Silverstone
Yardley Gobion
Potterspury
Old Stratford
Deanshanger
Hackleton
Cogenhoe
Earls Barton
Wollaston
Bozeat
Brafield-on-the-Green
Denton
Yardley Hastings
Yardley Chase
Harrold
Lavendon
Turvey
OLNEY
Hanslope
Castlethorpe
The Wilderness
Sherington
The Green
River Nene
River Tove
River Great Ouse
River Great Ouse River Great Ouse
River Great Ouse
River Great Ouse

Drawn By: UKWMS001

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Diff wide 120118.mxd

## Key

**J3 vs D1 (PM Peak)**

**Actual Flow Difference (Veh)**

- < -500
- -500 - -100
- -100 - -10
- -10 - 10
- 10 - 100
- 100 - 500
- > 500

Earls Barton
Wollaston
Bozeat
Cogenhoe
Harpole
Duston
Weedon Bec
Nether Heyford
Bugbrooke
Brafield-on-the-Green
Denton
Yardley Hastings
Yardley Chase
Hackleton
Harrold
Lavendon
Turvey
OLNEY
Hartwell
Greens Norton
TOWCESTER
Hanslope
Castlethorpe
Yardley Gobion
Potterspury
Old Stratford
Deanshanger
Sherington
The Wilderness
The Green

A45
A4500
A43
A45(T)
A5123
A5(T)
A43(T)
A508
M1
A509
A428
A6
A14

River Nene
River Great Ouse
River Tove
Grand Union Canal
River Glyme

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0 0.5 1 1.5 2 2.5 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

WIDE AREA

| SCALE @ A1: | CHECKED: | APPROVED: |
|---|---|---|
| CAD FILE: | DESIGN DRAWN: | DATE: ---- |
| PROJECT No: | DRAWING No: | REV: |

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Drawn By: ukrdt001

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Diff wider 120218.mxd

## Key

**J3 vs J1d (AM Peak)**

**Actual Flow Difference (Veh)**

- < -500
- -500 - -100
- -100 - -10
- -10 - 10
- 10 - 100
- 100 - 500
- > 500

Harpole
Weedon Bec
Nether Heyford
Grand Union Canal
Greens Norton
TOWCESTER
Roade
Hartwell
Hanslope
Yardley Gobion
Castlethorpe
Potterspury
Old Stratford
Silverstone
Hackleton
Cogenhoe
Earls Barton
Wollaston
Bozeat
Brafield-on-the-Green
Denton
Yardley Hastings
Yardley Chase
Harrold
Lavendon
Turvey
OLNEY
The Wilderness
Sherington
The Green
River Nene
River Tove
River Great Ouse
River Glyme
A45
A4500
A5095
A45(T)
A5
A508
A5(T)
A43(T)
M1
A6
A509
A428

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0 0.5 1 1.5 2 2.5 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

TITLE: WIDER AREA

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| PROJECT No: | DRAWING No: | REV: |

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## Key

**J3 vs J1d (PM Peak)**

**Actual Flow Difference (Veh)**

- < -500
- -500 - -100
- -100 - -10
- -10 - 10
- 10 - 100
- 100 - 500
- > 500

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0 0.5 1 1.5 2 2.5 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

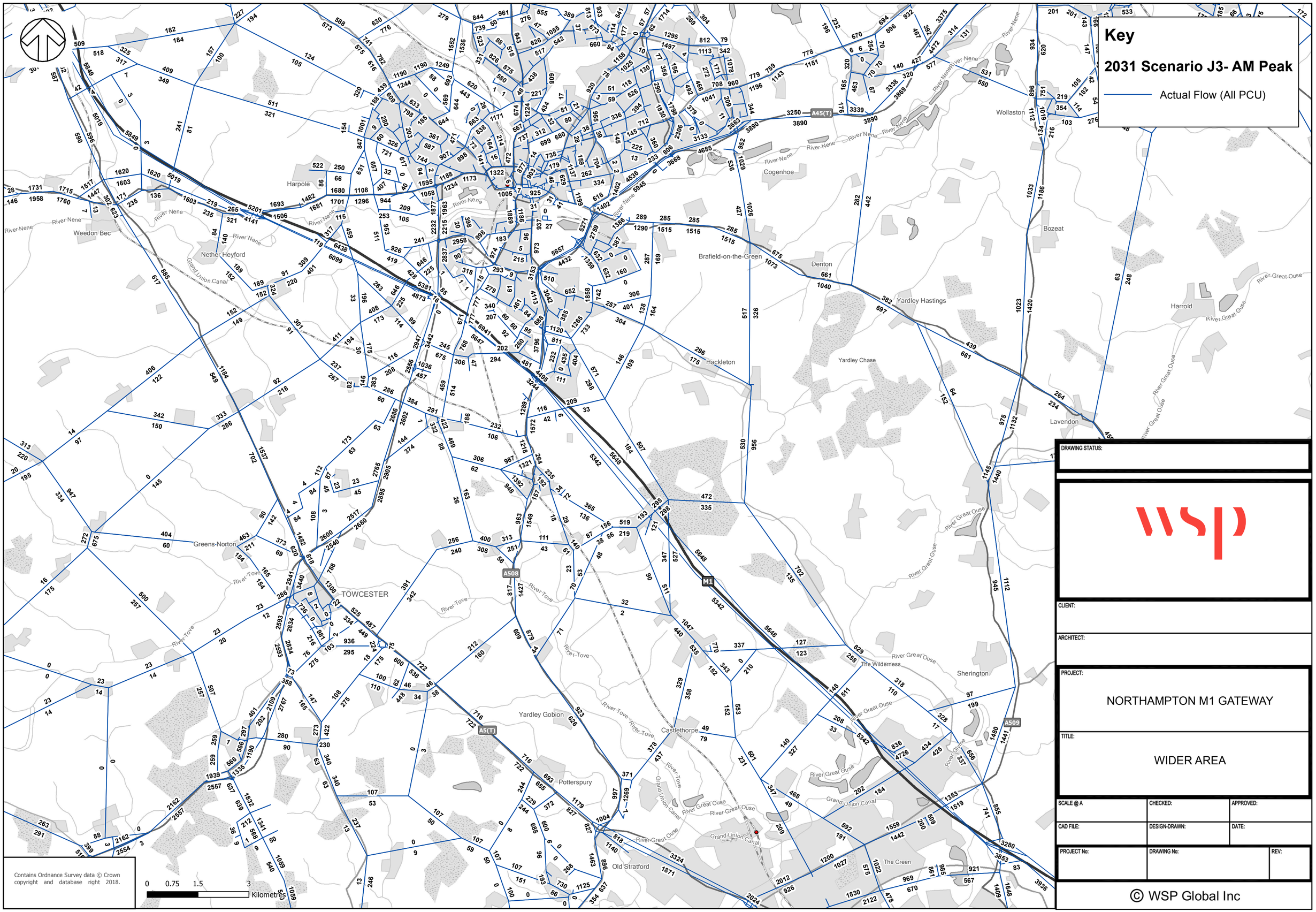
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ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

WIDER AREA

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File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\DS\2031_J3\AFlow_J3_AllPCU.mxd

# Key

## 2031 Scenario J3- PM Peak

Actual Flow (All PCU)

Harpole
Weedon Bec
Nether Heyford
Bugbrooke
Greens-Norton
Cogenhoe
Wollaston
Bozeat
Brafield-on-the-Green
Denton
Yardley Hastings
Harrold
Yardley Chase
Hackleton
Lavendon
Yardley Gobion
Castlethorpe
Potterspury
Old Stratford
The Green
The Wilderness
Sherington
River Nene
River Great Ouse
River Tove
Grand Union Canal
A45(T)
A508
M1
A5(T)
A509

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0 0.75 1.5 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

TITLE: WIDER AREA

| SCALE @ A | CHECKED: | APPROVED: |
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File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\VC Wider 12012018.mxd

## Key

**2031 Scenario J3**

**Junction V/C (%) AM Peak**

- < 75%
- 75% - 85%
- 85% - 100%
- > 100%

NORTHAMPTON
TOWCESTER
OLNEY
Weedon Bec
Flore
Harpole
Kislingbury
Nether Heyford
Bugbrooke
Duston
Earls Barton
Wollaston
Cogenhoe
Bozeat
Brafield-on-the-Green
Denton
Yardley Hastings
Yardley Chase
Harrold
Lavendon
Turvey
Brackmills
Collingtree
Hackleton
Blisworth
Roade
Hartwell
Greens Norton
Yardley Gobion
Castlethorpe
Hanslope
The Wilderness
Sherington
NEWPORT PAGNELL
The Green
Silverstone
Potterspury
Old Stratford
Deanshanger
A508
A5076
A5123
A5095
A428
A43
A45(T)
A45
A4500
A508(T)
A5(T)
A43(T)
M1
A509
A4146
A428
River Nene
Grand Union Canal
River Tove
River Great Ouse
River Great Ouse River Great Ouse
River Great Ouse
River Great Ouse

Drawn By: UKWMS001

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## Key

**2031 Scenario J3**

**Junction V/C (%) PM Peak**

- < 75%
- 75% - 85%
- 85% - 100%
- > 100%

NORTHAMPTON
TOWCESTER
OLNEY
Weedon Bec
Flore
Harpole
Kislingbury
Nether Heyford
Bugbrooke
Duston
Earls Barton
Wollaston
Cogenhoe
Bozeat
Brackmills
Brafield-on-the-Green
Denton
Yardley Hastings
Yardley Chase
Harrold
Collingtree
Hackleton
Blisworth
Roade
Hartwell
Lavendon
Turvey
Greens Norton
Yardley Gobion
Hanslope
The Wilderness
Sherington
Castlethorpe
NEWPORT PAGNELL
Silverstone
Potterspury
The Green
Old Stratford
Deanshanger

A45 A4500 A508 A43 A45(T) A5095 A5123 A428 A5076 A508(T) A5(T) A43(T) M1 A509 A4146 A428

River Nene Grand Union Canal River Great Ouse River Tove

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0 0.5 1 Kilometers

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

TITLE: WIDE AREA

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File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\VC diff wider 12012018.mxd

## Key

**J3 vs D1 (AM Peak)**

**V/C Difference**

- < -5%
- -5% - 5%
- > 5%

NORTHAMPTON

Duston
Harpole
Flore
Weedon Bec
Nether Heyford
Kislingbury
Bugbrooke
Collingtree
Brackmills
Brafield-on-the-Green
Denton
Earls Barton
Wollaston
Cogenhoe
Bozeat
Yardley Hastings
Yardley Chase
Hackleton
Harrold
Lavendon
OLNEY
Turvey
Blisworth
Roade
Hartwell
Greens Norton
TOWCESTER
Hanslope
The Wilderness
Sherington
Yardley Gobion
Castlethorpe
NEWPORT PAGNELL
Silverstone
Potterspury
The Green
Old Stratford
Deanshanger

A45 A4500 A508 A5095 A428 A5123 A43 A45(T) A5076 A508(T) A5(T) A43(T) M1 A509 A4146 A428

River Nene
Grand Union Canal
River Tove
River Great Ouse
River Glyme

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0 1 2 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

WIDER AREA

| SCALE @ A1: | CHECKED: | |
|---|---|---|
| CAD FILE: | DESIGN/DRAWN: | DATE: --- |
| PROJECT No: | DRAWING No: | REV: |

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Drawn By: UKWMS001

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\VC diff wider 12012018.mxd

## Key

**J3 vs D1 (PM Peak)**

**V/C Difference**

- < -5%
- -5% - 5%
- > 5%

NORTHAMPTON

Duston
Harpole
Flore
Weedon Bec
Nether Heyford
Kislingbury
Bugbrooke
Collingtree
Brackmills
Brafield-on-the-Green
Denton
Earls Barton
Wollaston
Cogenhoe
Bozeat
Yardley Hastings
Yardley Chase
Hackleton
Harrold
Lavendon
Turvey
OLNEY
Blisworth
Roade
Hartwell
Greens Norton
TOWCESTER
Hanslope
The Wilderness
Sherington
Yardley Gobion
Castlethorpe
NEWPORT PAGNELL
Silverstone
Potterspury
Old Stratford
Deanshanger
The Green

A508 A43 A45(T) A5095 A428 A5123 A45 A4500 A5076 A508(T) A5(T) M1 A509 A43(T) A4146 A428

River Nene
Grand Union Canal
River Great Ouse
River Tove

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0 1 2 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

WIDER AREA

| SCALE @ A1: | CHECKED: | |
|---|---|---|
| CAD FILE: | DESIGN/DRAWN: | DATE: --- |
| PROJECT No: | DRAWING No: | REV: |

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# APPENDIX D

# NSTM2 J1D VS J3 NSTM2 RESULTS PLOTS

Drawn By: ukrdt001

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Diff wider 120218.mxd

## Key

**J3 vs J1d (AM Peak)**

**Actual Flow Difference (Veh)**

- < -500
- -500 - -100
- -100 - -10
- -10 - 10
- 10 - 100
- 100 - 500
- > 500

Harpole
Weedon Bec
Nether Heyford
Grand Union Canal
Greens Norton
TOWCESTER
Roade
Hartwell
Hanslope
Yardley Gobion
Castlethorpe
Potterspury
Old Stratford
Silverstone
Hackleton
Cogenhoe
Earls Barton
Wollaston
Bozeat
Brafield-on-the-Green
Denton
Yardley Hastings
Yardley Chase
Harrold
Lavendon
Turvey
OLNEY
The Wilderness
Sherington
The Green
River Nene
River Tove
River Great Ouse
River Glyme
A45
A4500
A5095
A45(T)
A5
A508
A5(T)
A43(T)
M1
A6
A509
A428

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0 0.5 1 1.5 2 2.5 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

TITLE: WIDER AREA

| SCALE @ A1: | CHECKED: | APPROVED: |
|---|---|---|
| CAD FILE: | DESIGN DRAWN: | DATE: ----- |
| PROJECT No: | DRAWING No: | REV: |

© WSP Global Inc

Drawn By: ukrdt001

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\Actual Flow Diff wider 120218.mxd

## Key

**J3 vs J1d (PM Peak)**

**Actual Flow Difference (Veh)**

- < -500
- -500 - -100
- -100 - -10
- -10 - 10
- 10 - 100
- 100 - 500
- > 500

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0 0.5 1 1.5 2 2.5 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

TITLE: WIDER AREA

| SCALE@A1: | CHECKED: | APPROVED: |
|---|---|---|
| CAD FILE: | DESIGN DRAWN: | DATE: ---- |
| PROJECT No: | DRAWING No: | REV: |

© WSP Global Inc

Drawn By: UKWMS001

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\VC diff wider 12012018.mxd

## Key

**J3 vs J1d (AM Peak)**

**V/C Difference**

- < -5%
- -5% - 5%
- > 5%

NORTHAMPTON
TOWCESTER
OLNEY
NEWPORT PAGNELL
Earls Barton
Wollaston
Cogenhoe
Bozeat
Brafield-on-the-Green
Denton
Yardley Hastings
Harrold
Lavendon
Turvey
Duston
Harpole
Kislingbury
Flore
Weedon Bec
Nether Heyford
Bugbrooke
Brackmills
Collingtree
Hackleton
Yardley Chase
Blisworth
Roade
Hartwell
Hanslope
The Wilderness
Sherington
Greens Norton
Yardley Gobion
Castlethorpe
Silverstone
Potterspury
Old Stratford
Deanshanger
The Green

A45 A4500 A508 A43 A45(T) A5095 A428 A5123 A5076 A508(T) A5 A5(T) M1 A509 A4146 A428

River Nene Grand Union Canal River Tove River Great Ouse

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0 1 2 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT: NORTHAMPTON M1 GATEWAY

TITLE: WIDER AREA

SCALE @ A1: | CHECKED: | CAD FILE: | DESIGN/DRAWN: | DATE: --- | PROJECT No: | DRAWING No: | REV:

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Drawn By: UKWMS001

File: Q:\WSP_UK\WSP_D\Basing\Northants Multi Modal Transport Model\Analysis\Map Documents\Northampton Gateway\Difference Plots\VC diff wider 12012018.mxd

## Key

**J3 vs J1d (PM Peak)**

**V/C Difference**

- < -5%
- -5% - 5%
- > 5%

NORTHAMPTON

Duston
Harpole
Flore
Weedon Bec
Nether Heyford
Kislingbury
Bugbrooke
Collingtree
Brackmills
Brafield-on-the-Green
Denton
Earls Barton
Wollaston
Cogenhoe
Bozeat
Yardley Hastings
Yardley Chase
Hackleton
Harrold
Lavendon
Turvey
OLNEY
Blisworth
Roade
Hartwell
Greens Norton
TOWCESTER
Hanslope
The Wilderness
Sherington
Yardley Gobion
Castlethorpe
NEWPORT PAGNELL
Silverstone
Potterspury
The Green
Old Stratford
Deanshanger

A508 A43 A45(T) A5095 A5123 A428 A45 A4500 A5076 A508(T) A5(T) A43(T) M1 A509 A4146 A428

River Nene
Grand Union Canal
River Great Ouse
River Tove

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0 1 2 3 Kilometres

DRAWING STATUS:

wsp

CLIENT:

ARCHITECT:

PROJECT:

NORTHAMPTON M1 GATEWAY

TITLE:

WIDER AREA

| SCALE @ A1: | CHECKED: | |
|---|---|---|
| CAD FILE: | DESIGN/DRAWN: | DATE: --- |
| PROJECT No: | DRAWING No: | REV: |

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# APPENDIX E

# 2031 J3 CUMULATIVE ASSESSMENT TURNING FLOWS

## Junction Turning Flows

**Junction:** M1 Junction 15




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 3355 | 3104 | 9220 | 83008 | *A45* |
| B | 27014 | 83009 | 3104 | 27014 | *Saxon Avenue* |
| C | 83009 | 9107 | 83025 | 9221 | *M1 East* |
| D | 1252 | 9117 | 9221 | 1252 | *A508* |
| E | 9117 | 83011 | 83007 | 9220 | *M1 West* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

| PCU | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 49 | 32 | 881 | 1111 | 1700 | | | 3773 |
| | B | 43 | 0 | 20 | 22 | 65 | | | 150 |
| | C | 1689 | 95 | 0 | 314 | 0 | | | 2098 |
| | D | 630 | 22 | 228 | 41 | 610 | | | 1531 |
| | E | 1502 | 147 | 0 | 792 | 4 | | | 2445 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 3913 | 296 | 1129 | 2280 | 2379 | | | 9997 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 40 | 31 | 720 | 908 | 1130 | | | 2829 |
| | B | 42 | 0 | 16 | 20 | 62 | | | 140 |
| | C | 1309 | 58 | 0 | 233 | 0 | | | 1600 |
| | D | 491 | 16 | 155 | 0 | 391 | | | 1053 |
| | E | 1264 | 136 | 0 | 632 | 3 | | | 2035 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 3146 | 241 | 891 | 1793 | 1586 | | | 7657 |

MODELLED

| LGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 9 | 1 | 64 | 72 | 51 | | | 197 |
| | B | 1 | 0 | 3 | 0 | 2 | | | 6 |
| | C | 123 | 1 | 0 | 11 | 0 | | | 135 |
| | D | 35 | 0 | 4 | 0 | 21 | | | 60 |
| | E | 67 | 3 | 0 | 17 | 0 | | | 87 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 235 | 5 | 71 | 100 | 74 | | | 485 |

MODELLED

| HGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 0 | 97 | 131 | 519 | | | 747 |
| | B | 0 | 0 | 1 | 2 | 1 | | | 4 |
| | C | 257 | 36 | 0 | 70 | 0 | | | 363 |
| | D | 104 | 6 | 69 | 41 | 198 | | | 418 |
| | E | 171 | 8 | 0 | 143 | 1 | | | 323 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 532 | 50 | 167 | 387 | 719 | | | 1855 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

| PCU | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 100 | 88 | 988 | 1199 | 1302 | | | 3677 |
| | B | 32 | 0 | 116 | 20 | 97 | | | 265 |
| | C | 1382 | 24 | 0 | 199 | 0 | | | 1605 |
| | D | 1359 | 15 | 197 | 42 | 626 | | | 2239 |
| | E | 1046 | 104 | 0 | 548 | 0 | | | 1698 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 3919 | 231 | 1301 | 2008 | 2025 | | | 9484 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 96 | 85 | 905 | 1028 | 1214 | | | 3328 |
| | B | 32 | 0 | 74 | 18 | 18 | | | 142 |
| | C | 1082 | 24 | 0 | 114 | 0 | | | 1220 |
| | D | 1199 | 13 | 121 | 0 | 430 | | | 1763 |
| | E | 807 | 50 | 0 | 309 | 0 | | | 1166 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 3216 | 172 | 1100 | 1469 | 1662 | | | 7619 |

MODELLED

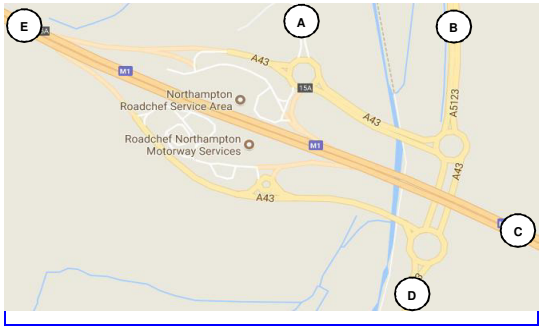
| LGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 4 | 2 | 36 | 20 | 22 | | | 84 |
| | B | 0 | 0 | 1 | 0 | 1 | | | 2 |
| | C | 71 | 0 | 0 | 3 | 0 | | | 74 |
| | D | 48 | 0 | 7 | 0 | 22 | | | 77 |
| | E | 68 | 2 | 0 | 24 | 0 | | | 94 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 191 | 4 | 44 | 47 | 45 | | | 331 |

MODELLED

| HGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 1 | 47 | 151 | 66 | | | 265 |
| | B | 0 | 0 | 41 | 2 | 78 | | | 121 |
| | C | 229 | 0 | 0 | 82 | 0 | | | 311 |
| | D | 112 | 2 | 69 | 42 | 174 | | | 399 |
| | E | 171 | 52 | 0 | 215 | 0 | | | 438 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 512 | 55 | 157 | 492 | 318 | | | 1534 |

## Junction Turning Flows

**Junction:** M1 Junction 15a




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 21265 | 21266 | 21266 | 21265 | *Swan Valley Way* |
| B | 90015 | 3246 | 3246 | 90015 | *A5123* |
| C | 1246 | 82005 | 82001 | 5246 | *M1 East* |
| D | 2309 | 4246 | 4246 | 2309 | *A43* |
| E | 6246 | 2266 | 82004 | 24119 | *M1 West* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 888 | 65 | 0 | | | 955 |
| B | 1 | 0 | 183 | 2241 | 316 | | | 2741 |
| C | 98 | 432 | 0 | 429 | 0 | | | 959 |
| D | 299 | 1282 | 503 | 0 | 820 | | | 2904 |
| E | 210 | 133 | 0 | 722 | 0 | | | 1065 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 608 | 1849 | 1573 | 3457 | 1136 | | | 8623 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 763 | 57 | 0 | | | 822 |
| B | 1 | 0 | 167 | 1774 | 246 | | | 2188 |
| C | 75 | 313 | 0 | 332 | 0 | | | 720 |
| D | 268 | 815 | 428 | 0 | 646 | | | 2158 |
| E | 204 | 126 | 0 | 344 | 0 | | | 675 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 549 | 1256 | 1359 | 2508 | 892 | | | 6563 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 26 | 2 | 0 | | | 28 |
| B | 0 | 0 | 9 | 160 | 4 | | | 173 |
| C | 10 | 39 | 0 | 23 | 0 | | | 71 |
| D | 15 | 52 | 17 | 0 | 15 | | | 98 |
| E | 5 | 2 | 0 | 43 | 0 | | | 51 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 30 | 93 | 51 | 228 | 19 | | | 421 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 99 | 6 | 0 | | | 104 |
| B | 0 | 0 | 7 | 308 | 66 | | | 380 |
| C | 13 | 80 | 0 | 74 | 0 | | | 167 |
| D | 16 | 415 | 57 | 0 | 160 | | | 648 |
| E | 0 | 5 | 0 | 334 | 0 | | | 339 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 29 | 500 | 163 | 722 | 226 | | | 1639 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 636 | 135 | 2 | | | 775 |
| B | 6 | 0 | 241 | 1150 | 173 | | | 1570 |
| C | 288 | 489 | 0 | 401 | 0 | | | 1179 |
| D | 298 | 1519 | 382 | 0 | 908 | | | 3107 |
| E | 7 | 384 | 144 | 386 | 0 | | | 921 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 600 | 2395 | 1403 | 2072 | 1083 | | | 7553 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 578 | 116 | 0 | | | 696 |
| B | 6 | 0 | 177 | 884 | 170 | | | 1237 |
| C | 150 | 413 | 0 | 309 | 0 | | | 872 |
| D | 266 | 1049 | 333 | 0 | 747 | | | 2394 |
| E | 7 | 207 | 138 | 244 | 0 | | | 596 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 428 | 1671 | 1225 | 1554 | 918 | | | 5796 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 44 | 3 | 2 | | | 49 |
| B | 0 | 0 | 6 | 53 | 3 | | | 62 |
| C | 8 | 17 | 0 | 11 | 0 | | | 36 |
| D | 10 | 66 | 16 | 0 | 46 | | | 138 |
| E | 0 | 14 | 6 | 11 | 0 | | | 31 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 18 | 97 | 71 | 78 | 51 | | | 315 |

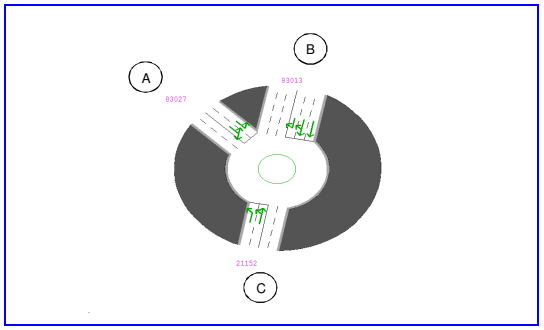
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 15 | 16 | 0 | | | 30 |
| B | 0 | 0 | 59 | 212 | 0 | | | 271 |
| C | 131 | 59 | 0 | 81 | 0 | | | 271 |
| D | 22 | 405 | 34 | 0 | 114 | | | 575 |
| E | 0 | 163 | 0 | 132 | 0 | | | 295 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 154 | 627 | 107 | 440 | 114 | | | 1442 |

## Junction Turning Flows

**Junction:** Site Access (new junction)




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 83027 | 83000 | 83000 | 83027 | *Site Access* |
| B | 83013 | 83000 | 83000 | 83013 | *A508 North* |
| C | 21152 | 83000 | 83000 | 21152 | *A508 South* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 380 | 8 | | | | | 388 |
| B | 736 | 0 | 1541 | | | | | 2277 |
| C | 138 | 1151 | 0 | | | | | 1289 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 874 | 1531 | 1549 | | | | | 3954 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 75 | 8 | | | | | 83 |
| B | 499 | 0 | 1320 | | | | | 1818 |
| C | 64 | 965 | 0 | | | | | 1030 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 563 | 1040 | 1328 | | | | | 2931 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 4 | 0 | | | | | 4 |
| B | 32 | 0 | 31 | | | | | 62 |
| C | 5 | 55 | 0 | | | | | 60 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 36 | 59 | 31 | | | | | 126 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 301 | 0 | | | | | 301 |
| B | 205 | 0 | 190 | | | | | 396 |
| C | 69 | 131 | 0 | | | | | 200 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 274 | 432 | 190 | | | | | 897 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1015 | 86 | | | | | 1101 |
| B | 393 | 0 | 1577 | | | | | 1970 |
| C | 85 | 1223 | 0 | | | | | 1309 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 478 | 2239 | 1663 | | | | | 4379 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 683 | 81 | | | | | 764 |
| B | 172 | 0 | 1361 | | | | | 1533 |
| C | 21 | 1077 | 0 | | | | | 1099 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 193 | 1761 | 1442 | | | | | 3396 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 31 | 5 | | | | | 36 |
| B | 8 | 0 | 45 | | | | | 53 |
| C | 1 | 46 | 0 | | | | | 47 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 9 | 77 | 50 | | | | | 135 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 301 | 0 | | | | | 301 |
| B | 213 | 0 | 171 | | | | | 384 |
| C | 63 | 100 | 0 | | | | | 163 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 276 | 402 | 171 | | | | | 848 |

## Junction Turning Flows

**Junction:** A45/Watering Ln




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | | | 2104 | 2093 | *A45 North* |
| B | 83008 | 2104 | | | *A45 South* |
| C | 1104 | 2104 | 2104 | 1104 | *Watering Lane* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 3450 | 0 | 525 | | | | | 3975 |
| C | 302 | 0 | 0 | | | | | 302 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 3752 | 0 | 525 | | | | | 4277 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 2736 | 0 | 451 | | | | | 3187 |
| C | 280 | 0 | 0 | | | | | 280 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 3016 | 0 | 451 | | | | | 3467 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 173 | 0 | 74 | | | | | 247 |
| C | 22 | 0 | 0 | | | | | 22 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 195 | 0 | 74 | | | | | 269 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 541 | 0 | 0 | | | | | 541 |
| C | 0 | 0 | 0 | | | | | 0 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 541 | 0 | 0 | | | | | 541 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 3892 | 0 | 270 | | | | | 4162 |
| C | 131 | 0 | 0 | | | | | 131 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 4023 | 0 | 270 | | | | | 4293 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 3194 | 0 | 259 | | | | | 3453 |
| C | 116 | 0 | 0 | | | | | 116 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 3310 | 0 | 259 | | | | | 3569 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 176 | 0 | 11 | | | | | 187 |
| C | 15 | 0 | 0 | | | | | 15 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 191 | 0 | 11 | | | | | 202 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 522 | 0 | 0 | | | | | 522 |
| C | 0 | 0 | 0 | | | | | 0 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 522 | 0 | 0 | | | | | 522 |

## Junction Turning Flows

**Junction:** A508/Courteenhall Rd




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 21152 | 25210 | 25210 | 21152 | *A508 (SB)* |
| B | 83006 | 25210 | 25210 | 83006 | *A508 (NB)* |
| C | 70874 | 25210 | 25210 | 70874 | *Courtenhall Rd* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1572 | 0 | | | | | 1572 |
| B | 1103 | 0 | 115 | | | | | 1218 |
| C | 290 | 0 | 0 | | | | | 290 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1392 | 1572 | 115 | | | | | 3079 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1347 | 0 | | | | | 1347 |
| B | 864 | 0 | 112 | | | | | 976 |
| C | 271 | 0 | 0 | | | | | 271 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1135 | 1347 | 112 | | | | | 2595 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 29 | 0 | | | | | 29 |
| B | 50 | 0 | 1 | | | | | 51 |
| C | 11 | 0 | 0 | | | | | 11 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 61 | 29 | 1 | | | | | 91 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 197 | 0 | | | | | 197 |
| B | 189 | 0 | 1 | | | | | 190 |
| C | 7 | 0 | 0 | | | | | 7 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 196 | 197 | 1 | | | | | 394 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1623 | 0 | | | | | 1623 |
| B | 1301 | 0 | 73 | | | | | 1375 |
| C | 78 | 0 | 0 | | | | | 78 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1379 | 1623 | 73 | | | | | 3076 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1424 | 0 | | | | | 1424 |
| B | 1140 | 0 | 70 | | | | | 1210 |
| C | 52 | 0 | 0 | | | | | 52 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1192 | 1424 | 70 | | | | | 2686 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 40 | 0 | | | | | 40 |
| B | 43 | 0 | 2 | | | | | 46 |
| C | 2 | 0 | 0 | | | | | 2 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 45 | 40 | 2 | | | | | 87 |

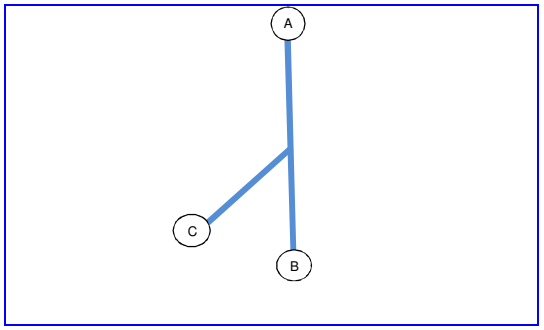
MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 159 | 0 | | | | | 159 |
| B | 118 | 0 | 1 | | | | | 119 |
| C | 25 | 0 | 0 | | | | | 25 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 143 | 159 | 1 | | | | | 302 |

## Junction Turning Flows

**Junction:** Roade Bypass northern roundabout (new junction)




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 25210 | 83006 | 83006 | 25210 | *A508 (SB)* |
| B | 25176 | 83006 | 83006 | 25176 | *A508 (NB)* |
| C | 83005 | 83006 | 83006 | 83005 | *Roade Bypass* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 251 | 1321 | | | | | 1572 |
| B | 244 | 0 | 0 | | | | | 244 |
| C | 973 | 13 | 0 | | | | | 987 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1218 | 264 | 1321 | | | | | 2803 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 237 | 1110 | | | | | 1347 |
| B | 230 | 0 | 0 | | | | | 230 |
| C | 747 | 13 | 0 | | | | | 760 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 977 | 250 | 1110 | | | | | 2337 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 25 | | | | | 29 |
| B | 3 | 0 | 0 | | | | | 3 |
| C | 48 | 0 | 0 | | | | | 48 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 51 | 4 | 25 | | | | | 80 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 11 | 186 | | | | | 197 |
| B | 11 | 0 | 0 | | | | | 11 |
| C | 178 | 0 | 0 | | | | | 178 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 190 | 11 | 186 | | | | | 386 |

### PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 322 | 1301 | | | | | 1623 |
| B | 473 | 0 | 0 | | | | | 473 |
| C | 901 | 173 | 0 | | | | | 1074 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1375 | 495 | 1301 | | | | | 3171 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 284 | 1140 | | | | | 1424 |
| B | 460 | 0 | 0 | | | | | 460 |
| C | 752 | 173 | 0 | | | | | 925 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1211 | 457 | 1140 | | | | | 2808 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 4 | 36 | | | | | 40 |
| B | 3 | 0 | 0 | | | | | 3 |
| C | 42 | 0 | 0 | | | | | 42 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 45 | 4 | 36 | | | | | 86 |

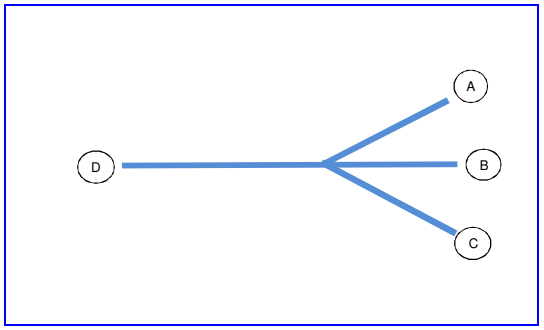
MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 34 | 124 | | | | | 159 |
| B | 10 | 0 | 0 | | | | | 10 |
| C | 108 | 0 | 0 | | | | | 108 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 118 | 34 | 124 | | | | | 276 |

## Junction Turning Flows

**Junction:** Roade Bypass/Blisworth roundabout (new junction)




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 83006 | 83005 | 83005 | 83006 | *Roade Bypass North* |
| B | 70607 | 83005 | 83005 | 70607 | *Knock Lane East* |
| C | 70611 | 83005 | 83005 | 70611 | *Roade Bypass South* |
| D | 25245 | 83005 | 83005 | 25245 | *Knock Lane West* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 21 | 1241 | 59 | | | | 1321 |
| B | 33 | 0 | 15 | 1 | | | | 49 |
| C | 940 | 4 | 0 | 3 | | | | 948 |
| D | 13 | 158 | 135 | 0 | | | | 306 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 986 | 183 | 1392 | 62 | | | | 2624 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 21 | 1032 | 57 | | | | 1110 |
| B | 31 | 0 | 15 | 1 | | | | 47 |
| C | 717 | 4 | 0 | 3 | | | | 724 |
| D | 13 | 152 | 135 | 0 | | | | 300 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 761 | 178 | 1183 | 60 | | | | 2181 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 23 | 2 | | | | 25 |
| B | 1 | 0 | 0 | 0 | | | | 1 |
| C | 47 | 0 | 0 | 0 | | | | 47 |
| D | 0 | 5 | 0 | 0 | | | | 5 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 48 | 5 | 24 | 2 | | | | 78 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 185 | 0 | | | | 186 |
| B | 1 | 0 | 0 | 0 | | | | 1 |
| C | 177 | 0 | 0 | 0 | | | | 177 |
| D | 0 | 0 | 0 | 0 | | | | 0 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 178 | 0 | 185 | 0 | | | | 364 |

### PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 46 | 1173 | 81 | | | | 1301 |
| B | 120 | 0 | 8 | 5 | | | | 133 |
| C | 948 | 21 | 0 | 3 | | | | 972 |
| D | 7 | 149 | 5 | 0 | | | | 161 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1074 | 216 | 1187 | 89 | | | | 2566 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 43 | 1017 | 79 | | | | 1140 |
| B | 117 | 0 | 8 | 5 | | | | 130 |
| C | 801 | 21 | 0 | 3 | | | | 825 |
| D | 6 | 125 | 4 | 0 | | | | 136 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 925 | 189 | 1030 | 87 | | | | 2231 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 32 | 2 | | | | 36 |
| B | 2 | 0 | 0 | 0 | | | | 2 |
| C | 40 | 0 | 0 | 0 | | | | 40 |
| D | 0 | 1 | 1 | 0 | | | | 2 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 42 | 4 | 33 | 2 | | | | 81 |

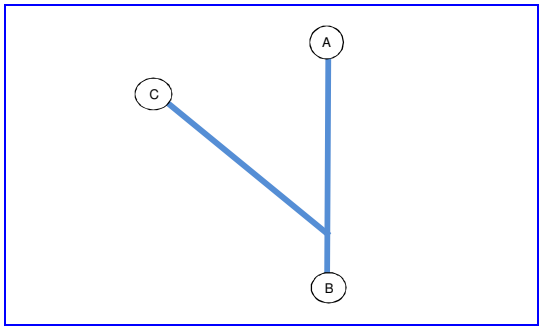
MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 124 | 0 | | | | 124 |
| B | 0 | 0 | 0 | 0 | | | | 0 |
| C | 107 | 0 | 0 | 0 | | | | 107 |
| D | 0 | 23 | 0 | 0 | | | | 23 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 107 | 23 | 124 | 0 | | | | 254 |

## Junction Turning Flows

**Junction:** Roade Bypass southern roundabout (new junction)




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 21313 | 70611 | 70611 | 21313 | *A508 (SB)* |
| B | 70111 | 70611 | 70611 | 70111 | *A508 (NB)* |
| C | 83005 | 70611 | 70611 | 83005 | *Roade Bypass* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 157 | 0 | | | | | 157 |
| B | 15 | 0 | 948 | | | | | 963 |
| C | 0 | 1392 | 0 | | | | | 1392 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 15 | 1549 | 948 | | | | | 2512 |

*By Vehicle Type:*

MODELLED

Car

| From Arm | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 157 | 0 | | | | | 157 |
| B | 9 | 0 | 724 | | | | | 734 |
| C | 0 | 1180 | 0 | | | | | 1180 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 9 | 1337 | 724 | | | | | 2071 |

MODELLED

LGV

| From Arm | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 0 | 0 | 47 | | | | | 47 |
| C | 0 | 24 | 0 | | | | | 24 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 0 | 24 | 47 | | | | | 71 |

MODELLED

HGV

| From Arm | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 6 | 0 | 177 | | | | | 182 |
| C | 0 | 188 | 0 | | | | | 188 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 6 | 188 | 177 | | | | | 370 |

### PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 176 | 0 | | | | | 176 |
| B | 261 | 0 | 972 | | | | | 1233 |
| C | 0 | 1187 | 0 | | | | | 1187 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 261 | 1362 | 972 | | | | | 2596 |

*By Vehicle Type:*

MODELLED

Car

| From Arm | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 176 | 0 | | | | | 176 |
| B | 261 | 0 | 825 | | | | | 1086 |
| C | 0 | 1030 | 0 | | | | | 1030 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 261 | 1206 | 825 | | | | | 2292 |

MODELLED

LGV

| From Arm | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 0 | 0 | 40 | | | | | 40 |
| C | 0 | 33 | 0 | | | | | 33 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 0 | 33 | 40 | | | | | 73 |

MODELLED

HGV

| From Arm | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 0 | 0 | 107 | | | | | 107 |
| C | 0 | 124 | 0 | | | | | 124 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 0 | 124 | 107 | | | | | 231 |

## Junction Turning Flows

**Junction:** A508/Rookery Ln/Ashton Rd




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 70611 | 70111 | 70111 | 70611 | *A508 North* |
| B | 70222 | 1500 | 1500 | 70222 | *Ashton Road* |
| C | 24622 | 1500 | 1500 | 24622 | *A508 South* |
| D | 70444 | 70111 | 70111 | 70444 | *Rookery Lane* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 7 | 1300 | 241 | | | | 1548 |
| B | 2 | 0 | 7 | 32 | | | | 41 |
| C | 704 | 56 | 0 | 0 | | | | 760 |
| D | 260 | 44 | 11 | 0 | | | | 315 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 966 | 107 | 1318 | 273 | | | | 2664 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 6 | 1115 | 213 | | | | 1334 |
| B | 2 | 0 | 7 | 30 | | | | 39 |
| C | 531 | 56 | 0 | 0 | | | | 587 |
| D | 207 | 42 | 9 | 0 | | | | 258 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 740 | 104 | 1131 | 243 | | | | 2218 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 19 | 5 | | | | 24 |
| B | 0 | 0 | 0 | 2 | | | | 2 |
| C | 38 | 0 | 0 | 0 | | | | 38 |
| D | 6 | 1 | 2 | 0 | | | | 9 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 44 | 1 | 21 | 7 | | | | 73 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1 | 166 | 23 | | | | 190 |
| B | 0 | 0 | 0 | 0 | | | | 0 |
| C | 135 | 0 | 0 | 0 | | | | 135 |
| D | 47 | 1 | 0 | 0 | | | | 48 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 182 | 2 | 166 | 23 | | | | 373 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 14 | 1084 | 266 | | | | 1364 |
| B | 2 | 0 | 1 | 5 | | | | 8 |
| C | 910 | 33 | 0 | 0 | | | | 943 |
| D | 323 | 3 | 0 | 0 | | | | 326 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1235 | 50 | 1085 | 271 | | | | 2641 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 12 | 995 | 197 | | | | 1204 |
| B | 2 | 0 | 1 | 3 | | | | 6 |
| C | 788 | 33 | 0 | 0 | | | | 821 |
| D | 297 | 3 | 0 | 0 | | | | 300 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1087 | 48 | 996 | 200 | | | | 2331 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 22 | 10 | | | | 34 |
| B | 0 | 0 | 0 | 2 | | | | 2 |
| C | 30 | 0 | 0 | 0 | | | | 30 |
| D | 10 | 0 | 0 | 0 | | | | 10 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 40 | 2 | 22 | 12 | | | | 76 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 67 | 59 | | | | 126 |
| B | 0 | 0 | 0 | 0 | | | | 0 |
| C | 92 | 0 | 0 | 0 | | | | 92 |
| D | 16 | 0 | 0 | 0 | | | | 16 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 108 | 0 | 67 | 59 | | | | 234 |

## Junction Turning Flows

**Junction:** A508/Pury Rd




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 24622 | 75174 | 75174 | 24622 | *A508 North* |
| B | 70884 | 75174 | 75174 | 70884 | *A508 South* |
| C | 75171 | 75174 | 75174 | 75171 | *Pury Road* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

| PCU | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 877 | 550 | | | | | 1427 |
| | B | 583 | 0 | 25 | | | | | 609 |
| | C | 232 | 2 | 0 | | | | | 234 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 815 | 879 | 576 | | | | | 2269 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 695 | 538 | | | | | 1233 |
| | B | 416 | 0 | 25 | | | | | 441 |
| | C | 225 | 2 | 0 | | | | | 226 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 640 | 697 | 563 | | | | | 1900 |

MODELLED

| LGV | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 22 | 12 | | | | | 34 |
| | B | 35 | 0 | 0 | | | | | 36 |
| | C | 7 | 0 | 0 | | | | | 8 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 43 | 22 | 12 | | | | | 77 |

MODELLED

| HGV | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 160 | 0 | | | | | 160 |
| | B | 132 | 0 | 0 | | | | | 132 |
| | C | 0 | 0 | 0 | | | | | 0 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 132 | 160 | 0 | | | | | 292 |

PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

| PCU | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 766 | 393 | | | | | 1159 |
| | B | 878 | 0 | 1 | | | | | 879 |
| | C | 225 | 45 | 0 | | | | | 270 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 1103 | 811 | 394 | | | | | 2307 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 625 | 387 | | | | | 1012 |
| | B | 749 | 0 | 1 | | | | | 749 |
| | C | 209 | 45 | 0 | | | | | 254 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 958 | 670 | 388 | | | | | 2015 |

MODELLED

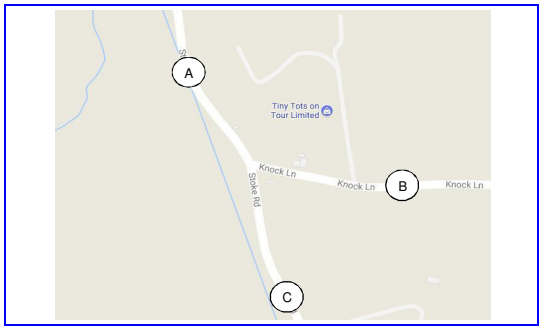
| LGV | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 22 | 6 | | | | | 28 |
| | B | 33 | 0 | 0 | | | | | 33 |
| | C | 16 | 0 | 0 | | | | | 16 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 48 | 22 | 6 | | | | | 76 |

MODELLED

| HGV | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 119 | 0 | | | | | 119 |
| | B | 97 | 0 | 0 | | | | | 97 |
| | C | 0 | 0 | 0 | | | | | 0 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 97 | 119 | 0 | | | | | 216 |

## Junction Turning Flows

**Junction:** Stoke Rd/Knock Ln




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 70997 | 25245 | 25245 | 70997 | *Stoke Rd North* |
| B | 83005 | 25245 | 25245 | 83005 | *Knock Ln* |
| C | 25211 | 25245 | 25245 | 25211 | *Stoke Rd South* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 306 | 163 | | | | | 469 |
| B | 62 | 0 | 0 | | | | | 62 |
| C | 26 | 0 | 0 | | | | | 26 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 88 | 306 | 163 | | | | | 557 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 300 | 141 | | | | | 441 |
| B | 60 | 0 | 0 | | | | | 60 |
| C | 22 | 0 | 0 | | | | | 22 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 82 | 300 | 141 | | | | | 523 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 5 | 22 | | | | | 28 |
| B | 2 | 0 | 0 | | | | | 2 |
| C | 3 | 0 | 0 | | | | | 3 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 5 | 5 | 22 | | | | | 33 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 0 | 0 | 0 | | | | | 0 |
| C | 1 | 0 | 0 | | | | | 1 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1 | 0 | 0 | | | | | 1 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 161 | 86 | | | | | 246 |
| B | 89 | 0 | 0 | | | | | 89 |
| C | 329 | 0 | 0 | | | | | 329 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 419 | 161 | 86 | | | | | 665 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 136 | 77 | | | | | 213 |
| B | 87 | 0 | 0 | | | | | 87 |
| C | 296 | 0 | 0 | | | | | 296 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 383 | 136 | 77 | | | | | 596 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 5 | | | | | 8 |
| B | 2 | 0 | 0 | | | | | 2 |
| C | 28 | 0 | 0 | | | | | 28 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 30 | 2 | 5 | | | | | 38 |

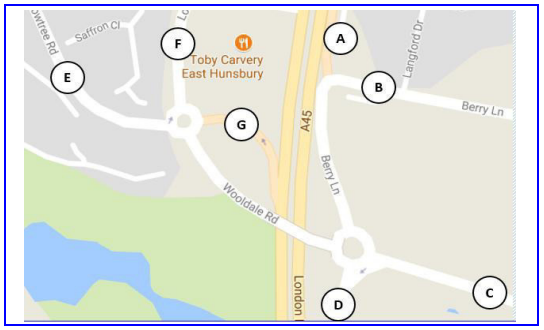
MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 23 | 3 | | | | | 26 |
| B | 0 | 0 | 0 | | | | | 0 |
| C | 5 | 0 | 0 | | | | | 5 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 5 | 23 | 3 | | | | | 31 |

## Junction Turning Flows

**Junction:** A45 Wootton Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 6082 | 5082 | | | *A45 SB Off-slip* |
| B | 4082 | 5082 | 5082 | 4082 | *Berry Lane East* |
| C | 3081 | 75031 | 75031 | 3081 | *Wooldale Road* |
| D | 1355 | 75032 | 75032 | 1355 | *unnamed road* |
| E | 24752 | 1093 | 1093 | 24752 | *Rowtree Road* |
| F | | | 1093 | 26031 | *London Road* |
| G | 2093 | 1093 | | | *A45 NB On-slip* |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 146 | 18 | 0 | 164 |
| B | 0 | 0 | 0 | 119 | 26 | 94 | 0 | 239 |
| C | 0 | 0 | 0 | 658 | 71 | 82 | 0 | 811 |
| D | 0 | 83 | 203 | 0 | 111 | 269 | 0 | 666 |
| E | 0 | 102 | 452 | 500 | 0 | 719 | 0 | 1773 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 41 | 489 | 21 | 174 | 34 | 0 | 759 |
| TOTAL | 0 | 226 | 1144 | 1298 | 528 | 1216 | 0 | 4412 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 131 | 17 | 0 | 148 |
| B | 0 | 0 | 0 | 99 | 26 | 92 | 0 | 217 |
| C | 0 | 0 | 0 | 328 | 66 | 74 | 0 | 468 |
| D | 0 | 81 | 187 | 0 | 111 | 254 | 0 | 633 |
| E | 0 | 100 | 426 | 492 | 0 | 558 | 0 | 1576 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 29 | 315 | 20 | 148 | 32 | 0 | 544 |
| TOTAL | 0 | 210 | 928 | 939 | 482 | 1027 | 0 | 3586 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 8 |
| B | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 4 |
| C | 0 | 0 | 0 | 26 | 4 | 4 | 0 | 34 |
| D | 0 | 2 | 5 | 0 | 0 | 10 | 0 | 17 |
| E | 0 | 2 | 17 | 3 | 0 | 21 | 0 | 43 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 1 | 29 | 1 | 7 | 2 | 0 | 40 |
| TOTAL | 0 | 5 | 51 | 33 | 18 | 39 | 0 | 146 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 8 |
| B | 0 | 0 | 0 | 17 | 0 | 1 | 0 | 18 |
| C | 0 | 0 | 0 | 304 | 1 | 4 | 0 | 309 |
| D | 0 | 0 | 11 | 0 | 0 | 5 | 0 | 16 |
| E | 0 | 0 | 9 | 5 | 0 | 140 | 0 | 154 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 11 | 145 | 0 | 19 | 0 | 0 | 175 |
| TOTAL | 0 | 11 | 165 | 326 | 28 | 150 | 0 | 680 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 12 | 0 | 523 | 66 | 0 | 601 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 510 | 373 | 105 | 0 | 988 |
| D | 0 | 41 | 269 | 0 | 92 | 201 | 0 | 603 |
| E | 0 | 8 | 266 | 374 | 0 | 553 | 0 | 1201 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 15 | 590 | 6 | 292 | 73 | 0 | 976 |
| TOTAL | 0 | 64 | 1137 | 890 | 1280 | 998 | 0 | 4369 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 12 | 0 | 417 | 64 | 0 | 493 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 414 | 228 | 99 | 0 | 741 |
| D | 0 | 36 | 248 | 0 | 91 | 192 | 0 | 567 |
| E | 0 | 7 | 206 | 365 | 0 | 186 | 0 | 764 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 14 | 407 | 1 | 275 | 55 | 0 | 752 |
| TOTAL | 0 | 57 | 873 | 780 | 1011 | 596 | 0 | 3317 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 20 | 2 | 0 | 22 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 19 | 3 | 5 | 0 | 27 |
| D | 0 | 1 | 21 | 0 | 1 | 8 | 0 | 31 |
| E | 0 | 1 | 11 | 7 | 0 | 26 | 0 | 45 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 0 | 20 | 5 | 12 | 3 | 0 | 40 |
| TOTAL | 0 | 2 | 52 | 31 | 36 | 44 | 0 | 165 |

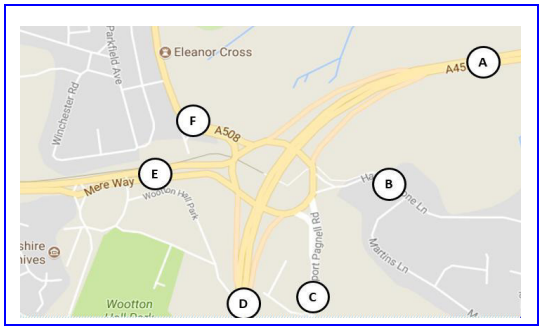
MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 86 | 0 | 0 | 86 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 77 | 142 | 1 | 0 | 220 |
| D | 0 | 4 | 0 | 0 | 0 | 1 | 0 | 5 |
| E | 0 | 0 | 49 | 2 | 0 | 341 | 0 | 392 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 1 | 163 | 0 | 5 | 15 | 0 | 184 |
| TOTAL | 0 | 5 | 212 | 79 | 233 | 358 | 0 | 887 |

## Junction Turning Flows

**Junction:** A45 Queen Eleanor Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 9168 | 2092 | 60137 | 9162 | *A45 North* |
| B | 1081 | 1079 | 1079 | 1081 | *Hardingstone Lane* |
| C | 24742 | 3082 | 3082 | 24742 | *Newport Pagnell Rd* |
| D | 9161 | 60134 | 60133 | 9169 | *A45 South* |
| E | 60203 | 1092 | 1092 | 60203 | *Mere Way* |
| F | 2088 | 60136 | 60136 | 2088 | *A508 - London Road* |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 58 | 102 | 0 | 1612 | 242 | | 2014 |
| B | 204 | 0 | 0 | 49 | 96 | 160 | | 509 |
| C | 218 | 0 | 0 | 0 | 376 | 483 | | 1077 |
| D | 0 | 0 | 0 | 0 | 33 | 826 | | 859 |
| E | 1834 | 20 | 376 | 176 | 0 | 25 | | 2431 |
| F | 223 | 11 | 353 | 531 | 26 | 0 | | 1144 |
| G | | | | | | | | |
| TOTAL | 2479 | 89 | 831 | 756 | 2143 | 1736 | | 8034 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 54 | 97 | 0 | 1344 | 181 | | 1676 |
| B | 201 | 0 | 0 | 49 | 95 | 158 | | 503 |
| C | 216 | 0 | 0 | 0 | 368 | 468 | | 1052 |
| D | 0 | 0 | 0 | 0 | 27 | 497 | | 524 |
| E | 1351 | 18 | 354 | 168 | 0 | 24 | | 1915 |
| F | 216 | 11 | 324 | 446 | 26 | 0 | | 1023 |
| G | | | | | | | | |
| TOTAL | 1984 | 83 | 775 | 663 | 1860 | 1328 | | 6693 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 4 | 5 | 0 | 105 | 26 | | 140 |
| B | 3 | 0 | 0 | 0 | 1 | 2 | | 6 |
| C | 1 | 0 | 0 | 0 | 6 | 8 | | 15 |
| D | 0 | 0 | 0 | 0 | 2 | 48 | | 50 |
| E | 55 | 2 | 6 | 4 | 0 | 1 | | 68 |
| F | 4 | 0 | 2 | 19 | 0 | 0 | | 25 |
| G | | | | | | | | |
| TOTAL | 63 | 6 | 13 | 23 | 114 | 85 | | 304 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 163 | 35 | | 198 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| C | 1 | 0 | 0 | 0 | 2 | 7 | | 10 |
| D | 0 | 0 | 0 | 0 | 4 | 281 | | 285 |
| E | 428 | 0 | 16 | 4 | 0 | 0 | | 448 |
| F | 3 | 0 | 27 | 66 | 0 | 0 | | 96 |
| G | | | | | | | | |
| TOTAL | 432 | 0 | 43 | 70 | 169 | 323 | | 1037 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 553 | 57 | 0 | 1202 | 201 | | 2013 |
| B | 409 | 0 | 0 | 29 | 30 | 150 | | 618 |
| C | 118 | 0 | 0 | 52 | 871 | 559 | | 1600 |
| D | 0 | 33 | 19 | 0 | 49 | 633 | | 734 |
| E | 1581 | 95 | 431 | 435 | 0 | 5 | | 2547 |
| F | 384 | 89 | 152 | 622 | 79 | 0 | | 1326 |
| G | | | | | | | | |
| TOTAL | 2492 | 770 | 659 | 1138 | 2231 | 1548 | | 8838 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 550 | 57 | 0 | 933 | 180 | | 1720 |
| B | 386 | 0 | 0 | 29 | 28 | 145 | | 588 |
| C | 117 | 0 | 0 | 51 | 849 | 532 | | 1549 |
| D | 0 | 32 | 18 | 0 | 46 | 561 | | 657 |
| E | 1339 | 94 | 426 | 429 | 0 | 5 | | 2293 |
| F | 365 | 84 | 137 | 555 | 74 | 0 | | 1215 |
| G | | | | | | | | |
| TOTAL | 2207 | 760 | 638 | 1064 | 1930 | 1423 | | 8022 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 0 | 0 | 66 | 21 | | 90 |
| B | 18 | 0 | 0 | 0 | 2 | 4 | | 24 |
| C | 1 | 0 | 0 | 1 | 20 | 26 | | 48 |
| D | 0 | 1 | 1 | 0 | 2 | 20 | | 24 |
| E | 37 | 1 | 4 | 1 | 0 | 0 | | 43 |
| F | 19 | 5 | 7 | 5 | 5 | 0 | | 41 |
| G | | | | | | | | |
| TOTAL | 75 | 10 | 12 | 7 | 95 | 71 | | 270 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 203 | 0 | | 203 |
| B | 5 | 0 | 0 | 0 | 0 | 1 | | 6 |
| C | 0 | 0 | 0 | 0 | 2 | 1 | | 3 |
| D | 0 | 0 | 0 | 0 | 1 | 52 | | 53 |
| E | 205 | 0 | 1 | 5 | 0 | 0 | | 211 |
| F | 0 | 0 | 8 | 62 | 0 | 0 | | 70 |
| G | | | | | | | | |
| TOTAL | 210 | 0 | 9 | 67 | 206 | 54 | | 546 |

## Junction Turning Flows

**Junction:** A45 Brackmills Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 75028 | 3084 | 2084 | 7084 | *A45/ Nene Valley Way* |
| B | 2345 | 4084 | 3084 | 2345 | *Caswell Road* |
| C | 9163 | 6084 | 4084 | 5084 | *A45/ Nene Valley Way* |
| D | 1084 | 2084 | 6084 | 1084 | *Eagle Drive* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 7 | 1047 | 94 | 9 | | | | 1157 |
| B | 891 | 0 | 589 | 8 | | | | 1488 |
| C | 1393 | 607 | 0 | 12 | | | | 2012 |
| D | 47 | 19 | 15 | 0 | | | | 81 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2338 | 1673 | 698 | 29 | | | | 4738 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 7 | 890 | 88 | 9 | | | | 994 |
| B | 831 | 0 | 420 | 6 | | | | 1257 |
| C | 1202 | 546 | 0 | 8 | | | | 1756 |
| D | 33 | 11 | 11 | 0 | | | | 55 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2073 | 1447 | 519 | 23 | | | | 4062 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 6 | 3 | 0 | | | | 9 |
| B | 19 | 0 | 36 | 2 | | | | 57 |
| C | 48 | 6 | 0 | 4 | | | | 58 |
| D | 14 | 8 | 4 | 0 | | | | 26 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 81 | 20 | 43 | 6 | | | | 150 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 151 | 3 | 0 | | | | 154 |
| B | 41 | 0 | 133 | 0 | | | | 174 |
| C | 143 | 55 | 0 | 0 | | | | 198 |
| D | 0 | 0 | 0 | 0 | | | | 0 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 184 | 206 | 136 | 0 | | | | 526 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 172 | 588 | 0 | | | | 760 |
| B | 212 | 0 | 413 | 47 | | | | 672 |
| C | 1363 | 643 | 0 | 8 | | | | 2014 |
| D | 483 | 129 | 92 | 0 | | | | 704 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2058 | 944 | 1093 | 55 | | | | 4150 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 167 | 565 | 0 | | | | 732 |
| B | 207 | 0 | 286 | 46 | | | | 539 |
| C | 1129 | 554 | 0 | 3 | | | | 1686 |
| D | 458 | 105 | 82 | 0 | | | | 645 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1794 | 826 | 933 | 49 | | | | 3602 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 5 | 18 | 0 | | | | 23 |
| B | 3 | 0 | 17 | 1 | | | | 21 |
| C | 57 | 28 | 0 | 5 | | | | 90 |
| D | 13 | 11 | 10 | 0 | | | | 34 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 73 | 44 | 45 | 6 | | | | 168 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 5 | 0 | | | | 5 |
| B | 2 | 0 | 110 | 0 | | | | 112 |
| C | 177 | 61 | 0 | 0 | | | | 238 |
| D | 12 | 13 | 0 | 0 | | | | 25 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 191 | 74 | 115 | 0 | | | | 380 |

## Junction Turning Flows

**Junction:** A45 Barnes Meadow Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 9166 | 9176 | 9175 | 9165 | *A45/NeneValley Way* |
| B | 24740 | 2053 | 2053 | 24740 | *A428/Bedford Road* |
| C | 9164 | 9173 | 9177 | 75027 | *A45/NeneValley Way* |
| D | 2051 | 9174 | 9174 | 2051 | *A428/Bedford Road* |
| E | 1054 | 9175 | 9175 | 1054 | *A5095/ Rushmere Roa* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

| PCU | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 337 | 427 | 943 | 97 | | | 1804 |
| | B | 89 | 0 | 157 | 305 | 113 | | | 664 |
| | C | 0 | 141 | 0 | 844 | 245 | | | 1230 |
| | D | 904 | 719 | 188 | 3 | 105 | | | 1919 |
| | E | 134 | 741 | 504 | 24 | 0 | | | 1403 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 1127 | 1938 | 1276 | 2119 | 560 | | | 7020 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 216 | 366 | 892 | 93 | | | 1567 |
| | B | 78 | 0 | 133 | 238 | 106 | | | 555 |
| | C | 0 | 137 | 0 | 803 | 239 | | | 1179 |
| | D | 815 | 645 | 183 | 3 | 93 | | | 1739 |
| | E | 130 | 737 | 433 | 23 | 0 | | | 1323 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 1023 | 1735 | 1115 | 1959 | 531 | | | 6363 |

MODELLED

| LGV | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 3 | 14 | 36 | 4 | | | 57 |
| | B | 7 | 0 | 16 | 21 | 6 | | | 50 |
| | C | 0 | 3 | 0 | 40 | 6 | | | 49 |
| | D | 78 | 6 | 4 | 0 | 12 | | | 100 |
| | E | 4 | 4 | 32 | 1 | 0 | | | 41 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 89 | 16 | 66 | 98 | 28 | | | 297 |

MODELLED

| HGV | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 118 | 47 | 15 | 0 | | | 180 |
| | B | 4 | 0 | 8 | 46 | 1 | | | 59 |
| | C | 0 | 1 | 0 | 1 | 0 | | | 2 |
| | D | 11 | 68 | 1 | 0 | 0 | | | 80 |
| | E | 0 | 0 | 39 | 0 | 0 | | | 39 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 15 | 187 | 95 | 62 | 1 | | | 360 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

| PCU | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 167 | 245 | 713 | 1 | | | 1126 |
| | B | 404 | 0 | 130 | 434 | 668 | | | 1636 |
| | C | 0 | 57 | 3 | 869 | 297 | | | 1226 |
| | D | 1853 | 343 | 400 | 8 | 33 | | | 2637 |
| | E | 488 | 338 | 222 | 0 | 0 | | | 1048 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 2745 | 905 | 1000 | 2024 | 999 | | | 7673 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 164 | 233 | 664 | 1 | | | 1062 |
| | B | 389 | 0 | 128 | 421 | 655 | | | 1593 |
| | C | 0 | 53 | 1 | 842 | 273 | | | 1169 |
| | D | 1658 | 333 | 387 | 8 | 32 | | | 2418 |
| | E | 477 | 327 | 214 | 0 | 0 | | | 1018 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 2524 | 877 | 963 | 1935 | 961 | | | 7260 |

MODELLED

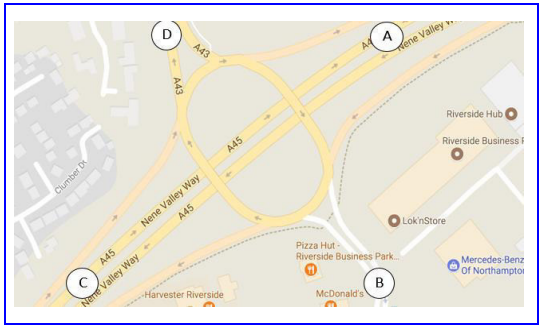
| LGV | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 2 | 6 | 15 | 0 | | | 23 |
| | B | 8 | 0 | 2 | 6 | 10 | | | 26 |
| | C | 0 | 0 | 2 | 27 | 21 | | | 50 |
| | D | 78 | 6 | 11 | 0 | 1 | | | 96 |
| | E | 11 | 9 | 5 | 0 | 0 | | | 25 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 97 | 17 | 26 | 48 | 32 | | | 220 |

MODELLED

| HGV | | To Arm A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| From Arm | A | 0 | 1 | 6 | 34 | 0 | | | 41 |
| | B | 7 | 0 | 0 | 7 | 3 | | | 17 |
| | C | 0 | 4 | 0 | 0 | 3 | | | 7 |
| | D | 117 | 4 | 2 | 0 | 0 | | | 123 |
| | E | 0 | 2 | 3 | 0 | 0 | | | 5 |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 124 | 11 | 11 | 41 | 6 | | | 193 |

## Junction Turning Flows

**Junction:** A45 Lumbertubs Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 9213 | 9214 | 9211 | 9212 | *A45/ Nene Valley Way* |
| B | 4437 | 9215 | 9214 | 4436 | *Ferris Row* |
| C | 2075 | 9217 | 9215 | 9216 | *A45/ Nene Valley Way* |
| D | 9210 | 9211 | 9217 | 4068 | *A43/ Lumbertubs Way* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 87 | 0 | 266 | | | | 353 |
| B | 42 | 0 | 1149 | 246 | | | | 1437 |
| C | 0 | 114 | 0 | 1676 | | | | 1790 |
| D | 460 | 1216 | 1347 | 149 | | | | 3172 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 502 | 1417 | 2496 | 2337 | | | | 6752 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 77 | 0 | 257 | | | | 334 |
| B | 39 | 0 | 1050 | 211 | | | | 1300 |
| C | 0 | 103 | 0 | 1161 | | | | 1264 |
| D | 446 | 1074 | 1163 | 146 | | | | 2829 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 485 | 1254 | 2213 | 1775 | | | | 5727 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 10 | 0 | 9 | | | | 19 |
| B | 2 | 0 | 42 | 6 | | | | 50 |
| C | 0 | 11 | 0 | 85 | | | | 96 |
| D | 13 | 53 | 60 | 3 | | | | 129 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 15 | 74 | 102 | 103 | | | | 294 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | | | | 0 |
| B | 1 | 0 | 57 | 29 | | | | 87 |
| C | 0 | 0 | 0 | 430 | | | | 430 |
| D | 1 | 89 | 124 | 0 | | | | 214 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2 | 89 | 181 | 459 | | | | 731 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 215 | 0 | 591 | | | | 806 |
| B | 62 | 0 | 829 | 719 | | | | 1610 |
| C | 133 | 120 | 1 | 1489 | | | | 1743 |
| D | 174 | 761 | 1058 | 58 | | | | 2051 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 369 | 1096 | 1888 | 2857 | | | | 6210 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 153 | 0 | 576 | | | | 729 |
| B | 57 | 0 | 819 | 715 | | | | 1591 |
| C | 127 | 16 | 1 | 1220 | | | | 1364 |
| D | 168 | 642 | 963 | 58 | | | | 1831 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 352 | 811 | 1783 | 2569 | | | | 5515 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 25 | 0 | 11 | | | | 36 |
| B | 5 | 0 | 10 | 4 | | | | 19 |
| C | 6 | 2 | 0 | 50 | | | | 58 |
| D | 6 | 19 | 22 | 0 | | | | 47 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 17 | 46 | 32 | 65 | | | | 160 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 37 | 0 | 4 | | | | 41 |
| B | 0 | 0 | 0 | 0 | | | | 0 |
| C | 0 | 102 | 0 | 219 | | | | 321 |
| D | 0 | 100 | 73 | 0 | | | | 173 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 0 | 239 | 73 | 223 | | | | 535 |

## Junction Turning Flows

**Junction:** A45 Great Billing Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 9259 | 9258 | 9253 | 9254 | *A45/ Nene Valley Way* |
| B | 1076 | 9257 | 9257 | 1076 | *Crow Lane* |
| C | 9250 | 9251 | 9256 | 9255 | *A45/ Nene Valley Way* |
| D | 24694 | 9252 | 9252 | 24694 | *Great Billing Way* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

| PCU | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 296 | 0 | 383 | | | | 679 |
| | B | 176 | 0 | 640 | 507 | | | | 1323 |
| | C | 0 | 146 | 18 | 305 | | | | 469 |
| | D | 374 | 516 | 836 | 0 | | | | 1726 |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 550 | 958 | 1494 | 1195 | | | | 4197 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 142 | 0 | 327 | | | | 469 |
| | B | 116 | 0 | 363 | 343 | | | | 822 |
| | C | 0 | 137 | 17 | 297 | | | | 451 |
| | D | 346 | 466 | 795 | 0 | | | | 1607 |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 462 | 745 | 1175 | 967 | | | | 3349 |

MODELLED

| LGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 4 | 0 | 8 | | | | 12 |
| | B | 47 | 0 | 56 | 48 | | | | 151 |
| | C | 0 | 9 | 1 | 6 | | | | 16 |
| | D | 7 | 20 | 26 | 0 | | | | 53 |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 54 | 33 | 83 | 62 | | | | 232 |

MODELLED

| HGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 150 | 0 | 48 | | | | 198 |
| | B | 13 | 0 | 221 | 116 | | | | 350 |
| | C | 0 | 0 | 0 | 2 | | | | 2 |
| | D | 21 | 30 | 15 | 0 | | | | 66 |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 34 | 180 | 236 | 166 | | | | 616 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

| PCU | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 75 | 0 | 140 | | | | 215 |
| | B | 263 | 0 | 228 | 620 | | | | 1111 |
| | C | 28 | 112 | 9 | 769 | | | | 918 |
| | D | 459 | 420 | 244 | 0 | | | | 1123 |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 750 | 607 | 481 | 1529 | | | | 3367 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 70 | 0 | 136 | | | | 206 |
| | B | 224 | 0 | 171 | 536 | | | | 931 |
| | C | 0 | 17 | 1 | 622 | | | | 640 |
| | D | 438 | 399 | 226 | 0 | | | | 1063 |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 662 | 486 | 398 | 1294 | | | | 2840 |

MODELLED

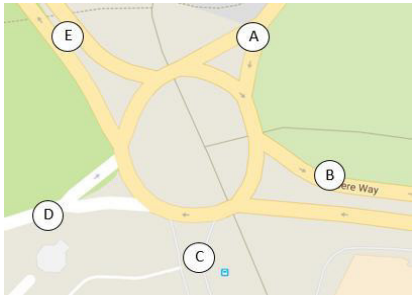
| LGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 5 | 0 | 4 | | | | 9 |
| | B | 38 | 0 | 41 | 68 | | | | 147 |
| | C | 0 | 12 | 0 | 22 | | | | 34 |
| | D | 21 | 21 | 3 | 0 | | | | 45 |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 59 | 38 | 44 | 94 | | | | 235 |

MODELLED

| HGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 0 | 0 | 0 | | | | 0 |
| | B | 1 | 0 | 16 | 16 | | | | 33 |
| | C | 28 | 83 | 8 | 125 | | | | 244 |
| | D | 0 | 0 | 15 | 0 | | | | 15 |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 29 | 83 | 39 | 141 | | | | 292 |

## Junction Turning Flows

**Junction:** A5076/Towcester Rd roundabout




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 60104 | 5298 | 4298 | 60104 | *Towcester Road* |
| B | 60120 | 60119 | 60125 | 60120 | *Mere Way* |
| C | 60123 | 60121 | 60122 | 60123 | *Shopping centre* |
| D | 3096 | 60126 | 7298 | 3096 | *Towcester Road* |
| E | 60118 | 60117 | 21298 | 60118 | *Danes Camp Way* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED — PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 532 | 10 | 271 | 297 | | | 1110 |
| B | 345 | 79 | 16 | 186 | 1741 | | | 2367 |
| C | 8 | 24 | 0 | 25 | 23 | | | 80 |
| D | 394 | 379 | 24 | 0 | 267 | | | 1064 |
| E | 285 | 1546 | 24 | 93 | 0 | | | 1948 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1032 | 2560 | 74 | 575 | 2328 | | | 6569 |

*By Vehicle Type:*

MODELLED — Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 523 | 10 | 242 | 280 | | | 1055 |
| B | 332 | 78 | 13 | 176 | 1537 | | | 2136 |
| C | 7 | 22 | 0 | 25 | 22 | | | 76 |
| D | 378 | 373 | 24 | 0 | 255 | | | 1030 |
| E | 275 | 1013 | 24 | 84 | 0 | | | 1396 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 992 | 2009 | 71 | 527 | 2094 | | | 5693 |

MODELLED — LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 6 | 0 | 26 | 16 | | | 48 |
| B | 12 | 1 | 3 | 6 | 48 | | | 70 |
| C | 1 | 1 | 0 | 0 | 1 | | | 3 |
| D | 15 | 4 | 0 | 0 | 12 | | | 31 |
| E | 7 | 44 | 0 | 6 | 0 | | | 57 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 35 | 56 | 3 | 38 | 77 | | | 209 |

MODELLED — HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 0 | 3 | 1 | | | 7 |
| B | 1 | 0 | 0 | 4 | 156 | | | 161 |
| C | 0 | 1 | 0 | 0 | 0 | | | 1 |
| D | 1 | 2 | 0 | 0 | 0 | | | 3 |
| E | 3 | 489 | 0 | 3 | 0 | | | 495 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 5 | 495 | 0 | 10 | 157 | | | 667 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED — PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 646 | 12 | 360 | 155 | | | 1173 |
| B | 127 | 138 | 25 | 319 | 1512 | | | 2121 |
| C | 10 | 36 | 0 | 33 | 18 | | | 97 |
| D | 471 | 422 | 26 | 0 | 45 | | | 964 |
| E | 217 | 1218 | 23 | 197 | 2 | | | 1657 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 825 | 2460 | 86 | 909 | 1732 | | | 6012 |

*By Vehicle Type:*

MODELLED — Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 631 | 11 | 322 | 152 | | | 1116 |
| B | 106 | 68 | 20 | 253 | 1363 | | | 1810 |
| C | 10 | 34 | 0 | 31 | 18 | | | 93 |
| D | 421 | 393 | 25 | 0 | 45 | | | 884 |
| E | 217 | 1172 | 23 | 194 | 2 | | | 1608 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 754 | 2298 | 79 | 800 | 1580 | | | 5511 |

MODELLED — LGV

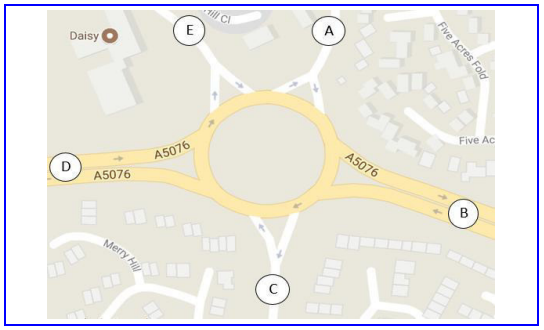
| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 14 | 1 | 38 | 3 | | | 56 |
| B | 10 | 7 | 4 | 35 | 37 | | | 93 |
| C | 0 | 2 | 0 | 1 | 0 | | | 3 |
| D | 29 | 10 | 1 | 0 | 0 | | | 40 |
| E | 0 | 12 | 0 | 2 | 0 | | | 14 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 39 | 45 | 6 | 76 | 40 | | | 206 |

MODELLED — HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1 | 0 | 0 | 0 | | | 1 |
| B | 11 | 63 | 1 | 31 | 112 | | | 218 |
| C | 0 | 0 | 0 | 1 | 0 | | | 1 |
| D | 21 | 19 | 0 | 0 | 0 | | | 40 |
| E | 0 | 34 | 0 | 1 | 0 | | | 35 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 32 | 117 | 1 | 33 | 112 | | | 295 |

## Junction Turning Flows

**Junction:** A5076/Huntsbury Hill roundabout




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 1134 | 9411 | 9411 | 1134 | *Hunsbarrow Road* |
| B | 1091 | 9411 | 9411 | 1091 | *Danes Camp Way* |
| C | 1098 | 9411 | 9411 | 1098 | *Hunsbury Hill Road* |
| D | 4100 | 9411 | 9411 | 4100 | *Danes Camp Way* |
| E | 9413 | 9411 | 9411 | 9413 | *Hunsbury Hill Avenue* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 11 | 11 | 359 | 17 | | | 398 |
| B | 7 | 0 | 39 | 2101 | 151 | | | 2298 |
| C | 0 | 207 | 0 | 454 | 9 | | | 670 |
| D | 13 | 2360 | 230 | 0 | 172 | | | 2775 |
| E | 1 | 240 | 7 | 159 | 0 | | | 406 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 20 | 2819 | 287 | 3073 | 349 | | | 6548 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 11 | 11 | 275 | 17 | | | 314 |
| B | 7 | 0 | 39 | 1876 | 151 | | | 2073 |
| C | 0 | 200 | 0 | 436 | 9 | | | 645 |
| D | 7 | 1813 | 227 | 0 | 171 | | | 2219 |
| E | 1 | 184 | 7 | 156 | 0 | | | 348 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 15 | 2208 | 283 | 2744 | 349 | | | 5599 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 83 | 0 | | | 83 |
| B | 0 | 0 | 0 | 65 | 0 | | | 65 |
| C | 0 | 2 | 0 | 18 | 0 | | | 20 |
| D | 5 | 78 | 3 | 0 | 0 | | | 87 |
| E | 0 | 1 | 0 | 1 | 0 | | | 2 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 6 | 81 | 3 | 166 | 0 | | | 257 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | | | 1 |
| B | 0 | 0 | 0 | 160 | 0 | | | 160 |
| C | 0 | 5 | 0 | 0 | 0 | | | 6 |
| D | 0 | 469 | 1 | 0 | 0 | | | 469 |
| E | 0 | 55 | 0 | 1 | 0 | | | 57 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 0 | 530 | 1 | 162 | 0 | | | 693 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 17 | 77 | 664 | 135 | | | 893 |
| B | 48 | 0 | 126 | 1077 | 510 | | | 1760 |
| C | 9 | 266 | 0 | 251 | 22 | | | 547 |
| D | 227 | 1346 | 394 | 0 | 222 | | | 2190 |
| E | 13 | 337 | 12 | 79 | 0 | | | 441 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 297 | 1966 | 609 | 2070 | 889 | | | 5832 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 17 | 77 | 641 | 130 | | | 865 |
| B | 47 | 0 | 126 | 909 | 510 | | | 1592 |
| C | 9 | 264 | 0 | 248 | 22 | | | 542 |
| D | 71 | 1284 | 384 | 0 | 194 | | | 1933 |
| E | 13 | 337 | 12 | 79 | 0 | | | 441 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 141 | 1902 | 598 | 1877 | 855 | | | 5373 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 19 | 5 | | | 25 |
| B | 0 | 0 | 0 | 38 | 0 | | | 39 |
| C | 0 | 2 | 0 | 2 | 0 | | | 4 |
| D | 1 | 24 | 10 | 0 | 28 | | | 64 |
| E | 0 | 0 | 0 | 0 | 0 | | | 0 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1 | 27 | 11 | 60 | 34 | | | 132 |

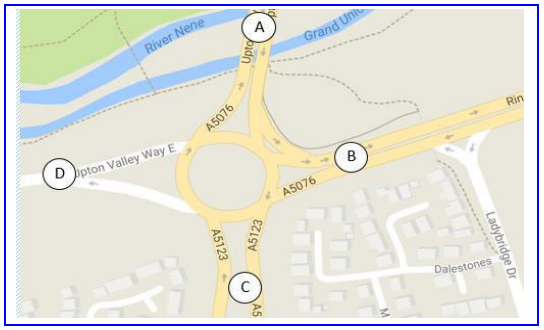
MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 3 | 0 | | | 4 |
| B | 0 | 0 | 0 | 130 | 0 | | | 130 |
| C | 0 | 0 | 0 | 0 | 0 | | | 0 |
| D | 155 | 38 | 0 | 0 | 0 | | | 193 |
| E | 0 | 0 | 0 | 0 | 0 | | | 0 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 155 | 38 | 0 | 133 | 0 | | | 327 |

## Junction Turning Flows

**Junction:** A5123/A5076 roundabout




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 3258 | 30008 | 30008 | 3258 | *Upton Way* |
| B | 3100 | 30009 | 30009 | 3100 | *A5076* |
| C | 2102 | 30007 | 30007 | 2102 | *A5123* |
| D | 4102 | 30010 | 30010 | 4102 | *Upton Valley Way E* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1112 | 1001 | 103 | | | | 2216 |
| B | 1104 | 0 | 1508 | 377 | | | | 2989 |
| C | 771 | 953 | 1 | 35 | | | | 1760 |
| D | 355 | 698 | 329 | 11 | | | | 1393 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2230 | 2763 | 2839 | 526 | | | | 8358 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1046 | 873 | 95 | | | | 2014 |
| B | 1012 | 0 | 1305 | 349 | | | | 2666 |
| C | 446 | 577 | 1 | 29 | | | | 1053 |
| D | 314 | 651 | 73 | 11 | | | | 1049 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1772 | 2274 | 2252 | 484 | | | | 6782 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 24 | 49 | 7 | | | | 80 |
| B | 31 | 0 | 115 | 17 | | | | 163 |
| C | 67 | 36 | 0 | 1 | | | | 104 |
| D | 36 | 34 | 14 | 0 | | | | 84 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 134 | 94 | 178 | 25 | | | | 431 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 42 | 79 | 1 | | | | 122 |
| B | 61 | 0 | 88 | 11 | | | | 160 |
| C | 258 | 340 | 0 | 5 | | | | 603 |
| D | 5 | 13 | 242 | 0 | | | | 260 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 324 | 395 | 409 | 17 | | | | 1145 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1431 | 654 | 139 | | | | 2224 |
| B | 817 | 0 | 737 | 426 | | | | 1980 |
| C | 1451 | 647 | 0 | 241 | | | | 2339 |
| D | 134 | 144 | 30 | 6 | | | | 314 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2402 | 2222 | 1421 | 812 | | | | 6857 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1394 | 452 | 137 | | | | 1983 |
| B | 776 | 0 | 646 | 370 | | | | 1792 |
| C | 985 | 414 | 0 | 235 | | | | 1634 |
| D | 124 | 137 | 9 | 6 | | | | 276 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1885 | 1945 | 1107 | 748 | | | | 5685 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 30 | 18 | 0 | | | | 48 |
| B | 20 | 0 | 26 | 13 | | | | 59 |
| C | 41 | 39 | 0 | 5 | | | | 85 |
| D | 9 | 5 | 18 | 0 | | | | 32 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 70 | 74 | 62 | 18 | | | | 224 |

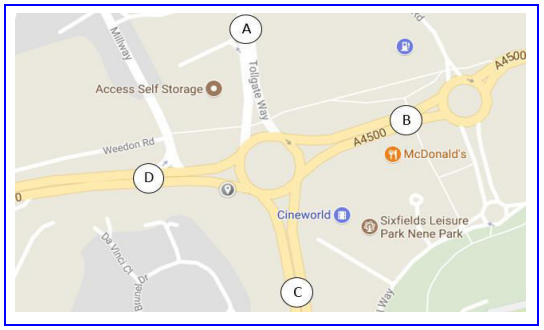
MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 7 | 184 | 2 | | | | 193 |
| B | 21 | 0 | 65 | 43 | | | | 129 |
| C | 425 | 194 | 0 | 1 | | | | 620 |
| D | 1 | 2 | 3 | 0 | | | | 6 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 447 | 203 | 252 | 46 | | | | 948 |

## Junction Turning Flows

**Junction:** A4500/A5076 roundabout




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 60099 | 9441 | 9440 | 60099 | *Tollgate Way* |
| B | 60100 | 9438 | 9441 | 60100 | *Weedon Road* |
| C | 60101 | 9439 | 9438 | 60101 | *Upton Way* |
| D | 60098 | 9440 | 9439 | 60098 | *Weedon Road* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 258 | 859 | 220 | | | | 1337 |
| B | 41 | 0 | 420 | 485 | | | | 946 |
| C | 780 | 681 | 0 | 339 | | | | 1800 |
| D | 244 | 860 | 499 | 54 | | | | 1657 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1065 | 1799 | 1778 | 1098 | | | | 5740 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 171 | 738 | 204 | | | | 1113 |
| B | 34 | 0 | 375 | 428 | | | | 837 |
| C | 574 | 548 | 0 | 303 | | | | 1425 |
| D | 189 | 766 | 463 | 53 | | | | 1471 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 797 | 1485 | 1576 | 988 | | | | 4846 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 87 | 59 | 9 | | | | 155 |
| B | 7 | 0 | 29 | 22 | | | | 58 |
| C | 46 | 26 | 0 | 33 | | | | 105 |
| D | 48 | 78 | 24 | 1 | | | | 151 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 101 | 191 | 112 | 65 | | | | 469 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 62 | 7 | | | | 69 |
| B | 0 | 0 | 16 | 35 | | | | 51 |
| C | 160 | 107 | 0 | 3 | | | | 270 |
| D | 7 | 16 | 12 | 0 | | | | 35 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 167 | 123 | 90 | 45 | | | | 425 |

### PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 221 | 546 | 234 | | | | 1001 |
| B | 46 | 0 | 928 | 788 | | | | 1762 |
| C | 787 | 607 | 0 | 173 | | | | 1567 |
| D | 206 | 807 | 352 | 9 | | | | 1374 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1039 | 1635 | 1826 | 1204 | | | | 5704 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 204 | 442 | 214 | | | | 860 |
| B | 42 | 0 | 887 | 720 | | | | 1649 |
| C | 595 | 524 | 0 | 142 | | | | 1261 |
| D | 176 | 730 | 341 | 9 | | | | 1256 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 813 | 1458 | 1670 | 1085 | | | | 5026 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 17 | 22 | 6 | | | | 45 |
| B | 4 | 0 | 17 | 15 | | | | 36 |
| C | 39 | 23 | 0 | 11 | | | | 73 |
| D | 28 | 54 | 10 | 0 | | | | 92 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 71 | 94 | 49 | 32 | | | | 246 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 82 | 14 | | | | 96 |
| B | 0 | 0 | 24 | 53 | | | | 77 |
| C | 153 | 60 | 0 | 20 | | | | 233 |
| D | 2 | 23 | 1 | 0 | | | | 26 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 155 | 83 | 107 | 87 | | | | 432 |

## Junction Turning Flows

**Junction:** A5123/A508




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 25240 | 5003 | 5003 | 25240 | *St John's Street* |
| B | 2003 | 7003 | 7003 | 2003 | *123/ Victoria Promeda* |
| C | 9314 | 1277 | 1277 | 9314 | *Auctioneers Way* |
| D | 3085 | 3015 | 3015 | 3085 | *A508/ Cotton End* |
| E | 2004 | 6003 | 6003 | 2004 | *A5123/ St Peter's Way* |
| F | 21204 | 4003 | | | *Commercial Street* |
| G | 9003 | 5204 | 5204 | 9003 | *Bridge Street* |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED — PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| B | 0 | 0 | 0 | 381 | 617 | 0 | 41 | 1039 |
| C | 0 | 0 | 0 | 10 | 19 | 0 | 0 | 29 |
| D | 109 | 456 | 5 | 0 | 708 | 0 | 86 | 1364 |
| E | 0 | 399 | 8 | 363 | 3 | 0 | 18 | 791 |
| F | 262 | 0 | 0 | 1 | 8 | 0 | 418 | 689 |
| G | 49 | 0 | 0 | 6 | 53 | 0 | 0 | 108 |
| TOTAL | 420 | 855 | 13 | 766 | 1408 | 0 | 563 | 4025 |

*By Vehicle Type:*

MODELLED — Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| B | 0 | 0 | 0 | 335 | 506 | 0 | 41 | 882 |
| C | 0 | 0 | 0 | 8 | 11 | 0 | 0 | 19 |
| D | 98 | 436 | 4 | 0 | 386 | 0 | 73 | 997 |
| E | 0 | 289 | 4 | 311 | 3 | 0 | 18 | 625 |
| F | 249 | 0 | 0 | 1 | 7 | 0 | 415 | 672 |
| G | 48 | 0 | 0 | 6 | 49 | 0 | 0 | 103 |
| TOTAL | 395 | 725 | 8 | 662 | 962 | 0 | 547 | 3299 |

MODELLED — LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 13 | 29 | 0 | 0 | 42 |
| C | 0 | 0 | 0 | 2 | 8 | 0 | 0 | 10 |
| D | 7 | 11 | 1 | 0 | 44 | 0 | 2 | 65 |
| E | 0 | 30 | 4 | 18 | 0 | 0 | 0 | 52 |
| F | 11 | 0 | 0 | 0 | 1 | 0 | 3 | 15 |
| G | 1 | 0 | 0 | 0 | 4 | 0 | 0 | 5 |
| TOTAL | 19 | 41 | 5 | 33 | 86 | 0 | 5 | 189 |

MODELLED — HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 4 |
| B | 0 | 0 | 0 | 33 | 82 | 0 | 0 | 115 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D | 4 | 9 | 0 | 0 | 278 | 0 | 11 | 302 |
| E | 0 | 80 | 0 | 34 | 0 | 0 | 0 | 114 |
| F | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| G | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 6 | 89 | 0 | 71 | 360 | 0 | 11 | 537 |

### PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED — PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 0 | 34 | 19 | 0 | 0 | 55 |
| B | 21 | 0 | 0 | 632 | 1006 | 0 | 32 | 1691 |
| C | 0 | 0 | 0 | 15 | 50 | 0 | 0 | 65 |
| D | 172 | 430 | 0 | 0 | 459 | 0 | 36 | 1097 |
| E | 0 | 132 | 0 | 363 | 26 | 0 | 15 | 536 |
| F | 201 | 0 | 0 | 163 | 24 | 0 | 132 | 520 |
| G | 518 | 5 | 0 | 27 | 119 | 0 | 0 | 669 |
| TOTAL | 912 | 569 | 0 | 1234 | 1703 | 0 | 215 | 4633 |

*By Vehicle Type:*

MODELLED — Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 0 | 32 | 19 | 0 | 0 | 53 |
| B | 20 | 0 | 0 | 607 | 958 | 0 | 32 | 1617 |
| C | 0 | 0 | 0 | 13 | 45 | 0 | 0 | 58 |
| D | 165 | 412 | 0 | 0 | 399 | 0 | 34 | 1010 |
| E | 0 | 92 | 0 | 311 | 25 | 0 | 15 | 443 |
| F | 191 | 0 | 0 | 157 | 23 | 0 | 127 | 498 |
| G | 506 | 5 | 0 | 27 | 116 | 0 | 0 | 654 |
| TOTAL | 882 | 511 | 0 | 1147 | 1585 | 0 | 208 | 4333 |

MODELLED — LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 1 | 0 | 0 | 16 | 21 | 0 | 0 | 38 |
| C | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 7 |
| D | 6 | 14 | 0 | 0 | 22 | 0 | 2 | 44 |
| E | 0 | 7 | 0 | 6 | 1 | 0 | 0 | 14 |
| F | 10 | 0 | 0 | 5 | 1 | 0 | 5 | 21 |
| G | 12 | 0 | 0 | 0 | 3 | 0 | 0 | 15 |
| TOTAL | 29 | 21 | 0 | 29 | 53 | 0 | 7 | 139 |

MODELLED — HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| B | 0 | 0 | 0 | 9 | 27 | 0 | 0 | 36 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D | 1 | 4 | 0 | 0 | 38 | 0 | 0 | 43 |
| E | 0 | 33 | 0 | 46 | 0 | 0 | 0 | 79 |
| F | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| G | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 1 | 37 | 0 | 58 | 65 | 0 | 0 | 161 |

## Junction Turning Flows

**Junction:** A4500/A5123/A508




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 30019 | 30012 | 60197 | 30019 | *Horse Market* |
| B | 30018 | 30013 | 60198 | 30018 | *St Peter's Way* |
| C | 30017 | 30014 | 60199 | 30017 | *Towcester* |
| D | 60194 | 30015 | 30014 | 60194 | *St Peter's Way* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

All Vehicle

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 494 | 497 | 16 | | | | 1007 |
| B | 462 | 22 | 160 | 694 | | | | 1338 |
| C | 1198 | 121 | 0 | 596 | | | | 1915 |
| D | 50 | 1099 | 736 | 13 | | | | 1898 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1710 | 1736 | 1393 | 1319 | | | | 6158 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 439 | 474 | 15 | | | | 928 |
| B | 328 | 17 | 128 | 416 | | | | 889 |
| C | 1145 | 116 | 0 | 560 | | | | 1821 |
| D | 50 | 968 | 669 | 13 | | | | 1700 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1523 | 1540 | 1271 | 1004 | | | | 5338 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 17 | 19 | 1 | | | | 37 |
| B | 37 | 2 | 16 | 49 | | | | 104 |
| C | 39 | 4 | 0 | 26 | | | | 69 |
| D | 0 | 59 | 55 | 0 | | | | 114 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 76 | 82 | 90 | 76 | | | | 324 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 38 | 4 | 0 | | | | 42 |
| B | 97 | 3 | 16 | 229 | | | | 345 |
| C | 14 | 1 | 0 | 10 | | | | 25 |
| D | 0 | 72 | 12 | 0 | | | | 84 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 111 | 114 | 32 | 239 | | | | 496 |

## PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

All Vehicle

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 505 | 947 | 4 | | | | 1456 |
| B | 576 | 44 | 226 | 945 | | | | 1791 |
| C | 691 | 64 | 0 | 294 | | | | 1049 |
| D | 81 | 526 | 749 | 6 | | | | 1362 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1348 | 1139 | 1922 | 1249 | | | | 5658 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 476 | 905 | 4 | | | | 1385 |
| B | 521 | 43 | 219 | 863 | | | | 1646 |
| C | 642 | 60 | 0 | 270 | | | | 972 |
| D | 81 | 461 | 707 | 6 | | | | 1255 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1244 | 1040 | 1831 | 1143 | | | | 5258 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 19 | 32 | 0 | | | | 51 |
| B | 25 | 1 | 7 | 36 | | | | 69 |
| C | 21 | 4 | 0 | 22 | | | | 47 |
| D | 0 | 18 | 21 | 0 | | | | 39 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 46 | 42 | 60 | 58 | | | | 206 |

MODELLED

HGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 10 | 10 | 0 | | | | 20 |
| B | 30 | 0 | 0 | 46 | | | | 76 |
| C | 28 | 0 | 0 | 2 | | | | 30 |
| D | 0 | 47 | 21 | 0 | | | | 68 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 58 | 57 | 31 | 48 | | | | 194 |

## Junction Turning Flows

**Junction:** Courteenhall Rd/High St/Northampton Rd




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 2141 | 24766 | 24766 | 2141 | *Northampton Road* |
| B | 70849 | 24766 | 24766 | 70849 | *Courteenhall Road* |
| C | 81042 | 24766 | 24766 | 81042 | *High Street* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM2_2031_J3_AM_v2.DAT

MODELLED

| All Vehicle | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 88 | 425 | | | | | 514 |
| | B | 21 | 0 | 34 | | | | | 55 |
| | C | 438 | 36 | 0 | | | | | 474 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 459 | 125 | 459 | | | | | 1043 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 87 | 299 | | | | | 386 |
| | B | 21 | 0 | 34 | | | | | 55 |
| | C | 385 | 19 | 0 | | | | | 404 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 406 | 106 | 333 | | | | | 845 |

MODELLED

| LGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 1 | 85 | | | | | 85 |
| | B | 0 | 0 | 0 | | | | | 0 |
| | C | 49 | 10 | 0 | | | | | 59 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 49 | 11 | 85 | | | | | 144 |

MODELLED

| HGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 0 | 41 | | | | | 42 |
| | B | 0 | 0 | 0 | | | | | 0 |
| | C | 4 | 8 | 0 | | | | | 11 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 4 | 8 | 41 | | | | | 53 |

### PM\NSTM2_2031_J3_PM_v2.DAT

MODELLED

| All Vehicle | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 164 | 455 | | | | | 619 |
| | B | 24 | 0 | 19 | | | | | 44 |
| | C | 440 | 50 | 0 | | | | | 490 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 465 | 214 | 474 | | | | | 1153 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 135 | 248 | | | | | 383 |
| | B | 23 | 0 | 19 | | | | | 42 |
| | C | 360 | 25 | 0 | | | | | 386 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 383 | 160 | 267 | | | | | 811 |

MODELLED

| LGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 29 | 30 | | | | | 59 |
| | B | 1 | 0 | 0 | | | | | 1 |
| | C | 39 | 1 | 0 | | | | | 40 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 40 | 31 | 30 | | | | | 100 |

MODELLED

| HGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 0 | 177 | | | | | 177 |
| | B | 0 | 0 | 0 | | | | | 0 |
| | C | 41 | 23 | 0 | | | | | 65 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 41 | 23 | 177 | | | | | 242 |

**SCENARIO 2031 J3 - AM PEAK**

**LIGHTS (VEH)**

| 19199 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 137 | 16 | 527 | 7 | 29 | 0 | 0 | 0 | 0 | 10 | 372 | 0 | 100 | 1 |
| **2** | 161 | 0 | 51 | 1267 | 196 | 273 | 0 | 0 | 0 | 0 | 42 | 1691 | 252 | 115 | 2 |
| **3** | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 36 | 23 | 2 | 0 |
| **4** | 787 | 840 | 35 | 1 | 124 | 30 | 0 | 0 | 0 | 0 | 27 | 1087 | 54 | 355 | 5 |
| **5** | 0 | 76 | 14 | 350 | 0 | 860 | 0 | 0 | 0 | 0 | 283 | 660 | 4 | 2 | 7 |
| **6** | 28 | 103 | 6 | 20 | 1932 | 0 | 1 | 1 | 0 | 0 | 0 | 249 | 6 | 12 | 56 |
| **7** | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | 8 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | 8 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| **11** | 105 | 490 | 33 | 97 | 60 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | 37 | 2 |
| **12** | 392 | 2183 | 88 | 709 | 389 | 119 | 16 | 16 | 1 | 1 | 209 | 0 | 158 | 76 | 10 |
| **13** | 0 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 9 | 24 | 1 | 30 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 16 | 1 | 0 | 0 |
| **15** | 0 | 0 | 0 | 1 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |

**HGV (VEH)**

| 2556 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 46 | 0 | 35 | 0 |
| **2** | 0 | 0 | 14 | 104 | 23 | 32 | 0 | 0 | 0 | 0 | 4 | 407 | 0 | 30 | 0 |
| **3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| **4** | 16 | 38 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 0 | 40 | 0 |
| **5** | 0 | 15 | 0 | 9 | 0 | 180 | 0 | 0 | 0 | 0 | 7 | 69 | 0 | 0 | 0 |
| **6** | 0 | 1 | 0 | 0 | 134 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 3 | 0 |
| **7** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| **11** | 0 | 41 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| **12** | 49 | 589 | 4 | 79 | 145 | 2 | 5 | 5 | 2 | 2 | 0 | 0 | 0 | 27 | 0 |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 18 | 30 | 2 | 42 | 8 | 4 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**TOTAL (VEH)**

| 21755 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 137 | 16 | 531 | 7 | 30 | 0 | 0 | 0 | 0 | 10 | 418 | 0 | 135 | 1 |
| **2** | 162 | 0 | 65 | 1371 | 219 | 305 | 0 | 0 | 0 | 0 | 46 | 2098 | 252 | 145 | 3 |
| **3** | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 37 | 23 | 3 | 0 |
| **4** | 804 | 878 | 35 | 1 | 126 | 30 | 0 | 0 | 0 | 0 | 28 | 1287 | 54 | 395 | 5 |
| **5** | 0 | 92 | 14 | 359 | 0 | 1041 | 0 | 0 | 0 | 0 | 290 | 730 | 4 | 2 | 7 |
| **6** | 28 | 103 | 6 | 20 | 2065 | 0 | 1 | 1 | 0 | 0 | 0 | 277 | 6 | 15 | 56 |
| **7** | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 27 | 8 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 27 | 8 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| **11** | 105 | 530 | 33 | 97 | 62 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | 39 | 2 |
| **12** | 441 | 2772 | 92 | 788 | 535 | 121 | 20 | 20 | 3 | 3 | 210 | 0 | 158 | 103 | 10 |
| **13** | 0 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 28 | 54 | 3 | 72 | 9 | 8 | 0 | 0 | 0 | 0 | 2 | 41 | 1 | 0 | 0 |
| **15** | 0 | 0 | 0 | 1 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |

**TOTAL (PCU)**

| 25079 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 138 | 16 | 537 | 7 | 31 | 0 | 0 | 0 | 0 | 11 | 477 | 0 | 181 | 1 |
| **2** | 162 | 0 | 83 | 1506 | 249 | 346 | 0 | 0 | 0 | 0 | 51 | 2627 | 252 | 184 | 3 |
| **3** | 25 | 23 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 4 | 37 | 23 | 4 | 0 |
| **4** | 824 | 928 | 35 | 1 | 129 | 30 | 0 | 0 | 0 | 0 | 28 | 1548 | 54 | 447 | 5 |
| **5** | 0 | 112 | 14 | 371 | 0 | 1275 | 0 | 0 | 0 | 0 | 299 | 820 | 4 | 2 | 7 |
| **6** | 28 | 104 | 6 | 20 | 2239 | 0 | 1 | 1 | 0 | 0 | 0 | 315 | 6 | 19 | 56 |
| **7** | 0 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 38 | 8 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 38 | 8 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 21 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 21 | 0 | 0 | 0 |
| **11** | 105 | 583 | 33 | 97 | 66 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | 42 | 2 |
| **12** | 504 | 3538 | 97 | 890 | 724 | 123 | 26 | 26 | 6 | 6 | 210 | 0 | 158 | 138 | 10 |
| **13** | 0 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 51 | 94 | 6 | 127 | 20 | 14 | 0 | 0 | 0 | 0 | 3 | 72 | 1 | 0 | 0 |
| **15** | 0 | 0 | 0 | 1 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |

**SCENARIO 2031 J3 - PM PEAK**

**LIGHTS (VEH)**

| 19221 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 48 | 9 | 841 | 2 | 19 | 0 | 0 | 0 | 0 | 10 | 195 | 0 | 25 | 0 |
| **2** | 73 | 0 | 25 | 1095 | 178 | 401 | 0 | 0 | 0 | 0 | 91 | 2397 | 105 | 51 | 0 |
| **3** | 21 | 84 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 18 | 3 | 0 | 0 |
| **4** | 929 | 926 | 87 | 0 | 116 | 3 | 1 | 1 | 1 | 1 | 35 | 1050 | 98 | 114 | 1 |
| **5** | 1 | 269 | 3 | 75 | 0 | 1113 | 1 | 1 | 0 | 0 | 276 | 794 | 0 | 0 | 1 |
| **6** | 8 | 139 | 11 | 13 | 928 | 0 | 1 | 1 | 1 | 1 | 1 | 160 | 3 | 2 | 5 |
| **7** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 48 | 427 | 21 | 100 | 120 | 1 | 2 | 2 | 1 | 1 | 0 | 2 | 13 | 14 | 1 |
| **12** | 323 | 2683 | 27 | 816 | 255 | 219 | 53 | 53 | 8 | 8 | 7 | 0 | 6 | 24 | 2 |
| **13** | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 78 | 83 | 4 | 391 | 9 | 20 | 0 | 0 | 0 | 0 | 18 | 178 | 21 | 0 | 0 |
| **15** | 1 | 1 | 0 | 5 | 8 | 43 | 0 | 0 | 0 | 0 | 6 | 14 | 0 | 1 | 0 |

**HGV (VEH)**

| 2134 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 30 | 0 |
| **2** | 0 | 0 | 0 | 97 | 25 | 23 | 0 | 0 | 0 | 0 | 58 | 404 | 0 | 35 | 0 |
| **3** | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 1 | 0 |
| **4** | 26 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 41 | 0 |
| **5** | 0 | 14 | 0 | 1 | 0 | 176 | 0 | 0 | 0 | 0 | 10 | 50 | 0 | 0 | 0 |
| **6** | 0 | 24 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| **7** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **11** | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| **12** | 65 | 416 | 23 | 74 | 57 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 19 | 30 | 1 | 44 | 9 | 4 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**TOTAL (VEH)**

| 21351 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 50 | 9 | 848 | 3 | 19 | 0 | 0 | 0 | 0 | 10 | 236 | 0 | 55 | 0 |
| **2** | 73 | 0 | 25 | 1192 | 203 | 423 | 0 | 0 | 0 | 0 | 149 | 2801 | 105 | 86 | 0 |
| **3** | 21 | 102 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 52 | 3 | 1 | 0 |
| **4** | 955 | 946 | 87 | 0 | 118 | 3 | 1 | 1 | 1 | 1 | 35 | 1076 | 98 | 155 | 1 |
| **5** | 1 | 283 | 3 | 76 | 0 | 1289 | 1 | 1 | 0 | 0 | 286 | 843 | 0 | 0 | 1 |
| **6** | 8 | 163 | 11 | 13 | 1020 | 0 | 1 | 1 | 1 | 1 | 1 | 161 | 3 | 4 | 5 |
| **7** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 48 | 431 | 21 | 100 | 127 | 1 | 2 | 2 | 1 | 1 | 0 | 2 | 13 | 17 | 1 |
| **12** | 388 | 3099 | 50 | 890 | 312 | 290 | 53 | 53 | 8 | 8 | 7 | 0 | 6 | 50 | 2 |
| **13** | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 97 | 113 | 5 | 433 | 18 | 24 | 0 | 0 | 0 | 0 | 19 | 200 | 21 | 0 | 0 |
| **15** | 1 | 1 | 0 | 5 | 8 | 43 | 0 | 0 | 0 | 0 | 6 | 14 | 0 | 1 | 0 |

**TOTAL (PCU)**

| 24127 | **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 52 | 9 | 857 | 3 | 20 | 0 | 0 | 0 | 0 | 10 | 289 | 0 | 94 | 0 |
| **2** | 73 | 0 | 25 | 1318 | 235 | 453 | 0 | 0 | 0 | 0 | 225 | 3326 | 105 | 132 | 0 |
| **3** | 21 | 126 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 96 | 3 | 2 | 0 |
| **4** | 989 | 972 | 88 | 0 | 121 | 3 | 1 | 1 | 1 | 1 | 35 | 1109 | 98 | 208 | 1 |
| **5** | 1 | 301 | 3 | 77 | 0 | 1518 | 1 | 1 | 0 | 0 | 298 | 908 | 0 | 0 | 1 |
| **6** | 8 | 194 | 11 | 13 | 1139 | 0 | 1 | 1 | 1 | 1 | 1 | 161 | 3 | 7 | 6 |
| **7** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 48 | 436 | 21 | 100 | 135 | 1 | 2 | 2 | 1 | 1 | 0 | 2 | 13 | 21 | 1 |
| **12** | 472 | 3640 | 79 | 985 | 386 | 383 | 53 | 53 | 8 | 8 | 7 | 0 | 6 | 84 | 2 |
| **13** | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 122 | 152 | 6 | 490 | 29 | 29 | 0 | 0 | 0 | 0 | 19 | 231 | 21 | 0 | 0 |
| **15** | 1 | 1 | 0 | 5 | 8 | 43 | 0 | 0 | 0 | 0 | 6 | 14 | 0 | 1 | 0 |

# APPENDIX F

# 2031 D1 REFERENCE CASE TURNING FLOWS

## Junction Turning Flows

**Junction:** M1 Junction 15




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 3355 | 3104 | 9220 | 2104 | *A45* |
| B | 27014 | 27015 | 3104 | 27014 | *Saxon Avenue* |
| C | 9116 | 9221 | 27015 | 9107 | *M1 East* |
| D | 1252 | 9117 | 9221 | 1252 | *A508* |
| E | 9106 | 9220 | 9117 | 9118 | *M1 West* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 75 | 36 | 970 | 683 | 1834 | | | 3598 |
| B | 26 | 0 | 20 | 2 | 9 | | | 57 |
| C | 1519 | 124 | 0 | 144 | 0 | | | 1787 |
| D | 421 | 12 | 84 | 0 | 312 | | | 829 |
| E | 1404 | 144 | 0 | 483 | 3 | | | 2034 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 3445 | 316 | 1074 | 1312 | 2158 | | | 8305 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 69 | 35 | 767 | 604 | 1229 | | | 2704 |
| B | 25 | 0 | 15 | 2 | 9 | | | 51 |
| C | 1167 | 81 | 0 | 124 | 0 | | | 1372 |
| D | 332 | 12 | 79 | 0 | 229 | | | 652 |
| E | 1140 | 127 | 0 | 363 | 2 | | | 1632 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2733 | 255 | 861 | 1093 | 1469 | | | 6411 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 6 | 1 | 92 | 61 | 50 | | | 210 |
| B | 1 | 0 | 4 | 0 | 0 | | | 5 |
| C | 86 | 7 | 0 | 13 | 0 | | | 106 |
| D | 29 | 0 | 4 | 0 | 15 | | | 48 |
| E | 67 | 3 | 0 | 9 | 0 | | | 79 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 189 | 11 | 100 | 83 | 65 | | | 448 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 111 | 18 | 555 | | | 684 |
| B | 0 | 0 | 1 | 0 | 0 | | | 1 |
| C | 266 | 36 | 0 | 7 | 0 | | | 309 |
| D | 60 | 0 | 1 | 0 | 68 | | | 129 |
| E | 197 | 14 | 0 | 111 | 1 | | | 323 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 523 | 50 | 113 | 136 | 624 | | | 1446 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 153 | 88 | 972 | 922 | 1286 | | | 3421 |
| B | 26 | 0 | 133 | 14 | 89 | | | 262 |
| C | 1399 | 33 | 0 | 99 | 0 | | | 1531 |
| D | 639 | 3 | 35 | 0 | 279 | | | 956 |
| E | 1256 | 100 | 0 | 266 | 0 | | | 1622 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 3473 | 224 | 1140 | 1301 | 1654 | | | 7792 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 146 | 84 | 881 | 798 | 1164 | | | 3073 |
| B | 25 | 0 | 86 | 14 | 15 | | | 140 |
| C | 1097 | 25 | 0 | 94 | 0 | | | 1216 |
| D | 603 | 3 | 31 | 0 | 187 | | | 824 |
| E | 980 | 54 | 0 | 159 | 0 | | | 1193 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2851 | 166 | 998 | 1065 | 1366 | | | 6446 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 7 | 2 | 37 | 21 | 23 | | | 90 |
| B | 1 | 0 | 0 | 0 | 1 | | | 2 |
| C | 69 | 0 | 0 | 5 | 0 | | | 74 |
| D | 21 | 0 | 3 | 0 | 8 | | | 32 |
| E | 62 | 2 | 0 | 13 | 0 | | | 77 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 160 | 4 | 40 | 39 | 32 | | | 275 |

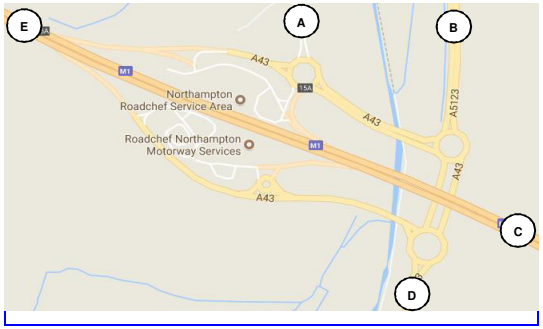
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 54 | 103 | 99 | | | 258 |
| B | 0 | 0 | 47 | 0 | 73 | | | 120 |
| C | 233 | 8 | 0 | 0 | 0 | | | 241 |
| D | 15 | 0 | 1 | 0 | 84 | | | 100 |
| E | 214 | 44 | 0 | 94 | 0 | | | 352 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 462 | 54 | 102 | 197 | 256 | | | 1071 |

## Junction Turning Flows

**Junction:** M1 Junction 15a




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 21265 | 21266 | 21266 | 21265 | *Swan Valley Way* |
| B | 2102 | 3246 | 3246 | 2102 | *A5123* |
| C | 1246 | 82005 | 82001 | 5246 | *M1 East* |
| D | 2309 | 4246 | 4246 | 2309 | *A43* |
| E | 6246 | 2266 | 82004 | 24119 | *M1 West* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 845 | 75 | 0 | | | 921 |
| B | 1 | 0 | 342 | 1363 | 226 | | | 1931 |
| C | 28 | 275 | 1 | 364 | 0 | | | 667 |
| D | 235 | 1172 | 281 | 0 | 350 | | | 2038 |
| E | 4 | 443 | 0 | 592 | 0 | | | 1039 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 267 | 1889 | 1469 | 2394 | 576 | | | 6596 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 718 | 74 | 0 | | | 792 |
| B | 1 | 0 | 330 | 1028 | 182 | | | 1541 |
| C | 24 | 182 | 1 | 337 | 0 | | | 544 |
| D | 223 | 864 | 262 | 0 | 328 | | | 1678 |
| E | 4 | 400 | 0 | 334 | 0 | | | 738 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 252 | 1446 | 1311 | 1773 | 511 | | | 5292 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 23 | 1 | 0 | | | 24 |
| B | 0 | 0 | 10 | 114 | 11 | | | 135 |
| C | 2 | 32 | 0 | 26 | 0 | | | 60 |
| D | 7 | 55 | 17 | 0 | 9 | | | 88 |
| E | 0 | 16 | 0 | 41 | 0 | | | 57 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 9 | 103 | 51 | 182 | 20 | | | 365 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 104 | 1 | 0 | | | 104 |
| B | 0 | 0 | 2 | 220 | 32 | | | 255 |
| C | 2 | 61 | 0 | 0 | 0 | | | 64 |
| D | 4 | 254 | 1 | 0 | 13 | | | 272 |
| E | 0 | 26 | 0 | 217 | 0 | | | 244 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 7 | 341 | 107 | 439 | 45 | | | 938 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 572 | 155 | 0 | | | 727 |
| B | 0 | 0 | 296 | 982 | 213 | | | 1491 |
| C | 108 | 467 | 0 | 189 | 0 | | | 763 |
| D | 168 | 1239 | 289 | 0 | 326 | | | 2022 |
| E | 7 | 461 | 0 | 418 | 0 | | | 886 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 283 | 2166 | 1156 | 1744 | 540 | | | 5889 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 530 | 151 | 0 | | | 681 |
| B | 0 | 0 | 232 | 812 | 202 | | | 1246 |
| C | 13 | 371 | 0 | 185 | 0 | | | 568 |
| D | 161 | 911 | 279 | 0 | 302 | | | 1653 |
| E | 7 | 264 | 0 | 386 | 0 | | | 657 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 180 | 1546 | 1041 | 1533 | 504 | | | 4805 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 38 | 4 | 0 | | | 41 |
| B | 0 | 0 | 8 | 45 | 8 | | | 61 |
| C | 1 | 21 | 0 | 4 | 0 | | | 25 |
| D | 5 | 61 | 10 | 0 | 24 | | | 101 |
| E | 0 | 17 | 0 | 16 | 0 | | | 34 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 6 | 99 | 56 | 69 | 32 | | | 262 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 4 | 0 | 0 | | | 4 |
| B | 0 | 0 | 56 | 126 | 3 | | | 185 |
| C | 94 | 75 | 0 | 0 | 0 | | | 169 |
| D | 1 | 266 | 0 | 0 | 0 | | | 268 |
| E | 0 | 180 | 0 | 16 | 0 | | | 196 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 96 | 521 | 60 | 142 | 3 | | | 822 |

## Junction Turning Flows

**Junction:** A45/Watering Ln




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | | | 2104 | 2093 | *A45 North* |
| B | 83008 | 2104 | | | *A45 South* |
| C | 1104 | 2104 | 2104 | 1104 | *Watering Lane* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 3017 | 0 | 294 | | | | | 3311 |
| C | 485 | 0 | 0 | | | | | 485 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 3502 | 0 | 294 | | | | | 3796 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 2421 | 0 | 260 | | | | | 2681 |
| C | 446 | 0 | 0 | | | | | 446 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2867 | 0 | 260 | | | | | 3285 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 163 | 0 | 34 | | | | | 197 |
| C | 39 | 0 | 0 | | | | | 39 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 202 | 0 | 34 | | | | | 262 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 433 | 0 | 0 | | | | | 433 |
| C | 0 | 0 | 0 | | | | | 0 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 433 | 0 | 0 | | | | | 547 |

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MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 3187 | 0 | 125 | | | | | 3312 |
| C | 272 | 0 | 0 | | | | | 272 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 3459 | 0 | 125 | | | | | 3584 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 2636 | 0 | 120 | | | | | 2756 |
| C | 238 | 0 | 0 | | | | | 238 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2874 | 0 | 120 | | | | | 3542 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 146 | 0 | 5 | | | | | 151 |
| C | 34 | 0 | 0 | | | | | 34 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 180 | 0 | 5 | | | | | 210 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 405 | 0 | 0 | | | | | 405 |
| C | 0 | 0 | 0 | | | | | 0 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 405 | 0 | 0 | | | | | 523 |

## Junction Turning Flows

**Junction:** A508/Courteenhall Rd




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 21152 | 25210 | 25210 | 21152 | *A508 (SB)* |
| B | 25176 | 25210 | 25210 | 25176 | *A508 (NB)* |
| C | 70874 | 25210 | 25210 | 70874 | *Courtenhall Rd* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1067 | 300 | | | | | 1368 |
| B | 751 | 0 | 56 | | | | | 807 |
| C | 226 | 50 | 0 | | | | | 276 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 977 | 1117 | 356 | | | | | 2450 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 898 | 253 | | | | | 1150 |
| B | 586 | 0 | 55 | | | | | 641 |
| C | 217 | 49 | 0 | | | | | 266 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 802 | 947 | 308 | | | | | 2057 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 22 | 45 | | | | | 67 |
| B | 41 | 0 | 0 | | | | | 41 |
| C | 9 | 1 | 0 | | | | | 10 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 50 | 23 | 45 | | | | | 118 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 147 | 3 | | | | | 151 |
| B | 125 | 0 | 0 | | | | | 125 |
| C | 0 | 0 | 0 | | | | | 0 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 125 | 147 | 3 | | | | | 275 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 898 | 338 | | | | | 1236 |
| B | 962 | 0 | 8 | | | | | 970 |
| C | 49 | 68 | 0 | | | | | 117 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1011 | 966 | 346 | | | | | 2323 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 779 | 242 | | | | | 1022 |
| B | 854 | 0 | 8 | | | | | 861 |
| C | 49 | 67 | 0 | | | | | 116 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 902 | 846 | 250 | | | | | 1999 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 10 | 19 | | | | | 29 |
| B | 30 | 0 | 0 | | | | | 30 |
| C | 1 | 1 | 0 | | | | | 2 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 30 | 11 | 19 | | | | | 60 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 109 | 77 | | | | | 185 |
| B | 79 | 0 | 0 | | | | | 79 |
| C | 0 | 0 | 0 | | | | | 0 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 79 | 109 | 77 | | | | | 265 |

## Junction Turning Flows

**Junction:** A508/Rookery Ln/Ashton Rd




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 70611 | 70111 | 70111 | 70611 | *A508 North* |
| B | 70222 | 70111 | 70111 | 70222 | *Ashton Road* |
| C | 24622 | 70111 | 70111 | 24622 | *A508 South* |
| D | 70444 | 70111 | 70111 | 70444 | *Rookery Lane* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 789 | 82 | | | | 872 |
| B | 0 | 0 | 5 | 28 | | | | 33 |
| C | 470 | 79 | 0 | 0 | | | | 549 |
| D | 198 | 22 | 108 | 0 | | | | 329 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 668 | 102 | 903 | 110 | | | | 1783 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 630 | 74 | | | | 704 |
| B | 0 | 0 | 5 | 26 | | | | 31 |
| C | 316 | 79 | 0 | 0 | | | | 395 |
| D | 186 | 22 | 107 | 0 | | | | 315 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 502 | 101 | 743 | 100 | | | | 1445 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 14 | 2 | | | | 17 |
| B | 0 | 0 | 0 | 2 | | | | 2 |
| C | 35 | 0 | 0 | 0 | | | | 35 |
| D | 4 | 1 | 1 | 0 | | | | 6 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 39 | 1 | 15 | 4 | | | | 59 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 145 | 6 | | | | 151 |
| B | 0 | 0 | 0 | 0 | | | | 0 |
| C | 119 | 0 | 0 | 0 | | | | 119 |
| D | 8 | 0 | 0 | 0 | | | | 8 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 127 | 0 | 145 | 6 | | | | 278 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 642 | 230 | | | | 872 |
| B | 0 | 0 | 6 | 10 | | | | 16 |
| C | 679 | 33 | 0 | 0 | | | | 712 |
| D | 202 | 7 | 0 | 0 | | | | 209 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 882 | 40 | 647 | 240 | | | | 1809 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 538 | 219 | | | | 757 |
| B | 0 | 0 | 6 | 7 | | | | 13 |
| C | 576 | 33 | 0 | 0 | | | | 609 |
| D | 197 | 6 | 0 | 0 | | | | 202 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 773 | 39 | 544 | 226 | | | | 1582 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 8 | | | | 9 |
| B | 0 | 0 | 0 | 3 | | | | 3 |
| C | 23 | 0 | 0 | 0 | | | | 23 |
| D | 5 | 1 | 0 | 0 | | | | 7 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 28 | 1 | 0 | 11 | | | | 41 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 103 | 2 | | | | 105 |
| B | 0 | 0 | 0 | 0 | | | | 0 |
| C | 80 | 0 | 0 | 0 | | | | 80 |
| D | 0 | 0 | 0 | 0 | | | | 0 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 81 | 0 | 103 | 2 | | | | 186 |

## Junction Turning Flows

**Junction:** A508/Pury Rd




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 24622 | 75174 | 75174 | 24622 | *A508 North* |
| B | 70884 | 75174 | 75174 | 70884 | *A508 South* |
| C | 75171 | 75174 | 75174 | 75171 | *Pury Road* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 539 | 576 | | | | | 1115 |
| B | 415 | 0 | 3 | | | | | 419 |
| C | 236 | 2 | 0 | | | | | 239 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 652 | 541 | 579 | | | | | 1772 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 435 | 502 | | | | | 937 |
| B | 264 | 0 | 3 | | | | | 267 |
| C | 225 | 2 | 0 | | | | | 227 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 489 | 436 | 505 | | | | | 1430 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 15 | 15 | | | | | 29 |
| B | 38 | 0 | 0 | | | | | 38 |
| C | 7 | 1 | 0 | | | | | 8 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 45 | 15 | 15 | | | | | 75 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 90 | 60 | | | | | 149 |
| B | 113 | 0 | 0 | | | | | 113 |
| C | 4 | 0 | 0 | | | | | 4 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 117 | 90 | 60 | | | | | 267 |

### PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 492 | 290 | | | | | 782 |
| B | 728 | 0 | 1 | | | | | 729 |
| C | 253 | 69 | 0 | | | | | 322 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 981 | 561 | 291 | | | | | 1833 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 382 | 289 | | | | | 671 |
| B | 616 | 0 | 1 | | | | | 617 |
| C | 221 | 69 | 0 | | | | | 290 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 837 | 451 | 290 | | | | | 1577 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 6 | 1 | | | | | 7 |
| B | 29 | 0 | 0 | | | | | 29 |
| C | 29 | 0 | 0 | | | | | 29 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 59 | 6 | 1 | | | | | 66 |

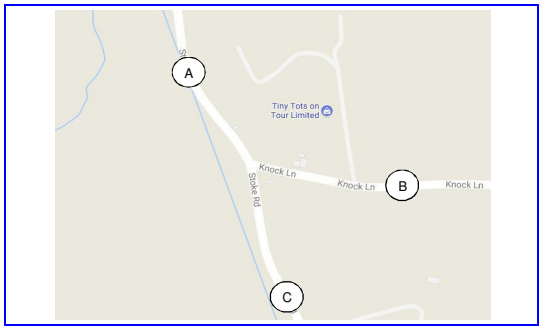
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 104 | 0 | | | | | 104 |
| B | 83 | 0 | 0 | | | | | 83 |
| C | 3 | 0 | 0 | | | | | 3 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 86 | 104 | 0 | | | | | 190 |

## Junction Turning Flows

**Junction:** Stoke Rd/Knock Ln




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 70997 | 25245 | 25245 | 70997 | *Stoke Rd North* |
| B | 70607 | 25245 | 25245 | 70607 | *Knock Ln* |
| C | 25211 | 25245 | 25245 | 25211 | *Stoke Rd South* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 89 | 377 | | | | | 466 |
| B | 50 | 0 | 0 | | | | | 50 |
| C | 148 | 0 | 0 | | | | | 148 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 198 | 89 | 377 | | | | | 664 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 84 | 357 | | | | | 441 |
| B | 50 | 0 | 0 | | | | | 50 |
| C | 112 | 0 | 0 | | | | | 112 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 162 | 84 | 357 | | | | | 603 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 4 | 21 | | | | | 25 |
| B | 0 | 0 | 0 | | | | | 0 |
| C | 31 | 0 | 0 | | | | | 31 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 31 | 4 | 21 | | | | | 56 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 0 | 0 | 0 | | | | | 0 |
| C | 4 | 0 | 0 | | | | | 4 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 4 | 0 | 0 | | | | | 5 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 109 | 185 | | | | | 294 |
| B | 23 | 0 | 0 | | | | | 23 |
| C | 551 | 0 | 0 | | | | | 551 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 575 | 109 | 185 | | | | | 868 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 106 | 176 | | | | | 282 |
| B | 23 | 0 | 0 | | | | | 23 |
| C | 513 | 0 | 0 | | | | | 513 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 536 | 106 | 176 | | | | | 818 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 8 | | | | | 11 |
| B | 0 | 0 | 0 | | | | | 0 |
| C | 33 | 0 | 0 | | | | | 33 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 34 | 3 | 8 | | | | | 45 |

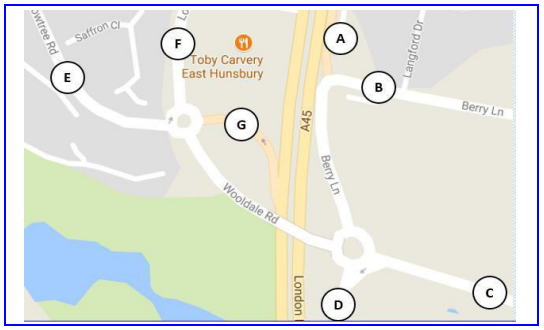
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | | | | | 0 |
| B | 0 | 0 | 0 | | | | | 0 |
| C | 6 | 0 | 0 | | | | | 6 |
| D | | | | | | | | |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 6 | 0 | 0 | | | | | 6 |

## Junction Turning Flows

**Junction:** A45 Wootton Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 6082 | 5082 | | | *A45 SB Off-slip* |
| B | 4082 | 5082 | 5082 | 4082 | *Berry Lane East* |
| C | 3081 | 75031 | 75031 | 3081 | *Wooldale Road* |
| D | 1355 | 75032 | 75032 | 1355 | *unnamed road* |
| E | 24752 | 1093 | 1093 | 24752 | *Rowtree Road* |
| F | | | 1093 | 26031 | *London Road* |
| G | 2093 | 1093 | | | *A45 NB On-slip* |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 138 | 19 | 0 | 157 |
| B | 0 | 0 | 0 | 93 | 29 | 112 | 0 | 234 |
| C | 0 | 0 | 0 | 674 | 76 | 113 | 0 | 863 |
| D | 0 | 83 | 172 | 0 | 114 | 316 | 0 | 685 |
| E | 0 | 43 | 482 | 419 | 0 | 643 | 0 | 1587 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 25 | 407 | 45 | 141 | 38 | 0 | 656 |
| TOTAL | 0 | 151 | 1061 | 1231 | 498 | 1241 | 0 | 4182 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 122 | 18 | 0 | 140 |
| B | 0 | 0 | 0 | 74 | 29 | 109 | 0 | 212 |
| C | 0 | 0 | 0 | 348 | 70 | 97 | 0 | 515 |
| D | 0 | 76 | 157 | 0 | 113 | 304 | 0 | 650 |
| E | 0 | 42 | 454 | 417 | 0 | 479 | 0 | 1392 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 22 | 250 | 41 | 116 | 36 | 0 | 465 |
| TOTAL | 0 | 140 | 861 | 880 | 450 | 1043 | 0 | 3374 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 8 |
| B | 0 | 0 | 0 | 3 | 0 | 2 | 0 | 5 |
| C | 0 | 0 | 0 | 26 | 5 | 5 | 0 | 36 |
| D | 0 | 3 | 4 | 0 | 1 | 10 | 0 | 18 |
| E | 0 | 1 | 17 | 1 | 0 | 22 | 0 | 41 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 1 | 22 | 4 | 6 | 2 | 0 | 35 |
| TOTAL | 0 | 5 | 43 | 34 | 19 | 42 | 0 | 143 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 9 |
| B | 0 | 0 | 0 | 16 | 0 | 1 | 0 | 17 |
| C | 0 | 0 | 0 | 300 | 1 | 11 | 0 | 312 |
| D | 0 | 4 | 11 | 0 | 0 | 2 | 0 | 17 |
| E | 0 | 0 | 11 | 1 | 0 | 142 | 0 | 154 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 2 | 135 | 0 | 19 | 0 | 0 | 156 |
| TOTAL | 0 | 6 | 157 | 317 | 29 | 156 | 0 | 665 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 13 | 0 | 519 | 83 | 0 | 615 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 553 | 345 | 111 | 0 | 1009 |
| D | 0 | 59 | 240 | 0 | 82 | 221 | 0 | 602 |
| E | 0 | 8 | 189 | 364 | 0 | 607 | 0 | 1168 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 21 | 584 | 17 | 274 | 0 | 0 | 896 |
| TOTAL | 0 | 88 | 1026 | 934 | 1220 | 1022 | 0 | 4290 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 13 | 0 | 438 | 81 | 0 | 532 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 430 | 205 | 105 | 0 | 740 |
| D | 0 | 55 | 221 | 0 | 81 | 210 | 0 | 567 |
| E | 0 | 7 | 149 | 356 | 0 | 219 | 0 | 731 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 20 | 405 | 8 | 255 | 0 | 0 | 688 |
| TOTAL | 0 | 82 | 788 | 794 | 979 | 615 | 0 | 3258 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 13 | 2 | 0 | 15 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 20 | 3 | 5 | 0 | 28 |
| D | 0 | 2 | 19 | 0 | 1 | 8 | 0 | 30 |
| E | 0 | 1 | 8 | 7 | 0 | 29 | 0 | 45 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 0 | 18 | 6 | 11 | 0 | 0 | 35 |
| TOTAL | 0 | 3 | 45 | 33 | 28 | 44 | 0 | 153 |

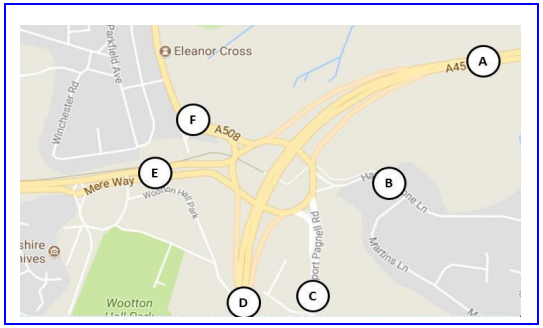
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 68 | 0 | 0 | 68 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| C | 0 | 0 | 0 | 103 | 137 | 1 | 0 | 241 |
| D | 0 | 2 | 0 | 0 | 0 | 3 | 0 | 5 |
| E | 0 | 0 | 32 | 1 | 0 | 359 | 0 | 392 |
| F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| G | 0 | 1 | 161 | 3 | 8 | 0 | 0 | 173 |
| TOTAL | 0 | 3 | 193 | 107 | 213 | 363 | 0 | 879 |

## Junction Turning Flows

**Junction:** A45 Queen Eleanor Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 9168 | 2092 | 60137 | 9162 | *A45 North* |
| B | 1081 | 1079 | 1079 | 1081 | *Hardingstone Lane* |
| C | 24742 | 3082 | 3082 | 24742 | *Newport Pagnell Rd* |
| D | 9161 | 60134 | 60133 | 9169 | *A45 South* |
| E | 60203 | 1092 | 1092 | 60203 | *Mere Way* |
| F | 2088 | 60136 | 60136 | 2088 | *A508 - London Road* |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 72 | 131 | 0 | 1485 | 323 | | 2011 |
| B | 205 | 0 | 0 | 42 | 80 | 170 | | 497 |
| C | 202 | 0 | 0 | 0 | 280 | 425 | | 907 |
| D | 27 | 0 | 0 | 0 | 30 | 782 | | 839 |
| E | 1762 | 19 | 458 | 209 | 0 | 3 | | 2451 |
| F | 190 | 11 | 472 | 470 | 20 | 0 | | 1163 |
| G | | | | | | | | |
| TOTAL | 2386 | 102 | 1061 | 721 | 1895 | 1703 | | 7868 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 68 | 120 | 0 | 1239 | 282 | | 1709 |
| B | 202 | 0 | 0 | 42 | 79 | 167 | | 490 |
| C | 200 | 0 | 0 | 0 | 273 | 411 | | 884 |
| D | 18 | 0 | 0 | 0 | 27 | 465 | | 510 |
| E | 1352 | 18 | 425 | 188 | 0 | 3 | | 1986 |
| F | 182 | 11 | 429 | 387 | 20 | 0 | | 1029 |
| G | | | | | | | | |
| TOTAL | 1954 | 97 | 974 | 617 | 1638 | 1328 | | 6608 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 4 | 5 | 0 | 81 | 28 | | 118 |
| B | 3 | 0 | 0 | 0 | 1 | 3 | | 7 |
| C | 2 | 0 | 0 | 0 | 4 | 8 | | 14 |
| D | 2 | 0 | 0 | 0 | 3 | 45 | | 50 |
| E | 35 | 1 | 6 | 11 | 0 | 0 | | 53 |
| F | 4 | 0 | 3 | 18 | 0 | 0 | | 25 |
| G | | | | | | | | |
| TOTAL | 46 | 5 | 14 | 29 | 89 | 84 | | 267 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 6 | 0 | 165 | 13 | | 184 |
| B | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| C | 0 | 0 | 0 | 0 | 3 | 6 | | 9 |
| D | 7 | 0 | 0 | 0 | 0 | 272 | | 279 |
| E | 375 | 0 | 27 | 10 | 0 | 0 | | 412 |
| F | 4 | 0 | 40 | 65 | 0 | 0 | | 109 |
| G | | | | | | | | |
| TOTAL | 386 | 0 | 73 | 75 | 168 | 291 | | 993 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 526 | 58 | 0 | 1191 | 238 | | 2013 |
| B | 460 | 0 | 0 | 31 | 36 | 150 | | 677 |
| C | 183 | 2 | 0 | 60 | 831 | 531 | | 1607 |
| D | 0 | 32 | 10 | 0 | 27 | 500 | | 569 |
| E | 1625 | 113 | 371 | 467 | 0 | 5 | | 2581 |
| F | 399 | 80 | 170 | 577 | 86 | 0 | | 1312 |
| G | | | | | | | | |
| TOTAL | 2667 | 753 | 609 | 1135 | 2171 | 1424 | | 8759 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 522 | 58 | 0 | 1031 | 215 | | 1826 |
| B | 437 | 0 | 0 | 31 | 34 | 145 | | 647 |
| C | 181 | 2 | 0 | 59 | 810 | 505 | | 1557 |
| D | 0 | 32 | 10 | 0 | 22 | 450 | | 514 |
| E | 1431 | 112 | 368 | 457 | 0 | 5 | | 2373 |
| F | 378 | 76 | 155 | 518 | 81 | 0 | | 1208 |
| G | | | | | | | | |
| TOTAL | 2427 | 744 | 591 | 1065 | 1978 | 1320 | | 8125 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 4 | 0 | 0 | 62 | 23 | | 89 |
| B | 18 | 0 | 0 | 0 | 2 | 4 | | 24 |
| C | 2 | 0 | 0 | 1 | 21 | 26 | | 50 |
| D | 0 | 0 | 0 | 0 | 0 | 16 | | 16 |
| E | 22 | 1 | 2 | 1 | 0 | 0 | | 26 |
| F | 21 | 4 | 7 | 5 | 5 | 0 | | 42 |
| G | | | | | | | | |
| TOTAL | 63 | 9 | 9 | 7 | 90 | 69 | | 247 |

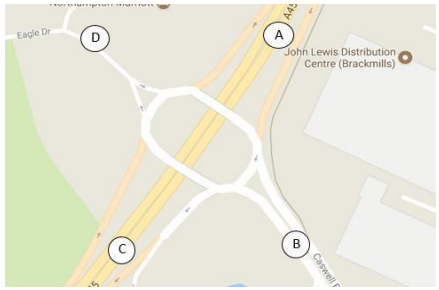
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 98 | 0 | | 98 |
| B | 5 | 0 | 0 | 0 | 0 | 1 | | 6 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | | 0 |
| D | 0 | 0 | 0 | 0 | 5 | 34 | | 39 |
| E | 172 | 0 | 1 | 9 | 0 | 0 | | 182 |
| F | 0 | 0 | 8 | 54 | 0 | 0 | | 62 |
| G | | | | | | | | |
| TOTAL | 177 | 0 | 9 | 63 | 103 | 35 | | 387 |

## Junction Turning Flows

**Junction:** A45 Brackmills Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 75028 | 3084 | 2084 | 7084 | *A45/ Nene Valley Way* |
| B | 2345 | 4084 | 3084 | 2345 | *Caswell Road* |
| C | 9163 | 6084 | 4084 | 5084 | *A45/ Nene Valley Way* |
| D | 1084 | 2084 | 6084 | 1084 | *Eagle Drive* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 8 | 1057 | 56 | 10 | | | | 1131 |
| B | 888 | 0 | 599 | 5 | | | | 1492 |
| C | 1341 | 655 | 0 | 14 | | | | 2010 |
| D | 42 | 12 | 27 | 0 | | | | 81 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2279 | 1724 | 682 | 29 | | | | 4714 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 8 | 900 | 49 | 10 | | | | 967 |
| B | 824 | 0 | 430 | 4 | | | | 1258 |
| C | 1188 | 580 | 0 | 9 | | | | 1777 |
| D | 30 | 6 | 19 | 0 | | | | 55 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2050 | 1486 | 498 | 23 | | | | 4057 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 5 | 3 | 0 | | | | 8 |
| B | 23 | 0 | 37 | 1 | | | | 61 |
| C | 45 | 8 | 0 | 5 | | | | 58 |
| D | 12 | 6 | 8 | 0 | | | | 26 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 80 | 19 | 48 | 6 | | | | 153 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 152 | 4 | 0 | | | | 156 |
| B | 41 | 0 | 132 | 0 | | | | 173 |
| C | 108 | 67 | 0 | 0 | | | | 175 |
| D | 0 | 0 | 0 | 0 | | | | 0 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 149 | 219 | 136 | 0 | | | | 504 |

### PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 252 | 462 | 0 | | | | 714 |
| B | 157 | 0 | 361 | 50 | | | | 568 |
| C | 1336 | 666 | 0 | 9 | | | | 2011 |
| D | 566 | 82 | 146 | 0 | | | | 794 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2059 | 1000 | 969 | 59 | | | | 4087 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 245 | 447 | 0 | | | | 692 |
| B | 154 | 0 | 256 | 49 | | | | 459 |
| C | 1133 | 578 | 0 | 3 | | | | 1714 |
| D | 541 | 55 | 131 | 0 | | | | 727 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1828 | 878 | 834 | 52 | | | | 3592 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 7 | 13 | 0 | | | | 20 |
| B | 2 | 0 | 19 | 1 | | | | 22 |
| C | 58 | 27 | 0 | 6 | | | | 91 |
| D | 15 | 9 | 15 | 0 | | | | 39 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 75 | 43 | 47 | 7 | | | | 172 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 2 | 0 | | | | 2 |
| B | 1 | 0 | 86 | 0 | | | | 87 |
| C | 145 | 61 | 0 | 0 | | | | 206 |
| D | 10 | 18 | 0 | 0 | | | | 28 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 156 | 79 | 88 | 0 | | | | 323 |

## Junction Turning Flows

**Junction:** A45 Barnes Meadow Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 9166 | 9176 | 9175 | 9165 | *A45/NeneValley Way* |
| B | 24740 | 2053 | 2053 | 24740 | *A428/Bedford Road* |
| C | 9164 | 9173 | 9177 | 75027 | *A45/NeneValley Way* |
| D | 2051 | 9174 | 9174 | 2051 | *A428/Bedford Road* |
| E | 1054 | 9175 | 9175 | 1054 | *A5095/ Rushmere Roa* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED — PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 386 | 512 | 834 | 27 | | | 1759 |
| B | 143 | 0 | 96 | 277 | 159 | | | 675 |
| C | 0 | 118 | 0 | 910 | 189 | | | 1217 |
| D | 844 | 719 | 181 | 0 | 150 | | | 1894 |
| E | 168 | 753 | 437 | 2 | 0 | | | 1360 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1155 | 1976 | 1226 | 2023 | 525 | | | 6905 |

*By Vehicle Type:*

MODELLED — Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 276 | 422 | 784 | 27 | | | 1509 |
| B | 131 | 0 | 79 | 227 | 142 | | | 579 |
| C | 0 | 115 | 0 | 867 | 185 | | | 1167 |
| D | 765 | 640 | 178 | 0 | 131 | | | 1714 |
| E | 165 | 751 | 397 | 2 | 0 | | | 1315 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1061 | 1782 | 1076 | 1880 | 485 | | | 6284 |

MODELLED — LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 19 | 32 | 0 | | | 54 |
| B | 7 | 0 | 11 | 17 | 6 | | | 41 |
| C | 0 | 3 | 0 | 42 | 4 | | | 49 |
| D | 73 | 6 | 3 | 0 | 19 | | | 101 |
| E | 3 | 1 | 35 | 0 | 0 | | | 39 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 83 | 13 | 68 | 91 | 29 | | | 284 |

MODELLED — HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 107 | 71 | 18 | 0 | | | 196 |
| B | 5 | 0 | 6 | 33 | 11 | | | 55 |
| C | 0 | 0 | 0 | 1 | 0 | | | 1 |
| D | 6 | 73 | 0 | 0 | 0 | | | 79 |
| E | 0 | 1 | 5 | 0 | 0 | | | 6 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 11 | 181 | 82 | 52 | 11 | | | 337 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED — PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 136 | 302 | 699 | 10 | | | 1147 |
| B | 397 | 0 | 159 | 422 | 661 | | | 1639 |
| C | 0 | 56 | 0 | 907 | 325 | | | 1288 |
| D | 1989 | 308 | 435 | 2 | 26 | | | 2760 |
| E | 427 | 308 | 223 | 2 | 0 | | | 960 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2813 | 808 | 1119 | 2032 | 1022 | | | 7794 |

*By Vehicle Type:*

MODELLED — Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 134 | 278 | 604 | 10 | | | 1026 |
| B | 388 | 0 | 156 | 412 | 650 | | | 1606 |
| C | 0 | 55 | 0 | 879 | 303 | | | 1237 |
| D | 1783 | 300 | 424 | 2 | 25 | | | 2534 |
| E | 419 | 299 | 217 | 2 | 0 | | | 937 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2590 | 788 | 1075 | 1899 | 988 | | | 7340 |

MODELLED — LGV

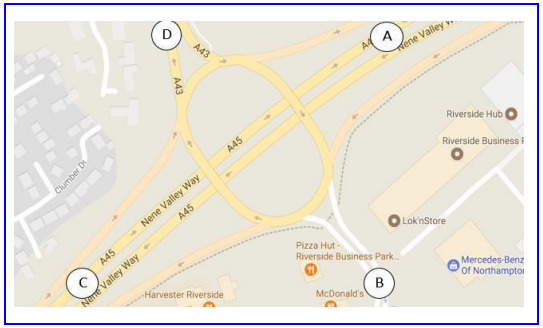
| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 2 | 10 | 13 | 0 | | | 25 |
| B | 6 | 0 | 3 | 7 | 9 | | | 25 |
| C | 0 | 0 | 0 | 28 | 22 | | | 50 |
| D | 84 | 5 | 11 | 0 | 1 | | | 101 |
| E | 8 | 9 | 6 | 0 | 0 | | | 23 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 98 | 16 | 30 | 48 | 32 | | | 224 |

MODELLED — HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 14 | 82 | 0 | | | 96 |
| B | 3 | 0 | 0 | 3 | 2 | | | 8 |
| C | 0 | 1 | 0 | 0 | 0 | | | 1 |
| D | 122 | 3 | 0 | 0 | 0 | | | 125 |
| E | 0 | 0 | 0 | 0 | 0 | | | 0 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 125 | 4 | 14 | 85 | 2 | | | 230 |

## Junction Turning Flows

**Junction:** A45 Lumbertubs Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 9213 | 9214 | 9211 | 9212 | *A45/ Nene Valley Way* |
| B | 4437 | 9215 | 9214 | 4436 | *Ferris Row* |
| C | 2075 | 9217 | 9215 | 9216 | *A45/ Nene Valley Way* |
| D | 9210 | 9211 | 9217 | 4068 | *A43/ Lumbertubs Way* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 74 | 0 | 269 | | | | 343 |
| B | 38 | 0 | 1083 | 304 | | | | 1425 |
| C | 0 | 129 | 0 | 1619 | | | | 1748 |
| D | 503 | 1274 | 1280 | 87 | | | | 3144 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 541 | 1477 | 2363 | 2279 | | | | 6660 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 66 | 0 | 258 | | | | 324 |
| B | 35 | 0 | 994 | 271 | | | | 1300 |
| C | 0 | 120 | 0 | 1143 | | | | 1263 |
| D | 490 | 1133 | 1131 | 85 | | | | 2839 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 525 | 1319 | 2125 | 1757 | | | | 5726 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 8 | 0 | 11 | | | | 19 |
| B | 2 | 0 | 37 | 8 | | | | 47 |
| C | 0 | 9 | 0 | 87 | | | | 96 |
| D | 12 | 54 | 52 | 2 | | | | 120 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 14 | 71 | 89 | 108 | | | | 282 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | | | | 0 |
| B | 1 | 0 | 52 | 25 | | | | 78 |
| C | 0 | 0 | 0 | 389 | | | | 389 |
| D | 1 | 87 | 97 | 0 | | | | 185 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2 | 87 | 149 | 414 | | | | 652 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 64 | 0 | 740 | | | | 804 |
| B | 78 | 0 | 868 | 548 | | | | 1494 |
| C | 0 | 143 | 0 | 1604 | | | | 1747 |
| D | 164 | 813 | 985 | 56 | | | | 2018 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 242 | 1020 | 1853 | 2948 | | | | 6063 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 39 | 0 | 714 | | | | 753 |
| B | 72 | 0 | 855 | 546 | | | | 1473 |
| C | 0 | 20 | 0 | 1367 | | | | 1387 |
| D | 158 | 711 | 909 | 56 | | | | 1834 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 230 | 770 | 1764 | 2683 | | | | 5447 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 22 | 0 | 14 | | | | 36 |
| B | 6 | 0 | 12 | 2 | | | | 20 |
| C | 0 | 2 | 0 | 54 | | | | 56 |
| D | 6 | 19 | 22 | 0 | | | | 47 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 12 | 43 | 34 | 70 | | | | 159 |

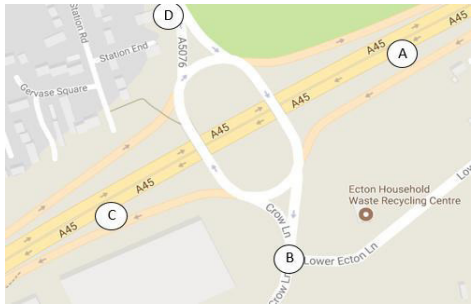
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 0 | 12 | | | | 15 |
| B | 0 | 0 | 1 | 0 | | | | 1 |
| C | 0 | 121 | 0 | 183 | | | | 304 |
| D | 0 | 83 | 54 | 0 | | | | 137 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 0 | 207 | 55 | 195 | | | | 457 |

## Junction Turning Flows

**Junction:** A45 Great Billing Interchange




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 9259 | 9258 | 9253 | 9254 | *A45/ Nene Valley Way* |
| B | 1076 | 9257 | 9257 | 1076 | *Crow Lane* |
| C | 9250 | 9251 | 9256 | 9255 | *A45/ Nene Valley Way* |
| D | 24694 | 9252 | 9252 | 24694 | *Great Billing Way* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 414 | 0 | 292 | | | | 706 |
| B | 162 | 0 | 633 | 539 | | | | 1334 |
| C | 0 | 160 | 5 | 299 | | | | 464 |
| D | 372 | 325 | 1022 | 0 | | | | 1719 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 534 | 899 | 1660 | 1130 | | | | 4223 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 225 | 0 | 265 | | | | 490 |
| B | 108 | 0 | 340 | 386 | | | | 834 |
| C | 0 | 149 | 5 | 292 | | | | 446 |
| D | 332 | 298 | 988 | 0 | | | | 1618 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 440 | 672 | 1333 | 943 | | | | 3388 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 5 | 0 | 8 | | | | 13 |
| B | 45 | 0 | 55 | 51 | | | | 151 |
| C | 0 | 11 | 0 | 6 | | | | 17 |
| D | 7 | 20 | 24 | 0 | | | | 51 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 52 | 36 | 79 | 65 | | | | 232 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 184 | 0 | 19 | | | | 203 |
| B | 9 | 0 | 238 | 102 | | | | 349 |
| C | 0 | 0 | 0 | 1 | | | | 1 |
| D | 33 | 7 | 10 | 0 | | | | 50 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 42 | 191 | 248 | 122 | | | | 603 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 61 | 0 | 138 | | | | 199 |
| B | 235 | 0 | 225 | 627 | | | | 1087 |
| C | 161 | 106 | 0 | 646 | | | | 913 |
| D | 374 | 423 | 300 | 0 | | | | 1097 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 770 | 590 | 525 | 1411 | | | | 3296 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 57 | 0 | 133 | | | | 190 |
| B | 197 | 0 | 168 | 542 | | | | 907 |
| C | 127 | 16 | 0 | 514 | | | | 657 |
| D | 354 | 403 | 295 | 0 | | | | 1052 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 678 | 476 | 463 | 1189 | | | | 2806 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 4 | 0 | 5 | | | | 9 |
| B | 37 | 0 | 40 | 71 | | | | 148 |
| C | 5 | 12 | 0 | 18 | | | | 35 |
| D | 20 | 19 | 5 | 0 | | | | 44 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 62 | 35 | 45 | 94 | | | | 236 |

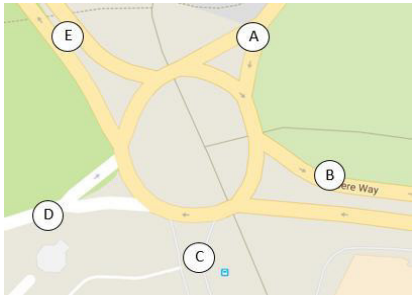
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | | | | 0 |
| B | 1 | 0 | 17 | 14 | | | | 32 |
| C | 29 | 78 | 0 | 114 | | | | 221 |
| D | 0 | 1 | 0 | 0 | | | | 1 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 30 | 79 | 17 | 128 | | | | 254 |

## Junction Turning Flows

**Junction:** A5076/Towcester Rd roundabout




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 60104 | 5298 | 4298 | 60104 | *Towcester Road* |
| B | 60120 | 60119 | 60125 | 60120 | *Mere Way* |
| C | 60123 | 60121 | 60122 | 60123 | *Shopping centre* |
| D | 3096 | 60126 | 7298 | 3096 | *Towcester Road* |
| E | 60118 | 60117 | 21298 | 60118 | *Danes Camp Way* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED — PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 565 | 11 | 303 | 204 | | | 1083 |
| B | 292 | 78 | 19 | 193 | 1513 | | | 2095 |
| C | 8 | 22 | 0 | 26 | 20 | | | 76 |
| D | 465 | 352 | 17 | 0 | 332 | | | 1166 |
| E | 390 | 1421 | 24 | 121 | 12 | | | 1968 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1155 | 2438 | 71 | 643 | 2081 | | | 6388 |

*By Vehicle Type:*

MODELLED — Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 546 | 11 | 285 | 195 | | | 1037 |
| B | 286 | 77 | 17 | 185 | 1381 | | | 1946 |
| C | 7 | 21 | 0 | 26 | 20 | | | 74 |
| D | 424 | 344 | 17 | 0 | 308 | | | 1093 |
| E | 347 | 1024 | 24 | 109 | 12 | | | 1516 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1064 | 2012 | 69 | 605 | 1916 | | | 5666 |

MODELLED — LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 16 | 0 | 16 | 9 | | | 41 |
| B | 5 | 1 | 2 | 3 | 26 | | | 37 |
| C | 1 | 1 | 0 | 0 | 0 | | | 2 |
| D | 40 | 5 | 0 | 0 | 24 | | | 69 |
| E | 6 | 27 | 0 | 8 | 0 | | | 41 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 52 | 50 | 2 | 27 | 59 | | | 190 |

MODELLED — HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 0 | 2 | 0 | | | 5 |
| B | 1 | 0 | 0 | 5 | 106 | | | 112 |
| C | 0 | 0 | 0 | 0 | 0 | | | 0 |
| D | 1 | 3 | 0 | 0 | 0 | | | 4 |
| E | 37 | 370 | 0 | 4 | 0 | | | 411 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 39 | 376 | 0 | 11 | 106 | | | 532 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED — PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 904 | 13 | 361 | 76 | | | 1354 |
| B | 130 | 106 | 24 | 324 | 1496 | | | 2080 |
| C | 10 | 35 | 0 | 35 | 17 | | | 97 |
| D | 450 | 368 | 24 | 0 | 51 | | | 893 |
| E | 207 | 1093 | 23 | 204 | 45 | | | 1572 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 797 | 2506 | 84 | 924 | 1685 | | | 5996 |

*By Vehicle Type:*

MODELLED — Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 885 | 12 | 324 | 75 | | | 1296 |
| B | 111 | 53 | 20 | 283 | 1384 | | | 1851 |
| C | 10 | 33 | 0 | 34 | 17 | | | 94 |
| D | 412 | 348 | 23 | 0 | 51 | | | 834 |
| E | 207 | 1081 | 23 | 203 | 45 | | | 1559 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 740 | 2400 | 78 | 844 | 1572 | | | 5634 |

MODELLED — LGV

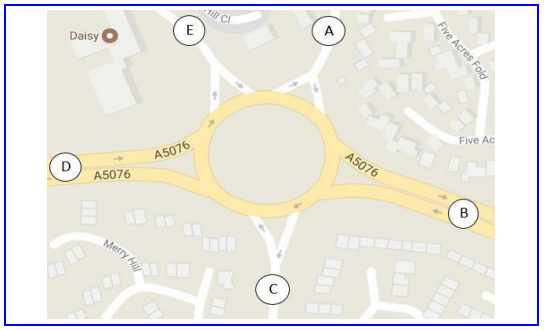
| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 18 | 1 | 37 | 1 | | | 57 |
| B | 8 | 7 | 4 | 21 | 48 | | | 88 |
| C | 0 | 2 | 0 | 1 | 0 | | | 3 |
| D | 18 | 3 | 1 | 0 | 0 | | | 22 |
| E | 0 | 10 | 0 | 1 | 0 | | | 11 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 26 | 40 | 6 | 60 | 49 | | | 181 |

MODELLED — HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1 | 0 | 0 | 0 | | | 1 |
| B | 11 | 46 | 0 | 20 | 64 | | | 141 |
| C | 0 | 0 | 0 | 0 | 0 | | | 0 |
| D | 20 | 17 | 0 | 0 | 0 | | | 37 |
| E | 0 | 2 | 0 | 0 | 0 | | | 2 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 31 | 66 | 0 | 20 | 64 | | | 181 |

## Junction Turning Flows

**Junction:** A5076/Huntsbury Hill roundabout




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 1134 | 9411 | 9411 | 1134 | *Hunsbarrow Road* |
| B | 1091 | 9411 | 9411 | 1091 | *Danes Camp Way* |
| C | 1098 | 9411 | 9411 | 1098 | *Hunsbury Hill Road* |
| D | 4100 | 9411 | 9411 | 4100 | *Danes Camp Way* |
| E | 9413 | 9411 | 9411 | 9413 | *Hunsbury Hill Avenue* |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 31 | 13 | 340 | 18 | | | 402 |
| B | 12 | 0 | 73 | 1696 | 179 | | | 1959 |
| C | 0 | 258 | 0 | 555 | 9 | | | 821 |
| D | 12 | 2331 | 215 | 0 | 154 | | | 2712 |
| E | 1 | 245 | 8 | 151 | 0 | | | 405 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 25 | 2865 | 309 | 2741 | 360 | | | 6300 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 31 | 13 | 258 | 18 | | | 320 |
| B | 11 | 0 | 73 | 1533 | 179 | | | 1796 |
| C | 0 | 250 | 0 | 535 | 9 | | | 794 |
| D | 7 | 1885 | 211 | 0 | 153 | | | 2255 |
| E | 1 | 189 | 8 | 148 | 0 | | | 346 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 19 | 2355 | 305 | 2474 | 359 | | | 5511 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 81 | 0 | | | 82 |
| B | 0 | 0 | 0 | 48 | 0 | | | 48 |
| C | 0 | 2 | 0 | 20 | 0 | | | 22 |
| D | 5 | 58 | 3 | 0 | 0 | | | 66 |
| E | 0 | 1 | 0 | 1 | 0 | | | 2 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 6 | 61 | 3 | 149 | 0 | | | 219 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | | | 1 |
| B | 0 | 0 | 0 | 116 | 0 | | | 116 |
| C | 0 | 5 | 0 | 0 | 0 | | | 6 |
| D | 0 | 389 | 2 | 0 | 0 | | | 391 |
| E | 0 | 55 | 0 | 1 | 0 | | | 57 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 0 | 450 | 2 | 118 | 0 | | | 569 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1 | 72 | 679 | 135 | | | 886 |
| B | 47 | 0 | 87 | 1070 | 509 | | | 1713 |
| C | 8 | 254 | 0 | 272 | 22 | | | 556 |
| D | 228 | 1299 | 413 | 0 | 219 | | | 2160 |
| E | 13 | 326 | 12 | 90 | 0 | | | 441 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 297 | 1880 | 584 | 2111 | 884 | | | 5756 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1 | 72 | 661 | 129 | | | 863 |
| B | 47 | 0 | 87 | 983 | 509 | | | 1626 |
| C | 8 | 252 | 0 | 270 | 22 | | | 552 |
| D | 72 | 1274 | 403 | 0 | 191 | | | 1940 |
| E | 13 | 326 | 12 | 90 | 0 | | | 441 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 140 | 1853 | 574 | 2003 | 851 | | | 5421 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 18 | 5 | | | 23 |
| B | 0 | 0 | 0 | 36 | 0 | | | 36 |
| C | 0 | 1 | 0 | 2 | 0 | | | 4 |
| D | 1 | 22 | 10 | 0 | 28 | | | 62 |
| E | 0 | 0 | 0 | 0 | 0 | | | 0 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1 | 23 | 10 | 56 | 34 | | | 125 |

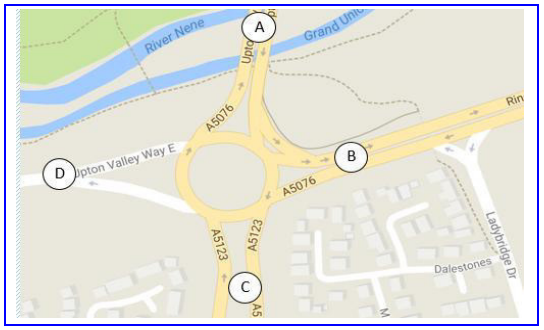
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | | | 0 |
| B | 0 | 0 | 0 | 52 | 0 | | | 52 |
| C | 0 | 0 | 0 | 0 | 0 | | | 0 |
| D | 155 | 4 | 0 | 0 | 0 | | | 158 |
| E | 0 | 0 | 0 | 0 | 0 | | | 0 |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 155 | 4 | 0 | 52 | 0 | | | 210 |

## Junction Turning Flows

**Junction:** A5123/A5076 roundabout




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 3258 | 30008 | 30008 | 3258 | *Upton Way* |
| B | 3100 | 30009 | 30009 | 3100 | *A5076* |
| C | 2102 | 30007 | 30007 | 2102 | *A5123* |
| D | 4102 | 30010 | 30010 | 4102 | *Upton Valley Way E* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1214 | 783 | 183 | | | | 2180 |
| B | 1187 | 0 | 965 | 616 | | | | 2768 |
| C | 668 | 1057 | 0 | 32 | | | | 1757 |
| D | 327 | 371 | 285 | 5 | | | | 988 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2182 | 2642 | 2033 | 836 | | | | 7693 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1158 | 693 | 170 | | | | 2021 |
| B | 1061 | 0 | 844 | 576 | | | | 2481 |
| C | 426 | 772 | 0 | 31 | | | | 1229 |
| D | 305 | 351 | 32 | 5 | | | | 693 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1792 | 2281 | 1569 | 782 | | | | 6424 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 28 | 36 | 11 | | | | 75 |
| B | 39 | 0 | 86 | 30 | | | | 155 |
| C | 57 | 41 | 0 | 1 | | | | 99 |
| D | 16 | 11 | 7 | 0 | | | | 34 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 112 | 80 | 129 | 42 | | | | 363 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 28 | 54 | 2 | | | | 84 |
| B | 87 | 0 | 35 | 10 | | | | 132 |
| C | 185 | 244 | 0 | 0 | | | | 429 |
| D | 6 | 9 | 246 | 0 | | | | 261 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 278 | 281 | 335 | 12 | | | | 906 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1490 | 619 | 115 | | | | 2224 |
| B | 906 | 0 | 743 | 373 | | | | 2022 |
| C | 1253 | 556 | 0 | 216 | | | | 2025 |
| D | 130 | 161 | 33 | 6 | | | | 330 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 2289 | 2207 | 1395 | 710 | | | | 6601 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1457 | 444 | 115 | | | | 2016 |
| B | 860 | 0 | 716 | 340 | | | | 1916 |
| C | 910 | 368 | 0 | 210 | | | | 1488 |
| D | 121 | 156 | 12 | 6 | | | | 295 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1891 | 1981 | 1172 | 671 | | | | 5715 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 32 | 17 | 0 | | | | 49 |
| B | 19 | 0 | 22 | 14 | | | | 55 |
| C | 37 | 32 | 0 | 6 | | | | 75 |
| D | 8 | 4 | 19 | 0 | | | | 31 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 64 | 68 | 58 | 20 | | | | 210 |

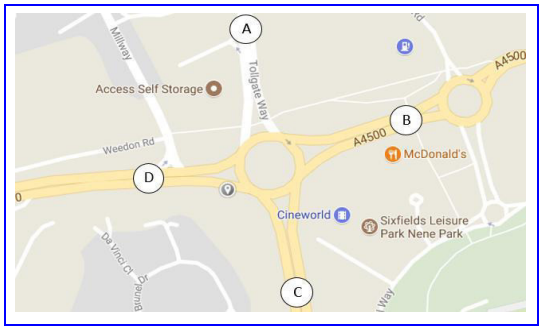
MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 1 | 158 | 0 | | | | 159 |
| B | 27 | 0 | 5 | 19 | | | | 51 |
| C | 306 | 156 | 0 | 0 | | | | 462 |
| D | 1 | 1 | 2 | 0 | | | | 4 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 334 | 158 | 165 | 19 | | | | 676 |

## Junction Turning Flows

**Junction:** A4500/A5076 roundabout




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 60099 | 9441 | 9440 | 60099 | *Tollgate Way* |
| B | 60100 | 9438 | 9441 | 60100 | *Weedon Road* |
| C | 60101 | 9439 | 9438 | 60101 | *Upton Way* |
| D | 60098 | 9440 | 9439 | 60098 | *Weedon Road* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 282 | 903 | 145 | | | | 1330 |
| B | 46 | 0 | 409 | 474 | | | | 929 |
| C | 773 | 595 | 0 | 375 | | | | 1743 |
| D | 181 | 915 | 369 | 68 | | | | 1533 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1000 | 1792 | 1681 | 1062 | | | | 5535 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 200 | 806 | 131 | | | | 1137 |
| B | 45 | 0 | 376 | 424 | | | | 845 |
| C | 574 | 521 | 0 | 341 | | | | 1436 |
| D | 131 | 795 | 350 | 67 | | | | 1343 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 750 | 1516 | 1532 | 963 | | | | 4761 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 82 | 67 | 5 | | | | 154 |
| B | 1 | 0 | 28 | 20 | | | | 49 |
| C | 52 | 20 | 0 | 32 | | | | 104 |
| D | 48 | 85 | 18 | 1 | | | | 152 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 101 | 187 | 113 | 58 | | | | 459 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 30 | 9 | | | | 39 |
| B | 0 | 0 | 5 | 30 | | | | 35 |
| C | 147 | 54 | 0 | 2 | | | | 203 |
| D | 2 | 35 | 1 | 0 | | | | 38 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 149 | 89 | 36 | 41 | | | | 315 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 173 | 503 | 235 | | | | 911 |
| B | 50 | 0 | 974 | 739 | | | | 1763 |
| C | 767 | 628 | 0 | 165 | | | | 1560 |
| D | 192 | 828 | 332 | 7 | | | | 1359 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1009 | 1629 | 1809 | 1146 | | | | 5593 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 155 | 428 | 223 | | | | 806 |
| B | 39 | 0 | 925 | 659 | | | | 1623 |
| C | 659 | 548 | 0 | 128 | | | | 1335 |
| D | 161 | 755 | 324 | 7 | | | | 1247 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 859 | 1458 | 1677 | 1017 | | | | 5011 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 18 | 23 | 6 | | | | 47 |
| B | 3 | 0 | 18 | 13 | | | | 34 |
| C | 41 | 21 | 0 | 11 | | | | 73 |
| D | 26 | 52 | 8 | 0 | | | | 86 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 70 | 91 | 49 | 30 | | | | 240 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 52 | 6 | | | | 58 |
| B | 8 | 0 | 31 | 67 | | | | 106 |
| C | 67 | 59 | 0 | 26 | | | | 152 |
| D | 5 | 21 | 0 | 0 | | | | 26 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 80 | 80 | 83 | 99 | | | | 342 |

## Junction Turning Flows

**Junction:** A5123/A508




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 25240 | 5003 | 5003 | 25240 | *St John's Street* |
| B | 2003 | 7003 | 7003 | 2003 | *123/ Victoria Promeda* |
| C | 9314 | 1277 | 1277 | 9314 | *Auctioneers Way* |
| D | 3085 | 3015 | 3015 | 3085 | *A508/ Cotton End* |
| E | 2004 | 6003 | 6003 | 2004 | *A5123/ St Peter's Way* |
| F | 21204 | 4003 | | | *Commercial Street* |
| G | 9003 | 5204 | 5204 | 9003 | *Bridge Street* |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8_forJ8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 532 | 705 | 0 | 51 | 1288 |
| C | 0 | 0 | 0 | 12 | 16 | 0 | 1 | 29 |
| D | 212 | 374 | 0 | 0 | 729 | 0 | 90 | 1405 |
| E | 0 | 322 | 4 | 266 | 3 | 0 | 37 | 632 |
| F | 315 | 0 | 0 | 0 | 0 | 0 | 369 | 684 |
| G | 105 | 0 | 0 | 1 | 1 | 0 | 0 | 107 |
| TOTAL | 632 | 696 | 4 | 811 | 1454 | 0 | 548 | 4145 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 463 | 584 | 0 | 51 | 1098 |
| C | 0 | 0 | 0 | 9 | 9 | 0 | 1 | 19 |
| D | 200 | 348 | 0 | 0 | 407 | 0 | 77 | 1032 |
| E | 0 | 217 | 2 | 223 | 3 | 0 | 36 | 481 |
| F | 303 | 0 | 0 | 0 | 0 | 0 | 365 | 668 |
| G | 100 | 0 | 0 | 1 | 0 | 0 | 0 | 101 |
| TOTAL | 603 | 565 | 2 | 696 | 1003 | 0 | 530 | 3399 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 14 | 27 | 0 | 0 | 41 |
| C | 0 | 0 | 0 | 3 | 7 | 0 | 0 | 10 |
| D | 8 | 15 | 0 | 0 | 47 | 0 | 3 | 73 |
| E | 0 | 37 | 2 | 10 | 0 | 0 | 1 | 50 |
| F | 10 | 0 | 0 | 0 | 0 | 0 | 3 | 13 |
| G | 5 | 0 | 0 | 0 | 1 | 0 | 0 | 6 |
| TOTAL | 23 | 52 | 2 | 27 | 82 | 0 | 7 | 193 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 55 | 94 | 0 | 0 | 149 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D | 4 | 11 | 0 | 0 | 275 | 0 | 10 | 300 |
| E | 0 | 68 | 0 | 33 | 0 | 0 | 0 | 101 |
| F | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 3 |
| G | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 6 | 79 | 0 | 88 | 369 | 0 | 11 | 553 |

## PM\NSTM_2_2031_PM_D1_v8_forJ8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 0 | 40 | 58 | 0 | 0 | 101 |
| B | 18 | 0 | 0 | 681 | 983 | 0 | 19 | 1701 |
| C | 0 | 0 | 0 | 24 | 41 | 0 | 0 | 65 |
| D | 162 | 418 | 0 | 0 | 425 | 0 | 32 | 1037 |
| E | 0 | 104 | 0 | 400 | 11 | 0 | 0 | 515 |
| F | 232 | 0 | 0 | 22 | 41 | 0 | 136 | 431 |
| G | 489 | 0 | 0 | 28 | 202 | 0 | 0 | 719 |
| TOTAL | 901 | 525 | 0 | 1195 | 1761 | 0 | 187 | 4569 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 3 | 0 | 40 | 58 | 0 | 0 | 101 |
| B | 17 | 0 | 0 | 665 | 896 | 0 | 19 | 1597 |
| C | 0 | 0 | 0 | 22 | 37 | 0 | 0 | 59 |
| D | 156 | 402 | 0 | 0 | 372 | 0 | 30 | 960 |
| E | 0 | 67 | 0 | 347 | 10 | 0 | 0 | 424 |
| F | 221 | 0 | 0 | 22 | 39 | 0 | 132 | 414 |
| G | 478 | 0 | 0 | 27 | 196 | 0 | 0 | 701 |
| TOTAL | 872 | 472 | 0 | 1123 | 1608 | 0 | 181 | 4256 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 1 | 0 | 0 | 14 | 24 | 0 | 0 | 39 |
| C | 0 | 0 | 0 | 2 | 4 | 0 | 0 | 6 |
| D | 5 | 13 | 0 | 0 | 23 | 0 | 2 | 43 |
| E | 0 | 7 | 0 | 8 | 1 | 0 | 0 | 16 |
| F | 10 | 0 | 0 | 0 | 2 | 0 | 4 | 16 |
| G | 11 | 0 | 0 | 1 | 6 | 0 | 0 | 18 |
| TOTAL | 27 | 20 | 0 | 25 | 60 | 0 | 6 | 138 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| B | 0 | 0 | 0 | 2 | 63 | 0 | 0 | 65 |
| C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| D | 1 | 3 | 0 | 0 | 30 | 0 | 0 | 34 |
| E | 0 | 30 | 0 | 45 | 0 | 0 | 0 | 75 |
| F | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| G | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| TOTAL | 2 | 33 | 0 | 47 | 93 | 0 | 0 | 175 |

## Junction Turning Flows

**Junction:** A4500/A5123/A508




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 30019 | 30012 | 60197 | 30019 | *Horse Market* |
| B | 30018 | 30013 | 60198 | 30018 | *St Peter's Way* |
| C | 30017 | 30014 | 60199 | 30017 | *Towcester* |
| D | 60194 | 30015 | 30014 | 60194 | *St Peter's Way* |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

## AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 350 | 456 | 14 | | | | 820 |
| B | 528 | 19 | 124 | 686 | | | | 1357 |
| C | 1177 | 161 | 0 | 575 | | | | 1913 |
| D | 60 | 1060 | 738 | 13 | | | | 1871 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1765 | 1590 | 1318 | 1288 | | | | 5961 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 323 | 427 | 13 | | | | 763 |
| B | 390 | 14 | 104 | 406 | | | | 914 |
| C | 1115 | 156 | 0 | 545 | | | | 1816 |
| D | 60 | 923 | 676 | 13 | | | | 1672 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1565 | 1416 | 1207 | 977 | | | | 5165 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 11 | 15 | 1 | | | | 27 |
| B | 37 | 1 | 13 | 48 | | | | 99 |
| C | 44 | 4 | 0 | 25 | | | | 73 |
| D | 0 | 57 | 55 | 0 | | | | 112 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 81 | 73 | 83 | 74 | | | | 311 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 16 | 14 | 0 | | | | 30 |
| B | 101 | 4 | 7 | 232 | | | | 344 |
| C | 18 | 1 | 0 | 5 | | | | 24 |
| D | 0 | 80 | 7 | 0 | | | | 87 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 119 | 101 | 28 | 237 | | | | 485 |

## PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

PCU

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 387 | 1067 | 6 | | | | 1460 |
| B | 591 | 51 | 279 | 866 | | | | 1787 |
| C | 657 | 49 | 0 | 264 | | | | 970 |
| D | 87 | 619 | 632 | 10 | | | | 1348 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1335 | 1106 | 1978 | 1146 | | | | 5565 |

*By Vehicle Type:*

MODELLED

Car

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 364 | 1030 | 6 | | | | 1400 |
| B | 527 | 50 | 263 | 768 | | | | 1608 |
| C | 611 | 45 | 0 | 242 | | | | 898 |
| D | 87 | 555 | 592 | 10 | | | | 1244 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 1225 | 1014 | 1885 | 1026 | | | | 5150 |

MODELLED

LGV

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 17 | 31 | 0 | | | | 48 |
| B | 22 | 1 | 10 | 32 | | | | 65 |
| C | 22 | 4 | 0 | 21 | | | | 47 |
| D | 0 | 19 | 18 | 0 | | | | 37 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 44 | 41 | 59 | 53 | | | | 197 |

MODELLED

HGV (PCU)

| From Arm \ To Arm | A | B | C | D | E | F | G | TOTAL |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 6 | 6 | 0 | | | | 12 |
| B | 42 | 0 | 6 | 66 | | | | 114 |
| C | 24 | 0 | 0 | 1 | | | | 25 |
| D | 0 | 45 | 22 | 0 | | | | 67 |
| E | | | | | | | | |
| F | | | | | | | | |
| G | | | | | | | | |
| TOTAL | 66 | 51 | 34 | 67 | | | | 218 |

## Junction Turning Flows

**Junction:** Courteenhall Rd/High St/Northampton Rd




### Arm Description

| Arm | Inbound | | Outbound | | Description |
|---|---|---|---|---|---|
| | A-Node | B-Node | A-Node | B-Node | |
| A | 2141 | 24766 | 24766 | 2141 | *Northampton Road* |
| B | 70849 | 24766 | 24766 | 70849 | *Courteenhall Road* |
| C | 81042 | 24766 | 24766 | 81042 | *High Street* |
| D | | | | | |
| E | | | | | |
| F | | | | | |
| G | | | | | |

### Growth Factors

| Vehicle | Growth |
|---|---|
| Car | *1* |
| LGV | *1* |
| HGV | *1* |

### AM\NSTM_2_2031_AM_D1_v8.DAT

MODELLED

| All Vehicle | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 101 | 483 | | | | | 584 |
| | B | 11 | 0 | 169 | | | | | 180 |
| | C | 526 | 22 | 0 | | | | | 549 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 537 | 123 | 651 | | | | | 1312 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 99 | 405 | | | | | 505 |
| | B | 11 | 0 | 153 | | | | | 164 |
| | C | 463 | 13 | 0 | | | | | 476 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 474 | 113 | 558 | | | | | 1145 |

MODELLED

| LGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 2 | 51 | | | | | 53 |
| | B | 0 | 0 | 14 | | | | | 14 |
| | C | 57 | 9 | 0 | | | | | 66 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 57 | 10 | 66 | | | | | 133 |

MODELLED

| HGV (PCU) | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 0 | 26 | | | | | 26 |
| | B | 0 | 0 | 2 | | | | | 2 |
| | C | 6 | 0 | 0 | | | | | 6 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 6 | 0 | 27 | | | | | 34 |

### PM\NSTM_2_2031_PM_D1_v8.DAT

MODELLED

| All Vehicle | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 195 | 373 | | | | | 568 |
| | B | 8 | 0 | 280 | | | | | 288 |
| | C | 512 | 48 | 0 | | | | | 560 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 520 | 243 | 653 | | | | | 1416 |

*By Vehicle Type:*

MODELLED

| Car | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 155 | 280 | | | | | 435 |
| | B | 8 | 0 | 187 | | | | | 195 |
| | C | 432 | 46 | 0 | | | | | 479 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 441 | 202 | 467 | | | | | 1110 |

MODELLED

| LGV | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 40 | 5 | | | | | 45 |
| | B | 0 | 0 | 16 | | | | | 16 |
| | C | 40 | 1 | 0 | | | | | 41 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 40 | 41 | 21 | | | | | 101 |

MODELLED

| HGV (PCU) | | To Arm | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | TOTAL |
| From Arm | A | 0 | 0 | 88 | | | | | 88 |
| | B | 0 | 0 | 77 | | | | | 77 |
| | C | 40 | 0 | 0 | | | | | 40 |
| | D | | | | | | | | |
| | E | | | | | | | | |
| | F | | | | | | | | |
| | G | | | | | | | | |
| | TOTAL | 40 | 0 | 165 | | | | | 205 |

**SCENARIO 2031 D1 - AM PEAK**

**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 29 | 10 | 391 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 224 | 0 | 0 | 1 |
| **2** | 145 | 0 | 66 | 1236 | 271 | 188 | 0 | 0 | 0 | 0 | 13 | 1904 | 118 | 0 | 2 |
| **3** | 4 | 20 | 0 | 18 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| **4** | 664 | 902 | 40 | 10 | 129 | 9 | 0 | 0 | 0 | 0 | 10 | 1251 | 72 | 0 | 5 |
| **5** | 0 | 61 | 10 | 211 | 0 | 892 | 0 | 0 | 0 | 0 | 232 | 349 | 7 | 0 | 7 |
| **6** | 38 | 249 | 9 | 47 | 1147 | 0 | 1 | 1 | 0 | 0 | 1 | 216 | 8 | 0 | 49 |
| **7** | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 14 | 12 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 14 | 12 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| **11** | 74 | 503 | 28 | 107 | 74 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | 0 | 8 |
| **12** | 266 | 2162 | 55 | 687 | 358 | 433 | 16 | 16 | 1 | 1 | 4 | 0 | 166 | 0 | 14 |
| **13** | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 0 |
| **2** | 3 | 0 | 10 | 112 | 0 | 20 | 0 | 0 | 0 | 0 | 1 | 402 | 0 | 0 | 0 |
| **3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **4** | 11 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 0 | 0 | 0 |
| **5** | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 |
| **6** | 0 | 2 | 0 | 0 | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 |
| **7** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| **11** | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **12** | 50 | 590 | 4 | 79 | 92 | 6 | 5 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**TOTAL (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 29 | 10 | 418 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 262 | 0 | 0 | 1 |
| **2** | 148 | 0 | 76 | 1348 | 271 | 209 | 0 | 0 | 0 | 0 | 13 | 2306 | 118 | 0 | 2 |
| **3** | 4 | 20 | 0 | 18 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| **4** | 675 | 944 | 40 | 10 | 129 | 9 | 0 | 0 | 0 | 0 | 10 | 1479 | 72 | 0 | 5 |
| **5** | 0 | 61 | 10 | 211 | 0 | 1009 | 0 | 0 | 0 | 0 | 234 | 354 | 7 | 0 | 7 |
| **6** | 38 | 250 | 9 | 47 | 1245 | 0 | 1 | 1 | 0 | 0 | 1 | 230 | 8 | 0 | 49 |
| **7** | 0 | 0 | 0 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 22 | 12 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 22 | 12 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **11** | 74 | 549 | 28 | 107 | 74 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | 0 | 8 |
| **12** | 316 | 2752 | 59 | 766 | 450 | 439 | 20 | 20 | 3 | 3 | 4 | 0 | 166 | 0 | 14 |
| **13** | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

**TOTAL (PCU)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 30 | 10 | 453 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 312 | 0 | 0 | 1 |
| **2** | 151 | 0 | 89 | 1494 | 271 | 235 | 0 | 0 | 0 | 0 | 14 | 2828 | 118 | 0 | 2 |
| **3** | 4 | 21 | 0 | 18 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| **4** | 690 | 1000 | 40 | 10 | 129 | 9 | 0 | 0 | 0 | 0 | 10 | 1776 | 72 | 0 | 5 |
| **5** | 0 | 61 | 10 | 212 | 0 | 1161 | 0 | 0 | 0 | 0 | 237 | 361 | 7 | 0 | 7 |
| **6** | 38 | 252 | 9 | 47 | 1371 | 0 | 1 | 1 | 0 | 0 | 1 | 248 | 8 | 0 | 49 |
| **7** | 0 | 0 | 0 | 4 | 1 | 4 | 0 | 0 | 0 | 0 | 32 | 13 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 4 | 1 | 4 | 0 | 0 | 0 | 0 | 32 | 13 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 |
| **11** | 74 | 609 | 28 | 107 | 74 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | 0 | 8 |
| **12** | 380 | 3518 | 63 | 869 | 569 | 447 | 26 | 26 | 6 | 6 | 4 | 0 | 166 | 0 | 15 |
| **13** | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

**SCENARIO 2031 D1 - PM PEAK**

**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 16 | 5 | 587 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 177 | 0 | 0 | 0 |
| **2** | 91 | 0 | 54 | 1017 | 116 | 398 | 0 | 0 | 0 | 0 | 8 | 2587 | 87 | 0 | 0 |
| **3** | 13 | 86 | 0 | 25 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 0 | 0 |
| **4** | 902 | 940 | 89 | 36 | 80 | 1 | 0 | 0 | 1 | 1 | 0 | 1181 | 133 | 0 | 0 |
| **5** | 0 | 295 | 1 | 10 | 0 | 975 | 0 | 0 | 0 | 0 | 161 | 322 | 0 | 0 | 1 |
| **6** | 17 | 188 | 11 | 33 | 800 | 0 | 2 | 2 | 0 | 0 | 0 | 216 | 1 | 0 | 5 |
| **7** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 32 | 369 | 17 | 152 | 156 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 2 | 0 | 2 |
| **12** | 109 | 2711 | 22 | 1001 | 459 | 282 | 54 | 54 | 8 | 8 | 18 | 0 | 4 | 0 | 2 |
| **13** | 0 | 0 | 0 | 306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 1 | 0 | 13 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 |

**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 0 |
| **2** | 0 | 0 | 0 | 87 | 0 | 26 | 0 | 0 | 0 | 0 | 51 | 410 | 0 | 0 | 0 |
| **3** | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 |
| **4** | 37 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| **5** | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **6** | 0 | 21 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| **7** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **11** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **12** | 32 | 432 | 17 | 85 | 8 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**TOTAL (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 17 | 5 | 594 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 214 | 0 | 0 | 0 |
| **2** | 91 | 0 | 54 | 1104 | 116 | 424 | 0 | 0 | 0 | 0 | 59 | 2997 | 87 | 0 | 0 |
| **3** | 13 | 104 | 0 | 25 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | 2 | 0 | 0 |
| **4** | 939 | 964 | 90 | 36 | 80 | 1 | 0 | 0 | 1 | 1 | 1 | 1215 | 133 | 0 | 0 |
| **5** | 0 | 295 | 1 | 10 | 0 | 1093 | 0 | 0 | 0 | 0 | 162 | 322 | 0 | 0 | 1 |
| **6** | 17 | 208 | 11 | 33 | 854 | 0 | 2 | 2 | 0 | 0 | 0 | 217 | 1 | 0 | 5 |
| **7** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 32 | 370 | 17 | 152 | 156 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 2 | 0 | 2 |
| **12** | 141 | 3143 | 39 | 1086 | 466 | 360 | 54 | 54 | 8 | 8 | 18 | 0 | 4 | 0 | 2 |
| **13** | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 1 | 0 | 2 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 |

**TOTAL (PCU)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 17 | 5 | 152 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 262 | 0 | 0 | 0 |
| **2** | 91 | 0 | 55 | 1196 | 116 | 458 | 0 | 0 | 0 | 0 | 125 | 3530 | 87 | 0 | 0 |
| **3** | 14 | 127 | 0 | 306 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 78 | 2 | 0 | 0 |
| **4** | 986 | 995 | 91 | 0 | 80 | 1 | 0 | 0 | 1 | 1 | 1 | 1260 | 133 | 0 | 0 |
| **5** | 0 | 295 | 1 | 13 | 0 | 1246 | 0 | 0 | 0 | 0 | 163 | 323 | 0 | 0 | 1 |
| **6** | 17 | 235 | 11 | 33 | 924 | 0 | 2 | 2 | 0 | 0 | 0 | 218 | 1 | 0 | 5 |
| **7** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 32 | 372 | 17 | 152 | 156 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 2 | 0 | 2 |
| **12** | 183 | 3704 | 61 | 1196 | 476 | 461 | 54 | 54 | 8 | 8 | 18 | 0 | 4 | 0 | 2 |
| **13** | 0 | 0 | 0 | 306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 1 | 0 | 13 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 |

# APPENDIX G

# TURNING MOVEMENT COMPARISON AND 2031J3 MANUAL ADJUSTMENTS

| Morning Peak Hour | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Movement | 2015 Observed Flow | 2015 Modelled Flow | 2031 Ref Case Flow | 2031 J3 Case Flow | Adjusted 2015 | 2031 ref vs 2015 model | 2031 J3 vs 2031 Ref | Adjusted Ref | Adjusted Dev | Comment |
| A45 SB offslip to Bedford Road West | 1411 | 857 | 834 | 943 | 1411 | -23 | 109 | 1388 | 1497 | Use 2015 observed flow as model base flow (1411) |
| Rushmere Road to Bedford Road East | 146 | 692 | 753 | 741 | 140 | 61 | -12 | 437 | 504 | Assignment appears to have switched between these routes, therefore flows reversed to match 2015 observed assignment |
| Rushmere Road to A45 SB | 855 | 140 | 437 | 504 | 692 | 297 | 67 | 753 | 741 | |
| Rushmere Road to Bedford Road West | 111 | 0 | 2 | 24 | 111 | 2 | 22 | 113 | 135 | Use 2015 observed flow as model base flow (111) |
| Evening Peak Hour | | | | | | | | | | |
| A45 NB offslip to Rowtree Road | 335 | 75 | 274 | 292 | 335 | 199 | 18 | 534 | 552 | Use 2015 observed flow as model base flow (335) |
| A45 SB offslip to Bedford Road West | 748 | 305 | 699 | 713 | 748 | 394 | 14 | 1142 | 1156 | Use 2015 observed flow as model base flow (748) |
| Rushmere Road to A45 NB | 151 | 621 | 427 | 488 | 151 | N/A | 61 | 151 | 212 | Use 2015 observed flow as 2031 reference case flow |
| Rushmere Road to A45 SB | 562 | 258 | 223 | 222 | 562 | -35 | -1 | 527 | 526 | Use 2015 observed flow as model base flow (562) |
| Upton Way to Danes Camp Way | 1094 | 1707 | 1490 | 1431 | NSTM2 flow is higher and has been retained in detailed model for robustness | | | | | |
| Danes Camp Way to Upton Way | 1196 | 795 | 906 | 817 | 1196 | 111 | -89 | 1307 | 1218 | Use 2015 observed flow as model base flow (1196) |
| A5123 to Danes Camp Way | 637 | 274 | 556 | 647 | Adjusted based on Turning Proportions - see below. | | | | | |
| Caswell Road to A45 NB | 1588 | 212 | 157 | 212 | 1588 | -55 | 55 | 1533 | 1588 | Use 2015 observed flow as model base flow (1588) |

| A5123 to Danes Camp Way turning proportion adjustments | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Movement | 2015 Observed Flow | 2015 Observed Turning % | 2015 Modelled Turning % | 2015 adjusted flows | 2031 Ref Case Flow | 2031 Ref Case Adjusted | 2031 J3 Case Flow | 2031 J3 Case Adjusted |
| A5123 to Upton Way | 863 | 55% | 1073 | 900 | 1253 | 1110 | 1451 | 1282 |
| A5123 to Danes Camp Way | 637 | 40% | 274 | 664 | 556 | 820 | 647 | 947 |
| A5123 to Upton Valley Way | 74 | 5% | 294 | 77 | 216 | 95 | 241 | 110 |

# APPENIDX H

# DETAILED MODELLING OUTPUTS

# JUNCTION 1

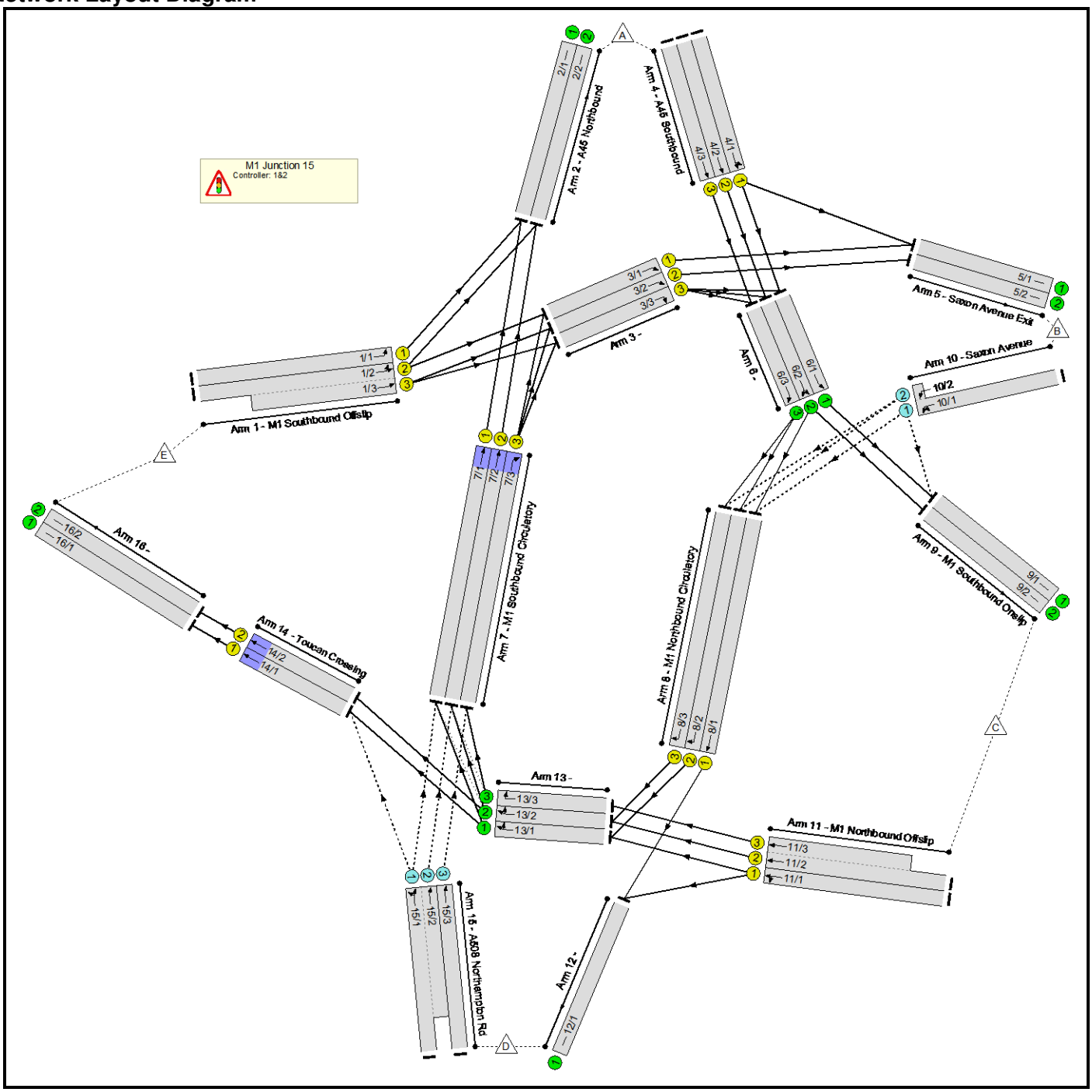
# M1 JUNCTION 15

## Full Input Data And Results

### User and Project Details

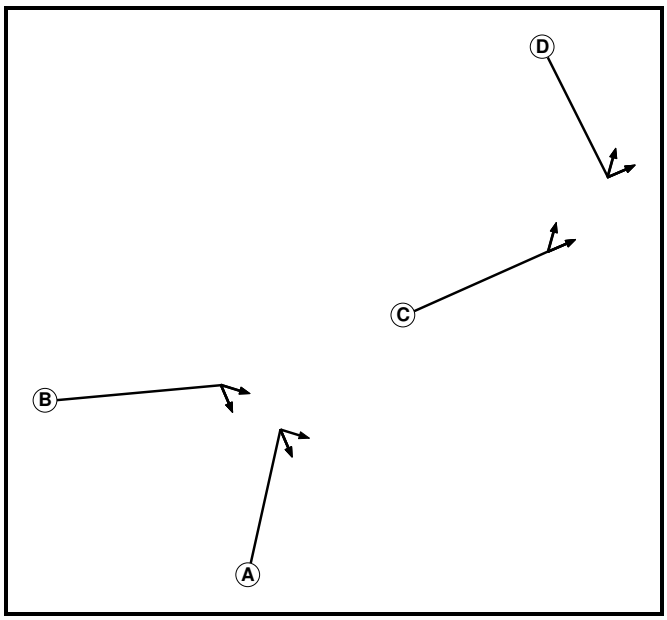
| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **M1 Junction 15 Reference Case Model** |
| **File name:** | 180220 M1 Junction 15 Ref Case Model without WL.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House, Nottingham |
| **Notes:** | NSTM2 D1 |

### Network Layout Diagram



**C1 - Eastside Controller**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |

## Phase Intergreens Matrix

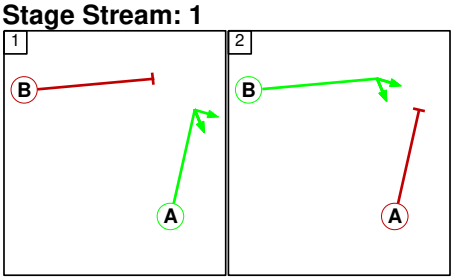
| | | Starting Phase | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| Terminating Phase | A | | 7 | - | - |
| | B | 7 | | - | - |
| | C | - | - | | 7 |
| | D | - | - | 6 | |

## Phases in Stage

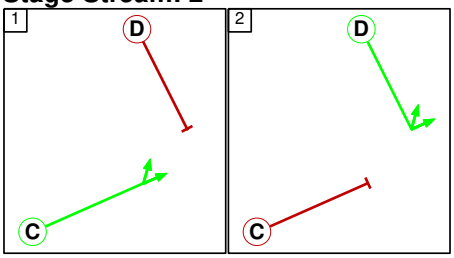
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |

## Stage Diagram

### Stage Stream: 1



**Stage Stream: 2**




## Prohibited Stage Change

**Stage Stream: 1**

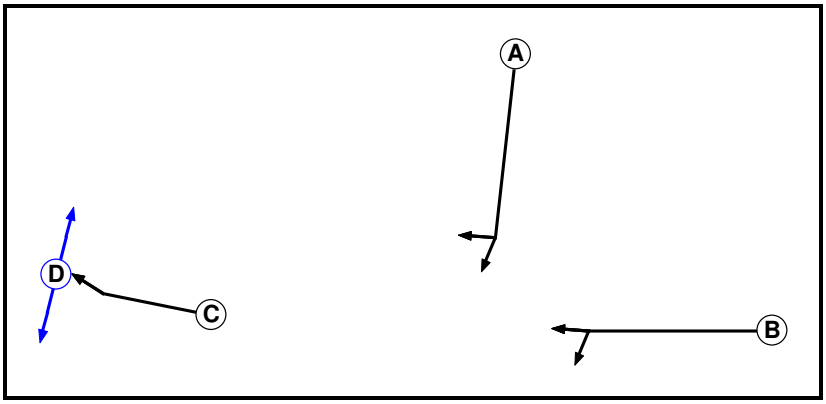
| | | To Stage | |
|---|---|---|---|
| | | 1 | 2 |
| From Stage | 1 | | 7 |
| | 2 | 7 | |

**Stage Stream: 2**

| | | To Stage | |
|---|---|---|---|
| | | 1 | 2 |
| From Stage | 1 | | 7 |
| | 2 | 6 | |

**C2 - Westside Controller**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Pedestrian | 2 | | 7 | 7 |

## Phase Intergreens Matrix

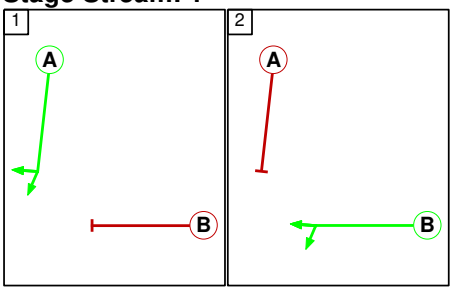
| | | Starting Phase | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| Terminating Phase | A | | 5 | - | - |
| | B | 7 | | - | - |
| | C | - | - | | 5 |
| | D | - | - | 7 | |

## Phases in Stage

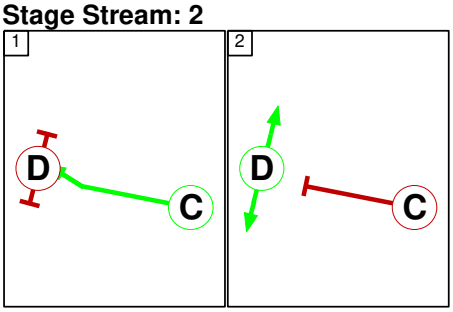
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |

## Stage Diagram

### Stage Stream: 1




### Stage Stream: 2




## Prohibited Stage Change

### Stage Stream: 1

| | | To Stage | | |
|---|---|---|---|---|
| | | | 1 | 2 |
| From Stage | 1 | | | 5 |
| | 2 | 7 | | |

### Stage Stream: 2

| | | To Stage | | |
|---|---|---|---|---|
| | | | 1 | 2 |
| From Stage | 1 | | | 5 |
| | 2 | 7 | | |

## Give-Way Lane Input Data

| Junction: M1 Junction 15 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| 10/1 (Saxon Avenue) | 8/1 (Left) | 838 | 0 | 6/1 | 0.23 | All | - | - | - | - | - |
| | | | | 6/2 | 0.23 | All | | | | | |
| | | | | 6/3 | 0.23 | All | | | | | |
| | 9/1 (Left) | 838 | 0 | 6/1 | 0.23 | All | | | | | |
| | | | | 6/2 | 0.23 | All | | | | | |
| | | | | 6/3 | 0.23 | All | | | | | |
| 10/2 (Saxon Avenue) | 8/2 (Left) | 838 | 0 | 6/1 | 0.23 | All | - | - | - | - | - |
| | | | | 6/2 | 0.23 | All | | | | | |
| | | | | 6/3 | 0.23 | All | | | | | |
| | 8/3 (Left) | 838 | 0 | 6/1 | 0.23 | All | | | | | |
| | | | | 6/2 | 0.23 | All | | | | | |
| | | | | 6/3 | 0.23 | All | | | | | |
| 15/1 (A508 Northampton Rd) | 7/1 (Ahead) | 800 | 0 | 13/1 | 0.22 | All | - | - | - | - | - |
| | | | | 13/2 | 0.22 | All | | | | | |
| | | | | 13/3 | 0.22 | All | | | | | |
| | 14/1 (Left) | 800 | 0 | 13/1 | 0.22 | All | | | | | |
| | | | | 13/2 | 0.22 | All | | | | | |
| | | | | 13/3 | 0.22 | All | | | | | |
| 15/2 (A508 Northampton Rd) | 7/2 (Ahead) | 800 | 0 | 13/1 | 0.22 | All | - | - | - | - | - |
| | | | | 13/2 | 0.22 | All | | | | | |
| | | | | 13/3 | 0.22 | All | | | | | |
| 15/3 (A508 Northampton Rd) | 7/3 (Ahead) | 800 | 0 | 13/1 | 0.21 | All | - | - | - | - | - |
| | | | | 13/2 | 0.21 | All | | | | | |
| | | | | 13/3 | 0.21 | All | | | | | |

## Lane Input Data

| Junction: M1 Junction 15 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 (M1 Southbound Offslip) | U | C | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 2 Left | Inf |
| ½ (M1 Southbound Offslip) | U | C | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 2 Left | Inf |
| | | | | | | | | | | | Arm 3 Ahead | Inf |
| 1/3 (M1 Southbound Offslip) | U | C | 2 | 3 | 14.0 | Geom | - | 3.65 | 0.00 | Y | Arm 3 Ahead | Inf |
| 2/1 (A45 Northbound) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| 2/2 (A45 Northbound) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| 3/1 | U | B | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 3/2 | U | B | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 3/3 | U | B | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 4/1 (A45 Southbound) | U | A | 2 | 3 | 67.8 | Geom | - | 3.65 | 0.00 | Y | Arm 5 Left | Inf |
| | | | | | | | | | | | Arm 6 Ahead | Inf |
| 4/2 (A45 Southbound) | U | A | 2 | 3 | 67.8 | Geom | - | 3.65 | 0.00 | N | Arm 6 Ahead | Inf |
| 4/3 (A45 Southbound) | U | A | 2 | 3 | 67.8 | Geom | - | 3.65 | 0.00 | N | Arm 6 Ahead | Inf |
| 5/1 (Saxon Avenue Exit) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| 5/2 (Saxon Avenue Exit) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| 6/1 | U | | 2 | 3 | 10.4 | Inf | - | - | - | - | - | - |
| 6/2 | U | | 2 | 3 | 10.4 | Inf | - | - | - | - | - | - |
| 6/3 | U | | 2 | 3 | 10.4 | Inf | - | - | - | - | - | - |
| 7/1 (M1 Southbound Circulatory) | U | D | 2 | 3 | 34.8 | User | 2000 | - | - | - | - | - |
| 7/2 (M1 Southbound Circulatory) | U | D | 2 | 3 | 34.8 | User | 2000 | - | - | - | - | - |
| 7/3 (M1 Southbound Circulatory) | U | D | 2 | 3 | 34.8 | User | 2000 | - | - | - | - | - |
| 8/1 (M1 Northbound Circulatory) | U | A | 2 | 3 | 35.7 | User | 2000 | - | - | - | - | - |
| 8/2 (M1 Northbound Circulatory) | U | A | 2 | 3 | 35.7 | User | 2000 | - | - | - | - | - |
| 8/3 (M1 Northbound Circulatory) | U | A | 2 | 3 | 35.7 | User | 2000 | - | - | - | - | - |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/1 (M1 Southbound Onslip) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| 9/2 (M1 Southbound Onslip) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| 10/1 (Saxon Avenue) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 10/2 (Saxon Avenue) | O | | 2 | 3 | 1.0 | Inf | - | - | - | - | - | - |
| 11/1 (M1 Northbound Offslip) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 12 Left | Inf |
| | | | | | | | | | | | Arm 13 Ahead | Inf |
| 11/2 (M1 Northbound Offslip) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 13 Ahead | Inf |
| 11/3 (M1 Northbound Offslip) | U | B | 2 | 3 | 18.0 | Geom | - | 3.65 | 0.00 | N | Arm 13 Ahead | Inf |
| 12/1 | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| 13/1 | U | | 2 | 3 | 10.4 | Inf | - | - | - | - | - | - |
| 13/2 | U | | 2 | 3 | 10.4 | Inf | - | - | - | - | - | - |
| 13/3 | U | | 2 | 3 | 10.4 | Inf | - | - | - | - | - | - |
| 14/1 (Toucan Crossing) | U | C | 2 | 3 | 4.3 | Geom | - | 3.80 | 0.00 | Y | Arm 16 Ahead | Inf |
| 14/2 (Toucan Crossing) | U | C | 2 | 3 | 4.3 | Geom | - | 3.80 | 0.00 | Y | Arm 16 Ahead | Inf |
| 15/1 (A508 Northampton Rd) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 15/2 (A508 Northampton Rd) | O | | 2 | 3 | 23.0 | Inf | - | - | - | - | - | - |
| 15/3 (A508 Northampton Rd) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 16/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 16/2 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 Ref AM Peak' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 Ref PM Peak' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 AM Ref D1'** (FG1: '2031 D1 Ref AM Peak', Plan 1: 'Network Control Plan 1')

### Traffic Flows, Desired

| | | Destination | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | Tot. |
| Origin | A | 75 | 36 | 970 | 683 | 1834 | 3598 |
| | B | 26 | 0 | 20 | 2 | 9 | 57 |
| | C | 1519 | 124 | 0 | 144 | 0 | 1787 |
| | D | 421 | 12 | 84 | 0 | 312 | 829 |
| | E | 1404 | 144 | 0 | 483 | 0 | 2031 |
| | Tot. | 3445 | 316 | 1074 | 1312 | 2155 | 8302 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 AM Ref D1 |
|---|---|
| 1/1 | 713 |
| ½ (with short) | 1318(In) 714(Out) |
| 1/3 (short) | 604 |
| 2/1 | 1768 |
| 2/2 | 1677 |
| 3/1 | 92 |
| 3/2 | 188 |
| 3/3 | 567 |
| 4/1 | 811 |
| 4/2 | 878 |
| 4/3 | 1909 |
| 5/1 | 128 |
| 5/2 | 188 |
| 6/1 | 817 |
| 6/2 | 1403 |
| 6/3 | 1909 |
| 7/1 | 1055 |
| 7/2 | 986 |
| 7/3 | 220 |
| 8/1 | 1168 |
| 8/2 | 941 |
| 8/3 | 1003 |
| 9/1 | 837 |
| 9/2 | 237 |
| 10/1 (with short) | 57(In) 22(Out) |
| 10/2 (short) | 35 |
| 11/1 | 754 |
| 11/2 (with short) | 1033(In) 809(Out) |
| 11/3 (short) | 224 |
| 12/1 | 1312 |
| 13/1 | 1551 |
| 13/2 | 1812 |
| 13/3 | 224 |
| 14/1 | 1178 |
| 14/2 | 977 |
| 15/1 (with short) | 733(In) 369(Out) |
| 15/2 (short) | 364 |
| 15/3 | 96 |
| 16/1 | 1178 |
| 16/2 | 977 |

## Lane Saturation Flows

| Junction: M1 Junction 15 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (M1 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1980 | 1980 |
| 1/2 (M1 Southbound Offslip) | 3.65 | 0.00 | N | Arm 2 Left | Inf | 96.8 % | 2120 | 2120 |
| | | | | Arm 3 Ahead | Inf | 3.2 % | | |
| 1/3 (M1 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (A45 Northbound Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (A45 Northbound Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 5 Left | Inf | 4.4 % | 1980 | 1980 |
| | | | | Arm 6 Ahead | Inf | 95.6 % | | |
| 4/2 (A45 Southbound) | 3.65 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/3 (A45 Southbound) | 3.65 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 5/1 (Saxon Avenue Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (Saxon Avenue Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (M1 Southbound Circulatory Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 7/2 (M1 Southbound Circulatory Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 7/3 (M1 Southbound Circulatory Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/1 (M1 Northbound Circulatory Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 (M1 Northbound Circulatory Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/3 (M1 Northbound Circulatory Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 (M1 Southbound Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (M1 Southbound Onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (Saxon Avenue Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 (Saxon Avenue Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | 3.65 | 0.00 | Y | Arm 12 Left | Inf | 19.1 % | 1980 | 1980 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (M1 Northbound Offslip) | | | | Arm 13 Ahead | Inf | 80.9 % | | |
| 11/2<br>(M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm 13 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 11/3<br>(M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm 13 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1<br>(Toucan Crossing) | 3.80 | 0.00 | Y | Arm 16 Ahead | Inf | 100.0 % | 1995 | 1995 |
| 14/2<br>(Toucan Crossing) | 3.80 | 0.00 | Y | Arm 16 Ahead | Inf | 100.0 % | 1995 | 1995 |
| 15/1<br>(A508 Northampton Rd Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2<br>(A508 Northampton Rd Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/3<br>(A508 Northampton Rd Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 2: '2031 PM Ref D1'** (FG2: '2031 D1 Ref PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | Tot. |
| Origin | A | 153 | 88 | 972 | 922 | 1206 | 3341 |
| | B | 26 | 0 | 133 | 14 | 89 | 262 |
| | C | 1399 | 33 | 0 | 99 | 0 | 1531 |
| | D | 639 | 3 | 35 | 0 | 279 | 956 |
| | E | 1256 | 100 | 0 | 266 | 0 | 1622 |
| | Tot. | 3473 | 224 | 1140 | 1301 | 1574 | 7712 |

## Traffic Lane Flows

| Lane | Scenario 2: 2031 PM Ref D1 |
|---|---|
| 1/1 | 609 |
| ½ (with short) | 1013(In) 656(Out) |
| 1/3 (short) | 357 |
| 2/1 | 1722 |
| 2/2 | 1751 |
| 3/1 | 28 |
| 3/2 | 108 |
| 3/3 | 301 |
| 4/1 | 953 |
| 4/2 | 1029 |
| 4/3 | 1359 |
| 5/1 | 116 |
| 5/2 | 108 |
| 6/1 | 882 |
| 6/2 | 1313 |
| 6/3 | 1359 |
| 7/1 | 1113 |
| 7/2 | 1104 |
| 7/3 | 71 |
| 8/1 | 1202 |
| 8/2 | 724 |
| 8/3 | 750 |
| 9/1 | 1015 |
| 9/2 | 125 |
| 10/1 (with short) | 262(In) 147(Out) |
| 10/2 (short) | 115 |
| 11/1 | 649 |
| 11/2 (with short) | 882(In) 699(Out) |
| 11/3 (short) | 183 |
| 12/1 | 1301 |
| 13/1 | 1274 |
| 13/2 | 1449 |
| 13/3 | 183 |
| 14/1 | 850 |
| 14/2 | 724 |
| 15/1 (with short) | 918(In) 459(Out) |
| 15/2 (short) | 459 |
| 15/3 | 38 |
| 16/1 | 850 |
| 16/2 | 724 |

## Lane Saturation Flows

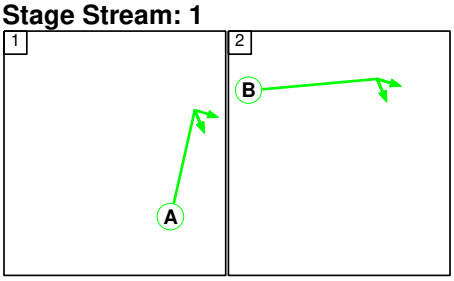
| Junction: M1 Junction 15 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 (M1 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1980 | 1980 |
| 1/2 (M1 Southbound Offslip) | 3.65 | 0.00 | N | Arm 2 Left | Inf | 98.6 % | 2120 | 2120 |
| | | | | Arm 3 Ahead | Inf | 1.4 % | | |
| 1/3 (M1 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (A45 Northbound Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (A45 Northbound Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 5 Left | Inf | 9.2 % | 1980 | 1980 |
| | | | | Arm 6 Ahead | Inf | 90.8 % | | |
| 4/2 (A45 Southbound) | 3.65 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/3 (A45 Southbound) | 3.65 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 5/1 (Saxon Avenue Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (Saxon Avenue Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (M1 Southbound Circulatory Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 7/2 (M1 Southbound Circulatory Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 7/3 (M1 Southbound Circulatory Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/1 (M1 Northbound Circulatory Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 (M1 Northbound Circulatory Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/3 (M1 Northbound Circulatory Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 (M1 Southbound Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 (M1 Southbound Onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (Saxon Avenue Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 (Saxon Avenue Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | 3.65 | 0.00 | Y | Arm 12 Left | Inf | 15.3 % | 1980 | 1980 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (M1 Northbound Offslip) | | | | Arm 13 Ahead | Inf | 84.7 % | | |
| 11/2<br>(M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm 13 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 11/3<br>(M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm 13 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1<br>(Toucan Crossing) | 3.80 | 0.00 | Y | Arm 16 Ahead | Inf | 100.0 % | 1995 | 1995 |
| 14/2<br>(Toucan Crossing) | 3.80 | 0.00 | Y | Arm 16 Ahead | Inf | 100.0 % | 1995 | 1995 |
| 15/1<br>(A508 Northampton Rd Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2<br>(A508 Northampton Rd Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/3<br>(A508 Northampton Rd Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

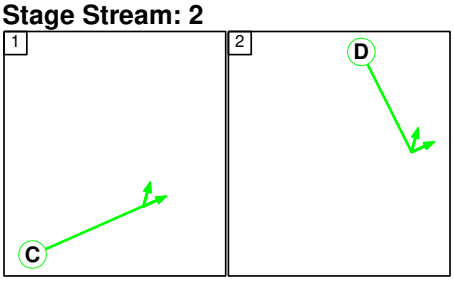
**Scenario 1: '2031 AM Ref D1'** (FG1: '2031 D1 Ref AM Peak', Plan 1: 'Network Control Plan 1')
**C1 - Eastside Controller**

## Stage Sequence Diagram

**Stage Stream: 1**




**Stage Stream: 2**




## Stage Timings

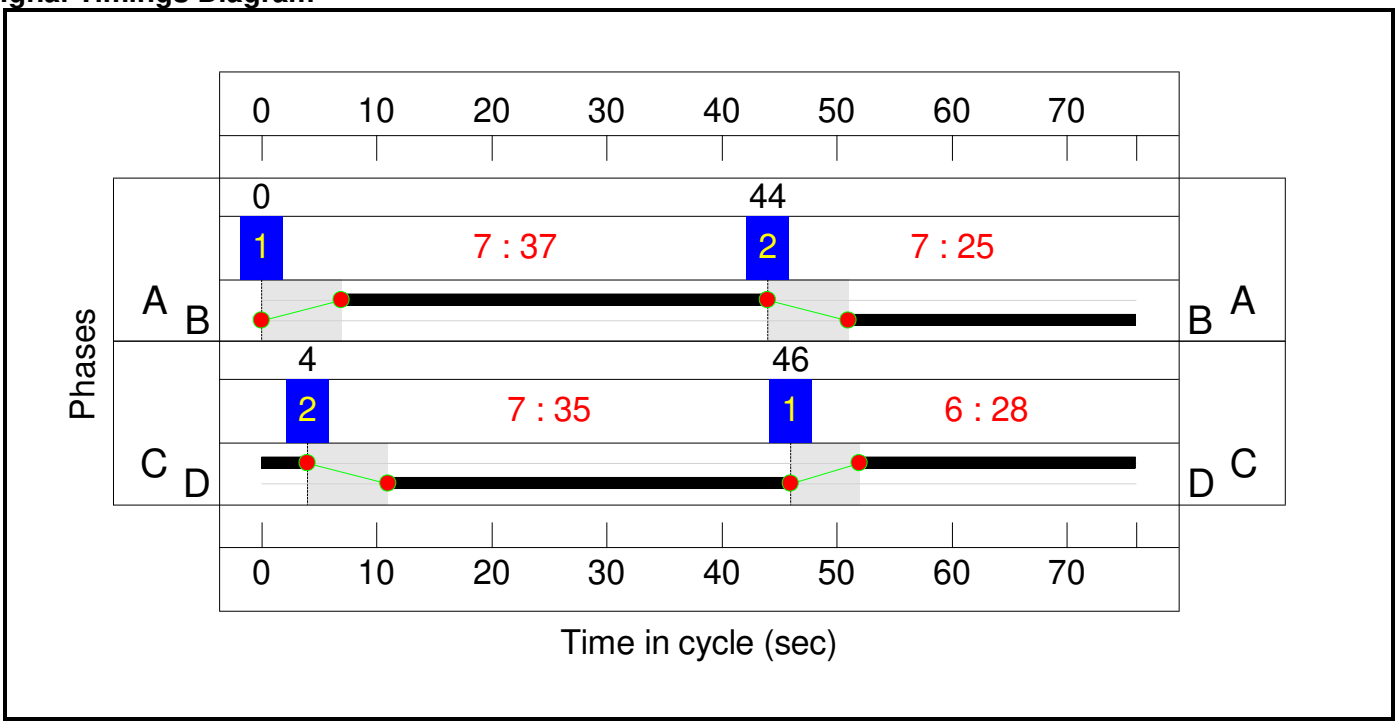
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 25 |
| Change Point | 0 | 44 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 28 | 35 |
| Change Point | 46 | 4 |

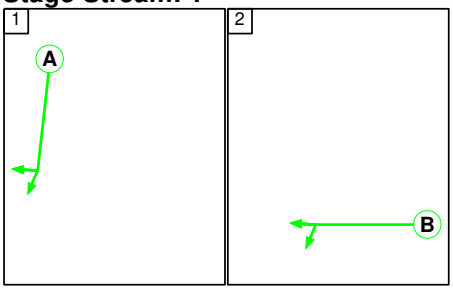
## Signal Timings Diagram



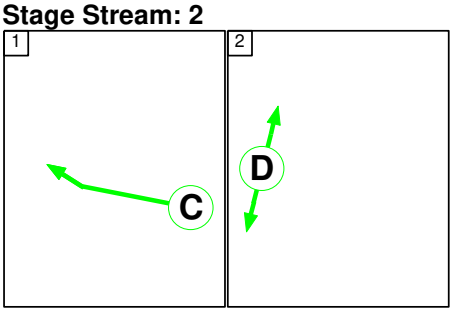

**C2 - Westside Controller**

## Stage Sequence Diagram

**Stage Stream: 1**




**Stage Stream: 2**




## Stage Timings

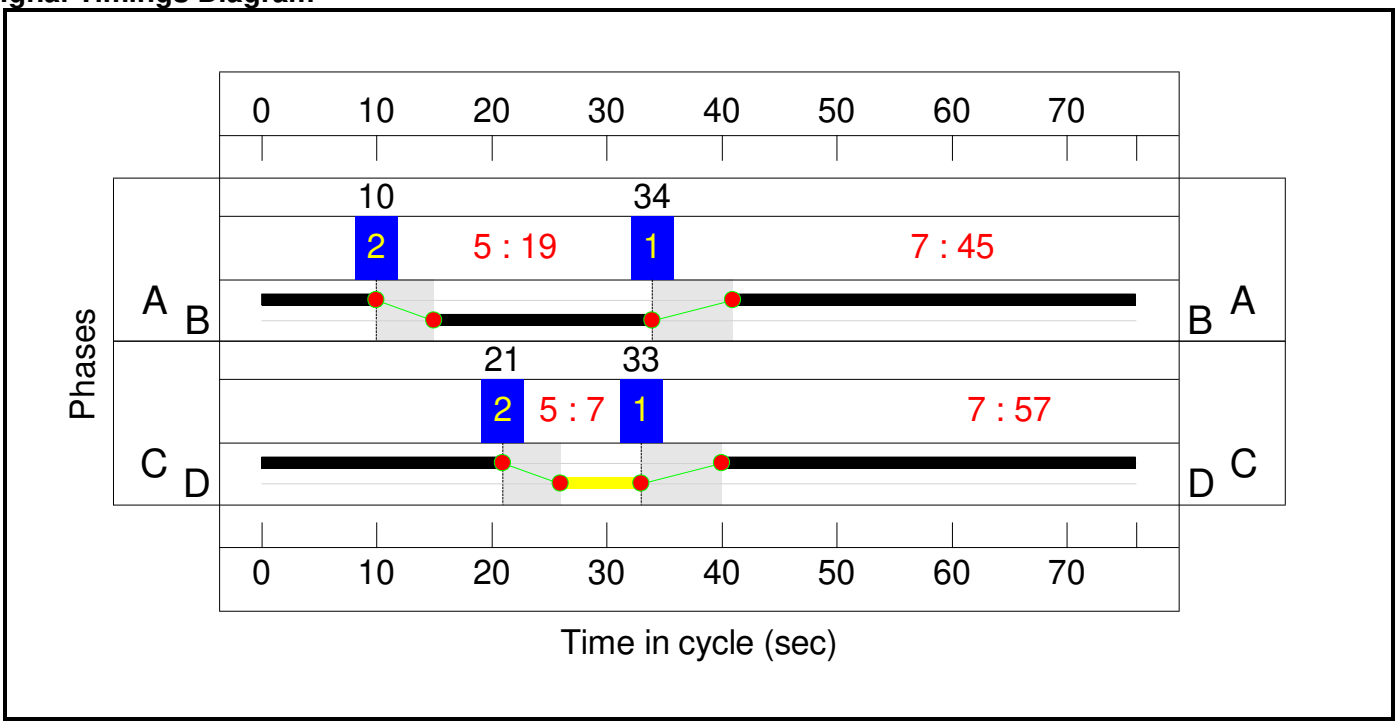
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 45 | 19 |
| Change Point | 34 | 10 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 57 | 7 |
| Change Point | 33 | 21 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | M1 Southbound Offslip Left | U | 1:2 | N/A | C1:C | | 1 | 28 | - | 713 | 1980 | 756 | 94.4% |
| 1/2+1/3 | M1 Southbound Offslip Left Ahead | U | 1:2 | N/A | C1:C | | 1 | 28 | - | 1318 | 2120:1980 | 736+623 | 97.0 : 97.0% |
| 3/1 | Ahead | U | 1:1 | N/A | C1:B | | 1 | 25 | - | 92 | 1900 | 650 | 11.7% |
| 3/2 | Ahead | U | 1:1 | N/A | C1:B | | 1 | 25 | - | 188 | 1900 | 650 | 26.5% |
| 3/3 | Right | U | 1:1 | N/A | C1:B | | 1 | 25 | - | 567 | 1900 | 650 | 87.2% |
| 4/1 | A45 Southbound Left Ahead | U | 1:1 | N/A | C1:A | | 1 | 37 | - | 811 | 1980 | 990 | 81.9% |
| 4/2 | A45 Southbound | U | 1:1 | N/A | C1:A | | 1 | 37 | - | 878 | 2120 | 1060 | 82.8% |
| 4/3 | A45 Southbound | U | 1:1 | N/A | C1:A | | 1 | 37 | - | 1909 | 2120 | 1060 | 180.1% |
| 7/1 | M1 Southbound Circulatory | U | 1:2 | N/A | C1:D | | 1 | 35 | - | 1055 | 2000 | 947 | 77.9% |
| 7/2 | M1 Southbound Circulatory | U | 1:2 | N/A | C1:D | | 1 | 35 | - | 986 | 2000 | 947 | 84.9% |
| 7/3 | M1 Southbound Circulatory Right | U | 1:2 | N/A | C1:D | | 1 | 35 | - | 220 | 2000 | 947 | 19.9% |
| 8/1 | M1 Northbound Circulatory Ahead | U | 2:1 | N/A | C2:A | | 1 | 45 | - | 1168 | 2000 | 1211 | 96.5% |
| 8/2 | M1 Northbound Circulatory Right | U | 2:1 | N/A | C2:A | | 1 | 45 | - | 941 | 2000 | 1211 | 43.3% |
| 8/3 | M1 Northbound Circulatory Right | U | 2:1 | N/A | C2:A | | 1 | 45 | - | 1003 | 2000 | 1211 | 47.2% |
| 10/1+10/2 | Saxon Avenue Left Left2 | O | N/A | N/A | - | | - | - | - | 57 | Inf : Inf | 181+288 | 12.1 : 12.1% |
| 11/1 | M1 Northbound Offslip Left Ahead | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 754 | 1980 | 521 | 144.7% |
| 11/2+11/3 | M1 Northbound Offslip Ahead | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 1033 | 2120:2120 | 558+154 | 145.0 : 145.0% |
| 14/1 | Toucan Crossing Ahead | U | 2:2 | N/A | C2:C | | 1 | 57 | - | 1178 | 1995 | 1523 | 52.1% |
| 14/2 | Toucan Crossing Ahead | U | 2:2 | N/A | C2:C | | 1 | 57 | - | 977 | 1995 | 1523 | 35.8% |
| 15/1+15/2 | A508 Northampton Rd Ahead Left | O | N/A | N/A | - | | - | - | - | 733 | Inf : Inf | 369+369 | 100.1 : 98.8% |
| 15/3 | A508 Northampton Rd | O | N/A | N/A | - | | - | - | - | 96 | Inf | 373 | 25.7% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 713 | 713 | - | - | - | 4.5 | 6.4 | - | 10.9 | 55.2 | 14.5 | 6.4 | 20.9 |
| 1/2+1/3 | 1318 | 1318 | - | - | - | 7.9 | 10.6 | - | 18.4 (10.1+8.4) | 50.3 (50.8:49.8) | 14.4 | 10.6 | 24.9 |
| 3/1 | 76 | 76 | - | - | - | 0.3 | 0.1 | - | 0.4 | 17.8 | 1.2 | 0.1 | 1.3 |
| 3/2 | 172 | 172 | - | - | - | 0.4 | 0.2 | - | 0.6 | 13.1 | 1.4 | 0.2 | 1.6 |
| 3/3 | 567 | 567 | - | - | - | 1.7 | 3.2 | - | 4.9 | 30.8 | 3.2 | 3.2 | 6.3 |
| 4/1 | 811 | 811 | - | - | - | 3.6 | 2.2 | - | 5.8 | 25.9 | 14.4 | 2.2 | 16.6 |
| 4/2 | 878 | 878 | - | - | - | 4.0 | 2.4 | - | 6.3 | 25.9 | 15.6 | 2.4 | 18.0 |
| 4/3 | 1909 | 1060 | - | - | - | 42.0 | 425.6 | - | 467.6 | 881.8 | 60.8 | 425.6 | 486.4 |
| 7/1 | 738 | 738 | - | - | - | 3.0 | 1.7 | - | 4.8 | 23.3 | 7.0 | 1.7 | 8.7 |
| 7/2 | 804 | 804 | - | - | - | 1.7 | 2.7 | - | 4.4 | 19.7 | 7.0 | 2.7 | 9.7 |
| 7/3 | 188 | 188 | - | - | - | 0.4 | 0.1 | - | 0.5 | 9.2 | 1.5 | 0.1 | 1.6 |
| 8/1 | 1168 | 1168 | - | - | - | 5.1 | 9.5 | - | 14.6 | 45.1 | 21.1 | 9.5 | 30.6 |
| 8/2 | 524 | 524 | - | - | - | 1.3 | 0.4 | - | 1.7 | 11.5 | 10.7 | 0.4 | 11.1 |
| 8/3 | 571 | 571 | - | - | - | 1.5 | 0.4 | - | 1.9 | 12.0 | 11.5 | 0.4 | 12.0 |
| 10/1+10/2 | 57 | 57 | 114 | 0 | 0 | 0.2 | 0.1 | - | 0.2 (0.1+0.1) | 14.2 (14.1:14.3) | 0.4 | 0.1 | 0.4 |
| 11/1 | 754 | 521 | - | - | - | 14.0 | 118.1 | - | 132.1 | 630.5 | 20.8 | 118.1 | 138.9 |
| 11/2+11/3 | 1033 | 724 | - | - | - | 17.3 | 161.9 | - | 179.2 (141.8+37.3) | 624.4 (631.2:599.7) | 27.3 | 161.9 | 189.2 |
| 14/1 | 794 | 794 | - | - | - | 0.1 | 0.5 | - | 0.6 | 2.7 | 0.3 | 0.5 | 0.8 |
| 14/2 | 545 | 545 | - | - | - | 0.0 | 0.3 | - | 0.3 | 1.9 | 0.0 | 0.3 | 0.3 |
| 15/1+15/2 | 733 | 733 | 1465 | 0 | 0 | 3.4 | 12.8 | - | 16.2 (8.3+7.9) | 79.6 (80.9:78.2) | 21.0 | 12.8 | 33.8 |
| 15/3 | 96 | 96 | 96 | 0 | 0 | 0.2 | 0.2 | - | 0.3 | 12.3 | 0.6 | 0.2 | 0.8 |

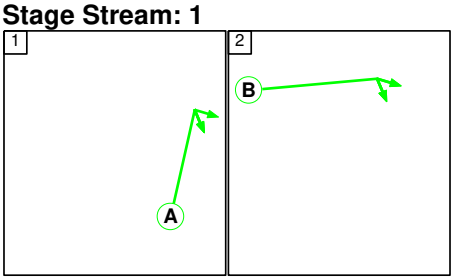
| | | | | |
|---|---|---|---|---|
| C1 - Eastside Controller | Stream: 1 PRC for Signalled Lanes (%): | -100.1 | Total Delay for Signalled Lanes (pcuHr): | 485.60 |
| C1 - Eastside Controller | Stream: 2 PRC for Signalled Lanes (%): | -7.7 | Total Delay for Signalled Lanes (pcuHr): | 39.01 |
| C2 - Westside Controller | Stream: 1 PRC for Signalled Lanes (%): | -61.1 | Total Delay for Signalled Lanes (pcuHr): | 329.44 |
| C2 - Westside Controller | Stream: 2 PRC for Signalled Lanes (%): | 72.6 | Total Delay for Signalled Lanes (pcuHr): | 0.89 |
| | PRC Over All Lanes (%): | -100.1 | Total Delay Over All Lanes(pcuHr): | 871.69 |

| | |
|---|---|
| Cycle Time (s): | 76 |
| Cycle Time (s): | 76 |
| Cycle Time (s): | 76 |
| Cycle Time (s): | 76 |

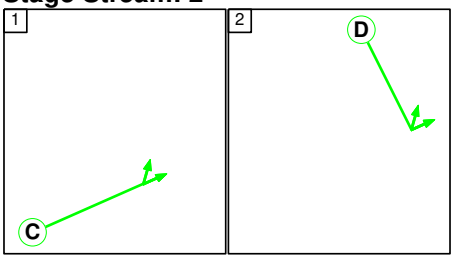
**Scenario 2: '2031 PM Ref D1'** (FG2: '2031 D1 Ref PM Peak', Plan 1: 'Network Control Plan 1')
**C1 - Eastside Controller**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

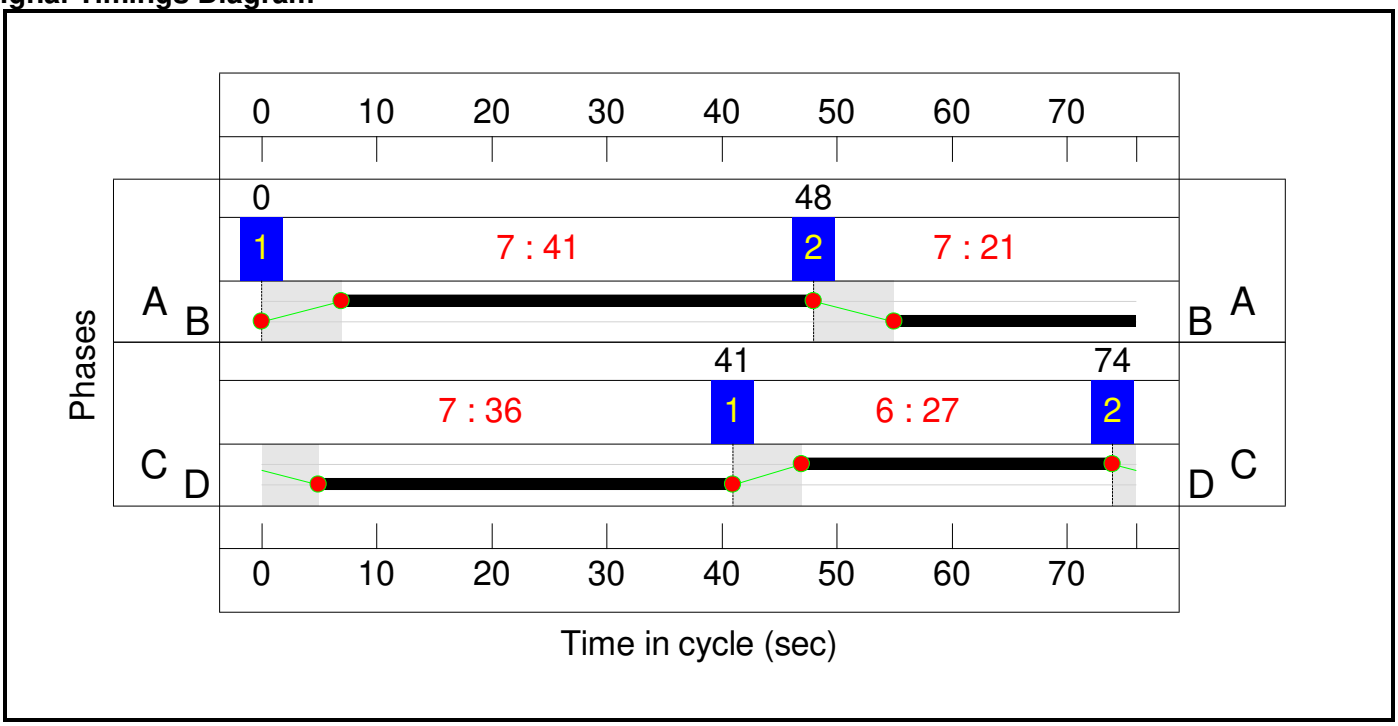
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 21 |
| Change Point | 0 | 48 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 27 | 36 |
| Change Point | 41 | 74 |

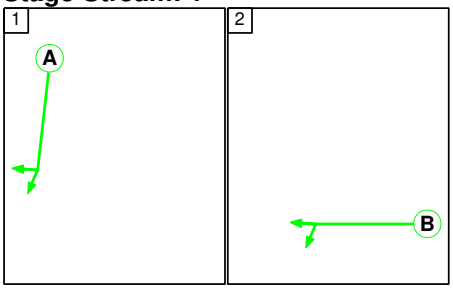
## Signal Timings Diagram



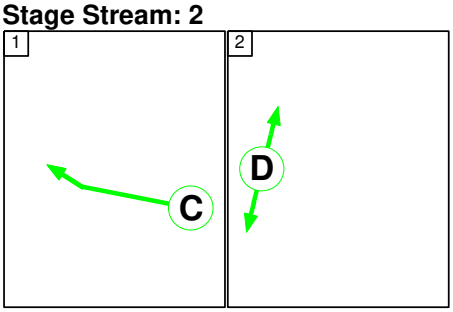
**C2 - Westside Controller**

## Stage Sequence Diagram

### Stage Stream: 1




### Stage Stream: 2




## Stage Timings

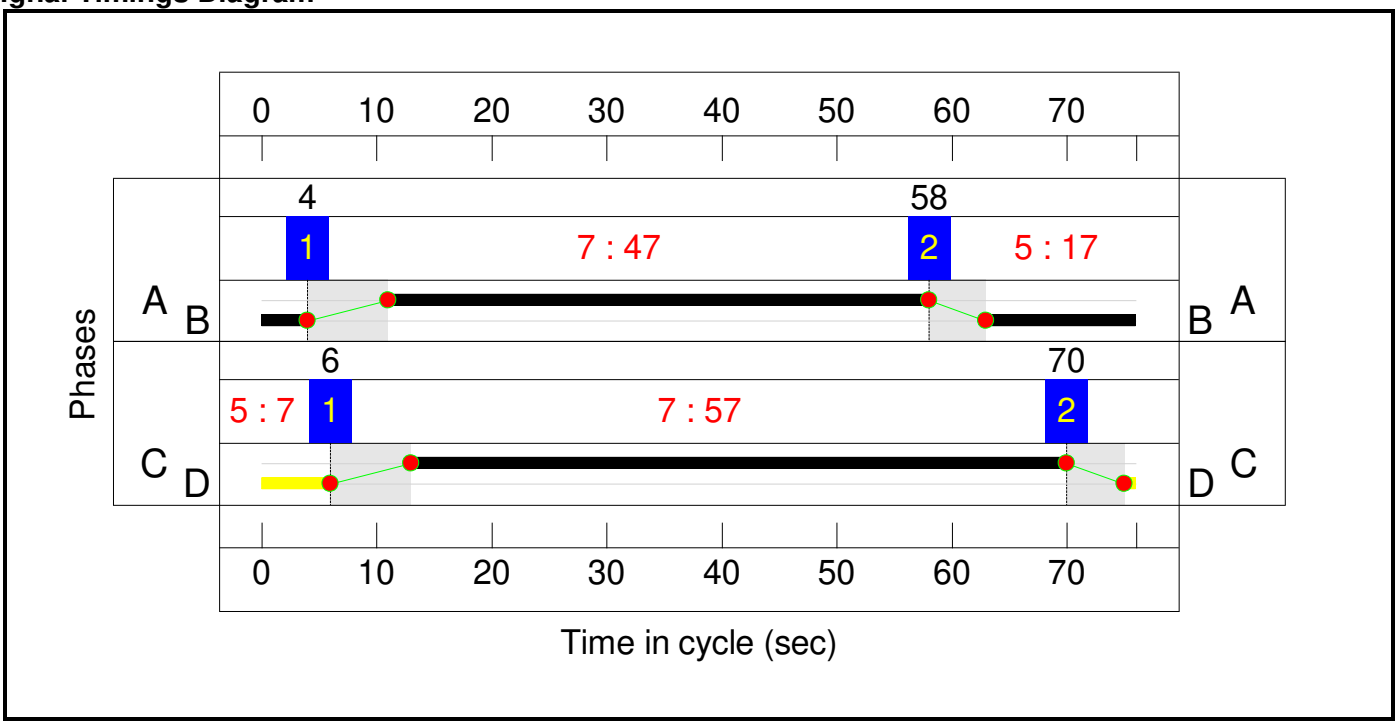
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 47 | 17 |
| Change Point | 4 | 58 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 57 | 7 |
| Change Point | 6 | 70 |

## Signal Timings Diagram



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | M1 Southbound Offslip Left | U | 1:2 | N/A | C1:C | | 1 | 27 | - | 609 | 1980 | 729 | 83.5% |
| 1/2+1/3 | M1 Southbound Offslip Left | U | 1:2 | N/A | C1:C | | 1 | 27 | - | 1013 | 2120:1980 | 734+399 | 89.4 : 89.4% |
| 3/1 | Ahead | U | 1:1 | N/A | C1:B | | 1 | 21 | - | 28 | 1900 | 550 | 4.6% |
| 3/2 | Ahead | U | 1:1 | N/A | C1:B | | 1 | 21 | - | 108 | 1900 | 550 | 19.1% |
| 3/3 | Right | U | 1:1 | N/A | C1:B | | 1 | 21 | - | 301 | 1900 | 550 | 54.7% |
| 4/1 | A45 Southbound Left | U | 1:1 | N/A | C1:A | | 1 | 41 | - | 953 | 1980 | 1094 | 87.1% |
| 4/2 | A45 Southbound | U | 1:1 | N/A | C1:A | | 1 | 41 | - | 1029 | 2120 | 1172 | 87.8% |
| 4/3 | A45 Southbound | U | 1:1 | N/A | C1:A | | 1 | 41 | - | 1359 | 2120 | 1172 | 116.0% |
| 7/1 | M1 Southbound Circulatory | U | 1:2 | N/A | C1:D | | 1 | 36 | - | 1113 | 2000 | 974 | 84.7% |
| 7/2 | M1 Southbound Circulatory | U | 1:2 | N/A | C1:D | | 1 | 36 | - | 1104 | 2000 | 974 | 84.0% |
| 7/3 | M1 Southbound Circulatory Right | U | 1:2 | N/A | C1:D | | 1 | 36 | - | 71 | 2000 | 974 | 6.7% |
| 8/1 | M1 Northbound Circulatory Ahead | U | 2:1 | N/A | C2:A | | 1 | 47 | - | 1202 | 2000 | 1263 | 95.2% |
| 8/2 | M1 Northbound Circulatory Right | U | 2:1 | N/A | C2:A | | 1 | 47 | - | 724 | 2000 | 1263 | 49.9% |
| 8/3 | M1 Northbound Circulatory Right | U | 2:1 | N/A | C2:A | | 1 | 47 | - | 750 | 2000 | 1263 | 52.0% |
| 10/1+10/2 | Saxon Avenue Left Left2 | O | N/A | N/A | - | | - | - | - | 262 | Inf : Inf | 306+239 | 48.1 : 48.1% |
| 11/1 | M1 Northbound Offslip Left Ahead | U | 2:1 | N/A | C2:B | | 1 | 17 | - | 649 | 1980 | 469 | 138.4% |
| 11/2+11/3 | M1 Northbound Offslip Ahead | U | 2:1 | N/A | C2:B | | 1 | 17 | - | 882 | 2120:2120 | 502+131 | 139.2 : 139.2% |
| 14/1 | Toucan Crossing Ahead | U | 2:2 | N/A | C2:C | | 1 | 57 | - | 850 | 1995 | 1523 | 46.0% |
| 14/2 | Toucan Crossing Ahead | U | 2:2 | N/A | C2:C | | 1 | 57 | - | 724 | 1995 | 1523 | 41.4% |
| 15/1+15/2 | A508 Northampton Rd Ahead Left | O | N/A | N/A | - | | - | - | - | 918 | Inf : Inf | 332+332 | 138.4 : 138.4% |
| 15/3 | A508 Northampton Rd Ahead | O | N/A | N/A | - | | - | - | - | 38 | Inf | 343 | 11.1% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 609 | 609 | - | - | - | 3.7 | 2.4 | - | 6.1 | 36.3 | 11.7 | 2.4 | 14.1 |
| 1/2+1/3 | 1013 | 1013 | - | - | - | 5.8 | 4.0 | - | 9.8 (6.6+3.2) | 34.8 (36.0:32.6) | 12.6 | 4.0 | 16.5 |
| 3/1 | 25 | 25 | - | - | - | 0.2 | 0.0 | - | 0.2 | 31.2 | 0.4 | 0.0 | 0.4 |
| 3/2 | 105 | 105 | - | - | - | 0.2 | 0.1 | - | 0.4 | 12.2 | 1.1 | 0.1 | 1.2 |
| 3/3 | 301 | 301 | - | - | - | 0.7 | 0.6 | - | 1.3 | 15.6 | 5.5 | 0.6 | 6.1 |
| 4/1 | 953 | 953 | - | - | - | 3.9 | 3.2 | - | 7.1 | 26.9 | 17.2 | 3.2 | 20.4 |
| 4/2 | 1029 | 1029 | - | - | - | 4.2 | 3.4 | - | 7.7 | 26.8 | 18.9 | 3.4 | 22.3 |
| 4/3 | 1359 | 1172 | - | - | - | 12.8 | 97.2 | - | 110.0 | 291.4 | 32.6 | 97.2 | 129.9 |
| 7/1 | 825 | 825 | - | - | - | 3.0 | 2.7 | - | 5.7 | 25.0 | 16.5 | 2.7 | 19.2 |
| 7/2 | 818 | 818 | - | - | - | 2.7 | 2.6 | - | 5.3 | 23.2 | 15.7 | 2.6 | 18.2 |
| 7/3 | 65 | 65 | - | - | - | 0.1 | 0.0 | - | 0.2 | 8.6 | 0.7 | 0.0 | 0.8 |
| 8/1 | 1202 | 1202 | - | - | - | 1.9 | 7.8 | - | 9.7 | 29.1 | 21.7 | 7.8 | 29.5 |
| 8/2 | 630 | 630 | - | - | - | 0.8 | 0.5 | - | 1.3 | 7.4 | 2.6 | 0.5 | 3.1 |
| 8/3 | 656 | 656 | - | - | - | 0.9 | 0.5 | - | 1.5 | 8.0 | 3.1 | 0.5 | 3.6 |
| 10/1+10/2 | 262 | 262 | 524 | 0 | 0 | 1.0 | 0.5 | - | 1.5 (0.8+0.6) | 20.3 (20.6:19.8) | 2.6 | 0.5 | 3.1 |
| 11/1 | 649 | 469 | - | - | - | 13.0 | 91.8 | - | 104.7 | 581.0 | 20.0 | 91.8 | 111.8 |
| 11/2+11/3 | 882 | 654 | - | - | - | 14.2 | 126.0 | - | 140.2 (112.8+27.4) | 572.1 (580.7:539.3) | 21.2 | 126.0 | 147.2 |
| 14/1 | 700 | 700 | - | - | - | 0.0 | 0.4 | - | 0.4 | 2.2 | 0.0 | 0.4 | 0.4 |
| 14/2 | 630 | 630 | - | - | - | 0.0 | 0.4 | - | 0.4 | 2.0 | 0.0 | 0.4 | 0.4 |
| 15/1+15/2 | 918 | 663 | 1327 | 0 | 0 | 14.0 | 129.1 | - | 143.1 (71.6+71.6) | 561.4 (561.4:561.4) | 29.1 | 129.1 | 158.2 |
| 15/3 | 38 | 38 | 38 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 8.3 | 0.2 | 0.1 | 0.3 |

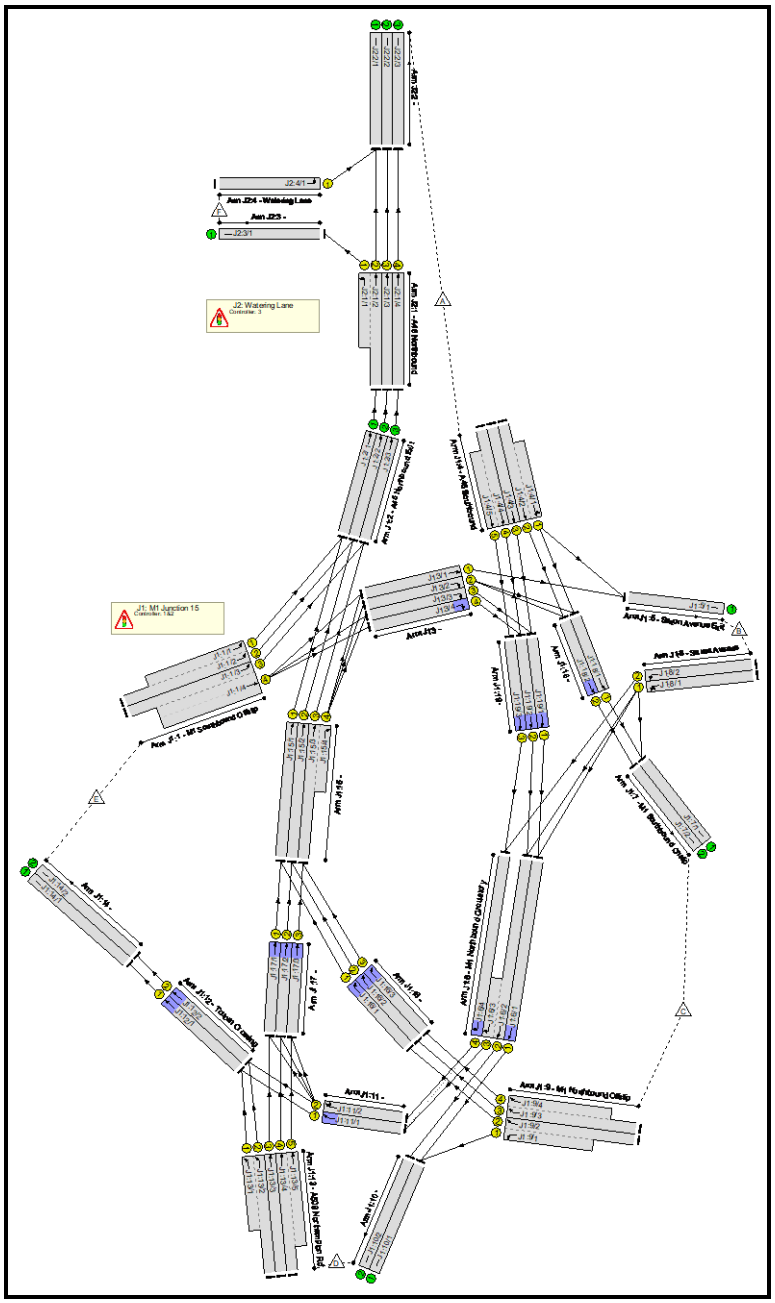
| | | | | | |
|---|---|---|---|---|---|
| C1 - Eastside Controller | Stream: 1 PRC for Signalled Lanes (%): | -28.9 | Total Delay for Signalled Lanes (pcuHr): | 126.65 | Cycle Time (s): 76 |
| C1 - Eastside Controller | Stream: 2 PRC for Signalled Lanes (%): | 0.7 | Total Delay for Signalled Lanes (pcuHr): | 27.09 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 1 PRC for Signalled Lanes (%): | -54.7 | Total Delay for Signalled Lanes (pcuHr): | 257.40 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 2 PRC for Signalled Lanes (%): | 95.8 | Total Delay for Signalled Lanes (pcuHr): | 0.78 | Cycle Time (s): 76 |
| | PRC Over All Lanes (%): | -54.7 | Total Delay Over All Lanes(pcuHr): | 556.63 | |

## Full Input Data And Results

### User and Project Details

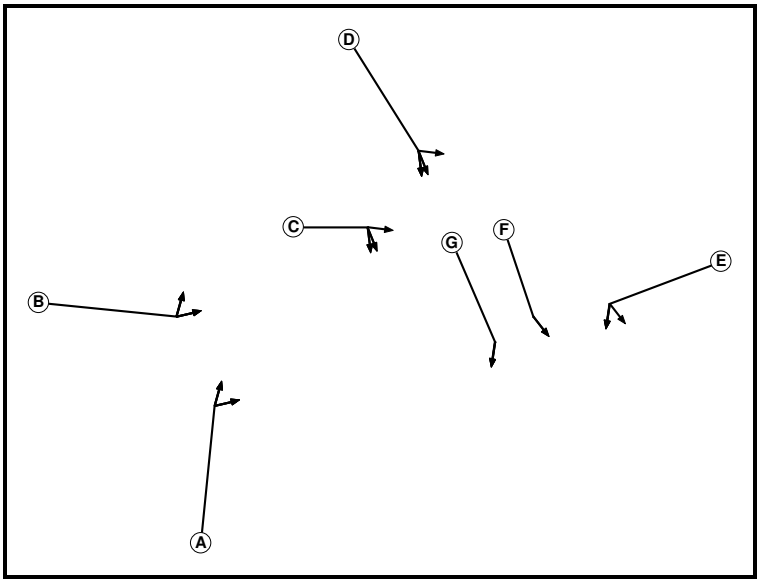
| | |
|---|---|
| **Project:** | **Northampton Gateway** |
| **Title:** | **M1 Junction 15 Mitigation Model - J3 Cumulative Impact** |
| **Location:** | northampton |
| **File name:** | 180321 M1 Junction 15 Mitigation with RC.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House, Nottingham |
| **Notes:** | Includes the Watering Lane junction |

### Network Layout Diagram



**C1 - Eastside Controller**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |
| E | Traffic | 3 | | 7 | 7 |
| F | Traffic | 3 | | 7 | 7 |
| G | Traffic | 3 | | 7 | 7 |

## Phase Intergreens Matrix

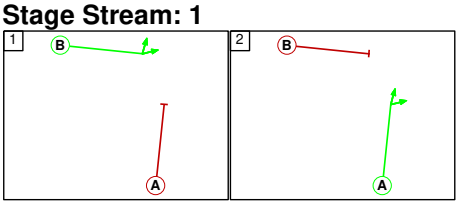
| | | Starting Phase | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G |
| Terminating Phase | A | | 6 | - | - | - | - | - |
| | B | 6 | | - | - | - | - | - |
| | C | - | - | | 6 | - | - | - |
| | D | - | - | 6 | | - | - | - |
| | E | - | - | - | - | | 8 | 8 |
| | F | - | - | - | - | 6 | | - |
| | G | - | - | - | - | 6 | - | |

## Phases in Stage

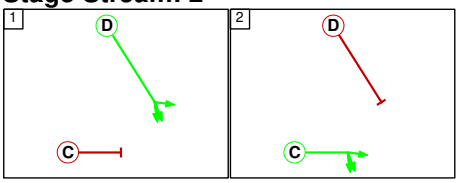
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | B |
| 1 | 2 | A |
| 2 | 1 | D |
| 2 | 2 | C |
| 3 | 1 | E |
| 3 | 2 | F G |

## Stage Diagram

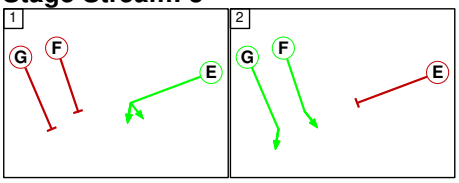
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Prohibited Stage Change

### Stage Stream: 1

| From Stage \ To Stage | 1 | 2 |
|---|---|---|
| 1 | | 6 |
| 2 | 6 | |

### Stage Stream: 2

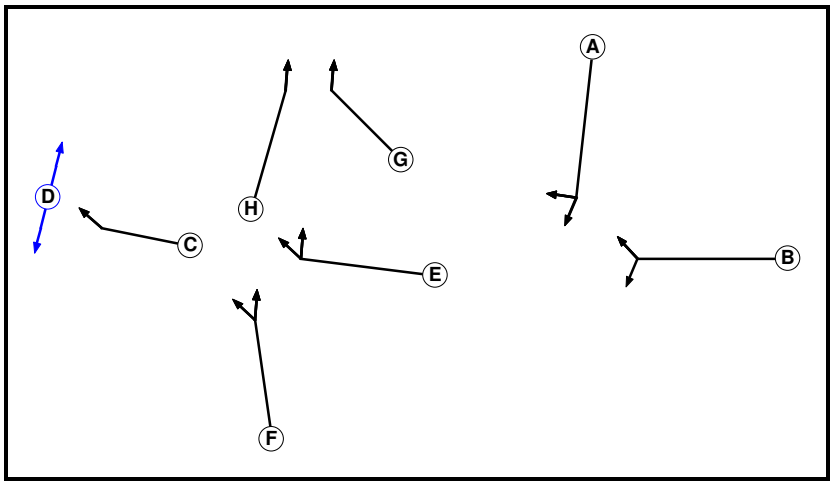
| From Stage \ To Stage | 1 | 2 |
|---|---|---|
| 1 | | 6 |
| 2 | 6 | |

### Stage Stream: 3

| From Stage \ To Stage | 1 | 2 |
|---|---|---|
| 1 | | 8 |
| 2 | 6 | |

**C2 - Westside Controller**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Pedestrian | 2 | | 7 | 7 |
| E | Traffic | 3 | | 7 | 7 |
| F | Traffic | 3 | | 7 | 7 |
| G | Traffic | 4 | | 7 | 7 |
| H | Traffic | 4 | | 7 | 7 |

## Phase Intergreens Matrix

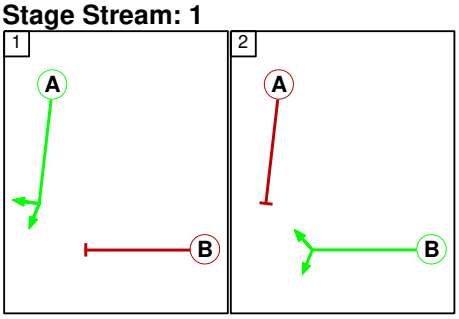
| | | Starting Phase | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H |
| Terminating Phase | A | | 5 | - | - | - | - | - | - |
| | B | 7 | | - | - | - | - | - | - |
| | C | - | - | | 5 | - | - | - | - |
| | D | - | - | 7 | | - | - | - | - |
| | E | - | - | - | - | | 5 | - | - |
| | F | - | - | - | - | 7 | | - | - |
| | G | - | - | - | - | - | - | | 5 |
| | H | - | - | - | - | - | - | 7 | |

## Phases in Stage

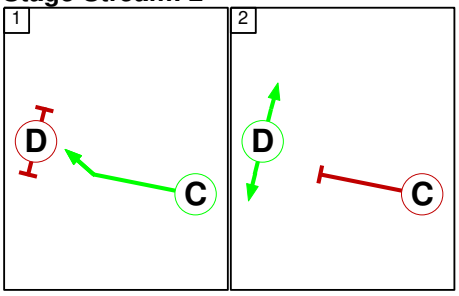
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |
| 3 | 1 | E |
| 3 | 2 | F |
| 4 | 1 | H |
| 4 | 2 | G |

## Stage Diagram

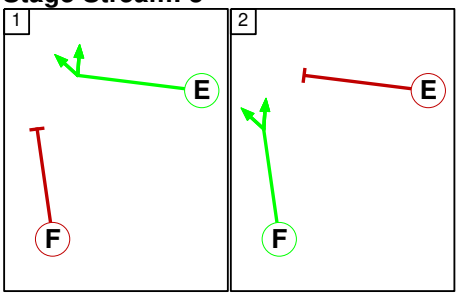
### Stage Stream: 1



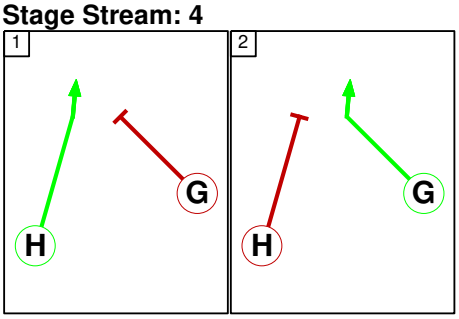

### Stage Stream: 2



**Stage Stream: 3**




**Stage Stream: 4**




## Prohibited Stage Change

**Stage Stream: 1**

| | To Stage | | |
|---|---|---|---|
| From Stage | | 1 | 2 |
| | 1 | | 5 |
| | 2 | 7 | |

**Stage Stream: 2**

| | To Stage | | |
|---|---|---|---|
| From Stage | | 1 | 2 |
| | 1 | | 5 |
| | 2 | 7 | |

**Stage Stream: 3**

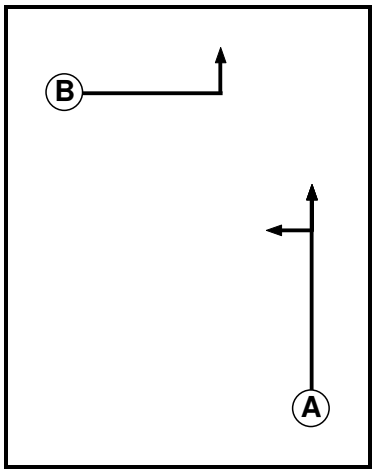
| | To Stage | | |
|---|---|---|---|
| From Stage | | 1 | 2 |
| | 1 | | 5 |
| | 2 | 7 | |

**Stage Stream: 4**

| | To Stage | | |
|---|---|---|---|
| From Stage | | 1 | 2 |
| | 1 | | 7 |
| | 2 | 5 | |

**C3 - Watering Lane**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|
| A | Traffic | | 7 | 7 |
| B | Traffic | | 7 | 7 |

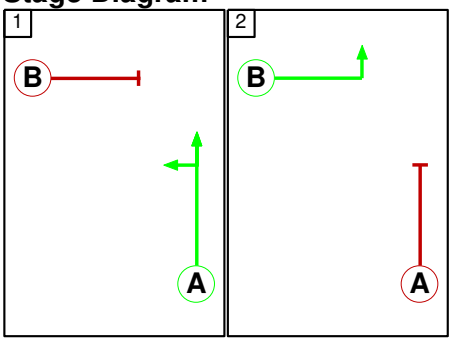
## Phase Intergreens Matrix

| | Starting Phase | | |
|---|---|---|---|
| Terminating Phase | | A | B |
| | A | | 6 |
| | B | 6 | |

## Phases in Stage

| Stage No. | Phases in Stage |
|---|---|
| 1 | A |
| 2 | B |

## Stage Diagram




## Prohibited Stage Change

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

## Lane Input Data

| Junction: J1: M1 Junction 15 | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| J1:1/1 (M1 Southbound Offslip) | U | B | 2 | 3 | 18.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:2 Left | Inf |
| J1:1/2 (M1 Southbound Offslip) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:2 Left | Inf |
| J1:1/3 (M1 Southbound Offslip) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:2 Left | Inf |
| J1:1/4 (M1 Southbound Offslip) | U | B | 2 | 3 | 18.0 | User | 4000 | - | - | - | - | - |
| J1:2/1 (A45 Northbound Exit) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| J1:2/2 (A45 Northbound Exit) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| J1:2/3 (A45 Northbound Exit) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| J1:3/1 | U | C | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| J1:3/2 | U | C | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| J1:3/3 | U | C | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| J1:3/4 | U | C | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| J1:4/1 (A45 Southbound) | U | D | 2 | 3 | 33.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:5 Left | Inf |
| | | | | | | | | | | | Arm J1:18 Ahead | Inf |
| J1:4/2 (A45 Southbound) | U | D | 2 | 3 | 67.8 | Geom | - | 3.65 | 0.00 | N | Arm J1:18 Ahead | Inf |
| J1:4/3 (A45 Southbound) | U | D | 2 | 3 | 67.8 | Geom | - | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf |
| J1:4/4 (A45 Southbound) | U | D | 2 | 3 | 67.8 | Geom | - | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf |
| J1:4/5 (A45 Southbound) | U | D | 2 | 3 | 33.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf |
| J1:5/1 (Saxon Avenue Exit) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| J1:6/1 (M1 Northbound Circulatory) | U | A | 2 | 3 | 33.0 | User | 2000 | - | - | - | - | - |
| J1:6/2 (M1 Northbound Circulatory) | U | A | 2 | 3 | 33.0 | User | 2000 | - | - | - | - | - |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J1:6/3 (M1 Northbound Circulatory) | U | A | 2 | 3 | 8.0 | User | 2000 | - | - | - | - | - |
| J1:6/4 (M1 Northbound Circulatory) | U | A | 2 | 3 | 33.0 | User | 2000 | - | - | - | - | - |
| J1:7/1 (M1 Southbound Onslip) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| J1:7/2 (M1 Southbound Onslip) | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| J1:8/1 (Saxon Avenue) | U | E | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm J1:6 Left | Inf |
| | | | | | | | | | | | Arm J1:7 Left | 30.00 |
| J1:8/2 (Saxon Avenue) | U | E | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm J1:6 Left | Inf |
| J1:9/1 (M1 Northbound Offslip) | U | B | 2 | 3 | 12.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:10 Left | Inf |
| J1:9/2 (M1 Northbound Offslip) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf |
| J1:9/3 (M1 Northbound Offslip) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf |
| J1:9/4 (M1 Northbound Offslip) | U | B | 2 | 3 | 40.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf |
| J1:10/1 | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| J1:10/2 | U | | 2 | 3 | 4.3 | Inf | - | - | - | - | - | - |
| J1:11/1 | U | E | 2 | 3 | 17.4 | User | 1900 | - | - | - | - | - |
| J1:11/2 | U | E | 2 | 3 | 17.4 | User | 1900 | - | - | - | - | - |
| J1:12/1 (Toucan Crossing) | U | C | 2 | 3 | 4.3 | Geom | - | 3.80 | 0.00 | Y | Arm J1:14 Ahead | Inf |
| J1:12/2 (Toucan Crossing) | U | C | 2 | 3 | 4.3 | Geom | - | 3.80 | 0.00 | Y | Arm J1:14 Ahead | Inf |
| J1:13/1 (A508 Northampton Rd) | U | F | 2 | 3 | 10.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:12 Ahead | Inf |
| J1:13/2 (A508 Northampton Rd) | U | F | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:12 Ahead | Inf |
| J1:13/3 (A508 Northampton Rd) | U | F | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf |
| J1:13/4 (A508 Northampton Rd) | U | F | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J1:13/5 (A508 Northampton Rd) | U | F | 2 | 3 | 20.0 | Geom | - | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf |
| J1:14/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:14/2 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:15/1 | U | A | 2 | 3 | 26.1 | User | 2000 | - | - | - | - | - |
| J1:15/2 | U | A | 2 | 3 | 26.1 | User | 2000 | - | - | - | - | - |
| J1:15/3 | U | A | 2 | 3 | 26.1 | User | 2000 | - | - | - | - | - |
| J1:15/4 | U | A | 2 | 3 | 9.0 | User | 2000 | - | - | - | - | - |
| J1:16/1 | U | G | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:16/2 | U | G | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:16/3 | U | G | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:17/1 | U | H | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:17/2 | U | H | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:17/3 | U | H | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:18/1 | U | F | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:18/2 | U | F | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:19/1 | U | G | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:19/2 | U | G | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |
| J1:19/3 | U | G | 2 | 3 | 13.9 | User | 2000 | - | - | - | - | - |

**Junction: J2: Watering Lane**

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| J2:1/1 (A45 Northbound) | U | A | 2 | 3 | 10.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:3 Left | Inf |
| J2:1/2 (A45 Northbound) | U | A | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm J2:2 Ahead | Inf |
| J2:1/3 (A45 Northbound) | U | A | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm J2:2 Ahead | Inf |
| J2:1/4 (A45 Northbound) | U | A | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:2 Ahead | Inf |
| J2:2/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:2/2 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:2/3 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:3/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:4/1 (Watering Lane) | U | B | 2 | 3 | 60.0 | Geom | - | 4.00 | 0.00 | Y | Arm J2:2 Left | 30.00 |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 3: '2031 J3 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 4: '2031 J3 PM Peak' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 J3 Dev AM'** (FG3: '2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | Tot. |
| Origin | A | 0 | 32 | 881 | 1111 | 1700 | 49 | 3773 |
| | B | 38 | 0 | 20 | 22 | 65 | 5 | 150 |
| | C | 1481 | 95 | 0 | 314 | 0 | 208 | 2098 |
| | D | 553 | 22 | 228 | 41 | 610 | 77 | 1531 |
| | E | 1317 | 147 | 0 | 792 | 0 | 185 | 2441 |
| | F | 302 | 0 | 0 | 0 | 0 | 0 | 302 |
| | Tot. | 3691 | 296 | 1129 | 2280 | 2375 | 524 | 10295 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 J3 Dev AM |
|---|---|
| **Junction: J1: M1 Junction 15** | |
| J1:1/1 (short) | 513 |
| J1:1/2 (with short) | 938(In) 425(Out) |
| J1:1/3 (with short) | 1503(In) 564(Out) |
| J1:1/4 (short) | 939 |
| J1:2/1 | 1443 |
| J1:2/2 | 1309 |
| J1:2/3 | 1161 |
| J1:3/1 | 264 |
| J1:3/2 | 228 |
| J1:3/3 | 323 |
| J1:3/4 | 510 |
| J1:4/1 (short) | 457 |
| J1:4/2 (with short) | 913(In) 456(Out) |
| J1:4/3 | 937 |
| J1:4/4 (with short) | 1923(In) 956(Out) |
| J1:4/5 (short) | 967 |
| J1:5/1 | 296 |
| J1:6/1 | 1260 |
| J1:6/2 (with short) | 1496(In) 706(Out) |
| J1:6/3 (short) | 790 |
| J1:6/4 | 1067 |
| J1:7/1 | 560 |
| J1:7/2 | 569 |
| J1:8/1 | 50 |
| J1:8/2 | 100 |
| J1:9/1 (short) | 314 |
| J1:9/2 (with short) | 908(In) 594(Out) |
| J1:9/3 (with short) | 1190(In) 594(Out) |
| J1:9/4 (short) | 596 |
| J1:10/1 | 1574 |
| J1:10/2 | 706 |
| J1:11/1 | 912 |
| J1:11/2 | 945 |

| | |
|---|---|
| J1:12/1 | 1205 |
| J1:12/2 | 1170 |
| J1:13/1 (short) | 293 |
| J1:13/2 (with short) | 610(In)<br>317(Out) |
| J1:13/3 | 282 |
| J1:13/4 (with short) | 639(In)<br>290(Out) |
| J1:13/5 (short) | 349 |
| J1:14/1 | 1205 |
| J1:14/2 | 1170 |
| J1:15/1 | 930 |
| J1:15/2 | 884 |
| J1:15/3 (with short) | 983(In)<br>597(Out) |
| J1:15/4 (short) | 386 |
| J1:16/1 | 594 |
| J1:16/2 | 594 |
| J1:16/3 | 596 |
| J1:17/1 | 336 |
| J1:17/2 | 290 |
| J1:17/3 | 387 |
| J1:18/1 | 540 |
| J1:18/2 | 569 |
| J1:19/1 | 1260 |
| J1:19/2 | 1466 |
| J1:19/3 | 967 |
| **Junction: J2: Watering Lane** | |
| J2:1/1 (short) | 524 |
| J2:1/2 (with short) | 1443(In)<br>919(Out) |
| J2:1/3 | 1309 |
| J2:1/4 | 1161 |
| J2:2/1 | 1221 |
| J2:2/2 | 1309 |
| J2:2/3 | 1161 |
| J2:3/1 | 524 |
| J2:4/1 | 302 |

## Lane Saturation Flows

| Junction: J1: M1 Junction 15 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 Southbound Offslip) | 3.65 | 0.00 | Y | Arm J1:2 Left | Inf | 100.0 % | 1980 | 1980 |
| J1:1/2 (M1 Southbound Offslip) | 3.65 | 0.00 | N | Arm J1:2 Left | Inf | 100.0 % | 2120 | 2120 |
| J1:1/3 (M1 Southbound Offslip) | 3.65 | 0.00 | N | Arm J1:2 Left | Inf | 100.0 % | 2120 | 2120 |
| J1:1/4 (M1 Southbound Offslip Lane 4) | This lane uses a directly entered Saturation Flow | | | | | | 4000 | 4000 |
| J1:2/1 (A45 Northbound Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:2/2 (A45 Northbound Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:2/3 (A45 Northbound Exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A45 Southbound) | 3.65 | 0.00 | Y | Arm J1:5 Left | Inf | 7.0 % | 1980 | 1980 |
| | | | | Arm J1:18 Ahead | Inf | 93.0 % | | |
| J1:4/2 (A45 Southbound) | 3.65 | 0.00 | N | Arm J1:18 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:4/3 (A45 Southbound) | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:4/4 (A45 Southbound) | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:4/5 (A45 Southbound) | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:5/1 (Saxon Avenue Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:6/1 (M1 Northbound Circulatory Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:6/2 (M1 Northbound Circulatory Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:6/3 (M1 Northbound Circulatory Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:6/4 (M1 Northbound Circulatory Lane 4) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:7/1 (M1 Southbound Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/2 (M1 Southbound Onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:8/1 | 3.50 | 0.00 | Y | Arm J1:6 Left | Inf | 60.0 % | 1926 | 1926 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (Saxon Avenue) | | | | Arm J1:7 Left | 30.00 | 40.0 % | | |
| J1:8/2 (Saxon Avenue) | 3.50 | 0.00 | N | Arm J1:6 Left | Inf | 100.0 % | 2105 | 2105 |
| J1:9/1 (M1 Northbound Offslip) | 3.65 | 0.00 | Y | Arm J1:10 Left | Inf | 100.0 % | 1980 | 1980 |
| J1:9/2 (M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:9/3 (M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:9/4 (M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:11/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:12/1 (Toucan Crossing) | 3.80 | 0.00 | Y | Arm J1:14 Ahead | Inf | 100.0 % | 1995 | 1995 |
| J1:12/2 (Toucan Crossing) | 3.80 | 0.00 | Y | Arm J1:14 Ahead | Inf | 100.0 % | 1995 | 1995 |
| J1:13/1 (A508 Northampton Rd) | 3.65 | 0.00 | Y | Arm J1:12 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:13/2 (A508 Northampton Rd) | 3.65 | 0.00 | Y | Arm J1:12 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:13/3 (A508 Northampton Rd) | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:13/4 (A508 Northampton Rd) | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:13/5 (A508 Northampton Rd) | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:14/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:15/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:15/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:15/3 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:15/4 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:16/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:16/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:16/3 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:17/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:17/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:17/3 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:18/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:18/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:19/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:19/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:19/3 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

| Junction: J2: Watering Lane | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J2:1/1 (A45 Northbound) | 3.65 | 0.00 | Y | Arm J2:3 Left | Inf | 100.0 % | 1980 | 1980 |
| J2:1/2 (A45 Northbound) | 3.65 | 0.00 | N | Arm J2:2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J2:1/3 (A45 Northbound) | 3.65 | 0.00 | N | Arm J2:2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J2:1/4 (A45 Northbound) | 3.65 | 0.00 | Y | Arm J2:2 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J2:2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:4/1 (Watering Lane) | 4.00 | 0.00 | Y | Arm J2:2 Left | 30.00 | 100.0 % | 1919 | 1919 |

**Scenario 2: '2031 J3 Dev PM'** (FG4: '2031 J3 PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | Tot. |
| Origin | A | 0 | 88 | 988 | 1199 | 1302 | 100 | 3677 |
| | B | 30 | 0 | 116 | 20 | 97 | 2 | 265 |
| | C | 1321 | 24 | 0 | 199 | 0 | 61 | 1605 |
| | D | 1299 | 15 | 197 | 42 | 626 | 60 | 2239 |
| | E | 999 | 104 | 0 | 548 | 0 | 47 | 1698 |
| | F | 131 | 0 | 0 | 0 | 0 | 0 | 131 |
| | Tot. | 3780 | 231 | 1301 | 2008 | 2025 | 270 | 9615 |

## Traffic Lane Flows

| Lane | Scenario 2: 2031 J3 Dev PM |
|---|---|
| **Junction: J1: M1 Junction 15** | |
| J1:1/1 (short) | 376 |
| J1:1/2 (with short) | 655(In)<br>279(Out) |
| J1:1/3 (with short) | 1043(In)<br>391(Out) |
| J1:1/4 (short) | 652 |
| J1:2/1 | 1419 |
| J1:2/2 | 1296 |
| J1:2/3 | 1204 |
| J1:3/1 | 143 |
| J1:3/2 | 197 |
| J1:3/3 | 268 |
| J1:3/4 | 322 |
| J1:4/1 (short) | 544 |
| J1:4/2 (with short) | 1076(In)<br>532(Out) |
| J1:4/3 | 776 |
| J1:4/4 (with short) | 1825(In)<br>838(Out) |
| J1:4/5 (short) | 987 |
| J1:5/1 | 231 |
| J1:6/1 | 1055 |
| J1:6/2 (with short) | 1173(In)<br>754(Out) |
| J1:6/3 (short) | 419 |
| J1:6/4 | 1112 |
| J1:7/1 | 678 |
| J1:7/2 | 623 |
| J1:8/1 | 140 |
| J1:8/2 | 125 |
| J1:9/1 (short) | 199 |
| J1:9/2 (with short) | 638(In)<br>439(Out) |
| J1:9/3 (with short) | 967(In)<br>456(Out) |
| J1:9/4 (short) | 511 |
| J1:10/1 | 1254 |
| J1:10/2 | 754 |
| J1:11/1 | 734 |
| J1:11/2 | 797 |

| | |
|---|---|
| J1:12/1 | 1036 |
| J1:12/2 | 989 |
| J1:13/1 (short) | 302 |
| J1:13/2 (with short) | 626(In)<br>324(Out) |
| J1:13/3 | 499 |
| J1:13/4 (with short) | 1114(In)<br>542(Out) |
| J1:13/5 (short) | 572 |
| J1:14/1 | 1036 |
| J1:14/2 | 989 |
| J1:15/1 | 1043 |
| J1:15/2 | 1017 |
| J1:15/3 (with short) | 1091(In)<br>813(Out) |
| J1:15/4 (short) | 278 |
| J1:16/1 | 439 |
| J1:16/2 | 456 |
| J1:16/3 | 511 |
| J1:17/1 | 604 |
| J1:17/2 | 561 |
| J1:17/3 | 580 |
| J1:18/1 | 562 |
| J1:18/2 | 623 |
| J1:19/1 | 1044 |
| J1:19/2 | 1160 |
| J1:19/3 | 987 |
| **Junction: J2: Watering Lane** | |
| J2:1/1 (short) | 270 |
| J2:1/2 (with short) | 1419(In)<br>1149(Out) |
| J2:1/3 | 1296 |
| J2:1/4 | 1204 |
| J2:2/1 | 1280 |
| J2:2/2 | 1296 |
| J2:2/3 | 1204 |
| J2:3/1 | 270 |
| J2:4/1 | 131 |

## Lane Saturation Flows

| Junction: J1: M1 Junction 15 | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (M1 Southbound Offslip) | 3.65 | 0.00 | Y | Arm J1:2 Left | Inf | 100.0 % | 1980 | 1980 |
| J1:1/2 (M1 Southbound Offslip) | 3.65 | 0.00 | N | Arm J1:2 Left | Inf | 100.0 % | 2120 | 2120 |
| J1:1/3 (M1 Southbound Offslip) | 3.65 | 0.00 | N | Arm J1:2 Left | Inf | 100.0 % | 2120 | 2120 |
| J1:1/4 (M1 Southbound Offslip Lane 4) | This lane uses a directly entered Saturation Flow | | | | | | 4000 | 4000 |
| J1:2/1 (A45 Northbound Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:2/2 (A45 Northbound Exit Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:2/3 (A45 Northbound Exit Lane 3) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:3/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:4/1 (A45 Southbound) | 3.65 | 0.00 | Y | Arm J1:5 Left | Inf | 16.2 % | 1980 | 1980 |
| | | | | Arm J1:18 Ahead | Inf | 83.8 % | | |
| J1:4/2 (A45 Southbound) | 3.65 | 0.00 | N | Arm J1:18 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:4/3 (A45 Southbound) | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:4/4 (A45 Southbound) | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:4/5 (A45 Southbound) | 3.65 | 0.00 | N | Arm J1:19 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:5/1 (Saxon Avenue Exit Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:6/1 (M1 Northbound Circulatory Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:6/2 (M1 Northbound Circulatory Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:6/3 (M1 Northbound Circulatory Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:6/4 (M1 Northbound Circulatory Lane 4) | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:7/1 (M1 Southbound Onslip Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/2 (M1 Southbound Onslip Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:8/1 | 3.50 | 0.00 | Y | Arm J1:6 Left | Inf | 17.1 % | 1887 | 1887 |

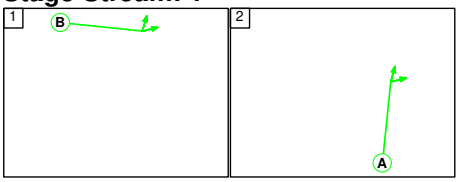
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| (Saxon Avenue) | | | | Arm J1:7 Left | 30.00 | 82.9 % | | |
| J1:8/2 (Saxon Avenue) | 3.50 | 0.00 | N | Arm J1:6 Left | Inf | 100.0 % | 2105 | 2105 |
| J1:9/1 (M1 Northbound Offslip) | 3.65 | 0.00 | Y | Arm J1:10 Left | Inf | 100.0 % | 1980 | 1980 |
| J1:9/2 (M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:9/3 (M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:9/4 (M1 Northbound Offslip) | 3.65 | 0.00 | N | Arm J1:16 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:11/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| J1:12/1 (Toucan Crossing) | 3.80 | 0.00 | Y | Arm J1:14 Ahead | Inf | 100.0 % | 1995 | 1995 |
| J1:12/2 (Toucan Crossing) | 3.80 | 0.00 | Y | Arm J1:14 Ahead | Inf | 100.0 % | 1995 | 1995 |
| J1:13/1 (A508 Northampton Rd) | 3.65 | 0.00 | Y | Arm J1:12 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:13/2 (A508 Northampton Rd) | 3.65 | 0.00 | Y | Arm J1:12 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:13/3 (A508 Northampton Rd) | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:13/4 (A508 Northampton Rd) | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:13/5 (A508 Northampton Rd) | 3.65 | 0.00 | N | Arm J1:17 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J1:14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:14/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:15/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:15/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:15/3 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:15/4 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:16/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:16/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:16/3 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:17/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:17/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:17/3 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:18/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:18/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:19/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:19/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| J1:19/3 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

| Junction: J2: Watering Lane | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J2:1/1 (A45 Northbound) | 3.65 | 0.00 | Y | Arm J2:3 Left | Inf | 100.0 % | 1980 | 1980 |
| J2:1/2 (A45 Northbound) | 3.65 | 0.00 | N | Arm J2:2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J2:1/3 (A45 Northbound) | 3.65 | 0.00 | N | Arm J2:2 Ahead | Inf | 100.0 % | 2120 | 2120 |
| J2:1/4 (A45 Northbound) | 3.65 | 0.00 | Y | Arm J2:2 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J2:2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:4/1 (Watering Lane) | 4.00 | 0.00 | Y | Arm J2:2 Left | 30.00 | 100.0 % | 1919 | 1919 |

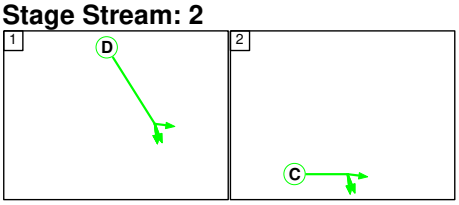
**Scenario 1: '2031 J3 Dev AM'** (FG3: '2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')
**C1 - Eastside Controller**

## Stage Sequence Diagram

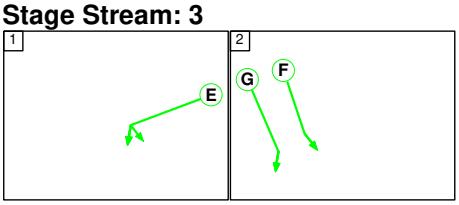
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 19 | 45 |
| Change Point | 42 | 67 |

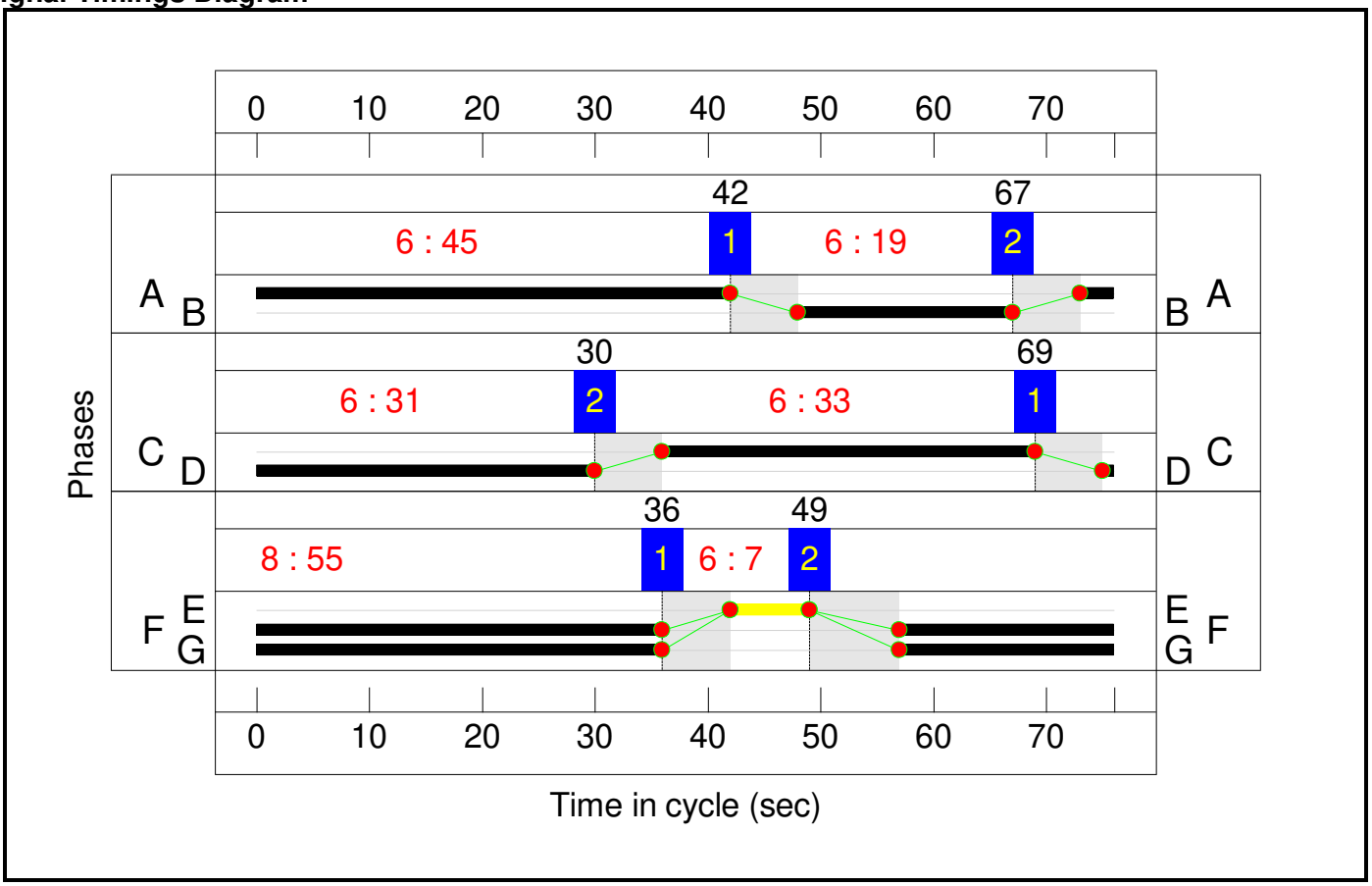
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 33 |
| Change Point | 69 | 30 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 55 |
| Change Point | 36 | 49 |

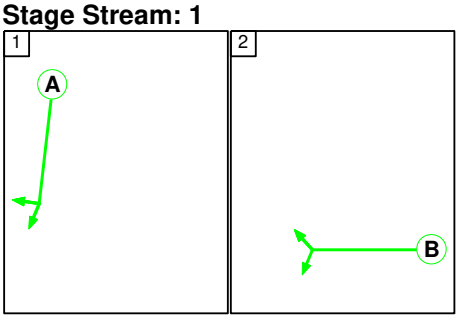
**Signal Timings Diagram**



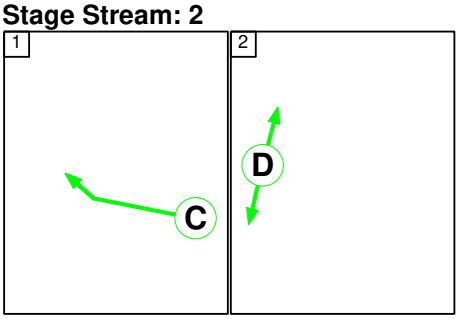

**C2 - Westside Controller**

## Stage Sequence Diagram

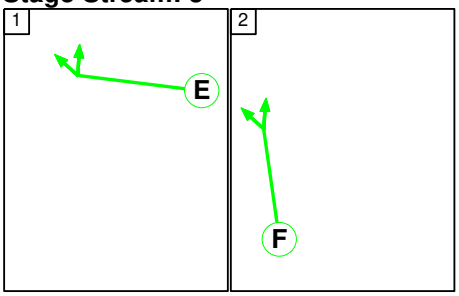
**Stage Stream: 1**



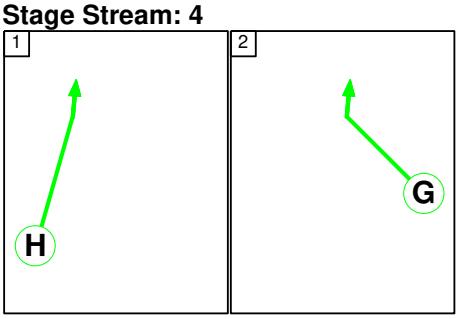

**Stage Stream: 2**



**Stage Stream: 3**




**Stage Stream: 4**




## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 46 | 18 |
| Change Point | 23 | 0 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 57 | 7 |
| Change Point | 24 | 12 |

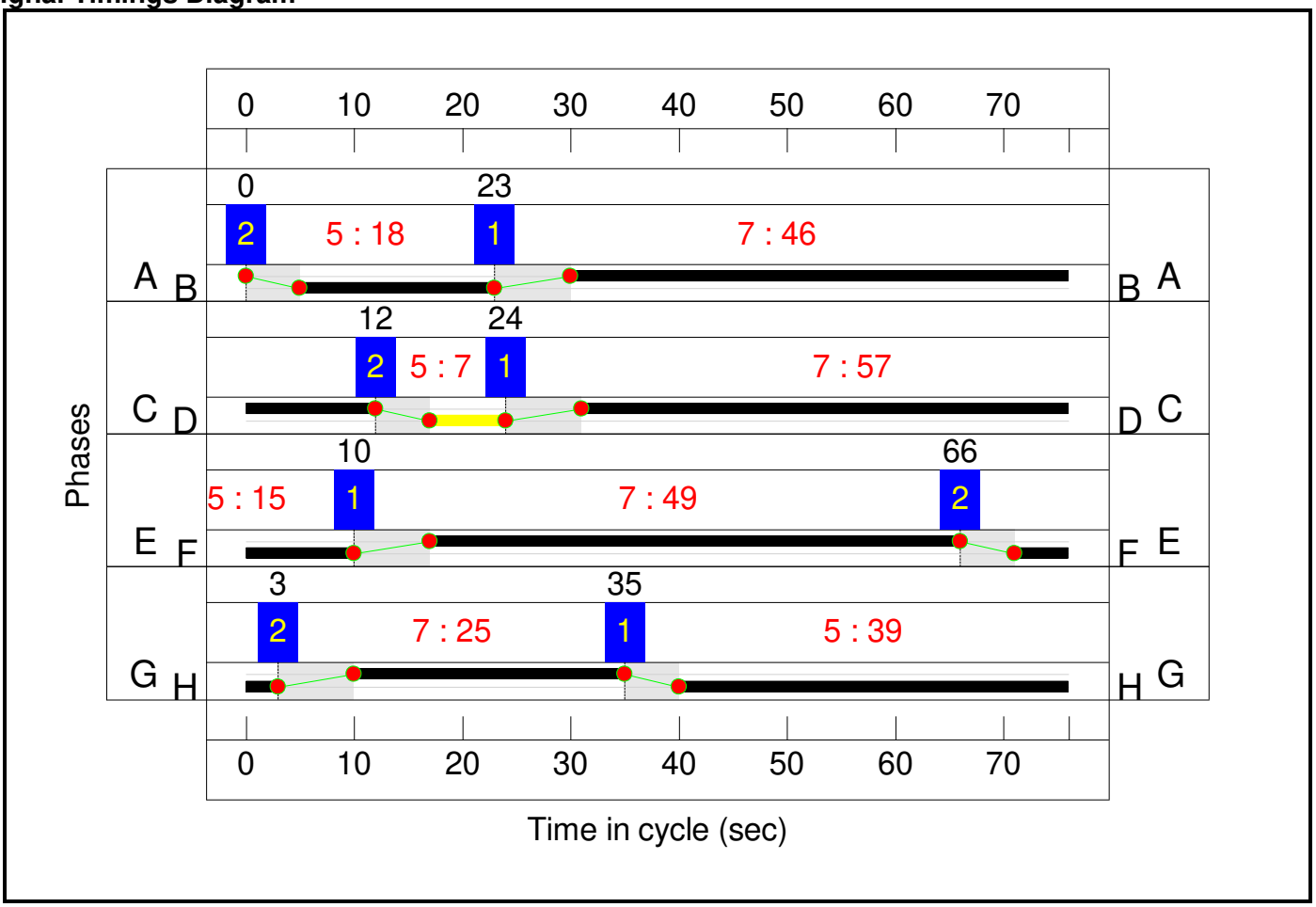
**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 49 | 15 |
| Change Point | 10 | 66 |

**Stage Stream: 4**

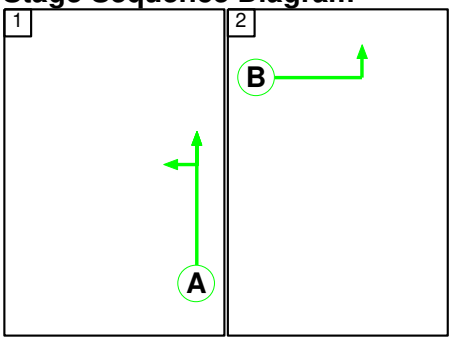
| Stage | 1 | 2 |
|---|---|---|
| Duration | 39 | 25 |
| Change Point | 35 | 3 |

## Signal Timings Diagram




### C3 - Watering Lane

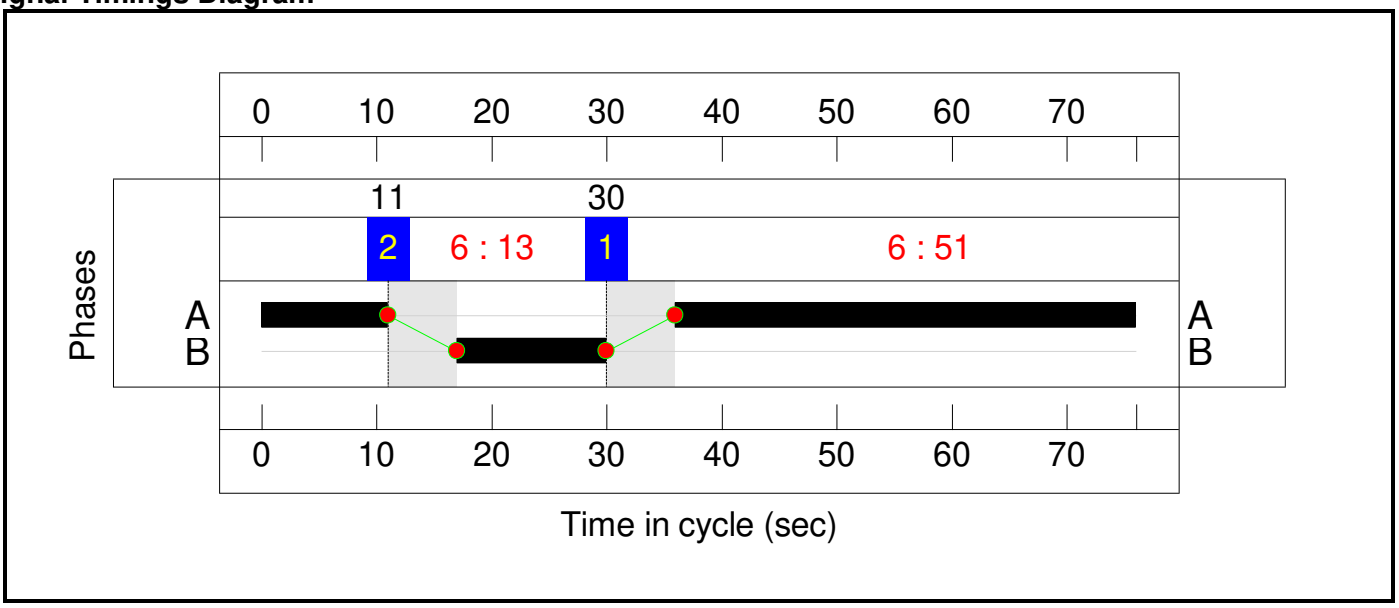
## Stage Sequence Diagram




## Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 51 | 13 |
| Change Point | 30 | 11 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **J1: M1 Junction 15** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **112.5%** |
| 1/2+1/1 | M1 Southbound Offslip Left | U | 1:1 | N/A | C1:B | | 1 | 19 | - | 938 | 2120:1980 | 454+521 | 93.6 : 98.5% |
| 1/3+1/4 | M1 Southbound Offslip Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 19 | - | 1503 | 2120:4000 | 558+1053 | 101.1 : 89.2% |
| 3/1 | Ahead | U | 1:2 | N/A | C1:C | | 1 | 33 | - | 264 | 1900 | 850 | 29.8% |
| 3/2 | Right | U | 1:2 | N/A | C1:C | | 1 | 33 | - | 228 | 1900 | 850 | 26.8% |
| 3/3 | Right | U | 1:2 | N/A | C1:C | | 1 | 33 | - | 323 | 1900 | 850 | 38.0% |
| 3/4 | Right | U | 1:2 | N/A | C1:C | | 1 | 33 | - | 510 | 1900 | 850 | 60.0% |
| 4/2+4/1 | A45 Southbound Left Ahead | U | 1:2 | N/A | C1:D | | 1 | 31 | - | 913 | 2120:1980 | 893+834 | 51.1 : 54.8% |
| 4/3 | A45 Southbound Ahead | U | 1:2 | N/A | C1:D | | 1 | 31 | - | 937 | 2120 | 893 | 105.0% |
| 4/4+4/5 | A45 Southbound Ahead | U | 1:2 | N/A | C1:D | | 1 | 31 | - | 1923 | 2120:2120 | 893+893 | 107.1 : 108.3% |
| 6/1 | M1 Northbound Circulatory Ahead | U | 2:1 | N/A | C2:A | | 1 | 46 | - | 1260 | 2000 | 1237 | 98.3% |
| 6/2+6/3 | M1 Northbound Circulatory Ahead Right | U | 2:1 | N/A | C2:A | | 1 | 46 | - | 1496 | 2000:2000 | 748+838 | 92.8 : 88.1% |
| 6/4 | M1 Northbound Circulatory Right | U | 2:1 | N/A | C2:A | | 1 | 46 | - | 1067 | 2000 | 1237 | 80.3% |
| 8/1 | Saxon Avenue Left Left2 | U | 1:3 | N/A | C1:E | | 1 | 7 | - | 50 | 1926 | 203 | 24.7% |
| 8/2 | Saxon Avenue Left | U | 1:3 | N/A | C1:E | | 1 | 7 | - | 100 | 2105 | 222 | 45.1% |
| 9/2+9/1 | M1 Northbound Offslip Left Ahead | U | 2:1 | N/A | C2:B | | 1 | 18 | - | 908 | 2120:1980 | 530+280 | 112.1 : 112.1% |
| 9/3+9/4 | M1 Northbound Offslip Ahead | U | 2:1 | N/A | C2:B | | 1 | 18 | - | 1190 | 2120:2120 | 530+530 | 112.1 : 112.5% |
| 11/1 | Ahead | U | 2:3 | N/A | C2:E | | 1 | 49 | - | 912 | 1900 | 1250 | 68.1% |
| 11/2 | Ahead Right | U | 2:3 | N/A | C2:E | | 1 | 49 | - | 945 | 1900 | 1250 | 70.4% |
| 12/1 | Toucan Crossing Ahead | U | 2:2 | N/A | C2:C | | 1 | 57 | - | 1205 | 1995 | 1523 | 75.2% |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/2 | Toucan Crossing Ahead | U | 2:2 | N/A | C2:C | | 1 | 57 | - | 1170 | 1995 | 1523 | 72.8% |
| 13/2+13/1 | A508 Northampton Rd Ahead | U | 2:3 | N/A | C2:F | | 1 | 15 | - | 610 | 1980:1980 | 417+406 | 76.0 : 72.1% |
| 13/3 | A508 Northampton Rd Ahead | U | 2:3 | N/A | C2:F | | 1 | 15 | - | 282 | 2120 | 446 | 63.2% |
| 13/4+13/5 | A508 Northampton Rd Ahead | U | 2:3 | N/A | C2:F | | 1 | 15 | - | 639 | 2120:2120 | 446+446 | 65.0 : 78.2% |
| 15/1 | Ahead | U | 1:1 | N/A | C1:A | | 1 | 45 | - | 930 | 2000 | 1211 | 71.2% |
| 15/2 | Ahead | U | 1:1 | N/A | C1:A | | 1 | 45 | - | 884 | 2000 | 1211 | 67.7% |
| 15/3+15/4 | Ahead Right | U | 1:1 | N/A | C1:A | | 1 | 45 | - | 983 | 2000:2000 | 906+586 | 59.8 : 64.1% |
| 16/1 | Right | U | 2:4 | N/A | C2:G | | 1 | 25 | - | 594 | 2000 | 684 | 77.5% |
| 16/2 | Right | U | 2:4 | N/A | C2:G | | 1 | 25 | - | 594 | 2000 | 684 | 77.5% |
| 16/3 | Right | U | 2:4 | N/A | C2:G | | 1 | 25 | - | 596 | 2000 | 684 | 77.5% |
| 17/1 | Ahead | U | 2:4 | N/A | C2:H | | 1 | 39 | - | 336 | 2000 | 1053 | 31.6% |
| 17/2 | Ahead | U | 2:4 | N/A | C2:H | | 1 | 39 | - | 290 | 2000 | 1053 | 27.6% |
| 17/3 | Ahead | U | 2:4 | N/A | C2:H | | 1 | 39 | - | 387 | 2000 | 1053 | 36.8% |
| 18/1 | Ahead | U | 1:3 | N/A | C1:F | | 1 | 55 | - | 540 | 2000 | 1474 | 36.6% |
| 18/2 | Ahead | U | 1:3 | N/A | C1:F | | 1 | 55 | - | 569 | 2000 | 1474 | 38.6% |
| 19/1 | Ahead | U | 1:3 | N/A | C1:G | | 1 | 55 | - | 1260 | 2000 | 1474 | 82.5% |
| 19/2 | Ahead | U | 1:3 | N/A | C1:G | | 1 | 55 | - | 1466 | 2000 | 1474 | 95.2% |
| 19/3 | Ahead | U | 1:3 | N/A | C1:G | | 1 | 55 | - | 967 | 2000 | 1474 | 60.6% |
| **J2: Watering Lane** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **85.8%** |
| 1/2+1/1 | A45 Northbound Ahead Left | U | N/A | N/A | C3:A | | 1 | 51 | - | 1443 | 2120:1980 | 1080+616 | 81.2 : 80.8% |
| 1/3 | A45 Northbound Ahead | U | N/A | N/A | C3:A | | 1 | 51 | - | 1309 | 2120 | 1451 | 85.8% |
| 1/4 | A45 Northbound Ahead | U | N/A | N/A | C3:A | | 1 | 51 | - | 1161 | 1980 | 1355 | 81.2% |
| 4/1 | Watering Lane Left | U | N/A | N/A | C3:B | | 1 | 13 | - | 302 | 1919 | 354 | 85.4% |

| 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: M1 Junction 15 Mitigation Model - J3 Cumulative Impact** | **-** | **-** | **0** | **0** | **0** | **128.0** | **306.6** | **0.0** | **434.5** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 15** | **-** | **-** | **0** | **0** | **0** | **120.2** | **296.7** | **0.0** | **416.9** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 938 | 938 | - | - | - | 7.0 | 8.6 | - | 15.7 (7.0+8.7) | 60.1 (59.0:61.0) | 10.7 | 8.6 | 19.3 |
| 1/3+1/4 | 1503 | 1497 | - | - | - | 11.6 | 9.3 | - | 20.9 (9.9+10.9) | 50.0 (63.5:42.0) | 12.0 | 9.3 | 21.3 |
| 3/1 | 253 | 253 | - | - | - | 0.4 | 0.2 | - | 0.6 | 8.3 | 1.9 | 0.2 | 2.2 |
| 3/2 | 228 | 228 | - | - | - | 2.0 | 0.2 | - | 2.2 | 34.5 | 4.8 | 0.2 | 5.0 |
| 3/3 | 323 | 323 | - | - | - | 0.5 | 0.3 | - | 0.8 | 8.7 | 1.1 | 0.3 | 1.5 |
| 3/4 | 510 | 510 | - | - | - | 1.2 | 0.7 | - | 1.9 | 13.5 | 3.4 | 0.7 | 4.1 |
| 4/2+4/1 | 913 | 913 | - | - | - | 4.2 | 0.6 | - | 4.7 (2.3+2.4) | 18.6 (18.4:18.8) | 7.2 | 0.6 | 7.8 |
| 4/3 | 937 | 893 | - | - | - | 7.4 | 30.0 | - | 37.4 | 143.7 | 20.7 | 30.0 | 50.7 |
| 4/4+4/5 | 1923 | 1785 | - | - | - | 16.9 | 75.3 | - | 92.2 (43.1+49.1) | 172.6 (162.3:182.8) | 22.0 | 75.3 | 97.2 |
| 6/1 | 1216 | 1216 | - | - | - | 6.3 | 12.9 | - | 19.2 | 56.9 | 22.2 | 12.9 | 35.1 |
| 6/2+6/3 | 1433 | 1433 | - | - | - | 5.7 | 4.4 | - | 10.1 (5.3+4.8) | 25.3 (27.3:23.4) | 17.5 | 4.4 | 21.9 |
| 6/4 | 993 | 993 | - | - | - | 3.9 | 2.0 | - | 5.9 | 21.4 | 20.4 | 2.0 | 22.4 |
| 8/1 | 50 | 50 | - | - | - | 0.4 | 0.2 | - | 0.6 | 43.0 | 1.0 | 0.2 | 1.1 |
| 8/2 | 100 | 100 | - | - | - | 0.9 | 0.4 | - | 1.3 | 46.7 | 2.0 | 0.4 | 2.4 |
| 9/2+9/1 | 908 | 810 | - | - | - | 10.0 | 53.2 | - | 63.1 (41.9+21.2) | 250.4 (254.0:243.4) | 16.9 | 53.2 | 70.1 |
| 9/3+9/4 | 1190 | 1060 | - | - | - | 13.7 | 69.3 | - | 83.0 (40.9+42.0) | 251.0 (248.1:253.9) | 13.6 | 69.3 | 82.9 |
| 11/1 | 851 | 851 | - | - | - | 0.9 | 1.1 | - | 2.0 | 8.4 | 11.9 | 1.1 | 13.0 |
| 11/2 | 879 | 879 | - | - | - | 1.1 | 1.2 | - | 2.3 | 9.5 | 3.4 | 1.2 | 4.6 |
| 12/1 | 1144 | 1144 | - | - | - | 0.3 | 1.5 | - | 1.8 | 5.5 | 1.6 | 1.5 | 3.1 |
| 12/2 | 1108 | 1108 | - | - | - | 0.4 | 1.3 | - | 1.7 | 5.5 | 2.4 | 1.3 | 3.7 |

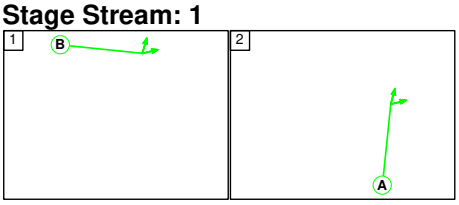
| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2+13/1 | 610 | 610 | - | - | - | 4.7 | 1.4 | - | 6.2 (3.2+2.9) | 36.4 (36.5:36.1) | 6.3 | 1.4 | 7.7 |
| 13/3 | 282 | 282 | - | - | - | 2.1 | 0.8 | - | 3.0 | 38.2 | 5.4 | 0.8 | 6.3 |
| 13/4+13/5 | 639 | 639 | - | - | - | 5.0 | 1.2 | - | 6.2 (2.8+3.4) | 35.0 (34.5:35.4) | 6.9 | 1.2 | 8.1 |
| 15/1 | 862 | 862 | - | - | - | 1.4 | 1.2 | - | 2.6 | 11.0 | 4.8 | 1.2 | 6.0 |
| 15/2 | 820 | 820 | - | - | - | 1.2 | 1.0 | - | 2.3 | 10.0 | 3.9 | 1.0 | 4.9 |
| 15/3+15/4 | 917 | 917 | - | - | - | 1.7 | 0.8 | - | 2.5 (0.9+1.6) | 9.8 (5.8:15.7) | 4.3 | 0.8 | 5.1 |
| 16/1 | 530 | 530 | - | - | - | 0.1 | 1.7 | - | 1.8 | 12.0 | 0.6 | 1.7 | 2.3 |
| 16/2 | 530 | 530 | - | - | - | 0.1 | 1.7 | - | 1.8 | 12.0 | 0.6 | 1.7 | 2.3 |
| 16/3 | 530 | 530 | - | - | - | 0.1 | 1.7 | - | 1.8 | 12.0 | 0.6 | 1.7 | 2.3 |
| 17/1 | 332 | 332 | - | - | - | 1.8 | 0.2 | - | 2.1 | 22.3 | 4.1 | 0.2 | 4.3 |
| 17/2 | 290 | 290 | - | - | - | 1.9 | 0.2 | - | 2.0 | 25.4 | 3.9 | 0.2 | 4.1 |
| 17/3 | 387 | 387 | - | - | - | 2.7 | 0.3 | - | 3.0 | 28.0 | 5.9 | 0.3 | 6.2 |
| 18/1 | 540 | 540 | - | - | - | 0.4 | 0.3 | - | 0.7 | 4.6 | 2.4 | 0.3 | 2.7 |
| 18/2 | 569 | 569 | - | - | - | 0.4 | 0.3 | - | 0.7 | 4.7 | 2.4 | 0.3 | 2.7 |
| 19/1 | 1216 | 1216 | - | - | - | 0.6 | 2.3 | - | 2.9 | 8.7 | 2.2 | 2.3 | 4.5 |
| 19/2 | 1403 | 1403 | - | - | - | 0.9 | 8.0 | - | 9.0 | 23.1 | 6.5 | 8.0 | 14.6 |
| 19/3 | 893 | 893 | - | - | - | 0.4 | 0.8 | - | 1.1 | 4.6 | 2.2 | 0.8 | 2.9 |
| **J2: Watering Lane** | **-** | **-** | **0** | **0** | **0** | **7.8** | **9.8** | **0.0** | **17.6** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 1375 | 1375 | - | - | - | 1.8 | 2.1 | - | 3.9 (2.5+1.4) | 10.1 (10.3:9.8) | 8.3 | 2.1 | 10.5 |
| 1/3 | 1245 | 1245 | - | - | - | 2.3 | 2.9 | - | 5.3 | 15.2 | 17.7 | 2.9 | 20.7 |
| 1/4 | 1099 | 1099 | - | - | - | 1.2 | 2.1 | - | 3.3 | 10.9 | 9.4 | 2.1 | 11.5 |
| 4/1 | 302 | 302 | - | - | - | 2.5 | 2.7 | - | 5.2 | 61.7 | 6.1 | 2.7 | 8.8 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - Eastside Controller | Stream: 1 | PRC for Signalled Lanes (%): | -12.3 | Total Delay for Signalled Lanes (pcuHr): | 43.97 | Cycle Time (s): 76 |
| C1 - Eastside Controller | Stream: 2 | PRC for Signalled Lanes (%): | -20.4 | Total Delay for Signalled Lanes (pcuHr): | 139.77 | Cycle Time (s): 76 |
| C1 - Eastside Controller | Stream: 3 | PRC for Signalled Lanes (%): | -5.8 | Total Delay for Signalled Lanes (pcuHr): | 16.40 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 1 | PRC for Signalled Lanes (%): | -24.9 | Total Delay for Signalled Lanes (pcuHr): | 181.28 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 2 | PRC for Signalled Lanes (%): | 19.7 | Total Delay for Signalled Lanes (pcuHr): | 3.43 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 3 | PRC for Signalled Lanes (%): | 15.1 | Total Delay for Signalled Lanes (pcuHr): | 19.66 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 4 | PRC for Signalled Lanes (%): | 16.2 | Total Delay for Signalled Lanes (pcuHr): | 12.41 | Cycle Time (s): 76 |
| C3 - Watering Lane | | PRC for Signalled Lanes (%): | 4.9 | Total Delay for Signalled Lanes (pcuHr): | 17.63 | Cycle Time (s): 76 |
| | | PRC Over All Lanes (%): | -24.9 | Total Delay Over All Lanes(pcuHr): | 434.55 | |

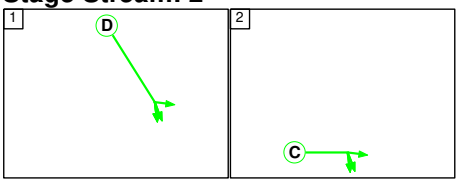
**Scenario 2: '2031 J3 Dev PM'** (FG4: '2031 J3 PM Peak', Plan 1: 'Network Control Plan 1')
**C1 - Eastside Controller**

## Stage Sequence Diagram

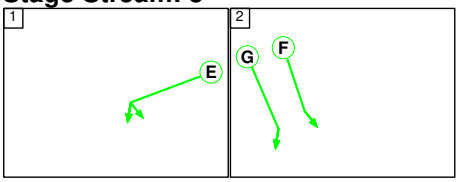
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 47 |
| Change Point | 59 | 6 |

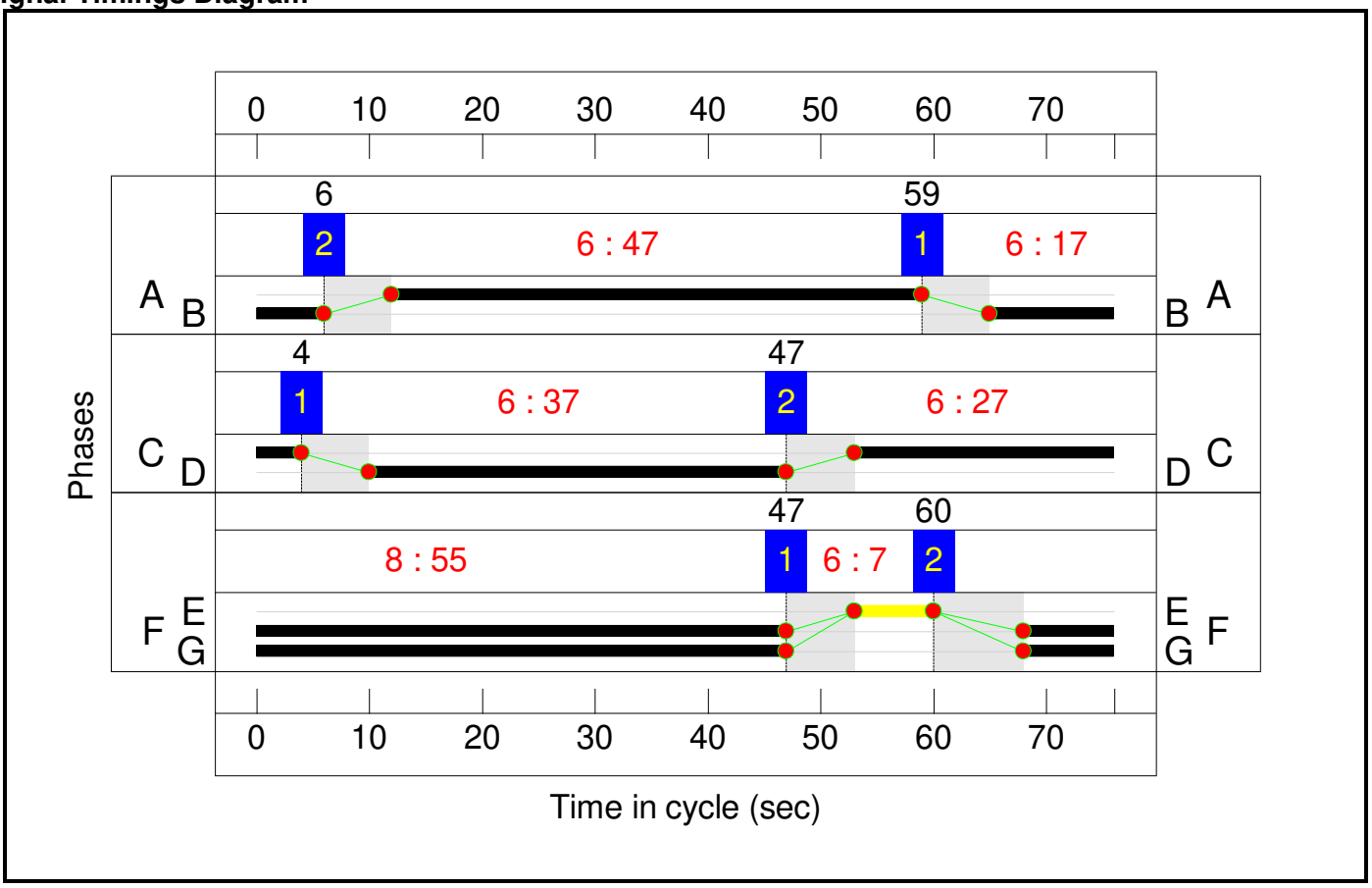
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 27 |
| Change Point | 4 | 47 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 55 |
| Change Point | 47 | 60 |

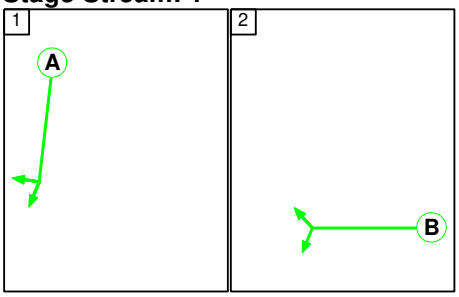
## Signal Timings Diagram



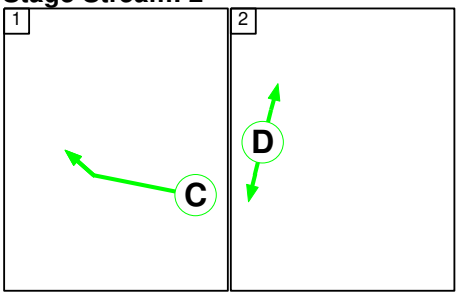

## C2 - Westside Controller

### Stage Sequence Diagram

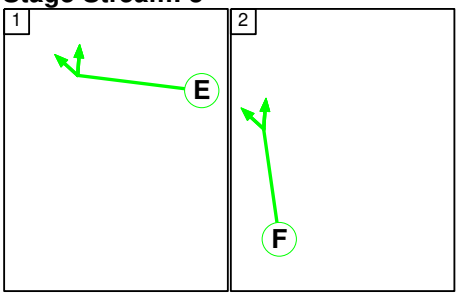
**Stage Stream: 1**



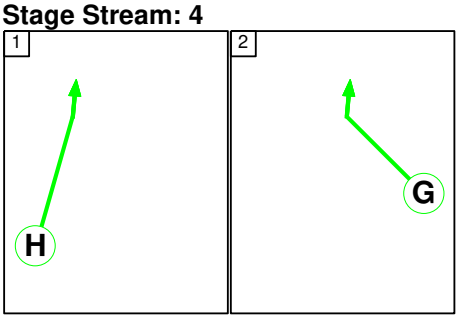

**Stage Stream: 2**



**Stage Stream: 3**




**Stage Stream: 4**




## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 45 | 19 |
| Change Point | 24 | 0 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 57 | 7 |
| Change Point | 12 | 0 |

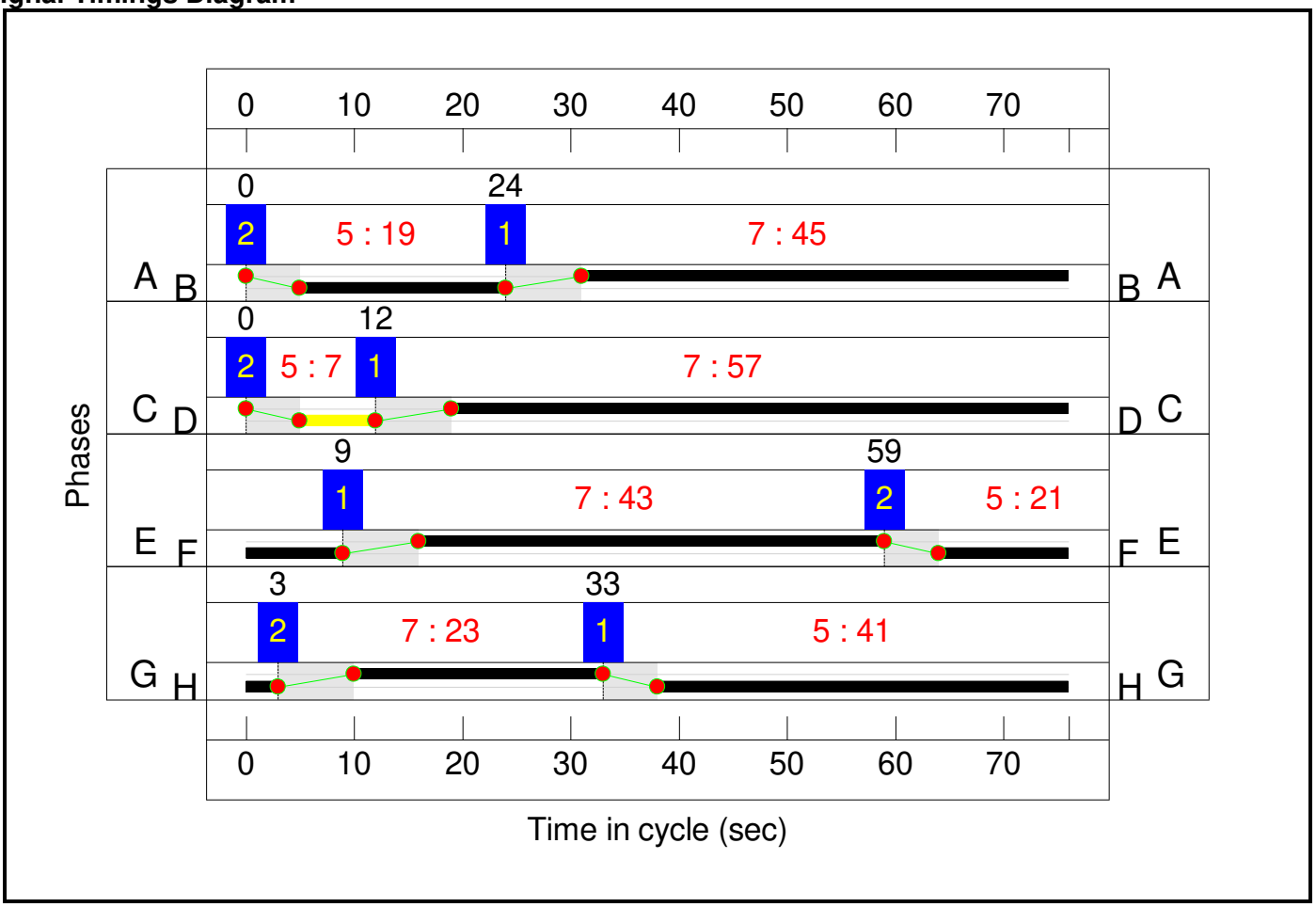
**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 21 |
| Change Point | 9 | 59 |

**Stage Stream: 4**

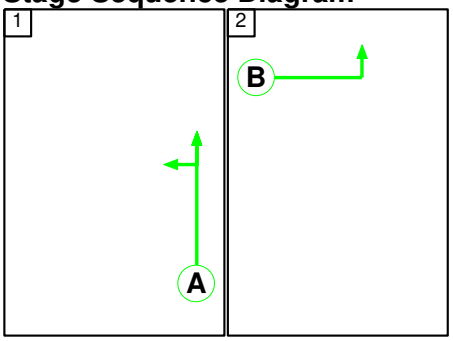
| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 23 |
| Change Point | 33 | 3 |

## Signal Timings Diagram




### C3 - Watering Lane

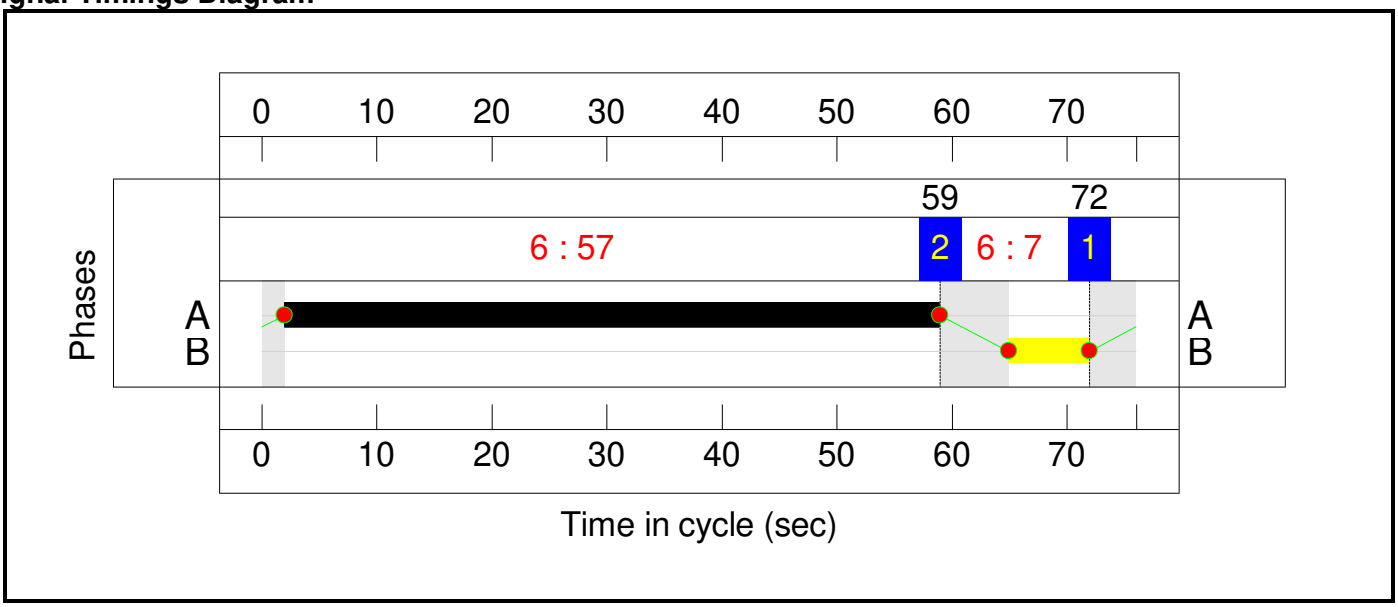
### Stage Sequence Diagram




### Stage Timings

| Stage | 1 | 2 |
|---|---|---|
| Duration | 57 | 7 |
| Change Point | 72 | 59 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **J1: M1 Junction 15** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **93.2%** |
| 1/2+1/1 | M1 Southbound Offslip Left | U | 1:1 | N/A | C1:B | | 1 | 17 | - | 655 | 2120:1980 | 479+469 | 58.3 : 80.2% |
| 1/3+1/4 | M1 Southbound Offslip Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 17 | - | 1043 | 2120:4000 | 502+947 | 77.9 : 68.8% |
| 3/1 | Ahead | U | 1:2 | N/A | C1:C | | 1 | 27 | - | 143 | 1900 | 700 | 20.4% |
| 3/2 | Right | U | 1:2 | N/A | C1:C | | 1 | 27 | - | 197 | 1900 | 700 | 28.1% |
| 3/3 | Right | U | 1:2 | N/A | C1:C | | 1 | 27 | - | 268 | 1900 | 700 | 38.3% |
| 3/4 | Right | U | 1:2 | N/A | C1:C | | 1 | 27 | - | 322 | 1900 | 700 | 46.0% |
| 4/2+4/1 | A45 Southbound Left Ahead | U | 1:2 | N/A | C1:D | | 1 | 37 | - | 1076 | 2120:1980 | 1012+990 | 52.6 : 54.9% |
| 4/3 | A45 Southbound Ahead | U | 1:2 | N/A | C1:D | | 1 | 37 | - | 776 | 2120 | 1060 | 73.2% |
| 4/4+4/5 | A45 Southbound Ahead | U | 1:2 | N/A | C1:D | | 1 | 37 | - | 1825 | 2120:2120 | 973+1060 | 86.1 : 93.1% |
| 6/1 | M1 Northbound Circulatory Ahead | U | 2:1 | N/A | C2:A | | 1 | 45 | - | 1055 | 2000 | 1211 | 87.2% |
| 6/2+6/3 | M1 Northbound Circulatory Ahead Right | U | 2:1 | N/A | C2:A | | 1 | 45 | - | 1173 | 2000:2000 | 920+511 | 81.9 : 81.9% |
| 6/4 | M1 Northbound Circulatory Right | U | 2:1 | N/A | C2:A | | 1 | 45 | - | 1112 | 2000 | 1211 | 91.9% |
| 8/1 | Saxon Avenue Left Left2 | U | 1:3 | N/A | C1:E | | 1 | 7 | - | 140 | 1887 | 199 | 70.5% |
| 8/2 | Saxon Avenue Left | U | 1:3 | N/A | C1:E | | 1 | 7 | - | 125 | 2105 | 222 | 56.4% |
| 9/2+9/1 | M1 Northbound Offslip Left Ahead | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 638 | 2120:1980 | 558+253 | 78.7 : 78.7% |
| 9/3+9/4 | M1 Northbound Offslip Ahead | U | 2:1 | N/A | C2:B | | 1 | 19 | - | 967 | 2120:2120 | 558+558 | 81.7 : 91.6% |
| 11/1 | Ahead | U | 2:3 | N/A | C2:E | | 1 | 43 | - | 734 | 1900 | 1100 | 66.7% |
| 11/2 | Ahead Right | U | 2:3 | N/A | C2:E | | 1 | 43 | - | 797 | 1900 | 1100 | 72.5% |
| 12/1 | Toucan Crossing Ahead | U | 2:2 | N/A | C2:C | | 1 | 57 | - | 1036 | 1995 | 1523 | 68.0% |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/2 | Toucan Crossing Ahead | U | 2:2 | N/A | C2:C | | 1 | 57 | - | 989 | 1995 | 1523 | 65.0% |
| 13/2+13/1 | A508 Northampton Rd Ahead | U | 2:3 | N/A | C2:F | | 1 | 21 | - | 626 | 1980:1980 | 528+492 | 61.4 : 61.4% |
| 13/3 | A508 Northampton Rd Ahead | U | 2:3 | N/A | C2:F | | 1 | 21 | - | 499 | 2120 | 614 | 81.3% |
| 13/4+13/5 | A508 Northampton Rd Ahead | U | 2:3 | N/A | C2:F | | 1 | 21 | - | 1114 | 2120:2120 | 614+614 | 88.3 : 93.2% |
| 15/1 | Ahead | U | 1:1 | N/A | C1:A | | 1 | 47 | - | 1043 | 2000 | 1263 | 82.6% |
| 15/2 | Ahead | U | 1:1 | N/A | C1:A | | 1 | 47 | - | 1017 | 2000 | 1263 | 80.5% |
| 15/3+15/4 | Ahead Right | U | 1:1 | N/A | C1:A | | 1 | 47 | - | 1091 | 2000:2000 | 1054+360 | 77.1 : 77.1% |
| 16/1 | Right | U | 2:4 | N/A | C2:G | | 1 | 23 | - | 439 | 2000 | 632 | 69.5% |
| 16/2 | Right | U | 2:4 | N/A | C2:G | | 1 | 23 | - | 456 | 2000 | 632 | 72.2% |
| 16/3 | Right | U | 2:4 | N/A | C2:G | | 1 | 23 | - | 511 | 2000 | 632 | 80.9% |
| 17/1 | Ahead | U | 2:4 | N/A | C2:H | | 1 | 41 | - | 604 | 2000 | 1105 | 54.6% |
| 17/2 | Ahead | U | 2:4 | N/A | C2:H | | 1 | 41 | - | 561 | 2000 | 1105 | 50.8% |
| 17/3 | Ahead | U | 2:4 | N/A | C2:H | | 1 | 41 | - | 580 | 2000 | 1105 | 52.5% |
| 18/1 | Ahead | U | 1:3 | N/A | C1:F | | 1 | 55 | - | 562 | 2000 | 1474 | 38.1% |
| 18/2 | Ahead | U | 1:3 | N/A | C1:F | | 1 | 55 | - | 623 | 2000 | 1474 | 42.3% |
| 19/1 | Ahead | U | 1:3 | N/A | C1:G | | 1 | 55 | - | 1044 | 2000 | 1474 | 70.8% |
| 19/2 | Ahead | U | 1:3 | N/A | C1:G | | 1 | 55 | - | 1160 | 2000 | 1474 | 78.7% |
| 19/3 | Ahead | U | 1:3 | N/A | C1:G | | 1 | 55 | - | 987 | 2000 | 1474 | 67.0% |
| **J2: Watering Lane** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **82.8%** |
| 1/2+1/1 | A45 Northbound Ahead Left | U | N/A | N/A | C3:A | | 1 | 57 | - | 1419 | 2120:1980 | 1387+326 | 82.8 : 82.8% |
| 1/3 | A45 Northbound Ahead | U | N/A | N/A | C3:A | | 1 | 57 | - | 1296 | 2120 | 1618 | 80.1% |
| 1/4 | A45 Northbound Ahead | U | N/A | N/A | C3:A | | 1 | 57 | - | 1204 | 1980 | 1511 | 79.7% |
| 4/1 | Watering Lane Left | U | N/A | N/A | C3:B | | 1 | 7 | - | 131 | 1919 | 202 | 64.9% |

| 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: M1 Junction 15 Mitigation Model - J3 Cumulative Impact** | **-** | **-** | **0** | **0** | **0** | **101.1** | **62.7** | **0.0** | **163.8** | **-** | **-** | **-** | **-** |
| **J1: M1 Junction 15** | **-** | **-** | **0** | **0** | **0** | **96.6** | **55.5** | **0.0** | **152.1** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 655 | 655 | - | - | - | 4.8 | 1.1 | - | 5.9 (2.4+3.5) | 32.7 (31.6:33.4) | 7.4 | 1.1 | 8.5 |
| 1/3+1/4 | 1043 | 1043 | - | - | - | 7.7 | 1.3 | - | 9.0 (3.4+5.6) | 31.1 (31.5:30.8) | 7.7 | 1.3 | 9.0 |
| 3/1 | 143 | 143 | - | - | - | 0.4 | 0.1 | - | 0.5 | 12.2 | 0.9 | 0.1 | 1.1 |
| 3/2 | 197 | 197 | - | - | - | 1.0 | 0.2 | - | 1.2 | 22.5 | 3.4 | 0.2 | 3.6 |
| 3/3 | 268 | 268 | - | - | - | 0.5 | 0.3 | - | 0.8 | 11.3 | 1.1 | 0.3 | 1.4 |
| 3/4 | 322 | 322 | - | - | - | 0.6 | 0.4 | - | 1.1 | 11.8 | 1.0 | 0.4 | 1.4 |
| 4/2+4/1 | 1076 | 1076 | - | - | - | 3.9 | 0.6 | - | 4.4 (2.2+2.3) | 14.8 (14.6:15.0) | 7.9 | 0.6 | 8.4 |
| 4/3 | 776 | 776 | - | - | - | 3.2 | 1.4 | - | 4.6 | 21.3 | 12.7 | 1.4 | 14.1 |
| 4/4+4/5 | 1825 | 1825 | - | - | - | 8.5 | 4.2 | - | 12.7 (5.6+7.1) | 25.1 (24.0:26.1) | 19.5 | 4.2 | 23.7 |
| 6/1 | 1055 | 1055 | - | - | - | 5.6 | 3.3 | - | 8.8 | 30.2 | 22.3 | 3.3 | 25.5 |
| 6/2+6/3 | 1173 | 1173 | - | - | - | 6.1 | 2.2 | - | 8.3 (5.6+2.7) | 25.5 (26.6:23.4) | 23.6 | 2.2 | 25.8 |
| 6/4 | 1112 | 1112 | - | - | - | 3.4 | 5.1 | - | 8.5 | 27.5 | 23.5 | 5.1 | 28.6 |
| 8/1 | 140 | 140 | - | - | - | 1.3 | 1.1 | - | 2.4 | 62.4 | 2.8 | 1.1 | 4.0 |
| 8/2 | 125 | 125 | - | - | - | 1.1 | 0.6 | - | 1.8 | 50.8 | 2.5 | 0.6 | 3.1 |
| 9/2+9/1 | 638 | 638 | - | - | - | 4.4 | 1.8 | - | 6.3 (4.4+1.8) | 35.3 (36.2:33.2) | 8.5 | 1.8 | 10.3 |
| 9/3+9/4 | 967 | 967 | - | - | - | 7.2 | 3.1 | - | 10.3 (4.8+5.5) | 38.4 (37.9:38.8) | 10.4 | 3.1 | 13.5 |
| 11/1 | 734 | 734 | - | - | - | 3.3 | 1.0 | - | 4.3 | 21.1 | 8.3 | 1.0 | 9.3 |
| 11/2 | 797 | 797 | - | - | - | 3.0 | 1.3 | - | 4.3 | 19.3 | 7.6 | 1.3 | 8.9 |
| 12/1 | 1036 | 1036 | - | - | - | 0.4 | 1.1 | - | 1.5 | 5.1 | 9.2 | 1.1 | 10.3 |
| 12/2 | 989 | 989 | - | - | - | 0.3 | 0.9 | - | 1.2 | 4.4 | 4.2 | 0.9 | 5.1 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/2+13/1 | 626 | 626 | - | - | - | 4.0 | 0.8 | - | 4.8 (2.5+2.3) | 27.4 (27.5:27.2) | 5.8 | 0.8 | 6.6 |
| 13/3 | 499 | 499 | - | - | - | 3.5 | 2.1 | - | 5.6 | 40.2 | 9.7 | 2.1 | 11.8 |
| 13/4+13/5 | 1114 | 1114 | - | - | - | 8.1 | 4.5 | - | 12.6 (6.1+6.5) | 40.7 (40.5:41.0) | 11.6 | 4.5 | 16.1 |
| 15/1 | 1043 | 1043 | - | - | - | 1.8 | 2.3 | - | 4.1 | 14.2 | 16.2 | 2.3 | 18.5 |
| 15/2 | 1017 | 1017 | - | - | - | 1.3 | 2.0 | - | 3.3 | 11.8 | 15.7 | 2.0 | 17.8 |
| 15/3+15/4 | 1091 | 1091 | - | - | - | 0.6 | 1.7 | - | 2.3 (1.6+0.7) | 7.4 (7.0:8.7) | 3.4 | 1.7 | 5.1 |
| 16/1 | 439 | 439 | - | - | - | 0.1 | 1.1 | - | 1.2 | 9.7 | 0.5 | 1.1 | 1.6 |
| 16/2 | 456 | 456 | - | - | - | 0.1 | 1.3 | - | 1.3 | 10.5 | 0.5 | 1.3 | 1.8 |
| 16/3 | 511 | 511 | - | - | - | 0.1 | 2.0 | - | 2.1 | 15.0 | 0.6 | 2.0 | 2.6 |
| 17/1 | 604 | 604 | - | - | - | 2.3 | 0.6 | - | 2.9 | 17.2 | 5.7 | 0.6 | 6.3 |
| 17/2 | 561 | 561 | - | - | - | 2.5 | 0.5 | - | 3.1 | 19.6 | 5.7 | 0.5 | 6.2 |
| 17/3 | 580 | 580 | - | - | - | 2.8 | 0.6 | - | 3.3 | 20.8 | 6.1 | 0.6 | 6.7 |
| 18/1 | 562 | 562 | - | - | - | 0.4 | 0.3 | - | 0.7 | 4.5 | 2.9 | 0.3 | 3.2 |
| 18/2 | 623 | 623 | - | - | - | 0.4 | 0.4 | - | 0.8 | 4.5 | 2.7 | 0.4 | 3.0 |
| 19/1 | 1044 | 1044 | - | - | - | 0.6 | 1.2 | - | 1.8 | 6.1 | 2.5 | 1.2 | 3.7 |
| 19/2 | 1160 | 1160 | - | - | - | 0.6 | 1.8 | - | 2.4 | 7.5 | 2.2 | 1.8 | 4.0 |
| 19/3 | 987 | 987 | - | - | - | 0.9 | 1.0 | - | 1.9 | 7.1 | 2.8 | 1.0 | 3.8 |
| **J2: Watering Lane** | **-** | **-** | **0** | **0** | **0** | **4.5** | **7.2** | **0.0** | **11.7** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 1419 | 1419 | - | - | - | 1.1 | 2.4 | - | 3.4 (2.9+0.6) | 8.7 (9.0:7.8) | 7.2 | 2.4 | 9.6 |
| 1/3 | 1296 | 1296 | - | - | - | 1.5 | 2.0 | - | 3.5 | 9.8 | 12.7 | 2.0 | 14.7 |
| 1/4 | 1204 | 1204 | - | - | - | 0.7 | 1.9 | - | 2.6 | 7.9 | 7.7 | 1.9 | 9.7 |
| 4/1 | 131 | 131 | - | - | - | 1.2 | 0.9 | - | 2.1 | 57.4 | 2.6 | 0.9 | 3.5 |

| | | | | | |
|---|---|---|---|---|---|
| C1 - Eastside Controller | Stream: 1 PRC for Signalled Lanes (%): | 9.0 | Total Delay for Signalled Lanes (pcuHr): | 24.66 | Cycle Time (s): 76 |
| C1 - Eastside Controller | Stream: 2 PRC for Signalled Lanes (%): | -3.5 | Total Delay for Signalled Lanes (pcuHr): | 25.36 | Cycle Time (s): 76 |
| C1 - Eastside Controller | Stream: 3 PRC for Signalled Lanes (%): | 14.3 | Total Delay for Signalled Lanes (pcuHr): | 11.79 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 1 PRC for Signalled Lanes (%): | -2.1 | Total Delay for Signalled Lanes (pcuHr): | 42.17 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 2 PRC for Signalled Lanes (%): | 32.3 | Total Delay for Signalled Lanes (pcuHr): | 2.69 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 3 PRC for Signalled Lanes (%): | -3.6 | Total Delay for Signalled Lanes (pcuHr): | 31.51 | Cycle Time (s): 76 |
| C2 - Westside Controller | Stream: 4 PRC for Signalled Lanes (%): | 11.2 | Total Delay for Signalled Lanes (pcuHr): | 13.92 | Cycle Time (s): 76 |
| C3 - Watering Lane | PRC for Signalled Lanes (%): | 8.7 | Total Delay for Signalled Lanes (pcuHr): | 11.71 | Cycle Time (s): 76 |
| | PRC Over All Lanes (%): | -3.6 | Total Delay Over All Lanes(pcuHr): | 163.82 | |

# JUNCTION 2

# M1 JUNCTION 15A

# Junctions 8

## ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** M1 Jct 15a (North) ARCADY Model D1 Only.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 12:50:30

» NSTM Traffic Flows - 2031 D1, AM
» NSTM Traffic Flows - 2031 D1, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | NSTM Traffic Flows - 2031 D1 | | | | | |
| Arm 1 | 5.09 | 8.55 | 0.82 | 12.60 | 19.22 | 0.92 |
| Arm 2 | 11.75 | 37.01 | 0.93 | 17.04 | 56.15 | 0.97 |
| Arm 3 | 7.67 | 13.54 | 0.88 | 2.15 | 4.75 | 0.66 |

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

*"D1 - 2031 D1, AM " model duration: 08:00 - 09:30*
*"D2 - 2031 D1, PM" model duration: 17:00 - 18:30*

*Run using Junctions 8.0.4.487 at 26/04/2018 12:50:27*

## File summary

| | |
|---|---|
| **Title** | M1 Jct 15a (North) |
| **Location** | Northampton |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# NSTM Traffic Flows - 2031 D1, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| NSTM Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, AM | 2031 D1 | AM | | ONE HOUR | 08:00 | 09:30 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | M1 Jct 15a (North) | Roundabout | 1,2,3 | | | | 16.74 | C |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| **1** | 1 | A43 S Link | |
| **2** | 2 | M1 Sbnd Offslip | |
| **3** | 3 | A5123 N | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| **1** | 0.00 | 99999.00 | | 0.00 |
| **2** | 0.00 | 99999.00 | | 0.00 |
| **3** | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 7.40 | 11.10 | 20.10 | 19.20 | 80.00 | 32.00 | |
| 2 | 7.20 | 8.50 | 6.00 | 18.00 | 80.00 | 62.00 | |
| 3 | 8.10 | 10.00 | 15.20 | 18.70 | 80.00 | 26.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.650 | 2921.251 |
| 2 | | (calculated) | (calculated) | 0.510 | 2133.026 |
| 3 | | (calculated) | (calculated) | 0.650 | 2895.546 |

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

### Arm Capacity Adjustments

| Arm | Type | Reason | Direct Capacity Adjustment (PCU/hr) | Percentage Capacity Adjustment (%) |
|---|---|---|---|---|
| 1 | None | | | |
| 2 | Direct | | 0.00 | |
| 3 | None | | | |

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1991.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 1110.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 1932.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 544.000 | 1447.000 |
| | 2 | 667.000 | 0.000 | 443.000 |
| | 3 | 1589.000 | 343.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.27 | 0.73 |
| | 2 | 0.60 | 0.00 | 0.40 |
| | 3 | 0.82 | 0.18 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.013 | 1.218 |
| | 2 | 1.327 | 1.000 | 1.059 |
| | 3 | 1.159 | 1.006 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 1.3 | 21.8 |
| | 2 | 32.7 | 0.0 | 5.9 |
| | 3 | 15.9 | 0.6 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.82 | 8.55 | 5.09 | A | 1826.98 | 2740.46 | 252.51 | 5.53 | 2.81 | 252.53 | 5.53 |
| 2 | 0.93 | 37.01 | 11.75 | E | 1018.56 | 1527.83 | 408.66 | 16.05 | 4.54 | 408.69 | 16.05 |
| 3 | 0.88 | 13.54 | 7.67 | B | 1772.84 | 2659.26 | 329.08 | 7.43 | 3.66 | 329.11 | 7.43 |

## Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1498.93 | 374.73 | 1493.46 | 1690.43 | 257.19 | 0.00 | 2754.18 | 2639.36 | 0.544 | 0.00 | 1.37 | 3.283 | A |
| 2 | 835.67 | 208.92 | 830.32 | 665.25 | 1085.40 | 0.00 | 1579.59 | 1154.95 | 0.529 | 0.00 | 1.34 | 5.752 | A |
| 3 | 1454.51 | 363.63 | 1448.68 | 1416.78 | 498.94 | 0.00 | 2571.17 | 2444.35 | 0.566 | 0.00 | 1.46 | 3.600 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1789.87 | 447.47 | 1786.59 | 2021.95 | 307.61 | 0.00 | 2721.43 | 2639.36 | 0.658 | 1.37 | 2.19 | 4.428 | A |
| 2 | 997.87 | 249.47 | 993.34 | 795.76 | 1298.44 | 0.00 | 1470.96 | 1154.95 | 0.678 | 1.34 | 2.47 | 8.999 | A |
| 3 | 1736.83 | 434.21 | 1732.67 | 1694.88 | 596.90 | 0.00 | 2507.48 | 2444.35 | 0.693 | 1.46 | 2.50 | 5.215 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2192.13 | 548.03 | 2181.03 | 2450.31 | 374.34 | 0.00 | 2678.09 | 2639.36 | 0.819 | 2.19 | 4.96 | 8.180 | A |
| 2 | 1222.13 | 305.53 | 1191.76 | 970.26 | 1585.11 | 0.00 | 1324.79 | 1154.95 | 0.923 | 2.47 | 10.06 | 27.913 | D |
| 3 | 2127.17 | 531.79 | 2108.52 | 2060.74 | 716.13 | 0.00 | 2429.97 | 2444.35 | 0.875 | 2.50 | 7.16 | 11.998 | B |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2192.13 | 548.03 | 2191.61 | 2478.18 | 377.29 | 0.00 | 2676.17 | 2639.36 | 0.819 | 4.96 | 5.09 | 8.550 | A |
| 2 | 1222.13 | 305.53 | 1215.38 | 976.10 | 1592.80 | 0.00 | 1320.87 | 1154.95 | 0.925 | 10.06 | 11.75 | 37.007 | E |
| 3 | 2127.17 | 531.79 | 2125.15 | 2077.85 | 730.32 | 0.00 | 2420.74 | 2444.35 | 0.879 | 7.16 | 7.67 | 13.538 | B |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1789.87 | 447.47 | 1801.21 | 2066.46 | 311.91 | 0.00 | 2718.64 | 2639.36 | 0.658 | 5.09 | 2.26 | 4.583 | A |
| 2 | 997.87 | 249.47 | 1034.23 | 804.06 | 1309.07 | 0.00 | 1465.55 | 1154.95 | 0.681 | 11.75 | 2.66 | 10.864 | B |
| 3 | 1736.83 | 434.21 | 1756.90 | 1721.83 | 621.47 | 0.00 | 2491.51 | 2444.35 | 0.697 | 7.67 | 2.65 | 5.677 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1498.93 | 374.73 | 1502.39 | 1705.32 | 259.05 | 0.00 | 2752.98 | 2639.36 | 0.544 | 2.26 | 1.39 | 3.333 | A |
| 2 | 835.67 | 208.92 | 840.78 | 669.55 | 1091.89 | 0.00 | 1576.28 | 1154.95 | 0.530 | 2.66 | 1.38 | 5.941 | A |
| 3 | 1454.51 | 363.63 | 1459.15 | 1427.45 | 505.23 | 0.00 | 2567.08 | 2444.35 | 0.567 | 2.65 | 1.49 | 3.681 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 19.91 | 1.33 | 3.283 | A | A |
| 2 | 19.18 | 1.28 | 5.752 | A | A |
| 3 | 21.14 | 1.41 | 3.600 | A | A |

### Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 31.69 | 2.11 | 4.428 | A | A |
| 2 | 34.87 | 2.32 | 8.999 | A | A |
| 3 | 35.90 | 2.39 | 5.215 | A | A |

### Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 68.38 | 4.56 | 8.180 | A | A |
| 2 | 118.18 | 7.88 | 27.913 | D | C |
| 3 | 93.94 | 6.26 | 11.998 | B | B |

### Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 75.62 | 5.04 | 8.550 | A | A |
| 2 | 165.48 | 11.03 | 37.007 | E | D |
| 3 | 112.06 | 7.47 | 13.538 | B | B |

### Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 35.50 | 2.37 | 4.583 | A | A |
| 2 | 49.42 | 3.29 | 10.864 | B | B |
| 3 | 43.02 | 2.87 | 5.677 | A | A |

### Queueing Delay results: (09:15-09:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 21.41 | 1.43 | 3.333 | A | A |
| 2 | 21.53 | 1.44 | 5.941 | A | A |
| 3 | 23.02 | 1.53 | 3.681 | A | A |

# NSTM Traffic Flows - 2031 D1, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| NSTM Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, PM | 2031 D1 | PM | | ONE HOUR | 17:00 | 18:30 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | M1 Jct 15a (North) | Roundabout | 1,2,3 | | | | 22.68 | C |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A43 S Link | |
| 2 | 2 | M1 Sbnd Offslip | |
| 3 | 3 | A5123 N | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 7.40 | 11.10 | 20.10 | 19.20 | 80.00 | 32.00 | |
| 2 | 7.20 | 8.50 | 6.00 | 18.00 | 80.00 | 62.00 | |
| 3 | 8.10 | 10.00 | 15.20 | 18.70 | 80.00 | 26.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.650 | 2921.251 |
| 2 | | (calculated) | (calculated) | 0.510 | 2133.026 |
| 3 | | (calculated) | (calculated) | 0.650 | 2895.546 |

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

### Arm Capacity Adjustments

| Arm | Type | Reason | Direct Capacity Adjustment (PCU/hr) | Percentage Capacity Adjustment (%) |
|---|---|---|---|---|
| 1 | None | | | |
| 2 | Direct | | 0.00 | |
| 3 | None | | | |

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 2271.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 1034.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 1491.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 565.000 | 1706.000 |
| | 2 | 573.000 | 0.000 | 461.000 |
| | 3 | 1195.000 | 296.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.25 | 0.75 |
| | 2 | 0.55 | 0.00 | 0.45 |
| | 3 | 0.80 | 0.20 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.168 | 1.200 |
| | 2 | 1.028 | 1.000 | 1.390 |
| | 3 | 1.108 | 1.189 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 16.8 | 20.0 |
| | 2 | 2.8 | 0.0 | 39.0 |
| | 3 | 10.8 | 18.9 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.92 | 19.22 | 12.60 | C | 2083.91 | 3125.86 | 490.12 | 9.41 | 5.45 | 490.16 | 9.41 |
| 2 | 0.97 | 56.15 | 17.04 | F | 948.82 | 1423.22 | 503.67 | 21.23 | 5.60 | 503.71 | 21.24 |
| 3 | 0.66 | 4.75 | 2.15 | A | 1368.17 | 2052.25 | 125.38 | 3.67 | 1.39 | 125.39 | 3.67 |

## Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1709.73 | 427.43 | 1702.18 | 1325.54 | 222.18 | 0.00 | 2776.93 | 2600.67 | 0.616 | 0.00 | 1.89 | 3.965 | A |
| 2 | 778.45 | 194.61 | 773.37 | 645.66 | 1278.69 | 0.00 | 1481.03 | 1136.88 | 0.526 | 0.00 | 1.27 | 5.874 | A |
| 3 | 1122.50 | 280.63 | 1119.15 | 1623.49 | 428.57 | 0.00 | 2616.92 | 2485.96 | 0.429 | 0.00 | 0.84 | 2.694 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2041.58 | 510.40 | 2035.70 | 1585.51 | 265.79 | 0.00 | 2748.60 | 2600.66 | 0.743 | 1.89 | 3.36 | 5.968 | A |
| 2 | 929.54 | 232.39 | 924.75 | 772.25 | 1529.24 | 0.00 | 1353.28 | 1136.88 | 0.687 | 1.27 | 2.47 | 9.662 | A |
| 3 | 1340.38 | 335.09 | 1338.84 | 1941.54 | 512.46 | 0.00 | 2562.38 | 2485.96 | 0.523 | 0.84 | 1.22 | 3.300 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2500.42 | 625.10 | 2467.83 | 1920.86 | 325.19 | 0.00 | 2710.01 | 2600.66 | 0.923 | 3.36 | 11.50 | 15.939 | C |
| 2 | 1138.46 | 284.61 | 1097.16 | 939.16 | 1853.86 | 0.00 | 1187.76 | 1136.88 | 0.958 | 2.47 | 12.79 | 36.176 | E |
| 3 | 1641.62 | 410.41 | 1638.05 | 2343.02 | 608.00 | 0.00 | 2500.27 | 2485.96 | 0.657 | 1.22 | 2.12 | 4.670 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2500.42 | 625.10 | 2496.03 | 1937.07 | 325.88 | 0.00 | 2709.57 | 2600.66 | 0.923 | 11.50 | 12.60 | 19.216 | C |
| 2 | 1138.46 | 284.61 | 1121.45 | 946.86 | 1875.04 | 0.00 | 1176.96 | 1136.88 | 0.967 | 12.79 | 17.04 | 56.154 | F |
| 3 | 1641.62 | 410.41 | 1641.49 | 2375.03 | 621.46 | 0.00 | 2491.52 | 2485.96 | 0.659 | 2.12 | 2.15 | 4.755 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2041.58 | 510.40 | 2077.85 | 1623.89 | 266.80 | 0.00 | 2747.94 | 2600.66 | 0.743 | 12.60 | 3.54 | 6.733 | A |
| 2 | 929.54 | 232.39 | 986.68 | 783.75 | 1560.90 | 0.00 | 1337.14 | 1136.88 | 0.695 | 17.04 | 2.76 | 13.820 | B |
| 3 | 1340.38 | 335.09 | 1343.91 | 2000.80 | 546.78 | 0.00 | 2540.07 | 2485.96 | 0.528 | 2.15 | 1.26 | 3.389 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1709.73 | 427.43 | 1716.14 | 1335.57 | 223.17 | 0.00 | 2776.28 | 2600.67 | 0.616 | 3.54 | 1.93 | 4.072 | A |
| 2 | 778.45 | 194.61 | 784.23 | 650.13 | 1289.18 | 0.00 | 1475.68 | 1136.88 | 0.528 | 2.76 | 1.32 | 6.103 | A |
| 3 | 1122.50 | 280.63 | 1124.16 | 1638.82 | 434.59 | 0.00 | 2613.01 | 2485.96 | 0.430 | 1.26 | 0.85 | 2.720 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 27.26 | 1.82 | 3.965 | A | A |
| 2 | 18.24 | 1.22 | 5.874 | A | A |
| 3 | 12.32 | 0.82 | 2.694 | A | A |

### Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 47.79 | 3.19 | 5.968 | A | A |
| 2 | 34.71 | 2.31 | 9.662 | A | A |
| 3 | 17.95 | 1.20 | 3.300 | A | A |

### Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 142.14 | 9.48 | 15.939 | C | B |
| 2 | 140.30 | 9.35 | 36.176 | E | D |
| 3 | 30.58 | 2.04 | 4.670 | A | A |

### Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 182.21 | 12.15 | 19.216 | C | B |
| 2 | 227.12 | 15.14 | 56.154 | F | E |
| 3 | 32.06 | 2.14 | 4.755 | A | A |

## Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 60.71 | 4.05 | 6.733 | A | A |
| 2 | 62.66 | 4.18 | 13.820 | B | B |
| 3 | 19.48 | 1.30 | 3.389 | A | A |

## Queueing Delay results: (18:15-18:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 30.02 | 2.00 | 4.072 | A | A |
| 2 | 20.63 | 1.38 | 6.103 | A | A |
| 3 | 12.99 | 0.87 | 2.720 | A | A |

# Junctions 8

## ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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**Filename:** M1 Jct 15a (South) ARCADY Model D1 Only.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 12:52:56

» NSTM Traffic Flows - 2031 D1, AM
» NSTM Traffic Flows - 2031 D1, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (Veh) | Delay (s) | RFC | Queue (Veh) | Delay (s) | RFC |
| | NSTM Traffic Flows - 2031 D1 | | | | | |
| Arm 1 | 210.77 | 360.40 | 1.18 | 3.96 | 7.45 | 0.80 |
| Arm 2 | 26.49 | 43.56 | 0.99 | 22.54 | 38.00 | 0.98 |
| Arm 3 | 148.41 | 837.73 | 1.56 | 301.04 | 1787.10 | 2.03 |

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

*"D1 - 2031 D1, AM " model duration: 08:00 - 09:30*
*"D2 - 2031 D1, PM" model duration: 17:00 - 18:30*

*Run using Junctions 8.0.4.487 at 26/04/2018 12:52:54*

## File summary

| | |
|---|---|
| **Title** | M1 Jct 15a (South) |
| **Location** | Northampton |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | Veh | Veh | perHour | s | -Min | perMin |

# NSTM Traffic Flows - 2031 D1, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| NSTM Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, AM | 2031 D1 | AM | | ONE HOUR | 08:00 | 09:30 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | M1 Jct 15a (South) | Roundabout | 1,2,3 | | | | 293.94 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| **1** | 1 | A43 N Link | |
| **2** | 2 | A43 S | |
| **3** | 3 | M1 Nbnd Offslip | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| **1** | 0.00 | 99999.00 | | 0.00 |
| **2** | 0.00 | 99999.00 | | 0.00 |
| **3** | 0.00 | 99999.00 | | 0.00 |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 9.80 | 9.80 | 0.00 | 17.00 | 92.00 | 55.00 | |
| 2 | 8.30 | 10.40 | 8.80 | 28.50 | 92.00 | 50.00 | |
| 3 | 4.60 | 5.20 | 1.00 | 19.70 | 92.00 | 56.00 | |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.573 | 2686.180 |
| 2 | | (calculated) | (calculated) | 0.587 | 2718.056 |
| 3 | | (calculated) | (calculated) | 0.382 | 1323.610 |

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

# Traffic Flows

### Demand Set Data Options

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

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 2256.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 2038.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 667.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 2030.000 | 226.000 |
| | 2 | 1688.000 | 0.000 | 350.000 |
| | 3 | 303.000 | 364.000 | 0.000 |

### Turning Proportions (Veh) - Junction 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.90 | 0.10 |
| | 2 | 0.83 | 0.00 | 0.17 |
| | 3 | 0.45 | 0.55 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.216 | 1.142 |
| | 2 | 1.153 | 1.000 | 1.037 |
| | 3 | 1.208 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 21.6 | 14.2 |
| | 2 | 15.3 | 0.0 | 3.7 |
| | 3 | 20.8 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) | Total Queueing Delay (Veh-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (Veh-min/min) | Inclusive Total Queueing Delay (Veh-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.18 | 360.40 | 210.77 | F | 2070.14 | 3105.21 | 9164.83 | 177.09 | 101.83 | 9367.95 | 181.01 |
| 2 | 0.99 | 43.56 | 26.49 | E | 1870.10 | 2805.15 | 789.99 | 16.90 | 8.78 | 790.05 | 16.90 |
| 3 | 1.56 | 837.73 | 148.41 | F | 612.05 | 918.08 | 6463.57 | 422.42 | 71.82 | 6906.10 | 451.34 |

## Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1698.43 | 424.61 | 1682.13 | 1488.09 | 268.87 | 0.00 | 2095.03 | 2105.57 | 0.811 | 0.00 | 4.07 | 8.415 | A |
| 2 | 1534.31 | 383.58 | 1526.41 | 1782.50 | 168.51 | 0.00 | 2299.21 | 2274.13 | 0.667 | 0.00 | 1.98 | 4.612 | A |
| 3 | 502.15 | 125.54 | 492.69 | 430.65 | 1264.27 | 0.00 | 700.97 | 451.94 | 0.716 | 0.00 | 2.37 | 16.614 | C |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2028.09 | 507.02 | 1975.88 | 1766.29 | 306.60 | 0.00 | 2077.13 | 2105.57 | 0.976 | 4.07 | 17.13 | 27.028 | D |
| 2 | 1832.12 | 458.03 | 1824.39 | 2084.55 | 197.94 | 0.00 | 2281.81 | 2274.13 | 0.803 | 1.98 | 3.91 | 7.741 | A |
| 3 | 599.62 | 149.90 | 561.83 | 511.25 | 1511.07 | 0.00 | 601.73 | 451.94 | 0.996 | 2.37 | 11.81 | 62.765 | F |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.90 | 620.97 | 2092.95 | 2024.24 | 263.17 | 0.00 | 2097.73 | 2105.57 | 1.184 | 17.13 | 114.86 | 120.336 | F |
| 2 | 2243.88 | 560.97 | 2179.46 | 2146.46 | 209.67 | 0.00 | 2274.88 | 2274.13 | 0.986 | 3.91 | 20.01 | 27.515 | D |
| 3 | 734.38 | 183.59 | 482.23 | 583.96 | 1805.17 | 0.00 | 483.47 | 451.94 | 1.519 | 11.81 | 74.85 | 342.071 | F |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2483.90 | 620.97 | 2100.25 | 2050.82 | 256.78 | 0.00 | 2100.77 | 2105.57 | 1.182 | 114.86 | 210.77 | 284.113 | F |
| 2 | 2243.88 | 560.97 | 2217.98 | 2146.64 | 210.40 | 0.00 | 2274.45 | 2274.13 | 0.987 | 20.01 | 26.49 | 43.559 | E |
| 3 | 734.38 | 183.59 | 470.53 | 591.31 | 1837.07 | 0.00 | 470.64 | 451.94 | 1.560 | 74.85 | 140.81 | 763.338 | F |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2028.09 | 507.02 | 2065.42 | 1849.44 | 310.64 | 0.00 | 2075.22 | 2105.57 | 0.977 | 210.77 | 201.44 | 360.401 | F |
| 2 | 1832.12 | 458.03 | 1920.71 | 2169.15 | 206.91 | 0.00 | 2276.51 | 2274.13 | 0.805 | 26.49 | 4.34 | 12.511 | B |
| 3 | 599.62 | 149.90 | 569.22 | 536.77 | 1590.86 | 0.00 | 569.65 | 451.94 | 1.053 | 140.81 | 148.41 | 837.728 | F |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1698.43 | 424.61 | 2033.67 | 1592.01 | 376.93 | 0.00 | 2043.77 | 2105.57 | 0.831 | 201.44 | 117.63 | 283.357 | F |
| 2 | 1534.31 | 383.58 | 1543.29 | 2206.88 | 203.73 | 0.00 | 2278.39 | 2274.13 | 0.673 | 4.34 | 2.10 | 4.955 | A |
| 3 | 502.15 | 125.54 | 690.70 | 468.77 | 1278.25 | 0.00 | 695.35 | 451.94 | 0.722 | 148.41 | 101.28 | 652.093 | F |

## Queueing Delay Results for each time segment

### Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 55.28 | 3.69 | 8.415 | A | A |
| 2 | 28.27 | 1.88 | 4.612 | A | A |
| 3 | 31.43 | 2.10 | 16.614 | C | B |

### Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 187.87 | 12.52 | 27.028 | D | C |
| 2 | 54.41 | 3.63 | 7.741 | A | A |
| 3 | 121.57 | 8.10 | 62.765 | F | E |

### Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 994.48 | 66.30 | 120.336 | F | F |
| 2 | 212.55 | 14.17 | 27.515 | D | C |
| 3 | 651.16 | 43.41 | 342.071 | F | F |

### Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 2442.47 | 162.83 | 284.113 | F | F |
| 2 | 352.61 | 23.51 | 43.559 | E | D |
| 3 | 1617.52 | 107.83 | 763.338 | F | F |

### Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 3091.64 | 206.11 | 360.401 | F | F |
| 2 | 109.19 | 7.28 | 12.511 | B | B |
| 3 | 2169.21 | 144.61 | 837.728 | F | F |

### Queueing Delay results: (09:15-09:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 2393.08 | 159.54 | 283.357 | F | F |
| 2 | 32.95 | 2.20 | 4.955 | A | A |
| 3 | 1872.67 | 124.84 | 652.093 | F | F |

# NSTM Traffic Flows - 2031 D1, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| NSTM Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, PM | 2031 D1 | PM | | ONE HOUR | 17:00 | 18:30 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | M1 Jct 15a (South) | Roundabout | 1,2,3 | | | | 344.51 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A43 N Link | |
| 2 | 2 | A43 S | |
| 3 | 3 | M1 Nbnd Offslip | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 9.80 | 9.80 | 0.00 | 17.00 | 92.00 | 55.00 | |
| 2 | 8.30 | 10.40 | 8.80 | 28.50 | 92.00 | 50.00 | |
| 3 | 4.60 | 5.20 | 1.00 | 19.70 | 92.00 | 56.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.573 | 2686.180 |
| 2 | | (calculated) | (calculated) | 0.587 | 2718.056 |
| 3 | | (calculated) | (calculated) | 0.382 | 1323.610 |

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1768.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 2022.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 764.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 1555.000 | 213.000 |
| | 2 | 1696.000 | 0.000 | 326.000 |
| | 3 | 575.000 | 189.000 | 0.000 |

### Turning Proportions (Veh) - Junction 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.88 | 0.12 |
| | 2 | 0.84 | 0.00 | 0.16 |
| | 3 | 0.75 | 0.25 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.091 | 1.014 |
| | 2 | 1.157 | 1.000 | 1.000 |
| | 3 | 1.294 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 9.1 | 1.4 |
| | 2 | 15.7 | 0.0 | 0.0 |
| | 3 | 29.4 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) | Total Queueing Delay (Veh-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (Veh-min/min) | Inclusive Total Queueing Delay (Veh-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.80 | 7.45 | 3.96 | A | 1622.35 | 2433.53 | 208.44 | 5.14 | 2.32 | 208.46 | 5.14 |
| 2 | 0.98 | 38.00 | 22.54 | E | 1855.42 | 2783.13 | 696.38 | 15.01 | 7.74 | 696.43 | 15.01 |
| 3 | 2.03 | 1787.10 | 301.04 | F | 701.06 | 1051.59 | 13624.49 | 777.37 | 151.38 | 17708.04 | 1010.36 |

## Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1331.05 | 332.76 | 1326.16 | 1682.14 | 135.30 | 0.00 | 2411.54 | 2430.54 | 0.552 | 0.00 | 1.22 | 3.302 | A |
| 2 | 1522.26 | 380.57 | 1514.72 | 1301.69 | 159.77 | 0.00 | 2317.81 | 2247.89 | 0.657 | 0.00 | 1.89 | 4.441 | A |
| 3 | 575.18 | 143.79 | 546.93 | 403.98 | 1270.51 | 0.00 | 624.37 | 401.99 | 0.921 | 0.00 | 7.06 | 38.213 | E |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1589.40 | 397.35 | 1586.68 | 1917.99 | 131.20 | 0.00 | 2413.71 | 2430.54 | 0.658 | 1.22 | 1.90 | 4.339 | A |
| 2 | 1817.73 | 454.43 | 1810.78 | 1526.72 | 191.15 | 0.00 | 2301.31 | 2247.89 | 0.790 | 1.89 | 3.62 | 7.237 | A |
| 3 | 686.82 | 171.71 | 530.34 | 483.10 | 1518.84 | 0.00 | 534.57 | 401.99 | 1.285 | 7.06 | 46.18 | 209.381 | F |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1946.61 | 486.65 | 1938.65 | 2140.22 | 105.28 | 0.00 | 2427.45 | 2430.54 | 0.802 | 1.90 | 3.89 | 7.249 | A |
| 2 | 2226.26 | 556.56 | 2169.74 | 1810.36 | 233.56 | 0.00 | 2279.03 | 2247.89 | 0.977 | 3.62 | 17.75 | 25.149 | D |
| 3 | 841.18 | 210.29 | 425.57 | 583.38 | 1819.92 | 0.00 | 425.69 | 401.99 | 1.976 | 46.18 | 150.08 | 846.319 | F |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1946.61 | 486.65 | 1946.35 | 2163.10 | 102.50 | 0.00 | 2428.92 | 2430.54 | 0.801 | 3.89 | 3.96 | 7.448 | A |
| 2 | 2226.26 | 556.56 | 2207.11 | 1814.35 | 234.49 | 0.00 | 2278.54 | 2247.89 | 0.977 | 17.75 | 22.54 | 38.003 | E |
| 3 | 841.18 | 210.29 | 414.34 | 590.33 | 1851.27 | 0.00 | 414.36 | 401.99 | 2.030 | 150.08 | 256.79 | 1778.379 | F |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1589.40 | 397.35 | 1597.44 | 1970.85 | 126.13 | 0.00 | 2416.40 | 2430.54 | 0.658 | 3.96 | 1.95 | 4.437 | A |
| 2 | 1817.73 | 454.43 | 1892.19 | 1531.12 | 192.45 | 0.00 | 2300.63 | 2247.89 | 0.790 | 22.54 | 3.93 | 10.358 | B |
| 3 | 686.82 | 171.71 | 509.85 | 497.52 | 1587.12 | 0.00 | 509.87 | 401.99 | 1.347 | 256.79 | 301.04 | 1787.097 | F |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1331.05 | 332.76 | 1333.83 | 1748.33 | 152.79 | 0.00 | 2402.27 | 2430.54 | 0.554 | 1.95 | 1.25 | 3.377 | A |
| 2 | 1522.26 | 380.57 | 1530.20 | 1325.93 | 160.69 | 0.00 | 2317.32 | 2247.89 | 0.657 | 3.93 | 1.94 | 4.618 | A |
| 3 | 575.18 | 143.79 | 617.62 | 407.40 | 1283.50 | 0.00 | 619.67 | 401.99 | 0.928 | 301.04 | 290.43 | 1723.910 | F |

## Queueing Delay Results for each time segment

### Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 17.79 | 1.19 | 3.302 | A | A |
| 2 | 27.05 | 1.80 | 4.441 | A | A |
| 3 | 78.01 | 5.20 | 38.213 | E | D |

### Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 27.59 | 1.84 | 4.339 | A | A |
| 2 | 50.77 | 3.38 | 7.237 | A | A |
| 3 | 403.08 | 26.87 | 209.381 | F | F |

### Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 54.31 | 3.62 | 7.249 | A | A |
| 2 | 193.49 | 12.90 | 25.149 | D | C |
| 3 | 1472.08 | 98.14 | 846.319 | F | F |

### Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 58.99 | 3.93 | 7.448 | A | A |
| 2 | 305.72 | 20.38 | 38.003 | E | D |
| 3 | 3051.60 | 203.44 | 1778.379 | F | F |

### Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 30.48 | 2.03 | 4.437 | A | A |
| 2 | 88.94 | 5.93 | 10.358 | B | B |
| 3 | 4183.74 | 278.92 | 1787.097 | F | F |

### Queueing Delay results: (18:15-18:30)

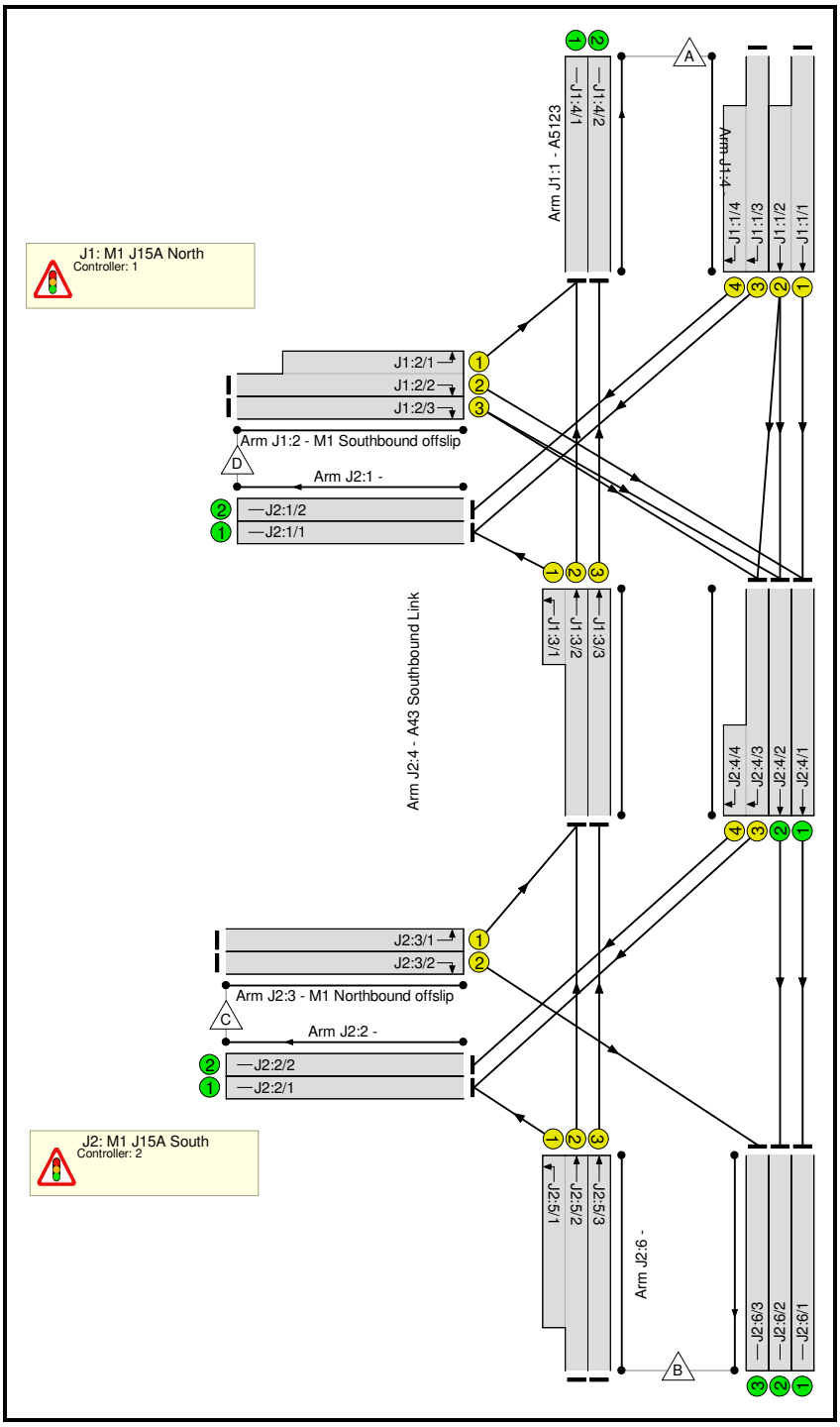
| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 19.29 | 1.29 | 3.377 | A | A |
| 2 | 30.40 | 2.03 | 4.618 | A | A |
| 3 | 4435.99 | 295.73 | 1723.910 | F | F |

## Full Input Data And Results

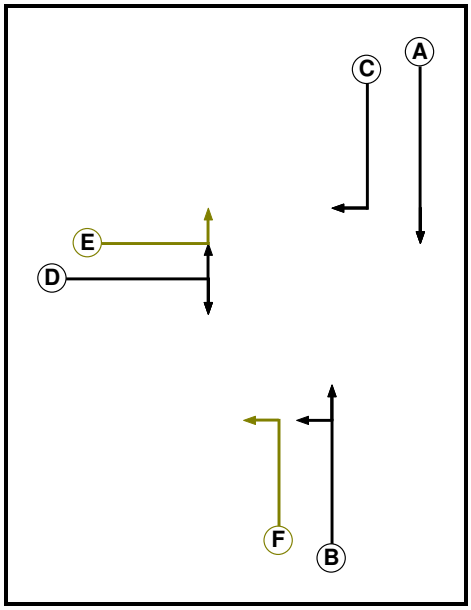
### User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway** |
| **Title:** | **M1 Junction 15a Proposed Rail Central Mitigation - J3 Cumulative Impact** |
| **Location:** | |
| **File name:** | 180126 Rail Central M1J15a Scheme.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House |
| **Notes:** | Rail Central mitigation layout as per 24 May 2017 presentation |

### Network Layout Diagram



**C1**
## 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 | Traffic | | 7 | 7 |
| E | Filter | D | 4 | 0 |
| F | Filter | B | 4 | 0 |

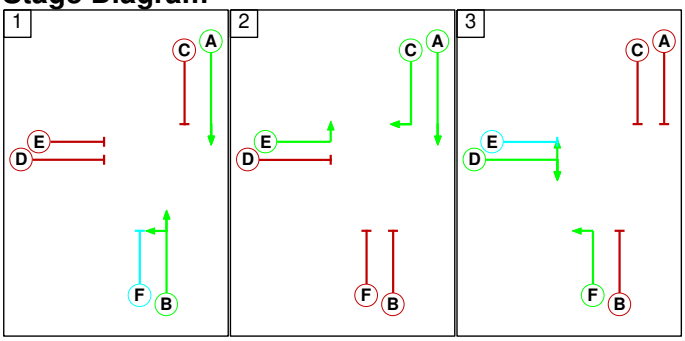
## Phase Intergreens Matrix

| | | Starting Phase | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| Terminating Phase | A | | - | - | 5 | - | - |
| | B | - | | 5 | 5 | 5 | - |
| | C | - | 5 | | 5 | - | 5 |
| | D | 5 | 5 | 5 | | - | - |
| | E | - | - | - | - | | - |
| | F | - | - | - | - | - | |

## Phases in Stage

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

## Stage Diagram

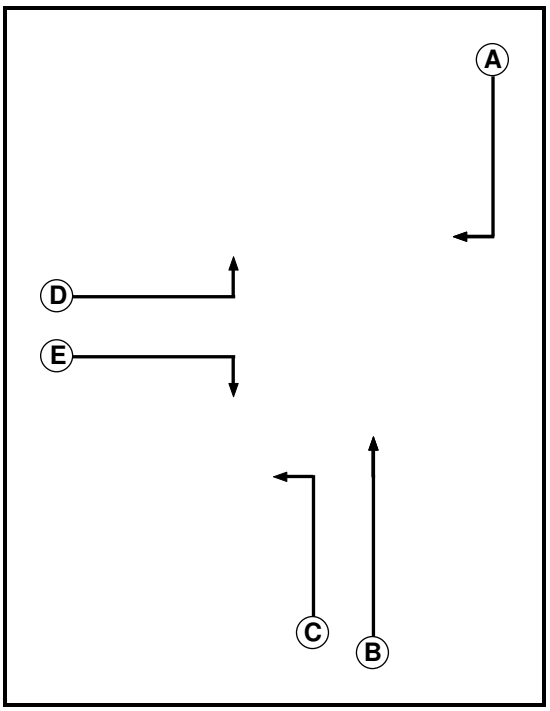



## Prohibited Stage Change

| | To Stage | | |
|---|---|---|---|
| From Stage | 1 | 2 | 3 |
| 1 | | 5 | 5 |
| 2 | X | | 5 |
| 3 | 5 | X | |

C2

## 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 | Traffic | | 7 | 7 |
| E | Traffic | | 7 | 7 |

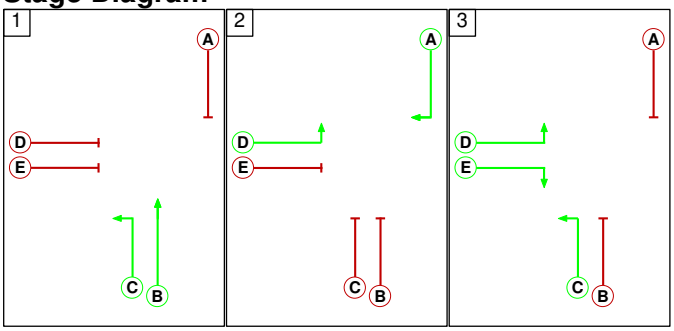
## Phase Intergreens Matrix

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

## Phases in Stage

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

## Stage Diagram




## Prohibited Stage Change

| | | To Stage | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From Stage | 1 | | 5 | 7 |
| | 2 | 7 | | 7 |
| | 3 | 5 | 5 | |

## Lane Input Data

| Junction: J1: M1 J15A North | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| J1:1/1 (A5123) | U | A | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:4 Ahead | Inf |
| J1:1/2 (A5123) | U | A | 2 | 3 | 11.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:4 Ahead | Inf |
| J1:1/3 (A5123) | U | C | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:1 Right | 20.00 |
| J1:1/4 (A5123) | U | C | 2 | 3 | 11.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:1 Right | 20.00 |
| J1:2/1 (M1 Southbound offslip) | U | D E | 2 | 3 | 18.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:4 Left | 12.00 |
| J1:2/2 (M1 Southbound offslip) | U | D | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:4 Right | Inf |
| J1:2/3 (M1 Southbound offslip) | U | D | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:4 Right | Inf |
| J1:3/1 (A43 Northbound Link) | U | B F | 2 | 3 | 5.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:1 Left | Inf |
| J1:3/2 (A43 Northbound Link) | U | B | 2 | 3 | 52.2 | Geom | - | 3.65 | 0.00 | Y | Arm J1:4 Ahead | Inf |
| J1:3/3 (A43 Northbound Link) | U | B | 2 | 3 | 52.2 | Geom | - | 3.65 | 0.00 | Y | Arm J1:4 Ahead | Inf |
| J1:4/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:4/2 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

| Junction: J2: M1 J15A South | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 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) |
| J2:1/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:1/2 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:2/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:2/2 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:3/1 (M1 Nb offslip) | U | D | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:3 Left | 15.00 |
| J2:3/2 (M1 Nd offslip) | U | E | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:6 Right | 25.00 |
| J2:4/1 (A43 Sb Link) | U | | 2 | 3 | 52.2 | User | 6000 | - | - | - | - | - |
| J2:4/2 (A43 Sb Link) | U | | 2 | 3 | 52.2 | User | 6000 | - | - | - | - | - |
| J2:4/3 (A43 Southbound Link) | U | A | 2 | 3 | 52.2 | User | 4000 | - | - | - | - | - |
| J2:4/4 (A43 Southbound Link) | U | A | 2 | 3 | 6.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:2 Right | Inf |
| J2:5/1 (A43) | U | C | 2 | 3 | 14.0 | Geom | - | 3.65 | 0.00 | Y | Arm J2:2 Left | 25.00 |
| J2:5/2 (A43) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:3 Ahead | Inf |
| J2:5/3 (A43) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm J1:3 Ahead | Inf |
| J2:6/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:6/2 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:6/3 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: 'J3 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 2: 'J3 PM Peak' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 J3 AM Peak'** (FG1: 'J3 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 2241 | 315 | 188 | 2744 |
| | B | 1284 | 0 | 820 | 803 | 2907 |
| | C | 424 | 452 | 0 | 100 | 976 |
| | D | 140 | 791 | 16 | 0 | 947 |
| | Tot. | 1848 | 3484 | 1151 | 1091 | 7574 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 J3 AM Peak |
|---|---|
| **Junction: J1: M1 J15A North** | |
| J1:1/1 (with short) | 2556(In) 1276(Out) |
| J1:1/2 (short) | 1280 |
| J1:1/3 (with short) | 188(In) 94(Out) |
| J1:1/4 (short) | 94 |
| J1:2/1 (short) | 140 |
| J1:2/2 (with short) | 548(In) 408(Out) |
| J1:2/3 | 399 |
| J1:3/1 (short) | 903 |
| J1:3/2 (with short) | 1442(In) 539(Out) |
| J1:3/3 | 1169 |
| J1:4/1 | 679 |
| J1:4/2 | 1169 |
| **Junction: J2: M1 J15A South** | |
| J2:1/1 | 997 |
| J2:1/2 | 94 |
| J2:2/1 | 1031 |
| J2:2/2 | 120 |
| J2:3/1 | 524 |
| J2:3/2 | 452 |
| J2:4/1 | 1684 |
| J2:4/2 | 1348 |
| J2:4/3 (with short) | 331(In) 211(Out) |
| J2:4/4 (short) | 120 |
| J2:5/1 (short) | 820 |
| J2:5/2 (with short) | 1738(In) 918(Out) |
| J2:5/3 | 1169 |
| J2:6/1 | 1684 |
| J2:6/2 | 1348 |
| J2:6/3 | 452 |

## Lane Saturation Flows

| Junction: J1: M1 J15A North | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (A5123) | 3.65 | 0.00 | Y | Arm J2:4 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:1/2 (A5123) | 3.65 | 0.00 | Y | Arm J2:4 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:1/3 (A5123) | 3.65 | 0.00 | Y | Arm J2:1 Right | 20.00 | 100.0 % | 1842 | 1842 |
| J1:1/4 (A5123) | 3.65 | 0.00 | Y | Arm J2:1 Right | 20.00 | 100.0 % | 1842 | 1842 |
| J1:2/1 (M1 Southbound offslip) | 3.65 | 0.00 | Y | Arm J1:4 Left | 12.00 | 100.0 % | 1760 | 1760 |
| J1:2/2 (M1 Southbound offslip) | 3.65 | 0.00 | Y | Arm J2:4 Right | Inf | 100.0 % | 1980 | 1980 |
| J1:2/3 (M1 Southbound offslip) | 3.65 | 0.00 | Y | Arm J2:4 Right | Inf | 100.0 % | 1980 | 1980 |
| J1:3/1 (A43 Northbound Link) | 3.65 | 0.00 | Y | Arm J2:1 Left | Inf | 100.0 % | 1980 | 1980 |
| J1:3/2 (A43 Northbound Link) | 3.65 | 0.00 | Y | Arm J1:4 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:3/3 (A43 Northbound Link) | 3.65 | 0.00 | Y | Arm J1:4 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

| Junction: J2: M1 J15A South | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J2:1/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:1/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:3/1 (M1 Northbound offslip) | 3.65 | 0.00 | Y | Arm J1:3 Left | 15.00 | 100.0 % | 1800 | 1800 |
| J2:3/2 (M1 Northbound offslip) | 3.65 | 0.00 | Y | Arm J2:6 Right | 25.00 | 100.0 % | 1868 | 1868 |
| J2:4/1 (A43 Southbound Link Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 6000 | 6000 |
| J2:4/2 (A43 Southbound Link Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 6000 | 6000 |
| J2:4/3 (A43 Southbound Link Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 4000 | 4000 |
| J2:4/4 (A43 Southbound Link) | 3.65 | 0.00 | Y | Arm J2:2 Right | Inf | 100.0 % | 1980 | 1980 |
| J2:5/1 (A43) | 3.65 | 0.00 | Y | Arm J2:2 Left | 25.00 | 100.0 % | 1868 | 1868 |
| J2:5/2 (A43) | 3.65 | 0.00 | Y | Arm J1:3 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J2:5/3 (A43) | 3.65 | 0.00 | Y | Arm J1:3 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J2:6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:6/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 2: '2031 J3 PM Peak'** (FG2: 'J3 PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 1147 | 176 | 252 | 1575 |
| | B | 1519 | 0 | 908 | 681 | 3108 |
| | C | 508 | 391 | 0 | 307 | 1206 |
| | D | 387 | 522 | 6 | 0 | 915 |
| | Tot. | 2414 | 2060 | 1090 | 1240 | 6804 |

## Traffic Lane Flows

| Lane | Scenario 2: 2031 J3 PM Peak |
|---|---|
| **Junction: J1: M1 J15A North** | |
| J1:1/1 (with short) | 1323(In) 659(Out) |
| J1:1/2 (short) | 664 |
| J1:1/3 (with short) | 252(In) 126(Out) |
| J1:1/4 (short) | 126 |
| J1:2/1 (short) | 387 |
| J1:2/2 (with short) | 677(In) 290(Out) |
| J1:2/3 | 238 |
| J1:3/1 (short) | 988 |
| J1:3/2 (with short) | 1766(In) 778(Out) |
| J1:3/3 | 1249 |
| J1:4/1 | 1165 |
| J1:4/2 | 1249 |
| **Junction: J2: M1 J15A South** | |
| J2:1/1 | 1114 |
| J2:1/2 | 126 |
| J2:2/1 | 1030 |
| J2:2/2 | 60 |
| J2:3/1 | 815 |
| J2:3/2 | 391 |
| J2:4/1 | 949 |
| J2:4/2 | 720 |
| J2:4/3 (with short) | 182(In) 122(Out) |
| J2:4/4 (short) | 60 |
| J2:5/1 (short) | 908 |
| J2:5/2 (with short) | 1859(In) 951(Out) |
| J2:5/3 | 1249 |
| J2:6/1 | 949 |
| J2:6/2 | 720 |
| J2:6/3 | 391 |

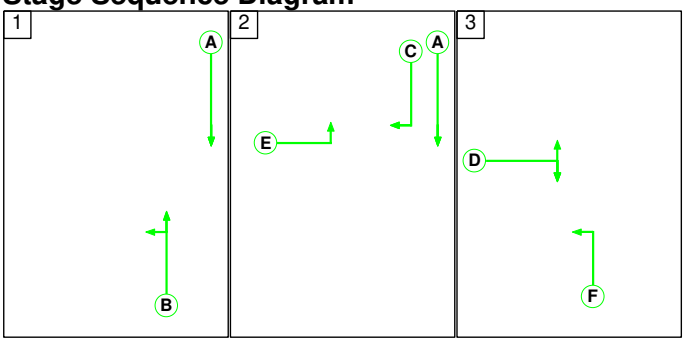
## Lane Saturation Flows

| Junction: J1: M1 J15A North | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (A5123) | 3.65 | 0.00 | Y | Arm J2:4 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:1/2 (A5123) | 3.65 | 0.00 | Y | Arm J2:4 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:1/3 (A5123) | 3.65 | 0.00 | Y | Arm J2:1 Right | 20.00 | 100.0 % | 1842 | 1842 |
| J1:1/4 (A5123) | 3.65 | 0.00 | Y | Arm J2:1 Right | 20.00 | 100.0 % | 1842 | 1842 |
| J1:2/1 (M1 Southbound offslip) | 3.65 | 0.00 | Y | Arm J1:4 Left | 12.00 | 100.0 % | 1760 | 1760 |
| J1:2/2 (M1 Southbound offslip) | 3.65 | 0.00 | Y | Arm J2:4 Right | Inf | 100.0 % | 1980 | 1980 |
| J1:2/3 (M1 Southbound offslip) | 3.65 | 0.00 | Y | Arm J2:4 Right | Inf | 100.0 % | 1980 | 1980 |
| J1:3/1 (A43 Northbound Link) | 3.65 | 0.00 | Y | Arm J2:1 Left | Inf | 100.0 % | 1980 | 1980 |
| J1:3/2 (A43 Northbound Link) | 3.65 | 0.00 | Y | Arm J1:4 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:3/3 (A43 Northbound Link) | 3.65 | 0.00 | Y | Arm J1:4 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J1:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

| Junction: J2: M1 J15A South | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J2:1/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:1/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:3/1 (M1 Northbound offslip) | 3.65 | 0.00 | Y | Arm J1:3 Left | 15.00 | 100.0 % | 1800 | 1800 |
| J2:3/2 (M1 Northbound offslip) | 3.65 | 0.00 | Y | Arm J2:6 Right | 25.00 | 100.0 % | 1868 | 1868 |
| J2:4/1 (A43 Southbound Link Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 6000 | 6000 |
| J2:4/2 (A43 Southbound Link Lane 2) | This lane uses a directly entered Saturation Flow | | | | | | 6000 | 6000 |
| J2:4/3 (A43 Southbound Link Lane 3) | This lane uses a directly entered Saturation Flow | | | | | | 4000 | 4000 |
| J2:4/4 (A43 Southbound Link) | 3.65 | 0.00 | Y | Arm J2:2 Right | Inf | 100.0 % | 1980 | 1980 |
| J2:5/1 (A43) | 3.65 | 0.00 | Y | Arm J2:2 Left | 25.00 | 100.0 % | 1868 | 1868 |
| J2:5/2 (A43) | 3.65 | 0.00 | Y | Arm J1:3 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J2:5/3 (A43) | 3.65 | 0.00 | Y | Arm J1:3 Ahead | Inf | 100.0 % | 1980 | 1980 |
| J2:6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:6/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 1: '2031 J3 AM Peak'** (FG1: 'J3 AM Peak', Plan 1: 'Network Control Plan 1')
**C1**

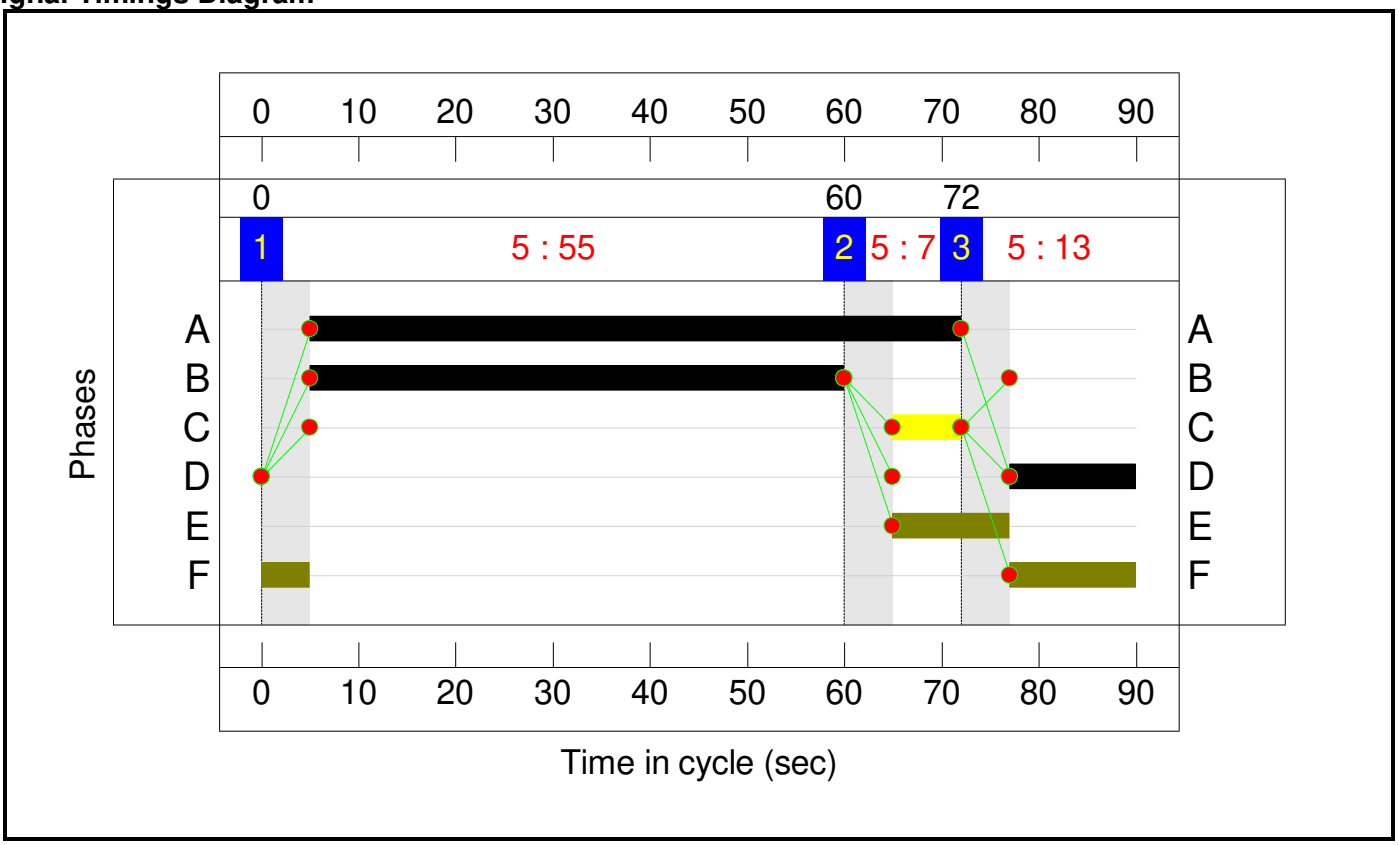
## Stage Sequence Diagram




## Stage Timings

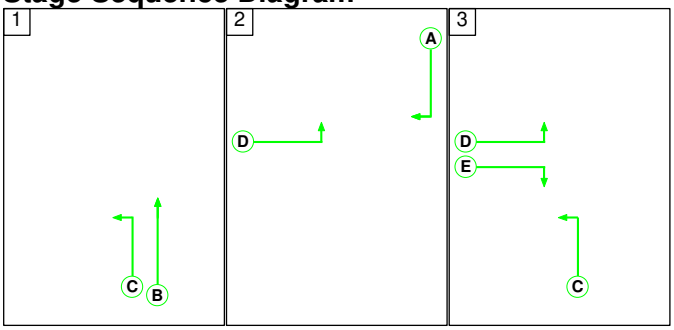
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| **Duration** | 55 | 7 | 13 |
| **Change Point** | 0 | 60 | 72 |

## Signal Timings Diagram




## C2

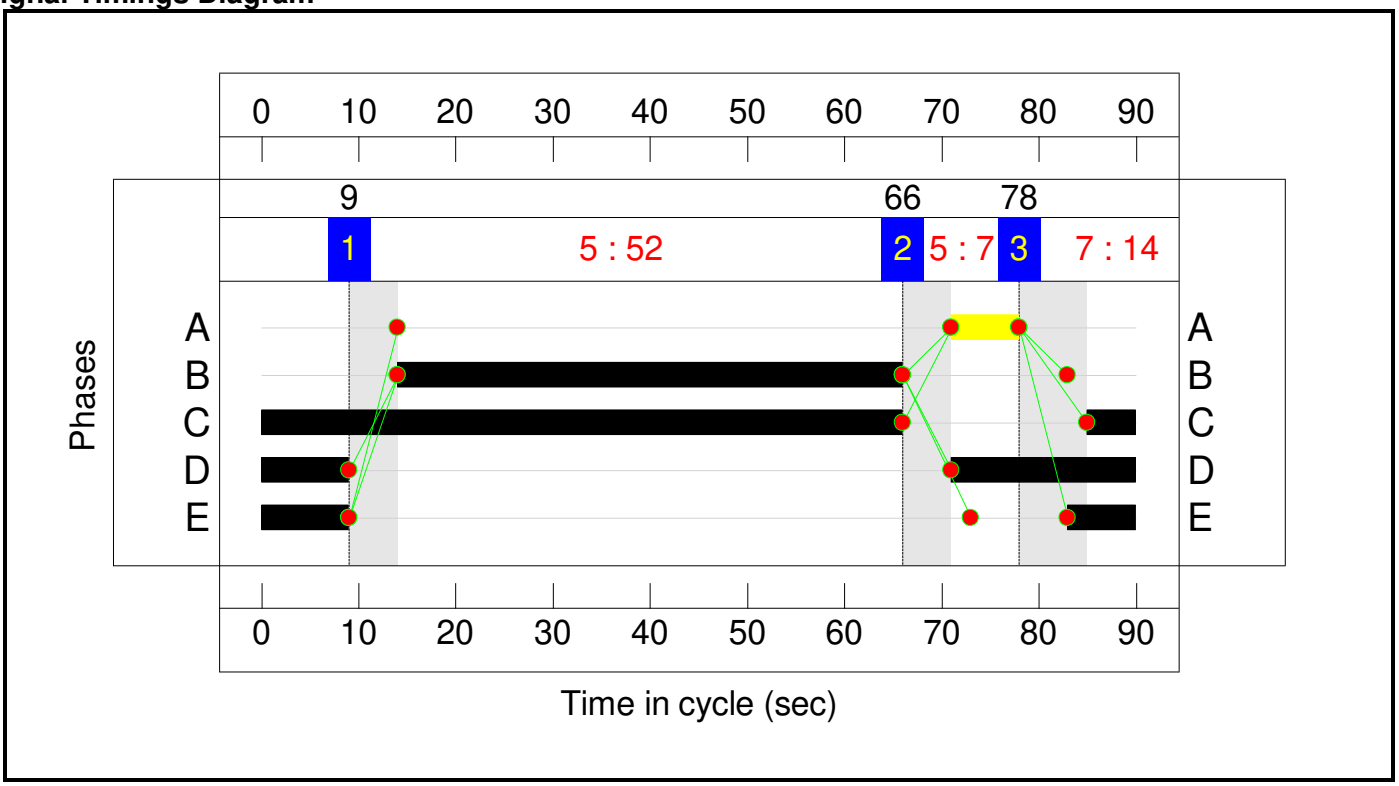
## Stage Sequence Diagram




## Stage Timings

| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 52 | 7 | 14 |
| Change Point | 9 | 66 | 78 |

**Signal Timings Diagram**



## Network Results

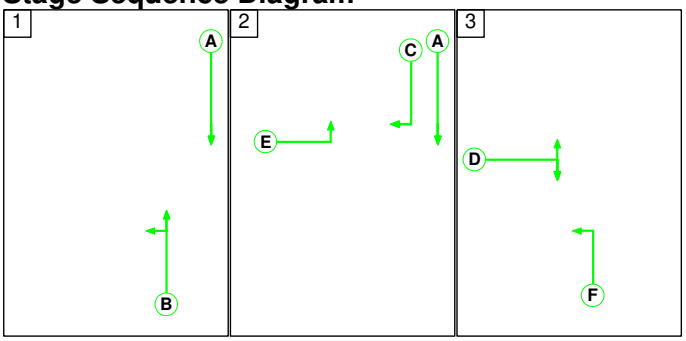
| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: M1 Junction 15a Proposed Rail Central Mitigation - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **132.5%** |
| **J1: M1 J15A North** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **132.5%** |
| 1/1+1/2 | A5123 Ahead | U | N/A | N/A | C1:A | | 1 | 67 | - | 2556 | 1980:1980 | 966+969 | 132.1 : 132.1% |
| 1/3+1/4 | A5123 Right | U | N/A | N/A | C1:C | | 1 | 7 | - | 188 | 1842:1842 | 164+164 | 57.4 : 57.4% |
| 2/2+2/1 | M1 Southbound offslip Right Left | U | N/A | N/A | C1:D | C1:E | 1 | 13:25 | 12 | 548 | 1980:1760 | 308+106 | 132.5 : 132.5% |
| 2/3 | M1 Southbound offslip Right | U | N/A | N/A | C1:D | | 1 | 13 | - | 399 | 1980 | 308 | 129.5% |
| 3/2+3/1 | A43 Northbound Link Left Ahead | U | N/A | N/A | C1:B | C1:F | 1 | 55:73 | 18 | 1442 | 1980:1980 | 586+983 | 91.0 : 88.2% |
| 3/3 | A43 Northbound Link Ahead | U | N/A | N/A | C1:B | | 1 | 55 | - | 1169 | 1980 | 1232 | 94.6% |
| **J2: M1 J15A South** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **128.1%** |
| 3/1 | M1 Northbound offslip Left | U | N/A | N/A | C2:D | | 1 | 28 | - | 524 | 1800 | 580 | 90.3% |
| 3/2 | M1 Northbound offslip Right | U | N/A | N/A | C2:E | | 1 | 16 | - | 452 | 1868 | 353 | 128.1% |
| 4/1 | A43 Southbound Link Ahead | U | N/A | N/A | - | | - | - | - | 1684 | 6000 | 6000 | 21.2% |
| 4/2 | A43 Southbound Link Ahead | U | N/A | N/A | - | | - | - | - | 1348 | 6000 | 6000 | 17.1% |
| 4/3+4/4 | A43 Southbound Link Right | U | N/A | N/A | C2:A | | 1 | 7 | - | 331 | 4000:1980 | 302+172 | 52.9 : 52.9% |
| 5/2+5/1 | A43 Left Ahead | U | N/A | N/A | C2:B C2:C | | 1 | 52:71 | - | 1738 | 1980:1868 | 876+783 | 104.7 : 104.7% |
| 5/3 | A43 Ahead | U | N/A | N/A | C2:B | | 1 | 52 | - | 1169 | 1980 | 1166 | 100.3% |

| 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: M1 Junction 15a Proposed Rail Central Mitigation - J3 Cumulative Impact** | **-** | **-** | **0** | **0** | **0** | **95.2** | **564.3** | **0.0** | **659.5** | **-** | **-** | **-** | **-** |
| **J1: M1 J15A North** | **-** | **-** | **0** | **0** | **0** | **65.6** | **441.4** | **0.0** | **507.0** | **-** | **-** | **-** | **-** |
| 1/1+1/2 | 2556 | 1935 | - | - | - | 39.5 | 312.8 | - | 352.3 | 496.2 | 90.3 | 312.8 | 403.1 |
| 1/3+1/4 | 188 | 188 | - | - | - | 2.1 | 0.7 | - | 2.7 | 52.2 | 2.2 | 0.7 | 2.9 |
| 2/2+2/1 | 548 | 448 | - | - | - | 9.0 | 69.1 | - | 78.2 | 513.5 | 13.5 | 69.1 | 82.6 |
| 2/3 | 399 | 308 | - | - | - | 8.9 | 47.6 | - | 56.5 | 509.5 | 14.2 | 47.6 | 61.8 |
| 3/2+3/1 | 1400 | 1400 | - | - | - | 1.0 | 4.0 | - | 5.0 | 12.8 | 10.5 | 4.0 | 14.5 |
| 3/3 | 1166 | 1166 | - | - | - | 5.1 | 7.2 | - | 12.3 | 38.1 | 14.0 | 7.2 | 21.2 |
| **J2: M1 J15A South** | **-** | **-** | **0** | **0** | **0** | **29.7** | **122.9** | **0.0** | **152.5** | **-** | **-** | **-** | **-** |
| 3/1 | 524 | 524 | - | - | - | 4.2 | 4.1 | - | 8.3 | 57.2 | 12.5 | 4.1 | 16.6 |
| 3/2 | 452 | 353 | - | - | - | 9.5 | 51.8 | - | 61.2 | 487.6 | 14.8 | 51.8 | 66.5 |
| 4/1 | 1274 | 1274 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.4 | 0.0 | 0.1 | 0.1 |
| 4/2 | 1026 | 1026 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.4 | 0.0 | 0.1 | 0.1 |
| 4/3+4/4 | 251 | 251 | - | - | - | 2.4 | 0.6 | - | 3.0 | 43.1 | 3.8 | 0.6 | 4.3 |
| 5/2+5/1 | 1738 | 1659 | - | - | - | 7.4 | 48.4 | - | 55.7 | 115.5 | 38.6 | 48.4 | 87.0 |
| 5/3 | 1169 | 1166 | - | - | - | 6.1 | 17.9 | - | 24.0 | 73.9 | 29.3 | 17.9 | 47.2 |

| | | | | |
|---|---|---|---|---|
| C1 | PRC for Signalled Lanes (%): | -47.2 | Total Delay for Signalled Lanes (pcuHr): | 506.97 | Cycle Time (s): | 90 |
| C2 | PRC for Signalled Lanes (%): | -42.3 | Total Delay for Signalled Lanes (pcuHr): | 152.28 | Cycle Time (s): | 90 |
| | PRC Over All Lanes (%): | -47.2 | Total Delay Over All Lanes(pcuHr): | 659.49 | | |

**Scenario 2: '2031 J3 PM Peak'** (FG2: 'J3 PM Peak', Plan 1: 'Network Control Plan 1')
**C1**

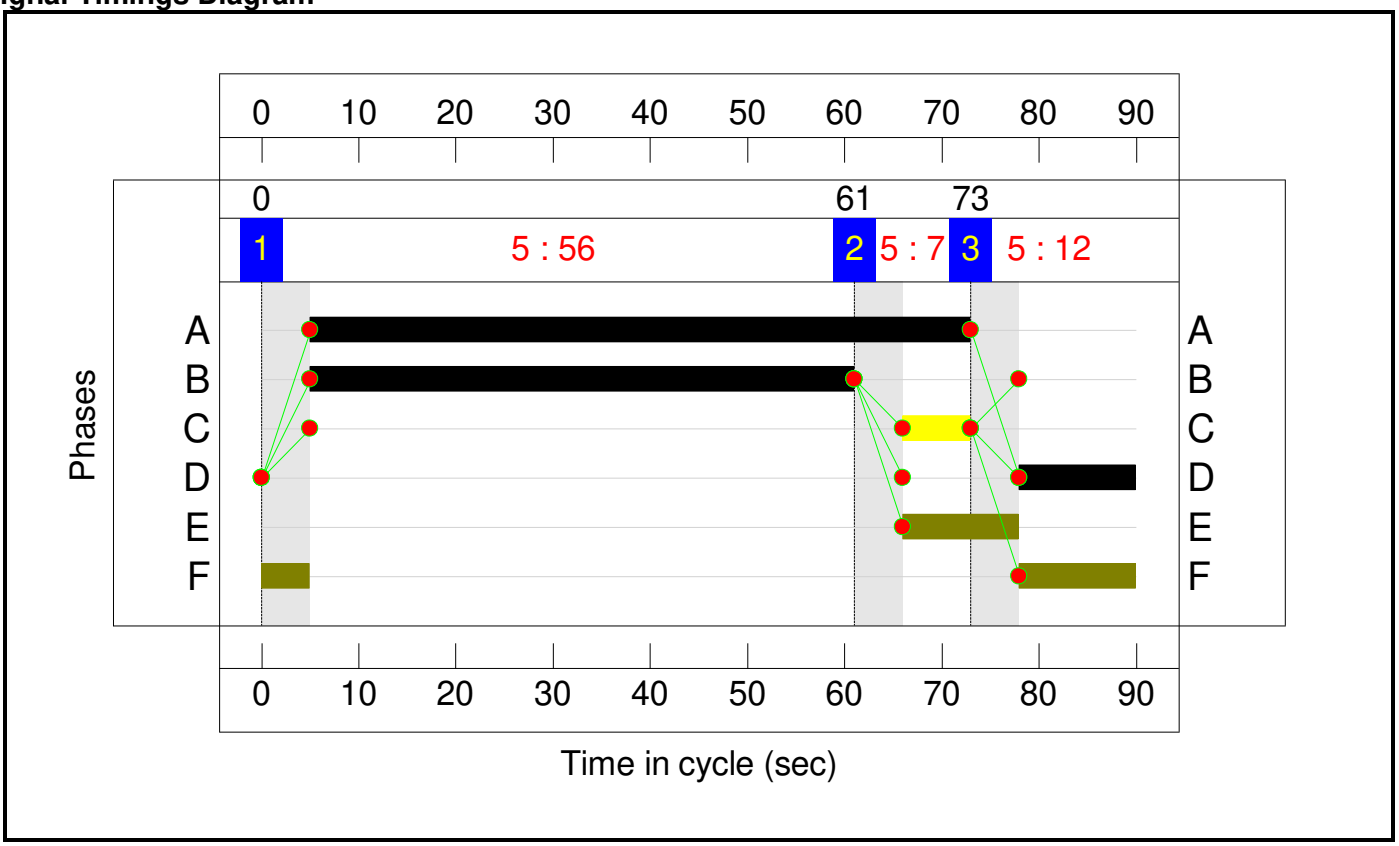
## Stage Sequence Diagram




## Stage Timings

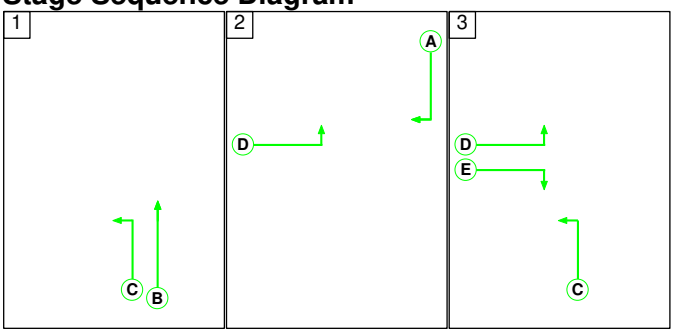
| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 56 | 7 | 12 |
| Change Point | 0 | 61 | 73 |

## Signal Timings Diagram




**C2**

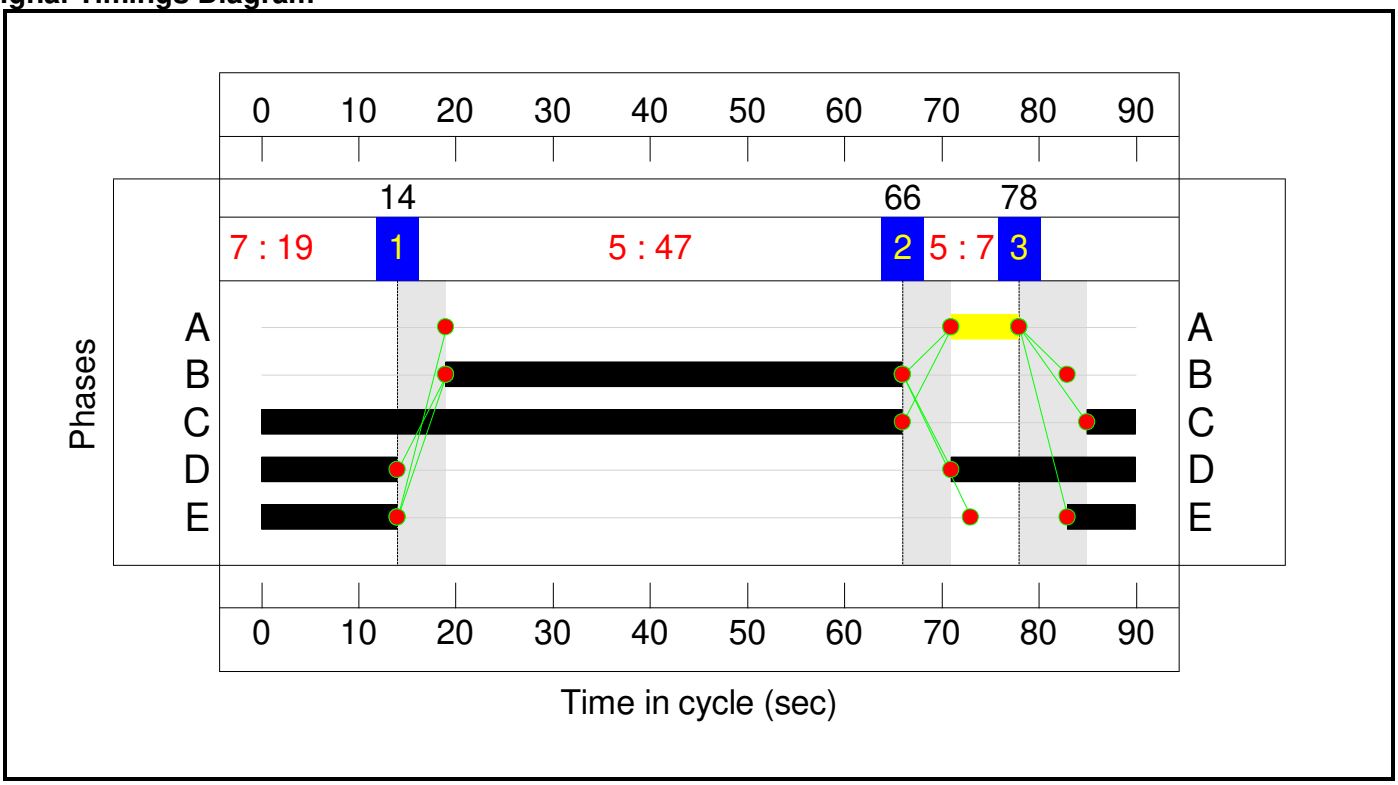
## Stage Sequence Diagram



## Stage Timings

| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 47 | 7 | 19 |
| Change Point | 14 | 66 | 78 |

## Signal Timings Diagram



## 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: M1 Junction 15a Proposed Rail Central Mitigation - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **119.9%** |
| **J1: M1 J15A North** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **101.4%** |
| 1/1+1/2 | A5123 Ahead | U | N/A | N/A | C1:A | | 1 | 68 | - | 1323 | 1980:1980 | 974+981 | 67.7 : 67.7% |
| 1/3+1/4 | A5123 Right | U | N/A | N/A | C1:C | | 1 | 7 | - | 252 | 1842:1842 | 164+164 | 77.0 : 77.0% |
| 2/2+2/1 | M1 Southbound offslip Right Left | U | N/A | N/A | C1:D | C1:E | 1 | 12:24 | 12 | 677 | 1980:1760 | 286+489 | 101.4 : 79.2% |
| 2/3 | M1 Southbound offslip Right | U | N/A | N/A | C1:D | | 1 | 12 | - | 238 | 1980 | 286 | 83.2% |
| 3/2+3/1 | A43 Northbound Link Left Ahead | U | N/A | N/A | C1:B | C1:F | 1 | 56:73 | 17 | 1766 | 1980:1980 | 665+845 | 98.4 : 99.1% |
| 3/3 | A43 Northbound Link Ahead | U | N/A | N/A | C1:B | | 1 | 56 | - | 1249 | 1980 | 1254 | 84.2% |
| **J2: M1 J15A South** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **119.9%** |
| 3/1 | M1 Northbound offslip Left | U | N/A | N/A | C2:D | | 1 | 33 | - | 815 | 1800 | 680 | 119.9% |
| 3/2 | M1 Northbound offslip Right | U | N/A | N/A | C2:E | | 1 | 21 | - | 391 | 1868 | 457 | 85.6% |
| 4/1 | A43 Southbound Link Ahead | U | N/A | N/A | - | | - | - | - | 949 | 6000 | 6000 | 15.8% |
| 4/2 | A43 Southbound Link Ahead | U | N/A | N/A | - | | - | - | - | 720 | 6000 | 6000 | 12.0% |
| 4/3+4/4 | A43 Southbound Link Right | U | N/A | N/A | C2:A | | 1 | 7 | - | 182 | 4000:1980 | 307+151 | 39.8 : 39.8% |
| 5/2+5/1 | A43 Left Ahead | U | N/A | N/A | C2:B C2:C | | 1 | 47:71 | - | 1859 | 1980:1868 | 811+775 | 117.2 : 117.2% |
| 5/3 | A43 Ahead | U | N/A | N/A | C2:B | | 1 | 47 | - | 1249 | 1980 | 1056 | 118.3% |

| 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: M1 Junction 15a Proposed Rail Central Mitigation - J3 Cumulative Impact** | **-** | **-** | **0** | **0** | **0** | **68.0** | **340.9** | **0.0** | **408.9** | **-** | **-** | **-** | **-** |
| **J1: M1 J15A North** | **-** | **-** | **0** | **0** | **0** | **19.0** | **28.0** | **0.0** | **47.0** | **-** | **-** | **-** | **-** |
| 1/1+1/2 | 1323 | 1323 | - | - | - | 1.4 | 1.0 | - | 2.4 | 6.5 | 5.7 | 1.0 | 6.8 |
| 1/3+1/4 | 252 | 252 | - | - | - | 2.8 | 1.6 | - | 4.4 | 63.0 | 3.1 | 1.6 | 4.7 |
| 2/2+2/1 | 677 | 673 | - | - | - | 6.4 | 5.2 | - | 11.7 | 62.1 | 8.9 | 5.2 | 14.2 |
| 2/3 | 238 | 238 | - | - | - | 2.5 | 2.3 | - | 4.7 | 71.7 | 5.8 | 2.3 | 8.0 |
| 3/2+3/1 | 1491 | 1491 | - | - | - | 1.2 | 15.2 | - | 16.5 | 39.7 | 16.6 | 15.2 | 31.8 |
| 3/3 | 1056 | 1056 | - | - | - | 4.7 | 2.6 | - | 7.3 | 25.0 | 13.1 | 2.6 | 15.7 |
| **J2: M1 J15A South** | **-** | **-** | **0** | **0** | **0** | **48.9** | **313.0** | **0.0** | **361.9** | **-** | **-** | **-** | **-** |
| 3/1 | 815 | 680 | - | - | - | 13.1 | 70.4 | - | 83.5 | 368.8 | 23.8 | 70.4 | 94.1 |
| 3/2 | 391 | 391 | - | - | - | 3.5 | 2.7 | - | 6.3 | 57.8 | 9.3 | 2.7 | 12.1 |
| 4/1 | 945 | 945 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.4 | 0.0 | 0.1 | 0.1 |
| 4/2 | 720 | 720 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.3 | 0.0 | 0.1 | 0.1 |
| 4/3+4/4 | 182 | 182 | - | - | - | 1.8 | 0.3 | - | 2.1 | 42.2 | 2.9 | 0.3 | 3.2 |
| 5/2+5/1 | 1859 | 1586 | - | - | - | 15.9 | 139.7 | - | 155.6 | 301.4 | 57.5 | 139.7 | 197.2 |
| 5/3 | 1249 | 1056 | - | - | - | 14.6 | 99.6 | - | 114.2 | 329.1 | 36.0 | 99.6 | 135.7 |

| | | | | |
|---|---|---|---|---|
| C1 | PRC for Signalled Lanes (%): | -12.7 | Total Delay for Signalled Lanes (pcuHr): | 47.01 | Cycle Time (s): | 90 |
| C2 | PRC for Signalled Lanes (%): | -33.2 | Total Delay for Signalled Lanes (pcuHr): | 361.72 | Cycle Time (s): | 90 |
| | PRC Over All Lanes (%): | -33.2 | Total Delay Over All Lanes(pcuHr): | 408.89 | | |

# JUNCTION 3

# SITE ACCESS ROUNDABOUT

# Junctions 8

## ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** 180321 Site access with RC.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:17:02

» (Default Analysis Set) - 2031 J3, AM
» (Default Analysis Set) - 2031 J3, PM

## Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS | Queue (PCU) | Delay (s) | RFC | LOS |
| | A1 - 2031 J3 | | | | | | | |
| Arm 1 | 5.71 | 8.37 | 0.83 | A | 3.22 | 5.40 | 0.73 | A |
| Arm 2 | 4.43 | 11.53 | 0.79 | B | 2.97 | 7.53 | 0.73 | A |
| Arm 3 | 0.02 | 3.98 | 0.01 | A | 0.11 | 3.56 | 0.09 | A |

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

*"D3 - 2031 J3, AM " model duration: 07:45 - 09:15*
*"D4 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:17:00*

## File summary

| | |
|---|---|
| **Title** | Proposed Site Access |
| **Location** | Northampton |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# (Default Analysis Set) - 2031 J3, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Pedestrian Crossing | Arm 1 - Pelican/Puffin Details | Pedestrian crossing uses default settings only. Is this correct? |
| Warning | Pedestrian Crossing | Arm 1 - Pelican/Puffin Details | Pedestrian crossing uses default flow of 0. Is this correct? |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3 | | | | 8.97 | A |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A508 (North) | |
| 2 | 2 | A508 (South) | |
| 3 | 3 | Site access | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 7.30 | 13.50 | 29.10 | 20.00 | 86.00 | 55.00 | |
| 2 | 3.70 | 9.10 | 60.00 | 20.00 | 86.00 | 52.00 | |
| 3 | 3.90 | 7.90 | 21.10 | 20.00 | 86.00 | 50.00 | |

## Bypass

| Arm | Arm Has Bypass | Bypass Utilisation (%) |
|---|---|---|
| 1 | | |
| 2 | | |
| 3 | ✓ | 98 |

## Pedestrian Crossings

| Arm | Crossing Type |
|---|---|
| 1 | Puffin |
| 2 | None |
| 3 | None |

## Pelican/ Puffin Crossings

| Arm | Amber time preceding red (s) | Amber time regarded as green (s) | Time from traffic red start to green man start (s) | Time period green man shown (s) | Clearance Period (s) | Traffic minimum green (s) | Space between crossing and junction entry (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 3.00 | 2.90 | 1.00 | 6.00 | 6.00 | 7.00 | 0.00 |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.634 | 3040.142 |
| 2 | | (calculated) | (calculated) | 0.517 | 2208.879 |
| 3 | | (calculated) | (calculated) | 0.461 | 1801.708 |

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 2282.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 1288.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 388.00 | 100.000 |

# Pedestrian Flows

## General Flows Data

| Arm | Profile Type | Average Pedestrian Flow (Ped/hr) |
|---|---|---|
| 1 | ONE HOUR | 0.00 |
| 2 | - | - |
| 3 | - | - |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 1541.000 | 741.000 |
| | 2 | 1151.000 | 0.000 | 137.000 |
| | 3 | 380.000 | 8.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.68 | 0.32 |
| | 2 | 0.89 | 0.00 | 0.11 |
| | 3 | 0.98 | 0.02 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.160 | 1.361 |
| | 2 | 1.148 | 1.000 | 1.655 |
| | 3 | 2.030 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 12.3 | 27.8 |
| | 2 | 11.4 | 0.0 | 50.4 |
| | 3 | 79.2 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.83 | 8.37 | 5.71 | A | 2094.00 | 3141.00 | 286.14 | 5.47 | 3.18 | 286.17 | 5.47 |
| 2 | 0.79 | 11.53 | 4.43 | B | 1181.89 | 1772.84 | 219.61 | 7.43 | 2.44 | 219.64 | 7.43 |
| 3 | 0.01 | 3.98 | 0.02 | A | 356.04 | 21.47 | 1.33 | 3.70 | 0.01 | 1.33 | 3.70 |

# (Default Analysis Set) - 2031 J3, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Pedestrian Crossing | Arm 1 - Pelican/Puffin Details | Pedestrian crossing uses default settings only. Is this correct? |
| Warning | Pedestrian Crossing | Arm 1 - Pelican/Puffin Details | Pedestrian crossing uses default flow of 0. Is this correct? |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

### Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

### Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3 | | | | 5.57 | A |

### Junction Network Options

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

# Arms

### Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| **1** | 1 | A508 (North) | |
| **2** | 2 | A508 (South) | |
| **3** | 3 | Site access | |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| **1** | 0.00 | 99999.00 | | 0.00 |
| **2** | 0.00 | 99999.00 | | 0.00 |
| **3** | 0.00 | 99999.00 | | 0.00 |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| **1** | 7.30 | 13.50 | 29.10 | 20.00 | 86.00 | 55.00 | |
| **2** | 3.70 | 9.10 | 60.00 | 20.00 | 86.00 | 52.00 | |
| **3** | 3.90 | 7.90 | 21.10 | 20.00 | 86.00 | 50.00 | |

### Bypass

| Arm | Arm Has Bypass | Bypass Utilisation (%) |
|---|---|---|
| **1** | | |
| **2** | | |
| **3** | ✓ | 98 |

### Pedestrian Crossings

| Arm | Crossing Type |
|---|---|
| 1 | Puffin |
| 2 | None |
| 3 | None |

### Pelican/ Puffin Crossings

| Arm | Amber time preceding red (s) | Amber time regarded as green (s) | Time from traffic red start to green man start (s) | Time period green man shown (s) | Clearance Period (s) | Traffic minimum green (s) | Space between crossing and junction entry (PCU) |
|---|---|---|---|---|---|---|---|
| 1 | 3.00 | 2.90 | 1.00 | 6.00 | 6.00 | 7.00 | 0.00 |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.634 | 3040.142 |
| 2 | | (calculated) | (calculated) | 0.517 | 2208.879 |
| 3 | | (calculated) | (calculated) | 0.461 | 1801.708 |

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1972.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 1308.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 1101.00 | 100.000 |

# Pedestrian Flows

### General Flows Data

| Arm | Profile Type | Average Pedestrian Flow (Ped/hr) |
|---|---|---|
| 1 | ONE HOUR | 0.00 |
| 2 | - | - |
| 3 | - | - |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 1577.000 | 395.000 |
| | 2 | 1223.000 | 0.000 | 85.000 |
| | 3 | 1023.000 | 78.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.80 | 0.20 |
| | 2 | 0.94 | 0.00 | 0.06 |
| | 3 | 0.93 | 0.07 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.140 | 1.705 |
| | 2 | 1.107 | 1.000 | 1.963 |
| | 3 | 1.382 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 10.8 | 54.2 |
| | 2 | 8.2 | 0.0 | 74.1 |
| | 3 | 29.4 | 0.0 | 0.0 |

# Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.73 | 5.40 | 3.22 | A | 1809.54 | 2714.31 | 182.80 | 4.04 | 2.03 | 182.81 | 4.04 |
| 2 | 0.73 | 7.53 | 2.97 | A | 1200.24 | 1800.37 | 164.64 | 5.49 | 1.83 | 164.66 | 5.49 |
| 3 | 0.09 | 3.56 | 0.11 | A | 1010.30 | 135.52 | 7.32 | 3.24 | 0.08 | 7.32 | 3.24 |

# JUNCTION 5

# A508/BLISWORTH ROAD

# Junctions 8

## PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** A508 Couteenhall Road Picady (UPDATED D1 Existing Layout NSTM).arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP
**Report generation date:** 12/04/2018 11:20:06

» D1, AM
» D1, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | D1 | | | | | |
| Stream B-C | 28.90 | 538.37 | 1.54 | 25.92 | 1771.65 | 9999999999.00 |
| Stream B-A | 10.16 | 616.40 | 1.48 | 36.69 | 5077.65 | 9999999999.00 |
| Stream C-AB | 8.92 | 118.29 | 1.14 | 36.55 | 341.96 | 1.45 |
| Stream C-A | - | - | - | - | - | - |
| Stream A-B | - | - | - | - | - | - |
| Stream A-C | - | - | - | - | - | - |

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

*"D1 - D1, AM " model duration: 07:45 - 09:15*
*"D2 - D1, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 12/04/2018 11:20:03*

## File summary

| | |
|---|---|
| Title | A508/Courteenhall Road |
| Location | |
| Site Number | |
| Date | 20/07/2017 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | Roxhill (Junciton 15) Ltd |
| Jobnumber | ADC1475 |
| Enumerator | ADCteam |
| Description | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# D1, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1, AM | D1 | AM | 2031 Reference Case | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 214.65 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 (S) | | Major |
| **B** | B | Couteenhall Road | | Minor |
| **C** | C | A508 (N) | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| C | 7.00 | | 0.00 | | 2.20 | 130.00 | ✓ | 1.00 |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | | | | 10.00 | 5.70 | 3.70 | 3.10 | 2.90 | ✓ | 1.00 | 19 | 33 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 510.231 | 0.089 | 0.225 | 0.141 | 0.321 |
| 1 | B-C | 696.208 | 0.102 | 0.258 | - | - |
| 1 | C-B | 649.248 | 0.241 | 0.241 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 807.00 | 100.000 |
| B | ONE HOUR | ✓ | 202.00 | 100.000 |
| C | ONE HOUR | ✓ | 1367.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 56.000 | 751.000 |
| | B | 50.000 | 0.000 | 152.000 |
| | C | 1067.000 | 300.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.07 | 0.93 |
| | B | 0.25 | 0.00 | 0.75 |
| | C | 0.78 | 0.22 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.216 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.178 | 1.013 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 16.6 |
| | B | 0.0 | 0.0 | 0.0 |
| | C | 13.7 | 1.0 | 0.0 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 1.54 | 538.37 | 28.90 | F | 139.48 | 209.22 | 638.11 | 183.00 | 7.09 | 638.12 | 183.00 |
| B-A | 1.48 | 616.40 | 10.16 | F | 45.88 | 68.82 | 258.57 | 225.42 | 2.87 | 258.58 | 225.43 |
| C-AB | 1.14 | 118.29 | 8.92 | F | 659.88 | 989.82 | 386.86 | 23.45 | 4.30 | 386.96 | 23.46 |
| C-A | - | - | - | - | 594.50 | 891.75 | - | - | - | - | - |
| A-B | - | - | - | - | 51.39 | 77.08 | - | - | - | - | - |
| A-C | - | - | - | - | 689.13 | 1033.70 | - | - | - | - | - |

# D1, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1, PM | D1 | PM | 2031 Reference Case | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 726.83 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 (S) | | Major |
| **B** | B | Couteenhall Road | | Minor |
| **C** | C | A508 (N) | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **C** | 7.00 | | 0.00 | | 2.20 | 130.00 | ✓ | 1.00 |

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

### Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | | | | 10.00 | 5.70 | 3.70 | 3.10 | 2.90 | ✓ | 1.00 | 19 | 33 |

### Slope / Intercept / Capacity

#### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 557.830 | 0.097 | 0.246 | 0.155 | 0.351 |
| 1 | B-C | 689.480 | 0.101 | 0.256 | - | - |
| 1 | C-B | 649.248 | 0.241 | 0.241 | - | - |

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

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

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 970.00 | 100.000 |
| B | ONE HOUR | ✓ | 117.00 | 100.000 |
| C | ONE HOUR | ✓ | 1236.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 8.000 | 962.000 |
| | B | 68.000 | 0.000 | 49.000 |
| | C | 898.000 | 338.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.01 | 0.99 |
| | B | 0.58 | 0.00 | 0.42 |
| | C | 0.73 | 0.27 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.109 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.138 | 1.328 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 8.4 |
| | B | 0.0 | 0.0 | 0.0 |
| | C | 10.6 | 25.2 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 9999999999.00 | 1771.65 | 25.92 | F | 44.96 | 67.44 | 959.19 | 853.31 | 10.66 | 963.74 | 857.36 |
| B-A | 9999999999.00 | 5077.65 | 36.69 | F | 62.40 | 93.60 | 1373.15 | 880.25 | 15.26 | 1378.54 | 883.71 |
| C-AB | 1.45 | 341.96 | 36.55 | F | 827.45 | 1241.17 | 1201.62 | 58.09 | 13.35 | 1202.02 | 58.11 |
| C-A | - | - | - | - | 306.73 | 460.09 | - | - | - | - | - |
| A-B | - | - | - | - | 7.34 | 11.01 | - | - | - | - | - |
| A-C | - | - | - | - | 882.75 | 1324.12 | - | - | - | - | - |

# Junctions 8

## PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** 180321 A508 Couteenhall Road with RC (Proposed LILO).arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:25:41

» (Default Analysis Set) - 2031 J3, AM
» (Default Analysis Set) - 2031 J3, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | A1 - 2031 J3 | | | | | |
| Stream B-C | 2.55 | 29.98 | 0.72 | 0.59 | 25.13 | 0.30 |
| Stream B-A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Stream C-A | - | - | - | - | - | - |
| Stream C-B | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Stream A-B | - | - | - | - | - | - |
| Stream A-C | - | - | - | - | - | - |

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

*"D7 - 2031 J3, AM " model duration: 07:45 - 09:15*
*"D8 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:25:38*

## File summary

| | |
|---|---|
| Title | A508/Courteenhall Road |
| Location | Northampton |
| Site Number | Northampton Gateway SRFI |
| Date | 21/03/2018 |
| Version | v1 |
| Status | |
| Identifier | MH |
| Client | Roxhill |
| Jobnumber | ADC1475 |
| Enumerator | ADCteam |
| Description | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# (Default Analysis Set) - 2031 J3, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 29.98 | D |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 (S) | | Major |
| **B** | B | Couteenhall Road | | Minor |
| **C** | C | A508 (N) | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| C | 8.00 | | 0.00 | | 2.20 | 130.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | | | | 10.00 | 5.60 | 3.90 | 3.10 | 3.10 | ✓ | 1.00 | 160 | 160 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 601.257 | 0.100 | 0.253 | 0.159 | 0.361 |
| 1 | B-C | 798.664 | 0.112 | 0.283 | - | - |
| 1 | C-B | 649.248 | 0.230 | 0.230 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 1218.00 | 100.000 |
| B | ONE HOUR | ✓ | 290.00 | 100.000 |
| C | ONE HOUR | ✓ | 1572.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 115.000 | 1103.000 |
| | B | 0.000 | 0.000 | 290.000 |
| | C | 1572.000 | 0.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.09 | 0.91 |
| | B | 0.00 | 0.00 | 1.00 |
| | C | 1.00 | 0.00 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.012 | 1.222 |
| | B | 1.000 | 1.000 | 1.031 |
| | C | 1.163 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.9 | 17.1 |
| | B | 0.0 | 0.0 | 2.4 |
| | C | 12.5 | 0.0 | 0.0 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.72 | 29.98 | 2.55 | D | 266.11 | 399.16 | 123.05 | 18.50 | 1.37 | 123.08 | 18.50 |
| B-A | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| C-A | - | - | - | - | 1442.49 | 2163.74 | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| A-B | - | - | - | - | 105.53 | 158.29 | - | - | - | - | - |
| A-C | - | - | - | - | 1012.13 | 1518.20 | - | - | - | - | - |

# Main Results for each time segment

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 218.33 | 54.58 | 215.70 | 0.00 | 554.38 | 0.394 | 0.00 | 0.66 | 10.879 | B |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 194.59 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1183.48 | 295.87 | 1183.48 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 438.65 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 86.58 | 21.64 | 86.58 | 0.00 | - | - | - | - | - | - |
| A-C | 830.40 | 207.60 | 830.40 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 260.70 | 65.18 | 259.10 | 0.00 | 506.97 | 0.514 | 0.66 | 1.06 | 14.879 | B |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 115.65 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1413.20 | 353.30 | 1413.20 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 397.77 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 103.38 | 25.85 | 103.38 | 0.00 | - | - | - | - | - | - |
| A-C | 991.57 | 247.89 | 991.57 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 319.30 | 79.82 | 313.80 | 0.00 | 441.41 | 0.723 | 1.06 | 2.43 | 27.949 | D |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 6.52 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1730.80 | 432.70 | 1730.80 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 341.26 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 126.62 | 31.65 | 126.62 | 0.00 | - | - | - | - | - | - |
| A-C | 1214.43 | 303.61 | 1214.43 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 319.30 | 79.82 | 318.82 | 0.00 | 441.41 | 0.723 | 2.43 | 2.55 | 29.982 | D |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 6.52 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1730.80 | 432.70 | 1730.80 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 341.26 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 126.62 | 31.65 | 126.62 | 0.00 | - | - | - | - | - | - |
| A-C | 1214.43 | 303.61 | 1214.43 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 260.70 | 65.18 | 266.39 | 0.00 | 506.97 | 0.514 | 2.55 | 1.13 | 15.772 | C |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 115.65 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1413.20 | 353.30 | 1413.20 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 397.77 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 103.38 | 25.85 | 103.38 | 0.00 | - | - | - | - | - | - |
| A-C | 991.57 | 247.89 | 991.57 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 218.33 | 54.58 | 220.11 | 0.00 | 554.38 | 0.394 | 1.13 | 0.68 | 11.165 | B |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 194.59 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1183.48 | 295.87 | 1183.48 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 438.65 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 86.58 | 21.64 | 86.58 | 0.00 | - | - | - | - | - | - |
| A-C | 830.40 | 207.60 | 830.40 | 0.00 | - | - | - | - | - | - |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 9.29 | 0.62 | 10.879 | B | B |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:00-08:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 14.97 | 1.00 | 14.879 | B | B |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:15-08:30)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 32.07 | 2.14 | 27.949 | D | C |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:30-08:45)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 37.54 | 2.50 | 29.982 | D | C |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:45-09:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 18.43 | 1.23 | 15.772 | C | B |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (09:00-09:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 10.75 | 0.72 | 11.165 | B | B |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

# (Default Analysis Set) - 2031 J3, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 25.13 | D |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 (S) | | Major |
| **B** | B | Couteenhall Road | | Minor |
| **C** | C | A508 (N) | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **C** | 8.00 | | 0.00 | | 2.20 | 130.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **B** | One lane plus flare | | | | 10.00 | 5.60 | 3.90 | 3.10 | 3.10 | ✓ | 1.00 | 160 | 160 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| **1** | B-A | 601.257 | 0.100 | 0.253 | 0.159 | 0.361 |
| **1** | B-C | 798.664 | 0.112 | 0.283 | - | - |
| **1** | C-B | 649.248 | 0.230 | 0.230 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 1374.00 | 100.000 |
| B | ONE HOUR | ✓ | 78.00 | 100.000 |
| C | ONE HOUR | ✓ | 1623.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 73.000 | 1301.000 |
| | B | 0.000 | 0.000 | 78.000 |
| | C | 1623.000 | 0.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.05 | 0.95 |
| | B | 0.00 | 0.00 | 1.00 |
| | C | 1.00 | 0.00 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.018 | 1.118 |
| | B | 1.000 | 1.000 | 1.417 |
| | C | 1.127 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 1.4 | 9.1 |
| | B | 0.0 | 0.0 | 32.1 |
| | C | 9.8 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.30 | 25.13 | 0.59 | D | 71.57 | 107.36 | 29.95 | 16.74 | 0.33 | 29.95 | 16.74 |
| B-A | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| C-A | - | - | - | - | 1489.29 | 2233.94 | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| A-B | - | - | - | - | 66.99 | 100.48 | - | - | - | - | - |
| A-C | - | - | - | - | 1193.82 | 1790.73 | - | - | - | - | - |

## Main Results for each time segment

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 58.72 | 14.68 | 58.00 | 0.00 | 515.81 | 0.114 | 0.00 | 0.18 | 11.129 | B |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 153.97 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1221.88 | 305.47 | 1221.88 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 411.68 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 54.96 | 13.74 | 54.96 | 0.00 | - | - | - | - | - | - |
| A-C | 979.46 | 244.87 | 979.46 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 70.12 | 17.53 | 69.84 | 0.00 | 460.90 | 0.152 | 0.18 | 0.25 | 13.037 | B |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 67.15 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1459.04 | 364.76 | 1459.04 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 365.57 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 65.63 | 16.41 | 65.63 | 0.00 | - | - | - | - | - | - |
| A-C | 1169.57 | 292.39 | 1169.57 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 85.88 | 21.47 | 84.57 | 0.00 | 288.74 | 0.297 | 0.25 | 0.58 | 24.833 | C |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1786.96 | 446.74 | 1786.96 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 301.81 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 80.37 | 20.09 | 80.37 | 0.00 | - | - | - | - | - | - |
| A-C | 1432.43 | 358.11 | 1432.43 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 85.88 | 21.47 | 85.84 | 0.00 | 288.74 | 0.297 | 0.58 | 0.59 | 25.130 | D |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1786.96 | 446.74 | 1786.96 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 301.81 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 80.37 | 20.09 | 80.37 | 0.00 | - | - | - | - | - | - |
| A-C | 1432.43 | 358.11 | 1432.43 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 70.12 | 17.53 | 71.44 | 0.00 | 460.90 | 0.152 | 0.59 | 0.26 | 13.145 | B |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 67.15 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1459.04 | 364.76 | 1459.04 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 365.57 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 65.63 | 16.41 | 65.63 | 0.00 | - | - | - | - | - | - |
| A-C | 1169.57 | 292.39 | 1169.57 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 58.72 | 14.68 | 59.02 | 0.00 | 515.81 | 0.114 | 0.26 | 0.18 | 11.176 | B |
| B-A | 0.00 | 0.00 | 0.00 | 0.00 | 153.97 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| C-A | 1221.88 | 305.47 | 1221.88 | 0.00 | - | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.00 | 0.00 | 411.68 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| A-B | 54.96 | 13.74 | 54.96 | 0.00 | - | - | - | - | - | - |
| A-C | 979.46 | 244.87 | 979.46 | 0.00 | - | - | - | - | - | - |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 2.57 | 0.17 | 11.129 | B | B |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (17:00-17:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 3.63 | 0.24 | 13.037 | B | B |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:15-17:30)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 8.03 | 0.54 | 24.833 | C | C |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:30-17:45)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 8.76 | 0.58 | 25.130 | D | C |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:45-18:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 4.10 | 0.27 | 13.145 | B | B |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (18:00-18:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 2.86 | 0.19 | 11.176 | B | B |
| B-A | 0.00 | 0.00 | 0.000 | A | A |
| C-A | - | - | - | - | - |
| C-B | 0.00 | 0.00 | 0.000 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

# JUNCTION 6

# ROADE BYPASS NORTHERN ROUNDABOUT

# Junctions 8

## ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** 180321 Roade Bypass Northern Roundabout with RC.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:30:38

» Traffic Flows - 2031 J3, AM
» Traffic Flows - 2031 J3, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | Traffic Flows - 2031 J3 | | | | | |
| Arm 1 | 2.87 | 6.02 | 0.71 | 3.75 | 7.67 | 0.77 |
| Arm 2 | 0.29 | 3.95 | 0.22 | 0.73 | 5.10 | 0.42 |
| Arm 3 | 1.38 | 4.59 | 0.53 | 1.83 | 5.61 | 0.62 |

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

*"D3 - 2031 J3, AM " model duration: 07:45 - 09:15*
*"D4 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:30:36*

## File summary

| | |
|---|---|
| **Title** | Roade Bypass Northern Roundabout |
| **Location** | Roade |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 02/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

### Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# Traffic Flows - 2031 J3, AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | Arm 1 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry | Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry | Arm 3 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

### Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

### Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

### Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3 | | | | 5.34 | A |

### Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A508 (S) | |
| 2 | 2 | A508 (N) | |
| 3 | 3 | Roade Bypass | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 3.65 | 9.00 | 67.00 | 24.00 | 70.00 | 28.00 | |
| 2 | 3.65 | 7.90 | 37.00 | 20.00 | 70.00 | 30.00 | |
| 3 | 3.65 | 9.00 | 39.00 | 20.00 | 70.00 | 33.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.624 | 2433.258 |
| 2 | | (calculated) | (calculated) | 0.560 | 2047.585 |
| 3 | | (calculated) | (calculated) | 0.583 | 2209.241 |

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1572.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 244.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 986.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 251.000 | 1321.000 |
| | 2 | 244.000 | 0.000 | 0.000 |
| | 3 | 973.000 | 13.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.16 | 0.84 |
| | 2 | 1.00 | 0.00 | 0.00 |
| | 3 | 0.99 | 0.01 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.057 | 1.183 |
| | 2 | 1.059 | 1.000 | 1.000 |
| | 3 | 1.238 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 4.4 | 14.1 |
| | 2 | 4.5 | 0.0 | 0.0 |
| | 3 | 18.3 | 0.0 | 0.0 |

# Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.71 | 6.02 | 2.87 | A | 1442.49 | 2163.74 | 165.16 | 4.58 | 1.84 | 165.17 | 4.58 |
| 2 | 0.22 | 3.95 | 0.29 | A | 223.90 | 335.85 | 19.17 | 3.42 | 0.21 | 19.17 | 3.42 |
| 3 | 0.53 | 4.59 | 1.38 | A | 904.77 | 1357.16 | 88.31 | 3.90 | 0.98 | 88.31 | 3.90 |

# Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1183.48 | 295.87 | 1179.10 | 912.99 | 9.75 | 0.00 | 2427.17 | 2419.43 | 0.488 | 0.00 | 1.10 | 3.339 | A |
| 2 | 183.70 | 45.92 | 183.10 | 198.02 | 990.83 | 0.00 | 1492.49 | 908.57 | 0.123 | 0.00 | 0.15 | 2.908 | A |
| 3 | 742.31 | 185.58 | 739.63 | 990.83 | 183.10 | 0.00 | 2102.46 | 1679.39 | 0.353 | 0.00 | 0.67 | 3.255 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1413.20 | 353.30 | 1411.17 | 1092.91 | 11.67 | 0.00 | 2425.97 | 2419.43 | 0.583 | 1.10 | 1.60 | 4.111 | A |
| 2 | 219.35 | 54.84 | 219.15 | 236.99 | 1185.85 | 0.00 | 1383.24 | 908.57 | 0.159 | 0.15 | 0.20 | 3.273 | A |
| 3 | 886.39 | 221.60 | 885.44 | 1185.85 | 219.15 | 0.00 | 2081.44 | 1679.39 | 0.426 | 0.67 | 0.91 | 3.710 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1730.80 | 432.70 | 1725.88 | 1337.74 | 14.29 | 0.00 | 2424.33 | 2419.43 | 0.714 | 1.60 | 2.83 | 5.942 | A |
| 2 | 268.65 | 67.16 | 268.27 | 289.86 | 1450.31 | 0.00 | 1235.08 | 908.57 | 0.218 | 0.20 | 0.29 | 3.938 | A |
| 3 | 1085.61 | 271.40 | 1083.76 | 1450.31 | 268.27 | 0.00 | 2052.79 | 1679.39 | 0.529 | 0.91 | 1.37 | 4.576 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1730.80 | 432.70 | 1730.68 | 1339.91 | 14.31 | 0.00 | 2424.32 | 2419.43 | 0.714 | 2.83 | 2.87 | 6.024 | A |
| 2 | 268.65 | 67.16 | 268.64 | 290.65 | 1454.34 | 0.00 | 1232.82 | 908.57 | 0.218 | 0.29 | 0.29 | 3.951 | A |
| 3 | 1085.61 | 271.40 | 1085.58 | 1454.34 | 268.64 | 0.00 | 2052.58 | 1679.39 | 0.529 | 1.37 | 1.38 | 4.593 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1413.20 | 353.30 | 1418.10 | 1096.23 | 11.71 | 0.00 | 2425.94 | 2419.43 | 0.583 | 2.87 | 1.64 | 4.167 | A |
| 2 | 219.35 | 54.84 | 219.72 | 238.14 | 1191.68 | 0.00 | 1379.97 | 908.57 | 0.159 | 0.29 | 0.20 | 3.287 | A |
| 3 | 886.39 | 221.60 | 888.22 | 1191.68 | 219.72 | 0.00 | 2081.11 | 1679.39 | 0.426 | 1.38 | 0.92 | 3.728 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1183.48 | 295.87 | 1185.58 | 917.39 | 9.80 | 0.00 | 2427.14 | 2419.43 | 0.488 | 1.64 | 1.11 | 3.374 | A |
| 2 | 183.70 | 45.92 | 183.90 | 199.10 | 996.28 | 0.00 | 1489.44 | 908.57 | 0.123 | 0.20 | 0.15 | 2.920 | A |
| 3 | 742.31 | 185.58 | 743.29 | 996.28 | 183.90 | 0.00 | 2102.00 | 1679.39 | 0.353 | 0.92 | 0.68 | 3.271 | A |

# Queueing Delay Results for each time segment

## Queueing Delay results: (07:45-08:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 16.01 | 1.07 | 3.339 | A | A |
| 2 | 2.18 | 0.15 | 2.908 | A | A |
| 3 | 9.82 | 0.65 | 3.255 | A | A |

## Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 23.40 | 1.56 | 4.111 | A | A |
| 2 | 2.94 | 0.20 | 3.273 | A | A |
| 3 | 13.37 | 0.89 | 3.710 | A | A |

## Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 40.48 | 2.70 | 5.942 | A | A |
| 2 | 4.31 | 0.29 | 3.938 | A | A |
| 3 | 20.00 | 1.33 | 4.576 | A | A |

## Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 42.79 | 2.85 | 6.024 | A | A |
| 2 | 4.40 | 0.29 | 3.951 | A | A |
| 3 | 20.63 | 1.38 | 4.593 | A | A |

## Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 25.40 | 1.69 | 4.167 | A | A |
| 2 | 3.06 | 0.20 | 3.287 | A | A |
| 3 | 14.15 | 0.94 | 3.728 | A | A |

## Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 17.08 | 1.14 | 3.374 | A | A |
| 2 | 2.27 | 0.15 | 2.920 | A | A |
| 3 | 10.34 | 0.69 | 3.271 | A | A |

# Traffic Flows - 2031 J3, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | Arm 1 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry | Arm 2 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry | Arm 3 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3 | | | | 6.59 | A |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| **1** | 1 | A508 (S) | |
| **2** | 2 | A508 (N) | |
| **3** | 3 | Roade Bypass | |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 3.65 | 9.00 | 67.00 | 24.00 | 70.00 | 28.00 | |
| 2 | 3.65 | 7.90 | 37.00 | 20.00 | 70.00 | 30.00 | |
| 3 | 3.65 | 9.00 | 39.00 | 20.00 | 70.00 | 33.00 | |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.624 | 2433.258 |
| 2 | | (calculated) | (calculated) | 0.560 | 2047.585 |
| 3 | | (calculated) | (calculated) | 0.583 | 2209.241 |

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1623.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 473.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 1074.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 322.000 | 1301.000 |
| | 2 | 473.000 | 0.000 | 0.000 |
| | 3 | 901.000 | 173.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.20 | 0.80 |
| | 2 | 1.00 | 0.00 | 0.00 |
| | 3 | 0.84 | 0.16 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.138 | 1.124 |
| | 2 | 1.027 | 1.000 | 1.000 |
| | 3 | 1.156 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 10.6 | 9.5 |
| | 2 | 2.1 | 0.0 | 0.0 |
| | 3 | 12.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.77 | 7.67 | 3.75 | A | 1489.29 | 2233.94 | 200.44 | 5.38 | 2.23 | 200.46 | 5.38 |
| 2 | 0.42 | 5.10 | 0.73 | A | 434.03 | 651.05 | 44.80 | 4.13 | 0.50 | 44.80 | 4.13 |
| 3 | 0.62 | 5.61 | 1.83 | A | 985.52 | 1478.28 | 109.31 | 4.44 | 1.21 | 109.32 | 4.44 |

## Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1221.88 | 305.47 | 1217.05 | 1030.60 | 129.75 | 0.00 | 2352.23 | 2271.32 | 0.519 | 0.00 | 1.21 | 3.558 | A |
| 2 | 356.10 | 89.02 | 354.83 | 371.21 | 975.59 | 0.00 | 1501.03 | 1027.58 | 0.237 | 0.00 | 0.32 | 3.224 | A |
| 3 | 808.56 | 202.14 | 805.53 | 975.59 | 354.83 | 0.00 | 2002.32 | 1609.99 | 0.404 | 0.00 | 0.76 | 3.383 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1459.04 | 364.76 | 1456.48 | 1233.59 | 155.31 | 0.00 | 2336.27 | 2271.31 | 0.625 | 1.21 | 1.85 | 4.594 | A |
| 2 | 425.22 | 106.30 | 424.70 | 444.28 | 1167.52 | 0.00 | 1393.51 | 1027.58 | 0.305 | 0.32 | 0.45 | 3.815 | A |
| 3 | 965.50 | 241.38 | 964.21 | 1167.52 | 424.70 | 0.00 | 1961.57 | 1609.99 | 0.492 | 0.76 | 1.08 | 4.065 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1786.96 | 446.74 | 1779.62 | 1509.23 | 190.01 | 0.00 | 2314.60 | 2271.31 | 0.772 | 1.85 | 3.68 | 7.477 | A |
| 2 | 520.78 | 130.20 | 519.66 | 543.08 | 1426.55 | 0.00 | 1248.39 | 1027.58 | 0.417 | 0.45 | 0.73 | 5.068 | A |
| 3 | 1182.50 | 295.62 | 1179.58 | 1426.55 | 519.66 | 0.00 | 1906.19 | 1609.99 | 0.620 | 1.08 | 1.81 | 5.565 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1786.96 | 446.74 | 1786.70 | 1512.73 | 190.47 | 0.00 | 2314.32 | 2271.31 | 0.772 | 3.68 | 3.75 | 7.674 | A |
| 2 | 520.78 | 130.20 | 520.76 | 544.94 | 1432.22 | 0.00 | 1245.21 | 1027.58 | 0.418 | 0.73 | 0.73 | 5.104 | A |
| 3 | 1182.50 | 295.62 | 1182.43 | 1432.22 | 520.76 | 0.00 | 1905.55 | 1609.99 | 0.621 | 1.81 | 1.83 | 5.613 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1459.04 | 364.76 | 1466.44 | 1238.74 | 155.99 | 0.00 | 2335.85 | 2271.31 | 0.625 | 3.75 | 1.90 | 4.702 | A |
| 2 | 425.22 | 106.30 | 426.33 | 446.93 | 1175.50 | 0.00 | 1389.04 | 1027.58 | 0.306 | 0.73 | 0.46 | 3.845 | A |
| 3 | 965.50 | 241.38 | 968.40 | 1175.50 | 426.33 | 0.00 | 1960.62 | 1609.99 | 0.492 | 1.83 | 1.10 | 4.104 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1221.88 | 305.47 | 1224.57 | 1036.08 | 130.46 | 0.00 | 2351.79 | 2271.32 | 0.520 | 1.90 | 1.23 | 3.607 | A |
| 2 | 356.10 | 89.02 | 356.64 | 373.41 | 981.61 | 0.00 | 1497.66 | 1027.58 | 0.238 | 0.46 | 0.32 | 3.241 | A |
| 3 | 808.56 | 202.14 | 809.90 | 981.61 | 356.64 | 0.00 | 2001.26 | 1609.99 | 0.404 | 1.10 | 0.77 | 3.410 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 17.57 | 1.17 | 3.558 | A | A |
| 2 | 4.67 | 0.31 | 3.224 | A | A |
| 3 | 11.10 | 0.74 | 3.383 | A | A |

### Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 26.85 | 1.79 | 4.594 | A | A |
| 2 | 6.61 | 0.44 | 3.815 | A | A |
| 3 | 15.88 | 1.06 | 4.065 | A | A |

## Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 51.64 | 3.44 | 7.477 | A | A |
| 2 | 10.63 | 0.71 | 5.068 | A | A |
| 3 | 26.18 | 1.75 | 5.565 | A | A |

## Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 55.83 | 3.72 | 7.674 | A | A |
| 2 | 10.98 | 0.73 | 5.104 | A | A |
| 3 | 27.35 | 1.82 | 5.613 | A | A |

## Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 29.65 | 1.98 | 4.702 | A | A |
| 2 | 6.99 | 0.47 | 3.845 | A | A |
| 3 | 17.03 | 1.14 | 4.104 | A | A |

## Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 18.90 | 1.26 | 3.607 | A | A |
| 2 | 4.91 | 0.33 | 3.241 | A | A |
| 3 | 11.77 | 0.78 | 3.410 | A | A |

# JUNCTION 7

# ROADE BYPASS/KNOCK LANE ROUNDABOUT

# Junctions 8

## ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** 180321 Roade Bypass_Knock Lane with RC.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:34:54

» Traffic Flows - 2031 J3, AM
» Traffic Flows - 2031 J3, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | Traffic Flows - 2031 J3 | | | | | |
| Arm 1 | 3.50 | 8.82 | 0.75 | 2.76 | 7.03 | 0.71 |
| Arm 2 | 0.10 | 6.49 | 0.09 | 0.26 | 6.49 | 0.21 |
| Arm 3 | 1.14 | 3.95 | 0.48 | 1.17 | 3.97 | 0.51 |
| Arm 4 | 0.48 | 5.15 | 0.33 | 0.26 | 5.30 | 0.18 |

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

*"D3 - 2031 J3, AM " model duration: 07:45 - 09:15*
*"D4 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:34:52*

## File summary

| | |
|---|---|
| **Title** | Roade Bypass Knock Lane Roundabout |
| **Location** | Roade |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

### Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# Traffic Flows - 2031 J3, AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | Arm 1 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry | Arm 3 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

### Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

### Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

### Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3,4 | | | | 6.59 | A |

### Junction Network Options

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

# Arms

### Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| **1** | 1 | Roade Bypass N | |
| **2** | 2 | Knock Lane E | |
| **3** | 3 | Roade Bypass S | |
| **4** | 4 | Knock Lane W | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |
| 4 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 3.65 | 8.00 | 62.00 | 20.00 | 80.00 | 40.00 | |
| 2 | 3.00 | 6.00 | 7.00 | 20.00 | 80.00 | 38.00 | |
| 3 | 3.65 | 8.96 | 60.00 | 20.00 | 80.00 | 46.00 | |
| 4 | 3.00 | 6.00 | 19.12 | 20.00 | 80.00 | 30.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.524 | 2106.607 |
| 2 | | (calculated) | (calculated) | 0.401 | 1256.439 |
| 3 | | (calculated) | (calculated) | 0.538 | 2228.776 |
| 4 | | (calculated) | (calculated) | 0.445 | 1514.156 |

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1321.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 49.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 947.00 | 100.000 |
| 4 | ONE HOUR | ✓ | 306.00 | 100.000 |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 21.000 | 1241.000 | 59.000 |
| | 2 | 33.000 | 0.000 | 15.000 | 1.000 |
| | 3 | 940.000 | 4.000 | 0.000 | 3.000 |
| | 4 | 13.000 | 158.000 | 135.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.02 | 0.94 | 0.04 |
| | 2 | 0.67 | 0.00 | 0.31 | 0.02 |
| | 3 | 0.99 | 0.00 | 0.00 | 0.00 |
| | 4 | 0.04 | 0.52 | 0.44 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.000 | 1.194 | 1.000 |
| | 2 | 1.039 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.244 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.000 | 1.000 | 1.000 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 0.0 | 14.9 | 0.0 |
| | 2 | 3.0 | 0.0 | 0.0 | 0.0 |
| | 3 | 18.8 | 0.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 | 0.0 |

# Results

### Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.75 | 8.82 | 3.50 | A | 1212.17 | 1818.26 | 189.87 | 6.27 | 2.11 | 189.89 | 6.27 |
| 2 | 0.09 | 6.49 | 0.10 | A | 44.96 | 67.44 | 6.25 | 5.56 | 0.07 | 6.25 | 5.56 |
| 3 | 0.48 | 3.95 | 1.14 | A | 868.98 | 1303.48 | 75.50 | 3.48 | 0.84 | 75.51 | 3.48 |
| 4 | 0.33 | 5.15 | 0.48 | A | 280.79 | 421.19 | 31.14 | 4.44 | 0.35 | 31.14 | 4.44 |

# Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 994.52 | 248.63 | 989.85 | 739.78 | 222.67 | 0.00 | 1989.88 | 1857.82 | 0.500 | 0.00 | 1.17 | 4.228 | A |
| 2 | 36.89 | 9.22 | 36.70 | 137.19 | 1075.32 | 0.00 | 825.36 | 437.43 | 0.045 | 0.00 | 0.05 | 4.681 | A |
| 3 | 712.95 | 178.24 | 710.57 | 1042.35 | 69.67 | 0.00 | 2191.33 | 2021.03 | 0.325 | 0.00 | 0.60 | 3.014 | A |
| 4 | 230.37 | 57.59 | 229.42 | 47.21 | 733.03 | 0.00 | 1188.02 | 486.76 | 0.194 | 0.00 | 0.24 | 3.752 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1187.55 | 296.89 | 1185.14 | 885.57 | 266.68 | 0.00 | 1966.82 | 1857.82 | 0.604 | 1.17 | 1.77 | 5.418 | A |
| 2 | 44.05 | 11.01 | 43.98 | 164.30 | 1287.51 | 0.00 | 740.30 | 437.43 | 0.060 | 0.05 | 0.06 | 5.304 | A |
| 3 | 851.33 | 212.83 | 850.56 | 1248.04 | 83.45 | 0.00 | 2183.92 | 2021.03 | 0.390 | 0.60 | 0.79 | 3.352 | A |
| 4 | 275.09 | 68.77 | 274.76 | 56.52 | 877.49 | 0.00 | 1123.75 | 486.76 | 0.245 | 0.24 | 0.32 | 4.237 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1454.45 | 363.61 | 1447.78 | 1084.12 | 326.40 | 0.00 | 1935.51 | 1857.81 | 0.751 | 1.77 | 3.44 | 8.591 | A |
| 2 | 53.95 | 13.49 | 53.82 | 201.05 | 1573.13 | 0.00 | 625.80 | 437.43 | 0.086 | 0.06 | 0.10 | 6.455 | A |
| 3 | 1042.67 | 260.67 | 1041.28 | 1524.94 | 102.01 | 0.00 | 2173.95 | 2021.03 | 0.480 | 0.79 | 1.14 | 3.943 | A |
| 4 | 336.91 | 84.23 | 336.29 | 69.06 | 1074.23 | 0.00 | 1036.22 | 486.76 | 0.325 | 0.32 | 0.48 | 5.139 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1454.45 | 363.61 | 1454.20 | 1085.58 | 326.99 | 0.00 | 1935.20 | 1857.81 | 0.752 | 3.44 | 3.50 | 8.817 | A |
| 2 | 53.95 | 13.49 | 53.95 | 201.48 | 1579.71 | 0.00 | 623.16 | 437.43 | 0.087 | 0.10 | 0.10 | 6.487 | A |
| 3 | 1042.67 | 260.67 | 1042.65 | 1531.28 | 102.38 | 0.00 | 2173.75 | 2021.03 | 0.480 | 1.14 | 1.14 | 3.953 | A |
| 4 | 336.91 | 84.23 | 336.90 | 69.35 | 1075.68 | 0.00 | 1035.58 | 486.76 | 0.325 | 0.48 | 0.48 | 5.152 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1187.55 | 296.89 | 1194.25 | 887.86 | 267.59 | 0.00 | 1966.34 | 1857.82 | 0.604 | 3.50 | 1.83 | 5.547 | A |
| 2 | 44.05 | 11.01 | 44.17 | 164.94 | 1296.90 | 0.00 | 736.54 | 437.43 | 0.060 | 0.10 | 0.07 | 5.334 | A |
| 3 | 851.33 | 212.83 | 852.70 | 1257.09 | 83.99 | 0.00 | 2183.63 | 2021.03 | 0.390 | 1.14 | 0.80 | 3.365 | A |
| 4 | 275.09 | 68.77 | 275.70 | 56.94 | 879.75 | 0.00 | 1122.75 | 486.76 | 0.245 | 0.48 | 0.33 | 4.254 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 994.52 | 248.63 | 997.06 | 743.15 | 223.92 | 0.00 | 1989.23 | 1857.82 | 0.500 | 1.83 | 1.19 | 4.293 | A |
| 2 | 36.89 | 9.22 | 36.96 | 137.99 | 1082.99 | 0.00 | 822.29 | 437.43 | 0.045 | 0.07 | 0.05 | 4.702 | A |
| 3 | 712.95 | 178.24 | 713.74 | 1049.78 | 70.18 | 0.00 | 2191.06 | 2021.03 | 0.325 | 0.80 | 0.60 | 3.027 | A |
| 4 | 230.37 | 57.59 | 230.71 | 47.55 | 736.37 | 0.00 | 1186.54 | 486.76 | 0.194 | 0.33 | 0.24 | 3.769 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 16.94 | 1.13 | 4.228 | A | A |
| 2 | 0.70 | 0.05 | 4.681 | A | A |
| 3 | 8.76 | 0.58 | 3.014 | A | A |
| 4 | 3.51 | 0.23 | 3.752 | A | A |

### Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 25.68 | 1.71 | 5.418 | A | A |
| 2 | 0.95 | 0.06 | 5.304 | A | A |
| 3 | 11.63 | 0.78 | 3.352 | A | A |
| 4 | 4.75 | 0.32 | 4.237 | A | A |

### Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 48.15 | 3.21 | 8.591 | A | A |
| 2 | 1.41 | 0.09 | 6.455 | A | A |
| 3 | 16.65 | 1.11 | 3.943 | A | A |
| 4 | 7.00 | 0.47 | 5.139 | A | A |

### Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 52.15 | 3.48 | 8.817 | A | A |
| 2 | 1.45 | 0.10 | 6.487 | A | A |
| 3 | 17.08 | 1.14 | 3.953 | A | A |
| 4 | 7.19 | 0.48 | 5.152 | A | A |

### Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 28.59 | 1.91 | 5.547 | A | A |
| 2 | 1.01 | 0.07 | 5.334 | A | A |
| 3 | 12.22 | 0.81 | 3.365 | A | A |
| 4 | 5.00 | 0.33 | 4.254 | A | A |

### Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 18.37 | 1.22 | 4.293 | A | A |
| 2 | 0.74 | 0.05 | 4.702 | A | A |
| 3 | 9.18 | 0.61 | 3.027 | A | A |
| 4 | 3.69 | 0.25 | 3.769 | A | A |

# Traffic Flows - 2031 J3, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | Arm 1 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry | Arm 3 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3,4 | | | | 5.73 | A |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | Roade Bypass N | |
| 2 | 2 | Knock Lane E | |
| 3 | 3 | Roade Bypass S | |
| 4 | 4 | Knock Lane W | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |
| 4 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 3.65 | 8.00 | 62.00 | 20.00 | 80.00 | 40.00 | |
| 2 | 3.00 | 6.00 | 7.00 | 20.00 | 80.00 | 38.00 | |
| 3 | 3.65 | 8.96 | 60.00 | 20.00 | 80.00 | 46.00 | |
| 4 | 3.00 | 6.00 | 19.12 | 20.00 | 80.00 | 30.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.524 | 2106.607 |
| 2 | | (calculated) | (calculated) | 0.401 | 1256.439 |
| 3 | | (calculated) | (calculated) | 0.538 | 2228.776 |
| 4 | | (calculated) | (calculated) | 0.445 | 1514.156 |

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1300.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 133.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 972.00 | 100.000 |
| 4 | ONE HOUR | ✓ | 161.00 | 100.000 |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 46.000 | 1173.000 | 81.000 |
| | 2 | 120.000 | 0.000 | 8.000 | 5.000 |
| | 3 | 948.000 | 21.000 | 0.000 | 3.000 |
| | 4 | 7.000 | 149.000 | 5.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.04 | 0.90 | 0.06 |
| | 2 | 0.90 | 0.00 | 0.06 | 0.04 |
| | 3 | 0.98 | 0.02 | 0.00 | 0.00 |
| | 4 | 0.04 | 0.93 | 0.03 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.000 | 1.138 | 1.000 |
| | 2 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.147 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.000 | 1.200 | 1.000 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 0.0 | 10.6 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 3 | 11.3 | 0.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 15.4 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.71 | 7.03 | 2.76 | A | 1192.90 | 1789.35 | 157.23 | 5.27 | 1.75 | 157.25 | 5.27 |
| 2 | 0.21 | 6.49 | 0.26 | A | 122.04 | 183.06 | 16.87 | 5.53 | 0.19 | 16.87 | 5.53 |
| 3 | 0.51 | 3.97 | 1.17 | A | 891.92 | 1337.89 | 76.31 | 3.42 | 0.85 | 76.32 | 3.42 |
| 4 | 0.18 | 5.30 | 0.26 | A | 147.74 | 221.60 | 17.37 | 4.70 | 0.19 | 17.37 | 4.70 |

## Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 978.71 | 244.68 | 974.59 | 806.53 | 131.17 | 0.00 | 2037.85 | 1855.19 | 0.480 | 0.00 | 1.03 | 3.788 | A |
| 2 | 100.13 | 25.03 | 99.62 | 161.91 | 943.85 | 0.00 | 878.07 | 533.34 | 0.114 | 0.00 | 0.13 | 4.621 | A |
| 3 | 731.77 | 182.94 | 729.42 | 889.12 | 154.35 | 0.00 | 2145.81 | 1897.21 | 0.341 | 0.00 | 0.59 | 2.899 | A |
| 4 | 121.21 | 30.30 | 120.66 | 66.72 | 817.05 | 0.00 | 1150.64 | 458.58 | 0.105 | 0.00 | 0.14 | 4.131 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1168.67 | 292.17 | 1166.73 | 965.44 | 157.14 | 0.00 | 2024.24 | 1855.19 | 0.577 | 1.03 | 1.52 | 4.703 | A |
| 2 | 119.56 | 29.89 | 119.38 | 193.93 | 1129.93 | 0.00 | 803.47 | 533.34 | 0.149 | 0.13 | 0.17 | 5.261 | A |
| 3 | 873.81 | 218.45 | 873.00 | 1064.42 | 184.90 | 0.00 | 2129.39 | 1897.21 | 0.410 | 0.59 | 0.79 | 3.273 | A |
| 4 | 144.74 | 36.18 | 144.56 | 79.88 | 978.02 | 0.00 | 1079.03 | 458.58 | 0.134 | 0.14 | 0.18 | 4.556 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1431.33 | 357.83 | 1426.48 | 1181.79 | 192.35 | 0.00 | 2005.78 | 1855.19 | 0.714 | 1.52 | 2.73 | 6.919 | A |
| 2 | 146.44 | 36.61 | 146.09 | 237.33 | 1381.50 | 0.00 | 702.62 | 533.34 | 0.208 | 0.17 | 0.26 | 6.464 | A |
| 3 | 1070.19 | 267.55 | 1068.68 | 1301.41 | 226.18 | 0.00 | 2107.20 | 1897.21 | 0.508 | 0.79 | 1.17 | 3.955 | A |
| 4 | 177.26 | 44.32 | 176.96 | 97.67 | 1197.19 | 0.00 | 981.52 | 458.58 | 0.181 | 0.18 | 0.26 | 5.291 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1431.33 | 357.83 | 1431.19 | 1183.57 | 192.67 | 0.00 | 2005.61 | 1855.19 | 0.714 | 2.73 | 2.76 | 7.031 | A |
| 2 | 146.44 | 36.61 | 146.43 | 237.81 | 1386.05 | 0.00 | 700.80 | 533.34 | 0.209 | 0.26 | 0.26 | 6.493 | A |
| 3 | 1070.19 | 267.55 | 1070.17 | 1305.68 | 226.79 | 0.00 | 2106.87 | 1897.21 | 0.508 | 1.17 | 1.17 | 3.968 | A |
| 4 | 177.26 | 44.32 | 177.26 | 97.98 | 1198.98 | 0.00 | 980.72 | 458.58 | 0.181 | 0.26 | 0.26 | 5.298 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1168.67 | 292.17 | 1173.51 | 968.19 | 157.64 | 0.00 | 2023.97 | 1855.19 | 0.577 | 2.76 | 1.55 | 4.778 | A |
| 2 | 119.56 | 29.89 | 119.91 | 194.66 | 1136.49 | 0.00 | 800.84 | 533.34 | 0.149 | 0.26 | 0.18 | 5.291 | A |
| 3 | 873.81 | 218.45 | 875.30 | 1070.58 | 185.81 | 0.00 | 2128.90 | 1897.21 | 0.410 | 1.17 | 0.80 | 3.284 | A |
| 4 | 144.74 | 36.18 | 145.04 | 80.33 | 980.79 | 0.00 | 1077.79 | 458.58 | 0.134 | 0.26 | 0.18 | 4.566 | A |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 978.71 | 244.68 | 980.73 | 810.30 | 131.94 | 0.00 | 2037.45 | 1855.19 | 0.480 | 1.55 | 1.05 | 3.831 | A |
| 2 | 100.13 | 25.03 | 100.32 | 162.87 | 949.80 | 0.00 | 875.68 | 533.34 | 0.114 | 0.18 | 0.13 | 4.645 | A |
| 3 | 731.77 | 182.94 | 732.60 | 894.73 | 155.39 | 0.00 | 2145.25 | 1897.21 | 0.341 | 0.80 | 0.59 | 2.913 | A |
| 4 | 121.21 | 30.30 | 121.39 | 67.14 | 820.85 | 0.00 | 1148.95 | 458.58 | 0.106 | 0.18 | 0.14 | 4.145 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 14.98 | 1.00 | 3.788 | A | A |
| 2 | 1.87 | 0.12 | 4.621 | A | A |
| 3 | 8.65 | 0.58 | 2.899 | A | A |
| 4 | 2.03 | 0.14 | 4.131 | A | A |

### Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 22.06 | 1.47 | 4.703 | A | A |
| 2 | 2.56 | 0.17 | 5.261 | A | A |
| 3 | 11.65 | 0.78 | 3.273 | A | A |
| 4 | 2.69 | 0.18 | 4.556 | A | A |

### Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 38.74 | 2.58 | 6.919 | A | A |
| 2 | 3.82 | 0.25 | 6.464 | A | A |
| 3 | 17.12 | 1.14 | 3.955 | A | A |
| 4 | 3.80 | 0.25 | 5.291 | A | A |

### Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 41.21 | 2.75 | 7.031 | A | A |
| 2 | 3.93 | 0.26 | 6.493 | A | A |
| 3 | 17.58 | 1.17 | 3.968 | A | A |
| 4 | 3.89 | 0.26 | 5.298 | A | A |

## Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 24.15 | 1.61 | 4.778 | A | A |
| 2 | 2.71 | 0.18 | 5.291 | A | A |
| 3 | 12.25 | 0.82 | 3.284 | A | A |
| 4 | 2.82 | 0.19 | 4.566 | A | A |

## Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 16.08 | 1.07 | 3.831 | A | A |
| 2 | 1.98 | 0.13 | 4.645 | A | A |
| 3 | 9.06 | 0.60 | 2.913 | A | A |
| 4 | 2.14 | 0.14 | 4.145 | A | A |

# JUNCTION 8

# ROADE BYPASS SOUTHERN ROUNDABOUT

# Junctions 8

## ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** 180321 Roade Bypass South Roundabout with RC.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:38:33

» 2031 Traffic Flows - 2031 J3, AM
» 2031 Traffic Flows - 2031 J3, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (Veh) | Delay (s) | RFC | Queue (Veh) | Delay (s) | RFC |
| | 2031 Traffic Flows - 2031 J3 | | | | | |
| Arm 1 | 3.96 | 9.29 | 0.80 | 2.47 | 6.73 | 0.71 |
| Arm 2 | 0.40 | 7.12 | 0.29 | 0.37 | 5.89 | 0.27 |
| Arm 3 | 1.29 | 4.42 | 0.57 | 1.96 | 5.25 | 0.66 |

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

*"D3 - 2031 J3, AM " model duration: 07:45 - 09:15*
*"D4 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:38:31*

## File summary

| | |
|---|---|
| **Title** | Roade Bypass Southern Roundabout |
| **Location** | Roade |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

### Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | Veh | Veh | perHour | s | -Min | perMin |

# 2031 Traffic Flows - 2031 J3, AM

### Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | Arm 1 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry | Arm 3 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

### Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| 2031 Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

### Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

### Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | A508/Roade Bypass (N) | Roundabout | 1,2,3 | | | | 7.26 | A |

### Junction Network Options

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

# Arms

### Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| **1** | 1 | A508 N | |
| **2** | 2 | Roade | |
| **3** | 3 | A508 S | |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 3.65 | 9.00 | 58.00 | 20.00 | 80.00 | 47.00 | |
| 2 | 3.00 | 6.00 | 19.00 | 20.00 | 80.00 | 41.00 | |
| 3 | 3.65 | 9.00 | 57.00 | 20.00 | 80.00 | 44.00 | |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.535 | 2218.487 |
| 2 | | (calculated) | (calculated) | 0.428 | 1455.134 |
| 3 | | (calculated) | (calculated) | 0.540 | 2238.287 |

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

# Traffic Flows

### Demand Set Data Options

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

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1422.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 187.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 963.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 30.000 | 1392.000 |
| | 2 | 30.000 | 0.000 | 157.000 |
| | 3 | 948.000 | 15.000 | 0.000 |

### Turning Proportions (Veh) - Junction 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.02 | 0.98 |
| | 2 | 0.16 | 0.00 | 0.84 |
| | 3 | 0.98 | 0.02 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.000 | 1.135 |
| | 2 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.187 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 0.0 | 13.5 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 18.7 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) | Total Queueing Delay (Veh-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (Veh-min/min) | Inclusive Total Queueing Delay (Veh-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.80 | 9.29 | 3.96 | A | 1304.85 | 1957.28 | 205.73 | 6.31 | 2.29 | 205.75 | 6.31 |
| 2 | 0.29 | 7.12 | 0.40 | A | 171.59 | 257.39 | 24.56 | 5.73 | 0.27 | 24.56 | 5.73 |
| 3 | 0.57 | 4.42 | 1.29 | A | 883.66 | 1325.50 | 82.63 | 3.74 | 0.92 | 82.63 | 3.74 |

## Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1070.56 | 267.64 | 1065.76 | 733.72 | 11.25 | 0.00 | 1954.21 | 1945.90 | 0.548 | 0.00 | 1.20 | 4.030 | A |
| 2 | 140.78 | 35.20 | 140.09 | 33.74 | 1043.27 | 0.00 | 948.63 | 530.34 | 0.148 | 0.00 | 0.17 | 4.448 | A |
| 3 | 725.00 | 181.25 | 722.50 | 1160.89 | 22.47 | 0.00 | 1880.04 | 1851.47 | 0.386 | 0.00 | 0.62 | 3.103 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1278.35 | 319.59 | 1275.70 | 878.27 | 13.47 | 0.00 | 1953.17 | 1945.90 | 0.655 | 1.20 | 1.86 | 5.292 | A |
| 2 | 168.11 | 42.03 | 167.82 | 40.38 | 1248.78 | 0.00 | 848.86 | 530.34 | 0.198 | 0.17 | 0.25 | 5.283 | A |
| 3 | 865.72 | 216.43 | 864.82 | 1389.68 | 26.92 | 0.00 | 1878.01 | 1851.47 | 0.461 | 0.62 | 0.85 | 3.549 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1565.65 | 391.41 | 1557.65 | 1074.98 | 16.49 | 0.00 | 1951.74 | 1945.90 | 0.802 | 1.86 | 3.87 | 8.956 | A |
| 2 | 205.89 | 51.47 | 205.27 | 49.35 | 1524.78 | 0.00 | 714.86 | 530.34 | 0.288 | 0.25 | 0.40 | 7.055 | A |
| 3 | 1060.28 | 265.07 | 1058.53 | 1697.12 | 32.93 | 0.00 | 1875.27 | 1851.47 | 0.565 | 0.85 | 1.29 | 4.397 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1565.65 | 391.41 | 1565.29 | 1076.77 | 16.51 | 0.00 | 1951.73 | 1945.90 | 0.802 | 3.87 | 3.96 | 9.291 | A |
| 2 | 205.89 | 51.47 | 205.87 | 49.54 | 1532.27 | 0.00 | 711.22 | 530.34 | 0.289 | 0.40 | 0.40 | 7.123 | A |
| 3 | 1060.28 | 265.07 | 1060.25 | 1705.11 | 33.03 | 0.00 | 1875.23 | 1851.47 | 0.565 | 1.29 | 1.29 | 4.417 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1278.35 | 319.59 | 1286.47 | 881.01 | 13.51 | 0.00 | 1953.15 | 1945.90 | 0.655 | 3.96 | 1.93 | 5.463 | A |
| 2 | 168.11 | 42.03 | 168.73 | 40.65 | 1259.32 | 0.00 | 843.74 | 530.34 | 0.199 | 0.40 | 0.25 | 5.339 | A |
| 3 | 865.72 | 216.43 | 867.44 | 1400.98 | 27.07 | 0.00 | 1877.95 | 1851.47 | 0.461 | 1.29 | 0.86 | 3.567 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1070.56 | 267.64 | 1073.37 | 737.24 | 11.31 | 0.00 | 1954.19 | 1945.90 | 0.548 | 1.93 | 1.22 | 4.099 | A |
| 2 | 140.78 | 35.20 | 141.08 | 33.95 | 1050.72 | 0.00 | 945.01 | 530.34 | 0.149 | 0.25 | 0.18 | 4.481 | A |
| 3 | 725.00 | 181.25 | 725.92 | 1169.17 | 22.63 | 0.00 | 1879.97 | 1851.47 | 0.386 | 0.86 | 0.63 | 3.123 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 17.38 | 1.16 | 4.030 | A | A |
| 2 | 2.54 | 0.17 | 4.448 | A | A |
| 3 | 9.15 | 0.61 | 3.103 | A | A |

### Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 26.92 | 1.79 | 5.292 | A | A |
| 2 | 3.60 | 0.24 | 5.283 | A | A |
| 3 | 12.49 | 0.83 | 3.549 | A | A |

### Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 53.41 | 3.56 | 8.956 | A | A |
| 2 | 5.83 | 0.39 | 7.055 | A | A |
| 3 | 18.76 | 1.25 | 4.397 | A | A |

### Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 58.79 | 3.92 | 9.291 | A | A |
| 2 | 6.05 | 0.40 | 7.123 | A | A |
| 3 | 19.37 | 1.29 | 4.417 | A | A |

### Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 30.32 | 2.02 | 5.463 | A | A |
| 2 | 3.85 | 0.26 | 5.339 | A | A |
| 3 | 13.22 | 0.88 | 3.567 | A | A |

### Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 18.90 | 1.26 | 4.099 | A | A |
| 2 | 2.69 | 0.18 | 4.481 | A | A |
| 3 | 9.64 | 0.64 | 3.123 | A | A |

# 2031 Traffic Flows - 2031 J3, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Geometry | Arm 1 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |
| Warning | Geometry | Arm 3 - Roundabout Geometry | Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| 2031 Traffic Flows | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | A508/Roade Bypass (N) | Roundabout | 1,2,3 | | | | 5.98 | A |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A508 N | |
| 2 | 2 | Roade | |
| 3 | 3 | A508 S | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 3.65 | 9.00 | 58.00 | 20.00 | 80.00 | 47.00 | |
| 2 | 3.00 | 6.00 | 19.00 | 20.00 | 80.00 | 41.00 | |
| 3 | 3.65 | 9.00 | 57.00 | 20.00 | 80.00 | 44.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.535 | 2218.487 |
| 2 | | (calculated) | (calculated) | 0.428 | 1455.134 |
| 3 | | (calculated) | (calculated) | 0.540 | 2238.287 |

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (Veh/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1217.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 206.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 1233.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.000 | 30.000 | 1187.000 |
| | 2 | 30.000 | 0.000 | 176.000 |
| | 3 | 972.000 | 261.000 | 0.000 |

### Turning Proportions (Veh) - Junction 1 (for whole period)

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.00 | 0.02 | 0.98 |
| | 2 | 0.15 | 0.00 | 0.85 |
| | 3 | 0.79 | 0.21 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 1.000 | 1.000 | 1.104 |
| | 2 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.110 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | 1 | 2 | 3 |
| From | 1 | 0.0 | 0.0 | 10.4 |
| | 2 | 0.0 | 0.0 | 0.0 |
| | 3 | 11.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (Veh) | Max LOS | Average Demand (Veh/hr) | Total Junction Arrivals (Veh) | Total Queueing Delay (Veh-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (Veh-min/min) | Inclusive Total Queueing Delay (Veh-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.71 | 6.73 | 2.47 | A | 1116.74 | 1675.11 | 139.95 | 5.01 | 1.55 | 139.96 | 5.01 |
| 2 | 0.27 | 5.89 | 0.37 | A | 189.03 | 283.54 | 23.45 | 4.96 | 0.26 | 23.45 | 4.96 |
| 3 | 0.66 | 5.25 | 1.96 | A | 1131.42 | 1697.13 | 117.80 | 4.16 | 1.31 | 117.81 | 4.17 |

## Main Results for each time segment

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 916.22 | 229.05 | 912.59 | 751.66 | 195.80 | 0.00 | 1919.02 | 1806.95 | 0.477 | 0.00 | 0.91 | 3.563 | A |
| 2 | 155.09 | 38.77 | 154.39 | 218.29 | 890.10 | 0.00 | 1034.80 | 622.86 | 0.150 | 0.00 | 0.18 | 4.085 | A |
| 3 | 928.26 | 232.07 | 924.97 | 1022.00 | 22.48 | 0.00 | 2048.49 | 2014.56 | 0.453 | 0.00 | 0.82 | 3.195 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1094.05 | 273.51 | 1092.31 | 899.64 | 234.34 | 0.00 | 1900.30 | 1806.95 | 0.576 | 0.91 | 1.34 | 4.445 | A |
| 2 | 185.19 | 46.30 | 184.93 | 261.27 | 1065.39 | 0.00 | 952.02 | 622.86 | 0.195 | 0.18 | 0.24 | 4.692 | A |
| 3 | 1108.44 | 277.11 | 1107.05 | 1223.39 | 26.93 | 0.00 | 2046.28 | 2014.56 | 0.542 | 0.82 | 1.17 | 3.828 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1339.94 | 334.98 | 1335.53 | 1100.70 | 286.71 | 0.00 | 1874.85 | 1806.95 | 0.715 | 1.34 | 2.44 | 6.621 | A |
| 2 | 226.81 | 56.70 | 226.30 | 319.63 | 1302.61 | 0.00 | 839.99 | 622.86 | 0.270 | 0.24 | 0.37 | 5.861 | A |
| 3 | 1357.55 | 339.39 | 1354.45 | 1495.96 | 32.96 | 0.00 | 2043.28 | 2014.56 | 0.664 | 1.17 | 1.95 | 5.202 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1339.94 | 334.98 | 1339.81 | 1103.17 | 287.35 | 0.00 | 1874.53 | 1806.95 | 0.715 | 2.44 | 2.47 | 6.727 | A |
| 2 | 226.81 | 56.70 | 226.80 | 320.38 | 1306.79 | 0.00 | 838.02 | 622.86 | 0.271 | 0.37 | 0.37 | 5.889 | A |
| 3 | 1357.55 | 339.39 | 1357.49 | 1500.56 | 33.03 | 0.00 | 2043.25 | 2014.56 | 0.664 | 1.95 | 1.96 | 5.249 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1094.05 | 273.51 | 1098.46 | 903.28 | 235.29 | 0.00 | 1899.84 | 1806.95 | 0.576 | 2.47 | 1.37 | 4.517 | A |
| 2 | 185.19 | 46.30 | 185.69 | 262.36 | 1071.38 | 0.00 | 949.19 | 622.86 | 0.195 | 0.37 | 0.24 | 4.717 | A |
| 3 | 1108.44 | 277.11 | 1111.52 | 1230.03 | 27.04 | 0.00 | 2046.22 | 2014.56 | 0.542 | 1.96 | 1.19 | 3.863 | A |

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

| Arm | Total Demand (Veh/hr) | Junction Arrivals (Veh) | Entry Flow (Veh/hr) | Exit Flow (Veh/hr) | Circulating Flow (Veh/hr) | Pedestrian Demand (Ped/hr) | Capacity (Veh/hr) | Saturation Capacity (Veh/hr) | RFC | Start Queue (Veh) | End Queue (Veh) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 916.22 | 229.05 | 918.03 | 755.53 | 196.80 | 0.00 | 1918.54 | 1806.95 | 0.478 | 1.37 | 0.92 | 3.606 | A |
| 2 | 155.09 | 38.77 | 155.35 | 219.43 | 895.40 | 0.00 | 1032.29 | 622.86 | 0.150 | 0.24 | 0.18 | 4.107 | A |
| 3 | 928.26 | 232.07 | 929.70 | 1028.13 | 22.62 | 0.00 | 2048.42 | 2014.56 | 0.453 | 1.19 | 0.83 | 3.223 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 13.22 | 0.88 | 3.563 | A | A |
| 2 | 2.57 | 0.17 | 4.085 | A | A |
| 3 | 12.04 | 0.80 | 3.195 | A | A |

### Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 19.56 | 1.30 | 4.445 | A | A |
| 2 | 3.53 | 0.24 | 4.692 | A | A |
| 3 | 17.15 | 1.14 | 3.828 | A | A |

### Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 34.76 | 2.32 | 6.621 | A | A |
| 2 | 5.37 | 0.36 | 5.861 | A | A |
| 3 | 28.07 | 1.87 | 5.202 | A | A |

### Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 36.93 | 2.46 | 6.727 | A | A |
| 2 | 5.52 | 0.37 | 5.889 | A | A |
| 3 | 29.35 | 1.96 | 5.249 | A | A |

## Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 21.34 | 1.42 | 4.517 | A | A |
| 2 | 3.74 | 0.25 | 4.717 | A | A |
| 3 | 18.42 | 1.23 | 3.863 | A | A |

## Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (Veh-min) | Queueing Rate Of Delay (Veh-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 14.15 | 0.94 | 3.606 | A | A |
| 2 | 2.71 | 0.18 | 4.107 | A | A |
| 3 | 12.77 | 0.85 | 3.223 | A | A |

# JUNCTION 9

# A508/ROOKERY LANE/ASHTON ROAD JUNCTION

# Junctions 8

## PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** A508_Rookery Lane_Ashton Rd (UPDATED Existing) D1 Stagger.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP
**Report generation date:** 12/04/2018 12:23:30

» D1, AM
» D1, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | D1 | | | | | |
| Stream B-C | 0.01 | 7.94 | 0.01 | 0.01 | 6.64 | 0.01 |
| Stream B-AD | 0.20 | 23.25 | 0.17 | 0.05 | 16.52 | 0.05 |
| Stream A-BCD | 1.45 | 5.79 | 0.33 | 15.88 | 48.46 | 0.92 |
| Stream A-B | - | - | - | - | - | - |
| Stream A-C | - | - | - | - | - | - |
| Stream D-A | 1.75 | 30.17 | 0.64 | 0.77 | 12.67 | 0.44 |
| Stream D-BC | 2.24 | 60.38 | 0.72 | 0.06 | 30.10 | 0.06 |
| Stream C-ABD | 1.00 | 7.37 | 0.29 | 0.32 | 4.62 | 0.12 |
| Stream C-D | - | - | - | - | - | - |
| Stream C-A | - | - | - | - | - | - |

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

*"D3 - D1, AM " model duration: 07:45 - 09:15*
*"D4 - D1, PM" model duration: 17:45 - 19:15*

*Run using Junctions 8.0.4.487 at 12/04/2018 12:23:26*

## File summary

| | |
|---|---|
| Title | A508/Rookery Lane/Ashton Rd |
| Location | Northamptonshire |
| Site Number | |
| Date | 04/08/2017 |
| Version | |
| Status | (new file) |
| Identifier | |
| Client | Roxhill (Junciton 15) Ltd |
| Jobnumber | |
| Enumerator | ADCteam |
| Description | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# D1, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Minor arm flare | Arm B - Minor Arm Geometry | Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1, AM | D1 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | OS-NS Stagger (UK RL Stagger) | Two-way | A,B,C,D | | 21.29 | C |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 N | | Major |
| **B** | B | Ashton Rd | | Minor |
| **C** | C | A508 S | | Major |
| **D** | D | Rookery Lane | | Minor |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| A | 7.20 | | 0.00 | | 2.20 | 125.00 | ✓ | 0.00 |
| C | 7.25 | | 0.00 | | 2.20 | 180.00 | ✓ | 0.00 |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | | | | 10.00 | 4.10 | 2.70 | 2.40 | 2.40 | ✓ | 1.00 | 23 | 20 |
| D | One lane plus flare | | | | 10.00 | 6.70 | 4.50 | 3.50 | 3.00 | ✓ | 1.00 | 19 | 20 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for A-D | Slope for B-A | Slope for B-D | Slope for C-A | Slope for C-B | Slope for C-D | Slope for D-B | Slope for D-C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A-D | 646.352 | - | - | - | 0.237 | 0.237 | 0.237 | - | 0.237 | - | - |
| 1 | B-AD | 510.742 | 0.088 | 0.222 | - | - | - | 0.140 | 0.318 | 0.140 | 0.088 | 0.222 |
| 1 | B-C | 763.982 | 0.111 | 0.280 | - | - | - | - | - | - | 0.111 | 0.280 |
| 1 | C-B | 678.203 | 0.248 | 0.248 | - | - | - | - | - | - | 0.248 | 0.248 |
| 1 | D-A | 695.177 | - | - | - | 0.255 | 0.101 | 0.255 | - | 0.101 | - | - |
| 1 | D-BC | 500.833 | 0.137 | 0.137 | 0.312 | 0.219 | 0.086 | 0.219 | - | 0.086 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 871.00 | 100.000 |
| B | ONE HOUR | ✓ | 33.00 | 100.000 |
| C | ONE HOUR | ✓ | 549.00 | 100.000 |
| D | ONE HOUR | ✓ | 328.00 | 100.000 |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.000 | 0.000 | 789.000 | 82.000 |
| | B | 0.000 | 0.000 | 5.000 | 28.000 |
| | C | 470.000 | 79.000 | 0.000 | 0.000 |
| | D | 198.000 | 22.000 | 108.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.00 | 0.00 | 0.91 | 0.09 |
| | B | 0.00 | 0.00 | 0.15 | 0.85 |
| | C | 0.86 | 0.14 | 0.00 | 0.00 |
| | D | 0.60 | 0.07 | 0.33 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 1.000 | 1.000 | 1.238 | 1.095 |
| | B | 1.000 | 1.000 | 1.000 | 1.000 |
| | C | 1.329 | 1.000 | 1.000 | 1.000 |
| | D | 1.052 | 1.000 | 1.000 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.0 | 0.0 | 18.3 | 7.3 |
| | B | 0.0 | 0.0 | 0.0 | 0.0 |
| | C | 25.3 | 0.0 | 0.0 | 0.0 |
| | D | 4.0 | 0.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.01 | 7.94 | 0.01 | A | 4.59 | 6.88 | 0.82 | 7.15 | 0.01 | 0.82 | 7.15 |
| B-AD | 0.17 | 23.25 | 0.20 | C | 25.69 | 38.54 | 11.41 | 17.76 | 0.13 | 11.41 | 17.76 |
| A-BCD | 0.33 | 5.79 | 1.45 | A | 254.38 | 381.57 | 82.22 | 12.93 | 0.91 | 82.23 | 12.93 |
| A-B | - | - | - | - | 0.00 | 0.00 | - | - | - | - | - |
| A-C | - | - | - | - | 544.86 | 817.29 | - | - | - | - | - |
| D-A | 0.64 | 30.17 | 1.75 | D | 181.69 | 272.53 | 77.28 | 17.01 | 0.86 | 77.29 | 17.02 |
| D-BC | 0.72 | 60.38 | 2.24 | F | 119.29 | 178.94 | 95.24 | 31.94 | 1.06 | 95.26 | 31.94 |
| C-ABD | 0.29 | 7.37 | 1.00 | A | 166.49 | 249.74 | 56.61 | 13.60 | 0.63 | 56.62 | 13.60 |
| C-D | - | - | - | - | 0.00 | 0.00 | - | - | - | - | - |
| C-A | - | - | - | - | 337.28 | 505.92 | - | - | - | - | - |

# D1, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Minor arm flare | Arm B - Minor Arm Geometry | Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1, PM | D1 | PM | | ONE HOUR | 17:45 | 19:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | OS-NS Stagger (UK RL Stagger) | Two-way | A,B,C,D | | 36.47 | E |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 N | | Major |
| **B** | B | Ashton Rd | | Minor |
| **C** | C | A508 S | | Major |
| **D** | D | Rookery Lane | | Minor |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **A** | 7.20 | | 0.00 | | 2.20 | 125.00 | ✓ | 0.00 |
| **C** | 7.25 | | 0.00 | | 2.20 | 180.00 | ✓ | 0.00 |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **B** | One lane plus flare | | | | 10.00 | 4.10 | 2.70 | 2.40 | 2.40 | ✓ | 1.00 | 23 | 20 |
| **D** | One lane plus flare | | | | 10.00 | 6.70 | 4.50 | 3.50 | 3.00 | ✓ | 1.00 | 19 | 20 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for A-D | Slope for B-A | Slope for B-D | Slope for C-A | Slope for C-B | Slope for C-D | Slope for D-B | Slope for D-C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | A-D | 646.352 | - | - | - | 0.237 | 0.237 | 0.237 | - | 0.237 | - | - |
| **1** | B-AD | 510.742 | 0.088 | 0.222 | - | - | - | 0.140 | 0.318 | 0.140 | 0.088 | 0.222 |
| **1** | B-C | 763.982 | 0.111 | 0.280 | - | - | - | - | - | - | 0.111 | 0.280 |
| **1** | C-B | 678.203 | 0.248 | 0.248 | - | - | - | - | - | - | 0.248 | 0.248 |
| **1** | D-A | 711.079 | - | - | - | 0.261 | 0.103 | 0.261 | - | 0.103 | - | - |
| **1** | D-BC | 458.197 | 0.126 | 0.126 | 0.286 | 0.200 | 0.079 | 0.200 | - | 0.079 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 872.00 | 100.000 |
| B | ONE HOUR | ✓ | 16.00 | 100.000 |
| C | ONE HOUR | ✓ | 712.00 | 100.000 |
| D | ONE HOUR | ✓ | 209.00 | 100.000 |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.000 | 0.000 | 642.000 | 230.000 |
| | B | 0.000 | 0.000 | 6.000 | 10.000 |
| | C | 679.000 | 33.000 | 0.000 | 0.000 |
| | D | 202.000 | 7.000 | 0.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.00 | 0.00 | 0.74 | 0.26 |
| | B | 0.00 | 0.00 | 0.38 | 0.63 |
| | C | 0.95 | 0.05 | 0.00 | 0.00 |
| | D | 0.97 | 0.03 | 0.00 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 1.000 | 1.000 | 1.208 | 1.010 |
| | B | 1.000 | 1.000 | 1.000 | 1.000 |
| | C | 1.152 | 1.000 | 1.000 | 1.000 |
| | D | 1.000 | 1.000 | 1.000 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.0 | 0.0 | 16.0 | 0.8 |
| | B | 0.0 | 0.0 | 0.0 | 0.0 |
| | C | 11.7 | 0.0 | 0.0 | 0.0 |
| | D | 0.0 | 0.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.01 | 6.64 | 0.01 | A | 5.51 | 8.26 | 0.85 | 6.19 | 0.01 | 0.85 | 6.19 |
| B-AD | 0.05 | 16.52 | 0.05 | C | 9.18 | 13.76 | 3.15 | 13.72 | 0.03 | 3.15 | 13.72 |
| A-BCD | 0.92 | 48.46 | 15.88 | E | 629.54 | 944.31 | 574.69 | 36.52 | 6.39 | 574.79 | 36.52 |
| A-B | - | - | - | - | 0.00 | 0.00 | - | - | - | - | - |
| A-C | - | - | - | - | 170.62 | 255.93 | - | - | - | - | - |
| D-A | 0.44 | 12.67 | 0.77 | B | 185.36 | 278.04 | 48.26 | 10.41 | 0.54 | 48.27 | 10.42 |
| D-BC | 0.06 | 30.10 | 0.06 | D | 6.42 | 9.64 | 3.48 | 21.64 | 0.04 | 3.48 | 21.64 |
| C-ABD | 0.12 | 4.62 | 0.32 | A | 86.39 | 129.58 | 18.01 | 8.34 | 0.20 | 18.01 | 8.34 |
| C-D | - | - | - | - | 0.00 | 0.00 | - | - | - | - | - |
| C-A | - | - | - | - | 566.95 | 850.43 | - | - | - | - | - |

# Junctions 8

## PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** 180321 A508_Rookery Lane_Ashton Rd (Option 2) with RC.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP
**Report generation date:** 08/05/2018 16:35:53

» (Default Analysis Set) - 2031 J3, AM
» (Default Analysis Set) - 2031 J3, PM

## Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS | Queue (PCU) | Delay (s) | RFC | LOS |
| | A1 - 2031 J3 | | | | | | | |
| Stream B-C | 0.02 | 11.29 | 0.02 | B | 0.00 | 9.04 | 0.00 | A |
| Stream B-AD | 0.20 | 19.11 | 0.17 | C | 0.03 | 13.94 | 0.03 | B |
| Stream A-B | - | - | - | - | - | - | - | - |
| Stream A-C | - | - | - | - | - | - | - | - |
| Stream A-D | 1.07 | 14.79 | 0.49 | B | 1.88 | 23.78 | 0.60 | C |
| Stream D-A | 1.59 | 20.53 | 0.58 | C | 2.74 | 28.91 | 0.73 | D |
| Stream D-BC | 0.48 | 29.01 | 0.32 | D | 0.03 | 30.69 | 0.03 | D |
| Stream C-D | - | - | - | - | - | - | - | - |
| Stream C-A | - | - | - | - | - | - | - | - |
| Stream C-B | 0.19 | 11.38 | 0.16 | B | 0.09 | 8.56 | 0.08 | A |

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

*"D3 - 2031 J3, AM " model duration: 07:45 - 09:15*
*"D4 - 2031 J3, PM" model duration: 17:45 - 19:15*

*Run using Junctions 8.0.4.487 at 08/05/2018 16:35:49*

## File summary

| | |
|---|---|
| **Title** | A508/Rookery Lane/Ashton Rd |
| **Location** | Northampton |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# (Default Analysis Set) - 2031 J3, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | OS-NS Stagger (UK RL Stagger) | Two-way | A,B,C,D | | 18.17 | C |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 N | | Major |
| **B** | B | Ashton Rd | | Minor |
| **C** | C | A508 S | | Major |
| **D** | D | Rookery Lane | | Minor |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| A | 8.30 | ✓ | 10.00 | ✓ | 3.70 | 125.00 | | |
| C | 8.40 | ✓ | 10.00 | ✓ | 3.70 | 180.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | | | | 10.00 | 9.65 | 5.30 | 3.65 | 3.50 | ✓ | 2.00 | 54 | 59 |
| D | One lane plus flare | | | | 10.00 | 9.70 | 5.40 | 3.30 | 3.00 | ✓ | 2.00 | 108 | 71 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for A-D | Slope for B-A | Slope for B-D | Slope for C-A | Slope for C-B | Slope for C-D | Slope for D-B | Slope for D-C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | A-D | 751.870 | - | - | - | 0.262 | 0.262 | 0.262 | - | 0.262 | - | - |
| 1 | B-AD | 725.181 | 0.097 | 0.244 | - | - | - | 0.154 | 0.349 | 0.154 | 0.097 | 0.244 |
| 1 | B-C | 695.118 | 0.095 | 0.241 | - | - | - | - | - | - | 0.095 | 0.241 |
| 1 | C-B | 788.921 | 0.274 | 0.274 | - | - | - | - | - | - | 0.274 | 0.274 |
| 1 | D-A | 745.712 | - | - | - | 0.260 | 0.103 | 0.260 | - | 0.103 | - | - |
| 1 | D-BC | 707.908 | 0.151 | 0.151 | 0.343 | 0.240 | 0.095 | 0.240 | - | 0.095 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 1548.00 | 100.000 |
| B | ONE HOUR | ✓ | 41.00 | 100.000 |
| C | ONE HOUR | ✓ | 760.00 | 100.000 |
| D | ONE HOUR | ✓ | 315.00 | 100.000 |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.000 | 7.000 | 1300.000 | 241.000 |
| | B | 2.000 | 0.000 | 7.000 | 32.000 |
| | C | 704.000 | 56.000 | 0.000 | 0.000 |
| | D | 260.000 | 44.000 | 11.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.00 | 0.00 | 0.84 | 0.16 |
| | B | 0.05 | 0.00 | 0.17 | 0.78 |
| | C | 0.93 | 0.07 | 0.00 | 0.00 |
| | D | 0.83 | 0.14 | 0.03 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 1.000 | 1.186 | 1.166 | 1.124 |
| | B | 1.000 | 1.000 | 1.000 | 1.000 |
| | C | 1.250 | 1.000 | 1.000 | 1.000 |
| | D | 1.170 | 1.030 | 1.000 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.0 | 14.3 | 12.8 | 9.5 |
| | B | 0.0 | 0.0 | 0.0 | 0.0 |
| | C | 19.2 | 0.0 | 0.0 | 0.0 |
| | D | 13.1 | 2.3 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.02 | 11.29 | 0.02 | B | 6.42 | 9.64 | 1.55 | 9.65 | 0.02 | 1.55 | 9.65 |
| B-AD | 0.17 | 19.11 | 0.20 | C | 31.20 | 46.80 | 11.04 | 14.15 | 0.12 | 11.04 | 14.15 |
| A-B | - | - | - | - | 6.42 | 9.64 | - | - | - | - | - |
| A-C | - | - | - | - | 1192.90 | 1789.35 | - | - | - | - | - |
| A-D | 0.49 | 14.79 | 1.07 | B | 221.15 | 331.72 | 65.69 | 11.88 | 0.73 | 65.70 | 11.88 |
| D-A | 0.58 | 20.53 | 1.59 | C | 238.58 | 357.87 | 88.52 | 14.84 | 0.98 | 88.54 | 14.84 |
| D-BC | 0.32 | 29.01 | 0.48 | D | 50.47 | 75.70 | 23.79 | 18.85 | 0.26 | 23.79 | 18.85 |
| C-D | - | - | - | - | 0.00 | 0.00 | - | - | - | - | - |
| C-A | - | - | - | - | 646.00 | 969.00 | - | - | - | - | - |
| C-B | 0.16 | 11.38 | 0.19 | B | 51.39 | 77.08 | 12.14 | 9.45 | 0.13 | 12.14 | 9.45 |

## Main Results for each time segment

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 5.27 | 1.32 | 5.22 | 0.00 | 445.83 | 0.012 | 0.00 | 0.01 | 8.169 | A |
| B-AD | 25.60 | 6.40 | 25.31 | 0.00 | 384.01 | 0.067 | 0.00 | 0.07 | 10.036 | B |
| A-B | 5.27 | 1.32 | 5.27 | 0.00 | - | - | - | - | - | - |
| A-C | 978.71 | 244.68 | 978.71 | 0.00 | - | - | - | - | - | - |
| A-D | 181.44 | 45.36 | 179.55 | 0.00 | 606.21 | 0.299 | 0.00 | 0.47 | 9.439 | A |
| D-A | 195.74 | 48.94 | 193.44 | 0.00 | 587.59 | 0.333 | 0.00 | 0.57 | 10.629 | B |
| D-BC | 41.41 | 10.35 | 40.89 | 0.00 | 362.83 | 0.114 | 0.00 | 0.13 | 11.429 | B |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 530.01 | 132.50 | 530.01 | 0.00 | - | - | - | - | - | - |
| C-B | 42.16 | 10.54 | 41.80 | 0.00 | 508.22 | 0.083 | 0.00 | 0.09 | 7.713 | A |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 6.29 | 1.57 | 6.28 | 0.00 | 396.49 | 0.016 | 0.01 | 0.02 | 9.225 | A |
| B-AD | 30.57 | 7.64 | 30.43 | 0.00 | 317.61 | 0.096 | 0.07 | 0.10 | 12.531 | B |
| A-B | 6.29 | 1.57 | 6.29 | 0.00 | - | - | - | - | - | - |
| A-C | 1168.67 | 292.17 | 1168.67 | 0.00 | - | - | - | - | - | - |
| A-D | 216.65 | 54.16 | 215.90 | 0.00 | 577.86 | 0.375 | 0.47 | 0.66 | 11.150 | B |
| D-A | 233.73 | 58.43 | 232.68 | 0.00 | 552.33 | 0.423 | 0.57 | 0.84 | 13.135 | B |
| D-BC | 49.44 | 12.36 | 49.14 | 0.00 | 291.25 | 0.170 | 0.13 | 0.21 | 15.205 | C |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 632.88 | 158.22 | 632.88 | 0.00 | - | - | - | - | - | - |
| C-B | 50.34 | 12.59 | 50.21 | 0.00 | 453.59 | 0.111 | 0.09 | 0.12 | 8.921 | A |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 7.71 | 1.93 | 7.68 | 0.00 | 326.95 | 0.024 | 0.02 | 0.02 | 11.274 | B |
| B-AD | 37.43 | 9.36 | 37.08 | 0.00 | 225.96 | 0.166 | 0.10 | 0.19 | 19.023 | C |
| A-B | 7.71 | 1.93 | 7.71 | 0.00 | - | - | - | - | - | - |
| A-C | 1431.33 | 357.83 | 1431.33 | 0.00 | - | - | - | - | - | - |
| A-D | 265.35 | 66.34 | 263.76 | 0.00 | 538.74 | 0.493 | 0.66 | 1.06 | 14.622 | B |
| D-A | 286.27 | 71.57 | 283.43 | 0.00 | 492.55 | 0.581 | 0.84 | 1.55 | 19.876 | C |
| D-BC | 60.56 | 15.14 | 59.53 | 0.00 | 188.77 | 0.321 | 0.21 | 0.46 | 28.295 | D |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 775.12 | 193.78 | 775.12 | 0.00 | - | - | - | - | - | - |
| C-B | 61.66 | 15.41 | 61.38 | 0.00 | 378.18 | 0.163 | 0.12 | 0.19 | 11.355 | B |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 7.71 | 1.93 | 7.71 | 0.00 | 326.63 | 0.024 | 0.02 | 0.02 | 11.287 | B |
| B-AD | 37.43 | 9.36 | 37.42 | 0.00 | 225.75 | 0.166 | 0.19 | 0.20 | 19.111 | C |
| A-B | 7.71 | 1.93 | 7.71 | 0.00 | - | - | - | - | - | - |
| A-C | 1431.33 | 357.83 | 1431.33 | 0.00 | - | - | - | - | - | - |
| A-D | 265.35 | 66.34 | 265.28 | 0.00 | 538.64 | 0.493 | 1.06 | 1.07 | 14.786 | B |
| D-A | 286.27 | 71.57 | 286.09 | 0.00 | 491.20 | 0.583 | 1.55 | 1.59 | 20.526 | C |
| D-BC | 60.56 | 15.14 | 60.50 | 0.00 | 187.39 | 0.323 | 0.46 | 0.48 | 29.014 | D |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 775.12 | 193.78 | 775.12 | 0.00 | - | - | - | - | - | - |
| C-B | 61.66 | 15.41 | 61.65 | 0.00 | 377.90 | 0.163 | 0.19 | 0.19 | 11.383 | B |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 6.29 | 1.57 | 6.32 | 0.00 | 396.07 | 0.016 | 0.02 | 0.02 | 9.237 | A |
| B-AD | 30.57 | 7.64 | 30.92 | 0.00 | 317.32 | 0.096 | 0.20 | 0.11 | 12.586 | B |
| A-B | 6.29 | 1.57 | 6.29 | 0.00 | - | - | - | - | - | - |
| A-C | 1168.67 | 292.17 | 1168.67 | 0.00 | - | - | - | - | - | - |
| A-D | 216.65 | 54.16 | 218.20 | 0.00 | 577.73 | 0.375 | 1.07 | 0.69 | 11.299 | B |
| D-A | 233.73 | 58.43 | 236.56 | 0.00 | 551.32 | 0.424 | 1.59 | 0.88 | 13.503 | B |
| D-BC | 49.44 | 12.36 | 50.49 | 0.00 | 289.80 | 0.171 | 0.48 | 0.21 | 15.466 | C |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 632.88 | 158.22 | 632.88 | 0.00 | - | - | - | - | - | - |
| C-B | 50.34 | 12.59 | 50.61 | 0.00 | 453.21 | 0.111 | 0.19 | 0.13 | 8.949 | A |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 5.27 | 1.32 | 5.29 | 0.00 | 445.54 | 0.012 | 0.02 | 0.01 | 8.178 | A |
| B-AD | 25.60 | 6.40 | 25.74 | 0.00 | 383.75 | 0.067 | 0.11 | 0.07 | 10.059 | B |
| A-B | 5.27 | 1.32 | 5.27 | 0.00 | - | - | - | - | - | - |
| A-C | 978.71 | 244.68 | 978.71 | 0.00 | - | - | - | - | - | - |
| A-D | 181.44 | 45.36 | 182.24 | 0.00 | 606.10 | 0.299 | 0.69 | 0.49 | 9.560 | A |
| D-A | 195.74 | 48.94 | 196.89 | 0.00 | 587.09 | 0.333 | 0.88 | 0.60 | 10.830 | B |
| D-BC | 41.41 | 10.35 | 41.73 | 0.00 | 361.54 | 0.115 | 0.21 | 0.13 | 11.537 | B |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 530.01 | 132.50 | 530.01 | 0.00 | - | - | - | - | - | - |
| C-B | 42.16 | 10.54 | 42.30 | 0.00 | 507.98 | 0.083 | 0.13 | 0.09 | 7.732 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.17 | 0.01 | 8.169 | A | A |
| B-AD | 1.01 | 0.07 | 10.036 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 6.76 | 0.45 | 9.439 | A | A |
| D-A | 8.16 | 0.54 | 10.629 | B | B |
| D-BC | 1.86 | 0.12 | 11.429 | B | B |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 1.30 | 0.09 | 7.713 | A | A |

### Queueing Delay results: (08:00-08:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.23 | 0.02 | 9.225 | A | A |
| B-AD | 1.52 | 0.10 | 12.531 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 9.55 | 0.64 | 11.150 | B | B |
| D-A | 12.02 | 0.80 | 13.135 | B | B |
| D-BC | 2.95 | 0.20 | 15.205 | C | B |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 1.80 | 0.12 | 8.921 | A | A |

## Queueing Delay results: (08:15-08:30)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.35 | 0.02 | 11.274 | B | B |
| B-AD | 2.75 | 0.18 | 19.023 | C | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 15.01 | 1.00 | 14.622 | B | B |
| D-A | 21.40 | 1.43 | 19.876 | C | B |
| D-BC | 6.39 | 0.43 | 28.295 | D | C |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 2.78 | 0.19 | 11.355 | B | B |

## Queueing Delay results: (08:30-08:45)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.36 | 0.02 | 11.287 | B | B |
| B-AD | 2.93 | 0.20 | 19.111 | C | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 16.01 | 1.07 | 14.786 | B | B |
| D-A | 23.60 | 1.57 | 20.526 | C | C |
| D-BC | 7.07 | 0.47 | 29.014 | D | C |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 2.89 | 0.19 | 11.383 | B | B |

## Queueing Delay results: (08:45-09:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.25 | 0.02 | 9.237 | A | A |
| B-AD | 1.70 | 0.11 | 12.586 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 10.79 | 0.72 | 11.299 | B | B |
| D-A | 14.04 | 0.94 | 13.503 | B | B |
| D-BC | 3.43 | 0.23 | 15.466 | C | B |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 1.96 | 0.13 | 8.949 | A | A |

### Queueing Delay results: (09:00-09:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.19 | 0.01 | 8.178 | A | A |
| B-AD | 1.12 | 0.07 | 10.059 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 7.57 | 0.50 | 9.560 | A | A |
| D-A | 9.31 | 0.62 | 10.830 | B | B |
| D-BC | 2.09 | 0.14 | 11.537 | B | B |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 1.41 | 0.09 | 7.732 | A | A |

# (Default Analysis Set) - 2031 J3, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 17:45 | 19:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | OS-NS Stagger (UK RL Stagger) | Two-way | A,B,C,D | | 25.51 | D |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 N | | Major |
| **B** | B | Ashton Rd | | Minor |
| **C** | C | A508 S | | Major |
| **D** | D | Rookery Lane | | Minor |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **A** | 8.30 | ✓ | 10.00 | ✓ | 3.70 | 125.00 | | |
| **C** | 8.40 | ✓ | 10.00 | ✓ | 3.70 | 180.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **B** | One lane plus flare | | | | 10.00 | 9.65 | 5.30 | 3.65 | 3.50 | ✓ | 2.00 | 54 | 59 |
| **D** | One lane plus flare | | | | 10.00 | 9.70 | 5.40 | 3.30 | 3.00 | ✓ | 2.00 | 108 | 71 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for A-D | Slope for B-A | Slope for B-D | Slope for C-A | Slope for C-B | Slope for C-D | Slope for D-B | Slope for D-C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | A-D | 751.870 | - | - | - | 0.262 | 0.262 | 0.262 | - | 0.262 | - | - |
| **1** | B-AD | 728.293 | 0.097 | 0.245 | - | - | - | 0.154 | 0.351 | 0.154 | 0.097 | 0.245 |
| **1** | B-C | 689.772 | 0.095 | 0.239 | - | - | - | - | - | - | 0.095 | 0.239 |
| **1** | C-B | 788.921 | 0.274 | 0.274 | - | - | - | - | - | - | 0.274 | 0.274 |
| **1** | D-A | 752.980 | - | - | - | 0.263 | 0.104 | 0.263 | - | 0.104 | - | - |
| **1** | D-BC | 695.750 | 0.148 | 0.148 | 0.337 | 0.236 | 0.093 | 0.236 | - | 0.093 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 1364.00 | 100.000 |
| B | ONE HOUR | ✓ | 8.00 | 100.000 |
| C | ONE HOUR | ✓ | 943.00 | 100.000 |
| D | ONE HOUR | ✓ | 326.00 | 100.000 |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.000 | 14.000 | 1084.000 | 266.000 |
| | B | 2.000 | 0.000 | 1.000 | 5.000 |
| | C | 910.000 | 33.000 | 0.000 | 0.000 |
| | D | 323.000 | 3.000 | 0.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.00 | 0.01 | 0.79 | 0.20 |
| | B | 0.25 | 0.00 | 0.13 | 0.63 |
| | C | 0.97 | 0.03 | 0.00 | 0.00 |
| | D | 0.99 | 0.01 | 0.00 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 1.000 | 1.000 | 1.042 | 1.289 |
| | B | 1.000 | 1.000 | 1.000 | 1.000 |
| | C | 1.131 | 1.000 | 1.000 | 1.000 |
| | D | 1.065 | 1.000 | 1.000 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| From | A | 0.0 | 0.0 | 3.2 | 22.2 |
| | B | 0.0 | 0.0 | 0.0 | 0.0 |
| | C | 10.1 | 0.0 | 0.0 | 0.0 |
| | D | 5.0 | 0.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.00 | 9.04 | 0.00 | A | 0.92 | 1.38 | 0.19 | 8.16 | 0.00 | 0.19 | 8.16 |
| B-AD | 0.03 | 13.94 | 0.03 | B | 6.42 | 9.64 | 1.80 | 11.24 | 0.02 | 1.80 | 11.24 |
| A-B | - | - | - | - | 12.85 | 19.27 | - | - | - | - | - |
| A-C | - | - | - | - | 994.70 | 1492.05 | - | - | - | - | - |
| A-D | 0.60 | 23.78 | 1.88 | C | 244.09 | 366.13 | 105.37 | 17.27 | 1.17 | 105.40 | 17.27 |
| D-A | 0.73 | 28.91 | 2.74 | D | 296.39 | 444.59 | 137.03 | 18.49 | 1.52 | 137.06 | 18.50 |
| D-BC | 0.03 | 30.69 | 0.03 | D | 2.75 | 4.13 | 1.32 | 19.14 | 0.01 | 1.32 | 19.14 |
| C-D | - | - | - | - | 0.00 | 0.00 | - | - | - | - | - |
| C-A | - | - | - | - | 835.03 | 1252.55 | - | - | - | - | - |
| C-B | 0.08 | 8.56 | 0.09 | A | 30.28 | 45.42 | 5.74 | 7.59 | 0.06 | 5.74 | 7.59 |

## Main Results for each time segment

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.75 | 0.19 | 0.75 | 0.00 | 491.65 | 0.002 | 0.00 | 0.00 | 7.332 | A |
| B-AD | 5.27 | 1.32 | 5.22 | 0.00 | 412.22 | 0.013 | 0.00 | 0.01 | 8.844 | A |
| A-B | 10.54 | 2.63 | 10.54 | 0.00 | - | - | - | - | - | - |
| A-C | 816.09 | 204.02 | 816.09 | 0.00 | - | - | - | - | - | - |
| A-D | 200.26 | 50.06 | 197.53 | 0.00 | 570.88 | 0.351 | 0.00 | 0.68 | 12.339 | B |
| D-A | 243.17 | 60.79 | 240.08 | 0.00 | 571.38 | 0.426 | 0.00 | 0.77 | 11.471 | B |
| D-BC | 2.26 | 0.56 | 2.23 | 0.00 | 331.33 | 0.007 | 0.00 | 0.01 | 10.939 | B |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 685.10 | 171.27 | 685.10 | 0.00 | - | - | - | - | - | - |
| C-B | 24.84 | 6.21 | 24.66 | 0.00 | 562.01 | 0.044 | 0.00 | 0.05 | 6.698 | A |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.90 | 0.22 | 0.90 | 0.00 | 453.01 | 0.002 | 0.00 | 0.00 | 7.962 | A |
| B-AD | 6.29 | 1.57 | 6.27 | 0.00 | 350.80 | 0.018 | 0.01 | 0.02 | 10.449 | B |
| A-B | 12.59 | 3.15 | 12.59 | 0.00 | - | - | - | - | - | - |
| A-C | 974.49 | 243.62 | 974.49 | 0.00 | - | - | - | - | - | - |
| A-D | 239.13 | 59.78 | 237.82 | 0.00 | 535.74 | 0.446 | 0.68 | 1.01 | 15.496 | C |
| D-A | 290.37 | 72.59 | 288.59 | 0.00 | 535.91 | 0.542 | 0.77 | 1.22 | 15.386 | C |
| D-BC | 2.70 | 0.67 | 2.68 | 0.00 | 248.32 | 0.011 | 0.01 | 0.01 | 14.655 | B |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 818.07 | 204.52 | 818.07 | 0.00 | - | - | - | - | - | - |
| C-B | 29.67 | 7.42 | 29.61 | 0.00 | 517.96 | 0.057 | 0.05 | 0.06 | 7.371 | A |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 1.10 | 0.28 | 1.10 | 0.00 | 399.37 | 0.003 | 0.00 | 0.00 | 9.038 | A |
| B-AD | 7.71 | 1.93 | 7.66 | 0.00 | 265.96 | 0.029 | 0.02 | 0.03 | 13.936 | B |
| A-B | 15.41 | 3.85 | 15.41 | 0.00 | - | - | - | - | - | - |
| A-C | 1193.51 | 298.38 | 1193.51 | 0.00 | - | - | - | - | - | - |
| A-D | 292.87 | 73.22 | 289.59 | 0.00 | 487.16 | 0.601 | 1.01 | 1.83 | 23.090 | C |
| D-A | 355.63 | 88.91 | 350.04 | 0.00 | 486.48 | 0.731 | 1.22 | 2.61 | 27.033 | D |
| D-BC | 3.30 | 0.83 | 3.24 | 0.00 | 124.73 | 0.026 | 0.01 | 0.03 | 29.616 | D |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 1001.93 | 250.48 | 1001.93 | 0.00 | - | - | - | - | - | - |
| C-B | 36.33 | 9.08 | 36.23 | 0.00 | 457.06 | 0.079 | 0.06 | 0.09 | 8.552 | A |

## Main results: (18:30-18:45)

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 1.10 | 0.28 | 1.10 | 0.00 | 399.33 | 0.003 | 0.00 | 0.00 | 9.039 | A |
| B-AD | 7.71 | 1.93 | 7.71 | 0.00 | 265.93 | 0.029 | 0.03 | 0.03 | 13.940 | B |
| A-B | 15.41 | 3.85 | 15.41 | 0.00 | - | - | - | - | - | - |
| A-C | 1193.51 | 298.38 | 1193.51 | 0.00 | - | - | - | - | - | - |
| A-D | 292.87 | 73.22 | 292.66 | 0.00 | 487.15 | 0.601 | 1.83 | 1.88 | 23.781 | C |
| D-A | 355.63 | 88.91 | 355.13 | 0.00 | 486.42 | 0.731 | 2.61 | 2.74 | 28.913 | D |
| D-BC | 3.30 | 0.83 | 3.30 | 0.00 | 120.60 | 0.027 | 0.03 | 0.03 | 30.687 | D |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 1001.93 | 250.48 | 1001.93 | 0.00 | - | - | - | - | - | - |
| C-B | 36.33 | 9.08 | 36.33 | 0.00 | 457.04 | 0.080 | 0.09 | 0.09 | 8.556 | A |

## Main results: (18:45-19:00)

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.90 | 0.22 | 0.90 | 0.00 | 452.94 | 0.002 | 0.00 | 0.00 | 7.963 | A |
| B-AD | 6.29 | 1.57 | 6.34 | 0.00 | 350.76 | 0.018 | 0.03 | 0.02 | 10.453 | B |
| A-B | 12.59 | 3.15 | 12.59 | 0.00 | - | - | - | - | - | - |
| A-C | 974.49 | 243.62 | 974.49 | 0.00 | - | - | - | - | - | - |
| A-D | 239.13 | 59.78 | 242.38 | 0.00 | 535.72 | 0.446 | 1.88 | 1.07 | 15.982 | C |
| D-A | 290.37 | 72.59 | 296.11 | 0.00 | 535.86 | 0.542 | 2.74 | 1.31 | 16.350 | C |
| D-BC | 2.70 | 0.67 | 2.76 | 0.00 | 244.04 | 0.011 | 0.03 | 0.01 | 14.923 | B |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 818.07 | 204.52 | 818.07 | 0.00 | - | - | - | - | - | - |
| C-B | 29.67 | 7.42 | 29.76 | 0.00 | 517.94 | 0.057 | 0.09 | 0.06 | 7.377 | A |

### Main results: (19:00-19:15)

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.75 | 0.19 | 0.75 | 0.00 | 491.60 | 0.002 | 0.00 | 0.00 | 7.336 | A |
| B-AD | 5.27 | 1.32 | 5.29 | 0.00 | 412.14 | 0.013 | 0.02 | 0.01 | 8.848 | A |
| A-B | 10.54 | 2.63 | 10.54 | 0.00 | - | - | - | - | - | - |
| A-C | 816.09 | 204.02 | 816.09 | 0.00 | - | - | - | - | - | - |
| A-D | 200.26 | 50.06 | 201.70 | 0.00 | 570.86 | 0.351 | 1.07 | 0.71 | 12.616 | B |
| D-A | 243.17 | 60.79 | 245.17 | 0.00 | 571.35 | 0.426 | 1.31 | 0.81 | 11.824 | B |
| D-BC | 2.26 | 0.56 | 2.28 | 0.00 | 328.88 | 0.007 | 0.01 | 0.01 | 11.022 | B |
| C-D | 0.00 | 0.00 | 0.00 | 0.00 | - | - | - | - | - | - |
| C-A | 685.10 | 171.27 | 685.10 | 0.00 | - | - | - | - | - | - |
| C-B | 24.84 | 6.21 | 24.90 | 0.00 | 562.00 | 0.044 | 0.06 | 0.05 | 6.705 | A |

## Queueing Delay Results for each time segment

### Queueing Delay results: (17:45-18:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.02 | 0.00 | 7.332 | A | A |
| B-AD | 0.19 | 0.01 | 8.844 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 9.62 | 0.64 | 12.339 | B | B |
| D-A | 10.87 | 0.72 | 11.471 | B | B |
| D-BC | 0.10 | 0.01 | 10.939 | B | B |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 0.67 | 0.04 | 6.698 | A | A |

### Queueing Delay results: (18:00-18:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.03 | 0.00 | 7.962 | A | A |
| B-AD | 0.26 | 0.02 | 10.449 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 14.38 | 0.96 | 15.496 | C | B |
| D-A | 17.19 | 1.15 | 15.386 | C | B |
| D-BC | 0.16 | 0.01 | 14.655 | B | B |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 0.88 | 0.06 | 7.371 | A | A |

## Queueing Delay results: (18:15-18:30)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.04 | 0.00 | 9.038 | A | A |
| B-AD | 0.42 | 0.03 | 13.936 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 25.16 | 1.68 | 23.090 | C | C |
| D-A | 34.63 | 2.31 | 27.033 | D | C |
| D-BC | 0.37 | 0.02 | 29.616 | D | C |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 1.25 | 0.08 | 8.552 | A | A |

## Queueing Delay results: (18:30-18:45)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.04 | 0.00 | 9.039 | A | A |
| B-AD | 0.44 | 0.03 | 13.940 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 27.93 | 1.86 | 23.781 | C | C |
| D-A | 40.34 | 2.69 | 28.913 | D | C |
| D-BC | 0.41 | 0.03 | 30.687 | D | C |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 1.29 | 0.09 | 8.556 | A | A |

## Queueing Delay results: (18:45-19:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.03 | 0.00 | 7.963 | A | A |
| B-AD | 0.29 | 0.02 | 10.453 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 17.13 | 1.14 | 15.982 | C | B |
| D-A | 21.27 | 1.42 | 16.350 | C | B |
| D-BC | 0.18 | 0.01 | 14.923 | B | B |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 0.94 | 0.06 | 7.377 | A | A |

## Queueing Delay results: (19:00-19:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 0.02 | 0.00 | 7.336 | A | A |
| B-AD | 0.20 | 0.01 | 8.848 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |
| A-D | 11.16 | 0.74 | 12.616 | B | B |
| D-A | 12.72 | 0.85 | 11.824 | B | B |
| D-BC | 0.11 | 0.01 | 11.022 | B | B |
| C-D | - | - | - | - | - |
| C-A | - | - | - | - | - |
| C-B | 0.71 | 0.05 | 6.705 | A | A |

# JUNCTION 10

# A508/PURY ROAD JUNCTION

# Junctions 8

## PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** Jn.10 Pury Road D1.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP
**Report generation date:** 26/04/2018 13:16:57

» D1 2031 Base, AM
» D1 2031 Base, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | D1 2031 Base | | | | | |
| Stream B-C | 0.71 | 9.98 | 0.41 | 2.07 | 27.92 | 0.68 |
| Stream B-A | 0.02 | 37.76 | 0.02 | 1.41 | 71.96 | 0.61 |
| Stream C-A | - | - | - | - | - | - |
| Stream C-B | 13.28 | 85.28 | 0.96 | 1.55 | 17.87 | 0.61 |
| Stream A-B | - | - | - | - | - | - |
| Stream A-C | - | - | - | - | - | - |

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

*"D1 - D1 2031 Base, AM " model duration: 07:45 - 09:15*
*"D2 - D1 2031 Base, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 13:16:55*

## File summary

| | |
|---|---|
| **Title** | Pury Road/A508 |
| **Location** | Northampton |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/04/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# D1 2031 Base, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1 2031 Base, AM | D1 2031 Base | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 62.29 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 (S) | | Major |
| **B** | B | Pury Road | | Minor |
| **C** | C | A508 (N) | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| C | 6.05 | | 0.00 | ✓ | 3.50 | 150.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | | | | 10.00 | 8.30 | 5.40 | 4.10 | 4.10 | ✓ | 2.00 | 94 | 56 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 530.773 | 0.096 | 0.244 | 0.153 | 0.348 |
| 1 | B-C | 767.424 | 0.117 | 0.297 | - | - |
| 1 | C-B | 754.327 | 0.292 | 0.292 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 418.00 | 100.000 |
| B | ONE HOUR | ✓ | 238.00 | 100.000 |
| C | ONE HOUR | ✓ | 1115.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 3.000 | 415.000 |
| | B | 2.000 | 0.000 | 236.000 |
| | C | 576.000 | 539.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.01 | 0.99 |
| | B | 0.01 | 0.00 | 0.99 |
| | C | 0.52 | 0.48 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.354 |
| | B | 1.000 | 1.000 | 1.021 |
| | C | 1.135 | 1.216 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 27.2 |
| | B | 0.0 | 0.0 | 1.6 |
| | C | 10.4 | 16.6 | 0.0 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.41 | 9.98 | 0.71 | A | 216.56 | 324.84 | 46.53 | 8.59 | 0.52 | 46.54 | 8.60 |
| B-A | 0.02 | 37.76 | 0.02 | E | 1.84 | 2.75 | 1.11 | 24.11 | 0.01 | 1.11 | 24.11 |
| C-A | - | - | - | - | 528.55 | 792.82 | - | - | - | - | - |
| C-B | 0.96 | 85.28 | 13.28 | F | 494.60 | 741.89 | 487.40 | 39.42 | 5.42 | 487.58 | 39.43 |
| A-B | - | - | - | - | 2.75 | 4.13 | - | - | - | - | - |
| A-C | - | - | - | - | 380.81 | 571.22 | - | - | - | - | - |

# Main Results for each time segment

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 177.67 | 44.42 | 176.23 | 0.00 | 673.43 | 0.264 | 0.00 | 0.36 | 7.371 | A |
| B-A | 1.51 | 0.38 | 1.48 | 0.00 | 245.29 | 0.006 | 0.00 | 0.01 | 14.763 | B |
| C-A | 433.64 | 108.41 | 433.64 | 0.00 | - | - | - | - | - | - |
| C-B | 405.79 | 101.45 | 398.45 | 0.00 | 662.55 | 0.612 | 0.00 | 1.83 | 16.161 | C |
| A-B | 2.26 | 0.56 | 2.26 | 0.00 | - | - | - | - | - | - |
| A-C | 312.43 | 78.11 | 312.43 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 212.16 | 53.04 | 211.67 | 0.00 | 654.83 | 0.324 | 0.36 | 0.48 | 8.283 | A |
| B-A | 1.80 | 0.45 | 1.78 | 0.00 | 186.62 | 0.010 | 0.01 | 0.01 | 19.476 | C |
| C-A | 517.81 | 129.45 | 517.81 | 0.00 | - | - | - | - | - | - |
| C-B | 484.55 | 121.14 | 478.58 | 0.00 | 644.74 | 0.752 | 1.83 | 3.33 | 25.417 | D |
| A-B | 2.70 | 0.67 | 2.70 | 0.00 | - | - | - | - | - | - |
| A-C | 373.08 | 93.27 | 373.08 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 259.84 | 64.96 | 258.94 | 0.00 | 628.27 | 0.414 | 0.48 | 0.71 | 9.925 | A |
| B-A | 2.20 | 0.55 | 2.16 | 0.00 | 107.14 | 0.021 | 0.01 | 0.02 | 34.278 | D |
| C-A | 634.19 | 158.55 | 634.19 | 0.00 | - | - | - | - | - | - |
| C-B | 593.45 | 148.36 | 565.04 | 0.00 | 620.11 | 0.957 | 3.33 | 10.43 | 59.979 | F |
| A-B | 3.30 | 0.83 | 3.30 | 0.00 | - | - | - | - | - | - |
| A-C | 456.92 | 114.23 | 456.92 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 259.84 | 64.96 | 259.81 | 0.00 | 627.88 | 0.414 | 0.71 | 0.71 | 9.982 | A |
| B-A | 2.20 | 0.55 | 2.19 | 0.00 | 97.51 | 0.023 | 0.02 | 0.02 | 37.764 | E |
| C-A | 634.19 | 158.55 | 634.19 | 0.00 | - | - | - | - | - | - |
| C-B | 593.45 | 148.36 | 582.05 | 0.00 | 620.11 | 0.957 | 10.43 | 13.28 | 85.282 | F |
| A-B | 3.30 | 0.83 | 3.30 | 0.00 | - | - | - | - | - | - |
| A-C | 456.92 | 114.23 | 456.92 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 212.16 | 53.04 | 213.03 | 0.00 | 654.63 | 0.324 | 0.71 | 0.50 | 8.338 | A |
| B-A | 1.80 | 0.45 | 1.84 | 0.00 | 170.81 | 0.011 | 0.02 | 0.01 | 21.313 | C |
| C-A | 517.81 | 129.45 | 517.81 | 0.00 | - | - | - | - | - | - |
| C-B | 484.55 | 121.14 | 521.12 | 0.00 | 644.74 | 0.752 | 13.28 | 4.14 | 41.951 | E |
| A-B | 2.70 | 0.67 | 2.70 | 0.00 | - | - | - | - | - | - |
| A-C | 373.08 | 93.27 | 373.08 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 177.67 | 44.42 | 178.18 | 0.00 | 673.38 | 0.264 | 0.50 | 0.37 | 7.430 | A |
| B-A | 1.51 | 0.38 | 1.52 | 0.00 | 239.50 | 0.006 | 0.01 | 0.01 | 15.130 | C |
| C-A | 433.64 | 108.41 | 433.64 | 0.00 | - | - | - | - | - | - |
| C-B | 405.79 | 101.45 | 414.30 | 0.00 | 662.55 | 0.612 | 4.14 | 2.01 | 18.182 | C |
| A-B | 2.26 | 0.56 | 2.26 | 0.00 | - | - | - | - | - | - |
| A-C | 312.43 | 78.11 | 312.43 | 0.00 | - | - | - | - | - | - |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 5.22 | 0.35 | 7.371 | A | A |
| B-A | 0.09 | 0.01 | 14.763 | B | B |
| C-A | - | - | - | - | - |
| C-B | 24.89 | 1.66 | 16.161 | C | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:00-08:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 7.04 | 0.47 | 8.283 | A | A |
| B-A | 0.14 | 0.01 | 19.476 | C | B |
| C-A | - | - | - | - | - |
| C-B | 44.59 | 2.97 | 25.417 | D | C |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:15-08:30)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 10.21 | 0.68 | 9.925 | A | A |
| B-A | 0.28 | 0.02 | 34.278 | D | C |
| C-A | - | - | - | - | - |
| C-B | 116.16 | 7.74 | 59.979 | F | E |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:30-08:45)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 10.67 | 0.71 | 9.982 | A | A |
| B-A | 0.33 | 0.02 | 37.764 | E | D |
| C-A | - | - | - | - | - |
| C-B | 179.73 | 11.98 | 85.282 | F | F |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:45-09:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 7.69 | 0.51 | 8.338 | A | A |
| B-A | 0.17 | 0.01 | 21.313 | C | C |
| C-A | - | - | - | - | - |
| C-B | 88.94 | 5.93 | 41.951 | E | D |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (09:00-09:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 5.70 | 0.38 | 7.430 | A | A |
| B-A | 0.10 | 0.01 | 15.130 | C | B |
| C-A | - | - | - | - | - |
| C-B | 33.08 | 2.21 | 18.182 | C | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

# D1 2031 Base, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D1 2031 Base, PM | D1 2031 Base | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 28.12 | D |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 (S) | | Major |
| **B** | B | Pury Road | | Minor |
| **C** | C | A508 (N) | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **C** | 6.05 | | 0.00 | ✓ | 3.50 | 150.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **B** | One lane plus flare | | | | 10.00 | 8.30 | 5.40 | 4.10 | 4.10 | ✓ | 2.00 | 94 | 56 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| **1** | B-A | 544.320 | 0.099 | 0.250 | 0.157 | 0.357 |
| **1** | B-C | 757.431 | 0.116 | 0.293 | - | - |
| **1** | C-B | 754.327 | 0.292 | 0.292 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 729.00 | 100.000 |
| B | ONE HOUR | ✓ | 322.00 | 100.000 |
| C | ONE HOUR | ✓ | 782.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 1.000 | 728.000 |
| | B | 69.000 | 0.000 | 253.000 |
| | C | 492.000 | 290.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.00 | 1.00 |
| | B | 0.21 | 0.00 | 0.79 |
| | C | 0.63 | 0.37 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.148 |
| | B | 1.000 | 1.000 | 1.016 |
| | C | 1.274 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 11.4 |
| | B | 0.0 | 0.0 | 1.2 |
| | C | 21.1 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.68 | 27.92 | 2.07 | D | 232.16 | 348.24 | 94.94 | 16.36 | 1.05 | 94.95 | 16.36 |
| B-A | 0.61 | 71.96 | 1.41 | F | 63.32 | 94.97 | 56.73 | 35.84 | 0.63 | 56.73 | 35.84 |
| C-A | - | - | - | - | 451.47 | 677.20 | - | - | - | - | - |
| C-B | 0.61 | 17.87 | 1.55 | C | 266.11 | 399.16 | 87.54 | 13.16 | 0.97 | 87.55 | 13.16 |
| A-B | - | - | - | - | 0.92 | 1.38 | - | - | - | - | - |
| A-C | - | - | - | - | 668.03 | 1002.04 | - | - | - | - | - |

## Main Results for each time segment

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 190.47 | 47.62 | 188.45 | 0.00 | 567.25 | 0.336 | 0.00 | 0.51 | 9.602 | A |
| B-A | 51.95 | 12.99 | 51.01 | 0.00 | 268.46 | 0.194 | 0.00 | 0.23 | 16.486 | C |
| C-A | 370.40 | 92.60 | 370.40 | 0.00 | - | - | - | - | - | - |
| C-B | 218.33 | 54.58 | 216.04 | 0.00 | 594.27 | 0.367 | 0.00 | 0.57 | 9.463 | A |
| A-B | 0.75 | 0.19 | 0.75 | 0.00 | - | - | - | - | - | - |
| A-C | 548.08 | 137.02 | 548.08 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 227.44 | 56.86 | 226.38 | 0.00 | 520.50 | 0.437 | 0.51 | 0.77 | 12.384 | B |
| B-A | 62.03 | 15.51 | 61.36 | 0.00 | 211.34 | 0.294 | 0.23 | 0.40 | 23.895 | C |
| C-A | 442.30 | 110.57 | 442.30 | 0.00 | - | - | - | - | - | - |
| C-B | 260.70 | 65.18 | 259.62 | 0.00 | 563.21 | 0.463 | 0.57 | 0.84 | 11.814 | B |
| A-B | 0.90 | 0.22 | 0.90 | 0.00 | - | - | - | - | - | - |
| A-C | 654.46 | 163.61 | 654.46 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 278.56 | 69.64 | 274.11 | 0.00 | 417.68 | 0.667 | 0.77 | 1.88 | 24.736 | C |
| B-A | 75.97 | 18.99 | 72.48 | 0.00 | 126.87 | 0.599 | 0.40 | 1.27 | 62.736 | F |
| C-A | 541.70 | 135.43 | 541.70 | 0.00 | - | - | - | - | - | - |
| C-B | 319.30 | 79.82 | 316.60 | 0.00 | 520.25 | 0.614 | 0.84 | 1.52 | 17.443 | C |
| A-B | 1.10 | 0.28 | 1.10 | 0.00 | - | - | - | - | - | - |
| A-C | 801.54 | 200.39 | 801.54 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 278.56 | 69.64 | 277.82 | 0.00 | 407.40 | 0.684 | 1.88 | 2.07 | 27.921 | D |
| B-A | 75.97 | 18.99 | 75.41 | 0.00 | 124.31 | 0.611 | 1.27 | 1.41 | 71.959 | F |
| C-A | 541.70 | 135.43 | 541.70 | 0.00 | - | - | - | - | - | - |
| C-B | 319.30 | 79.82 | 319.16 | 0.00 | 520.25 | 0.614 | 1.52 | 1.55 | 17.868 | C |
| A-B | 1.10 | 0.28 | 1.10 | 0.00 | - | - | - | - | - | - |
| A-C | 801.54 | 200.39 | 801.54 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 227.44 | 56.86 | 232.42 | 0.00 | 515.59 | 0.441 | 2.07 | 0.82 | 13.126 | B |
| B-A | 62.03 | 15.51 | 65.94 | 0.00 | 209.41 | 0.296 | 1.41 | 0.44 | 25.708 | D |
| C-A | 442.30 | 110.57 | 442.30 | 0.00 | - | - | - | - | - | - |
| C-B | 260.70 | 65.18 | 263.38 | 0.00 | 563.21 | 0.463 | 1.55 | 0.88 | 12.112 | B |
| A-B | 0.90 | 0.22 | 0.90 | 0.00 | - | - | - | - | - | - |
| A-C | 654.46 | 163.61 | 654.46 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 190.47 | 47.62 | 191.66 | 0.00 | 565.88 | 0.337 | 0.82 | 0.52 | 9.802 | A |
| B-A | 51.95 | 12.99 | 52.71 | 0.00 | 267.14 | 0.194 | 0.44 | 0.25 | 16.847 | C |
| C-A | 370.40 | 92.60 | 370.40 | 0.00 | - | - | - | - | - | - |
| C-B | 218.33 | 54.58 | 219.50 | 0.00 | 594.27 | 0.367 | 0.88 | 0.59 | 9.637 | A |
| A-B | 0.75 | 0.19 | 0.75 | 0.00 | - | - | - | - | - | - |
| A-C | 548.08 | 137.02 | 548.08 | 0.00 | - | - | - | - | - | - |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 7.20 | 0.48 | 9.602 | A | A |
| B-A | 3.29 | 0.22 | 16.486 | C | B |
| C-A | - | - | - | - | - |
| C-B | 8.14 | 0.54 | 9.463 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (17:00-17:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 11.03 | 0.74 | 12.384 | B | B |
| B-A | 5.64 | 0.38 | 23.895 | C | C |
| C-A | - | - | - | - | - |
| C-B | 12.08 | 0.81 | 11.814 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:15-17:30)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 25.18 | 1.68 | 24.736 | C | C |
| B-A | 16.01 | 1.07 | 62.736 | F | E |
| C-A | - | - | - | - | - |
| C-B | 21.06 | 1.40 | 17.443 | C | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:30-17:45)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 30.02 | 2.00 | 27.921 | D | C |
| B-A | 20.39 | 1.36 | 71.959 | F | E |
| C-A | - | - | - | - | - |
| C-B | 23.05 | 1.54 | 17.868 | C | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:45-18:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 13.32 | 0.89 | 13.126 | B | B |
| B-A | 7.47 | 0.50 | 25.708 | D | C |
| C-A | - | - | - | - | - |
| C-B | 14.00 | 0.93 | 12.112 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (18:00-18:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 8.18 | 0.55 | 9.802 | A | A |
| B-A | 3.92 | 0.26 | 16.847 | C | B |
| C-A | - | - | - | - | - |
| C-B | 9.21 | 0.61 | 9.637 | A | A |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

# Junctions 8

## PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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**Filename:** 180321 A508-Pury Road Mitigation with RC.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:47:18

» Traffic Flows - 2031 J3, AM
» Traffic Flows - 2031 J3, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | Traffic Flows - 2031 J3 | | | | | |
| Stream B-C | 0.82 | 11.70 | 0.45 | 40.05 | 500.33 | 1.54 |
| Stream B-A | 0.12 | 245.29 | 0.13 | 8.85 | 592.29 | 1.44 |
| Stream C-A | - | - | - | - | - | - |
| Stream C-B | 28.85 | 164.87 | 1.06 | 6.28 | 56.27 | 0.89 |
| Stream A-B | - | - | - | - | - | - |
| Stream A-C | - | - | - | - | - | - |

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

*"D5 - 2031 J3, AM " model duration: 07:45 - 09:15*
*"D6 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:47:15*

## File summary

| | |
|---|---|
| **Title** | Pury Road/A508 |
| **Location** | Northampton |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# Traffic Flows - 2031 J3, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| Traffic Flows | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 119.75 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 (S) | | Major |
| **B** | B | Pury Road | | Minor |
| **C** | C | A508 (N) | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| C | 7.30 | | 0.00 | ✓ | 3.50 | 150.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane plus flare | | | | 10.00 | 8.30 | 5.40 | 4.10 | 4.10 | ✓ | 2.00 | 94 | 56 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 530.773 | 0.091 | 0.231 | 0.145 | 0.329 |
| 1 | B-C | 767.424 | 0.111 | 0.281 | - | - |
| 1 | C-B | 754.327 | 0.276 | 0.276 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 608.00 | 100.000 |
| B | ONE HOUR | ✓ | 234.00 | 100.000 |
| C | ONE HOUR | ✓ | 1427.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 25.000 | 583.000 |
| | B | 2.000 | 0.000 | 232.000 |
| | C | 877.000 | 550.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.04 | 0.96 |
| | B | 0.01 | 0.00 | 0.99 |
| | C | 0.61 | 0.39 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.294 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.237 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 22.6 |
| | B | 0.0 | 0.0 | 0.0 |
| | C | 18.2 | 0.0 | 0.0 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 0.45 | 11.70 | 0.82 | B | 212.89 | 319.33 | 49.99 | 9.39 | 0.56 | 50.00 | 9.39 |
| B-A | 0.13 | 245.29 | 0.12 | F | 1.84 | 2.75 | 3.11 | 67.89 | 0.03 | 3.11 | 67.89 |
| C-A | - | - | - | - | 804.75 | 1207.13 | - | - | - | - | - |
| C-B | 1.06 | 164.87 | 28.85 | F | 504.69 | 757.03 | 907.17 | 71.90 | 10.08 | 907.37 | 71.92 |
| A-B | - | - | - | - | 22.94 | 34.41 | - | - | - | - | - |
| A-C | - | - | - | - | 534.97 | 802.46 | - | - | - | - | - |

# Main Results for each time segment

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 174.66 | 43.67 | 173.18 | 0.00 | 640.98 | 0.272 | 0.00 | 0.37 | 7.696 | A |
| B-A | 1.51 | 0.38 | 1.48 | 0.00 | 194.70 | 0.008 | 0.00 | 0.01 | 18.628 | C |
| C-A | 660.25 | 165.06 | 660.25 | 0.00 | - | - | - | - | - | - |
| C-B | 414.07 | 103.52 | 406.72 | 0.00 | 628.11 | 0.659 | 0.00 | 1.84 | 15.786 | C |
| A-B | 18.82 | 4.71 | 18.82 | 0.00 | - | - | - | - | - | - |
| A-C | 438.91 | 109.73 | 438.91 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 208.56 | 52.14 | 208.02 | 0.00 | 615.70 | 0.339 | 0.37 | 0.51 | 8.819 | A |
| B-A | 1.80 | 0.45 | 1.77 | 0.00 | 126.64 | 0.014 | 0.01 | 0.01 | 28.820 | D |
| C-A | 788.41 | 197.10 | 788.41 | 0.00 | - | - | - | - | - | - |
| C-B | 494.44 | 123.61 | 486.26 | 0.00 | 603.62 | 0.819 | 1.84 | 3.88 | 28.781 | D |
| A-B | 22.47 | 5.62 | 22.47 | 0.00 | - | - | - | - | - | - |
| A-C | 524.11 | 131.03 | 524.11 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 255.44 | 63.86 | 254.33 | 0.00 | 575.01 | 0.444 | 0.51 | 0.78 | 11.187 | B |
| B-A | 2.20 | 0.55 | 2.02 | 0.00 | 34.46 | 0.064 | 0.01 | 0.06 | 110.416 | F |
| C-A | 965.59 | 241.40 | 965.59 | 0.00 | - | - | - | - | - | - |
| C-B | 605.56 | 151.39 | 548.74 | 0.00 | 569.74 | 1.063 | 3.88 | 18.09 | 90.537 | F |
| A-B | 27.53 | 6.88 | 27.53 | 0.00 | - | - | - | - | - | - |
| A-C | 641.89 | 160.47 | 641.89 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 255.44 | 63.86 | 255.30 | 0.00 | 562.70 | 0.454 | 0.78 | 0.82 | 11.701 | B |
| B-A | 2.20 | 0.55 | 1.95 | 0.00 | 16.42 | 0.134 | 0.06 | 0.12 | 245.290 | F |
| C-A | 965.59 | 241.40 | 965.59 | 0.00 | - | - | - | - | - | - |
| C-B | 605.56 | 151.39 | 562.51 | 0.00 | 569.74 | 1.063 | 18.09 | 28.85 | 164.872 | F |
| A-B | 27.53 | 6.88 | 27.53 | 0.00 | - | - | - | - | - | - |
| A-C | 641.89 | 160.47 | 641.89 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 208.56 | 52.14 | 209.75 | 0.00 | 614.09 | 0.340 | 0.82 | 0.52 | 8.928 | A |
| B-A | 1.80 | 0.45 | 2.20 | 0.00 | 91.50 | 0.020 | 0.12 | 0.02 | 40.474 | E |
| C-A | 788.41 | 197.10 | 788.41 | 0.00 | - | - | - | - | - | - |
| C-B | 494.44 | 123.61 | 582.38 | 0.00 | 603.62 | 0.819 | 28.85 | 6.86 | 119.077 | F |
| A-B | 22.47 | 5.62 | 22.47 | 0.00 | - | - | - | - | - | - |
| A-C | 524.11 | 131.03 | 524.11 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 174.66 | 43.67 | 175.23 | 0.00 | 640.84 | 0.273 | 0.52 | 0.38 | 7.741 | A |
| B-A | 1.51 | 0.38 | 1.56 | 0.00 | 185.66 | 0.008 | 0.02 | 0.01 | 19.560 | C |
| C-A | 660.25 | 165.06 | 660.25 | 0.00 | - | - | - | - | - | - |
| C-B | 414.07 | 103.52 | 433.36 | 0.00 | 628.11 | 0.659 | 6.86 | 2.04 | 20.090 | C |
| A-B | 18.82 | 4.71 | 18.82 | 0.00 | - | - | - | - | - | - |
| A-C | 438.91 | 109.73 | 438.91 | 0.00 | - | - | - | - | - | - |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 5.33 | 0.36 | 7.696 | A | A |
| B-A | 0.11 | 0.01 | 18.628 | C | B |
| C-A | - | - | - | - | - |
| C-B | 24.78 | 1.65 | 15.786 | C | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:00-08:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 7.35 | 0.49 | 8.819 | A | A |
| B-A | 0.20 | 0.01 | 28.820 | D | C |
| C-A | - | - | - | - | - |
| C-B | 50.21 | 3.35 | 28.781 | D | C |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:15-08:30)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 11.23 | 0.75 | 11.187 | B | B |
| B-A | 0.76 | 0.05 | 110.416 | F | F |
| C-A | - | - | - | - | - |
| C-B | 175.51 | 11.70 | 90.537 | F | F |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:30-08:45)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 12.10 | 0.81 | 11.701 | B | B |
| B-A | 1.53 | 0.10 | 245.290 | F | F |
| C-A | - | - | - | - | - |
| C-B | 353.48 | 23.57 | 164.872 | F | F |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (08:45-09:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 8.13 | 0.54 | 8.928 | A | A |
| B-A | 0.38 | 0.03 | 40.474 | E | D |
| C-A | - | - | - | - | - |
| C-B | 265.48 | 17.70 | 119.077 | F | F |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (09:00-09:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 5.85 | 0.39 | 7.741 | A | A |
| B-A | 0.13 | 0.01 | 19.560 | C | B |
| C-A | - | - | - | - | - |
| C-B | 37.71 | 2.51 | 20.090 | C | C |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

# Traffic Flows - 2031 J3, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| Traffic Flows | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 243.35 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | A508 (S) | | Major |
| **B** | B | Pury Road | | Minor |
| **C** | C | A508 (N) | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **C** | 7.30 | | 0.00 | ✓ | 3.50 | 150.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **B** | One lane plus flare | | | | 10.00 | 8.30 | 5.40 | 4.10 | 4.10 | ✓ | 2.00 | 94 | 56 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| **1** | B-A | 539.720 | 0.093 | 0.234 | 0.147 | 0.335 |
| **1** | B-C | 760.825 | 0.110 | 0.278 | - | - |
| **1** | C-B | 754.327 | 0.276 | 0.276 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 879.00 | 100.000 |
| B | ONE HOUR | ✓ | 270.00 | 100.000 |
| C | ONE HOUR | ✓ | 1159.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 1.000 | 878.000 |
| | B | 45.000 | 0.000 | 225.000 |
| | C | 766.000 | 393.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.00 | 1.00 |
| | B | 0.17 | 0.00 | 0.83 |
| | C | 0.66 | 0.34 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.143 |
| | B | 1.000 | 1.000 | 1.000 |
| | C | 1.202 | 1.000 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 11.0 |
| | B | 0.0 | 0.0 | 0.0 |
| | C | 15.5 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 1.54 | 500.33 | 40.05 | F | 206.46 | 309.70 | 865.61 | 167.70 | 9.62 | 865.62 | 167.70 |
| B-A | 1.44 | 592.29 | 8.85 | F | 41.29 | 61.94 | 216.67 | 209.88 | 2.41 | 216.67 | 209.89 |
| C-A | - | - | - | - | 702.89 | 1054.34 | - | - | - | - | - |
| C-B | 0.89 | 56.27 | 6.28 | F | 360.62 | 540.94 | 248.84 | 27.60 | 2.76 | 248.90 | 27.61 |
| A-B | - | - | - | - | 0.92 | 1.38 | - | - | - | - | - |
| A-C | - | - | - | - | 805.67 | 1208.50 | - | - | - | - | - |

## Main Results for each time segment

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 169.39 | 42.35 | 167.65 | 0.00 | 551.98 | 0.307 | 0.00 | 0.44 | 9.326 | A |
| B-A | 33.88 | 8.47 | 33.08 | 0.00 | 199.33 | 0.170 | 0.00 | 0.20 | 21.558 | C |
| C-A | 576.68 | 144.17 | 576.68 | 0.00 | - | - | - | - | - | - |
| C-B | 295.87 | 73.97 | 291.71 | 0.00 | 571.86 | 0.517 | 0.00 | 1.04 | 12.670 | B |
| A-B | 0.75 | 0.19 | 0.75 | 0.00 | - | - | - | - | - | - |
| A-C | 661.00 | 165.25 | 661.00 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 202.27 | 50.57 | 201.31 | 0.00 | 494.97 | 0.409 | 0.44 | 0.68 | 12.219 | B |
| B-A | 40.45 | 10.11 | 39.56 | 0.00 | 130.72 | 0.309 | 0.20 | 0.42 | 39.117 | E |
| C-A | 688.62 | 172.15 | 688.62 | 0.00 | - | - | - | - | - | - |
| C-B | 353.30 | 88.32 | 350.17 | 0.00 | 536.44 | 0.659 | 1.04 | 1.82 | 19.001 | C |
| A-B | 0.90 | 0.22 | 0.90 | 0.00 | - | - | - | - | - | - |
| A-C | 789.30 | 197.33 | 789.30 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 247.73 | 61.93 | 177.38 | 0.00 | 185.42 | 1.336 | 0.68 | 18.26 | 231.462 | F |
| B-A | 49.55 | 12.39 | 32.23 | 0.00 | 37.94 | 1.306 | 0.42 | 4.75 | 395.177 | F |
| C-A | 843.38 | 210.85 | 843.38 | 0.00 | - | - | - | - | - | - |
| C-B | 432.70 | 108.18 | 418.12 | 0.00 | 487.47 | 0.888 | 1.82 | 5.47 | 44.674 | E |
| A-B | 1.10 | 0.28 | 1.10 | 0.00 | - | - | - | - | - | - |
| A-C | 966.70 | 241.67 | 966.70 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 247.73 | 61.93 | 160.57 | 0.00 | 161.08 | 1.538 | 18.26 | 40.05 | 500.330 | F |
| B-A | 49.55 | 12.39 | 33.17 | 0.00 | 34.42 | 1.439 | 4.75 | 8.85 | 592.289 | F |
| C-A | 843.38 | 210.85 | 843.38 | 0.00 | - | - | - | - | - | - |
| C-B | 432.70 | 108.18 | 429.45 | 0.00 | 487.47 | 0.888 | 5.47 | 6.28 | 56.268 | F |
| A-B | 1.10 | 0.28 | 1.10 | 0.00 | - | - | - | - | - | - |
| A-C | 966.70 | 241.67 | 966.70 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 202.27 | 50.57 | 357.86 | 0.00 | 403.76 | 0.501 | 40.05 | 1.16 | 165.705 | F |
| B-A | 40.45 | 10.11 | 71.75 | 0.00 | 91.44 | 0.442 | 8.85 | 1.02 | 217.983 | F |
| C-A | 688.62 | 172.15 | 688.62 | 0.00 | - | - | - | - | - | - |
| C-B | 353.30 | 88.32 | 370.22 | 0.00 | 536.44 | 0.659 | 6.28 | 2.05 | 23.538 | C |
| A-B | 0.90 | 0.22 | 0.90 | 0.00 | - | - | - | - | - | - |
| A-C | 789.30 | 197.33 | 789.30 | 0.00 | - | - | - | - | - | - |

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

| Stream | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|
| B-C | 169.39 | 42.35 | 172.20 | 0.00 | 547.80 | 0.309 | 1.16 | 0.45 | 9.655 | A |
| B-A | 33.88 | 8.47 | 37.11 | 0.00 | 196.86 | 0.172 | 1.02 | 0.21 | 22.953 | C |
| C-A | 576.68 | 144.17 | 576.68 | 0.00 | - | - | - | - | - | - |
| C-B | 295.87 | 73.97 | 299.66 | 0.00 | 571.86 | 0.517 | 2.05 | 1.10 | 13.404 | B |
| A-B | 0.75 | 0.19 | 0.75 | 0.00 | - | - | - | - | - | - |
| A-C | 661.00 | 165.25 | 661.00 | 0.00 | - | - | - | - | - | - |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 6.23 | 0.42 | 9.326 | A | A |
| B-A | 2.76 | 0.18 | 21.558 | C | C |
| C-A | - | - | - | - | - |
| C-B | 14.49 | 0.97 | 12.670 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

### Queueing Delay results: (17:00-17:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 9.69 | 0.65 | 12.219 | B | B |
| B-A | 5.76 | 0.38 | 39.117 | E | D |
| C-A | - | - | - | - | - |
| C-B | 25.14 | 1.68 | 19.001 | C | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:15-17:30)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 150.27 | 10.02 | 231.462 | F | F |
| B-A | 42.24 | 2.82 | 395.177 | F | F |
| C-A | - | - | - | - | - |
| C-B | 64.96 | 4.33 | 44.674 | E | D |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:30-17:45)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 437.62 | 29.17 | 500.330 | F | F |
| B-A | 102.34 | 6.82 | 592.289 | F | F |
| C-A | - | - | - | - | - |
| C-B | 88.98 | 5.93 | 56.268 | F | E |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (17:45-18:00)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 254.59 | 16.97 | 165.705 | F | F |
| B-A | 59.85 | 3.99 | 217.983 | F | F |
| C-A | - | - | - | - | - |
| C-B | 37.62 | 2.51 | 23.538 | C | C |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

## Queueing Delay results: (18:00-18:15)

| Stream | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| B-C | 7.20 | 0.48 | 9.655 | A | A |
| B-A | 3.72 | 0.25 | 22.953 | C | C |
| C-A | - | - | - | - | - |
| C-B | 17.65 | 1.18 | 13.404 | B | B |
| A-B | - | - | - | - | - |
| A-C | - | - | - | - | - |

# JUNCTION 12

# A45 WOOTTON INTERCHANGE

# Junctions 8

## ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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**Filename:** 180321 2031 RC Wootton Interchange v1.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:03:08

» (Default Analysis Set) - 2031 D1, AM
» (Default Analysis Set) - 2031 D1, PM
» (Default Analysis Set) - 2031 J3, AM
» (Default Analysis Set) - 2031 J3, PM

## Summary of junction performance

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS | Queue (PCU) | Delay (s) | RFC | LOS |
| | A1 - 2031 D1 | | | | | | | |
| Junction 1 - Arm 1 | 4.81 | 18.13 | 0.83 | C | 253.83 | 826.05 | 1.22 | F |
| Junction 1 - Arm 2 | 27.77 | 93.22 | 1.02 | F | 1.09 | 6.38 | 0.51 | A |
| Junction 1 - Arm 3 | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | A |
| Junction 1 - Arm 4 | 30.51 | 146.64 | 1.05 | F | 231.70 | 816.85 | 1.41 | F |
| Junction 2 - Arm 1 | 0.35 | 6.18 | 0.25 | A | 1.99 | 14.49 | 0.61 | B |
| Junction 2 - Arm 2 | 6.86 | 34.46 | 0.89 | D | 37.58 | 193.22 | 1.09 | F |
| Junction 2 - Arm 3 | 97.03 | 239.02 | 1.11 | F | 5.18 | 17.60 | 0.83 | C |
| Junction 2 - Arm 4 | 16.40 | 138.71 | 1.02 | F | 98.42 | 632.44 | 1.34 | F |
| | A1 - 2031 J3 | | | | | | | |
| Junction 1 - Arm 1 | 2.76 | 11.50 | 0.74 | B | 251.83 | 830.59 | 1.21 | F |
| Junction 1 - Arm 2 | 47.02 | 134.26 | 1.06 | F | 1.58 | 8.05 | 0.59 | A |
| Junction 1 - Arm 3 | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | A |
| Junction 1 - Arm 4 | 121.95 | 617.97 | 1.31 | F | 362.33 | 1319.02 | 1.60 | F |
| Junction 2 - Arm 1 | 0.26 | 5.69 | 0.20 | A | 2.19 | 15.24 | 0.62 | C |
| Junction 2 - Arm 2 | 4.44 | 22.85 | 0.82 | C | 35.86 | 184.77 | 1.09 | F |
| Junction 2 - Arm 3 | 189.42 | 495.65 | 1.17 | F | 6.57 | 21.95 | 0.86 | C |
| Junction 2 - Arm 4 | 15.31 | 127.78 | 1.00 | F | 114.93 | 754.20 | 1.41 | F |

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

*"D1 - 2031 D1, AM " model duration: 07:45 - 09:15*
*"D2 - 2031 D1, PM" model duration: 16:45 - 18:15*
*"D5 - 2031 J3, AM" model duration: 07:45 - 09:15*
*"D6 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:03:00*

## File summary

| | |
|---|---|
| **Title** | Wootton Interchange |
| **Location** | Northampton |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/0201 |
| **Version** | v1 |
| **Status** | (new file) |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# (Default Analysis Set) - 2031 D1, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 1 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, AM | 2031 D1 | AM | | Varies by Arm | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | (untitled) | Roundabout | 1,2,3,4 | | | | 79.59 | F |
| 2 | 2 | (untitled) | Roundabout | 1,2,3,4 | | | | 155.35 | F |

## Junction Network Options

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

# Arms

## Arms

| Junction | Arm | Arm | Name | Description |
|---|---|---|---|---|
| 1 | 1 | 1 | Wooldale Rd E | |
| 1 | 2 | 2 | Rowtree Rd | |
| 1 | 3 | 3 | London rd | |
| 1 | 4 | 4 | A45 N | |
| 2 | 1 | 1 | Wooldale Rd E | |
| 2 | 2 | 2 | A45 S | |
| 2 | 3 | 3 | (untitled) | Wooldale Rd W |
| 2 | 4 | 4 | Berry Lane | |

## Capacity Options

| Junction | Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|---|
| 1 | 1 | 0.00 | 99999.00 | | 0.00 |
| 1 | 2 | 0.00 | 99999.00 | | 0.00 |
| 1 | 3 | 0.00 | 99999.00 | | 0.00 |
| 1 | 4 | 0.00 | 99999.00 | | 0.00 |
| 2 | 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 2 | 0.00 | 99999.00 | | 0.00 |
| 2 | 3 | 0.00 | 99999.00 | | 0.00 |
| 2 | 4 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.70 | 5.90 | 1.70 | 15.00 | 32.00 | 12.00 | |
| 1 | 2 | 3.90 | 4.80 | 6.30 | 20.00 | 32.00 | 21.00 | |
| 1 | 3 | 3.50 | 6.60 | 10.00 | 30.00 | 32.00 | 18.00 | |
| 1 | 4 | 4.00 | 4.10 | 1.00 | 20.00 | 32.00 | 25.00 | |
| 2 | 1 | 3.10 | 4.80 | 9.80 | 20.00 | 38.00 | 19.00 | |
| 2 | 2 | 3.20 | 3.90 | 8.00 | 15.00 | 38.00 | 24.00 | |
| 2 | 3 | 4.20 | 5.50 | 6.20 | 15.00 | 38.00 | 24.00 | |
| 2 | 4 | 3.20 | 5.00 | 4.90 | 20.00 | 38.00 | 25.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction | Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|---|
| 1 | 1 | | (calculated) | (calculated) | 0.590 | 1308.494 |
| 1 | 2 | | (calculated) | (calculated) | 0.607 | 1411.596 |
| 1 | 3 | | (calculated) | (calculated) | 0.657 | 1620.802 |
| 1 | 4 | | (calculated) | (calculated) | 0.571 | 1256.381 |
| 2 | 1 | | (calculated) | (calculated) | 0.581 | 1319.029 |
| 2 | 2 | | (calculated) | (calculated) | 0.535 | 1140.435 |
| 2 | 3 | | (calculated) | (calculated) | 0.610 | 1515.149 |
| 2 | 4 | | (calculated) | (calculated) | 0.559 | 1241.472 |

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Junction | Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 | 1 | Linked Arm | | N/A | |
| 1 | 2 | ONE HOUR | ✓ | 944.00 | 100.000 |
| 1 | 3 | ONE HOUR | ✓ | 0.00 | 100.000 |
| 1 | 4 | ONE HOUR | ✓ | 656.00 | 100.000 |
| 2 | 1 | ONE HOUR | ✓ | 189.00 | 100.000 |
| 2 | 2 | ONE HOUR | ✓ | 695.00 | 100.000 |
| 2 | 3 | Linked Arm | | N/A | |
| 2 | 4 | ONE HOUR | ✓ | 391.00 | 100.000 |

## Linked Arm Data

| Junction | Arm | From Junction ID | From Arm ID | Link Type | Flow Source | Uniform Flow (PCU/hr) | Flow Multiplier (%) | Internal Storage Space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 3 | Simple (vertical queueing) | Normal | 0.00 | 100.00 | |
| 2 | 3 | 1 | 1 | Simple (vertical queueing) | Normal | 0.00 | 100.00 | |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 357.000 | 560.000 | 0.000 |
| | 2 | 944.000 | 0.000 | 0.000 | 0.000 |
| | 3 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 4 | 477.000 | 141.000 | 38.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.39 | 0.61 | 0.00 |
| | 2 | 1.00 | 0.00 | 0.00 | 0.00 |
| | 3 | 0.25 | 0.25 | 0.25 | 0.25 |
| | 4 | 0.73 | 0.21 | 0.06 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 0.000 | 189.000 | 0.000 |
| | 2 | 172.000 | 0.000 | 440.000 | 83.000 |
| | 3 | 889.000 | 464.000 | 0.000 | 68.000 |
| | 4 | 0.000 | 93.000 | 298.000 | 0.000 |

### Turning Proportions (PCU) - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.00 | 1.00 | 0.00 |
| | 2 | 0.25 | 0.00 | 0.63 | 0.12 |
| | 3 | 0.63 | 0.33 | 0.00 | 0.05 |
| | 4 | 0.00 | 0.24 | 0.76 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.028 | 1.032 | 1.000 |
| | 2 | 1.012 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.287 | 1.134 | 1.050 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 2.8 | 3.2 | 0.0 |
| | 2 | 1.2 | 0.0 | 0.0 | 0.0 |
| | 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 4 | 28.7 | 13.4 | 5.0 | 0.0 |

### Average PCU Per Vehicle - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.445 | 1.063 | 1.000 |
| | 2 | 1.064 | 1.000 | 1.005 | 1.048 |
| | 3 | 1.164 | 1.002 | 1.000 | 1.029 |
| | 4 | 1.000 | 1.172 | 1.036 | 1.000 |

### Heavy Vehicle Percentages - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 44.5 | 6.3 | 0.0 |
| | 2 | 6.4 | 0.0 | 0.5 | 4.8 |
| | 3 | 16.4 | 0.2 | 0.0 | 2.9 |
| | 4 | 0.0 | 17.2 | 3.6 | 0.0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.83 | 18.13 | 4.81 | C | 848.68 | 1273.01 | 245.24 | 11.56 | 2.72 | 245.29 | 11.56 |
| 1 | 2 | 1.02 | 93.22 | 27.77 | F | 866.23 | 1299.35 | 785.58 | 36.28 | 8.73 | 785.67 | 36.28 |
| 1 | 3 | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 4 | 1.05 | 146.64 | 30.51 | F | 601.96 | 902.94 | 924.49 | 61.43 | 10.27 | 924.60 | 61.44 |
| 2 | 1 | 0.25 | 6.18 | 0.35 | A | 173.43 | 260.14 | 24.22 | 5.59 | 0.27 | 24.22 | 5.59 |
| 2 | 2 | 0.89 | 34.46 | 6.86 | D | 637.74 | 956.62 | 285.57 | 17.91 | 3.17 | 285.63 | 17.91 |
| 2 | 3 | 1.11 | 239.02 | 97.03 | F | 1301.88 | 1952.82 | 3732.07 | 114.67 | 41.47 | 3746.93 | 115.12 |
| 2 | 4 | 1.02 | 138.71 | 16.40 | F | 358.79 | 538.18 | 567.43 | 63.26 | 6.30 | 567.85 | 63.31 |

# Main Results for each time segment

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 691.08 | 172.77 | 685.89 | 1058.50 | 132.97 | 0.00 | 1230.03 | 953.88 | 0.562 | 0.00 | 1.30 | 6.755 | A |
| 1 | 2 | 710.69 | 177.67 | 704.16 | 371.77 | 447.09 | 0.00 | 1140.43 | 890.58 | 0.623 | 0.00 | 1.63 | 8.234 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 447.09 | 704.16 | 0.00 | 1157.86 | 1035.30 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 493.87 | 123.47 | 487.32 | 0.00 | 704.16 | 0.00 | 854.60 | 305.19 | 0.578 | 0.00 | 1.64 | 11.905 | B |
| 2 | 1 | 142.29 | 35.57 | 141.55 | 782.35 | 631.91 | 0.00 | 951.71 | 807.57 | 0.150 | 0.00 | 0.19 | 4.720 | A |
| 2 | 2 | 523.23 | 130.81 | 518.27 | 410.49 | 362.97 | 0.00 | 946.20 | 535.22 | 0.553 | 0.00 | 1.24 | 8.520 | A |
| 2 | 3 | 1058.50 | 264.63 | 1045.50 | 691.08 | 190.16 | 0.00 | 1399.07 | 1395.27 | 0.757 | 0.00 | 3.25 | 10.827 | B |
| 2 | 4 | 294.37 | 73.59 | 290.52 | 111.93 | 1123.74 | 0.00 | 612.91 | 424.29 | 0.480 | 0.00 | 0.96 | 11.764 | B |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 826.39 | 206.60 | 823.08 | 1264.91 | 158.82 | 0.00 | 1214.77 | 953.88 | 0.680 | 1.30 | 2.13 | 9.390 | A |
| 1 | 2 | 848.64 | 212.16 | 841.68 | 445.54 | 536.36 | 0.00 | 1086.28 | 890.58 | 0.781 | 1.63 | 3.37 | 14.488 | B |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 536.36 | 841.68 | 0.00 | 1067.45 | 1035.30 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 589.73 | 147.43 | 582.06 | 0.00 | 841.68 | 0.00 | 776.14 | 305.19 | 0.760 | 1.64 | 3.56 | 22.070 | C |
| 2 | 1 | 169.91 | 42.48 | 169.64 | 930.05 | 750.97 | 0.00 | 882.51 | 807.57 | 0.193 | 0.19 | 0.25 | 5.367 | A |
| 2 | 2 | 624.79 | 156.20 | 621.11 | 487.44 | 433.17 | 0.00 | 908.63 | 535.22 | 0.688 | 1.24 | 2.16 | 12.658 | B |
| 2 | 3 | 1264.91 | 316.23 | 1240.92 | 826.39 | 227.89 | 0.00 | 1376.03 | 1395.27 | 0.919 | 3.25 | 9.25 | 25.595 | D |
| 2 | 4 | 351.50 | 87.88 | 345.77 | 133.56 | 1335.25 | 0.00 | 494.60 | 424.29 | 0.711 | 0.96 | 2.39 | 24.870 | C |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 985.18 | 246.29 | 976.54 | 1463.02 | 180.73 | 0.00 | 1201.84 | 953.88 | 0.820 | 2.13 | 4.28 | 15.866 | C |
| 1 | 2 | 1039.36 | 259.84 | 981.41 | 522.54 | 634.73 | 0.00 | 1026.62 | 890.58 | 1.012 | 3.37 | 17.86 | 51.818 | F |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 634.73 | 981.41 | 0.00 | 975.59 | 1035.30 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 722.27 | 180.57 | 662.34 | 0.00 | 981.41 | 0.00 | 696.41 | 305.19 | 1.037 | 3.56 | 18.54 | 78.303 | F |
| 2 | 1 | 208.09 | 52.02 | 207.70 | 1017.01 | 831.47 | 0.00 | 835.71 | 807.57 | 0.249 | 0.25 | 0.35 | 6.089 | A |
| 2 | 2 | 765.21 | 191.30 | 749.56 | 528.53 | 510.64 | 0.00 | 867.17 | 535.22 | 0.882 | 2.16 | 6.07 | 28.187 | D |
| 2 | 3 | 1463.02 | 365.75 | 1329.10 | 985.18 | 275.02 | 0.00 | 1347.26 | 1395.27 | 1.086 | 9.25 | 42.73 | 82.372 | F |
| 2 | 4 | 430.50 | 107.62 | 397.48 | 153.12 | 1451.00 | 0.00 | 429.86 | 424.29 | 1.001 | 2.39 | 10.65 | 79.993 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1001.09 | 250.27 | 998.98 | 1490.12 | 184.02 | 0.00 | 1199.90 | 953.88 | 0.834 | 4.28 | 4.81 | 18.128 | C |
| 1 | 2 | 1039.36 | 259.84 | 999.74 | 533.87 | 649.13 | 0.00 | 1017.89 | 890.58 | 1.021 | 17.86 | 27.77 | 93.219 | F |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 649.13 | 999.74 | 0.00 | 963.53 | 1035.30 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 722.27 | 180.57 | 674.39 | 0.00 | 999.74 | 0.00 | 685.95 | 305.19 | 1.053 | 18.54 | 30.51 | 146.644 | F |
| 2 | 1 | 208.09 | 52.02 | 208.07 | 1027.55 | 845.37 | 0.00 | 827.63 | 807.57 | 0.251 | 0.35 | 0.35 | 6.176 | A |
| 2 | 2 | 765.21 | 191.30 | 762.06 | 534.80 | 518.64 | 0.00 | 862.89 | 535.22 | 0.887 | 6.07 | 6.86 | 34.460 | D |
| 2 | 3 | 1490.12 | 372.53 | 1341.01 | 1001.09 | 279.61 | 0.00 | 1344.46 | 1395.27 | 1.108 | 42.73 | 80.00 | 173.233 | F |
| 2 | 4 | 430.50 | 107.62 | 407.49 | 155.18 | 1465.43 | 0.00 | 421.78 | 424.29 | 1.021 | 10.65 | 16.40 | 138.706 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 873.49 | 218.37 | 881.21 | 1436.41 | 185.76 | 0.00 | 1198.87 | 953.88 | 0.729 | 4.81 | 2.89 | 11.950 | B |
| 1 | 2 | 848.64 | 212.16 | 941.40 | 489.39 | 577.58 | 0.00 | 1061.28 | 890.58 | 0.800 | 27.77 | 4.58 | 43.211 | E |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 577.58 | 941.40 | 0.00 | 1001.89 | 1035.30 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 589.73 | 147.43 | 680.78 | 0.00 | 941.40 | 0.00 | 719.24 | 305.19 | 0.820 | 30.51 | 7.75 | 104.483 | F |
| 2 | 1 | 169.91 | 42.48 | 170.23 | 1014.94 | 836.15 | 0.00 | 832.99 | 807.57 | 0.204 | 0.35 | 0.27 | 5.776 | A |
| 2 | 2 | 624.79 | 156.20 | 642.12 | 539.40 | 466.97 | 0.00 | 890.54 | 535.22 | 0.702 | 6.86 | 2.53 | 15.764 | C |
| 2 | 3 | 1436.41 | 359.10 | 1368.30 | 873.49 | 235.60 | 0.00 | 1371.33 | 1395.27 | 1.047 | 80.00 | 97.03 | 239.020 | F |
| 2 | 4 | 351.50 | 87.88 | 389.35 | 142.16 | 1461.74 | 0.00 | 423.85 | 424.29 | 0.829 | 16.40 | 6.94 | 108.928 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 714.81 | 178.70 | 720.47 | 1098.32 | 141.25 | 0.00 | 1225.14 | 953.88 | 0.583 | 2.89 | 1.47 | 7.429 | A |
| 1 | 2 | 710.69 | 177.67 | 721.91 | 391.75 | 469.97 | 0.00 | 1126.55 | 890.58 | 0.631 | 4.58 | 1.77 | 9.241 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 469.97 | 721.91 | 0.00 | 1146.19 | 1035.30 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 493.87 | 123.47 | 517.66 | 0.00 | 721.91 | 0.00 | 844.47 | 305.19 | 0.585 | 7.75 | 1.80 | 14.528 | B |
| 2 | 1 | 142.29 | 35.57 | 142.56 | 994.80 | 763.23 | 0.00 | 875.38 | 807.57 | 0.163 | 0.27 | 0.21 | 5.223 | A |
| 2 | 2 | 523.23 | 130.81 | 528.05 | 525.27 | 380.51 | 0.00 | 936.81 | 535.22 | 0.559 | 2.53 | 1.32 | 9.123 | A |
| 2 | 3 | 1098.32 | 274.58 | 1381.23 | 714.81 | 193.75 | 0.00 | 1396.88 | 1395.27 | 0.786 | 97.03 | 26.30 | 164.470 | F |
| 2 | 4 | 294.37 | 73.59 | 312.21 | 129.16 | 1445.82 | 0.00 | 432.75 | 424.29 | 0.680 | 6.94 | 2.48 | 35.386 | E |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 18.51 | 1.23 | 6.755 | A | A |
| 1 | 2 | 22.96 | 1.53 | 8.234 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 22.74 | 1.52 | 11.905 | B | B |
| 2 | 1 | 2.72 | 0.18 | 4.720 | A | A |
| 2 | 2 | 17.53 | 1.17 | 8.520 | A | A |
| 2 | 3 | 44.05 | 2.94 | 10.827 | B | B |
| 2 | 4 | 13.45 | 0.90 | 11.764 | B | B |

### Queueing Delay results: (08:00-08:15)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 30.12 | 2.01 | 9.390 | A | A |
| 1 | 2 | 45.79 | 3.05 | 14.488 | B | B |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 47.33 | 3.16 | 22.070 | C | C |
| 2 | 1 | 3.70 | 0.25 | 5.367 | A | A |
| 2 | 2 | 30.19 | 2.01 | 12.658 | B | B |
| 2 | 3 | 112.07 | 7.47 | 25.595 | D | C |
| 2 | 4 | 31.73 | 2.12 | 24.870 | C | C |

## Queueing Delay results: (08:15-08:30)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 57.42 | 3.83 | 15.866 | C | B |
| 1 | 2 | 179.29 | 11.95 | 51.818 | F | D |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 182.05 | 12.14 | 78.303 | F | E |
| 2 | 1 | 5.12 | 0.34 | 6.089 | A | A |
| 2 | 2 | 74.98 | 5.00 | 28.187 | D | C |
| 2 | 3 | 401.25 | 26.75 | 82.372 | F | F |
| 2 | 4 | 109.74 | 7.32 | 79.993 | F | E |

## Queueing Delay results: (08:30-08:45)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 69.38 | 4.63 | 18.128 | C | B |
| 1 | 2 | 345.12 | 23.01 | 93.219 | F | F |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 370.19 | 24.68 | 146.644 | F | F |
| 2 | 1 | 5.30 | 0.35 | 6.176 | A | A |
| 2 | 2 | 98.04 | 6.54 | 34.460 | D | C |
| 2 | 3 | 921.63 | 61.44 | 173.233 | F | F |
| 2 | 4 | 204.93 | 13.66 | 138.706 | F | F |

## Queueing Delay results: (08:45-09:00)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 46.62 | 3.11 | 11.950 | B | B |
| 1 | 2 | 163.47 | 10.90 | 43.211 | E | D |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 269.13 | 17.94 | 104.483 | F | F |
| 2 | 1 | 4.21 | 0.28 | 5.776 | A | A |
| 2 | 2 | 43.85 | 2.92 | 15.764 | C | B |
| 2 | 3 | 1328.07 | 88.54 | 239.020 | F | F |
| 2 | 4 | 160.70 | 10.71 | 108.928 | F | F |

## Queueing Delay results: (09:00-09:15)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 23.20 | 1.55 | 7.429 | A | A |
| 1 | 2 | 28.95 | 1.93 | 9.241 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 33.05 | 2.20 | 14.528 | B | B |
| 2 | 1 | 3.18 | 0.21 | 5.223 | A | A |
| 2 | 2 | 20.97 | 1.40 | 9.123 | A | A |
| 2 | 3 | 925.01 | 61.67 | 164.470 | F | F |
| 2 | 4 | 46.87 | 3.12 | 35.386 | E | D |

# (Default Analysis Set) - 2031 D1, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 1 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, PM | 2031 D1 | PM | | Varies by Arm | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | (untitled) | Roundabout | 1,2,3,4 | | | | 670.73 | F |
| 2 | 2 | (untitled) | Roundabout | 1,2,3,4 | | | | 191.22 | F |

## Junction Network Options

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

# Arms

## Arms

| Junction | Arm | Arm | Name | Description |
|---|---|---|---|---|
| 1 | 1 | 1 | Wooldale Rd E | |
| 1 | 2 | 2 | Rowtree Rd | |
| 1 | 3 | 3 | London rd | |
| 1 | 4 | 4 | A45 N | |
| 2 | 1 | 1 | Wooldale Rd E | |
| 2 | 2 | 2 | A45 S | |
| 2 | 3 | 3 | (untitled) | Wooldale Rd W |
| 2 | 4 | 4 | Berry Lane | |

## Capacity Options

| Junction | Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|---|
| 1 | 1 | 0.00 | 99999.00 | | 0.00 |
| 1 | 2 | 0.00 | 99999.00 | | 0.00 |
| 1 | 3 | 0.00 | 99999.00 | | 0.00 |
| 1 | 4 | 0.00 | 99999.00 | | 0.00 |
| 2 | 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 2 | 0.00 | 99999.00 | | 0.00 |
| 2 | 3 | 0.00 | 99999.00 | | 0.00 |
| 2 | 4 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.70 | 5.90 | 1.70 | 15.00 | 32.00 | 12.00 | |
| 1 | 2 | 3.90 | 4.80 | 6.30 | 20.00 | 32.00 | 21.00 | |
| 1 | 3 | 3.50 | 6.60 | 10.00 | 30.00 | 32.00 | 18.00 | |
| 1 | 4 | 4.00 | 4.10 | 1.00 | 20.00 | 32.00 | 25.00 | |
| 2 | 1 | 3.10 | 4.80 | 9.80 | 20.00 | 38.00 | 19.00 | |
| 2 | 2 | 3.20 | 3.90 | 8.00 | 15.00 | 38.00 | 24.00 | |
| 2 | 3 | 4.20 | 5.50 | 6.20 | 15.00 | 38.00 | 24.00 | |
| 2 | 4 | 3.20 | 5.00 | 4.90 | 20.00 | 38.00 | 25.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction | Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|---|
| 1 | 1 | | (calculated) | (calculated) | 0.590 | 1308.494 |
| 1 | 2 | | (calculated) | (calculated) | 0.607 | 1411.596 |
| 1 | 3 | | (calculated) | (calculated) | 0.657 | 1620.802 |
| 1 | 4 | | (calculated) | (calculated) | 0.571 | 1256.381 |
| 2 | 1 | | (calculated) | (calculated) | 0.581 | 1319.029 |
| 2 | 2 | | (calculated) | (calculated) | 0.535 | 1140.435 |
| 2 | 3 | | (calculated) | (calculated) | 0.610 | 1515.149 |
| 2 | 4 | | (calculated) | (calculated) | 0.559 | 1241.472 |

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Junction | Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 | 1 | Linked Arm | | N/A | |
| 1 | 2 | ONE HOUR | ✓ | 561.00 | 100.000 |
| 1 | 3 | ONE HOUR | ✓ | 0.00 | 100.000 |
| 1 | 4 | ONE HOUR | ✓ | 1156.00 | 100.000 |
| 2 | 1 | ONE HOUR | ✓ | 456.00 | 100.000 |
| 2 | 2 | ONE HOUR | ✓ | 602.00 | 100.000 |
| 2 | 3 | Linked Arm | | N/A | |
| 2 | 4 | ONE HOUR | ✓ | 615.00 | 100.000 |

## Linked Arm Data

| Junction | Arm | From Junction ID | From Arm ID | Link Type | Flow Source | Uniform Flow (PCU/hr) | Flow Multiplier (%) | Internal Storage Space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 3 | Simple (vertical queueing) | Normal | 0.00 | 100.00 | |
| 2 | 3 | 1 | 1 | Simple (vertical queueing) | Normal | 0.00 | 100.00 | |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 946.000 | 415.000 | 0.000 |
| | 2 | 561.000 | 0.000 | 0.000 | 0.000 |
| | 3 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 4 | 622.000 | 534.000 | 0.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.70 | 0.30 | 0.00 |
| | 2 | 1.00 | 0.00 | 0.00 | 0.00 |
| | 3 | 0.25 | 0.25 | 0.25 | 0.25 |
| | 4 | 0.54 | 0.46 | 0.00 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 0.000 | 456.000 | 0.000 |
| | 2 | 240.000 | 0.000 | 303.000 | 59.000 |
| | 3 | 773.000 | 381.000 | 0.000 | 29.000 |
| | 4 | 13.000 | 0.000 | 602.000 | 0.000 |

### Turning Proportions (PCU) - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.00 | 1.00 | 0.00 |
| | 2 | 0.40 | 0.00 | 0.50 | 0.10 |
| | 3 | 0.65 | 0.32 | 0.00 | 0.02 |
| | 4 | 0.02 | 0.00 | 0.98 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.217 | 1.010 | 1.000 |
| | 2 | 1.059 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.265 | 1.029 | 1.000 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 21.7 | 1.0 | 0.0 |
| | 2 | 5.9 | 0.0 | 0.0 | 0.0 |
| | 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 4 | 26.5 | 2.9 | 0.0 | 0.0 |

### Average PCU Per Vehicle - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.000 | 1.303 | 1.000 |
| | 2 | 1.000 | 1.000 | 1.010 | 1.034 |
| | 3 | 1.215 | 1.010 | 1.000 | 1.034 |
| | 4 | 1.000 | 1.000 | 1.113 | 1.000 |

### Heavy Vehicle Percentages - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 0.0 | 30.3 | 0.0 |
| | 2 | 0.0 | 0.0 | 1.0 | 3.4 |
| | 3 | 21.5 | 1.0 | 0.0 | 3.4 |
| | 4 | 0.0 | 0.0 | 11.3 | 0.0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1.22 | 826.05 | 253.83 | F | 1203.88 | 1805.82 | 10110.60 | 335.93 | 112.34 | 11981.48 | 398.09 |
| 1 | 2 | 0.51 | 6.38 | 1.09 | A | 514.78 | 772.18 | 71.05 | 5.52 | 0.79 | 71.05 | 5.52 |
| 1 | 3 | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 4 | 1.41 | 816.85 | 231.70 | F | 1060.77 | 1591.15 | 10548.97 | 397.79 | 117.21 | 11693.57 | 440.95 |
| 2 | 1 | 0.61 | 14.49 | 1.99 | B | 418.43 | 627.65 | 122.73 | 11.73 | 1.36 | 122.77 | 11.74 |
| 2 | 2 | 1.09 | 193.22 | 37.58 | F | 552.41 | 828.61 | 1239.59 | 89.76 | 13.77 | 1239.90 | 89.78 |
| 2 | 3 | 0.83 | 17.60 | 5.18 | C | 1014.58 | 1521.87 | 326.06 | 12.85 | 3.62 | 326.24 | 12.86 |
| 2 | 4 | 1.34 | 632.44 | 98.42 | F | 564.33 | 846.50 | 4393.92 | 311.44 | 48.82 | 4616.93 | 327.25 |

## Main Results for each time segment

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1008.95 | 252.24 | 968.32 | 876.11 | 391.44 | 0.00 | 1077.50 | 975.49 | 0.936 | 0.00 | 10.16 | 30.910 | D |
| 1 | 2 | 422.35 | 105.59 | 420.16 | 1064.50 | 295.26 | 0.00 | 1232.51 | 1094.55 | 0.343 | 0.00 | 0.55 | 4.681 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 295.26 | 420.16 | 0.00 | 1344.57 | 901.20 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 870.30 | 217.57 | 847.39 | 0.00 | 420.16 | 0.00 | 1016.65 | 246.20 | 0.856 | 0.00 | 5.73 | 22.024 | C |
| 2 | 1 | 343.30 | 85.83 | 340.13 | 755.08 | 723.70 | 0.00 | 898.36 | 842.96 | 0.382 | 0.00 | 0.79 | 8.356 | A |
| 2 | 2 | 453.22 | 113.30 | 446.65 | 279.68 | 784.15 | 0.00 | 720.81 | 486.75 | 0.629 | 0.00 | 1.64 | 12.951 | B |
| 2 | 3 | 876.11 | 219.03 | 868.39 | 1008.95 | 221.84 | 0.00 | 1379.73 | 1367.57 | 0.635 | 0.00 | 1.93 | 7.884 | A |
| 2 | 4 | 463.00 | 115.75 | 453.61 | 65.06 | 1025.17 | 0.00 | 668.04 | 386.73 | 0.693 | 0.00 | 2.35 | 17.943 | C |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1187.05 | 296.76 | 1039.56 | 1012.02 | 436.53 | 0.00 | 1050.90 | 975.47 | 1.130 | 10.16 | 47.03 | 112.538 | F |
| 1 | 2 | 504.33 | 126.08 | 503.56 | 1159.10 | 316.99 | 0.00 | 1219.34 | 1094.54 | 0.414 | 0.55 | 0.74 | 5.320 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 316.99 | 503.56 | 0.00 | 1289.74 | 901.21 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 1039.22 | 259.81 | 944.99 | 0.00 | 503.56 | 0.00 | 969.06 | 246.20 | 1.072 | 5.73 | 29.28 | 82.065 | F |
| 2 | 1 | 409.93 | 102.48 | 408.17 | 880.53 | 836.11 | 0.00 | 833.02 | 842.96 | 0.492 | 0.79 | 1.23 | 10.995 | B |
| 2 | 2 | 541.19 | 135.30 | 530.59 | 324.29 | 919.99 | 0.00 | 648.11 | 486.75 | 0.835 | 1.64 | 4.29 | 28.600 | D |
| 2 | 3 | 1012.02 | 253.01 | 1006.92 | 1187.05 | 263.53 | 0.00 | 1354.27 | 1367.57 | 0.747 | 1.93 | 3.20 | 11.597 | B |
| 2 | 4 | 552.87 | 138.22 | 522.87 | 76.69 | 1193.77 | 0.00 | 573.73 | 386.73 | 0.964 | 2.35 | 9.85 | 58.727 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1294.08 | 323.52 | 1060.83 | 1102.58 | 417.47 | 0.00 | 1062.14 | 975.47 | 1.218 | 47.03 | 105.34 | 268.071 | F |
| 1 | 2 | 617.67 | 154.42 | 616.31 | 1154.83 | 323.47 | 0.00 | 1215.40 | 1094.54 | 0.508 | 0.74 | 1.08 | 6.349 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 323.47 | 616.31 | 0.00 | 1215.61 | 901.21 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 1272.78 | 318.19 | 903.74 | 0.00 | 616.31 | 0.00 | 904.72 | 246.20 | 1.407 | 29.28 | 121.54 | 310.814 | F |
| 2 | 1 | 502.07 | 125.52 | 499.18 | 961.89 | 850.96 | 0.00 | 824.38 | 842.96 | 0.609 | 1.23 | 1.95 | 14.293 | B |
| 2 | 2 | 662.81 | 165.70 | 589.76 | 352.91 | 997.23 | 0.00 | 606.77 | 486.75 | 1.092 | 4.29 | 22.55 | 99.926 | F |
| 2 | 3 | 1102.58 | 275.65 | 1095.79 | 1294.08 | 292.92 | 0.00 | 1336.33 | 1367.57 | 0.825 | 3.20 | 4.90 | 16.488 | C |
| 2 | 4 | 677.13 | 169.28 | 508.81 | 84.66 | 1304.05 | 0.00 | 512.05 | 386.73 | 1.322 | 9.85 | 51.93 | 237.766 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1299.51 | 324.88 | 1061.72 | 1103.95 | 417.51 | 0.00 | 1062.12 | 975.47 | 1.224 | 105.34 | 164.79 | 467.679 | F |
| 1 | 2 | 617.67 | 154.42 | 617.64 | 1155.48 | 323.74 | 0.00 | 1215.24 | 1094.54 | 0.508 | 1.08 | 1.09 | 6.379 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 323.74 | 617.64 | 0.00 | 1214.74 | 901.21 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 1272.78 | 318.19 | 903.82 | 0.00 | 617.64 | 0.00 | 903.97 | 246.20 | 1.408 | 121.54 | 213.78 | 656.056 | F |
| 2 | 1 | 502.07 | 125.52 | 501.94 | 971.56 | 849.40 | 0.00 | 825.29 | 842.96 | 0.608 | 1.95 | 1.99 | 14.488 | B |
| 2 | 2 | 662.81 | 165.70 | 602.69 | 355.18 | 996.16 | 0.00 | 607.35 | 486.75 | 1.091 | 22.55 | 37.58 | 193.223 | F |
| 2 | 3 | 1103.95 | 275.99 | 1102.82 | 1299.51 | 299.34 | 0.00 | 1332.41 | 1367.57 | 0.829 | 4.90 | 5.18 | 17.604 | C |
| 2 | 4 | 677.13 | 169.28 | 504.89 | 86.10 | 1316.07 | 0.00 | 505.33 | 386.73 | 1.340 | 51.93 | 94.99 | 524.585 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1252.65 | 313.16 | 1044.53 | 1026.25 | 446.94 | 0.00 | 1044.75 | 975.49 | 1.199 | 164.79 | 216.82 | 666.942 | F |
| 1 | 2 | 504.33 | 126.08 | 505.65 | 1172.97 | 318.50 | 0.00 | 1218.42 | 1094.55 | 0.414 | 1.09 | 0.76 | 5.360 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 318.50 | 505.65 | 0.00 | 1288.37 | 901.20 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 1039.22 | 259.81 | 967.54 | 0.00 | 505.65 | 0.00 | 967.87 | 246.20 | 1.074 | 213.78 | 231.70 | 816.847 | F |
| 2 | 1 | 409.93 | 102.48 | 412.53 | 932.25 | 859.68 | 0.00 | 819.32 | 842.96 | 0.500 | 1.99 | 1.34 | 11.606 | B |
| 2 | 2 | 541.19 | 135.30 | 620.60 | 331.93 | 940.28 | 0.00 | 637.25 | 486.75 | 0.849 | 37.58 | 17.73 | 165.541 | F |
| 2 | 3 | 1026.25 | 256.56 | 1030.63 | 1252.65 | 308.24 | 0.00 | 1326.98 | 1367.57 | 0.773 | 5.18 | 4.09 | 14.028 | B |
| 2 | 4 | 552.87 | 138.22 | 539.15 | 86.09 | 1252.78 | 0.00 | 540.73 | 386.73 | 1.022 | 94.99 | 98.42 | 632.442 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1181.06 | 295.27 | 1033.00 | 966.54 | 466.55 | 0.00 | 1033.18 | 975.48 | 1.143 | 216.82 | 253.83 | 826.051 | F |
| 1 | 2 | 422.35 | 105.59 | 423.11 | 1184.56 | 314.98 | 0.00 | 1220.55 | 1094.54 | 0.346 | 0.76 | 0.56 | 4.785 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 314.98 | 423.11 | 0.00 | 1342.63 | 901.21 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 870.30 | 217.57 | 1009.98 | 0.00 | 423.11 | 0.00 | 1014.96 | 246.20 | 0.857 | 231.70 | 196.78 | 764.144 | F |
| 2 | 1 | 343.30 | 85.83 | 344.67 | 852.01 | 890.59 | 0.00 | 801.35 | 842.96 | 0.428 | 1.34 | 0.99 | 10.302 | B |
| 2 | 2 | 453.22 | 113.30 | 513.86 | 312.82 | 922.43 | 0.00 | 646.81 | 486.75 | 0.701 | 17.73 | 2.57 | 37.302 | E |
| 2 | 3 | 966.54 | 241.64 | 971.31 | 1181.06 | 255.22 | 0.00 | 1359.35 | 1367.57 | 0.711 | 4.09 | 2.90 | 10.671 | B |
| 2 | 4 | 463.00 | 115.75 | 590.24 | 74.17 | 1152.36 | 0.00 | 596.90 | 386.73 | 0.776 | 98.42 | 66.61 | 505.315 | F |

# Queueing Delay Results for each time segment

## Queueing Delay results: (16:45-17:00)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 112.48 | 7.50 | 30.910 | D | C |
| 1 | 2 | 7.97 | 0.53 | 4.681 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 70.40 | 4.69 | 22.024 | C | C |
| 2 | 1 | 11.35 | 0.76 | 8.356 | A | A |
| 2 | 2 | 22.54 | 1.50 | 12.951 | B | B |
| 2 | 3 | 27.13 | 1.81 | 7.884 | A | A |
| 2 | 4 | 31.20 | 2.08 | 17.943 | C | B |

## Queueing Delay results: (17:00-17:15)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 436.63 | 29.11 | 112.538 | F | F |
| 1 | 2 | 10.83 | 0.72 | 5.320 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 276.74 | 18.45 | 82.065 | F | F |
| 2 | 1 | 17.67 | 1.18 | 10.995 | B | B |
| 2 | 2 | 54.36 | 3.62 | 28.600 | D | C |
| 2 | 3 | 44.68 | 2.98 | 11.597 | B | B |
| 2 | 4 | 106.28 | 7.09 | 58.727 | F | E |

## Queueing Delay results: (17:15-17:30)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 1143.40 | 76.23 | 268.071 | F | F |
| 1 | 2 | 15.67 | 1.04 | 6.349 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 1131.98 | 75.47 | 310.814 | F | F |
| 2 | 1 | 27.53 | 1.84 | 14.293 | B | B |
| 2 | 2 | 211.59 | 14.11 | 99.926 | F | F |
| 2 | 3 | 67.07 | 4.47 | 16.488 | C | B |
| 2 | 4 | 466.02 | 31.07 | 237.766 | F | F |

## Queueing Delay results: (17:30-17:45)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 2026.10 | 135.07 | 467.679 | F | F |
| 1 | 2 | 16.26 | 1.08 | 6.379 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 2515.01 | 167.67 | 656.056 | F | F |
| 2 | 1 | 29.60 | 1.97 | 14.488 | B | B |
| 2 | 2 | 452.16 | 30.14 | 193.223 | F | F |
| 2 | 3 | 76.10 | 5.07 | 17.604 | C | B |
| 2 | 4 | 1102.06 | 73.47 | 524.585 | F | F |

### Queueing Delay results: (17:45-18:00)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 2862.09 | 190.81 | 666.942 | F | F |
| 1 | 2 | 11.65 | 0.78 | 5.360 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 3341.18 | 222.75 | 816.847 | F | F |
| 2 | 1 | 21.07 | 1.40 | 11.606 | B | B |
| 2 | 2 | 414.84 | 27.66 | 165.541 | F | F |
| 2 | 3 | 65.01 | 4.33 | 14.028 | B | B |
| 2 | 4 | 1450.61 | 96.71 | 632.442 | F | F |

### Queueing Delay results: (18:00-18:15)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 3529.91 | 235.33 | 826.051 | F | F |
| 1 | 2 | 8.66 | 0.58 | 4.785 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 3213.66 | 214.24 | 764.144 | F | F |
| 2 | 1 | 15.51 | 1.03 | 10.302 | B | B |
| 2 | 2 | 84.10 | 5.61 | 37.302 | E | D |
| 2 | 3 | 46.06 | 3.07 | 10.671 | B | B |
| 2 | 4 | 1237.75 | 82.52 | 505.315 | F | F |

# (Default Analysis Set) - 2031 J3, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 1 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | Varies by Arm | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | (untitled) | Roundabout | 1,2,3,4 | | | | 235.87 | F |
| 2 | 2 | (untitled) | Roundabout | 1,2,3,4 | | | | 302.71 | F |

## Junction Network Options

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

# Arms

## Arms

| Junction | Arm | Arm | Name | Description |
|---|---|---|---|---|
| 1 | 1 | 1 | Wooldale Rd E | |
| 1 | 2 | 2 | Rowtree Rd | |
| 1 | 3 | 3 | London rd | |
| 1 | 4 | 4 | A45 N | |
| 2 | 1 | 1 | Wooldale Rd E | |
| 2 | 2 | 2 | A45 S | |
| 2 | 3 | 3 | (untitled) | Wooldale Rd W |
| 2 | 4 | 4 | Berry Lane | |

## Capacity Options

| Junction | Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|---|
| 1 | 1 | 0.00 | 99999.00 | | 0.00 |
| 1 | 2 | 0.00 | 99999.00 | | 0.00 |
| 1 | 3 | 0.00 | 99999.00 | | 0.00 |
| 1 | 4 | 0.00 | 99999.00 | | 0.00 |
| 2 | 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 2 | 0.00 | 99999.00 | | 0.00 |
| 2 | 3 | 0.00 | 99999.00 | | 0.00 |
| 2 | 4 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.70 | 5.90 | 1.70 | 15.00 | 32.00 | 12.00 | |
| 1 | 2 | 3.90 | 4.80 | 6.30 | 20.00 | 32.00 | 21.00 | |
| 1 | 3 | 3.50 | 6.60 | 10.00 | 30.00 | 32.00 | 18.00 | |
| 1 | 4 | 4.00 | 4.10 | 1.00 | 20.00 | 32.00 | 25.00 | |
| 2 | 1 | 3.10 | 4.80 | 9.80 | 20.00 | 38.00 | 19.00 | |
| 2 | 2 | 3.20 | 3.90 | 8.00 | 15.00 | 38.00 | 24.00 | |
| 2 | 3 | 4.20 | 5.50 | 6.20 | 15.00 | 38.00 | 24.00 | |
| 2 | 4 | 3.20 | 5.00 | 4.90 | 20.00 | 38.00 | 25.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction | Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|---|
| 1 | 1 | | (calculated) | (calculated) | 0.590 | 1308.494 |
| 1 | 2 | | (calculated) | (calculated) | 0.607 | 1411.596 |
| 1 | 3 | | (calculated) | (calculated) | 0.657 | 1620.802 |
| 1 | 4 | | (calculated) | (calculated) | 0.571 | 1256.381 |
| 2 | 1 | | (calculated) | (calculated) | 0.581 | 1319.029 |
| 2 | 2 | | (calculated) | (calculated) | 0.535 | 1140.435 |
| 2 | 3 | | (calculated) | (calculated) | 0.610 | 1515.149 |
| 2 | 4 | | (calculated) | (calculated) | 0.559 | 1241.472 |

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Junction | Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 | 1 | Linked Arm | | N/A | |
| 1 | 2 | ONE HOUR | ✓ | 1054.00 | 100.000 |
| 1 | 3 | ONE HOUR | ✓ | 0.00 | 100.000 |
| 1 | 4 | ONE HOUR | ✓ | 759.00 | 100.000 |
| 2 | 1 | ONE HOUR | ✓ | 153.00 | 100.000 |
| 2 | 2 | ONE HOUR | ✓ | 666.00 | 100.000 |
| 2 | 3 | Linked Arm | | N/A | |
| 2 | 4 | ONE HOUR | ✓ | 403.00 | 100.000 |

## Linked Arm Data

| Junction | Arm | From Junction ID | From Arm ID | Link Type | Flow Source | Uniform Flow (PCU/hr) | Flow Multiplier (%) | Internal Storage Space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 3 | Simple (vertical queueing) | Normal | 0.00 | 100.00 | |
| 2 | 3 | 1 | 1 | Simple (vertical queueing) | Normal | 0.00 | 100.00 | |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 354.000 | 463.000 | 0.000 |
| | 2 | 1054.000 | 0.000 | 0.000 | 0.000 |
| | 3 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 4 | 551.000 | 174.000 | 34.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.43 | 0.57 | 0.00 |
| | 2 | 1.00 | 0.00 | 0.00 | 0.00 |
| | 3 | 0.25 | 0.25 | 0.25 | 0.25 |
| | 4 | 0.73 | 0.23 | 0.04 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 0.000 | 153.000 | 0.000 |
| | 2 | 203.000 | 0.000 | 380.000 | 83.000 |
| | 3 | 941.000 | 521.000 | 0.000 | 143.000 |
| | 4 | 0.000 | 119.000 | 284.000 | 0.000 |

### Turning Proportions (PCU) - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.00 | 1.00 | 0.00 |
| | 2 | 0.30 | 0.00 | 0.57 | 0.12 |
| | 3 | 0.59 | 0.32 | 0.00 | 0.09 |
| | 4 | 0.00 | 0.30 | 0.70 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.031 | 1.022 | 1.000 |
| | 2 | 1.013 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.283 | 1.109 | 1.000 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 3.1 | 2.2 | 0.0 |
| | 2 | 1.3 | 0.0 | 0.0 | 0.0 |
| | 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 4 | 28.3 | 10.9 | 0.0 | 0.0 |

### Average PCU Per Vehicle - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.000 | 1.033 | 1.000 |
| | 2 | 1.054 | 1.000 | 1.005 | 1.000 |
| | 3 | 1.164 | 1.010 | 1.000 | 1.077 |
| | 4 | 1.000 | 1.143 | 1.032 | 1.000 |

### Heavy Vehicle Percentages - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 0.0 | 3.3 | 0.0 |
| | 2 | 5.4 | 0.0 | 0.5 | 0.0 |
| | 3 | 16.4 | 1.0 | 0.0 | 7.7 |
| | 4 | 0.0 | 14.3 | 3.2 | 0.0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 0.74 | 11.50 | 2.76 | B | 748.06 | 1122.09 | 160.61 | 8.59 | 1.78 | 160.64 | 8.59 |
| 1 | 2 | 1.06 | 134.26 | 47.02 | F | 967.17 | 1450.75 | 1351.26 | 55.89 | 15.01 | 1351.38 | 55.89 |
| 1 | 3 | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 4 | 1.31 | 617.97 | 121.95 | F | 696.47 | 1044.71 | 5072.21 | 291.31 | 56.36 | 5253.65 | 301.73 |
| 2 | 1 | 0.20 | 5.69 | 0.26 | A | 140.40 | 210.59 | 18.36 | 5.23 | 0.20 | 18.36 | 5.23 |
| 2 | 2 | 0.82 | 22.85 | 4.44 | C | 611.13 | 916.70 | 209.64 | 13.72 | 2.33 | 209.68 | 13.72 |
| 2 | 3 | 1.17 | 495.65 | 189.42 | F | 1437.86 | 2156.79 | 8086.45 | 224.96 | 89.85 | 8864.86 | 246.61 |
| 2 | 4 | 1.00 | 127.78 | 15.31 | F | 369.80 | 554.70 | 548.22 | 59.30 | 6.09 | 548.58 | 59.34 |

# Main Results for each time segment

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 608.63 | 152.16 | 604.59 | 1192.39 | 153.56 | 0.00 | 1217.88 | 960.57 | 0.500 | 0.00 | 1.01 | 5.983 | A |
| 1 | 2 | 793.51 | 198.38 | 785.61 | 390.42 | 367.72 | 0.00 | 1188.56 | 919.24 | 0.668 | 0.00 | 1.97 | 8.886 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 367.72 | 785.61 | 0.00 | 1104.31 | 1016.46 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 571.41 | 142.85 | 560.35 | 0.00 | 785.61 | 0.00 | 808.13 | 296.90 | 0.707 | 0.00 | 2.77 | 17.096 | C |
| 2 | 1 | 115.19 | 28.80 | 114.60 | 836.65 | 677.90 | 0.00 | 924.98 | 798.78 | 0.125 | 0.00 | 0.15 | 4.586 | A |
| 2 | 2 | 501.40 | 125.35 | 497.08 | 467.50 | 325.01 | 0.00 | 966.51 | 543.49 | 0.519 | 0.00 | 1.08 | 7.745 | A |
| 2 | 3 | 1192.39 | 298.10 | 1168.58 | 608.63 | 213.46 | 0.00 | 1384.84 | 1372.67 | 0.861 | 0.00 | 5.95 | 16.842 | C |
| 2 | 4 | 303.40 | 75.85 | 298.57 | 166.07 | 1215.98 | 0.00 | 561.31 | 449.42 | 0.541 | 0.00 | 1.21 | 14.310 | B |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 727.08 | 181.77 | 724.98 | 1411.61 | 178.86 | 0.00 | 1202.95 | 960.57 | 0.604 | 1.01 | 1.54 | 7.692 | A |
| 1 | 2 | 947.52 | 236.88 | 937.81 | 463.75 | 440.09 | 0.00 | 1144.67 | 919.24 | 0.828 | 1.97 | 4.40 | 16.871 | C |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 440.09 | 937.81 | 0.00 | 1004.25 | 1016.46 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 682.33 | 170.58 | 652.66 | 0.00 | 937.81 | 0.00 | 721.29 | 296.90 | 0.946 | 2.77 | 10.18 | 50.268 | F |
| 2 | 1 | 137.54 | 34.39 | 137.35 | 956.97 | 783.57 | 0.00 | 863.55 | 798.78 | 0.159 | 0.15 | 0.19 | 5.119 | A |
| 2 | 2 | 598.72 | 149.68 | 595.97 | 533.89 | 387.03 | 0.00 | 933.32 | 543.49 | 0.642 | 1.08 | 1.77 | 10.786 | B |
| 2 | 3 | 1411.61 | 352.90 | 1322.41 | 727.08 | 255.93 | 0.00 | 1358.92 | 1372.67 | 1.039 | 5.95 | 28.25 | 58.651 | F |
| 2 | 4 | 362.29 | 90.57 | 354.30 | 192.09 | 1386.24 | 0.00 | 466.08 | 449.42 | 0.777 | 1.21 | 3.20 | 32.159 | D |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 872.38 | 218.10 | 868.18 | 1534.35 | 176.14 | 0.00 | 1204.55 | 960.57 | 0.724 | 1.54 | 2.59 | 10.839 | B |
| 1 | 2 | 1160.48 | 290.12 | 1067.76 | 523.52 | 520.79 | 0.00 | 1095.72 | 919.24 | 1.059 | 4.40 | 27.58 | 66.835 | F |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 520.79 | 1067.76 | 0.00 | 918.82 | 1016.46 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 835.67 | 208.92 | 642.73 | 0.00 | 1067.76 | 0.00 | 647.14 | 296.90 | 1.291 | 10.18 | 58.42 | 209.859 | F |
| 2 | 1 | 168.46 | 42.11 | 168.19 | 995.53 | 842.24 | 0.00 | 829.45 | 798.78 | 0.203 | 0.19 | 0.26 | 5.621 | A |
| 2 | 2 | 733.28 | 183.32 | 723.84 | 551.05 | 459.38 | 0.00 | 894.60 | 543.49 | 0.820 | 1.77 | 4.13 | 20.418 | C |
| 2 | 3 | 1534.35 | 383.59 | 1321.70 | 872.38 | 310.84 | 0.00 | 1325.39 | 1372.67 | 1.158 | 28.25 | 81.42 | 159.178 | F |
| 2 | 4 | 443.71 | 110.93 | 413.20 | 207.97 | 1424.57 | 0.00 | 444.64 | 449.42 | 0.998 | 3.20 | 10.83 | 81.267 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 886.17 | 221.54 | 885.48 | 1545.90 | 174.85 | 0.00 | 1205.31 | 960.57 | 0.735 | 2.59 | 2.76 | 11.503 | B |
| 1 | 2 | 1160.48 | 290.12 | 1082.71 | 529.94 | 530.39 | 0.00 | 1089.90 | 919.24 | 1.065 | 27.58 | 47.02 | 134.258 | F |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 530.39 | 1082.71 | 0.00 | 908.99 | 1016.46 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 835.67 | 208.92 | 638.04 | 0.00 | 1082.71 | 0.00 | 638.61 | 296.90 | 1.309 | 58.42 | 107.83 | 484.675 | F |
| 2 | 1 | 168.46 | 42.11 | 168.44 | 998.43 | 855.04 | 0.00 | 822.01 | 798.78 | 0.205 | 0.26 | 0.26 | 5.689 | A |
| 2 | 2 | 733.28 | 183.32 | 732.03 | 554.99 | 468.50 | 0.00 | 889.72 | 543.49 | 0.824 | 4.13 | 4.44 | 22.854 | C |
| 2 | 3 | 1545.90 | 386.48 | 1322.38 | 886.17 | 314.36 | 0.00 | 1323.25 | 1372.67 | 1.168 | 81.42 | 137.30 | 302.993 | F |
| 2 | 4 | 443.71 | 110.93 | 425.78 | 209.05 | 1427.69 | 0.00 | 442.89 | 449.42 | 1.002 | 10.83 | 15.31 | 127.784 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 767.21 | 191.80 | 770.92 | 1558.22 | 171.51 | 0.00 | 1207.29 | 960.57 | 0.635 | 2.76 | 1.83 | 8.536 | A |
| 1 | 2 | 947.52 | 236.88 | 1103.89 | 477.50 | 464.92 | 0.00 | 1129.61 | 919.24 | 0.839 | 47.02 | 7.93 | 95.699 | F |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 464.92 | 1103.89 | 0.00 | 895.06 | 1016.46 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 682.33 | 170.58 | 625.83 | 0.00 | 1103.89 | 0.00 | 626.52 | 296.90 | 1.089 | 107.83 | 121.95 | 617.969 | F |
| 2 | 1 | 137.54 | 34.39 | 137.78 | 980.01 | 840.41 | 0.00 | 830.51 | 798.78 | 0.166 | 0.26 | 0.21 | 5.369 | A |
| 2 | 2 | 598.72 | 149.68 | 608.50 | 558.17 | 420.02 | 0.00 | 915.67 | 543.49 | 0.654 | 4.44 | 1.99 | 12.294 | B |
| 2 | 3 | 1558.22 | 389.55 | 1355.19 | 767.21 | 261.31 | 0.00 | 1355.63 | 1372.67 | 1.149 | 137.30 | 188.05 | 435.357 | F |
| 2 | 4 | 362.29 | 90.57 | 400.51 | 196.58 | 1419.92 | 0.00 | 447.24 | 449.42 | 0.810 | 15.31 | 5.76 | 89.391 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 626.89 | 156.72 | 629.51 | 1384.68 | 214.48 | 0.00 | 1181.93 | 960.57 | 0.530 | 1.83 | 1.18 | 6.718 | A |
| 1 | 2 | 793.51 | 198.38 | 816.51 | 452.18 | 391.81 | 0.00 | 1173.96 | 919.24 | 0.676 | 7.93 | 2.18 | 10.819 | B |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 391.81 | 816.51 | 0.00 | 1084.00 | 1016.46 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 571.41 | 142.85 | 782.64 | 0.00 | 816.51 | 0.00 | 790.50 | 296.90 | 0.723 | 121.95 | 69.14 | 441.908 | F |
| 2 | 1 | 115.19 | 28.80 | 115.38 | 962.49 | 764.80 | 0.00 | 874.46 | 798.78 | 0.132 | 0.21 | 0.16 | 4.899 | A |
| 2 | 2 | 501.40 | 125.35 | 504.83 | 541.34 | 338.85 | 0.00 | 959.10 | 543.49 | 0.523 | 1.99 | 1.14 | 8.134 | A |
| 2 | 3 | 1384.68 | 346.17 | 1379.20 | 626.89 | 216.79 | 0.00 | 1382.81 | 1372.67 | 1.001 | 188.05 | 189.42 | 495.652 | F |
| 2 | 4 | 303.40 | 75.85 | 317.10 | 185.80 | 1410.19 | 0.00 | 452.68 | 449.42 | 0.670 | 5.76 | 2.33 | 30.501 | D |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 14.53 | 0.97 | 5.983 | A | A |
| 1 | 2 | 27.51 | 1.83 | 8.886 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 36.77 | 2.45 | 17.096 | C | B |
| 2 | 1 | 2.14 | 0.14 | 4.586 | A | A |
| 2 | 2 | 15.34 | 1.02 | 7.745 | A | A |
| 2 | 3 | 74.83 | 4.99 | 16.842 | C | B |
| 2 | 4 | 16.66 | 1.11 | 14.310 | B | B |

### Queueing Delay results: (08:00-08:15)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 22.07 | 1.47 | 7.692 | A | A |
| 1 | 2 | 58.33 | 3.89 | 16.871 | C | B |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 113.53 | 7.57 | 50.268 | F | D |
| 2 | 1 | 2.86 | 0.19 | 5.119 | A | A |
| 2 | 2 | 25.00 | 1.67 | 10.786 | B | B |
| 2 | 3 | 275.23 | 18.35 | 58.651 | F | E |
| 2 | 4 | 41.00 | 2.73 | 32.159 | D | C |

## Queueing Delay results: (08:15-08:30)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 36.24 | 2.42 | 10.839 | B | B |
| 1 | 2 | 257.30 | 17.15 | 66.835 | F | E |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 518.26 | 34.55 | 209.859 | F | F |
| 2 | 1 | 3.84 | 0.26 | 5.621 | A | A |
| 2 | 2 | 54.05 | 3.60 | 20.418 | C | C |
| 2 | 3 | 824.57 | 54.97 | 159.178 | F | F |
| 2 | 4 | 115.09 | 7.67 | 81.267 | F | F |

## Queueing Delay results: (08:30-08:45)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 40.52 | 2.70 | 11.503 | B | B |
| 1 | 2 | 561.35 | 37.42 | 134.258 | F | F |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 1247.06 | 83.14 | 484.675 | F | F |
| 2 | 1 | 3.96 | 0.26 | 5.689 | A | A |
| 2 | 2 | 64.74 | 4.32 | 22.854 | C | C |
| 2 | 3 | 1640.59 | 109.37 | 302.993 | F | F |
| 2 | 4 | 197.86 | 13.19 | 127.784 | F | F |

## Queueing Delay results: (08:45-09:00)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 28.90 | 1.93 | 8.536 | A | A |
| 1 | 2 | 408.30 | 27.22 | 95.699 | F | F |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 1723.39 | 114.89 | 617.969 | F | F |
| 2 | 1 | 3.16 | 0.21 | 5.369 | A | A |
| 2 | 2 | 32.63 | 2.18 | 12.294 | B | B |
| 2 | 3 | 2440.18 | 162.68 | 435.357 | F | F |
| 2 | 4 | 135.96 | 9.06 | 89.391 | F | F |

## Queueing Delay results: (09:00-09:15)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 18.35 | 1.22 | 6.718 | A | A |
| 1 | 2 | 38.46 | 2.56 | 10.819 | B | B |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 1433.21 | 95.55 | 441.908 | F | F |
| 2 | 1 | 2.41 | 0.16 | 4.899 | A | A |
| 2 | 2 | 17.87 | 1.19 | 8.134 | A | A |
| 2 | 3 | 2831.05 | 188.74 | 495.652 | F | F |
| 2 | 4 | 41.65 | 2.78 | 30.501 | D | C |

# (Default Analysis Set) - 2031 J3, PM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Warning | Linked Roundabout | Junction 1 - Arm 1 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |
| Warning | Linked Roundabout | Junction 2 - Arm 3 | If the distance between linked junctions is small, results should be treated with caution. The linked junctions will be modelled as separate junctions, but the real behaviour may be that of a complex system with interactions that cannot be modelled. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | Varies by Arm | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | (untitled) | Roundabout | 1,2,3,4 | | | | 852.81 | F |
| 2 | 2 | (untitled) | Roundabout | 1,2,3,4 | | | | 212.07 | F |

## Junction Network Options

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

# Arms

## Arms

| Junction | Arm | Arm | Name | Description |
|---|---|---|---|---|
| 1 | 1 | 1 | Wooldale Rd E | |
| 1 | 2 | 2 | Rowtree Rd | |
| 1 | 3 | 3 | London rd | |
| 1 | 4 | 4 | A45 N | |
| 2 | 1 | 1 | Wooldale Rd E | |
| 2 | 2 | 2 | A45 S | |
| 2 | 3 | 3 | (untitled) | Wooldale Rd W |
| 2 | 4 | 4 | Berry Lane | |

## Capacity Options

| Junction | Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|---|
| 1 | 1 | 0.00 | 99999.00 | | 0.00 |
| 1 | 2 | 0.00 | 99999.00 | | 0.00 |
| 1 | 3 | 0.00 | 99999.00 | | 0.00 |
| 1 | 4 | 0.00 | 99999.00 | | 0.00 |
| 2 | 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 2 | 0.00 | 99999.00 | | 0.00 |
| 2 | 3 | 0.00 | 99999.00 | | 0.00 |
| 2 | 4 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Junction | Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 3.70 | 5.90 | 1.70 | 15.00 | 32.00 | 12.00 | |
| 1 | 2 | 3.90 | 4.80 | 6.30 | 20.00 | 32.00 | 21.00 | |
| 1 | 3 | 3.50 | 6.60 | 10.00 | 30.00 | 32.00 | 18.00 | |
| 1 | 4 | 4.00 | 4.10 | 1.00 | 20.00 | 32.00 | 25.00 | |
| 2 | 1 | 3.10 | 4.80 | 9.80 | 20.00 | 38.00 | 19.00 | |
| 2 | 2 | 3.20 | 3.90 | 8.00 | 15.00 | 38.00 | 24.00 | |
| 2 | 3 | 4.20 | 5.50 | 6.20 | 15.00 | 38.00 | 24.00 | |
| 2 | 4 | 3.20 | 5.00 | 4.90 | 20.00 | 38.00 | 25.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Junction | Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|---|
| 1 | 1 | | (calculated) | (calculated) | 0.590 | 1308.494 |
| 1 | 2 | | (calculated) | (calculated) | 0.607 | 1411.596 |
| 1 | 3 | | (calculated) | (calculated) | 0.657 | 1620.802 |
| 1 | 4 | | (calculated) | (calculated) | 0.571 | 1256.381 |
| 2 | 1 | | (calculated) | (calculated) | 0.581 | 1319.029 |
| 2 | 2 | | (calculated) | (calculated) | 0.535 | 1140.435 |
| 2 | 3 | | (calculated) | (calculated) | 0.610 | 1515.149 |
| 2 | 4 | | (calculated) | (calculated) | 0.559 | 1241.472 |

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Junction | Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|---|
| 1 | 1 | Linked Arm | | N/A | |
| 1 | 2 | ONE HOUR | ✓ | 648.00 | 100.000 |
| 1 | 3 | ONE HOUR | ✓ | 0.00 | 100.000 |
| 1 | 4 | ONE HOUR | ✓ | 1236.00 | 100.000 |
| 2 | 1 | ONE HOUR | ✓ | 478.00 | 100.000 |
| 2 | 2 | ONE HOUR | ✓ | 603.00 | 100.000 |
| 2 | 3 | Linked Arm | | N/A | |
| 2 | 4 | ONE HOUR | ✓ | 601.00 | 100.000 |

## Linked Arm Data

| Junction | Arm | From Junction ID | From Arm ID | Link Type | Flow Source | Uniform Flow (PCU/hr) | Flow Multiplier (%) | Internal Storage Space (PCU) |
|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 2 | 3 | Simple (vertical queueing) | Normal | 0.00 | 100.00 | |
| 2 | 3 | 1 | 1 | Simple (vertical queueing) | Normal | 0.00 | 100.00 | |

# Turning Proportions

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 988.000 | 372.000 | 0.000 |
| | 2 | 648.000 | 0.000 | 0.000 | 0.000 |
| | 3 | 0.000 | 0.000 | 0.000 | 0.000 |
| | 4 | 611.000 | 552.000 | 73.000 | 0.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.73 | 0.27 | 0.00 |
| | 2 | 1.00 | 0.00 | 0.00 | 0.00 |
| | 3 | 0.25 | 0.25 | 0.25 | 0.25 |
| | 4 | 0.49 | 0.45 | 0.06 | 0.00 |

### Turning Counts / Proportions (PCU/hr) - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.000 | 0.000 | 478.000 | 0.000 |
| | 2 | 269.000 | 0.000 | 293.000 | 41.000 |
| | 3 | 856.000 | 380.000 | 0.000 | 23.000 |
| | 4 | 12.000 | 0.000 | 589.000 | 0.000 |

### Turning Proportions (PCU) - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.00 | 0.00 | 1.00 | 0.00 |
| | 2 | 0.45 | 0.00 | 0.49 | 0.07 |
| | 3 | 0.68 | 0.30 | 0.00 | 0.02 |
| | 4 | 0.02 | 0.00 | 0.98 | 0.00 |

# Vehicle Mix

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.300 | 1.007 | 1.000 |
| | 2 | 1.103 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.348 | 1.088 | 1.273 | 1.000 |

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

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 23.1 | 0.5 | 0.0 |
| | 2 | 7.9 | 0.0 | 0.0 | 0.0 |
| | 3 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 4 | 26.8 | 6.8 | 21.0 | 0.0 |

### Average PCU Per Vehicle - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 1.000 | 1.000 | 1.389 | 1.000 |
| | 2 | 1.000 | 1.000 | 1.004 | 1.127 |
| | 3 | 1.322 | 1.007 | 1.000 | 1.056 |
| | 4 | 1.000 | 1.000 | 1.190 | 1.000 |

### Heavy Vehicle Percentages - Junction 2 (for whole period)

| | | To | | | |
|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 |
| From | 1 | 0.0 | 0.0 | 29.9 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.3 | 9.8 |
| | 3 | 24.8 | 0.5 | 0.0 | 4.3 |
| | 4 | 0.0 | 0.0 | 14.6 | 0.0 |

# Results

## Results Summary for whole modelled period

| Junction | Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1.21 | 830.59 | 251.83 | F | 1190.98 | 1786.47 | 10169.37 | 341.55 | 112.99 | 12038.56 | 404.32 |
| 1 | 2 | 0.59 | 8.05 | 1.58 | A | 594.62 | 891.92 | 99.12 | 6.67 | 1.10 | 99.14 | 6.67 |
| 1 | 3 | 0.00 | 0.00 | 0.00 | A | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1 | 4 | 1.60 | 1319.02 | 362.33 | F | 1134.18 | 1701.26 | 16716.69 | 589.56 | 185.74 | 20507.68 | 723.26 |
| 2 | 1 | 0.62 | 15.24 | 2.19 | C | 438.62 | 657.93 | 136.00 | 12.40 | 1.51 | 136.04 | 12.41 |
| 2 | 2 | 1.09 | 184.77 | 35.86 | F | 553.32 | 829.99 | 1176.27 | 85.03 | 13.07 | 1176.58 | 85.06 |
| 2 | 3 | 0.86 | 21.95 | 6.57 | C | 1038.96 | 1558.44 | 390.59 | 15.04 | 4.34 | 390.81 | 15.05 |
| 2 | 4 | 1.41 | 754.20 | 114.93 | F | 551.49 | 827.23 | 5106.67 | 370.39 | 56.74 | 5479.39 | 397.43 |

## Main Results for each time segment

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1006.10 | 251.52 | 954.78 | 922.47 | 447.55 | 0.00 | 1044.39 | 972.36 | 0.963 | 0.00 | 12.83 | 37.483 | E |
| 1 | 2 | 487.85 | 121.96 | 484.94 | 1088.90 | 313.43 | 0.00 | 1221.49 | 1106.08 | 0.399 | 0.00 | 0.73 | 5.370 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 313.43 | 484.94 | 0.00 | 1301.98 | 893.62 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 930.53 | 232.63 | 885.07 | 0.00 | 484.94 | 0.00 | 979.68 | 242.86 | 0.950 | 0.00 | 11.36 | 36.663 | E |
| 2 | 1 | 359.86 | 89.97 | 356.27 | 829.08 | 708.03 | 0.00 | 907.46 | 867.57 | 0.397 | 0.00 | 0.90 | 9.013 | A |
| 2 | 2 | 453.97 | 113.49 | 447.30 | 275.55 | 788.75 | 0.00 | 718.34 | 480.89 | 0.632 | 0.00 | 1.67 | 13.111 | B |
| 2 | 3 | 922.47 | 230.62 | 912.96 | 1006.10 | 229.96 | 0.00 | 1374.77 | 1364.23 | 0.671 | 0.00 | 2.38 | 9.199 | A |
| 2 | 4 | 452.46 | 113.12 | 441.29 | 47.09 | 1095.82 | 0.00 | 628.52 | 372.34 | 0.720 | 0.00 | 2.79 | 21.677 | C |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1178.96 | 294.74 | 1025.18 | 1035.14 | 464.14 | 0.00 | 1034.60 | 972.35 | 1.140 | 12.83 | 51.28 | 126.186 | F |
| 1 | 2 | 582.54 | 145.63 | 581.39 | 1154.69 | 334.63 | 0.00 | 1208.64 | 1106.08 | 0.482 | 0.73 | 1.01 | 6.317 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 334.63 | 581.39 | 0.00 | 1238.57 | 893.62 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 1111.14 | 277.78 | 917.88 | 0.00 | 581.39 | 0.00 | 924.65 | 242.86 | 1.202 | 11.36 | 59.68 | 155.979 | F |
| 2 | 1 | 429.71 | 107.43 | 427.79 | 947.15 | 803.74 | 0.00 | 851.83 | 867.57 | 0.504 | 0.90 | 1.38 | 11.734 | B |
| 2 | 2 | 542.08 | 135.52 | 531.38 | 310.77 | 920.76 | 0.00 | 647.70 | 480.89 | 0.837 | 1.67 | 4.34 | 28.894 | D |
| 2 | 3 | 1035.14 | 258.78 | 1029.64 | 1178.96 | 273.18 | 0.00 | 1348.38 | 1364.23 | 0.768 | 2.38 | 3.75 | 13.342 | B |
| 2 | 4 | 540.29 | 135.07 | 503.01 | 54.94 | 1247.88 | 0.00 | 543.47 | 372.34 | 0.994 | 2.79 | 12.11 | 73.056 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1276.91 | 319.23 | 1053.44 | 1131.58 | 429.95 | 0.00 | 1054.78 | 972.35 | 1.211 | 51.28 | 107.14 | 280.458 | F |
| 1 | 2 | 713.46 | 178.37 | 711.26 | 1145.03 | 338.37 | 0.00 | 1206.37 | 1106.08 | 0.591 | 1.01 | 1.56 | 7.981 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 338.37 | 711.26 | 0.00 | 1153.19 | 893.62 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 1360.86 | 340.22 | 850.27 | 0.00 | 711.26 | 0.00 | 850.55 | 242.86 | 1.600 | 59.68 | 187.32 | 532.381 | F |
| 2 | 1 | 526.29 | 131.57 | 523.18 | 1037.32 | 803.97 | 0.00 | 851.70 | 867.57 | 0.618 | 1.38 | 2.16 | 15.068 | C |
| 2 | 2 | 663.92 | 165.98 | 593.69 | 338.71 | 988.43 | 0.00 | 611.49 | 480.89 | 1.086 | 4.34 | 21.90 | 97.491 | F |
| 2 | 3 | 1131.58 | 282.89 | 1122.21 | 1276.91 | 305.21 | 0.00 | 1328.83 | 1364.23 | 0.852 | 3.75 | 6.10 | 19.989 | C |
| 2 | 4 | 661.71 | 165.43 | 474.73 | 60.87 | 1366.55 | 0.00 | 477.09 | 372.34 | 1.387 | 12.11 | 58.86 | 289.987 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1280.45 | 320.11 | 1054.62 | 1133.22 | 429.45 | 0.00 | 1055.07 | 972.35 | 1.214 | 107.14 | 163.60 | 472.849 | F |
| 1 | 2 | 713.46 | 178.37 | 713.40 | 1145.44 | 338.63 | 0.00 | 1206.21 | 1106.08 | 0.591 | 1.56 | 1.58 | 8.052 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 338.63 | 713.40 | 0.00 | 1151.79 | 893.62 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 1360.86 | 340.22 | 849.28 | 0.00 | 713.40 | 0.00 | 849.33 | 242.86 | 1.602 | 187.32 | 315.22 | 1020.217 | F |
| 2 | 1 | 526.29 | 131.57 | 526.16 | 1049.81 | 800.29 | 0.00 | 853.84 | 867.57 | 0.616 | 2.16 | 2.19 | 15.237 | C |
| 2 | 2 | 663.92 | 165.98 | 608.08 | 341.46 | 984.98 | 0.00 | 613.33 | 480.89 | 1.082 | 21.90 | 35.86 | 184.768 | F |
| 2 | 3 | 1133.22 | 283.31 | 1131.33 | 1280.45 | 312.61 | 0.00 | 1324.31 | 1364.23 | 0.856 | 6.10 | 6.57 | 21.949 | C |
| 2 | 4 | 661.71 | 165.43 | 468.17 | 62.01 | 1381.93 | 0.00 | 468.49 | 372.34 | 1.412 | 58.86 | 107.24 | 630.660 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1235.22 | 308.80 | 1032.92 | 1040.81 | 466.58 | 0.00 | 1033.16 | 972.35 | 1.196 | 163.60 | 214.17 | 669.052 | F |
| 1 | 2 | 582.54 | 145.63 | 584.69 | 1162.47 | 337.03 | 0.00 | 1207.18 | 1106.08 | 0.483 | 1.58 | 1.04 | 6.398 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 337.03 | 584.69 | 0.00 | 1236.40 | 893.62 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 1111.14 | 277.78 | 922.70 | 0.00 | 584.69 | 0.00 | 922.77 | 242.86 | 1.204 | 315.22 | 362.33 | 1304.092 | F |
| 2 | 1 | 429.71 | 107.43 | 432.57 | 1001.07 | 815.66 | 0.00 | 844.90 | 867.57 | 0.509 | 2.19 | 1.47 | 12.207 | B |
| 2 | 2 | 542.08 | 135.52 | 624.14 | 316.28 | 931.95 | 0.00 | 641.71 | 480.89 | 0.845 | 35.86 | 15.34 | 153.513 | F |
| 2 | 3 | 1040.81 | 260.20 | 1047.89 | 1235.22 | 320.87 | 0.00 | 1319.27 | 1364.23 | 0.789 | 6.57 | 4.80 | 16.383 | C |
| 2 | 4 | 540.29 | 135.07 | 509.55 | 61.58 | 1307.17 | 0.00 | 510.31 | 372.34 | 1.059 | 107.24 | 114.93 | 754.202 | F |

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

| Junction | Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | 1168.25 | 292.06 | 1017.63 | 970.53 | 492.57 | 0.00 | 1017.82 | 972.36 | 1.148 | 214.17 | 251.83 | 830.587 | F |
| 1 | 2 | 487.85 | 121.96 | 489.00 | 1174.31 | 335.88 | 0.00 | 1207.88 | 1106.08 | 0.404 | 1.04 | 0.75 | 5.530 | A |
| 1 | 3 | 0.00 | 0.00 | 0.00 | 335.88 | 489.00 | 0.00 | 1299.32 | 893.62 | 0.000 | 0.00 | 0.00 | 0.000 | A |
| 1 | 4 | 930.53 | 232.63 | 974.10 | 0.00 | 489.00 | 0.00 | 977.37 | 242.86 | 0.952 | 362.33 | 351.44 | 1319.023 | F |
| 2 | 1 | 359.86 | 89.97 | 361.34 | 901.11 | 856.45 | 0.00 | 821.19 | 867.57 | 0.438 | 1.47 | 1.11 | 10.909 | B |
| 2 | 2 | 453.97 | 113.49 | 505.03 | 294.93 | 922.85 | 0.00 | 646.58 | 480.89 | 0.702 | 15.34 | 2.58 | 33.200 | D |
| 2 | 3 | 970.53 | 242.63 | 977.16 | 1168.25 | 259.63 | 0.00 | 1356.65 | 1364.23 | 0.715 | 4.80 | 3.14 | 11.609 | B |
| 2 | 4 | 452.46 | 113.12 | 572.95 | 52.19 | 1184.60 | 0.00 | 578.86 | 372.34 | 0.782 | 114.93 | 84.80 | 629.124 | F |

# Queueing Delay Results for each time segment

## Queueing Delay results: (16:45-17:00)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 134.91 | 8.99 | 37.483 | E | D |
| 1 | 2 | 10.51 | 0.70 | 5.370 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 121.92 | 8.13 | 36.663 | E | D |
| 2 | 1 | 12.79 | 0.85 | 9.013 | A | A |
| 2 | 2 | 22.84 | 1.52 | 13.111 | B | B |
| 2 | 3 | 33.05 | 2.20 | 9.199 | A | A |
| 2 | 4 | 36.32 | 2.42 | 21.677 | C | C |

## Queueing Delay results: (17:00-17:15)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 486.81 | 32.45 | 126.186 | F | F |
| 1 | 2 | 14.74 | 0.98 | 6.317 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 538.12 | 35.87 | 155.979 | F | F |
| 2 | 1 | 19.71 | 1.31 | 11.734 | B | B |
| 2 | 2 | 54.94 | 3.66 | 28.894 | D | C |
| 2 | 3 | 52.09 | 3.47 | 13.342 | B | B |
| 2 | 4 | 126.03 | 8.40 | 73.056 | F | E |

## Queueing Delay results: (17:15-17:30)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 1188.67 | 79.24 | 280.458 | F | F |
| 1 | 2 | 22.45 | 1.50 | 7.981 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 1852.69 | 123.51 | 532.381 | F | F |
| 2 | 1 | 30.33 | 2.02 | 15.068 | C | B |
| 2 | 2 | 207.15 | 13.81 | 97.491 | F | F |
| 2 | 3 | 81.74 | 5.45 | 19.989 | C | B |
| 2 | 4 | 534.16 | 35.61 | 289.987 | F | F |

## Queueing Delay results: (17:30-17:45)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 2030.65 | 135.38 | 472.849 | F | F |
| 1 | 2 | 23.60 | 1.57 | 8.052 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 3769.10 | 251.27 | 1020.217 | F | F |
| 2 | 1 | 32.64 | 2.18 | 15.237 | C | B |
| 2 | 2 | 434.38 | 28.96 | 184.768 | F | F |
| 2 | 3 | 95.71 | 6.38 | 21.949 | C | C |
| 2 | 4 | 1245.86 | 83.06 | 630.660 | F | F |

## Queueing Delay results: (17:45-18:00)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 2833.31 | 188.89 | 669.052 | F | F |
| 1 | 2 | 16.19 | 1.08 | 6.398 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 5081.63 | 338.78 | 1304.092 | F | F |
| 2 | 1 | 23.29 | 1.55 | 12.207 | B | B |
| 2 | 2 | 384.00 | 25.60 | 153.513 | F | F |
| 2 | 3 | 77.55 | 5.17 | 16.383 | C | B |
| 2 | 4 | 1666.30 | 111.09 | 754.202 | F | F |

## Queueing Delay results: (18:00-18:15)

| Junction | Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|---|
| 1 | 1 | 3495.01 | 233.00 | 830.587 | F | F |
| 1 | 2 | 11.63 | 0.78 | 5.530 | A | A |
| 1 | 3 | 0.00 | 0.00 | 0.000 | A | A |
| 1 | 4 | 5353.23 | 356.88 | 1319.023 | F | F |
| 2 | 1 | 17.24 | 1.15 | 10.909 | B | B |
| 2 | 2 | 72.95 | 4.86 | 33.200 | D | C |
| 2 | 3 | 50.44 | 3.36 | 11.609 | B | B |
| 2 | 4 | 1497.99 | 99.87 | 629.124 | F | F |

# JUNCTION 13

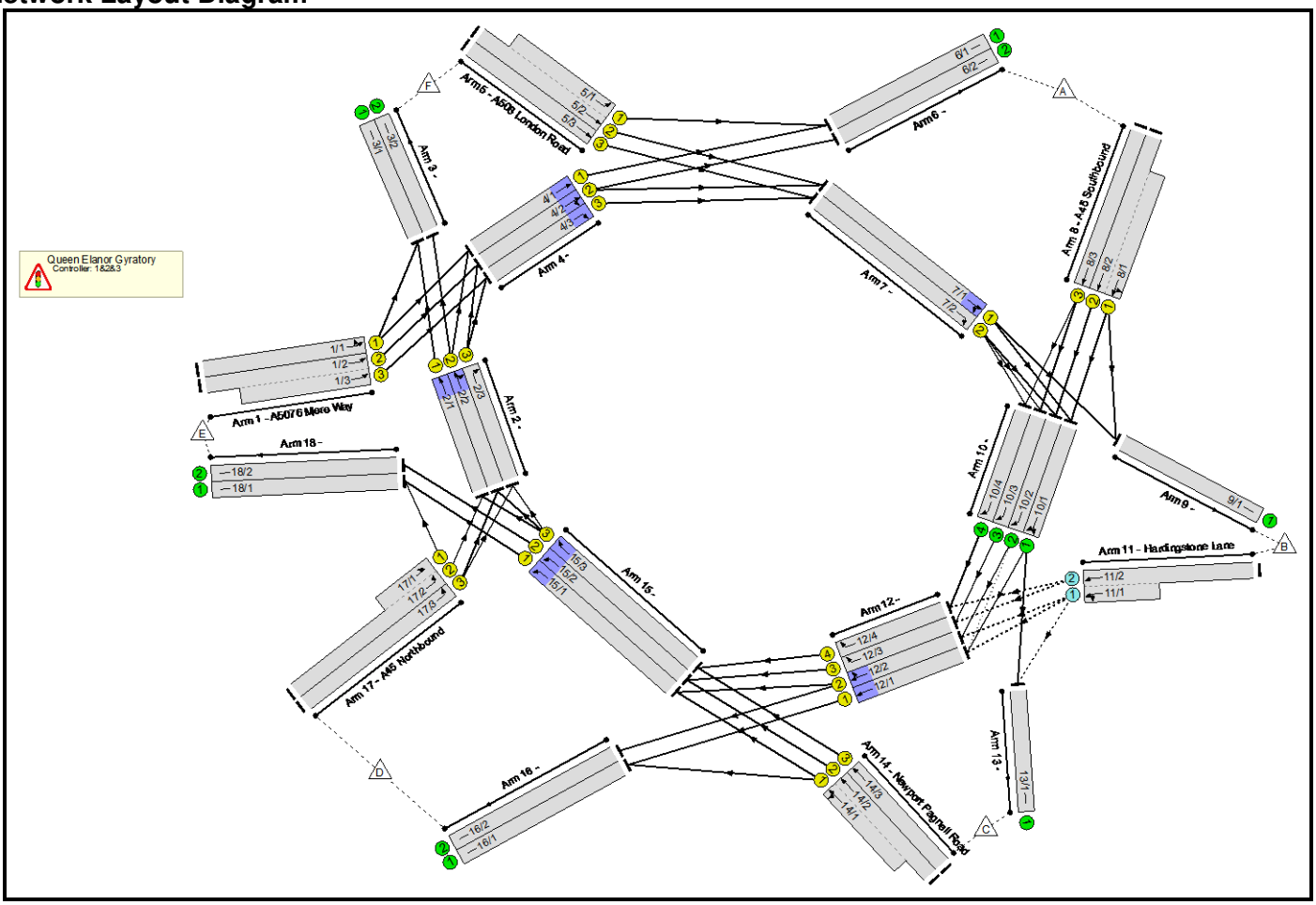
# A45 QUEEN ELEANOR INTERCHANGE

## Full Input Data And Results

### User and Project Details

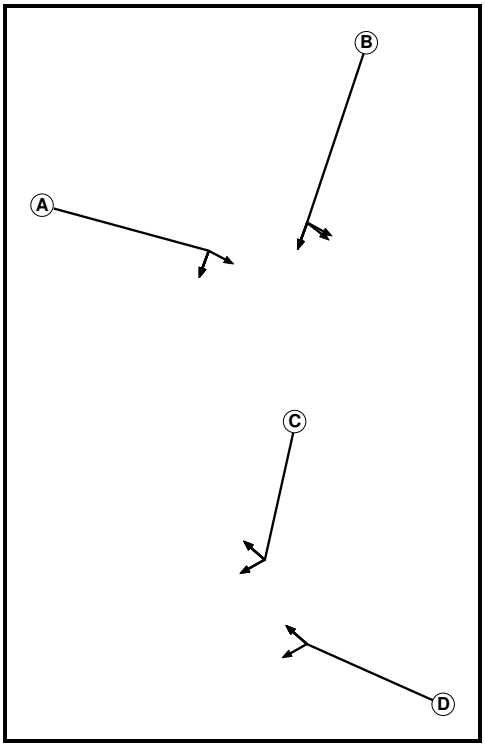
| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **Queen Elanor Gyratory - J3 Cumulative Impact** |
| **Location:** | |
| **File name:** | 180318 Queen Eleanor Gyratory.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House, Nottingham |
| **Notes:** | |

### Network Layout Diagram



**C1 - Queen Elanor A B**

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |

## Phase Intergreens Matrix

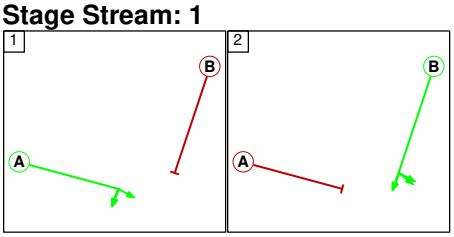
| | | Starting Phase | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| Terminating Phase | A | | 7 | - | - |
| | B | 7 | | - | - |
| | C | - | - | | 5 |
| | D | - | - | 5 | |

## Phases in Stage

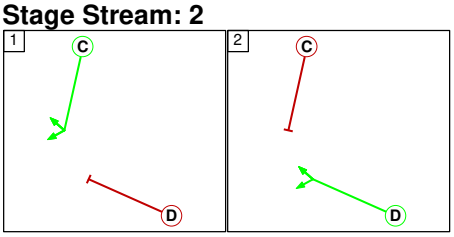
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |

## Stage Diagram

### Stage Stream: 1

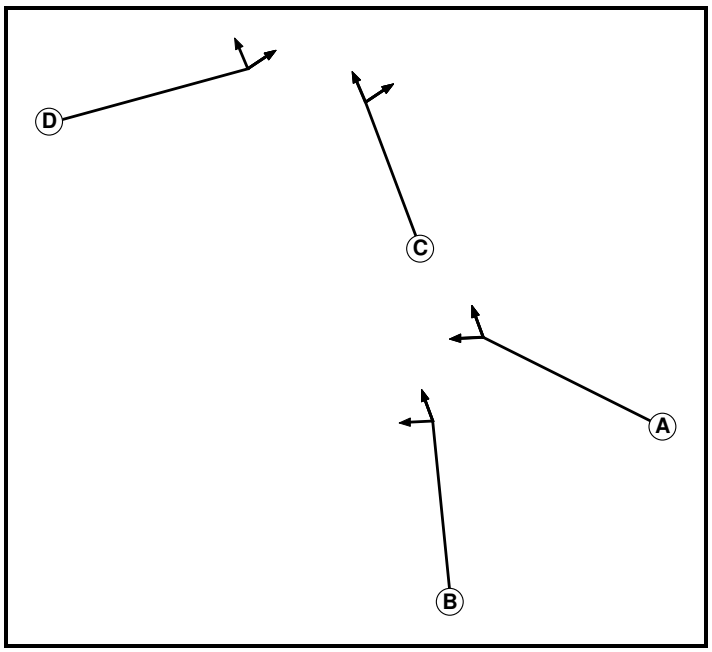



### Stage Stream: 2




### C2 - Queen Elanor C D

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |

## Phase Intergreens Matrix

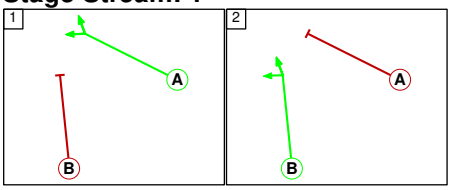
| | | Starting Phase | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| Terminating Phase | A | | 5 | - | - |
| | B | 5 | | - | - |
| | C | - | - | | 6 |
| | D | - | - | 6 | |

## Phases in Stage

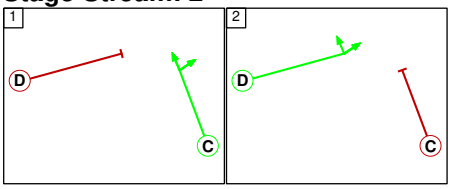
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |

## Stage Diagram

### Stage Stream: 1

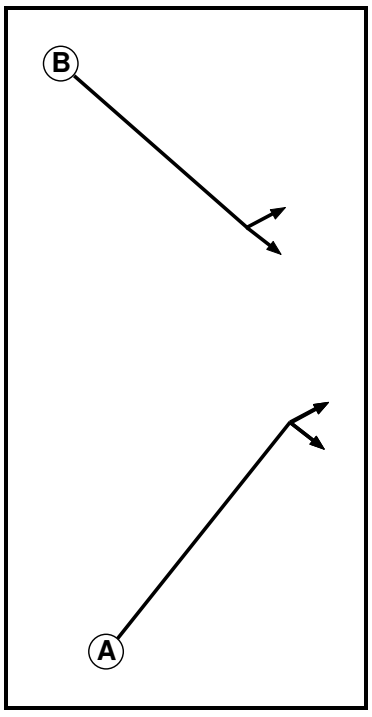



### Stage Stream: 2




### C3 - London Road

## Phase Diagram



## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |

## Phase Intergreens Matrix

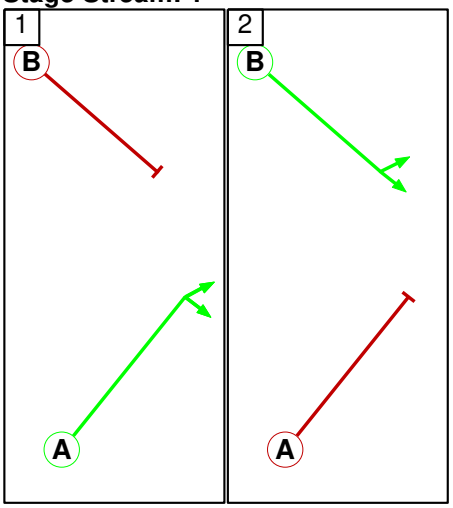
| | | Starting Phase | |
|---|---|---|---|
| | | A | B |
| Terminating Phase | A | | 6 |
| | B | 6 | |

## Phases in Stage

| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |

## Stage Diagram

**Stage Stream: 1**



## Give-Way Lane Input Data

| Junction: Queen Elanor Gyratory | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| 11/1 (Hardingstone Lane) | 12/1 (Ahead) | 1006 | 0 | 10/1 | 0.25 | All | - | - | - | - | - |
| | | | | 10/2 | 0.25 | All | | | | | |
| | 12/2 (Ahead) | 1006 | 0 | 10/1 | 0.25 | All | | | | | |
| | | | | 10/2 | 0.25 | All | | | | | |
| | 13/1 (Left) | 1006 | 0 | 10/1 | 0.25 | All | | | | | |
| 11/2 (Hardingstone Lane) | 12/3 (Ahead) | 1006 | 0 | 10/1 | 0.25 | All | - | - | - | - | - |
| | | | | 10/2 | 0.25 | All | | | | | |
| | | | | 10/3 | 0.25 | All | | | | | |
| | | | | 10/4 | 0.25 | All | | | | | |
| | 12/4 (Ahead) | 1006 | 0 | 10/1 | 0.25 | All | | | | | |
| | | | | 10/2 | 0.25 | All | | | | | |
| | | | | 10/3 | 0.25 | All | | | | | |
| | | | | 10/4 | 0.25 | All | | | | | |

## Lane Input Data

| Junction: Queen Elanor Gyratory | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 (A5076 Mere Way) | U | D | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 3 Left | 20.00 |
| | | | | | | | | | | | Arm 4 Ahead | Inf |
| 1/2 (A5076 Mere Way) | U | D | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 4 Ahead | Inf |
| 1/3 (A5076 Mere Way) | U | D | 2 | 3 | 12.2 | Geom | - | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf |
| 2/1 | U | C | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 2/2 | U | C | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 2/3 | U | C | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 3/1 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 3/2 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 4/1 | U | A | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 4/2 | U | A | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 4/3 | U | A | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 5/1 (A508 London Road) | U | B | 2 | 3 | 15.7 | Geom | - | 3.50 | 0.00 | Y | Arm 6 Left | Inf |
| 5/2 (A508 London Road) | U | B | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 7 Ahead | Inf |
| 5/3 (A508 London Road) | U | B | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf |
| 6/1 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 6/2 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 7/1 | U | A | 2 | 3 | 20.9 | User | 1900 | - | - | - | - | - |
| 7/2 | U | A | 2 | 3 | 20.9 | User | 1900 | - | - | - | - | - |
| 8/1 (A45 Southbound) | U | B | 2 | 3 | 15.7 | Geom | - | 3.65 | 0.00 | Y | Arm 9 Left | 30.00 |
| | | | | | | | | | | | Arm 10 Ahead | Inf |
| 8/2 (A45 Southbound) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 10 Ahead | Inf |
| 8/3 (A45 Southbound) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf |
| 9/1 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 10/1 | U | | 2 | 3 | 12.2 | Inf | - | - | - | - | - | - |
| 10/2 | U | | 2 | 3 | 12.2 | Inf | - | - | - | - | - | - |
| 10/3 | U | | 2 | 3 | 12.2 | User | 3000 | - | - | - | - | - |
| 10/4 | U | | 2 | 3 | 12.2 | User | 3000 | - | - | - | - | - |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11/1 (Hardingstone Lane) | O | | 2 | 3 | 7.0 | Inf | - | - | - | - | - | - |
| 11/2 (Hardingstone Lane) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 12/1 | U | C | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 12/2 | U | C | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 12/3 | U | C | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 12/4 | U | C | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 13/1 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 14/1 (Newport Pagnell Road) | U | D | 2 | 3 | 10.0 | Geom | - | 3.50 | 0.00 | Y | Arm 15 Ahead<br>Arm 16 Left | Inf<br>20.00 |
| 14/2 (Newport Pagnell Road) | U | D | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 15 Ahead | 30.00 |
| 14/3 (Newport Pagnell Road) | U | D | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 15 Ahead | 50.00 |
| 15/1 | U | A | 2 | 3 | 22.6 | User | 1900 | - | - | - | - | - |
| 15/2 | U | A | 2 | 3 | 22.6 | User | 1900 | - | - | - | - | - |
| 15/3 | U | A | 2 | 3 | 22.6 | User | 1900 | - | - | - | - | - |
| 16/1 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 16/2 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 17/1 (A45 Northbound) | U | B | 2 | 3 | 6.0 | Geom | - | 3.65 | 0.00 | Y | Arm 18 U-Turn | Inf |
| 17/2 (A45 Northbound) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 2 Left | Inf |
| 17/3 (A45 Northbound) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 2 Left | Inf |
| 18/1 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |
| 18/2 | U | | 2 | 3 | 3.0 | Inf | - | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 Ref AM' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 Ref PM' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 Dev AM' | 08:00 | 09:00 | 01:00 | |
| 6: '2031 J3 Dev PM' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | Tot. |
| Origin | A | 0 | 72 | 131 | 0 | 1485 | 323 | 2011 |
| | B | 205 | 0 | 0 | 42 | 80 | 170 | 497 |
| | C | 202 | 0 | 0 | 0 | 280 | 425 | 907 |
| | D | 27 | 0 | 0 | 0 | 30 | 782 | 839 |
| | E | 1762 | 19 | 458 | 209 | 0 | 3 | 2451 |
| | F | 190 | 11 | 472 | 470 | 20 | 0 | 1163 |
| | Tot. | 2386 | 102 | 1061 | 721 | 1895 | 1703 | 7868 |

## Traffic Lane Flows

| Lane | Scenario 1:<br>2031 D1 Ref AM |
|---|---|
| 1/1 | 1192 |
| ½ (with short) | 1258(In) 1258(Out) |
| 1/3<br>(short) | 0 |
| 2/1 | 912 |
| 2/2 | 859 |
| 2/3 | 363 |
| 3/1 | 915 |
| 3/2 | 788 |
| 4/1 | 1260 |
| 4/2 | 1621 |
| 4/3 | 0 |
| 5/1 (short) | 190 |
| 5/2 (with short) | 673(In) 483(Out) |
| 5/3 | 490 |
| 6/1 | 1450 |
| 6/2 | 936 |
| 7/1 | 1168 |
| 7/2 | 490 |
| 8/1 (short) | 203 |
| 8/2 (with short) | 1138(In) 935(Out) |
| 8/3 | 873 |
| 9/1 | 102 |
| 10/1 | 1269 |
| 10/2 | 1405 |
| 10/3 | 570 |
| 10/4 | 323 |
| 11/1 (short) | 122 |
| 11/2 (with short) | 497(In) 375(Out) |
| 12/1 | 670 |
| 12/2 | 1065 |
| 12/3 | 570 |
| 12/4 | 698 |
| 13/1 | 1061 |
| 14/1 (short) | 111 |
| 14/2 (with short) | 280(In) 169(Out) |
| 14/3 | 627 |
| 15/1 | 1126 |
| 15/2 | 739 |
| 15/3 | 1325 |
| 16/1 | 670 |
| 16/2 | 50 |
| 17/1 (short) | 30 |
| 17/2 (with short) | 445(In) 415(Out) |
| 17/3 | 394 |
| 18/1 | 1156 |
| 18/2 | 739 |

## Lane Saturation Flows

| Junction: Queen Elanor Gyratory | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A5076 Mere Way) | 3.50 | 0.00 | Y | Arm 3 Left<br>Arm 4 Ahead | 20.00<br>Inf | 0.3 %<br>99.7 % | 1965 | 1965 |
| 1/2 (A5076 Mere Way) | 3.50 | 0.00 | N | Arm 4 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A5076 Mere Way) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (A508 London Road) | 3.50 | 0.00 | Y | Arm 6 Left | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A508 London Road) | 3.50 | 0.00 | N | Arm 7 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 5/3 (A508 London Road) | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 9 Left<br>Arm 10 Ahead | 30.00<br>Inf | 35.5 %<br>64.5 % | 1945 | 1945 |
| 8/2 (A45 Southbound) | 3.65 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 8/3 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| 10/4 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| 11/1 (Hardingstone Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 (Hardingstone Lane Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 (Newport Pagnell Road) | 3.50 | 0.00 | Y | Arm 15 Ahead | Inf | 100.0 % | 1965 | 1965 |
| | | | | Arm 16 Left | 20.00 | 0.0 % | | |
| 14/2 (Newport Pagnell Road) | 3.50 | 0.00 | N | Arm 15 Ahead | 30.00 | 100.0 % | 2005 | 2005 |
| 14/3 (Newport Pagnell Road) | 3.50 | 0.00 | Y | Arm 15 Ahead | 50.00 | 100.0 % | 1908 | 1908 |
| 15/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 15/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 15/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 17/1 (A45 Northbound) | 3.65 | 0.00 | Y | Arm 18 U-Turn | Inf | 100.0 % | 1980 | 1980 |
| 17/2 (A45 Northbound) | 3.65 | 0.00 | N | Arm 2 Left | Inf | 100.0 % | 2120 | 2120 |
| 17/3 (A45 Northbound) | 3.65 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1980 | 1980 |
| 18/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 18/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 2: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | Tot. |
| Origin | A | 0 | 58 | 102 | 0 | 1612 | 242 | 2014 |
| | B | 204 | 0 | 0 | 49 | 96 | 160 | 509 |
| | C | 218 | 0 | 0 | 0 | 375 | 483 | 1076 |
| | D | 0 | 0 | 0 | 0 | 33 | 826 | 859 |
| | E | 1834 | 20 | 376 | 176 | 0 | 25 | 2431 |
| | F | 223 | 11 | 353 | 531 | 26 | 0 | 1144 |
| | Tot. | 2479 | 89 | 831 | 756 | 2142 | 1736 | 8033 |

## Traffic Lane Flows

| Lane | Scenario 2: 2031 J3 Dev AM |
|---|---|
| 1/1 | 1181 |
| ½ (with short) | 1250(In) 1250(Out) |
| 1/3 (short) | 0 |
| 2/1 | 935 |
| 2/2 | 886 |
| 2/3 | 312 |
| 3/1 | 960 |
| 3/2 | 776 |
| 4/1 | 1266 |
| 4/2 | 1562 |
| 4/3 | 0 |
| 5/1 (short) | 223 |
| 5/2 (with short) | 622(In) 399(Out) |
| 5/3 | 522 |
| 6/1 | 1489 |
| 6/2 | 990 |
| 7/1 | 971 |
| 7/2 | 522 |
| 8/1 (short) | 160 |
| 8/2 (with short) | 1119(In) 959(Out) |
| 8/3 | 895 |
| 9/1 | 89 |
| 10/1 | 1042 |
| 10/2 | 1455 |
| 10/3 | 679 |
| 10/4 | 242 |
| 11/1 (short) | 145 |
| 11/2 (with short) | 509(In) 364(Out) |
| 12/1 | 700 |
| 12/2 | 1111 |
| 12/3 | 679 |
| 12/4 | 606 |
| 13/1 | 831 |
| 14/1 (short) | 151 |
| 14/2 (with short) | 375(In) 224(Out) |
| 14/3 | 701 |
| 15/1 | 1206 |
| 15/2 | 903 |
| 15/3 | 1307 |
| 16/1 | 700 |
| 16/2 | 56 |
| 17/1 (short) | 33 |
| 17/2 (with short) | 456(In) 423(Out) |
| 17/3 | 403 |
| 18/1 | 1239 |
| 18/2 | 903 |

## Lane Saturation Flows

| Junction: Queen Elanor Gyratory | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A5076 Mere Way) | 3.50 | 0.00 | Y | Arm 3 Left | 20.00 | 2.1 % | 1962 | 1962 |
| | | | | Arm 4 Ahead | Inf | 97.9 % | | |
| 1/2 (A5076 Mere Way) | 3.50 | 0.00 | N | Arm 4 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A5076 Mere Way) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (A508 London Road) | 3.50 | 0.00 | Y | Arm 6 Left | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A508 London Road) | 3.50 | 0.00 | N | Arm 7 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 5/3 (A508 London Road) | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 9 Left | 30.00 | 36.3 % | 1945 | 1945 |
| | | | | Arm 10 Ahead | Inf | 63.7 % | | |
| 8/2 (A45 Southbound) | 3.65 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 8/3 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| 10/4 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| 11/1 (Hardingstone Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 (Hardingstone Lane Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 12/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 (Newport Pagnell Road) | 3.50 | 0.00 | Y | Arm 15 Ahead | Inf | 100.0 % | 1965 | 1965 |
| | | | | Arm 16 Left | 20.00 | 0.0 % | | |
| 14/2 (Newport Pagnell Road) | 3.50 | 0.00 | N | Arm 15 Ahead | 30.00 | 100.0 % | 2005 | 2005 |
| 14/3 (Newport Pagnell Road) | 3.50 | 0.00 | Y | Arm 15 Ahead | 50.00 | 100.0 % | 1908 | 1908 |
| 15/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 15/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 15/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 17/1 (A45 Northbound) | 3.65 | 0.00 | Y | Arm 18 U-Turn | Inf | 100.0 % | 1980 | 1980 |
| 17/2 (A45 Northbound) | 3.65 | 0.00 | N | Arm 2 Left | Inf | 100.0 % | 2120 | 2120 |
| 17/3 (A45 Northbound) | 3.65 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1980 | 1980 |
| 18/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 18/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 3: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | Tot. |
| Origin | A | 0 | 526 | 58 | 0 | 1191 | 238 | 2013 |
| | B | 460 | 0 | 0 | 31 | 36 | 150 | 677 |
| | C | 183 | 2 | 0 | 60 | 831 | 531 | 1607 |
| | D | 0 | 32 | 10 | 0 | 27 | 500 | 569 |
| | E | 1625 | 113 | 371 | 467 | 0 | 5 | 2581 |
| | F | 399 | 80 | 170 | 577 | 86 | 0 | 1312 |
| | Tot. | 2667 | 753 | 609 | 1135 | 2171 | 1424 | 8759 |

## Traffic Lane Flows

| Lane | Scenario 3:<br>2031 D1 Ref PM |
|---|---|
| 1/1 | 1249 |
| ½ (with short) | 1331(In) 1331(Out) |
| 1/3 (short) | 0 |
| 2/1 | 811 |
| 2/2 | 811 |
| 2/3 | 484 |
| 3/1 | 816 |
| 3/2 | 608 |
| 4/1 | 1447 |
| 4/2 | 1815 |
| 4/3 | 0 |
| 5/1 (short) | 399 |
| 5/2 (with short) | 649(In) 250(Out) |
| 5/3 | 663 |
| 6/1 | 1846 |
| 6/2 | 821 |
| 7/1 | 1244 |
| 7/2 | 663 |
| 8/1 (short) | 584 |
| 8/2 (with short) | 1322(In) 738(Out) |
| 8/3 | 691 |
| 9/1 | 753 |
| 10/1 | 1075 |
| 10/2 | 1325 |
| 10/3 | 529 |
| 10/4 | 238 |
| 11/1 (short) | 67 |
| 11/2 (with short) | 677(In) 610(Out) |
| 12/1 | 854 |
| 12/2 | 1004 |
| 12/3 | 529 |
| 12/4 | 848 |
| 13/1 | 609 |
| 14/1 (short) | 401 |
| 14/2 (with short) | 891(In) 490(Out) |
| 14/3 | 716 |
| 15/1 | 1125 |
| 15/2 | 1019 |
| 15/3 | 1564 |
| 16/1 | 914 |
| 16/2 | 220 |
| 17/1 (short) | 27 |
| 17/2 (with short) | 308(In) 281(Out) |
| 17/3 | 261 |
| 18/1 | 1152 |
| 18/2 | 1019 |

## Lane Saturation Flows

| Junction: Queen Elanor Gyratory | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A5076 Mere Way) | 3.50 | 0.00 | Y | Arm 3 Left | 20.00 | 0.4 % | 1964 | 1964 |
| | | | | Arm 4 Ahead | Inf | 99.6 % | | |
| 1/2 (A5076 Mere Way) | 3.50 | 0.00 | N | Arm 4 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A5076 Mere Way) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (A508 London Road) | 3.50 | 0.00 | Y | Arm 6 Left | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A508 London Road) | 3.50 | 0.00 | N | Arm 7 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 5/3 (A508 London Road) | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 9 Left | 30.00 | 90.1 % | 1895 | 1895 |
| | | | | Arm 10 Ahead | Inf | 9.9 % | | |
| 8/2 (A45 Southbound) | 3.65 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 8/3 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| 10/4 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| 11/1 (Hardingstone Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 (Hardingstone Lane Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 12/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 (Newport Pagnell Road) | 3.50 | 0.00 | Y | Arm 15 Ahead | Inf | 85.0 % | 1943 | 1943 |
| | | | | Arm 16 Left | 20.00 | 15.0 % | | |
| 14/2 (Newport Pagnell Road) | 3.50 | 0.00 | N | Arm 15 Ahead | 30.00 | 100.0 % | 2005 | 2005 |
| 14/3 (Newport Pagnell Road) | 3.50 | 0.00 | Y | Arm 15 Ahead | 50.00 | 100.0 % | 1908 | 1908 |
| 15/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 15/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 15/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 17/1 (A45 Northbound) | 3.65 | 0.00 | Y | Arm 18 U-Turn | Inf | 100.0 % | 1980 | 1980 |
| 17/2 (A45 Northbound) | 3.65 | 0.00 | N | Arm 2 Left | Inf | 100.0 % | 2120 | 2120 |
| 17/3 (A45 Northbound) | 3.65 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1980 | 1980 |
| 18/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 18/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 4: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | Tot. |
| Origin | A | 0 | 553 | 57 | 0 | 1202 | 201 | 2013 |
| | B | 409 | 0 | 0 | 29 | 30 | 150 | 618 |
| | C | 118 | 0 | 0 | 52 | 871 | 559 | 1600 |
| | D | 0 | 33 | 19 | 0 | 49 | 633 | 734 |
| | E | 1581 | 95 | 431 | 435 | 0 | 5 | 2547 |
| | F | 384 | 89 | 152 | 622 | 79 | 0 | 1326 |
| | Tot. | 2492 | 770 | 659 | 1138 | 2231 | 1548 | 8838 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 J3 Dev PM |
|---|---|
| 1/1 | 1236 |
| ½ (with short) | 1311(In) 1311(Out) |
| 1/3 | 0 |
| 2/1 | 893 |
| 2/2 | 837 |
| 2/3 | 392 |
| 3/1 | 898 |
| 3/2 | 650 |
| 4/1 | 1418 |
| 4/2 | 1703 |
| 4/3 | 0 |
| 5/1 | 384 |
| 5/2 (with short) | 758(In) 374(Out) |
| 5/3 | 568 |
| 6/1 | 1802 |
| 6/2 | 690 |
| 7/1 | 1387 |
| 7/2 | 568 |
| 8/1 | 610 |
| 8/2 (with short) | 1337(In) 727(Out) |
| 8/3 | 676 |
| 9/1 | 770 |
| 10/1 | 1227 |
| 10/2 | 1216 |
| 10/3 | 554 |
| 10/4 | 201 |
| 11/1 | 59 |
| 11/2 (with short) | 618(In) 559(Out) |
| 12/1 | 927 |
| 12/2 | 916 |
| 12/3 | 554 |
| 12/4 | 760 |
| 13/1 | 659 |
| 14/1 | 443 |
| 14/2 (with short) | 923(In) 480(Out) |
| 14/3 | 677 |
| 15/1 | 1148 |
| 15/2 | 1034 |
| 15/3 | 1437 |
| 16/1 | 979 |
| 16/2 | 159 |
| 17/1 | 49 |
| 17/2 (with short) | 397(In) 348(Out) |
| 17/3 | 337 |
| 18/1 | 1197 |
| 18/2 | 1034 |

## Lane Saturation Flows

| Junction: Queen Elanor Gyratory | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A5076 Mere Way) | 3.50 | 0.00 | Y | Arm 3 Left | 20.00 | 0.4 % | 1964 | 1964 |
| | | | | Arm 4 Ahead | Inf | 99.6 % | | |
| 1/2 (A5076 Mere Way) | 3.50 | 0.00 | N | Arm 4 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A5076 Mere Way) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 0.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (A508 London Road) | 3.50 | 0.00 | Y | Arm 6 Left | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A508 London Road) | 3.50 | 0.00 | N | Arm 7 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 5/3 (A508 London Road) | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 9 Left | 30.00 | 90.7 % | 1894 | 1894 |
| | | | | Arm 10 Ahead | Inf | 9.3 % | | |
| 8/2 (A45 Southbound) | 3.65 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 8/3 (A45 Southbound) | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| 10/4 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| 11/1 (Hardingstone Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 (Hardingstone Lane Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 12/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 (Newport Pagnell Road) | 3.50 | 0.00 | Y | Arm 15 Ahead | Inf | 88.3 % | 1948 | 1948 |
| | | | | Arm 16 Left | 20.00 | 11.7 % | | |
| 14/2 (Newport Pagnell Road) | 3.50 | 0.00 | N | Arm 15 Ahead | 30.00 | 100.0 % | 2005 | 2005 |
| 14/3 (Newport Pagnell Road) | 3.50 | 0.00 | Y | Arm 15 Ahead | 50.00 | 100.0 % | 1908 | 1908 |
| 15/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 15/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 15/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 17/1 (A45 Northbound) | 3.65 | 0.00 | Y | Arm 18 U-Turn | Inf | 100.0 % | 1980 | 1980 |
| 17/2 (A45 Northbound) | 3.65 | 0.00 | N | Arm 2 Left | Inf | 100.0 % | 2120 | 2120 |
| 17/3 (A45 Northbound) | 3.65 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1980 | 1980 |
| 18/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 18/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')
**C1 - Queen Elanor A B**

## Stage Timings

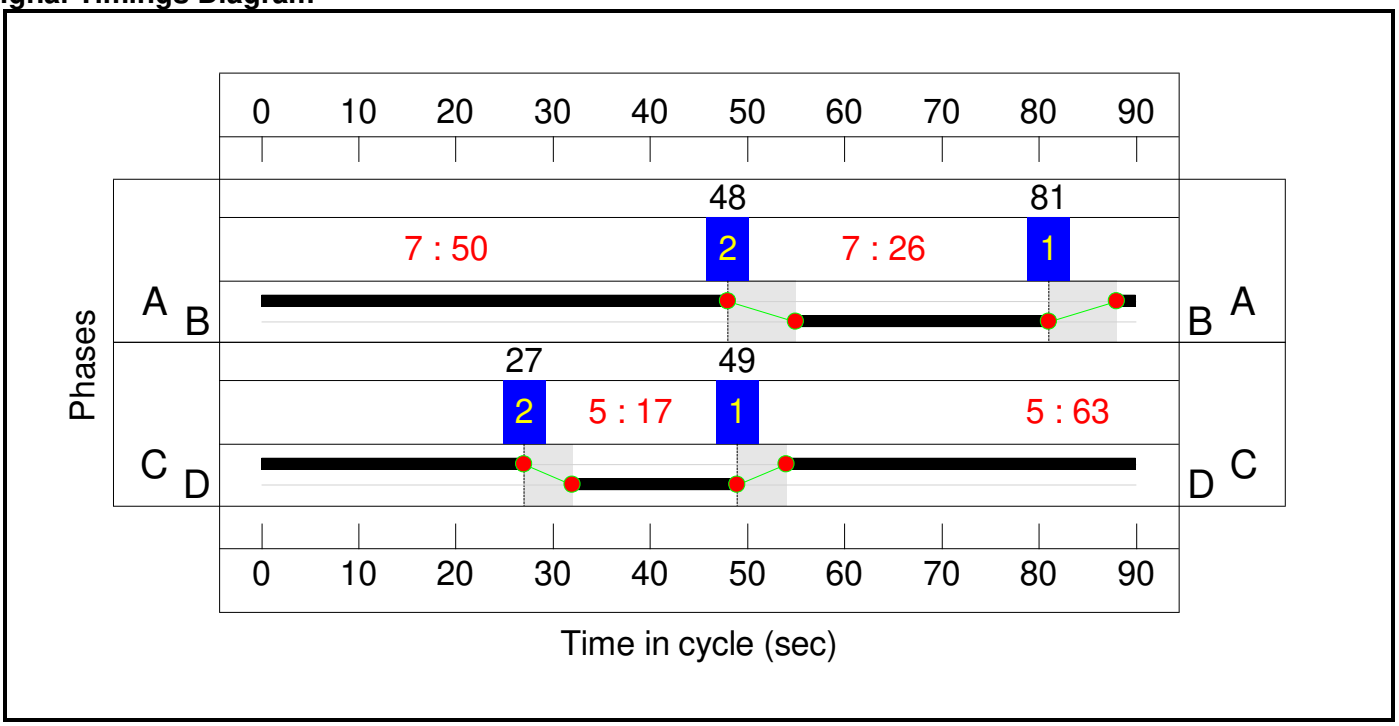
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 50 | 26 |
| Change Point | 81 | 48 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 63 | 17 |
| Change Point | 49 | 27 |

**Signal Timings Diagram**




**C2 - Queen Elanor C D**

## Stage Timings

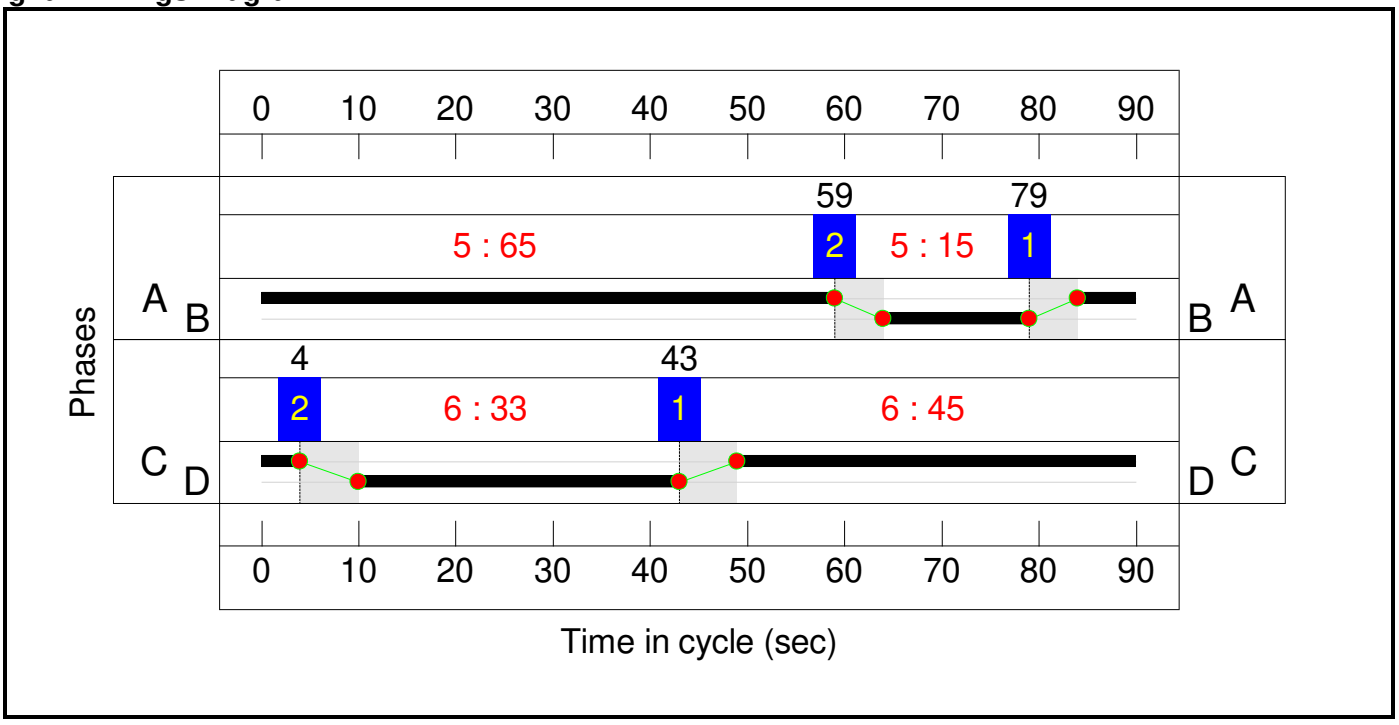
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 65 | 15 |
| Change Point | 79 | 59 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 45 | 33 |
| Change Point | 43 | 4 |

**Signal Timings Diagram**



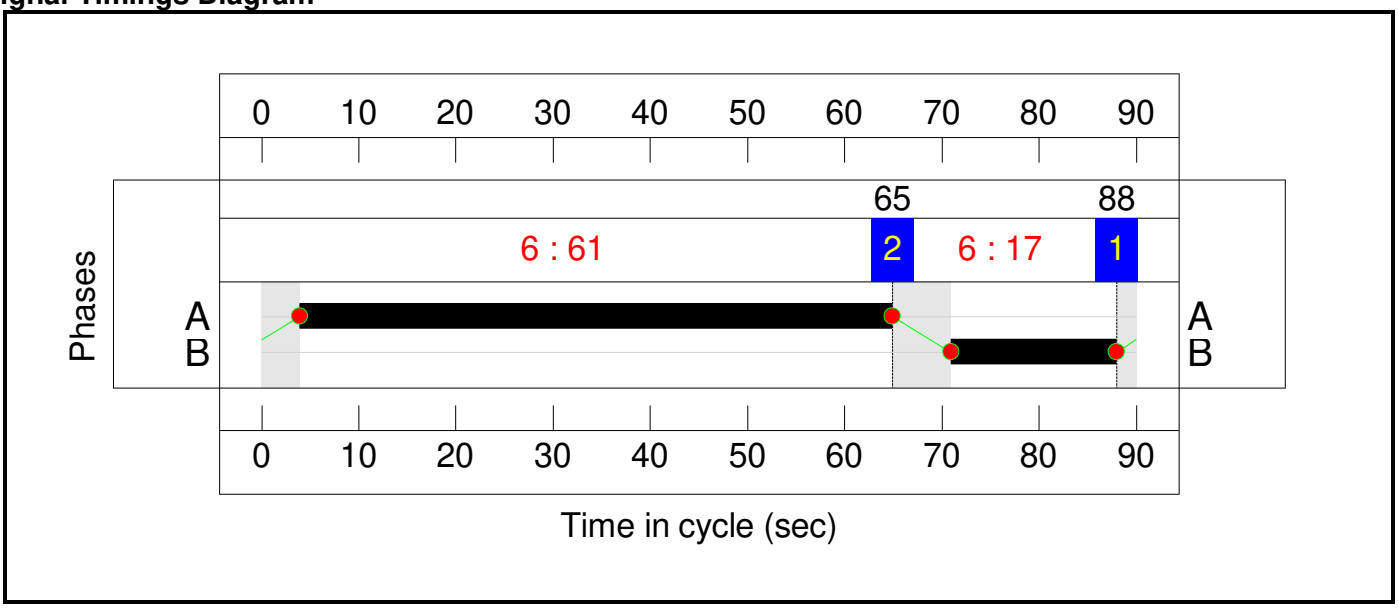
**C3 - London Road**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 61 | 17 |
| Change Point | 88 | 65 |

### Signal Timings Diagram



## 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: Queen Elanor Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **164.3%** |
| **Queen Elanor Gyratory** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **164.3%** |
| 1/1 | A5076 Mere Way Left Ahead | U | 2:2 | N/A | C2:D | | 1 | 33 | - | 1192 | 1965 | 742 | 160.6% |
| 1/2+1/3 | A5076 Mere Way Ahead | U | 2:2 | N/A | C2:D | | 1 | 33 | - | 1258 | 2105:1965 | 787+0 | 159.8 : 0.0% |
| 2/1 | Ahead | U | 2:2 | N/A | C2:C | | 1 | 45 | - | 912 | 1900 | 971 | 73.8% |
| 2/2 | Ahead Right | U | 2:2 | N/A | C2:C | | 1 | 45 | - | 859 | 1900 | 971 | 71.1% |
| 2/3 | Right | U | 2:2 | N/A | C2:C | | 1 | 45 | - | 363 | 1900 | 971 | 30.0% |
| 4/1 | Ahead | U | 3:1 | N/A | C3:A | | 1 | 61 | - | 1260 | 1900 | 1309 | 61.2% |
| 4/2 | Ahead Right | U | 3:1 | N/A | C3:A | | 1 | 61 | - | 1621 | 1900 | 1309 | 82.5% |
| 4/3 | Right | U | 3:1 | N/A | C3:A | | 1 | 61 | - | 0 | 1900 | 1309 | 0.0% |
| 5/2+5/1 | A508 London Road Left Ahead | U | 3:1 | N/A | C3:B | | 1 | 17 | - | 673 | 2105:1965 | 421+166 | 114.7 : 114.7% |
| 5/3 | A508 London Road Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 490 | 1965 | 590 | 83.1% |
| 7/1 | Ahead Right | U | 1:1 | N/A | C1:A | | 1 | 50 | - | 1168 | 1900 | 1077 | 78.9% |
| 7/2 | Right | U | 1:1 | N/A | C1:A | | 1 | 50 | - | 490 | 1900 | 1077 | 45.5% |
| 8/2+8/1 | A45 Southbound Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 1138 | 2120:1945 | 636+138 | 147.0 : 147.0% |
| 8/3 | A45 Southbound Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 873 | 1980 | 594 | 147.0% |
| 10/3 | Right | U | N/A | N/A | - | | - | - | - | 570 | 3000 | 3000 | 13.1% |
| 10/4 | Right | U | N/A | N/A | - | | - | - | - | 323 | 3000 | 3000 | 7.3% |
| 11/2+11/1 | Hardingstone Lane Ahead Left | O | N/A | N/A | - | | - | - | - | 497 | Inf : Inf | 375+122 | 100.1 : 100.1% |
| 12/1 | Ahead | U | 1:2 | N/A | C1:C | | 1 | 63 | - | 670 | 1900 | 1351 | 43.8% |
| 12/2 | Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 63 | - | 1065 | 1900 | 1351 | 56.7% |
| 12/3 | Right | U | 1:2 | N/A | C1:C | | 1 | 63 | - | 570 | 1900 | 1351 | 29.2% |
| 12/4 | Right | U | 1:2 | N/A | C1:C | | 1 | 63 | - | 698 | 1900 | 1351 | 44.0% |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14/2+14/1 | Newport Pagnell Road Ahead Left | U | 1:2 | N/A | C1:D | | 1 | 17 | - | 280 | 2005:1965 | 400+263 | 42.3 : 42.3% |
| 14/3 | Newport Pagnell Road Ahead | U | 1:2 | N/A | C1:D | | 1 | 17 | - | 627 | 1908 | 382 | 164.3% |
| 15/1 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 65 | - | 1126 | 1900 | 1393 | 59.4% |
| 15/2 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 65 | - | 739 | 1900 | 1393 | 40.4% |
| 15/3 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 65 | - | 1325 | 1900 | 1393 | 70.0% |
| 17/2+17/1 | A45 Northbound Left U-Turn | U | 2:1 | N/A | C2:B | | 1 | 15 | - | 445 | 2120:1980 | 371+27 | 111.8 : 111.8% |
| 17/3 | A45 Northbound Left | U | 2:1 | N/A | C2:B | | 1 | 15 | - | 394 | 1980 | 352 | 111.9% |

| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay ( | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 1192 | 742 | - | - | - | 28.2 | 226.2 | - | 254.3 | 768.2 | 41.0 | 226.2 | 267.2 |
| 1/2+1/3 | 1258 | 787 | - | - | - | 29.6 | 236.6 | - | 266.2 | 761.8 | 46.4 | 236.6 | 283.0 |
| 2/1 | 717 | 717 | - | - | - | 2.0 | 1.4 | - | 3.4 | 16.9 | 7.2 | 1.4 | 8.6 |
| 2/2 | 691 | 691 | - | - | - | 2.1 | 1.2 | - | 3.3 | 17.3 | 7.2 | 1.2 | 8.5 |
| 2/3 | 292 | 292 | - | - | - | 1.3 | 0.2 | - | 1.5 | 18.9 | 4.4 | 0.2 | 4.6 |
| 4/1 | 800 | 800 | - | - | - | 0.2 | 0.8 | - | 1.0 | 4.4 | 0.6 | 0.8 | 1.4 |
| 4/2 | 1079 | 1079 | - | - | - | 0.6 | 2.3 | - | 2.9 | 9.7 | 10.7 | 2.3 | 13.0 |
| 4/3 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2+5/1 | 673 | 611 | - | - | - | 8.4 | 46.8 | - | 55.2 | 295.3 | 13.7 | 46.8 | 60.5 |
| 5/3 | 490 | 490 | - | - | - | 4.0 | 2.4 | - | 6.3 | 46.7 | 11.3 | 2.4 | 13.6 |
| 7/1 | 850 | 850 | - | - | - | 3.1 | 1.8 | - | 5.0 | 21.1 | 14.1 | 1.8 | 15.9 |
| 7/2 | 490 | 490 | - | - | - | 3.2 | 0.4 | - | 3.6 | 26.3 | 12.2 | 0.4 | 12.7 |
| 8/2+8/1 | 1138 | 774 | - | - | - | 24.6 | 183.5 | - | 208.1 | 658.3 | 40.1 | 183.5 | 223.6 |
| 8/3 | 873 | 594 | - | - | - | 21.7 | 141.0 | - | 162.7 | 671.1 | 34.3 | 141.0 | 175.4 |
| 10/3 | 394 | 394 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.7 | 0.0 | 0.1 | 0.1 |
| 10/4 | 220 | 220 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1 | 497 | 497 | 993 | 0 | 0 | 2.1 | 11.3 | - | 13.4 | 97.4 | 21.4 | 11.3 | 32.7 |
| 12/1 | 592 | 592 | - | - | - | 0.9 | 0.4 | - | 1.3 | 7.7 | 4.0 | 0.4 | 4.4 |
| 12/2 | 766 | 766 | - | - | - | 0.6 | 0.7 | - | 1.2 | 5.8 | 10.9 | 0.7 | 11.6 |
| 12/3 | 394 | 394 | - | - | - | 0.0 | 0.2 | - | 0.2 | 2.1 | 0.1 | 0.2 | 0.3 |
| 12/4 | 594 | 594 | - | - | - | 0.8 | 0.4 | - | 1.2 | 7.3 | 8.2 | 0.4 | 8.6 |
| 14/2+14/1 | 280 | 280 | - | - | - | 2.4 | 0.4 | - | 2.8 | 35.8 | 3.7 | 0.4 | 4.0 |
| 14/3 | 627 | 382 | - | - | - | 15.6 | 124.0 | - | 139.6 | 801.6 | 21.8 | 124.0 | 145.8 |
| 15/1 | 827 | 827 | - | - | - | 2.2 | 0.7 | - | 2.9 | 12.6 | 17.7 | 0.7 | 18.5 |
| 15/2 | 563 | 563 | - | - | - | 0.5 | 0.3 | - | 0.8 | 5.3 | 8.0 | 0.3 | 8.4 |
| 15/3 | 976 | 976 | - | - | - | 2.6 | 1.2 | - | 3.8 | 13.9 | 14.6 | 1.2 | 15.7 |
| 17/2+17/1 | 445 | 398 | - | - | - | 6.0 | 27.5 | - | 33.5 | 270.9 | 12.4 | 27.5 | 39.9 |
| 17/3 | 394 | 352 | - | - | - | 5.5 | 24.9 | - | 30.4 | 277.9 | 11.1 | 24.9 | 36.0 |

| | | | | | |
|---|---|---|---|---|---|
| C1 - Queen Elanor A B | Stream: 1 PRC for Signalled Lanes (%): | -63.3 | Total Delay for Signalled Lanes (pcuHr): | 385.75 | Cycle Time (s): 90 |
| C1 - Queen Elanor A B | Stream: 2 PRC for Signalled Lanes (%): | -82.6 | Total Delay for Signalled Lanes (pcuHr): | 146.34 | Cycle Time (s): 90 |
| C2 - Queen Elanor C D | Stream: 1 PRC for Signalled Lanes (%): | -24.4 | Total Delay for Signalled Lanes (pcuHr): | 71.39 | Cycle Time (s): 90 |
| C2 - Queen Elanor C D | Stream: 2 PRC for Signalled Lanes (%): | -78.4 | Total Delay for Signalled Lanes (pcuHr): | 528.78 | Cycle Time (s): 90 |
| C3 - London Road | Stream: 1 PRC for Signalled Lanes (%): | -27.5 | Total Delay for Signalled Lanes (pcuHr): | 59.09 | Cycle Time (s): 90 |
| | PRC Over All Lanes (%): | -82.6 | Total Delay Over All Lanes(pcuHr): | 1204.90 | |

**Scenario 2: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')
**C1 - Queen Elanor A B**

## Stage Timings

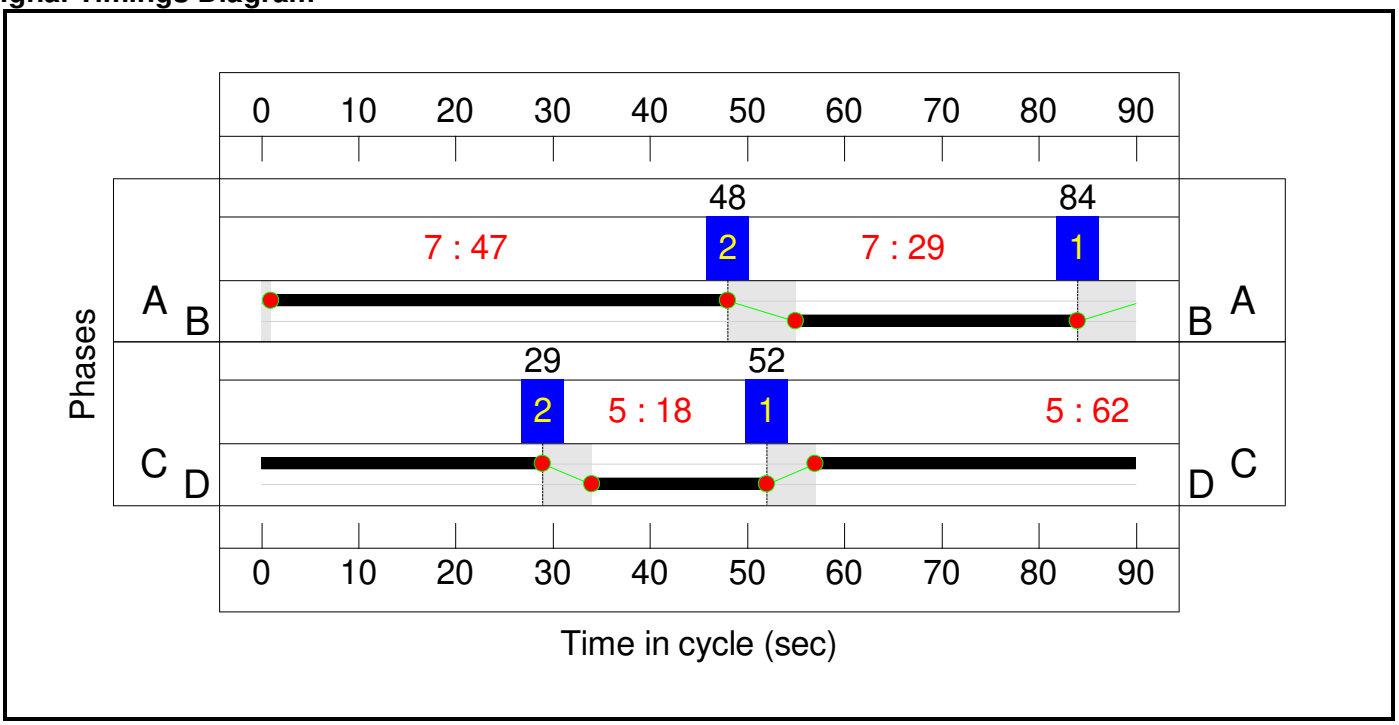
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 47 | 29 |
| Change Point | 84 | 48 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 62 | 18 |
| Change Point | 52 | 29 |

## Signal Timings Diagram




**C2 - Queen Elanor C D**

## Stage Timings

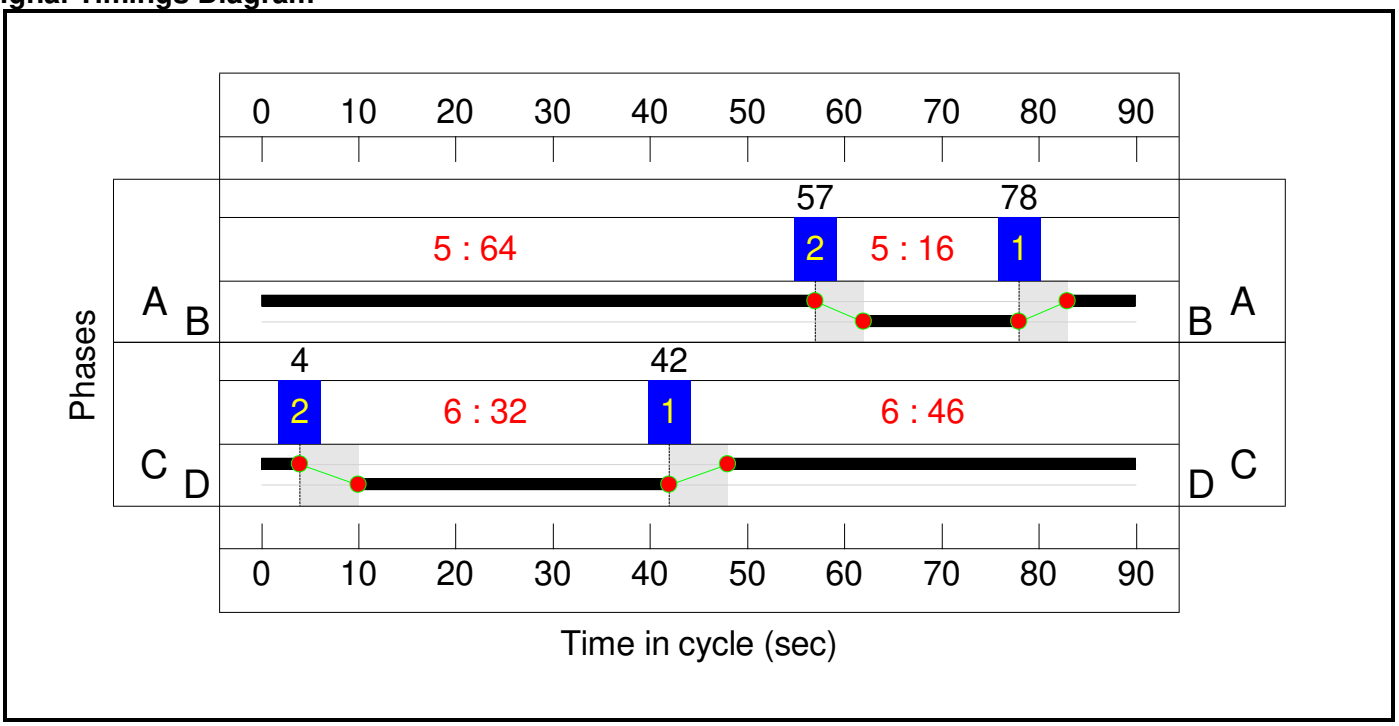
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 64 | 16 |
| Change Point | 78 | 57 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 46 | 32 |
| Change Point | 42 | 4 |

**Signal Timings Diagram**



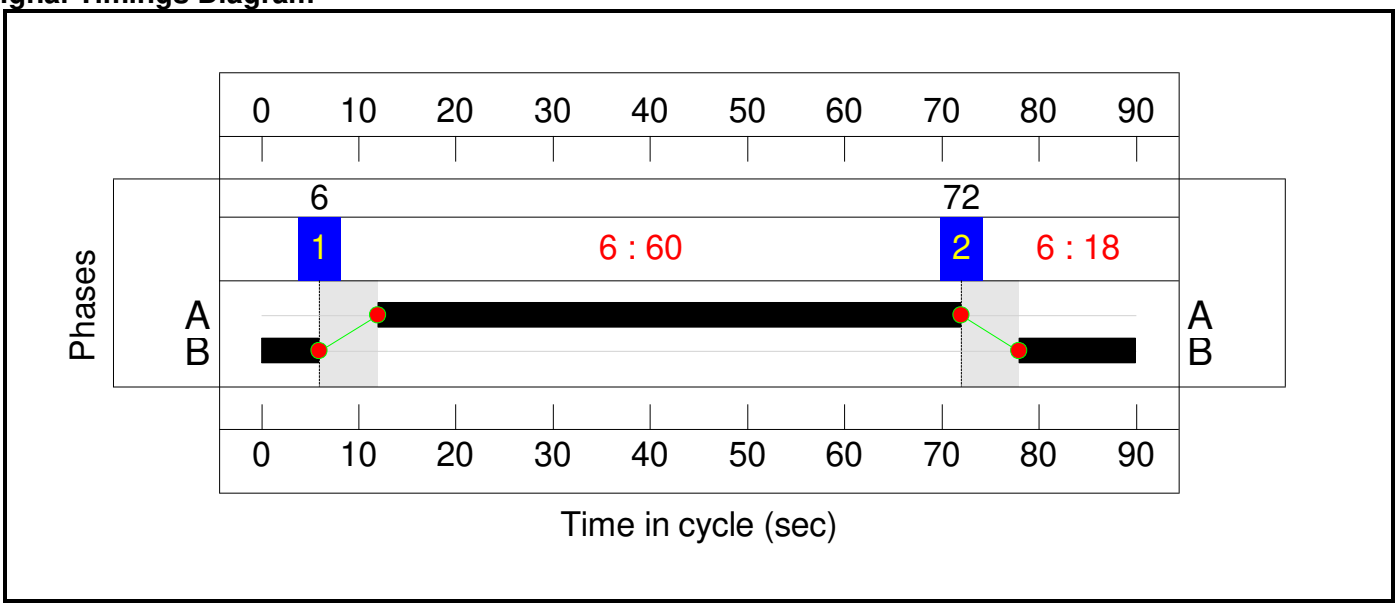

**C3 - London Road**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 60 | 18 |
| Change Point | 6 | 72 |

**Signal Timings Diagram**



## 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: Queen Elanor Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **174.0%** |
| **Queen Elanor Gyratory** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **174.0%** |
| 1/1 | A5076 Mere Way Left Ahead | U | 2:2 | N/A | C2:D | | 1 | 32 | - | 1181 | 1962 | 719 | 164.2% |
| 1/2+1/3 | A5076 Mere Way Ahead | U | 2:2 | N/A | C2:D | | 1 | 32 | - | 1250 | 2105:1965 | 764+0 | 163.6 : 0.0% |
| 2/1 | Ahead | U | 2:2 | N/A | C2:C | | 1 | 46 | - | 935 | 1900 | 992 | 74.9% |
| 2/2 | Ahead Right | U | 2:2 | N/A | C2:C | | 1 | 46 | - | 886 | 1900 | 992 | 72.2% |
| 2/3 | Right | U | 2:2 | N/A | C2:C | | 1 | 46 | - | 312 | 1900 | 992 | 24.9% |
| 4/1 | Ahead | U | 3:1 | N/A | C3:A | | 1 | 60 | - | 1266 | 1900 | 1288 | 60.8% |
| 4/2 | Ahead Right | U | 3:1 | N/A | C3:A | | 1 | 60 | - | 1562 | 1900 | 1288 | 78.5% |
| 4/3 | Right | U | 3:1 | N/A | C3:A | | 1 | 60 | - | 0 | 1900 | 1288 | 0.0% |
| 5/2+5/1 | A508 London Road Left Ahead | U | 3:1 | N/A | C3:B | | 1 | 18 | - | 622 | 2105:1965 | 444+248 | 89.8 : 89.8% |
| 5/3 | A508 London Road Ahead | U | 1:1 | N/A | C1:B | | 1 | 29 | - | 522 | 1965 | 655 | 79.7% |
| 7/1 | Ahead Right | U | 1:1 | N/A | C1:A | | 1 | 47 | - | 971 | 1900 | 1013 | 73.9% |
| 7/2 | Right | U | 1:1 | N/A | C1:A | | 1 | 47 | - | 522 | 1900 | 1013 | 51.5% |
| 8/2+8/1 | A45 Southbound Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 29 | - | 1119 | 2120:1945 | 707+118 | 135.7 : 135.7% |
| 8/3 | A45 Southbound Ahead | U | 1:1 | N/A | C1:B | | 1 | 29 | - | 895 | 1980 | 660 | 135.6% |
| 10/3 | Right | U | N/A | N/A | - | | - | - | - | 679 | 3000 | 3000 | 16.9% |
| 10/4 | Right | U | N/A | N/A | - | | - | - | - | 242 | 3000 | 3000 | 5.9% |
| 11/2+11/1 | Hardingstone Lane Ahead Left | O | N/A | N/A | - | | - | - | - | 509 | Inf : Inf | 359+143 | 101.5 : 101.5% |
| 12/1 | Ahead | U | 1:2 | N/A | C1:C | | 1 | 62 | - | 700 | 1900 | 1330 | 47.5% |
| 12/2 | Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 62 | - | 1111 | 1900 | 1330 | 64.6% |
| 12/3 | Right | U | 1:2 | N/A | C1:C | | 1 | 62 | - | 679 | 1900 | 1330 | 38.2% |
| 12/4 | Right | U | 1:2 | N/A | C1:C | | 1 | 62 | - | 606 | 1900 | 1330 | 40.4% |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14/2+14/1 | Newport Pagnell Road Ahead Left | U | 1:2 | N/A | C1:D | | 1 | 18 | - | 375 | 2005:1965 | 413+279 | 54.2 : 54.2% |
| 14/3 | Newport Pagnell Road Ahead | U | 1:2 | N/A | C1:D | | 1 | 18 | - | 701 | 1908 | 403 | 174.0% |
| 15/1 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 64 | - | 1206 | 1900 | 1372 | 69.5% |
| 15/2 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 64 | - | 903 | 1900 | 1372 | 53.3% |
| 15/3 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 64 | - | 1307 | 1900 | 1372 | 68.5% |
| 17/2+17/1 | A45 Northbound Left U-Turn | U | 2:1 | N/A | C2:B | | 1 | 16 | - | 456 | 2120:1980 | 392+31 | 107.9 : 107.9% |
| 17/3 | A45 Northbound Left | U | 2:1 | N/A | C2:B | | 1 | 16 | - | 403 | 1980 | 374 | 107.8% |

| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay ( | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 1181 | 719 | - | - | - | 28.8 | 232.1 | - | 260.9 | 795.3 | 41.1 | 232.1 | 273.1 |
| 1/2+1/3 | 1250 | 764 | - | - | - | 30.4 | 244.3 | - | 274.7 | 791.1 | 46.5 | 244.3 | 290.8 |
| 2/1 | 743 | 743 | - | - | - | 1.8 | 1.5 | - | 3.3 | 15.9 | 6.4 | 1.5 | 7.9 |
| 2/2 | 716 | 716 | - | - | - | 1.9 | 1.3 | - | 3.2 | 16.1 | 6.4 | 1.3 | 7.7 |
| 2/3 | 247 | 247 | - | - | - | 1.6 | 0.2 | - | 1.7 | 25.4 | 4.5 | 0.2 | 4.7 |
| 4/1 | 783 | 783 | - | - | - | 0.1 | 0.8 | - | 0.8 | 3.8 | 0.3 | 0.8 | 1.1 |
| 4/2 | 1011 | 1011 | - | - | - | 0.4 | 1.8 | - | 2.2 | 7.9 | 10.1 | 1.8 | 11.9 |
| 4/3 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2+5/1 | 622 | 622 | - | - | - | 5.8 | 4.0 | - | 9.7 | 56.4 | 9.6 | 4.0 | 13.6 |
| 5/3 | 522 | 522 | - | - | - | 3.9 | 1.9 | - | 5.9 | 40.4 | 11.7 | 1.9 | 13.7 |
| 7/1 | 749 | 749 | - | - | - | 2.2 | 1.4 | - | 3.6 | 17.2 | 12.9 | 1.4 | 14.3 |
| 7/2 | 522 | 522 | - | - | - | 3.8 | 0.5 | - | 4.3 | 29.8 | 13.0 | 0.5 | 13.6 |
| 8/2+8/1 | 1119 | 825 | - | - | - | 21.2 | 149.1 | - | 170.3 | 548.0 | 37.0 | 149.1 | 186.1 |
| 8/3 | 895 | 660 | - | - | - | 19.7 | 119.4 | - | 139.0 | 559.3 | 33.4 | 119.4 | 152.8 |
| 10/3 | 508 | 508 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.7 | 0.0 | 0.1 | 0.1 |
| 10/4 | 178 | 178 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1 | 509 | 504 | 1007 | 0 | 0 | 2.4 | 13.3 | - | 15.7 | 111.1 | 20.7 | 13.3 | 34.0 |
| 12/1 | 632 | 632 | - | - | - | 1.4 | 0.5 | - | 1.9 | 10.7 | 5.3 | 0.5 | 5.8 |
| 12/2 | 859 | 859 | - | - | - | 0.8 | 0.9 | - | 1.7 | 7.0 | 12.8 | 0.9 | 13.7 |
| 12/3 | 508 | 508 | - | - | - | 0.0 | 0.3 | - | 0.3 | 2.5 | 0.2 | 0.3 | 0.5 |
| 12/4 | 537 | 537 | - | - | - | 0.9 | 0.3 | - | 1.2 | 8.2 | 8.0 | 0.3 | 8.3 |
| 14/2+14/1 | 375 | 375 | - | - | - | 3.2 | 0.6 | - | 3.8 | 36.7 | 4.9 | 0.6 | 5.5 |
| 14/3 | 701 | 403 | - | - | - | 18.7 | 150.3 | - | 169.0 | 867.9 | 25.6 | 150.3 | 175.9 |
| 15/1 | 954 | 954 | - | - | - | 2.4 | 1.1 | - | 3.6 | 13.4 | 20.1 | 1.1 | 21.3 |
| 15/2 | 732 | 732 | - | - | - | 0.8 | 0.6 | - | 1.4 | 6.9 | 12.5 | 0.6 | 13.1 |
| 15/3 | 940 | 940 | - | - | - | 3.1 | 1.1 | - | 4.2 | 16.2 | 14.9 | 1.1 | 16.0 |
| 17/2+17/1 | 456 | 423 | - | - | - | 5.6 | 21.8 | - | 27.4 | 216.7 | 12.1 | 21.8 | 34.0 |
| 17/3 | 403 | 374 | - | - | - | 5.0 | 19.6 | - | 24.6 | 219.6 | 10.8 | 19.6 | 30.4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - Queen Elanor A B | Stream: 1 | PRC for Signalled Lanes (%): | -50.8 | Total Delay for Signalled Lanes (pcuHr): | 323.11 | Cycle Time (s): 90 |
| C1 - Queen Elanor A B | Stream: 2 | PRC for Signalled Lanes (%): | -93.4 | Total Delay for Signalled Lanes (pcuHr): | 177.94 | Cycle Time (s): 90 |
| C2 - Queen Elanor C D | Stream: 1 | PRC for Signalled Lanes (%): | -19.8 | Total Delay for Signalled Lanes (pcuHr): | 61.20 | Cycle Time (s): 90 |
| C2 - Queen Elanor C D | Stream: 2 | PRC for Signalled Lanes (%): | -82.4 | Total Delay for Signalled Lanes (pcuHr): | 543.83 | Cycle Time (s): 90 |
| C3 - London Road | Stream: 1 | PRC for Signalled Lanes (%): | 0.2 | Total Delay for Signalled Lanes (pcuHr): | 12.78 | Cycle Time (s): 90 |
| | | PRC Over All Lanes (%): | -93.4 | Total Delay Over All Lanes(pcuHr): | 1134.71 | |

**Scenario 3: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')
**C1 - Queen Elanor A B**

## Stage Timings

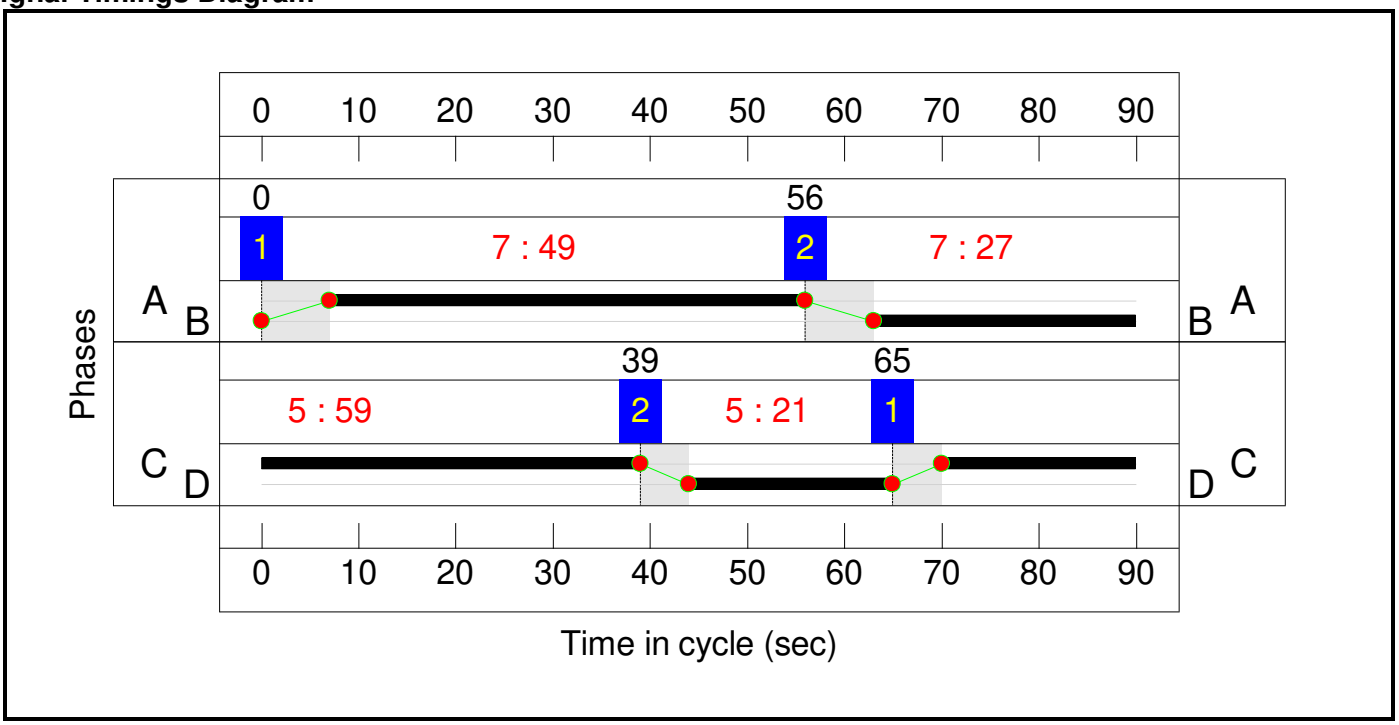
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 49 | 27 |
| Change Point | 0 | 56 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 59 | 21 |
| Change Point | 65 | 39 |

## Signal Timings Diagram




**C2 - Queen Elanor C D**

## Stage Timings

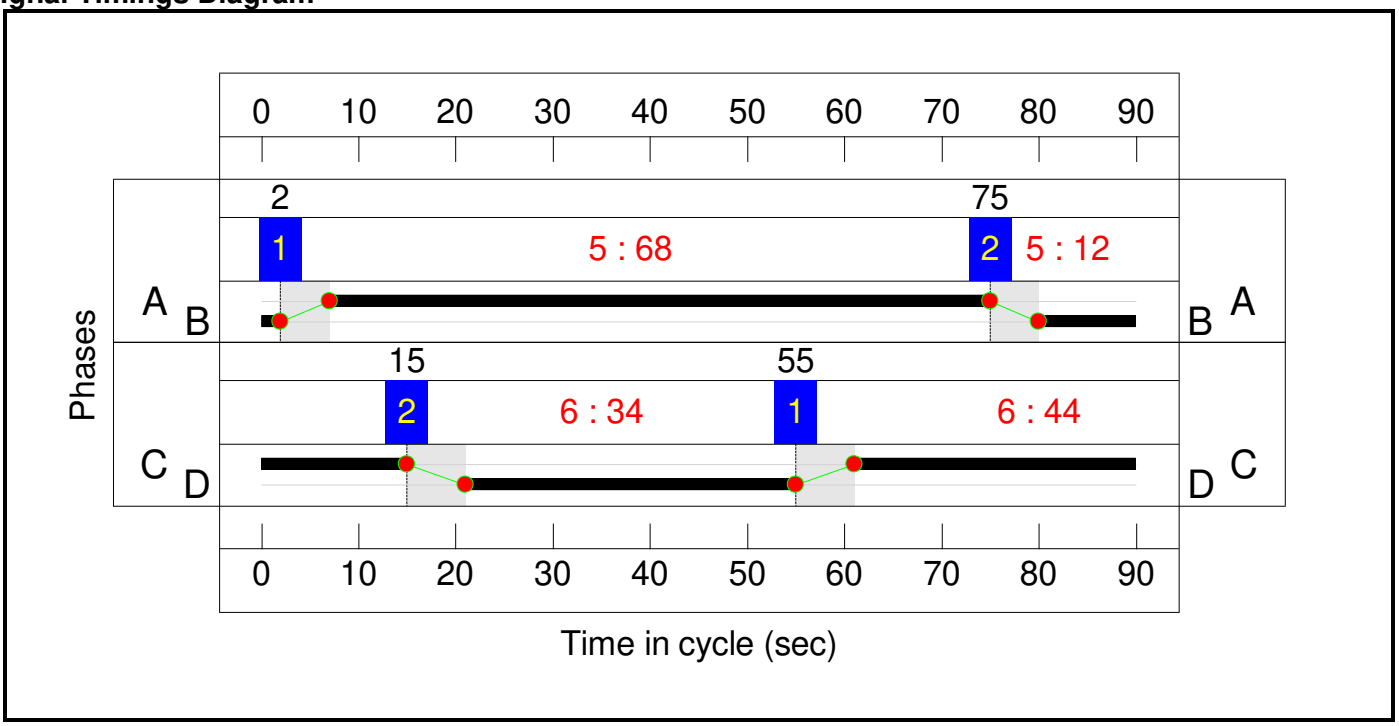
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 68 | 12 |
| Change Point | 2 | 75 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 44 | 34 |
| Change Point | 55 | 15 |

**Signal Timings Diagram**



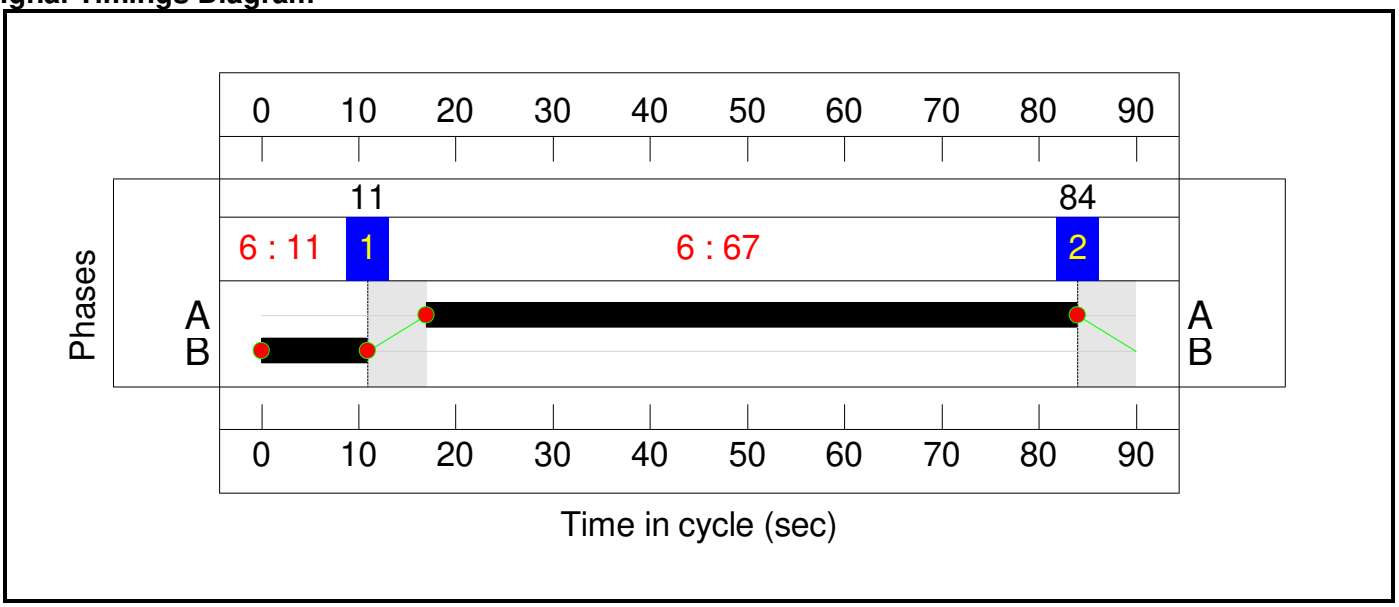

**C3 - London Road**

**Stage Timings**

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 67 | 11 |
| Change Point | 11 | 84 |

**Signal Timings Diagram**



## 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: Queen Elanor Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **165.9%** |
| **Queen Elanor Gyratory** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **165.9%** |
| 1/1 | A5076 Mere Way Left Ahead | U | 2:2 | N/A | C2:D | | 1 | 34 | - | 1249 | 1964 | 764 | 163.5% |
| 1/2+1/3 | A5076 Mere Way Ahead | U | 2:2 | N/A | C2:D | | 1 | 34 | - | 1331 | 2105:1965 | 811+0 | 164.2 : 0.0% |
| 2/1 | Ahead | U | 2:2 | N/A | C2:C | | 1 | 44 | - | 811 | 1900 | 950 | 68.8% |
| 2/2 | Ahead Right | U | 2:2 | N/A | C2:C | | 1 | 44 | - | 811 | 1900 | 950 | 65.3% |
| 2/3 | Right | U | 2:2 | N/A | C2:C | | 1 | 44 | - | 484 | 1900 | 950 | 33.1% |
| 4/1 | Ahead | U | 3:1 | N/A | C3:A | | 1 | 67 | - | 1447 | 1900 | 1436 | 61.7% |
| 4/2 | Ahead Right | U | 3:1 | N/A | C3:A | | 1 | 67 | - | 1815 | 1900 | 1436 | 78.4% |
| 4/3 | Right | U | 3:1 | N/A | C3:A | | 1 | 67 | - | 0 | 1900 | 1436 | 0.0% |
| 5/2+5/1 | A508 London Road Left Ahead | U | 3:1 | N/A | C3:B | | 1 | 11 | - | 649 | 2105:1965 | 268+262 | 93.2 : 152.3% |
| 5/3 | A508 London Road Ahead | U | 1:1 | N/A | C1:B | | 1 | 27 | - | 663 | 1965 | 611 | 108.5% |
| 7/1 | Ahead Right | U | 1:1 | N/A | C1:A | | 1 | 49 | - | 1244 | 1900 | 1056 | 82.6% |
| 7/2 | Right | U | 1:1 | N/A | C1:A | | 1 | 49 | - | 663 | 1900 | 1056 | 57.9% |
| 8/2+8/1 | A45 Southbound Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 27 | - | 1322 | 2120:1895 | 659+521 | 112.1 : 112.1% |
| 8/3 | A45 Southbound Ahead | U | 1:1 | N/A | C1:B | | 1 | 27 | - | 691 | 1980 | 616 | 112.2% |
| 10/3 | Right | U | N/A | N/A | - | | - | - | - | 529 | 3000 | 3000 | 15.8% |
| 10/4 | Right | U | N/A | N/A | - | | - | - | - | 238 | 3000 | 3000 | 7.1% |
| 11/2+11/1 | Hardingstone Lane Ahead Left | O | N/A | N/A | - | | - | - | - | 677 | Inf : Inf | 368+40 | 165.9 : 165.9% |
| 12/1 | Ahead | U | 1:2 | N/A | C1:C | | 1 | 59 | - | 854 | 1900 | 1267 | 49.9% |
| 12/2 | Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 59 | - | 1004 | 1900 | 1267 | 70.4% |
| 12/3 | Right | U | 1:2 | N/A | C1:C | | 1 | 59 | - | 529 | 1900 | 1267 | 37.4% |
| 12/4 | Right | U | 1:2 | N/A | C1:C | | 1 | 59 | - | 848 | 1900 | 1267 | 45.8% |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14/2+14/1 | Newport Pagnell Road Ahead Left | U | 1:2 | N/A | C1:D | | 1 | 21 | - | 891 | 2005:1943 | 448+367 | 109.3 : 109.3% |
| 14/3 | Newport Pagnell Road Ahead | U | 1:2 | N/A | C1:D | | 1 | 21 | - | 716 | 1908 | 466 | 153.5% |
| 15/1 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 68 | - | 1125 | 1900 | 1457 | 68.8% |
| 15/2 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 68 | - | 1019 | 1900 | 1457 | 63.3% |
| 15/3 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 68 | - | 1564 | 1900 | 1457 | 71.8% |
| 17/2+17/1 | A45 Northbound Left U-Turn | U | 2:1 | N/A | C2:B | | 1 | 12 | - | 308 | 2120:1980 | 304+29 | 92.4 : 92.4% |
| 17/3 | A45 Northbound Left | U | 2:1 | N/A | C2:B | | 1 | 12 | - | 261 | 1980 | 286 | 91.3% |

| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay ( | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 1249 | 764 | - | - | - | 29.4 | 243.9 | - | 273.3 | 787.8 | 44.4 | 243.9 | 288.3 |
| 1/2+1/3 | 1331 | 811 | - | - | - | 30.4 | 261.4 | - | 291.8 | 789.2 | 49.6 | 261.4 | 311.0 |
| 2/1 | 654 | 654 | - | - | - | 1.6 | 1.1 | - | 2.7 | 15.1 | 6.9 | 1.1 | 8.0 |
| 2/2 | 620 | 620 | - | - | - | 2.3 | 0.9 | - | 3.3 | 18.9 | 8.3 | 0.9 | 9.2 |
| 2/3 | 314 | 314 | - | - | - | 1.7 | 0.2 | - | 2.0 | 22.6 | 4.9 | 0.2 | 5.2 |
| 4/1 | 886 | 886 | - | - | - | 0.1 | 0.8 | - | 0.9 | 3.8 | 0.5 | 0.8 | 1.4 |
| 4/2 | 1125 | 1125 | - | - | - | 0.6 | 1.8 | - | 2.4 | 7.5 | 11.3 | 1.8 | 13.1 |
| 4/3 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2+5/1 | 649 | 512 | - | - | - | 13.6 | 71.1 | - | 84.7 | 469.7 | 15.3 | 71.1 | 86.4 |
| 5/3 | 663 | 611 | - | - | - | 8.5 | 31.2 | - | 39.6 | 215.1 | 18.6 | 31.2 | 49.8 |
| 7/1 | 872 | 872 | - | - | - | 3.3 | 2.3 | - | 5.6 | 23.1 | 13.5 | 2.3 | 15.8 |
| 7/2 | 611 | 611 | - | - | - | 4.2 | 0.7 | - | 4.8 | 28.5 | 15.3 | 0.7 | 16.0 |
| 8/2+8/1 | 1322 | 1180 | - | - | - | 16.3 | 75.5 | - | 91.8 | 249.9 | 25.6 | 75.5 | 101.1 |
| 8/3 | 691 | 616 | - | - | - | 9.9 | 41.6 | - | 51.6 | 268.8 | 20.4 | 41.6 | 62.1 |
| 10/3 | 474 | 474 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.7 | 0.0 | 0.1 | 0.1 |
| 10/4 | 212 | 212 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1 | 677 | 408 | 816 | 0 | 0 | 16.3 | 135.7 | - | 152.1 | 808.7 | 39.9 | 135.7 | 175.6 |
| 12/1 | 632 | 632 | - | - | - | 1.6 | 0.5 | - | 2.1 | 11.9 | 6.1 | 0.5 | 6.6 |
| 12/2 | 892 | 892 | - | - | - | 0.7 | 1.2 | - | 1.9 | 7.6 | 8.6 | 1.2 | 9.8 |
| 12/3 | 474 | 474 | - | - | - | 0.1 | 0.3 | - | 0.4 | 3.1 | 0.4 | 0.3 | 0.7 |
| 12/4 | 580 | 580 | - | - | - | 1.3 | 0.4 | - | 1.7 | 10.9 | 9.3 | 0.4 | 9.7 |
| 14/2+14/1 | 891 | 815 | - | - | - | 10.8 | 43.1 | - | 53.9 | 217.8 | 18.0 | 43.1 | 61.0 |
| 14/3 | 716 | 466 | - | - | - | 17.2 | 126.2 | - | 143.4 | 721.0 | 26.0 | 126.2 | 152.2 |
| 15/1 | 1001 | 1001 | - | - | - | 2.8 | 1.1 | - | 3.9 | 14.0 | 17.1 | 1.1 | 18.2 |
| 15/2 | 922 | 922 | - | - | - | 1.3 | 0.9 | - | 2.1 | 8.3 | 10.5 | 0.9 | 11.3 |
| 15/3 | 1046 | 1046 | - | - | - | 2.3 | 1.3 | - | 3.5 | 12.1 | 13.8 | 1.3 | 15.0 |
| 17/2+17/1 | 308 | 308 | - | - | - | 3.2 | 4.5 | - | 7.7 | 90.2 | 7.0 | 4.5 | 11.4 |
| 17/3 | 261 | 261 | - | - | - | 2.8 | 4.0 | - | 6.7 | 92.6 | 6.4 | 4.0 | 10.3 |

| | | | | | |
|---|---|---|---|---|---|
| C1 - Queen Elanor A B | Stream: 1 PRC for Signalled Lanes (%): | -24.6 | Total Delay for Signalled Lanes (pcuHr): | 193.42 | Cycle Time (s): 90 |
| C1 - Queen Elanor A B | Stream: 2 PRC for Signalled Lanes (%): | -70.6 | Total Delay for Signalled Lanes (pcuHr): | 203.44 | Cycle Time (s): 90 |
| C2 - Queen Elanor C D | Stream: 1 PRC for Signalled Lanes (%): | -2.7 | Total Delay for Signalled Lanes (pcuHr): | 23.98 | Cycle Time (s): 90 |
| C2 - Queen Elanor C D | Stream: 2 PRC for Signalled Lanes (%): | -82.4 | Total Delay for Signalled Lanes (pcuHr): | 573.09 | Cycle Time (s): 90 |
| C3 - London Road | Stream: 1 PRC for Signalled Lanes (%): | -69.2 | Total Delay for Signalled Lanes (pcuHr): | 87.96 | Cycle Time (s): 90 |
| | PRC Over All Lanes (%): | -84.4 | Total Delay Over All Lanes(pcuHr): | 1234.09 | |

**Scenario 4: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')
**C1 - Queen Elanor A B**

## Stage Timings

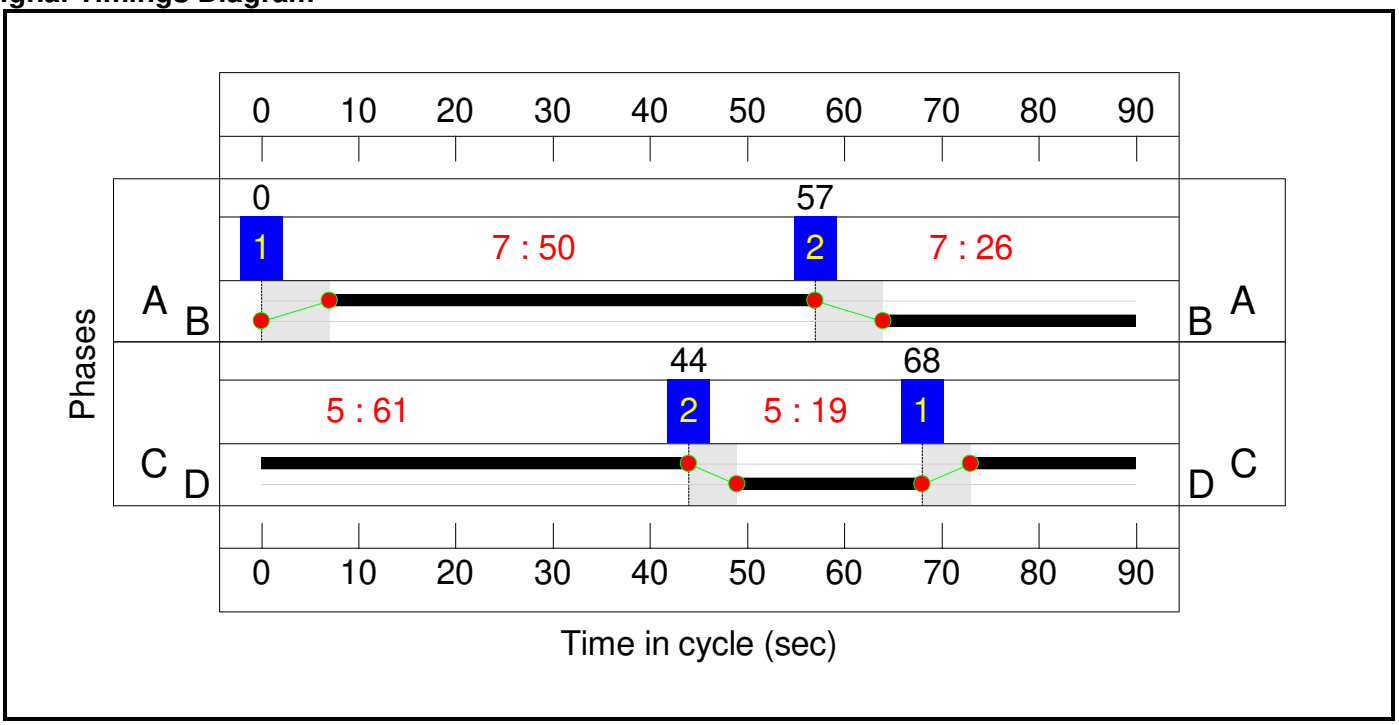
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 50 | 26 |
| Change Point | 0 | 57 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 61 | 19 |
| Change Point | 68 | 44 |

## Signal Timings Diagram




**C2 - Queen Elanor C D**

## Stage Timings

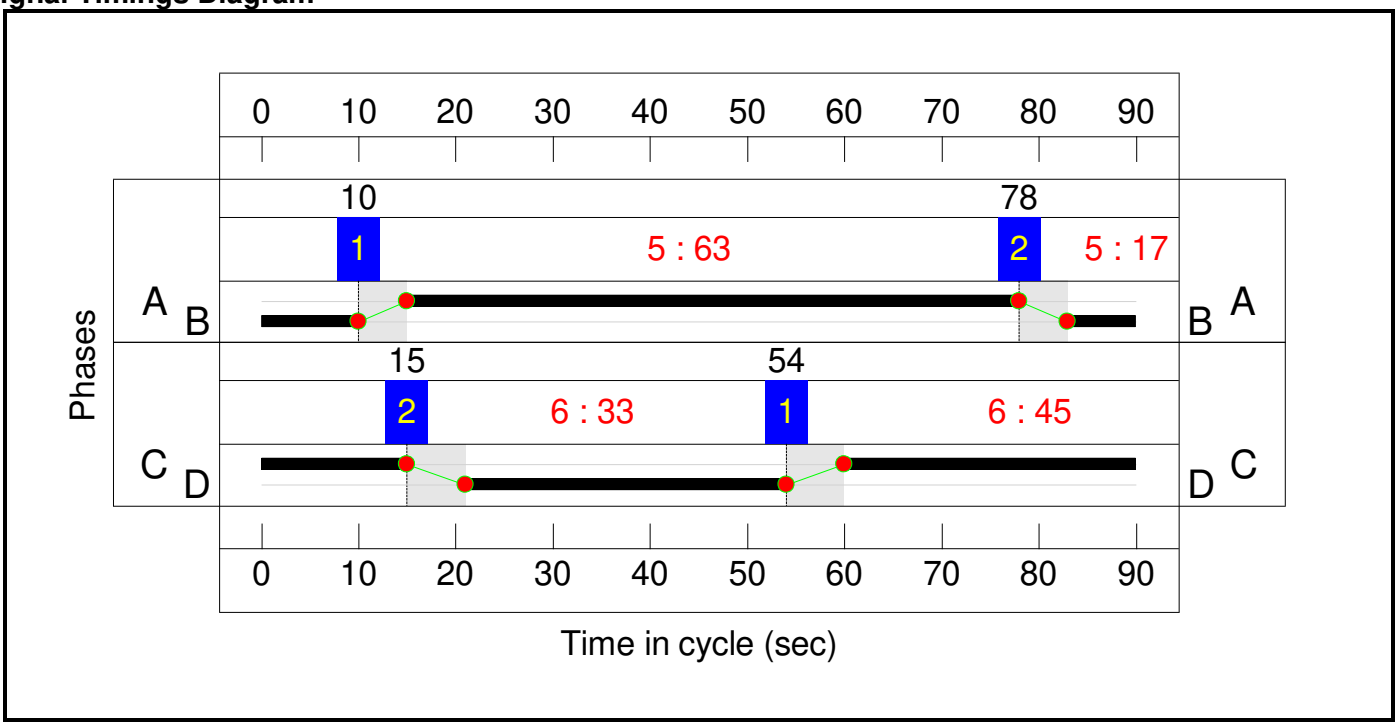
**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 63 | 17 |
| Change Point | 10 | 78 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 45 | 33 |
| Change Point | 54 | 15 |

**Signal Timings Diagram**



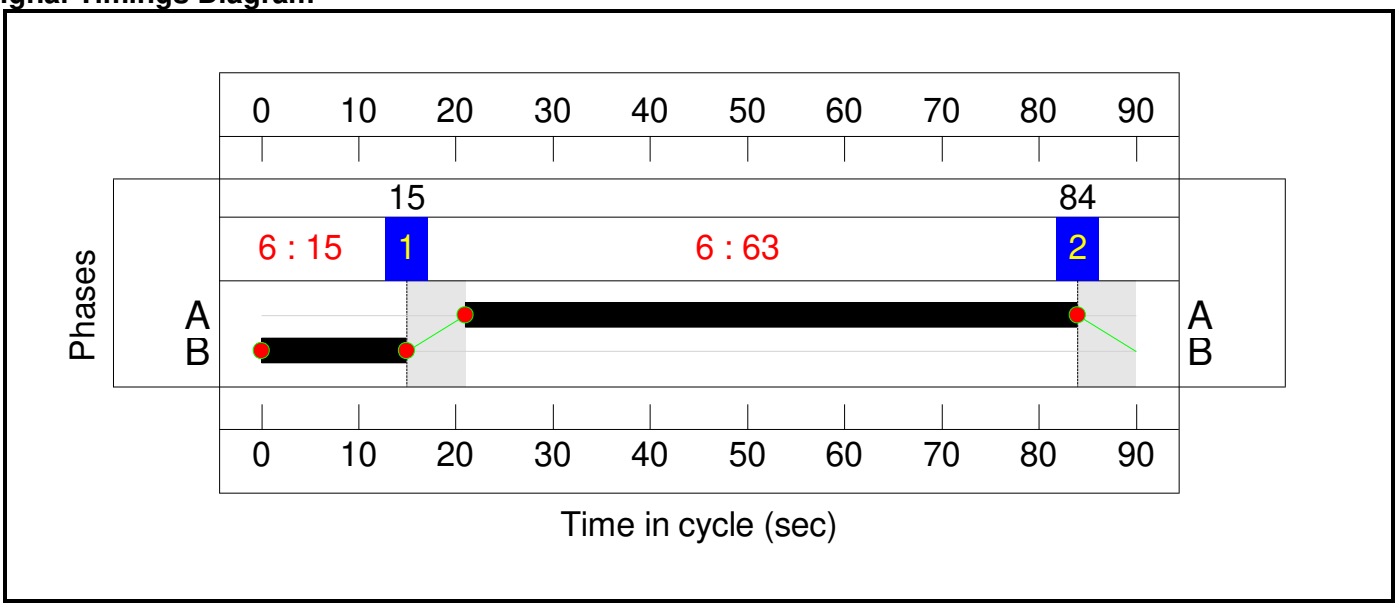

**C3 - London Road**

**Stage Timings**

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 63 | 15 |
| Change Point | 15 | 84 |

**Signal Timings Diagram**



## 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: Queen Elanor Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **166.6%** |
| **Queen Elanor Gyratory** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **166.6%** |
| 1/1 | A5076 Mere Way Left Ahead | U | 2:2 | N/A | C2:D | | 1 | 33 | - | 1236 | 1964 | 742 | 166.6% |
| 1/2+1/3 | A5076 Mere Way Ahead | U | 2:2 | N/A | C2:D | | 1 | 33 | - | 1311 | 2105:1965 | 787+0 | 166.5 : 0.0% |
| 2/1 | Ahead | U | 2:2 | N/A | C2:C | | 1 | 45 | - | 893 | 1900 | 971 | 74.2% |
| 2/2 | Ahead Right | U | 2:2 | N/A | C2:C | | 1 | 45 | - | 837 | 1900 | 971 | 67.2% |
| 2/3 | Right | U | 2:2 | N/A | C2:C | | 1 | 45 | - | 392 | 1900 | 971 | 27.6% |
| 4/1 | Ahead | U | 3:1 | N/A | C3:A | | 1 | 63 | - | 1418 | 1900 | 1351 | 63.5% |
| 4/2 | Ahead Right | U | 3:1 | N/A | C3:A | | 1 | 63 | - | 1703 | 1900 | 1351 | 78.1% |
| 4/3 | Right | U | 3:1 | N/A | C3:A | | 1 | 63 | - | 0 | 1900 | 1351 | 0.0% |
| 5/2+5/1 | A508 London Road Left Ahead | U | 3:1 | N/A | C3:B | | 1 | 15 | - | 758 | 2105:1965 | 374+349 | 99.9 : 109.9% |
| 5/3 | A508 London Road Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 568 | 1965 | 590 | 96.4% |
| 7/1 | Ahead Right | U | 1:1 | N/A | C1:A | | 1 | 50 | - | 1387 | 1900 | 1077 | 93.2% |
| 7/2 | Right | U | 1:1 | N/A | C1:A | | 1 | 50 | - | 568 | 1900 | 1077 | 52.8% |
| 8/2+8/1 | A45 Southbound Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 1337 | 2120:1894 | 636+534 | 114.3 : 114.3% |
| 8/3 | A45 Southbound Ahead | U | 1:1 | N/A | C1:B | | 1 | 26 | - | 676 | 1980 | 594 | 113.8% |
| 10/3 | Right | U | N/A | N/A | - | | - | - | - | 554 | 3000 | 3000 | 16.5% |
| 10/4 | Right | U | N/A | N/A | - | | - | - | - | 201 | 3000 | 3000 | 5.9% |
| 11/2+11/1 | Hardingstone Lane Ahead Left | O | N/A | N/A | - | | - | - | - | 618 | Inf : Inf | 356+38 | 157.0 : 157.0% |
| 12/1 | Ahead | U | 1:2 | N/A | C1:C | | 1 | 61 | - | 927 | 1900 | 1309 | 57.1% |
| 12/2 | Right Ahead | U | 1:2 | N/A | C1:C | | 1 | 61 | - | 916 | 1900 | 1309 | 61.8% |
| 12/3 | Right | U | 1:2 | N/A | C1:C | | 1 | 61 | - | 554 | 1900 | 1309 | 37.9% |
| 12/4 | Right | U | 1:2 | N/A | C1:C | | 1 | 61 | - | 760 | 1900 | 1309 | 40.7% |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14/2+14/1 | Newport Pagnell Road Ahead Left | U | 1:2 | N/A | C1:D | | 1 | 19 | - | 923 | 2005:1948 | 423+390 | 113.5 : 113.5% |
| 14/3 | Newport Pagnell Road Ahead | U | 1:2 | N/A | C1:D | | 1 | 19 | - | 677 | 1908 | 424 | 159.7% |
| 15/1 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 63 | - | 1148 | 1900 | 1351 | 74.0% |
| 15/2 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 63 | - | 1034 | 1900 | 1351 | 68.0% |
| 15/3 | Ahead | U | 2:1 | N/A | C2:A | | 1 | 63 | - | 1437 | 1900 | 1351 | 70.8% |
| 17/2+17/1 | A45 Northbound Left U-Turn | U | 2:1 | N/A | C2:B | | 1 | 17 | - | 397 | 2120:1980 | 404+57 | 86.2 : 86.2% |
| 17/3 | A45 Northbound Left | U | 2:1 | N/A | C2:B | | 1 | 17 | - | 337 | 1980 | 396 | 85.1% |

| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay ( | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 1236 | 742 | - | - | - | 29.9 | 248.3 | - | 278.2 | 810.2 | 44.3 | 248.3 | 292.5 |
| 1/2+1/3 | 1311 | 787 | - | - | - | 30.6 | 263.1 | - | 293.7 | 806.4 | 49.1 | 263.1 | 312.2 |
| 2/1 | 721 | 721 | - | - | - | 1.4 | 1.4 | - | 2.8 | 13.9 | 4.8 | 1.4 | 6.2 |
| 2/2 | 653 | 653 | - | - | - | 1.9 | 1.0 | - | 2.9 | 15.9 | 6.5 | 1.0 | 7.5 |
| 2/3 | 268 | 268 | - | - | - | 1.5 | 0.2 | - | 1.7 | 23.0 | 4.5 | 0.2 | 4.7 |
| 4/1 | 858 | 858 | - | - | - | 0.1 | 0.9 | - | 1.0 | 4.2 | 0.5 | 0.9 | 1.4 |
| 4/2 | 1055 | 1055 | - | - | - | 0.6 | 1.8 | - | 2.4 | 8.1 | 10.7 | 1.8 | 12.5 |
| 4/3 | 0 | 0 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 5/2+5/1 | 758 | 723 | - | - | - | 9.4 | 25.0 | - | 34.4 | 163.3 | 10.5 | 25.0 | 35.4 |
| 5/3 | 568 | 568 | - | - | - | 4.9 | 7.7 | - | 12.6 | 79.8 | 13.9 | 7.7 | 21.6 |
| 7/1 | 1003 | 1003 | - | - | - | 3.3 | 5.9 | - | 9.1 | 32.8 | 17.7 | 5.9 | 23.6 |
| 7/2 | 568 | 568 | - | - | - | 3.7 | 0.6 | - | 4.3 | 27.0 | 14.2 | 0.6 | 14.8 |
| 8/2+8/1 | 1337 | 1170 | - | - | - | 17.3 | 87.5 | - | 104.8 | 282.3 | 25.7 | 87.5 | 113.2 |
| 8/3 | 676 | 594 | - | - | - | 10.3 | 44.8 | - | 55.0 | 293.1 | 20.4 | 44.8 | 65.2 |
| 10/3 | 496 | 496 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.7 | 0.0 | 0.1 | 0.1 |
| 10/4 | 177 | 177 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.6 | 0.0 | 0.0 | 0.0 |
| 11/2+11/1 | 618 | 394 | 787 | 0 | 0 | 13.7 | 113.5 | - | 127.2 | 741.0 | 33.8 | 113.5 | 147.3 |
| 12/1 | 748 | 748 | - | - | - | 1.0 | 0.7 | - | 1.7 | 8.0 | 4.2 | 0.7 | 4.9 |
| 12/2 | 809 | 809 | - | - | - | 0.4 | 0.8 | - | 1.2 | 5.2 | 8.0 | 0.8 | 8.8 |
| 12/3 | 496 | 496 | - | - | - | 0.0 | 0.3 | - | 0.3 | 2.2 | 0.0 | 0.3 | 0.3 |
| 12/4 | 533 | 533 | - | - | - | 1.3 | 0.3 | - | 1.7 | 11.2 | 8.6 | 0.3 | 9.0 |
| 14/2+14/1 | 923 | 813 | - | - | - | 12.5 | 58.9 | - | 71.3 | 278.2 | 18.6 | 58.9 | 77.5 |
| 14/3 | 677 | 424 | - | - | - | 17.7 | 127.8 | - | 145.6 | 774.0 | 26.0 | 127.8 | 153.8 |
| 15/1 | 1000 | 1000 | - | - | - | 3.9 | 1.4 | - | 5.3 | 19.1 | 16.4 | 1.4 | 17.8 |
| 15/2 | 919 | 919 | - | - | - | 2.1 | 1.1 | - | 3.2 | 12.4 | 11.0 | 1.1 | 12.1 |
| 15/3 | 957 | 957 | - | - | - | 2.8 | 1.2 | - | 4.0 | 14.9 | 12.6 | 1.2 | 13.8 |
| 17/2+17/1 | 397 | 397 | - | - | - | 3.8 | 2.9 | - | 6.6 | 60.1 | 8.6 | 2.9 | 11.5 |
| 17/3 | 337 | 337 | - | - | - | 3.2 | 2.6 | - | 5.9 | 62.7 | 8.1 | 2.6 | 10.7 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 - Queen Elanor A B | Stream: 1 PRC for Signalled Lanes (%): | -27.0 | Total Delay for Signalled Lanes (pcuHr): | 185.88 | Cycle Time (s): | 90 |
| C1 - Queen Elanor A B | Stream: 2 PRC for Signalled Lanes (%): | -77.4 | Total Delay for Signalled Lanes (pcuHr): | 221.67 | Cycle Time (s): | 90 |
| C2 - Queen Elanor C D | Stream: 1 PRC for Signalled Lanes (%): | 4.4 | Total Delay for Signalled Lanes (pcuHr): | 24.94 | Cycle Time (s): | 90 |
| C2 - Queen Elanor C D | Stream: 2 PRC for Signalled Lanes (%): | -85.1 | Total Delay for Signalled Lanes (pcuHr): | 579.23 | Cycle Time (s): | 90 |
| C3 - London Road | Stream: 1 PRC for Signalled Lanes (%): | -22.1 | Total Delay for Signalled Lanes (pcuHr): | 37.76 | Cycle Time (s): | 90 |
| | PRC Over All Lanes (%): | -85.1 | Total Delay Over All Lanes(pcuHr): | 1176.83 | | |

# JUNCTION 14

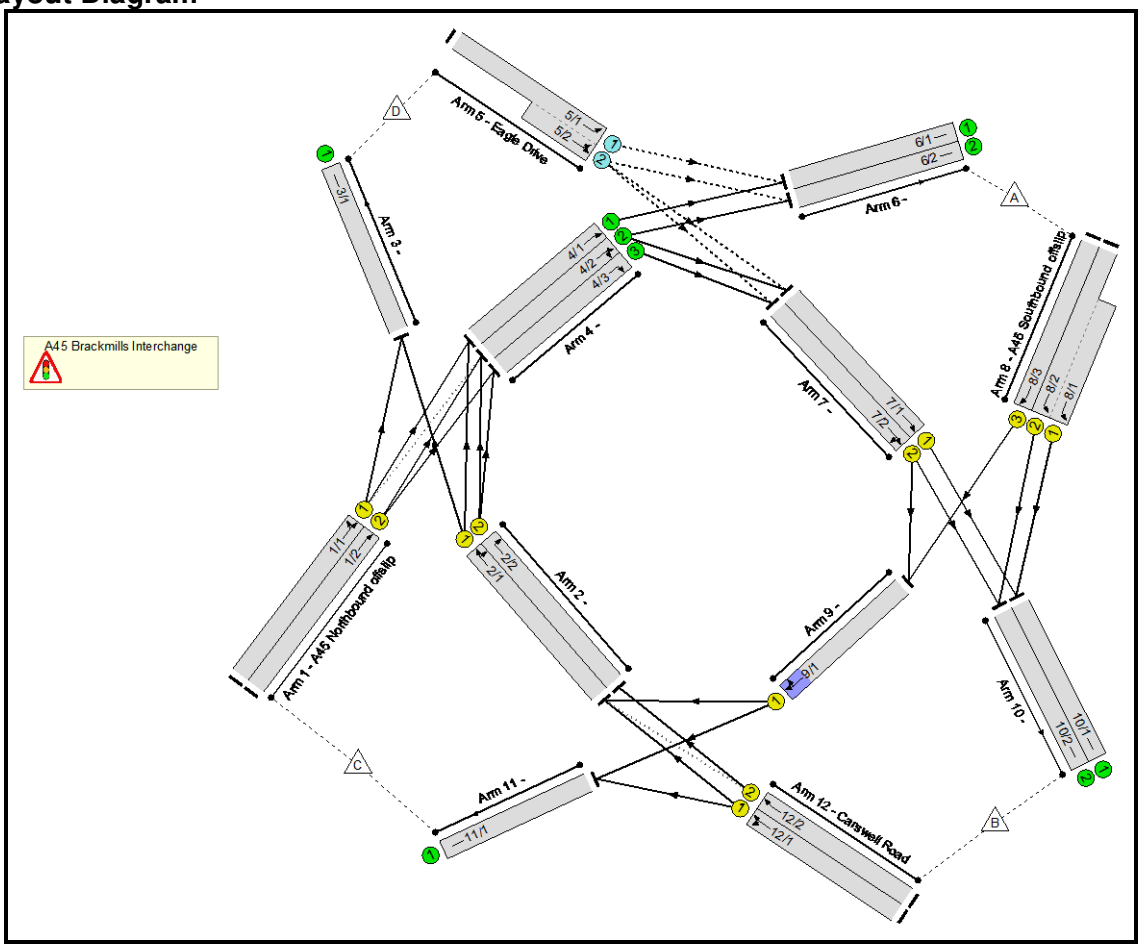
# A45 BRACKMILLS INTERCHANGE

## Full Input Data And Results

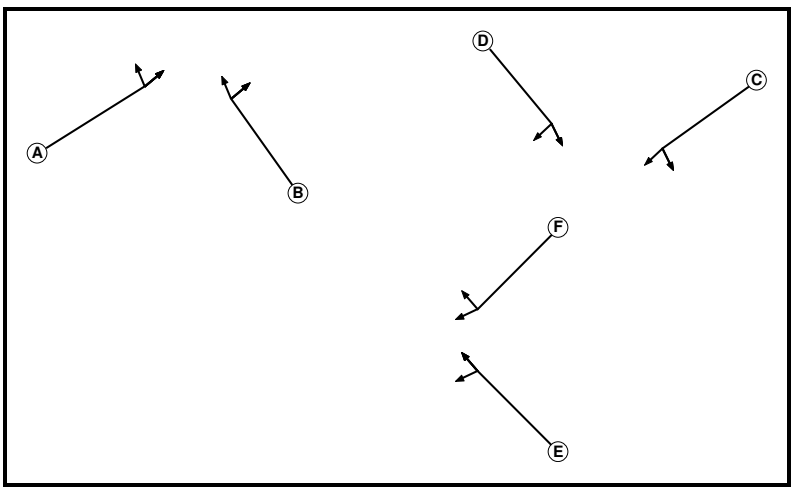
### User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **Brackmills Interchange - J3 Cumulative Impact** |
| **Location:** | |
| **File name:** | 180318 Brackmills Interchange Base Model.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House, Nottingham |

### Network Layout Diagram




### Phase Diagram



## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |
| E | Traffic | 3 | | 7 | 7 |
| F | Traffic | 3 | | 7 | 7 |

## Phase Intergreens Matrix

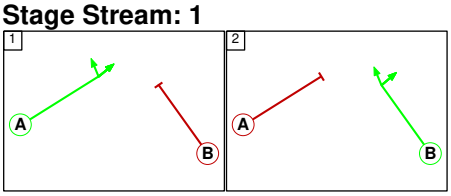
| | | Starting Phase | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| Terminating Phase | A | | 6 | - | - | - | - |
| | B | 6 | | - | - | - | - |
| | C | - | - | | 6 | - | - |
| | D | - | - | 6 | | - | - |
| | E | - | - | - | - | | 6 |
| | F | - | - | - | - | 6 | |

## Phases in Stage

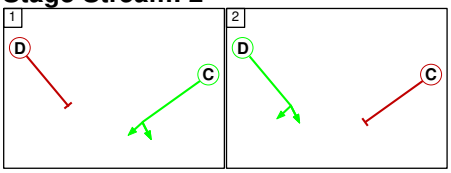
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |
| 3 | 1 | E |
| 3 | 2 | F |

## Stage Diagram

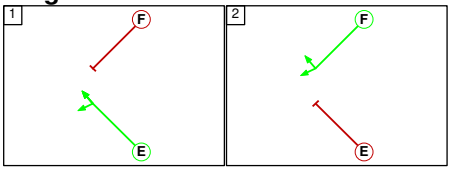
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3



## Give-Way Lane Input Data

| Junction: A45 Brackmills Interchange | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| 5/1 (Eagle Drive) | 6/1 (Left) | 1008 | 0 | 4/1 | 0.24 | All | - | - | - | - | - |
| | | | | 4/2 | 0.24 | All | | | | | |
| 5/2 (Eagle Drive) | 6/2 (Left) | 1008 | 0 | 4/1 | 0.24 | All | - | - | - | - | - |
| | | | | 4/2 | 0.24 | All | | | | | |
| | 7/1 (Ahead) | 1008 | 0 | 4/1 | 0.24 | All | | | | | |
| | | | | 4/2 | 0.24 | All | | | | | |
| | | | | 4/3 | 0.24 | All | | | | | |
| | 7/2 (Ahead) | 1008 | 0 | 4/1 | 0.24 | All | | | | | |
| | | | | 4/2 | 0.24 | All | | | | | |
| | | | | 4/3 | 0.24 | All | | | | | |

## Lane Input Data

| Junction: A45 Brackmills Interchange | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 (A45 Northbound offslip) | U | A | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 3 Left | 40.00 |
| | | | | | | | | | | | Arm 4 Ahead | Inf |
| 1/2 (A45 Northbound offslip) | U | A | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf |
| 2/1 | U | B | 2 | 3 | 19.1 | User | 1900 | - | - | - | - | - |
| 2/2 | U | B | 2 | 3 | 19.1 | User | 1900 | - | - | - | - | - |
| 3/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 4/1 | U | | 2 | 3 | 12.2 | Inf | - | - | - | - | - | - |
| 4/2 | U | | 2 | 3 | 12.2 | Inf | - | - | - | - | - | - |
| 4/3 | U | | 2 | 3 | 12.2 | Inf | - | - | - | - | - | - |
| 5/1 (Eagle Drive) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 5/2 (Eagle Drive) | O | | 2 | 3 | 6.0 | Inf | - | - | - | - | - | - |
| 6/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 6/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 7/1 | U | D | 2 | 3 | 20.0 | User | 1900 | - | - | - | - | - |
| 7/2 | U | D | 2 | 3 | 20.0 | User | 1900 | - | - | - | - | - |
| 8/1 (A45 Southbound offslip) | U | C | 2 | 3 | 10.0 | Geom | - | 3.65 | 0.00 | Y | Arm 10 Left | 60.00 |
| 8/2 (A45 Southbound offslip) | U | C | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 10 Left | Inf |
| 8/3 (A45 Southbound offslip) | U | C | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 9 Ahead | Inf |
| 9/1 | U | F | 2 | 3 | 13.0 | User | 1900 | - | - | - | - | - |
| 10/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 10/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 11/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 12/1 (Carswell Road) | U | E | 2 | 3 | 60.0 | Geom | - | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf |
| | | | | | | | | | | | Arm 11 Left | 40.00 |
| 12/2 (Carswell Road) | U | E | 2 | 3 | 60.0 | Geom | - | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 Ref AM' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 Ref PM' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 Dev AM' | 08:00 | 09:00 | 01:00 | |
| 6: '2031 J3 Dev PM' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 1057 | 56 | 10 | 1123 |
| | B | 888 | 0 | 599 | 5 | 1492 |
| | C | 1341 | 655 | 0 | 14 | 2010 |
| | D | 42 | 12 | 27 | 0 | 81 |
| | Tot. | 2271 | 1724 | 682 | 29 | 4706 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 Ref AM |
|---|---|
| **Junction: A45 Brackmills Interchange** | |
| 1/1 | 1005 |
| 1/2 | 1005 |
| 2/1 | 447 |
| 2/2 | 456 |
| 3/1 | 29 |
| 4/1 | 767 |
| 4/2 | 1805 |
| 4/3 | 312 |
| 5/1 (with short) | 81(In) 21(Out) |
| 5/2 (short) | 60 |
| 6/1 | 788 |
| 6/2 | 1483 |
| 7/1 | 350 |
| 7/2 | 344 |
| 8/1 (short) | 504 |
| 8/2 (with short) | 1057(In) 553(Out) |
| 8/3 | 66 |
| 9/1 | 93 |
| 10/1 | 854 |
| 10/2 | 870 |
| 11/1 | 682 |
| 12/1 | 1036 |
| 12/2 | 456 |

## Lane Saturation Flows

| Junction: A45 Brackmills Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Northbound offslip) | 3.50 | 0.00 | Y | Arm 3 Left | 40.00 | 1.4 % | 1964 | 1964 |
| | | | | Arm 4 Ahead | Inf | 98.6 % | | |
| 1/2 (A45 Northbound offslip) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Eagle Drive Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (Eagle Drive Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A45 Southbound offslip) | 3.65 | 0.00 | Y | Arm 10 Left | 60.00 | 100.0 % | 1932 | 1932 |
| 8/2 (A45 Southbound offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 100.0 % | 2120 | 2120 |
| 8/3 (A45 Southbound offslip) | 3.65 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (Carswell Road) | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf | 42.2 % | 1899 | 1899 |
| | | | | Arm 11 Left | 40.00 | 57.8 % | | |
| 12/2 (Carswell Road) | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1940 | 1940 |

**Scenario 3: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 1047 | 94 | 9 | 1150 |
| | B | 891 | 0 | 589 | 8 | 1488 |
| | C | 1393 | 607 | 0 | 12 | 2012 |
| | D | 47 | 19 | 15 | 0 | 81 |
| | Tot. | 2331 | 1673 | 698 | 29 | 4731 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 Dev AM |
|---|---|
| **Junction: A45 Brackmills Interchange** | |
| 1/1 | 1006 |
| 1/2 | 1006 |
| 2/1 | 449 |
| 2/2 | 459 |
| 3/1 | 29 |
| 4/1 | 782 |
| 4/2 | 1823 |
| 4/3 | 286 |
| 5/1 (with short) | 81(In) 23(Out) |
| 5/2 (short) | 58 |
| 6/1 | 805 |
| 6/2 | 1526 |
| 7/1 | 329 |
| 7/2 | 312 |
| 8/1 (short) | 499 |
| 8/2 (with short) | 1047(In) 548(Out) |
| 8/3 | 103 |
| 9/1 | 118 |
| 10/1 | 828 |
| 10/2 | 845 |
| 11/1 | 698 |
| 12/1 | 727 |
| 12/2 | 761 |

## Lane Saturation Flows

| Junction: A45 Brackmills Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Northbound offslip) | 3.50 | 0.00 | Y | Arm 3 Left | 40.00 | 1.2 % | 1964 | 1964 |
| | | | | Arm 4 Ahead | Inf | 98.8 % | | |
| 1/2 (A45 Northbound offslip) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Eagle Drive Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (Eagle Drive Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A45 Southbound offslip) | 3.65 | 0.00 | Y | Arm 10 Left | 60.00 | 100.0 % | 1932 | 1932 |
| 8/2 (A45 Southbound offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 100.0 % | 2120 | 2120 |
| 8/3 (A45 Southbound offslip) | 3.65 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (Carswell Road) | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf | 19.0 % | 1883 | 1883 |
| | | | | Arm 11 Left | 40.00 | 81.0 % | | |
| 12/2 (Carswell Road) | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1940 | 1940 |

**Scenario 4: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 252 | 462 | 0 | 714 |
| | B | 1533 | 0 | 361 | 50 | 1944 |
| | C | 1336 | 666 | 0 | 9 | 2011 |
| | D | 566 | 82 | 146 | 0 | 794 |
| | Tot. | 3435 | 1000 | 969 | 59 | 5463 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 Ref PM |
|---|---|
| **Junction: A45 Brackmills Interchange** | |
| 1/1 | 1005 |
| 1/2 | 1006 |
| 2/1 | 794 |
| 2/2 | 789 |
| 3/1 | 59 |
| 4/1 | 1078 |
| 4/2 | 2289 |
| 4/3 | 168 |
| 5/1 (with short) | 794(In) 413(Out) |
| 5/2 (short) | 381 |
| 6/1 | 1491 |
| 6/2 | 1944 |
| 7/1 | 523 |
| 7/2 | 371 |
| 8/1 (short) | 120 |
| 8/2 (with short) | 252(In) 132(Out) |
| 8/3 | 462 |
| 9/1 | 608 |
| 10/1 | 643 |
| 10/2 | 357 |
| 11/1 | 969 |
| 12/1 | 965 |
| 12/2 | 979 |

## Lane Saturation Flows

| Junction: A45 Brackmills Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Northbound offslip) | 3.50 | 0.00 | Y | Arm 3 Left | 40.00 | 0.9 % | 1964 | 1964 |
| | | | | Arm 4 Ahead | Inf | 99.1 % | | |
| 1/2 (A45 Northbound offslip) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Eagle Drive Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (Eagle Drive Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A45 Southbound offslip) | 3.65 | 0.00 | Y | Arm 10 Left | 60.00 | 100.0 % | 1932 | 1932 |
| 8/2 (A45 Southbound offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 100.0 % | 2120 | 2120 |
| 8/3 (A45 Southbound offslip) | 3.65 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (Carswell Road) | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf | 62.6 % | 1913 | 1913 |
| | | | | Arm 11 Left | 40.00 | 37.4 % | | |
| 12/2 (Carswell Road) | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1940 | 1940 |

**Scenario 6: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 172 | 588 | 0 | 760 |
| | B | 1588 | 0 | 413 | 47 | 2048 |
| | C | 1363 | 643 | 0 | 8 | 2014 |
| | D | 483 | 129 | 92 | 0 | 704 |
| | Tot. | 3434 | 944 | 1093 | 55 | 5526 |

## Traffic Lane Flows

| Lane | Scenario 6: 2031 J3 Dev PM |
|---|---|
| **Junction: A45 Brackmills Interchange** | |
| 1/1 | 1007 |
| 1/2 | 1007 |
| 2/1 | 833 |
| 2/2 | 814 |
| 3/1 | 55 |
| 4/1 | 1135 |
| 4/2 | 2245 |
| 4/3 | 226 |
| 5/1 (with short) | 704(In) 373(Out) |
| 5/2 (short) | 331 |
| 6/1 | 1508 |
| 6/2 | 1938 |
| 7/1 | 461 |
| 7/2 | 403 |
| 8/1 (short) | 82 |
| 8/2 (with short) | 172(In) 90(Out) |
| 8/3 | 588 |
| 9/1 | 680 |
| 10/1 | 543 |
| 10/2 | 401 |
| 11/1 | 1093 |
| 12/1 | 1022 |
| 12/2 | 1038 |

## Lane Saturation Flows

| Junction: A45 Brackmills Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Northbound offslip) | 3.50 | 0.00 | Y | Arm 3 Left | 40.00 | 0.8 % | 1964 | 1964 |
| | | | | Arm 4 Ahead | Inf | 99.2 % | | |
| 1/2 (A45 Northbound offslip) | 3.50 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (Eagle Drive Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 (Eagle Drive Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A45 Southbound offslip) | 3.65 | 0.00 | Y | Arm 10 Left | 60.00 | 100.0 % | 1932 | 1932 |
| 8/2 (A45 Southbound offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 100.0 % | 2120 | 2120 |
| 8/3 (A45 Southbound offslip) | 3.65 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (Carswell Road) | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf | 59.6 % | 1911 | 1911 |
| | | | | Arm 11 Left | 40.00 | 40.4 % | | |
| 12/2 (Carswell Road) | 3.25 | 0.00 | Y | Arm 2 Ahead | Inf | 100.0 % | 1940 | 1940 |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| **Duration** | 33 | 15 |
| **Change Point** | 0 | 39 |

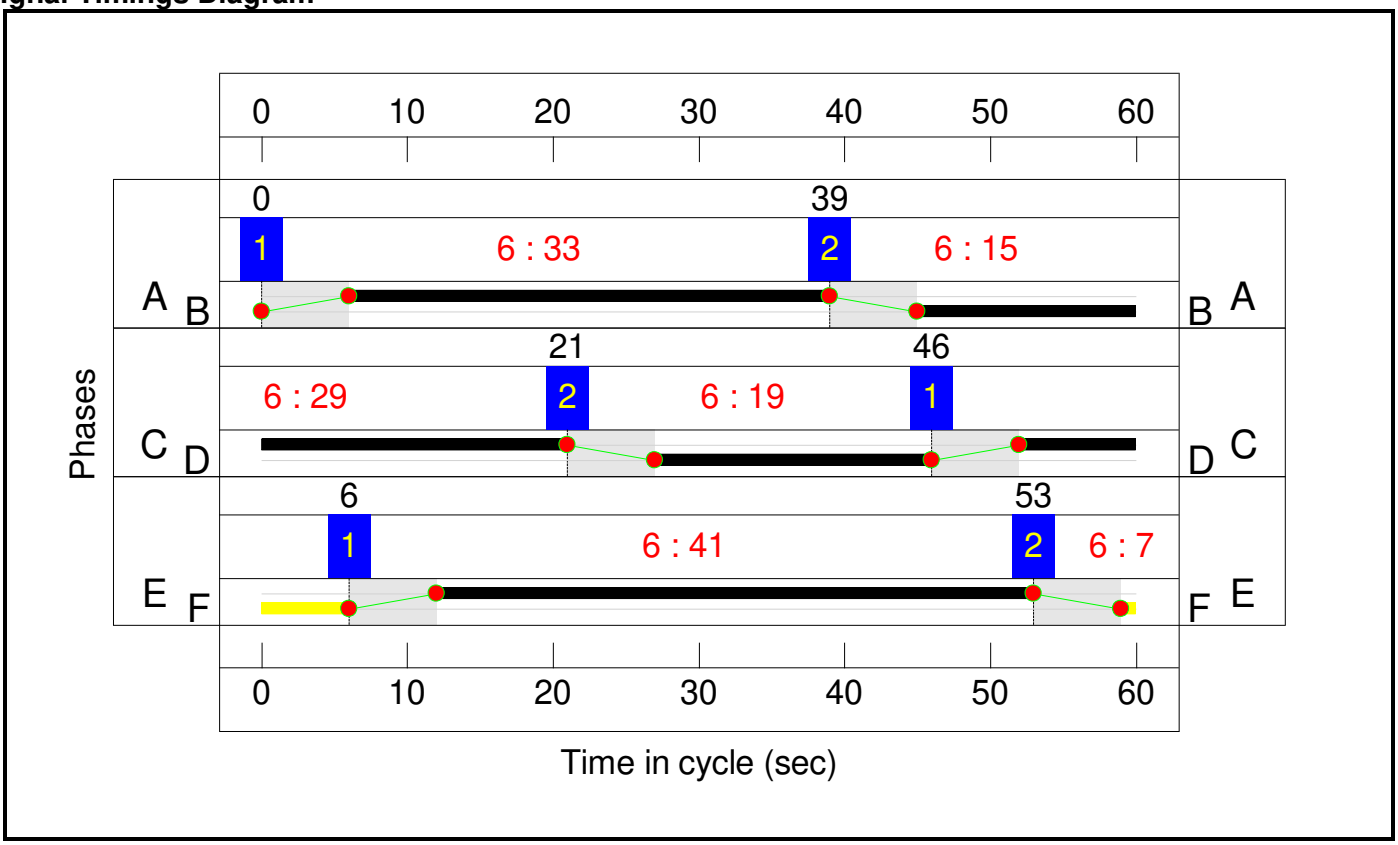
**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 19 |
| Change Point | 46 | 21 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 7 |
| Change Point | 6 | 53 |

**Signal Timings Diagram**



## 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: Brackmills Interchange - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **90.3%** |
| **A45 Brackmills Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **90.3%** |
| 1/1 | A45 Northbound offslip Left Ahead | U | 1 | N/A | A | | 1 | 33 | - | 1005 | 1964 | 1113 | 90.3% |
| 1/2 | A45 Northbound offslip Ahead | U | 1 | N/A | A | | 1 | 33 | - | 1005 | 1965 | 1113 | 90.3% |
| 2/1 | Ahead Right | U | 1 | N/A | B | | 1 | 15 | - | 447 | 1900 | 507 | 88.2% |
| 2/2 | Right | U | 1 | N/A | B | | 1 | 15 | - | 456 | 1900 | 507 | 90.0% |
| 5/1+5/2 | Eagle Drive Left Ahead | O | N/A | N/A | - | | - | - | - | 81 | Inf : Inf | 115+329 | 18.3 : 18.3% |
| 7/1 | Ahead | U | 2 | N/A | D | | 1 | 19 | - | 350 | 1900 | 633 | 55.3% |
| 7/2 | Right Ahead | U | 2 | N/A | D | | 1 | 19 | - | 344 | 1900 | 633 | 54.3% |
| 8/2+8/1 | A45 Southbound offslip Left | U | 2 | N/A | C | | 1 | 29 | - | 1057 | 2120:1932 | 830+756 | 66.7 : 66.7% |
| 8/3 | A45 Southbound offslip Ahead | U | 2 | N/A | C | | 1 | 29 | - | 66 | 1980 | 990 | 6.7% |
| 9/1 | Right Ahead | U | 3 | N/A | F | | 1 | 7 | - | 93 | 1900 | 253 | 36.7% |
| 12/1 | Carswell Road Ahead Left | U | 3 | N/A | E | | 1 | 41 | - | 1036 | 1899 | 1329 | 77.9% |
| 12/2 | Carswell Road Ahead | U | 3 | N/A | E | | 1 | 41 | - | 456 | 1940 | 1358 | 33.6% |

| 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: Brackmills Interchange - J3 Cumulative Impact** | **-** | **-** | **162** | **0** | **0** | **17.6** | **11.7** | **0.0** | **29.3** | **-** | **-** | **-** | **-** |
| **A45 Brackmills Interchange** | **-** | **-** | **162** | **0** | **0** | **17.6** | **11.7** | **0.0** | **29.3** | **-** | **-** | **-** | **-** |
| 1/1 | 1005 | 1005 | - | - | - | 3.2 | 4.3 | - | 7.5 | 27.0 | 14.8 | 4.3 | 19.1 |
| 1/2 | 1005 | 1005 | - | - | - | 3.2 | 4.3 | - | 7.5 | 26.9 | 14.8 | 4.3 | 19.1 |
| 2/1 | 447 | 447 | - | - | - | 2.0 | 0.0 | - | 2.0 | 15.8 | 7.1 | 0.0 | 7.1 |
| 2/2 | 456 | 456 | - | - | - | 2.2 | 0.0 | - | 2.2 | 17.7 | 7.2 | 0.0 | 7.2 |
| 5/1+5/2 | 81 | 81 | 162 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 5.0 | 0.0 | 0.1 | 0.1 |
| 7/1 | 350 | 350 | - | - | - | 0.6 | 0.0 | - | 0.6 | 5.7 | 3.4 | 0.0 | 3.4 |
| 7/2 | 344 | 344 | - | - | - | 0.6 | 0.0 | - | 0.6 | 6.5 | 3.5 | 0.0 | 3.5 |
| 8/2+8/1 | 1057 | 1057 | - | - | - | 3.0 | 1.0 | - | 4.0 | 13.5 | 6.1 | 1.0 | 7.1 |
| 8/3 | 66 | 66 | - | - | - | 0.1 | 0.0 | - | 0.2 | 9.7 | 0.6 | 0.0 | 0.6 |
| 9/1 | 93 | 93 | - | - | - | 0.5 | 0.0 | - | 0.5 | 18.3 | 1.4 | 0.0 | 1.4 |
| 12/1 | 1036 | 1036 | - | - | - | 1.7 | 1.7 | - | 3.5 | 12.0 | 11.2 | 1.7 | 13.0 |
| 12/2 | 456 | 456 | - | - | - | 0.4 | 0.3 | - | 0.7 | 5.5 | 2.9 | 0.3 | 3.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 | PRC for Signalled Lanes (%): | -0.3 | Total Delay for Signalled Lanes (pcuHr): | 19.25 | Cycle Time (s): 60 |
| C1 | Stream: 2 | PRC for Signalled Lanes (%): | 35.0 | Total Delay for Signalled Lanes (pcuHr): | 5.33 | Cycle Time (s): 60 |
| C1 | Stream: 3 | PRC for Signalled Lanes (%): | 15.5 | Total Delay for Signalled Lanes (pcuHr): | 4.63 | Cycle Time (s): 60 |
| | | PRC Over All Lanes (%): | -0.3 | Total Delay Over All Lanes(pcuHr): | 29.31 | |

**Scenario 3: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 33 | 15 |
| Change Point | 0 | 39 |

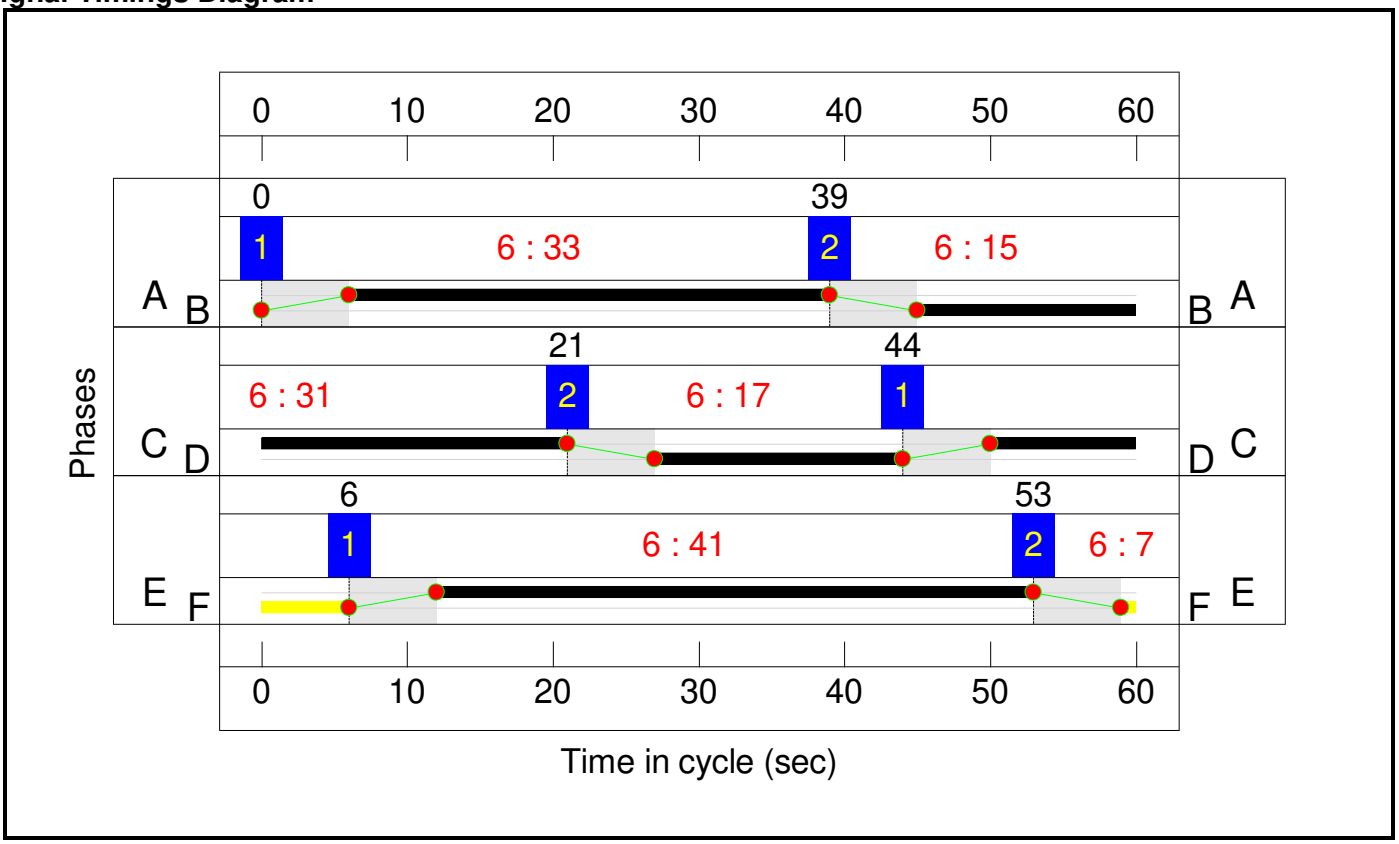
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 17 |
| Change Point | 44 | 21 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 7 |
| Change Point | 6 | 53 |

## Signal Timings Diagram



## 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: Brackmills Interchange - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **90.6%** |
| **A45 Brackmills Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **90.6%** |
| 1/1 | A45 Northbound offslip Left Ahead | U | 1 | N/A | A | | 1 | 33 | - | 1006 | 1964 | 1113 | 90.4% |
| 1/2 | A45 Northbound offslip Ahead | U | 1 | N/A | A | | 1 | 33 | - | 1006 | 1965 | 1113 | 90.3% |
| 2/1 | Ahead Right | U | 1 | N/A | B | | 1 | 15 | - | 449 | 1900 | 507 | 88.6% |
| 2/2 | Right | U | 1 | N/A | B | | 1 | 15 | - | 459 | 1900 | 507 | 90.6% |
| 5/1+5/2 | Eagle Drive Left Ahead | O | N/A | N/A | - | | - | - | - | 81 | Inf : Inf | 131+329 | 17.6 : 17.6% |
| 7/1 | Ahead | U | 2 | N/A | D | | 1 | 17 | - | 329 | 1900 | 570 | 57.7% |
| 7/2 | Right Ahead | U | 2 | N/A | D | | 1 | 17 | - | 312 | 1900 | 570 | 54.7% |
| 8/2+8/1 | A45 Southbound offslip Left | U | 2 | N/A | C | | 1 | 31 | - | 1047 | 2120:1932 | 865+788 | 63.3 : 63.3% |
| 8/3 | A45 Southbound offslip Ahead | U | 2 | N/A | C | | 1 | 31 | - | 103 | 1980 | 1056 | 9.8% |
| 9/1 | Right Ahead | U | 3 | N/A | F | | 1 | 7 | - | 118 | 1900 | 253 | 46.6% |
| 12/1 | Carswell Road Ahead Left | U | 3 | N/A | E | | 1 | 41 | - | 727 | 1883 | 1318 | 55.2% |
| 12/2 | Carswell Road Ahead | U | 3 | N/A | E | | 1 | 41 | - | 761 | 1940 | 1358 | 56.0% |

| 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: Brackmills Interchange - J3 Cumulative Impact** | **-** | **-** | **162** | **0** | **0** | **17.3** | **11.0** | **0.0** | **28.2** | **-** | **-** | **-** | **-** |
| **A45 Brackmills Interchange** | **-** | **-** | **162** | **0** | **0** | **17.3** | **11.0** | **0.0** | **28.2** | **-** | **-** | **-** | **-** |
| 1/1 | 1006 | 1006 | - | - | - | 3.2 | 4.3 | - | 7.6 | 27.1 | 14.8 | 4.3 | 19.2 |
| 1/2 | 1006 | 1006 | - | - | - | 3.2 | 4.3 | - | 7.6 | 27.0 | 14.8 | 4.3 | 19.1 |
| 2/1 | 449 | 449 | - | - | - | 2.2 | 0.0 | - | 2.2 | 17.2 | 7.1 | 0.0 | 7.1 |
| 2/2 | 459 | 459 | - | - | - | 2.1 | 0.0 | - | 2.1 | 16.8 | 7.4 | 0.0 | 7.4 |
| 5/1+5/2 | 81 | 81 | 162 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 4.8 | 0.0 | 0.1 | 0.1 |
| 7/1 | 329 | 329 | - | - | - | 0.7 | 0.0 | - | 0.7 | 7.2 | 3.4 | 0.0 | 3.4 |
| 7/2 | 312 | 312 | - | - | - | 0.7 | 0.0 | - | 0.7 | 7.7 | 3.3 | 0.0 | 3.3 |
| 8/2+8/1 | 1047 | 1047 | - | - | - | 2.6 | 0.9 | - | 3.4 | 11.8 | 5.6 | 0.9 | 6.5 |
| 8/3 | 103 | 103 | - | - | - | 0.2 | 0.1 | - | 0.3 | 8.8 | 0.8 | 0.1 | 0.9 |
| 9/1 | 118 | 118 | - | - | - | 0.6 | 0.0 | - | 0.6 | 18.1 | 1.8 | 0.0 | 1.8 |
| 12/1 | 727 | 727 | - | - | - | 0.9 | 0.6 | - | 1.5 | 7.4 | 5.9 | 0.6 | 6.5 |
| 12/2 | 761 | 761 | - | - | - | 0.9 | 0.6 | - | 1.6 | 7.5 | 6.1 | 0.6 | 6.8 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 | PRC for Signalled Lanes (%): | -0.7 | Total Delay for Signalled Lanes (pcuHr): | 19.43 | Cycle Time (s): 60 |
| C1 | Stream: 2 | PRC for Signalled Lanes (%): | 42.1 | Total Delay for Signalled Lanes (pcuHr): | 5.01 | Cycle Time (s): 60 |
| C1 | Stream: 3 | PRC for Signalled Lanes (%): | 60.6 | Total Delay for Signalled Lanes (pcuHr): | 3.67 | Cycle Time (s): 60 |
| | | PRC Over All Lanes (%): | -0.7 | Total Delay Over All Lanes(pcuHr): | 28.22 | |

**Scenario 4: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 24 |
| Change Point | 0 | 30 |

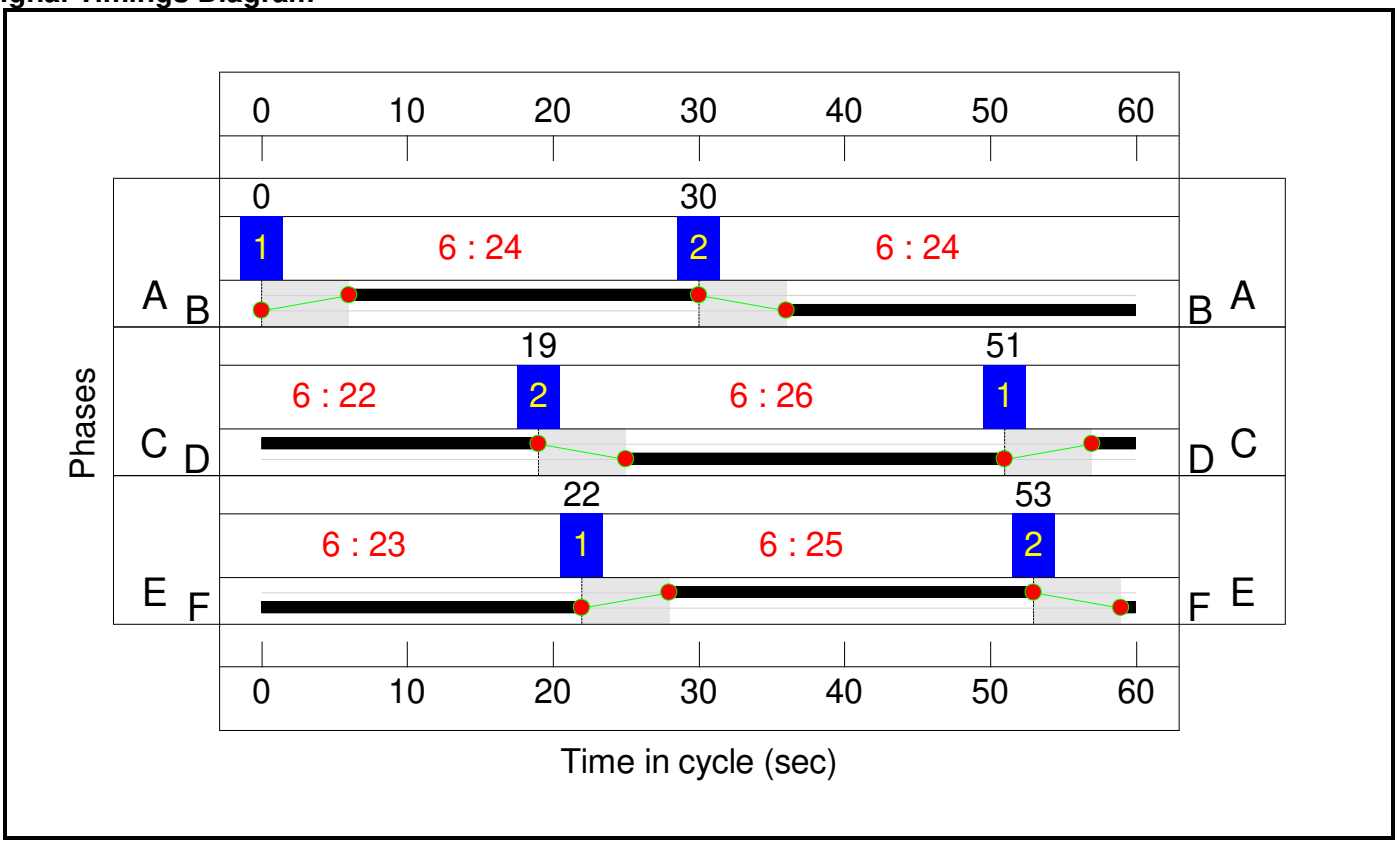
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 26 |
| Change Point | 51 | 19 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 25 | 23 |
| Change Point | 22 | 53 |

## Signal Timings Diagram



## 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: Brackmills Interchange - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **123.8%** |
| **A45 Brackmills Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **123.8%** |
| 1/1 | A45 Northbound offslip Left Ahead | U | 1 | N/A | A | | 1 | 24 | - | 1005 | 1964 | 818 | 122.8% |
| 1/2 | A45 Northbound offslip Ahead | U | 1 | N/A | A | | 1 | 24 | - | 1006 | 1965 | 819 | 122.9% |
| 2/1 | Ahead Right | U | 1 | N/A | B | | 1 | 24 | - | 794 | 1900 | 792 | 86.1% |
| 2/2 | Right | U | 1 | N/A | B | | 1 | 24 | - | 789 | 1900 | 792 | 85.6% |
| 5/1+5/2 | Eagle Drive Left Ahead | O | N/A | N/A | - | | - | - | - | 794 | Inf : Inf | 334+309 | 123.8 : 123.4% |
| 7/1 | Ahead | U | 2 | N/A | D | | 1 | 26 | - | 523 | 1900 | 855 | 49.8% |
| 7/2 | Right Ahead | U | 2 | N/A | D | | 1 | 26 | - | 371 | 1900 | 855 | 35.2% |
| 8/2+8/1 | A45 Southbound offslip Left | U | 2 | N/A | C | | 1 | 22 | - | 252 | 2120:1932 | 706+642 | 18.7 : 18.7% |
| 8/3 | A45 Southbound offslip Ahead | U | 2 | N/A | C | | 1 | 22 | - | 462 | 1980 | 759 | 60.9% |
| 9/1 | Right Ahead | U | 3 | N/A | F | | 1 | 23 | - | 608 | 1900 | 760 | 76.4% |
| 12/1 | Carswell Road Ahead Left | U | 3 | N/A | E | | 1 | 25 | - | 965 | 1913 | 829 | 116.4% |
| 12/2 | Carswell Road Ahead | U | 3 | N/A | E | | 1 | 25 | - | 979 | 1940 | 841 | 116.5% |

| 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: Brackmills Interchange - J3 Cumulative Impact** | **-** | **-** | **1285** | **0** | **0** | **49.5** | **415.3** | **0.0** | **464.8** | **-** | **-** | **-** | **-** |
| **A45 Brackmills Interchange** | **-** | **-** | **1285** | **0** | **0** | **49.5** | **415.3** | **0.0** | **464.8** | **-** | **-** | **-** | **-** |
| 1/1 | 1005 | 818 | - | - | - | 10.1 | 96.0 | - | 106.0 | 379.8 | 19.9 | 96.0 | 115.8 |
| 1/2 | 1006 | 819 | - | - | - | 10.1 | 96.2 | - | 106.3 | 380.5 | 19.9 | 96.2 | 116.1 |
| 2/1 | 682 | 682 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.1 | 2.2 | 0.0 | 2.2 |
| 2/2 | 678 | 678 | - | - | - | 0.0 | 0.0 | - | 0.0 | 0.1 | 2.2 | 0.0 | 2.2 |
| 5/1+5/2 | 794 | 642 | 1285 | 0 | 0 | 7.1 | 78.3 | - | 85.4 | 387.1 | 19.0 | 78.3 | 97.4 |
| 7/1 | 426 | 426 | - | - | - | 0.4 | 0.0 | - | 0.4 | 3.2 | 4.8 | 0.0 | 4.8 |
| 7/2 | 301 | 301 | - | - | - | 0.5 | 0.0 | - | 0.5 | 6.5 | 2.8 | 0.0 | 2.8 |
| 8/2+8/1 | 252 | 252 | - | - | - | 0.9 | 0.1 | - | 1.0 | 13.8 | 1.4 | 0.1 | 1.5 |
| 8/3 | 462 | 462 | - | - | - | 1.9 | 0.8 | - | 2.7 | 20.9 | 6.2 | 0.8 | 6.9 |
| 9/1 | 580 | 580 | - | - | - | 1.0 | 0.0 | - | 1.0 | 6.4 | 2.8 | 0.0 | 2.8 |
| 12/1 | 965 | 829 | - | - | - | 8.7 | 71.4 | - | 80.1 | 298.7 | 19.5 | 71.4 | 90.9 |
| 12/2 | 979 | 841 | - | - | - | 8.8 | 72.5 | - | 81.4 | 299.2 | 19.8 | 72.5 | 92.4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -36.5 | Total Delay for Signalled Lanes (pcuHr): | 212.39 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 47.9 | Total Delay for Signalled Lanes (pcuHr): | 4.57 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | -29.4 | Total Delay for Signalled Lanes (pcuHr): | 162.46 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -37.5 | Total Delay Over All Lanes(pcuHr): | 464.81 | | |

**Scenario 6: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 24 |
| Change Point | 0 | 30 |

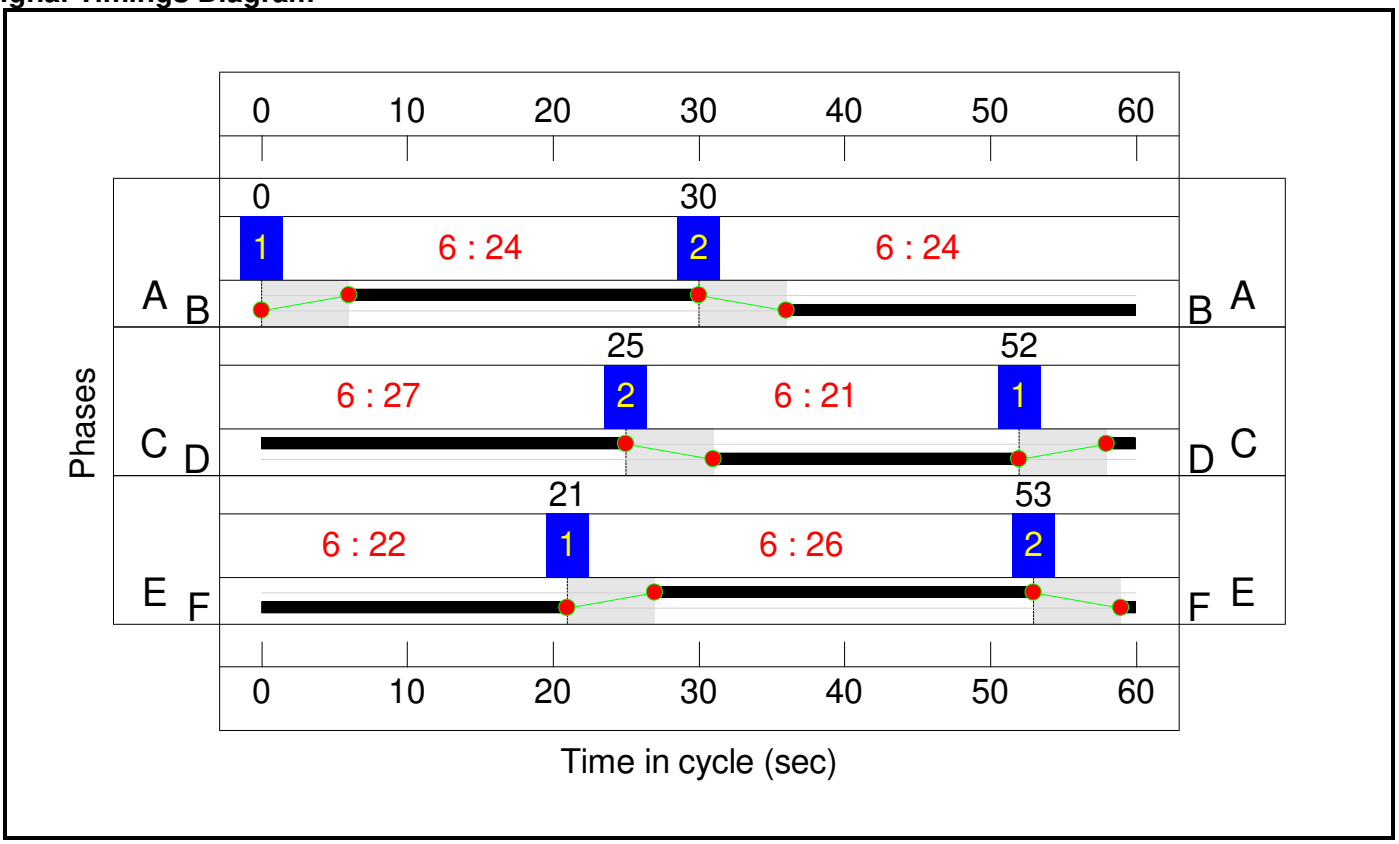
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 27 | 21 |
| Change Point | 52 | 25 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 26 | 22 |
| Change Point | 21 | 53 |

## Signal Timings Diagram



## 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: Brackmills Interchange - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **123.1%** |
| **A45 Brackmills Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **123.1%** |
| 1/1 | A45 Northbound offslip Left Ahead | U | 1 | N/A | A | | 1 | 24 | - | 1007 | 1964 | 818 | 123.1% |
| 1/2 | A45 Northbound offslip Ahead | U | 1 | N/A | A | | 1 | 24 | - | 1007 | 1965 | 819 | 123.0% |
| 2/1 | Ahead Right | U | 1 | N/A | B | | 1 | 24 | - | 833 | 1900 | 792 | 88.5% |
| 2/2 | Right | U | 1 | N/A | B | | 1 | 24 | - | 814 | 1900 | 792 | 86.5% |
| 5/1+5/2 | Eagle Drive Left Ahead | O | N/A | N/A | - | | - | - | - | 704 | Inf : Inf | 338+301 | 110.4 : 110.0% |
| 7/1 | Ahead | U | 2 | N/A | D | | 1 | 21 | - | 461 | 1900 | 697 | 54.4% |
| 7/2 | Right Ahead | U | 2 | N/A | D | | 1 | 21 | - | 403 | 1900 | 697 | 49.5% |
| 8/2+8/1 | A45 Southbound offslip Left | U | 2 | N/A | C | | 1 | 27 | - | 172 | 2120:1932 | 794+724 | 11.3 : 11.3% |
| 8/3 | A45 Southbound offslip Ahead | U | 2 | N/A | C | | 1 | 27 | - | 588 | 1980 | 924 | 63.6% |
| 9/1 | Right Ahead | U | 3 | N/A | F | | 1 | 22 | - | 680 | 1900 | 728 | 92.2% |
| 12/1 | Carswell Road Ahead Left | U | 3 | N/A | E | | 1 | 26 | - | 1022 | 1911 | 860 | 118.8% |
| 12/2 | Carswell Road Ahead | U | 3 | N/A | E | | 1 | 26 | - | 1038 | 1940 | 873 | 118.9% |

| 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: Brackmills Interchange - J3 Cumulative Impact** | **-** | **-** | **1277** | **0** | **0** | **49.5** | **401.6** | **0.0** | **451.1** | **-** | **-** | **-** | **-** |
| **A45 Brackmills Interchange** | **-** | **-** | **1277** | **0** | **0** | **49.5** | **401.6** | **0.0** | **451.1** | **-** | **-** | **-** | **-** |
| 1/1 | 1007 | 818 | - | - | - | 10.1 | 96.9 | - | 107.1 | 382.8 | 19.9 | 96.9 | 116.9 |
| 1/2 | 1007 | 819 | - | - | - | 10.1 | 96.7 | - | 106.9 | 382.0 | 19.9 | 96.7 | 116.6 |
| 2/1 | 701 | 701 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.4 | 4.8 | 0.0 | 4.8 |
| 2/2 | 685 | 685 | - | - | - | 0.1 | 0.0 | - | 0.1 | 0.4 | 4.2 | 0.0 | 4.2 |
| 5/1+5/2 | 704 | 639 | 1277 | 0 | 0 | 3.7 | 37.4 | - | 41.1 | 210.3 | 17.2 | 37.4 | 54.6 |
| 7/1 | 379 | 379 | - | - | - | 0.8 | 0.0 | - | 0.8 | 8.0 | 6.1 | 0.0 | 6.1 |
| 7/2 | 345 | 345 | - | - | - | 0.9 | 0.0 | - | 0.9 | 9.7 | 4.4 | 0.0 | 4.4 |
| 8/2+8/1 | 172 | 172 | - | - | - | 0.4 | 0.1 | - | 0.5 | 10.3 | 0.8 | 0.1 | 0.9 |
| 8/3 | 588 | 588 | - | - | - | 2.0 | 0.9 | - | 2.9 | 17.5 | 7.3 | 0.9 | 8.2 |
| 9/1 | 672 | 672 | - | - | - | 1.5 | 0.0 | - | 1.5 | 8.1 | 3.4 | 0.0 | 3.4 |
| 12/1 | 1022 | 860 | - | - | - | 9.8 | 84.1 | - | 93.8 | 330.5 | 21.3 | 84.1 | 105.4 |
| 12/2 | 1038 | 873 | - | - | - | 9.9 | 85.5 | - | 95.5 | 331.1 | 21.6 | 85.5 | 107.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -36.7 | Total Delay for Signalled Lanes (pcuHr): | 214.07 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 41.4 | Total Delay for Signalled Lanes (pcuHr): | 5.12 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | -32.1 | Total Delay for Signalled Lanes (pcuHr): | 190.80 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -36.7 | Total Delay Over All Lanes(pcuHr): | 451.11 | | |

# JUNCTION 15

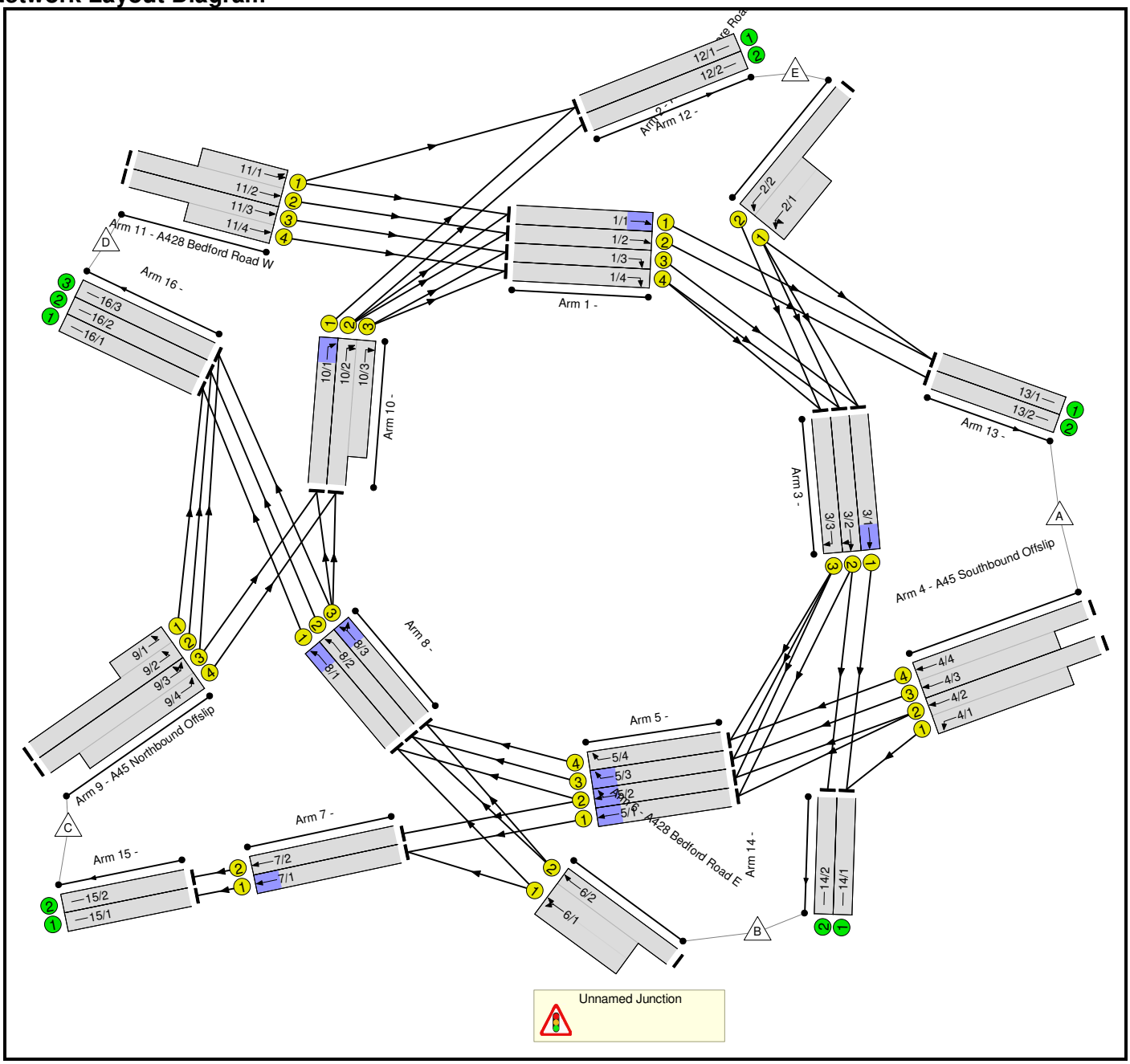
# A45 BARNES MEADOW INTERCHANGE

## Full Input Data And Results

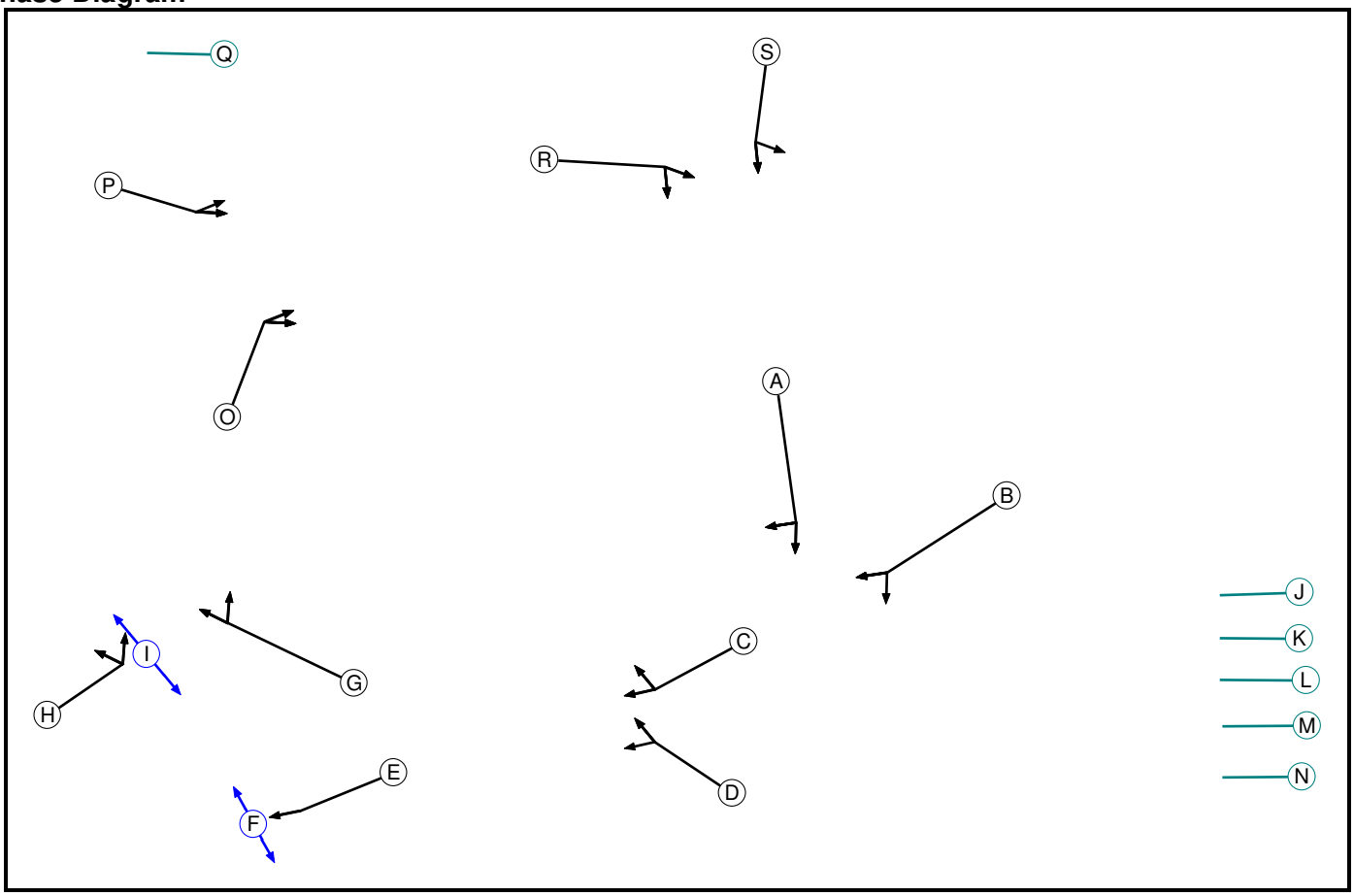
### User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **A45 Barnes Meadow Interchange - J3 Cumulative Impact** |
| **Location:** | |
| **File name:** | 180321 Barnes Meadow RC.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure Ltd |
| **Address:** | Western House, Nottingham |
| **Notes:** | |

### Network Layout Diagram



## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |
| E | Traffic | 3 | | 7 | 7 |
| F | Pedestrian | 3 | | 5 | 5 |
| G | Traffic | 4 | | 7 | 0 |
| H | Traffic | 4 | | 7 | 7 |
| I | Pedestrian | 4 | | 6 | 6 |
| J | Dummy | | | 7 | 7 |
| K | Dummy | | | 7 | 7 |
| L | Dummy | | | 7 | 7 |
| M | Dummy | | | 7 | 7 |
| N | Dummy | | | 7 | 7 |
| O | Traffic | 5 | | 7 | 7 |
| P | Traffic | 5 | | 7 | 7 |
| Q | Dummy | | | 7 | 7 |
| R | Traffic | 6 | | 7 | 7 |
| S | Traffic | 6 | | 7 | 7 |

## Phase Intergreens Matrix

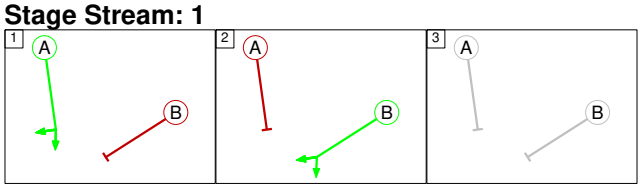
| Terminating Phase \ Starting Phase | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | 5 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| C | - | - | | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| D | - | - | 5 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| E | - | - | - | - | | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| F | - | - | - | - | 9 | | - | - | - | - | - | - | - | - | - | - | - | - | - |
| G | - | - | - | - | - | - | | 5 | - | - | - | - | - | - | - | - | - | - | - |
| H | - | - | - | - | - | - | 5 | | 5 | - | - | - | - | - | - | - | - | - | - |
| I | - | - | - | - | - | - | - | 14 | | - | - | - | - | - | - | - | - | - | - |
| J | - | - | - | - | - | - | - | - | - | | - | - | - | - | - | - | - | - | - |
| K | - | - | - | - | - | - | - | - | - | - | | - | - | - | - | - | - | - | - |
| L | - | - | - | - | - | - | - | - | - | - | - | | - | - | - | - | - | - | - |
| M | - | - | - | - | - | - | - | - | - | - | - | - | | - | - | - | - | - | - |
| N | - | - | - | - | - | - | - | - | - | - | - | - | - | | - | - | - | - | - |
| O | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | 5 | - | - | - |
| P | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | | - | - | - |
| Q | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | - | - |
| R | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | 5 |
| S | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 5 | |

## Phases in Stage

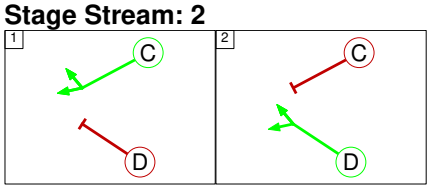
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 1 | 3 | |
| 2 | 1 | C |
| 2 | 2 | D |
| 3 | 1 | E |
| 3 | 2 | F |
| 4 | 1 | G I |
| 4 | 2 | H |
| 5 | 1 | O |
| 5 | 2 | P |
| 6 | 1 | R |
| 6 | 2 | S |

## Stage Diagram

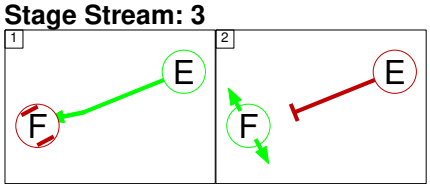
### Stage Stream: 1



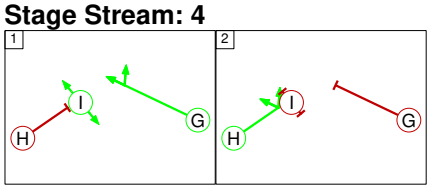
**Stage Stream: 2**



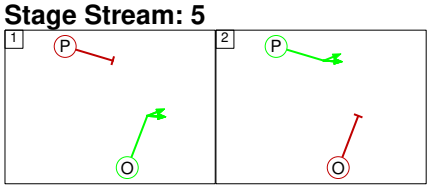

**Stage Stream: 3**



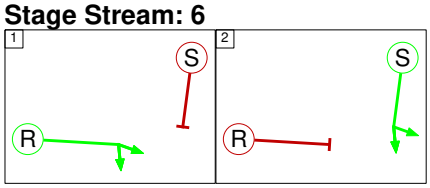

**Stage Stream: 4**




**Stage Stream: 5**




**Stage Stream: 6**



## Lane Input Data

| Junction: Unnamed Junction | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 | U | R | 2 | 3 | 8.7 | Geom | - | 3.50 | 0.00 | Y | Arm 13 Ahead | Inf |
| 1/2 | U | R | 2 | 3 | 8.7 | Geom | - | 3.50 | 0.00 | N | Arm 13 Ahead | Inf |
| 1/3 | U | R | 2 | 3 | 8.7 | Geom | - | 3.50 | 0.00 | N | Arm 3 Right | Inf |
| 1/4 | U | R | 2 | 3 | 8.7 | Geom | - | 3.50 | 0.00 | N | Arm 3 Right | Inf |
| 2/1 (A5095 Rushmere Road) | U | S | 2 | 3 | 6.0 | User | 3600 | - | - | - | - | - |
| 2/2 (A5095 Rushmere Road) | U | S | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 3 Ahead | 26.00 |
| 3/1 | U | A | 2 | 3 | 26.1 | Geom | - | 3.65 | 0.00 | Y | Arm 14 Ahead | 40.00 |
| 3/2 | U | A | 2 | 3 | 26.1 | Geom | - | 3.65 | 0.00 | N | Arm 5 Right | 50.00 |
| | | | | | | | | | | | Arm 14 Ahead | Inf |
| 3/3 | U | A | 2 | 3 | 26.1 | Geom | - | 3.65 | 0.00 | N | Arm 5 Right | 45.00 |
| 4/1 (A45 Southbound Offslip) | U | B | 2 | 3 | 15.0 | Geom | - | 3.65 | 0.00 | Y | Arm 14 Left | 35.00 |
| 4/2 (A45 Southbound Offslip) | U | B | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 5 Ahead | Inf |
| 4/3 (A45 Southbound Offslip) | U | B | 2 | 3 | 22.0 | Geom | - | 3.65 | 0.00 | N | Arm 5 Ahead | Inf |
| 4/4 (A45 Southbound Offslip) | U | B | 2 | 3 | 60.0 | Geom | - | 3.25 | 0.00 | Y | Arm 5 Ahead | Inf |
| 5/1 | U | C | 2 | 3 | 13.0 | Geom | - | 3.65 | 0.00 | Y | Arm 7 Ahead | 30.00 |
| 5/2 | U | C | 2 | 3 | 13.0 | Geom | - | 3.65 | 0.00 | N | Arm 7 Ahead | Inf |
| | | | | | | | | | | | Arm 8 Right | 35.00 |
| 5/3 | U | C | 2 | 3 | 13.0 | Geom | - | 3.65 | 0.00 | N | Arm 8 Right | 35.00 |
| 5/4 | U | C | 2 | 3 | 13.0 | Geom | - | 3.25 | 0.00 | Y | Arm 8 Right | Inf |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/1 (A428 Bedford Road E) | U | D | 2 | 3 | 8.0 | User | 3800 | - | - | - | - | - |
| 6/2 (A428 Bedford Road E) | U | D | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 8 Ahead | 45.00 |
| 7/1 | U | E | 2 | 3 | 10.4 | Geom | - | 3.65 | 0.00 | Y | Arm 15 Ahead | Inf |
| 7/2 | U | E | 2 | 3 | 10.4 | Geom | - | 3.65 | 0.00 | N | Arm 15 Ahead | Inf |
| 8/1 | U | G | 2 | 3 | 17.4 | Geom | - | 3.65 | 0.00 | Y | Arm 16 Ahead | 35.00 |
| 8/2 | U | G | 2 | 3 | 17.4 | Geom | - | 3.65 | 0.00 | N | Arm 16 Ahead | 40.00 |
| 8/3 | U | G | 2 | 3 | 17.4 | Geom | - | 3.65 | 0.00 | N | Arm 10 Ahead | 50.00 |
| | | | | | | | | | | | Arm 16 Ahead | Inf |
| 9/1 (A45 Northbound Offslip) | U | H | 2 | 3 | 5.0 | Geom | - | 3.65 | 0.00 | Y | Arm 16 Left | 25.00 |
| 9/2 (A45 Northbound Offslip) | U | H | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 16 Left | Inf |
| 9/3 (A45 Northbound Offslip) | U | H | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 10 Left | Inf |
| | | | | | | | | | | | Arm 16 Left | Inf |
| 9/4 (A45 Northbound Offslip) | U | H | 2 | 3 | 15.0 | Geom | - | 3.65 | 0.00 | N | Arm 10 Left | Inf |
| 10/1 | U | O | 2 | 3 | 31.3 | Geom | - | 3.65 | 0.00 | Y | Arm 12 Right | 40.00 |
| 10/2 | U | O | 2 | 3 | 31.3 | Geom | - | 3.65 | 0.00 | N | Arm 1 Right | 45.00 |
| | | | | | | | | | | | Arm 12 Right | 45.00 |
| 10/3 | U | O | 2 | 3 | 10.4 | Geom | - | 3.65 | 0.00 | N | Arm 1 Right | 50.00 |
| 11/1 (A428 Bedford Road W) | U | P | 2 | 3 | 7.0 | Geom | - | 3.50 | 0.00 | Y | Arm 1 Ahead | 60.00 |
| | | | | | | | | | | | Arm 12 Ahead | 60.00 |
| 11/2 (A428 Bedford Road W) | U | P | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | N | Arm 1 Ahead | Inf |
| 11/3 (A428 Bedford Road W) | U | P | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 |
| 11/4 (A428 Bedford Road W) | U | P | 2 | 3 | 7.0 | Geom | - | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 |
| 12/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 12/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 13/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 14/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 14/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 15/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 15/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 16/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 16/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 16/3 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 Ref AM' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 Ref PM' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 Dev AM' | 08:00 | 09:00 | 01:00 | |
| 6: '2031 J3 Dev PM' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Staging Plan No. 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | Tot. |
| Origin | A | 0 | 386 | 512 | 1388 | 27 | 2313 |
| | B | 143 | 0 | 96 | 277 | 159 | 675 |
| | C | 0 | 118 | 0 | 910 | 189 | 1217 |
| | D | 844 | 719 | 181 | 0 | 150 | 1894 |
| | E | 168 | 437 | 753 | 113 | 0 | 1471 |
| | Tot. | 1155 | 1660 | 1542 | 2688 | 525 | 7570 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 Ref AM |
|---|---|
| 1/1 | 467 |
| 1/2 | 520 |
| 1/3 | 478 |
| 1/4 | 540 |
| 2/1 (short) | 811 |
| 2/2 (with short) | 1471(In) 660(Out) |
| 3/1 | 742 |
| 3/2 | 834 |
| 3/3 | 745 |
| 4/1 (short) | 386 |
| 4/2 (with short) | 1054(In) 668(Out) |
| 4/3 (short) | 718 |
| 4/4 (with short) | 1259(In) 541(Out) |
| 5/1 | 762 |
| 5/2 | 920 |
| 5/3 | 746 |
| 5/4 | 546 |
| 6/1 (short) | 370 |
| 6/2 (with short) | 675(In) 305(Out) |
| 7/1 | 858 |
| 7/2 | 684 |
| 8/1 | 510 |
| 8/2 | 749 |
| 8/3 | 848 |
| 9/1 (short) | 264 |
| 9/2 (with short) | 566(In) 302(Out) |
| 9/3 (with short) | 651(In) 411(Out) |
| 9/4 (short) | 240 |
| 10/1 | 206 |
| 10/2 (with short) | 430(In) 312(Out) |
| 10/3 (short) | 118 |
| 11/1 (short) | 515 |
| 11/2 (with short) | 994(In) 479(Out) |
| 11/3 (with short) | 900(In) 385(Out) |
| 11/4 (short) | 515 |
| 12/1 | 356 |
| 12/2 | 169 |
| 13/1 | 635 |
| 13/2 | 520 |
| 14/1 | 1128 |
| 14/2 | 532 |
| 15/1 | 858 |
| 15/2 | 684 |
| 16/1 | 774 |
| 16/2 | 1051 |
| 16/3 | 863 |

## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 | 3.50 | 0.00 | Y | Arm 13 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 | 3.50 | 0.00 | N | Arm 13 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 | 3.50 | 0.00 | N | Arm 3 Right | Inf | 100.0 % | 2105 | 2105 |
| 1/4 | 3.50 | 0.00 | N | Arm 3 Right | Inf | 100.0 % | 2105 | 2105 |
| 2/1 (A5095 Rushmere Road Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 3600 | 3600 |
| 2/2 (A5095 Rushmere Road) | 3.65 | 0.00 | N | Arm 3 Ahead | 26.00 | 100.0 % | 2004 | 2004 |
| 3/1 | 3.65 | 0.00 | Y | Arm 14 Ahead | 40.00 | 100.0 % | 1908 | 1908 |
| 3/2 | 3.65 | 0.00 | N | Arm 5 Right | 50.00 | 36.2 % | 2097 | 2097 |
| | | | | Arm 14 Ahead | Inf | 63.8 % | | |
| 3/3 | 3.65 | 0.00 | N | Arm 5 Right | 45.00 | 100.0 % | 2052 | 2052 |
| 4/1 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 14 Left | 35.00 | 100.0 % | 1899 | 1899 |
| 4/2 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/3 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/4 (A45 Southbound Offslip) | 3.25 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/1 | 3.65 | 0.00 | Y | Arm 7 Ahead | 30.00 | 100.0 % | 1886 | 1886 |
| 5/2 | 3.65 | 0.00 | N | Arm 7 Ahead | Inf | 74.3 % | 2097 | 2097 |
| | | | | Arm 8 Right | 35.00 | 25.7 % | | |
| 5/3 | 3.65 | 0.00 | N | Arm 8 Right | 35.00 | 100.0 % | 2033 | 2033 |
| 5/4 | 3.25 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1940 | 1940 |
| 6/1 (A428 Bedford Road E Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 3800 | 3800 |
| 6/2 (A428 Bedford Road E) | 3.65 | 0.00 | N | Arm 8 Ahead | 45.00 | 100.0 % | 2052 | 2052 |
| 7/1 | 3.65 | 0.00 | Y | Arm 15 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 7/2 | 3.65 | 0.00 | N | Arm 15 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 8/1 | 3.65 | 0.00 | Y | Arm 16 Ahead | 35.00 | 100.0 % | 1899 | 1899 |
| 8/2 | 3.65 | 0.00 | N | Arm 16 Ahead | 40.00 | 100.0 % | 2043 | 2043 |
| 8/3 | 3.65 | 0.00 | N | Arm 10 Ahead | 50.00 | 38.8 % | 2096 | 2096 |
| | | | | Arm 16 Ahead | Inf | 61.2 % | | |
| 9/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 16 Left | 25.00 | 100.0 % | 1868 | 1868 |
| 9/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 16 Left | Inf | 100.0 % | 2120 | 2120 |
| 9/3 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 16.3 % | 2120 | 2120 |
| | | | | Arm 16 Left | Inf | 83.7 % | | |
| 9/4 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 100.0 % | 2120 | 2120 |
| 10/1 | 3.65 | 0.00 | Y | Arm 12 Right | 40.00 | 100.0 % | 1908 | 1908 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10/2 | 3.65 | 0.00 | N | Arm 1 Right | 45.00 | 45.8 % | 2052 | 2052 |
| | | | | Arm 12 Right | 45.00 | 54.2 % | | |
| 10/3 | 3.65 | 0.00 | N | Arm 1 Right | 50.00 | 100.0 % | 2058 | 2058 |
| 11/1 (A428 Bedford Road W) | 3.50 | 0.00 | Y | Arm 1 Ahead | 60.00 | 70.9 % | 1917 | 1917 |
| | | | | Arm 12 Ahead | 60.00 | 29.1 % | | |
| 11/2 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 11/3 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 | 100.0 % | 2005 | 2005 |
| 11/4 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 | 100.0 % | 2005 | 2005 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 3: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Staging Plan No. 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | Tot. |
| Origin | A | 0 | 337 | 427 | 1497 | 97 | 2358 |
| | B | 89 | 0 | 157 | 305 | 113 | 664 |
| | C | 0 | 141 | 0 | 844 | 245 | 1230 |
| | D | 904 | 719 | 168 | 3 | 105 | 1899 |
| | E | 134 | 504 | 741 | 135 | 0 | 1514 |
| | Tot. | 1127 | 1701 | 1493 | 2784 | 560 | 7665 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 Dev AM |
|---|---|
| 1/1 | 464 |
| 1/2 | 529 |
| 1/3 | 511 |
| 1/4 | 520 |
| 2/1 (short) | 789 |
| 2/2 (with short) | 1514(In) 725(Out) |
| 3/1 | 750 |
| 3/2 | 849 |
| 3/3 | 812 |
| 4/1 (short) | 337 |
| 4/2 (with short) | 1028(In) 691(Out) |
| 4/3 (short) | 708 |
| 4/4 (with short) | 1330(In) 622(Out) |
| 5/1 | 658 |
| 5/2 | 978 |
| 5/3 | 775 |
| 5/4 | 657 |
| 6/1 (short) | 419 |
| 6/2 (with short) | 664(In) 245(Out) |
| 7/1 | 815 |
| 7/2 | 678 |
| 8/1 | 562 |
| 8/2 | 814 |
| 8/3 | 863 |
| 9/1 (short) | 251 |
| 9/2 (with short) | 536(In) 285(Out) |
| 9/3 (with short) | 694(In) 400(Out) |
| 9/4 (short) | 294 |
| 10/1 | 200 |
| 10/2 (with short) | 485(In) 344(Out) |
| 10/3 (short) | 141 |
| 11/1 (short) | 502 |
| 11/2 (with short) | 1009(In) 507(Out) |
| 11/3 (with short) | 890(In) 425(Out) |
| 11/4 (short) | 465 |
| 12/1 | 305 |
| 12/2 | 255 |
| 13/1 | 598 |
| 13/2 | 529 |
| 14/1 | 1087 |
| 14/2 | 614 |
| 15/1 | 815 |
| 15/2 | 678 |
| 16/1 | 813 |
| 16/2 | 1099 |
| 16/3 | 872 |

## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 | 3.50 | 0.00 | Y | Arm 13 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 | 3.50 | 0.00 | N | Arm 13 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 | 3.50 | 0.00 | N | Arm 3 Right | Inf | 100.0 % | 2105 | 2105 |
| 1/4 | 3.50 | 0.00 | N | Arm 3 Right | Inf | 100.0 % | 2105 | 2105 |
| 2/1 (A5095 Rushmere Road Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 3600 | 3600 |
| 2/2 (A5095 Rushmere Road) | 3.65 | 0.00 | N | Arm 3 Ahead | 26.00 | 100.0 % | 2004 | 2004 |
| 3/1 | 3.65 | 0.00 | Y | Arm 14 Ahead | 40.00 | 100.0 % | 1908 | 1908 |
| 3/2 | 3.65 | 0.00 | N | Arm 5 Right | 50.00 | 27.7 % | 2103 | 2103 |
| | | | | Arm 14 Ahead | Inf | 72.3 % | | |
| 3/3 | 3.65 | 0.00 | N | Arm 5 Right | 45.00 | 100.0 % | 2052 | 2052 |
| 4/1 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 14 Left | 35.00 | 100.0 % | 1899 | 1899 |
| 4/2 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/3 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/4 (A45 Southbound Offslip) | 3.25 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/1 | 3.65 | 0.00 | Y | Arm 7 Ahead | 30.00 | 100.0 % | 1886 | 1886 |
| 5/2 | 3.65 | 0.00 | N | Arm 7 Ahead | Inf | 69.3 % | 2092 | 2092 |
| | | | | Arm 8 Right | 35.00 | 30.7 % | | |
| 5/3 | 3.65 | 0.00 | N | Arm 8 Right | 35.00 | 100.0 % | 2033 | 2033 |
| 5/4 | 3.25 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1940 | 1940 |
| 6/1 (A428 Bedford Road E Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 3800 | 3800 |
| 6/2 (A428 Bedford Road E) | 3.65 | 0.00 | N | Arm 8 Ahead | 45.00 | 100.0 % | 2052 | 2052 |
| 7/1 | 3.65 | 0.00 | Y | Arm 15 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 7/2 | 3.65 | 0.00 | N | Arm 15 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 8/1 | 3.65 | 0.00 | Y | Arm 16 Ahead | 35.00 | 100.0 % | 1899 | 1899 |
| 8/2 | 3.65 | 0.00 | N | Arm 16 Ahead | 40.00 | 100.0 % | 2043 | 2043 |
| 8/3 | 3.65 | 0.00 | N | Arm 10 Ahead | 50.00 | 34.6 % | 2098 | 2098 |
| | | | | Arm 16 Ahead | Inf | 65.4 % | | |
| 9/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 16 Left | 25.00 | 100.0 % | 1868 | 1868 |
| 9/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 16 Left | Inf | 100.0 % | 2120 | 2120 |
| 9/3 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 23.0 % | 2120 | 2120 |
| | | | | Arm 16 Left | Inf | 77.0 % | | |
| 9/4 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 100.0 % | 2120 | 2120 |
| 10/1 | 3.65 | 0.00 | Y | Arm 12 Right | 40.00 | 100.0 % | 1908 | 1908 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10/2 | 3.65 | 0.00 | N | Arm 1 Right | 45.00 | 25.9 % | 2052 | 2052 |
| | | | | Arm 12 Right | 45.00 | 74.1 % | | |
| 10/3 | 3.65 | 0.00 | N | Arm 1 Right | 50.00 | 100.0 % | 2058 | 2058 |
| 11/1 (A428 Bedford Road W) | 3.50 | 0.00 | Y | Arm 1 Ahead | 60.00 | 79.1 % | 1917 | 1917 |
| | | | | Arm 12 Ahead | 60.00 | 20.9 % | | |
| 11/2 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 11/3 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 | 100.0 % | 2005 | 2005 |
| 11/4 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 | 100.0 % | 2005 | 2005 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 4: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Staging Plan No. 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | Tot. |
| Origin | A | 0 | 136 | 302 | 1142 | 10 | 1590 |
| | B | 397 | 0 | 159 | 422 | 661 | 1639 |
| | C | 0 | 56 | 0 | 907 | 325 | 1288 |
| | D | 1989 | 308 | 435 | 2 | 26 | 2760 |
| | E | 151 | 308 | 527 | 2 | 0 | 988 |
| | Tot. | 2537 | 808 | 1423 | 2475 | 1022 | 8265 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 Ref PM |
|---|---|
| 1/1 | 1177 |
| 1/2 | 1209 |
| 1/3 | 326 |
| 1/4 | 913 |
| 2/1 (short) | 627 |
| 2/2 (with short) | 988(In) 361(Out) |
| 3/1 | 534 |
| 3/2 | 681 |
| 3/3 | 861 |
| 4/1 (short) | 136 |
| 4/2 (with short) | 754(In) 618(Out) |
| 4/3 (short) | 622 |
| 4/4 (with short) | 836(In) 214(Out) |
| 5/1 | 781 |
| 5/2 | 799 |
| 5/3 | 626 |
| 5/4 | 652 |
| 6/1 (short) | 542 |
| 6/2 (with short) | 1639(In) 1097(Out) |
| 7/1 | 940 |
| 7/2 | 483 |
| 8/1 | 699 |
| 8/2 | 665 |
| 8/3 | 1710 |
| 9/1 (short) | 40 |
| 9/2 (with short) | 456(In) 416(Out) |
| 9/3 (with short) | 832(In) 502(Out) |
| 9/4 (short) | 330 |
| 10/1 | 748 |
| 10/2 (with short) | 1139(In) 1083(Out) |
| 10/3 (short) | 56 |
| 11/1 (short) | 638 |
| 11/2 (with short) | 1577(In) 939(Out) |
| 11/3 (with short) | 1183(In) 283(Out) |
| 11/4 (short) | 900 |
| 12/1 | 748 |
| 12/2 | 274 |
| 13/1 | 1328 |
| 13/2 | 1209 |
| 14/1 | 670 |
| 14/2 | 138 |
| 15/1 | 940 |
| 15/2 | 483 |
| 16/1 | 739 |
| 16/2 | 1081 |
| 16/3 | 655 |

## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 | 3.50 | 0.00 | Y | Arm 13 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 | 3.50 | 0.00 | N | Arm 13 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 | 3.50 | 0.00 | N | Arm 3 Right | Inf | 100.0 % | 2105 | 2105 |
| 1/4 | 3.50 | 0.00 | N | Arm 3 Right | Inf | 100.0 % | 2105 | 2105 |
| 2/1 (A5095 Rushmere Road Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 3600 | 3600 |
| 2/2 (A5095 Rushmere Road) | 3.65 | 0.00 | N | Arm 3 Ahead | 26.00 | 100.0 % | 2004 | 2004 |
| 3/1 | 3.65 | 0.00 | Y | Arm 14 Ahead | 40.00 | 100.0 % | 1908 | 1908 |
| 3/2 | 3.65 | 0.00 | N | Arm 5 Right | 50.00 | 79.7 % | 2070 | 2070 |
| | | | | Arm 14 Ahead | Inf | 20.3 % | | |
| 3/3 | 3.65 | 0.00 | N | Arm 5 Right | 45.00 | 100.0 % | 2052 | 2052 |
| 4/1 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 14 Left | 35.00 | 100.0 % | 1899 | 1899 |
| 4/2 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/3 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/4 (A45 Southbound Offslip) | 3.25 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/1 | 3.65 | 0.00 | Y | Arm 7 Ahead | 30.00 | 100.0 % | 1886 | 1886 |
| 5/2 | 3.65 | 0.00 | N | Arm 7 Ahead | Inf | 60.5 % | 2085 | 2085 |
| | | | | Arm 8 Right | 35.00 | 39.5 % | | |
| 5/3 | 3.65 | 0.00 | N | Arm 8 Right | 35.00 | 100.0 % | 2033 | 2033 |
| 5/4 | 3.25 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1940 | 1940 |
| 6/1 (A428 Bedford Road E Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 3800 | 3800 |
| 6/2 (A428 Bedford Road E) | 3.65 | 0.00 | N | Arm 8 Ahead | 45.00 | 100.0 % | 2052 | 2052 |
| 7/1 | 3.65 | 0.00 | Y | Arm 15 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 7/2 | 3.65 | 0.00 | N | Arm 15 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 8/1 | 3.65 | 0.00 | Y | Arm 16 Ahead | 35.00 | 100.0 % | 1899 | 1899 |
| 8/2 | 3.65 | 0.00 | N | Arm 16 Ahead | 40.00 | 100.0 % | 2043 | 2043 |
| 8/3 | 3.65 | 0.00 | N | Arm 10 Ahead | 50.00 | 88.1 % | 2065 | 2065 |
| | | | | Arm 16 Ahead | Inf | 11.9 % | | |
| 9/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 16 Left | 25.00 | 100.0 % | 1868 | 1868 |
| 9/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 16 Left | Inf | 100.0 % | 2120 | 2120 |
| 9/3 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 10.2 % | 2120 | 2120 |
| | | | | Arm 16 Left | Inf | 89.8 % | | |
| 9/4 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 100.0 % | 2120 | 2120 |
| 10/1 | 3.65 | 0.00 | Y | Arm 12 Right | 40.00 | 100.0 % | 1908 | 1908 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10/2 | 3.65 | 0.00 | N | Arm 1 Right | 45.00 | 74.7 % | 2052 | 2052 |
| | | | | Arm 12 Right | 45.00 | 25.3 % | | |
| 10/3 | 3.65 | 0.00 | N | Arm 1 Right | 50.00 | 100.0 % | 2058 | 2058 |
| 11/1 (A428 Bedford Road W) | 3.50 | 0.00 | Y | Arm 1 Ahead | 60.00 | 100.0 % | 1917 | 1917 |
| | | | | Arm 12 Ahead | 60.00 | 0.0 % | | |
| 11/2 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 11/3 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 | 100.0 % | 2005 | 2005 |
| 11/4 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 | 100.0 % | 2005 | 2005 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 6: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Staging Plan No. 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | Tot. |
| Origin | A | 0 | 167 | 245 | 1156 | 1 | 1569 |
| | B | 404 | 0 | 130 | 434 | 668 | 1636 |
| | C | 0 | 57 | 3 | 869 | 297 | 1226 |
| | D | 1853 | 343 | 400 | 8 | 33 | 2637 |
| | E | 212 | 338 | 526 | 0 | 0 | 1076 |
| | Tot. | 2469 | 905 | 1304 | 2467 | 999 | 8144 |

## Traffic Lane Flows

| Lane | Scenario 6: 2031 J3 Dev PM |
|---|---|
| 1/1 | 1063 |
| 1/2 | 1194 |
| 1/3 | 358 |
| 1/4 | 849 |
| 2/1 (short) | 697 |
| 2/2 (with short) | 1076(In) 379(Out) |
| 3/1 | 519 |
| 3/2 | 718 |
| 3/3 | 834 |
| 4/1 (short) | 167 |
| 4/2 (with short) | 756(In) 589(Out) |
| 4/3 (short) | 591 |
| 4/4 (with short) | 813(In) 222(Out) |
| 5/1 | 722 |
| 5/2 | 796 |
| 5/3 | 599 |
| 5/4 | 618 |
| 6/1 (short) | 442 |
| 6/2 (with short) | 1636(In) 1194(Out) |
| 7/1 | 852 |
| 7/2 | 452 |
| 8/1 | 656 |
| 8/2 | 718 |
| 8/3 | 1693 |
| 9/1 (short) | 267 |
| 9/2 (with short) | 571(In) 304(Out) |
| 9/3 (with short) | 655(In) 402(Out) |
| 9/4 (short) | 253 |
| 10/1 | 792 |
| 10/2 (with short) | 1034(In) 974(Out) |
| 10/3 (short) | 60 |
| 11/1 (short) | 616 |
| 11/2 (with short) | 1490(In) 874(Out) |
| 11/3 (with short) | 1147(In) 309(Out) |
| 11/4 (short) | 838 |
| 12/1 | 805 |
| 12/2 | 194 |
| 13/1 | 1275 |
| 13/2 | 1194 |
| 14/1 | 686 |
| 14/2 | 219 |
| 15/1 | 852 |
| 15/2 | 452 |
| 16/1 | 923 |
| 16/2 | 1022 |
| 16/3 | 522 |

## Lane Saturation Flows

| Junction: Unnamed Junction | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 | 3.50 | 0.00 | Y | Arm 13 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 1/2 | 3.50 | 0.00 | N | Arm 13 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 | 3.50 | 0.00 | N | Arm 3 Right | Inf | 100.0 % | 2105 | 2105 |
| 1/4 | 3.50 | 0.00 | N | Arm 3 Right | Inf | 100.0 % | 2105 | 2105 |
| 2/1 (A5095 Rushmere Road Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 3600 | 3600 |
| 2/2 (A5095 Rushmere Road) | 3.65 | 0.00 | N | Arm 3 Ahead | 26.00 | 100.0 % | 2004 | 2004 |
| 3/1 | 3.65 | 0.00 | Y | Arm 14 Ahead | 40.00 | 100.0 % | 1908 | 1908 |
| 3/2 | 3.65 | 0.00 | N | Arm 5 Right | 50.00 | 69.5 % | 2077 | 2077 |
| | | | | Arm 14 Ahead | Inf | 30.5 % | | |
| 3/3 | 3.65 | 0.00 | N | Arm 5 Right | 45.00 | 100.0 % | 2052 | 2052 |
| 4/1 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 14 Left | 35.00 | 100.0 % | 1899 | 1899 |
| 4/2 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/3 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 4/4 (A45 Southbound Offslip) | 3.25 | 0.00 | Y | Arm 5 Ahead | Inf | 100.0 % | 1940 | 1940 |
| 5/1 | 3.65 | 0.00 | Y | Arm 7 Ahead | 30.00 | 100.0 % | 1886 | 1886 |
| 5/2 | 3.65 | 0.00 | N | Arm 7 Ahead | Inf | 56.8 % | 2081 | 2081 |
| | | | | Arm 8 Right | 35.00 | 43.2 % | | |
| 5/3 | 3.65 | 0.00 | N | Arm 8 Right | 35.00 | 100.0 % | 2033 | 2033 |
| 5/4 | 3.25 | 0.00 | Y | Arm 8 Right | Inf | 100.0 % | 1940 | 1940 |
| 6/1 (A428 Bedford Road E Lane 1) | This lane uses a directly entered Saturation Flow | | | | | | 3800 | 3800 |
| 6/2 (A428 Bedford Road E) | 3.65 | 0.00 | N | Arm 8 Ahead | 45.00 | 100.0 % | 2052 | 2052 |
| 7/1 | 3.65 | 0.00 | Y | Arm 15 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 7/2 | 3.65 | 0.00 | N | Arm 15 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 8/1 | 3.65 | 0.00 | Y | Arm 16 Ahead | 35.00 | 100.0 % | 1899 | 1899 |
| 8/2 | 3.65 | 0.00 | N | Arm 16 Ahead | 40.00 | 100.0 % | 2043 | 2043 |
| 8/3 | 3.65 | 0.00 | N | Arm 10 Ahead | 50.00 | 86.8 % | 2066 | 2066 |
| | | | | Arm 16 Ahead | Inf | 13.2 % | | |
| 9/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 16 Left | 25.00 | 100.0 % | 1868 | 1868 |
| 9/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 16 Left | Inf | 100.0 % | 2120 | 2120 |
| 9/3 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 25.9 % | 2120 | 2120 |
| | | | | Arm 16 Left | Inf | 74.1 % | | |
| 9/4 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 10 Left | Inf | 100.0 % | 2120 | 2120 |
| 10/1 | 3.65 | 0.00 | Y | Arm 12 Right | 40.00 | 100.0 % | 1908 | 1908 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 10/2 | 3.65 | 0.00 | N | Arm 1 Right | 45.00 | 80.1 % | 2052 | 2052 |
| | | | | Arm 12 Right | 45.00 | 19.9 % | | |
| 10/3 | 3.65 | 0.00 | N | Arm 1 Right | 50.00 | 100.0 % | 2058 | 2058 |
| 11/1 (A428 Bedford Road W) | 3.50 | 0.00 | Y | Arm 1 Ahead | 60.00 | 97.9 % | 1917 | 1917 |
| | | | | Arm 12 Ahead | 60.00 | 2.1 % | | |
| 11/2 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | Inf | 100.0 % | 2055 | 2055 |
| 11/3 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 | 100.0 % | 2005 | 2005 |
| 11/4 (A428 Bedford Road W) | 3.00 | 0.00 | N | Arm 1 Ahead | 60.00 | 100.0 % | 2005 | 2005 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 16/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Staging Plan No. 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 21 |
| Change Point | 1 | 35 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 35 | 15 |
| Change Point | 42 | 22 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 5 |
| Change Point | 37 | 27 |

**Stage Stream: 4**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 18 | 23 |
| Change Point | 42 | 5 |

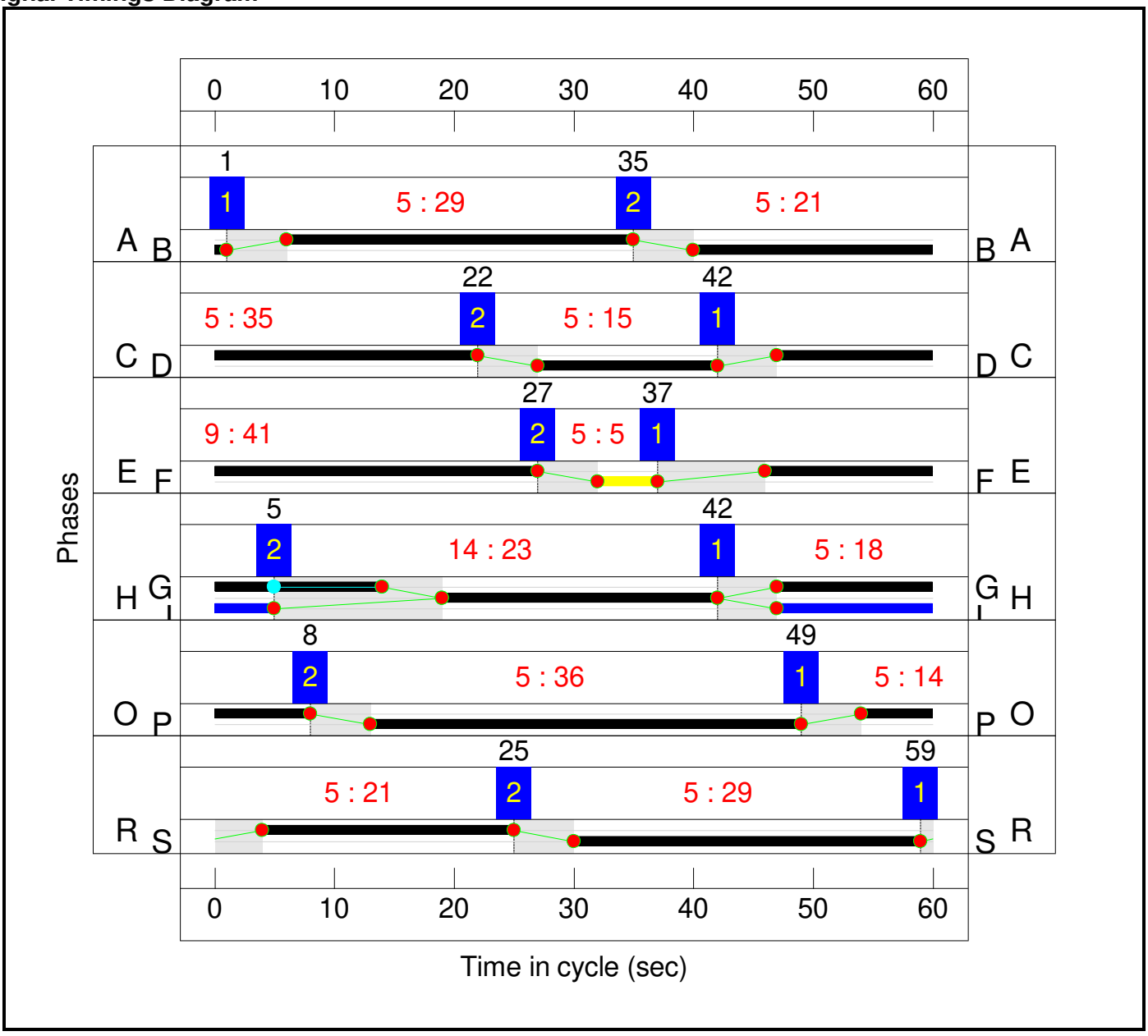
**Stage Stream: 5**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 14 | 36 |
| Change Point | 49 | 8 |

**Stage Stream: 6**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 21 | 29 |
| Change Point | 59 | 25 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | Ahead | U | 6 | N/A | R | | 1 | 21 | - | 467 | 1965 | 721 | 64.8% |
| 1/2 | Ahead | U | 6 | N/A | R | | 1 | 21 | - | 520 | 2105 | 772 | 67.4% |
| 1/3 | Right | U | 6 | N/A | R | | 1 | 21 | - | 478 | 2105 | 772 | 61.9% |
| 1/4 | Right | U | 6 | N/A | R | | 1 | 21 | - | 540 | 2105 | 772 | 70.0% |
| 2/2+2/1 | A5095 Rushmere Road | U | 6 | N/A | S | | 1 | 29 | - | 1471 | 2004:3600 | 1400 | 105.1% |
| 3/1 | Ahead | U | 1 | N/A | A | | 1 | 29 | - | 742 | 1908 | 954 | 76.4% |
| 3/2 | Right Ahead | U | 1 | N/A | A | | 1 | 29 | - | 834 | 2097 | 1049 | 77.8% |
| 3/3 | Right | U | 1 | N/A | A | | 1 | 29 | - | 745 | 2052 | 1026 | 69.5% |
| 4/2+4/1 | A45 Southbound Offslip Ahead Left | U | 1 | N/A | B | | 1 | 21 | - | 1054 | 2120:1899 | 1227 | 85.9% |
| 4/4+4/3 | A45 Southbound Offslip Ahead | U | 1 | N/A | B | | 1 | 21 | - | 1259 | 1940:2120 | 1489 | 84.6% |
| 5/1 | Ahead | U | 2 | N/A | C | | 1 | 35 | - | 762 | 1886 | 1132 | 66.5% |
| 5/2 | Ahead Right | U | 2 | N/A | C | | 1 | 35 | - | 920 | 2097 | 1258 | 70.7% |
| 5/3 | Right | U | 2 | N/A | C | | 1 | 35 | - | 746 | 2033 | 1220 | 61.0% |
| 5/4 | Right | U | 2 | N/A | C | | 1 | 35 | - | 546 | 1940 | 1164 | 46.9% |
| 6/2+6/1 | A428 Bedford Road E Left Ahead | U | 2 | N/A | D | | 1 | 15 | - | 675 | 2052:3800 | 1128 | 59.8% |
| 7/1 | Ahead | U | 3 | N/A | E | | 1 | 41 | - | 858 | 1980 | 1386 | 61.2% |
| 7/2 | Ahead | U | 3 | N/A | E | | 1 | 41 | - | 684 | 2120 | 1484 | 44.3% |
| 8/1 | Ahead | U | 4 | N/A | G | | 1 | 27 | - | 510 | 1899 | 886 | 57.1% |
| 8/2 | Ahead | U | 4 | N/A | G | | 1 | 27 | - | 749 | 2043 | 953 | 78.4% |
| 8/3 | Ahead Ahead2 | U | 4 | N/A | G | | 1 | 27 | - | 848 | 2096 | 978 | 86.7% |
| 9/2+9/1 | A45 Northbound Offslip Left | U | 4 | N/A | H | | 1 | 23 | - | 566 | 2120:1868 | 1094 | 51.7% |
| 9/3+9/4 | A45 Northbound Offslip Left Left2 | U | 4 | N/A | H | | 1 | 23 | - | 651 | 2120:2120 | 1343 | 48.5% |
| 10/1 | Right | U | 5 | N/A | O | | 1 | 14 | - | 206 | 1908 | 477 | 43.2% |
| 10/2+10/3 | Right Right2 | U | 5 | N/A | O | | 1 | 14 | - | 430 | 2052:2058 | 707 | 60.8% |
| 11/2+11/1 | A428 Bedford Road W Ahead Ahead2 | U | 5 | N/A | P | | 1 | 36 | - | 994 | 2055:1917 | 1603 | 62.0% |
| 11/3+11/4 | A428 Bedford Road W Ahead | U | 5 | N/A | P | | 1 | 36 | - | 900 | 2005:2005 | 1536 | 58.6% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 467 | 467 | - | - | - | 1.3 | 0.9 | - | 2.3 | 17.4 | 4.3 | 0.9 | 5.3 |
| 1/2 | 520 | 520 | - | - | - | 1.7 | 1.0 | - | 2.8 | 19.0 | 4.3 | 1.0 | 5.4 |
| 1/3 | 478 | 478 | - | - | - | 1.6 | 0.8 | - | 2.4 | 18.2 | 4.5 | 0.8 | 5.4 |
| 1/4 | 540 | 540 | - | - | - | 1.9 | 1.2 | - | 3.1 | 20.4 | 4.4 | 1.2 | 5.6 |
| 2/2+2/1 | 1471 | 1400 | - | - | - | 6.2 | 44.0 | - | 50.2 | 122.9 | 19.2 | 44.0 | 63.2 |
| 3/1 | 729 | 729 | - | - | - | 1.2 | 1.6 | - | 2.8 | 14.0 | 4.3 | 1.6 | 5.9 |
| 3/2 | 816 | 816 | - | - | - | 1.9 | 1.7 | - | 3.6 | 15.9 | 9.6 | 1.7 | 11.3 |
| 3/3 | 713 | 713 | - | - | - | 3.6 | 1.1 | - | 4.8 | 24.1 | 11.2 | 1.1 | 12.3 |
| 4/2+4/1 | 1054 | 1054 | - | - | - | 4.9 | 3.0 | - | 7.8 | 26.8 | 10.2 | 3.0 | 13.2 |
| 4/4+4/3 | 1259 | 1259 | - | - | - | 6.1 | 2.7 | - | 8.8 | 25.2 | 11.4 | 2.7 | 14.0 |
| 5/1 | 752 | 752 | - | - | - | 0.6 | 1.0 | - | 1.6 | 7.7 | 5.6 | 1.0 | 6.6 |
| 5/2 | 890 | 890 | - | - | - | 2.3 | 1.2 | - | 3.5 | 14.1 | 8.0 | 1.2 | 9.2 |
| 5/3 | 745 | 745 | - | - | - | 0.4 | 0.8 | - | 1.2 | 5.7 | 7.1 | 0.8 | 7.8 |
| 5/4 | 546 | 546 | - | - | - | 0.2 | 0.4 | - | 0.6 | 3.9 | 8.1 | 0.4 | 8.6 |
| 6/2+6/1 | 675 | 675 | - | - | - | 3.4 | 0.7 | - | 4.2 | 22.3 | 4.3 | 0.7 | 5.1 |
| 7/1 | 848 | 848 | - | - | - | 0.3 | 0.8 | - | 1.1 | 4.6 | 1.6 | 0.8 | 2.4 |
| 7/2 | 657 | 657 | - | - | - | 0.0 | 0.4 | - | 0.4 | 2.2 | 0.0 | 0.4 | 0.4 |
| 8/1 | 506 | 506 | - | - | - | 1.4 | 0.7 | - | 2.0 | 14.5 | 5.5 | 0.7 | 6.2 |
| 8/2 | 748 | 748 | - | - | - | 0.6 | 1.8 | - | 2.3 | 11.3 | 1.2 | 1.8 | 3.0 |
| 8/3 | 848 | 848 | - | - | - | 1.1 | 3.1 | - | 4.2 | 18.0 | 5.8 | 3.1 | 8.9 |
| 9/2+9/1 | 566 | 566 | - | - | - | 2.0 | 0.5 | - | 2.5 | 16.0 | 3.4 | 0.5 | 4.0 |
| 9/3+9/4 | 651 | 651 | - | - | - | 2.3 | 0.5 | - | 2.8 | 15.6 | 5.0 | 0.5 | 5.5 |
| 10/1 | 206 | 206 | - | - | - | 0.5 | 0.4 | - | 0.9 | 16.0 | 1.5 | 0.4 | 1.8 |
| 10/2+10/3 | 430 | 430 | - | - | - | 1.3 | 0.8 | - | 2.1 | 17.3 | 10.5 | 0.8 | 11.2 |
| 11/2+11/1 | 994 | 994 | - | - | - | 1.6 | 0.8 | - | 2.4 | 8.8 | 4.4 | 0.8 | 5.2 |
| 11/3+11/4 | 900 | 900 | - | - | - | 1.4 | 0.7 | - | 2.1 | 8.6 | 4.3 | 0.7 | 5.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 4.7 | Total Delay for Signalled Lanes (pcuHr): | 27.86 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 27.3 | Total Delay for Signalled Lanes (pcuHr): | 11.07 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 47.1 | Total Delay for Signalled Lanes (pcuHr): | 1.49 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | 3.8 | Total Delay for Signalled Lanes (pcuHr): | 13.95 | Cycle Time (s): | 60 |
| C1 | Stream: 5 PRC for Signalled Lanes (%): | 45.1 | Total Delay for Signalled Lanes (pcuHr): | 7.56 | Cycle Time (s): | 60 |
| C1 | Stream: 6 PRC for Signalled Lanes (%): | -16.8 | Total Delay for Signalled Lanes (pcuHr): | 60.71 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -16.8 | Total Delay Over All Lanes(pcuHr): | 122.65 | | |

**Scenario 3: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Staging Plan No. 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 29 | 21 |
| Change Point | 1 | 35 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 9 |
| Change Point | 36 | 22 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 5 |
| Change Point | 17 | 7 |

**Stage Stream: 4**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 20 | 21 |
| Change Point | 42 | 7 |

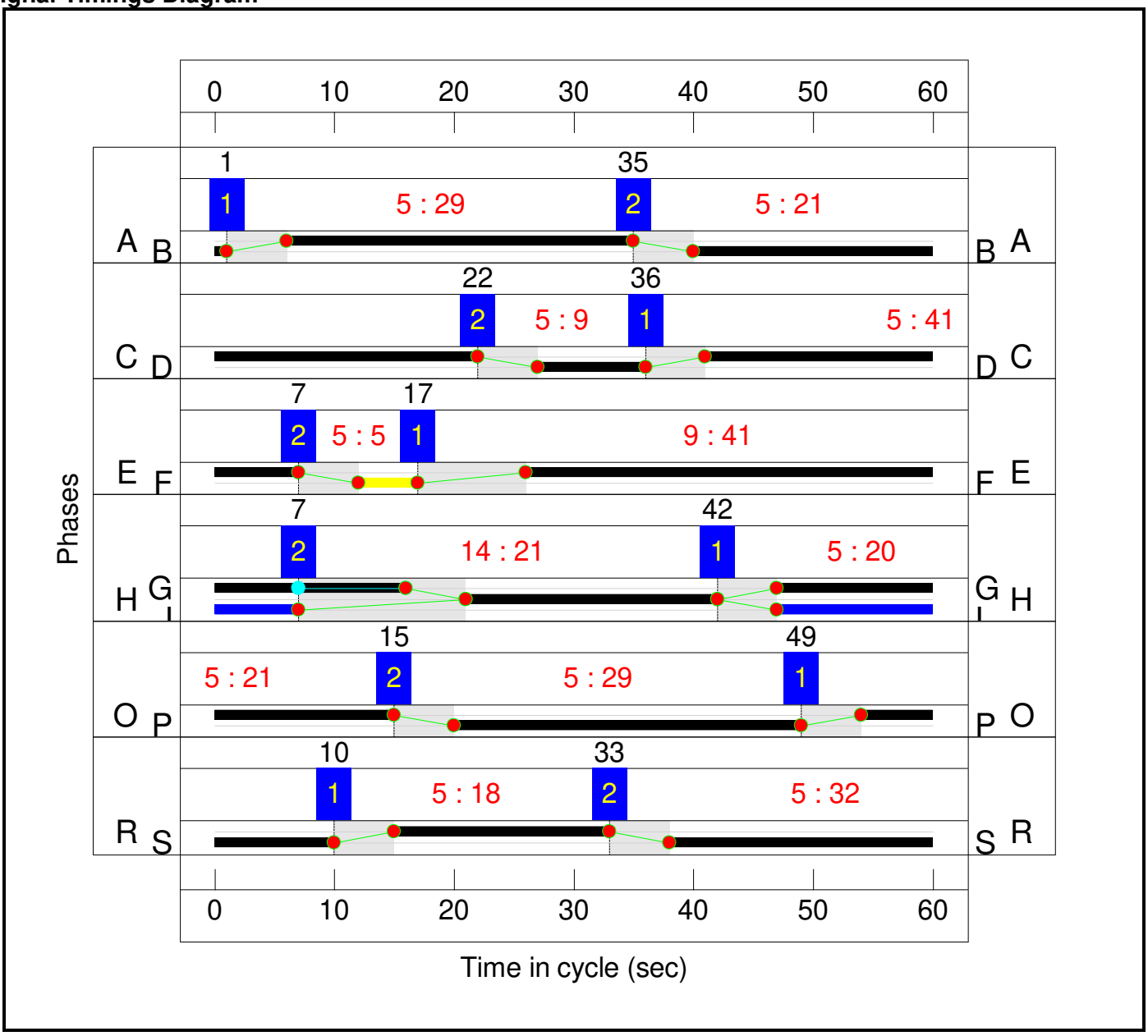
**Stage Stream: 5**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 21 | 29 |
| Change Point | 49 | 15 |

**Stage Stream: 6**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 18 | 32 |
| Change Point | 10 | 33 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | Ahead | U | 6 | N/A | R | | 1 | 18 | - | 464 | 1965 | 622 | 74.6% |
| 1/2 | Ahead | U | 6 | N/A | R | | 1 | 18 | - | 529 | 2105 | 667 | 79.4% |
| 1/3 | Right | U | 6 | N/A | R | | 1 | 18 | - | 511 | 2105 | 667 | 76.7% |
| 1/4 | Right | U | 6 | N/A | R | | 1 | 18 | - | 520 | 2105 | 667 | 78.0% |
| 2/2+2/1 | A5095 Rushmere Road | U | 6 | N/A | S | | 1 | 32 | - | 1514 | 2004:3600 | 1446 | 104.7% |
| 3/1 | Ahead | U | 1 | N/A | A | | 1 | 29 | - | 750 | 1908 | 954 | 77.5% |
| 3/2 | Right Ahead | U | 1 | N/A | A | | 1 | 29 | - | 849 | 2103 | 1052 | 79.0% |
| 3/3 | Right | U | 1 | N/A | A | | 1 | 29 | - | 812 | 2052 | 1026 | 75.9% |
| 4/2+4/1 | A45 Southbound Offslip Ahead Left | U | 1 | N/A | B | | 1 | 21 | - | 1028 | 2120:1899 | 1156 | 88.9% |
| 4/4+4/3 | A45 Southbound Offslip Ahead | U | 1 | N/A | B | | 1 | 21 | - | 1330 | 1940:2120 | 1489 | 89.3% |
| 5/1 | Ahead | U | 2 | N/A | C | | 1 | 41 | - | 658 | 1886 | 1320 | 49.3% |
| 5/2 | Ahead Right | U | 2 | N/A | C | | 1 | 41 | - | 978 | 2092 | 1464 | 64.9% |
| 5/3 | Right | U | 2 | N/A | C | | 1 | 41 | - | 775 | 2033 | 1423 | 54.3% |
| 5/4 | Right | U | 2 | N/A | C | | 1 | 41 | - | 657 | 1940 | 1358 | 48.3% |
| 6/2+6/1 | A428 Bedford Road E Left Ahead | U | 2 | N/A | D | | 1 | 9 | - | 664 | 2052:3800 | 975 | 68.1% |
| 7/1 | Ahead | U | 3 | N/A | E | | 1 | 41 | - | 815 | 1980 | 1386 | 58.3% |
| 7/2 | Ahead | U | 3 | N/A | E | | 1 | 41 | - | 678 | 2120 | 1484 | 43.9% |
| 8/1 | Ahead | U | 4 | N/A | G | | 1 | 29 | - | 562 | 1899 | 950 | 59.0% |
| 8/2 | Ahead | U | 4 | N/A | G | | 1 | 29 | - | 814 | 2043 | 1022 | 79.4% |
| 8/3 | Ahead Ahead2 | U | 4 | N/A | G | | 1 | 29 | - | 863 | 2098 | 1049 | 82.1% |
| 9/2+9/1 | A45 Northbound Offslip Left | U | 4 | N/A | H | | 1 | 21 | - | 536 | 2120:1868 | 1029 | 52.1% |
| 9/3+9/4 | A45 Northbound Offslip Left Left2 | U | 4 | N/A | H | | 1 | 21 | - | 694 | 2120:2120 | 1349 | 51.5% |
| 10/1 | Right | U | 5 | N/A | O | | 1 | 21 | - | 200 | 1908 | 700 | 28.6% |
| 10/2+10/3 | Right Right2 | U | 5 | N/A | O | | 1 | 21 | - | 485 | 2052:2058 | 1006 | 48.2% |
| 11/2+11/1 | A428 Bedford Road W Ahead Ahead2 | U | 5 | N/A | P | | 1 | 29 | - | 1009 | 2055:1917 | 1406 | 71.7% |
| 11/3+11/4 | A428 Bedford Road W Ahead | U | 5 | N/A | P | | 1 | 29 | - | 890 | 2005:2005 | 1372 | 64.9% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 464 | 464 | - | - | - | 1.6 | 1.4 | - | 3.1 | 23.8 | 3.5 | 1.4 | 5.0 |
| 1/2 | 529 | 529 | - | - | - | 1.7 | 1.9 | - | 3.5 | 24.0 | 3.2 | 1.9 | 5.1 |
| 1/3 | 511 | 511 | - | - | - | 1.8 | 1.6 | - | 3.4 | 23.9 | 3.8 | 1.6 | 5.4 |
| 1/4 | 520 | 520 | - | - | - | 1.7 | 1.7 | - | 3.5 | 24.0 | 3.5 | 1.7 | 5.2 |
| 2/2+2/1 | 1514 | 1446 | - | - | - | 6.6 | 43.0 | - | 49.6 | 117.9 | 21.9 | 43.0 | 64.9 |
| 3/1 | 739 | 739 | - | - | - | 3.0 | 1.7 | - | 4.7 | 23.1 | 7.7 | 1.7 | 9.4 |
| 3/2 | 830 | 830 | - | - | - | 3.5 | 1.8 | - | 5.3 | 23.0 | 10.2 | 1.8 | 12.1 |
| 3/3 | 779 | 779 | - | - | - | 2.9 | 1.6 | - | 4.5 | 20.8 | 12.6 | 1.6 | 14.2 |
| 4/2+4/1 | 1028 | 1028 | - | - | - | 4.8 | 3.8 | - | 8.6 | 30.0 | 10.7 | 3.8 | 14.5 |
| 4/4+4/3 | 1330 | 1330 | - | - | - | 6.6 | 4.0 | - | 10.6 | 28.7 | 11.2 | 4.0 | 15.2 |
| 5/1 | 651 | 651 | - | - | - | 0.5 | 0.5 | - | 1.0 | 5.3 | 2.0 | 0.5 | 2.5 |
| 5/2 | 950 | 950 | - | - | - | 1.7 | 0.9 | - | 2.7 | 10.1 | 7.5 | 0.9 | 8.4 |
| 5/3 | 772 | 772 | - | - | - | 0.2 | 0.6 | - | 0.8 | 3.7 | 0.6 | 0.6 | 1.2 |
| 5/4 | 655 | 655 | - | - | - | 0.1 | 0.5 | - | 0.5 | 2.9 | 0.3 | 0.5 | 0.8 |
| 6/2+6/1 | 664 | 664 | - | - | - | 4.3 | 1.1 | - | 5.4 | 29.3 | 3.8 | 1.1 | 4.9 |
| 7/1 | 808 | 808 | - | - | - | 0.4 | 0.7 | - | 1.1 | 5.1 | 2.7 | 0.7 | 3.4 |
| 7/2 | 651 | 651 | - | - | - | 0.7 | 0.4 | - | 1.1 | 6.1 | 5.2 | 0.4 | 5.6 |
| 8/1 | 560 | 560 | - | - | - | 1.1 | 0.7 | - | 1.8 | 11.5 | 4.9 | 0.7 | 5.6 |
| 8/2 | 811 | 811 | - | - | - | 0.3 | 1.9 | - | 2.2 | 9.7 | 1.7 | 1.9 | 3.6 |
| 8/3 | 861 | 861 | - | - | - | 0.8 | 2.2 | - | 3.0 | 12.7 | 4.0 | 2.2 | 6.2 |
| 9/2+9/1 | 536 | 536 | - | - | - | 2.1 | 0.5 | - | 2.6 | 17.5 | 3.4 | 0.5 | 3.9 |
| 9/3+9/4 | 694 | 694 | - | - | - | 2.8 | 0.5 | - | 3.3 | 17.2 | 5.1 | 0.5 | 5.6 |
| 10/1 | 200 | 200 | - | - | - | 0.7 | 0.2 | - | 0.9 | 15.4 | 2.0 | 0.2 | 2.2 |
| 10/2+10/3 | 485 | 485 | - | - | - | 1.6 | 0.5 | - | 2.1 | 15.5 | 10.5 | 0.5 | 11.0 |
| 11/2+11/1 | 1009 | 1009 | - | - | - | 2.8 | 1.3 | - | 4.1 | 14.6 | 5.6 | 1.3 | 6.8 |
| 11/3+11/4 | 890 | 890 | - | - | - | 2.4 | 0.9 | - | 3.3 | 13.4 | 5.0 | 0.9 | 6.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 0.7 | Total Delay for Signalled Lanes (pcuHr): | 33.73 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 32.2 | Total Delay for Signalled Lanes (pcuHr): | 10.32 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 54.3 | Total Delay for Signalled Lanes (pcuHr): | 2.24 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | 9.6 | Total Delay for Signalled Lanes (pcuHr): | 12.93 | Cycle Time (s): | 60 |
| C1 | Stream: 5 PRC for Signalled Lanes (%): | 25.4 | Total Delay for Signalled Lanes (pcuHr): | 10.34 | Cycle Time (s): | 60 |
| C1 | Stream: 6 PRC for Signalled Lanes (%): | -16.4 | Total Delay for Signalled Lanes (pcuHr): | 63.03 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -16.4 | Total Delay Over All Lanes(pcuHr): | 132.59 | | |

**Scenario 4: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Staging Plan No. 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 13 |
| Change Point | 0 | 42 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 26 |
| Change Point | 48 | 17 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 5 |
| Change Point | 36 | 26 |

**Stage Stream: 4**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 10 |
| Change Point | 11 | 47 |

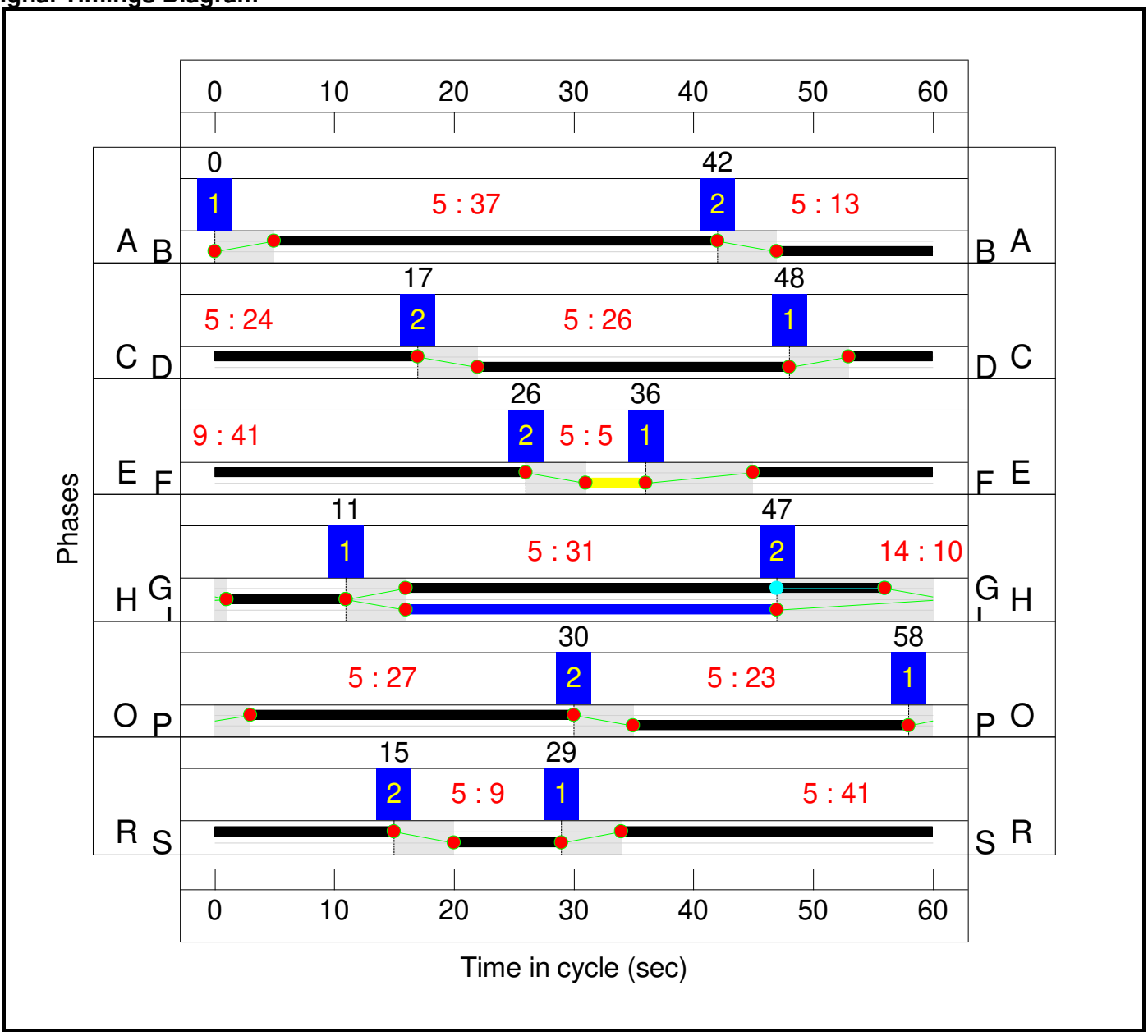
**Stage Stream: 5**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 27 | 23 |
| Change Point | 58 | 30 |

**Stage Stream: 6**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 9 |
| Change Point | 29 | 15 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | Ahead | U | 6 | N/A | R | | 1 | 41 | - | 1177 | 1965 | 1375 | 62.3% |
| 1/2 | Ahead | U | 6 | N/A | R | | 1 | 41 | - | 1209 | 2105 | 1473 | 57.5% |
| 1/3 | Right | U | 6 | N/A | R | | 1 | 41 | - | 326 | 2105 | 1473 | 17.8% |
| 1/4 | Right | U | 6 | N/A | R | | 1 | 41 | - | 913 | 2105 | 1473 | 48.4% |
| 2/2+2/1 | A5095 Rushmere Road | U | 6 | N/A | S | | 1 | 9 | - | 988 | 2004:3600 | 934 | 105.8% |
| 3/1 | Ahead | U | 1 | N/A | A | | 1 | 37 | - | 534 | 1908 | 1208 | 38.2% |
| 3/2 | Right Ahead | U | 1 | N/A | A | | 1 | 37 | - | 681 | 2070 | 1311 | 44.3% |
| 3/3 | Right | U | 1 | N/A | A | | 1 | 37 | - | 861 | 2052 | 1300 | 55.6% |
| 4/2+4/1 | A45 Southbound Offslip Ahead Left | U | 1 | N/A | B | | 1 | 13 | - | 754 | 2120:1899 | 604 | 124.9% |
| 4/4+4/3 | A45 Southbound Offslip Ahead | U | 1 | N/A | B | | 1 | 13 | - | 836 | 1940:2120 | 665 | 125.7% |
| 5/1 | Ahead | U | 2 | N/A | C | | 1 | 24 | - | 781 | 1886 | 786 | 81.8% |
| 5/2 | Ahead Right | U | 2 | N/A | C | | 1 | 24 | - | 799 | 2085 | 869 | 78.6% |
| 5/3 | Right | U | 2 | N/A | C | | 1 | 24 | - | 626 | 2033 | 847 | 58.8% |
| 5/4 | Right | U | 2 | N/A | C | | 1 | 24 | - | 652 | 1940 | 808 | 68.6% |
| 6/2+6/1 | A428 Bedford Road E Left Ahead | U | 2 | N/A | D | | 1 | 26 | - | 1639 | 2052:3800 | 1150 | 142.5% |
| 7/1 | Ahead | U | 3 | N/A | E | | 1 | 41 | - | 940 | 1980 | 1386 | 54.4% |
| 7/2 | Ahead | U | 3 | N/A | E | | 1 | 41 | - | 483 | 2120 | 1484 | 29.0% |
| 8/1 | Ahead | U | 4 | N/A | G | | 1 | 40 | - | 699 | 1899 | 1298 | 40.2% |
| 8/2 | Ahead | U | 4 | N/A | G | | 1 | 40 | - | 665 | 2043 | 1396 | 37.6% |
| 8/3 | Ahead Ahead2 | U | 4 | N/A | G | | 1 | 40 | - | 1710 | 2065 | 1411 | 91.9% |
| 9/2+9/1 | A45 Northbound Offslip Left | U | 4 | N/A | H | | 1 | 10 | - | 456 | 2120:1868 | 426 | 107.0% |
| 9/3+9/4 | A45 Northbound Offslip Left Left2 | U | 4 | N/A | H | | 1 | 10 | - | 832 | 2120:2120 | 777 | 107.0% |
| 10/1 | Right | U | 5 | N/A | O | | 1 | 27 | - | 748 | 1908 | 890 | 59.9% |
| 10/2+10/3 | Right Right2 | U | 5 | N/A | O | | 1 | 27 | - | 1139 | 2052:2058 | 985 | 94.3% |
| 11/2+11/1 | A428 Bedford Road W Ahead Ahead2 | U | 5 | N/A | P | | 1 | 23 | - | 1577 | 2055:1917 | 1105 | 142.7% |
| 11/3+11/4 | A428 Bedford Road W Ahead | U | 5 | N/A | P | | 1 | 23 | - | 1183 | 2005:2005 | 920 | 128.6% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 856 | 856 | - | - | - | 0.4 | 0.8 | - | 1.2 | 5.1 | 2.7 | 0.8 | 3.5 |
| 1/2 | 847 | 847 | - | - | - | 0.6 | 0.7 | - | 1.3 | 5.5 | 2.2 | 0.7 | 2.9 |
| 1/3 | 263 | 263 | - | - | - | 0.1 | 0.1 | - | 0.2 | 3.2 | 0.7 | 0.1 | 0.8 |
| 1/4 | 713 | 713 | - | - | - | 0.0 | 0.5 | - | 0.5 | 2.5 | 0.2 | 0.5 | 0.7 |
| 2/2+2/1 | 988 | 934 | - | - | - | 8.3 | 34.2 | - | 42.5 | 154.8 | 8.8 | 34.2 | 43.0 |
| 3/1 | 462 | 462 | - | - | - | 0.9 | 0.3 | - | 1.2 | 9.6 | 4.1 | 0.3 | 4.4 |
| 3/2 | 580 | 580 | - | - | - | 0.8 | 0.4 | - | 1.2 | 7.6 | 5.4 | 0.4 | 5.8 |
| 3/3 | 723 | 723 | - | - | - | 1.0 | 0.6 | - | 1.7 | 8.2 | 6.5 | 0.6 | 7.1 |
| 4/2+4/1 | 754 | 631 | - | - | - | 7.7 | 77.7 | - | 85.4 | 407.7 | 12.7 | 77.7 | 90.4 |
| 4/4+4/3 | 836 | 709 | - | - | - | 7.5 | 87.9 | - | 95.4 | 410.9 | 12.0 | 87.9 | 100.0 |
| 5/1 | 643 | 643 | - | - | - | 1.6 | 2.2 | - | 3.8 | 21.4 | 6.8 | 2.2 | 9.0 |
| 5/2 | 683 | 683 | - | - | - | 2.1 | 1.8 | - | 3.9 | 20.6 | 10.9 | 1.8 | 12.7 |
| 5/3 | 498 | 498 | - | - | - | 0.1 | 0.7 | - | 0.8 | 5.6 | 0.4 | 0.7 | 1.1 |
| 5/4 | 554 | 554 | - | - | - | 1.5 | 1.1 | - | 2.6 | 16.6 | 5.5 | 1.1 | 6.6 |
| 6/2+6/1 | 1639 | 1150 | - | - | - | 19.3 | 246.0 | - | 265.3 | 582.7 | 35.5 | 246.0 | 281.6 |
| 7/1 | 754 | 754 | - | - | - | 0.4 | 0.6 | - | 1.0 | 4.6 | 1.5 | 0.6 | 2.1 |
| 7/2 | 430 | 430 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.7 | 0.0 | 0.2 | 0.2 |
| 8/1 | 522 | 522 | - | - | - | 0.4 | 0.3 | - | 0.7 | 4.8 | 4.2 | 0.3 | 4.6 |
| 8/2 | 525 | 525 | - | - | - | 2.1 | 0.3 | - | 2.4 | 16.2 | 8.3 | 0.3 | 8.6 |
| 8/3 | 1297 | 1297 | - | - | - | 2.0 | 5.2 | - | 7.2 | 20.1 | 14.7 | 5.2 | 19.9 |
| 9/2+9/1 | 456 | 426 | - | - | - | 4.1 | 20.5 | - | 24.6 | 194.2 | 7.7 | 20.5 | 28.3 |
| 9/3+9/4 | 832 | 719 | - | - | - | 9.1 | 33.5 | - | 42.7 | 184.5 | 10.3 | 33.5 | 43.8 |
| 10/1 | 534 | 534 | - | - | - | 2.2 | 0.7 | - | 3.0 | 20.0 | 8.4 | 0.7 | 9.2 |
| 10/2+10/3 | 929 | 929 | - | - | - | 3.4 | 6.7 | - | 10.1 | 39.1 | 15.4 | 6.7 | 22.1 |
| 11/2+11/1 | 1577 | 1105 | - | - | - | 22.8 | 237.8 | - | 260.6 | 594.9 | 35.1 | 237.8 | 272.9 |
| 11/3+11/4 | 1183 | 920 | - | - | - | 13.5 | 133.9 | - | 147.4 | 448.6 | 24.3 | 133.9 | 158.2 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -39.7 | Total Delay for Signalled Lanes (pcuHr): | 184.94 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -58.3 | Total Delay for Signalled Lanes (pcuHr): | 276.39 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 65.4 | Total Delay for Signalled Lanes (pcuHr): | 1.16 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | -18.9 | Total Delay for Signalled Lanes (pcuHr): | 77.55 | Cycle Time (s): | 60 |
| C1 | Stream: 5 PRC for Signalled Lanes (%): | -58.6 | Total Delay for Signalled Lanes (pcuHr): | 421.05 | Cycle Time (s): | 60 |
| C1 | Stream: 6 PRC for Signalled Lanes (%): | -17.5 | Total Delay for Signalled Lanes (pcuHr): | 45.73 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -58.6 | Total Delay Over All Lanes(pcuHr): | 1006.83 | | |

**Scenario 6: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Staging Plan No. 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 38 | 12 |
| Change Point | 0 | 43 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 26 |
| Change Point | 48 | 17 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 5 |
| Change Point | 48 | 38 |

**Stage Stream: 4**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 10 |
| Change Point | 11 | 47 |

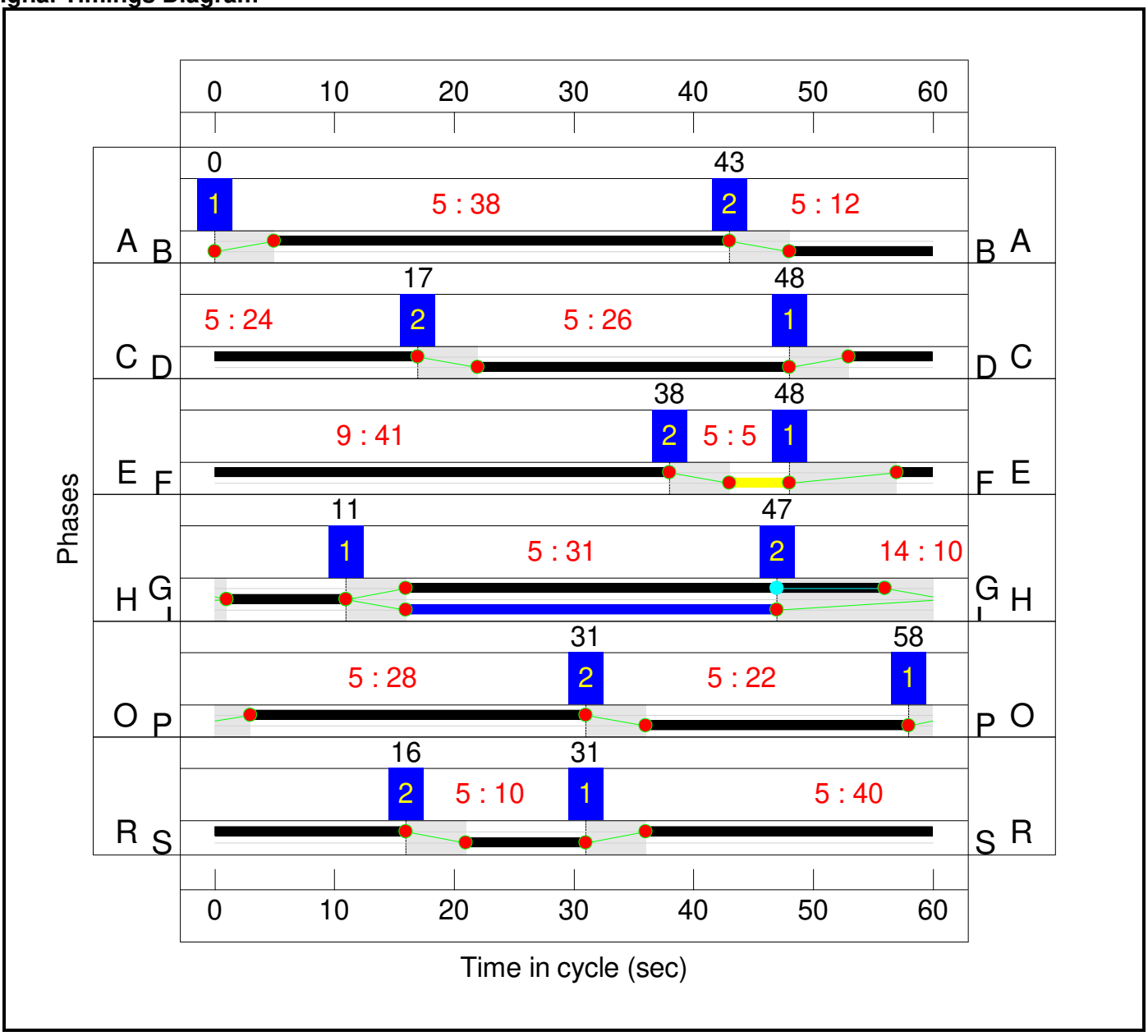
**Stage Stream: 5**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 28 | 22 |
| Change Point | 58 | 31 |

**Stage Stream: 6**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 40 | 10 |
| Change Point | 31 | 16 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | Ahead | U | 6 | N/A | R | | 1 | 40 | - | 1063 | 1965 | 1343 | 59.0% |
| 1/2 | Ahead | U | 6 | N/A | R | | 1 | 40 | - | 1194 | 2105 | 1438 | 59.0% |
| 1/3 | Right | U | 6 | N/A | R | | 1 | 40 | - | 358 | 2105 | 1438 | 20.4% |
| 1/4 | Right | U | 6 | N/A | R | | 1 | 40 | - | 849 | 2105 | 1438 | 46.9% |
| 2/2+2/1 | A5095 Rushmere Road | U | 6 | N/A | S | | 1 | 10 | - | 1076 | 2004:3600 | 1020 | 105.5% |
| 3/1 | Ahead | U | 1 | N/A | A | | 1 | 38 | - | 519 | 1908 | 1240 | 36.0% |
| 3/2 | Right Ahead | U | 1 | N/A | A | | 1 | 38 | - | 718 | 2077 | 1350 | 46.0% |
| 3/3 | Right | U | 1 | N/A | A | | 1 | 38 | - | 834 | 2052 | 1334 | 54.0% |
| 4/2+4/1 | A45 Southbound Offslip Ahead Left | U | 1 | N/A | B | | 1 | 12 | - | 756 | 2120:1899 | 590 | 128.2% |
| 4/4+4/3 | A45 Southbound Offslip Ahead | U | 1 | N/A | B | | 1 | 12 | - | 813 | 1940:2120 | 632 | 128.7% |
| 5/1 | Ahead | U | 2 | N/A | C | | 1 | 24 | - | 722 | 1886 | 786 | 75.4% |
| 5/2 | Ahead Right | U | 2 | N/A | C | | 1 | 24 | - | 796 | 2081 | 867 | 79.1% |
| 5/3 | Right | U | 2 | N/A | C | | 1 | 24 | - | 599 | 2033 | 847 | 55.0% |
| 5/4 | Right | U | 2 | N/A | C | | 1 | 24 | - | 618 | 1940 | 808 | 66.3% |
| 6/2+6/1 | A428 Bedford Road E Left Ahead | U | 2 | N/A | D | | 1 | 26 | - | 1636 | 2052:3800 | 1093 | 149.7% |
| 7/1 | Ahead | U | 3 | N/A | E | | 1 | 41 | - | 852 | 1980 | 1386 | 49.0% |
| 7/2 | Ahead | U | 3 | N/A | E | | 1 | 41 | - | 452 | 2120 | 1484 | 28.1% |
| 8/1 | Ahead | U | 4 | N/A | G | | 1 | 40 | - | 656 | 1899 | 1298 | 36.7% |
| 8/2 | Ahead | U | 4 | N/A | G | | 1 | 40 | - | 718 | 2043 | 1396 | 39.1% |
| 8/3 | Ahead Ahead2 | U | 4 | N/A | G | | 1 | 40 | - | 1693 | 2066 | 1412 | 88.8% |
| 9/2+9/1 | A45 Northbound Offslip Left | U | 4 | N/A | H | | 1 | 10 | - | 571 | 2120:1868 | 663 | 86.1% |
| 9/3+9/4 | A45 Northbound Offslip Left Left2 | U | 4 | N/A | H | | 1 | 10 | - | 655 | 2120:2120 | 777 | 84.3% |
| 10/1 | Right | U | 5 | N/A | O | | 1 | 28 | - | 792 | 1908 | 922 | 61.0% |
| 10/2+10/3 | Right Right2 | U | 5 | N/A | O | | 1 | 28 | - | 1034 | 2052:2058 | 1026 | 80.1% |
| 11/2+11/1 | A428 Bedford Road W Ahead Ahead2 | U | 5 | N/A | P | | 1 | 22 | - | 1490 | 2055:1917 | 1082 | 137.7% |
| 11/3+11/4 | A428 Bedford Road W Ahead | U | 5 | N/A | P | | 1 | 22 | - | 1147 | 2005:2005 | 909 | 126.2% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 792 | 792 | - | - | - | 0.3 | 0.7 | - | 1.0 | 4.5 | 2.4 | 0.7 | 3.1 |
| 1/2 | 848 | 848 | - | - | - | 0.4 | 0.7 | - | 1.1 | 4.9 | 1.4 | 0.7 | 2.1 |
| 1/3 | 294 | 294 | - | - | - | 0.2 | 0.1 | - | 0.3 | 4.2 | 0.8 | 0.1 | 0.9 |
| 1/4 | 675 | 675 | - | - | - | 0.0 | 0.4 | - | 0.5 | 2.6 | 0.2 | 0.4 | 0.6 |
| 2/2+2/1 | 1076 | 1020 | - | - | - | 8.7 | 35.6 | - | 44.3 | 148.2 | 9.4 | 35.6 | 44.9 |
| 3/1 | 446 | 446 | - | - | - | 1.1 | 0.3 | - | 1.4 | 11.4 | 5.1 | 0.3 | 5.4 |
| 3/2 | 621 | 621 | - | - | - | 1.0 | 0.4 | - | 1.4 | 8.1 | 5.7 | 0.4 | 6.1 |
| 3/3 | 721 | 721 | - | - | - | 1.1 | 0.6 | - | 1.7 | 8.4 | 6.4 | 0.6 | 7.0 |
| 4/2+4/1 | 756 | 626 | - | - | - | 8.1 | 85.4 | - | 93.5 | 445.4 | 12.5 | 85.4 | 97.9 |
| 4/4+4/3 | 813 | 681 | - | - | - | 7.7 | 92.8 | - | 100.5 | 444.8 | 11.8 | 92.8 | 104.5 |
| 5/1 | 593 | 593 | - | - | - | 1.5 | 1.5 | - | 3.0 | 18.1 | 5.6 | 1.5 | 7.2 |
| 5/2 | 686 | 686 | - | - | - | 1.9 | 1.9 | - | 3.8 | 19.8 | 10.6 | 1.9 | 12.5 |
| 5/3 | 466 | 466 | - | - | - | 0.1 | 0.6 | - | 0.7 | 5.2 | 0.3 | 0.6 | 0.9 |
| 5/4 | 536 | 536 | - | - | - | 1.4 | 1.0 | - | 2.4 | 16.0 | 5.6 | 1.0 | 6.6 |
| 6/2+6/1 | 1636 | 1093 | - | - | - | 21.6 | 273.1 | - | 294.7 | 648.4 | 38.3 | 273.1 | 311.3 |
| 7/1 | 680 | 680 | - | - | - | 0.1 | 0.5 | - | 0.6 | 3.0 | 0.5 | 0.5 | 1.0 |
| 7/2 | 418 | 418 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.7 | 0.0 | 0.2 | 0.2 |
| 8/1 | 477 | 477 | - | - | - | 0.4 | 0.3 | - | 0.7 | 5.2 | 4.5 | 0.3 | 4.8 |
| 8/2 | 545 | 545 | - | - | - | 1.8 | 0.3 | - | 2.1 | 14.1 | 7.8 | 0.3 | 8.1 |
| 8/3 | 1254 | 1254 | - | - | - | 1.8 | 3.8 | - | 5.6 | 16.1 | 9.4 | 3.8 | 13.2 |
| 9/2+9/1 | 571 | 571 | - | - | - | 3.7 | 2.9 | - | 6.6 | 41.7 | 4.8 | 2.9 | 7.7 |
| 9/3+9/4 | 655 | 642 | - | - | - | 4.7 | 2.6 | - | 7.3 | 40.2 | 6.9 | 2.6 | 9.5 |
| 10/1 | 563 | 563 | - | - | - | 2.0 | 0.8 | - | 2.8 | 17.9 | 8.4 | 0.8 | 9.1 |
| 10/2+10/3 | 822 | 822 | - | - | - | 2.6 | 2.0 | - | 4.6 | 20.2 | 13.9 | 2.0 | 15.9 |
| 11/2+11/1 | 1490 | 1082 | - | - | - | 20.3 | 205.9 | - | 226.2 | 546.5 | 31.4 | 205.9 | 237.3 |
| 11/3+11/4 | 1147 | 909 | - | - | - | 12.6 | 121.3 | - | 133.9 | 420.3 | 22.6 | 121.3 | 143.9 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C1 | Stream: 1 | PRC for Signalled Lanes (%): | -43.0 | Total Delay for Signalled Lanes (pcuHr): | 198.48 | Cycle Time (s): | 60 |
| C1 | Stream: 2 | PRC for Signalled Lanes (%): | -66.3 | Total Delay for Signalled Lanes (pcuHr): | 304.47 | Cycle Time (s): | 60 |
| C1 | Stream: 3 | PRC for Signalled Lanes (%): | 83.6 | Total Delay for Signalled Lanes (pcuHr): | 0.76 | Cycle Time (s): | 60 |
| C1 | Stream: 4 | PRC for Signalled Lanes (%): | 1.3 | Total Delay for Signalled Lanes (pcuHr): | 22.37 | Cycle Time (s): | 60 |
| C1 | Stream: 5 | PRC for Signalled Lanes (%): | -53.0 | Total Delay for Signalled Lanes (pcuHr): | 367.49 | Cycle Time (s): | 60 |
| C1 | Stream: 6 | PRC for Signalled Lanes (%): | -17.2 | Total Delay for Signalled Lanes (pcuHr): | 47.29 | Cycle Time (s): | 60 |
| | | PRC Over All Lanes (%): | -66.3 | Total Delay Over All Lanes(pcuHr): | 940.86 | | |

# JUNCTION 16

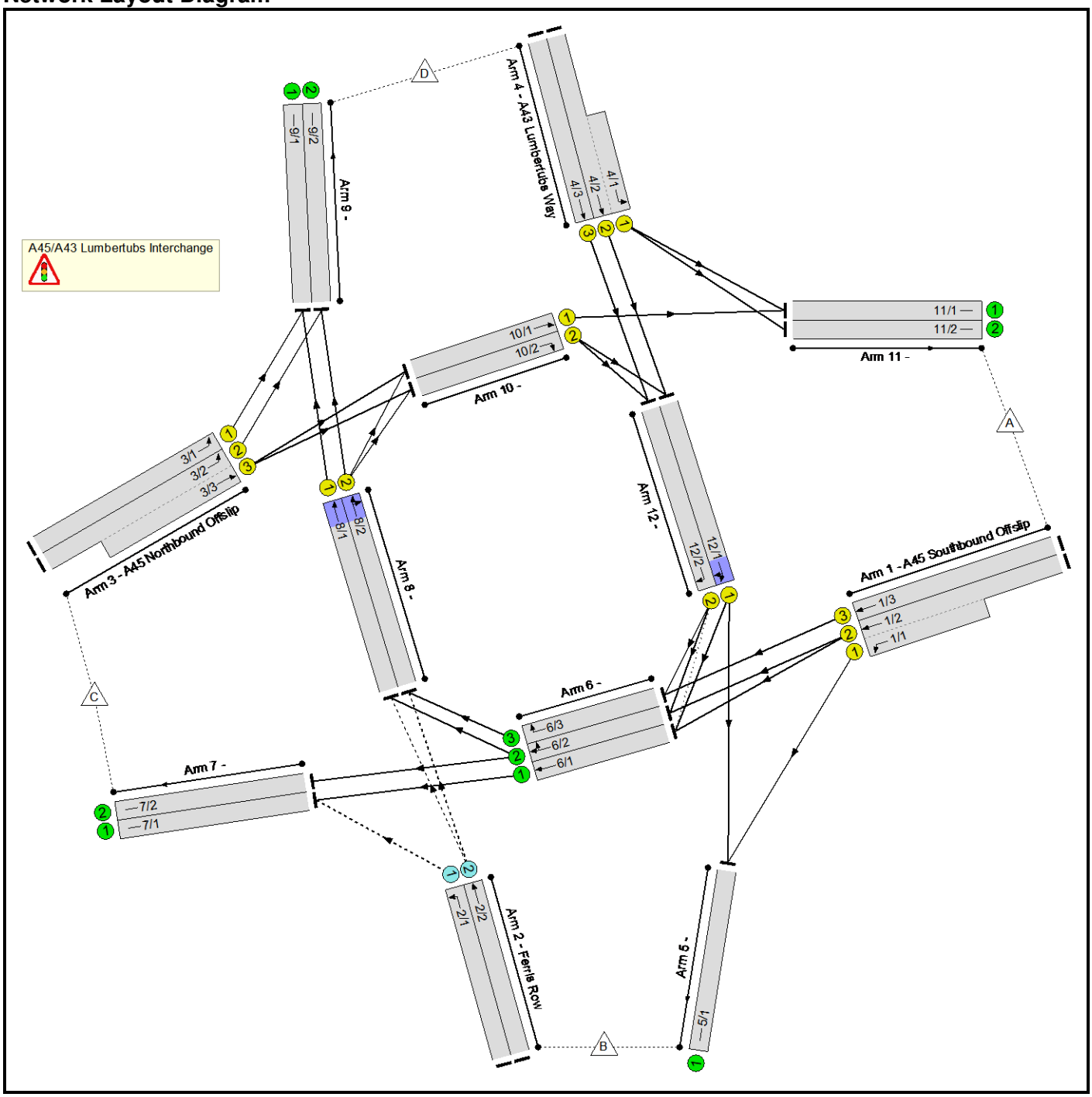
# A45 LUMBERTUBS INTERCHANGE

## Full Input Data And Results

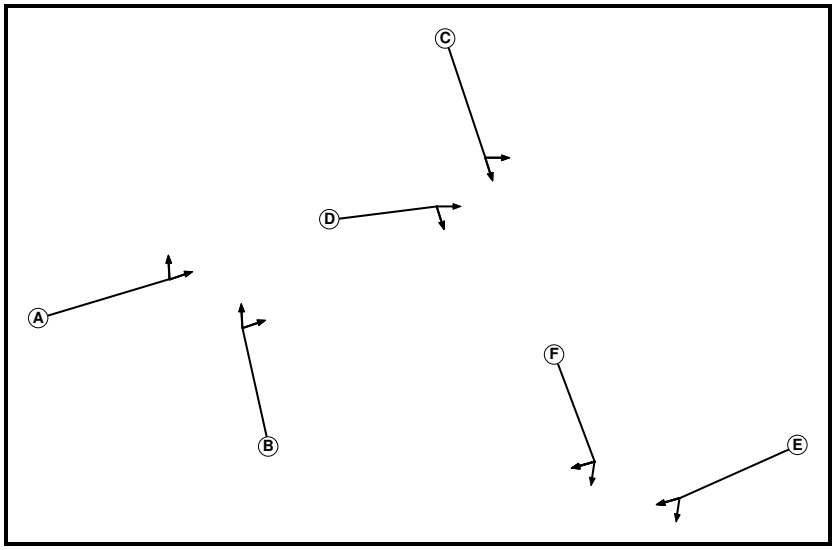
### User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **A45 Lumbertubs Gyratory - J3 Cumulative Impact** |
| **Location:** | |
| **File name:** | 180318 Lumbertubs Interchange Base Model.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Nottingham |

### Network Layout Diagram



## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |
| E | Traffic | 3 | | 7 | 7 |
| F | Traffic | 3 | | 7 | 7 |

## Phase Intergreens Matrix

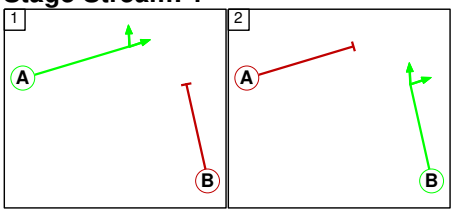
| | | Starting Phase | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| Terminating Phase | A | | 6 | - | - | - | - |
| | B | 6 | | - | - | - | - |
| | C | - | - | | 6 | - | - |
| | D | - | - | 6 | | - | - |
| | E | - | - | - | - | | 6 |
| | F | - | - | - | - | 6 | |

## Phases in Stage

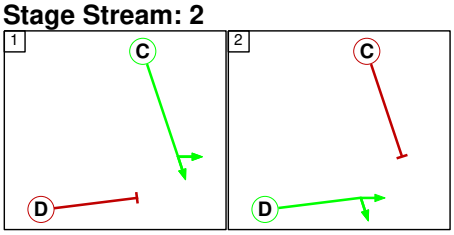
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |
| 3 | 1 | E |
| 3 | 2 | F |

## Stage Diagram

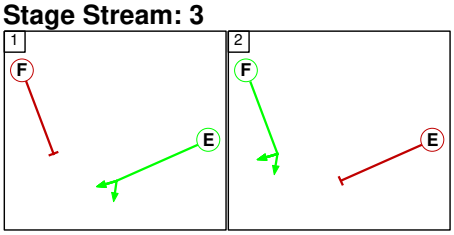
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Prohibited Stage Change

### Stage Stream: 1

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

### Stage Stream: 2

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

### Stage Stream: 3

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

## Give-Way Lane Input Data

| Junction: A45/A43 Lumbertubs Interchange | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| 2/1 (Ferris Row) | 7/1 (Left) | 1133 | 0 | 6/1 | 0.26 | All | - | - | - | - | - |
| | | | | 6/2 | 0.26 | All | | | | | |
| 2/2 (Ferris Row) | 8/1 (Ahead) | 1133 | 0 | 6/1 | 0.26 | All | - | - | - | - | - |
| | | | | 6/2 | 0.26 | All | | | | | |
| | | | | 6/3 | 0.26 | All | | | | | |
| | 8/2 (Ahead) | 1133 | 0 | 6/1 | 0.26 | All | | | | | |
| | | | | 6/2 | 0.26 | All | | | | | |
| | | | | 6/3 | 0.26 | All | | | | | |

## Lane Input Data

| Junction: A45/A43 Lumbertubs Interchange | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | U | E | 2 | 3 | 10.0 | Geom | - | 3.65 | 0.00 | Y | Arm 5 Left | Inf |
| 1/2 (A45 Southbound Offslip) | U | E | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 6 Ahead | Inf |
| 1/3 (A45 Southbound Offslip) | U | E | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf |
| 2/1 (Ferris Row) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 2/2 (Ferris Row) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 3/1 (A45 Northbound Offslip) | U | A | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 9 Left | Inf |
| 3/2 (A45 Northbound Offslip) | U | A | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 9 Left | Inf |
| 3/3 (A45 Northbound Offslip) | U | A | 2 | 3 | 12.0 | Geom | - | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf |
| 4/1 (A43 Lumbertubs Way) | U | C | 2 | 3 | 8.0 | Geom | - | 3.50 | 0.00 | Y | Arm 11 Left | 60.00 |
| 4/2 (A43 Lumbertubs Way) | U | C | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 12 Ahead | 80.00 |
| 4/3 (A43 Lumbertubs Way) | U | C | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 12 Ahead | 80.00 |
| 5/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 6/1 | U | | 2 | 3 | 13.0 | Inf | - | - | - | - | - | - |
| 6/2 | U | | 2 | 3 | 13.0 | Inf | - | - | - | - | - | - |
| 6/3 | U | | 2 | 3 | 13.0 | Inf | - | - | - | - | - | - |
| 7/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 7/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 8/1 | U | B | 2 | 3 | 27.8 | User | 2000 | - | - | - | - | - |
| 8/2 | U | B | 2 | 3 | 27.8 | User | 2000 | - | - | - | - | - |
| 9/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 9/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/1 | U | D | 2 | 3 | 13.0 | User | 1900 | - | - | - | - | - |
| 10/2 | U | D | 2 | 3 | 13.0 | User | 1900 | - | - | - | - | - |
| 11/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 11/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 12/1 | U | F | 2 | 3 | 26.1 | User | 2000 | - | - | - | - | - |
| 12/2 | U | F | 2 | 3 | 26.1 | User | 2000 | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 Ref AM' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 Ref PM' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 Dev AM' | 08:00 | 09:00 | 01:00 | |
| 6: '2031 J3 Dev PM' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 AM Peak'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 74 | 0 | 269 | 343 |
| | B | 38 | 0 | 1083 | 304 | 1425 |
| | C | 0 | 129 | 0 | 1619 | 1748 |
| | D | 503 | 1274 | 1280 | 87 | 3144 |
| | Tot. | 541 | 1477 | 2363 | 2279 | 6660 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 AM Peak |
|---|---|
| **Junction: A45/A43 Lumbertubs Interchange** | |
| 1/1 (short) | 74 |
| 1/2 (with short) | 236(In) 162(Out) |
| 1/3 | 107 |
| 2/1 | 1083 |
| 2/2 | 342 |
| 3/1 | 777 |
| 3/2 (with short) | 971(In) 842(Out) |
| 3/3 (short) | 129 |
| 4/1 (short) | 503 |
| 4/2 (with short) | 1777(In) 1274(Out) |
| 4/3 | 1367 |
| 5/1 | 1477 |
| 6/1 | 640 |
| 6/2 | 859 |
| 6/3 | 137 |
| 7/1 | 1723 |
| 7/2 | 640 |
| 8/1 | 355 |
| 8/2 | 343 |
| 9/1 | 1132 |
| 9/2 | 1147 |
| 10/1 | 38 |
| 10/2 | 129 |
| 11/1 | 289 |
| 11/2 | 252 |
| 12/1 | 1403 |
| 12/2 | 1367 |

## Lane Saturation Flows

| Junction: A45/A43 Lumbertubs Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 5 Left | Inf | 100.0 % | 1980 | 1980 |
| 1/2 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 1/3 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (Ferris Row Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Ferris Row Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1980 | 1980 |
| 3/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 9 Left | Inf | 100.0 % | 2120 | 2120 |
| 3/3 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 4/1 (A43 Lumbertubs Way) | 3.50 | 0.00 | Y | Arm 11 Left | 60.00 | 100.0 % | 1917 | 1917 |
| 4/2 (A43 Lumbertubs Way) | 3.50 | 0.00 | N | Arm 12 Ahead | 80.00 | 100.0 % | 2066 | 2066 |
| 4/3 (A43 Lumbertubs Way) | 3.50 | 0.00 | Y | Arm 12 Ahead | 80.00 | 100.0 % | 1929 | 1929 |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

**Scenario 3: '2031 J3 AM Peak'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 87 | 0 | 266 | 353 |
| | B | 42 | 0 | 1149 | 246 | 1437 |
| | C | 0 | 114 | 0 | 1676 | 1790 |
| | D | 460 | 1216 | 1347 | 149 | 3172 |
| | Tot. | 502 | 1417 | 2496 | 2337 | 6752 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 AM Peak |
|---|---|
| **Junction: A45/A43 Lumbertubs Interchange** | |
| 1/1 (short) | 87 |
| 1/2 (with short) | 250(In)<br>163(Out) |
| 1/3 | 103 |
| 2/1 | 1149 |
| 2/2 | 288 |
| 3/1 | 805 |
| 3/2 (with short) | 985(In)<br>871(Out) |
| 3/3 (short) | 114 |
| 4/1 (short) | 460 |
| 4/2 (with short) | 1743(In)<br>1283(Out) |
| 4/3 | 1429 |
| 5/1 | 1417 |
| 6/1 | 707 |
| 6/2 | 903 |
| 6/3 | 152 |
| 7/1 | 1856 |
| 7/2 | 640 |
| 8/1 | 362 |
| 8/2 | 341 |
| 9/1 | 1167 |
| 9/2 | 1170 |
| 10/1 | 42 |
| 10/2 | 114 |
| 11/1 | 272 |
| 11/2 | 230 |
| 12/1 | 1397 |
| 12/2 | 1429 |

## Lane Saturation Flows

| Junction: A45/A43 Lumbertubs Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 5 Left | Inf | 100.0 % | 1980 | 1980 |
| 1/2 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 1/3 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (Ferris Row Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Ferris Row Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1980 | 1980 |
| 3/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 9 Left | Inf | 100.0 % | 2120 | 2120 |
| 3/3 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 4/1 (A43 Lumbertubs Way) | 3.50 | 0.00 | Y | Arm 11 Left | 60.00 | 100.0 % | 1917 | 1917 |
| 4/2 (A43 Lumbertubs Way) | 3.50 | 0.00 | N | Arm 12 Ahead | 80.00 | 100.0 % | 2066 | 2066 |
| 4/3 (A43 Lumbertubs Way) | 3.50 | 0.00 | Y | Arm 12 Ahead | 80.00 | 100.0 % | 1929 | 1929 |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

**Scenario 4: '2031 D1 PM Peak'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 64 | 0 | 740 | 804 |
| | B | 78 | 0 | 868 | 548 | 1494 |
| | C | 0 | 143 | 0 | 1604 | 1747 |
| | D | 164 | 813 | 985 | 56 | 2018 |
| | Tot. | 242 | 1020 | 1853 | 2948 | 6063 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 PM Peak |
|---|---|
| **Junction: A45/A43 Lumbertubs Interchange** | |
| 1/1 (short) | 64 |
| 1/2 (with short) | 448(In)<br>384(Out) |
| 1/3 | 356 |
| 2/1 | 868 |
| 2/2 | 626 |
| 3/1 | 774 |
| 3/2 (with short) | 973(In)<br>830(Out) |
| 3/3 (short) | 143 |
| 4/1 (short) | 164 |
| 4/2 (with short) | 1025(In)<br>861(Out) |
| 4/3 | 993 |
| 5/1 | 1020 |
| 6/1 | 517 |
| 6/2 | 882 |
| 6/3 | 382 |
| 7/1 | 1385 |
| 7/2 | 468 |
| 8/1 | 714 |
| 8/2 | 708 |
| 9/1 | 1488 |
| 9/2 | 1460 |
| 10/1 | 78 |
| 10/2 | 143 |
| 11/1 | 160 |
| 11/2 | 82 |
| 12/1 | 1004 |
| 12/2 | 993 |

## Lane Saturation Flows

| Junction: A45/A43 Lumbertubs Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 5 Left | Inf | 100.0 % | 1980 | 1980 |
| 1/2 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 1/3 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (Ferris Row Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Ferris Row Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1980 | 1980 |
| 3/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 9 Left | Inf | 100.0 % | 2120 | 2120 |
| 3/3 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 4/1 (A43 Lumbertubs Way) | 3.50 | 0.00 | Y | Arm 11 Left | 60.00 | 100.0 % | 1917 | 1917 |
| 4/2 (A43 Lumbertubs Way) | 3.50 | 0.00 | N | Arm 12 Ahead | 80.00 | 100.0 % | 2066 | 2066 |
| 4/3 (A43 Lumbertubs Way) | 3.50 | 0.00 | Y | Arm 12 Ahead | 80.00 | 100.0 % | 1929 | 1929 |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

**Scenario 6: '2031 J3 PM Peak'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 215 | 0 | 591 | 806 |
| | B | 62 | 0 | 829 | 719 | 1610 |
| | C | 133 | 120 | 1 | 1489 | 1743 |
| | D | 174 | 761 | 1058 | 58 | 2051 |
| | Tot. | 369 | 1096 | 1888 | 2857 | 6210 |

## Traffic Lane Flows

| Lane | Scenario 6: 2031 J3 PM Peak |
|---|---|
| **Junction: A45/A43 Lumbertubs Interchange** | |
| 1/1 (short) | 215 |
| 1/2 (with short) | 552(In)<br>337(Out) |
| 1/3 | 254 |
| 2/1 | 829 |
| 2/2 | 781 |
| 3/1 | 717 |
| 3/2 (with short) | 1026(In)<br>772(Out) |
| 3/3 (short) | 254 |
| 4/1 (short) | 174 |
| 4/2 (with short) | 1064(In)<br>890(Out) |
| 4/3 | 987 |
| 5/1 | 1096 |
| 6/1 | 594 |
| 6/2 | 830 |
| 6/3 | 284 |
| 7/1 | 1423 |
| 7/2 | 465 |
| 8/1 | 715 |
| 8/2 | 715 |
| 9/1 | 1432 |
| 9/2 | 1425 |
| 10/1 | 195 |
| 10/2 | 121 |
| 11/1 | 282 |
| 11/2 | 87 |
| 12/1 | 1010 |
| 12/2 | 988 |

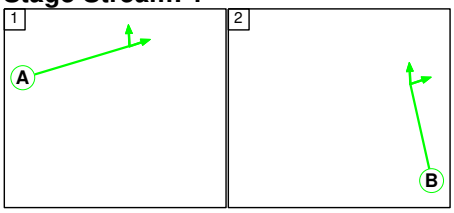
## Lane Saturation Flows

| Junction: A45/A43 Lumbertubs Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 5 Left | Inf | 100.0 % | 1980 | 1980 |
| 1/2 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 6 Ahead | Inf | 100.0 % | 2120 | 2120 |
| 1/3 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (Ferris Row Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Ferris Row Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1980 | 1980 |
| 3/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 9 Left | Inf | 100.0 % | 2120 | 2120 |
| 3/3 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 4/1 (A43 Lumbertubs Way) | 3.50 | 0.00 | Y | Arm 11 Left | 60.00 | 100.0 % | 1917 | 1917 |
| 4/2 (A43 Lumbertubs Way) | 3.50 | 0.00 | N | Arm 12 Ahead | 80.00 | 100.0 % | 2066 | 2066 |
| 4/3 (A43 Lumbertubs Way) | 3.50 | 0.00 | Y | Arm 12 Ahead | 80.00 | 100.0 % | 1929 | 1929 |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

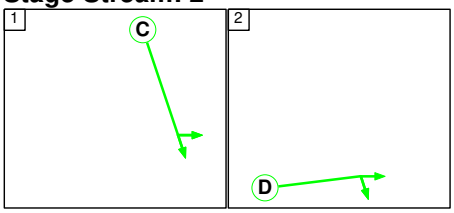
**Scenario 1: '2031 D1 AM Peak'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Stage Sequence Diagram

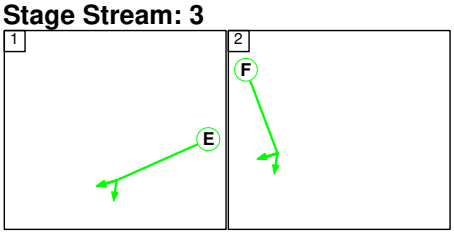
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 34 | 14 |
| Change Point | 0 | 40 |

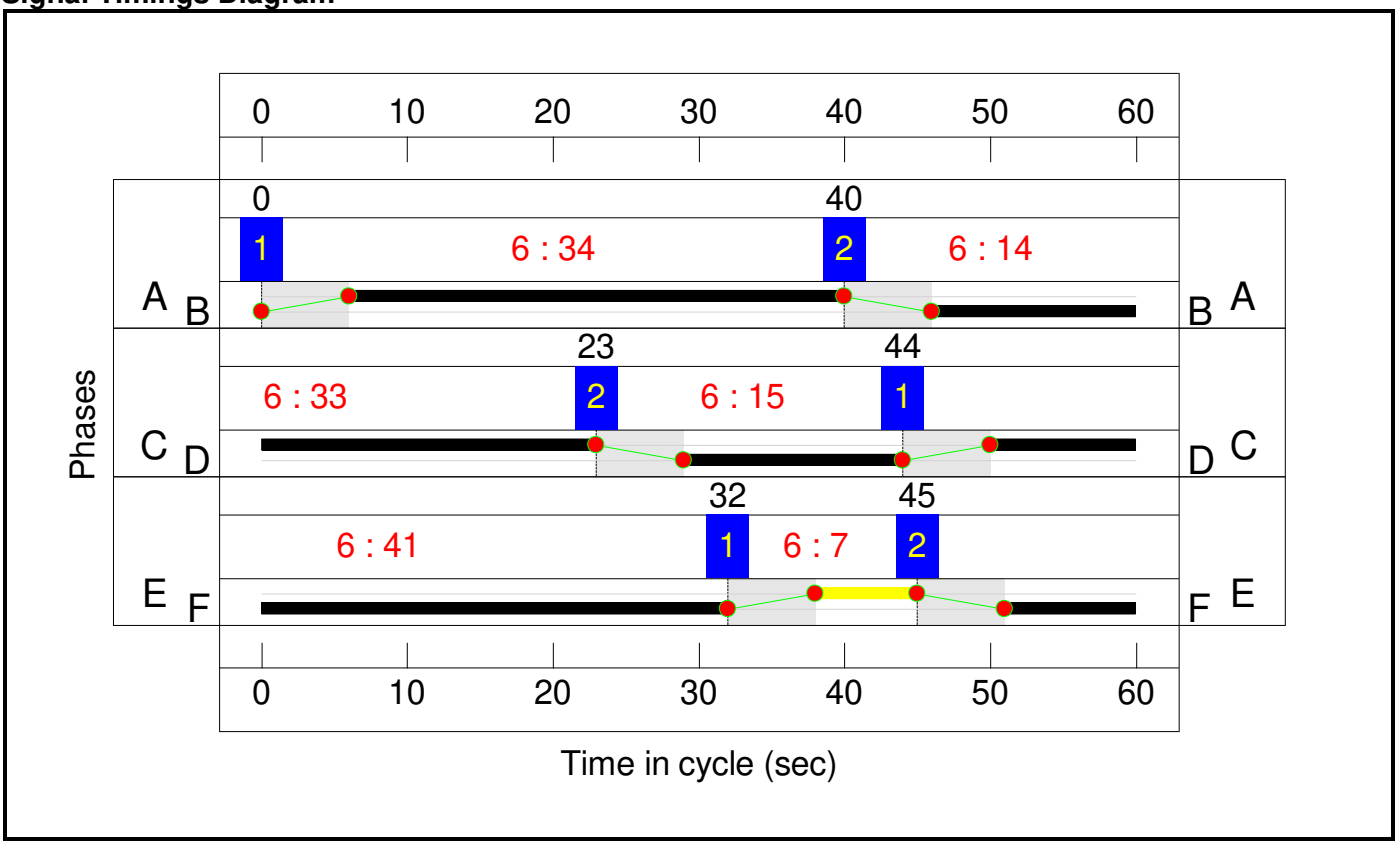
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 33 | 15 |
| Change Point | 44 | 23 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 32 | 45 |

**Signal Timings Diagram**



## 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: A45 Lumbertubs Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **133.2%** |
| **A45/A43 Lumbertubs Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **133.2%** |
| 1/2+1/1 | A45 Southbound Offslip Left Ahead | U | 3 | N/A | E | | 1 | 7 | - | 236 | 2120:1980 | 283+129 | 57.3 : 57.3% |
| 1/3 | A45 Southbound Offslip Ahead | U | 3 | N/A | E | | 1 | 7 | - | 107 | 1980 | 264 | 40.5% |
| 2/1 | Ferris Row Left | O | N/A | N/A | - | | - | - | - | 1083 | Inf | 813 | 133.2% |
| 2/2 | Ferris Row Ahead | O | N/A | N/A | - | | - | - | - | 342 | Inf | 779 | 43.9% |
| 3/1 | A45 Northbound Offslip Left | U | 1 | N/A | A | | 1 | 34 | - | 777 | 1980 | 1155 | 67.3% |
| 3/2+3/3 | A45 Northbound Offslip Left Ahead | U | 1 | N/A | A | | 1 | 34 | - | 971 | 2120:1980 | 1175+180 | 71.6 : 71.6% |
| 4/2+4/1 | A43 Lumbertubs Way Left Ahead | U | 2 | N/A | C | | 1 | 33 | - | 1777 | 2066:1917 | 963+380 | 132.3 : 132.3% |
| 4/3 | A43 Lumbertubs Way Ahead | U | 2 | N/A | C | | 1 | 33 | - | 1367 | 1929 | 1093 | 125.1% |
| 8/1 | Ahead | U | 1 | N/A | B | | 1 | 14 | - | 355 | 2000 | 500 | 68.7% |
| 8/2 | Ahead Right | U | 1 | N/A | B | | 1 | 14 | - | 343 | 2000 | 500 | 67.4% |
| 10/1 | Ahead | U | 2 | N/A | D | | 1 | 15 | - | 38 | 1900 | 507 | 7.5% |
| 10/2 | Right | U | 2 | N/A | D | | 1 | 15 | - | 129 | 1900 | 507 | 25.5% |
| 12/1 | Ahead Right | U | 3 | N/A | F | | 1 | 41 | - | 1403 | 2000 | 1400 | 78.0% |
| 12/2 | Right | U | 3 | N/A | F | | 1 | 41 | - | 1367 | 2000 | 1400 | 78.1% |

| 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: A45 Lumbertubs Gyratory - J3 Cumulative Impact** | **-** | **-** | **1155** | **0** | **0** | **53.8** | **504.8** | **0.0** | **558.6** | **-** | **-** | **-** | **-** |
| **A45/A43 Lumbertubs Interchange** | **-** | **-** | **1155** | **0** | **0** | **53.8** | **504.8** | **0.0** | **558.6** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 236 | 236 | - | - | - | 1.6 | 0.7 | - | 2.2 | 34.3 | 2.5 | 0.7 | 3.2 |
| 1/3 | 107 | 107 | - | - | - | 0.7 | 0.3 | - | 1.0 | 35.2 | 1.6 | 0.3 | 1.9 |
| 2/1 | 1083 | 813 | 813 | 0 | 0 | 11.6 | 137.1 | - | 148.6 | 494.0 | 51.7 | 137.1 | 188.8 |
| 2/2 | 342 | 342 | 342 | 0 | 0 | 0.0 | 0.4 | - | 0.4 | 4.2 | 0.5 | 0.4 | 0.9 |
| 3/1 | 777 | 777 | - | - | - | 1.9 | 1.0 | - | 2.9 | 13.3 | 8.8 | 1.0 | 9.9 |
| 3/2+3/3 | 971 | 971 | - | - | - | 2.2 | 1.3 | - | 3.5 | 12.9 | 9.6 | 1.3 | 10.8 |
| 4/2+4/1 | 1777 | 1343 | - | - | - | 19.1 | 218.9 | - | 237.9 | 482.0 | 36.6 | 218.9 | 255.5 |
| 4/3 | 1367 | 1093 | - | - | - | 13.4 | 139.4 | - | 152.8 | 402.5 | 27.3 | 139.4 | 166.7 |
| 8/1 | 344 | 344 | - | - | - | 0.9 | 1.1 | - | 2.0 | 21.2 | 2.6 | 1.1 | 3.7 |
| 8/2 | 337 | 337 | - | - | - | 1.2 | 1.0 | - | 2.2 | 23.9 | 3.3 | 1.0 | 4.3 |
| 10/1 | 38 | 38 | - | - | - | 0.4 | 0.0 | - | 0.4 | 38.3 | 0.6 | 0.0 | 0.7 |
| 10/2 | 129 | 129 | - | - | - | 0.4 | 0.2 | - | 0.6 | 16.5 | 1.7 | 0.2 | 1.9 |
| 12/1 | 1092 | 1092 | - | - | - | 0.4 | 1.8 | - | 2.2 | 7.1 | 2.1 | 1.8 | 3.9 |
| 12/2 | 1093 | 1093 | - | - | - | 0.0 | 1.8 | - | 1.8 | 5.8 | 0.0 | 1.8 | 1.8 |

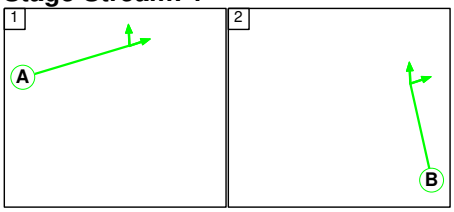
| | | | | |
|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 25.6 | Total Delay for Signalled Lanes (pcuHr): | 10.61 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -47.0 | Total Delay for Signalled Lanes (pcuHr): | 391.75 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 15.3 | Total Delay for Signalled Lanes (pcuHr): | 7.22 |
| | PRC Over All Lanes (%): | -48.0 | Total Delay Over All Lanes(pcuHr): | 558.60 |

Cycle Time (s): 60
Cycle Time (s): 60
Cycle Time (s): 60

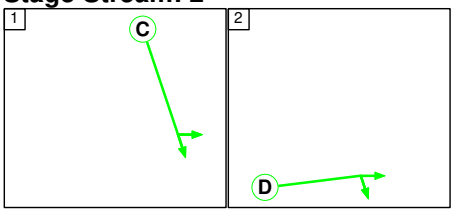
**Scenario 3: '2031 J3 AM Peak'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Stage Sequence Diagram

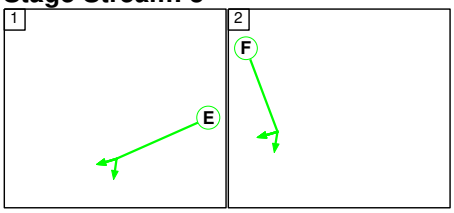
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 35 | 13 |
| Change Point | 0 | 41 |

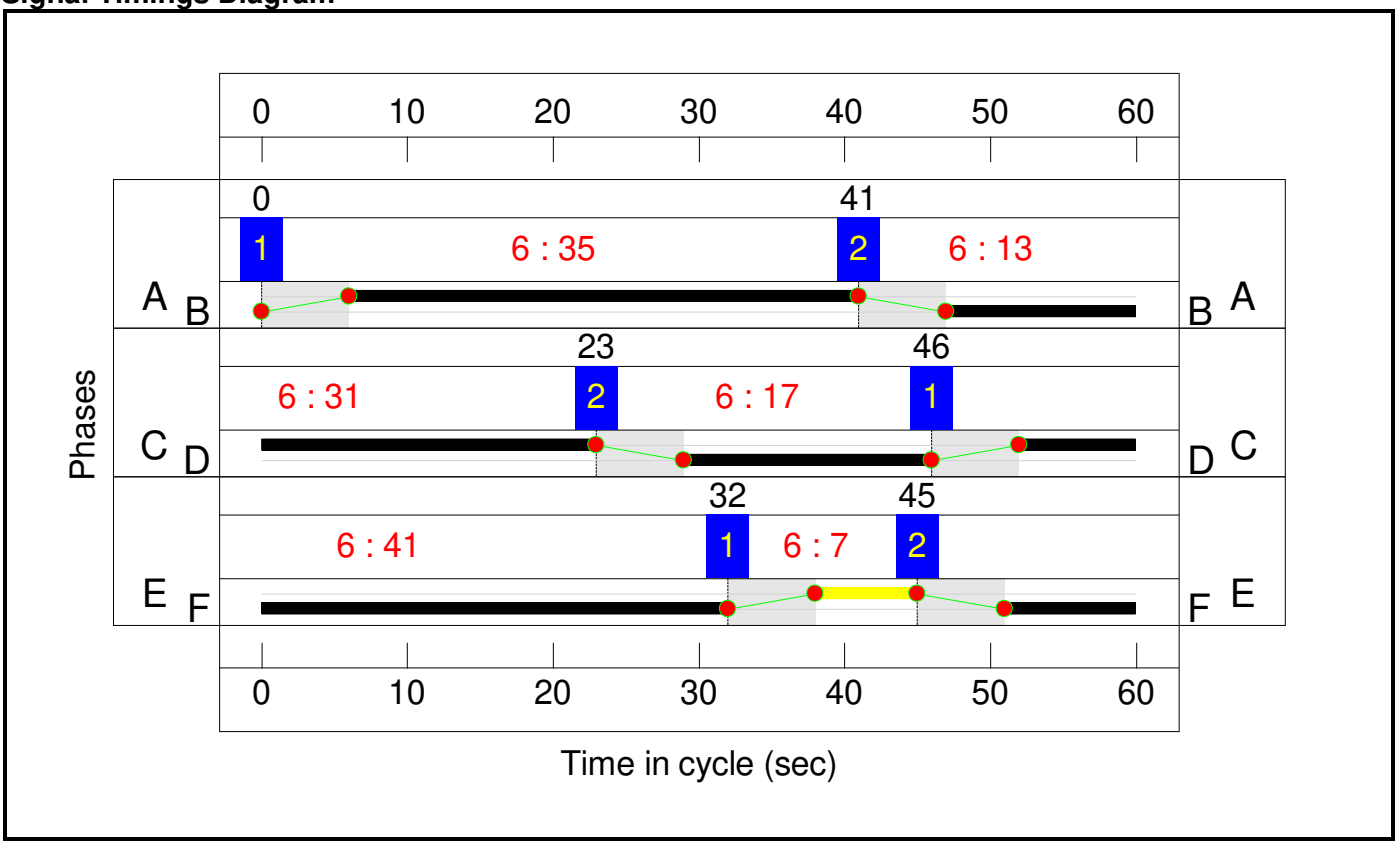
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 17 |
| Change Point | 46 | 23 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 32 | 45 |

**Signal Timings Diagram**



## 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: A45 Lumbertubs Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **140.2%** |
| **A45/A43 Lumbertubs Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **140.2%** |
| 1/2+1/1 | A45 Southbound Offslip Left Ahead | U | 3 | N/A | E | | 1 | 7 | - | 250 | 2120:1980 | 283+151 | 57.7 : 57.7% |
| 1/3 | A45 Southbound Offslip Ahead | U | 3 | N/A | E | | 1 | 7 | - | 103 | 1980 | 264 | 39.0% |
| 2/1 | Ferris Row Left | O | N/A | N/A | - | | - | - | - | 1149 | Inf | 820 | 140.2% |
| 2/2 | Ferris Row Ahead | O | N/A | N/A | - | | - | - | - | 288 | Inf | 784 | 36.7% |
| 3/1 | A45 Northbound Offslip Left | U | 1 | N/A | A | | 1 | 35 | - | 805 | 1980 | 1188 | 67.8% |
| 3/2+3/3 | A45 Northbound Offslip Left Ahead | U | 1 | N/A | A | | 1 | 35 | - | 985 | 2120:1980 | 1216+159 | 71.6 : 71.6% |
| 4/2+4/1 | A43 Lumbertubs Way Left Ahead | U | 2 | N/A | C | | 1 | 31 | - | 1743 | 2066:1917 | 927+332 | 138.4 : 138.4% |
| 4/3 | A43 Lumbertubs Way Ahead | U | 2 | N/A | C | | 1 | 31 | - | 1429 | 1929 | 1029 | 138.9% |
| 8/1 | Ahead | U | 1 | N/A | B | | 1 | 13 | - | 362 | 2000 | 467 | 71.6% |
| 8/2 | Ahead Right | U | 1 | N/A | B | | 1 | 13 | - | 341 | 2000 | 467 | 70.1% |
| 10/1 | Ahead | U | 2 | N/A | D | | 1 | 17 | - | 42 | 1900 | 570 | 7.4% |
| 10/2 | Right | U | 2 | N/A | D | | 1 | 17 | - | 114 | 1900 | 570 | 20.0% |
| 12/1 | Ahead Right | U | 3 | N/A | F | | 1 | 41 | - | 1397 | 2000 | 1400 | 74.4% |
| 12/2 | Right | U | 3 | N/A | F | | 1 | 41 | - | 1429 | 2000 | 1400 | 73.5% |

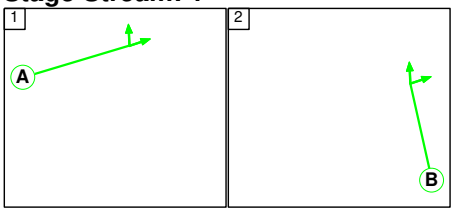
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: A45 Lumbertubs Gyratory - J3 Cumulative Impact** | **-** | **-** | **1108** | **0** | **0** | **62.2** | **620.8** | **0.0** | **683.0** | **-** | **-** | **-** | **-** |
| **A45/A43 Lumbertubs Interchange** | **-** | **-** | **1108** | **0** | **0** | **62.2** | **620.8** | **0.0** | **683.0** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 250 | 250 | - | - | - | 1.7 | 0.7 | - | 2.4 | 33.9 | 2.5 | 0.7 | 3.2 |
| 1/3 | 103 | 103 | - | - | - | 0.7 | 0.3 | - | 1.0 | 34.9 | 1.5 | 0.3 | 1.9 |
| 2/1 | 1149 | 820 | 820 | 0 | 0 | 13.8 | 166.4 | - | 180.3 | 564.8 | 57.5 | 166.4 | 223.9 |
| 2/2 | 288 | 288 | 288 | 0 | 0 | 0.0 | 0.3 | - | 0.3 | 3.7 | 0.3 | 0.3 | 0.6 |
| 3/1 | 805 | 805 | - | - | - | 1.8 | 1.0 | - | 2.9 | 12.8 | 8.9 | 1.0 | 10.0 |
| 3/2+3/3 | 985 | 985 | - | - | - | 2.1 | 1.3 | - | 3.4 | 12.4 | 9.7 | 1.3 | 10.9 |
| 4/2+4/1 | 1743 | 1259 | - | - | - | 21.0 | 243.6 | - | 264.5 | 546.4 | 37.1 | 243.6 | 280.7 |
| 4/3 | 1429 | 1029 | - | - | - | 17.8 | 201.9 | - | 219.7 | 553.5 | 30.5 | 201.9 | 232.4 |
| 8/1 | 334 | 334 | - | - | - | 0.9 | 1.2 | - | 2.1 | 22.9 | 2.6 | 1.2 | 3.8 |
| 8/2 | 327 | 327 | - | - | - | 1.2 | 1.2 | - | 2.4 | 26.2 | 3.3 | 1.2 | 4.4 |
| 10/1 | 42 | 42 | - | - | - | 0.4 | 0.0 | - | 0.4 | 37.2 | 0.7 | 0.0 | 0.7 |
| 10/2 | 114 | 114 | - | - | - | 0.3 | 0.1 | - | 0.5 | 14.5 | 1.4 | 0.1 | 1.5 |
| 12/1 | 1041 | 1041 | - | - | - | 0.4 | 1.4 | - | 1.8 | 6.2 | 1.8 | 1.4 | 3.2 |
| 12/2 | 1029 | 1029 | - | - | - | 0.0 | 1.4 | - | 1.4 | 4.8 | 0.0 | 1.4 | 1.4 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 25.6 | Total Delay for Signalled Lanes (pcuHr): | 10.75 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -54.3 | Total Delay for Signalled Lanes (pcuHr): | 485.14 | Cycle Time (s): 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 21.0 | Total Delay for Signalled Lanes (pcuHr): | 6.52 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | -55.8 | Total Delay Over All Lanes(pcuHr): | 682.96 | |

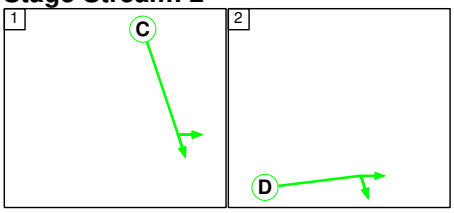
**Scenario 4: '2031 D1 PM Peak'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Stage Sequence Diagram

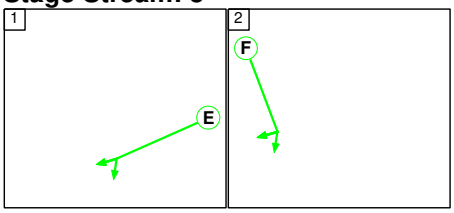
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 25 | 23 |
| Change Point | 0 | 31 |

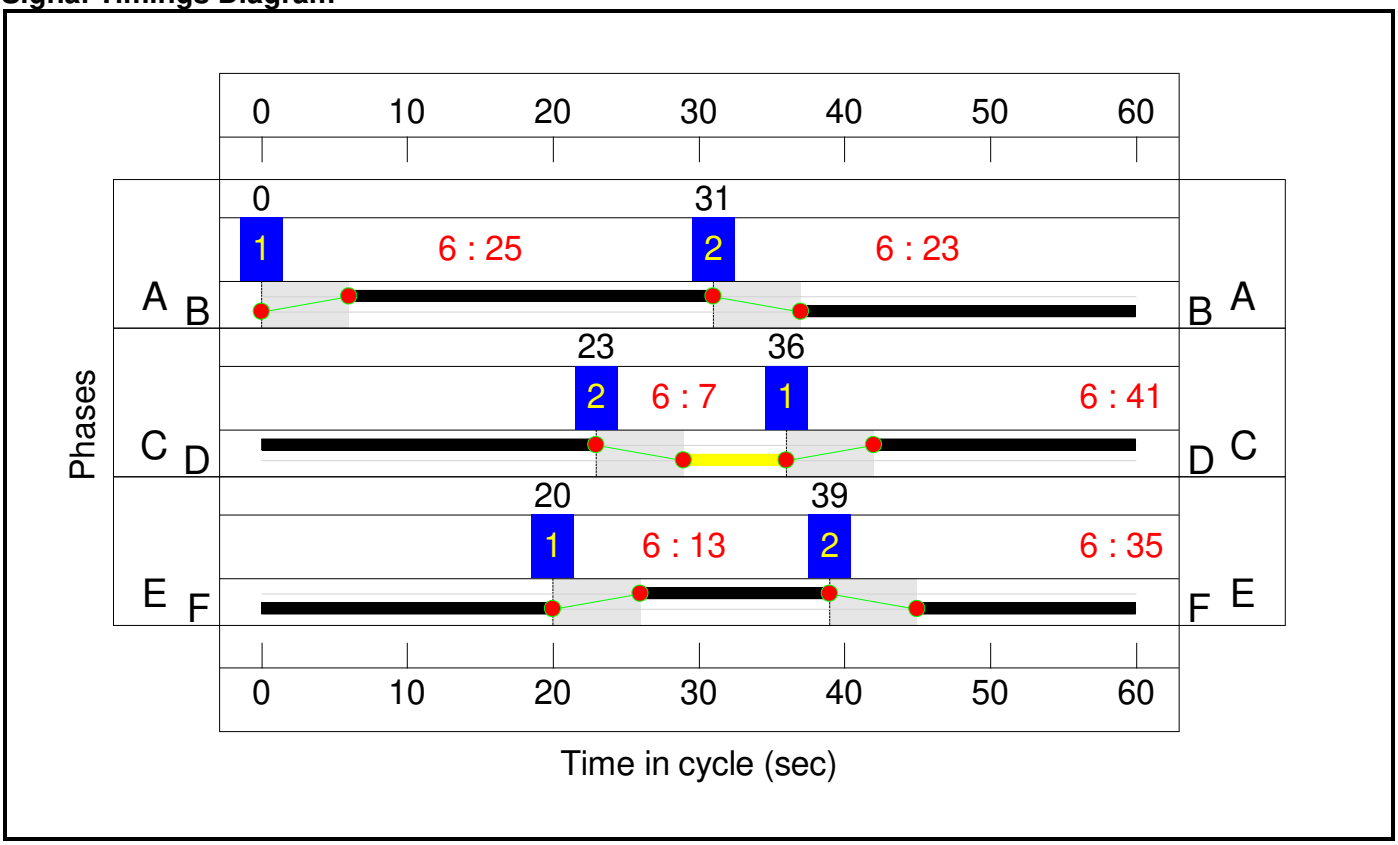
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 41 | 7 |
| Change Point | 36 | 23 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 13 | 35 |
| Change Point | 20 | 39 |

**Signal Timings Diagram**



## 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: A45 Lumbertubs Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **112.8%** |
| **A45/A43 Lumbertubs Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **112.8%** |
| 1/2+1/1 | A45 Southbound Offslip Left Ahead | U | 3 | N/A | E | | 1 | 13 | - | 448 | 2120:1980 | 495+82 | 77.6 : 77.6% |
| 1/3 | A45 Southbound Offslip Ahead | U | 3 | N/A | E | | 1 | 13 | - | 356 | 1980 | 462 | 77.1% |
| 2/1 | Ferris Row Left | O | N/A | N/A | - | | - | - | - | 868 | Inf | 769 | 112.8% |
| 2/2 | Ferris Row Ahead | O | N/A | N/A | - | | - | - | - | 626 | Inf | 670 | 93.5% |
| 3/1 | A45 Northbound Offslip Left | U | 1 | N/A | A | | 1 | 25 | - | 774 | 1980 | 858 | 90.2% |
| 3/2+3/3 | A45 Northbound Offslip Left Ahead | U | 1 | N/A | A | | 1 | 25 | - | 973 | 2120:1980 | 899+155 | 92.3 : 92.3% |
| 4/2+4/1 | A43 Lumbertubs Way Left Ahead | U | 2 | N/A | C | | 1 | 41 | - | 1025 | 2066:1917 | 1280+244 | 67.3 : 67.3% |
| 4/3 | A43 Lumbertubs Way Ahead | U | 2 | N/A | C | | 1 | 41 | - | 993 | 1929 | 1350 | 73.5% |
| 8/1 | Ahead | U | 1 | N/A | B | | 1 | 23 | - | 714 | 2000 | 800 | 89.3% |
| 8/2 | Ahead Right | U | 1 | N/A | B | | 1 | 23 | - | 708 | 2000 | 800 | 88.5% |
| 10/1 | Ahead | U | 2 | N/A | D | | 1 | 7 | - | 78 | 1900 | 253 | 30.8% |
| 10/2 | Right | U | 2 | N/A | D | | 1 | 7 | - | 143 | 1900 | 253 | 56.4% |
| 12/1 | Ahead Right | U | 3 | N/A | F | | 1 | 35 | - | 1004 | 2000 | 1200 | 83.7% |
| 12/2 | Right | U | 3 | N/A | F | | 1 | 35 | - | 993 | 2000 | 1200 | 82.8% |

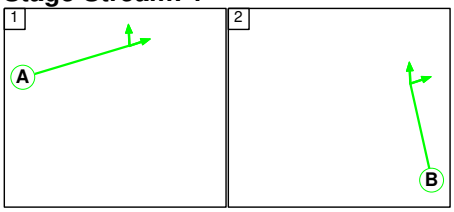
| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay (pcuHr) | Storage Area Uniform Delay (pcuHr) | Total Delay (pcuHr) | Av. Delay Per PCU (s/pcu) | Max. Back of Uniform Queue (pcu) | Rand + Oversat Queue (pcu) | Mean Max Queue (pcu) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Network: A45 Lumbertubs Gyratory - J3 Cumulative Impact** | **-** | **-** | **1395** | **0** | **0** | **28.2** | **87.5** | **0.0** | **115.7** | **-** | **-** | **-** | **-** |
| **A45/A43 Lumbertubs Interchange** | **-** | **-** | **1395** | **0** | **0** | **28.2** | **87.5** | **0.0** | **115.7** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 448 | 448 | - | - | - | 2.6 | 1.7 | - | 4.3 | 34.7 | 6.0 | 1.7 | 7.7 |
| 1/3 | 356 | 356 | - | - | - | 2.1 | 1.6 | - | 3.8 | 38.0 | 5.5 | 1.6 | 7.2 |
| 2/1 | 868 | 769 | 769 | 0 | 0 | 4.4 | 53.5 | - | 57.9 | 240.2 | 43.4 | 53.5 | 96.9 |
| 2/2 | 626 | 626 | 626 | 0 | 0 | 0.6 | 5.7 | - | 6.3 | 36.1 | 9.4 | 5.7 | 15.1 |
| 3/1 | 774 | 774 | - | - | - | 3.4 | 4.2 | - | 7.6 | 35.3 | 11.8 | 4.2 | 16.0 |
| 3/2+3/3 | 973 | 973 | - | - | - | 4.1 | 5.3 | - | 9.4 | 34.7 | 13.1 | 5.3 | 18.4 |
| 4/2+4/1 | 1025 | 1025 | - | - | - | 1.2 | 1.0 | - | 2.3 | 8.0 | 7.2 | 1.0 | 8.2 |
| 4/3 | 993 | 993 | - | - | - | 1.5 | 1.4 | - | 2.9 | 10.6 | 10.2 | 1.4 | 11.6 |
| 8/1 | 714 | 714 | - | - | - | 1.8 | 3.8 | - | 5.6 | 28.3 | 11.3 | 3.8 | 15.1 |
| 8/2 | 708 | 708 | - | - | - | 1.9 | 3.6 | - | 5.4 | 27.7 | 11.0 | 3.6 | 14.6 |
| 10/1 | 78 | 78 | - | - | - | 0.9 | 0.2 | - | 1.1 | 50.4 | 1.3 | 0.2 | 1.5 |
| 10/2 | 143 | 143 | - | - | - | 0.6 | 0.6 | - | 1.2 | 30.1 | 2.1 | 0.6 | 2.8 |
| 12/1 | 1004 | 1004 | - | - | - | 1.9 | 2.5 | - | 4.4 | 15.8 | 13.9 | 2.5 | 16.4 |
| 12/2 | 993 | 993 | - | - | - | 1.2 | 2.3 | - | 3.5 | 12.7 | 3.3 | 2.3 | 5.7 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -2.6 | Total Delay for Signalled Lanes (pcuHr): | 28.04 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 22.4 | Total Delay for Signalled Lanes (pcuHr): | 7.47 | Cycle Time (s): 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 7.6 | Total Delay for Signalled Lanes (pcuHr): | 15.99 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | -25.4 | Total Delay Over All Lanes(pcuHr): | 115.69 | |

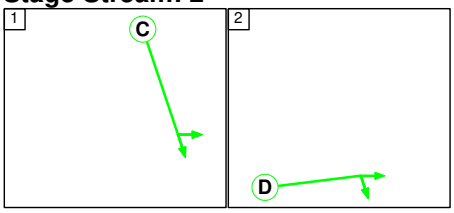
**Scenario 6: '2031 J3 PM Peak'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')

## Stage Sequence Diagram

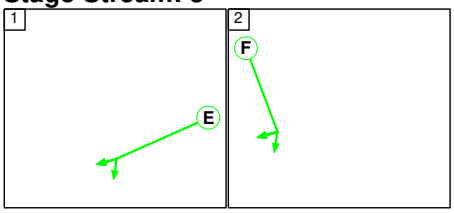
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 25 | 23 |
| Change Point | 0 | 31 |

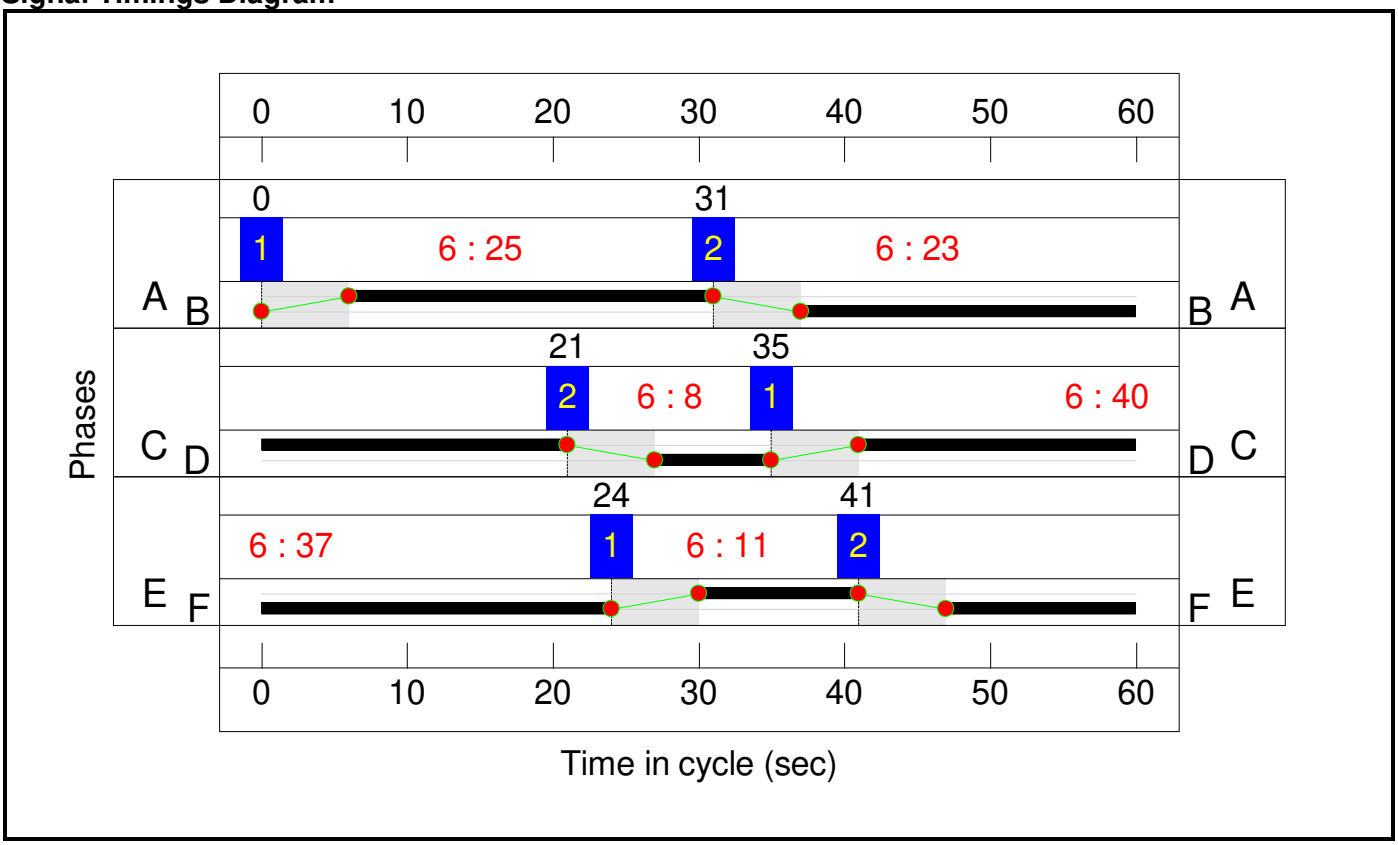
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 40 | 8 |
| Change Point | 35 | 21 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 11 | 37 |
| Change Point | 24 | 41 |

**Signal Timings Diagram**



## 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: A45 Lumbertubs Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **113.4%** |
| **A45/A43 Lumbertubs Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **113.4%** |
| 1/2+1/1 | A45 Southbound Offslip Left Ahead | U | 3 | N/A | E | | 1 | 11 | - | 552 | 2120:1980 | 424+271 | 79.5 : 79.5% |
| 1/3 | A45 Southbound Offslip Ahead | U | 3 | N/A | E | | 1 | 11 | - | 254 | 1980 | 396 | 64.1% |
| 2/1 | Ferris Row Left | O | N/A | N/A | - | | - | - | - | 829 | Inf | 763 | 108.7% |
| 2/2 | Ferris Row Ahead | O | N/A | N/A | - | | - | - | - | 781 | Inf | 689 | 113.4% |
| 3/1 | A45 Northbound Offslip Left | U | 1 | N/A | A | | 1 | 25 | - | 717 | 1980 | 858 | 83.6% |
| 3/2+3/3 | A45 Northbound Offslip Left Ahead | U | 1 | N/A | A | | 1 | 25 | - | 1026 | 2120:1980 | 877+288 | 88.1 : 88.1% |
| 4/2+4/1 | A43 Lumbertubs Way Left Ahead | U | 2 | N/A | C | | 1 | 40 | - | 1064 | 2066:1917 | 1248+244 | 71.3 : 71.3% |
| 4/3 | A43 Lumbertubs Way Ahead | U | 2 | N/A | C | | 1 | 40 | - | 987 | 1929 | 1318 | 74.9% |
| 8/1 | Ahead | U | 1 | N/A | B | | 1 | 23 | - | 715 | 2000 | 800 | 84.2% |
| 8/2 | Ahead Right | U | 1 | N/A | B | | 1 | 23 | - | 715 | 2000 | 800 | 83.0% |
| 10/1 | Ahead | U | 2 | N/A | D | | 1 | 8 | - | 195 | 1900 | 285 | 65.9% |
| 10/2 | Right | U | 2 | N/A | D | | 1 | 8 | - | 121 | 1900 | 285 | 42.5% |
| 12/1 | Ahead Right | U | 3 | N/A | F | | 1 | 37 | - | 1010 | 2000 | 1267 | 79.7% |
| 12/2 | Right | U | 3 | N/A | F | | 1 | 37 | - | 988 | 2000 | 1267 | 78.0% |

| 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: A45 Lumbertubs Gyratory - J3 Cumulative Impact** | **-** | **-** | **1452** | **0** | **0** | **29.2** | **109.9** | **0.0** | **139.1** | **-** | **-** | **-** | **-** |
| **A45/A43 Lumbertubs Interchange** | **-** | **-** | **1452** | **0** | **0** | **29.2** | **109.9** | **0.0** | **139.1** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 552 | 552 | - | - | - | 3.4 | 1.9 | - | 5.3 | 34.6 | 5.3 | 1.9 | 7.2 |
| 1/3 | 254 | 254 | - | - | - | 1.6 | 0.9 | - | 2.4 | 34.5 | 3.9 | 0.9 | 4.8 |
| 2/1 | 829 | 763 | 763 | 0 | 0 | 3.2 | 38.5 | - | 41.7 | 181.3 | 41.5 | 38.5 | 80.0 |
| 2/2 | 781 | 689 | 689 | 0 | 0 | 4.1 | 50.0 | - | 54.1 | 249.2 | 39.0 | 50.0 | 89.0 |
| 3/1 | 717 | 717 | - | - | - | 3.0 | 2.5 | - | 5.5 | 27.4 | 10.6 | 2.5 | 13.0 |
| 3/2+3/3 | 1026 | 1026 | - | - | - | 4.0 | 3.5 | - | 7.5 | 26.4 | 11.4 | 3.5 | 14.9 |
| 4/2+4/1 | 1064 | 1064 | - | - | - | 1.5 | 1.2 | - | 2.7 | 9.1 | 8.3 | 1.2 | 9.5 |
| 4/3 | 987 | 987 | - | - | - | 1.7 | 1.5 | - | 3.2 | 11.5 | 10.4 | 1.5 | 11.9 |
| 8/1 | 674 | 674 | - | - | - | 1.4 | 2.6 | - | 3.9 | 21.1 | 4.4 | 2.6 | 6.9 |
| 8/2 | 664 | 664 | - | - | - | 1.8 | 2.4 | - | 4.2 | 22.7 | 9.9 | 2.4 | 12.3 |
| 10/1 | 188 | 188 | - | - | - | 1.1 | 0.9 | - | 2.0 | 39.0 | 3.0 | 0.9 | 3.9 |
| 10/2 | 121 | 121 | - | - | - | 0.4 | 0.4 | - | 0.8 | 23.1 | 1.8 | 0.4 | 2.2 |
| 12/1 | 1010 | 1010 | - | - | - | 1.4 | 1.9 | - | 3.4 | 12.1 | 12.9 | 1.9 | 14.8 |
| 12/2 | 988 | 988 | - | - | - | 0.6 | 1.8 | - | 2.3 | 8.4 | 1.7 | 1.8 | 3.4 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 2.2 | Total Delay for Signalled Lanes (pcuHr): | 21.13 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 20.2 | Total Delay for Signalled Lanes (pcuHr): | 8.68 | Cycle Time (s): 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 12.9 | Total Delay for Signalled Lanes (pcuHr): | 13.45 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | -26.0 | Total Delay Over All Lanes(pcuHr): | 139.07 | |

# JUNCTION 17

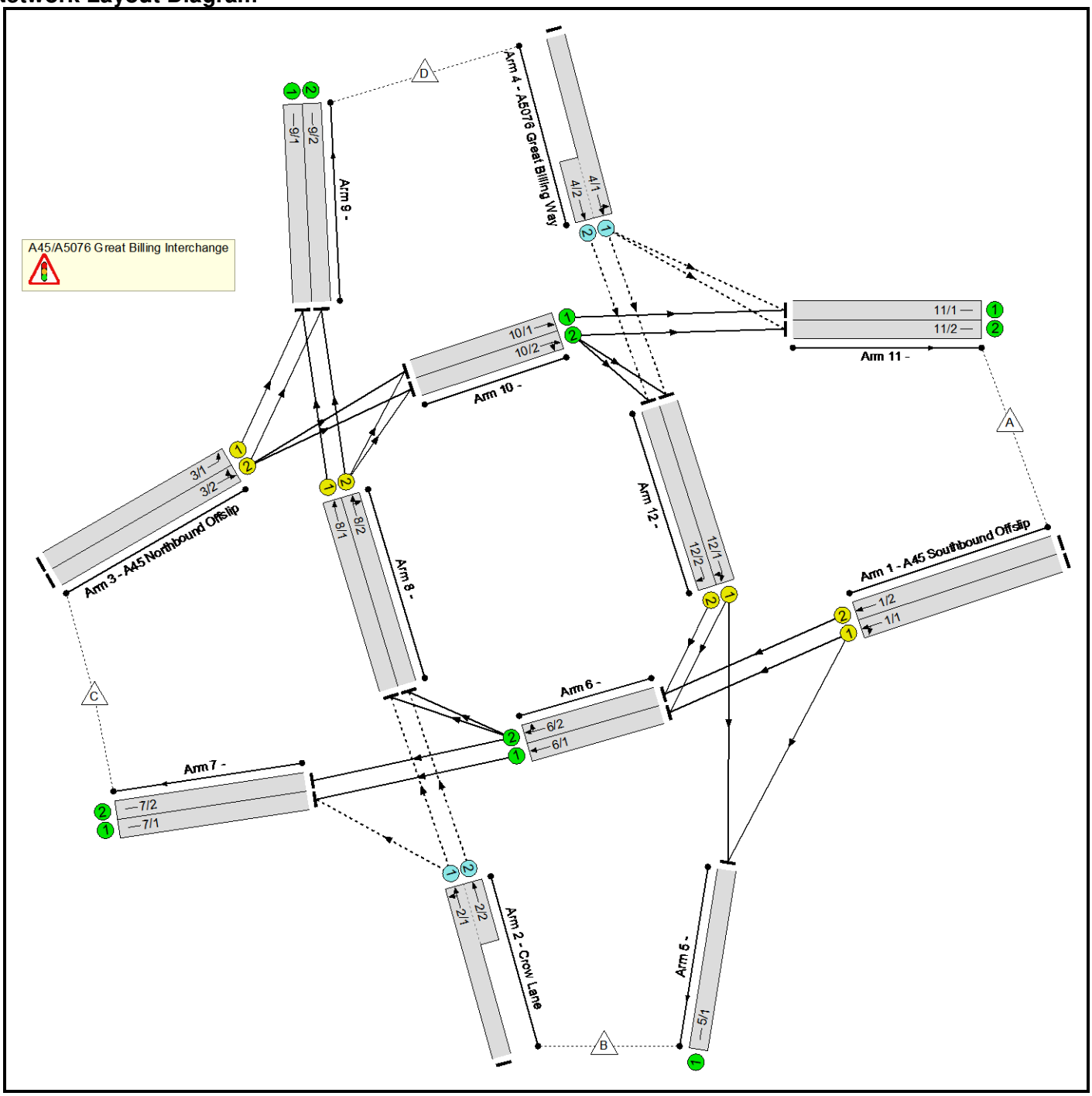
# A45 GREAT BILLING WAY INTERCHANGE

## Full Input Data And Results

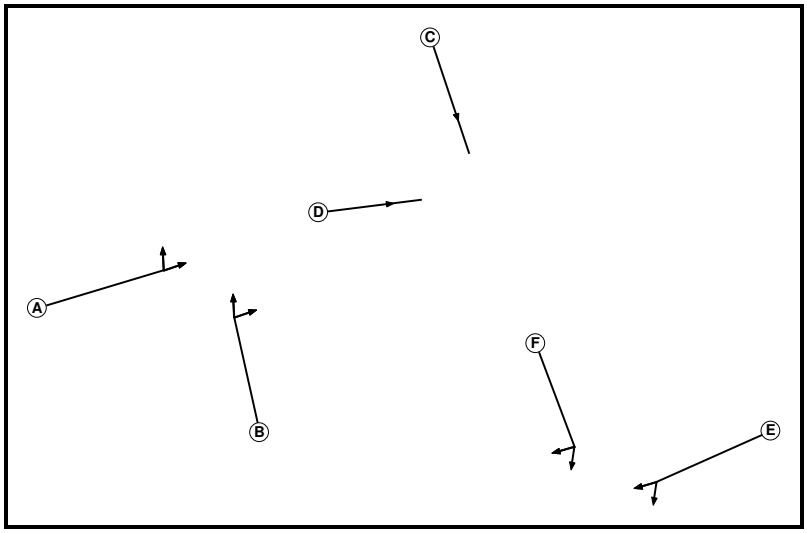
### User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **A45 Great Billing Interchange - J3 Cumulative Impact** |
| **Location:** | |
| **File name:** | 180318 Great Billing Interchange Base Model.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House, Nottingham |
| **Notes:** | |

### Network Layout Diagram



## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |
| E | Traffic | 3 | | 7 | 7 |
| F | Traffic | 3 | | 7 | 7 |

## Phase Intergreens Matrix

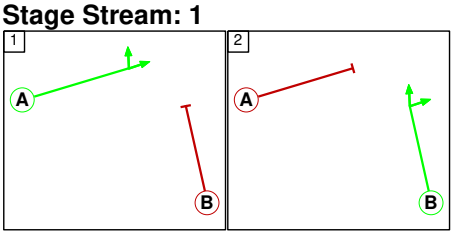
| | | Starting Phase | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F |
| Terminating Phase | A | | 6 | - | - | - | - |
| | B | 6 | | - | - | - | - |
| | C | - | - | | 6 | - | - |
| | D | - | - | 6 | | - | - |
| | E | - | - | - | - | | 6 |
| | F | - | - | - | - | 6 | |

## Phases in Stage

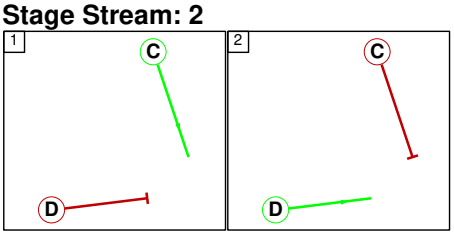
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |
| 3 | 1 | E |
| 3 | 2 | F |

## Stage Diagram

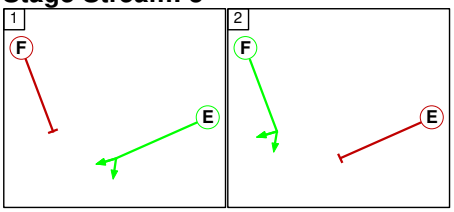
### Stage Stream: 1




### Stage Stream: 2




### Stage Stream: 3




## Prohibited Stage Change

### Stage Stream: 1

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

### Stage Stream: 2

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

### Stage Stream: 3

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

## Give-Way Lane Input Data

| Junction: A45/A5076 Great Billing Interchange | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| 2/1 (Crow Lane) | 7/1 (Left) | 1122 | 0 | 6/1 | 0.27 | All | - | - | - | - | - |
| | | | | 6/2 | 0.27 | To 7/2 (Ahead) | | | | | |
| | 8/1 (Ahead) | 1122 | 0 | 6/1 | 0.27 | All | | | | | |
| | | | | 6/2 | 0.27 | All | | | | | |
| 2/2 (Crow Lane) | 8/2 (Ahead) | 1122 | 0 | 6/1 | 0.27 | All | - | - | - | - | - |
| | | | | 6/2 | 0.27 | All | | | | | |
| 4/1 (A5076 Great Billing Way) | 11/1 (Left) | 1231 | 0 | 10/1 | 0.28 | All | - | - | - | - | - |
| | | | | 10/2 | 0.28 | All | | | | | |
| | 11/2 (Left) | 1231 | 0 | 10/1 | 0.28 | All | | | | | |
| | | | | 10/2 | 0.28 | All | | | | | |
| | 12/1 (Ahead) | 1231 | 0 | 10/1 | 0.28 | All | | | | | |
| | | | | 10/2 | 0.28 | All | | | | | |
| 4/2 (A5076 Great Billing Way) | 12/2 (Ahead) | 1231 | 0 | 10/1 | 0.28 | All | - | - | - | - | - |
| | | | | 10/2 | 0.28 | All | | | | | |

## Lane Input Data

| Junction: A45/A5076 Great Billing Interchange | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | U | E | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 5 Left | Inf |
| | | | | | | | | | | | Arm 6 Ahead | Inf |
| 1/2 (A45 Southbound Offslip) | U | E | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf |
| 2/1 (Crow Lane) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 2/2 (Crow Lane) | O | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 3/1 (A45 Northbound Offslip) | U | A | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | Y | Arm 9 Left | Inf |
| 3/2 (A45 Northbound Offslip) | U | A | 2 | 3 | 60.0 | Geom | - | 3.65 | 0.00 | N | Arm 9 Left | Inf |
| | | | | | | | | | | | Arm 10 Ahead | Inf |
| 4/1 (A5076 Great Billing Way) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 4/2 (A5076 Great Billing Way) | O | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 5/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 6/1 | U | | 2 | 3 | 13.0 | Inf | - | - | - | - | - | - |
| 6/2 | U | | 2 | 3 | 13.0 | Inf | - | - | - | - | - | - |
| 7/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 7/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 8/1 | U | B | 2 | 3 | 27.8 | User | 2000 | - | - | - | - | - |
| 8/2 | U | B | 2 | 3 | 27.8 | User | 2000 | - | - | - | - | - |
| 9/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 9/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 10/1 | U | | 2 | 3 | 13.0 | Inf | - | - | - | - | - | - |
| 10/2 | U | | 2 | 3 | 13.0 | Inf | - | - | - | - | - | - |
| 11/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 11/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 12/1 | U | F | 2 | 3 | 26.1 | User | 2000 | - | - | - | - | - |
| 12/2 | U | F | 2 | 3 | 26.1 | User | 2000 | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 Ref AM' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 Ref PM' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 Dev AM' | 08:00 | 09:00 | 01:00 | |
| 6: '2031 J3 Dev PM' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 414 | 0 | 292 | 706 |
| | B | 162 | 0 | 633 | 539 | 1334 |
| | C | 0 | 160 | 5 | 299 | 464 |
| | D | 372 | 325 | 1022 | 0 | 1719 |
| | Tot. | 534 | 899 | 1660 | 1130 | 4223 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 Ref AM |
|---|---|
| **Junction: A45/A5076 Great Billing Interchange** | |
| 1/1 | 414 |
| 1/2 | 292 |
| 2/1 (with short) | 1334(In) 761(Out) |
| 2/2 (short) | 573 |
| 3/1 | 217 |
| 3/2 | 247 |
| 4/1 (with short) | 1719(In) 965(Out) |
| 4/2 (short) | 754 |
| 5/1 | 899 |
| 6/1 | 273 |
| 6/2 | 1046 |
| 7/1 | 906 |
| 7/2 | 754 |
| 8/1 | 332 |
| 8/2 | 661 |
| 9/1 | 549 |
| 9/2 | 581 |
| 10/1 | 81 |
| 10/2 | 246 |
| 11/1 | 267 |
| 11/2 | 267 |
| 12/1 | 758 |
| 12/2 | 754 |

## Lane Saturation Flows

| Junction: A45/A5076 Great Billing Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Left | Inf | 100.0 % | 2120 | 2120 |
| | | | | Arm 6 Ahead | Inf | 0.0 % | | |
| 1/2 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (Crow Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Crow Lane Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1980 | 1980 |
| 3/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 9 Left | Inf | 33.2 % | 2120 | 2120 |
| | | | | Arm 10 Ahead | Inf | 66.8 % | | |
| 4/1 (A5076 Great Billing Way Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A5076 Great Billing Way Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

**Scenario 3: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 296 | 0 | 383 | 679 |
| | B | 176 | 0 | 640 | 507 | 1323 |
| | C | 0 | 146 | 18 | 305 | 469 |
| | D | 374 | 516 | 836 | 0 | 1726 |
| | Tot. | 550 | 958 | 1494 | 1195 | 4197 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 Dev AM |
|---|---|
| **Junction: A45/A5076 Great Billing Interchange** | |
| 1/1 | 296 |
| 1/2 | 383 |
| 2/1 (with short) | 1323(In) 798(Out) |
| 2/2 (short) | 525 |
| 3/1 | 219 |
| 3/2 | 250 |
| 4/1 (with short) | 1726(In) 969(Out) |
| 4/2 (short) | 757 |
| 5/1 | 958 |
| 6/1 | 97 |
| 6/2 | 1140 |
| 7/1 | 737 |
| 7/2 | 757 |
| 8/1 | 438 |
| 8/2 | 628 |
| 9/1 | 657 |
| 9/2 | 538 |
| 10/1 | 88 |
| 10/2 | 252 |
| 11/1 | 275 |
| 11/2 | 275 |
| 12/1 | 759 |
| 12/2 | 757 |

## Lane Saturation Flows

| Junction: A45/A5076 Great Billing Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Left | Inf | 100.0 % | 2120 | 2120 |
| | | | | Arm 6 Ahead | Inf | 0.0 % | | |
| 1/2 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (Crow Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Crow Lane Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1980 | 1980 |
| 3/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 9 Left | Inf | 34.4 % | 2120 | 2120 |
| | | | | Arm 10 Ahead | Inf | 65.6 % | | |
| 4/1 (A5076 Great Billing Way Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A5076 Great Billing Way Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

**Scenario 4: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 61 | 0 | 138 | 199 |
| | B | 235 | 0 | 225 | 627 | 1087 |
| | C | 161 | 106 | 0 | 646 | 913 |
| | D | 374 | 423 | 300 | 0 | 1097 |
| | Tot. | 770 | 590 | 525 | 1411 | 3296 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 Ref PM |
|---|---|
| **Junction: A45/A5076 Great Billing Interchange** | |
| 1/1 | 61 |
| 1/2 | 138 |
| 2/1 (with short) | 1087(In) 655(Out) |
| 2/2 (short) | 432 |
| 3/1 | 433 |
| 3/2 | 480 |
| 4/1 (with short) | 1097(In) 797(Out) |
| 4/2 (short) | 300 |
| 5/1 | 590 |
| 6/1 | 0 |
| 6/2 | 438 |
| 7/1 | 225 |
| 7/2 | 300 |
| 8/1 | 500 |
| 8/2 | 500 |
| 9/1 | 933 |
| 9/2 | 478 |
| 10/1 | 197 |
| 10/2 | 305 |
| 11/1 | 384 |
| 11/2 | 386 |
| 12/1 | 529 |
| 12/2 | 300 |

## Lane Saturation Flows

| Junction: A45/A5076 Great Billing Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Left | Inf | 100.0 % | 2120 | 2120 |
| | | | | Arm 6 Ahead | Inf | 0.0 % | | |
| 1/2 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (Crow Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Crow Lane Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1980 | 1980 |
| 3/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 9 Left | Inf | 44.4 % | 2120 | 2120 |
| | | | | Arm 10 Ahead | Inf | 55.6 % | | |
| 4/1 (A5076 Great Billing Way Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A5076 Great Billing Way Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

**Scenario 6: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | Destination | | | | | |
|---|---|---|---|---|---|---|
| Origin | | A | B | C | D | Tot. |
| | A | 0 | 75 | 0 | 140 | 215 |
| | B | 263 | 0 | 228 | 620 | 1111 |
| | C | 28 | 112 | 9 | 769 | 918 |
| | D | 459 | 420 | 244 | 0 | 1123 |
| | Tot. | 750 | 607 | 481 | 1529 | 3367 |

## Traffic Lane Flows

| Lane | Scenario 6: 2031 J3 Dev PM |
|---|---|
| **Junction: A45/A5076 Great Billing Interchange** | |
| 1/1 | 75 |
| 1/2 | 140 |
| 2/1 (with short) | 1111(In) 670(Out) |
| 2/2 (short) | 441 |
| 3/1 | 436 |
| 3/2 | 482 |
| 4/1 (with short) | 1123(In) 879(Out) |
| 4/2 (short) | 244 |
| 5/1 | 607 |
| 6/1 | 9 |
| 6/2 | 384 |
| 7/1 | 237 |
| 7/2 | 244 |
| 8/1 | 511 |
| 8/2 | 512 |
| 9/1 | 947 |
| 9/2 | 582 |
| 10/1 | 145 |
| 10/2 | 267 |
| 11/1 | 374 |
| 11/2 | 376 |
| 12/1 | 541 |
| 12/2 | 244 |

## Lane Saturation Flows

| Junction: A45/A5076 Great Billing Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A45 Southbound Offslip) | 3.65 | 0.00 | N | Arm 5 Left | Inf | 100.0 % | 2120 | 2120 |
| | | | | Arm 6 Ahead | Inf | 0.0 % | | |
| 1/2 (A45 Southbound Offslip) | 3.65 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1980 | 1980 |
| 2/1 (Crow Lane Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Crow Lane Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 (A45 Northbound Offslip) | 3.65 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1980 | 1980 |
| 3/2 (A45 Northbound Offslip) | 3.65 | 0.00 | N | Arm 9 Left | Inf | 69.1 % | 2120 | 2120 |
| | | | | Arm 10 Ahead | Inf | 30.9 % | | |
| 4/1 (A5076 Great Billing Way Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A5076 Great Billing Way Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| **Duration** | 15 | 33 |
| **Change Point** | 0 | 21 |

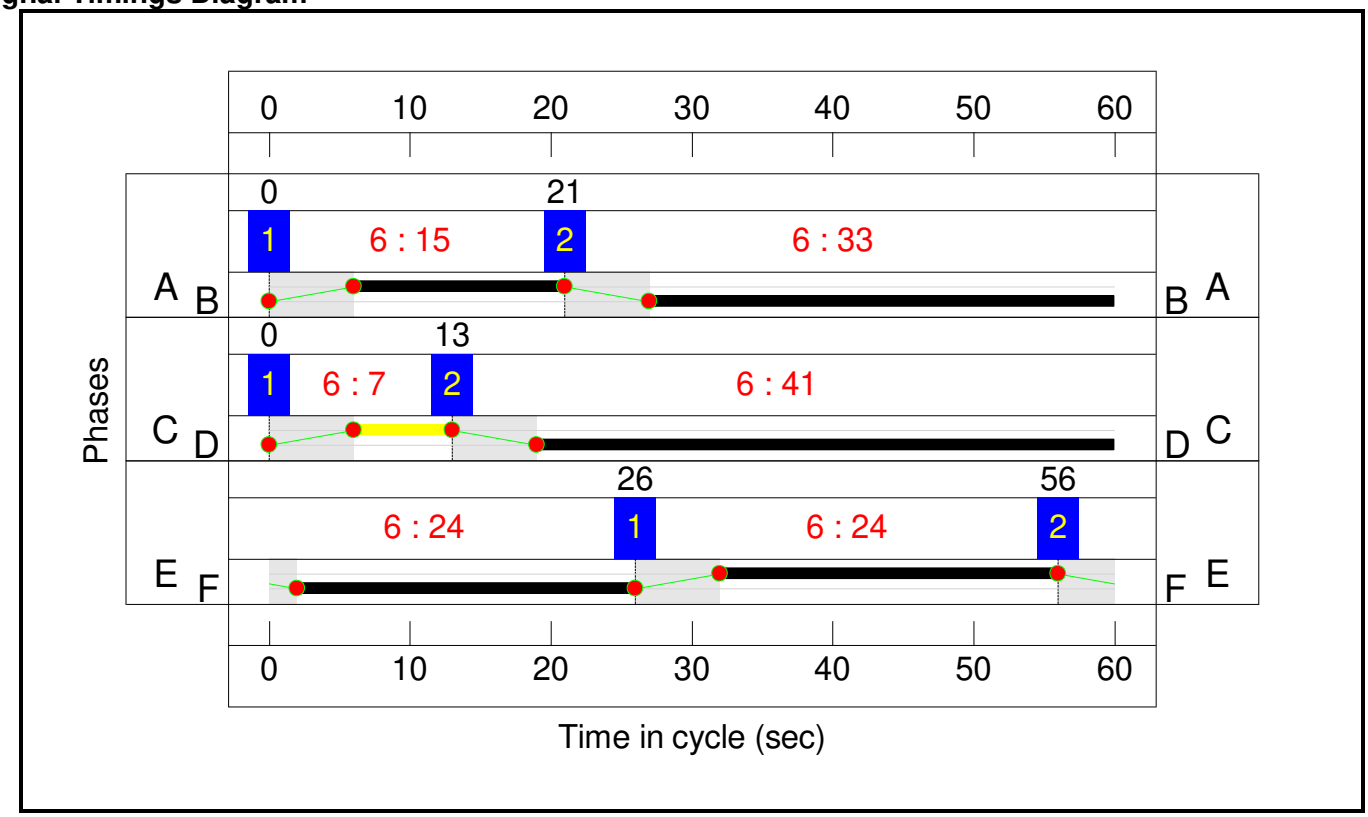
**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 0 | 13 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 24 |
| Change Point | 26 | 56 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | A45 Southbound Offslip Left Ahead | U | 3 | N/A | E | | 1 | 24 | - | 414 | 2120 | 883 | 46.9% |
| 1/2 | A45 Southbound Offslip Ahead | U | 3 | N/A | E | | 1 | 24 | - | 292 | 1980 | 825 | 35.4% |
| 2/1+2/2 | Crow Lane Left Ahead | O | N/A | N/A | - | | - | - | - | 1334 | Inf : Inf | 825+621 | 92.2 : 92.2% |
| 3/1 | A45 Northbound Offslip Left | U | 1 | N/A | A | | 1 | 15 | - | 217 | 1980 | 528 | 41.1% |
| 3/2 | A45 Northbound Offslip Left Ahead | U | 1 | N/A | A | | 1 | 15 | - | 247 | 2120 | 565 | 43.7% |
| 4/1+4/2 | A5076 Great Billing Way Left Ahead | O | N/A | N/A | - | | - | - | - | 1719 | Inf : Inf | 1139+890 | 84.7 : 84.7% |
| 8/1 | Ahead | U | 1 | N/A | B | | 1 | 33 | - | 332 | 2000 | 1133 | 29.3% |
| 8/2 | Ahead Right | U | 1 | N/A | B | | 1 | 33 | - | 661 | 2000 | 1133 | 58.3% |
| 12/1 | Ahead Right | U | 3 | N/A | F | | 1 | 24 | - | 758 | 2000 | 833 | 91.0% |
| 12/2 | Right | U | 3 | N/A | F | | 1 | 24 | - | 754 | 2000 | 833 | 90.5% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 414 | 414 | - | - | - | 1.5 | 0.4 | - | 1.9 | 16.5 | 4.9 | 0.4 | 5.4 |
| 1/2 | 292 | 292 | - | - | - | 1.0 | 0.3 | - | 1.2 | 15.4 | 3.3 | 0.3 | 3.6 |
| 2/1+2/2 | 1334 | 1334 | 2668 | 0 | 0 | 1.3 | 5.4 | - | 6.7 | 18.1 | 10.4 | 5.4 | 15.8 |
| 3/1 | 217 | 217 | - | - | - | 1.1 | 0.3 | - | 1.4 | 23.9 | 3.0 | 0.3 | 3.3 |
| 3/2 | 247 | 247 | - | - | - | 1.3 | 0.4 | - | 1.6 | 23.9 | 3.4 | 0.4 | 3.7 |
| 4/1+4/2 | 1719 | 1719 | 3438 | 0 | 0 | 0.0 | 2.7 | - | 2.7 | 5.7 | 2.4 | 2.7 | 5.1 |
| 8/1 | 332 | 332 | - | - | - | 0.5 | 0.2 | - | 0.7 | 7.5 | 1.5 | 0.2 | 1.8 |
| 8/2 | 661 | 661 | - | - | - | 1.2 | 0.7 | - | 1.9 | 10.6 | 4.7 | 0.7 | 5.4 |
| 12/1 | 758 | 758 | - | - | - | 2.8 | 4.5 | - | 7.3 | 34.8 | 9.0 | 4.5 | 13.5 |
| 12/2 | 754 | 754 | - | - | - | 3.4 | 4.3 | - | 7.7 | 36.9 | 11.7 | 4.3 | 16.0 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 54.3 | Total Delay for Signalled Lanes (pcuHr): | 5.71 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | -1.1 | Total Delay for Signalled Lanes (pcuHr): | 18.19 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | -2.5 | Total Delay Over All Lanes(pcuHr): | 33.36 | |

**Scenario 3: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 14 | 34 |
| Change Point | 0 | 20 |

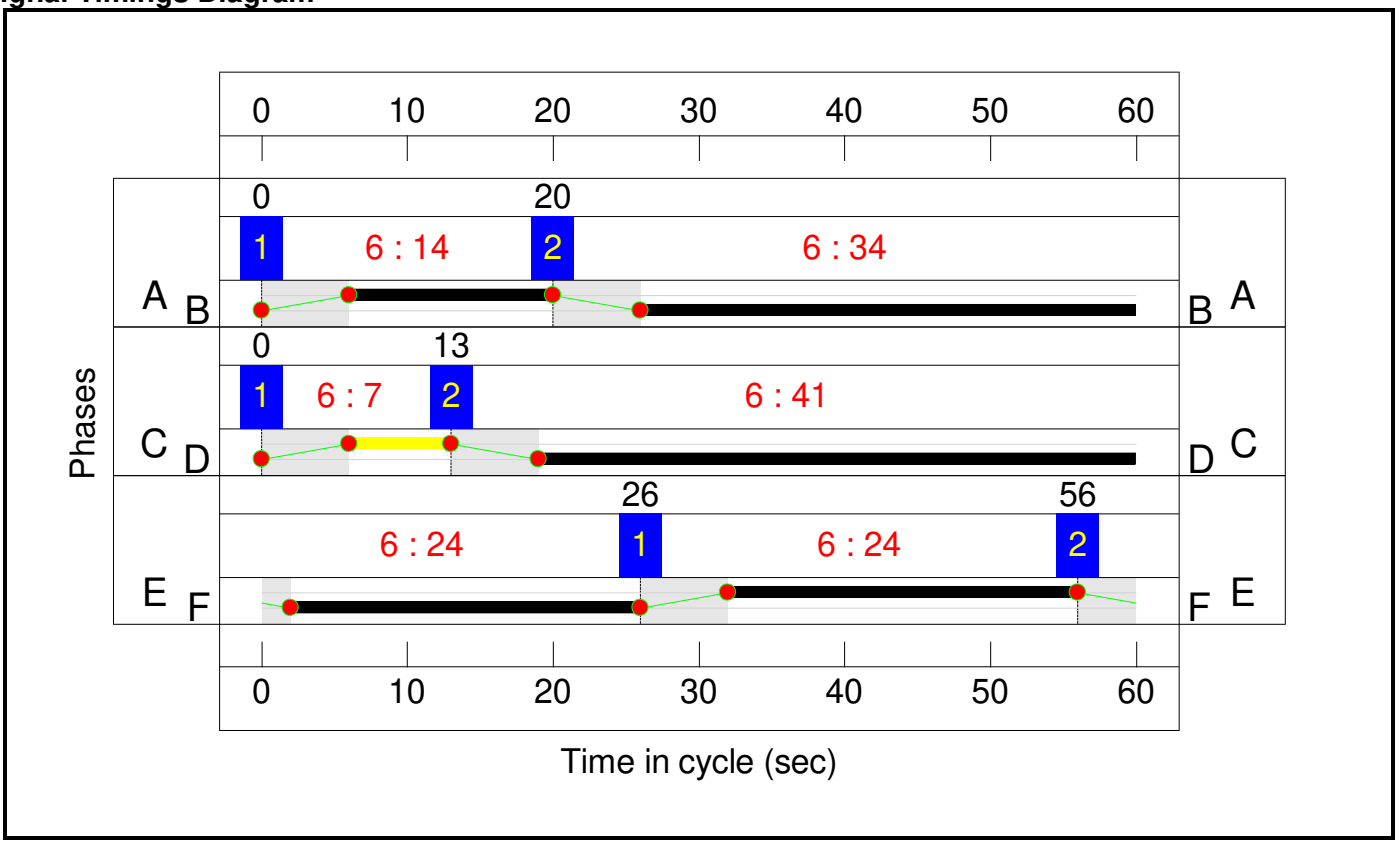
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 0 | 13 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 24 |
| Change Point | 26 | 56 |

## Signal Timings Diagram



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | A45 Southbound Offslip Left Ahead | U | 3 | N/A | E | | 1 | 24 | - | 296 | 2120 | 883 | 33.5% |
| 1/2 | A45 Southbound Offslip Ahead | U | 3 | N/A | E | | 1 | 24 | - | 383 | 1980 | 825 | 46.4% |
| 2/1+2/2 | Crow Lane Left Ahead | O | N/A | N/A | - | | - | - | - | 1323 | Inf : Inf | 861+567 | 92.6 : 92.6% |
| 3/1 | A45 Northbound Offslip Left | U | 1 | N/A | A | | 1 | 14 | - | 219 | 1980 | 495 | 44.2% |
| 3/2 | A45 Northbound Offslip Left Ahead | U | 1 | N/A | A | | 1 | 14 | - | 250 | 2120 | 530 | 47.2% |
| 4/1+4/2 | A5076 Great Billing Way Left Ahead | O | N/A | N/A | - | | - | - | - | 1726 | Inf : Inf | 1136+887 | 85.3 : 85.3% |
| 8/1 | Ahead | U | 1 | N/A | B | | 1 | 34 | - | 438 | 2000 | 1167 | 37.5% |
| 8/2 | Ahead Right | U | 1 | N/A | B | | 1 | 34 | - | 628 | 2000 | 1167 | 53.8% |
| 12/1 | Ahead Right | U | 3 | N/A | F | | 1 | 24 | - | 759 | 2000 | 833 | 91.1% |
| 12/2 | Right | U | 3 | N/A | F | | 1 | 24 | - | 757 | 2000 | 833 | 90.8% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 296 | 296 | - | - | - | 1.0 | 0.3 | - | 1.2 | 14.9 | 3.3 | 0.3 | 3.5 |
| 1/2 | 383 | 383 | - | - | - | 1.3 | 0.4 | - | 1.8 | 16.7 | 4.6 | 0.4 | 5.0 |
| 2/1+2/2 | 1323 | 1323 | 2646 | 0 | 0 | 0.7 | 5.7 | - | 6.4 | 17.4 | 10.4 | 5.7 | 16.1 |
| 3/1 | 219 | 219 | - | - | - | 1.2 | 0.4 | - | 1.6 | 25.5 | 3.0 | 0.4 | 3.4 |
| 3/2 | 250 | 250 | - | - | - | 1.3 | 0.4 | - | 1.8 | 25.5 | 3.5 | 0.4 | 4.0 |
| 4/1+4/2 | 1726 | 1726 | 3452 | 0 | 0 | 0.0 | 2.9 | - | 2.9 | 6.0 | 2.4 | 2.9 | 5.3 |
| 8/1 | 438 | 438 | - | - | - | 0.6 | 0.3 | - | 0.9 | 7.4 | 2.0 | 0.3 | 2.3 |
| 8/2 | 628 | 628 | - | - | - | 1.2 | 0.6 | - | 1.8 | 10.1 | 5.2 | 0.6 | 5.8 |
| 12/1 | 759 | 759 | - | - | - | 2.8 | 4.5 | - | 7.4 | 34.9 | 9.0 | 4.5 | 13.5 |
| 12/2 | 757 | 757 | - | - | - | 3.5 | 4.4 | - | 7.9 | 37.6 | 11.8 | 4.4 | 16.2 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 67.2 | Total Delay for Signalled Lanes (pcuHr): | 5.98 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | -1.2 | Total Delay for Signalled Lanes (pcuHr): | 18.26 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | -2.9 | Total Delay Over All Lanes(pcuHr): | 33.51 | |

**Scenario 4: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 25 |
| Change Point | 0 | 29 |

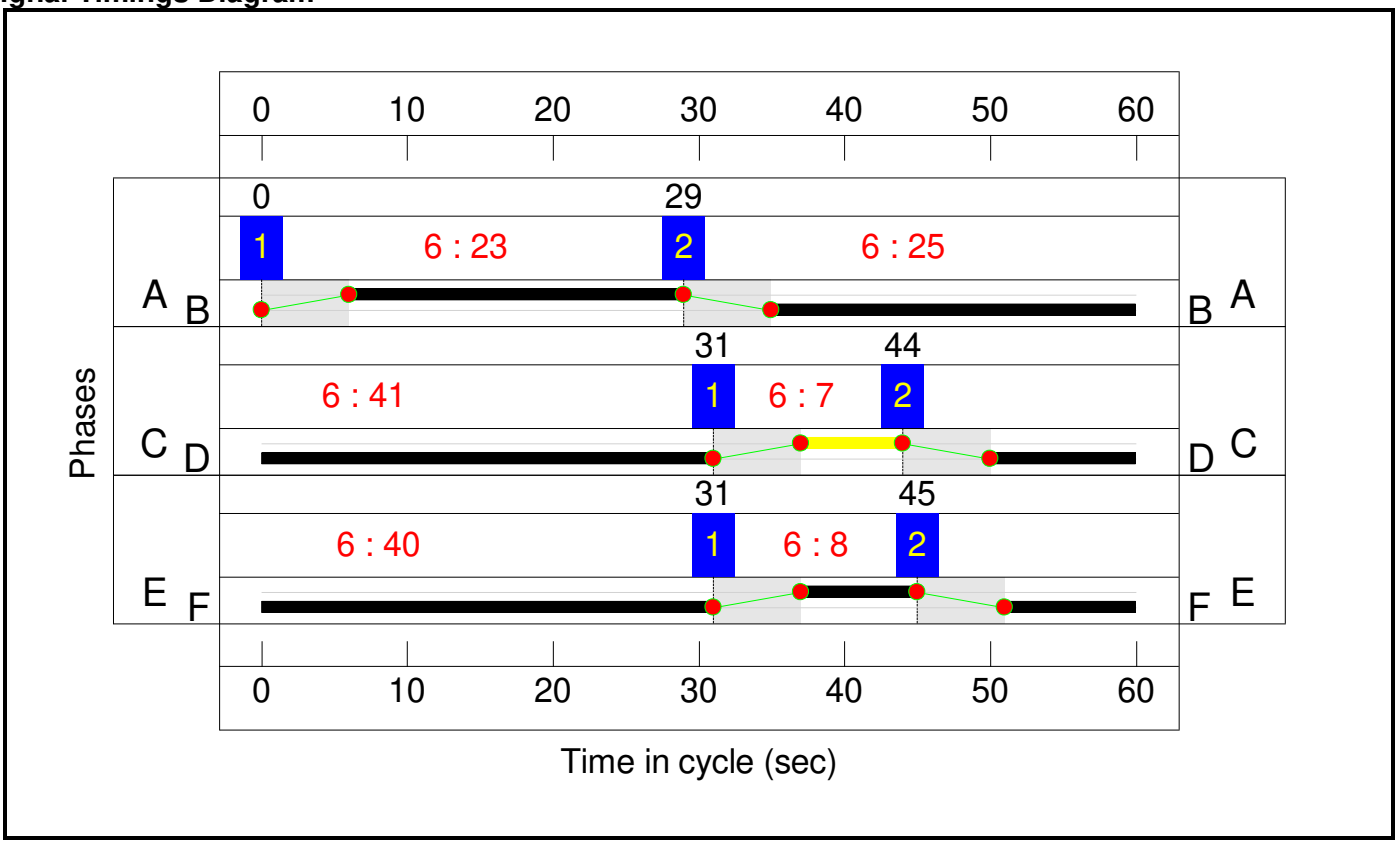
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 31 | 44 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 8 | 40 |
| Change Point | 31 | 45 |

## Signal Timings Diagram



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | A45 Southbound Offslip Left Ahead | U | 3 | N/A | E | | 1 | 8 | - | 61 | 2120 | 318 | 19.2% |
| 1/2 | A45 Southbound Offslip Ahead | U | 3 | N/A | E | | 1 | 8 | - | 138 | 1980 | 297 | 46.5% |
| 2/1+2/2 | Crow Lane Left Ahead | O | N/A | N/A | - | | - | - | - | 1087 | Inf : Inf | 1012+668 | 64.7 : 64.7% |
| 3/1 | A45 Northbound Offslip Left | U | 1 | N/A | A | | 1 | 23 | - | 433 | 1980 | 792 | 54.7% |
| 3/2 | A45 Northbound Offslip Left Ahead | U | 1 | N/A | A | | 1 | 23 | - | 480 | 2120 | 848 | 56.6% |
| 4/1+4/2 | A5076 Great Billing Way Left Ahead | O | N/A | N/A | - | | - | - | - | 1097 | Inf : Inf | 1090+410 | 73.1 : 73.1% |
| 8/1 | Ahead | U | 1 | N/A | B | | 1 | 25 | - | 500 | 2000 | 867 | 57.7% |
| 8/2 | Ahead Right | U | 1 | N/A | B | | 1 | 25 | - | 500 | 2000 | 867 | 57.7% |
| 12/1 | Ahead Right | U | 3 | N/A | F | | 1 | 40 | - | 529 | 2000 | 1367 | 38.7% |
| 12/2 | Right | U | 3 | N/A | F | | 1 | 40 | - | 300 | 2000 | 1367 | 22.0% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 61 | 61 | - | - | - | 0.4 | 0.1 | - | 0.5 | 29.4 | 0.9 | 0.1 | 1.0 |
| 1/2 | 138 | 138 | - | - | - | 0.9 | 0.4 | - | 1.3 | 34.6 | 2.1 | 0.4 | 2.5 |
| 2/1+2/2 | 1087 | 1087 | 2174 | 0 | 0 | 0.0 | 0.9 | - | 0.9 | 3.0 | 0.5 | 0.9 | 1.5 |
| 3/1 | 433 | 433 | - | - | - | 1.7 | 0.6 | - | 2.3 | 18.8 | 5.5 | 0.6 | 6.1 |
| 3/2 | 480 | 480 | - | - | - | 1.9 | 0.6 | - | 2.5 | 18.8 | 6.1 | 0.6 | 6.8 |
| 4/1+4/2 | 1097 | 1097 | 2194 | 0 | 0 | 0.0 | 1.3 | - | 1.3 | 4.4 | 0.0 | 1.3 | 1.3 |
| 8/1 | 500 | 500 | - | - | - | 1.5 | 0.7 | - | 2.1 | 15.4 | 5.1 | 0.7 | 5.8 |
| 8/2 | 500 | 500 | - | - | - | 1.5 | 0.7 | - | 2.2 | 15.5 | 5.2 | 0.7 | 5.8 |
| 12/1 | 529 | 529 | - | - | - | 0.6 | 0.3 | - | 0.9 | 6.0 | 3.2 | 0.3 | 3.5 |
| 12/2 | 300 | 300 | - | - | - | 0.3 | 0.1 | - | 0.4 | 5.2 | 1.8 | 0.1 | 2.0 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 56.0 | Total Delay for Signalled Lanes (pcuHr): | 9.08 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 93.7 | Total Delay for Signalled Lanes (pcuHr): | 3.14 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | 23.1 | Total Delay Over All Lanes(pcuHr): | 14.48 | |

**Scenario 6: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 25 |
| Change Point | 0 | 29 |

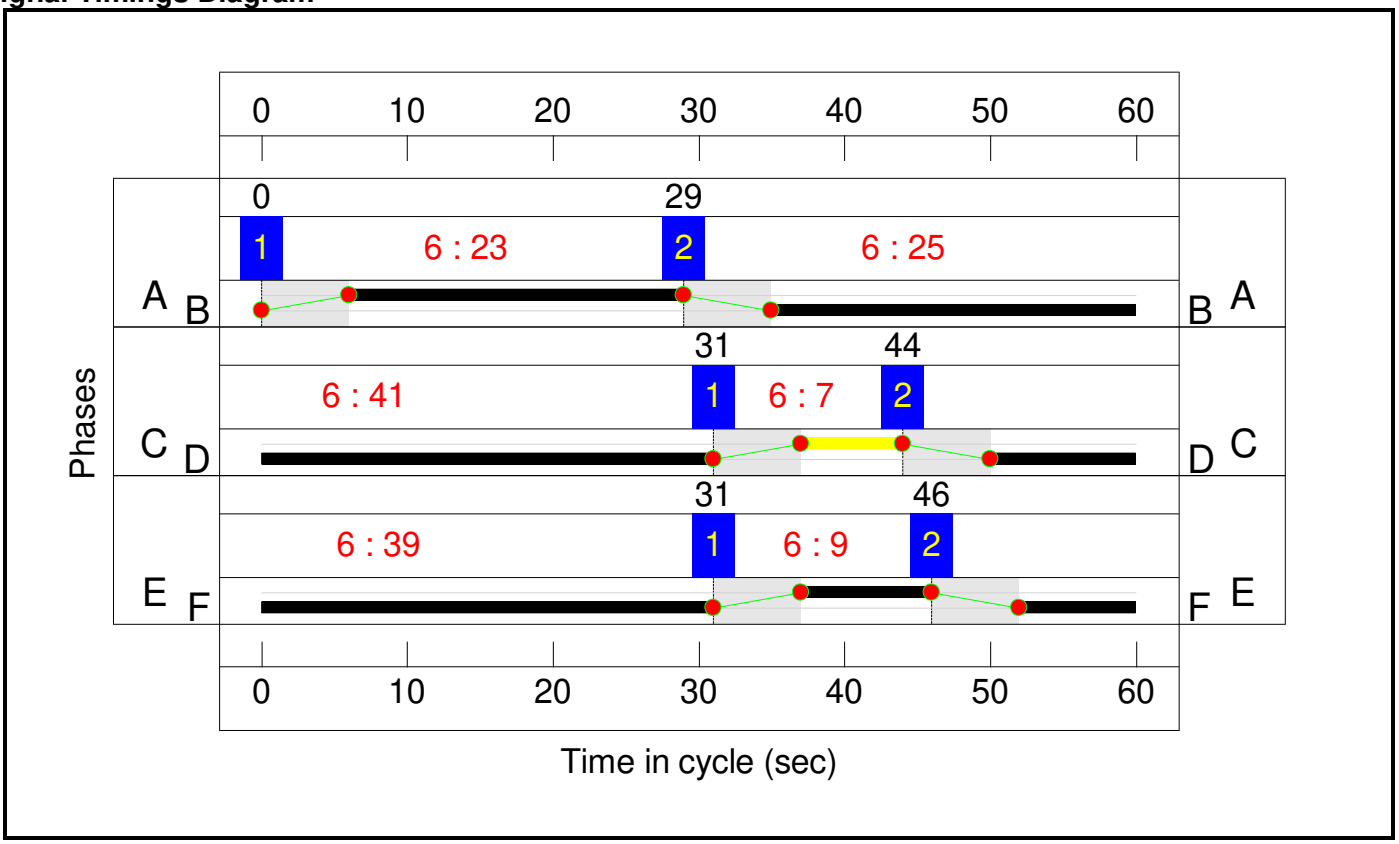
### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 31 | 44 |

### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 9 | 39 |
| Change Point | 31 | 46 |

## Signal Timings Diagram



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | A45 Southbound Offslip Left Ahead | U | 3 | N/A | E | | 1 | 9 | - | 75 | 2120 | 353 | 21.2% |
| 1/2 | A45 Southbound Offslip Ahead | U | 3 | N/A | E | | 1 | 9 | - | 140 | 1980 | 330 | 42.4% |
| 2/1+2/2 | Crow Lane Left Ahead | O | N/A | N/A | - | | - | - | - | 1111 | Inf : Inf | 1024+674 | 65.4 : 65.4% |
| 3/1 | A45 Northbound Offslip Left | U | 1 | N/A | A | | 1 | 23 | - | 436 | 1980 | 792 | 55.1% |
| 3/2 | A45 Northbound Offslip Left Ahead | U | 1 | N/A | A | | 1 | 23 | - | 482 | 2120 | 848 | 56.8% |
| 4/1+4/2 | A5076 Great Billing Way Left Ahead | O | N/A | N/A | - | | - | - | - | 1123 | Inf : Inf | 1115+310 | 78.8 : 78.8% |
| 8/1 | Ahead | U | 1 | N/A | B | | 1 | 25 | - | 511 | 2000 | 867 | 59.0% |
| 8/2 | Ahead Right | U | 1 | N/A | B | | 1 | 25 | - | 512 | 2000 | 867 | 59.1% |
| 12/1 | Ahead Right | U | 3 | N/A | F | | 1 | 39 | - | 541 | 2000 | 1333 | 40.6% |
| 12/2 | Right | U | 3 | N/A | F | | 1 | 39 | - | 244 | 2000 | 1333 | 18.3% |

| Item | Arriving (pcu) | Leaving (pcu) | Turners In Gaps (pcu) | Turners When Unopposed (pcu) | Turners In Intergreen (pcu) | Uniform Delay (pcuHr) | Rand + Oversat Delay | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 | 75 | 75 | - | - | - | 0.5 | 0.1 | - | 0.6 | 28.1 | 1.1 | 0.1 | 1.2 |
| 1/2 | 140 | 140 | - | - | - | 0.9 | 0.4 | - | 1.2 | 31.9 | 2.1 | 0.4 | 2.4 |
| 2/1+2/2 | 1111 | 1111 | 2222 | 0 | 0 | 0.0 | 0.9 | - | 0.9 | 3.1 | 0.6 | 0.9 | 1.5 |
| 3/1 | 436 | 436 | - | - | - | 1.7 | 0.6 | - | 2.3 | 18.9 | 5.6 | 0.6 | 6.2 |
| 3/2 | 482 | 482 | - | - | - | 1.9 | 0.7 | - | 2.5 | 18.9 | 6.2 | 0.7 | 6.8 |
| 4/1+4/2 | 1123 | 1123 | 2246 | 0 | 0 | 0.0 | 1.8 | - | 1.8 | 5.9 | 0.0 | 1.8 | 1.8 |
| 8/1 | 511 | 511 | - | - | - | 1.5 | 0.7 | - | 2.2 | 15.8 | 5.3 | 0.7 | 6.0 |
| 8/2 | 512 | 512 | - | - | - | 1.5 | 0.7 | - | 2.2 | 15.8 | 5.3 | 0.7 | 6.0 |
| 12/1 | 541 | 541 | - | - | - | 0.6 | 0.3 | - | 1.0 | 6.5 | 3.5 | 0.3 | 3.8 |
| 12/2 | 244 | 244 | - | - | - | 0.3 | 0.1 | - | 0.4 | 5.5 | 1.5 | 0.1 | 1.6 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 52.3 | Total Delay for Signalled Lanes (pcuHr): | 9.31 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 0.0 | Total Delay for Signalled Lanes (pcuHr): | 0.00 | Cycle Time (s): 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 112.1 | Total Delay for Signalled Lanes (pcuHr): | 3.17 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | 14.2 | Total Delay Over All Lanes(pcuHr): | 15.26 | |

# JUNCTION 18

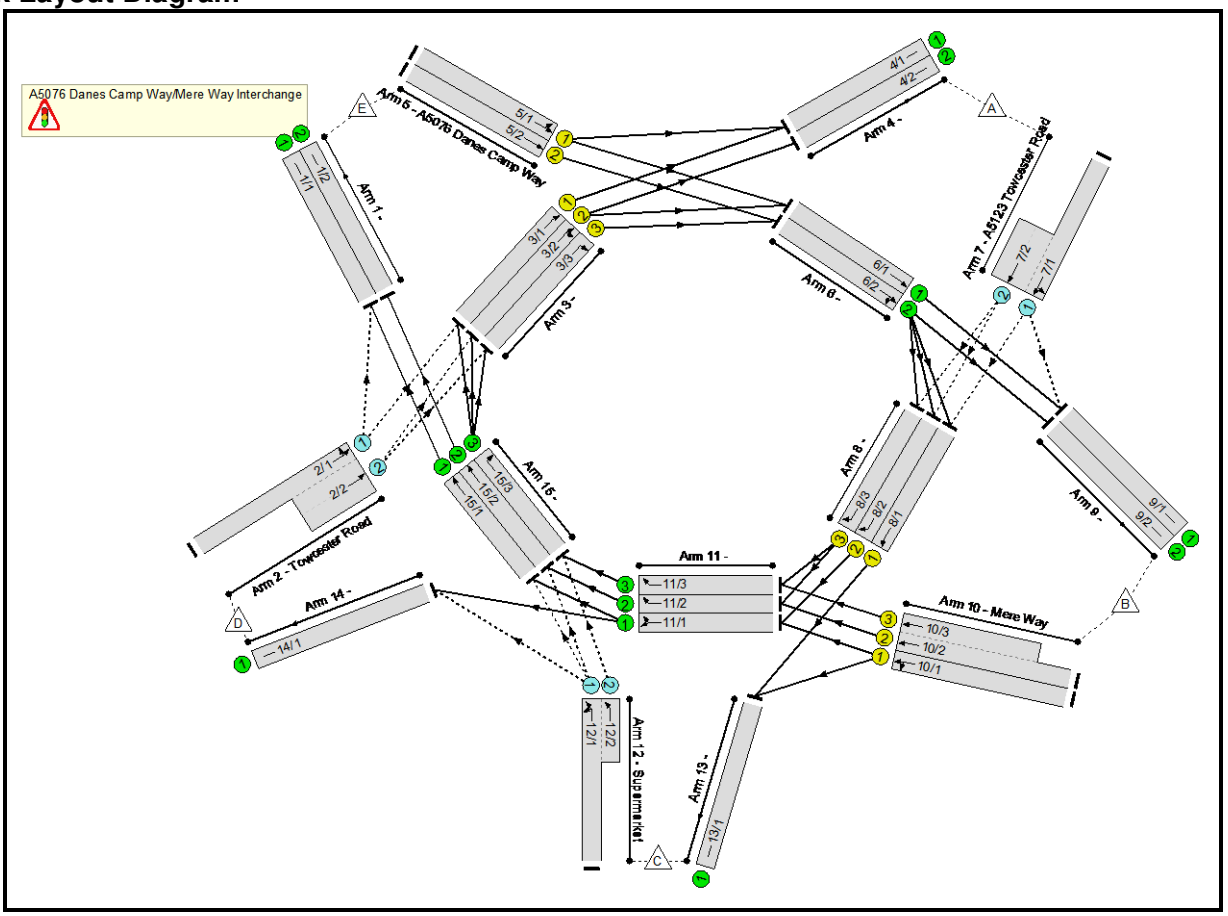
# A5076 MERE WAY/TOWCESTER ROAD/TESCO GYRATORY

## Full Input Data And Results

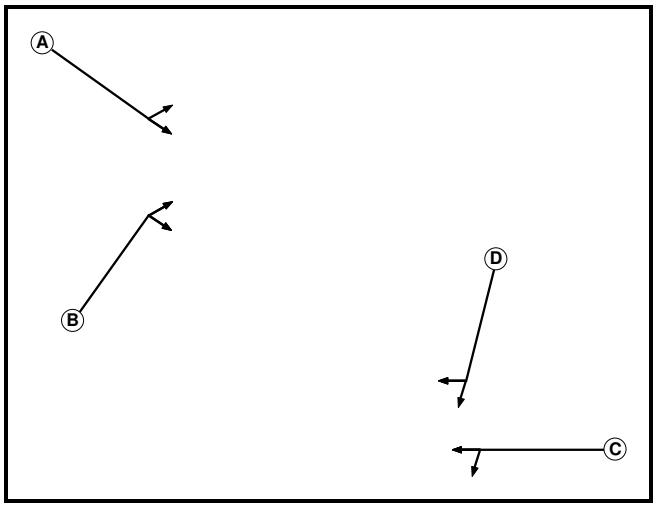
### User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **Danes Camp Way/Mere Way - J3 Cumulative Impact** |
| **File name:** | 180319 Danes Camp Way_Mere Way Base Model.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Nottingham |
| **Notes:** | Supermarket flows increased to match count data. |

### Network Layout Diagram




### Phase Diagram



## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |

## Phase Intergreens Matrix

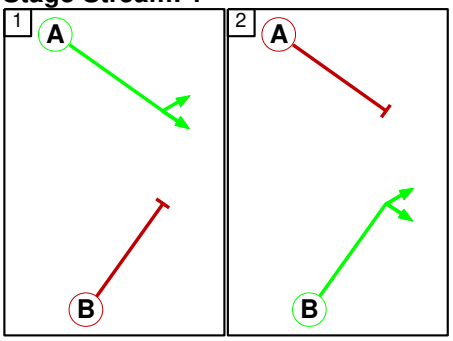
| Terminating Phase | Starting Phase | | | | |
|---|---|---|---|---|---|
| | | A | B | C | D |
| | A | | 5 | - | - |
| | B | 5 | | - | - |
| | C | - | - | | 5 |
| | D | - | - | 5 | |

## Phases in Stage

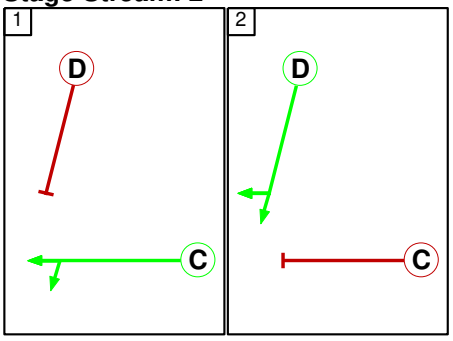
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |

## Stage Diagram

### Stage Stream: 1




### Stage Stream: 2



## Give-Way Lane Input Data

| Junction: A5076 Danes Camp Way/Mere Way Interchange | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| 2/1 (Towcester Road) | 1/1 (Left) | 942 | 0 | 15/1 | 0.21 | All | - | - | - | - | - |
| | | | | 15/2 | 0.21 | All | | | | | |
| | 3/1 (Ahead) | 942 | 0 | 15/1 | 0.21 | All | | | | | |
| | | | | 15/2 | 0.21 | All | | | | | |
| | | | | 15/3 | 0.21 | All | | | | | |
| 2/2 (Towcester Road) | 3/2 (Ahead) | 942 | 0 | 15/1 | 0.21 | All | - | - | - | - | - |
| | | | | 15/2 | 0.21 | All | | | | | |
| | | | | 15/3 | 0.21 | All | | | | | |
| | 3/3 (Ahead) | 942 | 0 | 15/1 | 0.21 | All | | | | | |
| | | | | 15/2 | 0.21 | All | | | | | |
| | | | | 15/3 | 0.21 | All | | | | | |
| 7/1 (A5123 Towcester Road) | 8/1 (Ahead) | 952 | 0 | 6/1 | 0.22 | All | - | - | - | - | - |
| | | | | 6/2 | 0.22 | All | | | | | |
| | 9/1 (Left) | 952 | 0 | 6/1 | 0.22 | All | | | | | |
| 7/2 (A5123 Towcester Road) | 8/2 (Ahead) | 952 | 0 | 6/1 | 0.22 | All | - | - | - | - | - |
| | | | | 6/2 | 0.22 | All | | | | | |
| | 8/3 (Ahead) | 952 | 0 | 6/1 | 0.22 | All | | | | | |
| | | | | 6/2 | 0.22 | All | | | | | |
| 12/1 (Supermarket) | 14/1 (Left) | 1000 | 0 | 11/1 | 0.33 | All | - | - | - | - | - |
| | 15/1 (Ahead) | 1000 | 0 | 11/1 | 0.33 | All | | | | | |
| | 15/2 (Ahead) | 1000 | 0 | 11/1 | 0.33 | All | | | | | |
| | | | | 11/2 | 0.33 | All | | | | | |
| 12/2 (Supermarket) | 15/3 (Ahead) | 1000 | 0 | 11/1 | 0.33 | All | - | - | - | - | - |
| | | | | 11/2 | 0.33 | All | | | | | |
| | | | | 11/3 | 0.33 | All | | | | | |

## Lane Input Data

| Junction: A5076 Danes Camp Way/Mere Way Interchange | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 1/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 2/1 (Towcester Road) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 2/2 (Towcester Road) | O | | 2 | 3 | 6.0 | Inf | - | - | - | - | - | - |
| 3/1 | U | B | 2 | 3 | 7.0 | User | 1900 | - | - | - | - | - |
| 3/2 | U | B | 2 | 3 | 7.0 | User | 1900 | - | - | - | - | - |
| 3/3 | U | B | 2 | 3 | 7.0 | User | 1900 | - | - | - | - | - |
| 4/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 4/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 5/1 (A5076 Danes Camp Way) | U | A | 2 | 3 | 60.0 | Geom | - | 3.80 | 0.00 | Y | Arm 4 Left | Inf |
| | | | | | | | | | | | Arm 6 Ahead | Inf |
| 5/2 (A5076 Danes Camp Way) | U | A | 2 | 3 | 60.0 | Geom | - | 3.80 | 0.00 | Y | Arm 6 Ahead | Inf |
| 6/1 | U | | 2 | 3 | 9.6 | Inf | - | - | - | - | - | - |
| 6/2 | U | | 2 | 3 | 9.6 | Inf | - | - | - | - | - | - |
| 7/1 (A5123 Towcester Road) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 7/2 (A5123 Towcester Road) | O | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 8/1 | U | D | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 8/2 | U | D | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 8/3 | U | D | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 9/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 9/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 10/1 (Mere Way) | U | C | 2 | 3 | 60.0 | Geom | - | 3.60 | 0.00 | Y | Arm 11 Ahead | Inf |
| | | | | | | | | | | | Arm 13 Left | 20.00 |
| 10/2 (Mere Way) | U | C | 2 | 3 | 60.0 | Geom | - | 3.60 | 0.00 | N | Arm 11 Ahead | Inf |
| 10/3 (Mere Way) | U | C | 2 | 3 | 12.0 | Geom | - | 3.60 | 0.00 | Y | Arm 11 Ahead | Inf |
| 11/1 | U | | 2 | 3 | 7.0 | Inf | - | - | - | - | - | - |
| 11/2 | U | | 2 | 3 | 7.0 | Inf | - | - | - | - | - | - |
| 11/3 | U | | 2 | 3 | 7.0 | Inf | - | - | - | - | - | - |
| 12/1 (Supermarket) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12/2 (Supermarket) | O | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 13/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 14/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 15/1 | U | | 2 | 3 | 6.1 | Inf | - | - | - | - | - | - |
| 15/2 | U | | 2 | 3 | 6.1 | Inf | - | - | - | - | - | - |
| 15/3 | U | | 2 | 3 | 6.1 | Inf | - | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 Ref AM' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 Ref PM' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 Dev AM' | 08:00 | 09:00 | 01:00 | |
| 6: '2031 J3 Dev PM' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | Tot. |
| Origin | A | 0 | 565 | 73 | 303 | 204 | 1145 |
| | B | 292 | 78 | 98 | 193 | 1513 | 2174 |
| | C | 86 | 201 | 0 | 44 | 165 | 496 |
| | D | 465 | 352 | 18 | 0 | 332 | 1167 |
| | E | 390 | 1421 | 101 | 121 | 12 | 2045 |
| | Tot. | 1233 | 2617 | 290 | 661 | 2226 | 7027 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 Ref AM |
|---|---|
| **Junction: A5076 Danes Camp Way/Mere Way Interchange** | |
| 1/1 | 1004 |
| 1/2 | 1222 |
| 2/1 (with short) | 1167(In) 602(Out) |
| 2/2 (short) | 565 |
| 3/1 | 489 |
| 3/2 | 494 |
| 3/3 | 509 |
| 4/1 | 879 |
| 4/2 | 354 |
| 5/1 | 1022 |
| 5/2 | 1023 |
| 6/1 | 772 |
| 6/2 | 1532 |
| 7/1 (with short) | 1145(In) 638(Out) |
| 7/2 (short) | 507 |
| 8/1 | 192 |
| 8/2 | 424 |
| 8/3 | 216 |
| 9/1 | 1337 |
| 9/2 | 1280 |
| 10/1 | 881 |
| 10/2 (with short) | 1293(In) 923(Out) |
| 10/3 (short) | 370 |
| 11/1 | 1207 |
| 11/2 | 1139 |
| 11/3 | 370 |
| 12/1 (with short) | 496(In) 209(Out) |
| 12/2 (short) | 287 |
| 13/1 | 290 |
| 14/1 | 661 |
| 15/1 | 672 |
| 15/2 | 1222 |
| 15/3 | 657 |

## Lane Saturation Flows

| Junction: A5076 Danes Camp Way/Mere Way Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 1/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/1 (Towcester Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Towcester Road Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A5076 Danes Camp Way) | 3.80 | 0.00 | Y | Arm 4 Left | Inf | 38.2 % | 1995 | 1995 |
| | | | | Arm 6 Ahead | Inf | 61.8 % | | |
| 5/2 (A5076 Danes Camp Way) | 3.80 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1995 | 1995 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A5123 Towcester Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 (A5123 Towcester Road Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (Mere Way) | 3.60 | 0.00 | Y | Arm 11 Ahead | Inf | 88.9 % | 1959 | 1959 |
| | | | | Arm 13 Left | 20.00 | 11.1 % | | |
| 10/2 (Mere Way) | 3.60 | 0.00 | N | Arm 11 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 10/3 (Mere Way) | 3.60 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1975 | 1975 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (Supermarket Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 (Supermarket Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 3: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | Destination | | | | | | |
|---|---|---|---|---|---|---|---|
| Origin | | A | B | C | D | E | Tot. |
| | A | 0 | 532 | 73 | 271 | 297 | 1173 |
| | B | 345 | 79 | 98 | 186 | 1741 | 2449 |
| | C | 86 | 201 | 0 | 44 | 165 | 496 |
| | D | 394 | 379 | 24 | 0 | 267 | 1064 |
| | E | 285 | 1546 | 101 | 93 | 0 | 2025 |
| | Tot. | 1110 | 2737 | 296 | 594 | 2470 | 7207 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 Dev AM |
|---|---|
| 1/1 | 1049 |
| 1/2 | 1421 |
| 2/1 (with short) | 1064(In) 546(Out) |
| 2/2 (short) | 518 |
| 3/1 | 542 |
| 3/2 | 479 |
| 3/3 | 487 |
| 4/1 | 827 |
| 4/2 | 283 |
| 5/1 | 1013 |
| 5/2 | 1012 |
| 6/1 | 924 |
| 6/2 | 1499 |
| 7/1 (with short) | 1173(In) 605(Out) |
| 7/2 (short) | 568 |
| 8/1 | 198 |
| 8/2 | 364 |
| 8/3 | 297 |
| 9/1 | 1456 |
| 9/2 | 1281 |
| 10/1 | 984 |
| 10/2 (with short) | 1465(In) 1041(Out) |
| 10/3 (short) | 424 |
| 11/1 | 1250 |
| 11/2 | 1338 |
| 11/3 | 424 |
| 12/1 (with short) | 496(In) 209(Out) |
| 12/2 (short) | 287 |
| 13/1 | 296 |
| 14/1 | 594 |
| 15/1 | 782 |
| 15/2 | 1421 |
| 15/3 | 711 |

## Lane Saturation Flows

| Junction: A5076 Danes Camp Way/Mere Way Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 1/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/1 (Towcester Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Towcester Road Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A5076 Danes Camp Way) | 3.80 | 0.00 | Y | Arm 4 Left | Inf | 28.1 % | 1995 | 1995 |
| | | | | Arm 6 Ahead | Inf | 71.9 % | | |
| 5/2 (A5076 Danes Camp Way) | 3.80 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1995 | 1995 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A5123 Towcester Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 (A5123 Towcester Road Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (Mere Way) | 3.60 | 0.00 | Y | Arm 11 Ahead | Inf | 90.0 % | 1960 | 1960 |
| | | | | Arm 13 Left | 20.00 | 10.0 % | | |
| 10/2 (Mere Way) | 3.60 | 0.00 | N | Arm 11 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 10/3 (Mere Way) | 3.60 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1975 | 1975 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (Supermarket Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 (Supermarket Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 4: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | |
|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | Tot. |
| Origin | A | 0 | 904 | 93 | 361 | 76 | 1434 |
| | B | 130 | 106 | 91 | 324 | 1496 | 2147 |
| | C | 86 | 85 | 0 | 87 | 231 | 489 |
| | D | 450 | 368 | 37 | 0 | 51 | 906 |
| | E | 207 | 1093 | 203 | 204 | 45 | 1752 |
| | Tot. | 873 | 2556 | 424 | 976 | 1899 | 6728 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 Ref PM |
|---|---|
| 1/1 | 689 |
| 1/2 | 1210 |
| 2/1 (with short) | 906(In) 444(Out) |
| 2/2 (short) | 462 |
| 3/1 | 434 |
| 3/2 | 417 |
| 3/3 | 411 |
| 4/1 | 641 |
| 4/2 | 232 |
| 5/1 | 876 |
| 5/2 | 876 |
| 6/1 | 854 |
| 6/2 | 1287 |
| 7/1 (with short) | 1434(In) 997(Out) |
| 7/2 (short) | 437 |
| 8/1 | 333 |
| 8/2 | 565 |
| 8/3 | 121 |
| 9/1 | 1758 |
| 9/2 | 798 |
| 10/1 | 938 |
| 10/2 (with short) | 1209(In) 973(Out) |
| 10/3 (short) | 236 |
| 11/1 | 1412 |
| 11/2 | 1094 |
| 11/3 | 236 |
| 12/1 (with short) | 489(In) 318(Out) |
| 12/2 (short) | 171 |
| 13/1 | 424 |
| 14/1 | 976 |
| 15/1 | 638 |
| 15/2 | 1210 |
| 15/3 | 407 |

## Lane Saturation Flows

| Junction: A5076 Danes Camp Way/Mere Way Interchange | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| 1/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 1/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/1 (Towcester Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 (Towcester Road Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/1 (A5076 Danes Camp Way) | 3.80 | 0.00 | Y | Arm 4 Left | Inf | 23.6 % | 1995 | 1995 |
| | | | | Arm 6 Ahead | Inf | 76.4 % | | |
| 5/2 (A5076 Danes Camp Way) | 3.80 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1995 | 1995 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 (A5123 Towcester Road Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/2 (A5123 Towcester Road Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 (Mere Way) | 3.60 | 0.00 | Y | Arm 11 Ahead | Inf | 90.3 % | 1961 | 1961 |
| | | | | Arm 13 Left | 20.00 | 9.7 % | | |
| 10/2 (Mere Way) | 3.60 | 0.00 | N | Arm 11 Ahead | Inf | 100.0 % | 2115 | 2115 |
| 10/3 (Mere Way) | 3.60 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1975 | 1975 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (Supermarket Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 (Supermarket Lane 2) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 14/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 15/3 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 1: '2031 D1 Ref AM'** (FG1: '2031 D1 Ref AM', Plan 1: 'Network Control Plan 1')

## Stage Timings

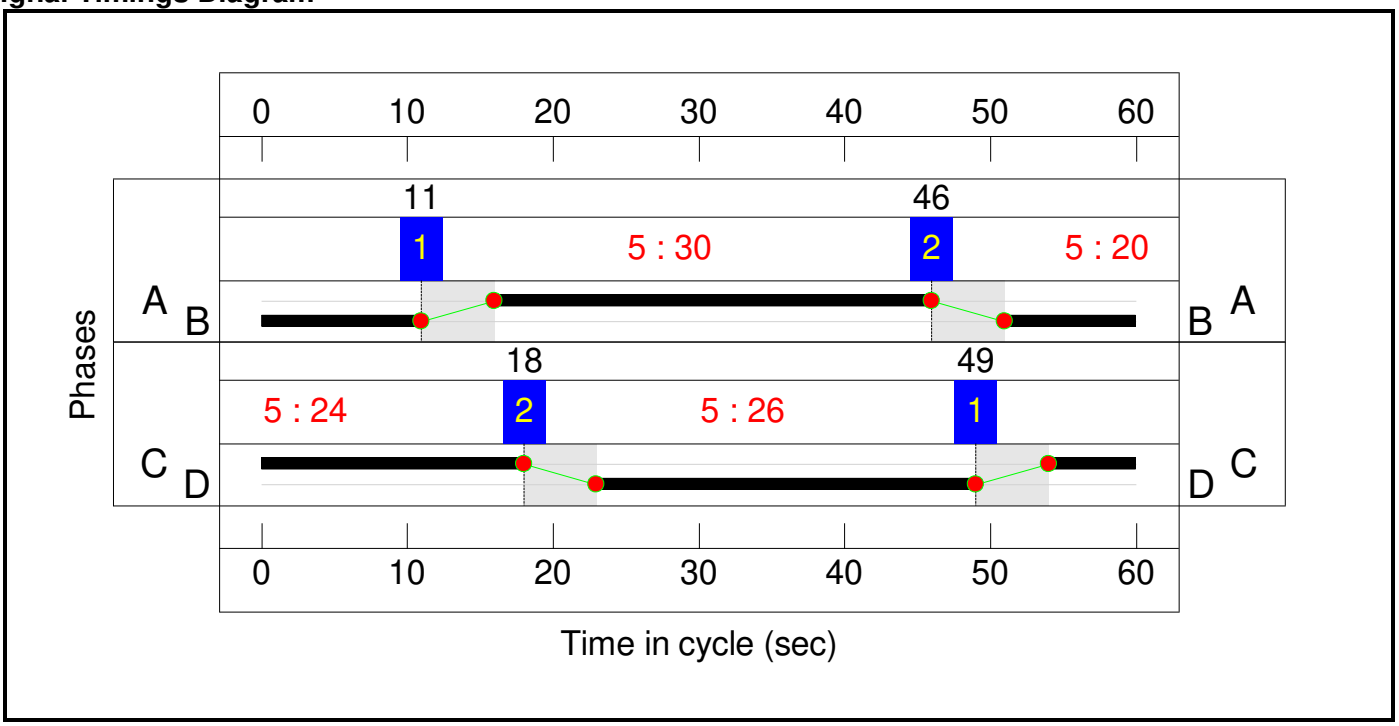
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 30 | 20 |
| Change Point | 11 | 46 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 26 |
| Change Point | 49 | 18 |

## Signal Timings Diagram



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/1+2/2 | Towcester Road Left Ahead | O | N/A | N/A | - | | - | - | - | 1167 | Inf : Inf | 506+475 | 118.9 : 119.0% |
| 3/1 | Ahead | U | 1 | N/A | B | | 1 | 20 | - | 489 | 1900 | 665 | 64.7% |
| 3/2 | Ahead Right | U | 1 | N/A | B | | 1 | 20 | - | 494 | 1900 | 665 | 67.0% |
| 3/3 | Right | U | 1 | N/A | B | | 1 | 20 | - | 509 | 1900 | 665 | 67.8% |
| 5/1 | A5076 Danes Camp Way Left Ahead | U | 1 | N/A | A | | 1 | 30 | - | 1022 | 1995 | 1031 | 99.2% |
| 5/2 | A5076 Danes Camp Way Ahead | U | 1 | N/A | A | | 1 | 30 | - | 1023 | 1995 | 1031 | 99.2% |
| 7/1+7/2 | A5123 Towcester Road Ahead Left | O | N/A | N/A | - | | - | - | - | 1145 | Inf : Inf | 705+459 | 90.5 : 110.4% |
| 8/1 | Ahead | U | 2 | N/A | D | | 1 | 26 | - | 192 | 1900 | 855 | 22.1% |
| 8/2 | Right | U | 2 | N/A | D | | 1 | 26 | - | 424 | 1900 | 855 | 46.3% |
| 8/3 | Right | U | 2 | N/A | D | | 1 | 26 | - | 216 | 1900 | 855 | 23.0% |
| 10/1 | Mere Way Ahead Left | U | 2 | N/A | C | | 1 | 24 | - | 881 | 1959 | 816 | 107.9% |
| 10/2+10/3 | Mere Way Ahead | U | 2 | N/A | C | | 1 | 24 | - | 1293 | 2115:1975 | 843+338 | 109.4 : 109.4% |
| 12/1+12/2 | Supermarket Left Ahead | O | N/A | N/A | - | | - | - | - | 496 | Inf : Inf | 296+407 | 70.5 : 70.5% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2/1+2/2 | 1167 | 981 | 1962 | 0 | 0 | 10.4 | 96.0 | - | 106.4 | 328.3 | 29.4 | 96.0 | 125.5 |
| 3/1 | 430 | 430 | - | - | - | 1.0 | 0.9 | - | 1.9 | 15.7 | 3.9 | 0.9 | 4.8 |
| 3/2 | 445 | 445 | - | - | - | 1.2 | 1.0 | - | 2.2 | 17.7 | 5.4 | 1.0 | 6.4 |
| 3/3 | 451 | 451 | - | - | - | 1.3 | 1.0 | - | 2.4 | 18.9 | 6.0 | 1.0 | 7.0 |
| 5/1 | 1022 | 1022 | - | - | - | 4.1 | 13.9 | - | 18.0 | 63.5 | 16.7 | 13.9 | 30.7 |
| 5/2 | 1023 | 1023 | - | - | - | 4.1 | 14.2 | - | 18.3 | 64.3 | 16.8 | 14.2 | 30.9 |
| 7/1+7/2 | 1145 | 1097 | 2195 | 0 | 0 | 2.9 | 36.7 | - | 39.6 | 124.5 | 11.0 | 36.7 | 47.7 |
| 8/1 | 189 | 189 | - | - | - | 0.4 | 0.1 | - | 0.6 | 11.0 | 1.3 | 0.1 | 1.5 |
| 8/2 | 396 | 396 | - | - | - | 1.2 | 0.4 | - | 1.6 | 14.4 | 4.6 | 0.4 | 5.0 |
| 8/3 | 197 | 197 | - | - | - | 0.6 | 0.1 | - | 0.7 | 13.6 | 2.5 | 0.1 | 2.7 |
| 10/1 | 881 | 816 | - | - | - | 6.3 | 38.1 | - | 44.4 | 181.6 | 15.8 | 38.1 | 53.9 |
| 10/2+10/3 | 1293 | 1181 | - | - | - | 9.2 | 61.1 | - | 70.3 | 195.7 | 21.5 | 61.1 | 82.6 |
| 12/1+12/2 | 496 | 496 | 992 | 0 | 0 | 1.4 | 1.2 | - | 2.6 | 18.6 | 3.8 | 1.2 | 5.0 |

C1 Stream: 1 PRC for Signalled Lanes (%): -10.3 Total Delay for Signalled Lanes (pcuHr): 42.72 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): -21.6 Total Delay for Signalled Lanes (pcuHr): 117.65 Cycle Time (s): 60
PRC Over All Lanes (%): -32.3 Total Delay Over All Lanes(pcuHr): 308.94

**Scenario 3: '2031 J3 Dev AM'** (FG5: '2031 J3 Dev AM', Plan 1: 'Network Control Plan 1')

## Stage Timings

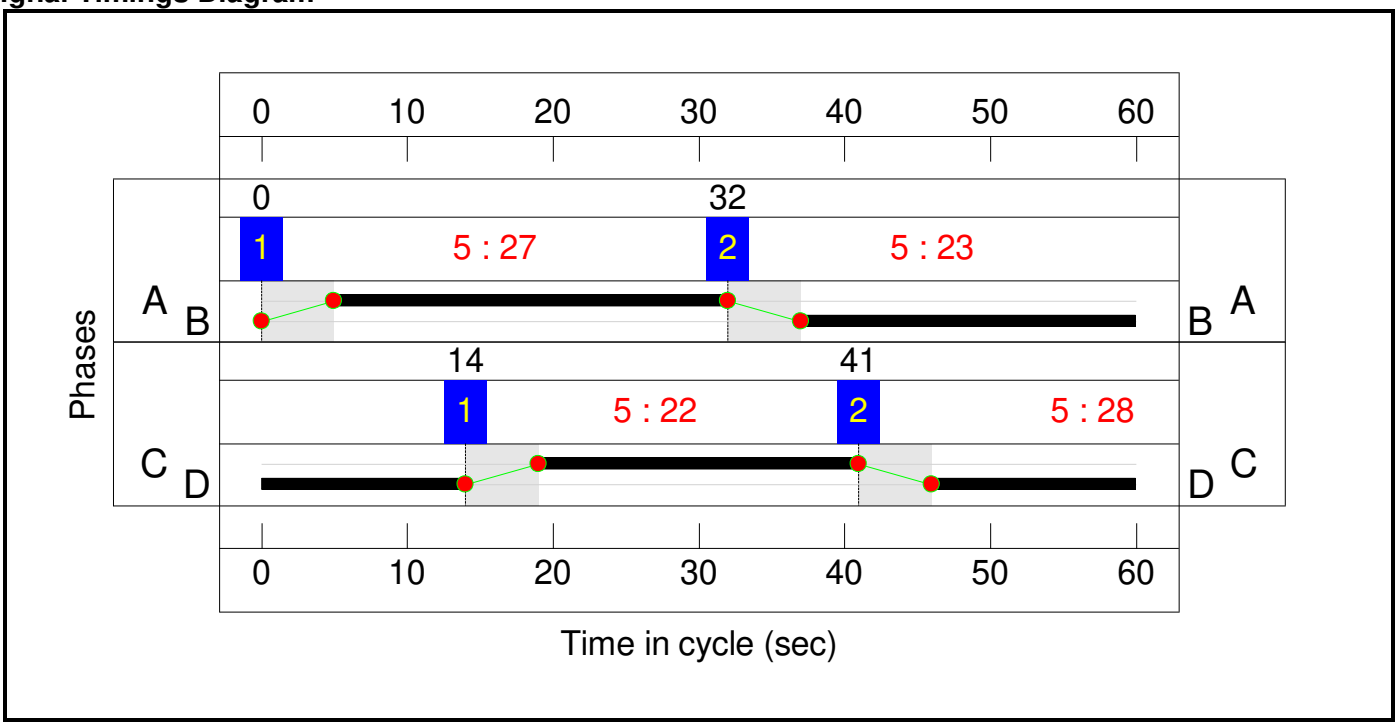
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 27 | 23 |
| Change Point | 0 | 32 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 28 |
| Change Point | 14 | 41 |

## Signal Timings Diagram



## 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: Danes Camp Way/Mere Way - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **131.2%** |
| **A5076 Danes Camp Way/Mere Way Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **131.2%** |
| 2/1+2/2 | Towcester Road Left Ahead | O | N/A | N/A | - | | - | - | - | 1064 | Inf : Inf | 510+484 | 107.1 : 107.0% |
| 3/1 | Ahead | U | 1 | N/A | B | | 1 | 23 | - | 542 | 1900 | 760 | 61.7% |
| 3/2 | Ahead Right | U | 1 | N/A | B | | 1 | 23 | - | 479 | 1900 | 760 | 57.9% |
| 3/3 | Right | U | 1 | N/A | B | | 1 | 23 | - | 487 | 1900 | 760 | 58.7% |
| 5/1 | A5076 Danes Camp Way Left Ahead | U | 1 | N/A | A | | 1 | 27 | - | 1013 | 1995 | 931 | 108.8% |
| 5/2 | A5076 Danes Camp Way Ahead | U | 1 | N/A | A | | 1 | 27 | - | 1012 | 1995 | 931 | 108.7% |
| 7/1+7/2 | A5123 Towcester Road Ahead Left | O | N/A | N/A | - | | - | - | - | 1173 | Inf : Inf | 679+459 | 89.1 : 123.6% |
| 8/1 | Ahead | U | 2 | N/A | D | | 1 | 28 | - | 198 | 1900 | 918 | 20.5% |
| 8/2 | Right | U | 2 | N/A | D | | 1 | 28 | - | 364 | 1900 | 918 | 33.2% |
| 8/3 | Right | U | 2 | N/A | D | | 1 | 28 | - | 297 | 1900 | 918 | 26.2% |
| 10/1 | Mere Way Ahead Left | U | 2 | N/A | C | | 1 | 22 | - | 984 | 1960 | 751 | 131.0% |
| 10/2+10/3 | Mere Way Ahead | U | 2 | N/A | C | | 1 | 22 | - | 1465 | 2115:1975 | 794+323 | 131.2 : 131.2% |
| 12/1+12/2 | Supermarket Left Ahead | O | N/A | N/A | - | | - | - | - | 496 | Inf : Inf | 325+446 | 64.3 : 64.3% |

| 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: Danes Camp Way/Mere Way - J3 Cumulative Impact** | **-** | **-** | **5109** | **0** | **0** | **60.0** | **496.8** | **0.0** | **556.8** | **-** | **-** | **-** | **-** |
| **A5076 Danes Camp Way/Mere Way Interchange** | **-** | **-** | **5109** | **0** | **0** | **60.0** | **496.8** | **0.0** | **556.8** | **-** | **-** | **-** | **-** |
| 2/1+2/2 | 1064 | 994 | 1988 | 0 | 0 | 5.1 | 41.4 | - | 46.5 | 157.2 | 22.9 | 41.4 | 64.3 |
| 3/1 | 469 | 469 | - | - | - | 2.2 | 0.8 | - | 3.0 | 22.9 | 6.7 | 0.8 | 7.5 |
| 3/2 | 440 | 440 | - | - | - | 2.3 | 0.7 | - | 3.0 | 24.5 | 5.9 | 0.7 | 6.6 |
| 3/3 | 446 | 446 | - | - | - | 2.3 | 0.7 | - | 3.0 | 24.5 | 6.0 | 0.7 | 6.7 |
| 5/1 | 1013 | 931 | - | - | - | 6.8 | 46.5 | - | 53.2 | 189.1 | 18.3 | 46.5 | 64.7 |
| 5/2 | 1012 | 931 | - | - | - | 6.7 | 46.0 | - | 52.7 | 187.6 | 18.2 | 46.0 | 64.2 |
| 7/1+7/2 | 1173 | 1064 | 2129 | 0 | 0 | 5.6 | 64.8 | - | 70.4 | 216.2 | 13.2 | 64.8 | 78.0 |
| 8/1 | 188 | 188 | - | - | - | 0.6 | 0.1 | - | 0.8 | 14.7 | 2.2 | 0.1 | 2.4 |
| 8/2 | 305 | 305 | - | - | - | 0.7 | 0.2 | - | 1.0 | 11.5 | 2.7 | 0.2 | 3.0 |
| 8/3 | 240 | 240 | - | - | - | 0.3 | 0.2 | - | 0.4 | 6.7 | 1.4 | 0.2 | 1.6 |
| 10/1 | 984 | 751 | - | - | - | 10.7 | 118.4 | - | 129.2 | 472.5 | 20.3 | 118.4 | 138.7 |
| 10/2+10/3 | 1465 | 1117 | - | - | - | 15.5 | 176.1 | - | 191.7 | 471.0 | 28.6 | 176.1 | 204.7 |
| 12/1+12/2 | 496 | 496 | 992 | 0 | 0 | 1.0 | 0.9 | - | 1.9 | 13.8 | 3.2 | 0.9 | 4.1 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -20.9 | Total Delay for Signalled Lanes (pcuHr): | 114.98 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -45.7 | Total Delay for Signalled Lanes (pcuHr): | 323.01 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | -45.7 | Total Delay Over All Lanes(pcuHr): | 556.79 | |

**Scenario 4: '2031 D1 Ref PM'** (FG2: '2031 D1 Ref PM', Plan 1: 'Network Control Plan 1')

## Stage Timings

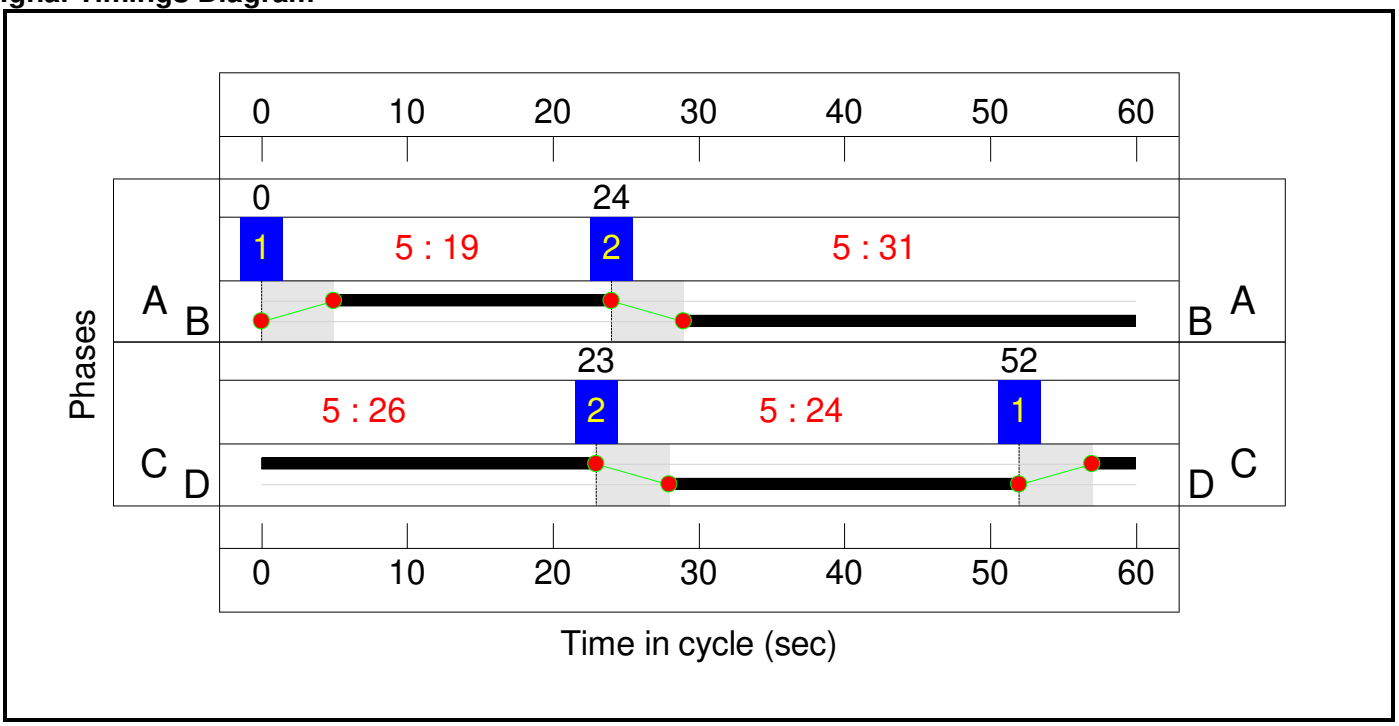
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 19 | 31 |
| Change Point | 0 | 24 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 26 | 24 |
| Change Point | 52 | 23 |

## Signal Timings Diagram



## 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: Danes Camp Way/Mere Way - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **133.2%** |
| **A5076 Danes Camp Way/Mere Way Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **133.2%** |
| 2/1+2/2 | Towcester Road Left Ahead | O | N/A | N/A | - | | - | - | - | 906 | Inf : Inf | 515+511 | 86.2 : 90.4% |
| 3/1 | Ahead | U | 1 | N/A | B | | 1 | 31 | - | 434 | 1900 | 1013 | 42.6% |
| 3/2 | Ahead Right | U | 1 | N/A | B | | 1 | 31 | - | 417 | 1900 | 1013 | 40.6% |
| 3/3 | Right | U | 1 | N/A | B | | 1 | 31 | - | 411 | 1900 | 1013 | 39.9% |
| 5/1 | A5076 Danes Camp Way Left Ahead | U | 1 | N/A | A | | 1 | 19 | - | 876 | 1995 | 665 | 131.7% |
| 5/2 | A5076 Danes Camp Way Ahead | U | 1 | N/A | A | | 1 | 19 | - | 876 | 1995 | 665 | 131.7% |
| 7/1+7/2 | A5123 Towcester Road Ahead Left | O | N/A | N/A | - | | - | - | - | 1434 | Inf : Inf | 749+328 | 133.2 : 133.2% |
| 8/1 | Ahead | U | 2 | N/A | D | | 1 | 24 | - | 333 | 1900 | 792 | 33.0% |
| 8/2 | Right | U | 2 | N/A | D | | 1 | 24 | - | 565 | 1900 | 792 | 53.8% |
| 8/3 | Right | U | 2 | N/A | D | | 1 | 24 | - | 121 | 1900 | 792 | 11.5% |
| 10/1 | Mere Way Ahead Left | U | 2 | N/A | C | | 1 | 26 | - | 938 | 1961 | 882 | 106.3% |
| 10/2+10/3 | Mere Way Ahead | U | 2 | N/A | C | | 1 | 26 | - | 1209 | 2115:1975 | 916+222 | 106.2 : 106.2% |
| 12/1+12/2 | Supermarket Left Ahead | O | N/A | N/A | - | | - | - | - | 489 | Inf : Inf | 393+211 | 80.9 : 80.9% |

| 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: Danes Camp Way/Mere Way - J3 Cumulative Impact** | **-** | **-** | **4944** | **0** | **0** | **56.3** | **480.3** | **0.0** | **536.6** | **-** | **-** | **-** | **-** |
| **A5076 Danes Camp Way/Mere Way Interchange** | **-** | **-** | **4944** | **0** | **0** | **56.3** | **480.3** | **0.0** | **536.6** | **-** | **-** | **-** | **-** |
| 2/1+2/2 | 906 | 906 | 1812 | 0 | 0 | 1.7 | 3.6 | - | 5.3 | 21.0 | 5.9 | 3.6 | 9.5 |
| 3/1 | 432 | 432 | - | - | - | 0.7 | 0.4 | - | 1.1 | 9.1 | 2.7 | 0.4 | 3.1 |
| 3/2 | 412 | 412 | - | - | - | 0.8 | 0.3 | - | 1.2 | 10.1 | 2.6 | 0.3 | 3.0 |
| 3/3 | 405 | 405 | - | - | - | 0.9 | 0.3 | - | 1.3 | 11.3 | 3.2 | 0.3 | 3.5 |
| 5/1 | 876 | 665 | - | - | - | 10.9 | 107.5 | - | 118.5 | 486.9 | 18.1 | 107.5 | 125.7 |
| 5/2 | 876 | 665 | - | - | - | 10.9 | 107.5 | - | 118.5 | 486.9 | 18.1 | 107.5 | 125.7 |
| 7/1+7/2 | 1434 | 1077 | 2154 | 0 | 0 | 13.0 | 180.5 | - | 193.5 | 485.9 | 46.4 | 180.5 | 226.9 |
| 8/1 | 261 | 261 | - | - | - | 0.8 | 0.2 | - | 1.0 | 13.8 | 3.6 | 0.2 | 3.8 |
| 8/2 | 426 | 426 | - | - | - | 1.5 | 0.6 | - | 2.1 | 17.7 | 5.9 | 0.6 | 6.5 |
| 8/3 | 91 | 91 | - | - | - | 0.2 | 0.1 | - | 0.3 | 12.3 | 1.0 | 0.1 | 1.1 |
| 10/1 | 938 | 882 | - | - | - | 6.0 | 34.6 | - | 40.5 | 155.5 | 16.6 | 34.6 | 51.1 |
| 10/2+10/3 | 1209 | 1138 | - | - | - | 7.2 | 42.6 | - | 49.8 | 148.3 | 21.1 | 42.6 | 63.7 |
| 12/1+12/2 | 489 | 489 | 978 | 0 | 0 | 1.5 | 2.0 | - | 3.6 | 26.4 | 4.6 | 2.0 | 6.6 |

C1 Stream: 1 PRC for Signalled Lanes (%): -46.4 Total Delay for Signalled Lanes (pcuHr): 240.44 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): -18.1 Total Delay for Signalled Lanes (pcuHr): 93.73 Cycle Time (s): 60
PRC Over All Lanes (%): -48.0 Total Delay Over All Lanes(pcuHr): 536.60

**Scenario 6: '2031 J3 Dev PM'** (FG6: '2031 J3 Dev PM', Plan 1: 'Network Control Plan 1')

## Stage Timings

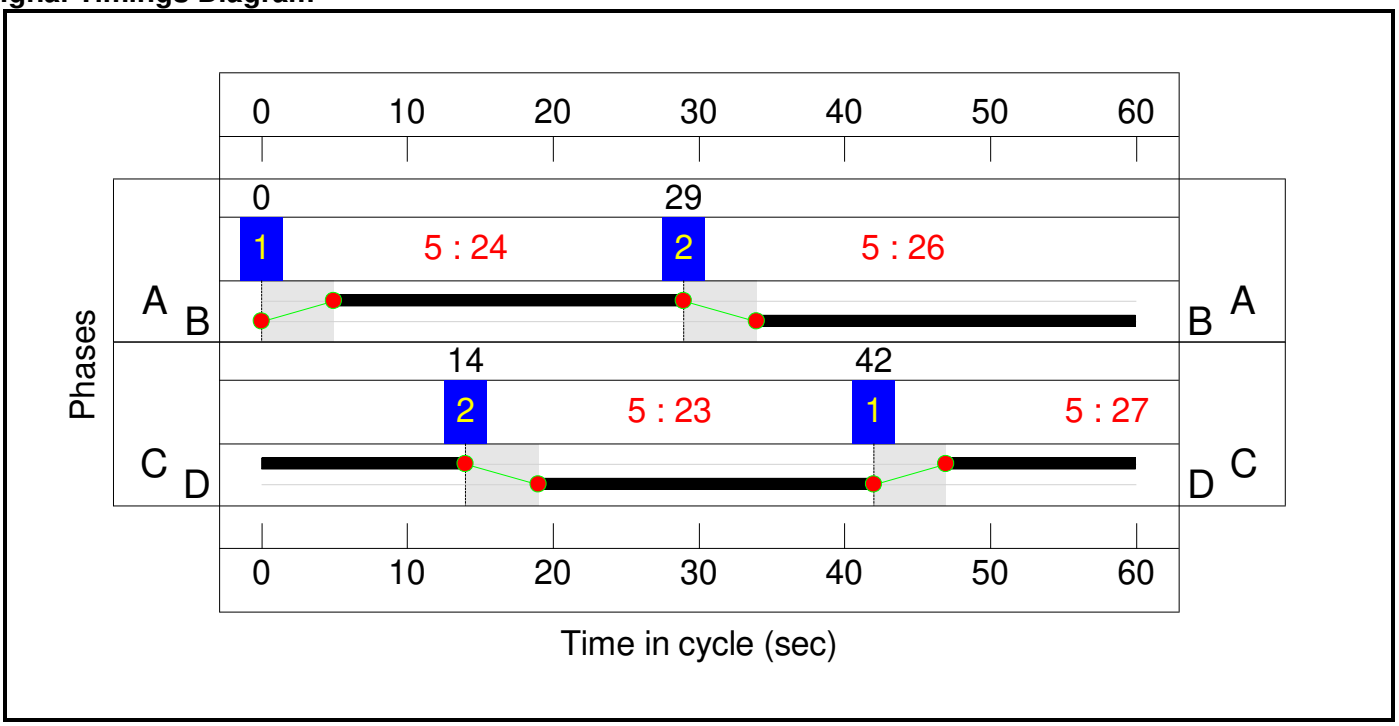
### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 26 |
| Change Point | 0 | 29 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 27 | 23 |
| Change Point | 42 | 14 |

## Signal Timings Diagram



## 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: Danes Camp Way/Mere Way - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **110.6%** |
| **A5076 Danes Camp Way/Mere Way Interchange** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **110.6%** |
| 2/1+2/2 | Towcester Road Left Ahead | O | N/A | N/A | - | | - | - | - | 975 | Inf : Inf | 487+484 | 100.3 : 100.5% |
| 3/1 | Ahead | U | 1 | N/A | B | | 1 | 26 | - | 477 | 1900 | 855 | 55.5% |
| 3/2 | Ahead Right | U | 1 | N/A | B | | 1 | 26 | - | 448 | 1900 | 855 | 52.0% |
| 3/3 | Right | U | 1 | N/A | B | | 1 | 26 | - | 441 | 1900 | 855 | 51.1% |
| 5/1 | A5076 Danes Camp Way Left Ahead | U | 1 | N/A | A | | 1 | 24 | - | 919 | 1995 | 831 | 110.6% |
| 5/2 | A5076 Danes Camp Way Ahead | U | 1 | N/A | A | | 1 | 24 | - | 918 | 1995 | 831 | 110.4% |
| 7/1+7/2 | A5123 Towcester Road Ahead Left | O | N/A | N/A | - | | - | - | - | 1254 | Inf : Inf | 679+480 | 108.9 : 107.2% |
| 8/1 | Ahead | U | 2 | N/A | D | | 1 | 23 | - | 333 | 1900 | 760 | 40.3% |
| 8/2 | Right | U | 2 | N/A | D | | 1 | 23 | - | 557 | 1900 | 760 | 67.7% |
| 8/3 | Right | U | 2 | N/A | D | | 1 | 23 | - | 157 | 1900 | 760 | 19.3% |
| 10/1 | Mere Way Ahead Left | U | 2 | N/A | C | | 1 | 27 | - | 946 | 1961 | 915 | 103.4% |
| 10/2+10/3 | Mere Way Ahead | U | 2 | N/A | C | | 1 | 27 | - | 1241 | 2115:1975 | 938+255 | 104.0 : 104.0% |
| 12/1+12/2 | Supermarket Left Ahead | O | N/A | N/A | - | | - | - | - | 499 | Inf : Inf | 335+175 | 98.0 : 98.0% |

| 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: Danes Camp Way/Mere Way - J3 Cumulative Impact** | **-** | **-** | **5259** | **0** | **0** | **41.3** | **236.9** | **0.0** | **278.1** | **-** | **-** | **-** | **-** |
| **A5076 Danes Camp Way/Mere Way Interchange** | **-** | **-** | **5259** | **0** | **0** | **41.3** | **236.9** | **0.0** | **278.1** | **-** | **-** | **-** | **-** |
| 2/1+2/2 | 975 | 971 | 1942 | 0 | 0 | 2.6 | 16.6 | - | 19.2 | 70.9 | 16.7 | 16.6 | 33.3 |
| 3/1 | 475 | 475 | - | - | - | 0.8 | 0.6 | - | 1.4 | 10.9 | 4.5 | 0.6 | 5.1 |
| 3/2 | 445 | 445 | - | - | - | 0.7 | 0.5 | - | 1.3 | 10.3 | 4.0 | 0.5 | 4.6 |
| 3/3 | 437 | 437 | - | - | - | 0.8 | 0.5 | - | 1.3 | 11.0 | 3.5 | 0.5 | 4.0 |
| 5/1 | 919 | 831 | - | - | - | 6.9 | 48.6 | - | 55.5 | 217.5 | 16.8 | 48.6 | 65.4 |
| 5/2 | 918 | 831 | - | - | - | 6.9 | 48.1 | - | 55.0 | 215.8 | 16.7 | 48.1 | 64.9 |
| 7/1+7/2 | 1254 | 1159 | 2318 | 0 | 0 | 5.6 | 53.3 | - | 58.9 | 169.2 | 34.3 | 53.3 | 87.6 |
| 8/1 | 306 | 306 | - | - | - | 0.7 | 0.3 | - | 1.1 | 12.4 | 3.0 | 0.3 | 3.3 |
| 8/2 | 514 | 514 | - | - | - | 1.9 | 1.0 | - | 2.9 | 20.3 | 7.0 | 1.0 | 8.1 |
| 8/3 | 146 | 146 | - | - | - | 0.6 | 0.1 | - | 0.7 | 17.7 | 1.9 | 0.1 | 2.0 |
| 10/1 | 946 | 915 | - | - | - | 5.2 | 24.9 | - | 30.1 | 114.7 | 16.3 | 24.9 | 41.2 |
| 10/2+10/3 | 1241 | 1198 | - | - | - | 6.5 | 33.2 | - | 39.7 | 115.3 | 20.6 | 33.2 | 53.8 |
| 12/1+12/2 | 499 | 499 | 998 | 0 | 0 | 1.9 | 8.9 | - | 10.8 | 78.0 | 5.4 | 8.9 | 14.3 |

C1 Stream: 1 PRC for Signalled Lanes (%): -22.8 Total Delay for Signalled Lanes (pcuHr): 114.61 Cycle Time (s): 60
C1 Stream: 2 PRC for Signalled Lanes (%): -15.6 Total Delay for Signalled Lanes (pcuHr): 74.55 Cycle Time (s): 60
PRC Over All Lanes (%): -22.8 Total Delay Over All Lanes(pcuHr): 278.12

# JUNCTION 19

# A5076 DANES CAMP WAY/HUNSBURY HILL ROAD ROUNDABOUT

# Junctions 8

## ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** 180321 A5076_Hunsbury Hill Road.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:51:58

» (Default Analysis Set) - 2031 D1, AM
» (Default Analysis Set) - 2031 D1, PM
» (Default Analysis Set) - 2031 J3, AM
» (Default Analysis Set) - 2031 J3, PM

## Summary of junction performance

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

| | AM | | | | PM | | | |
|---|---|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | LOS | Queue (PCU) | Delay (s) | RFC | LOS |
| | A1 - 2031 D1 | | | | | | | |
| Arm 1 | 9.68 | 17.04 | 0.91 | C | 8.61 | 17.27 | 0.90 | C |
| Arm 2 | 120.13 | 459.18 | 1.35 | F | 4.93 | 30.76 | 0.85 | D |
| Arm 3 | 274.04 | 399.28 | 1.21 | F | 135.86 | 180.68 | 1.12 | F |
| Arm 4 | 1.85 | 15.28 | 0.65 | C | 1.35 | 10.15 | 0.58 | B |
| Arm 5 | 66.18 | 670.78 | 1.35 | F | 258.09 | 1272.63 | 1.65 | F |
| | A1 - 2031 J3 | | | | | | | |
| Arm 1 | ?? | ?? | ?? | ?? | 9.62 | 18.86 | 0.92 | C |
| Arm 2 | 111.89 | 621.49 | 1.35 | F | 4.23 | 26.63 | 0.82 | D |
| Arm 3 | 281.30 | 396.70 | 1.21 | F | 156.78 | 211.04 | 1.14 | F |
| Arm 4 | 1.85 | 15.19 | 0.65 | C | 1.36 | 10.27 | 0.58 | B |
| Arm 5 | ?? | ?? | ?? | ?? | 271.21 | 1366.76 | 1.67 | F |

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

*"D1 - 2031 D1, AM " model duration: 07:45 - 09:15*
*"D2 - 2031 D1, PM" model duration: 16:45 - 18:15*
*"D5 - 2031 J3, AM" model duration: 07:45 - 09:15*
*"D6 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:51:52*

## File summary

| | |
|---|---|
| **Title** | A5076/Hunsbury Hill Roundabout |
| **Location** | Northampton |
| **Site Number** | Northampton Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# (Default Analysis Set) - 2031 D1, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, AM | 2031 D1 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3,4,5 | | | | 280.83 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A5076 Danes Camp Way | |
| 2 | 2 | Hunsbury Hill Road South | |
| 3 | 3 | A5076 Ring Road | |
| 4 | 4 | Hunsbury Hill Road North | |
| 5 | 5 | Hunsbarrow Road | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |
| 4 | 0.00 | 99999.00 | | 0.00 |
| 5 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 7.20 | 10.40 | 7.50 | 40.00 | 90.00 | 16.00 | |
| 2 | 3.60 | 8.30 | 15.80 | 39.00 | 90.00 | 14.00 | |
| 3 | 7.40 | 8.80 | 17.90 | 35.00 | 90.00 | 17.00 | |
| 4 | 3.80 | 7.60 | 21.30 | 31.00 | 90.00 | 21.00 | |
| 5 | 3.70 | 7.70 | 9.60 | 29.00 | 90.00 | 13.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.625 | 2780.780 |
| 2 | | (calculated) | (calculated) | 0.511 | 1964.833 |
| 3 | | (calculated) | (calculated) | 0.620 | 2752.035 |
| 4 | | (calculated) | (calculated) | 0.506 | 1975.905 |
| 5 | | (calculated) | (calculated) | 0.481 | 1762.200 |

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1960.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 822.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 2712.00 | 100.000 |
| 4 | ONE HOUR | ✓ | 405.00 | 100.000 |
| 5 | ONE HOUR | ✓ | 402.00 | 100.000 |

# Turning Proportions

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.000 | 73.000 | 1696.000 | 179.000 | 12.000 |
| | 2 | 258.000 | 0.000 | 555.000 | 9.000 | 0.000 |
| | 3 | 2331.000 | 215.000 | 0.000 | 154.000 | 12.000 |
| | 4 | 245.000 | 8.000 | 151.000 | 0.000 | 1.000 |
| | 5 | 31.000 | 13.000 | 340.000 | 18.000 | 0.000 |

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.00 | 0.04 | 0.87 | 0.09 | 0.01 |
| | 2 | 0.31 | 0.00 | 0.68 | 0.01 | 0.00 |
| | 3 | 0.86 | 0.08 | 0.00 | 0.06 | 0.00 |
| | 4 | 0.60 | 0.02 | 0.37 | 0.00 | 0.00 |
| | 5 | 0.08 | 0.03 | 0.85 | 0.04 | 0.00 |

# Vehicle Mix

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 2 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 5 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.91 | 17.04 | 9.68 | C | 1798.53 | 2697.80 | 390.86 | 8.69 | 4.34 | 390.89 | 8.69 |
| 2 | 1.35 | 459.18 | 120.13 | F | 754.28 | 1131.42 | 4204.21 | 222.95 | 46.71 | 4204.32 | 222.96 |
| 3 | 1.21 | 399.28 | 274.04 | F | 2488.58 | 3732.87 | 12036.86 | 193.47 | 133.74 | 12385.24 | 199.07 |
| 4 | 0.65 | 15.28 | 1.85 | C | 371.64 | 557.45 | 108.11 | 11.64 | 1.20 | 108.14 | 11.64 |
| 5 | 1.35 | 670.78 | 66.18 | F | 368.88 | 553.32 | 2962.59 | 321.25 | 32.92 | 3190.96 | 346.01 |

## Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1475.59 | 368.90 | 1469.49 | 2139.88 | 555.27 | 0.00 | 2433.59 | 2360.40 | 0.606 | 0.00 | 1.52 | 3.712 | A |
| 2 | 618.84 | 154.71 | 613.21 | 230.97 | 1793.79 | 0.00 | 1048.47 | 571.87 | 0.590 | 0.00 | 1.41 | 8.169 | A |
| 3 | 2041.74 | 510.43 | 2025.72 | 2051.24 | 355.76 | 0.00 | 2531.57 | 2488.25 | 0.807 | 0.00 | 4.00 | 6.914 | A |
| 4 | 304.91 | 76.23 | 302.90 | 269.33 | 2112.15 | 0.00 | 907.56 | 690.69 | 0.336 | 0.00 | 0.50 | 5.935 | A |
| 5 | 302.65 | 75.66 | 298.80 | 18.71 | 2396.35 | 0.00 | 609.61 | 220.94 | 0.496 | 0.00 | 0.96 | 11.447 | B |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1762.00 | 440.50 | 1756.88 | 2517.76 | 648.21 | 0.00 | 2375.48 | 2360.39 | 0.742 | 1.52 | 2.80 | 5.771 | A |
| 2 | 738.96 | 184.74 | 725.94 | 272.27 | 2132.82 | 0.00 | 875.28 | 571.87 | 0.844 | 1.41 | 4.66 | 22.409 | C |
| 3 | 2438.03 | 609.51 | 2378.48 | 2436.35 | 422.41 | 0.00 | 2490.27 | 2488.25 | 0.979 | 4.00 | 18.89 | 24.426 | C |
| 4 | 364.09 | 91.02 | 362.09 | 318.86 | 2482.02 | 0.00 | 720.47 | 690.69 | 0.505 | 0.50 | 1.00 | 9.990 | A |
| 5 | 361.39 | 90.35 | 344.02 | 22.17 | 2821.94 | 0.00 | 404.90 | 220.94 | 0.893 | 0.96 | 5.30 | 49.654 | E |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2158.00 | 539.50 | 2133.50 | 2631.98 | 671.37 | 0.00 | 2360.99 | 2360.39 | 0.914 | 2.80 | 8.93 | 14.483 | B |
| 2 | 905.04 | 226.26 | 677.65 | 294.89 | 2509.98 | 0.00 | 682.61 | 571.87 | 1.326 | 4.66 | 61.51 | 189.875 | F |
| 3 | 2985.97 | 746.49 | 2473.85 | 2744.99 | 442.65 | 0.00 | 2477.73 | 2488.25 | 1.205 | 18.89 | 146.92 | 126.381 | F |
| 4 | 445.91 | 111.48 | 442.67 | 357.37 | 2559.13 | 0.00 | 681.47 | 690.69 | 0.654 | 1.00 | 1.81 | 14.874 | B |
| 5 | 442.61 | 110.65 | 326.65 | 25.10 | 2976.70 | 0.00 | 330.47 | 220.94 | 1.339 | 5.30 | 34.29 | 242.057 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2158.00 | 539.50 | 2154.99 | 2634.83 | 674.04 | 0.00 | 2359.32 | 2360.39 | 0.915 | 8.93 | 9.68 | 17.043 | C |
| 2 | 905.04 | 226.26 | 670.56 | 296.08 | 2532.94 | 0.00 | 670.88 | 571.87 | 1.349 | 61.51 | 120.13 | 459.180 | F |
| 3 | 2985.97 | 746.49 | 2477.48 | 2761.01 | 442.49 | 0.00 | 2477.82 | 2488.25 | 1.205 | 146.92 | 274.04 | 309.750 | F |
| 4 | 445.91 | 111.48 | 445.74 | 359.52 | 2560.46 | 0.00 | 680.80 | 690.69 | 0.655 | 1.81 | 1.85 | 15.282 | C |
| 5 | 442.61 | 110.65 | 327.92 | 25.26 | 2980.94 | 0.00 | 328.43 | 220.94 | 1.348 | 34.29 | 62.96 | 539.630 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1762.00 | 440.50 | 1788.80 | 2624.82 | 660.11 | 0.00 | 2368.04 | 2360.39 | 0.744 | 9.68 | 2.98 | 6.491 | A |
| 2 | 738.96 | 184.74 | 849.62 | 279.71 | 2169.20 | 0.00 | 856.70 | 571.87 | 0.863 | 120.13 | 92.47 | 436.034 | F |
| 3 | 2438.03 | 609.51 | 2454.36 | 2552.93 | 465.90 | 0.00 | 2463.32 | 2488.25 | 0.990 | 274.04 | 269.96 | 399.277 | F |
| 4 | 364.09 | 91.02 | 366.52 | 327.64 | 2592.62 | 0.00 | 664.53 | 690.69 | 0.548 | 1.85 | 1.25 | 12.179 | B |
| 5 | 361.39 | 90.35 | 348.51 | 22.72 | 2936.42 | 0.00 | 349.84 | 220.94 | 1.033 | 62.96 | 66.18 | 670.776 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1475.59 | 368.90 | 1480.91 | 2623.24 | 643.84 | 0.00 | 2378.21 | 2360.40 | 0.620 | 2.98 | 1.65 | 4.036 | A |
| 2 | 618.84 | 154.71 | 981.03 | 266.68 | 1858.06 | 0.00 | 1015.64 | 571.87 | 0.609 | 92.47 | 1.92 | 165.142 | F |
| 3 | 2041.74 | 510.43 | 2446.16 | 2360.12 | 478.96 | 0.00 | 2455.22 | 2488.25 | 0.832 | 269.96 | 168.85 | 323.553 | F |
| 4 | 304.91 | 76.23 | 306.26 | 300.89 | 2624.24 | 0.00 | 648.54 | 690.69 | 0.470 | 1.25 | 0.91 | 10.562 | B |
| 5 | 302.65 | 75.66 | 357.22 | 20.65 | 2909.85 | 0.00 | 362.62 | 220.94 | 0.835 | 66.18 | 52.54 | 600.003 | F |

# Queueing Delay Results for each time segment

## Queueing Delay results: (07:45-08:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 22.06 | 1.47 | 3.712 | A | A |
| 2 | 19.88 | 1.33 | 8.169 | A | A |
| 3 | 55.04 | 3.67 | 6.914 | A | A |
| 4 | 7.25 | 0.48 | 5.935 | A | A |
| 5 | 13.47 | 0.90 | 11.447 | B | B |

## Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 39.93 | 2.66 | 5.771 | A | A |
| 2 | 59.17 | 3.94 | 22.409 | C | C |
| 3 | 205.70 | 13.71 | 24.426 | C | C |
| 4 | 14.25 | 0.95 | 9.990 | A | A |
| 5 | 60.22 | 4.01 | 49.654 | E | D |

## Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 112.32 | 7.49 | 14.483 | B | B |
| 2 | 501.95 | 33.46 | 189.875 | F | F |
| 3 | 1247.61 | 83.17 | 126.381 | F | F |
| 4 | 25.18 | 1.68 | 14.874 | B | B |
| 5 | 300.25 | 20.02 | 242.057 | F | F |

## Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 140.63 | 9.38 | 17.043 | C | B |
| 2 | 1362.44 | 90.83 | 459.180 | F | F |
| 3 | 3157.37 | 210.49 | 309.750 | F | F |
| 4 | 27.54 | 1.84 | 15.282 | C | B |
| 5 | 729.60 | 48.64 | 539.630 | F | F |

## Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 50.24 | 3.35 | 6.491 | A | A |
| 2 | 1594.48 | 106.30 | 436.034 | F | F |
| 3 | 4080.03 | 272.00 | 399.277 | F | F |
| 4 | 19.72 | 1.31 | 12.179 | B | B |
| 5 | 968.63 | 64.58 | 670.776 | F | F |

### Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 25.69 | 1.71 | 4.036 | A | A |
| 2 | 666.30 | 44.42 | 165.142 | F | F |
| 3 | 3291.11 | 219.41 | 323.553 | F | F |
| 4 | 14.17 | 0.94 | 10.562 | B | B |
| 5 | 890.42 | 59.36 | 600.003 | F | F |

# (Default Analysis Set) - 2031 D1, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, PM | 2031 D1 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3,4,5 | | | | 272.78 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A5076 Danes Camp Way | |
| 2 | 2 | Hunsbury Hill Road South | |
| 3 | 3 | A5076 Ring Road | |
| 4 | 4 | Hunsbury Hill Road North | |
| 5 | 5 | Hunsbarrow Road | |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |
| 4 | 0.00 | 99999.00 | | 0.00 |
| 5 | 0.00 | 99999.00 | | 0.00 |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 7.20 | 10.40 | 7.50 | 40.00 | 90.00 | 16.00 | |
| 2 | 3.60 | 8.30 | 15.80 | 39.00 | 90.00 | 14.00 | |
| 3 | 7.40 | 8.80 | 17.90 | 35.00 | 90.00 | 17.00 | |
| 4 | 3.80 | 7.60 | 21.30 | 31.00 | 90.00 | 21.00 | |
| 5 | 3.70 | 7.70 | 9.60 | 29.00 | 90.00 | 13.00 | |

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.625 | 2780.780 |
| 2 | | (calculated) | (calculated) | 0.511 | 1964.833 |
| 3 | | (calculated) | (calculated) | 0.620 | 2752.035 |
| 4 | | (calculated) | (calculated) | 0.506 | 1975.905 |
| 5 | | (calculated) | (calculated) | 0.481 | 1762.200 |

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

# Traffic Flows

### Demand Set Data Options

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

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1713.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 556.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 2159.00 | 100.000 |
| 4 | ONE HOUR | ✓ | 441.00 | 100.000 |
| 5 | ONE HOUR | ✓ | 887.00 | 100.000 |

# Turning Proportions

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.000 | 87.000 | 1070.000 | 509.000 | 47.000 |
| | 2 | 254.000 | 0.000 | 272.000 | 22.000 | 8.000 |
| | 3 | 1299.000 | 413.000 | 0.000 | 219.000 | 228.000 |
| | 4 | 326.000 | 12.000 | 90.000 | 0.000 | 13.000 |
| | 5 | 1.000 | 72.000 | 679.000 | 135.000 | 0.000 |

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.00 | 0.05 | 0.62 | 0.30 | 0.03 |
| | 2 | 0.46 | 0.00 | 0.49 | 0.04 | 0.01 |
| | 3 | 0.60 | 0.19 | 0.00 | 0.10 | 0.11 |
| | 4 | 0.74 | 0.03 | 0.20 | 0.00 | 0.03 |
| | 5 | 0.00 | 0.08 | 0.77 | 0.15 | 0.00 |

# Vehicle Mix

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 2 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 5 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.90 | 17.27 | 8.61 | C | 1571.88 | 2357.82 | 370.03 | 9.42 | 4.11 | 370.08 | 9.42 |
| 2 | 0.85 | 30.76 | 4.93 | D | 510.20 | 765.29 | 193.02 | 15.13 | 2.14 | 193.04 | 15.13 |
| 3 | 1.12 | 180.68 | 135.86 | F | 1981.14 | 2971.70 | 4100.04 | 82.78 | 45.56 | 4100.12 | 82.78 |
| 4 | 0.58 | 10.15 | 1.35 | B | 404.67 | 607.00 | 77.12 | 7.62 | 0.86 | 77.13 | 7.62 |
| 5 | 1.65 | 1272.63 | 258.09 | F | 813.93 | 1220.89 | 11020.60 | 541.60 | 122.45 | 13003.39 | 639.04 |

## Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1289.64 | 322.41 | 1283.57 | 1407.14 | 1041.77 | 0.00 | 2129.39 | 2138.93 | 0.606 | 0.00 | 1.52 | 4.226 | A |
| 2 | 418.59 | 104.65 | 415.74 | 436.63 | 1888.70 | 0.00 | 999.99 | 636.23 | 0.419 | 0.00 | 0.71 | 6.133 | A |
| 3 | 1625.41 | 406.35 | 1615.96 | 1575.48 | 728.96 | 0.00 | 2300.30 | 2079.61 | 0.707 | 0.00 | 2.36 | 5.191 | A |
| 4 | 332.01 | 83.00 | 330.34 | 661.76 | 1683.17 | 0.00 | 1124.54 | 849.39 | 0.295 | 0.00 | 0.42 | 4.524 | A |
| 5 | 667.78 | 166.95 | 656.98 | 221.59 | 1791.92 | 0.00 | 900.32 | 432.75 | 0.742 | 0.00 | 2.70 | 14.229 | B |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1539.95 | 384.99 | 1534.27 | 1678.35 | 1170.81 | 0.00 | 2048.71 | 2138.93 | 0.752 | 1.52 | 2.94 | 6.923 | A |
| 2 | 499.83 | 124.96 | 497.05 | 514.71 | 2190.37 | 0.00 | 845.88 | 636.23 | 0.591 | 0.71 | 1.41 | 10.240 | B |
| 3 | 1940.90 | 485.22 | 1925.03 | 1827.19 | 860.23 | 0.00 | 2218.95 | 2079.61 | 0.875 | 2.36 | 6.33 | 11.664 | B |
| 4 | 396.45 | 99.11 | 395.34 | 779.18 | 2006.08 | 0.00 | 961.21 | 849.39 | 0.412 | 0.42 | 0.69 | 6.348 | A |
| 5 | 797.39 | 199.35 | 711.93 | 264.19 | 2137.22 | 0.00 | 734.24 | 432.75 | 1.086 | 2.70 | 24.07 | 85.149 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1886.05 | 471.51 | 1865.49 | 1903.63 | 1113.60 | 0.00 | 2084.48 | 2138.91 | 0.905 | 2.94 | 8.08 | 15.176 | C |
| 2 | 612.17 | 153.04 | 600.09 | 560.77 | 2418.32 | 0.00 | 729.44 | 636.23 | 0.839 | 1.41 | 4.43 | 25.757 | D |
| 3 | 2377.10 | 594.28 | 2113.65 | 2015.35 | 1003.06 | 0.00 | 2130.44 | 2079.61 | 1.116 | 6.33 | 72.19 | 74.695 | F |
| 4 | 485.55 | 121.39 | 483.07 | 883.50 | 2233.21 | 0.00 | 846.32 | 849.39 | 0.574 | 0.69 | 1.31 | 9.843 | A |
| 5 | 976.61 | 244.15 | 598.22 | 297.27 | 2419.02 | 0.00 | 598.70 | 432.75 | 1.631 | 24.07 | 118.66 | 442.905 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1886.05 | 471.51 | 1883.93 | 1915.23 | 1109.60 | 0.00 | 2086.98 | 2138.91 | 0.904 | 8.08 | 8.61 | 17.274 | C |
| 2 | 612.17 | 153.04 | 610.16 | 562.95 | 2430.58 | 0.00 | 723.17 | 636.23 | 0.847 | 4.43 | 4.93 | 30.760 | D |
| 3 | 2377.10 | 594.28 | 2122.43 | 2027.49 | 1013.24 | 0.00 | 2124.13 | 2079.61 | 1.119 | 72.19 | 135.86 | 180.685 | F |
| 4 | 485.55 | 121.39 | 485.41 | 889.32 | 2246.35 | 0.00 | 839.68 | 849.39 | 0.578 | 1.31 | 1.35 | 10.153 | B |
| 5 | 976.61 | 244.15 | 591.99 | 298.92 | 2432.84 | 0.00 | 592.05 | 432.75 | 1.650 | 118.66 | 214.82 | 983.512 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1539.95 | 384.99 | 1562.43 | 1853.51 | 1136.50 | 0.00 | 2070.16 | 2138.93 | 0.744 | 8.61 | 2.99 | 7.386 | A |
| 2 | 499.83 | 124.96 | 514.05 | 561.70 | 2137.23 | 0.00 | 873.03 | 636.23 | 0.573 | 4.93 | 1.37 | 10.407 | B |
| 3 | 1940.90 | 485.22 | 2199.98 | 1786.57 | 864.72 | 0.00 | 2216.17 | 2079.61 | 0.876 | 135.86 | 71.09 | 170.444 | F |
| 4 | 396.45 | 99.11 | 398.14 | 802.77 | 2261.92 | 0.00 | 831.80 | 849.39 | 0.477 | 1.35 | 0.93 | 8.335 | A |
| 5 | 797.39 | 199.35 | 624.28 | 294.33 | 2365.73 | 0.00 | 624.33 | 432.75 | 1.277 | 214.82 | 258.09 | 1272.634 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1289.64 | 322.41 | 1294.36 | 1582.69 | 1226.11 | 0.00 | 2014.13 | 2138.93 | 0.640 | 2.99 | 1.81 | 5.035 | A |
| 2 | 418.59 | 104.65 | 420.78 | 502.03 | 2018.44 | 0.00 | 933.71 | 636.23 | 0.448 | 1.37 | 0.82 | 7.050 | A |
| 3 | 1625.41 | 406.35 | 1899.56 | 1684.48 | 754.75 | 0.00 | 2284.32 | 2079.61 | 0.712 | 71.09 | 2.55 | 19.737 | C |
| 4 | 332.01 | 83.00 | 333.69 | 713.63 | 1940.67 | 0.00 | 994.29 | 849.39 | 0.334 | 0.93 | 0.51 | 5.464 | A |
| 5 | 667.78 | 166.95 | 786.44 | 252.01 | 2022.35 | 0.00 | 789.49 | 432.75 | 0.846 | 258.09 | 228.43 | 1113.916 | F |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 21.89 | 1.46 | 4.226 | A | A |
| 2 | 10.26 | 0.68 | 6.133 | A | A |
| 3 | 33.51 | 2.23 | 5.191 | A | A |
| 4 | 6.07 | 0.40 | 4.524 | A | A |
| 5 | 36.06 | 2.40 | 14.229 | B | B |

### Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 41.47 | 2.76 | 6.923 | A | A |
| 2 | 19.91 | 1.33 | 10.240 | B | B |
| 3 | 83.41 | 5.56 | 11.664 | B | B |
| 4 | 10.08 | 0.67 | 6.348 | A | A |
| 5 | 216.81 | 14.45 | 85.149 | F | F |

### Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 102.71 | 6.85 | 15.176 | C | B |
| 2 | 55.81 | 3.72 | 25.757 | D | C |
| 3 | 605.73 | 40.38 | 74.695 | F | E |
| 4 | 18.66 | 1.24 | 9.843 | A | A |
| 5 | 1070.89 | 71.39 | 442.905 | F | F |

### Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 125.83 | 8.39 | 17.274 | C | B |
| 2 | 70.93 | 4.73 | 30.760 | D | C |
| 3 | 1560.99 | 104.07 | 180.685 | F | F |
| 4 | 20.04 | 1.34 | 10.153 | B | B |
| 5 | 2501.10 | 166.74 | 983.512 | F | F |

### Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 49.93 | 3.33 | 7.386 | A | A |
| 2 | 23.27 | 1.55 | 10.407 | B | B |
| 3 | 1552.11 | 103.47 | 170.444 | F | F |
| 4 | 14.45 | 0.96 | 8.335 | A | A |
| 5 | 3546.82 | 236.45 | 1272.634 | F | F |

### Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 28.21 | 1.88 | 5.035 | A | A |
| 2 | 12.84 | 0.86 | 7.050 | A | A |
| 3 | 264.29 | 17.62 | 19.737 | C | B |
| 4 | 7.82 | 0.52 | 5.464 | A | A |
| 5 | 3648.92 | 243.26 | 1113.916 | F | F |

# (Default Analysis Set) - 2031 J3, AM

## Data Errors and Warnings

| Severity | Area | Item | Description |
|---|---|---|---|
| Last Run | Last Run | Arm 1 - Capacity | End Queues failed to stabilise/converge in 1 timesegment(s), treat results with caution. |
| Last Run | Last Run | Arm 5 - Capacity | Entry Flow failed to stabilise/converge in 1 timesegment(s), treat results with caution. |
| Last Run | Last Run | Arm 5 - Capacity | End Queues failed to stabilise/converge in 1 timesegment(s), treat results with caution. |

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

### Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

### Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3,4,5 | | | | 316.44 | F |

### Junction Network Options

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

# Arms

### Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A5076 Danes Camp Way | |
| 2 | 2 | Hunsbury Hill Road South | |
| 3 | 3 | A5076 Ring Road | |
| 4 | 4 | Hunsbury Hill Road North | |
| 5 | 5 | Hunsbarrow Road | |

### Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |
| 4 | 0.00 | 99999.00 | | 0.00 |
| 5 | 0.00 | 99999.00 | | 0.00 |

### Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 7.20 | 10.40 | 7.50 | 40.00 | 90.00 | 16.00 | |
| 2 | 3.60 | 8.30 | 15.80 | 39.00 | 90.00 | 14.00 | |
| 3 | 7.40 | 8.80 | 17.90 | 35.00 | 90.00 | 17.00 | |
| 4 | 3.80 | 7.60 | 21.30 | 31.00 | 90.00 | 21.00 | |
| 5 | 3.70 | 7.70 | 9.60 | 29.00 | 90.00 | 13.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.625 | 2780.780 |
| 2 | | (calculated) | (calculated) | 0.511 | 1964.833 |
| 3 | | (calculated) | (calculated) | 0.620 | 2752.035 |
| 4 | | (calculated) | (calculated) | 0.506 | 1975.905 |
| 5 | | (calculated) | (calculated) | 0.481 | 1762.200 |

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 2298.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 670.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 2775.00 | 100.000 |
| 4 | ONE HOUR | ✓ | 407.00 | 100.000 |
| 5 | ONE HOUR | ✓ | 398.00 | 100.000 |

# Turning Proportions

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.000 | 39.000 | 2101.000 | 151.000 | 7.000 |
| | 2 | 207.000 | 0.000 | 454.000 | 9.000 | 0.000 |
| | 3 | 2360.000 | 230.000 | 0.000 | 172.000 | 13.000 |
| | 4 | 240.000 | 7.000 | 159.000 | 0.000 | 1.000 |
| | 5 | 11.000 | 11.000 | 359.000 | 17.000 | 0.000 |

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.00 | 0.02 | 0.91 | 0.07 | 0.00 |
| | 2 | 0.31 | 0.00 | 0.68 | 0.01 | 0.00 |
| | 3 | 0.85 | 0.08 | 0.00 | 0.06 | 0.00 |
| | 4 | 0.59 | 0.02 | 0.39 | 0.00 | 0.00 |
| | 5 | 0.03 | 0.03 | 0.90 | 0.04 | 0.00 |

# Vehicle Mix

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 2 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 5 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ?? | ?? | ?? | ?? | ?? | ?? | ?? | ?? | ?? | ?? | ?? |
| 2 | 1.35 | 621.49 | 111.89 | F | 614.80 | 922.21 | 4432.62 | 288.39 | 49.25 | 4526.73 | 294.52 |
| 3 | 1.21 | 396.70 | 281.30 | F | 2546.39 | 3819.58 | 12303.57 | 193.27 | 136.71 | 12653.26 | 198.76 |
| 4 | 0.65 | 15.19 | 1.85 | C | 373.47 | 560.21 | 105.92 | 11.34 | 1.18 | 105.95 | 11.35 |
| 5 | ?? | ?? | ?? | ?? | ?? | ?? | ?? | ?? | ?? | ?? | ?? |

# Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1730.05 | 432.51 | 1720.16 | 2104.56 | 583.64 | 0.00 | 2415.85 | 2344.89 | 0.716 | 0.00 | 2.47 | 5.105 | A |
| 2 | 504.41 | 126.10 | 499.39 | 214.38 | 2089.42 | 0.00 | 897.45 | 547.60 | 0.562 | 0.00 | 1.25 | 8.937 | A |
| 3 | 2089.17 | 522.29 | 2072.54 | 2296.91 | 291.91 | 0.00 | 2571.14 | 2537.05 | 0.813 | 0.00 | 4.16 | 7.004 | A |
| 4 | 306.41 | 76.60 | 304.41 | 260.84 | 2103.61 | 0.00 | 911.88 | 682.99 | 0.336 | 0.00 | 0.50 | 5.908 | A |
| 5 | 299.64 | 74.91 | 295.89 | 15.70 | 2392.32 | 0.00 | 611.54 | 214.21 | 0.490 | 0.00 | 0.94 | 11.277 | B |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2065.85 | 516.46 | 2049.71 | 2473.13 | 682.67 | 0.00 | 2353.93 | 2344.88 | 0.878 | 2.47 | 6.51 | 11.275 | B |
| 2 | 602.32 | 150.58 | 587.10 | 252.01 | 2480.37 | 0.00 | 697.74 | 547.59 | 0.863 | 1.25 | 5.06 | 29.310 | D |
| 3 | 2494.67 | 623.67 | 2431.27 | 2722.65 | 344.82 | 0.00 | 2538.35 | 2537.05 | 0.983 | 4.16 | 20.01 | 25.049 | D |
| 4 | 365.88 | 91.47 | 363.93 | 307.88 | 2468.21 | 0.00 | 727.46 | 682.99 | 0.503 | 0.50 | 0.99 | 9.850 | A |
| 5 | 357.79 | 89.45 | 342.19 | 18.53 | 2813.61 | 0.00 | 408.91 | 214.21 | 0.875 | 0.94 | 4.84 | 46.325 | E |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2530.15 | 632.54 | 2313.92 | 2594.23 | 708.53 | 0.00 | 2337.76 | 2344.87 | 1.082 | 6.51 | 60.57 | 60.127 | F |
| 2 | 737.68 | 184.42 | 551.97 | 265.70 | 2756.74 | 0.00 | 556.55 | 547.59 | 1.325 | 5.06 | 51.49 | 201.145 | F |
| 3 | 3055.33 | 763.83 | 2530.84 | 2957.73 | 350.98 | 0.00 | 2534.53 | 2537.06 | 1.205 | 20.01 | 151.13 | 127.319 | F |
| 4 | 448.12 | 112.03 | 444.85 | 330.27 | 2551.56 | 0.00 | 685.30 | 682.99 | 0.654 | 0.99 | 1.81 | 14.770 | B |
| 5 | 438.21 | 109.55 | 326.35 | 20.00 | 2976.41 | 0.00 | 330.60 | 214.21 | 1.325 | 4.84 | 32.80 | 231.638 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2530.15 | 632.54 | 2332.46 | 2597.35 | 711.53 | 0.00 | 2335.88 | 2344.87 | 1.083 | 60.57 | 109.99 | 137.374 | F |
| 2 | 737.68 | 184.42 | 545.55 | 266.43 | 2777.56 | 0.00 | 545.92 | 547.59 | 1.351 | 51.49 | 99.52 | 507.467 | F |
| 3 | 3055.33 | 763.83 | 2534.66 | 2972.86 | 350.25 | 0.00 | 2534.99 | 2537.06 | 1.205 | 151.13 | 281.30 | 310.514 | F |
| 4 | 448.12 | 112.03 | 447.94 | 331.70 | 2553.21 | 0.00 | 684.47 | 682.99 | 0.655 | 1.81 | 1.85 | 15.187 | C |
| 5 | 438.21 | 109.55 | 327.81 | 20.08 | 2981.07 | 0.00 | 328.37 | 214.21 | 1.335 | 32.80 | 60.40 | 508.850 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | ?? | ?? | ?? | ?? | ?? | ?? | ?? | 2344.88 | ?? | ?? | ?? | ?? | ?? |
| 2 | 602.32 | 150.58 | 552.85 | 264.98 | 2764.40 | 0.00 | 553.60 | 547.59 | 1.088 | 99.52 | 111.89 | 621.490 | F |
| 3 | 2494.67 | 623.67 | 2524.41 | 2964.34 | 352.91 | 0.00 | 2533.39 | 2537.05 | 0.985 | 281.30 | 273.86 | 396.697 | F |
| 4 | 365.88 | 91.47 | 368.63 | 331.53 | 2545.79 | 0.00 | 688.22 | 682.99 | 0.532 | 1.85 | 1.16 | 11.359 | B |
| 5 | ?? | ?? | ?? | ?? | ?? | ?? | ?? | 214.21 | ?? | ?? | ?? | ?? | ?? |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1730.05 | 432.51 | 1912.21 | 2551.88 | 695.67 | 0.00 | 2345.80 | 2344.89 | 0.738 | 48.44 | 2.90 | 12.595 | B |
| 2 | 504.41 | 126.10 | 756.26 | 255.31 | 2352.58 | 0.00 | 763.02 | 547.60 | 0.661 | 111.89 | 48.92 | 385.593 | F |
| 3 | 2089.17 | 522.29 | 2500.46 | 2717.61 | 391.23 | 0.00 | 2509.59 | 2537.05 | 0.832 | 273.86 | 171.04 | 320.909 | F |
| 4 | 306.41 | 76.60 | 307.61 | 306.74 | 2584.95 | 0.00 | 668.41 | 682.99 | 0.458 | 1.16 | 0.86 | 10.011 | B |
| 5 | 299.64 | 74.91 | 373.28 | 18.29 | 2874.27 | 0.00 | 379.73 | 214.21 | 0.789 | 57.87 | 39.46 | 472.215 | F |

## Queueing Delay Results for each time segment

### Queueing Delay results: (07:45-08:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 35.07 | 2.34 | 5.105 | A | A |
| 2 | 17.68 | 1.18 | 8.937 | A | A |
| 3 | 56.99 | 3.80 | 7.004 | A | A |
| 4 | 7.25 | 0.48 | 5.908 | A | A |
| 5 | 13.15 | 0.88 | 11.277 | B | B |

### Queueing Delay results: (08:00-08:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 85.90 | 5.73 | 11.275 | B | B |
| 2 | 61.77 | 4.12 | 29.310 | D | C |
| 3 | 215.61 | 14.37 | 25.049 | D | C |
| 4 | 14.13 | 0.94 | 9.850 | A | A |
| 5 | 56.01 | 3.73 | 46.325 | E | D |

### Queueing Delay results: (08:15-08:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 523.99 | 34.93 | 60.127 | F | E |
| 2 | 428.86 | 28.59 | 201.145 | F | F |
| 3 | 1287.27 | 85.82 | 127.319 | F | F |
| 4 | 25.14 | 1.68 | 14.770 | B | B |
| 5 | 286.01 | 19.07 | 231.638 | F | F |

### Queueing Delay results: (08:30-08:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 1280.26 | 85.35 | 137.374 | F | F |
| 2 | 1132.68 | 75.51 | 507.467 | F | F |
| 3 | 3243.30 | 216.22 | 310.514 | F | F |
| 4 | 27.50 | 1.83 | 15.187 | C | B |
| 5 | 699.25 | 46.62 | 508.850 | F | F |

### Queueing Delay results: (08:45-09:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | ?? | ?? | ?? | ?? | ?? |
| 2 | 1585.57 | 105.70 | 621.490 | F | F |
| 3 | 4163.67 | 277.58 | 396.697 | F | F |
| 4 | 18.43 | 1.23 | 11.359 | B | B |
| 5 | ?? | ?? | ?? | ?? | ?? |

### Queueing Delay results: (09:00-09:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 154.82 | 10.32 | 12.595 | B | B |
| 2 | 1206.06 | 80.40 | 385.593 | F | F |
| 3 | 3336.72 | 222.45 | 320.909 | F | F |
| 4 | 13.46 | 0.90 | 10.011 | B | B |
| 5 | 729.95 | 48.66 | 472.215 | F | F |

# (Default Analysis Set) - 2031 J3, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set (s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| (Default Analysis Set) | ARCADY | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Arm Order | Grade Separated | Large Roundabout | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|---|
| 1 | (untitled) | Roundabout | 1,2,3,4,5 | | | | 297.46 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description |
|---|---|---|---|
| 1 | 1 | A5076 Danes Camp Way | |
| 2 | 2 | Hunsbury Hill Road South | |
| 3 | 3 | A5076 Ring Road | |
| 4 | 4 | Hunsbury Hill Road North | |
| 5 | 5 | Hunsbarrow Road | |

## Capacity Options

| Arm | Minimum Capacity (PCU/hr) | Maximum Capacity (PCU/hr) | Assume Flat Start Profile | Initial Queue (PCU) |
|---|---|---|---|---|
| 1 | 0.00 | 99999.00 | | 0.00 |
| 2 | 0.00 | 99999.00 | | 0.00 |
| 3 | 0.00 | 99999.00 | | 0.00 |
| 4 | 0.00 | 99999.00 | | 0.00 |
| 5 | 0.00 | 99999.00 | | 0.00 |

## Roundabout Geometry

| Arm | V - Approach road half-width (m) | E - Entry width (m) | l' - Effective flare length (m) | R - Entry radius (m) | D - Inscribed circle diameter (m) | PHI - Conflict (entry) angle (deg) | Exit Only |
|---|---|---|---|---|---|---|---|
| 1 | 7.20 | 10.40 | 7.50 | 40.00 | 90.00 | 16.00 | |
| 2 | 3.60 | 8.30 | 15.80 | 39.00 | 90.00 | 14.00 | |
| 3 | 7.40 | 8.80 | 17.90 | 35.00 | 90.00 | 17.00 | |
| 4 | 3.80 | 7.60 | 21.30 | 31.00 | 90.00 | 21.00 | |
| 5 | 3.70 | 7.70 | 9.60 | 29.00 | 90.00 | 13.00 | |

## Slope / Intercept / Capacity

### Roundabout Slope and Intercept used in model

| Arm | Enter slope and intercept directly | Entered slope | Entered intercept (PCU/hr) | Final Slope | Final Intercept (PCU/hr) |
|---|---|---|---|---|---|
| 1 | | (calculated) | (calculated) | 0.625 | 2780.780 |
| 2 | | (calculated) | (calculated) | 0.511 | 1964.833 |
| 3 | | (calculated) | (calculated) | 0.620 | 2752.035 |
| 4 | | (calculated) | (calculated) | 0.506 | 1975.905 |
| 5 | | (calculated) | (calculated) | 0.481 | 1762.200 |

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

# Traffic Flows

## Demand Set Data Options

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

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| 1 | ONE HOUR | ✓ | 1761.00 | 100.000 |
| 2 | ONE HOUR | ✓ | 548.00 | 100.000 |
| 3 | ONE HOUR | ✓ | 2189.00 | 100.000 |
| 4 | ONE HOUR | ✓ | 441.00 | 100.000 |
| 5 | ONE HOUR | ✓ | 893.00 | 100.000 |

# Turning Proportions

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.000 | 126.000 | 1077.000 | 510.000 | 48.000 |
| | 2 | 266.000 | 0.000 | 251.000 | 22.000 | 9.000 |
| | 3 | 1346.000 | 394.000 | 0.000 | 222.000 | 227.000 |
| | 4 | 337.000 | 12.000 | 79.000 | 0.000 | 13.000 |
| | 5 | 17.000 | 77.000 | 664.000 | 135.000 | 0.000 |

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.00 | 0.07 | 0.61 | 0.29 | 0.03 |
| | 2 | 0.49 | 0.00 | 0.46 | 0.04 | 0.02 |
| | 3 | 0.61 | 0.18 | 0.00 | 0.10 | 0.10 |
| | 4 | 0.76 | 0.03 | 0.18 | 0.00 | 0.03 |
| | 5 | 0.02 | 0.09 | 0.74 | 0.15 | 0.00 |

# Vehicle Mix

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 2 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 3 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 4 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |
| | 5 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 |

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

| | | To | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| From | 1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 5 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Arm | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.92 | 18.86 | 9.62 | C | 1615.92 | 2423.89 | 399.72 | 9.89 | 4.44 | 399.76 | 9.90 |
| 2 | 0.82 | 26.63 | 4.23 | D | 502.85 | 754.28 | 172.37 | 13.71 | 1.92 | 172.39 | 13.71 |
| 3 | 1.14 | 211.04 | 156.78 | F | 2008.66 | 3013.00 | 5043.90 | 100.44 | 56.04 | 5044.00 | 100.44 |
| 4 | 0.58 | 10.27 | 1.36 | B | 404.67 | 607.00 | 79.11 | 7.82 | 0.88 | 79.12 | 7.82 |
| 5 | 1.67 | 1366.76 | 271.21 | F | 819.43 | 1229.15 | 11775.83 | 574.83 | 130.84 | 14493.10 | 707.47 |

## Main Results for each time segment

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1325.77 | 331.44 | 1319.41 | 1471.11 | 1010.99 | 0.00 | 2148.64 | 2178.21 | 0.617 | 0.00 | 1.59 | 4.309 | A |
| 2 | 412.56 | 103.14 | 409.82 | 455.18 | 1875.22 | 0.00 | 1006.88 | 659.58 | 0.410 | 0.00 | 0.69 | 6.002 | A |
| 3 | 1647.99 | 412.00 | 1638.00 | 1544.99 | 740.05 | 0.00 | 2293.43 | 2062.79 | 0.719 | 0.00 | 2.50 | 5.413 | A |
| 4 | 332.01 | 83.00 | 330.31 | 664.55 | 1713.50 | 0.00 | 1109.20 | 840.89 | 0.299 | 0.00 | 0.42 | 4.611 | A |
| 5 | 672.30 | 168.07 | 660.58 | 222.29 | 1821.52 | 0.00 | 886.09 | 427.03 | 0.759 | 0.00 | 2.93 | 15.264 | C |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1583.10 | 395.78 | 1577.14 | 1751.96 | 1119.65 | 0.00 | 2080.70 | 2178.21 | 0.761 | 1.59 | 3.08 | 7.067 | A |
| 2 | 492.64 | 123.16 | 490.16 | 534.87 | 2161.92 | 0.00 | 860.42 | 659.58 | 0.573 | 0.69 | 1.31 | 9.658 | A |
| 3 | 1967.87 | 491.97 | 1949.34 | 1780.78 | 871.30 | 0.00 | 2212.09 | 2062.79 | 0.890 | 2.50 | 7.13 | 12.879 | B |
| 4 | 396.45 | 99.11 | 395.28 | 780.03 | 2040.60 | 0.00 | 943.75 | 840.89 | 0.420 | 0.42 | 0.72 | 6.551 | A |
| 5 | 802.79 | 200.70 | 700.56 | 264.84 | 2171.05 | 0.00 | 717.97 | 427.03 | 1.118 | 2.93 | 28.49 | 98.703 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1938.90 | 484.72 | 1915.58 | 1964.61 | 1059.71 | 0.00 | 2118.17 | 2178.19 | 0.915 | 3.08 | 8.91 | 16.166 | C |
| 2 | 603.36 | 150.84 | 593.22 | 580.67 | 2394.62 | 0.00 | 741.54 | 659.57 | 0.814 | 1.31 | 3.84 | 22.871 | C |
| 3 | 2410.13 | 602.53 | 2108.07 | 1969.87 | 1017.96 | 0.00 | 2121.20 | 2062.79 | 1.136 | 7.13 | 82.65 | 84.201 | F |
| 4 | 485.55 | 121.39 | 483.08 | 881.85 | 2244.18 | 0.00 | 840.78 | 840.89 | 0.578 | 0.72 | 1.33 | 9.995 | A |
| 5 | 983.21 | 245.80 | 591.86 | 294.80 | 2432.46 | 0.00 | 592.24 | 427.03 | 1.660 | 28.49 | 126.32 | 483.790 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1938.90 | 484.72 | 1936.08 | 1973.87 | 1056.40 | 0.00 | 2120.25 | 2178.19 | 0.914 | 8.91 | 9.62 | 18.858 | C |
| 2 | 603.36 | 150.84 | 601.80 | 582.78 | 2409.70 | 0.00 | 733.84 | 659.57 | 0.822 | 3.84 | 4.23 | 26.633 | D |
| 3 | 2410.13 | 602.53 | 2113.60 | 1983.13 | 1028.37 | 0.00 | 2114.75 | 2062.79 | 1.140 | 82.65 | 156.78 | 207.385 | F |
| 4 | 485.55 | 121.39 | 485.42 | 887.95 | 2254.02 | 0.00 | 835.80 | 840.89 | 0.581 | 1.33 | 1.36 | 10.267 | B |
| 5 | 983.21 | 245.80 | 586.98 | 296.15 | 2443.29 | 0.00 | 587.02 | 427.03 | 1.675 | 126.32 | 225.38 | 1044.139 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1583.10 | 395.78 | 1609.00 | 1910.37 | 1084.85 | 0.00 | 2102.45 | 2178.21 | 0.753 | 9.62 | 3.14 | 7.658 | A |
| 2 | 492.64 | 123.16 | 504.39 | 574.39 | 2119.46 | 0.00 | 882.11 | 659.58 | 0.558 | 4.23 | 1.29 | 9.814 | A |
| 3 | 1967.87 | 491.97 | 2194.65 | 1747.00 | 876.85 | 0.00 | 2208.65 | 2062.79 | 0.891 | 156.78 | 100.09 | 211.039 | F |
| 4 | 396.45 | 99.11 | 398.17 | 802.45 | 2269.05 | 0.00 | 828.19 | 840.89 | 0.479 | 1.36 | 0.93 | 8.406 | A |
| 5 | 802.79 | 200.70 | 619.46 | 291.46 | 2375.76 | 0.00 | 619.51 | 427.03 | 1.296 | 225.38 | 271.21 | 1366.761 | F |

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

| Arm | Total Demand (PCU/hr) | Junction Arrivals (PCU) | Entry Flow (PCU/hr) | Exit Flow (PCU/hr) | Circulating Flow (PCU/hr) | Pedestrian Demand (Ped/hr) | Capacity (PCU/hr) | Saturation Capacity (PCU/hr) | RFC | Start Queue (PCU) | End Queue (PCU) | Delay (s) | LOS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1325.77 | 331.44 | 1331.03 | 1722.80 | 1149.74 | 0.00 | 2061.88 | 2178.21 | 0.643 | 3.14 | 1.83 | 4.960 | A |
| 2 | 412.56 | 103.14 | 414.74 | 533.80 | 1946.97 | 0.00 | 970.23 | 659.58 | 0.425 | 1.29 | 0.75 | 6.507 | A |
| 3 | 1647.99 | 412.00 | 2037.40 | 1605.11 | 756.60 | 0.00 | 2283.17 | 2062.79 | 0.722 | 100.09 | 2.73 | 48.752 | E |
| 4 | 332.01 | 83.00 | 333.49 | 718.82 | 2075.18 | 0.00 | 926.26 | 840.89 | 0.358 | 0.93 | 0.56 | 6.089 | A |
| 5 | 672.30 | 168.07 | 728.07 | 264.20 | 2144.47 | 0.00 | 730.75 | 427.03 | 0.920 | 271.21 | 257.27 | 1306.743 | F |

## Queueing Delay Results for each time segment

### Queueing Delay results: (16:45-17:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 22.92 | 1.53 | 4.309 | A | A |
| 2 | 9.90 | 0.66 | 6.002 | A | A |
| 3 | 35.35 | 2.36 | 5.413 | A | A |
| 4 | 6.18 | 0.41 | 4.611 | A | A |
| 5 | 38.74 | 2.58 | 15.264 | C | B |

## Queueing Delay results: (17:00-17:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 43.42 | 2.89 | 7.067 | A | A |
| 2 | 18.59 | 1.24 | 9.658 | A | A |
| 3 | 92.42 | 6.16 | 12.879 | B | B |
| 4 | 10.39 | 0.69 | 6.551 | A | A |
| 5 | 249.72 | 16.65 | 98.703 | F | F |

## Queueing Delay results: (17:15-17:30)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 111.65 | 7.44 | 16.166 | C | B |
| 2 | 49.51 | 3.30 | 22.871 | C | C |
| 3 | 687.13 | 45.81 | 84.201 | F | F |
| 4 | 18.93 | 1.26 | 9.995 | A | A |
| 5 | 1161.40 | 77.43 | 483.790 | F | F |

## Queueing Delay results: (17:30-17:45)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 139.87 | 9.32 | 18.858 | C | B |
| 2 | 61.23 | 4.08 | 26.633 | D | C |
| 3 | 1796.17 | 119.74 | 207.385 | F | F |
| 4 | 20.29 | 1.35 | 10.267 | B | B |
| 5 | 2637.83 | 175.86 | 1044.139 | F | F |

## Queueing Delay results: (17:45-18:00)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 53.31 | 3.55 | 7.658 | A | A |
| 2 | 21.49 | 1.43 | 9.814 | A | A |
| 3 | 1926.52 | 128.43 | 211.039 | F | F |
| 4 | 14.58 | 0.97 | 8.406 | A | A |
| 5 | 3724.49 | 248.30 | 1366.761 | F | F |

## Queueing Delay results: (18:00-18:15)

| Arm | Queueing Total Delay (PCU-min) | Queueing Rate Of Delay (PCU-min/min) | Average Delay Per Arriving Vehicle (s) | Unsignalised Level Of Service | Signalised Level Of Service |
|---|---|---|---|---|---|
| 1 | 28.55 | 1.90 | 4.960 | A | A |
| 2 | 11.65 | 0.78 | 6.507 | A | A |
| 3 | 506.31 | 33.75 | 48.752 | E | D |
| 4 | 8.74 | 0.58 | 6.089 | A | A |
| 5 | 3963.65 | 264.24 | 1306.743 | F | F |

# JUNCTION 20

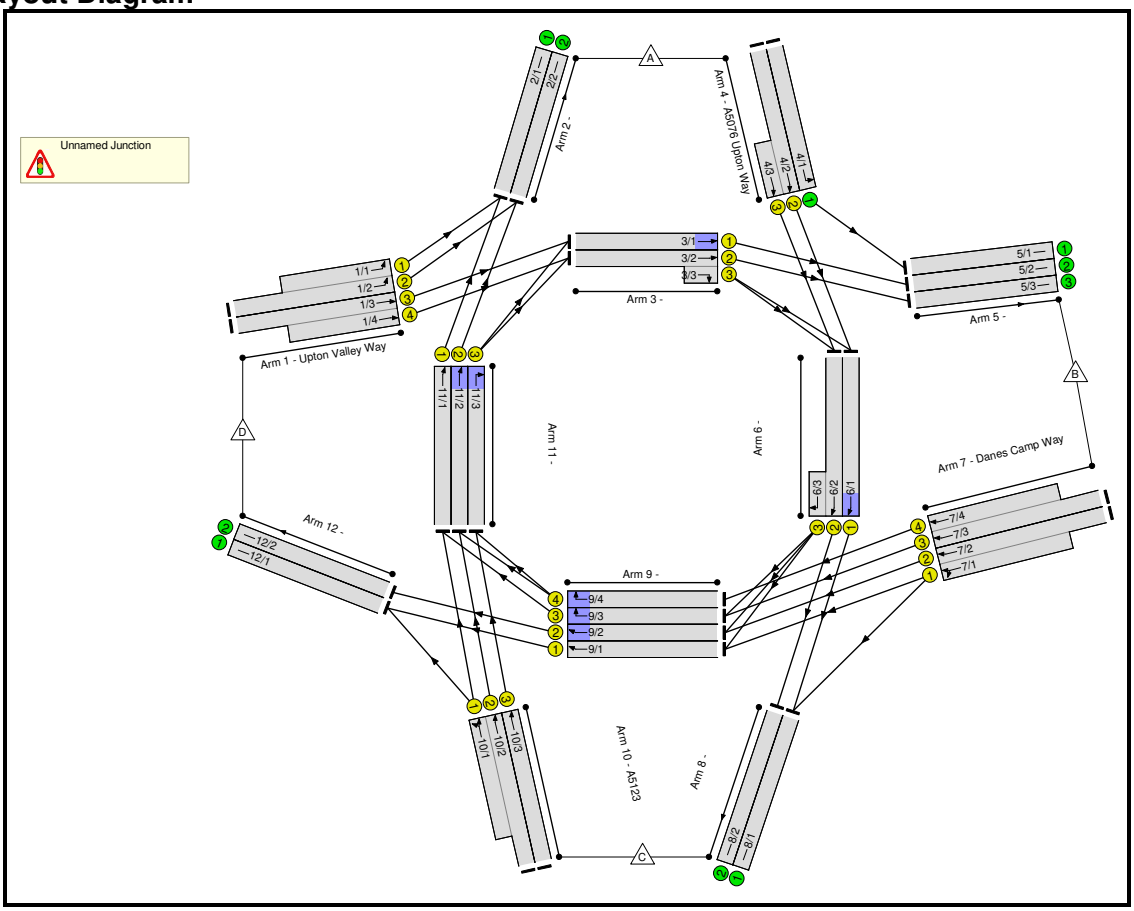
# A5076 DANES CAMP WAY/A5123/UPTON VALLEY WAY GYRATORY

## Full Input Data And Results

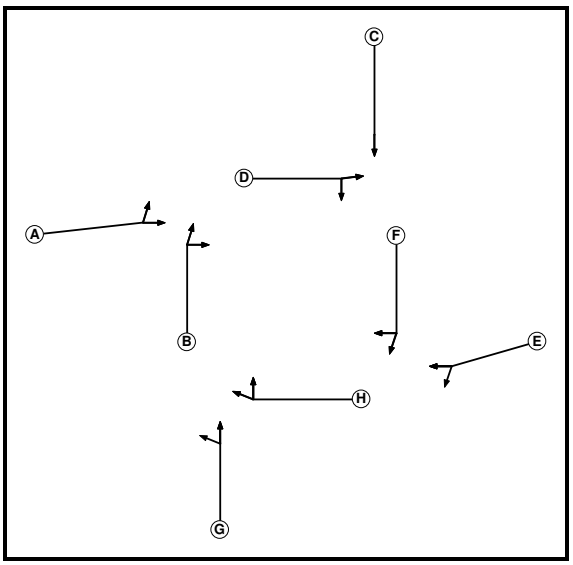
## User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **A5123/A5076 Gyratory - J3 Cumulative Impact** |
| **File name:** | 180320 A5123_A5076 Base Model sensitivity.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House, Nottingham |

## Network Layout Diagram




## Phase Diagram



## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 2 | | 7 | 7 |
| D | Traffic | 2 | | 7 | 7 |
| E | Traffic | 3 | | 7 | 7 |
| F | Traffic | 3 | | 7 | 7 |
| G | Traffic | 4 | | 7 | 7 |
| H | Traffic | 4 | | 7 | 7 |

## Phase Intergreens Matrix

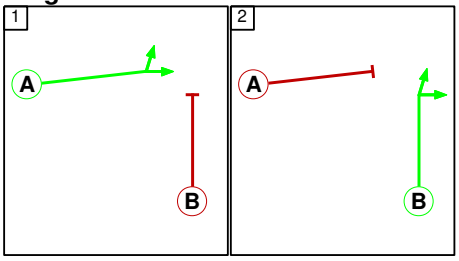
| | | Starting Phase | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H |
| Terminating Phase | A | | 6 | - | - | - | - | - | - |
| | B | 6 | | - | - | - | - | - | - |
| | C | - | - | | 6 | - | - | - | - |
| | D | - | - | 6 | | - | - | - | - |
| | E | - | - | - | - | | 6 | - | - |
| | F | - | - | - | - | 6 | | - | - |
| | G | - | - | - | - | - | - | | 6 |
| | H | - | - | - | - | - | - | 6 | |

## Phases in Stage

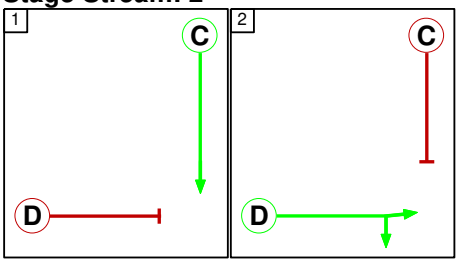
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B |
| 2 | 1 | C |
| 2 | 2 | D |
| 3 | 1 | E |
| 3 | 2 | F |
| 4 | 1 | G |
| 4 | 2 | H |

## Stage Diagram

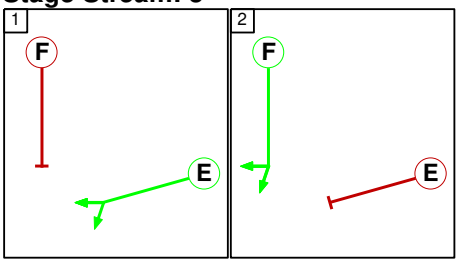
### Stage Stream: 1



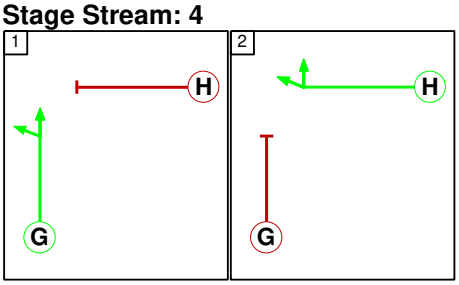
**Stage Stream: 2**




**Stage Stream: 3**




**Stage Stream: 4**




## Prohibited Stage Change

**Stage Stream: 1**

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

**Stage Stream: 2**

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

**Stage Stream: 3**

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

**Stage Stream: 4**

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

## Lane Input Data

| 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 (Upton Valley Way) | U | A | 2 | 3 | 10.0 | Geom | - | 3.55 | 0.00 | Y | Arm 2 Left | Inf |
| 1/2 (Upton Valley Way) | U | A | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 2 Left | Inf |
| 1/3 (Upton Valley Way) | U | A | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 3 Ahead | Inf |
| 1/4 (Upton Valley Way) | U | A | 2 | 3 | 10.0 | Geom | - | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf |
| 2/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 2/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 3/1 | U | D | 2 | 3 | 10.4 | User | 1900 | - | - | - | - | - |
| 3/2 | U | D | 2 | 3 | 10.4 | User | 1900 | - | - | - | - | - |
| 3/3 | U | D | 2 | 3 | 3.0 | User | 1900 | - | - | - | - | - |
| 4/1 (A5076 Upton Way) | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| 4/2 (A5076 Upton Way) | U | C | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf |
| 4/3 (A5076 Upton Way) | U | C | 2 | 3 | 5.0 | Geom | - | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf |
| 5/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 5/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 5/3 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 6/1 | U | F | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 6/2 | U | F | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 6/3 | U | F | 2 | 3 | 4.0 | User | 1900 | - | - | - | - | - |
| 7/1 (Danes Camp Way) | U | E | 2 | 3 | 12.0 | Geom | - | 3.50 | 0.00 | Y | Arm 8 Left | Inf |
| | | | | | | | | | | | Arm 9 Ahead | Inf |
| 7/2 (Danes Camp Way) | U | E | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 9 Ahead | Inf |
| 7/3 (Danes Camp Way) | U | E | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 9 Ahead | Inf |
| 7/4 (Danes Camp Way) | U | E | 2 | 3 | 12.0 | Geom | - | 3.50 | 0.00 | Y | Arm 9 Ahead | Inf |
| 8/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 8/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 9/1 | U | H | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 9/2 | U | H | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/3 | U | H | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 9/4 | U | H | 2 | 3 | 9.6 | User | 1900 | - | - | - | - | - |
| 10/1 (A5123) | U | G | 2 | 3 | 18.0 | Geom | - | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf |
| | | | | | | | | | | | Arm 12 Left | Inf |
| 10/2 (A5123) | U | G | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 11 Ahead | Inf |
| 10/3 (A5123) | U | G | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf |
| 11/1 | U | B | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 11/2 | U | B | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 11/3 | U | B | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 12/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 12/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 PM Peak - sensitivity' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 7: '2031 J3 PM Peak - sensitivity' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 AM Peak'** (FG1: '2031 D1 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 1214 | 783 | 183 | 2180 |
| | B | 1187 | 0 | 965 | 616 | 2768 |
| | C | 668 | 1057 | 0 | 32 | 1757 |
| | D | 327 | 371 | 285 | 5 | 988 |
| | Tot. | 2182 | 2642 | 2033 | 836 | 7693 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 AM Peak |
|---|---|
| 1/1 (short) | 158 |
| 1/2 (with short) | 327(In)<br>169(Out) |
| 1/3 (with short) | 661(In)<br>342(Out) |
| ¼ (short) | 319 |
| 2/1 | 1086 |
| 2/2 | 1096 |
| 3/1 | 726 |
| 3/2 (with short) | 992(In)<br>702(Out) |
| 3/3 (short) | 290 |
| 4/1 | 1214 |
| 4/2 (with short) | 966(In)<br>381(Out) |
| 4/3 (short) | 585 |
| 5/1 | 1214 |
| 5/2 | 726 |
| 5/3 | 702 |
| 6/1 | 595 |
| 6/2 (with short) | 661(In)<br>473(Out) |
| 6/3 (short) | 188 |
| 7/1 (short) | 1191 |
| 7/2 (with short) | 1581(In)<br>390(Out) |
| 7/3 (with short) | 1187(In)<br>594(Out) |
| 7/4 (short) | 593 |
| 8/1 | 1560 |
| 8/2 | 473 |
| 9/1 | 321 |
| 9/2 | 483 |
| 9/3 | 594 |
| 9/4 | 593 |
| 10/1 (short) | 366 |
| 10/2 (with short) | 700(In)<br>334(Out) |
| 10/3 | 1057 |
| 11/1 | 928 |
| 11/2 | 927 |
| 11/3 | 1057 |
| 12/1 | 353 |
| 12/2 | 483 |

## Lane Saturation Flows

| 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 (Upton Valley Way) | 3.55 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1970 | 1970 |
| ½ (Upton Valley Way) | 3.50 | 0.00 | N | Arm 2 Left | Inf | 100.0 % | 2105 | 2105 |
| 1/3(Upton Valley Way) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| ¼ (Upton Valley Way) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 (A5076 Upton Way Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A5076 Upton Way) | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 4/3 (A5076 Upton Way) | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 6/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 6/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/1 (Danes Camp Way) | 3.50 | 0.00 | Y | Arm 8 Left | Inf | 81.0 % | 1965 | 1965 |
| | | | | Arm 9 Ahead | Inf | 19.0 % | | |
| 7/2 (Danes Camp Way) | 3.50 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 7/3 (Danes Camp Way) | 3.50 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 7/4 (Danes Camp Way) | 3.50 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/1 (A5123) | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf | 91.3 % | 1965 | 1965 |
| | | | | Arm 12 Left | Inf | 8.7 % | | |
| 10/2 (A5123) | 3.50 | 0.00 | N | Arm 11 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 10/3 (A5123) | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 11/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 3: '2031 J3 AM Peak'** (FG5: '2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

### Desired Flow :

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 112 | 1001 | 103 | 1216 |
| | B | 1104 | 0 | 1508 | 377 | 2989 |
| | C | 771 | 953 | 1 | 35 | 1760 |
| | D | 355 | 698 | 329 | 11 | 1393 |
| | Tot. | 2230 | 1763 | 2839 | 526 | 7358 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 AM Peak |
|---|---|
| 1/1 (short) | 172 |
| ½ (with short) | 355(In) 183(Out) |
| 1/3 (with short) | 1038(In) 536(Out) |
| ¼ (short) | 502 |
| 2/1 | 1109 |
| 2/2 | 1121 |
| 3/1 | 806 |
| 3/2 (with short) | 1186(In) 845(Out) |
| 3/3 (short) | 341 |
| 4/1 | 112 |
| 4/2 (with short) | 1104(In) 490(Out) |
| 4/3 (short) | 614 |
| 5/1 | 112 |
| 5/2 | 806 |
| 5/3 | 845 |
| 6/1 | 690 |
| 6/2 (with short) | 755(In) 641(Out) |
| 6/3 (short) | 114 |
| 7/1 (short) | 1687 |
| 7/2 (with short) | 1885(In) 198(Out) |
| 7/3 (with short) | 1104(In) 552(Out) |
| 7/4 (short) | 552 |
| 8/1 | 2198 |
| 8/2 | 641 |
| 9/1 | 266 |
| 9/2 | 225 |
| 9/3 | 552 |
| 9/4 | 552 |
| 10/1 (short) | 420 |
| 10/2 (with short) | 806(In) 386(Out) |
| 10/3 | 954 |
| 11/1 | 937 |
| 11/2 | 938 |
| 11/3 | 954 |
| 12/1 | 301 |
| 12/2 | 225 |

## Lane Saturation Flows

| 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 (Upton Valley Way) | 3.55 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1970 | 1970 |
| ½ (Upton Valley Way) | 3.50 | 0.00 | N | Arm 2 Left | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (Upton Valley Way) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| ¼ (Upton Valley Way) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 (A5076 Upton Way Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A5076 Upton Way) | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 4/3 (A5076 Upton Way) | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 6/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 6/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/1 (Danes Camp Way) | 3.50 | 0.00 | Y | Arm 8 Left | Inf | 89.4 % | 1965 | 1965 |
| | | | | Arm 9 Ahead | Inf | 10.6 % | | |
| 7/2 (Danes Camp Way) | 3.50 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 7/3 (Danes Camp Way) | 3.50 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 7/4 (Danes Camp Way) | 3.50 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/1 (A5123) | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf | 91.7 % | 1965 | 1965 |
| | | | | Arm 12 Left | Inf | 8.3 % | | |
| 10/2 (A5123) | 3.50 | 0.00 | N | Arm 11 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 10/3 (A5123) | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 11/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 4: '2031 D1 PM Peak'** (FG2: '2031 D1 PM Peak - sensitivity', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

### Desired Flow :

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 1490 | 619 | 115 | 2224 |
| | B | 1307 | 0 | 743 | 373 | 2423 |
| | C | 1110 | 820 | 0 | 95 | 2025 |
| | D | 130 | 161 | 33 | 6 | 330 |
| | Tot. | 2547 | 2471 | 1395 | 589 | 7002 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 PM Peak |
|---|---|
| 1/1 (short) | 63 |
| ½ (with short) | 130(In) 67(Out) |
| 1/3 (with short) | 200(In) 82(Out) |
| ¼ (short) | 118 |
| 2/1 | 1227 |
| 2/2 | 1320 |
| 3/1 | 507 |
| 3/2 (with short) | 513(In) 474(Out) |
| 3/3 (short) | 39 |
| 4/1 | 1490 |
| 4/2 (with short) | 734(In) 358(Out) |
| 4/3 (short) | 376 |
| 5/1 | 1490 |
| 5/2 | 507 |
| 5/3 | 474 |
| 6/1 | 358 |
| 6/2 (with short) | 415(In) 294(Out) |
| 6/3 (short) | 121 |
| 7/1 (short) | 743 |
| 7/2 (with short) | 1116(In) 373(Out) |
| 7/3 (with short) | 1307(In) 676(Out) |
| 7/4 (short) | 631 |
| 8/1 | 1101 |
| 8/2 | 294 |
| 9/1 | 121 |
| 9/2 | 373 |
| 9/3 | 676 |
| 9/4 | 631 |
| 10/1 (short) | 583 |
| 10/2 (with short) | 1205(In) 622(Out) |
| 10/3 | 820 |
| 11/1 | 1164 |
| 11/2 | 1253 |
| 11/3 | 820 |
| 12/1 | 216 |
| 12/2 | 373 |

## Lane Saturation Flows

| 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 (Upton Valley Way) | 3.55 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1970 | 1970 |
| ½ (Upton Valley Way) | 3.50 | 0.00 | N | Arm 2 Left | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (Upton Valley Way) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| ¼ (Upton Valley Way) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 (A5076 Upton Way Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A5076 Upton Way) | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 4/3 (A5076 Upton Way) | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 6/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 6/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/1 (Danes Camp Way) | 3.50 | 0.00 | Y | Arm 8 Left | Inf | 100.0 % | 1965 | 1965 |
| | | | | Arm 9 Ahead | Inf | 0.0 % | | |
| 7/2 (Danes Camp Way) | 3.50 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 7/3 (Danes Camp Way) | 3.50 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 7/4 (Danes Camp Way) | 3.50 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/1 (A5123) | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf | 83.7 % | 1965 | 1965 |
| | | | | Arm 12 Left | Inf | 16.3 % | | |
| 10/2 (A5123) | 3.50 | 0.00 | N | Arm 11 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 10/3 (A5123) | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 11/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 6: '2031 J3 PM Peak - adjusted'** (FG7: '2031 J3 PM Peak - sensitivity', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

### Desired Flow :

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 1431 | 654 | 139 | 2224 |
| | B | 1218 | 0 | 737 | 426 | 2381 |
| | C | 1282 | 947 | 0 | 110 | 2339 |
| | D | 134 | 144 | 30 | 6 | 314 |
| | Tot. | 2634 | 2522 | 1421 | 681 | 7258 |

## Traffic Lane Flows

| Lane | Scenario 6: 2031 J3 PM Peak - adjusted |
|---|---|
| 1/1 (short) | 65 |
| ½ (with short) | 134(In) 69(Out) |
| 1/3 (with short) | 180(In) 95(Out) |
| ¼ (short) | 85 |
| 2/1 | 1313 |
| 2/2 | 1321 |
| 3/1 | 569 |
| 3/2 (with short) | 558(In) 522(Out) |
| 3/3 (short) | 36 |
| 4/1 | 1431 |
| 4/2 (with short) | 793(In) 387(Out) |
| 4/3 (short) | 406 |
| 5/1 | 1431 |
| 5/2 | 569 |
| 5/3 | 522 |
| 6/1 | 388 |
| 6/2 (with short) | 441(In) 296(Out) |
| 6/3 (short) | 145 |
| 7/1 (short) | 776 |
| 7/2 (with short) | 1163(In) 387(Out) |
| 7/3 (with short) | 1218(In) 629(Out) |
| 7/4 (short) | 589 |
| 8/1 | 1125 |
| 8/2 | 296 |
| 9/1 | 142 |
| 9/2 | 429 |
| 9/3 | 629 |
| 9/4 | 589 |
| 10/1 (short) | 729 |
| 10/2 (with short) | 1392(In) 663(Out) |
| 10/3 | 947 |
| 11/1 | 1248 |
| 11/2 | 1252 |
| 11/3 | 947 |
| 12/1 | 252 |
| 12/2 | 429 |

## Lane Saturation Flows

| Lane | Lane Width | Gradient | Nearside Lane | Allowed Turns | Turning Radius | Turning Prop. | Sat Flow (PCU/Hr) | Flared Sat Flow (PCU/Hr) |
|---|---|---|---|---|---|---|---|---|
| 1/1 (Upton Valley Way) | 3.55 | 0.00 | Y | Arm 2 Left | Inf | 100.0 % | 1970 | 1970 |
| ½ (Upton Valley Way) | 3.50 | 0.00 | N | Arm 2 Left | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (Upton Valley Way) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| ¼ (Upton Valley Way) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 (A5076 Upton Way Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| 4/2 (A5076 Upton Way) | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 4/3 (A5076 Upton Way) | 3.50 | 0.00 | Y | Arm 6 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 5/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 5/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 6/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 6/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/1 (Danes Camp Way) | 3.50 | 0.00 | Y | Arm 8 Left | Inf | 95.0 % | 1965 | 1965 |
| | | | | Arm 9 Ahead | Inf | 5.0 % | | |
| 7/2 (Danes Camp Way) | 3.50 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 7/3 (Danes Camp Way) | 3.50 | 0.00 | N | Arm 9 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 7/4 (Danes Camp Way) | 3.50 | 0.00 | Y | Arm 9 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 8/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 9/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/1 (A5123) | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf | 84.9 % | 1965 | 1965 |
| | | | | Arm 12 Left | Inf | 15.1 % | | |
| 10/2 (A5123) | 3.50 | 0.00 | N | Arm 11 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 10/3 (A5123) | 3.50 | 0.00 | Y | Arm 11 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 11/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 12/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/2 | Infinite Saturation Flow | | | | | | Inf | Inf |

**Scenario 1: '2031 D1 AM Peak'** (FG1: '2031 D1 AM Peak', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 51 | 4 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 13 | 35 |
| Change Point | 39 | 58 |

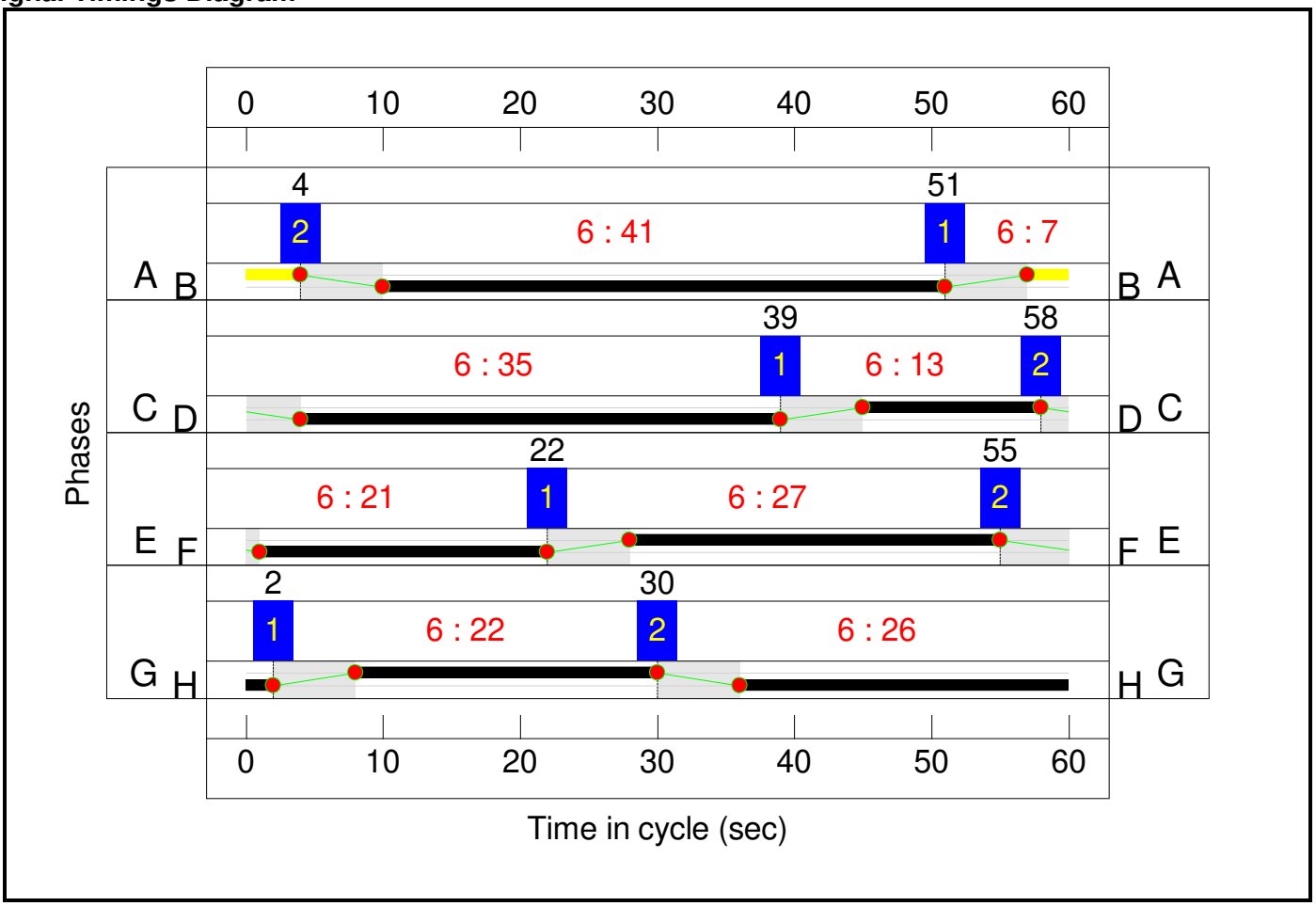
### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 27 | 21 |
| Change Point | 22 | 55 |

### Stage Stream: 4

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 26 |
| Change Point | 2 | 30 |

## Signal Timings Diagram



## 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: A5123/A5076 Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **146.6%** |
| **Unnamed Junction** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **146.6%** |
| 1/2+1/1 | Upton Valley Way Left | U | 1 | N/A | A | | 1 | 7 | - | 327 | 2105:1970 | 281+263 | 60.2 : 60.2% |
| 1/3+1/4 | Upton Valley Way Ahead | U | 1 | N/A | A | | 1 | 7 | - | 661 | 2105:1965 | 281+262 | 121.9 : 121.8% |
| 3/1 | Ahead | U | 2 | N/A | D | | 1 | 35 | - | 726 | 1900 | 1140 | 48.6% |
| 3/2+3/3 | Ahead Right | U | 2 | N/A | D | | 1 | 35 | - | 992 | 1900:1900 | 852+352 | 59.1 : 67.6% |
| 4/2+4/3 | A5076 Upton Way Ahead | U | 2 | N/A | C | | 1 | 13 | - | 966 | 1965:1965 | 260+399 | 146.6 : 146.6% |
| 6/1 | Ahead | U | 3 | N/A | F | | 1 | 21 | - | 595 | 1900 | 697 | 62.5% |
| 6/2+6/3 | Ahead Right | U | 3 | N/A | F | | 1 | 21 | - | 661 | 1900:1900 | 557+221 | 59.7 : 58.2% |
| 7/2+7/1 | Danes Camp Way Left Ahead | U | 3 | N/A | E | | 1 | 27 | - | 1581 | 2105:1965 | 285+870 | 136.8 : 136.8% |
| 7/3+7/4 | Danes Camp Way Ahead | U | 3 | N/A | E | | 1 | 27 | - | 1187 | 2105:1965 | 823+822 | 72.2 : 72.2% |
| 9/1 | Ahead | U | 4 | N/A | H | | 1 | 26 | - | 321 | 1900 | 855 | 26.9% |
| 9/2 | Ahead | U | 4 | N/A | H | | 1 | 26 | - | 483 | 1900 | 855 | 40.8% |
| 9/3 | Right | U | 4 | N/A | H | | 1 | 26 | - | 594 | 1900 | 855 | 69.5% |
| 9/4 | Right | U | 4 | N/A | H | | 1 | 26 | - | 593 | 1900 | 855 | 69.4% |
| 10/2+10/1 | A5123 Ahead Left | U | 4 | N/A | G | | 1 | 22 | - | 700 | 2105:1965 | 807+753 | 41.4 : 48.6% |
| 10/3 | A5123 Ahead | U | 4 | N/A | G | | 1 | 22 | - | 1057 | 1965 | 753 | 140.3% |
| 11/1 | Ahead | U | 1 | N/A | B | | 1 | 41 | - | 928 | 1900 | 1330 | 69.8% |
| 11/2 | Ahead | U | 1 | N/A | B | | 1 | 41 | - | 927 | 1900 | 1330 | 69.7% |
| 11/3 | Right | U | 1 | N/A | B | | 1 | 41 | - | 1057 | 1900 | 1330 | 56.6% |

| 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: A5123/A5076 Gyratory - J3 Cumulative Impact** | **-** | **-** | **0** | **0** | **0** | **73.1** | **596.0** | **0.0** | **669.1** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **0** | **0** | **0** | **73.1** | **596.0** | **0.0** | **669.1** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 327 | 327 | - | - | - | 2.2 | 0.8 | - | 3.0 | 32.8 | 2.6 | 0.8 | 3.4 |
| 1/3+1/4 | 661 | 543 | - | - | - | 8.5 | 61.8 | - | 70.4 | 383.3 | 7.1 | 61.8 | 68.9 |
| 3/1 | 554 | 554 | - | - | - | 0.5 | 0.5 | - | 1.0 | 6.4 | 7.4 | 0.5 | 7.8 |
| 3/2+3/3 | 742 | 742 | - | - | - | 0.4 | 0.8 | - | 1.2 | 6.0 | 9.9 | 0.8 | 10.7 |
| 4/2+4/3 | 966 | 659 | - | - | - | 15.9 | 155.0 | - | 170.9 | 637.0 | 22.0 | 155.0 | 177.0 |
| 6/1 | 436 | 436 | - | - | - | 0.9 | 0.8 | - | 1.8 | 14.5 | 5.5 | 0.8 | 6.3 |
| 6/2+6/3 | 462 | 462 | - | - | - | 1.1 | 0.7 | - | 1.8 | 14.0 | 5.2 | 0.7 | 6.0 |
| 7/2+7/1 | 1581 | 1156 | - | - | - | 17.2 | 214.6 | - | 231.8 | 527.8 | 32.6 | 214.6 | 247.2 |
| 7/3+7/4 | 1187 | 1187 | - | - | - | 4.0 | 1.3 | - | 5.3 | 16.0 | 7.4 | 1.3 | 8.7 |
| 9/1 | 230 | 230 | - | - | - | 0.6 | 0.2 | - | 0.8 | 11.7 | 1.8 | 0.2 | 2.0 |
| 9/2 | 349 | 349 | - | - | - | 0.9 | 0.3 | - | 1.3 | 13.0 | 4.9 | 0.3 | 5.2 |
| 9/3 | 594 | 594 | - | - | - | 0.6 | 1.1 | - | 1.8 | 10.7 | 8.4 | 1.1 | 9.5 |
| 9/4 | 593 | 593 | - | - | - | 0.6 | 1.1 | - | 1.7 | 10.3 | 8.4 | 1.1 | 9.5 |
| 10/2+10/1 | 700 | 700 | - | - | - | 2.7 | 0.4 | - | 3.1 | 15.9 | 4.6 | 0.4 | 5.0 |
| 10/3 | 1057 | 753 | - | - | - | 13.8 | 153.6 | - | 167.4 | 570.1 | 22.7 | 153.6 | 176.3 |
| 11/1 | 928 | 928 | - | - | - | 1.5 | 1.1 | - | 2.7 | 10.3 | 8.7 | 1.1 | 9.9 |
| 11/2 | 927 | 927 | - | - | - | 1.5 | 1.1 | - | 2.7 | 10.4 | 8.7 | 1.1 | 9.9 |
| 11/3 | 753 | 753 | - | - | - | 0.1 | 0.7 | - | 0.7 | 3.5 | 0.4 | 0.7 | 1.1 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 | PRC for Signalled Lanes (%): | -35.4 | Total Delay for Signalled Lanes (pcuHr): | 79.44 | Cycle Time (s): 60 |
| C1 | Stream: 2 | PRC for Signalled Lanes (%): | -62.8 | Total Delay for Signalled Lanes (pcuHr): | 173.14 | Cycle Time (s): 60 |
| C1 | Stream: 3 | PRC for Signalled Lanes (%): | -52.0 | Total Delay for Signalled Lanes (pcuHr): | 240.59 | Cycle Time (s): 60 |
| C1 | Stream: 4 | PRC for Signalled Lanes (%): | -55.9 | Total Delay for Signalled Lanes (pcuHr): | 175.94 | Cycle Time (s): 60 |
| | | PRC Over All Lanes (%): | -62.8 | Total Delay Over All Lanes(pcuHr): | 669.11 | |

**Scenario 3: '2031 J3 AM Peak'** (FG5: '2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 9 | 39 |
| Change Point | 0 | 15 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 12 | 36 |
| Change Point | 52 | 10 |

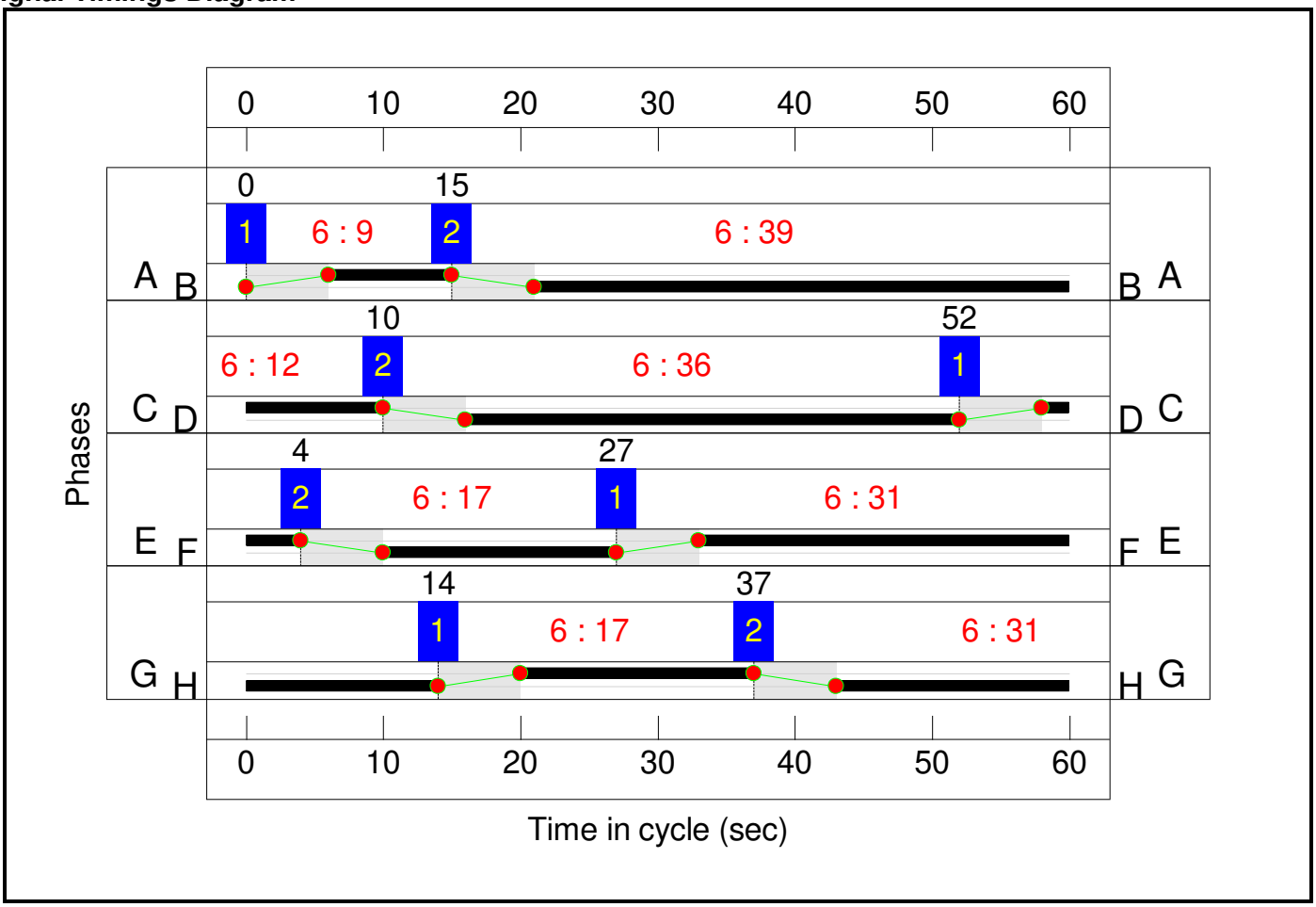
### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 31 | 17 |
| Change Point | 27 | 4 |

### Stage Stream: 4

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 31 |
| Change Point | 14 | 37 |

## Signal Timings Diagram



## 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: A5123/A5076 Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **166.2%** |
| **Unnamed Junction** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **166.2%** |
| 1/2+1/1 | Upton Valley Way Left | U | 1 | N/A | A | | 1 | 9 | - | 355 | 2105:1970 | 351+328 | 52.2 : 52.4% |
| 1/3+1/4 | Upton Valley Way Ahead | U | 1 | N/A | A | | 1 | 9 | - | 1038 | 2105:1965 | 351+327 | 152.8 : 153.3% |
| 3/1 | Ahead | U | 2 | N/A | D | | 1 | 36 | - | 806 | 1900 | 1172 | 44.2% |
| 3/2+3/3 | Ahead Right | U | 2 | N/A | D | | 1 | 36 | - | 1186 | 1900:1900 | 879+355 | 60.0 : 62.7% |
| 4/2+4/3 | A5076 Upton Way Ahead | U | 2 | N/A | C | | 1 | 12 | - | 1104 | 1965:1965 | 298+373 | 164.7 : 164.7% |
| 6/1 | Ahead | U | 3 | N/A | F | | 1 | 17 | - | 690 | 1900 | 570 | 75.1% |
| 6/2+6/3 | Ahead Right | U | 3 | N/A | F | | 1 | 17 | - | 755 | 1900:1900 | 509+90 | 77.6 : 77.0% |
| 7/2+7/1 | Danes Camp Way Left Ahead | U | 3 | N/A | E | | 1 | 31 | - | 1885 | 2105:1965 | 119+1015 | 166.2 : 166.2% |
| 7/3+7/4 | Danes Camp Way Ahead | U | 3 | N/A | E | | 1 | 31 | - | 1104 | 2105:1965 | 889+889 | 62.1 : 62.1% |
| 9/1 | Ahead | U | 4 | N/A | H | | 1 | 31 | - | 266 | 1900 | 1013 | 15.9% |
| 9/2 | Ahead | U | 4 | N/A | H | | 1 | 31 | - | 225 | 1900 | 1013 | 13.4% |
| 9/3 | Right | U | 4 | N/A | H | | 1 | 31 | - | 552 | 1900 | 1013 | 54.5% |
| 9/4 | Right | U | 4 | N/A | H | | 1 | 31 | - | 552 | 1900 | 1013 | 54.5% |
| 10/2+10/1 | A5123 Ahead Left | U | 4 | N/A | G | | 1 | 17 | - | 806 | 2105:1965 | 632+590 | 61.1 : 71.2% |
| 10/3 | A5123 Ahead | U | 4 | N/A | G | | 1 | 17 | - | 954 | 1965 | 590 | 161.8% |
| 11/1 | Ahead | U | 1 | N/A | B | | 1 | 39 | - | 937 | 1900 | 1267 | 74.0% |
| 11/2 | Ahead | U | 1 | N/A | B | | 1 | 39 | - | 938 | 1900 | 1267 | 74.1% |
| 11/3 | Right | U | 1 | N/A | B | | 1 | 39 | - | 954 | 1900 | 1267 | 46.5% |

| 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: A5123/A5076 Gyratory - J3 Cumulative Impact** | **-** | **-** | **0** | **0** | **0** | **102.2** | **970.8** | **0.0** | **1072.9** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **0** | **0** | **0** | **102.2** | **970.8** | **0.0** | **1072.9** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 355 | 355 | - | - | - | 2.3 | 0.5 | - | 2.8 | 28.4 | 2.7 | 0.5 | 3.3 |
| 1/3+1/4 | 1038 | 678 | - | - | - | 17.9 | 181.3 | - | 199.2 | 690.9 | 15.9 | 181.3 | 197.2 |
| 3/1 | 518 | 518 | - | - | - | 0.9 | 0.4 | - | 1.3 | 8.9 | 8.2 | 0.4 | 8.6 |
| 3/2+3/3 | 750 | 750 | - | - | - | 0.8 | 0.8 | - | 1.6 | 7.5 | 10.8 | 0.8 | 11.5 |
| 4/2+4/3 | 1104 | 670 | - | - | - | 20.8 | 218.1 | - | 238.8 | 778.7 | 24.9 | 218.1 | 242.9 |
| 6/1 | 428 | 428 | - | - | - | 0.7 | 1.5 | - | 2.2 | 18.6 | 5.0 | 1.5 | 6.5 |
| 6/2+6/3 | 465 | 465 | - | - | - | 0.8 | 1.7 | - | 2.5 | 19.3 | 5.7 | 1.7 | 7.4 |
| 7/2+7/1 | 1885 | 1134 | - | - | - | 32.4 | 376.6 | - | 409.0 | 781.2 | 50.3 | 376.6 | 426.9 |
| 7/3+7/4 | 1104 | 1104 | - | - | - | 2.8 | 0.8 | - | 3.6 | 11.6 | 5.8 | 0.8 | 6.6 |
| 9/1 | 161 | 161 | - | - | - | 0.2 | 0.1 | - | 0.3 | 6.8 | 0.9 | 0.1 | 1.0 |
| 9/2 | 136 | 136 | - | - | - | 0.2 | 0.1 | - | 0.3 | 7.4 | 1.5 | 0.1 | 1.6 |
| 9/3 | 552 | 552 | - | - | - | 0.7 | 0.6 | - | 1.3 | 8.6 | 7.2 | 0.6 | 7.8 |
| 9/4 | 552 | 552 | - | - | - | 0.7 | 0.6 | - | 1.3 | 8.4 | 7.2 | 0.6 | 7.8 |
| 10/2+10/1 | 806 | 806 | - | - | - | 4.1 | 1.0 | - | 5.1 | 22.7 | 6.2 | 1.0 | 7.1 |
| 10/3 | 954 | 589 | - | - | - | 15.4 | 183.5 | - | 199.0 | 750.8 | 22.8 | 183.5 | 206.3 |
| 11/1 | 937 | 937 | - | - | - | 0.7 | 1.4 | - | 2.1 | 8.0 | 6.3 | 1.4 | 7.8 |
| 11/2 | 938 | 938 | - | - | - | 0.7 | 1.4 | - | 2.2 | 8.3 | 2.3 | 1.4 | 3.8 |
| 11/3 | 589 | 589 | - | - | - | 0.1 | 0.4 | - | 0.5 | 3.0 | 0.3 | 0.4 | 0.8 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -70.3 | Total Delay for Signalled Lanes (pcuHr): | 206.72 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -83.0 | Total Delay for Signalled Lanes (pcuHr): | 241.67 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | -84.6 | Total Delay for Signalled Lanes (pcuHr): | 417.31 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | -79.8 | Total Delay for Signalled Lanes (pcuHr): | 207.22 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -84.6 | Total Delay Over All Lanes(pcuHr): | 1072.92 | | |

**Scenario 4: '2031 D1 PM Peak'** (FG2: '2031 D1 PM Peak - sensitivity', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 0 | 13 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 14 | 34 |
| Change Point | 37 | 57 |

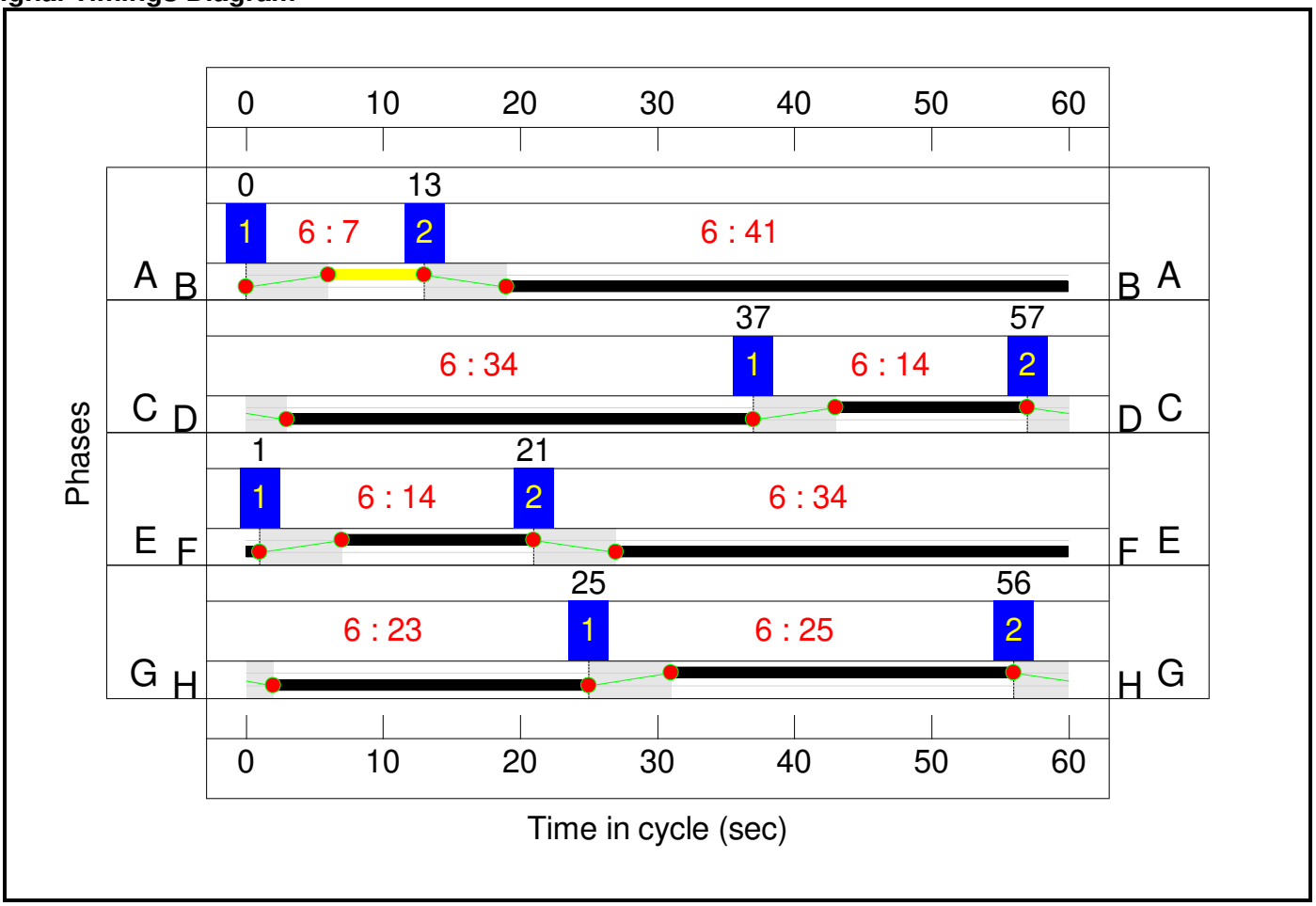
### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 14 | 34 |
| Change Point | 1 | 21 |

### Stage Stream: 4

| Stage | 1 | 2 |
|---|---|---|
| Duration | 25 | 23 |
| Change Point | 25 | 56 |

## Signal Timings Diagram



## 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: A5123/A5076 Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **151.2%** |
| **Unnamed Junction** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **151.2%** |
| 1/2+1/1 | Upton Valley Way Left | U | 1 | N/A | A | | 1 | 7 | - | 130 | 2105:1970 | 281+263 | 23.9 : 24.0% |
| 1/3+1/4 | Upton Valley Way Ahead | U | 1 | N/A | A | | 1 | 7 | - | 200 | 2105:1965 | 281+262 | 29.2 : 45.0% |
| 3/1 | Ahead | U | 2 | N/A | D | | 1 | 34 | - | 507 | 1900 | 1108 | 45.7% |
| 3/2+3/3 | Ahead Right | U | 2 | N/A | D | | 1 | 34 | - | 513 | 1900:1900 | 1029+85 | 46.1 : 46.1% |
| 4/2+4/3 | A5076 Upton Way Ahead | U | 2 | N/A | C | | 1 | 14 | - | 734 | 1965:1965 | 381+401 | 93.8 : 93.8% |
| 6/1 | Ahead | U | 3 | N/A | F | | 1 | 34 | - | 358 | 1900 | 1108 | 32.3% |
| 6/2+6/3 | Ahead Right | U | 3 | N/A | F | | 1 | 34 | - | 415 | 1900:1900 | 846+348 | 34.8 : 34.8% |
| 7/2+7/1 | Danes Camp Way Left Ahead | U | 3 | N/A | E | | 1 | 14 | - | 1116 | 2105:1965 | 247+491 | 151.2 : 151.2% |
| 7/3+7/4 | Danes Camp Way Ahead | U | 3 | N/A | E | | 1 | 14 | - | 1307 | 2105:1965 | 526+491 | 128.5 : 128.4% |
| 9/1 | Ahead | U | 4 | N/A | H | | 1 | 23 | - | 121 | 1900 | 760 | 15.9% |
| 9/2 | Ahead | U | 4 | N/A | H | | 1 | 23 | - | 373 | 1900 | 760 | 32.4% |
| 9/3 | Right | U | 4 | N/A | H | | 1 | 23 | - | 676 | 1900 | 760 | 69.2% |
| 9/4 | Right | U | 4 | N/A | H | | 1 | 23 | - | 631 | 1900 | 760 | 64.6% |
| 10/2+10/1 | A5123 Ahead Left | U | 4 | N/A | G | | 1 | 25 | - | 1205 | 2105:1965 | 912+852 | 68.2 : 68.5% |
| 10/3 | A5123 Ahead | U | 4 | N/A | G | | 1 | 25 | - | 820 | 1965 | 852 | 96.3% |
| 11/1 | Ahead | U | 1 | N/A | B | | 1 | 41 | - | 1164 | 1900 | 1330 | 76.3% |
| 11/2 | Ahead | U | 1 | N/A | B | | 1 | 41 | - | 1253 | 1900 | 1330 | 83.7% |
| 11/3 | Right | U | 1 | N/A | B | | 1 | 41 | - | 820 | 1900 | 1330 | 61.7% |

| 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: A5123/A5076 Gyratory - J3 Cumulative Impact** | **-** | **-** | **0** | **0** | **0** | **52.7** | **362.2** | **0.0** | **414.9** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **0** | **0** | **0** | **52.7** | **362.2** | **0.0** | **414.9** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 130 | 130 | - | - | - | 0.8 | 0.2 | - | 1.0 | 27.7 | 1.0 | 0.2 | 1.1 |
| 1/3+1/4 | 200 | 200 | - | - | - | 1.3 | 0.3 | - | 1.6 | 29.0 | 1.8 | 0.3 | 2.1 |
| 3/1 | 507 | 507 | - | - | - | 1.3 | 0.4 | - | 1.7 | 12.3 | 3.6 | 0.4 | 4.0 |
| 3/2+3/3 | 513 | 513 | - | - | - | 1.2 | 0.4 | - | 1.6 | 11.4 | 5.2 | 0.4 | 5.6 |
| 4/2+4/3 | 734 | 734 | - | - | - | 4.3 | 6.1 | - | 10.3 | 50.7 | 6.9 | 6.1 | 12.9 |
| 6/1 | 358 | 358 | - | - | - | 0.0 | 0.2 | - | 0.2 | 2.5 | 0.1 | 0.2 | 0.4 |
| 6/2+6/3 | 415 | 415 | - | - | - | 0.1 | 0.3 | - | 0.4 | 3.5 | 9.3 | 0.3 | 9.5 |
| 7/2+7/1 | 1116 | 738 | - | - | - | 15.8 | 190.5 | - | 206.3 | 665.6 | 22.0 | 190.5 | 212.5 |
| 7/3+7/4 | 1307 | 1017 | - | - | - | 16.5 | 147.0 | - | 163.5 | 450.4 | 18.7 | 147.0 | 165.6 |
| 9/1 | 121 | 121 | - | - | - | 0.3 | 0.1 | - | 0.4 | 10.9 | 2.0 | 0.1 | 2.1 |
| 9/2 | 246 | 246 | - | - | - | 0.0 | 0.2 | - | 0.3 | 3.9 | 0.4 | 0.2 | 0.6 |
| 9/3 | 526 | 526 | - | - | - | 0.6 | 1.1 | - | 1.7 | 12.0 | 0.9 | 1.1 | 2.0 |
| 9/4 | 491 | 491 | - | - | - | 0.2 | 0.9 | - | 1.1 | 8.1 | 0.3 | 0.9 | 1.2 |
| 10/2+10/1 | 1205 | 1205 | - | - | - | 4.6 | 1.1 | - | 5.7 | 16.9 | 8.3 | 1.1 | 9.4 |
| 10/3 | 820 | 820 | - | - | - | 3.8 | 8.5 | - | 12.2 | 53.7 | 13.2 | 8.5 | 21.7 |
| 11/1 | 1014 | 1014 | - | - | - | 0.9 | 1.6 | - | 2.4 | 8.7 | 8.9 | 1.6 | 10.5 |
| 11/2 | 1113 | 1113 | - | - | - | 0.7 | 2.5 | - | 3.2 | 10.5 | 8.4 | 2.5 | 10.9 |
| 11/3 | 820 | 820 | - | - | - | 0.2 | 0.8 | - | 1.0 | 4.6 | 0.5 | 0.8 | 1.3 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 7.5 | Total Delay for Signalled Lanes (pcuHr): | 9.33 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -4.3 | Total Delay for Signalled Lanes (pcuHr): | 13.69 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | -68.1 | Total Delay for Signalled Lanes (pcuHr): | 370.50 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | -7.0 | Total Delay for Signalled Lanes (pcuHr): | 21.37 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -68.1 | Total Delay Over All Lanes(pcuHr): | 414.90 | | |

**Scenario 6: '2031 J3 PM Peak - adjusted'** (FG7: '2031 J3 PM Peak - sensitivity', Plan 1: 'Network Control Plan 1')

## Stage Timings

### Stage Stream: 1

| Stage | 1 | 2 |
|---|---|---|
| Duration | 7 | 41 |
| Change Point | 0 | 13 |

### Stage Stream: 2

| Stage | 1 | 2 |
|---|---|---|
| Duration | 14 | 34 |
| Change Point | 37 | 57 |

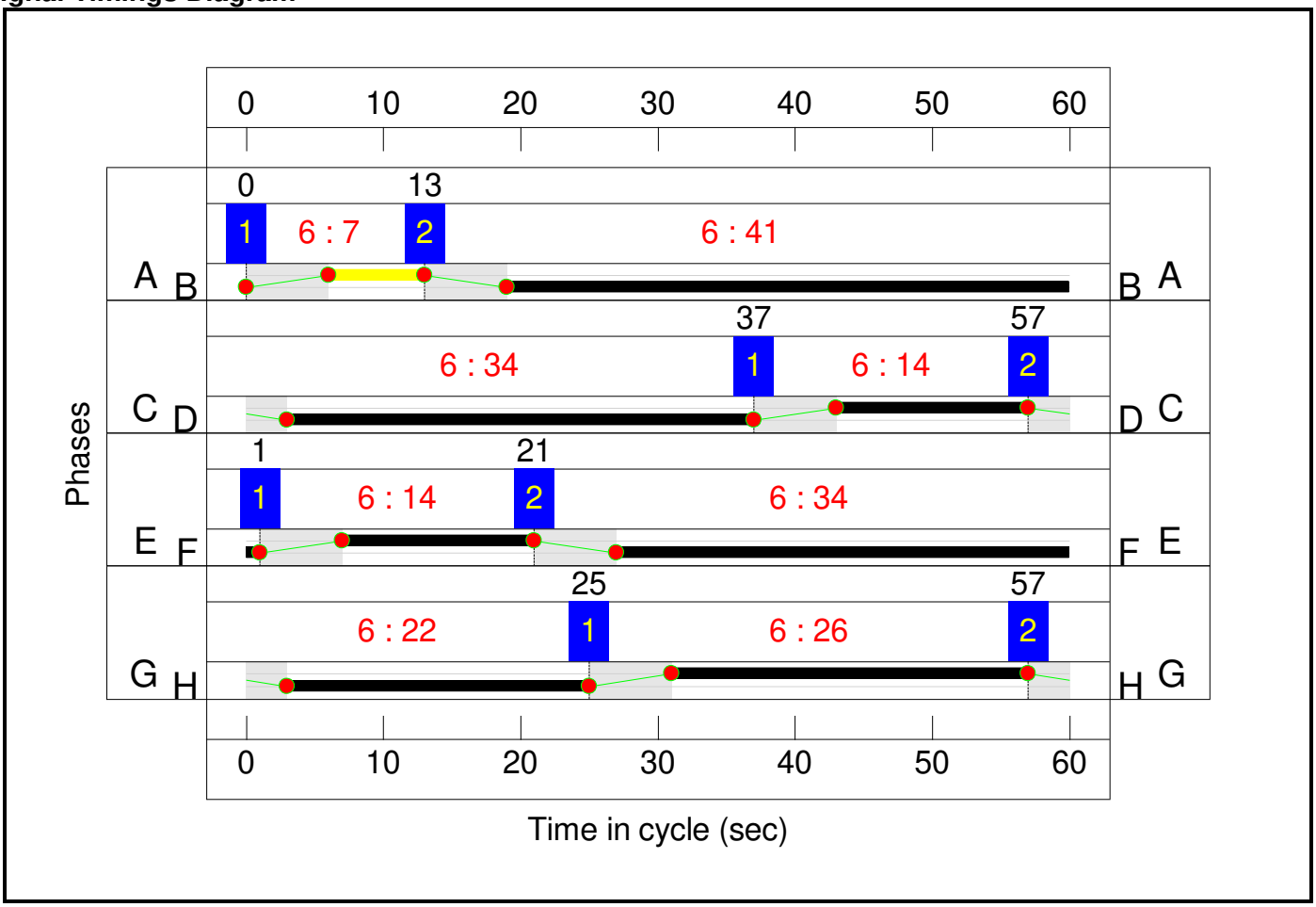
### Stage Stream: 3

| Stage | 1 | 2 |
|---|---|---|
| Duration | 14 | 34 |
| Change Point | 1 | 21 |

### Stage Stream: 4

| Stage | 1 | 2 |
|---|---|---|
| Duration | 26 | 22 |
| Change Point | 25 | 57 |

## Signal Timings Diagram



## 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: A5123/A5076 Gyratory - J3 Cumulative Impact** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **158.0%** |
| **Unnamed Junction** | - | - | **N/A** | - | - | | - | - | - | - | - | - | **158.0%** |
| 1/2+1/1 | Upton Valley Way Left | U | 1 | N/A | A | | 1 | 7 | - | 134 | 2105:1970 | 281+263 | 24.6 : 24.7% |
| 1/3+1/4 | Upton Valley Way Ahead | U | 1 | N/A | A | | 1 | 7 | - | 180 | 2105:1965 | 281+262 | 33.8 : 32.4% |
| 3/1 | Ahead | U | 2 | N/A | D | | 1 | 34 | - | 569 | 1900 | 1108 | 48.5% |
| 3/2+3/3 | Ahead Right | U | 2 | N/A | D | | 1 | 34 | - | 558 | 1900:1900 | 1039+72 | 47.2 : 50.2% |
| 4/2+4/3 | A5076 Upton Way Ahead | U | 2 | N/A | C | | 1 | 14 | - | 793 | 1965:1965 | 382+401 | 101.3 : 101.3% |
| 6/1 | Ahead | U | 3 | N/A | F | | 1 | 34 | - | 388 | 1900 | 1108 | 34.5% |
| 6/2+6/3 | Ahead Right | U | 3 | N/A | F | | 1 | 34 | - | 441 | 1900:1900 | 814+399 | 35.9 : 35.9% |
| 7/2+7/1 | Danes Camp Way Left Ahead | U | 3 | N/A | E | | 1 | 14 | - | 1163 | 2105:1965 | 245+491 | 158.0 : 158.0% |
| 7/3+7/4 | Danes Camp Way Ahead | U | 3 | N/A | E | | 1 | 14 | - | 1218 | 2105:1965 | 526+491 | 119.5 : 119.9% |
| 9/1 | Ahead | U | 4 | N/A | H | | 1 | 22 | - | 142 | 1900 | 728 | 17.4% |
| 9/2 | Ahead | U | 4 | N/A | H | | 1 | 22 | - | 429 | 1900 | 728 | 39.3% |
| 9/3 | Right | U | 4 | N/A | H | | 1 | 22 | - | 629 | 1900 | 728 | 72.3% |
| 9/4 | Right | U | 4 | N/A | H | | 1 | 22 | - | 589 | 1900 | 728 | 67.4% |
| 10/2+10/1 | A5123 Ahead Left | U | 4 | N/A | G | | 1 | 26 | - | 1392 | 2105:1965 | 807+884 | 82.2 : 82.4% |
| 10/3 | A5123 Ahead | U | 4 | N/A | G | | 1 | 26 | - | 947 | 1965 | 884 | 107.1% |
| 11/1 | Ahead | U | 1 | N/A | B | | 1 | 41 | - | 1248 | 1900 | 1330 | 86.1% |
| 11/2 | Ahead | U | 1 | N/A | B | | 1 | 41 | - | 1252 | 1900 | 1330 | 86.8% |
| 11/3 | Right | U | 1 | N/A | B | | 1 | 41 | - | 947 | 1900 | 1330 | 66.5% |

| 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: A5123/A5076 Gyratory - J3 Cumulative Impact** | **-** | **-** | **0** | **0** | **0** | **56.2** | **386.6** | **0.0** | **442.8** | **-** | **-** | **-** | **-** |
| **Unnamed Junction** | **-** | **-** | **0** | **0** | **0** | **56.2** | **386.6** | **0.0** | **442.8** | **-** | **-** | **-** | **-** |
| 1/2+1/1 | 134 | 134 | - | - | - | 0.9 | 0.2 | - | 1.0 | 27.7 | 1.0 | 0.2 | 1.2 |
| 1/3+1/4 | 180 | 180 | - | - | - | 1.2 | 0.2 | - | 1.4 | 28.6 | 1.4 | 0.2 | 1.7 |
| 3/1 | 538 | 538 | - | - | - | 1.3 | 0.5 | - | 1.7 | 11.6 | 3.4 | 0.5 | 3.9 |
| 3/2+3/3 | 527 | 527 | - | - | - | 1.3 | 0.5 | - | 1.7 | 11.8 | 5.5 | 0.5 | 5.9 |
| 4/2+4/3 | 793 | 782 | - | - | - | 4.9 | 17.0 | - | 21.9 | 99.3 | 8.6 | 17.0 | 25.6 |
| 6/1 | 383 | 383 | - | - | - | 0.0 | 0.3 | - | 0.3 | 2.6 | 0.1 | 0.3 | 0.4 |
| 6/2+6/3 | 436 | 436 | - | - | - | 0.1 | 0.3 | - | 0.4 | 3.3 | 9.3 | 0.3 | 9.6 |
| 7/2+7/1 | 1163 | 736 | - | - | - | 17.5 | 214.7 | - | 232.3 | 719.0 | 23.7 | 214.7 | 238.5 |
| 7/3+7/4 | 1218 | 1017 | - | - | - | 13.4 | 103.2 | - | 116.6 | 344.6 | 15.7 | 103.2 | 118.9 |
| 9/1 | 126 | 126 | - | - | - | 0.2 | 0.1 | - | 0.3 | 9.7 | 1.7 | 0.1 | 1.8 |
| 9/2 | 286 | 286 | - | - | - | 0.1 | 0.3 | - | 0.4 | 5.4 | 0.6 | 0.3 | 0.9 |
| 9/3 | 526 | 526 | - | - | - | 0.6 | 1.3 | - | 1.9 | 13.2 | 0.9 | 1.3 | 2.1 |
| 9/4 | 491 | 491 | - | - | - | 0.2 | 1.0 | - | 1.2 | 9.0 | 0.3 | 1.0 | 1.3 |
| 10/2+10/1 | 1392 | 1392 | - | - | - | 5.4 | 2.3 | - | 7.7 | 19.8 | 10.5 | 2.3 | 12.8 |
| 10/3 | 947 | 884 | - | - | - | 6.7 | 37.7 | - | 44.3 | 168.5 | 17.9 | 37.7 | 55.5 |
| 11/1 | 1145 | 1145 | - | - | - | 1.0 | 3.0 | - | 4.0 | 12.5 | 10.0 | 3.0 | 13.0 |
| 11/2 | 1154 | 1154 | - | - | - | 0.8 | 3.2 | - | 4.0 | 12.5 | 8.6 | 3.2 | 11.7 |
| 11/3 | 884 | 884 | - | - | - | 0.6 | 1.0 | - | 1.6 | 6.4 | 1.5 | 1.0 | 2.5 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 3.7 | Total Delay for Signalled Lanes (pcuHr): | 12.00 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -12.6 | Total Delay for Signalled Lanes (pcuHr): | 25.33 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | -75.5 | Total Delay for Signalled Lanes (pcuHr): | 349.55 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | -19.0 | Total Delay for Signalled Lanes (pcuHr): | 55.92 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -75.5 | Total Delay Over All Lanes(pcuHr): | 442.80 | | |

# JUNCTION 21

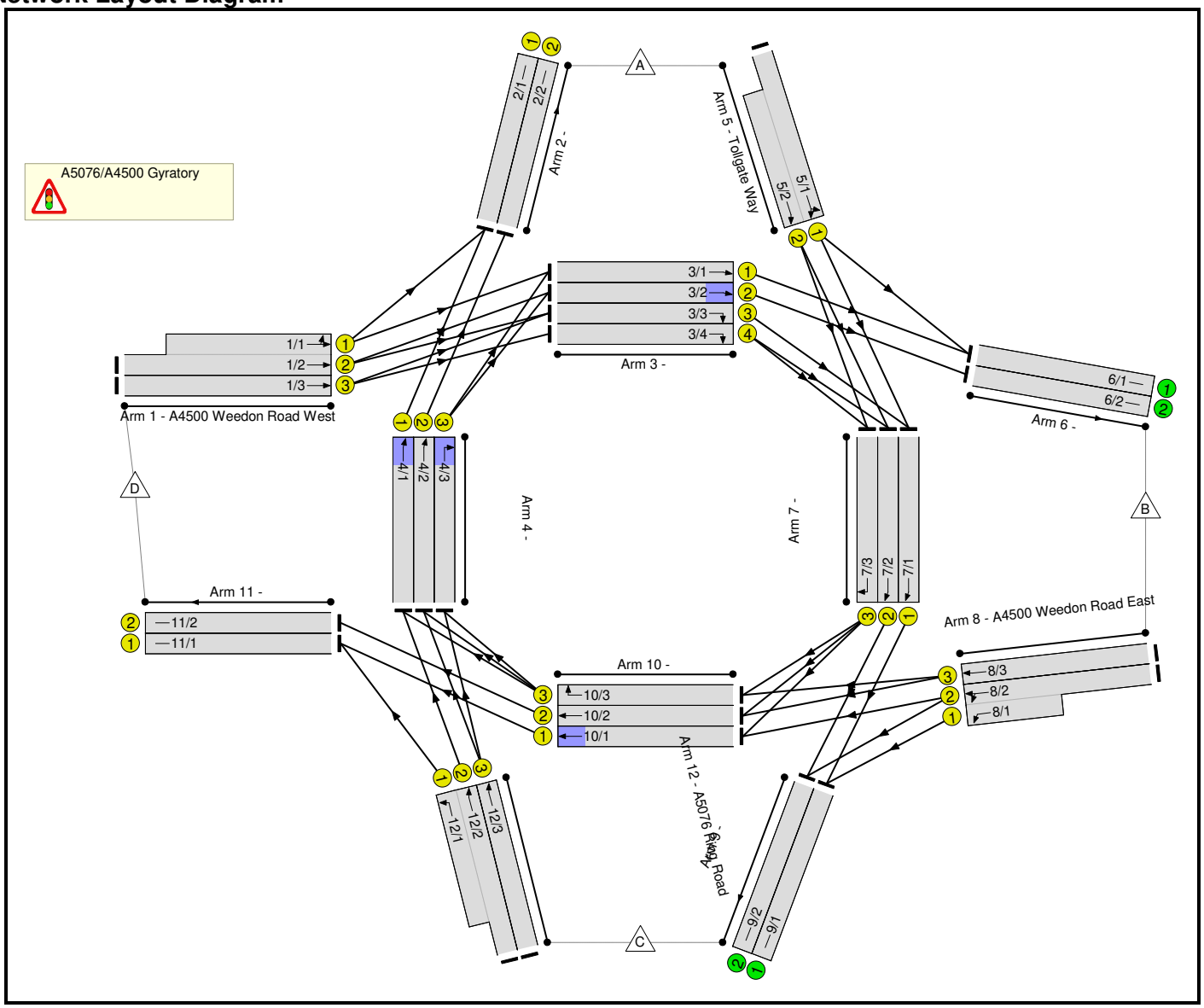
# A5076 UPTON WAY/A4500 WEEDON ROAD GYRATORY

## Full Input Data And Results

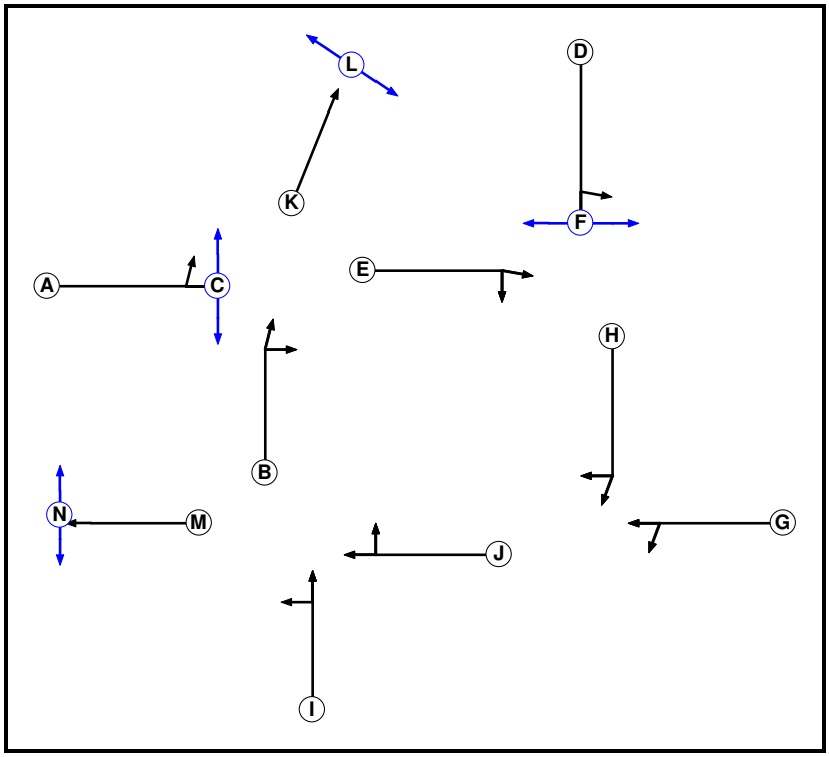
### User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **A5076/A4500/Tollgate Way Gyratory - J3 Cumulative Impact** |
| **Location:** | |
| **File name:** | 180206 A5076_A4500_Tollgate Way Gyratory.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House, Nottingham |
| **Notes:** | |

### Network Layout Diagram



## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Pedestrian | 1 | | 5 | 5 |
| D | Traffic | 2 | | 7 | 7 |
| E | Traffic | 2 | | 7 | 7 |
| F | Pedestrian | 2 | | 5 | 5 |
| G | Traffic | 3 | | 7 | 7 |
| H | Traffic | 3 | | 7 | 7 |
| I | Traffic | 4 | | 7 | 7 |
| J | Traffic | 4 | | 7 | 7 |
| K | Traffic | 5 | | 7 | 7 |
| L | Pedestrian | 5 | | 5 | 5 |
| M | Traffic | 6 | | 7 | 7 |
| N | Pedestrian | 6 | | 5 | 5 |

## Phase Intergreens Matrix

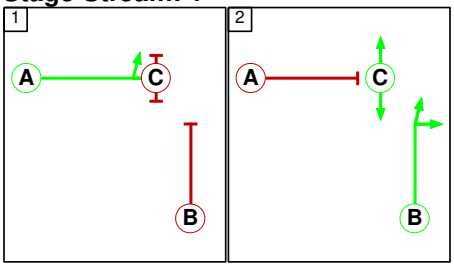
| Terminating Phase \ Starting Phase | A | B | C | D | E | F | G | H | I | J | K | L | M | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | | 7 | 5 | - | - | - | - | - | - | - | - | - | - | - |
| B | 5 | | - | - | - | - | - | - | - | - | - | - | - | - |
| C | 7 | - | | - | - | - | - | - | - | - | - | - | - | - |
| D | - | - | - | | 7 | 5 | - | - | - | - | - | - | - | - |
| E | - | - | - | 5 | | - | - | - | - | - | - | - | - | - |
| F | - | - | - | 7 | - | | - | - | - | - | - | - | - | - |
| G | - | - | - | - | - | - | | 5 | - | - | - | - | - | - |
| H | - | - | - | - | - | - | 5 | | - | - | - | - | - | - |
| I | - | - | - | - | - | - | - | - | | 5 | - | - | - | - |
| J | - | - | - | - | - | - | - | - | 5 | | - | - | - | - |
| K | - | - | - | - | - | - | - | - | - | - | | 5 | - | - |
| L | - | - | - | - | - | - | - | - | - | - | 7 | | - | - |
| M | - | - | - | - | - | - | - | - | - | - | - | - | | 5 |
| N | - | - | - | - | - | - | - | - | - | - | - | - | 7 | |

## Phases in Stage

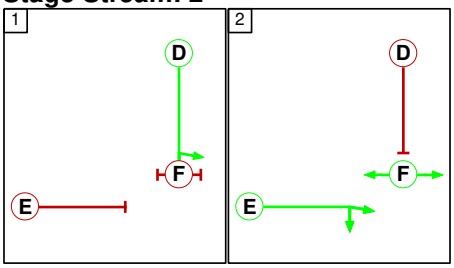
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B C |
| 2 | 1 | D |
| 2 | 2 | E F |
| 3 | 1 | G |
| 3 | 2 | H |
| 4 | 1 | I |
| 4 | 2 | J |
| 5 | 1 | K |
| 5 | 2 | L |
| 6 | 1 | M |
| 6 | 2 | N |

## Stage Diagram

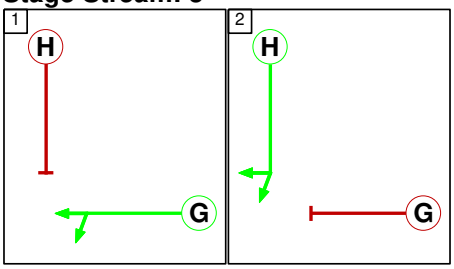
### Stage Stream: 1



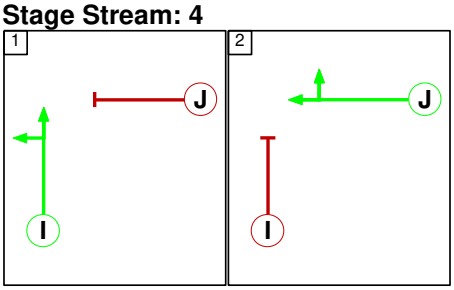
**Stage Stream: 2**



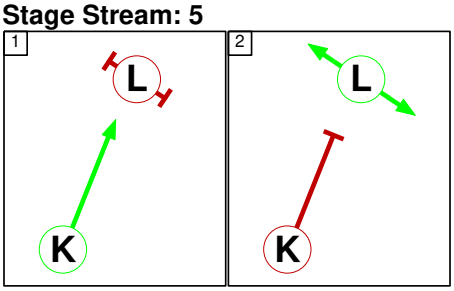

**Stage Stream: 3**



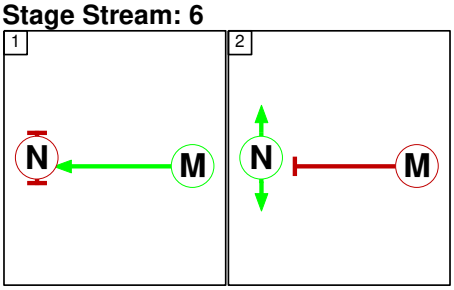

**Stage Stream: 4**




**Stage Stream: 5**




**Stage Stream: 6**



## Lane Input Data

| 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 (A4500 Weedon Road West) | U | A | 2 | 3 | 29.6 | Geom | - | 3.50 | 0.00 | Y | Arm 2 Left | Inf |
| | | | | | | | | | | | Arm 3 Ahead | Inf |
| 1/2 (A4500 Weedon Road West) | U | A | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 3 Ahead | Inf |
| 1/3 (A4500 Weedon Road West) | U | A | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf |
| 2/1 | U | K | 2 | 3 | 5.0 | User | 2000 | - | - | - | - | - |
| 2/2 | U | K | 2 | 3 | 5.0 | User | 2000 | - | - | - | - | - |
| 3/1 | U | E | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 3/2 | U | E | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 3/3 | U | E | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 3/4 | U | E | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 4/1 | U | B | 2 | 3 | 10.4 | User | 1900 | - | - | - | - | - |
| 4/2 | U | B | 2 | 3 | 10.4 | User | 1900 | - | - | - | - | - |
| 4/3 | U | B | 2 | 3 | 10.4 | User | 1900 | - | - | - | - | - |
| 5/1 (Tollgate Way) | U | D | 2 | 3 | 60.0 | Geom | - | 3.75 | 0.00 | Y | Arm 6 Left | Inf |
| | | | | | | | | | | | Arm 7 Ahead | Inf |
| 5/2 (Tollgate Way) | U | D | 2 | 3 | 13.9 | Geom | - | 3.75 | 0.00 | Y | Arm 7 Ahead | Inf |
| 6/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 6/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 7/1 | U | H | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 7/2 | U | H | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 7/3 | U | H | 2 | 3 | 12.2 | User | 1900 | - | - | - | - | - |
| 8/1 (A4500 Weedon Road East) | U | G | 2 | 3 | 7.0 | Geom | - | 3.50 | 0.00 | Y | Arm 9 Left | Inf |
| 8/2 (A4500 Weedon Road East) | U | G | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 9 Left | Inf |
| | | | | | | | | | | | Arm 10 Ahead | Inf |
| 8/3 (A4500 Weedon Road East) | U | G | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf |
| 9/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 9/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 10/1 | U | J | 2 | 3 | 10.4 | User | 1900 | - | - | - | - | - |
| 10/2 | U | J | 2 | 3 | 10.4 | User | 1900 | - | - | - | - | - |
| 10/3 | U | J | 2 | 3 | 10.4 | User | 1900 | - | - | - | - | - |
| 11/1 | U | M | 2 | 3 | 5.0 | User | 2000 | - | - | - | - | - |
| 11/2 | U | M | 2 | 3 | 5.0 | User | 2000 | - | - | - | - | - |
| 12/1 (A5076 Ring Road) | U | I | 2 | 3 | 23.5 | Geom | - | 3.75 | 0.00 | Y | Arm 11 Left | Inf |
| 12/2 (A5076 Ring Road) | U | I | 2 | 3 | 60.0 | Geom | - | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf |
| 12/3 (A5076 Ring Road) | U | I | 2 | 3 | 60.0 | Geom | - | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 PM Peak' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 6: '2031 J3 PM Peak' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 AM Peak'** (FG1: '2031 D1 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 282 | 903 | 145 | 1330 |
| | B | 46 | 0 | 409 | 474 | 929 |
| | C | 773 | 594 | 0 | 375 | 1742 |
| | D | 181 | 915 | 370 | 68 | 1534 |
| | Tot. | 1000 | 1791 | 1682 | 1062 | 5535 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 AM Peak |
|---|---|
| 1/1 (short) | 530 |
| ½ (with short) | 1096(In) 566(Out) |
| 1/3 | 438 |
| 2/1 | 867 |
| 2/2 | 133 |
| 3/1 | 730 |
| 3/2 | 779 |
| 3/3 | 217 |
| 3/4 | 221 |
| 4/1 | 686 |
| 4/2 | 133 |
| 4/3 | 594 |
| 5/1 (with short) | 1330(In) 665(Out) |
| 5/2 (short) | 665 |
| 6/1 | 1012 |
| 6/2 | 779 |
| 7/1 | 600 |
| 7/2 | 673 |
| 7/3 | 213 |
| 8/1 (short) | 315 |
| 8/2 (with short) | 651(In) 336(Out) |
| 8/3 | 278 |
| 9/1 | 915 |
| 9/2 | 767 |
| 10/1 | 302 |
| 10/2 | 385 |
| 10/3 | 46 |
| 11/1 | 677 |
| 11/2 | 385 |
| 12/1 (short) | 375 |
| 12/2 (with short) | 1061(In) 686(Out) |
| 12/3 | 681 |

## Lane Saturation Flows

| 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 (A4500 Weedon Road West) | 3.50 | 0.00 | Y | Arm 2 Left | Inf | 34.2 % | 1965 | 1965 |
| | | | | Arm 3 Ahead | Inf | 65.8 % | | |
| 1/2 (A4500 Weedon Road West) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A4500 Weedon Road West) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (Tollgate Way) | 3.75 | 0.00 | Y | Arm 6 Left | Inf | 42.4 % | 1990 | 1990 |
| | | | | Arm 7 Ahead | Inf | 57.6 % | | |
| 5/2 (Tollgate Way) | 3.75 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A4500 Weedon Road East) | 3.50 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1965 | 1965 |
| 8/2 (A4500 Weedon Road East) | 3.50 | 0.00 | N | Arm 9 Left | Inf | 28.0 % | 2105 | 2105 |
| | | | | Arm 10 Ahead | Inf | 72.0 % | | |
| 8/3 (A4500 Weedon Road East) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 11/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/1 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 11 Left | Inf | 100.0 % | 1990 | 1990 |
| 12/2 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 12/3 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |

**Scenario 3: '2031 J3 AM Peak'** (FG5: '2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 258 | 859 | 220 | 1337 |
| | B | 41 | 0 | 420 | 485 | 946 |
| | C | 780 | 681 | 0 | 339 | 1800 |
| | D | 244 | 860 | 499 | 54 | 1657 |
| | Tot. | 1065 | 1799 | 1778 | 1098 | 5740 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 AM Peak |
|---|---|
| 1/1 (short) | 558 |
| 1/2 (with short) | 1133(In)<br>575(Out) |
| 1/3 | 524 |
| 2/1 | 971 |
| 2/2 | 94 |
| 3/1 | 745 |
| 3/2 | 796 |
| 3/3 | 261 |
| 3/4 | 292 |
| 4/1 | 727 |
| 4/2 | 94 |
| 4/3 | 681 |
| 5/1 (with short) | 1337(In)<br>669(Out) |
| 5/2 (short) | 668 |
| 6/1 | 1003 |
| 6/2 | 796 |
| 7/1 | 672 |
| 7/2 | 686 |
| 7/3 | 274 |
| 8/1 (short) | 321 |
| 8/2 (with short) | 664(In)<br>343(Out) |
| 8/3 | 282 |
| 9/1 | 993 |
| 9/2 | 785 |
| 10/1 | 340 |
| 10/2 | 419 |
| 10/3 | 41 |
| 11/1 | 679 |
| 11/2 | 419 |
| 12/1 (short) | 339 |
| 12/2 (with short) | 1066(In)<br>727(Out) |
| 12/3 | 734 |

## Lane Saturation Flows

| 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 (A4500 Weedon Road West) | 3.50 | 0.00 | Y | Arm 2 Left | Inf | 43.7 % | 1965 | 1965 |
| | | | | Arm 3 Ahead | Inf | 56.3 % | | |
| 1/2 (A4500 Weedon Road West) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A4500 Weedon Road West) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (Tollgate Way) | 3.75 | 0.00 | Y | Arm 6 Left | Inf | 38.6 % | 1990 | 1990 |
| | | | | Arm 7 Ahead | Inf | 61.4 % | | |
| 5/2 (Tollgate Way) | 3.75 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A4500 Weedon Road East) | 3.50 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1965 | 1965 |
| 8/2 (A4500 Weedon Road East) | 3.50 | 0.00 | N | Arm 9 Left | Inf | 28.9 % | 2105 | 2105 |
| | | | | Arm 10 Ahead | Inf | 71.1 % | | |
| 8/3 (A4500 Weedon Road East) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 11/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/1 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 11 Left | Inf | 100.0 % | 1990 | 1990 |
| 12/2 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 12/3 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |

**Scenario 4: '2031 D1 PM Peak'** (FG2: '2031 D1 PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 173 | 503 | 235 | 911 |
| | B | 50 | 0 | 974 | 739 | 1763 |
| | C | 767 | 628 | 0 | 165 | 1560 |
| | D | 192 | 828 | 332 | 7 | 1359 |
| | Tot. | 1009 | 1629 | 1809 | 1146 | 5593 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 PM Peak |
|---|---|
| 1/1 (short) | 551 |
| 1/2 (with short) | 1026(In)<br>475(Out) |
| 1/3 | 333 |
| 2/1 | 867 |
| 2/2 | 142 |
| 3/1 | 708 |
| 3/2 | 748 |
| 3/3 | 159 |
| 3/4 | 180 |
| 4/1 | 675 |
| 4/2 | 142 |
| 4/3 | 628 |
| 5/1 (with short) | 911(In) 443(Out) |
| 5/2 (short) | 468 |
| 6/1 | 881 |
| 6/2 | 748 |
| 7/1 | 429 |
| 7/2 | 406 |
| 7/3 | 242 |
| 8/1 (short) | 549 |
| 8/2 (with short) | 1141(In) 592(Out) |
| 8/3 | 622 |
| 9/1 | 978 |
| 9/2 | 831 |
| 10/1 | 392 |
| 10/2 | 589 |
| 10/3 | 50 |
| 11/1 | 557 |
| 11/2 | 589 |
| 12/1 (short) | 165 |
| 12/2 (with short) | 840(In)<br>675(Out) |
| 12/3 | 720 |

## Lane Saturation Flows

| 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 (A4500 Weedon Road West) | 3.50 | 0.00 | Y | Arm 2 Left | Inf | 34.8 % | 1965 | 1965 |
| | | | | Arm 3 Ahead | Inf | 65.2 % | | |
| 1/2 (A4500 Weedon Road West) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A4500 Weedon Road West) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (Tollgate Way) | 3.75 | 0.00 | Y | Arm 6 Left | Inf | 39.1 % | 1990 | 1990 |
| | | | | Arm 7 Ahead | Inf | 60.9 % | | |
| 5/2 (Tollgate Way) | 3.75 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A4500 Weedon Road East) | 3.50 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1965 | 1965 |
| 8/2 (A4500 Weedon Road East) | 3.50 | 0.00 | N | Arm 9 Left | Inf | 71.8 % | 2105 | 2105 |
| | | | | Arm 10 Ahead | Inf | 28.2 % | | |
| 8/3 (A4500 Weedon Road East) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 11/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/1 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 11 Left | Inf | 100.0 % | 1990 | 1990 |
| 12/2 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 12/3 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |

**Scenario 6: '2031 J3 PM Peak'** (FG6: '2031 J3 PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 221 | 546 | 234 | 1001 |
| | B | 46 | 0 | 928 | 788 | 1762 |
| | C | 787 | 607 | 0 | 173 | 1567 |
| | D | 206 | 807 | 652 | 9 | 1674 |
| | Tot. | 1039 | 1635 | 2126 | 1204 | 6004 |

## Traffic Lane Flows

| Lane | Scenario 6: 2031 J3 PM Peak |
|---|---|
| 1/1 (short) | 564 |
| ½ (with short) | 1152(In) 588(Out) |
| 1/3 | 522 |
| 2/1 | 883 |
| 2/2 | 156 |
| 3/1 | 688 |
| 3/2 | 726 |
| 3/3 | 322 |
| 3/4 | 339 |
| 4/1 | 677 |
| 4/2 | 156 |
| 4/3 | 607 |
| 5/1 (with short) | 1001(In) 500(Out) |
| 5/2 (short) | 501 |
| 6/1 | 909 |
| 6/2 | 726 |
| 7/1 | 601 |
| 7/2 | 597 |
| 7/3 | 243 |
| 8/1 (short) | 533 |
| 8/2 (with short) | 1112(In) 579(Out) |
| 8/3 | 650 |
| 9/1 | 1134 |
| 9/2 | 992 |
| 10/1 | 407 |
| 10/2 | 624 |
| 10/3 | 46 |
| 11/1 | 580 |
| 11/2 | 624 |
| 12/1 (short) | 173 |
| 12/2 (with short) | 850(In) 677(Out) |
| 12/3 | 717 |

## Lane Saturation Flows

| 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 (A4500 Weedon Road West) | 3.50 | 0.00 | Y | Arm 2 Left | Inf | 36.5 % | 1965 | 1965 |
| | | | | Arm 3 Ahead | Inf | 63.5 % | | |
| 1/2 (A4500 Weedon Road West) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A4500 Weedon Road West) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 2/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/4 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (Tollgate Way) | 3.75 | 0.00 | Y | Arm 6 Left | Inf | 44.2 % | 1990 | 1990 |
| | | | | Arm 7 Ahead | Inf | 55.8 % | | |
| 5/2 (Tollgate Way) | 3.75 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 6/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 6/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A4500 Weedon Road East) | 3.50 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1965 | 1965 |
| 8/2 (A4500 Weedon Road East) | 3.50 | 0.00 | N | Arm 9 Left | Inf | 68.2 % | 2105 | 2105 |
| | | | | Arm 10 Ahead | Inf | 31.8 % | | |
| 8/3 (A4500 Weedon Road East) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 11/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 12/1 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 11 Left | Inf | 100.0 % | 1990 | 1990 |
| 12/2 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 12/3 (A5076 Ring Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |

**Scenario 1: '2031 D1 AM Peak'** (FG1: '2031 D1 AM Peak', Plan 1: 'Network Control Plan 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 15 | 31 |
| Change Point | 0 | 22 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 29 |
| Change Point | 28 | 52 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 28 |
| Change Point | 1 | 28 |

**Stage Stream: 4**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 27 |
| Change Point | 32 | 0 |

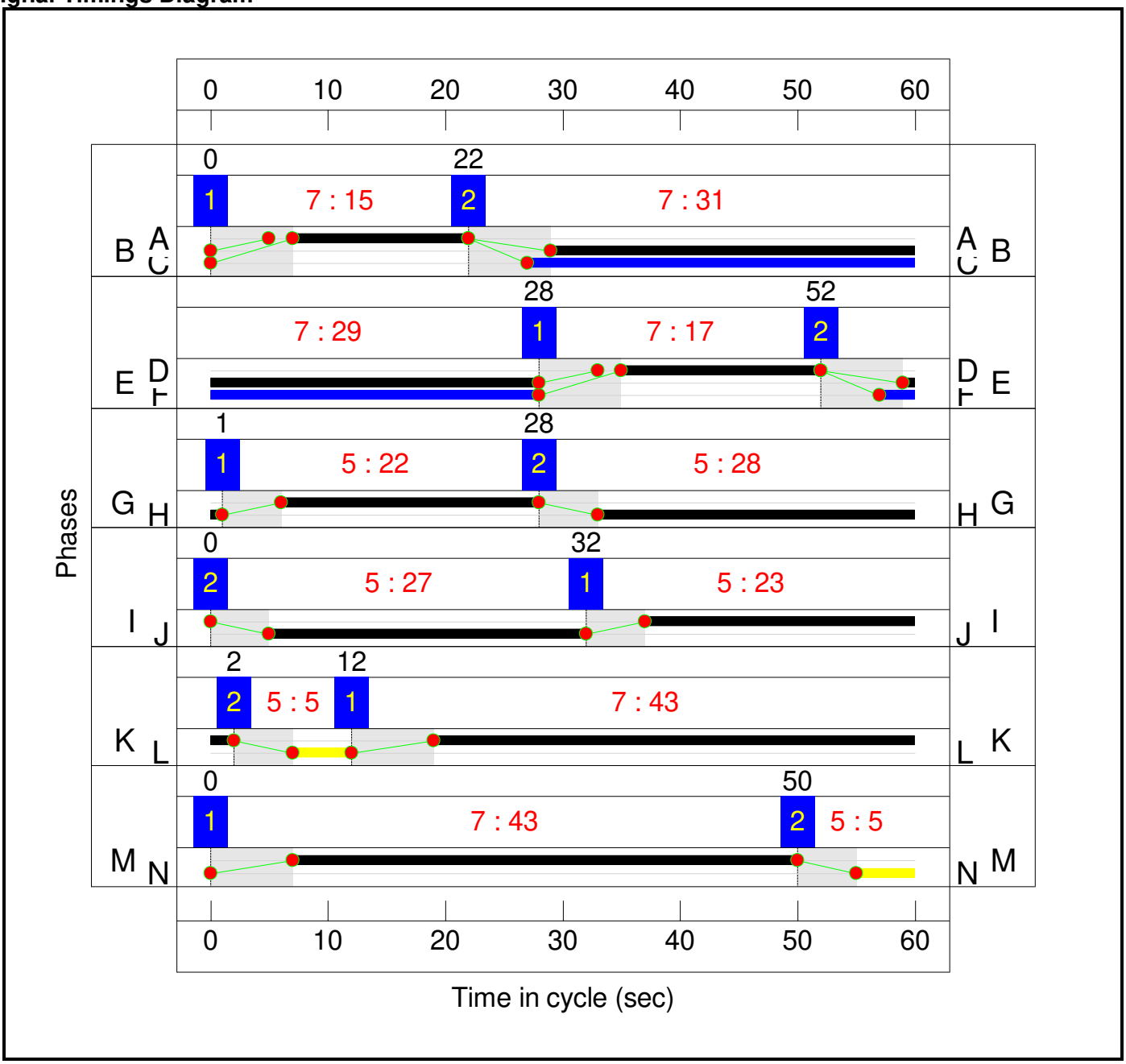
**Stage Stream: 5**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 5 |
| Change Point | 12 | 2 |

**Stage Stream: 6**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 5 |
| Change Point | 0 | 50 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2+1/1 | A4500 Weedon Road West Left | U | 1 | N/A | A | | 1 | 15 | - | 1096 | 2105:1965 | 561+524 | 100.8 : 101.1% |
| 1/3 | A4500 Weedon Road West | U | 1 | N/A | A | | 1 | 15 | - | 438 | 1965 | 524 | 83.6% |
| 2/1 | | U | 5 | N/A | K | | 1 | 43 | - | 867 | 2000 | 1467 | 59.0% |
| 2/2 | | U | 5 | N/A | K | | 1 | 43 | - | 133 | 2000 | 1467 | 9.1% |
| 3/1 | Ahead | U | 2 | N/A | E | | 1 | 29 | - | 730 | 1900 | 950 | 76.4% |
| 3/2 | Ahead | U | 2 | N/A | E | | 1 | 29 | - | 779 | 1900 | 950 | 81.5% |
| 3/3 | Right | U | 2 | N/A | E | | 1 | 29 | - | 217 | 1900 | 950 | 22.8% |
| 3/4 | Right | U | 2 | N/A | E | | 1 | 29 | - | 221 | 1900 | 950 | 23.3% |
| 4/1 | Ahead | U | 1 | N/A | B | | 1 | 31 | - | 686 | 1900 | 1013 | 67.7% |
| 4/2 | Ahead | U | 1 | N/A | B | | 1 | 31 | - | 133 | 1900 | 1013 | 13.1% |
| 4/3 | Right | U | 1 | N/A | B | | 1 | 31 | - | 594 | 1900 | 1013 | 58.6% |
| 5/1+5/2 | Tollgate Way Left Ahead | U | 2 | N/A | D | | 1 | 17 | - | 1330 | 1990:1990 | 597+597 | 111.4 : 111.4% |
| 7/1 | Ahead | U | 3 | N/A | H | | 1 | 28 | - | 600 | 1900 | 918 | 61.1% |
| 7/2 | Ahead | U | 3 | N/A | H | | 1 | 28 | - | 673 | 1900 | 918 | 67.5% |
| 7/3 | Right | U | 3 | N/A | H | | 1 | 28 | - | 213 | 1900 | 918 | 21.6% |
| 8/2+8/1 | A4500 Weedon Road East Left Ahead | U | 3 | N/A | G | | 1 | 22 | - | 651 | 2105:1965 | 613+574 | 54.9 : 54.9% |
| 8/3 | A4500 Weedon Road East | U | 3 | N/A | G | | 1 | 22 | - | 278 | 1965 | 753 | 36.9% |
| 10/1 | Ahead | U | 4 | N/A | J | | 1 | 27 | - | 302 | 1900 | 887 | 33.4% |
| 10/2 | Ahead | U | 4 | N/A | J | | 1 | 27 | - | 385 | 1900 | 887 | 42.4% |
| 10/3 | Right | U | 4 | N/A | J | | 1 | 27 | - | 46 | 1900 | 887 | 5.2% |
| 11/1 | | U | 6 | N/A | M | | 1 | 43 | - | 677 | 2000 | 1467 | 45.7% |
| 11/2 | | U | 6 | N/A | M | | 1 | 43 | - | 385 | 2000 | 1467 | 25.7% |
| 12/2+12/1 | A5076 Ring Road Ahead | U | 4 | N/A | I | | 1 | 23 | - | 1061 | 1990:1990 | 796+457 | 86.2 : 82.0% |
| 12/3 | A5076 Ring Road Ahead | U | 4 | N/A | I | | 1 | 23 | - | 681 | 1990 | 796 | 85.6% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2+1/1 | 1096 | 1085 | - | - | - | 7.0 | 19.4 | - | 26.4 | 86.8 | 9.5 | 19.4 | 28.9 |
| 1/3 | 438 | 438 | - | - | - | 2.5 | 2.4 | - | 4.9 | 40.6 | 6.8 | 2.4 | 9.2 |
| 2/1 | 865 | 865 | - | - | - | 0.2 | 0.7 | - | 1.0 | 4.0 | 2.8 | 0.7 | 3.5 |
| 2/2 | 133 | 133 | - | - | - | 0.0 | 0.0 | - | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 |
| 3/1 | 726 | 726 | - | - | - | 1.0 | 1.6 | - | 2.6 | 13.1 | 6.4 | 1.6 | 7.9 |
| 3/2 | 774 | 774 | - | - | - | 0.8 | 2.2 | - | 2.9 | 13.7 | 3.7 | 2.2 | 5.9 |
| 3/3 | 217 | 217 | - | - | - | 0.0 | 0.1 | - | 0.1 | 2.5 | 0.0 | 0.1 | 0.1 |
| 3/4 | 221 | 221 | - | - | - | 0.0 | 0.2 | - | 0.2 | 2.5 | 0.0 | 0.2 | 0.2 |
| 4/1 | 686 | 686 | - | - | - | 0.5 | 1.0 | - | 1.5 | 8.0 | 0.9 | 1.0 | 1.9 |
| 4/2 | 133 | 133 | - | - | - | 0.2 | 0.1 | - | 0.2 | 6.4 | 0.8 | 0.1 | 0.8 |
| 4/3 | 594 | 594 | - | - | - | 0.3 | 0.7 | - | 1.0 | 6.1 | 0.7 | 0.7 | 1.4 |
| 5/1+5/2 | 1330 | 1194 | - | - | - | 10.6 | 72.6 | - | 83.2 | 225.1 | 12.2 | 72.6 | 84.8 |
| 7/1 | 561 | 561 | - | - | - | 0.8 | 0.8 | - | 1.5 | 9.9 | 3.6 | 0.8 | 4.4 |
| 7/2 | 620 | 620 | - | - | - | 0.5 | 1.0 | - | 1.5 | 8.9 | 2.6 | 1.0 | 3.6 |
| 7/3 | 198 | 198 | - | - | - | 0.2 | 0.1 | - | 0.3 | 6.0 | 1.1 | 0.1 | 1.3 |
| 8/2+8/1 | 651 | 651 | - | - | - | 2.5 | 0.6 | - | 3.1 | 16.9 | 4.1 | 0.6 | 4.7 |
| 8/3 | 278 | 278 | - | - | - | 1.0 | 0.3 | - | 1.3 | 17.1 | 3.3 | 0.3 | 3.6 |
| 10/1 | 296 | 296 | - | - | - | 0.2 | 0.3 | - | 0.4 | 5.3 | 0.9 | 0.3 | 1.1 |
| 10/2 | 376 | 376 | - | - | - | 0.8 | 0.4 | - | 1.2 | 11.3 | 2.4 | 0.4 | 2.8 |
| 10/3 | 46 | 46 | - | - | - | 0.0 | 0.0 | - | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 |
| 11/1 | 671 | 671 | - | - | - | 0.3 | 0.4 | - | 0.7 | 3.7 | 2.1 | 0.4 | 2.6 |
| 11/2 | 376 | 376 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.7 | 0.0 | 0.2 | 0.2 |
| 12/2+12/1 | 1061 | 1061 | - | - | - | 4.5 | 2.7 | - | 7.2 | 24.5 | 10.3 | 2.7 | 13.0 |
| 12/3 | 681 | 681 | - | - | - | 3.1 | 2.8 | - | 5.9 | 31.3 | 10.2 | 2.8 | 13.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -12.4 | Total Delay for Signalled Lanes (pcuHr): | 34.13 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -23.8 | Total Delay for Signalled Lanes (pcuHr): | 89.04 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 33.3 | Total Delay for Signalled Lanes (pcuHr): | 7.78 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | 4.4 | Total Delay for Signalled Lanes (pcuHr): | 14.78 | Cycle Time (s): | 60 |
| C1 | Stream: 5 PRC for Signalled Lanes (%): | 52.6 | Total Delay for Signalled Lanes (pcuHr): | 1.00 | Cycle Time (s): | 60 |
| C1 | Stream: 6 PRC for Signalled Lanes (%): | 96.7 | Total Delay for Signalled Lanes (pcuHr): | 0.86 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -23.8 | Total Delay Over All Lanes(pcuHr): | 147.59 | | |

**Scenario 3: '2031 J3 AM Peak'** (FG5: '2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 16 | 30 |
| Change Point | 0 | 23 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 29 |
| Change Point | 28 | 52 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 22 | 28 |
| Change Point | 1 | 28 |

**Stage Stream: 4**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 23 | 27 |
| Change Point | 32 | 0 |

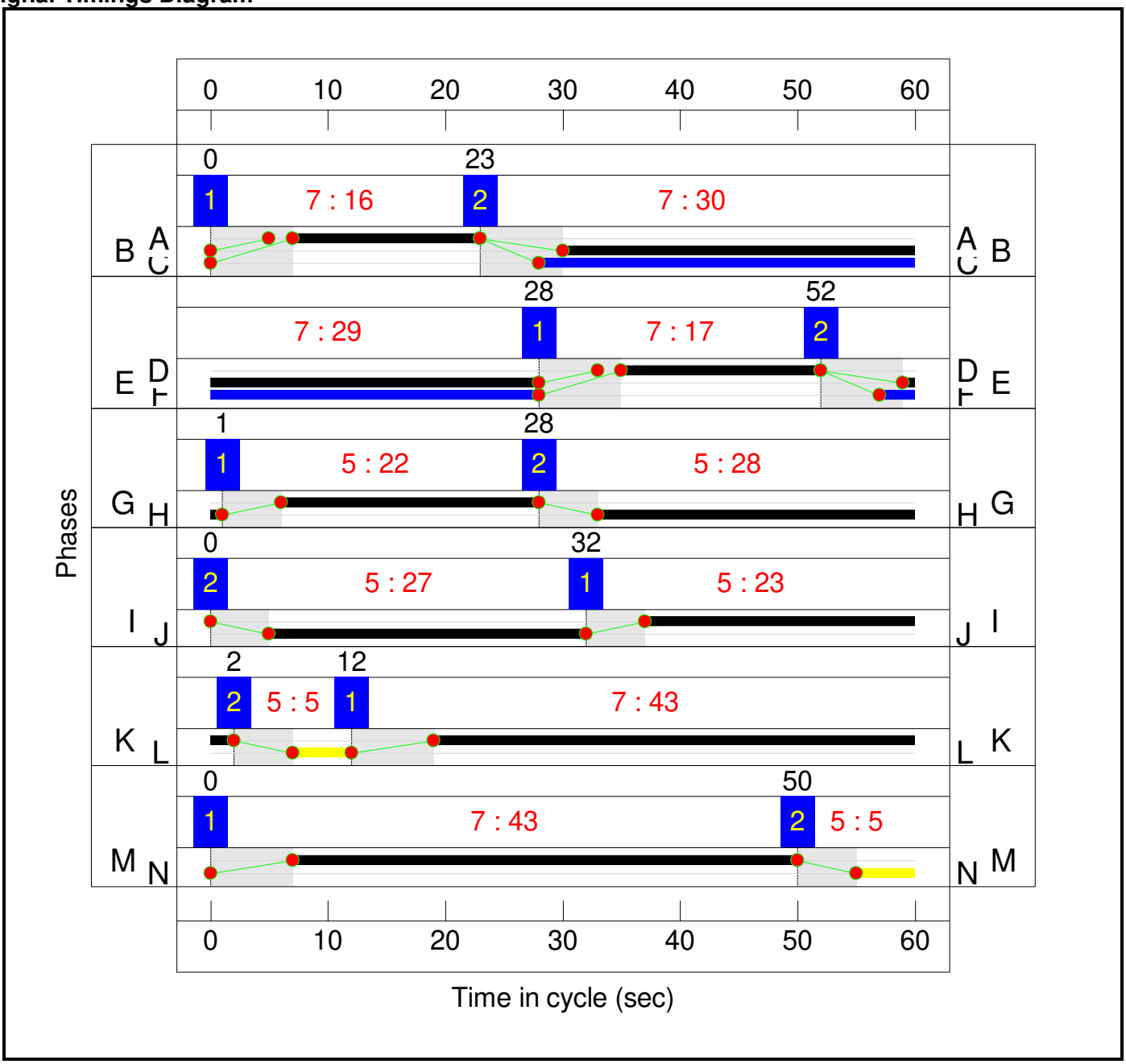
**Stage Stream: 5**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 5 |
| Change Point | 12 | 2 |

**Stage Stream: 6**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 5 |
| Change Point | 0 | 50 |

**Signal Timings Diagram**



## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green | Arrow Green | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2+1/1 | A4500 Weedon Road West Left | U | 1 | N/A | A | | 1 | 16 | - | 1133 | 2105:1965 | 596+557 | 96.4 : 100.2% |
| 1/3 | A4500 Weedon Road West | U | 1 | N/A | A | | 1 | 16 | - | 524 | 1965 | 557 | 94.1% |
| 2/1 | | U | 5 | N/A | K | | 1 | 43 | - | 971 | 2000 | 1467 | 66.2% |
| 2/2 | | U | 5 | N/A | K | | 1 | 43 | - | 94 | 2000 | 1467 | 6.4% |
| 3/1 | Ahead | U | 2 | N/A | E | | 1 | 29 | - | 745 | 1900 | 950 | 78.3% |
| 3/2 | Ahead | U | 2 | N/A | E | | 1 | 29 | - | 796 | 1900 | 950 | 83.8% |
| 3/3 | Right | U | 2 | N/A | E | | 1 | 29 | - | 261 | 1900 | 950 | 27.5% |
| 3/4 | Right | U | 2 | N/A | E | | 1 | 29 | - | 292 | 1900 | 950 | 30.7% |
| 4/1 | Ahead | U | 1 | N/A | B | | 1 | 30 | - | 727 | 1900 | 982 | 74.1% |
| 4/2 | Ahead | U | 1 | N/A | B | | 1 | 30 | - | 94 | 1900 | 982 | 9.6% |
| 4/3 | Right | U | 1 | N/A | B | | 1 | 30 | - | 681 | 1900 | 982 | 69.4% |
| 5/1+5/2 | Tollgate Way Left Ahead | U | 2 | N/A | D | | 1 | 17 | - | 1337 | 1990:1990 | 597+597 | 112.1 : 111.9% |
| 7/1 | Ahead | U | 3 | N/A | H | | 1 | 28 | - | 672 | 1900 | 918 | 68.4% |
| 7/2 | Ahead | U | 3 | N/A | H | | 1 | 28 | - | 686 | 1900 | 918 | 69.5% |
| 7/3 | Right | U | 3 | N/A | H | | 1 | 28 | - | 274 | 1900 | 918 | 27.3% |
| 8/2+8/1 | A4500 Weedon Road East Left | U | 3 | N/A | G | | 1 | 22 | - | 664 | 2105:1965 | 613+573 | 56.0 : 56.0% |
| 8/3 | A4500 Weedon Road East Ahead | U | 3 | N/A | G | | 1 | 22 | - | 282 | 1965 | 753 | 37.4% |
| 10/1 | Ahead | U | 4 | N/A | J | | 1 | 27 | - | 340 | 1900 | 887 | 37.2% |
| 10/2 | Ahead | U | 4 | N/A | J | | 1 | 27 | - | 419 | 1900 | 887 | 45.8% |
| 10/3 | Right | U | 4 | N/A | J | | 1 | 27 | - | 41 | 1900 | 887 | 4.6% |
| 11/1 | | U | 6 | N/A | M | | 1 | 43 | - | 679 | 2000 | 1467 | 45.6% |
| 11/2 | | U | 6 | N/A | M | | 1 | 43 | - | 419 | 2000 | 1467 | 27.7% |
| 12/2+12/1 | A5076 Ring Road Ahead Left | U | 4 | N/A | I | | 1 | 23 | - | 1066 | 1990:1990 | 796+371 | 91.3 : 91.3% |
| 12/3 | A5076 Ring Road Ahead | U | 4 | N/A | I | | 1 | 23 | - | 734 | 1990 | 796 | 92.2% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2+1/1 | 1133 | 1132 | - | - | - | 6.8 | 13.2 | - | 19.9 | 63.3 | 9.4 | 13.2 | 22.6 |
| 1/3 | 524 | 524 | - | - | - | 3.1 | 5.9 | - | 8.9 | 61.4 | 8.4 | 5.9 | 14.3 |
| 2/1 | 970 | 970 | - | - | - | 0.3 | 1.0 | - | 1.3 | 4.9 | 4.1 | 1.0 | 5.0 |
| 2/2 | 94 | 94 | - | - | - | 0.0 | 0.0 | - | 0.0 | 1.3 | 0.0 | 0.0 | 0.0 |
| 3/1 | 744 | 744 | - | - | - | 1.3 | 1.8 | - | 3.1 | 14.8 | 7.5 | 1.8 | 9.3 |
| 3/2 | 796 | 796 | - | - | - | 0.7 | 2.5 | - | 3.2 | 14.4 | 4.1 | 2.5 | 6.6 |
| 3/3 | 261 | 261 | - | - | - | 0.0 | 0.2 | - | 0.2 | 2.6 | 0.0 | 0.2 | 0.2 |
| 3/4 | 292 | 292 | - | - | - | 0.0 | 0.2 | - | 0.2 | 2.7 | 0.0 | 0.2 | 0.2 |
| 4/1 | 727 | 727 | - | - | - | 0.8 | 1.4 | - | 2.3 | 11.2 | 1.6 | 1.4 | 3.0 |
| 4/2 | 94 | 94 | - | - | - | 0.2 | 0.1 | - | 0.2 | 7.9 | 0.7 | 0.1 | 0.7 |
| 4/3 | 681 | 681 | - | - | - | 0.5 | 1.1 | - | 1.6 | 8.7 | 1.1 | 1.1 | 2.2 |
| 5/1+5/2 | 1337 | 1194 | - | - | - | 10.8 | 75.9 | - | 86.7 | 233.3 | 12.3 | 75.9 | 88.3 |
| 7/1 | 628 | 628 | - | - | - | 0.9 | 1.1 | - | 2.0 | 11.2 | 5.4 | 1.1 | 6.4 |
| 7/2 | 638 | 638 | - | - | - | 0.8 | 1.1 | - | 1.9 | 10.8 | 4.3 | 1.1 | 5.5 |
| 7/3 | 251 | 251 | - | - | - | 0.1 | 0.2 | - | 0.3 | 4.6 | 0.9 | 0.2 | 1.1 |
| 8/2+8/1 | 664 | 664 | - | - | - | 2.5 | 0.6 | - | 3.2 | 17.1 | 4.2 | 0.6 | 4.8 |
| 8/3 | 282 | 282 | - | - | - | 1.0 | 0.3 | - | 1.3 | 17.1 | 3.4 | 0.3 | 3.7 |
| 10/1 | 330 | 330 | - | - | - | 0.3 | 0.3 | - | 0.6 | 6.5 | 1.4 | 0.3 | 1.7 |
| 10/2 | 406 | 406 | - | - | - | 0.9 | 0.4 | - | 1.3 | 11.3 | 3.2 | 0.4 | 3.6 |
| 10/3 | 41 | 41 | - | - | - | 0.0 | 0.0 | - | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 |
| 11/1 | 669 | 669 | - | - | - | 0.3 | 0.4 | - | 0.7 | 3.6 | 2.6 | 0.4 | 3.0 |
| 11/2 | 406 | 406 | - | - | - | 0.0 | 0.2 | - | 0.2 | 1.7 | 0.0 | 0.2 | 0.2 |
| 12/2+12/1 | 1066 | 1066 | - | - | - | 4.7 | 4.8 | - | 9.5 | 32.0 | 11.3 | 4.8 | 16.1 |
| 12/3 | 734 | 734 | - | - | - | 3.5 | 5.1 | - | 8.6 | 42.1 | 11.6 | 5.1 | 16.7 |

| | | | | | |
|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -11.4 | Total Delay for Signalled Lanes (pcuHr): | 32.96 | Cycle Time (s): 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -24.5 | Total Delay for Signalled Lanes (pcuHr): | 93.33 | Cycle Time (s): 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 29.5 | Total Delay for Signalled Lanes (pcuHr): | 8.69 | Cycle Time (s): 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | -2.5 | Total Delay for Signalled Lanes (pcuHr): | 19.94 | Cycle Time (s): 60 |
| C1 | Stream: 5 PRC for Signalled Lanes (%): | 36.0 | Total Delay for Signalled Lanes (pcuHr): | 1.36 | Cycle Time (s): 60 |
| C1 | Stream: 6 PRC for Signalled Lanes (%): | 97.4 | Total Delay for Signalled Lanes (pcuHr): | 0.86 | Cycle Time (s): 60 |
| | PRC Over All Lanes (%): | -24.5 | Total Delay Over All Lanes(pcuHr): | 157.13 | |

**Scenario 4: '2031 D1 PM Peak'** (FG2: '2031 D1 PM Peak', Plan 1: 'Network Control Plan 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 18 | 28 |
| Change Point | 0 | 25 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 15 | 31 |
| Change Point | 27 | 49 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 26 | 24 |
| Change Point | 1 | 32 |

**Stage Stream: 4**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 26 |
| Change Point | 32 | 1 |

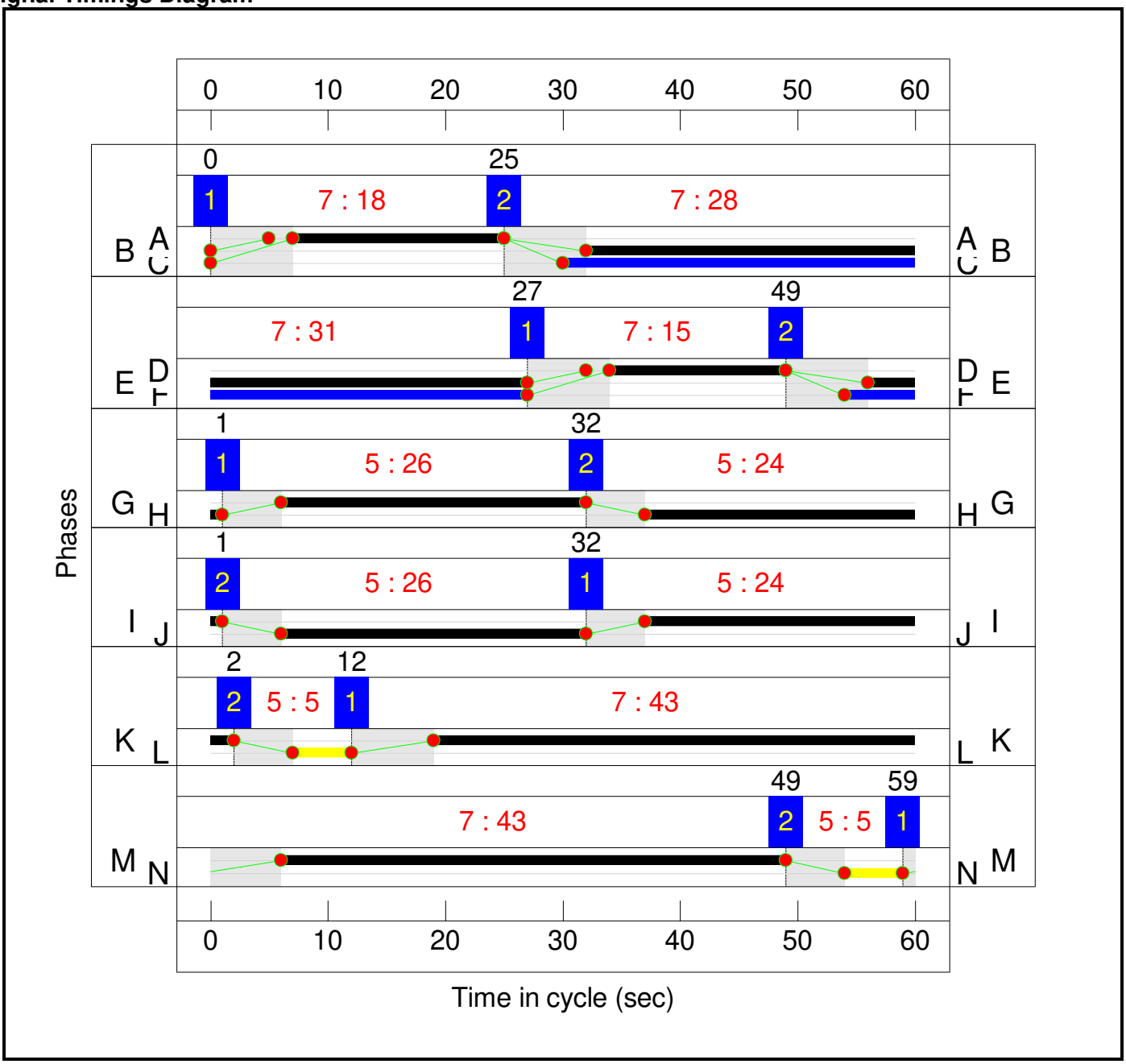
**Stage Stream: 5**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 5 |
| Change Point | 12 | 2 |

**Stage Stream: 6**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 5 |
| Change Point | 59 | 49 |

**Signal Timings Diagram**



## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2+1/1 | A4500 Weedon Road West Left Ahead | U | 1 | N/A | A | | 1 | 18 | - | 1026 | 2105:1965 | 667+622 | 71.3 : 88.5% |
| 1/3 | A4500 Weedon Road West | U | 1 | N/A | A | | 1 | 18 | - | 333 | 1965 | 622 | 53.5% |
| 2/1 | | U | 5 | N/A | K | | 1 | 43 | - | 867 | 2000 | 1467 | 59.1% |
| 2/2 | | U | 5 | N/A | K | | 1 | 43 | - | 142 | 2000 | 1467 | 9.7% |
| 3/1 | Ahead | U | 2 | N/A | E | | 1 | 31 | - | 708 | 1900 | 1013 | 69.9% |
| 3/2 | Ahead | U | 2 | N/A | E | | 1 | 31 | - | 748 | 1900 | 1013 | 73.8% |
| 3/3 | Right | U | 2 | N/A | E | | 1 | 31 | - | 159 | 1900 | 1013 | 15.7% |
| 3/4 | Right | U | 2 | N/A | E | | 1 | 31 | - | 180 | 1900 | 1013 | 17.8% |
| 4/1 | Ahead | U | 1 | N/A | B | | 1 | 28 | - | 675 | 1900 | 918 | 73.5% |
| 4/2 | Ahead | U | 1 | N/A | B | | 1 | 28 | - | 142 | 1900 | 918 | 15.5% |
| 4/3 | Right | U | 1 | N/A | B | | 1 | 28 | - | 628 | 1900 | 918 | 68.4% |
| 5/1+5/2 | Tollgate Way Left Ahead | U | 2 | N/A | D | | 1 | 15 | - | 911 | 1990:1990 | 531+531 | 83.5 : 88.2% |
| 7/1 | Ahead | U | 3 | N/A | H | | 1 | 24 | - | 429 | 1900 | 792 | 54.2% |
| 7/2 | Ahead | U | 3 | N/A | H | | 1 | 24 | - | 406 | 1900 | 792 | 51.3% |
| 7/3 | Right | U | 3 | N/A | H | | 1 | 24 | - | 242 | 1900 | 792 | 30.6% |
| 8/2+8/1 | A4500 Weedon Road East Left | U | 3 | N/A | G | | 1 | 26 | - | 1141 | 2105:1965 | 684+634 | 86.6 : 86.6% |
| 8/3 | A4500 Weedon Road East | U | 3 | N/A | G | | 1 | 26 | - | 622 | 1965 | 884 | 70.3% |
| 10/1 | Ahead | U | 4 | N/A | J | | 1 | 26 | - | 392 | 1900 | 855 | 45.8% |
| 10/2 | Ahead | U | 4 | N/A | J | | 1 | 26 | - | 589 | 1900 | 855 | 68.9% |
| 10/3 | Right | U | 4 | N/A | J | | 1 | 26 | - | 50 | 1900 | 855 | 5.8% |
| 11/1 | | U | 6 | N/A | M | | 1 | 43 | - | 557 | 2000 | 1467 | 38.0% |
| 11/2 | | U | 6 | N/A | M | | 1 | 43 | - | 589 | 2000 | 1467 | 40.2% |
| 12/2+12/1 | A5076 Ring Road Ahead Left | U | 4 | N/A | I | | 1 | 24 | - | 840 | 1990:1990 | 829+203 | 81.4 : 81.4% |
| 12/3 | A5076 Ring Road Ahead | U | 4 | N/A | I | | 1 | 24 | - | 720 | 1990 | 829 | 86.8% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2+1/1 | 1026 | 1026 | - | - | - | 5.4 | 1.9 | - | 7.3 | 25.6 | 8.6 | 1.9 | 10.5 |
| 1/3 | 333 | 333 | - | - | - | 1.6 | 0.6 | - | 2.1 | 23.1 | 4.5 | 0.6 | 5.1 |
| 2/1 | 867 | 867 | - | - | - | 0.2 | 0.7 | - | 1.0 | 4.0 | 2.9 | 0.7 | 3.6 |
| 2/2 | 142 | 142 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.4 | 0.0 | 0.1 | 0.1 |
| 3/1 | 708 | 708 | - | - | - | 0.8 | 1.2 | - | 1.9 | 9.8 | 6.1 | 1.2 | 7.3 |
| 3/2 | 748 | 748 | - | - | - | 0.7 | 1.4 | - | 2.1 | 10.0 | 4.2 | 1.4 | 5.6 |
| 3/3 | 159 | 159 | - | - | - | 0.1 | 0.1 | - | 0.2 | 3.5 | 0.1 | 0.1 | 0.2 |
| 3/4 | 180 | 180 | - | - | - | 0.1 | 0.1 | - | 0.2 | 3.5 | 0.2 | 0.1 | 0.3 |
| 4/1 | 675 | 675 | - | - | - | 0.5 | 1.4 | - | 1.9 | 10.2 | 0.9 | 1.4 | 2.3 |
| 4/2 | 142 | 142 | - | - | - | 0.2 | 0.1 | - | 0.3 | 7.3 | 0.9 | 0.1 | 1.0 |
| 4/3 | 628 | 628 | - | - | - | 0.4 | 1.1 | - | 1.5 | 8.6 | 0.9 | 1.1 | 1.9 |
| 5/1+5/2 | 911 | 911 | - | - | - | 5.3 | 2.9 | - | 8.2 | 32.5 | 7.4 | 2.9 | 10.3 |
| 7/1 | 429 | 429 | - | - | - | 0.8 | 0.6 | - | 1.4 | 11.5 | 4.9 | 0.6 | 5.5 |
| 7/2 | 406 | 406 | - | - | - | 0.8 | 0.5 | - | 1.4 | 12.1 | 4.4 | 0.5 | 4.9 |
| 7/3 | 242 | 242 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.7 | 0.1 | 0.2 | 0.3 |
| 8/2+8/1 | 1141 | 1141 | - | - | - | 4.0 | 3.1 | - | 7.1 | 22.5 | 8.9 | 3.1 | 12.0 |
| 8/3 | 622 | 622 | - | - | - | 2.3 | 1.2 | - | 3.5 | 20.1 | 8.3 | 1.2 | 9.5 |
| 10/1 | 392 | 392 | - | - | - | 1.3 | 0.4 | - | 1.7 | 15.9 | 4.6 | 0.4 | 5.0 |
| 10/2 | 589 | 589 | - | - | - | 0.4 | 1.1 | - | 1.5 | 9.2 | 0.9 | 1.1 | 2.0 |
| 10/3 | 50 | 50 | - | - | - | 0.0 | 0.0 | - | 0.1 | 4.3 | 0.1 | 0.0 | 0.1 |
| 11/1 | 557 | 557 | - | - | - | 0.1 | 0.3 | - | 0.4 | 2.6 | 0.6 | 0.3 | 0.9 |
| 11/2 | 589 | 589 | - | - | - | 0.0 | 0.3 | - | 0.3 | 2.0 | 0.0 | 0.3 | 0.3 |
| 12/2+12/1 | 840 | 840 | - | - | - | 3.4 | 2.1 | - | 5.5 | 23.8 | 9.8 | 2.1 | 11.9 |
| 12/3 | 720 | 720 | - | - | - | 3.2 | 3.1 | - | 6.3 | 31.6 | 10.8 | 3.1 | 13.9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | 1.6 | Total Delay for Signalled Lanes (pcuHr): | 13.12 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 2.1 | Total Delay for Signalled Lanes (pcuHr): | 12.56 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 4.0 | Total Delay for Signalled Lanes (pcuHr): | 13.58 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | 3.6 | Total Delay for Signalled Lanes (pcuHr): | 15.17 | Cycle Time (s): | 60 |
| C1 | Stream: 5 PRC for Signalled Lanes (%): | 52.2 | Total Delay for Signalled Lanes (pcuHr): | 1.02 | Cycle Time (s): | 60 |
| C1 | Stream: 6 PRC for Signalled Lanes (%): | 124.1 | Total Delay for Signalled Lanes (pcuHr): | 0.74 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | 1.6 | Total Delay Over All Lanes(pcuHr): | 56.18 | | |

**Scenario 6: '2031 J3 PM Peak'** (FG6: '2031 J3 PM Peak', Plan 1: 'Network Control Plan 1')

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 17 | 29 |
| Change Point | 0 | 24 |

**Stage Stream: 2**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 16 | 30 |
| Change Point | 28 | 51 |

**Stage Stream: 3**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 26 |
| Change Point | 56 | 25 |

**Stage Stream: 4**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 24 | 26 |
| Change Point | 29 | 58 |

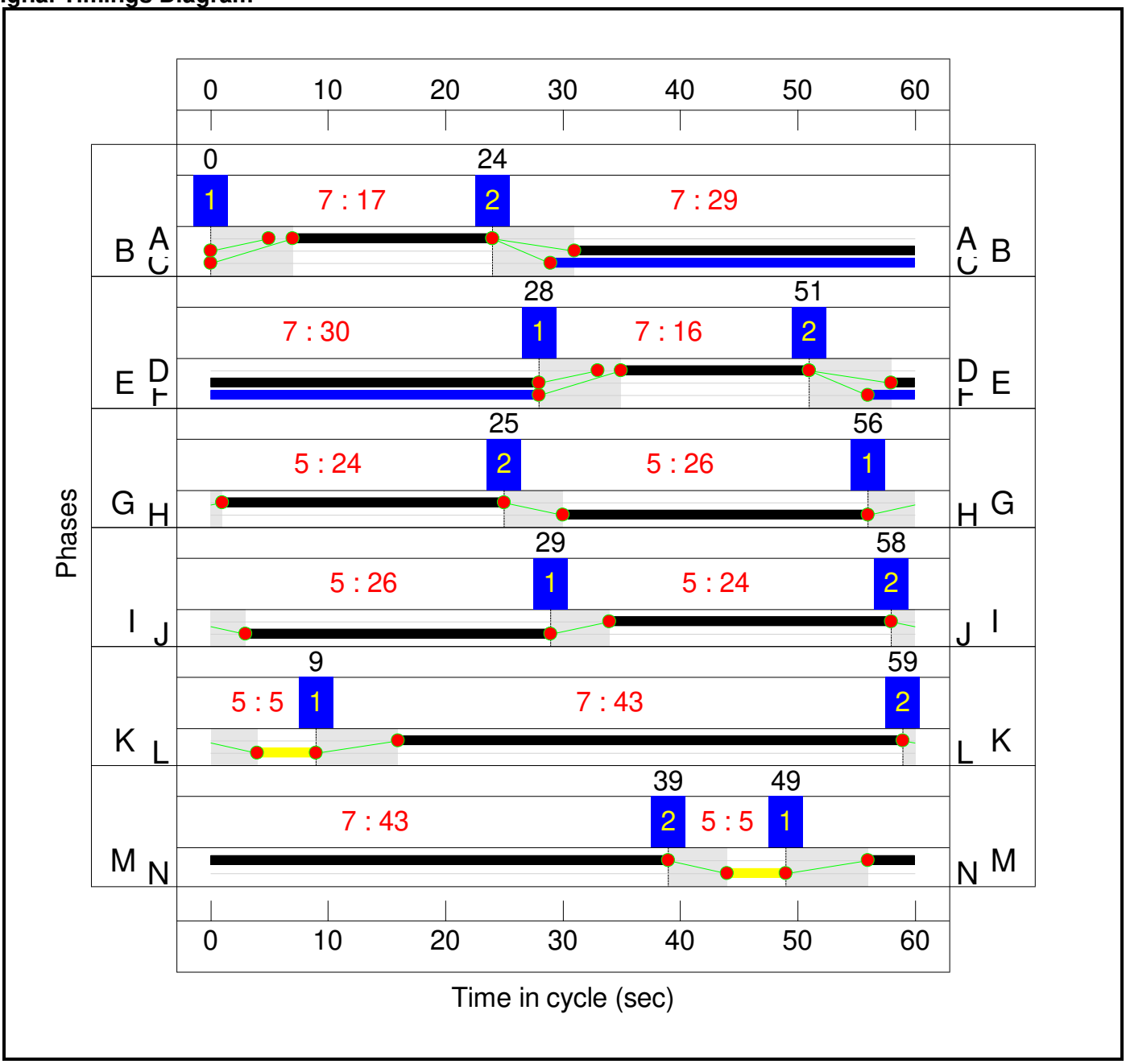
**Stage Stream: 5**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 5 |
| Change Point | 9 | 59 |

**Stage Stream: 6**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 43 | 5 |
| Change Point | 49 | 39 |

**Signal Timings Diagram**



## Network Results

| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2+1/1 | A4500 Weedon Road West Left Ahead | U | 1 | N/A | A | | 1 | 17 | - | 1152 | 2105:1965 | 632+590 | 93.1 : 95.7% |
| 1/3 | A4500 Weedon Road West | U | 1 | N/A | A | | 1 | 17 | - | 522 | 1965 | 590 | 88.5% |
| 2/1 | | U | 5 | N/A | K | | 1 | 43 | - | 883 | 2000 | 1467 | 60.2% |
| 2/2 | | U | 5 | N/A | K | | 1 | 43 | - | 156 | 2000 | 1467 | 10.6% |
| 3/1 | Ahead | U | 2 | N/A | E | | 1 | 30 | - | 688 | 1900 | 982 | 70.1% |
| 3/2 | Ahead | U | 2 | N/A | E | | 1 | 30 | - | 726 | 1900 | 982 | 74.0% |
| 3/3 | Right | U | 2 | N/A | E | | 1 | 30 | - | 322 | 1900 | 982 | 32.8% |
| 3/4 | Right | U | 2 | N/A | E | | 1 | 30 | - | 339 | 1900 | 982 | 34.5% |
| 4/1 | Ahead | U | 1 | N/A | B | | 1 | 29 | - | 677 | 1900 | 950 | 71.3% |
| 4/2 | Ahead | U | 1 | N/A | B | | 1 | 29 | - | 156 | 1900 | 950 | 16.4% |
| 4/3 | Right | U | 1 | N/A | B | | 1 | 29 | - | 607 | 1900 | 950 | 63.9% |
| 5/1+5/2 | Tollgate Way Left Ahead | U | 2 | N/A | D | | 1 | 16 | - | 1001 | 1990:1990 | 564+564 | 88.7 : 88.9% |
| 7/1 | Ahead | U | 3 | N/A | H | | 1 | 26 | - | 601 | 1900 | 855 | 70.3% |
| 7/2 | Ahead | U | 3 | N/A | H | | 1 | 26 | - | 597 | 1900 | 855 | 69.8% |
| 7/3 | Right | U | 3 | N/A | H | | 1 | 26 | - | 243 | 1900 | 855 | 28.4% |
| 8/2+8/1 | A4500 Weedon Road East Left | U | 3 | N/A | G | | 1 | 24 | - | 1112 | 2105:1965 | 650+598 | 89.1 : 89.1% |
| 8/3 | A4500 Weedon Road East | U | 3 | N/A | G | | 1 | 24 | - | 650 | 1965 | 819 | 79.4% |
| 10/1 | Ahead | U | 4 | N/A | J | | 1 | 26 | - | 407 | 1900 | 855 | 47.6% |
| 10/2 | Ahead | U | 4 | N/A | J | | 1 | 26 | - | 624 | 1900 | 855 | 73.0% |
| 10/3 | Right | U | 4 | N/A | J | | 1 | 26 | - | 46 | 1900 | 855 | 5.4% |
| 11/1 | | U | 6 | N/A | M | | 1 | 43 | - | 580 | 2000 | 1467 | 39.5% |
| 11/2 | | U | 6 | N/A | M | | 1 | 43 | - | 624 | 2000 | 1467 | 42.5% |
| 12/2+12/1 | A5076 Ring Road Ahead Left | U | 4 | N/A | I | | 1 | 24 | - | 850 | 1990:1990 | 829+212 | 81.6 : 81.6% |
| 12/3 | A5076 Ring Road Ahead | U | 4 | N/A | I | | 1 | 24 | - | 717 | 1990 | 829 | 86.5% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/2+1/1 | 1152 | 1152 | - | - | - | 6.6 | 6.9 | - | 13.5 | 42.2 | 9.5 | 6.9 | 16.4 |
| 1/3 | 522 | 522 | - | - | - | 2.9 | 3.5 | - | 6.4 | 44.2 | 8.3 | 3.5 | 11.8 |
| 2/1 | 883 | 883 | - | - | - | 0.3 | 0.8 | - | 1.1 | 4.3 | 3.0 | 0.8 | 3.7 |
| 2/2 | 156 | 156 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.9 | 0.1 | 0.1 | 0.2 |
| 3/1 | 688 | 688 | - | - | - | 0.9 | 1.2 | - | 2.1 | 10.9 | 5.6 | 1.2 | 6.8 |
| 3/2 | 726 | 726 | - | - | - | 0.7 | 1.4 | - | 2.1 | 10.6 | 4.7 | 1.4 | 6.1 |
| 3/3 | 322 | 322 | - | - | - | 0.0 | 0.2 | - | 0.3 | 3.2 | 0.1 | 0.2 | 0.3 |
| 3/4 | 339 | 339 | - | - | - | 0.0 | 0.3 | - | 0.3 | 3.3 | 0.1 | 0.3 | 0.4 |
| 4/1 | 677 | 677 | - | - | - | 0.3 | 1.2 | - | 1.5 | 7.9 | 0.5 | 1.2 | 1.7 |
| 4/2 | 156 | 156 | - | - | - | 0.2 | 0.1 | - | 0.3 | 6.4 | 0.8 | 0.1 | 0.9 |
| 4/3 | 607 | 607 | - | - | - | 0.2 | 0.9 | - | 1.0 | 6.2 | 0.3 | 0.9 | 1.2 |
| 5/1+5/2 | 1001 | 1001 | - | - | - | 5.7 | 3.7 | - | 9.5 | 34.0 | 7.9 | 3.7 | 11.7 |
| 7/1 | 601 | 601 | - | - | - | 0.9 | 1.2 | - | 2.1 | 12.6 | 5.4 | 1.2 | 6.5 |
| 7/2 | 597 | 597 | - | - | - | 1.0 | 1.1 | - | 2.1 | 12.8 | 5.5 | 1.1 | 6.6 |
| 7/3 | 243 | 243 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.2 | 0.1 | 0.2 | 0.3 |
| 8/2+8/1 | 1112 | 1112 | - | - | - | 4.4 | 3.9 | - | 8.3 | 26.7 | 9.5 | 3.9 | 13.3 |
| 8/3 | 650 | 650 | - | - | - | 2.8 | 1.9 | - | 4.6 | 25.7 | 9.4 | 1.9 | 11.3 |
| 10/1 | 407 | 407 | - | - | - | 1.0 | 0.5 | - | 1.4 | 12.6 | 4.8 | 0.5 | 5.3 |
| 10/2 | 624 | 624 | - | - | - | 0.1 | 1.3 | - | 1.4 | 8.1 | 0.3 | 1.3 | 1.7 |
| 10/3 | 46 | 46 | - | - | - | 0.0 | 0.0 | - | 0.0 | 2.2 | 0.0 | 0.0 | 0.0 |
| 11/1 | 580 | 580 | - | - | - | 0.1 | 0.3 | - | 0.4 | 2.7 | 0.8 | 0.3 | 1.1 |
| 11/2 | 624 | 624 | - | - | - | 0.0 | 0.4 | - | 0.4 | 2.1 | 0.0 | 0.4 | 0.4 |
| 12/2+12/1 | 850 | 850 | - | - | - | 3.4 | 2.2 | - | 5.6 | 23.8 | 10.0 | 2.2 | 12.1 |
| 12/3 | 717 | 717 | - | - | - | 3.2 | 3.0 | - | 6.2 | 31.2 | 10.8 | 3.0 | 13.8 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -6.3 | Total Delay for Signalled Lanes (pcuHr): | 22.73 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | 1.3 | Total Delay for Signalled Lanes (pcuHr): | 14.26 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | 1.0 | Total Delay for Signalled Lanes (pcuHr): | 17.34 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | 4.1 | Total Delay for Signalled Lanes (pcuHr): | 14.68 | Cycle Time (s): | 60 |
| C1 | Stream: 5 PRC for Signalled Lanes (%): | 49.5 | Total Delay for Signalled Lanes (pcuHr): | 1.15 | Cycle Time (s): | 60 |
| C1 | Stream: 6 PRC for Signalled Lanes (%): | 111.5 | Total Delay for Signalled Lanes (pcuHr): | 0.81 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -6.3 | Total Delay Over All Lanes(pcuHr): | 70.96 | | |

# JUNCTION 22

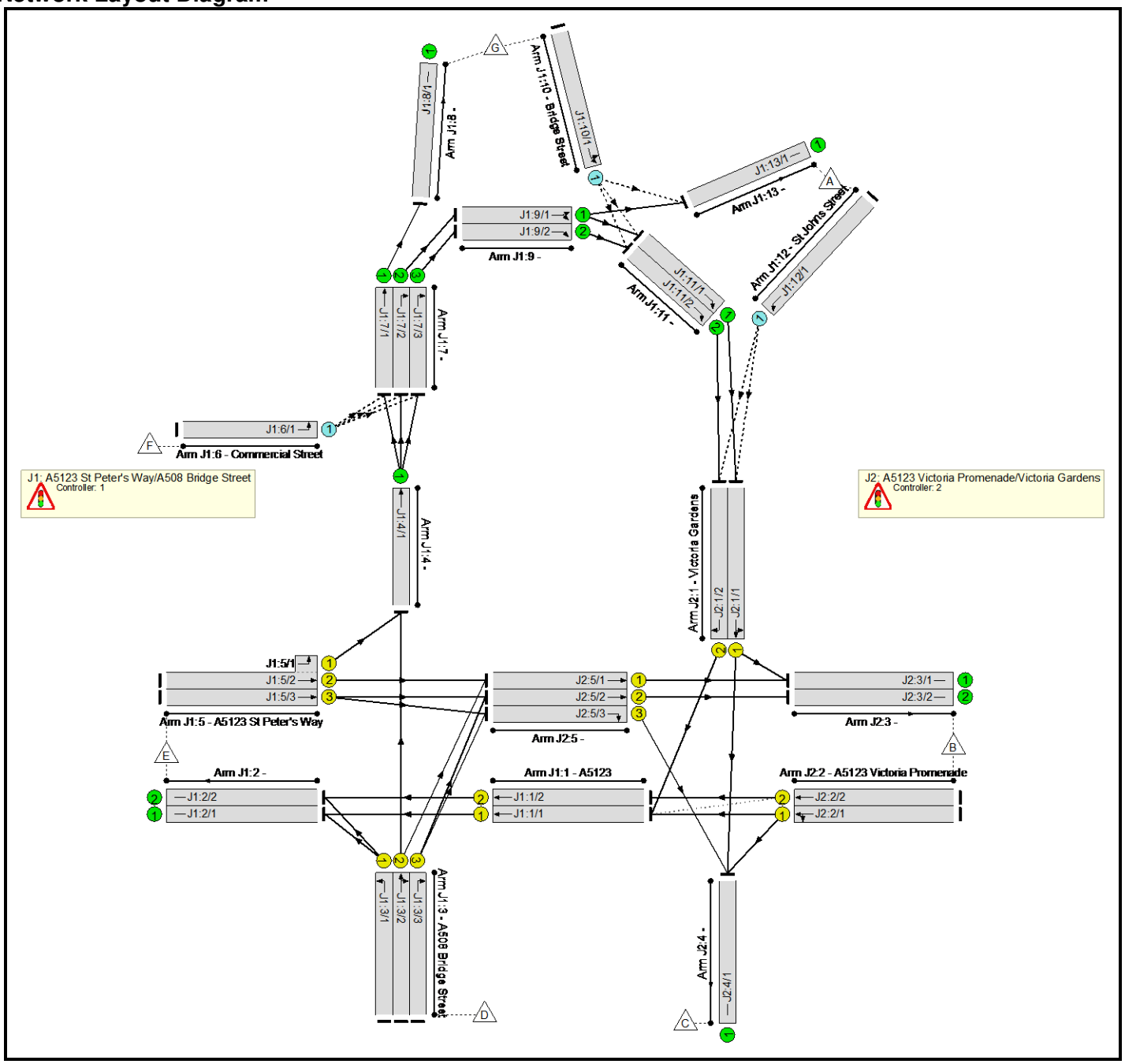
# PLOUGH GYRATORY

## Full Input Data And Results

### User and Project Details

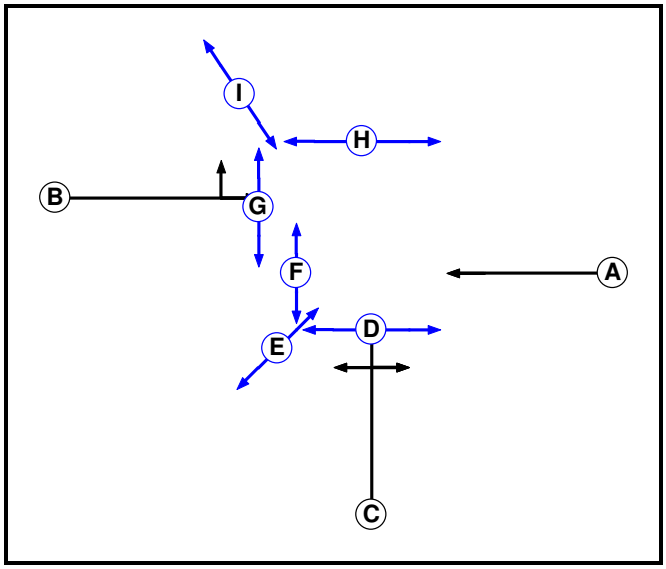
| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **Plough Gyratory - J3 Cumulative Impact** |
| **File name:** | 180319 Proposed Bridge Street Gyratory.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Nottingham |
| **Notes:** | Modelled as per the arrangement included in the NSTM2. |

### Network Layout Diagram



C1

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 1 | | 7 | 7 |
| D | Pedestrian | 1 | | 5 | 5 |
| E | Pedestrian | 1 | | 5 | 5 |
| F | Pedestrian | 1 | | 5 | 5 |
| G | Pedestrian | 1 | | 5 | 5 |
| H | Pedestrian | 1 | | 5 | 5 |
| I | Pedestrian | 1 | | 5 | 5 |

## Phase Intergreens Matrix

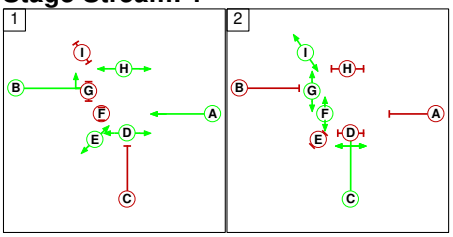
| | | Starting Phase | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H | I |
| Terminating Phase | A | | - | 7 | - | - | 7 | - | - | - |
| | B | - | | 5 | - | - | - | 5 | - | 5 |
| | C | 6 | 6 | | 5 | 5 | - | - | 7 | - |
| | D | - | - | 7 | | - | - | - | - | - |
| | E | - | - | 5 | - | | - | - | - | - |
| | F | 7 | - | - | - | - | | - | - | - |
| | G | - | 7 | - | - | - | - | | - | - |
| | H | - | - | 5 | - | - | - | - | | - |
| | I | - | 5 | - | - | - | - | - | - | |

## Phases in Stage

| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A B D E H |
| 1 | 2 | C F G I |

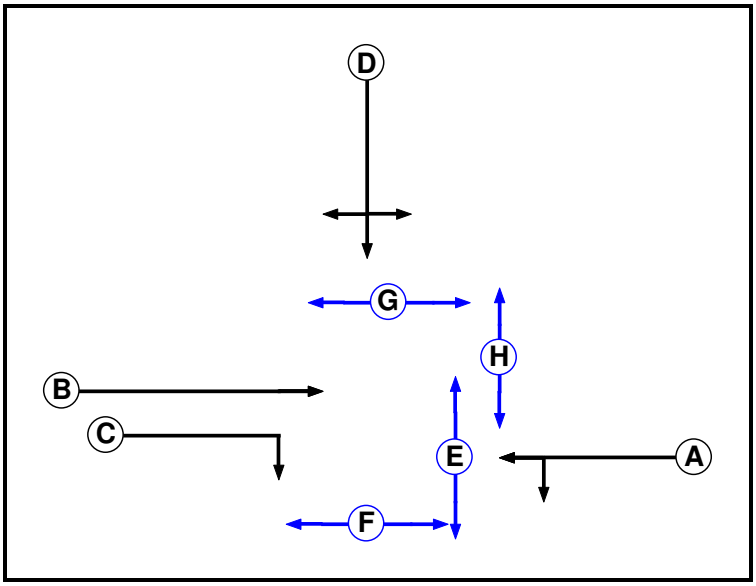
## Stage Diagram

### Stage Stream: 1




## C2

## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 7 |
| C | Traffic | 1 | | 7 | 7 |
| D | Traffic | 1 | | 7 | 7 |
| E | Pedestrian | 1 | | 5 | 5 |
| F | Pedestrian | 1 | | 5 | 5 |
| G | Pedestrian | 1 | | 5 | 5 |
| H | Pedestrian | 1 | | 5 | 5 |

## Phase Intergreens Matrix

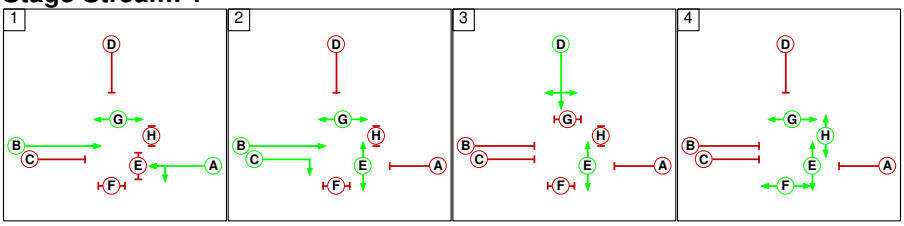
| | | Starting Phase | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | H |
| Terminating Phase | A | | - | 6 | 5 | 5 | 5 | - | - |
| | B | - | | - | 5 | - | - | - | 6 |
| | C | 5 | - | | 5 | - | 6 | - | - |
| | D | 7 | 5 | 7 | | - | 8 | 5 | 5 |
| | E | 7 | - | - | - | | - | - | - |
| | F | 7 | - | 7 | 7 | - | | - | - |
| | G | - | - | - | 7 | - | - | | - |
| | H | - | 7 | - | 7 | - | - | - | |

## Phases in Stage

| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A B G |
| 1 | 2 | B C E G |
| 1 | 3 | D E |
| 1 | 4 | E F G H |

## Stage Diagram

### Stage Stream: 1



## Give-Way Lane Input Data

| Junction: J1: A5123 St Peter's Way/A508 Bridge Street | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| J1:6/1 (Commercial Street) | J1:7/1 (Left) | 715 | 0 | J1:4/1 | 0.22 | All | - | - | - | - | - |
| | J1:7/2 (Left) | 715 | 0 | J1:4/1 | 0.22 | All | | | | | |
| | J1:7/3 (Left) | 715 | 0 | J1:4/1 | 0.22 | All | | | | | |
| J1:10/1 (Bridge Street) | J1:11/1 (Ahead) | 1000 | 0 | J1:9/1 | 0.33 | All | - | - | - | - | - |
| | J1:11/2 (Ahead) | 1000 | 0 | J1:9/1 | 0.33 | All | | | | | |
| | | | | J1:9/2 | 0.33 | All | | | | | |
| | J1:13/1 (Left) | 1000 | 0 | J1:9/1 | 0.33 | All | | | | | |
| J1:12/1 (St Johns Street) | J2:1/1 (Ahead) | 1000 | 0 | J1:11/1 | 0.33 | All | - | - | - | - | - |
| | J2:1/2 (Ahead) | 1000 | 0 | J1:11/1 | 0.33 | All | | | | | |
| | | | | J1:11/2 | 0.33 | All | | | | | |

## Lane Input Data

| Junction: J1: A5123 St Peter's Way/A508 Bridge Street | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| J1:1/1 (A5123) | U | A | 2 | 3 | 13.9 | Geom | - | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf |
| J1:1/2 (A5123) | U | A | 2 | 3 | 13.9 | Geom | - | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf |
| J1:2/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:2/2 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:3/1 (A508 Bridge Street) | U | C | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm J1:2 Left | 30.00 |
| J1:3/2 (A508 Bridge Street) | U | C | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm J1:4 Ahead | Inf |
| | | | | | | | | | | | Arm J2:5 Right | Inf |
| J1:3/3 (A508 Bridge Street) | U | C | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm J2:5 Right | Inf |
| J1:4/1 | U | | 2 | 3 | 13.0 | User | 3000 | - | - | - | - | - |
| J1:5/1 (A5123 St Peter's Way) | U | B | 2 | 3 | 2.0 | Geom | - | 3.50 | 0.00 | Y | Arm J1:4 Left | 15.00 |
| J1:5/2 (A5123 St Peter's Way) | U | B | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf |
| J1:5/3 (A5123 St Peter's Way) | U | B | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf |
| J1:6/1 (Commercial Street) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:7/1 | U | | 2 | 3 | 3.5 | Inf | - | - | - | - | - | - |
| J1:7/2 | U | | 2 | 3 | 3.5 | Inf | - | - | - | - | - | - |
| J1:7/3 | U | | 2 | 3 | 3.5 | Inf | - | - | - | - | - | - |
| J1:8/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:9/1 | U | | 2 | 3 | 3.5 | Inf | - | - | - | - | - | - |
| J1:9/2 | U | | 2 | 3 | 3.5 | Inf | - | - | - | - | - | - |
| J1:10/1 (Bridge Street) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:11/1 | U | | 2 | 3 | 8.7 | Inf | - | - | - | - | - | - |
| J1:11/2 | U | | 2 | 3 | 8.7 | Inf | - | - | - | - | - | - |
| J1:12/1 (St Johns Street) | O | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J1:13/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |

| Junction: J2: A5123 Victoria Promenade/Victoria Gardens | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **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)** |
| J2:1/1 (Victoria Gardens) | U | D | 2 | 3 | 19.1 | Geom | - | 3.50 | 0.00 | Y | Arm J2:3 Left | 10.00 |
| | | | | | | | | | | | Arm J2:4 Ahead | Inf |
| J2:1/2 (Victoria Gardens) | U | D | 2 | 3 | 19.1 | Geom | - | 3.50 | 0.00 | Y | Arm J1:1 Right | 18.00 |
| J2:2/1 (A5123 Victoria Promenade) | U | A | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf |
| | | | | | | | | | | | Arm J2:4 Left | Inf |
| J2:2/2 (A5123 Victoria Promenade) | U | A | 2 | 3 | 60.0 | Geom | - | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf |
| J2:3/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| J2:3/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| J2:4/1 | U | | 2 | 3 | 60.0 | Inf | - | - | - | - | - | - |
| J2:5/1 | U | B | 2 | 3 | 80.0 | Geom | - | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf |
| J2:5/2 | U | B | 2 | 3 | 80.0 | Geom | - | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf |
| J2:5/3 | U | C | 2 | 3 | 80.0 | Geom | - | 3.50 | 0.00 | Y | Arm J2:4 Right | 15.00 |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 2: '2031 D1 PM Peak' | 17:00 | 18:00 | 01:00 | |
| 5: 'Adjusted 2031 D1 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 8: '2031 J3 PM Peak' | 17:00 | 18:00 | 01:00 | |
| 9: 'Adjusted 2031 J3 AM Peak' | 08:00 | 09:00 | 01:00 | |

**Scenario 1: '2031 D1 AM peak'** (FG5: 'Adjusted 2031 D1 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | Tot. |
| Origin | A | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | B | 0 | 0 | 583 | 0 | 705 | 0 | 0 | 1288 |
| | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 212 | 374 | 0 | 0 | 745 | 0 | 91 | 1422 |
| | E | 158 | 322 | 270 | 0 | 0 | 0 | 204 | 954 |
| | F | 158 | 0 | 0 | 0 | 3 | 0 | 204 | 365 |
| | G | 105 | 0 | 1 | 0 | 1 | 0 | 0 | 107 |
| | Tot. | 633 | 696 | 854 | 0 | 1454 | 0 | 499 | 4136 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 AM peak |
|---|---|
| **Junction: J1: A5123 St Peter's Way/A508 Bridge Street** | |
| J1:1/1 | 353 |
| J1:1/2 | 356 |
| J1:2/1 | 725 |
| J1:2/2 | 729 |
| J1:3/1 | 745 |
| J1:3/2 | 410 |
| J1:3/3 | 267 |
| J1:4/1 | 672 |
| J1:5/1 (short) | 369 |
| J1:5/2 (with short) | 478(In)<br>109(Out) |
| J1:5/3 | 476 |
| J1:6/1 | 365 |
| J1:7/1 | 499 |
| J1:7/2 | 535 |
| J1:7/3 | 3 |
| J1:8/1 | 499 |
| J1:9/1 | 535 |
| J1:9/2 | 3 |
| J1:10/1 | 107 |
| J1:11/1 | 8 |
| J1:11/2 | 4 |
| J1:12/1 | 0 |
| J1:13/1 | 633 |
| **Junction: J2: A5123 Victoria Promenade/Victoria Gardens** | |
| J2:1/1 | 8 |
| J2:1/2 | 4 |
| J2:2/1 | 644 |
| J2:2/2 | 644 |
| J2:3/1 | 216 |
| J2:3/2 | 480 |
| J2:4/1 | 854 |
| J2:5/1 | 216 |
| J2:5/2 | 480 |
| J2:5/3 | 263 |

## Lane Saturation Flows

| Junction: J1: A5123 St Peter's Way/A508 Bridge Street | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (A5123) | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J1:1/2 (A5123) | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J1:2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:3/1 (A508 Bridge Street) | 3.50 | 0.00 | Y | Arm J1:2 Left | 30.00 | 100.0 % | 1871 | 1871 |
| J1:3/2 (A508 Bridge Street) | 3.00 | 0.00 | Y | Arm J1:4 Ahead<br>Arm J2:5 Right | Inf<br>Inf | 73.9 %<br>26.1 % | 1915 | 1915 |
| J1:3/3 (A508 Bridge Street) | 3.00 | 0.00 | Y | Arm J2:5 Right | Inf | 100.0 % | 1915 | 1915 |
| J1:4/1 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| J1:5/1 (A5123 St Peter's Way) | 3.50 | 0.00 | Y | Arm J1:4 Left | 15.00 | 100.0 % | 1786 | 1786 |
| J1:5/2 (A5123 St Peter's Way) | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J1:5/3 (A5123 St Peter's Way) | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J1:6/1 (Commercial Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (Bridge Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:12/1 (St Johns Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |

| Junction: J2: A5123 Victoria Promenade/Victoria Gardens | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J2:1/1 (Victoria Gardens) | 3.50 | 0.00 | Y | Arm J2:3 Left | 10.00 | 0.0 % | 1965 | 1965 |
| | | | | Arm J2:4 Ahead | Inf | 100.0 % | | |
| J2:1/2 (Victoria Gardens) | 3.50 | 0.00 | Y | Arm J1:1 Right | 18.00 | 100.0 % | 1814 | 1814 |
| J2:2/1 (A5123 Victoria Promenade) | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf | 9.5 % | 1915 | 1915 |
| | | | | Arm J2:4 Left | Inf | 90.5 % | | |
| J2:2/2 (A5123 Victoria Promenade) | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J2:3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:3/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:5/1 | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J2:5/2 | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J2:5/3 | 3.50 | 0.00 | Y | Arm J2:4 Right | 15.00 | 100.0 % | 1786 | 1786 |

**Scenario 3: '2031 J3 AM peak'** (FG9: 'Adjusted 2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | Tot. |
| Origin | A | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 |
| | B | 0 | 0 | 422 | 0 | 617 | 0 | 0 | 1039 |
| | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 109 | 456 | 5 | 0 | 775 | 0 | 127 | 1472 |
| | E | 131 | 399 | 371 | 0 | 0 | 0 | 218 | 1119 |
| | F | 131 | 0 | 1 | 0 | 8 | 0 | 218 | 358 |
| | G | 49 | 0 | 6 | 0 | 53 | 0 | 0 | 108 |
| | Tot. | 420 | 855 | 810 | 0 | 1453 | 0 | 563 | 4101 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 AM peak |
|---|---|
| **Junction: J1: A5123 St Peter's Way/A508 Bridge Street** | |
| J1:1/1 | 326 |
| J1:1/2 | 352 |
| J1:2/1 | 713 |
| J1:2/2 | 740 |
| J1:3/1 | 775 |
| J1:3/2 | 408 |
| J1:3/3 | 289 |
| J1:4/1 | 826 |
| J1:5/1 (short) | 590 |
| J1:5/2 (with short) | 590(In)<br>0(Out) |
| J1:5/3 | 529 |
| J1:6/1 | 358 |
| J1:7/1 | 563 |
| J1:7/2 | 613 |
| J1:7/3 | 8 |
| J1:8/1 | 563 |
| J1:9/1 | 613 |
| J1:9/2 | 8 |
| J1:10/1 | 108 |
| J1:11/1 | 248 |
| J1:11/2 | 61 |
| J1:12/1 | 5 |
| J1:13/1 | 420 |
| **Junction: J2: A5123 Victoria Promenade/Victoria Gardens** | |
| J2:1/1 | 253 |
| J2:1/2 | 61 |
| J2:2/1 | 519 |
| J2:2/2 | 520 |
| J2:3/1 | 172 |
| J2:3/2 | 683 |
| J2:4/1 | 810 |
| J2:5/1 | 172 |
| J2:5/2 | 683 |
| J2:5/3 | 135 |

## Lane Saturation Flows

| Junction: J1: A5123 St Peter's Way/A508 Bridge Street | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (A5123) | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J1:1/2 (A5123) | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J1:2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:3/1 (A508 Bridge Street) | 3.50 | 0.00 | Y | Arm J1:2 Left | 30.00 | 100.0 % | 1871 | 1871 |
| J1:3/2 (A508 Bridge Street) | 3.00 | 0.00 | Y | Arm J1:4 Ahead<br>Arm J2:5 Right | Inf<br>Inf | 57.8 %<br>42.2 % | 1915 | 1915 |
| J1:3/3 (A508 Bridge Street) | 3.00 | 0.00 | Y | Arm J2:5 Right | Inf | 100.0 % | 1915 | 1915 |
| J1:4/1 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| J1:5/1 (A5123 St Peter's Way) | 3.50 | 0.00 | Y | Arm J1:4 Left | 15.00 | 100.0 % | 1786 | 1786 |
| J1:5/2 (A5123 St Peter's Way) | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf | 0.0 % | 1915 | 1915 |
| J1:5/3 (A5123 St Peter's Way) | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J1:6/1 (Commercial Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (Bridge Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:12/1 (St Johns Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |

| Junction: J2: A5123 Victoria Promenade/Victoria Gardens | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J2:1/1 (Victoria Gardens) | 3.50 | 0.00 | Y | Arm J2:3 Left | 10.00 | 0.0 % | 1965 | 1965 |
| | | | | Arm J2:4 Ahead | Inf | 100.0 % | | |
| J2:1/2 (Victoria Gardens) | 3.50 | 0.00 | Y | Arm J1:1 Right | 18.00 | 100.0 % | 1814 | 1814 |
| J2:2/1 (A5123 Victoria Promenade) | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf | 18.7 % | 1915 | 1915 |
| | | | | Arm J2:4 Left | Inf | 81.3 % | | |
| J2:2/2 (A5123 Victoria Promenade) | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J2:3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:3/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:5/1 | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J2:5/2 | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J2:5/3 | 3.50 | 0.00 | Y | Arm J2:4 Right | 15.00 | 100.0 % | 1786 | 1786 |

**Scenario 4: '2031 D1 PM peak'** (FG2: '2031 D1 PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | Tot. |
| Origin | A | 0 | 3 | 40 | 0 | 58 | 0 | 0 | 101 |
| | B | 0 | 0 | 681 | 0 | 983 | 0 | 0 | 1664 |
| | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 173 | 418 | 0 | 0 | 425 | 0 | 51 | 1067 |
| | E | 0 | 104 | 400 | 0 | 0 | 0 | 0 | 504 |
| | F | 232 | 0 | 22 | 0 | 52 | 0 | 136 | 442 |
| | G | 489 | 0 | 28 | 0 | 202 | 0 | 0 | 719 |
| | Tot. | 894 | 525 | 1171 | 0 | 1720 | 0 | 187 | 4497 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 PM peak |
|---|---|
| **Junction: J1: A5123 St Peter's Way/A508 Bridge Street** | |
| J1:1/1 | 693 |
| J1:1/2 | 602 |
| J1:2/1 | 905 |
| J1:2/2 | 815 |
| J1:3/1 | 425 |
| J1:3/2 | 349 |
| J1:3/3 | 293 |
| J1:4/1 | 392 |
| J1:5/1 (short) | 168 |
| J1:5/2 (with short) | 265(In)<br>97(Out) |
| J1:5/3 | 239 |
| J1:6/1 | 442 |
| J1:7/1 | 187 |
| J1:7/2 | 595 |
| J1:7/3 | 52 |
| J1:8/1 | 187 |
| J1:9/1 | 595 |
| J1:9/2 | 52 |
| J1:10/1 | 719 |
| J1:11/1 | 218 |
| J1:11/2 | 254 |
| J1:12/1 | 101 |
| J1:13/1 | 894 |
| **Junction: J2: A5123 Victoria Promenade/Victoria Gardens** | |
| J2:1/1 | 261 |
| J2:1/2 | 312 |
| J2:2/1 | 832 |
| J2:2/2 | 832 |
| J2:3/1 | 225 |
| J2:3/2 | 300 |
| J2:4/1 | 1171 |
| J2:5/1 | 222 |
| J2:5/2 | 300 |
| J2:5/3 | 232 |

## Lane Saturation Flows

| Junction: J1: A5123 St Peter's Way/A508 Bridge Street | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (A5123) | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J1:1/2 (A5123) | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J1:2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:3/1 (A508 Bridge Street) | 3.50 | 0.00 | Y | Arm J1:2 Left | 30.00 | 100.0 % | 1871 | 1871 |
| J1:3/2 (A508 Bridge Street) | 3.00 | 0.00 | Y | Arm J1:4 Ahead<br>Arm J2:5 Right | Inf<br>Inf | 64.2 %<br>35.8 % | 1915 | 1915 |
| J1:3/3 (A508 Bridge Street) | 3.00 | 0.00 | Y | Arm J2:5 Right | Inf | 100.0 % | 1915 | 1915 |
| J1:4/1 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| J1:5/1 (A5123 St Peter's Way) | 3.50 | 0.00 | Y | Arm J1:4 Left | 15.00 | 100.0 % | 1786 | 1786 |
| J1:5/2 (A5123 St Peter's Way) | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J1:5/3 (A5123 St Peter's Way) | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J1:6/1 (Commercial Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (Bridge Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:12/1 (St Johns Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |

| Junction: J2: A5123 Victoria Promenade/Victoria Gardens | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J2:1/1 (Victoria Gardens) | 3.50 | 0.00 | Y | Arm J2:3 Left | 10.00 | 1.1 % | 1962 | 1962 |
| | | | | Arm J2:4 Ahead | Inf | 98.9 % | | |
| J2:1/2 (Victoria Gardens) | 3.50 | 0.00 | Y | Arm J1:1 Right | 18.00 | 100.0 % | 1814 | 1814 |
| J2:2/1 (A5123 Victoria Promenade) | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf | 18.1 % | 1915 | 1915 |
| | | | | Arm J2:4 Left | Inf | 81.9 % | | |
| J2:2/2 (A5123 Victoria Promenade) | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J2:3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:3/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:5/1 | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J2:5/2 | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J2:5/3 | 3.50 | 0.00 | Y | Arm J2:4 Right | 15.00 | 100.0 % | 1786 | 1786 |

**Scenario 6: '2031 J3 PM peak'** (FG8: '2031 J3 PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| | | Destination | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | D | E | F | G | Tot. |
| Origin | A | 0 | 2 | 34 | 0 | 19 | 0 | 0 | 55 |
| | B | 0 | 0 | 655 | 0 | 1006 | 0 | 0 | 1661 |
| | C | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | D | 193 | 430 | 0 | 0 | 459 | 0 | 68 | 1150 |
| | E | 0 | 132 | 389 | 0 | 0 | 0 | 15 | 536 |
| | F | 201 | 0 | 163 | 0 | 24 | 0 | 132 | 520 |
| | G | 518 | 5 | 27 | 0 | 119 | 0 | 0 | 669 |
| | Tot. | 912 | 569 | 1268 | 0 | 1627 | 0 | 215 | 4591 |

## Traffic Lane Flows

| Lane | Scenario 6: 2031 J3 PM peak |
|---|---|
| **Junction: J1: A5123 St Peter's Way/A508 Bridge Street** | |
| J1:1/1 | 553 |
| J1:1/2 | 615 |
| J1:2/1 | 782 |
| J1:2/2 | 845 |
| J1:3/1 | 459 |
| J1:3/2 | 349 |
| J1:3/3 | 342 |
| J1:4/1 | 276 |
| J1:5/1 (short) | 15 |
| J1:5/2 (with short) | 147(In) 132(Out) |
| J1:5/3 | 389 |
| J1:6/1 | 520 |
| J1:7/1 | 215 |
| J1:7/2 | 557 |
| J1:7/3 | 24 |
| J1:8/1 | 215 |
| J1:9/1 | 557 |
| J1:9/2 | 24 |
| J1:10/1 | 669 |
| J1:11/1 | 195 |
| J1:11/2 | 143 |
| J1:12/1 | 55 |
| J1:13/1 | 912 |
| **Junction: J2: A5123 Victoria Promenade/Victoria Gardens** | |
| J2:1/1 | 231 |
| J2:1/2 | 162 |
| J2:2/1 | 831 |
| J2:2/2 | 830 |
| J2:3/1 | 227 |
| J2:3/2 | 342 |
| J2:4/1 | 1268 |
| J2:5/1 | 220 |
| J2:5/2 | 342 |
| J2:5/3 | 389 |

## Lane Saturation Flows

| Junction: J1: A5123 St Peter's Way/A508 Bridge Street | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J1:1/1 (A5123) | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J1:1/2 (A5123) | 3.50 | 0.00 | Y | Arm J1:2 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J1:2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:3/1 (A508 Bridge Street) | 3.50 | 0.00 | Y | Arm J1:2 Left | 30.00 | 100.0 % | 1871 | 1871 |
| J1:3/2 (A508 Bridge Street) | 3.00 | 0.00 | Y | Arm J1:4 Ahead<br>Arm J2:5 Right | Inf<br>Inf | 74.8 %<br>25.2 % | 1915 | 1915 |
| J1:3/3 (A508 Bridge Street) | 3.00 | 0.00 | Y | Arm J2:5 Right | Inf | 100.0 % | 1915 | 1915 |
| J1:4/1 | This lane uses a directly entered Saturation Flow | | | | | | 3000 | 3000 |
| J1:5/1 (A5123 St Peter's Way) | 3.50 | 0.00 | Y | Arm J1:4 Left | 15.00 | 100.0 % | 1786 | 1786 |
| J1:5/2 (A5123 St Peter's Way) | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J1:5/3 (A5123 St Peter's Way) | 3.00 | 0.00 | Y | Arm J2:5 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J1:6/1 (Commercial Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:7/3 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:8/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:9/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:10/1 (Bridge Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:12/1 (St Johns Street Lane 1) | Infinite Saturation Flow | | | | | | Inf | Inf |
| J1:13/1 | Infinite Saturation Flow | | | | | | Inf | Inf |

| Junction: J2: A5123 Victoria Promenade/Victoria Gardens | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Lane** | **Lane Width (m)** | **Gradient** | **Nearside Lane** | **Allowed Turns** | **Turning Radius (m)** | **Turning Prop.** | **Sat Flow (PCU/Hr)** | **Flared Sat Flow (PCU/Hr)** |
| J2:1/1 (Victoria Gardens) | 3.50 | 0.00 | Y | Arm J2:3 Left | 10.00 | 3.0 % | 1956 | 1956 |
| | | | | Arm J2:4 Ahead | Inf | 97.0 % | | |
| J2:1/2 (Victoria Gardens) | 3.50 | 0.00 | Y | Arm J1:1 Right | 18.00 | 100.0 % | 1814 | 1814 |
| J2:2/1 (A5123 Victoria Promenade) | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf | 21.2 % | 1915 | 1915 |
| | | | | Arm J2:4 Left | Inf | 78.8 % | | |
| J2:2/2 (A5123 Victoria Promenade) | 3.00 | 0.00 | Y | Arm J1:1 Ahead | Inf | 100.0 % | 1915 | 1915 |
| J2:3/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:3/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:4/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| J2:5/1 | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J2:5/2 | 3.50 | 0.00 | Y | Arm J2:3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| J2:5/3 | 3.50 | 0.00 | Y | Arm J2:4 Right | 15.00 | 100.0 % | 1786 | 1786 |

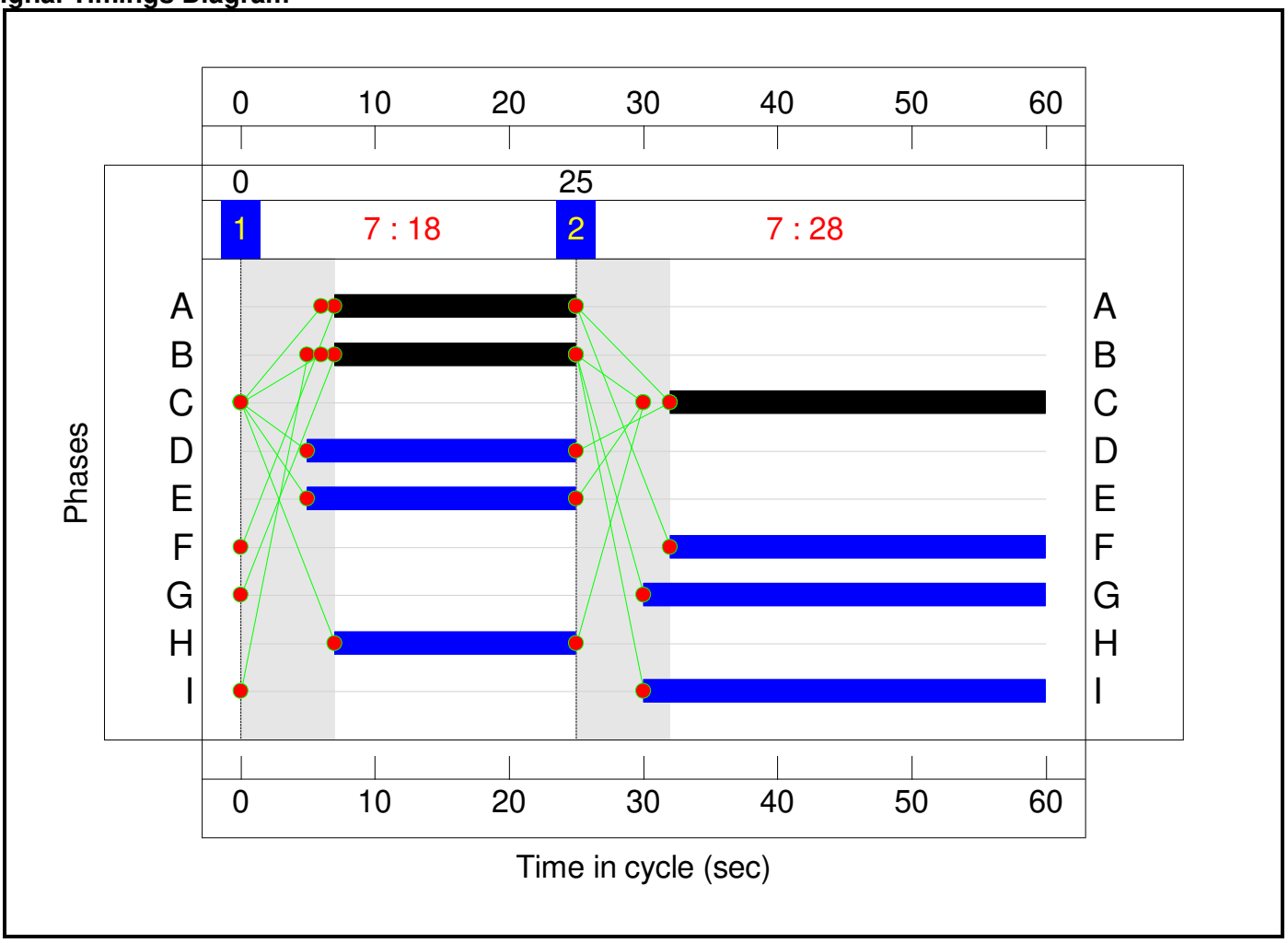
**Scenario 1: '2031 D1 AM peak'** (FG5: 'Adjusted 2031 D1 AM Peak', Plan 1: 'Network Control Plan 1')
**C1**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 18 | 28 |
| Change Point | 0 | 25 |

## Signal Timings Diagram



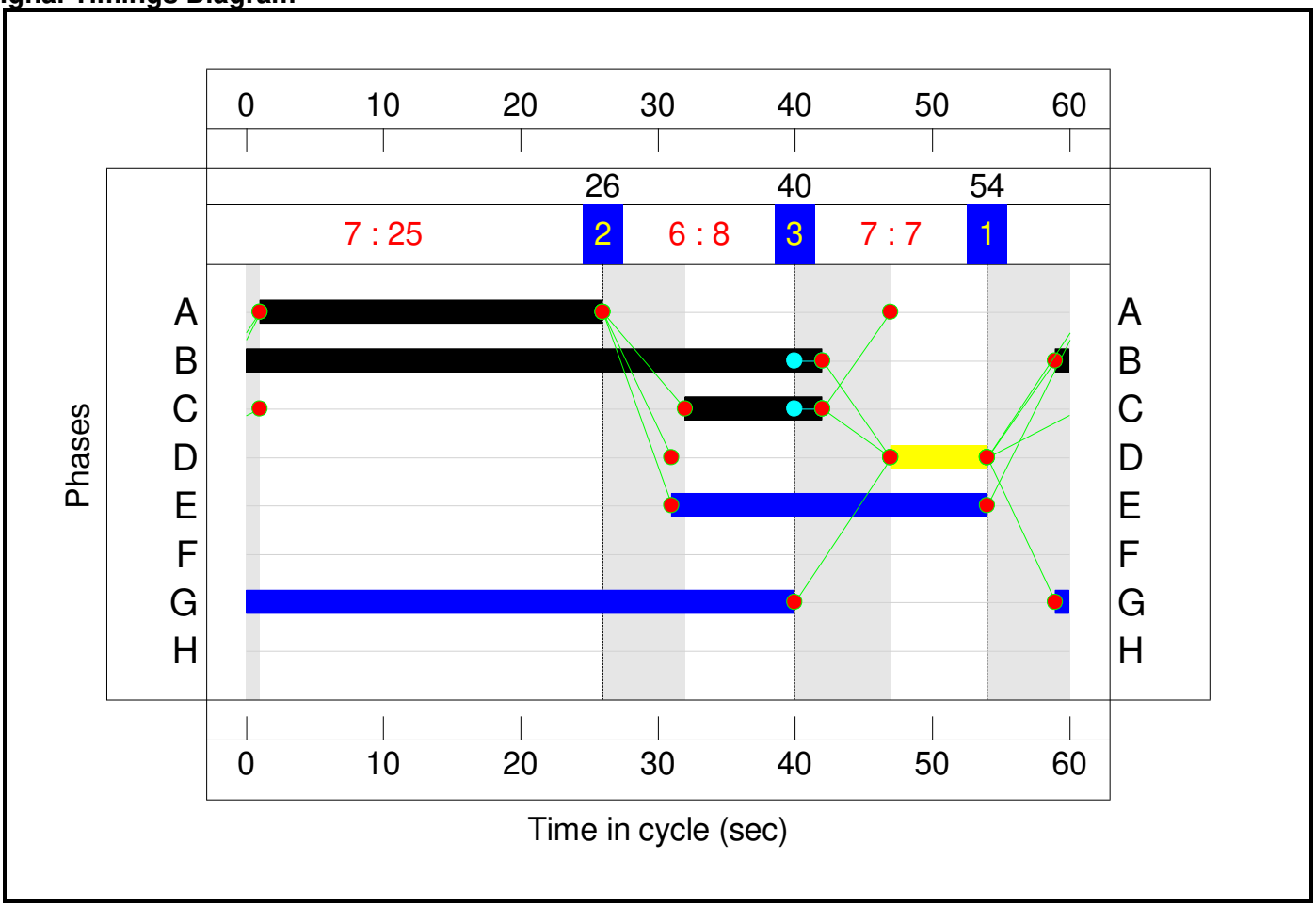

**C2**

### Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 25 | 8 | 7 |
| Change Point | 54 | 26 | 40 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **J1: A5123 St Peter's Way/A508 Bridge Street** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **82.4%** |
| 1/1 | A5123 Ahead | U | 1:1 | N/A | C1:A | | 1 | 18 | - | 353 | 1965 | 622 | 56.7% |
| 1/2 | A5123 Ahead | U | 1:1 | N/A | C1:A | | 1 | 18 | - | 356 | 1965 | 622 | 57.2% |
| 3/1 | A508 Bridge Street Left | U | 1:1 | N/A | C1:C | | 1 | 28 | - | 745 | 1871 | 904 | 82.4% |
| 3/2 | A508 Bridge Street Ahead Right | U | 1:1 | N/A | C1:C | | 1 | 28 | - | 410 | 1915 | 926 | 44.3% |
| 3/3 | A508 Bridge Street Right | U | 1:1 | N/A | C1:C | | 1 | 28 | - | 267 | 1915 | 926 | 28.8% |
| 4/1 | Ahead | U | N/A | N/A | - | | - | - | - | 672 | 3000 | 3000 | 22.4% |
| 5/2+5/1 | A5123 St Peter's Way Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 18 | - | 478 | 1915:1786 | 139+470 | 78.5 : 78.5% |
| 5/3 | A5123 St Peter's Way | U | 1:1 | N/A | C1:B | | 1 | 18 | - | 476 | 1915 | 606 | 78.5% |
| 6/1 | Commercial Street Left | O | N/A | N/A | - | | - | - | - | 365 | Inf | 567 | 64.4% |
| 10/1 | Bridge Street Ahead Left | O | N/A | N/A | - | | - | - | - | 107 | Inf | 823 | 13.0% |
| 12/1 | St Johns Street Ahead | O | N/A | N/A | - | | - | - | - | 0 | Inf | 997 | 0.0% |
| **J2: A5123 Victoria Prom/Victoria Gardens** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **80.3%** |
| 1/1 | Victoria Gardens Left | U | 2:1 | N/A | C2:D | | 1 | 7 | - | 8 | 1965 | 262 | 3.1% |
| 1/2 | Victoria Gardens Right | U | 2:1 | N/A | C2:D | | 1 | 7 | - | 4 | 1814 | 242 | 1.7% |
| 2/1 | A5123 Victoria Promenade Ahead Left | U | 2:1 | N/A | C2:A | | 1 | 25 | - | 644 | 1915 | 830 | 77.6% |
| 2/2 | A5123 Victoria Promenade | U | 2:1 | N/A | C2:A | | 1 | 25 | - | 644 | 1915 | 830 | 77.6% |
| 5/1 | Ahead | U | 2:1 | N/A | C2:B | | 1 | 43 | - | 216 | 1965 | 1441 | 15.0% |
| 5/2 | Ahead | U | 2:1 | N/A | C2:B | | 1 | 43 | - | 480 | 1965 | 1441 | 33.3% |
| 5/3 | Right | U | 2:1 | N/A | C2:C | | 1 | 10 | - | 263 | 1786 | 327 | 80.3% |

| 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: Plough Gyratory - J3 Cumulative Impact** | **-** | **-** | **472** | **0** | **0** | **19.1** | **14.5** | **0.0** | **33.6** | **-** | **-** | **-** | **-** |
| **J1: A5123 St Peter's Way/A508 Bridge Street** | **-** | **-** | **472** | **0** | **0** | **10.6** | **8.9** | **0.0** | **19.4** | **-** | **-** | **-** | **-** |
| 1/1 | 353 | 353 | - | - | - | 0.6 | 0.7 | - | 1.2 | 12.4 | 1.6 | 0.7 | 2.3 |
| 1/2 | 356 | 356 | - | - | - | 0.6 | 0.7 | - | 1.2 | 12.4 | 1.4 | 0.7 | 2.0 |
| 3/1 | 745 | 745 | - | - | - | 2.8 | 2.3 | - | 5.0 | 24.3 | 10.6 | 2.3 | 12.8 |
| 3/2 | 410 | 410 | - | - | - | 1.2 | 0.4 | - | 1.6 | 13.7 | 4.4 | 0.4 | 4.8 |
| 3/3 | 267 | 267 | - | - | - | 0.7 | 0.2 | - | 0.9 | 12.0 | 2.7 | 0.2 | 2.9 |
| 4/1 | 672 | 672 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.8 | 0.0 | 0.1 | 0.1 |
| 5/2+5/1 | 478 | 478 | - | - | - | 2.4 | 1.8 | - | 4.2 | 31.5 | 6.6 | 1.8 | 8.4 |
| 5/3 | 476 | 476 | - | - | - | 2.5 | 1.8 | - | 4.2 | 32.1 | 7.1 | 1.8 | 8.9 |
| 6/1 | 365 | 365 | 365 | 0 | 0 | 0.0 | 0.9 | - | 0.9 | 8.8 | 0.0 | 0.9 | 0.9 |
| 10/1 | 107 | 107 | 107 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 2.5 | 0.0 | 0.1 | 0.1 |
| 12/1 | 0 | 0 | 0 | 0 | 0 | 0.0 | 0.0 | - | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **J2: A5123 Victoria Promenade/Victoria Gardens** | **-** | **-** | **0** | **0** | **0** | **8.5** | **5.7** | **0.0** | **14.1** | **-** | **-** | **-** | **-** |
| 1/1 | 8 | 8 | - | - | - | 0.0 | 0.0 | - | 0.0 | 17.7 | 0.1 | 0.0 | 0.1 |
| 1/2 | 4 | 4 | - | - | - | 0.0 | 0.0 | - | 0.0 | 30.5 | 0.1 | 0.0 | 0.1 |
| 2/1 | 644 | 644 | - | - | - | 2.6 | 1.7 | - | 4.3 | 24.0 | 9.1 | 1.7 | 10.8 |
| 2/2 | 644 | 644 | - | - | - | 2.6 | 1.7 | - | 4.3 | 24.0 | 9.1 | 1.7 | 10.8 |
| 5/1 | 216 | 216 | - | - | - | 0.2 | 0.1 | - | 0.3 | 4.6 | 1.3 | 0.1 | 1.3 |
| 5/2 | 480 | 480 | - | - | - | 0.4 | 0.2 | - | 0.7 | 5.2 | 2.9 | 0.2 | 3.2 |
| 5/3 | 263 | 263 | - | - | - | 2.6 | 1.9 | - | 4.5 | 61.7 | 4.1 | 1.9 | 6.0 |

C1 Stream: 1 PRC for Signalled Lanes (%): 9.2 Total Delay for Signalled Lanes (pcuHr): 18.34 Cycle Time (s): 60

C2 Stream: 1 PRC for Signalled Lanes (%): 12.0 Total Delay for Signalled Lanes (pcuHr): 14.15 Cycle Time (s): 60

PRC Over All Lanes (%): 9.2 Total Delay Over All Lanes(pcuHr): 33.60

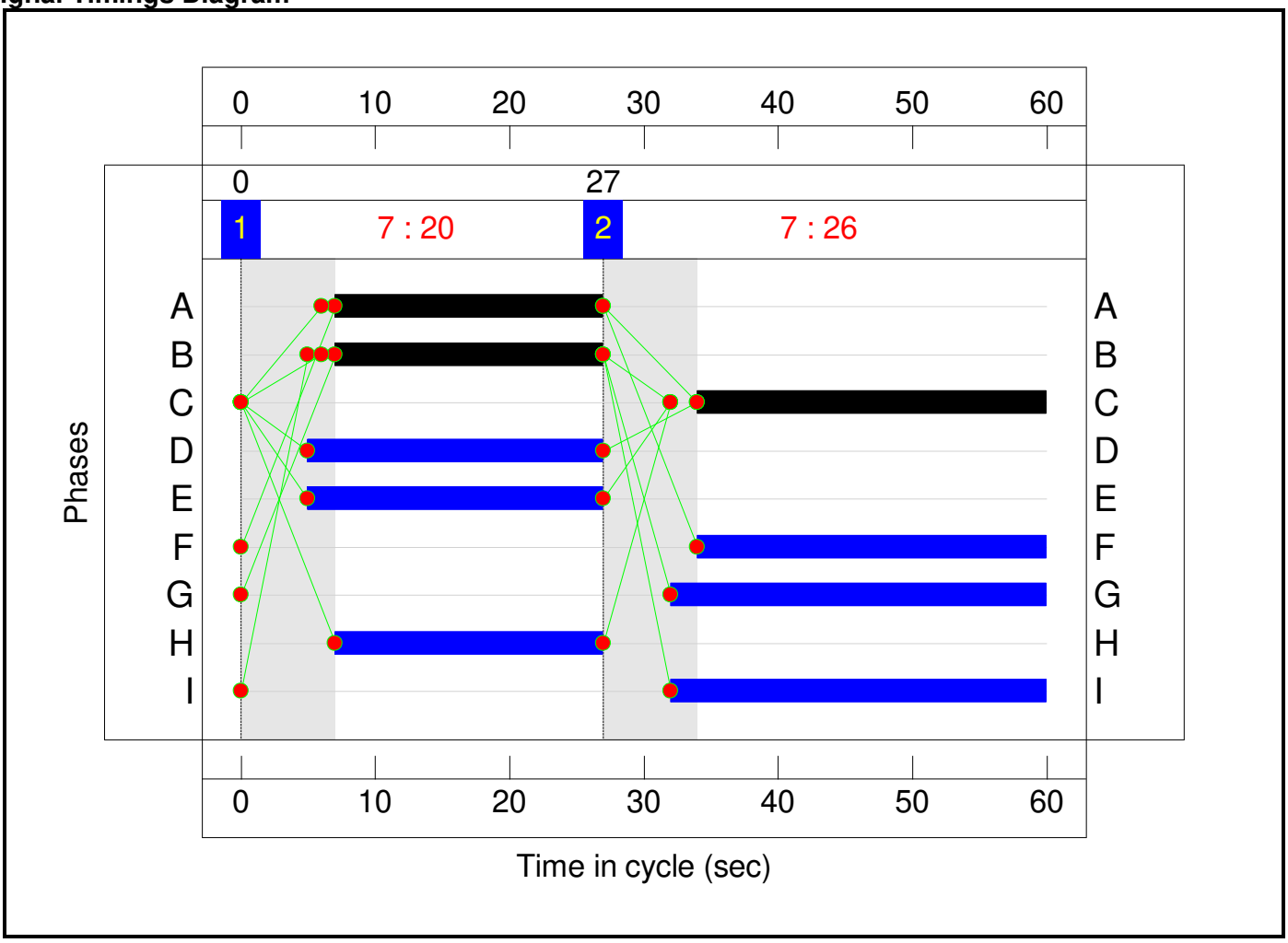
**Scenario 3: '2031 J3 AM peak'** (FG9: 'Adjusted 2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')
**C1**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 20 | 26 |
| Change Point | 0 | 27 |

## Signal Timings Diagram



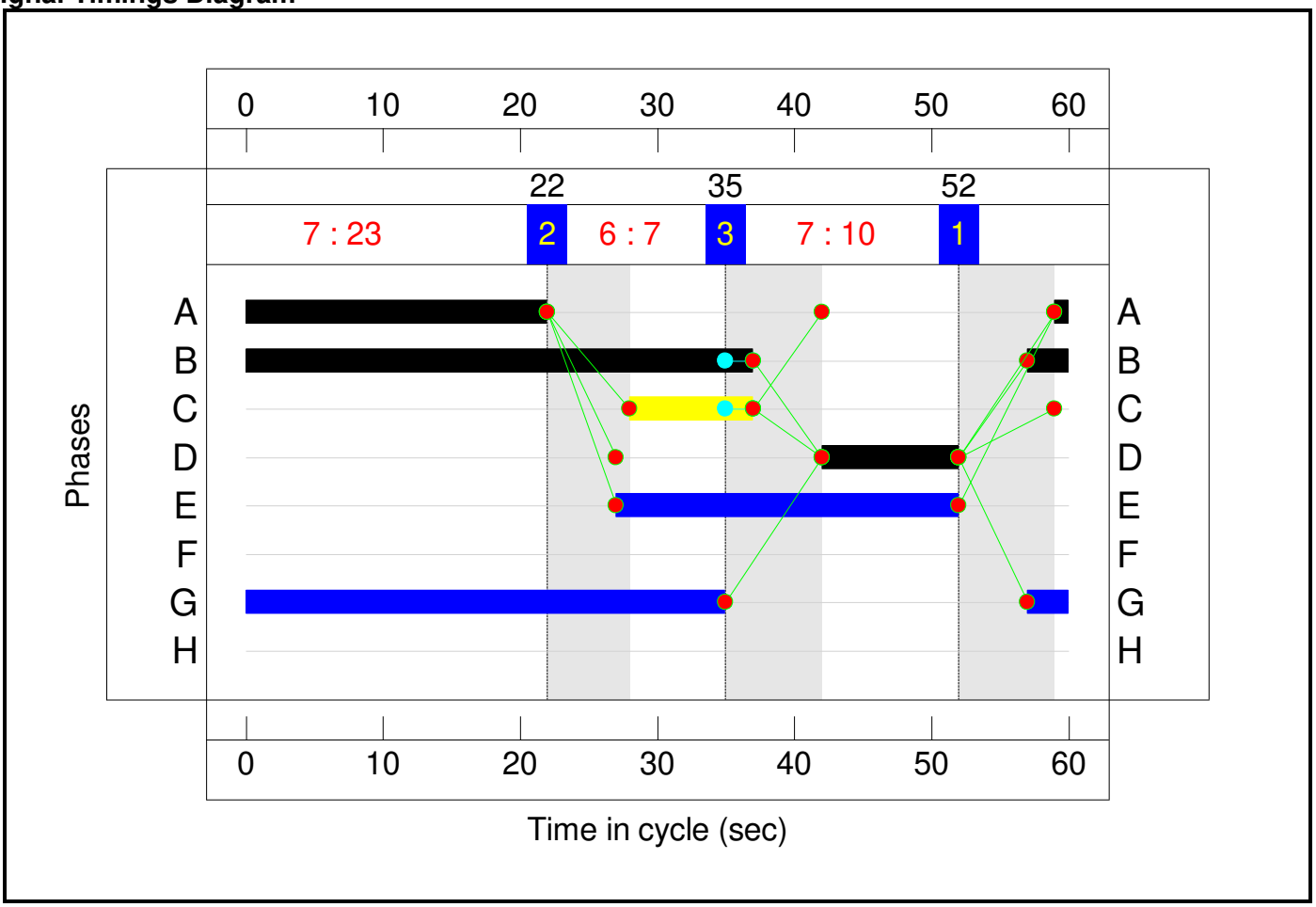

**C2**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 23 | 7 | 10 |
| Change Point | 52 | 22 | 35 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **J1: A5123 St Peter's Way/A508 Bridge Street** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **94.4%** |
| 1/1 | A5123 Ahead | U | 1:1 | N/A | C1:A | | 1 | 20 | - | 326 | 1965 | 688 | 47.4% |
| 1/2 | A5123 Ahead | U | 1:1 | N/A | C1:A | | 1 | 20 | - | 352 | 1965 | 688 | 51.2% |
| 3/1 | A508 Bridge Street Left | U | 1:1 | N/A | C1:C | | 1 | 26 | - | 775 | 1871 | 842 | 92.0% |
| 3/2 | A508 Bridge Street Ahead Right | U | 1:1 | N/A | C1:C | | 1 | 26 | - | 408 | 1915 | 862 | 47.3% |
| 3/3 | A508 Bridge Street Right | U | 1:1 | N/A | C1:C | | 1 | 26 | - | 289 | 1915 | 862 | 33.5% |
| 4/1 | Ahead | U | N/A | N/A | - | | - | - | - | 826 | 3000 | 3000 | 27.5% |
| 5/2+5/1 | A5123 St Peter's Way Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 590 | 1915:1786 | 0+625 | 0.0 : 94.4% |
| 5/3 | A5123 St Peter's Way | U | 1:1 | N/A | C1:B | | 1 | 20 | - | 529 | 1915 | 670 | 78.9% |
| 6/1 | Commercial Street Left | O | N/A | N/A | - | | - | - | - | 358 | Inf | 533 | 67.1% |
| 10/1 | Bridge Street Ahead Left | O | N/A | N/A | - | | - | - | - | 108 | Inf | 796 | 13.6% |
| 12/1 | St Johns Street Ahead | O | N/A | N/A | - | | - | - | - | 5 | Inf | 918 | 0.5% |
| **J2: A5123 Victoria Prom/Victoria Gardens** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **70.2%** |
| 1/1 | Victoria Gardens Left | U | 2:1 | N/A | C2:D | | 1 | 10 | - | 253 | 1965 | 360 | 70.2% |
| 1/2 | Victoria Gardens Right | U | 2:1 | N/A | C2:D | | 1 | 10 | - | 61 | 1814 | 333 | 18.3% |
| 2/1 | A5123 Victoria Promenade Ahead Left | U | 2:1 | N/A | C2:A | | 1 | 23 | - | 519 | 1915 | 766 | 67.8% |
| 2/2 | A5123 Victoria Promenade | U | 2:1 | N/A | C2:A | | 1 | 23 | - | 520 | 1915 | 766 | 67.9% |
| 5/1 | Ahead | U | 2:1 | N/A | C2:B | | 1 | 40 | - | 172 | 1965 | 1343 | 12.8% |
| 5/2 | Ahead | U | 2:1 | N/A | C2:B | | 1 | 40 | - | 683 | 1965 | 1343 | 50.9% |
| 5/3 | Right | U | 2:1 | N/A | C2:C | | 1 | 9 | - | 135 | 1786 | 298 | 45.4% |

| 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: Plough Gyratory - J3 Cumulative Impact** | **-** | **-** | **471** | **0** | **0** | **19.5** | **20.4** | **0.0** | **39.9** | **-** | **-** | **-** | **-** |
| **J1: A5123 St Peter's Way/A508 Bridge Street** | **-** | **-** | **471** | **0** | **0** | **11.8** | **16.0** | **0.0** | **27.8** | **-** | **-** | **-** | **-** |
| 1/1 | 326 | 326 | - | - | - | 0.4 | 0.4 | - | 0.9 | 9.8 | 2.9 | 0.4 | 3.3 |
| 1/2 | 352 | 352 | - | - | - | 0.1 | 0.5 | - | 0.7 | 6.8 | 1.7 | 0.5 | 2.3 |
| 3/1 | 775 | 775 | - | - | - | 3.3 | 5.0 | - | 8.4 | 38.9 | 12.1 | 5.0 | 17.1 |
| 3/2 | 408 | 408 | - | - | - | 1.3 | 0.4 | - | 1.8 | 15.5 | 4.6 | 0.4 | 5.1 |
| 3/3 | 289 | 289 | - | - | - | 0.9 | 0.3 | - | 1.1 | 13.8 | 3.1 | 0.3 | 3.3 |
| 4/1 | 826 | 826 | - | - | - | 0.0 | 0.2 | - | 0.2 | 0.8 | 0.0 | 0.2 | 0.2 |
| 5/2+5/1 | 590 | 590 | - | - | - | 3.1 | 6.2 | - | 9.3 | 56.8 | 9.5 | 6.2 | 15.7 |
| 5/3 | 529 | 529 | - | - | - | 2.6 | 1.8 | - | 4.4 | 29.9 | 7.8 | 1.8 | 9.6 |
| 6/1 | 358 | 358 | 358 | 0 | 0 | 0.0 | 1.0 | - | 1.0 | 10.3 | 1.7 | 1.0 | 2.7 |
| 10/1 | 108 | 108 | 108 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 2.6 | 0.0 | 0.1 | 0.1 |
| 12/1 | 5 | 5 | 5 | 0 | 0 | 0.0 | 0.0 | - | 0.0 | 2.0 | 0.0 | 0.0 | 0.0 |
| **J2: A5123 Victoria Promenade/Victoria Gardens** | **-** | **-** | **0** | **0** | **0** | **7.7** | **4.4** | **0.0** | **12.1** | **-** | **-** | **-** | **-** |
| 1/1 | 253 | 253 | - | - | - | 0.6 | 1.2 | - | 1.8 | 25.0 | 3.6 | 1.2 | 4.7 |
| 1/2 | 61 | 61 | - | - | - | 0.4 | 0.1 | - | 0.5 | 27.4 | 0.8 | 0.1 | 1.0 |
| 2/1 | 519 | 519 | - | - | - | 2.1 | 1.0 | - | 3.2 | 22.0 | 7.1 | 1.0 | 8.1 |
| 2/2 | 520 | 520 | - | - | - | 2.1 | 1.0 | - | 3.2 | 22.1 | 7.1 | 1.0 | 8.1 |
| 5/1 | 172 | 172 | - | - | - | 0.1 | 0.1 | - | 0.1 | 2.8 | 0.3 | 0.1 | 0.4 |
| 5/2 | 683 | 683 | - | - | - | 1.2 | 0.5 | - | 1.7 | 8.8 | 7.2 | 0.5 | 7.8 |
| 5/3 | 135 | 135 | - | - | - | 1.3 | 0.4 | - | 1.7 | 44.8 | 2.2 | 0.4 | 2.6 |

C1 Stream: 1 PRC for Signalled Lanes (%): -4.9 Total Delay for Signalled Lanes (pcuHr): 26.50 Cycle Time (s): 60

C2 Stream: 1 PRC for Signalled Lanes (%): 28.2 Total Delay for Signalled Lanes (pcuHr): 12.08 Cycle Time (s): 60

PRC Over All Lanes (%): -4.9 Total Delay Over All Lanes(pcuHr): 39.88

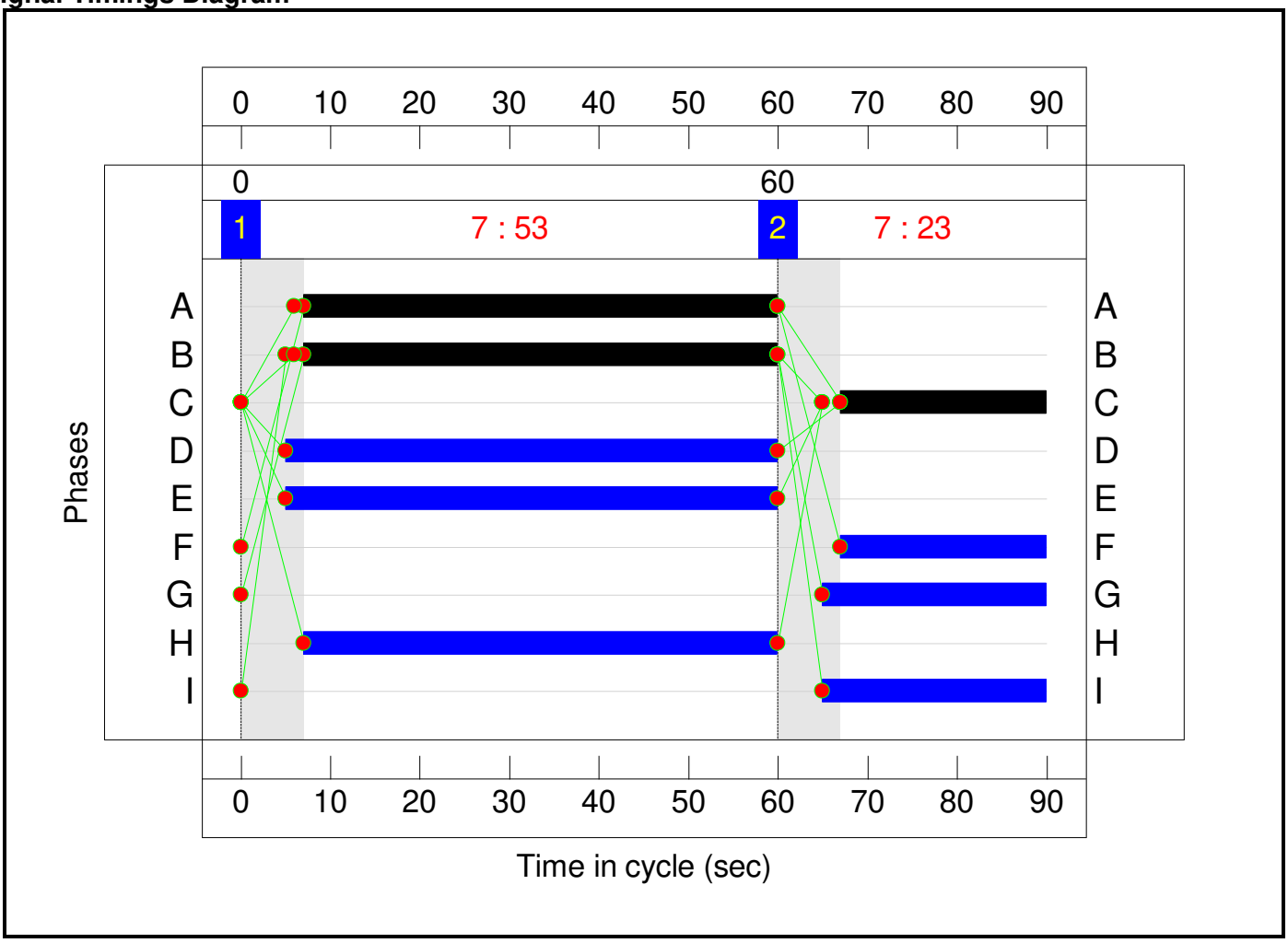
**Scenario 4: '2031 D1 PM peak'** (FG2: '2031 D1 PM Peak', Plan 1: 'Network Control Plan 1')
**C1**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 53 | 23 |
| Change Point | 0 | 60 |

## Signal Timings Diagram



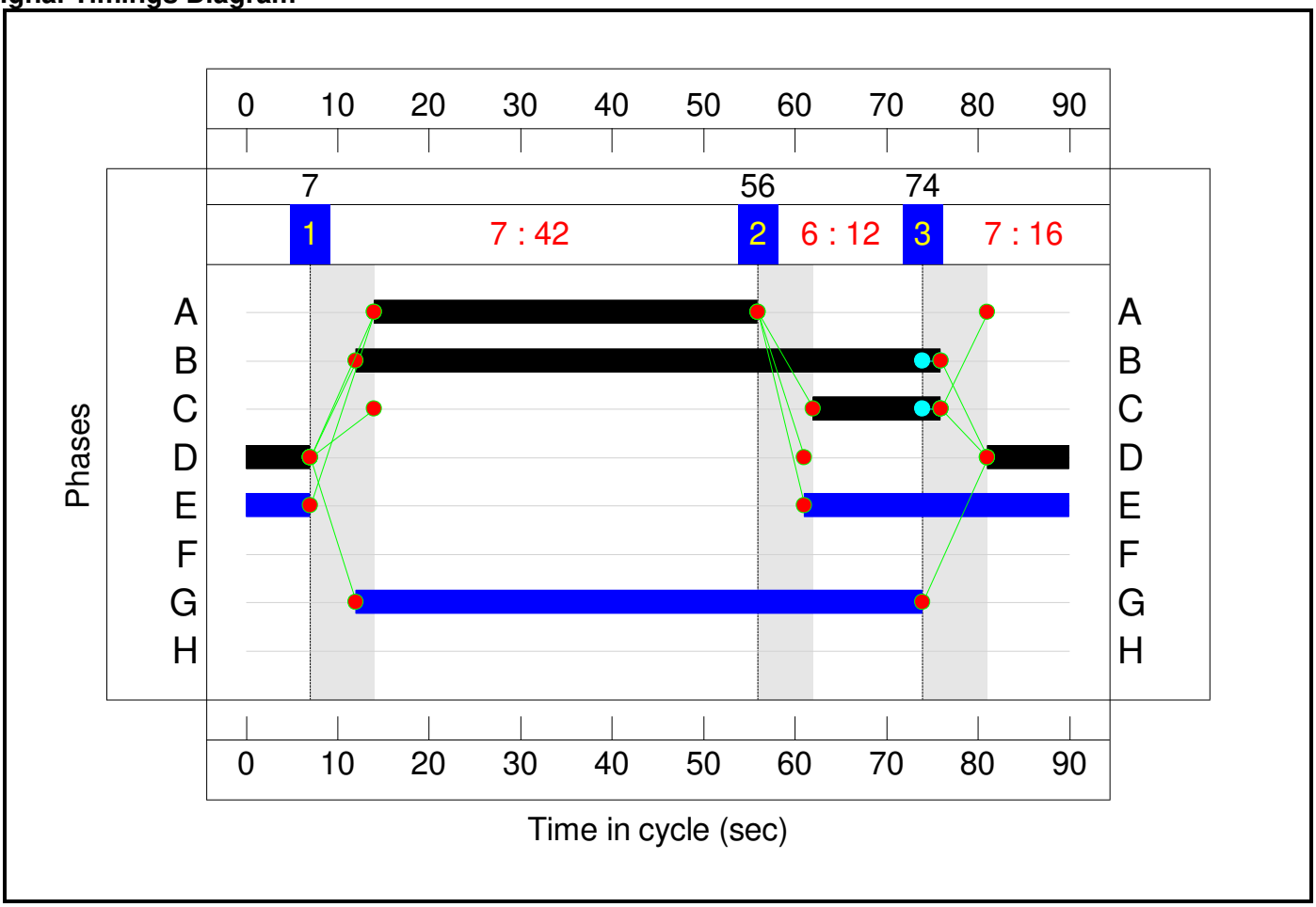

**C2**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 42 | 12 | 16 |
| Change Point | 7 | 56 | 74 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **J1: A5123 St Peter's Way/A508 Bridge Street** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **90.0%** |
| 1/1 | A5123 Ahead | U | 1:1 | N/A | C1:A | | 1 | 53 | - | 693 | 1965 | 1179 | 58.8% |
| 1/2 | A5123 Ahead | U | 1:1 | N/A | C1:A | | 1 | 53 | - | 602 | 1965 | 1179 | 51.1% |
| 3/1 | A508 Bridge Street Left | U | 1:1 | N/A | C1:C | | 1 | 23 | - | 425 | 1871 | 499 | 85.2% |
| 3/2 | A508 Bridge Street Ahead Right | U | 1:1 | N/A | C1:C | | 1 | 23 | - | 349 | 1915 | 511 | 68.3% |
| 3/3 | A508 Bridge Street Right | U | 1:1 | N/A | C1:C | | 1 | 23 | - | 293 | 1915 | 511 | 57.4% |
| 4/1 | Ahead | U | N/A | N/A | - | | - | - | - | 392 | 3000 | 3000 | 13.1% |
| 5/2+5/1 | A5123 St Peter's Way Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 53 | - | 265 | 1915:1786 | 419+725 | 23.2 : 23.2% |
| 5/3 | A5123 St Peter's Way | U | 1:1 | N/A | C1:B | | 1 | 53 | - | 239 | 1915 | 1149 | 20.8% |
| 6/1 | Commercial Street Left | O | N/A | N/A | - | | - | - | - | 442 | Inf | 629 | 70.3% |
| 10/1 | Bridge Street Ahead Left | O | N/A | N/A | - | | - | - | - | 719 | Inf | 798 | 90.0% |
| 12/1 | St Johns Street Ahead | O | N/A | N/A | - | | - | - | - | 101 | Inf | 878 | 11.5% |
| **J2: A5123 Victoria Prom/Victoria Gardens** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **91.1%** |
| 1/1 | Victoria Gardens Left | U | 2:1 | N/A | C2:D | | 1 | 16 | - | 261 | 1962 | 371 | 70.4% |
| 1/2 | Victoria Gardens Right | U | 2:1 | N/A | C2:D | | 1 | 16 | - | 312 | 1814 | 343 | 91.1% |
| 2/1 | A5123 Victoria Promenade Ahead Left | U | 2:1 | N/A | C2:A | | 1 | 42 | - | 832 | 1915 | 915 | 90.9% |
| 2/2 | A5123 Victoria Promenade | U | 2:1 | N/A | C2:A | | 1 | 42 | - | 832 | 1915 | 915 | 90.9% |
| 5/1 | Ahead | U | 2:1 | N/A | C2:B | | 1 | 64 | - | 222 | 1965 | 1419 | 15.6% |
| 5/2 | Ahead | U | 2:1 | N/A | C2:B | | 1 | 64 | - | 300 | 1965 | 1419 | 21.1% |
| 5/3 | Right | U | 2:1 | N/A | C2:C | | 1 | 14 | - | 232 | 1786 | 298 | 77.9% |

| 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: Plough Gyratory - J3 Cumulative Impact** | **-** | **-** | **1262** | **0** | **0** | **28.9** | **27.5** | **0.0** | **56.4** | **-** | **-** | **-** | **-** |
| **J1: A5123 St Peter's Way/A508 Bridge Street** | **-** | **-** | **1262** | **0** | **0** | **11.2** | **11.3** | **0.0** | **22.5** | **-** | **-** | **-** | **-** |
| 1/1 | 693 | 693 | - | - | - | 0.9 | 0.7 | - | 1.6 | 8.5 | 8.5 | 0.7 | 9.2 |
| 1/2 | 602 | 602 | - | - | - | 0.2 | 0.5 | - | 0.7 | 4.2 | 0.5 | 0.5 | 1.0 |
| 3/1 | 425 | 425 | - | - | - | 3.7 | 2.7 | - | 6.4 | 54.0 | 10.0 | 2.7 | 12.7 |
| 3/2 | 349 | 349 | - | - | - | 2.9 | 1.1 | - | 3.9 | 40.6 | 7.8 | 1.1 | 8.8 |
| 3/3 | 293 | 293 | - | - | - | 2.3 | 0.7 | - | 3.0 | 36.8 | 6.3 | 0.7 | 6.9 |
| 4/1 | 392 | 392 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.7 | 0.0 | 0.1 | 0.1 |
| 5/2+5/1 | 265 | 265 | - | - | - | 0.6 | 0.2 | - | 0.7 | 9.9 | 1.8 | 0.2 | 2.0 |
| 5/3 | 239 | 239 | - | - | - | 0.5 | 0.1 | - | 0.7 | 10.2 | 2.7 | 0.1 | 2.9 |
| 6/1 | 442 | 442 | 442 | 0 | 0 | 0.0 | 1.2 | - | 1.2 | 9.5 | 0.2 | 1.2 | 1.4 |
| 10/1 | 719 | 719 | 719 | 0 | 0 | 0.1 | 4.1 | - | 4.2 | 20.8 | 5.0 | 4.1 | 9.1 |
| 12/1 | 101 | 101 | 101 | 0 | 0 | 0.0 | 0.1 | - | 0.1 | 2.3 | 0.0 | 0.1 | 0.1 |
| **J2: A5123 Victoria Promenade/Victoria Gardens** | **-** | **-** | **0** | **0** | **0** | **17.7** | **16.1** | **0.0** | **33.9** | **-** | **-** | **-** | **-** |
| 1/1 | 261 | 261 | - | - | - | 2.6 | 1.2 | - | 3.8 | 52.4 | 6.4 | 1.2 | 7.5 |
| 1/2 | 312 | 312 | - | - | - | 3.1 | 4.0 | - | 7.1 | 82.3 | 7.6 | 4.0 | 11.7 |
| 2/1 | 832 | 832 | - | - | - | 5.0 | 4.5 | - | 9.5 | 41.3 | 19.2 | 4.5 | 23.7 |
| 2/2 | 832 | 832 | - | - | - | 5.0 | 4.5 | - | 9.5 | 41.3 | 19.2 | 4.5 | 23.7 |
| 5/1 | 222 | 222 | - | - | - | 0.1 | 0.1 | - | 0.2 | 3.2 | 0.9 | 0.1 | 1.0 |
| 5/2 | 300 | 300 | - | - | - | 0.0 | 0.1 | - | 0.2 | 2.0 | 1.2 | 0.1 | 1.3 |
| 5/3 | 232 | 232 | - | - | - | 1.8 | 1.7 | - | 3.5 | 54.7 | 5.5 | 1.7 | 7.2 |

C1 Stream: 1 PRC for Signalled Lanes (%): 5.7 Total Delay for Signalled Lanes (pcuHr): 17.05 Cycle Time (s): 90

C2 Stream: 1 PRC for Signalled Lanes (%): -1.2 Total Delay for Signalled Lanes (pcuHr): 33.89 Cycle Time (s): 90

PRC Over All Lanes (%): -1.2 Total Delay Over All Lanes(pcuHr): 56.41

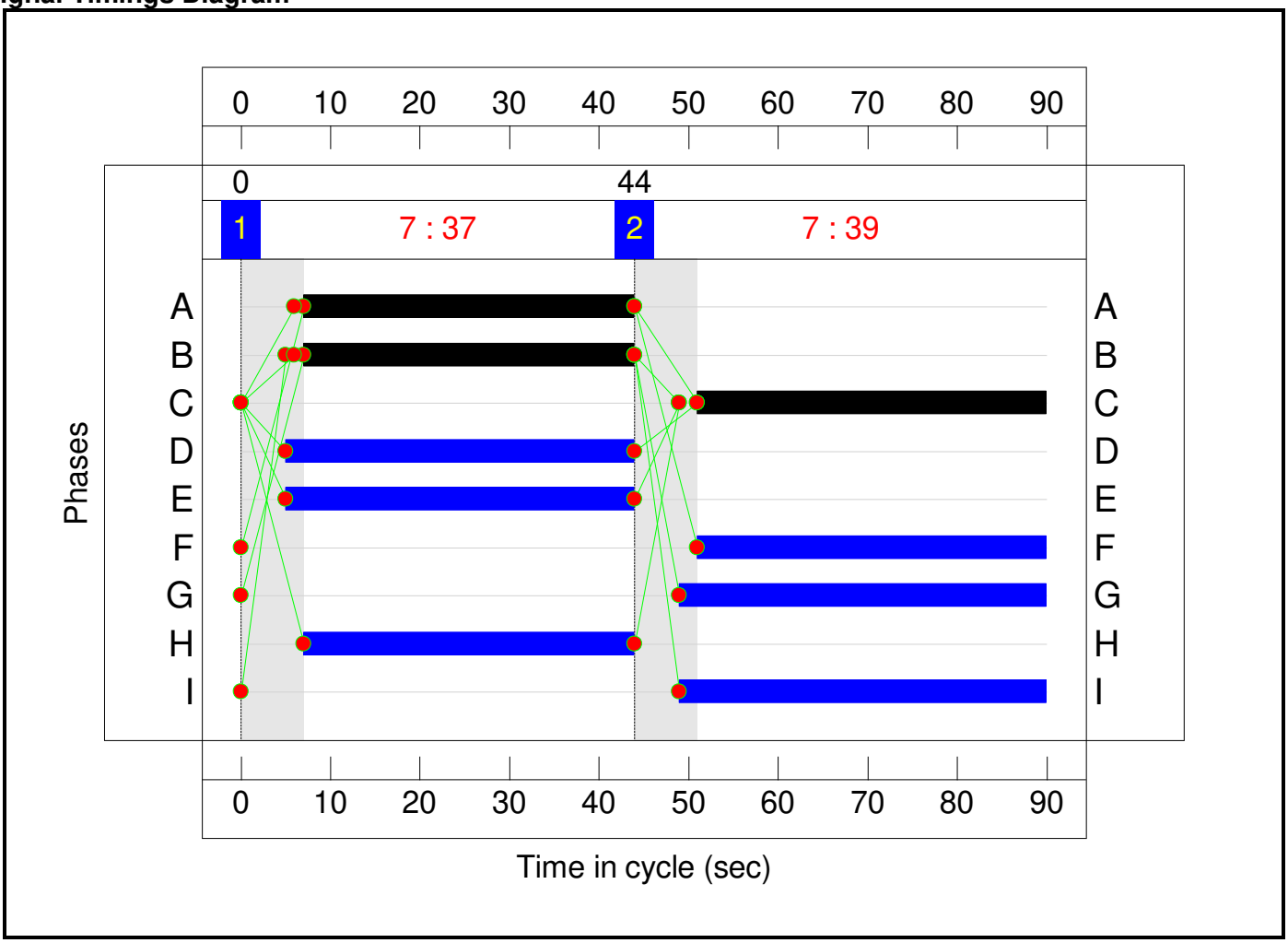
**Scenario 6: '2031 J3 PM peak'** (FG8: '2031 J3 PM Peak', Plan 1: 'Network Control Plan 1')
**C1**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 |
|---|---|---|
| Duration | 37 | 39 |
| Change Point | 0 | 44 |

## Signal Timings Diagram



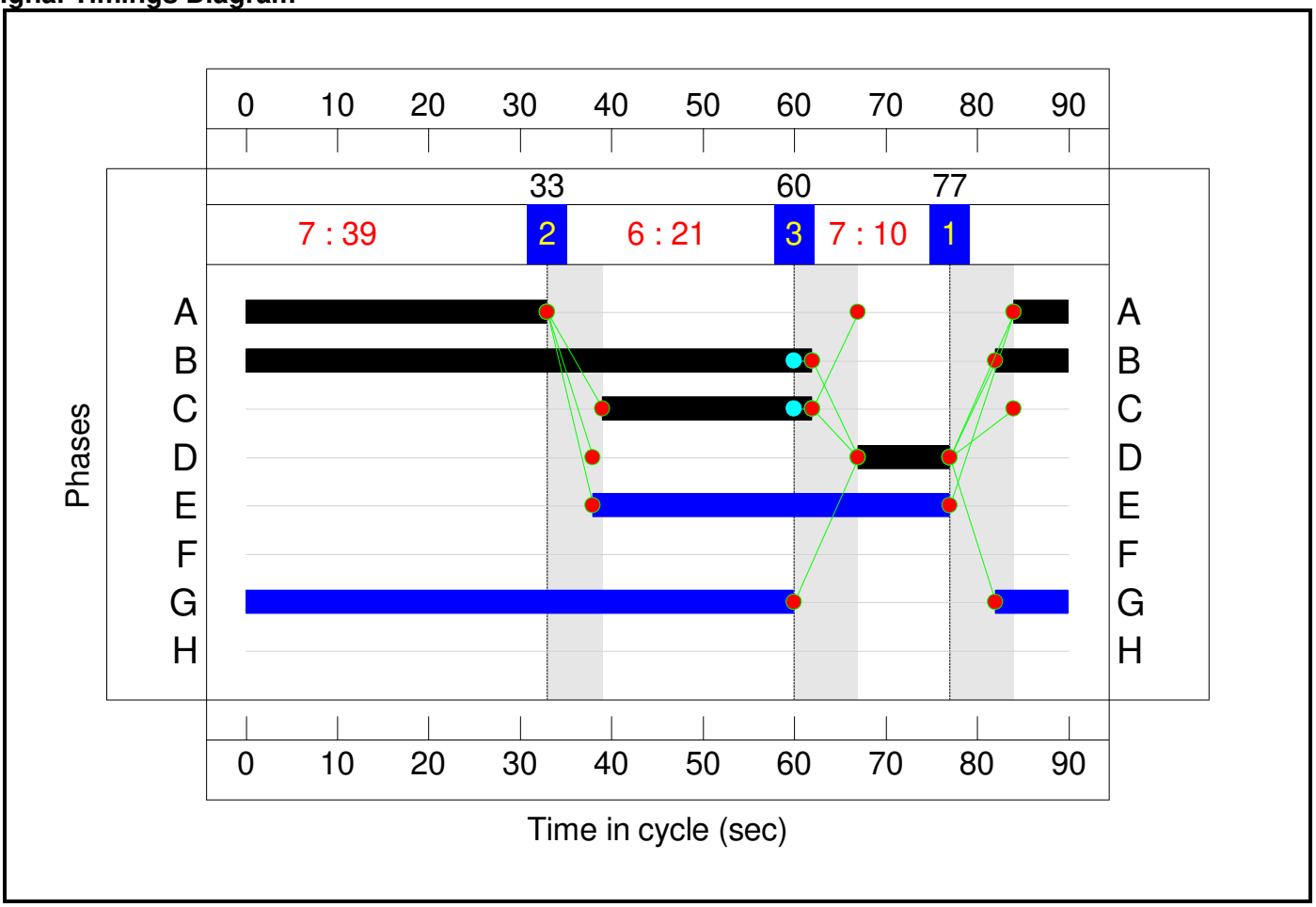

**C2**

## Stage Timings

**Stage Stream: 1**

| Stage | 1 | 2 | 3 |
|---|---|---|---|
| Duration | 39 | 21 | 10 |
| Change Point | 77 | 33 | 60 |

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **J1: A5123 St Peter's Way/A508 Bridge Street** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **82.1%** |
| 1/1 | A5123 Ahead | U | 1:1 | N/A | C1:A | | 1 | 37 | - | 553 | 1965 | 830 | 66.7% |
| 1/2 | A5123 Ahead | U | 1:1 | N/A | C1:A | | 1 | 37 | - | 615 | 1965 | 830 | 74.1% |
| 3/1 | A508 Bridge Street Left | U | 1:1 | N/A | C1:C | | 1 | 39 | - | 459 | 1871 | 832 | 55.2% |
| 3/2 | A508 Bridge Street Ahead Right | U | 1:1 | N/A | C1:C | | 1 | 39 | - | 349 | 1915 | 851 | 41.0% |
| 3/3 | A508 Bridge Street Right | U | 1:1 | N/A | C1:C | | 1 | 39 | - | 342 | 1915 | 851 | 40.2% |
| 4/1 | Ahead | U | N/A | N/A | - | | - | - | - | 276 | 3000 | 3000 | 9.2% |
| 5/2+5/1 | A5123 St Peter's Way Left Ahead | U | 1:1 | N/A | C1:B | | 1 | 37 | - | 147 | 1915:1786 | 725+82 | 18.2 : 18.2% |
| 5/3 | A5123 St Peter's Way | U | 1:1 | N/A | C1:B | | 1 | 37 | - | 389 | 1915 | 809 | 48.1% |
| 6/1 | Commercial Street Left | O | N/A | N/A | - | | - | - | - | 520 | Inf | 654 | 79.5% |
| 10/1 | Bridge Street Ahead Left | O | N/A | N/A | - | | - | - | - | 669 | Inf | 814 | 82.1% |
| 12/1 | St Johns Street Ahead | O | N/A | N/A | - | | - | - | - | 55 | Inf | 919 | 6.0% |
| **J2: A5123 Victoria Prom/Victoria Gardens** | **-** | **-** | **N/A** | **-** | **-** | | **-** | **-** | **-** | **-** | **-** | **-** | **97.6%** |
| 1/1 | Victoria Gardens Left | U | 2:1 | N/A | C2:D | | 1 | 10 | - | 231 | 1956 | 239 | 96.6% |
| 1/2 | Victoria Gardens Right | U | 2:1 | N/A | C2:D | | 1 | 10 | - | 162 | 1814 | 222 | 73.1% |
| 2/1 | A5123 Victoria Promenade Ahead Left | U | 2:1 | N/A | C2:A | | 1 | 39 | - | 831 | 1915 | 851 | 97.6% |
| 2/2 | A5123 Victoria Promenade | U | 2:1 | N/A | C2:A | | 1 | 39 | - | 830 | 1915 | 851 | 97.5% |
| 5/1 | Ahead | U | 2:1 | N/A | C2:B | | 1 | 70 | - | 220 | 1965 | 1550 | 14.2% |
| 5/2 | Ahead | U | 2:1 | N/A | C2:B | | 1 | 70 | - | 342 | 1965 | 1550 | 22.1% |
| 5/3 | Right | U | 2:1 | N/A | C2:C | | 1 | 23 | - | 389 | 1786 | 476 | 81.7% |

| 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: Plough Gyratory - J3 Cumulative Impact** | **-** | **-** | **1244** | **0** | **0** | **28.1** | **38.3** | **0.0** | **66.3** | **-** | **-** | **-** | **-** |
| **J1: A5123 St Peter's Way/A508 Bridge Street** | **-** | **-** | **1244** | **0** | **0** | **10.2** | **8.5** | **0.0** | **18.7** | **-** | **-** | **-** | **-** |
| 1/1 | 553 | 553 | - | - | - | 1.5 | 1.0 | - | 2.5 | 16.4 | 10.4 | 1.0 | 11.4 |
| 1/2 | 615 | 615 | - | - | - | 0.3 | 1.4 | - | 1.8 | 10.3 | 8.8 | 1.4 | 10.2 |
| 3/1 | 459 | 459 | - | - | - | 2.3 | 0.6 | - | 3.0 | 23.2 | 8.4 | 0.6 | 9.0 |
| 3/2 | 349 | 349 | - | - | - | 1.6 | 0.3 | - | 2.0 | 20.6 | 5.9 | 0.3 | 6.3 |
| 3/3 | 342 | 342 | - | - | - | 1.6 | 0.3 | - | 1.9 | 20.4 | 5.7 | 0.3 | 6.0 |
| 4/1 | 276 | 276 | - | - | - | 0.0 | 0.1 | - | 0.1 | 0.7 | 0.0 | 0.1 | 0.1 |
| 5/2+5/1 | 147 | 147 | - | - | - | 0.7 | 0.1 | - | 0.8 | 18.8 | 2.1 | 0.1 | 2.2 |
| 5/3 | 389 | 389 | - | - | - | 2.0 | 0.5 | - | 2.5 | 23.1 | 7.0 | 0.5 | 7.5 |
| 6/1 | 520 | 520 | 520 | 0 | 0 | 0.0 | 1.9 | - | 1.9 | 13.2 | 2.6 | 1.9 | 4.5 |
| 10/1 | 669 | 669 | 669 | 0 | 0 | 0.0 | 2.2 | - | 2.3 | 12.1 | 3.5 | 2.2 | 5.8 |
| 12/1 | 55 | 55 | 55 | 0 | 0 | 0.0 | 0.0 | - | 0.0 | 2.1 | 0.0 | 0.0 | 0.0 |
| **J2: A5123 Victoria Promenade/Victoria Gardens** | **-** | **-** | **0** | **0** | **0** | **17.9** | **29.8** | **0.0** | **47.7** | **-** | **-** | **-** | **-** |
| 1/1 | 231 | 231 | - | - | - | 2.5 | 5.8 | - | 8.4 | 130.4 | 5.7 | 5.8 | 11.6 |
| 1/2 | 162 | 162 | - | - | - | 1.7 | 1.3 | - | 3.0 | 66.9 | 3.9 | 1.3 | 5.2 |
| 2/1 | 831 | 831 | - | - | - | 5.7 | 10.2 | - | 15.9 | 68.9 | 20.3 | 10.2 | 30.6 |
| 2/2 | 830 | 830 | - | - | - | 5.7 | 10.1 | - | 15.7 | 68.2 | 20.3 | 10.1 | 30.4 |
| 5/1 | 220 | 220 | - | - | - | 0.1 | 0.1 | - | 0.2 | 3.0 | 0.8 | 0.1 | 0.9 |
| 5/2 | 342 | 342 | - | - | - | 0.0 | 0.1 | - | 0.1 | 1.6 | 0.1 | 0.1 | 0.2 |
| 5/3 | 389 | 389 | - | - | - | 2.2 | 2.1 | - | 4.3 | 40.1 | 7.6 | 2.1 | 9.8 |

C1 Stream: 1 PRC for Signalled Lanes (%): 21.4 Total Delay for Signalled Lanes (pcuHr): 14.44 Cycle Time (s): 90

C2 Stream: 1 PRC for Signalled Lanes (%): -8.5 Total Delay for Signalled Lanes (pcuHr): 47.65 Cycle Time (s): 90

PRC Over All Lanes (%): -8.5 Total Delay Over All Lanes(pcuHr): 66.35

# JUNCTION 23

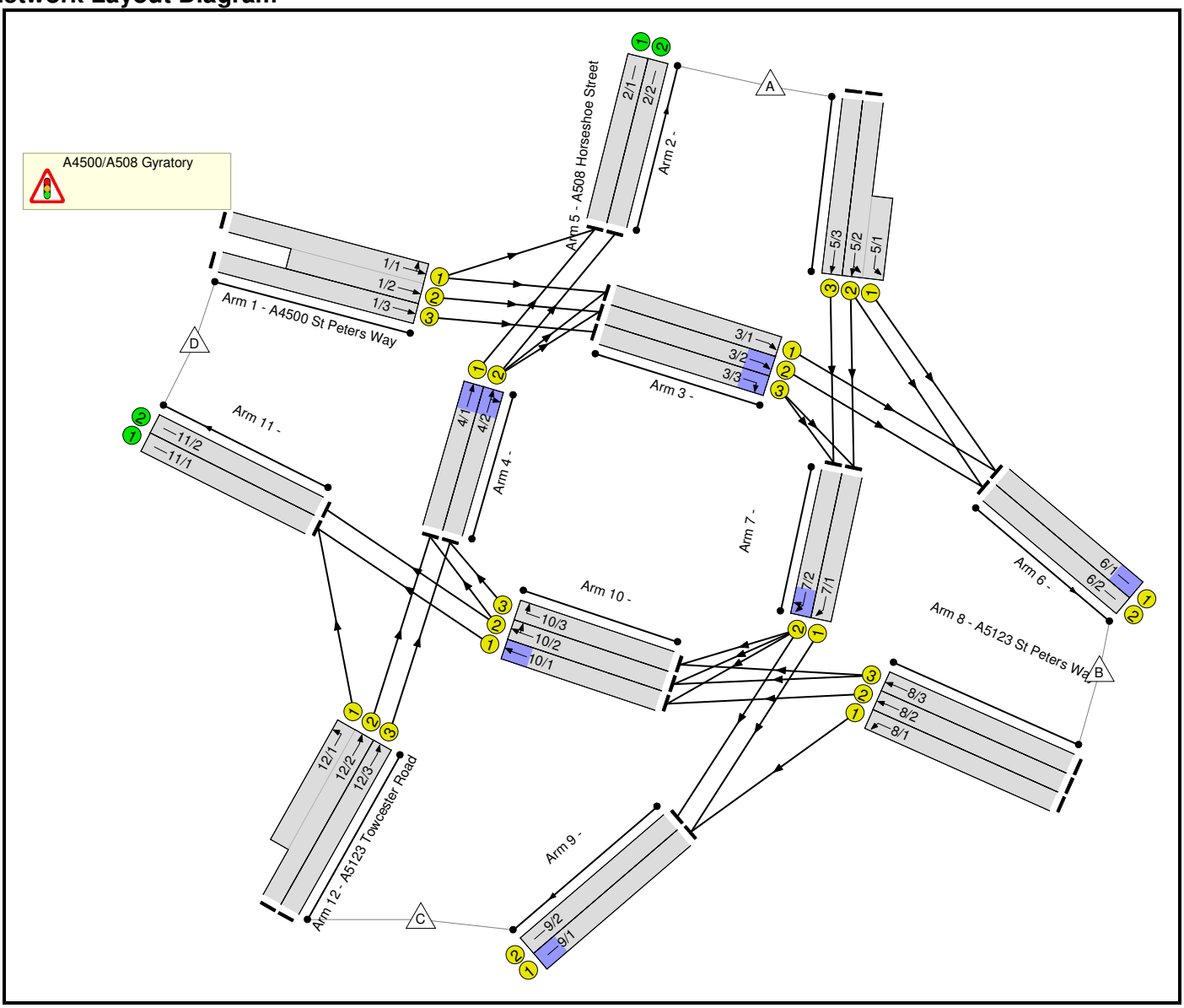
# A4500 ST PETERS WAY/A508 HORSESHOE STREET GYRATORY

## Full Input Data And Results

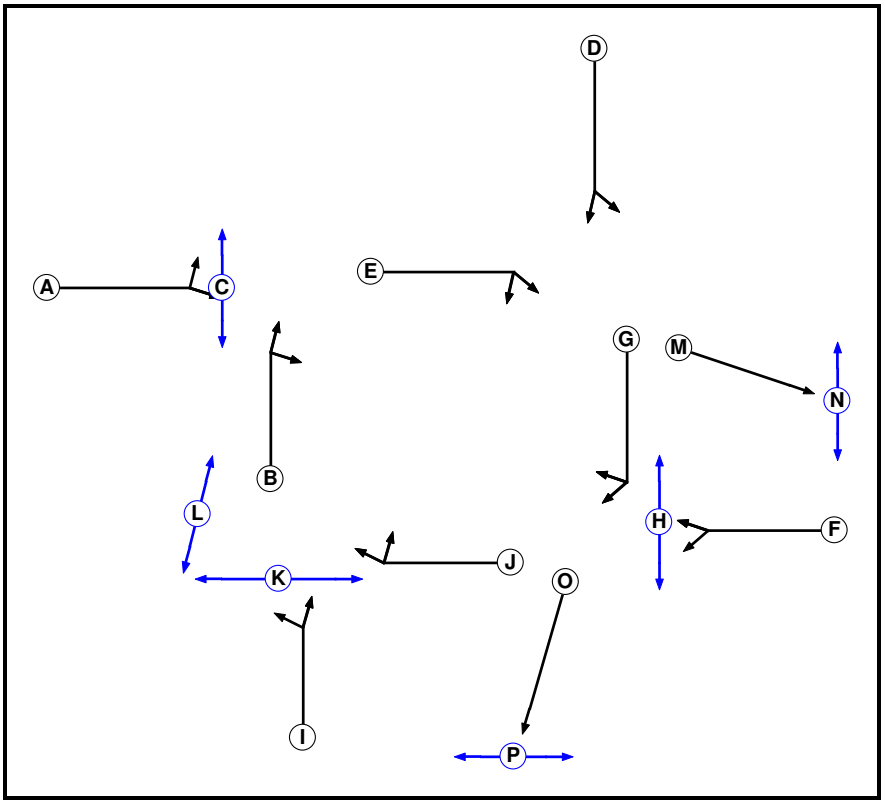
### User and Project Details

| | |
|---|---|
| **Project:** | **Northampton Gateway SRFI** |
| **Title:** | **A4500 St Peters Way/A508 Horseshoe Street Gyratory - J3 Cumulative Impact** |
| **File name:** | 180319 A4500_A508_Towcester Road Gyratory.lsg3x |
| **Author:** | Mark Higgins |
| **Company:** | ADC Infrastructure |
| **Address:** | Western House, Nottingham |

### Network Layout Diagram



## Phase Diagram




## Phase Input Data

| Phase Name | Phase Type | Stage Stream | Assoc. Phase | Street Min | Cont Min |
|---|---|---|---|---|---|
| A | Traffic | 1 | | 7 | 7 |
| B | Traffic | 1 | | 7 | 6 |
| C | Pedestrian | 1 | | 5 | 5 |
| D | Traffic | 2 | | 7 | 7 |
| E | Traffic | 2 | | 7 | 7 |
| F | Traffic | 3 | | 7 | 7 |
| G | Traffic | 3 | | 7 | 6 |
| H | Pedestrian | 3 | | 5 | 5 |
| I | Traffic | 4 | | 7 | 6 |
| J | Traffic | 4 | | 7 | 7 |
| K | Pedestrian | 4 | | 5 | 5 |
| L | Pedestrian | 4 | | 5 | 5 |
| M | Traffic | 5 | | 7 | 7 |
| N | Pedestrian | 5 | | 5 | 5 |
| O | Traffic | 6 | | 7 | 7 |
| P | Pedestrian | 6 | | 5 | 5 |

## Phase Intergreens Matrix

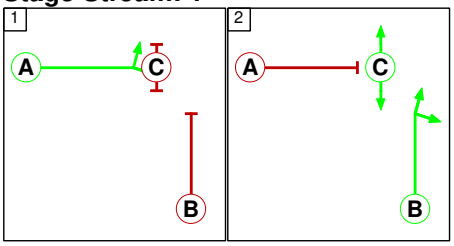
| Terminating Phase \ Starting Phase | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | | 6 | 5 | - | - | - | - | - | - | - | - | - | - | - | - | - |
| B | 5 | | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| C | 6 | - | | - | - | - | - | - | - | - | - | - | - | - | - | - |
| D | - | - | - | | 5 | - | - | - | - | - | - | - | - | - | - | - |
| E | - | - | - | 5 | | - | - | - | - | - | - | - | - | - | - | - |
| F | - | - | - | - | - | | 6 | 5 | - | - | - | - | - | - | - | - |
| G | - | - | - | - | - | 5 | | - | - | - | - | - | - | - | - | - |
| H | - | - | - | - | - | 6 | - | | - | - | - | - | - | - | - | - |
| I | - | - | - | - | - | - | - | - | | 6 | 5 | - | - | - | - | - |
| J | - | - | - | - | - | - | - | - | 7 | | - | 7 | - | - | - | - |
| K | - | - | - | - | - | - | - | - | 7 | - | | - | - | - | - | - |
| L | - | - | - | - | - | - | - | - | - | 7 | - | | - | - | - | - |
| M | - | - | - | - | - | - | - | - | - | - | - | - | | 5 | - | - |
| N | - | - | - | - | - | - | - | - | - | - | - | - | 7 | | - | - |
| O | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | 5 |
| P | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 7 | |

## Phases in Stage

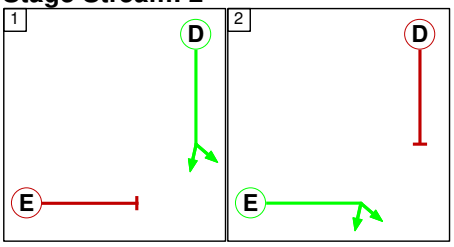
| Stream | Stage No. | Phases in Stage |
|---|---|---|
| 1 | 1 | A |
| 1 | 2 | B C |
| 2 | 1 | D |
| 2 | 2 | E |
| 3 | 1 | F |
| 3 | 2 | G H |
| 4 | 1 | I L |
| 4 | 2 | J K |
| 5 | 1 | M |
| 5 | 2 | N |
| 6 | 1 | O |
| 6 | 2 | P |

## Stage Diagram

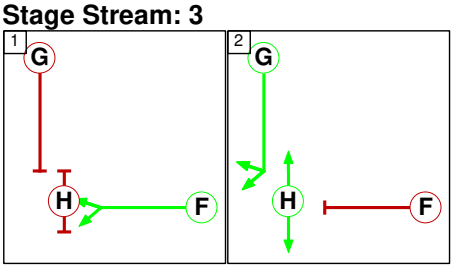
### Stage Stream: 1



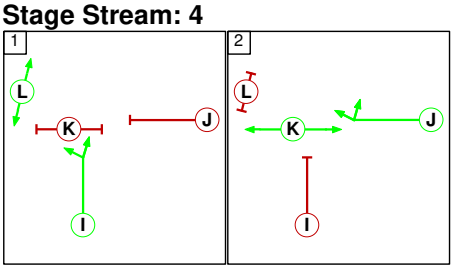
**Stage Stream: 2**



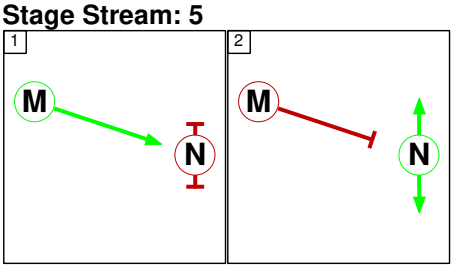

**Stage Stream: 3**



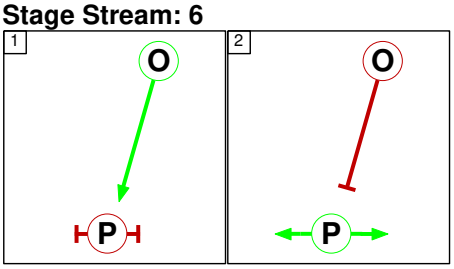

**Stage Stream: 4**




**Stage Stream: 5**




**Stage Stream: 6**



## Lane Input Data

| Lane | Lane Type | Phases | Start Disp. | End Disp. | Physical Length (PCU) | Sat Flow Type | Saturation Flow (PCU/Hr) | Lane Width (m) | Gradient | Nearside Lane | Turns | Turning Radius (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1 (A4500 St Peters Way) | U | A | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 2 Left | Inf |
| | | | | | | | | | | | Arm 3 Ahead | Inf |
| ½ (A4500 St Peters Way) | U | A | 2 | 3 | 10.0 | Geom | - | 3.50 | 0.00 | N | Arm 3 Ahead | Inf |
| 1/3 (A4500 St Peters Way) | U | A | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf |
| 2/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 2/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 3/1 | U | E | 2 | 3 | 5.2 | User | 1900 | - | - | - | - | - |
| 3/2 | U | E | 2 | 3 | 5.2 | User | 1900 | - | - | - | - | - |
| 3/3 | U | E | 2 | 3 | 5.2 | User | 1900 | - | - | - | - | - |
| 4/1 | U | B | 2 | 3 | 6.1 | User | 1900 | - | - | - | - | - |
| 4/2 | U | B | 2 | 3 | 6.1 | User | 1900 | - | - | - | - | - |
| 5/1 (A508 Horseshoe St) | U | D | 2 | 3 | 6.0 | Geom | - | 3.50 | 0.00 | Y | Arm 6 Left | Inf |
| 5/2 (A508 Horseshoe St) | U | D | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 6 Left | Inf |
| | | | | | | | | | | | Arm 7 Ahead | Inf |
| 5/3 (A508 Horseshoe St) | U | D | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf |
| 6/1 | U | M | 2 | 3 | 5.0 | User | 2000 | - | - | - | - | - |
| 6/2 | U | M | 2 | 3 | 5.0 | User | 2000 | - | - | - | - | - |
| 7/1 | U | G | 2 | 3 | 7.0 | User | 1900 | - | - | - | - | - |
| 7/2 | U | G | 2 | 3 | 7.0 | User | 1900 | - | - | - | - | - |
| 8/1 (A5123 St Peters Way) | U | F | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 9 Left | Inf |
| 8/2 (A5123 St Peters Way) | U | F | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | N | Arm 10 Ahead | Inf |
| 8/3 (A5123 St Peters Way) | U | F | 2 | 3 | 60.0 | Geom | - | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf |
| 9/1 | U | O | 2 | 3 | 5.0 | User | 2000 | - | - | - | - | - |
| 9/2 | U | O | 2 | 3 | 5.0 | User | 2000 | - | - | - | - | - |
| 10/1 | U | J | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 10/2 | U | J | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 10/3 | U | J | 2 | 3 | 7.8 | User | 1900 | - | - | - | - | - |
| 11/1 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 11/2 | U | | 2 | 3 | 5.0 | Inf | - | - | - | - | - | - |
| 12/1 (A5123 Towcester Rd) | U | I | 2 | 3 | 10.0 | Geom | - | 3.75 | 0.00 | Y | Arm 11 Left | Inf |
| 12/2 (A5123 Towcester Rd) | U | I | 2 | 3 | 60.0 | Geom | - | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf |
| 12/3 (A5123 Towcester Rd) | U | I | 2 | 3 | 60.0 | Geom | - | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf |

## Traffic Flow Groups

| Flow Group | Start Time | End Time | Duration | Formula |
|---|---|---|---|---|
| 1: '2031 D1 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 2: '2031 D1 PM Peak' | 17:00 | 18:00 | 01:00 | |
| 5: '2031 J3 AM Peak' | 08:00 | 09:00 | 01:00 | |
| 6: '2031 J3 PM Peak' | 17:00 | 18:00 | 01:00 | |

**Scenario 1: '2031 D1 AM Peak'** (FG1: '2031 D1 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

### Desired Flow :

| | | Destination | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| Origin | A | 0 | 329 | 461 | 6 | 796 |
| | B | 541 | 19 | 130 | 662 | 1352 |
| | C | 1180 | 146 | 0 | 586 | 1912 |
| | D | 61 | 1137 | 664 | 13 | 1875 |
| | Tot. | 1782 | 1631 | 1255 | 1267 | 5935 |

## Traffic Lane Flows

| Lane | Scenario 1: 2031 D1 AM Peak |
|---|---|
| 1/1 (with short) | 1198(In) 578(Out) |
| 1/2 (short) | 620 |
| 1/3 | 677 |
| 2/1 | 999 |
| 2/2 | 783 |
| 3/1 | 627 |
| 3/2 | 675 |
| 3/3 | 677 |
| 4/1 | 938 |
| 4/2 | 948 |
| 5/1 (short) | 247 |
| 5/2 (with short) | 547(In) 300(Out) |
| 5/3 | 249 |
| 6/1 | 874 |
| 6/2 | 757 |
| 7/1 | 544 |
| 7/2 | 600 |
| 8/1 | 130 |
| 8/2 | 631 |
| 8/3 | 591 |
| 9/1 | 674 |
| 9/2 | 581 |
| 10/1 | 636 |
| 10/2 | 318 |
| 10/3 | 287 |
| 11/1 | 1222 |
| 11/2 | 45 |
| 12/1 (short) | 586 |
| 12/2 (with short) | 1251(In) 665(Out) |
| 12/3 | 661 |

## Lane Saturation Flows

| Junction: A4500/A508 Gyratory | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A4500 St Peters Way) | 3.50 | 0.00 | Y | Arm 2 Left | Inf | 10.6 % | 1965 | 1965 |
| | | | | Arm 3 Ahead | Inf | 89.4 % | | |
| 1/2 (A4500 St Peters Way) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A4500 St Peters Way) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (A508 Horseshoe Street) | 3.50 | 0.00 | Y | Arm 6 Left | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A508 Horseshoe Street) | 3.50 | 0.00 | N | Arm 6 Left | Inf | 27.3 % | 2105 | 2105 |
| | | | | Arm 7 Ahead | Inf | 72.7 % | | |
| 5/3 (A508 Horseshoe Street) | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 6/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 6/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A5123 St Peters Way) | 3.50 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1965 | 1965 |
| 8/2 (A5123 St Peters Way) | 3.50 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 8/3 (A5123 St Peters Way) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 11 Left | Inf | 100.0 % | 1990 | 1990 |
| 12/2 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 12/3 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |

**Scenario 3: '2031 J3 AM Peak'** (FG5: '2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 494 | 497 | 16 | 1007 |
| | B | 462 | 22 | 160 | 694 | 1338 |
| | C | 1198 | 121 | 0 | 596 | 1915 |
| | D | 50 | 1099 | 736 | 13 | 1898 |
| | Tot. | 1710 | 1736 | 1393 | 1319 | 6158 |

## Traffic Lane Flows

| Lane | Scenario 3: 2031 J3 AM Peak |
|---|---|
| 1/1<br>(with short) | 1149(In)<br>578(Out) |
| 1/2<br>(short) | 571 |
| 1/3 | 749 |
| 2/1 | 950 |
| 2/2 | 760 |
| 3/1 | 599 |
| 3/2 | 643 |
| 3/3 | 749 |
| 4/1 | 900 |
| 4/2 | 903 |
| 5/1<br>(short) | 306 |
| 5/2<br>(with short) | 674(In)<br>368(Out) |
| 5/3 | 333 |
| 6/1 | 905 |
| 6/2 | 831 |
| 7/1 | 577 |
| 7/2 | 685 |
| 8/1 | 160 |
| 8/2 | 609 |
| 8/3 | 569 |
| 9/1 | 737 |
| 9/2 | 656 |
| 10/1 | 620 |
| 10/2 | 340 |
| 10/3 | 247 |
| 11/1 | 1216 |
| 11/2 | 103 |
| 12/1<br>(short) | 596 |
| 12/2<br>(with short) | 1259(In)<br>663(Out) |
| 12/3 | 656 |

## Lane Saturation Flows

| Junction: A4500/A508 Gyratory | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A4500 St Peters Way) | 3.50 | 0.00 | Y | Arm 2 Left<br>Arm 3 Ahead | Inf<br>Inf | 8.7 %<br>91.3 % | 1965 | 1965 |
| 1/2 (A4500 St Peters Way) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A4500 St Peters Way) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (A508 Horseshoe Street) | 3.50 | 0.00 | Y | Arm 6 Left | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A508 Horseshoe Street) | 3.50 | 0.00 | N | Arm 6 Left<br>Arm 7 Ahead | Inf<br>Inf | 51.1 %<br>48.9 % | 2105 | 2105 |
| 5/3 (A508 Horseshoe Street) | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 6/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 6/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A5123 St Peters Way) | 3.50 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1965 | 1965 |
| 8/2 (A5123 St Peters Way) | 3.50 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 8/3 (A5123 St Peters Way) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 11 Left | Inf | 100.0 % | 1990 | 1990 |
| 12/2 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 12/3 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |

**Scenario 4: '2031 D1 PM Peak'** (FG2: '2031 D1 PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 545 | 908 | 8 | 1461 |
| | B | 557 | 31 | 224 | 944 | 1756 |
| | C | 690 | 46 | 0 | 247 | 983 |
| | D | 93 | 520 | 745 | 8 | 1366 |
| | Tot. | 1340 | 1142 | 1877 | 1207 | 5566 |

## Traffic Lane Flows

| Lane | Scenario 4: 2031 D1 PM Peak |
|---|---|
| 1/1<br>(with short) | 613(In)<br>319(Out) |
| 1/2<br>(short) | 294 |
| 1/3 | 753 |
| 2/1 | 762 |
| 2/2 | 578 |
| 3/1 | 275 |
| 3/2 | 322 |
| 3/3 | 753 |
| 4/1 | 669 |
| 4/2 | 655 |
| 5/1<br>(short) | 279 |
| 5/2<br>(with short) | 862(In)<br>583(Out) |
| 5/3 | 599 |
| 6/1 | 554 |
| 6/2 | 588 |
| 7/1 | 769 |
| 7/2 | 900 |
| 8/1 | 224 |
| 8/2 | 792 |
| 8/3 | 740 |
| 9/1 | 993 |
| 9/2 | 884 |
| 10/1 | 796 |
| 10/2 | 432 |
| 10/3 | 320 |
| 11/1 | 1043 |
| 11/2 | 164 |
| 12/1<br>(short) | 247 |
| 12/2<br>(with short) | 648(In)<br>401(Out) |
| 12/3 | 335 |

## Lane Saturation Flows

| Junction: A4500/A508 Gyratory | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A4500 St Peters Way) | 3.50 | 0.00 | Y | Arm 2 Left<br>Arm 3 Ahead | Inf<br>Inf | 29.2 %<br>70.8 % | 1965 | 1965 |
| 1/2 (A4500 St Peters Way) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A4500 St Peters Way) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (A508 Horseshoe Street) | 3.50 | 0.00 | Y | Arm 6 Left | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A508 Horseshoe Street) | 3.50 | 0.00 | N | Arm 6 Left<br>Arm 7 Ahead | Inf<br>Inf | 45.6 %<br>54.4 % | 2105 | 2105 |
| 5/3 (A508 Horseshoe Street) | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 6/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 6/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A5123 St Peters Way) | 3.50 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1965 | 1965 |
| 8/2 (A5123 St Peters Way) | 3.50 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 8/3 (A5123 St Peters Way) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 11 Left | Inf | 100.0 % | 1990 | 1990 |
| 12/2 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 12/3 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |

**Scenario 6: '2031 J3 PM Peak'** (FG6: '2031 J3 PM Peak', Plan 1: 'Network Control Plan 1')

## Traffic Flows, Desired

**Desired Flow :**

| Origin | Destination | | | | | |
|---|---|---|---|---|---|---|
| | | A | B | C | D | Tot. |
| | A | 0 | 505 | 947 | 4 | 1456 |
| | B | 576 | 44 | 226 | 945 | 1791 |
| | C | 691 | 64 | 0 | 294 | 1049 |
| | D | 81 | 526 | 749 | 6 | 1362 |
| | Tot. | 1348 | 1139 | 1922 | 1249 | 5658 |

## Traffic Lane Flows

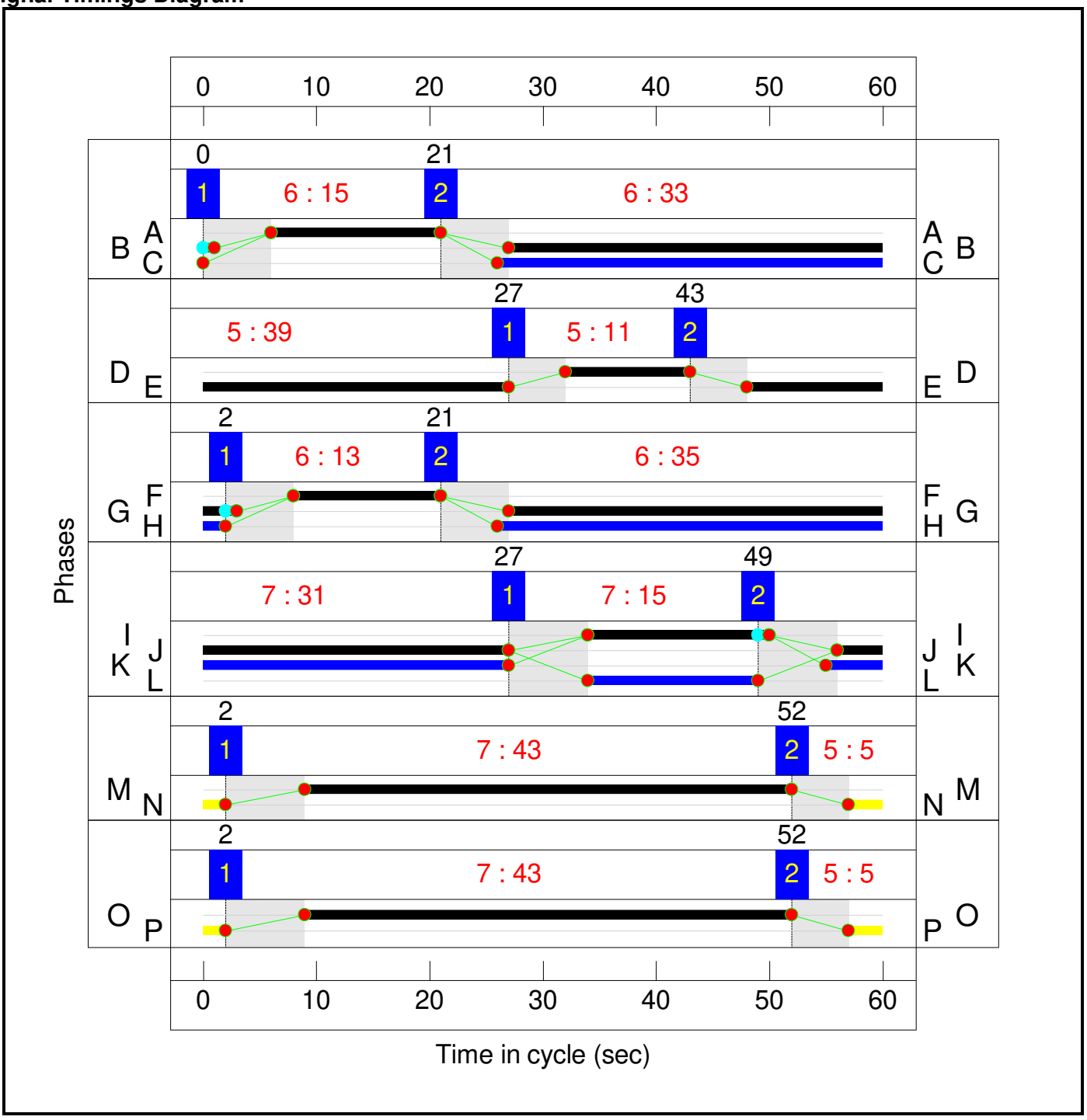
| Lane | Scenario 6: 2031 J3 PM Peak |
|---|---|
| 1/1<br>(with short) | 607(In)<br>322(Out) |
| 1/2<br>(short) | 285 |
| 1/3 | 755 |
| 2/1 | 776 |
| 2/2 | 572 |
| 3/1 | 299 |
| 3/2 | 335 |
| 3/3 | 755 |
| 4/1 | 695 |
| 4/2 | 680 |
| 5/1<br>(short) | 223 |
| 5/2<br>(with short) | 831(In)<br>608(Out) |
| 5/3 | 625 |
| 6/1 | 522 |
| 6/2 | 617 |
| 7/1 | 792 |
| 7/2 | 914 |
| 8/1 | 226 |
| 8/2 | 809 |
| 8/3 | 756 |
| 9/1 | 1018 |
| 9/2 | 904 |
| 10/1 | 809 |
| 10/2 | 436 |
| 10/3 | 330 |
| 11/1 | 1103 |
| 11/2 | 146 |
| 12/1<br>(short) | 294 |
| 12/2<br>(with short) | 699(In)<br>405(Out) |
| 12/3 | 350 |

## Lane Saturation Flows

| Junction: A4500/A508 Gyratory | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **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 (A4500 St Peters Way) | 3.50 | 0.00 | Y | Arm 2 Left | Inf | 25.2 % | 1965 | 1965 |
| | | | | Arm 3 Ahead | Inf | 74.8 % | | |
| 1/2 (A4500 St Peters Way) | 3.50 | 0.00 | N | Arm 3 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 1/3 (A4500 St Peters Way) | 3.50 | 0.00 | Y | Arm 3 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 2/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 2/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 3/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 3/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 4/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 5/1 (A508 Horseshoe Street) | 3.50 | 0.00 | Y | Arm 6 Left | Inf | 100.0 % | 1965 | 1965 |
| 5/2 (A508 Horseshoe Street) | 3.50 | 0.00 | N | Arm 6 Left | Inf | 46.4 % | 2105 | 2105 |
| | | | | Arm 7 Ahead | Inf | 53.6 % | | |
| 5/3 (A508 Horseshoe Street) | 3.50 | 0.00 | Y | Arm 7 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 6/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 6/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 7/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 7/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 8/1 (A5123 St Peters Way) | 3.50 | 0.00 | Y | Arm 9 Left | Inf | 100.0 % | 1965 | 1965 |
| 8/2 (A5123 St Peters Way) | 3.50 | 0.00 | N | Arm 10 Ahead | Inf | 100.0 % | 2105 | 2105 |
| 8/3 (A5123 St Peters Way) | 3.50 | 0.00 | Y | Arm 10 Ahead | Inf | 100.0 % | 1965 | 1965 |
| 9/1 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 9/2 | This lane uses a directly entered Saturation Flow | | | | | | 2000 | 2000 |
| 10/1 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/2 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 10/3 | This lane uses a directly entered Saturation Flow | | | | | | 1900 | 1900 |
| 11/1 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 11/2 | Infinite Saturation Flow | | | | | | Inf | Inf |
| 12/1 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 11 Left | Inf | 100.0 % | 1990 | 1990 |
| 12/2 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |
| 12/3 (A5123 Towcester Road) | 3.75 | 0.00 | Y | Arm 4 Ahead | Inf | 100.0 % | 1990 | 1990 |

**Scenario 1: '2031 D1 AM Peak'** (FG1: '2031 D1 AM Peak', Plan 1: 'Network Control Plan 1')

**Signal Timings Diagram**



## Network Results

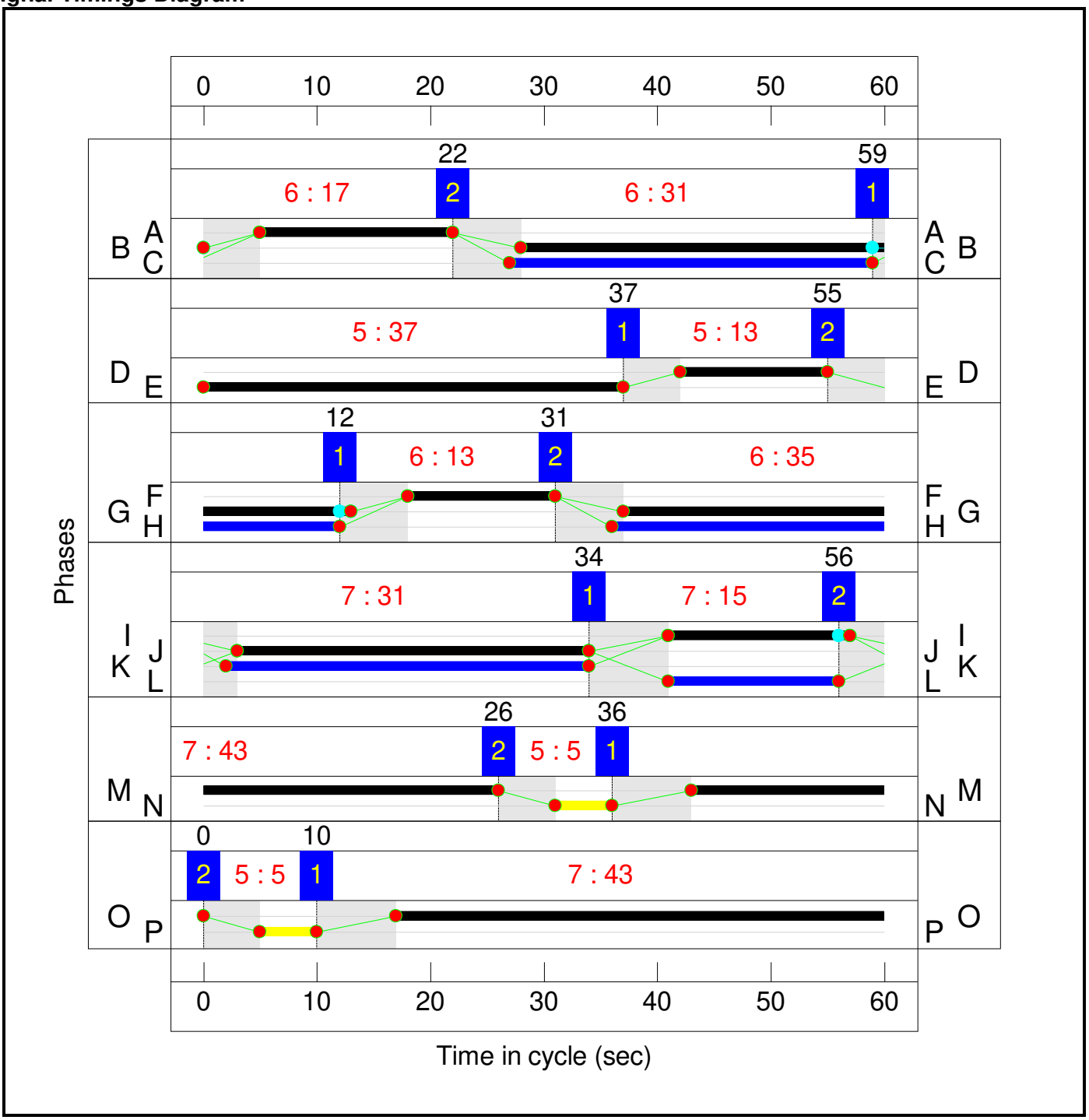
| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1+1/2 | A4500 St Peters Way Left Ahead | U | 1 | N/A | A | | 1 | 15 | - | 1198 | 1965:2105 | 524+561 | 110.3 : 110.5% |
| 1/3 | A4500 St Peters Way | U | 1 | N/A | A | | 1 | 15 | - | 677 | 1965 | 524 | 129.2% |
| 3/1 | Ahead | U | 2 | N/A | E | | 1 | 39 | - | 627 | 1900 | 1267 | 44.3% |
| 3/2 | Ahead | U | 2 | N/A | E | | 1 | 39 | - | 675 | 1900 | 1267 | 48.0% |
| 3/3 | Right | U | 2 | N/A | E | | 1 | 39 | - | 677 | 1900 | 1267 | 41.4% |
| 4/1 | Ahead | U | 1 | N/A | B | | 1 | 34 | - | 938 | 1900 | 1108 | 70.0% |
| 4/2 | Ahead Right | U | 1 | N/A | B | | 1 | 34 | - | 948 | 1900 | 1108 | 71.0% |
| 5/2+5/1 | A508 Horseshoe Street Left | U | 2 | N/A | D | | 1 | 11 | - | 547 | 2105:1965 | 397+327 | 75.5 : 75.5% |
| 5/3 | A508 Horseshoe Street Ahead | U | 2 | N/A | D | | 1 | 11 | - | 249 | 1965 | 393 | 63.4% |
| 6/1 | | U | 5 | N/A | M | | 1 | 43 | - | 874 | 2000 | 1467 | 55.1% |
| 6/2 | | U | 5 | N/A | M | | 1 | 43 | - | 757 | 2000 | 1467 | 47.0% |
| 7/1 | Ahead | U | 3 | N/A | G | | 1 | 36 | - | 544 | 1900 | 1172 | 40.1% |
| 7/2 | Ahead Right | U | 3 | N/A | G | | 1 | 36 | - | 600 | 1900 | 1172 | 44.4% |
| 8/1 | A5123 St Peters Way Left | U | 3 | N/A | F | | 1 | 13 | - | 130 | 1965 | 458 | 28.4% |
| 8/2 | A5123 St Peters Way | U | 3 | N/A | F | | 1 | 13 | - | 631 | 2105 | 491 | 128.5% |
| 8/3 | A5123 St Peters Way | U | 3 | N/A | F | | 1 | 13 | - | 591 | 1965 | 458 | 128.9% |
| 9/1 | | U | 6 | N/A | O | | 1 | 43 | - | 674 | 2000 | 1467 | 40.9% |
| 9/2 | | U | 6 | N/A | O | | 1 | 43 | - | 581 | 2000 | 1467 | 34.4% |
| 10/1 | Ahead | U | 4 | N/A | J | | 1 | 31 | - | 636 | 1900 | 1013 | 48.9% |
| 10/2 | Right Ahead | U | 4 | N/A | J | | 1 | 31 | - | 318 | 1900 | 1013 | 24.5% |
| 10/3 | Right | U | 4 | N/A | J | | 1 | 31 | - | 287 | 1900 | 1013 | 22.0% |
| 12/2+12/1 | A5123 Towcester Road Ahead | U | 4 | N/A | I | | 1 | 16 | - | 1251 | 1990:1990 | 564+497 | 117.9 : 117.9% |
| 12/3 | A5123 Towcester Road Ahead | U | 4 | N/A | I | | 1 | 16 | - | 661 | 1990 | 564 | 117.2% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1+1/2 | 1198 | 1085 | - | - | - | 10.6 | 61.2 | - | 71.8 | 215.8 | 15.3 | 61.2 | 76.5 |
| 1/3 | 677 | 524 | - | - | - | 8.6 | 78.7 | - | 87.2 | 463.9 | 13.8 | 78.7 | 92.5 |
| 3/1 | 562 | 562 | - | - | - | 0.1 | 0.4 | - | 0.5 | 3.2 | 0.9 | 0.4 | 1.3 |
| 3/2 | 608 | 608 | - | - | - | 0.2 | 0.5 | - | 0.7 | 3.9 | 0.9 | 0.5 | 1.4 |
| 3/3 | 524 | 524 | - | - | - | 0.0 | 0.4 | - | 0.4 | 2.7 | 0.3 | 0.4 | 0.6 |
| 4/1 | 776 | 776 | - | - | - | 0.6 | 1.2 | - | 1.8 | 8.2 | 3.5 | 1.2 | 4.7 |
| 4/2 | 786 | 786 | - | - | - | 0.7 | 1.2 | - | 1.9 | 8.5 | 3.7 | 1.2 | 4.9 |
| 5/2+5/1 | 547 | 547 | - | - | - | 3.4 | 1.5 | - | 4.9 | 32.2 | 4.6 | 1.5 | 6.1 |
| 5/3 | 249 | 249 | - | - | - | 1.5 | 0.9 | - | 2.4 | 34.3 | 3.7 | 0.9 | 4.6 |
| 6/1 | 809 | 809 | - | - | - | 0.1 | 0.6 | - | 0.7 | 3.2 | 0.5 | 0.6 | 1.1 |
| 6/2 | 690 | 690 | - | - | - | 0.0 | 0.4 | - | 0.5 | 2.6 | 0.2 | 0.4 | 0.7 |
| 7/1 | 470 | 470 | - | - | - | 0.8 | 0.3 | - | 1.2 | 8.8 | 4.2 | 0.3 | 4.5 |
| 7/2 | 521 | 521 | - | - | - | 1.0 | 0.4 | - | 1.4 | 9.3 | 4.5 | 0.4 | 4.9 |
| 8/1 | 130 | 130 | - | - | - | 0.7 | 0.2 | - | 0.9 | 24.4 | 1.8 | 0.2 | 2.0 |
| 8/2 | 631 | 491 | - | - | - | 8.1 | 72.1 | - | 80.2 | 457.3 | 12.8 | 72.1 | 85.0 |
| 8/3 | 591 | 458 | - | - | - | 7.6 | 68.4 | - | 76.0 | 462.9 | 12.1 | 68.4 | 80.5 |
| 9/1 | 600 | 600 | - | - | - | 0.0 | 0.3 | - | 0.3 | 2.1 | 0.0 | 0.3 | 0.3 |
| 9/2 | 505 | 505 | - | - | - | 0.0 | 0.3 | - | 0.3 | 1.9 | 0.0 | 0.3 | 0.3 |
| 10/1 | 495 | 495 | - | - | - | 0.1 | 0.5 | - | 0.6 | 4.4 | 0.8 | 0.5 | 1.3 |
| 10/2 | 248 | 248 | - | - | - | 0.1 | 0.2 | - | 0.2 | 3.2 | 0.2 | 0.2 | 0.4 |
| 10/3 | 223 | 223 | - | - | - | 0.0 | 0.1 | - | 0.1 | 2.3 | 0.0 | 0.1 | 0.1 |
| 12/2+12/1 | 1251 | 1060 | - | - | - | 10.8 | 98.3 | - | 109.1 | 314.1 | 17.6 | 98.3 | 116.0 |
| 12/3 | 661 | 564 | - | - | - | 6.3 | 51.8 | - | 58.1 | 316.5 | 13.0 | 51.8 | 64.7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C1 | Stream: 1 | PRC for Signalled Lanes (%): | -43.6 | Total Delay for Signalled Lanes (pcuHr): | 162.68 | Cycle Time (s): | 60 |
| C1 | Stream: 2 | PRC for Signalled Lanes (%): | 19.2 | Total Delay for Signalled Lanes (pcuHr): | 8.81 | Cycle Time (s): | 60 |
| C1 | Stream: 3 | PRC for Signalled Lanes (%): | -43.2 | Total Delay for Signalled Lanes (pcuHr): | 159.54 | Cycle Time (s): | 60 |
| C1 | Stream: 4 | PRC for Signalled Lanes (%): | -31.0 | Total Delay for Signalled Lanes (pcuHr): | 168.21 | Cycle Time (s): | 60 |
| C1 | Stream: 5 | PRC for Signalled Lanes (%): | 63.2 | Total Delay for Signalled Lanes (pcuHr): | 1.21 | Cycle Time (s): | 60 |
| C1 | Stream: 6 | PRC for Signalled Lanes (%): | 119.9 | Total Delay for Signalled Lanes (pcuHr): | 0.61 | Cycle Time (s): | 60 |
| | | PRC Over All Lanes (%): | -43.6 | Total Delay Over All Lanes(pcuHr): | 501.07 | | |

**Scenario 3: '2031 J3 AM Peak'** (FG5: '2031 J3 AM Peak', Plan 1: 'Network Control Plan 1')
**Stage Timings**

**Signal Timings Diagram**



## Network Results

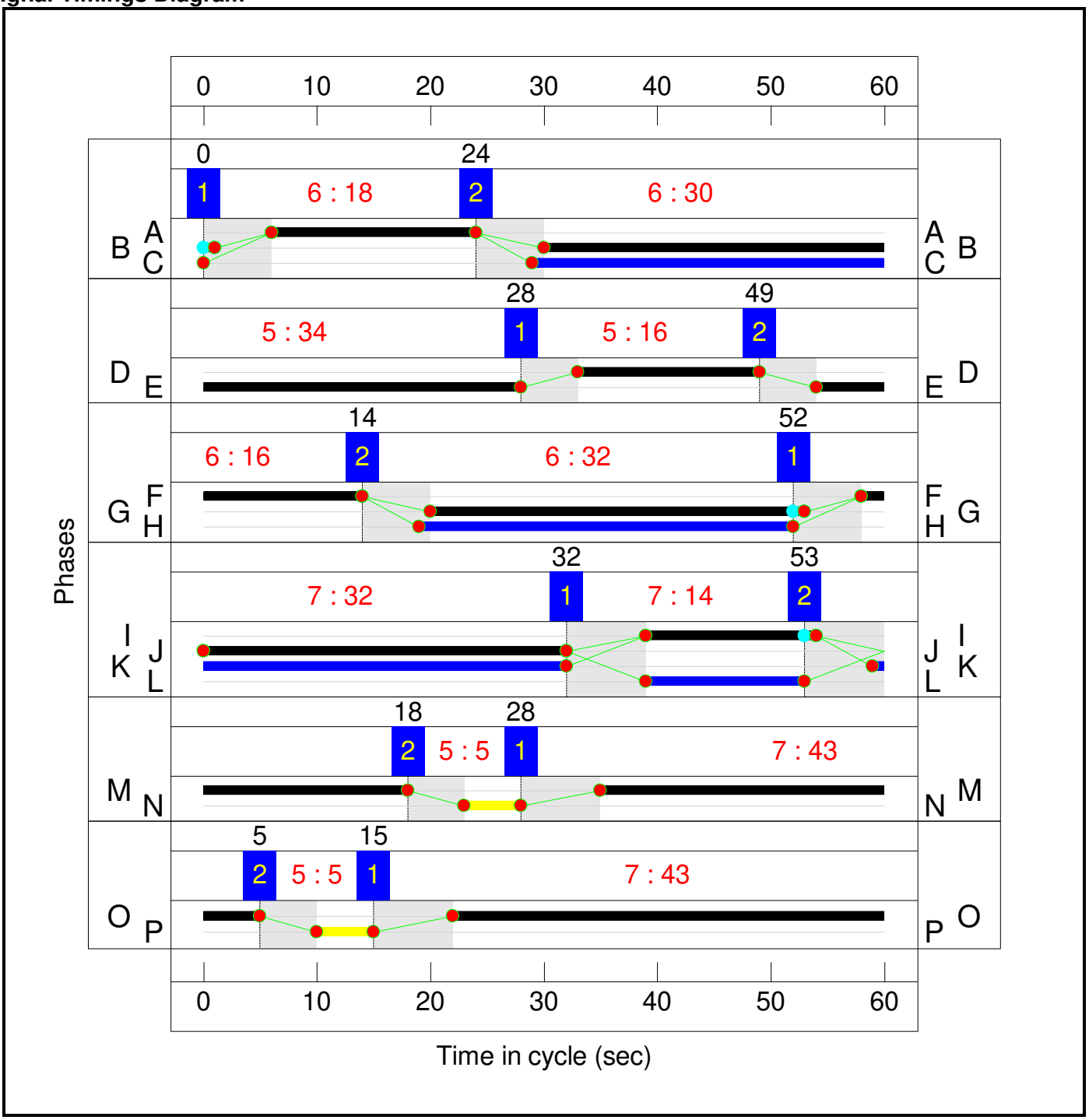
| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1+1/2 | A4500 St Peters Way Left Ahead | U | 1 | N/A | A | | 1 | 17 | - | 1149 | 1965:2105 | 590+582 | 98.0 : 98.0% |
| 1/3 | A4500 St Peters Way Ahead | U | 1 | N/A | A | | 1 | 17 | - | 749 | 1965 | 590 | 127.1% |
| 3/1 | Ahead | U | 2 | N/A | E | | 1 | 37 | - | 599 | 1900 | 1203 | 48.9% |
| 3/2 | Ahead | U | 2 | N/A | E | | 1 | 37 | - | 643 | 1900 | 1203 | 52.5% |
| 3/3 | Right | U | 2 | N/A | E | | 1 | 37 | - | 749 | 1900 | 1203 | 49.0% |
| 4/1 | Ahead | U | 1 | N/A | B | | 1 | 32 | - | 900 | 1900 | 1045 | 72.2% |
| 4/2 | Ahead Right | U | 1 | N/A | B | | 1 | 32 | - | 903 | 1900 | 1045 | 73.0% |
| 5/2+5/1 | A508 Horseshoe Street Left Ahead | U | 2 | N/A | D | | 1 | 13 | - | 674 | 2105:1965 | 434+361 | 84.7 : 84.7% |
| 5/3 | A508 Horseshoe Street Ahead | U | 2 | N/A | D | | 1 | 13 | - | 333 | 1965 | 458 | 72.6% |
| 6/1 | | U | 5 | N/A | M | | 1 | 43 | - | 905 | 2000 | 1467 | 61.0% |
| 6/2 | | U | 5 | N/A | M | | 1 | 43 | - | 831 | 2000 | 1467 | 55.9% |
| 7/1 | Ahead | U | 3 | N/A | G | | 1 | 36 | - | 577 | 1900 | 1172 | 42.0% |
| 7/2 | Ahead Right | U | 3 | N/A | G | | 1 | 36 | - | 685 | 1900 | 1172 | 52.1% |
| 8/1 | A5123 St Peters Way Left | U | 3 | N/A | F | | 1 | 13 | - | 160 | 1965 | 458 | 34.9% |
| 8/2 | A5123 St Peters Way Ahead | U | 3 | N/A | F | | 1 | 13 | - | 609 | 2105 | 491 | 124.0% |
| 8/3 | A5123 St Peters Way Ahead | U | 3 | N/A | F | | 1 | 13 | - | 569 | 1965 | 458 | 124.1% |
| 9/1 | | U | 6 | N/A | O | | 1 | 43 | - | 737 | 2000 | 1467 | 44.5% |
| 9/2 | | U | 6 | N/A | O | | 1 | 43 | - | 656 | 2000 | 1467 | 39.8% |
| 10/1 | Ahead | U | 4 | N/A | J | | 1 | 31 | - | 620 | 1900 | 1013 | 49.4% |
| 10/2 | Right Ahead | U | 4 | N/A | J | | 1 | 31 | - | 340 | 1900 | 1013 | 27.3% |
| 10/3 | Right | U | 4 | N/A | J | | 1 | 31 | - | 247 | 1900 | 1013 | 19.6% |
| 12/2+12/1 | A5123 Towcester Road Ahead Left | U | 4 | N/A | I | | 1 | 16 | - | 1259 | 1990:1990 | 564+507 | 117.6 : 117.6% |
| 12/3 | A5123 Towcester Road Ahead | U | 4 | N/A | I | | 1 | 16 | - | 656 | 1990 | 564 | 116.3% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1+1/2 | 1149 | 1149 | - | - | - | 6.5 | 12.2 | - | 18.7 | 58.6 | 9.5 | 12.2 | 21.6 |
| 1/3 | 749 | 589 | - | - | - | 9.0 | 82.0 | - | 91.0 | 437.5 | 15.1 | 82.0 | 97.2 |
| 3/1 | 588 | 588 | - | - | - | 0.1 | 0.5 | - | 0.6 | 3.5 | 0.7 | 0.5 | 1.2 |
| 3/2 | 632 | 632 | - | - | - | 0.2 | 0.6 | - | 0.8 | 4.5 | 0.9 | 0.6 | 1.4 |
| 3/3 | 589 | 589 | - | - | - | 0.1 | 0.5 | - | 0.5 | 3.2 | 0.3 | 0.5 | 0.8 |
| 4/1 | 755 | 755 | - | - | - | 0.3 | 1.3 | - | 1.6 | 7.7 | 2.0 | 1.3 | 3.3 |
| 4/2 | 763 | 763 | - | - | - | 0.3 | 1.3 | - | 1.7 | 7.9 | 2.1 | 1.3 | 3.4 |
| 5/2+5/1 | 674 | 674 | - | - | - | 4.0 | 2.7 | - | 6.6 | 35.4 | 5.6 | 2.7 | 8.3 |
| 5/3 | 333 | 333 | - | - | - | 2.0 | 1.3 | - | 3.3 | 35.3 | 5.1 | 1.3 | 6.4 |
| 6/1 | 894 | 894 | - | - | - | 0.0 | 0.8 | - | 0.8 | 3.2 | 0.2 | 0.8 | 0.9 |
| 6/2 | 820 | 820 | - | - | - | 0.0 | 0.6 | - | 0.7 | 2.9 | 0.2 | 0.6 | 0.8 |
| 7/1 | 492 | 492 | - | - | - | 1.3 | 0.4 | - | 1.7 | 12.4 | 4.1 | 0.4 | 4.5 |
| 7/2 | 610 | 610 | - | - | - | 1.2 | 0.5 | - | 1.7 | 10.1 | 3.6 | 0.5 | 4.2 |
| 8/1 | 160 | 160 | - | - | - | 0.9 | 0.3 | - | 1.1 | 25.2 | 2.2 | 0.3 | 2.5 |
| 8/2 | 609 | 491 | - | - | - | 7.0 | 61.4 | - | 68.3 | 404.0 | 12.1 | 61.4 | 73.5 |
| 8/3 | 569 | 458 | - | - | - | 6.5 | 57.7 | - | 64.2 | 406.3 | 11.3 | 57.7 | 69.0 |
| 9/1 | 652 | 652 | - | - | - | 0.1 | 0.4 | - | 0.5 | 2.6 | 1.1 | 0.4 | 1.5 |
| 9/2 | 584 | 584 | - | - | - | 0.1 | 0.3 | - | 0.4 | 2.4 | 1.0 | 0.3 | 1.3 |
| 10/1 | 500 | 500 | - | - | - | 0.5 | 0.5 | - | 1.0 | 7.2 | 0.9 | 0.5 | 1.4 |
| 10/2 | 277 | 277 | - | - | - | 0.0 | 0.2 | - | 0.2 | 3.1 | 0.3 | 0.2 | 0.5 |
| 10/3 | 199 | 199 | - | - | - | 0.0 | 0.1 | - | 0.1 | 2.2 | 0.0 | 0.1 | 0.1 |
| 12/2+12/1 | 1259 | 1071 | - | - | - | 10.8 | 97.4 | - | 108.2 | 309.4 | 15.6 | 97.4 | 113.0 |
| 12/3 | 656 | 564 | - | - | - | 7.2 | 49.4 | - | 56.6 | 310.7 | 14.0 | 49.4 | 63.4 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| C1 | Stream: 1 | PRC for Signalled Lanes (%): | -41.2 | Total Delay for Signalled Lanes (pcuHr): | 113.05 | Cycle Time (s): | 60 |
| C1 | Stream: 2 | PRC for Signalled Lanes (%): | 6.2 | Total Delay for Signalled Lanes (pcuHr): | 11.78 | Cycle Time (s): | 60 |
| C1 | Stream: 3 | PRC for Signalled Lanes (%): | -37.9 | Total Delay for Signalled Lanes (pcuHr): | 137.10 | Cycle Time (s): | 60 |
| C1 | Stream: 4 | PRC for Signalled Lanes (%): | -30.7 | Total Delay for Signalled Lanes (pcuHr): | 166.17 | Cycle Time (s): | 60 |
| C1 | Stream: 5 | PRC for Signalled Lanes (%): | 47.6 | Total Delay for Signalled Lanes (pcuHr): | 1.46 | Cycle Time (s): | 60 |
| C1 | Stream: 6 | PRC for Signalled Lanes (%): | 102.3 | Total Delay for Signalled Lanes (pcuHr): | 0.87 | Cycle Time (s): | 60 |
| | | PRC Over All Lanes (%): | -41.2 | Total Delay Over All Lanes(pcuHr): | 430.42 | | |

**Scenario 4: '2031 D1 PM Peak'** (FG2: '2031 D1 PM Peak', Plan 1: 'Network Control Plan 1')
**Stage Timings**

**Signal Timings Diagram**



## Network Results

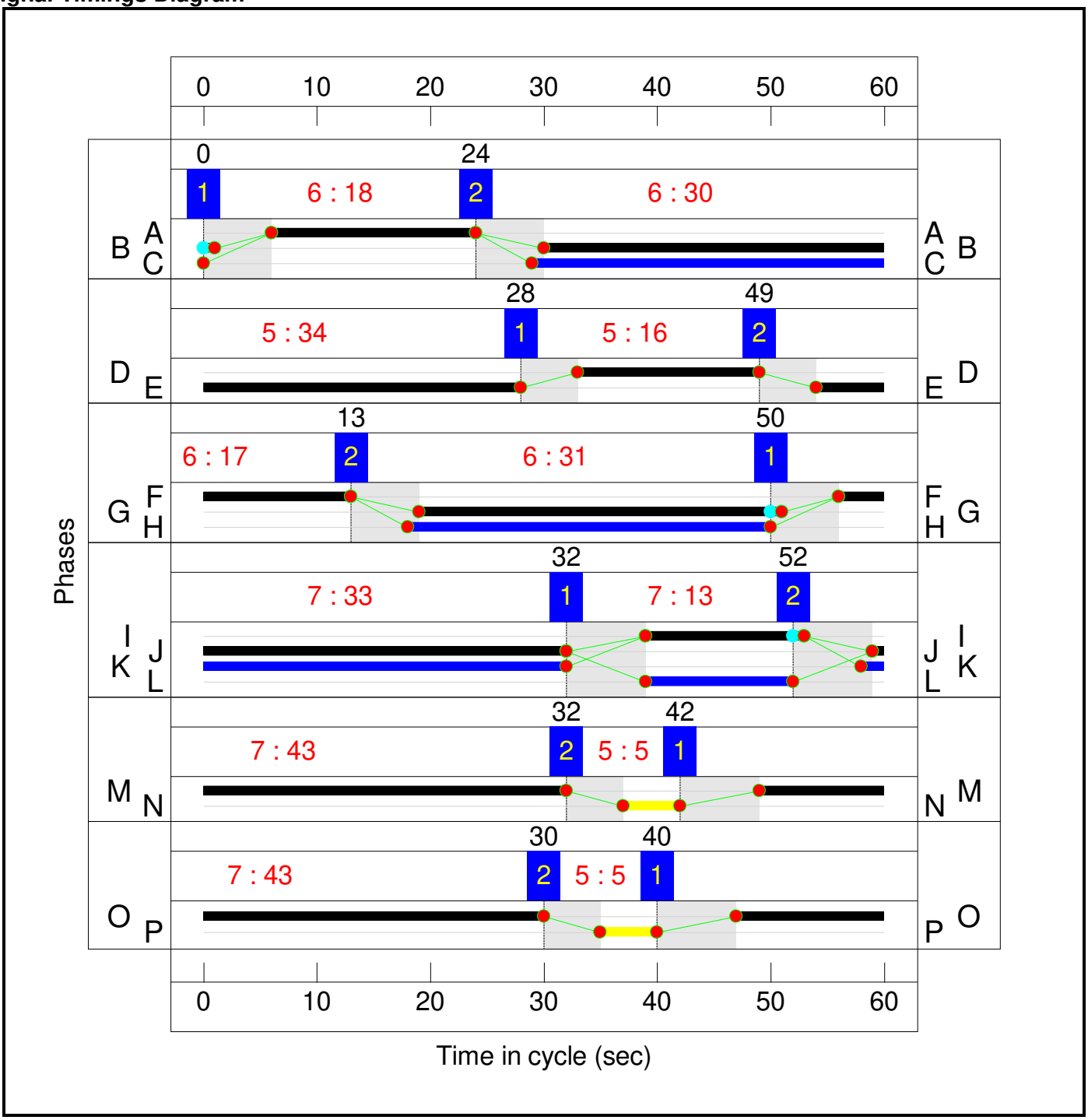
| Item | Lane Description | Lane Type | Controller Stream | Position In Filtered Route | Full Phase | Arrow Phase | Num Greens | Total Green (s) | Arrow Green (s) | Demand Flow (pcu) | Sat Flow (pcu/Hr) | Capacity (pcu) | Deg Sat (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1+1/2 | A4500 St Peters Way Left Ahead | U | 1 | N/A | A | | 1 | 18 | - | 613 | 1965:2105 | 618+569 | 51.7 : 51.7% |
| 1/3 | A4500 St Peters Way Ahead | U | 1 | N/A | A | | 1 | 18 | - | 753 | 1965 | 622 | 121.0% |
| 3/1 | Ahead | U | 2 | N/A | E | | 1 | 34 | - | 275 | 1900 | 1108 | 24.5% |
| 3/2 | Ahead | U | 2 | N/A | E | | 1 | 34 | - | 322 | 1900 | 1108 | 28.7% |
| 3/3 | Right | U | 2 | N/A | E | | 1 | 34 | - | 753 | 1900 | 1108 | 56.1% |
| 4/1 | Ahead | U | 1 | N/A | B | | 1 | 31 | - | 669 | 1900 | 1013 | 59.5% |
| 4/2 | Ahead Right | U | 1 | N/A | B | | 1 | 31 | - | 655 | 1900 | 1013 | 56.8% |
| 5/2+5/1 | A508 Horseshoe Street Left Ahead | U | 2 | N/A | D | | 1 | 16 | - | 862 | 2105:1965 | 522+250 | 111.6 : 111.6% |
| 5/3 | A508 Horseshoe Street Ahead | U | 2 | N/A | D | | 1 | 16 | - | 599 | 1965 | 557 | 107.6% |
| 6/1 | | U | 5 | N/A | M | | 1 | 43 | - | 554 | 2000 | 1467 | 35.5% |
| 6/2 | | U | 5 | N/A | M | | 1 | 43 | - | 588 | 2000 | 1467 | 38.0% |
| 7/1 | Ahead | U | 3 | N/A | G | | 1 | 33 | - | 769 | 1900 | 1077 | 61.1% |
| 7/2 | Ahead Right | U | 3 | N/A | G | | 1 | 33 | - | 900 | 1900 | 1077 | 74.8% |
| 8/1 | A5123 St Peters Way Left | U | 3 | N/A | F | | 1 | 16 | - | 224 | 1965 | 557 | 40.2% |
| 8/2 | A5123 St Peters Way Ahead | U | 3 | N/A | F | | 1 | 16 | - | 792 | 2105 | 596 | 132.8% |
| 8/3 | A5123 St Peters Way Ahead | U | 3 | N/A | F | | 1 | 16 | - | 740 | 1965 | 557 | 132.9% |
| 9/1 | | U | 6 | N/A | O | | 1 | 43 | - | 993 | 2000 | 1467 | 60.1% |
| 9/2 | | U | 6 | N/A | O | | 1 | 43 | - | 884 | 2000 | 1467 | 54.0% |
| 10/1 | Ahead | U | 4 | N/A | J | | 1 | 32 | - | 796 | 1900 | 1045 | 57.4% |
| 10/2 | Right Ahead | U | 4 | N/A | J | | 1 | 32 | - | 432 | 1900 | 1045 | 31.3% |
| 10/3 | Right | U | 4 | N/A | J | | 1 | 32 | - | 320 | 1900 | 1045 | 23.0% |
| 12/2+12/1 | A5123 Towcester Road Ahead Left | U | 4 | N/A | I | | 1 | 15 | - | 648 | 1990:1990 | 531+327 | 75.6 : 75.6% |
| 12/3 | A5123 Towcester Road Ahead | U | 4 | N/A | I | | 1 | 15 | - | 335 | 1990 | 531 | 63.1% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1+1/2 | 613 | 613 | - | - | - | 2.8 | 0.5 | - | 3.3 | 19.6 | 4.3 | 0.5 | 4.8 |
| 1/3 | 753 | 622 | - | - | - | 8.0 | 68.1 | - | 76.2 | 364.1 | 14.7 | 68.1 | 82.9 |
| 3/1 | 271 | 271 | - | - | - | 0.1 | 0.2 | - | 0.3 | 3.6 | 0.7 | 0.2 | 0.9 |
| 3/2 | 318 | 318 | - | - | - | 0.1 | 0.2 | - | 0.3 | 3.4 | 0.4 | 0.2 | 0.6 |
| 3/3 | 622 | 622 | - | - | - | 0.1 | 0.6 | - | 0.7 | 4.0 | 0.3 | 0.6 | 1.0 |
| 4/1 | 603 | 603 | - | - | - | 1.2 | 0.7 | - | 1.9 | 11.5 | 3.4 | 0.7 | 4.1 |
| 4/2 | 576 | 576 | - | - | - | 1.4 | 0.7 | - | 2.1 | 13.1 | 4.0 | 0.7 | 4.7 |
| 5/2+5/1 | 862 | 772 | - | - | - | 6.9 | 49.2 | - | 56.1 | 234.2 | 13.9 | 49.2 | 63.2 |
| 5/3 | 599 | 557 | - | - | - | 4.5 | 26.7 | - | 31.2 | 187.6 | 10.7 | 26.7 | 37.4 |
| 6/1 | 521 | 521 | - | - | - | 0.2 | 0.3 | - | 0.5 | 3.1 | 0.6 | 0.3 | 0.9 |
| 6/2 | 557 | 557 | - | - | - | 0.2 | 0.3 | - | 0.5 | 3.1 | 1.4 | 0.3 | 1.7 |
| 7/1 | 658 | 658 | - | - | - | 0.5 | 0.8 | - | 1.3 | 7.2 | 6.2 | 0.8 | 7.0 |
| 7/2 | 805 | 805 | - | - | - | 0.3 | 1.5 | - | 1.8 | 7.8 | 2.7 | 1.5 | 4.2 |
| 8/1 | 224 | 224 | - | - | - | 1.1 | 0.3 | - | 1.4 | 22.8 | 3.0 | 0.3 | 3.3 |
| 8/2 | 792 | 596 | - | - | - | 10.8 | 99.8 | - | 110.6 | 502.7 | 16.5 | 99.8 | 116.2 |
| 8/3 | 740 | 557 | - | - | - | 10.1 | 93.6 | - | 103.7 | 504.6 | 15.4 | 93.6 | 109.0 |
| 9/1 | 882 | 882 | - | - | - | 0.2 | 0.8 | - | 1.0 | 4.0 | 0.7 | 0.8 | 1.4 |
| 9/2 | 791 | 791 | - | - | - | 0.0 | 0.6 | - | 0.6 | 2.7 | 0.0 | 0.6 | 0.6 |
| 10/1 | 600 | 600 | - | - | - | 0.2 | 0.7 | - | 0.8 | 5.0 | 1.0 | 0.7 | 1.6 |
| 10/2 | 327 | 327 | - | - | - | 0.0 | 0.2 | - | 0.3 | 2.8 | 0.1 | 0.2 | 0.3 |
| 10/3 | 241 | 241 | - | - | - | 0.0 | 0.1 | - | 0.1 | 2.2 | 0.0 | 0.1 | 0.1 |
| 12/2+12/1 | 648 | 648 | - | - | - | 3.5 | 1.5 | - | 5.0 | 28.0 | 6.1 | 1.5 | 7.7 |
| 12/3 | 335 | 335 | - | - | - | 1.8 | 0.8 | - | 2.7 | 28.5 | 4.8 | 0.8 | 5.7 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 PRC for Signalled Lanes (%): | -34.5 | Total Delay for Signalled Lanes (pcuHr): | 83.53 | Cycle Time (s): | 60 |
| C1 | Stream: 2 PRC for Signalled Lanes (%): | -24.0 | Total Delay for Signalled Lanes (pcuHr): | 88.57 | Cycle Time (s): | 60 |
| C1 | Stream: 3 PRC for Signalled Lanes (%): | -47.7 | Total Delay for Signalled Lanes (pcuHr): | 218.79 | Cycle Time (s): | 60 |
| C1 | Stream: 4 PRC for Signalled Lanes (%): | 19.1 | Total Delay for Signalled Lanes (pcuHr): | 8.92 | Cycle Time (s): | 60 |
| C1 | Stream: 5 PRC for Signalled Lanes (%): | 137.1 | Total Delay for Signalled Lanes (pcuHr): | 0.93 | Cycle Time (s): | 60 |
| C1 | Stream: 6 PRC for Signalled Lanes (%): | 49.7 | Total Delay for Signalled Lanes (pcuHr): | 1.56 | Cycle Time (s): | 60 |
| | PRC Over All Lanes (%): | -47.7 | Total Delay Over All Lanes(pcuHr): | 402.30 | | |

**Scenario 6: '2031 J3 PM Peak'** (FG6: '2031 J3 PM Peak', Plan 1: 'Network Control Plan 1')

**Signal Timings Diagram**



## 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 (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1+1/2 | A4500 St Peters Way Left Ahead | U | 1 | N/A | A | | 1 | 18 | - | 607 | 1965:2105 | 618+547 | 52.1 : 52.1% |
| 1/3 | A4500 St Peters Way Ahead | U | 1 | N/A | A | | 1 | 18 | - | 755 | 1965 | 622 | 121.3% |
| 3/1 | Ahead | U | 2 | N/A | E | | 1 | 34 | - | 299 | 1900 | 1108 | 26.5% |
| 3/2 | Ahead | U | 2 | N/A | E | | 1 | 34 | - | 335 | 1900 | 1108 | 29.8% |
| 3/3 | Right | U | 2 | N/A | E | | 1 | 34 | - | 755 | 1900 | 1108 | 56.1% |
| 4/1 | Ahead | U | 1 | N/A | B | | 1 | 31 | - | 695 | 1900 | 1013 | 62.3% |
| 4/2 | Ahead Right | U | 1 | N/A | B | | 1 | 31 | - | 680 | 1900 | 1013 | 59.9% |
| 5/2+5/1 | A508 Horseshoe Street Left Ahead | U | 2 | N/A | D | | 1 | 16 | - | 831 | 2105:1965 | 536+197 | 113.4 : 113.4% |
| 5/3 | A508 Horseshoe Street Ahead | U | 2 | N/A | D | | 1 | 16 | - | 625 | 1965 | 557 | 112.3% |
| 6/1 | | U | 5 | N/A | M | | 1 | 43 | - | 522 | 2000 | 1467 | 33.5% |
| 6/2 | | U | 5 | N/A | M | | 1 | 43 | - | 617 | 2000 | 1467 | 39.5% |
| 7/1 | Ahead | U | 3 | N/A | G | | 1 | 32 | - | 792 | 1900 | 1045 | 64.3% |
| 7/2 | Ahead Right | U | 3 | N/A | G | | 1 | 32 | - | 914 | 1900 | 1045 | 76.1% |
| 8/1 | A5123 St Peters Way Left | U | 3 | N/A | F | | 1 | 17 | - | 226 | 1965 | 590 | 38.3% |
| 8/2 | A5123 St Peters Way Ahead | U | 3 | N/A | F | | 1 | 17 | - | 809 | 2105 | 632 | 128.1% |
| 8/3 | A5123 St Peters Way Ahead | U | 3 | N/A | F | | 1 | 17 | - | 756 | 1965 | 590 | 128.2% |
| 9/1 | | U | 6 | N/A | O | | 1 | 43 | - | 1018 | 2000 | 1467 | 61.2% |
| 9/2 | | U | 6 | N/A | O | | 1 | 43 | - | 904 | 2000 | 1467 | 53.6% |
| 10/1 | Ahead | U | 4 | N/A | J | | 1 | 33 | - | 809 | 1900 | 1077 | 58.7% |
| 10/2 | Right Ahead | U | 4 | N/A | J | | 1 | 33 | - | 436 | 1900 | 1077 | 31.6% |
| 10/3 | Right | U | 4 | N/A | J | | 1 | 33 | - | 330 | 1900 | 1077 | 23.9% |
| 12/2+12/1 | A5123 Towcester Road Ahead Left | U | 4 | N/A | I | | 1 | 14 | - | 699 | 1990:1990 | 498+361 | 81.4 : 81.4% |
| 12/3 | A5123 Towcester Road Ahead | U | 4 | N/A | I | | 1 | 14 | - | 350 | 1990 | 498 | 70.4% |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1/1+1/2 | 607 | 607 | - | - | - | 2.8 | 0.5 | - | 3.3 | 19.7 | 4.4 | 0.5 | 4.9 |
| 1/3 | 755 | 622 | - | - | - | 8.1 | 69.1 | - | 77.2 | 368.1 | 14.8 | 69.1 | 83.9 |
| 3/1 | 294 | 294 | - | - | - | 0.1 | 0.2 | - | 0.3 | 4.0 | 0.8 | 0.2 | 1.0 |
| 3/2 | 330 | 330 | - | - | - | 0.2 | 0.2 | - | 0.4 | 4.0 | 0.7 | 0.2 | 0.9 |
| 3/3 | 622 | 622 | - | - | - | 0.1 | 0.6 | - | 0.7 | 4.0 | 0.3 | 0.6 | 1.0 |
| 4/1 | 631 | 631 | - | - | - | 1.4 | 0.8 | - | 2.3 | 12.9 | 3.8 | 0.8 | 4.6 |
| 4/2 | 607 | 607 | - | - | - | 1.7 | 0.7 | - | 2.4 | 14.3 | 4.3 | 0.7 | 5.0 |
| 5/2+5/1 | 831 | 733 | - | - | - | 6.9 | 52.9 | - | 59.8 | 259.1 | 14.2 | 52.9 | 67.1 |
| 5/3 | 625 | 557 | - | - | - | 5.2 | 38.2 | - | 43.4 | 250.0 | 11.6 | 38.2 | 49.8 |
| 6/1 | 491 | 491 | - | - | - | 0.6 | 0.3 | - | 0.9 | 6.4 | 3.3 | 0.3 | 3.5 |
| 6/2 | 579 | 579 | - | - | - | 0.7 | 0.3 | - | 1.0 | 6.3 | 4.7 | 0.3 | 5.0 |
| 7/1 | 672 | 672 | - | - | - | 0.6 | 0.9 | - | 1.5 | 8.0 | 6.6 | 0.9 | 7.5 |
| 7/2 | 795 | 795 | - | - | - | 0.7 | 1.6 | - | 2.2 | 10.2 | 3.7 | 1.6 | 5.2 |
| 8/1 | 226 | 226 | - | - | - | 1.0 | 0.3 | - | 1.4 | 21.6 | 3.0 | 0.3 | 3.3 |
| 8/2 | 809 | 631 | - | - | - | 10.3 | 91.0 | - | 101.3 | 450.7 | 16.4 | 91.0 | 107.4 |
| 8/3 | 756 | 589 | - | - | - | 9.7 | 85.5 | - | 95.1 | 453.0 | 15.4 | 85.5 | 100.8 |
| 9/1 | 898 | 898 | - | - | - | 1.0 | 0.8 | - | 1.8 | 7.1 | 5.9 | 0.8 | 6.7 |
| 9/2 | 786 | 786 | - | - | - | 1.4 | 0.6 | - | 1.9 | 8.9 | 8.7 | 0.6 | 9.3 |
| 10/1 | 631 | 631 | - | - | - | 0.2 | 0.7 | - | 0.9 | 5.0 | 1.6 | 0.7 | 2.3 |
| 10/2 | 341 | 341 | - | - | - | 0.0 | 0.2 | - | 0.2 | 2.6 | 0.1 | 0.2 | 0.3 |
| 10/3 | 257 | 257 | - | - | - | 0.0 | 0.2 | - | 0.2 | 2.2 | 0.0 | 0.2 | 0.2 |
| 12/2+12/1 | 699 | 699 | - | - | - | 4.0 | 2.1 | - | 6.1 | 31.6 | 6.3 | 2.1 | 8.4 |
| 12/3 | 350 | 350 | - | - | - | 2.0 | 1.2 | - | 3.2 | 32.5 | 5.2 | 1.2 | 6.4 |

| | | | | | | |
|---|---|---|---|---|---|---|
| C1 | Stream: 1 | PRC for Signalled Lanes (%): | -34.8 | Total Delay for Signalled Lanes (pcuHr): | 85.21 | Cycle Time (s): 60 |
| C1 | Stream: 2 | PRC for Signalled Lanes (%): | -26.0 | Total Delay for Signalled Lanes (pcuHr): | 104.60 | Cycle Time (s): 60 |
| C1 | Stream: 3 | PRC for Signalled Lanes (%): | -42.5 | Total Delay for Signalled Lanes (pcuHr): | 201.50 | Cycle Time (s): 60 |
| C1 | Stream: 4 | PRC for Signalled Lanes (%): | 10.6 | Total Delay for Signalled Lanes (pcuHr): | 10.57 | Cycle Time (s): 60 |
| C1 | Stream: 5 | PRC for Signalled Lanes (%): | 128.0 | Total Delay for Signalled Lanes (pcuHr): | 1.89 | Cycle Time (s): 60 |
| C1 | Stream: 6 | PRC for Signalled Lanes (%): | 47.1 | Total Delay for Signalled Lanes (pcuHr): | 3.70 | Cycle Time (s): 60 |
| | | PRC Over All Lanes (%): | -42.5 | Total Delay Over All Lanes(pcuHr): | 407.47 | |

# JUNCTION 27

# NORTHAMPTON ROAD/HIGH STREET/COURTEENHALL ROAD JUNCTION

# Junctions 8

## PICADY 8 - Priority Intersection Module

Version: 8.0.4.487 [15039,24/03/2014]
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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:** 27. Courteenhall Rd High St Northampton Rd Picady D1 & J3.arc8
**Path:** C:\Users\ADCteam\Dropbox\~ JN8 TEMP\MH
**Report generation date:** 26/04/2018 11:58:50

» 2031 D1, AM
» 2031 D1, PM
» 2031 J3, AM
» 2031 J3, PM

## Summary of junction performance

| | AM | | | PM | | |
|---|---|---|---|---|---|---|
| | Queue (PCU) | Delay (s) | RFC | Queue (PCU) | Delay (s) | RFC |
| | 2031 D1 | | | | | |
| Stream B-AC | 75.39 | 503.30 | 1.27 | 144.76 | 1095.85 | 1.56 |
| Stream C-A | - | - | - | - | - | - |
| Stream C-B | 26.81 | 162.36 | 1.06 | 23.47 | 148.82 | 1.04 |
| Stream A-B | - | - | - | - | - | - |
| Stream A-C | - | - | - | - | - | - |
| | 2031 J3 | | | | | |
| Stream B-AC | 12.05 | 81.36 | 0.96 | 76.94 | 479.98 | 1.23 |
| Stream C-A | - | - | - | - | - | - |
| Stream C-B | 3.69 | 28.86 | 0.80 | 4.03 | 31.47 | 0.80 |
| Stream A-B | - | - | - | - | - | - |
| Stream A-C | - | - | - | - | - | - |

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

*"D1 - 2031 D1, AM " model duration: 07:45 - 09:15*
*"D2 - 2031 D1, PM" model duration: 16:45 - 18:15*
*"D3 - 2031 J3, AM" model duration: 07:45 - 09:15*
*"D4 - 2031 J3, PM" model duration: 16:45 - 18:15*

*Run using Junctions 8.0.4.487 at 26/04/2018 11:58:46*

## File summary

| | |
|---|---|
| **Title** | Courteenhall Road/High Street Junction |
| **Location** | Blisworth |
| **Site Number** | Northampon Gateway SRFI |
| **Date** | 21/03/2018 |
| **Version** | v1 |
| **Status** | |
| **Identifier** | MH |
| **Client** | Roxhill |
| **Jobnumber** | ADC1475 |
| **Enumerator** | ADCteam |
| **Description** | |

## Analysis Options

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

## Units

| Distance Units | Speed Units | Traffic Units Input | Traffic Units Results | Flow Units | Average Delay Units | Total Delay Units | Rate Of Delay Units |
|---|---|---|---|---|---|---|---|
| m | kph | PCU | PCU | perHour | s | -Min | perMin |

# 2031 D1, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, AM | 2031 D1 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 341.74 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | Courtneel Rd | | Major |
| **B** | B | Northampton Rd | | Minor |
| **C** | C | Northampton Rd | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **C** | 6.00 | | 0.00 | | 2.20 | 80.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **B** | One lane | 3.24 | | | | | | | | | | 105 | 82 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| **1** | B-A | 566.499 | 0.103 | 0.261 | 0.164 | 0.373 |
| **1** | B-C | 691.791 | 0.106 | 0.268 | - | - |
| **1** | C-B | 620.292 | 0.240 | 0.240 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 270.00 | 100.000 |
| B | ONE HOUR | ✓ | 584.00 | 100.000 |
| C | ONE HOUR | ✓ | 548.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 101.000 | 169.000 |
| | B | 101.000 | 0.000 | 483.000 |
| | C | 22.000 | 526.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.37 | 0.63 |
| | B | 0.17 | 0.00 | 0.83 |
| | C | 0.04 | 0.96 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.014 |
| | B | 1.000 | 1.000 | 1.069 |
| | C | 1.000 | 1.014 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 1.1 |
| | B | 0.0 | 0.0 | 5.3 |
| | C | 0.0 | 1.1 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 1.27 | 503.30 | 75.39 | F | 535.89 | 803.83 | 3409.66 | 254.51 | 37.89 | 3512.24 | 262.16 |
| C-A | - | - | - | - | 20.19 | 30.28 | - | - | - | - | - |
| C-B | 1.06 | 162.36 | 26.81 | F | 482.67 | 724.00 | 910.84 | 75.48 | 10.12 | 911.15 | 75.51 |
| A-B | - | - | - | - | 92.68 | 139.02 | - | - | - | - | - |
| A-C | - | - | - | - | 155.08 | 232.62 | - | - | - | - | - |

# 2031 D1, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 D1, PM | 2031 D1 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 646.89 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| A | A | Courtneel Rd | | Major |
| B | B | Northampton Rd | | Minor |
| C | C | Northampton Rd | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| C | 6.00 | | 0.00 | | 2.20 | 80.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane | 3.24 | | | | | | | | | | 105 | 82 |

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 566.499 | 0.103 | 0.261 | 0.164 | 0.373 |
| 1 | B-C | 691.791 | 0.106 | 0.268 | - | - |
| 1 | C-B | 620.292 | 0.240 | 0.240 | - | - |

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

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

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

# Traffic Flows

## Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

## General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 288.00 | 100.000 |
| B | ONE HOUR | ✓ | 568.00 | 100.000 |
| C | ONE HOUR | ✓ | 560.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 8.000 | 280.000 |
| | B | 195.000 | 0.000 | 373.000 |
| | C | 48.000 | 512.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.03 | 0.97 |
| | B | 0.34 | 0.00 | 0.66 |
| | C | 0.09 | 0.91 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.358 |
| | B | 1.000 | 1.000 | 1.306 |
| | C | 1.000 | 1.101 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 27.5 |
| | B | 0.0 | 0.0 | 23.5 |
| | C | 0.0 | 7.8 | 0.0 |

# Results

### Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 1.56 | 1095.85 | 144.76 | F | 521.21 | 781.81 | 6537.15 | 501.69 | 72.64 | 7535.09 | 578.28 |
| C-A | - | - | - | - | 44.05 | 66.07 | - | - | - | - | - |
| C-B | 1.04 | 148.82 | 23.47 | F | 469.82 | 704.73 | 802.08 | 68.29 | 8.91 | 802.40 | 68.32 |
| A-B | - | - | - | - | 7.34 | 11.01 | - | - | - | - | - |
| A-C | - | - | - | - | 256.93 | 385.40 | - | - | - | - | - |

# 2031 J3, AM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, AM | 2031 J3 | AM | | ONE HOUR | 07:45 | 09:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 57.18 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | Courtneel Rd | | Major |
| **B** | B | Northampton Rd | | Minor |
| **C** | C | Northampton Rd | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **C** | 6.00 | | 0.00 | | 2.20 | 80.00 | | |

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

### Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| B | One lane | 3.24 | | | | | | | | | | 105 | 82 |

### Slope / Intercept / Capacity

#### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 566.499 | 0.103 | 0.261 | 0.164 | 0.373 |
| 1 | B-C | 691.791 | 0.106 | 0.268 | - | - |
| 1 | C-B | 620.292 | 0.240 | 0.240 | - | - |

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

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

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 55.00 | 100.000 |
| B | ONE HOUR | ✓ | 513.00 | 100.000 |
| C | ONE HOUR | ✓ | 474.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 21.000 | 34.000 |
| | B | 88.000 | 0.000 | 425.000 |
| | C | 36.000 | 438.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.38 | 0.62 |
| | B | 0.17 | 0.00 | 0.83 |
| | C | 0.08 | 0.92 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.125 |
| | C | 1.286 | 1.013 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 0.0 |
| | B | 0.0 | 0.0 | 9.6 |
| | C | 22.0 | 1.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 0.96 | 81.36 | 12.05 | F | 470.74 | 706.11 | 447.95 | 38.06 | 4.98 | 448.12 | 38.08 |
| C-A | - | - | - | - | 33.03 | 49.55 | - | - | - | - | - |
| C-B | 0.80 | 28.86 | 3.69 | D | 401.92 | 602.87 | 192.11 | 19.12 | 2.13 | 192.19 | 19.13 |
| A-B | - | - | - | - | 19.27 | 28.90 | - | - | - | - | - |
| A-C | - | - | - | - | 31.20 | 46.80 | - | - | - | - | - |

# 2031 J3, PM

## Data Errors and Warnings

*No errors or warnings*

## Analysis Set Details

| Name | Roundabout Capacity Model | Description | Include In Report | Use Specific Demand Set(s) | Specific Demand Set(s) | Locked | Network Flow Scaling Factor (%) | Network Capacity Scaling Factor (%) | Reason For Scaling Factors |
|---|---|---|---|---|---|---|---|---|---|
| | N/A | | ✓ | | | | 100.000 | 100.000 | |

## Demand Set Details

| Name | Scenario Name | Time Period Name | Description | Traffic Profile Type | Model Start Time (HH:mm) | Model Finish Time (HH:mm) | Model Time Period Length (min) | Time Segment Length (min) | Results For Central Hour Only | Single Time Segment Only | Locked | Run Automatically | Use Relationship | Relationship |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2031 J3, PM | 2031 J3 | PM | | ONE HOUR | 16:45 | 18:15 | 90 | 15 | | | | ✓ | | |

# Junction Network

## Junctions

| Junction | Name | Junction Type | Major Road Direction | Arm Order | Do Geometric Delay | Junction Delay (s) | Junction LOS |
|---|---|---|---|---|---|---|---|
| 1 | (untitled) | T-Junction | Two-way | A,B,C | | 293.63 | F |

## Junction Network Options

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

# Arms

## Arms

| Arm | Arm | Name | Description | Arm Type |
|---|---|---|---|---|
| **A** | A | Courtneel Rd | | Major |
| **B** | B | Northampton Rd | | Minor |
| **C** | C | Northampton Rd | | Major |

## Major Arm Geometry

| Arm | Width of carriageway (m) | Has kerbed central reserve | Width of kerbed central reserve (m) | Has right turn bay | Width For Right Turn (m) | Visibility For Right Turn (m) | Blocks? | Blocking Queue (PCU) |
|---|---|---|---|---|---|---|---|---|
| **C** | 6.00 | | 0.00 | | 2.20 | 80.00 | | |

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

## Minor Arm Geometry

| Arm | Minor Arm Type | Lane Width (m) | Lane Width (Left) (m) | Lane Width (Right) (m) | Width at give-way (m) | Width at 5m (m) | Width at 10m (m) | Width at 15m (m) | Width at 20m (m) | Estimate Flare Length | Flare Length (PCU) | Visibility To Left (m) | Visibility To Right (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **B** | One lane | 3.24 | | | | | | | | | | 105 | 82 |

### Slope / Intercept / Capacity

#### Priority Intersection Slopes and Intercepts

| Junction | Stream | Intercept (PCU/hr) | Slope for A-B | Slope for A-C | Slope for C-A | Slope for C-B |
|---|---|---|---|---|---|---|
| 1 | B-A | 566.499 | 0.103 | 0.261 | 0.164 | 0.373 |
| 1 | B-C | 691.791 | 0.106 | 0.268 | - | - |
| 1 | C-B | 620.292 | 0.240 | 0.240 | - | - |

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

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

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

# Traffic Flows

### Demand Set Data Options

| Default Vehicle Mix | Vehicle Mix Varies Over Time | Vehicle Mix Varies Over Turn | Vehicle Mix Varies Over Entry | Vehicle Mix Source | PCU Factor for a HV (PCU) | Default Turning Proportions | Estimate from entry/exit counts | Turning Proportions Vary Over Time | Turning Proportions Vary Over Turn | Turning Proportions Vary Over Entry |
|---|---|---|---|---|---|---|---|---|---|---|
| | | ✓ | ✓ | HV Percentages | 2.30 | | | | ✓ | ✓ |

# Entry Flows

### General Flows Data

| Arm | Profile Type | Use Turning Counts | Average Demand Flow (PCU/hr) | Flow Scaling Factor (%) |
|---|---|---|---|---|
| A | ONE HOUR | ✓ | 43.00 | 100.000 |
| B | ONE HOUR | ✓ | 619.00 | 100.000 |
| C | ONE HOUR | ✓ | 490.00 | 100.000 |

# Turning Proportions

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.000 | 19.000 | 24.000 |
| | B | 164.000 | 0.000 | 455.000 |
| | C | 50.000 | 440.000 | 0.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.00 | 0.44 | 0.56 |
| | B | 0.26 | 0.00 | 0.74 |
| | C | 0.10 | 0.90 | 0.00 |

# Vehicle Mix

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 1.000 | 1.000 | 1.000 |
| | B | 1.000 | 1.000 | 1.507 |
| | C | 1.533 | 1.117 | 1.000 |

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

| | | To | | |
|---|---|---|---|---|
| | | A | B | C |
| From | A | 0.0 | 0.0 | 0.0 |
| | B | 0.0 | 0.0 | 39.0 |
| | C | 41.0 | 9.0 | 0.0 |

# Results

## Results Summary for whole modelled period

| Stream | Max RFC | Max Delay (s) | Max Queue (PCU) | Max LOS | Average Demand (PCU/hr) | Total Junction Arrivals (PCU) | Total Queueing Delay (PCU-min) | Average Queueing Delay (s) | Rate Of Queueing Delay (PCU-min/min) | Inclusive Total Queueing Delay (PCU-min) | Inclusive Average Queueing Delay (s) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| B-AC | 1.23 | 479.98 | 76.94 | F | 568.01 | 852.01 | 3411.27 | 240.23 | 37.90 | 3494.12 | 246.06 |
| C-A | - | - | - | - | 45.88 | 68.82 | - | - | - | - | - |
| C-B | 0.80 | 31.47 | 4.03 | D | 403.75 | 605.63 | 210.64 | 20.87 | 2.34 | 210.73 | 20.88 |
| A-B | - | - | - | - | 17.43 | 26.15 | - | - | - | - | - |
| A-C | - | - | - | - | 22.02 | 33.03 | - | - | - | - | - |

# APPENDIX I

# VISSIM3 MICRO-SIMULATION TECHNICAL NOTE

| | | | |
|---|---|---|---|
| **Prepared by:** | **Daniel Bent** | **Reviewed by:** | **Luke Best** |
| **Client:** | **ADC Infrastructure** | **Date:** | **28/02/2018** |

# VISSIM Modelling Summary

## 1. INTRODUCTION

1.1.1. This Technical Note (TN) summarises the VISSIM modelling undertaken on behalf of ADC Infrastructure (ADC) for the proposed Strategic Rail Freight Interchange (SRFI) known as Northampton Gateway (NG), located south of M1 J15 (see **Figure 1**).

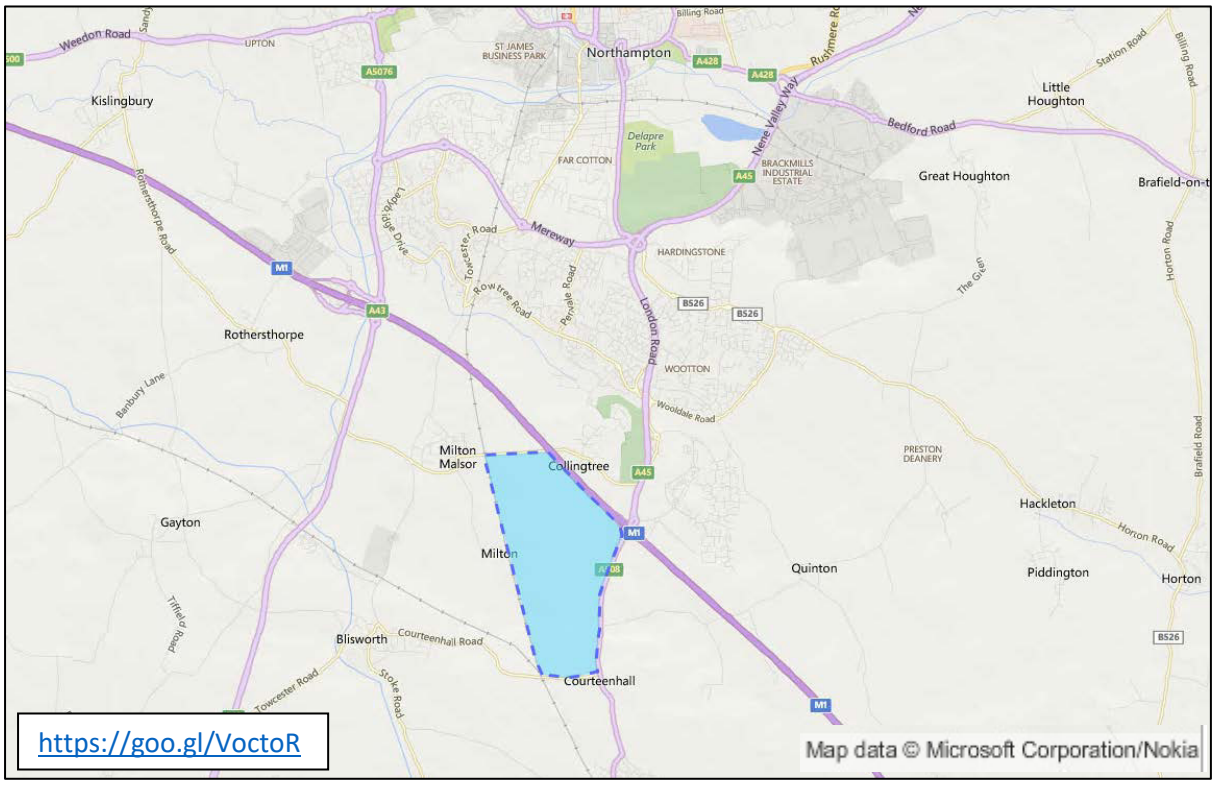



**Figure 1 – Proposed Northampton Gateway SFRI**

1.1.2. This TN follows on from Multimodal's previous notes – *'171218 MM TN – Modelling Summary'* and *'180123 MM TN - Modelling Summary_Site Access'* and provides details of the impact on the network if both proposed SRFI developments in the Northampton area – Northampton Gateway and Rail Central – were to come forward and be developed.

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## Rail Central SRFI

1.1.3. According to the *'Introduction to Rail Central'* information leaflet from January 2016 (http://railcentral.com/site/assets/files/1036/rail_central_info_leaflet_january_2016.pdf), the SRFI is proposed to be located where the West Coast mainline meets the Northampton Loop line, located to the south-west of Northampton (see **Figure 2)**.




**Figure 2 – Proposed Rail Central SFRI**

Further details on Rail Central (RC) can be found at http://railcentral.com/

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## 2. PROPOSED MITIGATION

### Northampton Gateway SRFI

2.1.1. As a recap, significant junction improvements are proposed as part of this development: This includes improvements to M1 J15, A45 / Watering Lane and a new site access on the A508 south of M1 J15. The improvements at each junction are illustrated in **Figures 3-5**.

### Rail Central SRFI

2.1.2. For the RC SRFI, there are proposals to improve M1 J15a. These involve the removal of the two roundabouts and replacing them with traffic signals (see **Figure 6**).

2.1.3. Details of these proposals were taken from the *'Local Liaison Group Meeting No. 4'* presentation document (P.22 & 23), which can be found at the following link: http://railcentral.com/site/assets/files/1100/llg_meeting_highways_24_may_2017.pdf

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## M1 J15

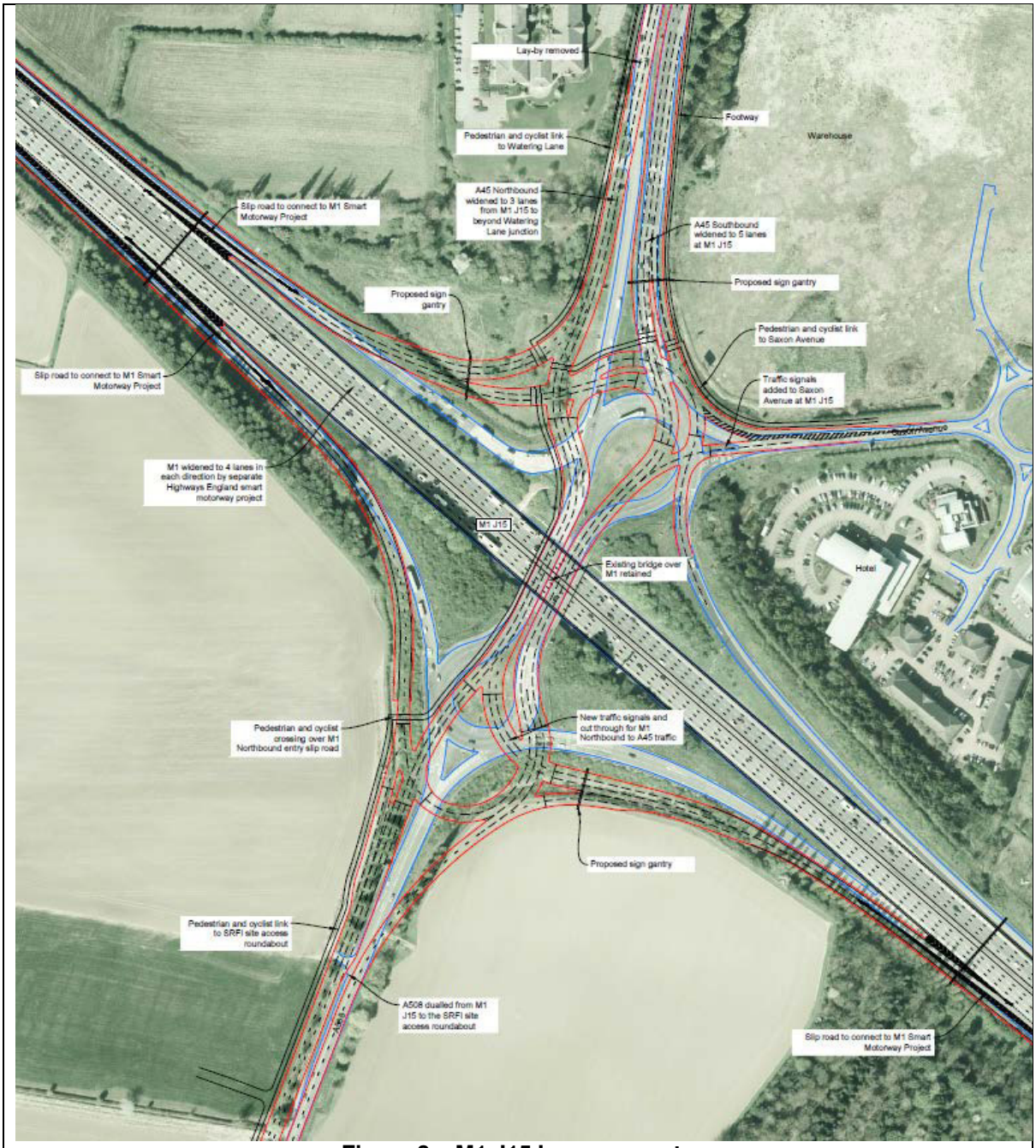



**Figure 3 – M1 J15 Improvements**

- 5 lane approaches on the A45, M1 Northbound Off-Slip, A508 and M1 Southbound Off-Slip.
- 2 lane approach on Saxon Avenue, which is also now signalised.
- Increased number of lanes on the circulatory sections over the M1.
- New signalised, right turn 'cut throughs' on both the north and south circulatory sections.
- 3 lane exit from M1 J15 to the A45 / Watering Lane junction (northbound direction).
- 2 lane exit from M1 J15 to a new A508 / Site Access junction (southbound direction).
- Proposed 50mph speed limit through and around the junction.

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## A45 / Watering Lane

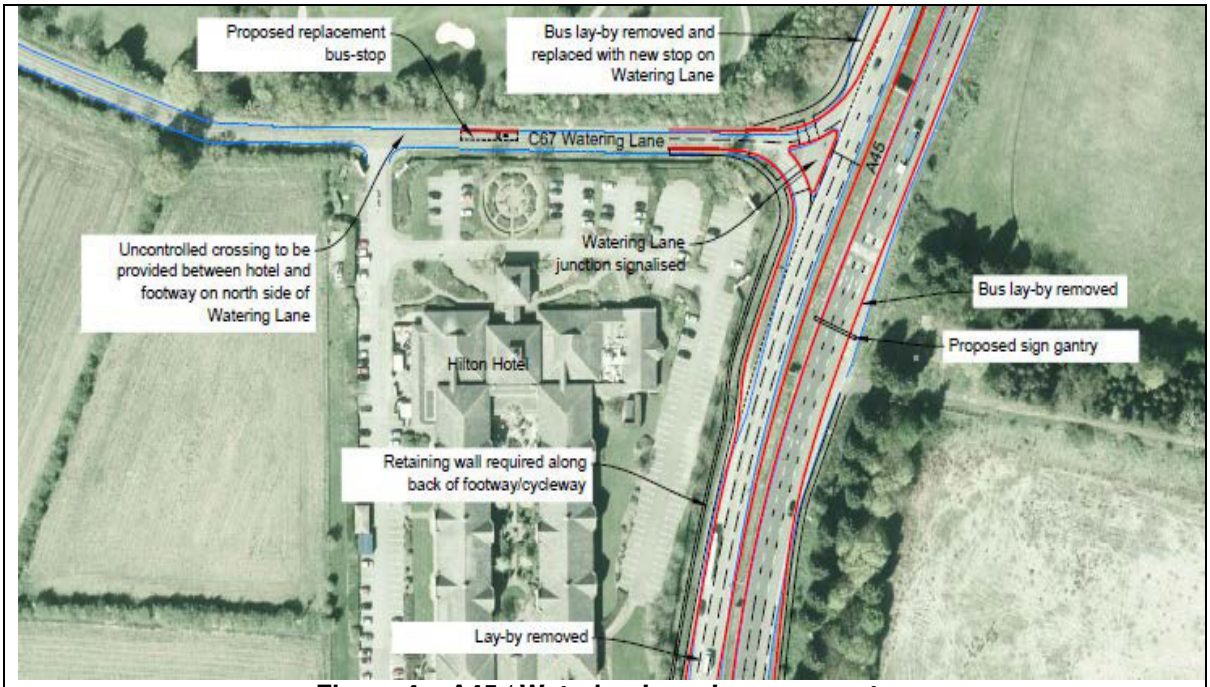



**Figure 4 – A45 / Watering Lane Improvements**

- Signalisation of A45 Northbound and Watering Lane approaches.
- 3 lanes on A45 travelling northbound, with a merge down to 2 lanes north of the junction.
- Relocation of bus stop from A45 to Watering Lane.

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## New Site Access / A508 Junction

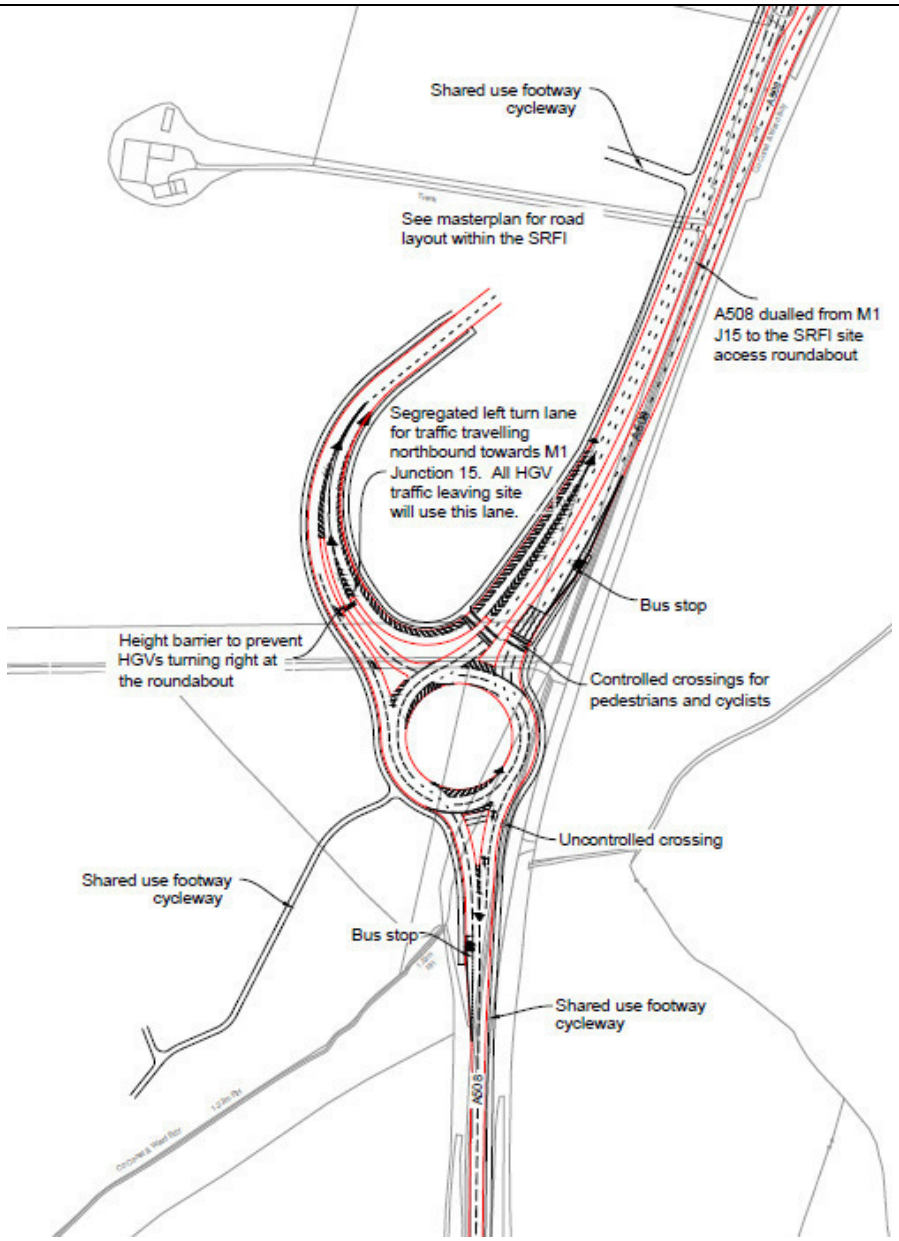



**Figure 5 – New A508 / Site Access Roundabout**

- New roundabout on the A508, with 2 lane link travelling southbound from M1 J15 and 3 lane link travelling northbound to M1 J15.
- 2 lane approach and 2 lane exit on the A508 south.
- Toucan crossing on the A508 north of the junction.

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## M1 J15a

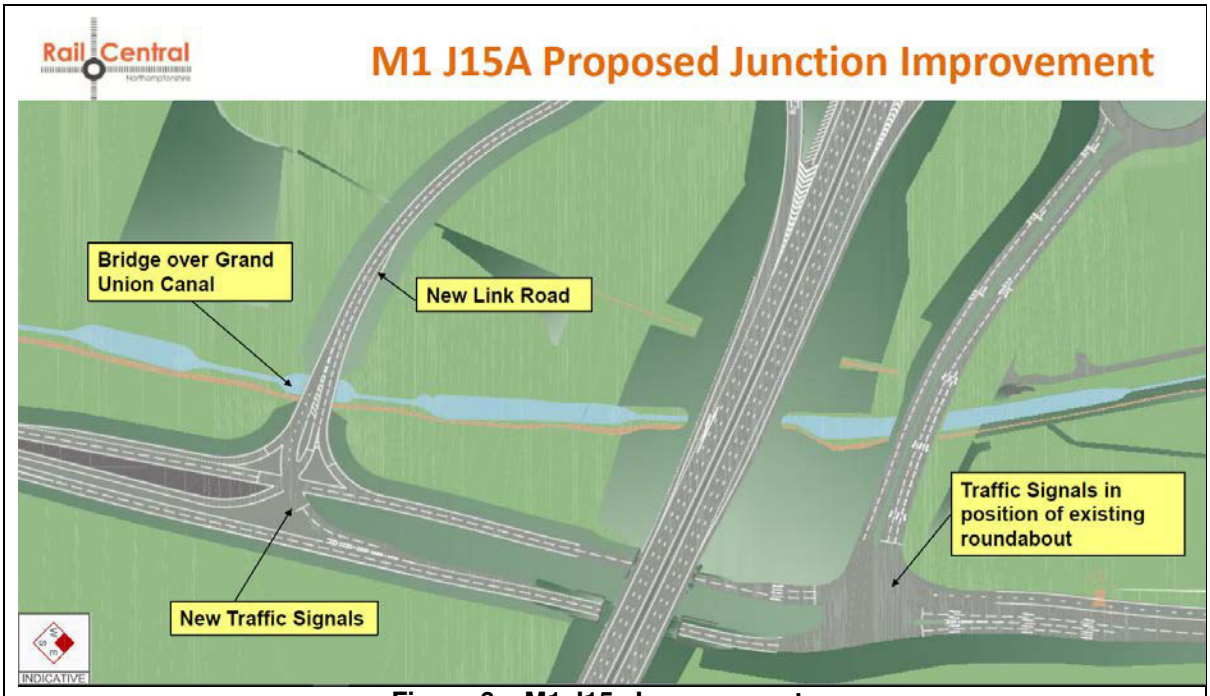



**Figure 6 – M1 J15a Improvements**

*North Junction*

- Replace roundabout with signalised junction.
- Flared approach on A5123, increasing from two to four.
- Flared approach on the M1 SB link, increasing from two to three.
- Flared approach on the A43 South link, increasing from two to three.

*South Junction*

- Replace roundabout with signalised junction.
- Separate right turn to M1 on A43 North link.
- Flared approach on the A43 South link, increasing from two to three
- Flared approach on the M1 NB link, with separate left and right turn lanes
- New merge layout for vehicles travelling south on the A43.

*VISSIM Modelling – Signal Control*

- For the purposes of the VISSIM modelling, both North and South junctions have been developed to run under Fixed Time plans. The set-up and timings have been based on a LINSIG model provided by ADC. The timings have been modified slightly following a visual assessment before the final model results were obtained.
- Details of the signal timings used for the AM and PM peak periods are included in **Appendix A**.

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## 3. FUTURE YEAR FLOWS

3.1.1. Previously, future year flows were obtained by ADC from the Northamptonshire Strategic Transport Model (NSTM2), which is owned by Northamptonshire County Council (NCC) and operated by WSP for the following:

- 2021 DfT Circular 02/2013 Reference Case – Flowset C1;
- 2021 DfT Circular 02/2013 Mitigation Case – Flowset I1;
- 2031 Reference Case – Flowset D1;
- 2031 Mitigation Case – Flowset J1d.

3.1.2. To test the impact of the proposed NG and RC SRFIs, a further scenario has been modelled in the NSTM2. This was:

- 2031 Combined NG+RC – Flowset J3

3.1.3. To test the impact of the proposed NG and RC SRFI on the SRN and local highway network, the following scenarios have been modelled in VISSIM:

1) 2031 Reference Case – background growth only
2) 2031 NG+RC Case – background growth + proposed SRFI developments + proposed improvements.

Further details of the NSTM2 outputs and conversion process for the two modelled scenarios can be found in **Appendix B**.

3.1.4. It should be noted that the VISSIM model and NSTM2 model have different times for the AM and PM peak periods. The VISSIM model uses 0715-0815hrs and 1645-1745hrs, whereas the NSTM2 model uses 0800-0900hrs and 1700-1800hrs. As the NSTM2 peak hour flows have been used in the assessment, the results are reported using the NSTM2 (0800-0900hrs and 1700-1800hrs) peak hour convention, i.e. 0715hrs in the VISSIM model corresponds with the 0800hrs and is reported as such within this TN.

## 4. MODELLING OUTPUTS

4.1.1. To compare the effects on the network in the two modelled scenarios, the following outputs have been obtained from the VISSIM models:

1) Journey Times;
2) Traffic Volumes;
3) Queue Lengths;
4) Overall Network Performance.

4.1.2. Before running the models for results, a convergence exercise was undertaken for each scenario. The results of the convergence levels can be found in **Appendix C**.

4.1.3. It can be seen that not all of the WebTAG criteria has been met. However, the percentages achieved between the runs are similar, indicating a relatively stable model for each scenario. To account for the slightly lower convergence levels when running for results, each scenario model was run for double the usual amount of random seed runs (20 instead of 10) to allow for a more robust average to be obtained.

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# 5. 2031 ASSESSMENT YEAR PERFORMANCE COMPARISON

5.1.1. The following headings provide details on the key comparisons between the 2031 Reference Case VISSIM model and the 2031 NG+RC model.

## Journey Times & Traffic Volumes

5.1.2. A comparison of the journey times and queue lengths between various routes in the network for the AM and PM peak periods can be seen in **Tables 1-4**. **Tables 1 and 2** detail the effects on Cars and **Tables 3 and 4** detail the effects on HGVs. Each zone-to-zone route has been included to allow both network-wide impacts and more specific journey impacts to be understood. It should be noted that **Tables 1-4** compare only the existing network routes (and not routes specifically from the NG development). Therefore, the tables summarise the direct impact of the NG development traffic and highway mitigation on background and RC traffic journey times and the volumes of background and RC traffic accommodated by the network.

**Table 1: 2031 Journey Time & Volume Comparisons – Cars – AM Peak**

| AM PEAK | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Cars | | | | | | | | | | | | |
| JT No. | From | | To | | REF CASE | NG+RC CASE | Difference | | REF CASE | NG+RC CASE | Difference | |
| | | | | | Overall Avg JT (s) | Overall Avg JT (s) | | | Overall Traffic Volume (Cars) | Overall Traffic Volume (Cars) | | |
| | Zone No. | Site | Zone No. | Site | 0800-0900 | 0800-0900 | Time | % | 0800-0900 | 0800-0900 | No. | % |
| 1 | 1 | A508 | 2 | M1 South | 00:09:38 | 00:04:54 | -00:04:44 | -49% | 23 | 136 | 113 | 491% |
| 50 | | | 3 | Saxon Avenue | 00:08:55 | 00:04:00 | -00:04:55 | -55% | 7 | 16 | 9 | 129% |
| 2 | | | 4 | A45 | 00:09:16 | 00:03:46 | -00:05:30 | -59% | 304 | 519 | 215 | 71% |
| 3 | | | 5 | A43 | - | 00:07:34 | - | - | 0 | 7 | 7 | - |
| 51 | | | 6 | A5123 | 00:18:11 | 00:07:36 | -00:10:35 | -58% | 3 | 29 | 26 | 867% |
| 52 | | | 12 | M1 North | 00:12:01 | 00:06:08 | -00:05:54 | -49% | 173 | 365 | 192 | 111% |
| 76 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 53 | 2 | M1 South | 1 | A508 | 00:02:56 | 00:03:47 | 00:00:51 | 29% | 145 | 158 | 13 | 9% |
| 54 | | | 3 | Saxon Avenue | 00:04:00 | 00:04:43 | 00:00:44 | 18% | 66 | 50 | -16 | -24% |
| 4 | | | 4 | A45 | 00:03:38 | 00:04:44 | 00:01:06 | 30% | 1213 | 1226 | 13 | 1% |
| 5 | | | 5 | A43 | 00:14:29 | 00:06:53 | -00:07:36 | -52% | 185 | 189 | 4 | 2% |
| 6 | | | 6 | A5123 | 00:14:41 | 00:06:58 | -00:07:43 | -53% | 128 | 263 | 135 | 105% |
| 7 | | | 12 | M1 North | 00:05:16 | 00:05:18 | 00:00:03 | 1% | 1877 | 1669 | -208 | -11% |
| 77 | | | 13 | Watering Lane | 00:03:48 | 00:04:44 | 00:00:56 | 24% | 118 | 243 | 125 | 106% |
| 55 | 3 | Saxon Avenue | 1 | A508 | 00:02:58 | 00:03:08 | 00:00:10 | 6% | 4 | 24 | 20 | 500% |
| 56 | | | 2 | M1 South | 00:02:10 | 00:02:14 | 00:00:03 | 3% | 21 | 21 | 0 | 0% |
| 57 | | | 4 | A45 | 00:03:11 | 00:04:38 | 00:01:27 | 46% | 18 | 25 | 7 | 39% |
| 58 | | | 5 | A43 | 00:15:22 | 00:07:58 | -00:07:24 | -48% | 4 | 17 | 13 | 325% |
| 59 | | | 6 | A5123 | - | 00:08:05 | - | - | 0 | 16 | 16 | - |
| 60 | | | 12 | M1 North | 00:06:06 | 00:06:37 | 00:00:31 | 8% | 12 | 36 | 24 | 200% |
| 78 | | | 13 | Watering Lane | 00:03:12 | 00:04:37 | 00:01:24 | 44% | 5 | 23 | 18 | 360% |
| 8 | 4 | A45 | 1 | A508 | 00:05:36 | 00:04:27 | -00:01:09 | -20% | 513 | 741 | 228 | 44% |
| 61 | | | 2 | M1 South | 00:05:12 | 00:02:53 | -00:02:19 | -45% | 693 | 816 | 123 | 18% |
| 62 | | | 3 | Saxon Avenue | 00:04:59 | 00:01:53 | -00:03:06 | -62% | 29 | 34 | 5 | 17% |
| 63 | | | 5 | A43 | 00:16:23 | 00:09:20 | -00:07:03 | -43% | 73 | 114 | 41 | 56% |
| 64 | | | 6 | A5123 | 00:16:04 | 00:09:30 | -00:06:34 | -41% | 5 | 28 | 23 | 460% |
| 9 | | | 12 | M1 North | 00:08:45 | 00:07:54 | -00:00:51 | -10% | 971 | 1014 | 43 | 4% |
| 79 | | | 13 | Watering Lane | 00:19:18 | 00:14:29 | -00:04:48 | -25% | 40 | 48 | 8 | 20% |
| 10 | 5 | A43 | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 11 | | | 2 | M1 South | 00:06:07 | 00:07:16 | 00:01:09 | 19% | 60 | 73 | 13 | 22% |
| 65 | | | 3 | Saxon Avenue | 00:08:00 | 00:08:27 | 00:00:26 | 5% | 10 | 14 | 4 | 40% |
| 66 | | | 4 | A45 | 00:07:37 | 00:08:10 | 00:00:33 | 7% | 197 | 322 | 125 | 63% |
| 12 | | | 6 | A5123 | 00:02:29 | 00:02:35 | 00:00:06 | 4% | 881 | 854 | -27 | -3% |
| 13 | | | 12 | M1 North | 00:03:19 | 00:03:33 | 00:00:13 | 7% | 345 | 651 | 306 | 89% |
| 80 | | | 13 | Watering Lane | 00:07:55 | 00:08:17 | 00:00:21 | 4% | 7 | 4 | -3 | -43% |
| 67 | 6 | A5123 | 1 | A508 | 00:08:41 | 00:09:36 | 00:00:54 | 10% | 36 | 26 | -10 | -28% |
| 68 | | | 2 | M1 South | 00:05:42 | 00:06:54 | 00:01:12 | 21% | 245 | 97 | -148 | -60% |
| 69 | | | 3 | Saxon Avenue | 00:07:30 | 00:08:06 | 00:00:36 | 8% | 8 | 6 | -2 | -25% |
| 70 | | | 4 | A45 | 00:07:15 | 00:07:45 | 00:00:30 | 7% | 43 | 19 | -24 | -56% |
| 14 | | | 5 | A43 | 00:02:14 | 00:02:39 | 00:00:25 | 19% | 1140 | 1917 | 777 | 68% |
| 71 | | | 12 | M1 North | 00:03:49 | 00:05:08 | 00:01:19 | 34% | 215 | 244 | 29 | 13% |
| 81 | | | 13 | Watering Lane | 00:07:22 | 00:07:56 | 00:00:34 | 8% | 8 | 7 | -1 | -13% |
| 72 | 12 | M1 North | 1 | A508 | 00:08:21 | 00:08:21 | -00:00:00 | 0% | 246 | 365 | 119 | 48% |
| 18 | | | 2 | M1 South | 00:05:16 | 00:05:25 | 00:00:08 | 3% | 2128 | 2149 | 21 | 1% |
| 73 | | | 3 | Saxon Avenue | 00:07:06 | 00:06:32 | -00:00:34 | -8% | 50 | 86 | 36 | 72% |
| 19 | | | 4 | A45 | 00:06:50 | 00:06:29 | -00:00:21 | -5% | 645 | 683 | 38 | 6% |
| 20 | | | 5 | A43 | 00:12:41 | 00:06:24 | -00:06:17 | -50% | 241 | 366 | 125 | 52% |
| 74 | | | 6 | A5123 | 00:10:23 | 00:04:25 | -00:05:59 | -58% | 300 | 114 | -186 | -62% |
| 82 | | | 13 | Watering Lane | 00:07:00 | 00:06:30 | -00:00:30 | -7% | 154 | 151 | -3 | -2% |
| 75 | 13 | Watering Lane | 4 | A45 | 00:01:16 | 00:01:42 | 00:00:26 | 34% | 553 | 327 | -226 | -41% |
| **Total** | | | | | **05:53:00** | **04:50:54** | **-01:02:06** | **-18%** | **14142** | **16302** | **2160** | **15%** |

5.1.3. **Table 1** shows that, in general, the journey times are reduced in the NG+RC scenario, in comparison to the reference case. Considering all routes, there is an average journey time reduction of 18%.

5.1.4. The most notable routes which benefit from the improvements are from the A508 (to Saxon Avenue, A45 and A5123), M1 South (to A43 & A5123), A45 (to Saxon Avenue) and the M1

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North (to A43 & A5123). This is indicated by the cells in light green, where the journey times are reduced by around 60%.

5.1.5. There are a number of routes which would experience an increase in journey times. The following routes have increases of 30-40% - M1 South to the A45, Saxon Avenue to the A45 & Watering Lane, A5123 to the M1 North and Watering Lane to the A45. This is likely to be due to the NG and RC junction improvements introducing signals to approaches that were previously under priority control, therefore adding delays to these routes. When considering the overall traffic volumes (16,302), the number of vehicles undertaking these movements (1,845) equates to 11.3% of the total volume.

5.1.6. Taking further account of the traffic volumes, the NG+RC scenario is successful in allowing more vehicles within the network, with an extra 15% (2,160 cars) overall in comparison to the reference case. This increase in traffic is in addition to the NG development traffic.

**Table 2: 2031 Journey Time & Volume Comparisons – Cars – PM Peak**

| PM PEAK Cars | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| JT No. | From | | To | | REF CASE Overall Avg JT (s) | NG+RC CASE Overall Avg JT (s) | Difference | | REF CASE Overall Traffic Volume (Cars) | NG+RC CASE Overall Traffic Volume (Cars) | Difference | |
| | Zone No. | Site | Zone No. | Site | 1700-1800 | 1700-1800 | Time | % | 1700-1800 | 1700-1800 | No. | % |
| 1 | 1 | A508 | 2 | M1 South | 00:04:59 | 00:04:23 | -00:00:36 | -12% | 15 | 48 | 33 | 220% |
| 50 | | | 3 | Saxon Avenue | 00:04:06 | 00:03:20 | -00:00:45 | -18% | 4 | 8 | 4 | 100% |
| 2 | | | 4 | A45 | 00:04:29 | 00:03:37 | -00:00:53 | -20% | 585 | 830 | 245 | 42% |
| 3 | | | 5 | A43 | - | 00:08:43 | - | - | 0 | 4 | 4 | - |
| 51 | | | 6 | A5123 | 00:35:03 | 00:08:57 | -00:26:06 | -74% | 3 | 19 | 16 | 533% |
| 52 | | | 12 | M1 North | 00:08:35 | 00:06:04 | -00:02:30 | -29% | 171 | 192 | 21 | 12% |
| 76 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 53 | 2 | M1 South | 1 | A508 | 00:02:49 | 00:03:13 | 00:00:23 | 14% | 93 | 72 | -21 | -23% |
| 54 | | | 3 | Saxon Avenue | 00:03:18 | 00:03:32 | 00:00:14 | 7% | 54 | 23 | -31 | -57% |
| 4 | | | 4 | A45 | 00:03:09 | 00:03:41 | 00:00:32 | 17% | 1013 | 1090 | 77 | 8% |
| 5 | | | 5 | A43 | 00:35:35 | 00:08:15 | -00:27:20 | -77% | 47 | 165 | 118 | 251% |
| 6 | | | 6 | A5123 | 00:35:18 | 00:08:27 | -00:26:50 | -76% | 166 | 367 | 201 | 121% |
| 7 | | | 12 | M1 North | 00:05:47 | 00:05:23 | -00:00:24 | -7% | 2534 | 2380 | -154 | -6% |
| 77 | | | 13 | Watering Lane | 00:03:18 | 00:03:36 | 00:00:18 | 9% | 88 | 104 | 16 | 18% |
| 55 | 3 | Saxon Avenue | 1 | A508 | 00:02:50 | 00:02:57 | 00:00:08 | 5% | 12 | 20 | 8 | 67% |
| 56 | | | 2 | M1 South | 00:02:18 | 00:02:19 | 00:00:01 | 1% | 86 | 83 | -3 | -3% |
| 57 | | | 4 | A45 | 00:02:51 | 00:04:14 | 00:01:23 | 49% | 24 | 32 | 8 | 33% |
| 58 | | | 5 | A43 | - | - | - | - | 0 | 0 | 0 | - |
| 59 | | | 6 | A5123 | - | - | - | - | 0 | 0 | 0 | - |
| 60 | | | 12 | M1 North | 00:07:05 | 00:06:20 | -00:00:45 | -11% | 12 | 16 | 4 | 33% |
| 78 | | | 13 | Watering Lane | - | 00:04:06 | - | - | 0 | 4 | 4 | - |
| 8 | 4 | A45 | 1 | A508 | 00:06:04 | 00:03:17 | -00:02:47 | -46% | 701 | 921 | 220 | 31% |
| 61 | | | 2 | M1 South | 00:05:45 | 00:02:35 | -00:03:09 | -55% | 738 | 921 | 183 | 25% |
| 62 | | | 3 | Saxon Avenue | 00:05:31 | 00:01:32 | -00:03:59 | -72% | 70 | 88 | 18 | 26% |
| 63 | | | 5 | A43 | 00:38:03 | 00:09:24 | -00:28:39 | -75% | 30 | 107 | 77 | 257% |
| 64 | | | 6 | A5123 | - | 00:09:48 | - | - | 0 | 4 | 4 | - |
| 9 | | | 12 | M1 North | 00:10:02 | 00:06:43 | -00:03:19 | -33% | 903 | 1035 | 132 | 15% |
| 79 | | | 13 | Watering Lane | 00:39:28 | 00:14:08 | -00:25:20 | -64% | 49 | 88 | 39 | 80% |
| 10 | 5 | A43 | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 11 | | | 2 | M1 South | 00:06:20 | 00:07:34 | 00:01:14 | 19% | 290 | 259 | -31 | -11% |
| 65 | | | 3 | Saxon Avenue | - | 00:07:56 | - | - | 0 | 4 | 4 | - |
| 66 | | | 4 | A45 | 00:06:38 | 00:08:06 | 00:01:28 | 22% | 12 | 73 | 61 | 508% |
| 12 | | | 6 | A5123 | 00:02:52 | 00:03:08 | 00:00:17 | 10% | 960 | 1087 | 127 | 13% |
| 13 | | | 12 | M1 North | 00:03:26 | 00:03:50 | 00:00:24 | 12% | 320 | 775 | 455 | 142% |
| 80 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 67 | 6 | A5123 | 1 | A508 | 00:07:09 | 00:08:25 | 00:01:16 | 18% | 16 | 8 | -8 | -50% |
| 68 | | | 2 | M1 South | 00:05:23 | 00:06:41 | 00:01:18 | 24% | 184 | 136 | -48 | -26% |
| 69 | | | 3 | Saxon Avenue | 00:05:56 | 00:06:59 | 00:01:03 | 18% | 12 | 11 | -1 | -8% |
| 70 | | | 4 | A45 | 00:05:43 | 00:07:11 | 00:01:28 | 26% | 32 | 12 | -20 | -63% |
| 14 | | | 5 | A43 | 00:02:01 | 00:02:15 | 00:00:14 | 12% | 798 | 925 | 127 | 16% |
| 71 | | | 12 | M1 North | 00:03:41 | 00:04:25 | 00:00:44 | 20% | 216 | 159 | -57 | -26% |
| 81 | | | 13 | Watering Lane | - | 00:07:19 | - | - | 0 | 4 | 4 | - |
| 72 | 12 | M1 North | 1 | A508 | 00:07:13 | 00:07:12 | -00:00:01 | 0% | 99 | 319 | 220 | 222% |
| 18 | | | 2 | M1 South | 00:05:24 | 00:05:24 | -00:00:00 | 0% | 2454 | 2661 | 207 | 8% |
| 73 | | | 3 | Saxon Avenue | 00:06:02 | 00:05:44 | -00:00:18 | -5% | 19 | 28 | 9 | 47% |
| 19 | | | 4 | A45 | 00:05:48 | 00:06:03 | 00:00:14 | 4% | 910 | 808 | -102 | -11% |
| 20 | | | 5 | A43 | 00:40:47 | 00:05:06 | -00:35:41 | -88% | 185 | 253 | 68 | 37% |
| 74 | | | 6 | A5123 | 00:38:25 | 00:04:04 | -00:34:21 | -89% | 112 | 218 | 106 | 95% |
| 82 | | | 13 | Watering Lane | 00:05:53 | 00:05:57 | 00:00:03 | 1% | 4 | 8 | 4 | 100% |
| 75 | 13 | Watering Lane | 4 | A45 | 00:01:11 | 00:01:39 | 00:00:29 | 41% | 306 | 152 | -154 | -50% |
| **Total** | | | | | **07:06:15** | **04:13:33** | **-02:52:42** | **-41%** | **14327** | **16521** | **2194** | **15%** |

5.1.7. In the PM peak, the trend is the same as the AM peak, with journey times improved in the NG+RC scenario in comparison to the reference case. Overall, there is a 41% average reduction in journey times, when considering all routes.

5.1.8. There are notable routes with significantly reduced journey times, including the A508 to the A5123, M1 South to the A43 and A4123, all routes from the A45 and two routes from the M1 – one to the A43 and the other to the A5123. These have benefits ranging from 35% to 90%.

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5.1.9. In terms of increased journey times, there are two routes of note. These are Saxon Avenue to the A45, where the journey time increases by 49% and from Watering Lane to the A45 where the increase is 41%. For the Saxon Avenue route, this is likely to be due to vehicles having to negotiate a larger junction, as well as an increased number of signalised stop-lines at J15. The Watering Lane route to the A45 is now signalised, which will cause delay to a route which was previously priority controlled. It should be noted that 32 and 152 vehicles use these routes respectively, which equates to 1.1% of the total traffic volume in the network.

5.1.10. When looking at the volumes on the existing routing, the NG+RC scenario allows an additional 15% of traffic to use the network, an increase of 2,194 cars in comparison to the reference case. This increase is in addition to the NG development traffic.

**Table 3: 2031 Journey Time & Volume Comparisons – HGVs – AM Peak**

| AM PEAK | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HGVs | | | | | | | | | | | | |
| JT No. | From | | To | | REF CASE | NG+RC CASE | Difference | | REF CASE | NG+RC CASE | Difference | |
| | | | | | Overall Avg JT (s) | Overall Avg JT (s) | | | Overall Traffic Volume (Cars) | Overall Traffic Volume (Cars) | | |
| | Zone No. | Site | Zone No. | Site | 0800-0900 | 0800-0900 | Time | % | 0800-0900 | 0800-0900 | No. | % |
| 1 | 1 | A508 | 2 | M1 South | - | - | - | - | 0 | 0 | 0 | - |
| 50 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 2 | | | 4 | A45 | 00:09:30 | 00:04:01 | -00:05:29 | -58% | 20 | 4 | -16 | -80% |
| 3 | | | 5 | A43 | - | - | - | - | 0 | 0 | 0 | - |
| 51 | | | 6 | A5123 | - | - | - | - | 0 | 0 | 0 | - |
| 52 | | | 12 | M1 North | 00:12:38 | 00:06:54 | -00:05:44 | -45% | 30 | 46 | 16 | 53% |
| 76 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 53 | 2 | M1 South | 1 | A508 | 00:03:10 | - | - | - | 4 | 0 | -4 | -100% |
| 54 | | | 3 | Saxon Avenue | 00:04:20 | 00:04:58 | 00:00:38 | 14% | 11 | 14 | 3 | 27% |
| 4 | | | 4 | A45 | 00:03:54 | 00:05:01 | 00:01:07 | 29% | 109 | 100 | -9 | -8% |
| 5 | | | 5 | A43 | - | 00:07:14 | - | - | 0 | 23 | 23 | - |
| 6 | | | 6 | A5123 | 00:14:44 | 00:07:18 | -00:07:26 | -50% | 13 | 30 | 17 | 131% |
| 7 | | | 12 | M1 North | 00:06:09 | 00:06:10 | 00:00:01 | 0% | 393 | 400 | 7 | 2% |
| 77 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 55 | 3 | Saxon Avenue | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 56 | | | 2 | M1 South | - | - | - | - | 0 | 0 | 0 | - |
| 57 | | | 4 | A45 | - | - | - | - | 0 | 0 | 0 | - |
| 58 | | | 5 | A43 | - | - | - | - | 0 | 0 | 0 | - |
| 59 | | | 6 | A5123 | - | - | - | - | 0 | 0 | 0 | - |
| 60 | | | 12 | M1 North | - | - | - | - | 0 | 0 | 0 | - |
| 78 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 8 | 4 | A45 | 1 | A508 | 00:05:47 | 00:04:40 | -00:01:07 | -19% | 8 | 15 | 7 | 88% |
| 61 | | | 2 | M1 South | 00:05:18 | 00:03:08 | -00:02:10 | -41% | 32 | 37 | 5 | 16% |
| 62 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 63 | | | 5 | A43 | - | - | - | - | 0 | 2 | 2 | - |
| 64 | | | 6 | A5123 | - | - | - | - | 0 | 0 | 0 | - |
| 9 | | | 12 | M1 North | 00:09:27 | 00:08:37 | -00:00:50 | -9% | 177 | 188 | 11 | 6% |
| 79 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 10 | 5 | A43 | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 11 | | | 2 | M1 South | - | 00:07:53 | - | - | 0 | 15 | 15 | - |
| 65 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 66 | | | 4 | A45 | - | 00:08:31 | - | - | 0 | 8 | 8 | - |
| 12 | | | 6 | A5123 | 00:02:41 | 00:02:46 | 00:00:05 | 3% | 116 | 179 | 63 | 54% |
| 13 | | | 12 | M1 North | 00:03:40 | 00:03:49 | 00:00:09 | 4% | 4 | 68 | 64 | 1600% |
| 80 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 67 | 6 | A5123 | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 68 | | | 2 | M1 South | - | - | - | - | 0 | 0 | 0 | - |
| 69 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 70 | | | 4 | A45 | - | - | - | - | 0 | 0 | 0 | - |
| 14 | | | 5 | A43 | 00:02:26 | 00:02:45 | 00:00:18 | 13% | 95 | 134 | 39 | 41% |
| 71 | | | 12 | M1 North | 00:04:08 | 00:05:37 | 00:01:29 | 36% | 14 | 28 | 14 | 100% |
| 81 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 72 | 12 | M1 North | 1 | A508 | 00:08:51 | 00:08:45 | -00:00:05 | -1% | 48 | 46 | -2 | -4% |
| 18 | | | 2 | M1 South | 00:06:06 | 00:06:13 | 00:00:07 | 2% | 581 | 582 | 1 | 0% |
| 73 | | | 3 | Saxon Avenue | 00:07:27 | 00:07:11 | -00:00:16 | -4% | 4 | 5 | 1 | 25% |
| 19 | | | 4 | A45 | 00:07:18 | 00:06:57 | -00:00:21 | -5% | 75 | 75 | 0 | 0% |
| 20 | | | 5 | A43 | 00:12:23 | 00:06:33 | -00:05:50 | -47% | 58 | 136 | 78 | 134% |
| 74 | | | 6 | A5123 | 00:10:57 | - | - | - | 4 | 2 | -2 | -50% |
| 82 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 75 | 13 | Watering Lane | 4 | A45 | - | - | - | - | 0 | 0 | 0 | - |
| **Total** | | | | | **02:20:54** | **02:05:01** | **-00:15:53** | **-11%** | **1796** | **2137** | **341** | **19%** |

5.1.11. **Table 3** shows a general improvement in HGV journey times in the network in the NG+RC scenario. When considering all the routes, there is an 11% reduction in journey times.

5.1.12. There are five notable routes with journey time reductions – A508 to A45, A508 to M1 North, M1 South to A5123, A45 to M1 South and M1 North to A43. These have improvements in the range of 40-60%.

5.1.13. The journey times with the biggest increases are from the M1 South to the A45 and from the A5123 to the M1 North, where the increases are 29% and 36% respectively. This is due to the

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vehicles having to negotiate additional signalised stop-lines at J15 and J15a, which are not present in the Reference Case.

5.1.14. The NG+RC scenario introduces more HGVs to the network, with a 19% increase in comparison to the reference case. This increase is in addition to the NG development traffic.

**Table 4: 2031 Journey Time & Volume Comparisons – HGVs – PM Peak**

| PM PEAK | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HGVs | | | | | | | | | | | | |
| JT No. | From | | To | | REF CASE | NG+RC CASE | Difference | | REF CASE | NG+RC CASE | Difference | |
| | | | | | Overall Avg JT (s) | Overall Avg JT (s) | | | Overall Traffic Volume (Cars) | Overall Traffic Volume (Cars) | | |
| | Zone No. | Site | Zone No. | Site | 1700-1800 | 1700-1800 | Time | % | 1700-1800 | 1700-1800 | No. | % |
| 1 | | | 2 | M1 South | - | - | - | - | 0 | 0 | 0 | - |
| 50 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 2 | | | 4 | A45 | 00:04:46 | 00:03:47 | -00:00:59 | -21% | 8 | 8 | 0 | 0% |
| 3 | 1 | A508 | 5 | A43 | - | - | - | - | 0 | 0 | 0 | - |
| 51 | | | 6 | A5123 | - | - | - | - | 0 | 0 | 0 | - |
| 52 | | | 12 | M1 North | 00:09:52 | 00:06:49 | -00:03:03 | -31% | 33 | 40 | 7 | 21% |
| 76 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 53 | | | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 54 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 4 | | | 4 | A45 | 00:03:26 | 00:04:00 | 00:00:34 | 17% | 89 | 96 | 7 | 8% |
| 5 | 2 | M1 South | 5 | A43 | - | 00:08:35 | - | - | 0 | 23 | 23 | - |
| 6 | | | 6 | A5123 | 00:34:49 | 00:08:42 | -00:26:07 | -75% | 10 | 20 | 10 | 100% |
| 7 | | | 12 | M1 North | 00:07:17 | 00:06:11 | -00:01:06 | -15% | 388 | 397 | 9 | 2% |
| 77 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 55 | | | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 56 | | | 2 | M1 South | 00:02:28 | 00:02:34 | 00:00:07 | 4% | 18 | 18 | 0 | 0% |
| 57 | | | 4 | A45 | - | - | - | - | 0 | 0 | 0 | - |
| 58 | 3 | Saxon Avenue | 5 | A43 | - | - | - | - | 0 | 0 | 0 | - |
| 59 | | | 6 | A5123 | - | - | - | - | 0 | 0 | 0 | - |
| 60 | | | 12 | M1 North | 00:08:10 | 00:07:10 | -00:01:00 | -12% | 27 | 34 | 7 | 26% |
| 78 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 8 | | | 1 | A508 | 00:06:11 | 00:03:25 | -00:02:46 | -45% | 28 | 28 | 0 | 0% |
| 61 | | | 2 | M1 South | 00:05:59 | 00:02:48 | -00:03:11 | -53% | 19 | 20 | 1 | 5% |
| 62 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 63 | 4 | A45 | 5 | A43 | - | 00:09:21 | - | - | 0 | 4 | 4 | - |
| 64 | | | 6 | A5123 | - | - | - | - | 0 | 0 | 0 | - |
| 9 | | | 12 | M1 North | 00:11:45 | 00:07:26 | -00:04:19 | -37% | 26 | 24 | -2 | -8% |
| 79 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 10 | | | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 11 | | | 2 | M1 South | - | 00:08:13 | - | - | 0 | 12 | 12 | - |
| 65 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 66 | 5 | A43 | 4 | A45 | - | - | - | - | 0 | 0 | 0 | - |
| 12 | | | 6 | A5123 | 00:03:04 | 00:03:17 | 00:00:13 | 7% | 117 | 173 | 56 | 48% |
| 13 | | | 12 | M1 North | - | 00:04:07 | - | - | 0 | 48 | 48 | - |
| 80 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 67 | | | 1 | A508 | - | - | - | - | 0 | 0 | 0 | - |
| 68 | | | 2 | M1 South | 00:06:02 | 00:07:29 | 00:01:27 | 24% | 19 | 23 | 4 | 21% |
| 69 | | | 3 | Saxon Avenue | - | - | - | - | 0 | 0 | 0 | - |
| 70 | 6 | A5123 | 4 | A45 | - | - | - | - | 0 | 0 | 0 | - |
| 14 | | | 5 | A43 | 00:02:16 | 00:02:22 | 00:00:06 | 4% | 53 | 93 | 40 | 75% |
| 71 | | | 12 | M1 North | - | - | - | - | 0 | 0 | 0 | - |
| 81 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 72 | | | 1 | A508 | 00:07:47 | 00:07:39 | -00:00:08 | -2% | 29 | 63 | 34 | 117% |
| 18 | | | 2 | M1 South | 00:06:18 | 00:06:11 | -00:00:07 | -2% | 382 | 412 | 30 | 8% |
| 73 | | | 3 | Saxon Avenue | 00:06:43 | 00:06:12 | -00:00:31 | -8% | 14 | 24 | 10 | 71% |
| 19 | 12 | M1 North | 4 | A45 | 00:06:25 | 00:06:32 | 00:00:07 | 2% | 75 | 71 | -4 | -5% |
| 20 | | | 5 | A43 | 00:36:58 | 00:05:18 | -00:31:40 | -86% | 3 | 56 | 53 | 1767% |
| 74 | | | 6 | A5123 | 00:37:48 | 00:04:15 | -00:33:33 | -89% | 22 | 73 | 51 | 232% |
| 82 | | | 13 | Watering Lane | - | - | - | - | 0 | 0 | 0 | - |
| 75 | 13 | Watering Lane | 4 | A45 | - | - | - | - | 0 | 0 | 0 | - |
| **Total** | | | | | **03:28:03** | **02:12:23** | **-01:15:40** | **-36%** | **1360** | **1760** | **400** | **29%** |

5.1.15. **Table 4** shows that, as with the AM peak for HGVs, there is an improvement in HGV journey times, with a 36% reduction overall with NG+RC in place.

5.1.16. There are three routes with notable journey time reductions – M1 South to the A5123, M1 North to A43 and the A5123. These routes have reductions ranging from 75% to 90%.

5.1.17. In terms of the routes with increased journey times, there are two routes of note. These are the M1 South to the A45 and from the A5123 to the M1 South, where the increases are 17% and 24% respectively. As in the AM peak, these may be affected by the increased number of signals that the HGVs must negotiate through at J15 and J15a.

5.1.18. When looking at the volumes on the existing routing, there is a 29% increase in HGV movements in the NG+RC scenario over the reference case scenario. This increase in traffic is in addition to the NG development traffic.

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## Queue Lengths

5.1.19. A comparison of the average and maximum (average) queue lengths (in metres) at M1 J15 and M1 J15a can be seen in **Figures 7, 10, 12 and 13** for the AM and PM peaks, with **Appendix D** providing more detailed queue results.

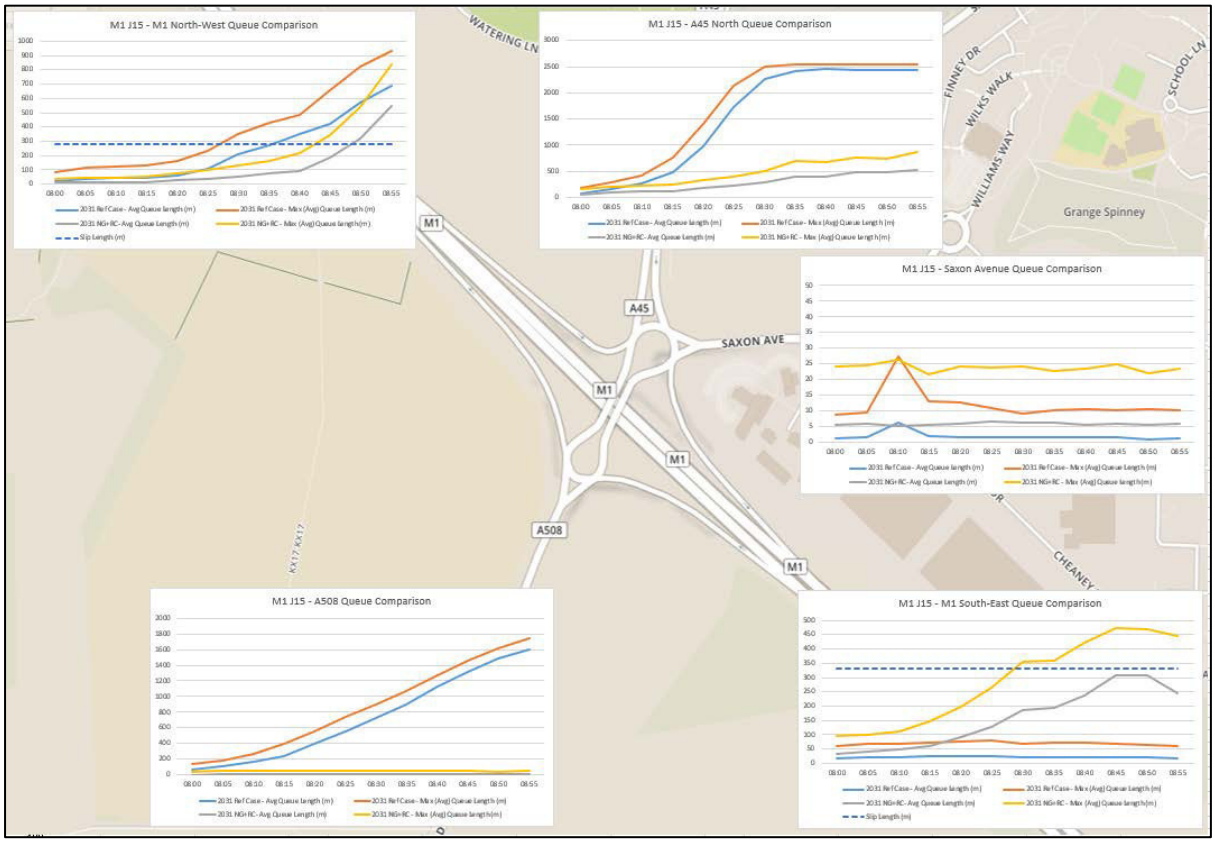



**Figure 7 – 2031 M1 J15 Queue Comparison – AM (queue in metres)**

5.1.20. On the M1 NW approach, the reference case average queues reach back to the M1 mainline at around 0835hrs and continue to increase as the peak progresses. This will have safety implications for the M1 mainline. In the NG+RC scenario, there are also safety implications, albeit later in the peak, with average queues reaching back to the mainline at around 0850hrs. This suggests that the junction begins to operate over-capacity towards the end of the AM peak. A network performance comparison is shown in **Figure 8**.

5.1.21. The A45 North approach queues extend to 2.5km in the reference case, which is the extent of the VISSIM network. Given that the lengths plateau at around 0830hrs, it is expected that the queues would extend further than the 2.5km specified. In the NG+RC scenario, the average queues reach up to ~500m, providing a significant improvement over the reference case.

5.1.22. The M1 SE approach has higher average queues in the NG+RC scenario compared to the reference case, with lengths reaching ~300m in comparison to ~25m. This is very close to being a safety issue for the M1 mainline and is the result of the new junction configuration and increased flows from the A45 North approach travelling south to the A508 and to the M1 northbound off-slip. This causes additional signal green time and in turn affects the length of queue on the M1 SE approach.

5.1.23. The A508 approach has increasing average queue lengths in the reference case as the AM peak progresses, with queues reaching ~1.6km by the end of the peak. Conversely, the NG+RC scenario has average queues ~20m, a significant improvement over the reference case.

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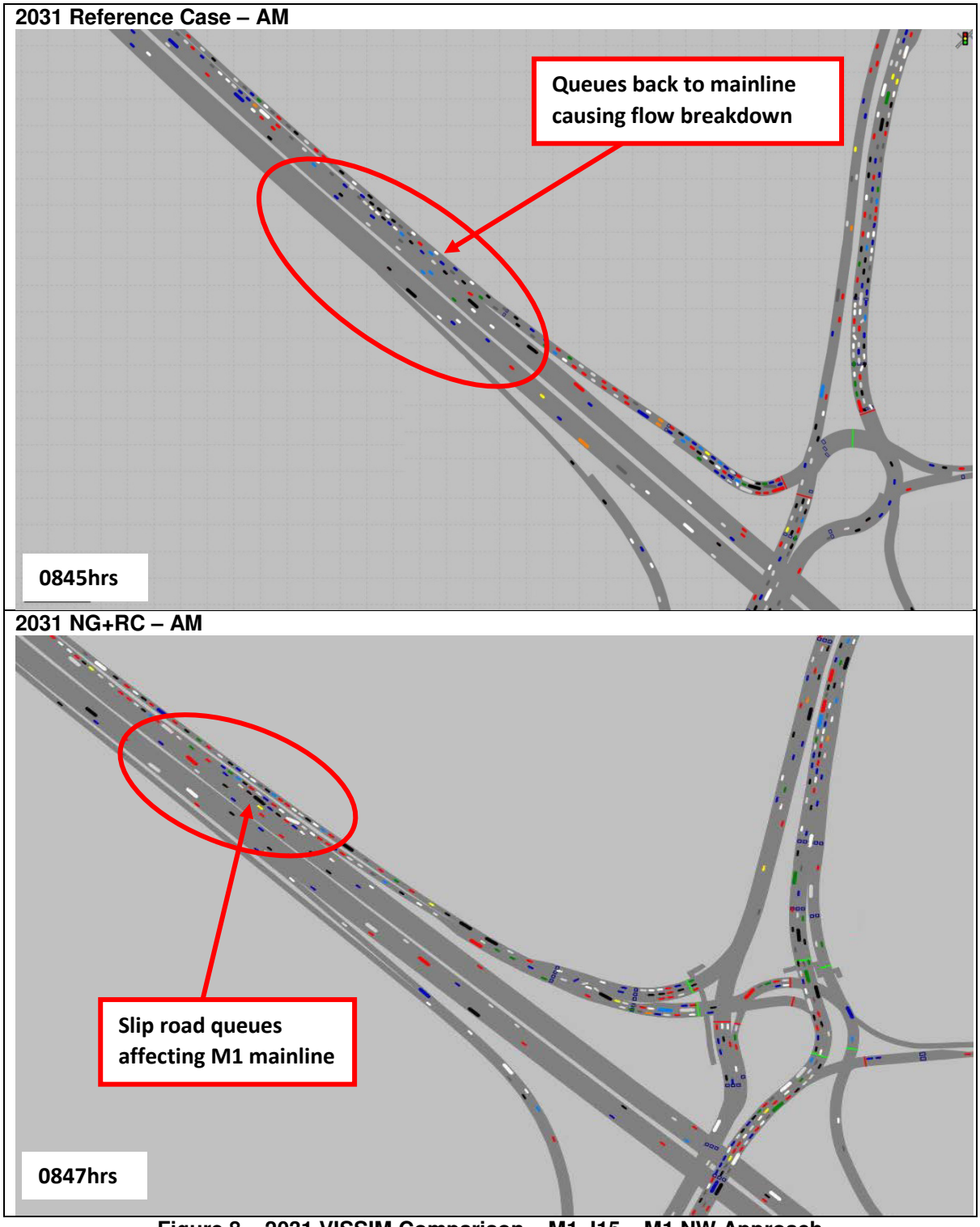



**Figure 8 – 2031 VISSIM Comparison – M1 J15 – M1 NW Approach**

5.1.24. Finally, the Saxon Avenue approach has similar queue lengths when comparing the average (~2m compared to 5m) but has a higher maximum (average) length in the mitigation scenario (~25m compared to 10m in the reference case). This will be due to this approach now being signalised, which adds delay compared to the previous priority-controlled arrangement.

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5.1.25. For J15a, with the layout of the junction changing as a result of the RC SRFI, **Figure 9** shows how the queues are compared between the two scenarios.

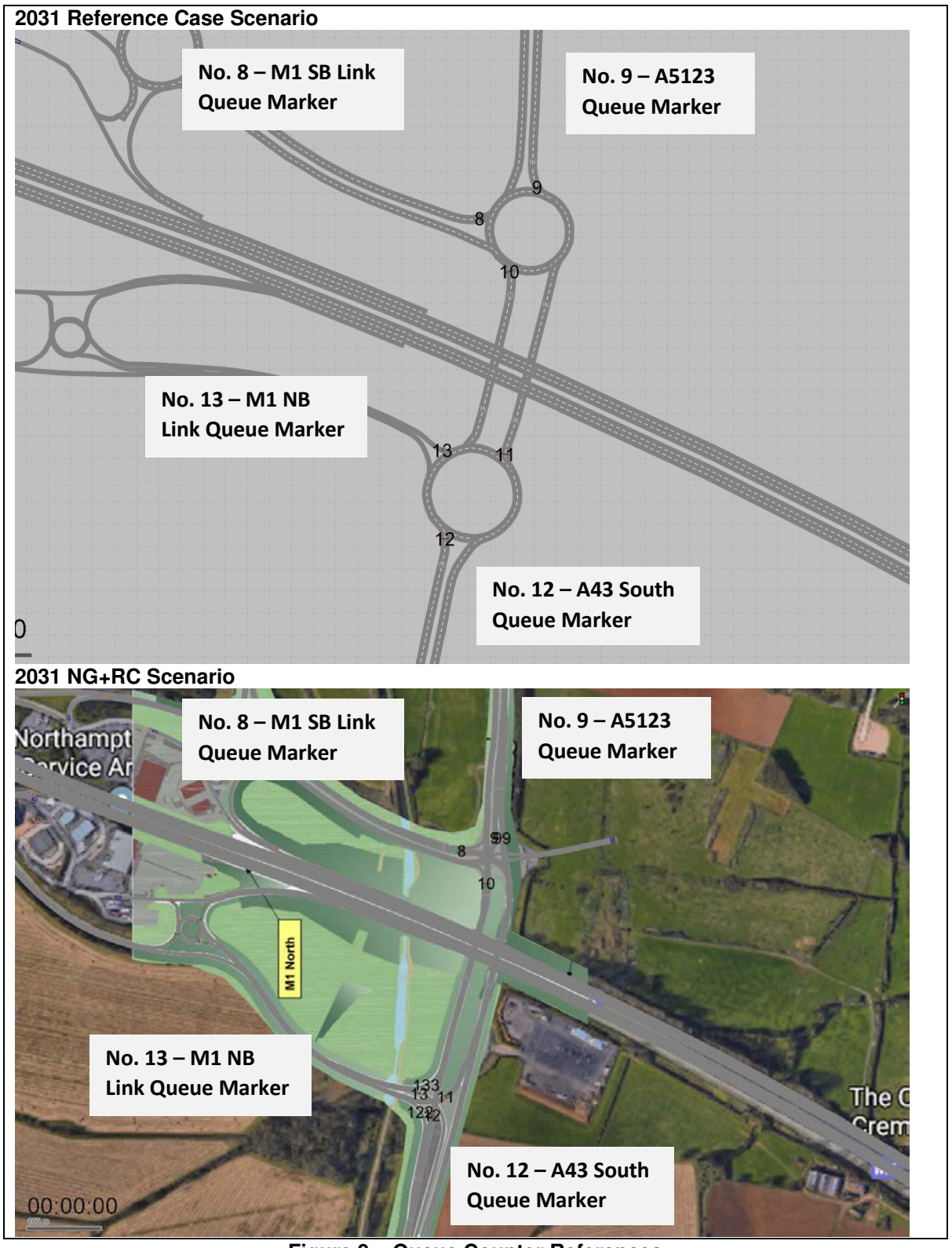



**Figure 9 – Queue Counter References**

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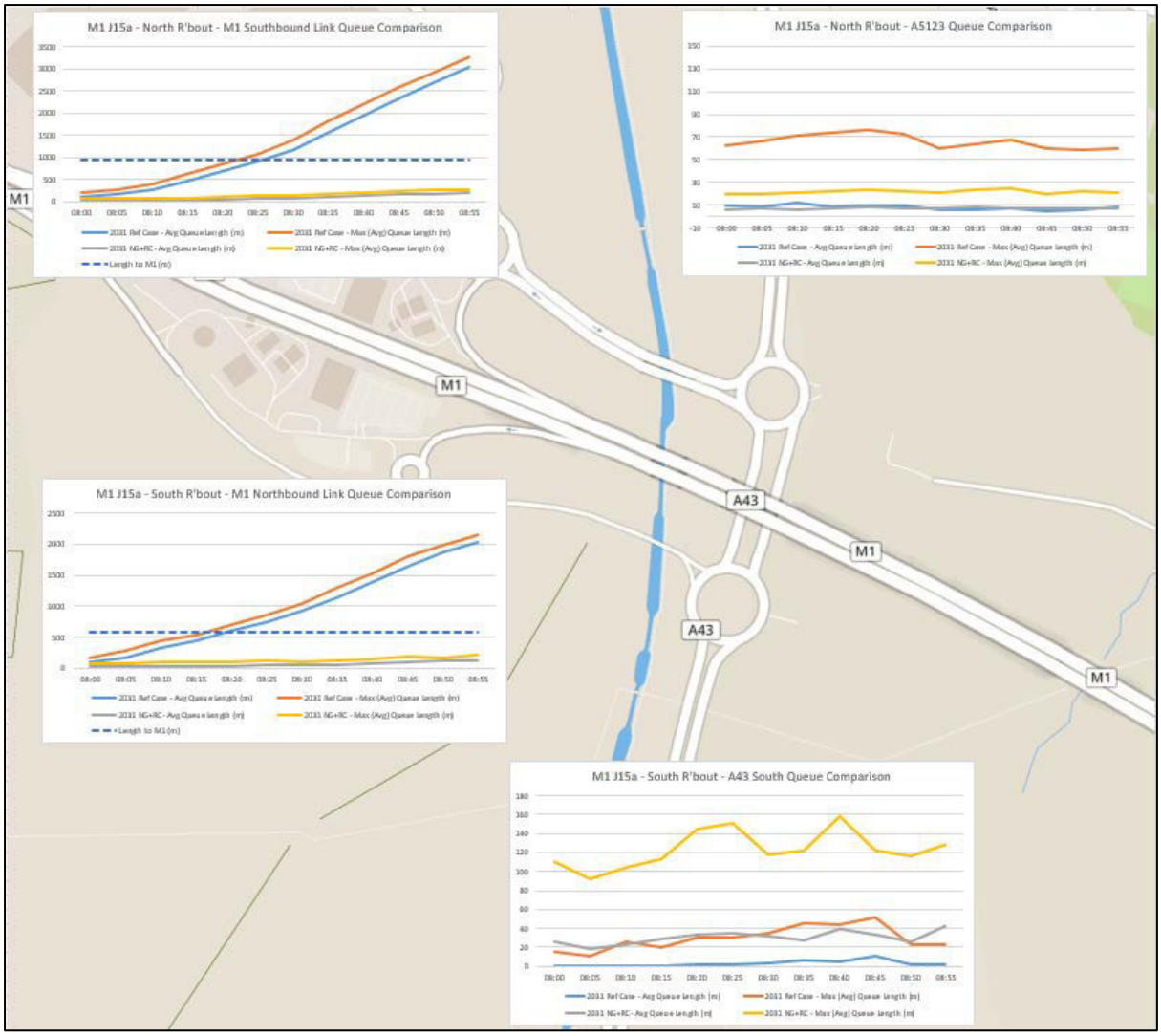



**Figure 10 – 2031 M1 J15a Queue Comparison – AM (queue in metres)**

5.1.26. At the North roundabout, the M1 SB link experiences significant queuing in the reference case, with average queues reaching back to the M1 mainline at around 0830hrs. This continues to increase (up to 3km) and will have safety implications for the M1. In the NG+RC scenario, the junction improvements have a drastic impact on the queues, reducing the lengths to an approximate maximum of 150m(see **Figure 11** for a network comparison).

5.1.27. The A5123 approach has similar average queue lengths between the two scenarios (~10m), but the reference case scenario has higher maximum (average) queues (reaching ~70m as opposed to 25m in the NG+RC scenario). This will be due to the proposed mitigation, with the signals providing benefits over the previously priority-controlled approaches, which favoured the M1 SB slip.

5.1.28. At the South roundabout, the M1 NB link has significant queuing in the reference case, with average queues reaching back to the mainline at 0820hrs and continuing to increase. This will have safety implications for the M1. The NG+RC scenario dramatically reduces this queue and allows the length to be contained within the M1 NB link, removing any M1 mainline safety issues. See network comparison in **Figure 11**.

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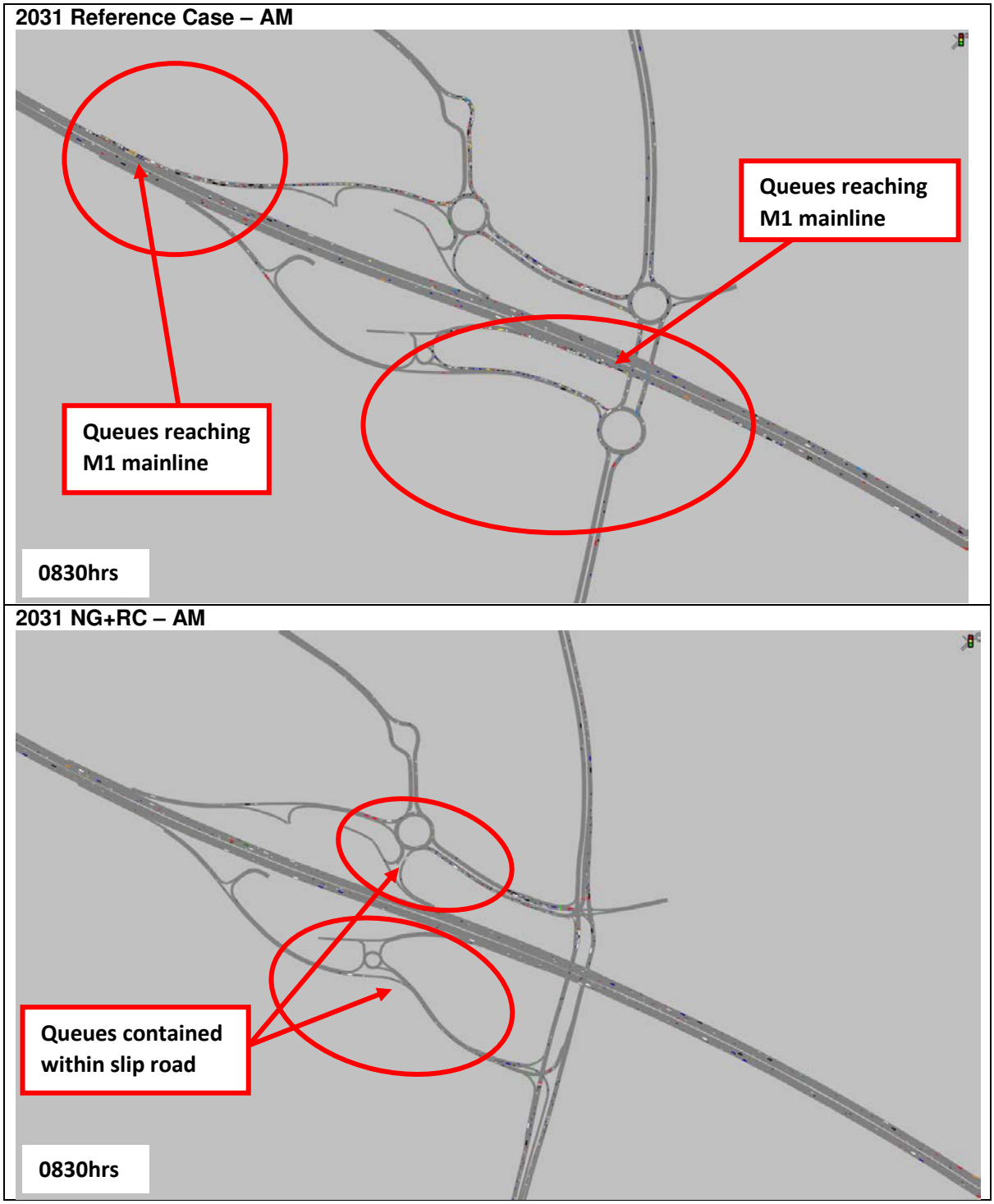



**Figure 11 – 2021 VISSIM Comparison – M1 J15a – M1 NB Link**

5.1.29. On the A43 approach, the NG+RC scenario has larger average and maximum (average) queues in comparison to the reference case, due to the new configuration and signalisation of this approach. Whilst this helps to reduce the queuing elsewhere, the requirement to manage the A43 approach traffic more formally leads to the increased queue lengths.

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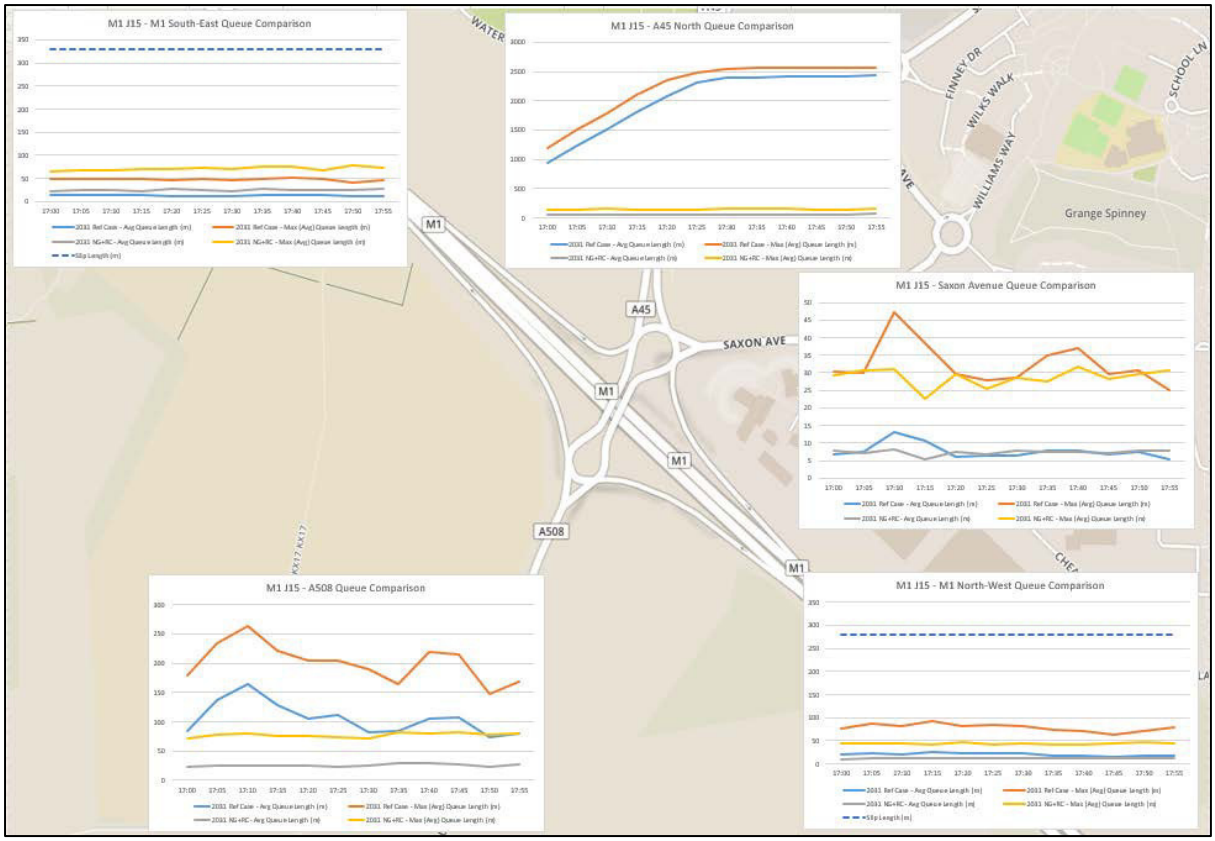



**Figure 12 – 2031 M1 J15 Queue Comparison – PM (queue in metres)**

5.1.30. In the PM peak, the M1 SE approach queues are relatively similar between the two scenarios, with average queues ~25m in length. However, the NG+RC scenario does have slightly larger maximum (average) queue lengths (~80m in comparison to 50m in the reference case), but these are still within the length of the slip road.

5.1.31. As in the AM peak, the A45 North approach in the reference case scenario reaches the end of the modelled network (2.5km in length). The NG+RC scenario drastically reduces this queue, with average and maximum (average) queues of ~50m and ~100m respectively.

5.1.32. The M1 NW approach has similar average queues in the two scenarios (~20-30m) but has slightly higher maximum (average) queues in the reference case (~90m compared to 50m). However, it should be noted that both scenarios have queue lengths within the lengths of the slip road.

5.1.33. The NG+RC scenario reduces the queues on the A508 approach, with both the average and maximum (average) queues being lower than the reference case.

5.1.34. Finally, the Saxon Avenue approach has similar average queue lengths between the two scenarios (~8m) and slightly higher maximum (average) queue lengths in the reference case.

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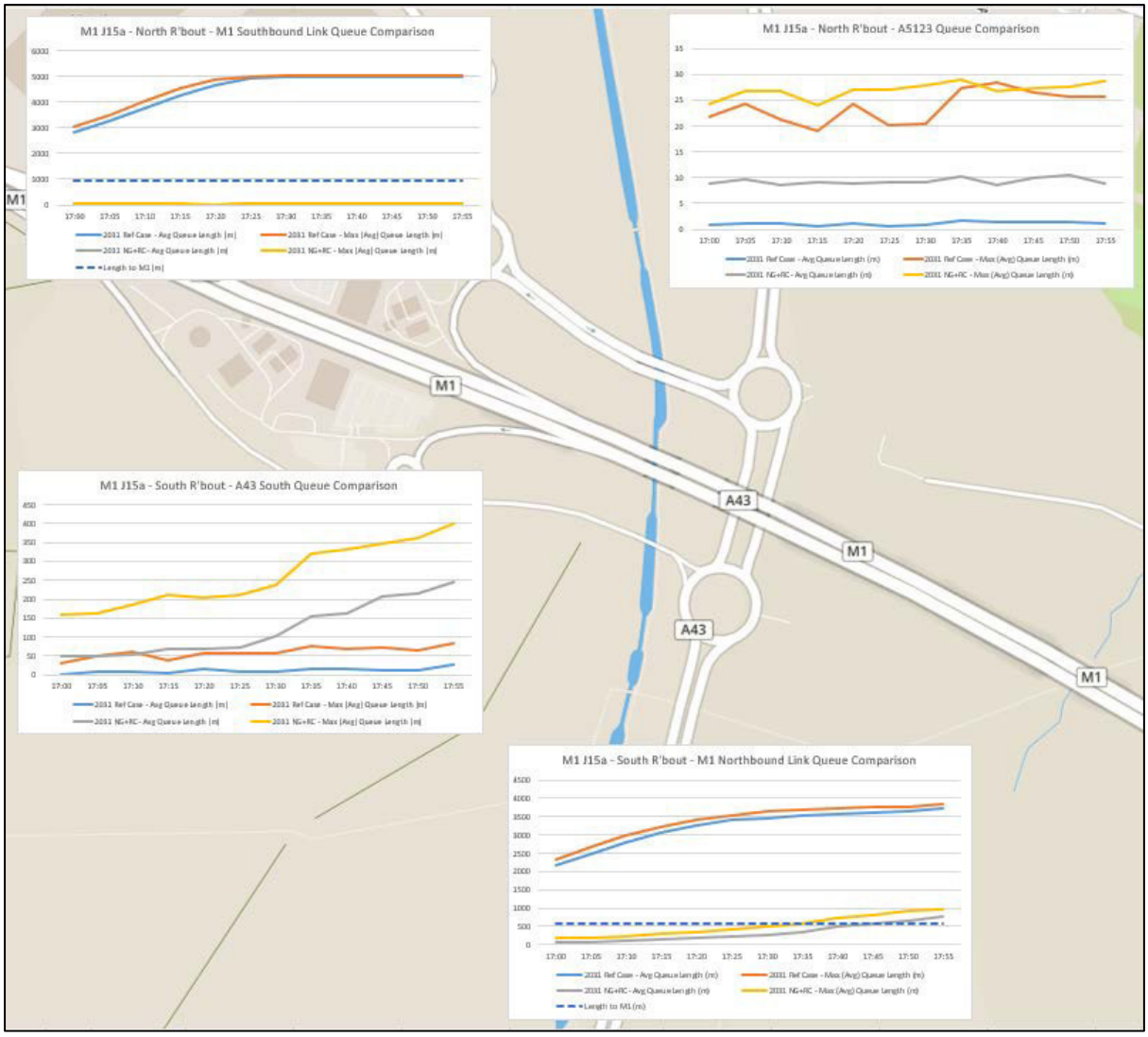



**Figure 13 – 2031 M1 J15a Queue Comparison – PM (queue in metres)**

5.1.35. At the North roundabout, the M1 SB link experiences significant queuing back to the M1 mainline and beyond in the reference case. These queues reach back as far as the model extents, ~5km in length and will result in safety concerns for the M1. In the NG+RC scenario, the junction improvements reduce this queue dramatically and allow the queues to be contained within the SB link. A network comparison is shown in **Figure 14**.

5.1.36. On the A5123 approach, the average queues in the reference case are lower than in the NG+RC scenario (~1m compared to 10m). For the maximum (average) queues, these are similar between the two scenarios at 15-20m.

5.1.37. On the M1 NB link, the queues in the reference case have stretched beyond the length of the link before the start of the PM peak, affecting the M1 mainline flow. This queue continues to be grow as the peak period progresses, up to nearly 4km in length by the end of the peak. In the NG+RC scenario, the average and maximum (average) queues gradually increases as the peak progresses and impact on the M1 mainline at around 1745hrs. This suggests that, whilst the proposed mitigation improves the performance in comparison to the reference case, the junction is operating over-capacity towards the end of the PM peak period. A comparison is shown in **Figure 15**.

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5.1.38. Finally, the A43 approach has increased queues in the NG+RC scenario. As stated before, this approach is now signalised and this approach requires management to improve the queuing elsewhere at the junction.

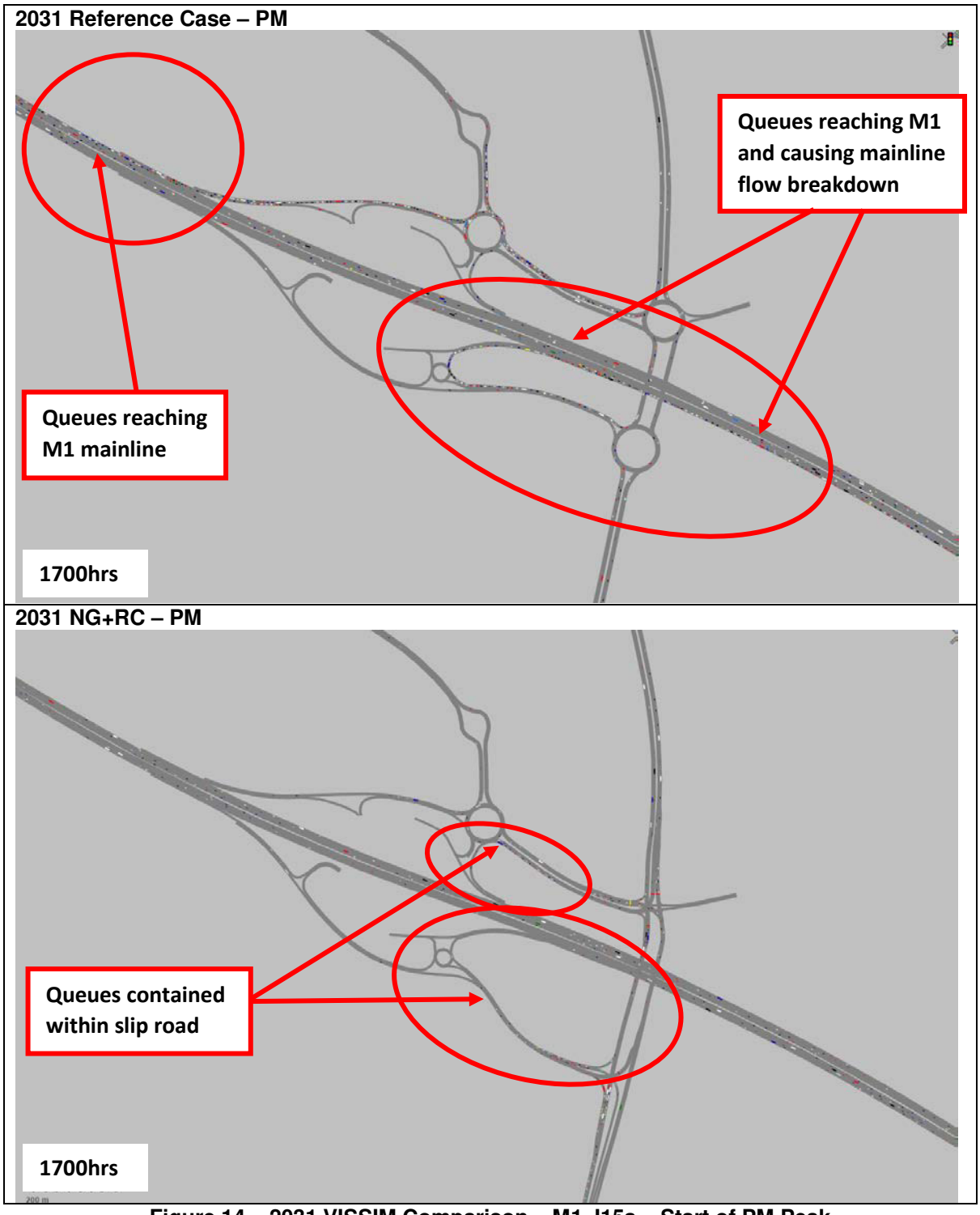



**Figure 14 – 2031 VISSIM Comparison – M1 J15a – Start of PM Peak**

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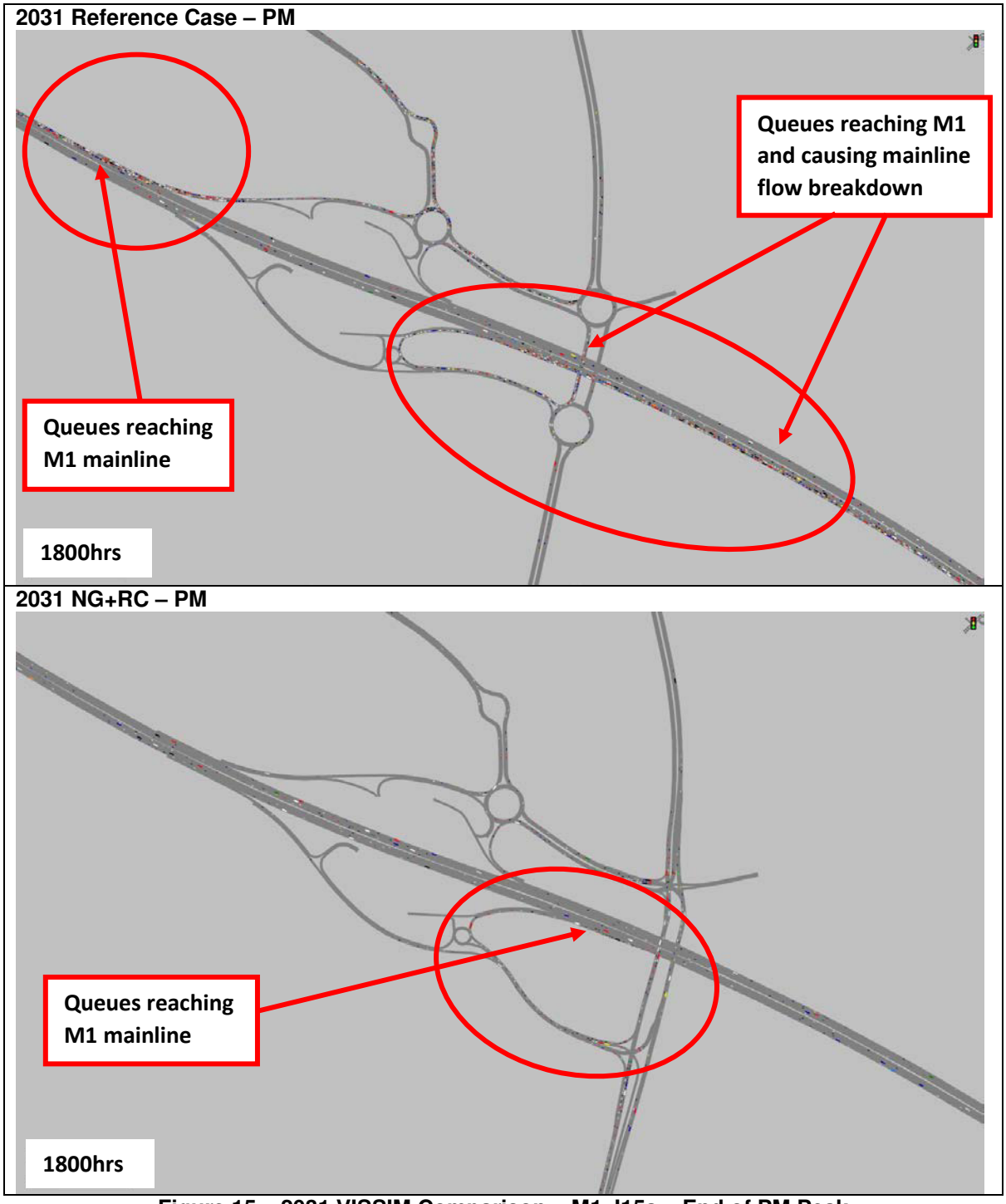



**Figure 15 – 2031 VISSIM Comparison – M1 J15a – End of PM Peak**

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## Overall Network Performance

5.1.39. The comparison of the overall network performance can be seen in **Figures 16 and 17** for the AM and PM peak periods.

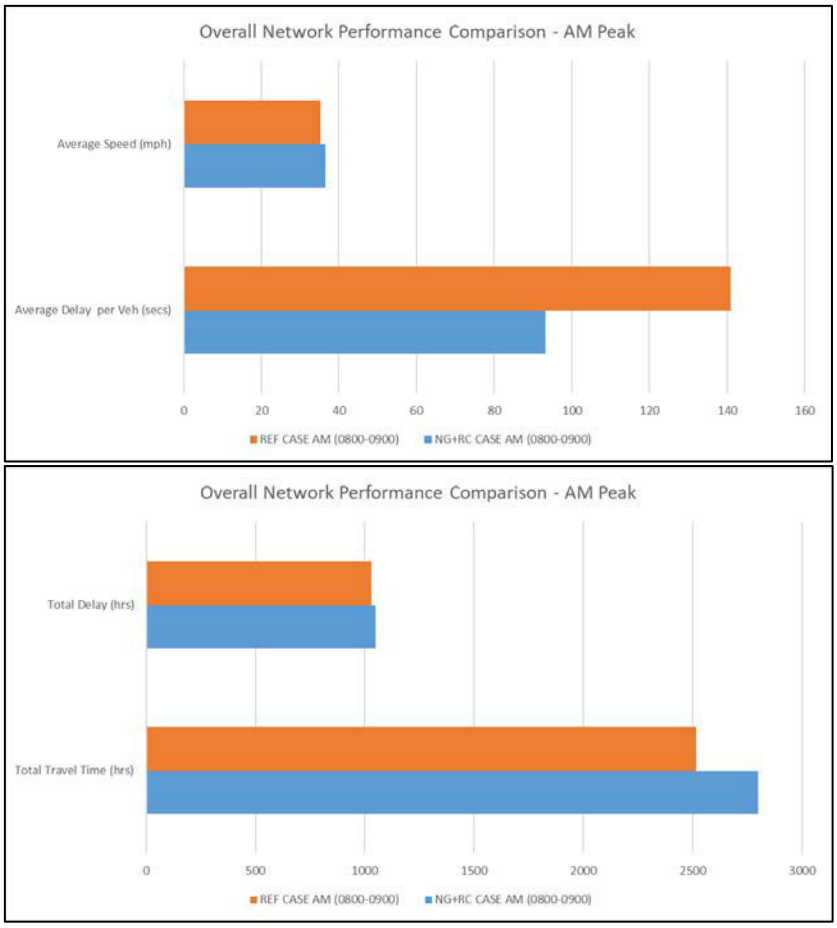



**Figure 16 – 2031 Overall Network Performance – AM**

5.1.40. From **Figure 16**, the NG+RC scenario has a lower average delay per vehicle and higher average speed compared to the reference case. The total delay time and total travel time is increased, which is due to a higher number of total trips being able to be made as a result of more vehicles in the network.

5.1.41. The number of unreleased vehicles from the model zones have also been considered and these further support the conclusion of improved performance in the NG+RC scenario. The reference case had 800 unreleased vehicles, whereas there were none in the NG+RC scenario (based on the average of 20 random seed runs).

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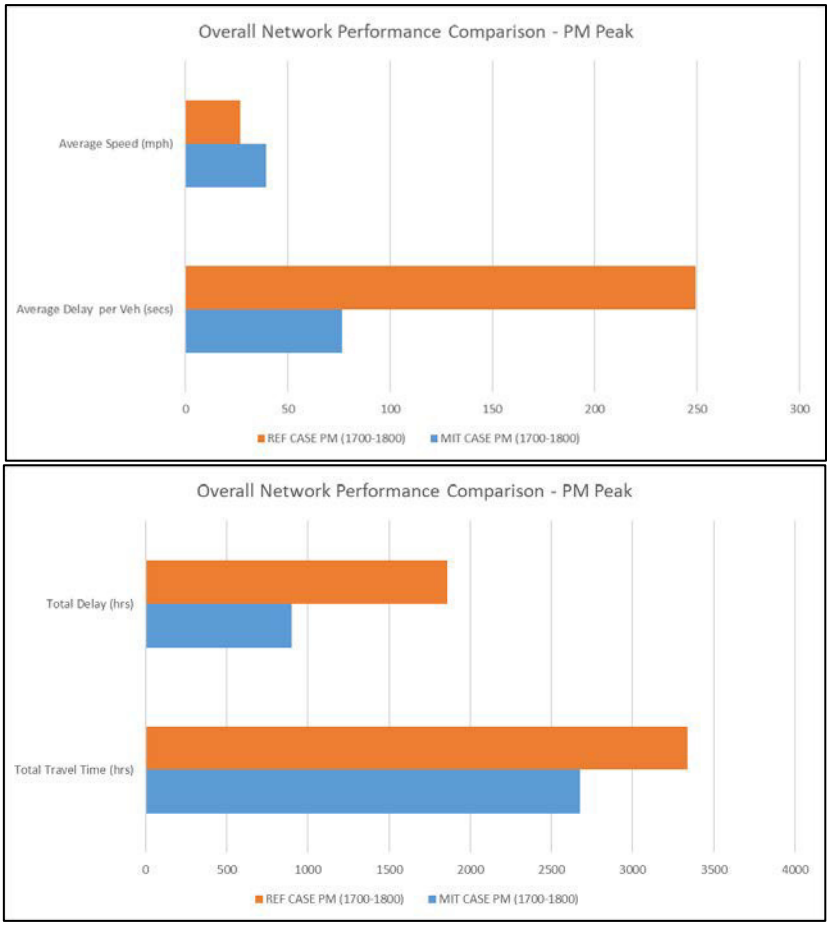



**Figure 17 – 2031 Overall Network Performance - PM**

5.1.42. From **Figure 17**, the NG+RC scenario produces reduced total delay, average delay per vehicle and an increased average speed. One difference compared to the AM peak is the total travel time, which for the PM peak is higher in the reference case despite the lower total vehicle volume. This is a result of significant queuing from M1 J15a and M1 mainline flow breakdown, which means vehicles are taking longer to complete their journeys.

5.1.43. A review of the unreleased vehicles shows around 1,800 in the reference case and 35 in the NG+RC scenario. This also indicates an improved 2031 network operation with the junction improvements in place.

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## 6. OVERALL SUMMARY & CONCLUSIONS

6.1.1. This Technical Note follows on from Multimodal's previous notes – *'171218 MM TN – Modelling Summary'* and *'180123 MM TN - Modelling Summary_Site Access'* and provides details of the impact on the network if both proposed SRFI developments in the Northampton area – Northampton Gateway and Rail Central – were to come forward and be developed.

6.1.2. The overall conclusions of this modelling are that in the 2031 future year, the network performance is improved with the Northampton Gateway and Rail Central developments and associated junction improvements in place in comparison to the Reference Case.

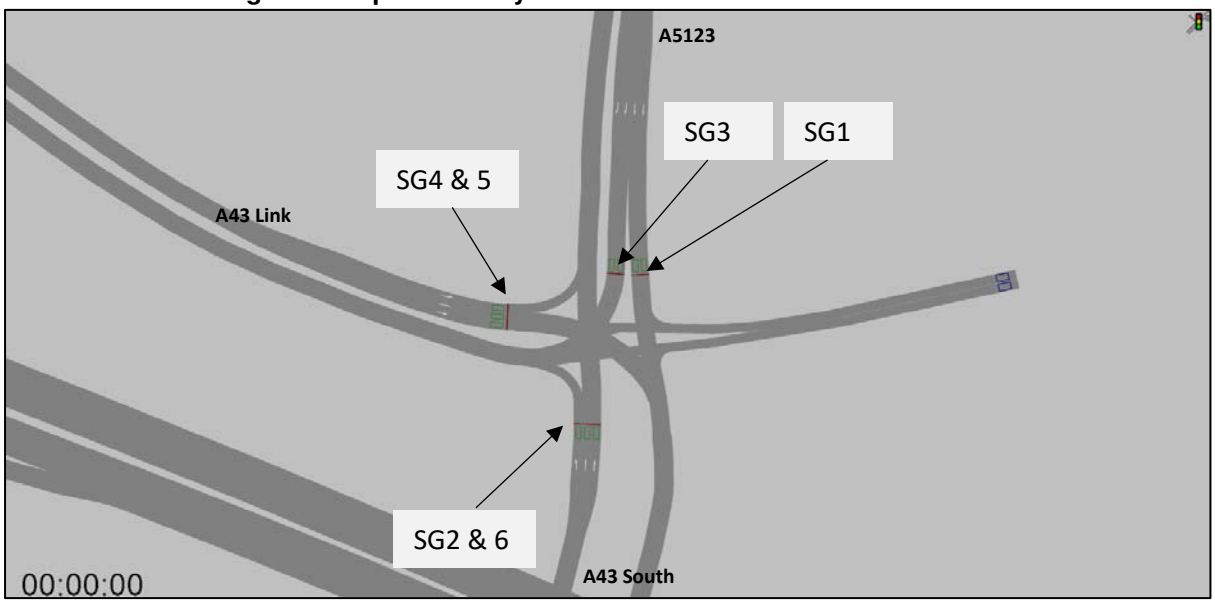
6.1.3. However, the queue length analysis suggests that the junctions will operate over-capacity towards the end of the AM and PM peak periods, even with the proposed junction improvements in place. This means that further mitigation will be required to accommodate both proposed SRFI developments on the network and prevent safety implications for the M1 mainline.

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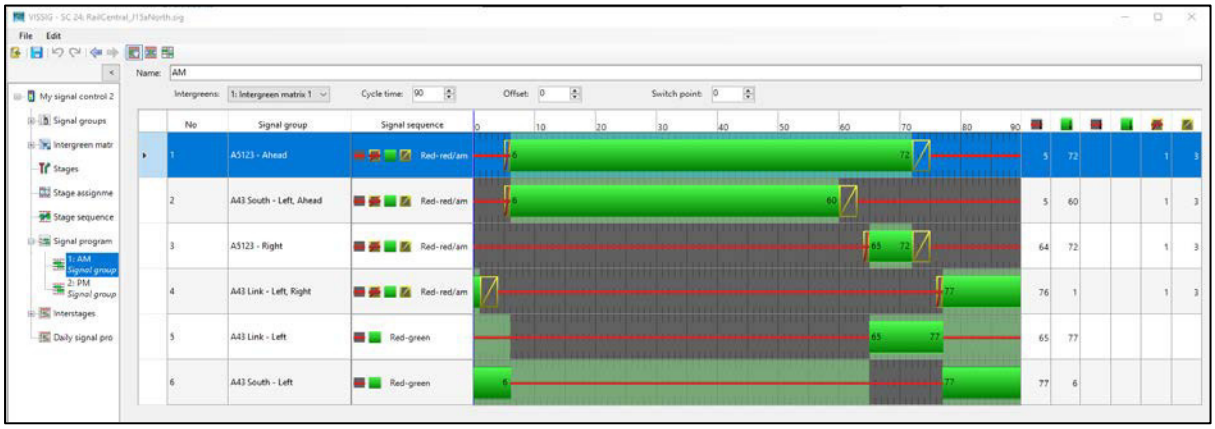
# 7. APPENDICES

## Appendix A – M1 J15a – Rail Central Improvements – Proposed Signal Set-Up

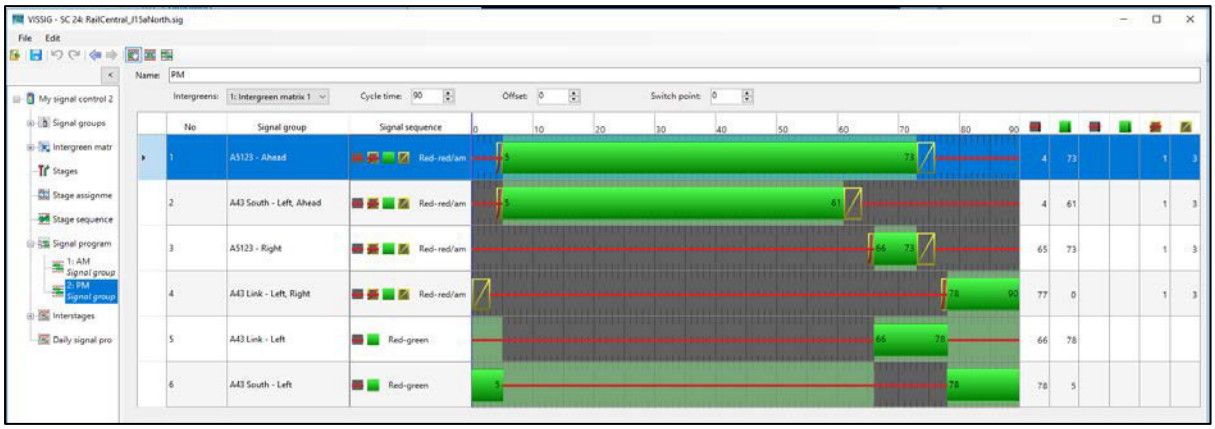
### North Junction – Signal Group/Phase Layout




### North Junction – AM

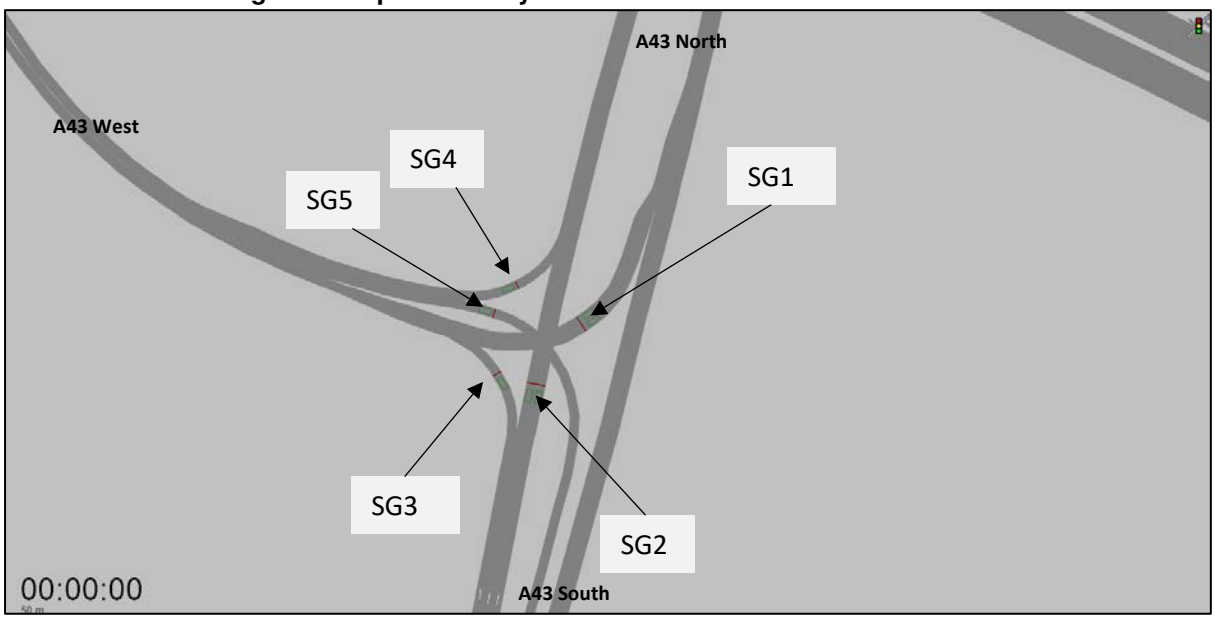


### North Junction – PM

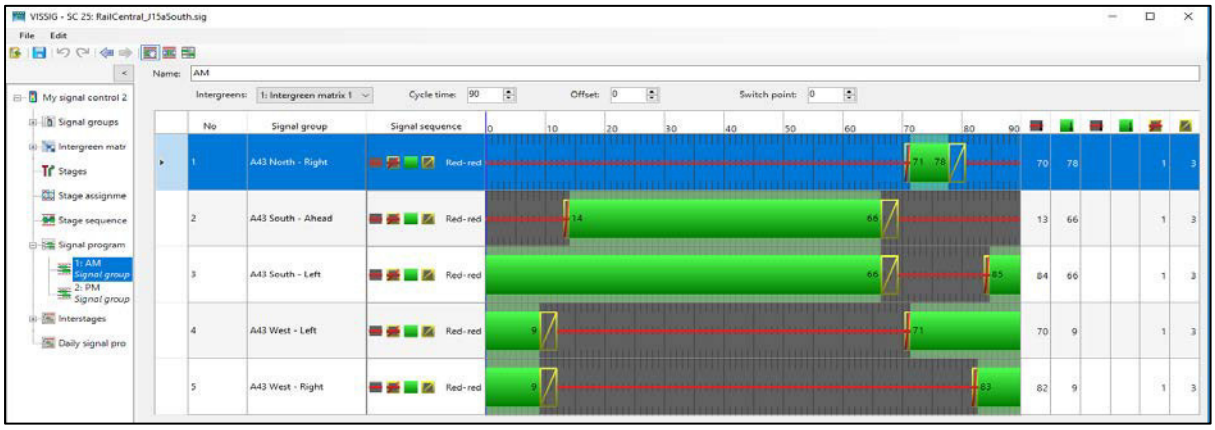


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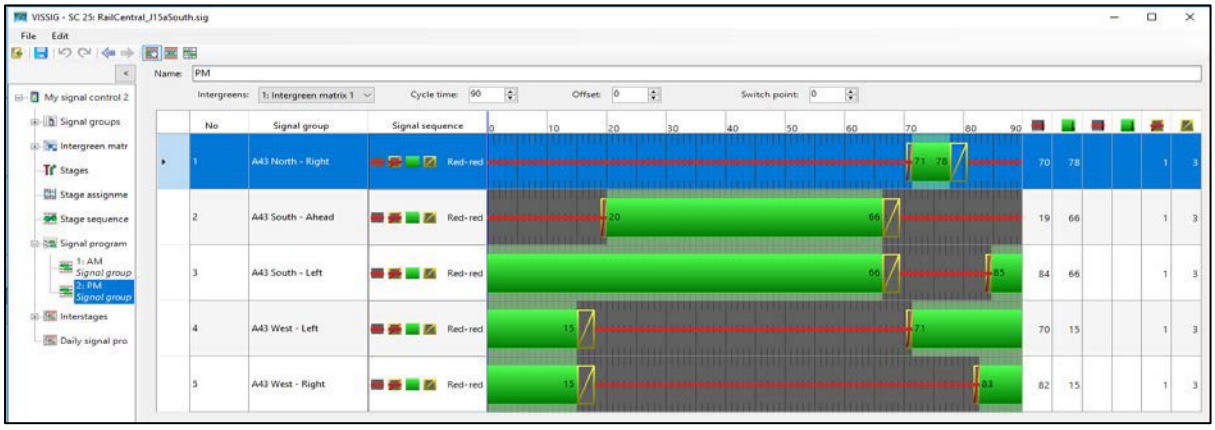
## South Junction – Signal Group/Phase Layout




## South Junction – AM




## South Junction – PM




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# Appendix B – 2031 Flow Calculations

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# NSTM2 OUTPUTS - 2031 REFERENCE CASE (FLOWSET D1)

**SCENARIO 2031 D1 - AM PEAK**

**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 29 | 10 | 391 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 224 | 0 | 0 | 1 |
| **2** | 145 | 0 | 66 | 1236 | 271 | 188 | 0 | 0 | 0 | 0 | 13 | 1904 | 118 | 0 | 2 |
| **3** | 4 | 20 | 0 | 18 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| **4** | 664 | 902 | 40 | 10 | 129 | 9 | 0 | 0 | 0 | 0 | 10 | 1251 | 72 | 0 | 5 |
| **5** | 0 | 61 | 10 | 211 | 0 | 892 | 0 | 0 | 0 | 0 | 232 | 349 | 7 | 0 | 7 |
| **6** | 38 | 249 | 9 | 47 | 1147 | 0 | 1 | 1 | 0 | 0 | 1 | 216 | 8 | 0 | 49 |
| **7** | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 14 | 12 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 14 | 12 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| **11** | 74 | 503 | 28 | 107 | 74 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | 0 | 8 |
| **12** | 266 | 2162 | 55 | 687 | 358 | 433 | 16 | 16 | 1 | 1 | 4 | 0 | 166 | 0 | 14 |
| **13** | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 0 |
| **2** | 3 | 0 | 10 | 112 | 0 | 20 | 0 | 0 | 0 | 0 | 1 | 402 | 0 | 0 | 0 |
| **3** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **4** | 11 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 0 | 0 | 0 |
| **5** | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 |
| **6** | 0 | 2 | 0 | 0 | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 |
| **7** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| **11** | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **12** | 50 | 590 | 4 | 79 | 92 | 6 | 5 | 5 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**TOTAL (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 29 | 10 | 418 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 262 | 0 | 0 | 1 |
| **2** | 148 | 0 | 76 | 1348 | 271 | 209 | 0 | 0 | 0 | 0 | 13 | 2306 | 118 | 0 | 2 |
| **3** | 4 | 20 | 0 | 18 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| **4** | 675 | 944 | 40 | 10 | 129 | 9 | 0 | 0 | 0 | 0 | 10 | 1479 | 72 | 0 | 5 |
| **5** | 0 | 61 | 10 | 211 | 0 | 1009 | 0 | 0 | 0 | 0 | 234 | 354 | 7 | 0 | 7 |
| **6** | 38 | 250 | 9 | 47 | 1245 | 0 | 1 | 1 | 0 | 0 | 1 | 230 | 8 | 0 | 49 |
| **7** | 0 | 0 | 0 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 22 | 12 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 4 | 1 | 3 | 0 | 0 | 0 | 0 | 22 | 12 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 19 | 0 | 0 | 0 |
| **11** | 74 | 549 | 28 | 107 | 74 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | 0 | 8 |
| **12** | 316 | 2752 | 59 | 766 | 450 | 439 | 20 | 20 | 3 | 3 | 4 | 0 | 166 | 0 | 14 |
| **13** | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

**TOTAL (PCU)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 30 | 10 | 453 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 312 | 0 | 0 | 1 |
| **2** | 151 | 0 | 89 | 1494 | 271 | 235 | 0 | 0 | 0 | 0 | 14 | 2828 | 118 | 0 | 2 |
| **3** | 4 | 21 | 0 | 18 | 6 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| **4** | 690 | 1000 | 40 | 10 | 129 | 9 | 0 | 0 | 0 | 0 | 10 | 1776 | 72 | 0 | 5 |
| **5** | 0 | 61 | 10 | 212 | 0 | 1161 | 0 | 0 | 0 | 0 | 237 | 361 | 7 | 0 | 7 |
| **6** | 38 | 252 | 9 | 47 | 1371 | 0 | 1 | 1 | 0 | 0 | 1 | 248 | 8 | 0 | 49 |
| **7** | 0 | 0 | 0 | 4 | 1 | 4 | 0 | 0 | 0 | 0 | 32 | 13 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 4 | 1 | 4 | 0 | 0 | 0 | 0 | 32 | 13 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 |
| **11** | 74 | 609 | 28 | 107 | 74 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 35 | 0 | 8 |
| **12** | 380 | 3518 | 63 | 869 | 569 | 447 | 26 | 26 | 6 | 6 | 4 | 0 | 166 | 0 | 15 |
| **13** | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

**SCENARIO 2031 D1 - PM PEAK**

**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 16 | 5 | 587 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 177 | 0 | 0 | 0 |
| **2** | 91 | 0 | 54 | 1017 | 116 | 398 | 0 | 0 | 0 | 0 | 8 | 2587 | 87 | 0 | 0 |
| **3** | 13 | 86 | 0 | 25 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 0 | 0 |
| **4** | 902 | 940 | 89 | 36 | 80 | 1 | 0 | 0 | 1 | 1 | 0 | 1181 | 133 | 0 | 0 |
| **5** | 0 | 295 | 1 | 10 | 0 | 975 | 0 | 0 | 0 | 0 | 161 | 322 | 0 | 0 | 1 |
| **6** | 17 | 188 | 11 | 33 | 800 | 0 | 2 | 2 | 0 | 0 | 0 | 216 | 1 | 0 | 5 |
| **7** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 32 | 369 | 17 | 152 | 156 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 2 | 0 | 2 |
| **12** | 109 | 2711 | 22 | 1001 | 459 | 282 | 54 | 54 | 8 | 8 | 18 | 0 | 4 | 0 | 2 |
| **13** | 0 | 0 | 0 | 306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 1 | 0 | 13 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 |

**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 0 |
| **2** | 0 | 0 | 0 | 87 | 0 | 26 | 0 | 0 | 0 | 0 | 51 | 410 | 0 | 0 | 0 |
| **3** | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 |
| **4** | 37 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| **5** | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| **6** | 0 | 21 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| **7** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **11** | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **12** | 32 | 432 | 17 | 85 | 8 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **13** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**TOTAL (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 17 | 5 | 594 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 214 | 0 | 0 | 0 |
| **2** | 91 | 0 | 54 | 1104 | 116 | 424 | 0 | 0 | 0 | 0 | 59 | 2997 | 87 | 0 | 0 |
| **3** | 13 | 104 | 0 | 25 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 41 | 2 | 0 | 0 |
| **4** | 939 | 964 | 90 | 36 | 80 | 1 | 0 | 0 | 1 | 1 | 1 | 1215 | 133 | 0 | 0 |
| **5** | 0 | 295 | 1 | 10 | 0 | 1093 | 0 | 0 | 0 | 0 | 162 | 322 | 0 | 0 | 1 |
| **6** | 17 | 208 | 11 | 33 | 854 | 0 | 2 | 2 | 0 | 0 | 0 | 217 | 1 | 0 | 5 |
| **7** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 32 | 370 | 17 | 152 | 156 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 2 | 0 | 2 |
| **12** | 141 | 3143 | 39 | 1086 | 466 | 360 | 54 | 54 | 8 | 8 | 18 | 0 | 4 | 0 | 2 |
| **13** | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 1 | 0 | 2 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 |

**TOTAL (PCU)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **1** | 0 | 17 | 5 | 152 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 262 | 0 | 0 | 0 |
| **2** | 91 | 0 | 55 | 1196 | 116 | 458 | 0 | 0 | 0 | 0 | 125 | 3530 | 87 | 0 | 0 |
| **3** | 14 | 127 | 0 | 306 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 78 | 2 | 0 | 0 |
| **4** | 986 | 995 | 91 | 0 | 80 | 1 | 0 | 0 | 1 | 1 | 1 | 1260 | 133 | 0 | 0 |
| **5** | 0 | 295 | 1 | 13 | 0 | 1246 | 0 | 0 | 0 | 0 | 163 | 323 | 0 | 0 | 1 |
| **6** | 17 | 235 | 11 | 33 | 924 | 0 | 2 | 2 | 0 | 0 | 0 | 218 | 1 | 0 | 5 |
| **7** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **8** | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 | 0 |
| **9** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **10** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| **11** | 32 | 372 | 17 | 152 | 156 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 2 | 0 | 2 |
| **12** | 183 | 3704 | 61 | 1196 | 476 | 461 | 54 | 54 | 8 | 8 | 18 | 0 | 4 | 0 | 2 |
| **13** | 0 | 0 | 0 | 306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **14** | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| **15** | 0 | 1 | 0 | 13 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 |

# NSTM2 Outputs - 2031 Northampton Gateway + Rail Central (Flowset J3)

**SCENARIO 2031 J3 - AM PEAK**

**LIGHTS (VEH)**

| 19199 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 137 | 16 | 527 | 7 | 29 | 0 | 0 | 0 | 0 | 10 | 372 | 0 | 100 | 1 |
| 2 | 161 | 0 | 51 | 1267 | 196 | 273 | 0 | 0 | 0 | 0 | 42 | 1691 | 252 | 115 | 2 |
| 3 | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 36 | 23 | 2 | 0 |
| 4 | 787 | 840 | 35 | 1 | 124 | 30 | 0 | 0 | 0 | 0 | 27 | 1087 | 54 | 355 | 5 |
| 5 | 0 | 76 | 14 | 350 | 0 | 860 | 0 | 0 | 0 | 0 | 283 | 660 | 4 | 2 | 7 |
| 6 | 28 | 103 | 6 | 20 | 1932 | 0 | 1 | 1 | 0 | 0 | 0 | 249 | 6 | 12 | 56 |
| 7 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | 8 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 19 | 8 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 11 | 105 | 490 | 33 | 97 | 60 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | 37 | 2 |
| 12 | 392 | 2183 | 88 | 709 | 389 | 119 | 16 | 16 | 1 | 1 | 209 | 0 | 158 | 76 | 10 |
| 13 | 0 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 9 | 24 | 1 | 30 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 16 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |

**HGV (VEH)**

| 2556 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 46 | 0 | 35 | 0 |
| 2 | 0 | 0 | 14 | 104 | 23 | 32 | 0 | 0 | 0 | 0 | 4 | 407 | 0 | 30 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4 | 16 | 38 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 0 | 40 | 0 |
| 5 | 0 | 15 | 0 | 9 | 0 | 180 | 0 | 0 | 0 | 0 | 7 | 69 | 0 | 0 | 0 |
| 6 | 0 | 1 | 0 | 0 | 134 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 3 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 11 | 0 | 41 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 12 | 49 | 589 | 4 | 79 | 145 | 2 | 5 | 5 | 2 | 2 | 0 | 0 | 0 | 27 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 18 | 30 | 2 | 42 | 8 | 4 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**TOTAL (VEH)**

| 21755 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 137 | 16 | 531 | 7 | 30 | 0 | 0 | 0 | 0 | 10 | 418 | 0 | 135 | 1 |
| 2 | 162 | 0 | 65 | 1371 | 219 | 305 | 0 | 0 | 0 | 0 | 46 | 2098 | 252 | 145 | 3 |
| 3 | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 37 | 23 | 3 | 0 |
| 4 | 804 | 878 | 35 | 1 | 126 | 30 | 0 | 0 | 0 | 0 | 28 | 1287 | 54 | 395 | 5 |
| 5 | 0 | 92 | 14 | 359 | 0 | 1041 | 0 | 0 | 0 | 0 | 290 | 730 | 4 | 2 | 7 |
| 6 | 28 | 103 | 6 | 20 | 2065 | 0 | 1 | 1 | 0 | 0 | 0 | 277 | 6 | 15 | 56 |
| 7 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 27 | 8 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 4 | 1 | 1 | 0 | 0 | 0 | 0 | 27 | 8 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| 11 | 105 | 530 | 33 | 97 | 62 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | 39 | 2 |
| 12 | 441 | 2772 | 92 | 788 | 535 | 121 | 20 | 20 | 3 | 3 | 210 | 0 | 158 | 103 | 10 |
| 13 | 0 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 28 | 54 | 3 | 72 | 9 | 8 | 0 | 0 | 0 | 0 | 2 | 41 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |

**TOTAL (PCU)**

| 25079 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 138 | 16 | 537 | 7 | 31 | 0 | 0 | 0 | 0 | 11 | 477 | 0 | 181 | 1 |
| 2 | 162 | 0 | 83 | 1506 | 249 | 346 | 0 | 0 | 0 | 0 | 51 | 2627 | 252 | 184 | 3 |
| 3 | 25 | 23 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 4 | 37 | 23 | 4 | 0 |
| 4 | 824 | 928 | 35 | 1 | 129 | 30 | 0 | 0 | 0 | 0 | 28 | 1548 | 54 | 447 | 5 |
| 5 | 0 | 112 | 14 | 371 | 0 | 1275 | 0 | 0 | 0 | 0 | 299 | 820 | 4 | 2 | 7 |
| 6 | 28 | 104 | 6 | 20 | 2239 | 0 | 1 | 1 | 0 | 0 | 0 | 315 | 6 | 19 | 56 |
| 7 | 0 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 38 | 8 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 4 | 1 | 2 | 0 | 0 | 0 | 0 | 38 | 8 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 21 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 1 | 21 | 0 | 0 | 0 |
| 11 | 105 | 583 | 33 | 97 | 66 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 33 | 42 | 2 |
| 12 | 504 | 3538 | 97 | 890 | 724 | 123 | 26 | 26 | 6 | 6 | 210 | 0 | 158 | 138 | 10 |
| 13 | 0 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 51 | 94 | 6 | 127 | 20 | 14 | 0 | 0 | 0 | 0 | 3 | 72 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 2 | 9 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |

**SCENARIO 2031 J3 - PM PEAK**

**LIGHTS (VEH)**

| 19221 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 48 | 9 | 841 | 2 | 19 | 0 | 0 | 0 | 0 | 10 | 195 | 0 | 25 | 0 |
| 2 | 73 | 0 | 25 | 1095 | 178 | 401 | 0 | 0 | 0 | 0 | 91 | 2397 | 105 | 51 | 0 |
| 3 | 21 | 84 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 18 | 3 | 0 | 0 |
| 4 | 929 | 926 | 87 | 0 | 116 | 3 | 1 | 1 | 1 | 1 | 35 | 1050 | 98 | 114 | 1 |
| 5 | 1 | 269 | 3 | 75 | 0 | 1113 | 1 | 1 | 0 | 0 | 276 | 794 | 0 | 0 | 1 |
| 6 | 8 | 139 | 11 | 13 | 928 | 0 | 1 | 1 | 1 | 1 | 1 | 160 | 3 | 2 | 5 |
| 7 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 11 | 48 | 427 | 21 | 100 | 120 | 1 | 2 | 2 | 1 | 1 | 0 | 2 | 13 | 14 | 1 |
| 12 | 323 | 2683 | 27 | 816 | 255 | 219 | 53 | 53 | 8 | 8 | 7 | 0 | 6 | 24 | 2 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 78 | 83 | 4 | 391 | 9 | 20 | 0 | 0 | 0 | 0 | 18 | 178 | 21 | 0 | 0 |
| 15 | 1 | 1 | 0 | 5 | 8 | 43 | 0 | 0 | 0 | 0 | 6 | 14 | 0 | 1 | 0 |

**HGV (VEH)**

| 2134 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 30 | 0 |
| 2 | 0 | 0 | 0 | 97 | 25 | 23 | 0 | 0 | 0 | 0 | 58 | 404 | 0 | 35 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 1 | 0 |
| 4 | 26 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 41 | 0 |
| 5 | 0 | 14 | 0 | 1 | 0 | 176 | 0 | 0 | 0 | 0 | 10 | 50 | 0 | 0 | 0 |
| 6 | 0 | 24 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 12 | 65 | 416 | 23 | 74 | 57 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 19 | 30 | 1 | 44 | 9 | 4 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**TOTAL (VEH)**

| 21351 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 50 | 9 | 848 | 3 | 19 | 0 | 0 | 0 | 0 | 10 | 236 | 0 | 55 | 0 |
| 2 | 73 | 0 | 25 | 1192 | 203 | 423 | 0 | 0 | 0 | 0 | 149 | 2801 | 105 | 86 | 0 |
| 3 | 21 | 102 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 52 | 3 | 1 | 0 |
| 4 | 955 | 946 | 87 | 0 | 118 | 3 | 1 | 1 | 1 | 1 | 35 | 1076 | 98 | 155 | 1 |
| 5 | 1 | 283 | 3 | 76 | 0 | 1289 | 1 | 1 | 0 | 0 | 286 | 843 | 0 | 0 | 1 |
| 6 | 8 | 163 | 11 | 13 | 1020 | 0 | 1 | 1 | 1 | 1 | 1 | 161 | 3 | 4 | 5 |
| 7 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 5 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 11 | 48 | 431 | 21 | 100 | 127 | 1 | 2 | 2 | 1 | 1 | 0 | 2 | 13 | 17 | 1 |
| 12 | 388 | 3099 | 50 | 890 | 312 | 290 | 53 | 53 | 8 | 8 | 7 | 0 | 6 | 50 | 2 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 97 | 113 | 5 | 433 | 18 | 24 | 0 | 0 | 0 | 0 | 19 | 200 | 21 | 0 | 0 |
| 15 | 1 | 1 | 0 | 5 | 8 | 43 | 0 | 0 | 0 | 0 | 6 | 14 | 0 | 1 | 0 |

M1 Mainline

| | A | B | C | D | E | | C | E |
|---|---|---|---|---|---|---|---|---|
| A | 55 | 35 | 928 | 1271 | 1741 | 4030 | | |
| B | 49 | 0 | 23 | 29 | 75 | 176 | | |
| C | 1758 | 83 | 0 | 346 | 0 | 2187 | C | 3274 |
| D | 665 | 22 | 231 | 0 | 636 | 1554 | | |
| E | 1591 | 151 | 0 | 840 | 0 | 2582 | E | 4337 |
| | 4117 | 291 | 1182 | 2487 | 2452 | 10529 | | |

Vehs

| | A | B | C | D | E | | C | E |
|---|---|---|---|---|---|---|---|---|
| A | 55 | 35 | 878 | 1199 | 1477 | 3644 | | |
| B | 49 | 0 | 22 | 28 | 75 | 173 | | |
| C | 1622 | 65 | 0 | 307 | 0 | 1994 | C | 2668 |
| D | 605 | 19 | 191 | 0 | 525 | 1341 | | |
| E | 1475 | 145 | 0 | 735 | 0 | 2355 | E | 3497 |
| | 3806 | 264 | 1092 | 2268 | 2077 | 9507 | | |

HGV

| | A | B | C | D | E | | C | E |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 38 | 56 | 203 | 297 | | |
| B | 0 | 0 | 0 | 1 | 0 | 2 | | |
| C | 104 | 14 | 0 | 30 | 0 | 148 | C | 466 |
| D | 46 | 2 | 31 | 0 | 85 | 164 | | |
| E | 89 | 4 | 0 | 81 | 0 | 174 | E | 646 |
| | 239 | 21 | 69 | 168 | 288 | 785 | | |

M1 Mainline

| | A | B | C | D | E | | C | E |
|---|---|---|---|---|---|---|---|---|
| A | 98 | 88 | 972 | 1197 | 1273 | 3627 | | |
| B | 36 | 0 | 126 | 23 | 101 | 286 | | |
| C | 1422 | 25 | 0 | 205 | 0 | 1653 | C | 4239 |
| D | 1368 | 15 | 204 | 0 | 632 | 2219 | | |
| E | 1206 | 115 | 0 | 643 | 0 | 1963 | E | 4571 |
| | 4131 | 242 | 1302 | 2068 | 2006 | 9748 | | |

Vehs

| | A | B | C | D | E | | C | E |
|---|---|---|---|---|---|---|---|---|
| A | 98 | 87 | 946 | 1110 | 1237 | 3478 | | |
| B | 36 | 0 | 102 | 22 | 57 | 217 | | |
| C | 1297 | 25 | 0 | 159 | 0 | 1481 | C | 3576 |
| D | 1302 | 14 | 163 | 0 | 529 | 2008 | | |
| E | 1109 | 85 | 0 | 518 | 0 | 1712 | E | 3976 |
| | 3842 | 211 | 1211 | 1809 | 1823 | 8895 | | |

HGV

| | A | B | C | D | E | | C | E |
|---|---|---|---|---|---|---|---|---|
| A | 0 | 0 | 20 | 67 | 28 | 115 | | |
| B | 0 | 0 | 18 | 1 | 34 | 54 | | |
| C | 97 | 0 | 0 | 35 | 0 | 132 | C | 510 |
| D | 51 | 1 | 32 | 0 | 79 | 162 | | |
| E | 74 | 23 | 0 | 96 | 0 | 193 | E | 458 |
| | 222 | 24 | 70 | 199 | 141 | 656 | | |

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

## Calculation of 15 Minute Matrix Factors

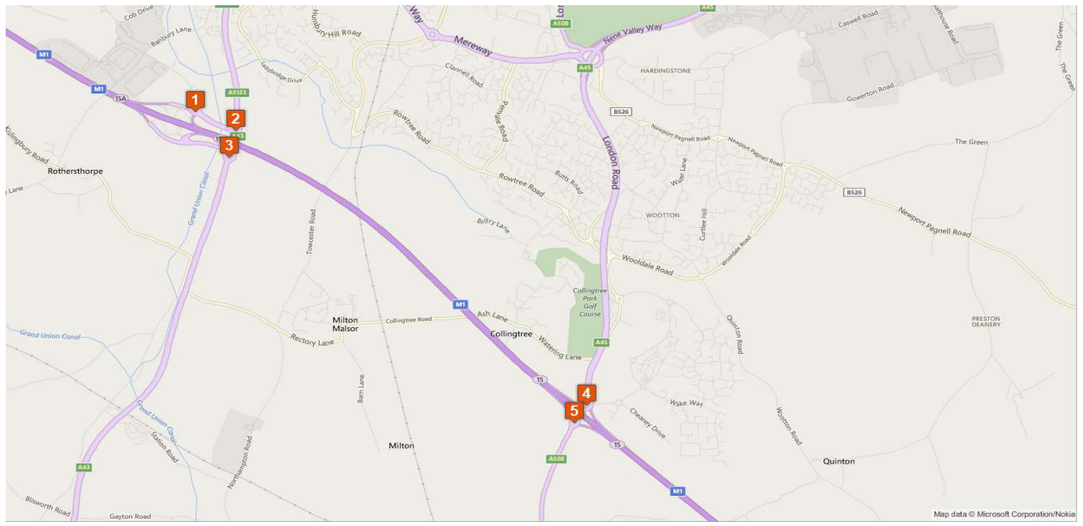
Base VISSIM Model Matrix Times

| AM | PM |
|---|---|
| 0615-0715 | 1545-1645 |
| 0715-0815 | 1645-1745 |
| 0815-0845 | 1745-1815 |

Traffic Count data received:

*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\170526 Alternative Layout & Data for Factors\M1 J15_J15a Survey Data\MCC*
ID02564 M1 J15 and 15A - Turning Counts - Site 1
ID02564 M1 J15 and 15A - Turning Counts - Site 2
ID02564 M1 J15 and 15A - Turning Counts - Site 3
ID02564 M1 J15 and 15A - Turning Counts - Site 4
ID02564 M1 J15 and 15A - Turning Counts - Site 5

Site 1 = A43 / Swan Valley Way (M1 J15a)
Site 2 = M1 / A43 North Roundabout (M1 J15a)
Site 3 = M1 / A43 South Roundabout (M1 J15a)
Site 4 = Saxon Ave / M1 slips / A45 (M1 J15)
Site 5 = M1 slips / A508 (M1 J15)




| Time | Site 1 Junc. Total | Site 2 Junc. Total | Site 3 Junc. Total | Site 4 Junc. Total | Site 5 Junc. Total | Grand Total |
|---|---|---|---|---|---|---|
| 06:00 | 225 | 446 | 448 | 644 | 341 | **2104** |
| 06:15 | 215 | 469 | 525 | 835 | 490 | **2534** |
| 06:30 | 261 | 607 | 645 | 981 | 540 | **3034** |
| 06:45 | 296 | 684 | 734 | 1190 | 700 | **3604** |
| 07:00 | 335 | 746 | 772 | 1395 | 873 | **4121** |
| 07:15 | 394 | 849 | 862 | 1515 | 953 | **4573** |
| 07:30 | 399 | 944 | 982 | 1646 | 1013 | **4984** |
| 07:45 | 434 | 887 | 897 | 1724 | 1078 | **5020** |
| 08:00 | 397 | 830 | 879 | 1607 | 970 | **4683** |
| 08:15 | 400 | 867 | 930 | 1354 | 882 | **4433** |
| 08:30 | 372 | 828 | 831 | 1525 | 845 | **4401** |
| 08:45 | 365 | 705 | 756 | 1500 | 860 | **4186** |
| 09:00 | 379 | 727 | 739 | 1294 | 793 | **3932** |
| 09:15 | 297 | 541 | 595 | 1195 | 722 | **3350** |
| 09:30 | 249 | 543 | 597 | 1082 | 667 | **3138** |
| 09:45 | 234 | 467 | 530 | 991 | 614 | **2836** |
| 15:00 | 293 | 577 | 637 | 1152 | 815 | **3474** |
| 15:15 | 276 | 589 | 709 | 1177 | 784 | **3535** |
| 15:30 | 320 | 626 | 739 | 1189 | 783 | **3657** |
| 15:45 | 370 | 675 | 760 | 1238 | 821 | **3864** |
| 16:00 | 322 | 696 | 806 | 1376 | 914 | **4114** |
| 16:15 | 367 | 753 | 860 | 1509 | 1014 | **4503** |
| 16:30 | 355 | 771 | 883 | 1498 | 1022 | **4529** |
| 16:45 | 371 | 801 | 906 | 1601 | 1066 | **4745** |
| 17:00 | 404 | 832 | 945 | 1566 | 1005 | **4752** |
| 17:15 | 387 | 860 | 964 | 1587 | 1013 | **4811** |
| 17:30 | 416 | 841 | 910 | 1631 | 1036 | **4834** |
| 17:45 | 374 | 823 | 897 | 1490 | 1024 | **4608** |
| 18:00 | 332 | 761 | 862 | 1477 | 951 | **4383** |
| 18:15 | 273 | 657 | 765 | 1391 | 915 | **4001** |
| 18:30 | 258 | 597 | 711 | 1101 | 764 | **3431** |
| 18:45 | 233 | 479 | 544 | 1032 | 721 | **3009** |

**AM PEAK**

| | Total | Time From | Count | Factor |
|---|---|---|---|---|
| 0615-0715 | 13293 | 06:15 | 2534 | 0.191 |
| | | 06:30 | 3034 | 0.228 |
| | | 06:45 | 3604 | 0.271 |
| | | 07:00 | 4121 | 0.310 |
| 0715-0815 | 19260 | 07:15 | 4573 | 0.237 |
| | | 07:30 | 4984 | 0.259 |
| | | 07:45 | 5020 | 0.261 |
| | | 08:00 | 4683 | 0.243 |
| 0815-0845 | 8834 | 08:15 | 4433 | 0.502 |
| | | 08:30 | 4401 | 0.498 |

Factors for Warm Up and Cool Down periods:

| Time | Total | Factor |
|---|---|---|
| 0615-0715 | 13293 | 0.690 |
| 0815-0845 | 8834 | 0.459 |

**PM PEAK**

| | Total | | Count | Factor |
|---|---|---|---|---|
| 1545-1645 | 17010 | 15:45 | 3864 | 0.227 |
| | | 16:00 | 4114 | 0.242 |
| | | 16:15 | 4503 | 0.265 |
| | | 16:30 | 4529 | 0.266 |
| 1645-1745 | 19142 | 16:45 | 4745 | 0.248 |
| | | 17:00 | 4752 | 0.248 |
| | | 17:15 | 4811 | 0.251 |
| | | 17:30 | 4834 | 0.253 |
| 1745-1815 | 8991 | 17:45 | 4608 | 0.513 |
| | | 18:00 | 4383 | 0.487 |

Factors for Warm Up and Cool Down periods:

| Time | Total | Factor |
|---|---|---|
| 1545-1645 | 17010 | 0.889 |
| 1745-1815 | 8991 | 0.470 |

MULTIMODAL
VISION | AIM | ANALYSE | IMPROVEMENTS

**Project:** 02664 Northampton Gateway
**Prepared by:** DN
**Checked by:** LB

**NSTM to VISSIM - Flow Matrix Calculations**

Location of NSTM Outputs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\10 - CDMeM\Elvaston\FLOWS\ 04 - Updated 2031 NSTM Flows
**NSTM2 M1 Gateway Micro Sim Cordon Matrices - Adjusted v4**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\from TfS\10 REF CASE\Traffic Flows
**EFG16 15 MIN FACTORS**

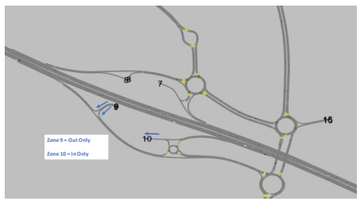
## Calculation Details

Conversion of NSTM data to account for M1 J15a Services.

Current VISSIM model has two zones for northbound access and two zones for southbound access.

NSTM data provides flows to both of these zones, so amended the matrices to ensure 'IN' and 'OUT' traffic was correctly assigned.




| SCENARIO: | 2031 REFERENCE CASE FUTURE YEAR ASSESSMENT |
|---|---|
| FLOWSET: | D1 |

SCENARIO 2031 D1 - AM PEAK
LIGHTS (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 39 | 10 | 391 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 224 | 0 | 0 | 1 |
| 2 | 145 | 0 | 66 | 1256 | 271 | 186 | 0 | 0 | 0 | 0 | 13 | 1604 | 136 | 0 | 7 |
| 3 | 4 | 20 | 0 | 18 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| 4 | 664 | 902 | 40 | 10 | 129 | 9 | 0 | 1 | 0 | 0 | 10 | 1251 | 72 | 0 | 5 |
| 5 | 0 | 61 | 10 | 211 | 0 | 892 | 0 | 0 | 0 | 0 | 232 | 349 | 7 | 0 | 7 |
| 6 | 38 | 248 | 9 | 47 | 1147 | 0 | 0 | 1 | 0 | 0 | 1 | 216 | 8 | 0 | 49 |
| 7 | 1 | 0 | 0 | 7 | 1 | 4 | 0 | 0 | 0 | 0 | 28 | 24 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 17 | 0 | 0 | 0 |
| 11 | 74 | 503 | 28 | 107 | 74 | 0 | 2 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 8 |
| 12 | 266 | 2162 | 55 | 687 | 358 | 433 | 0 | 31 | 1 | 1 | 4 | 0 | 166 | 0 | 14 |
| 13 | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |

SCENARIO 2031 D1 - AM PEAK
HGV (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 0 |
| 2 | 3 | 0 | 10 | 112 | 0 | 20 | 0 | 0 | 0 | 0 | 1 | 402 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 11 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 |
| 6 | 0 | 2 | 0 | 0 | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 11 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 50 | 590 | 4 | 79 | 92 | 6 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 106 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO 2031 D1 - PM PEAK
LIGHTS (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 16 | 5 | 587 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 177 | 0 | 0 | 0 |
| 2 | 91 | 0 | 54 | 1017 | 116 | 398 | 0 | 0 | 0 | 0 | 4 | 2587 | 87 | 0 | 0 |
| 3 | 13 | 86 | 0 | 25 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 0 | 0 |
| 4 | 902 | 940 | 89 | 36 | 80 | 1 | 0 | 0 | 0 | 0 | 2 | 1181 | 133 | 0 | 0 |
| 5 | 0 | 265 | 13 | 10 | 0 | 975 | 0 | 1 | 0 | 0 | 161 | 322 | 0 | 0 | 1 |
| 6 | 17 | 188 | 11 | 33 | 800 | 0 | 2 | 2 | 0 | 0 | 0 | 216 | 1 | 0 | 5 |
| 7 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 11 | 32 | 369 | 17 | 153 | 156 | 0 | 3 | 3 | 1 | 1 | 0 | 0 | 2 | 0 | 2 |
| 12 | 109 | 2751 | 22 | 1001 | 459 | 262 | 54 | 9 | 8 | 18 | 0 | 4 | 0 | 2 | 2 |
| 13 | 0 | 0 | 0 | 306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 1 | 0 | 13 | 6 | 10 | 0 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 |

SCENARIO 2031 D1 - PM PEAK
HGV (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 87 | 0 | 26 | 0 | 0 | 0 | 0 | 0 | 51 | 410 | 0 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 |
| 4 | 37 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 6 | 0 | 21 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 32 | 432 | 17 | 85 | 8 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 32 | 432 | 17 | 85 | 8 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

## NSTM to VISSIM - Flow Matrix Calculations

Location of NSTM Outputs:
*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\170808 ADC-Updated 2031 NSTM Flows*
**NSTM2 M1 Gateway Micro Sim Cordon Matrices - Adjusted v4**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\non TfL\02 REF CASE\Traffic Flows
**170526 15 MIN FACTORS**

| SCENARIO: | 2031 REFERENCE CASE FUTURE YEAR ASSESSMENT |
|---|---|
| FLOWSET: | D1 |

**SCENARIO 2031 D1 - AM PEAK**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 29 | 10 | 391 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 224 | 0 | 0 | 1 |
| 2 | 145 | 0 | 66 | 1236 | 271 | 188 | 0 | 0 | 0 | 0 | 13 | 1904 | 118 | 0 | 2 |
| 3 | 4 | 20 | 0 | 18 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| 4 | 664 | 902 | 40 | 10 | 129 | 9 | 0 | 1 | 0 | 0 | 10 | 1251 | 72 | 0 | 5 |
| 5 | 0 | 61 | 10 | 211 | 0 | 892 | 0 | 0 | 0 | 0 | 232 | 349 | 7 | 0 | 7 |
| 6 | 38 | 249 | 9 | 47 | 1147 | 0 | 0 | 2 | 0 | 0 | 1 | 216 | 8 | 0 | 49 |
| 7 | 1 | 0 | 0 | 7 | 1 | 4 | 0 | 0 | 0 | 0 | 28 | 24 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 74 | 503 | 28 | 107 | 74 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 35 | 0 | 8 |
| 12 | 266 | 2162 | 55 | 687 | 358 | 433 | 0 | 31 | 0 | 2 | 4 | 0 | 166 | 0 | 14 |
| 13 | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

WARM UP FACTOR = 0.690

COOL DOWN FACTOR = 0.459

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0715)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 20 | 7 | 270 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 155 | 0 | 0 | 0 |
| 2 | 100 | 0 | 46 | 853 | 187 | 130 | 0 | 0 | 0 | 0 | 9 | 1314 | 81 | 0 | 1 |
| 3 | 2 | 14 | 0 | 13 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 0 | 0 |
| 4 | 458 | 622 | 28 | 7 | 89 | 6 | 0 | 1 | 0 | 0 | 7 | 863 | 50 | 0 | 3 |
| 5 | 0 | 42 | 7 | 146 | 0 | 616 | 0 | 0 | 0 | 0 | 160 | 241 | 5 | 0 | 5 |
| 6 | 26 | 172 | 6 | 32 | 791 | 0 | 0 | 1 | 0 | 0 | 0 | 149 | 6 | 0 | 34 |
| 7 | 1 | 0 | 0 | 5 | 1 | 3 | 0 | 0 | 0 | 0 | 20 | 17 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 51 | 347 | 19 | 74 | 51 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 24 | 0 | 5 |
| 12 | 184 | 1492 | 38 | 474 | 247 | 299 | 0 | 22 | 0 | 2 | 3 | 0 | 115 | 0 | 10 |
| 13 | 0 | 0 | 0 | 383 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |

0615-0630 FACTOR 0.191

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 29 | 10 | 391 | 0 | 6 | 0 | 0 | 0 | 0 | 3 | 224 | 0 | 0 | 1 |
| 2 | 145 | 0 | 66 | 1236 | 271 | 188 | 0 | 0 | 0 | 0 | 13 | 1904 | 118 | 0 | 2 |
| 3 | 4 | 20 | 0 | 18 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 5 | 0 | 0 |
| 4 | 664 | 902 | 40 | 10 | 129 | 9 | 0 | 1 | 0 | 0 | 10 | 1251 | 72 | 0 | 5 |
| 5 | 0 | 61 | 10 | 211 | 0 | 892 | 0 | 0 | 0 | 0 | 232 | 349 | 7 | 0 | 7 |
| 6 | 38 | 249 | 9 | 47 | 1147 | 0 | 0 | 2 | 0 | 0 | 1 | 216 | 8 | 0 | 49 |
| 7 | 1 | 0 | 0 | 7 | 1 | 4 | 0 | 0 | 0 | 0 | 28 | 24 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 74 | 503 | 28 | 107 | 74 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 35 | 0 | 8 |
| 12 | 266 | 2162 | 55 | 687 | 358 | 433 | 0 | 31 | 0 | 2 | 4 | 0 | 166 | 0 | 14 |
| 13 | 0 | 0 | 0 | 554 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |

0715-0730 FACTOR 0.237

**VISSIM MATRIX - LIGHTS - COOL DOWN (0815-0845)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 13 | 4 | 180 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 103 | 0 | 0 | 0 |
| 2 | 67 | 0 | 31 | 567 | 124 | 87 | 0 | 0 | 0 | 0 | 6 | 874 | 54 | 0 | 1 |
| 3 | 2 | 9 | 0 | 8 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 0 |
| 4 | 305 | 414 | 18 | 5 | 59 | 4 | 0 | 0 | 0 | 0 | 4 | 574 | 33 | 0 | 2 |
| 5 | 0 | 28 | 4 | 97 | 0 | 409 | 0 | 0 | 0 | 0 | 107 | 160 | 3 | 0 | 3 |
| 6 | 17 | 114 | 4 | 21 | 527 | 0 | 0 | 0 | 1 | 0 | 0 | 99 | 4 | 0 | 22 |
| 7 | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 13 | 11 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 34 | 231 | 13 | 49 | 34 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | 0 | 4 |
| 12 | 122 | 992 | 25 | 315 | 164 | 199 | 0 | 14 | 0 | 1 | 2 | 0 | 76 | 0 | 7 |
| 13 | 0 | 0 | 0 | 254 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |

0815-0830 FACTOR 0.502

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0630)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 1 | 52 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 |
| 2 | 19 | 0 | 9 | 163 | 36 | 25 | 0 | 0 | 0 | 0 | 2 | 251 | 16 | 0 | 0 |
| 3 | 0 | 3 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| 4 | 88 | 119 | 5 | 1 | 17 | 1 | 0 | 0 | 0 | 0 | 1 | 165 | 10 | 0 | 1 |
| 5 | 0 | 8 | 1 | 28 | 0 | 118 | 0 | 0 | 0 | 0 | 31 | 46 | 1 | 0 | 1 |
| 6 | 5 | 33 | 1 | 6 | 151 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 1 | 0 | 6 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10 | 66 | 4 | 14 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 |
| 12 | 35 | 285 | 7 | 91 | 47 | 57 | 0 | 4 | 0 | 0 | 1 | 0 | 22 | 0 | 2 |
| 13 | 0 | 0 | 0 | 73 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0630-0645 FACTOR 0.228

**VISSIM MATRIX - LIGHTS - PEAK (0730-0745)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 7 | 2 | 101 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 58 | 0 | 0 | 0 |
| 2 | 38 | 0 | 17 | 320 | 70 | 49 | 0 | 0 | 0 | 0 | 1 | 493 | 31 | 0 | 1 |
| 3 | 1 | 5 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 |
| 4 | 173 | 234 | 10 | 3 | 33 | 2 | 0 | 0 | 0 | 0 | 2 | 124 | 19 | 0 | 1 |
| 5 | 0 | 16 | 3 | 55 | 0 | 231 | 0 | 0 | 0 | 0 | 0 | 90 | 2 | 0 | 2 |
| 6 | 10 | 64 | 2 | 12 | 297 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 2 | 0 | 13 |
| 7 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 19 | 130 | 7 | 28 | 19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 2 |
| 12 | 69 | 560 | 14 | 178 | 93 | 112 | 0 | 8 | 0 | 1 | 1 | 0 | 43 | 0 | 4 |
| 13 | 0 | 0 | 0 | 144 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

0730-0745 FACTOR 0.259

**VISSIM MATRIX - LIGHTS - COOL DOWN (0830-0845)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 7 | 2 | 89 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 52 | 0 | 0 | 0 |
| 2 | 33 | 0 | 15 | 283 | 62 | 43 | 0 | 0 | 0 | 0 | 3 | 435 | 27 | 0 | 0 |
| 3 | 1 | 5 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 |
| 4 | 152 | 206 | 9 | 2 | 29 | 2 | 0 | 0 | 0 | 0 | 2 | 286 | 17 | 0 | 1 |
| 5 | 0 | 14 | 2 | 48 | 0 | 204 | 0 | 0 | 0 | 0 | 53 | 80 | 2 | 0 | 2 |
| 6 | 9 | 57 | 2 | 11 | 262 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 2 | 0 | 11 |
| 7 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 17 | 115 | 6 | 25 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 2 |
| 12 | 61 | 494 | 13 | 157 | 82 | 99 | 0 | 7 | 0 | 1 | 1 | 0 | 38 | 0 | 3 |
| 13 | 0 | 0 | 0 | 127 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

0830-0845 FACTOR 0.498

**VISSIM MATRIX - LIGHTS - WARM UP (0630-0645)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 5 | 1 | 62 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| 2 | 23 | 0 | 10 | 194 | 43 | 30 | 0 | 0 | 0 | 0 | 2 | 300 | 19 | 0 | 0 |
| 3 | 1 | 3 | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 |
| 4 | 105 | 142 | 6 | 2 | 20 | 1 | 0 | 0 | 0 | 0 | 1 | 197 | 11 | 0 | 1 |
| 5 | 0 | 10 | 2 | 33 | 0 | 140 | 0 | 0 | 0 | 0 | 37 | 55 | 1 | 0 | 1 |
| 6 | 6 | 39 | 1 | 7 | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 1 | 0 | 8 |
| 7 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 4 | 4 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 12 | 79 | 4 | 17 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 |
| 12 | 42 | 340 | 9 | 108 | 56 | 68 | 0 | 5 | 0 | 0 | 1 | 0 | 26 | 0 | 2 |
| 13 | 0 | 0 | 0 | 87 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0645-0700 FACTOR 0.271

**VISSIM MATRIX - LIGHTS - PEAK (0745-0800)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 8 | 2 | 102 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 58 | 0 | 0 | 0 |
| 2 | 38 | 0 | 17 | 323 | 71 | 49 | 0 | 0 | 0 | 0 | 1 | 497 | 31 | 0 | 1 |
| 3 | 1 | 5 | 0 | 5 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 |
| 4 | 173 | 235 | 10 | 3 | 34 | 2 | 0 | 0 | 0 | 0 | 2 | 126 | 19 | 0 | 1 |
| 5 | 0 | 16 | 3 | 55 | 0 | 233 | 0 | 0 | 0 | 0 | 0 | 91 | 2 | 0 | 2 |
| 6 | 10 | 65 | 2 | 12 | 299 | 0 | 0 | 0 | 0 | 0 | 0 | 56 | 2 | 0 | 13 |
| 7 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 19 | 131 | 7 | 28 | 19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 9 | 0 | 2 |
| 12 | 69 | 564 | 14 | 179 | 93 | 113 | 0 | 8 | 0 | 1 | 1 | 0 | 43 | 0 | 4 |
| 13 | 0 | 0 | 0 | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

0630-0645 FACTOR 0.243

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - COOL DOWN (0815-0845)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - WARM UP (0700-0730)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 6 | 2 | 84 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 48 | 0 | 0 | 0 |
| 2 | 31 | 0 | 14 | 264 | 58 | 40 | 0 | 0 | 0 | 0 | 3 | 407 | 25 | 0 | 0 |
| 3 | 1 | 4 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 |
| 4 | 142 | 193 | 9 | 2 | 28 | 2 | 0 | 0 | 0 | 0 | 2 | 268 | 15 | 0 | 1 |
| 5 | 0 | 13 | 2 | 45 | 0 | 191 | 0 | 0 | 0 | 0 | 50 | 75 | 1 | 0 | 1 |
| 6 | 8 | 53 | 2 | 10 | 245 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 2 | 0 | 10 |
| 7 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 6 | 5 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 16 | 108 | 6 | 23 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 |
| 12 | 57 | 462 | 12 | 147 | 77 | 93 | 0 | 7 | 0 | 1 | 1 | 0 | 36 | 0 | 3 |
| 13 | 0 | 0 | 0 | 119 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

0700-0715 FACTOR 0.310

**VISSIM MATRIX - LIGHTS - PEAK (0800-0815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 7 | 2 | 95 | 0 | 2 | 0 | 0 | 0 | 0 | 1 | 54 | 0 | 0 | 0 |
| 2 | 35 | 0 | 16 | 300 | 66 | 46 | 0 | 0 | 0 | 0 | 3 | 463 | 29 | 0 | 1 |
| 3 | 1 | 5 | 0 | 4 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 1 | 0 | 0 |
| 4 | 161 | 219 | 10 | 2 | 31 | 2 | 0 | 0 | 0 | 0 | 2 | 304 | 18 | 0 | 1 |
| 5 | 0 | 15 | 2 | 51 | 0 | 217 | 0 | 0 | 0 | 0 | 0 | 56 | 85 | 2 | 0 |
| 6 | 9 | 60 | 2 | 11 | 279 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 2 | 0 | 12 |
| 7 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 6 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 18 | 122 | 7 | 26 | 18 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 8 | 0 | 2 |
| 12 | 65 | 525 | 13 | 167 | 87 | 105 | 0 | 8 | 0 | 1 | 1 | 0 | 40 | 0 | 3 |
| 13 | 0 | 0 | 0 | 135 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0715)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

## NSTM to VISSIM - Flow Matrix Calculations

Location of NSTM Outputs:
*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\170808 ADC-Updated 2031 NSTM Flows*
**NSTM2 M1 Gateway Micro Sim Cordon Matrices - Adjusted v4**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\non TfL\02 REF CASE\Traffic Flows
**170526 15 MIN FACTORS**

| SCENARIO: | 2031 REFERENCE CASE FUTURE YEAR ASSESSMENT |
|---|---|
| FLOWSET: | D1 |

**SCENARIO 2031 D1 - AM PEAK**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 0 |
| 2 | 3 | 0 | 10 | 112 | 0 | 20 | 0 | 0 | 0 | 0 | 1 | 402 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 11 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 |
| 6 | 0 | 2 | 0 | 0 | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 16 | 1 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 50 | 590 | 4 | 79 | 92 | 6 | 0 | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

WARM UP FACTOR = 0.690

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0715)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 0 | 0 |
| 2 | 2 | 0 | 7 | 77 | 0 | 14 | 0 | 0 | 0 | 0 | 1 | 277 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 8 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 157 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 81 | 0 | 0 | 0 | 0 | 1 | 4 | 0 | 0 | 0 |
| 6 | 0 | 1 | 0 | 0 | 67 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 34 | 407 | 2 | 55 | 63 | 4 | 0 | 6 | 0 | 3 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0615-0630 FACTOR 0.191

**VISSIM MATRIX - LIGHTS - WARM UP (0630-0645)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 2 | 0 | 0 | 1 | 15 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 7 | 78 | 0 | 12 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0630-0645 FACTOR 0.228

**VISSIM MATRIX - LIGHTS - WARM UP (0645-0700)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 2 | 0 | 0 | 2 | 21 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 75 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 2 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 9 | 110 | 1 | 15 | 17 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0700-0715 FACTOR 0.310

**VISSIM MATRIX - LIGHTS - WARM UP (0700-0730)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 2 | 1 | 0 | 2 | 24 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 86 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 2 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 49 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 11 | 126 | 1 | 17 | 20 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0715)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 0 | 0 |
| 2 | 3 | 0 | 10 | 112 | 0 | 20 | 0 | 0 | 0 | 0 | 1 | 402 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 11 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 228 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 117 | 0 | 0 | 0 | 0 | 2 | 5 | 0 | 0 | 0 |
| 6 | 0 | 2 | 0 | 0 | 97 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 16 | 1 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 46 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 50 | 590 | 4 | 79 | 92 | 6 | 0 | 9 | 0 | 4 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0715-0730 FACTOR 0.237

**VISSIM MATRIX - LIGHTS - PEAK (0715-0730)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 1 | 0 | 2 | 27 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 95 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 12 | 140 | 1 | 19 | 22 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0730-0745 FACTOR 0.259

**VISSIM MATRIX - LIGHTS - PEAK (0730-0745)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| 2 | 1 | 0 | 3 | 29 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 104 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 13 | 154 | 1 | 21 | 24 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0745-0800 FACTOR 0.261

**VISSIM MATRIX - LIGHTS - PEAK (0745-0800)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 0 | 0 |
| 2 | 1 | 0 | 3 | 29 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 13 | 154 | 1 | 21 | 24 | 2 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0630-0645 FACTOR 0.243

**VISSIM MATRIX - LIGHTS - PEAK (0800-0815)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 1 | 0 | 2 | 27 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 98 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 12 | 143 | 1 | 19 | 22 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

COOL DOWN FACTOR = 0.459

**VISSIM MATRIX - LIGHTS - COOL DOWN (0815-0845)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| 2 | 1 | 0 | 4 | 51 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 184 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 5 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 |
| 6 | 0 | 1 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 23 | 271 | 2 | 36 | 42 | 3 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

0815-0830 FACTOR 0.502

**VISSIM MATRIX - LIGHTS - COOL DOWN (0830-0845)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 1 | 0 | 2 | 26 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 93 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 27 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 |

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

## NSTM to VISSIM - Flow Matrix Calculations

Location of NSTM Outputs:
*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\170808 ADC-Updated 2031 NSTM Flows*
**NSTM2 M1 Gateway Micro Sim Cordon Matrices - Adjusted v4**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\non TfL\02 REF CASE\Traffic Flows
**170526 15 MIN FACTORS**

| SCENARIO: | 2031 REFERENCE CASE FUTURE YEAR ASSESSMENT |
|---|---|
| FLOWSET: | D1 |

**SCENARIO 2031 D1 - PM PEAK**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 16 | 5 | 587 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 177 | 0 | 0 | 0 |
| 2 | 91 | 0 | 54 | 1017 | 116 | 398 | 0 | 0 | 0 | 0 | 8 | 2587 | 87 | 0 | 0 |
| 3 | 13 | 86 | 0 | 25 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 0 | 0 |
| 4 | 902 | 940 | 89 | 36 | 80 | 1 | 0 | 0 | 0 | 2 | 0 | 1181 | 133 | 0 | 0 |
| 5 | 0 | 295 | 1 | 10 | 0 | 975 | 0 | 1 | 0 | 0 | 161 | 322 | 0 | 0 | 1 |
| 6 | 17 | 188 | 11 | 33 | 800 | 0 | 0 | 4 | 0 | 1 | 0 | 216 | 1 | 0 | 5 |
| 7 | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 11 | 12 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 32 | 369 | 17 | 152 | 156 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 2 | 0 | 2 |
| 12 | 109 | 2711 | 22 | 1001 | 459 | 282 | 0 | 107 | 0 | 16 | 18 | 0 | 4 | 0 | 2 |
| 13 | 0 | 0 | 0 | 306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 1 | 0 | 13 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 |

WARM UP FACTOR = 0.889

COOL DOWN FACTOR = 0.470

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1645)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 14 | 4 | 522 | 0 | 9 | 0 | 0 | 0 | 0 | 1 | 157 | 0 | 0 | 0 |
| 2 | 81 | 0 | 48 | 904 | 103 | 354 | 0 | 0 | 0 | 0 | 7 | 2300 | 77 | 0 | 0 |
| 3 | 12 | 76 | 0 | 22 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 12 | 2 | 0 | 0 |
| 4 | 802 | 835 | 79 | 32 | 71 | 1 | 0 | 0 | 0 | 2 | 0 | 1050 | 118 | 0 | 0 |
| 5 | 0 | 263 | 1 | 9 | 0 | 867 | 0 | 1 | 0 | 0 | 143 | 287 | 0 | 0 | 1 |
| 6 | 15 | 167 | 10 | 30 | 712 | 0 | 0 | 3 | 0 | 1 | 0 | 192 | 0 | 0 | 5 |
| 7 | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 10 | 11 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 28 | 328 | 15 | 135 | 139 | 0 | 0 | 5 | 0 | 1 | 0 | 0 | 2 | 0 | 2 |
| 12 | 97 | 2410 | 19 | 890 | 408 | 250 | 0 | 95 | 0 | 14 | 16 | 0 | 3 | 0 | 2 |
| 13 | 0 | 0 | 0 | 272 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 1 | 0 | 11 | 5 | 26 | 0 | 0 | 0 | 0 | 10 | 13 | 0 | 0 | 0 |

1545-1600 FACTOR 0.227

**VISSIM MATRIX - LIGHTS - PEAK (1645-1745)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 16 | 5 | 587 | 0 | 10 | 0 | 0 | 0 | 0 | 1 | 177 | 0 | 0 | 0 |
| 2 | 91 | 0 | 54 | 1017 | 116 | 398 | 0 | 0 | 0 | 0 | 8 | 2587 | 87 | 0 | 0 |
| 3 | 13 | 86 | 0 | 25 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 13 | 2 | 0 | 0 |
| 4 | 902 | 940 | 89 | 36 | 80 | 1 | 0 | 0 | 0 | 2 | 0 | 1181 | 133 | 0 | 0 |
| 5 | 0 | 295 | 1 | 10 | 0 | 975 | 0 | 1 | 0 | 0 | 161 | 322 | 0 | 0 | 1 |
| 6 | 17 | 188 | 11 | 33 | 800 | 0 | 0 | 4 | 0 | 1 | 0 | 216 | 1 | 0 | 5 |
| 7 | 0 | 0 | 0 | 3 | 1 | 2 | 0 | 0 | 0 | 0 | 11 | 12 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 32 | 369 | 17 | 152 | 156 | 0 | 0 | 5 | 0 | 2 | 0 | 0 | 2 | 0 | 2 |
| 12 | 109 | 2711 | 22 | 1001 | 459 | 282 | 0 | 107 | 0 | 16 | 18 | 0 | 4 | 0 | 2 |
| 13 | 0 | 0 | 0 | 306 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 1 | 0 | 13 | 6 | 30 | 0 | 0 | 0 | 0 | 12 | 15 | 0 | 0 | 0 |

1645-1700 FACTOR 0.248

**VISSIM MATRIX - LIGHTS - COOL DOWN (1745-1815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 8 | 2 | 276 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 83 | 0 | 0 | 0 |
| 2 | 43 | 0 | 25 | 478 | 55 | 187 | 0 | 0 | 0 | 0 | 4 | 1216 | 41 | 0 | 0 |
| 3 | 6 | 40 | 0 | 12 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 1 | 0 | 0 |
| 4 | 424 | 442 | 42 | 17 | 38 | 0 | 0 | 0 | 0 | 1 | 0 | 555 | 62 | 0 | 0 |
| 5 | 0 | 139 | 1 | 5 | 0 | 458 | 0 | 0 | 0 | 0 | 76 | 152 | 0 | 0 | 0 |
| 6 | 8 | 88 | 5 | 16 | 376 | 0 | 0 | 2 | 0 | 0 | 0 | 102 | 0 | 0 | 2 |
| 7 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 15 | 173 | 8 | 72 | 73 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 1 |
| 12 | 51 | 1274 | 10 | 471 | 216 | 132 | 0 | 50 | 0 | 8 | 9 | 0 | 2 | 0 | 1 |
| 13 | 0 | 0 | 0 | 144 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 1 | 0 | 6 | 3 | 14 | 0 | 0 | 0 | 0 | 5 | 7 | 0 | 0 | 0 |

1745-1800 FACTOR 0.513

**VISSIM MATRIX - LIGHTS - WARM UP (1600-1615)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 3 | 1 | 119 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 0 | 0 |
| 2 | 18 | 0 | 11 | 205 | 23 | 80 | 0 | 0 | 0 | 0 | 2 | 522 | 18 | 0 | 0 |
| 3 | 3 | 17 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4 | 182 | 190 | 18 | 7 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 238 | 27 | 0 | 0 |
| 5 | 0 | 60 | 0 | 2 | 0 | 197 | 0 | 0 | 0 | 0 | 33 | 65 | 0 | 0 | 0 |
| 6 | 3 | 38 | 2 | 7 | 162 | 0 | 0 | 1 | 0 | 0 | 0 | 44 | 0 | 0 | 1 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 6 | 74 | 3 | 31 | 32 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 22 | 547 | 4 | 202 | 93 | 57 | 0 | 22 | 0 | 3 | 4 | 0 | 1 | 0 | 0 |
| 13 | 0 | 0 | 0 | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 1 | 6 | 0 | 0 | 0 | 0 | 0 | 2 | 3 | 0 | 0 |

1600-1615 FACTOR 0.242

**VISSIM MATRIX - LIGHTS - PEAK (1700-1715)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 1 | 146 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 44 | 0 | 0 | 0 |
| 2 | 23 | 0 | 13 | 252 | 29 | 99 | 0 | 0 | 0 | 0 | 2 | 642 | 22 | 0 | 0 |
| 3 | 3 | 21 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4 | 224 | 233 | 22 | 9 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 293 | 33 | 0 | 0 |
| 5 | 0 | 73 | 0 | 3 | 0 | 242 | 0 | 0 | 0 | 0 | 0 | 80 | 0 | 0 | 0 |
| 6 | 4 | 47 | 3 | 8 | 198 | 0 | 0 | 1 | 0 | 0 | 0 | 54 | 0 | 0 | 1 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 8 | 92 | 4 | 38 | 39 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 27 | 672 | 5 | 248 | 114 | 70 | 0 | 27 | 0 | 4 | 5 | 0 | 1 | 0 | 0 |
| 13 | 0 | 0 | 0 | 76 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 2 | 7 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 |

1700-1715 FACTOR 0.248

**VISSIM MATRIX - LIGHTS - COOL DOWN (1800-1815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 1 | 134 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 40 | 0 | 0 | 0 |
| 2 | 21 | 0 | 12 | 233 | 27 | 91 | 0 | 0 | 0 | 0 | 2 | 592 | 20 | 0 | 0 |
| 3 | 3 | 20 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4 | 206 | 215 | 20 | 8 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 270 | 30 | 0 | 0 |
| 5 | 0 | 68 | 0 | 2 | 0 | 223 | 0 | 0 | 0 | 0 | 37 | 74 | 0 | 0 | 0 |
| 6 | 4 | 43 | 3 | 8 | 183 | 0 | 0 | 1 | 0 | 0 | 0 | 50 | 0 | 0 | 1 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 7 | 84 | 4 | 35 | 36 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 25 | 620 | 5 | 229 | 105 | 64 | 0 | 25 | 0 | 4 | 4 | 0 | 1 | 0 | 0 |
| 13 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 1 | 7 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |

1800-1815 FACTOR 0.487

**VISSIM MATRIX - LIGHTS - WARM UP (1615-1630)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 1 | 138 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 0 | 0 |
| 2 | 21 | 0 | 13 | 240 | 27 | 94 | 0 | 0 | 0 | 0 | 2 | 609 | 20 | 0 | 0 |
| 3 | 3 | 20 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4 | 213 | 221 | 21 | 8 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 278 | 31 | 0 | 0 |
| 5 | 0 | 70 | 0 | 2 | 0 | 230 | 0 | 0 | 0 | 0 | 38 | 76 | 0 | 0 | 0 |
| 6 | 4 | 44 | 3 | 8 | 189 | 0 | 0 | 1 | 0 | 0 | 0 | 51 | 0 | 0 | 1 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 7 | 87 | 4 | 36 | 37 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 26 | 639 | 5 | 236 | 108 | 66 | 0 | 25 | 0 | 4 | 4 | 0 | 1 | 0 | 0 |
| 13 | 0 | 0 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 |

1630-1645 FACTOR 0.266

**VISSIM MATRIX - LIGHTS - PEAK (1715-1730)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 1 | 147 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 44 | 0 | 0 | 0 |
| 2 | 23 | 0 | 14 | 255 | 29 | 100 | 0 | 0 | 0 | 0 | 2 | 649 | 22 | 0 | 0 |
| 3 | 3 | 22 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4 | 226 | 236 | 22 | 9 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 296 | 33 | 0 | 0 |
| 5 | 0 | 74 | 0 | 3 | 0 | 245 | 0 | 0 | 0 | 0 | 40 | 81 | 0 | 0 | 0 |
| 6 | 4 | 47 | 3 | 8 | 201 | 0 | 0 | 1 | 0 | 0 | 0 | 54 | 0 | 0 | 1 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 8 | 93 | 4 | 38 | 39 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 27 | 680 | 5 | 251 | 115 | 71 | 0 | 27 | 0 | 4 | 5 | 0 | 1 | 0 | 0 |
| 13 | 0 | 0 | 0 | 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 2 | 7 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 |

1715-1730 FACTOR 0.251

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - COOL DOWN (0815-0845)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**VISSIM MATRIX - LIGHTS - WARM UP (1630-1645)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 1 | 139 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 42 | 0 | 0 | 0 |
| 2 | 22 | 0 | 13 | 240 | 27 | 94 | 0 | 0 | 0 | 0 | 2 | 612 | 21 | 0 | 0 |
| 3 | 3 | 20 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4 | 213 | 222 | 21 | 9 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 279 | 31 | 0 | 0 |
| 5 | 0 | 70 | 0 | 2 | 0 | 231 | 0 | 0 | 0 | 0 | 38 | 76 | 0 | 0 | 0 |
| 6 | 4 | 44 | 3 | 8 | 189 | 0 | 0 | 1 | 0 | 0 | 0 | 51 | 0 | 0 | 1 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 8 | 87 | 4 | 36 | 37 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 26 | 641 | 5 | 237 | 108 | 67 | 0 | 25 | 0 | 4 | 4 | 0 | 1 | 0 | 0 |
| 13 | 0 | 0 | 0 | 72 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 1 | 7 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - PEAK (1730-1745)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 1 | 149 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 45 | 0 | 0 | 0 |
| 2 | 23 | 0 | 14 | 257 | 29 | 101 | 0 | 0 | 0 | 0 | 2 | 654 | 22 | 0 | 0 |
| 3 | 3 | 22 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 4 | 228 | 238 | 23 | 9 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 299 | 34 | 0 | 0 |
| 5 | 0 | 75 | 0 | 3 | 0 | 247 | 0 | 0 | 0 | 0 | 41 | 82 | 0 | 0 | 0 |
| 6 | 4 | 47 | 3 | 8 | 202 | 0 | 0 | 1 | 0 | 0 | 0 | 55 | 0 | 0 | 1 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 8 | 93 | 4 | 39 | 39 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 27 | 686 | 6 | 253 | 116 | 71 | 0 | 27 | 0 | 4 | 5 | 0 | 1 | 0 | 0 |
| 13 | 0 | 0 | 0 | 77 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 3 | 2 | 8 | 0 | 0 | 0 | 0 | 3 | 4 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

## NSTM to VISSIM - Flow Matrix Calculations

Location of NSTM Outputs:
*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\170808 ADC-Updated 2031 NSTM Flows*
**NSTM2 M1 Gateway Micro Sim Cordon Matrices - Adjusted v4**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\non TfL\02 REF CASE\Traffic Flows
**170526 15 MIN FACTORS**

| SCENARIO: | 2031 REFERENCE CASE FUTURE YEAR ASSESSMENT |
|---|---|
| FLOWSET: | D1 |

**SCENARIO 2031 D1 - PM PEAK**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 87 | 0 | 26 | 0 | 0 | 0 | 0 | 51 | 410 | 0 | 0 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 |
| 4 | 37 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 6 | 0 | 21 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 32 | 432 | 17 | 85 | 8 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| WARM UP FACTOR = | 0.889 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1645)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 77 | 0 | 23 | 0 | 0 | 0 | 0 | 45 | 364 | 0 | 0 | 0 |
| 3 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 |
| 4 | 32 | 21 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 105 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 6 | 0 | 18 | 0 | 0 | 48 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 29 | 384 | 15 | 75 | 7 | 69 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1545-1600 FACTOR | 0.227 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1600)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 18 | 0 | 5 | 0 | 0 | 0 | 0 | 10 | 83 | 0 | 0 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 4 | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 4 | 0 | 0 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 6 | 87 | 3 | 17 | 2 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1600-1615 FACTOR | 0.242 |
|---|---|

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - WARM UP (1600-1615)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 19 | 0 | 6 | 0 | 0 | 0 | 0 | 11 | 88 | 0 | 0 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 4 | 8 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 4 | 0 | 0 | 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 7 | 93 | 4 | 18 | 2 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1615-1630 FACTOR | 0.265 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1615-1630)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 20 | 0 | 6 | 0 | 0 | 0 | 0 | 12 | 97 | 0 | 0 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 4 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 5 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 8 | 102 | 4 | 20 | 2 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1630-1645 FACTOR | 0.266 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1630-1645)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 21 | 0 | 6 | 0 | 0 | 0 | 0 | 12 | 97 | 0 | 0 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 4 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 5 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 8 | 102 | 4 | 20 | 2 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1645)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**VISSIM MATRIX - LIGHTS - PEAK (1645-1745)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 37 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 87 | 0 | 26 | 0 | 0 | 0 | 0 | 51 | 410 | 0 | 0 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 28 | 0 | 0 | 0 |
| 4 | 37 | 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 118 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| 6 | 0 | 21 | 0 | 0 | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 32 | 432 | 17 | 85 | 8 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1645-1700 FACTOR | 0.248 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (1645-1700)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 22 | 0 | 6 | 0 | 0 | 0 | 0 | 13 | 102 | 0 | 0 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 4 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 5 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 8 | 107 | 4 | 21 | 2 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1700-1715 FACTOR | 0.248 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (1700-1715)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 22 | 0 | 6 | 0 | 0 | 0 | 0 | 13 | 102 | 0 | 0 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 4 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 5 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 8 | 107 | 4 | 21 | 2 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1715-1730 FACTOR | 0.251 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (1715-1730)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 22 | 0 | 6 | 0 | 0 | 0 | 0 | 13 | 103 | 0 | 0 | 0 |
| 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 4 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 5 | 0 | 0 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 8 | 108 | 4 | 21 | 2 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1730-1745 FACTOR | 0.253 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (1730-1745)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 22 | 0 | 7 | 0 | 0 | 0 | 0 | 13 | 104 | 0 | 0 | 0 |
| 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 4 | 9 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 5 | 0 | 0 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 8 | 109 | 4 | 21 | 2 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| CDOL DOWN FACTOR = | 0.470 |
|---|---|

**VISSIM MATRIX - LIGHTS - COOL DOWN (1745-1815)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 41 | 0 | 12 | 0 | 0 | 0 | 0 | 24 | 193 | 0 | 0 | 0 |
| 3 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 |
| 4 | 17 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 55 | 0 | 0 | 0 | 0

**Title:** 180212 2031 RAIL CENTRAL VISSIM FLOWS.xlsx
**Sheet Name:** 2031 MIT FLOWS_CONVERSION
**Date:** 20/02/2018

MULTIMODAL
MODELLING | ANALYSIS | MANAGEMENT

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

**NSTM to VISSIM - Matrix Conversion**

Location of NSTM Outputs:
L:\Team Folders\PROJECTS\02664 M1\15 Northampton Gateway\10_CDM\MS\Exercise\LB\0202 ADC 2031 Mit+RC NSTM Flows & LINSIG
**NSTM2 2031 10 Micro Sim Combo Matrices - Adjusted v1**

## Calculation Details

Conversion of NSTM data to account for M1 J15a Services.

Current VISSIM model has two zones for northbound access and two zones for southbound access.

NSTM data provides flows to both of these zones, so amended the matrices to ensure 'IN' and 'OUT' traffic was correctly assigned.







SCENARIO: 2031 WITH RAIL CENTRAL + MITIGATION DEVELOPMENT CASE
FLOWSET: J3

SCENARIO 2031 J1d - AM PEAK
LIGHTS (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 137 | 16 | 127 | 7 | 29 | 0 | 0 | 0 | 0 | 10 | 172 | 0 | 100 | 0 |
| 2 | 161 | 0 | 51 | 1267 | 196 | 273 | 0 | 0 | 0 | 0 | 42 | 1691 | 252 | 115 | 0 |
| 3 | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 36 | 23 | 2 | 0 |
| 4 | 787 | 840 | 35 | 1 | 124 | 30 | 0 | 0 | 1 | 0 | 27 | 1087 | 54 | 355 | 0 |
| 5 | 0 | 76 | 14 | 350 | 0 | 800 | 0 | 0 | 1 | 0 | 0 | 263 | 660 | 4 | 2 |
| 6 | 26 | 100 | 6 | 20 | 1932 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 249 | 6 | 12 |
| 7 | 1 | 0 | 0 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | 11 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 11 | 105 | 460 | 33 | 97 | 60 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 33 | 37 | 0 |
| 12 | 392 | 2183 | 88 | 709 | 389 | 119 | 0 | 32 | 1 | 1 | 209 | 0 | 158 | 76 | 0 |
| 13 | 0 | 0 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 9 | 24 | 1 | 20 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 16 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No Zone 15 in Rail Central proposals - removed flows for modelling

SCENARIO 2031 J1d - AM PEAK
HGV (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 46 | 0 | 35 | 0 |
| 2 | 0 | 0 | 0 | 14 | 104 | 23 | 12 | 0 | 0 | 0 | 4 | 407 | 0 | 30 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 16 | 16 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 0 | 40 | 0 |
| 5 | 0 | 11 | 0 | 0 | 0 | 180 | 0 | 0 | 0 | 0 | 0 | 7 | 69 | 0 | 0 |
| 6 | 0 | 1 | 0 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 3 |
| 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 3 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 11 | 0 | 41 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 12 | 49 | 589 | 4 | 79 | 145 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 18 | 30 | 2 | 42 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO 2031 J1d - AM PEAK
LIGHTS (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 137 | 16 | 127 | 7 | 29 | 0 | 0 | 0 | 0 | 10 | 172 | 0 | 100 | 0 |
| 2 | 161 | 0 | 51 | 1267 | 196 | 273 | 0 | 0 | 0 | 0 | 42 | 1691 | 252 | 115 | 0 |
| 3 | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 36 | 23 | 2 | 0 |
| 4 | 787 | 840 | 35 | 1 | 124 | 30 | 0 | 0 | 1 | 0 | 27 | 1087 | 54 | 355 | 0 |
| 5 | 0 | 76 | 14 | 350 | 0 | 800 | 0 | 0 | 1 | 0 | 0 | 263 | 660 | 4 | 2 |
| 6 | 26 | 100 | 6 | 20 | 1932 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 249 | 6 | 12 |
| 7 | 1 | 0 | 0 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | 11 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 11 | 105 | 460 | 33 | 97 | 60 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 33 | 37 | 0 |
| 12 | 392 | 2183 | 88 | 709 | 389 | 119 | 0 | 32 | 1 | 1 | 209 | 0 | 158 | 76 | 0 |
| 13 | 0 | 0 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 9 | 24 | 1 | 20 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 16 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO 2031 J1d - AM PEAK
HGV (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 46 | 0 | 35 | 0 |
| 2 | 0 | 0 | 0 | 14 | 104 | 23 | 12 | 0 | 0 | 0 | 4 | 407 | 0 | 30 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 16 | 16 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 0 | 40 | 0 |
| 5 | 0 | 11 | 0 | 0 | 0 | 180 | 0 | 0 | 0 | 0 | 0 | 7 | 69 | 0 | 0 |
| 6 | 0 | 1 | 0 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 3 |
| 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 3 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 11 | 0 | 41 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 12 | 49 | 589 | 4 | 79 | 145 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 18 | 30 | 2 | 42 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO 2031 J1d - AM PEAK
LIGHTS (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 137 | 16 | 127 | 7 | 29 | 0 | 0 | 0 | 0 | 10 | 172 | 0 | 100 | 0 |
| 2 | 161 | 0 | 51 | 1267 | 196 | 273 | 0 | 0 | 0 | 0 | 42 | 1691 | 252 | 115 | 0 |
| 3 | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 36 | 23 | 2 | 0 |
| 4 | 787 | 840 | 35 | 1 | 124 | 30 | 0 | 0 | 1 | 0 | 27 | 1087 | 54 | 355 | 0 |
| 5 | 0 | 76 | 14 | 350 | 0 | 800 | 0 | 0 | 1 | 0 | 0 | 263 | 660 | 4 | 2 |
| 6 | 26 | 100 | 6 | 20 | 1932 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 249 | 6 | 12 |
| 7 | 1 | 0 | 0 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 38 | 11 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 |
| 11 | 105 | 460 | 33 | 97 | 60 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 33 | 37 | 0 |
| 12 | 392 | 2183 | 88 | 709 | 389 | 119 | 0 | 32 | 1 | 1 | 209 | 0 | 158 | 76 | 0 |
| 13 | 0 | 0 | 0 | 229 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 9 | 24 | 1 | 20 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 16 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO 2031 J1d - AM PEAK
HGV (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 46 | 0 | 35 | 0 |
| 2 | 0 | 0 | 0 | 14 | 104 | 23 | 12 | 0 | 0 | 0 | 4 | 407 | 0 | 30 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 16 | 16 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 0 | 40 | 0 |
| 5 | 0 | 11 | 0 | 0 | 0 | 180 | 0 | 0 | 0 | 0 | 0 | 7 | 69 | 0 | 0 |
| 6 | 0 | 1 | 0 | 0 | 116 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 3 |
| 7 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | 3 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 11 | 0 | 41 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
| 12 | 49 | 589 | 4 | 79 | 145 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 27 | 0 | 0 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 18 | 30 | 2 | 42 | 8 | 0 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO: 2031 WITH RAIL CENTRAL + MITIGATION DEVELOPMENT CASE
FLOWSET: J3

SCENARIO 2031 J1d - PM PEAK
LIGHTS (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 48 | 9 | 841 | 2 | 19 | 0 | 0 | 0 | 0 | 10 | 191 | 0 | 25 | 0 |
| 2 | 73 | 0 | 25 | 1691 | 178 | 491 | 0 | 0 | 0 | 0 | 91 | 2397 | 105 | 51 | 0 |
| 3 | 21 | 84 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 18 | 3 | 0 | 0 |
| 4 | 929 | 936 | 87 | 0 | 116 | 3 | 0 | 2 | 0 | 0 | 35 | 1050 | 98 | 116 | 0 |
| 5 | 1 | 269 | 3 | 75 | 0 | 1113 | 0 | 2 | 0 | 0 | 276 | 794 | 0 | 0 | 0 |
| 6 | 8 | 139 | 11 | 13 | 928 | 0 | 0 | 1 | 1 | 1 | 1 | 160 | 3 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 |
| 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 11 | 48 | 427 | 21 | 100 | 120 | 1 | 0 | 2 | 0 | 0 | 2 | 13 | 14 | 0 | 0 |
| 12 | 323 | 2683 | 27 | 810 | 255 | 219 | 53 | 9 | 0 | 0 | 176 | 21 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 78 | 83 | 4 | 391 | 0 | 20 | 0 | 0 | 0 | 0 | 18 | 178 | 21 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

No Zone 15 in Rail Central proposals - removed flows for modelling

SCENARIO 2031 J1d - PM PEAK
HGV (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 30 | 0 |
| 2 | 0 | 0 | 0 | 97 | 25 | 23 | 0 | 0 | 0 | 0 | 0 | 406 | 0 | 35 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 1 | 0 |
| 4 | 26 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 41 | 0 |
| 5 | 0 | 14 | 0 | 1 | 0 | 176 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 0 | 0 |
| 6 | 0 | 24 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 49 | 416 | 23 | 74 | 57 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 10 | 10 | 1 | 44 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 28 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO 2031 J1d - PM PEAK
LIGHTS (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 48 | 9 | 841 | 2 | 19 | 0 | 0 | 0 | 0 | 10 | 191 | 0 | 25 | 0 |
| 2 | 73 | 0 | 25 | 1691 | 178 | 491 | 0 | 0 | 0 | 0 | 91 | 2397 | 105 | 51 | 0 |
| 3 | 21 | 84 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 18 | 3 | 0 | 0 |
| 4 | 929 | 936 | 87 | 0 | 116 | 3 | 0 | 2 | 0 | 0 | 35 | 1050 | 98 | 116 | 0 |
| 5 | 1 | 269 | 3 | 75 | 0 | 1113 | 0 | 2 | 0 | 0 | 276 | 794 | 0 | 0 | 0 |
| 6 | 8 | 139 | 11 | 13 | 928 | 0 | 0 | 1 | 1 | 1 | 1 | 160 | 3 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 |
| 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 11 | 48 | 427 | 21 | 100 | 120 | 1 | 0 | 2 | 0 | 0 | 2 | 13 | 14 | 0 | 0 |
| 12 | 323 | 2683 | 27 | 810 | 255 | 219 | 53 | 9 | 0 | 0 | 176 | 21 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 78 | 83 | 4 | 391 | 0 | 20 | 0 | 0 | 0 | 0 | 18 | 178 | 21 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO 2031 J1d - PM PEAK
HGV (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 30 | 0 |
| 2 | 0 | 0 | 0 | 97 | 25 | 23 | 0 | 0 | 0 | 0 | 0 | 406 | 0 | 35 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 1 | 0 |
| 4 | 26 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 41 | 0 |
| 5 | 0 | 14 | 0 | 1 | 0 | 176 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 0 | 0 |
| 6 | 0 | 24 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 49 | 416 | 23 | 74 | 57 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 10 | 10 | 1 | 44 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 28 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO: 2031 WITH RAIL CENTRAL + MITIGATION DEVELOPMENT CASE
FLOWSET: J3

SCENARIO 2031 J1d - PM PEAK
LIGHTS (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 48 | 9 | 841 | 2 | 19 | 0 | 0 | 0 | 0 | 10 | 191 | 0 | 25 | 0 |
| 2 | 73 | 0 | 25 | 1691 | 178 | 491 | 0 | 0 | 0 | 0 | 91 | 2397 | 105 | 51 | 0 |
| 3 | 21 | 84 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 18 | 3 | 0 | 0 |
| 4 | 929 | 936 | 87 | 0 | 116 | 3 | 0 | 2 | 0 | 0 | 35 | 1050 | 98 | 116 | 0 |
| 5 | 1 | 269 | 3 | 75 | 0 | 1113 | 0 | 2 | 0 | 0 | 276 | 794 | 0 | 0 | 0 |
| 6 | 8 | 139 | 11 | 13 | 928 | 0 | 0 | 1 | 1 | 1 | 1 | 160 | 3 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 |
| 8 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 11 | 48 | 427 | 21 | 100 | 120 | 1 | 0 | 2 | 0 | 0 | 2 | 13 | 14 | 0 | 0 |
| 12 | 323 | 2683 | 27 | 810 | 255 | 219 | 53 | 9 | 0 | 0 | 176 | 21 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 78 | 83 | 4 | 391 | 0 | 20 | 0 | 0 | 0 | 0 | 18 | 178 | 21 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

SCENARIO 2031 J1d - PM PEAK
HGV (VEH)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 30 | 0 |
| 2 | 0 | 0 | 0 | 97 | 25 | 23 | 0 | 0 | 0 | 0 | 0 | 406 | 0 | 35 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 1 | 0 |
| 4 | 26 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 41 | 0 |
| 5 | 0 | 14 | 0 | 1 | 0 | 176 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 0 | 0 |
| 6 | 0 | 24 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 49 | 416 | 23 | 74 | 57 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 10 | 10 | 1 | 44 | 0 | 4 | 0 | 0 | 0 | 0 | 1 | 28 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

## NSTM to VISSIM - Flow Matrix Calculations

Location of NSTM Outputs:
*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\180202 ADC-2031 Mit+RC NSTM Flows & LINSIG*
**NSTM2 2031 J3 Micro Sim Cordon Matrices - Adjusted v1**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\non TfL\02 REF CASE\Traffic Flows
**170526 15 MIN FACTORS**

### Calculation Details

Conversion of NSTM data into:
1) Warm Up, Peak and Cool Down Matrices
2) 15 minute matrices within Warm Up, Peak and Cool Down periods.

Conversion based on observed turning counts, with factors to split the traffic appropriately.

| SCENARIO: | 2031 WITH RAIL CENTRAL + MITIGATION DEVELOPMENT CASE |
|---|---|
| FLOWSET: | J3 |

**SCENARIO 2031 D1 - AM PEAK**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 137 | 16 | 527 | 7 | 29 | 0 | 0 | 0 | 0 | 10 | 372 | 0 | 100 | 0 |
| 2 | 161 | 0 | 51 | 1267 | 196 | 273 | 0 | 0 | 0 | 0 | 42 | 1691 | 252 | 115 | 0 |
| 3 | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 36 | 23 | 2 | 0 |
| 4 | 787 | 840 | 35 | 1 | 124 | 30 | 0 | 1 | 0 | 0 | 27 | 1087 | 54 | 355 | 0 |
| 5 | 0 | 76 | 14 | 350 | 0 | 860 | 0 | 1 | 0 | 0 | 283 | 660 | 4 | 2 | 0 |
| 6 | 28 | 103 | 6 | 20 | 1932 | 0 | 0 | 1 | 0 | 0 | 0 | 249 | 6 | 12 | 0 |
| 7 | 1 | 0 | 0 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 38 | 16 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 1 | 0 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 105 | 490 | 33 | 97 | 60 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 33 | 37 | 0 |
| 12 | 392 | 2183 | 88 | 709 | 389 | 119 | 0 | 32 | 0 | 2 | 209 | 0 | 158 | 76 | 0 |
| 13 | 0 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 9 | 24 | 1 | 30 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 16 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| WARM UP FACTOR = | 0.690 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0715)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 95 | 11 | 364 | 4 | 20 | 0 | 0 | 0 | 0 | 7 | 257 | 0 | 69 | 0 |
| 2 | 111 | 0 | 35 | 874 | 135 | 189 | 0 | 0 | 0 | 0 | 29 | 1167 | 174 | 79 | 0 |
| 3 | 17 | 15 | 0 | 18 | 12 | 11 | 0 | 0 | 0 | 0 | 2 | 25 | 16 | 1 | 0 |
| 4 | 543 | 580 | 24 | 1 | 86 | 21 | 0 | 1 | 0 | 0 | 19 | 750 | 37 | 245 | 0 |
| 5 | 0 | 53 | 9 | 241 | 0 | 593 | 0 | 0 | 0 | 0 | 195 | 456 | 2 | 1 | 0 |
| 6 | 19 | 71 | 4 | 14 | 1333 | 0 | 0 | 1 | 0 | 0 | 0 | 172 | 4 | 8 | 0 |
| 7 | 1 | 0 | 0 | 5 | 1 | 1 | 0 | 0 | 0 | 0 | 26 | 11 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 72 | 338 | 23 | 67 | 41 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 23 | 26 | 0 |
| 12 | 270 | 1506 | 61 | 463 | 269 | 82 | 0 | 22 | 0 | 2 | 144 | 0 | 109 | 52 | 0 |
| 13 | 0 | 0 | 0 | 227 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 6 | 16 | 1 | 21 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 11 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| 0615-0630 FACTOR | 0.191 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0630)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 18 | 2 | 70 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 49 | 0 | 13 | 0 |
| 2 | 21 | 0 | 7 | 167 | 26 | 36 | 0 | 0 | 0 | 0 | 6 | 223 | 33 | 15 | 0 |
| 3 | 3 | 3 | 0 | 3 | 2 | 2 | 0 | 0 | 0 | 0 | 0 | 5 | 3 | 0 | 0 |
| 4 | 104 | 111 | 5 | 0 | 16 | 4 | 0 | 0 | 0 | 0 | 4 | 143 | 7 | 47 | 0 |
| 5 | 0 | 10 | 2 | 46 | 0 | 113 | 0 | 0 | 0 | 0 | 37 | 87 | 0 | 0 | 0 |
| 6 | 4 | 14 | 1 | 3 | 255 | 0 | 0 | 0 | 0 | 0 | 0 | 33 | 1 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 2 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 14 | 65 | 4 | 13 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 5 | 0 |
| 12 | 52 | 288 | 12 | 93 | 51 | 16 | 16 | 4 | 0 | 0 | 28 | 0 | 21 | 10 | 0 |
| 13 | 0 | 0 | 0 | 43 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 1 | 3 | 0 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 2 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0630-0645 FACTOR | 0.228 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0630-0645)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 22 | 2 | 88 | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 59 | 0 | 16 | 0 |
| 2 | 25 | 0 | 8 | 199 | 31 | 43 | 0 | 0 | 0 | 0 | 0 | 266 | 40 | 18 | 0 |
| 3 | 4 | 3 | 0 | 4 | 3 | 3 | 0 | 0 | 0 | 0 | 1 | 6 | 4 | 0 | 0 |
| 4 | 124 | 132 | 6 | 0 | 20 | 5 | 0 | 0 | 0 | 0 | 4 | 171 | 9 | 56 | 0 |
| 5 | 0 | 12 | 2 | 55 | 0 | 135 | 0 | 0 | 0 | 0 | 45 | 104 | 1 | 0 | 0 |
| 6 | 4 | 16 | 1 | 3 | 304 | 0 | 0 | 0 | 0 | 0 | 0 | 39 | 1 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 16 | 77 | 5 | 15 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 6 | 0 |
| 12 | 62 | 343 | 14 | 112 | 61 | 19 | 0 | 5 | 0 | 0 | 33 | 0 | 25 | 12 | 0 |
| 13 | 0 | 0 | 0 | 52 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 1 | 4 | 0 | 1 | 5 | 0 | 1 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0645-0700 FACTOR | 0.271 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0645-0700)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 26 | 3 | 99 | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 70 | 0 | 19 | 0 |
| 2 | 30 | 0 | 9 | 237 | 37 | 51 | 0 | 0 | 0 | 0 | 8 | 316 | 47 | 22 | 0 |
| 3 | 5 | 4 | 0 | 5 | 3 | 3 | 0 | 0 | 0 | 0 | 1 | 7 | 4 | 0 | 0 |
| 4 | 147 | 157 | 7 | 0 | 23 | 6 | 0 | 0 | 0 | 0 | 5 | 203 | 10 | 66 | 0 |
| 5 | 0 | 14 | 3 | 65 | 0 | 161 | 0 | 0 | 0 | 0 | 53 | 123 | 1 | 0 | 0 |
| 6 | 5 | 19 | 1 | 4 | 361 | 0 | 0 | 0 | 0 | 0 | 0 | 47 | 1 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 20 | 92 | 6 | 18 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 7 | 0 |
| 12 | 73 | 408 | 16 | 133 | 73 | 22 | 0 | 6 | 0 | 0 | 39 | 0 | 30 | 14 | 0 |
| 13 | 0 | 0 | 0 | 62 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 2 | 4 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0700-0715 FACTOR | 0.310 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0700-0730)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 29 | 3 | 113 | 1 | 6 | 0 | 0 | 0 | 0 | 2 | 80 | 0 | 21 | 0 |
| 2 | 35 | 0 | 10 | 271 | 42 | 58 | 0 | 0 | 0 | 0 | 9 | 362 | 54 | 25 | 0 |
| 3 | 5 | 5 | 0 | 5 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 8 | 5 | 0 | 0 |
| 4 | 168 | 180 | 8 | 0 | 27 | 6 | 0 | 0 | 0 | 0 | 6 | 232 | 12 | 76 | 0 |
| 5 | 0 | 16 | 3 | 75 | 0 | 184 | 0 | 0 | 0 | 0 | 61 | 141 | 1 | 0 | 0 |
| 6 | 6 | 22 | 1 | 4 | 413 | 0 | 0 | 0 | 0 | 0 | 0 | 53 | 1 | 3 | 0 |
| 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 3 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 22 | 105 | 7 | 21 | 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 8 | 0 |
| 12 | 84 | 467 | 19 | 152 | 83 | 25 | 0 | 7 | 0 | 0 | 45 | 0 | 34 | 16 | 0 |
| 13 | 0 | 0 | 0 | 70 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 2 | 5 | 0 | 6 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0715)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 137 | 16 | 527 | 7 | 29 | 0 | 0 | 0 | 0 | 10 | 372 | 0 | 100 | 0 |
| 2 | 161 | 0 | 51 | 1267 | 196 | 273 | 0 | 0 | 0 | 0 | 42 | 1691 | 252 | 115 | 0 |
| 3 | 25 | 22 | 0 | 26 | 18 | 17 | 0 | 0 | 0 | 0 | 3 | 36 | 23 | 2 | 0 |
| 4 | 787 | 840 | 35 | 1 | 124 | 30 | 0 | 1 | 0 | 0 | 27 | 1087 | 54 | 355 | 0 |
| 5 | 0 | 76 | 14 | 350 | 0 | 860 | 0 | 1 | 0 | 0 | 283 | 660 | 4 | 2 | 0 |
| 6 | 28 | 103 | 6 | 20 | 1932 | 0 | 0 | 1 | 0 | 0 | 0 | 249 | 6 | 12 | 0 |
| 7 | 1 | 0 | 0 | 7 | 2 | 1 | 0 | 0 | 0 | 0 | 38 | 16 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 1 | 0 | 0 | 2 | 1 | 4 | 0 | 0 | 0 | 0 | 0 | 33 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 105 | 490 | 33 | 97 | 60 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 33 | 37 | 0 |
| 12 | 392 | 2183 | 88 | 709 | 389 | 119 | 0 | 32 | 0 | 2 | 209 | 0 | 158 | 76 | 0 |
| 13 | 0 | 0 | 0 | 329 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 9 | 24 | 1 | 30 | 1 | 4 | 0 | 0 | 0 | 0 | 1 | 16 | 1 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| 0715-0730 FACTOR | 0.237 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (0715-0730)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 32 | 4 | 125 | 2 | 7 | 0 | 0 | 0 | 0 | 2 | 88 | 0 | 24 | 0 |
| 2 | 38 | 0 | 12 | 300 | 46 | 65 | 0 | 0 | 0 | 0 | 10 | 401 | 60 | 27 | 0 |
| 3 | 6 | 5 | 0 | 6 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 9 | 5 | 0 | 0 |
| 4 | 187 | 199 | 8 | 0 | 29 | 7 | 0 | 0 | 0 | 0 | 7 | 258 | 13 | 84 | 0 |
| 5 | 0 | 18 | 3 | 83 | 0 | 204 | 0 | 0 | 0 | 0 | 67 | 156 | 1 | 0 | 0 |
| 6 | 7 | 24 | 1 | 5 | 458 | 0 | 0 | 0 | 0 | 0 | 0 | 59 | 1 | 3 | 0 |
| 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 25 | 116 | 8 | 23 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 9 | 0 |
| 12 | 93 | 527 | 21 | 168 | 92 | 28 | 0 | 8 | 0 | 1 | 50 | 0 | 37 | 18 | 0 |
| 13 | 0 | 0 | 0 | 78 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 2 | 6 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0730-0745 FACTOR | 0.259 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (0730-0745)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 33 | 4 | 128 | 2 | 7 | 0 | 0 | 0 | 0 | 2 | 90 | 0 | 24 | 0 |
| 2 | 39 | 0 | 12 | 308 | 47 | 66 | 0 | 0 | 0 | 0 | 10 | 411 | 61 | 28 | 0 |
| 3 | 6 | 5 | 0 | 6 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 9 | 6 | 0 | 0 |
| 4 | 191 | 204 | 9 | 0 | 30 | 7 | 0 | 0 | 0 | 0 | 7 | 264 | 13 | 86 | 0 |
| 5 | 0 | 19 | 3 | 85 | 0 | 209 | 0 | 0 | 0 | 0 | 69 | 160 | 1 | 0 | 0 |
| 6 | 7 | 25 | 1 | 5 | 469 | 0 | 0 | 0 | 0 | 0 | 0 | 60 | 2 | 3 | 0 |
| 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 25 | 119 | 8 | 23 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 9 | 0 |
| 12 | 95 | 530 | 21 | 172 | 95 | 29 | 0 | 8 | 0 | 1 | 51 | 0 | 38 | 18 | 0 |
| 13 | 0 | 0 | 0 | 80 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 2 | 6 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| COOL DOWN FACTOR = | 0.459 |
|---|---|

**VISSIM MATRIX - LIGHTS - COOL DOWN (0815-0845)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 63 | 7 | 242 | 3 | 13 | 0 | 0 | 0 | 0 | 4 | 171 | 0 | 46 | 0 |
| 2 | 74 | 0 | 23 | 581 | 90 | 125 | 0 | 0 | 0 | 0 | 19 | 776 | 115 | 53 | 0 |
| 3 | 11 | 10 | 0 | 12 | 8 | 8 | 0 | 0 | 0 | 0 | 2 | 17 | 11 | 1 | 0 |
| 4 | 361 | 386 | 16 | 0 | 57 | 14 | 0 | 0 | 0 | 0 | 13 | 499 | 25 | 163 | 0 |
| 5 | 0 | 35 | 6 | 161 | 0 | 395 | 0 | 0 | 0 | 0 | 130 | 303 | 2 | 1 | 0 |
| 6 | 13 | 47 | 3 | 9 | 887 | 0 | 0 | 1 | 0 | 0 | 0 | 114 | 3 | 6 | 0 |
| 7 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 17 | 7 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 15 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 48 | 225 | 15 | 44 | 27 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 15 | 17 | 0 |
| 12 | 180 | 1002 | 40 | 325 | 179 | 54 | 0 | 15 | 0 | 1 | 96 | 0 | 72 | 35 | 0 |
| 13 | 0 | 0 | 0 | 151 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 4 | 11 | 0 | 14 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0815-0830 FACTOR | 0.502 |
|---|---|

**VISSIM MATRIX - LIGHTS - COOL DOWN (0815-0830)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 32 | 4 | 122 | 1 | 7 | 0 | 0 | 0 | 0 | 2 | 86 | 0 | 23 | 0 |
| 2 | 37 | 0 | 12 | 292 | 45 | 63 | 0 | 0 | 0 | 0 | 10 | 390 | 58 | 26 | 0 |
| 3 | 6 | 5 | 0 | 6 | 4 | 4 | 0 | 0 | 0 | 0 | 1 | 8 | 5 | 0 | 0 |
| 4 | 181 | 194 | 8 | 0 | 29 | 7 | 0 | 0 | 0 | 0 | 6 | 250 | 12 | 82 | 0 |
| 5 | 0 | 18 | 3 | 81 | 0 | 198 | 0 | 0 | 0 | 0 | 65 | 152 | 1 | 0 | 0 |
| 6 | 6 | 24 | 1 | 5 | 445 | 0 | 0 | 0 | 0 | 0 | 0 | 57 | 1 | 3 | 0 |
| 7 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 4 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 24 | 112 | 8 | 22 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 8 | 0 | 0 |
| 12 | 90 | 499 | 20 | 162 | 89 | 27 | 0 | 7 | 0 | 1 | 48 | 0 | 36 | 17 | 0 |
| 13 | 0 | 0 | 0 | 75 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 2 | 5 | 0 | 7 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0830-0845 FACTOR | 0.498 |
|---|---|

**VISSIM MATRIX - LIGHTS - COOL DOWN (0830-0845)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 31 | 4 | 121 | 1 | 7 | 0 | 0 | 0 | 0 | 2 | 85 | 0 | 23 | 0 |
| 2 | 37 | 0 | 12 | 290 | 45 | 62 | 0 | 0 | 0 | 0 | 10 | 386 | 57 | 26 | 0 |
| 3 | 6 | 5 | 0 | 6 | 4 | 4 | 0 | 0 |

**Title:** 180212 2031 RAIL CENTRAL VISSIM FLOWS.xlsx
**Sheet Name:** 2031 MIT FLOWS_AM_HEAVIES
**Date:** 28/02/2018

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

**NSTM to VISSIM - Flow Matrix Calculations**

Location of NSTM Outputs:
*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\180202 ADC-2031 Mit+RC NSTM Flows & LINSIG*
**NSTM2 2031 J3 Micro Sim Cordon Matrices - Adjusted v1**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\non TfL\02 REF CASE\Traffic Flows
**170526 15 MIN FACTORS**

## Calculation Details

Conversion of NSTM data into:
1) Warm Up, Peak and Cool Down Matrices
2) 15 minute matrices within Warm Up, Peak and Cool Down periods.

Conversion based on observed turning counts, with factors to split the traffic appropriately.

| SCENARIO: | 2031 WITH RAIL CENTRAL + MITIGATION DEVELOPMENT CASE |
|---|---|
| FLOWSET: | J3 |

**SCENARIO 2031 D1 - AM PEAK**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 4 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 46 | 0 | 35 | 0 |
| 2 | 0 | 0 | 14 | 104 | 23 | 32 | 0 | 0 | 0 | 0 | 4 | 407 | 0 | 30 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4 | 16 | 38 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 201 | 0 | 40 | 0 |
| 5 | 0 | 15 | 0 | 9 | 0 | 180 | 0 | 0 | 0 | 0 | 7 | 69 | 0 | 0 | 0 |
| 6 | 0 | 1 | 0 | 0 | 134 | 0 | 0 | 0 | 0 | 0 | 0 | 29 | 0 | 3 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 16 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 41 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 12 | 49 | 589 | 4 | 79 | 145 | 2 | 0 | 9 | 0 | 4 | 0 | 0 | 0 | 27 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 18 | 30 | 2 | 42 | 8 | 4 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| WARM UP FACTOR = | 0.690 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0715)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 3 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 31 | 0 | 24 | 0 |
| 2 | 0 | 0 | 10 | 72 | 16 | 22 | 0 | 0 | 0 | 0 | 3 | 281 | 0 | 21 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 4 | 11 | 26 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 138 | 0 | 28 | 0 |
| 5 | 0 | 11 | 0 | 6 | 0 | 124 | 0 | 0 | 0 | 0 | 5 | 48 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 20 | 0 | 2 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 28 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 12 | 34 | 406 | 3 | 54 | 100 | 1 | 0 | 6 | 0 | 3 | 0 | 0 | 0 | 19 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 13 | 21 | 2 | 29 | 6 | 3 | 0 | 0 | 0 | 0 | 1 | 17 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| 0615-0630 FACTOR | 0.191 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0630)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 5 | 0 |
| 2 | 0 | 0 | 2 | 14 | 3 | 4 | 0 | 0 | 0 | 0 | 1 | 54 | 0 | 4 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 2 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 5 | 0 |
| 5 | 0 | 2 | 0 | 1 | 0 | 24 | 0 | 0 | 0 | 0 | 1 | 9 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 6 | 78 | 1 | 10 | 19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 2 | 4 | 0 | 6 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0630-0645 FACTOR | 0.228 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0630-0645)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 6 | 0 |
| 2 | 0 | 0 | 2 | 16 | 4 | 5 | 0 | 0 | 0 | 0 | 1 | 64 | 0 | 5 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | 0 | 6 | 0 |
| 5 | 0 | 2 | 0 | 1 | 0 | 28 | 0 | 0 | 0 | 0 | 1 | 11 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 8 | 93 | 1 | 12 | 23 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 4 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 1 | 5 | 0 | 7 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0645-0700 FACTOR | 0.271 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0645-0700)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 7 | 0 |
| 2 | 0 | 0 | 0 | 19 | 4 | 6 | 0 | 0 | 0 | 0 | 1 | 76 | 0 | 6 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38 | 0 | 7 | 0 |
| 5 | 0 | 3 | 0 | 2 | 0 | 34 | 0 | 0 | 0 | 0 | 1 | 13 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 25 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 9 | 110 | 1 | 15 | 27 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 5 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 3 | 6 | 0 | 8 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0700-0715 FACTOR | 0.310 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (0700-0730)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 7 | 0 |
| 2 | 0 | 0 | 3 | 22 | 5 | 7 | 0 | 0 | 0 | 0 | 1 | 87 | 0 | 6 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 3 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 43 | 0 | 9 | 0 |
| 5 | 0 | 3 | 0 | 2 | 0 | 39 | 0 | 0 | 0 | 0 | 1 | 15 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 29 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 10 | 126 | 1 | 17 | 31 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 6 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 4 | 6 | 1 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - WARM UP (0615-0715)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| COOL DOWN FACTOR = | 0.459 |
|---|---|

**VISSIM MATRIX - LIGHTS - COOL DOWN (0815-0845)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 21 | 0 | 16 | 0 |
| 2 | 0 | 0 | 6 | 48 | 11 | 14 | 0 | 0 | 0 | 0 | 2 | 187 | 0 | 14 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 7 | 17 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 92 | 0 | 18 | 0 |
| 5 | 0 | 7 | 0 | 4 | 0 | 83 | 0 | 0 | 0 | 0 | 3 | 32 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 61 | 0 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 19 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 12 | 22 | 270 | 2 | 36 | 67 | 1 | 0 | 4 | 0 | 2 | 0 | 0 | 0 | 12 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 8 | 14 | 1 | 19 | 4 | 2 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0815-0830 FACTOR | 0.502 |
|---|---|

**VISSIM MATRIX - LIGHTS - COOL DOWN (0815-0830)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 8 | 0 |
| 2 | 0 | 0 | 3 | 24 | 5 | 7 | 0 | 0 | 0 | 0 | 1 | 94 | 0 | 7 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 9 | 0 |
| 5 | 0 | 4 | 0 | 2 | 0 | 42 | 0 | 0 | 0 | 0 | 2 | 16 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 11 | 135 | 1 | 18 | 33 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 6 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 4 | 7 | 1 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0830-0845 FACTOR | 0.498 |
|---|---|

**VISSIM MATRIX - LIGHTS - COOL DOWN (0830-0845)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 8 | 0 |
| 2 | 0 | 0 | 3 | 24 | 5 | 7 | 0 | 0 | 0 | 0 | 1 | 93 | 0 | 7 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 46 | 0 | 9 | 0 |
| 5 | 0 | 4 | 0 | 2 | 0 | 41 | 0 | 0 | 0 | 0 | 2 | 16 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 9 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 11 | 135 | 1 | 18 | 33 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 6 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 4 | 7 | 1 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - PEAK (0715-0730)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 8 | 0 |
| 2 | 0 | 0 | 3 | 25 | 6 | 7 | 0 | 0 | 0 | 0 | 1 | 97 | 0 | 7 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 4 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 48 | 0 | 9 | 0 |
| 5 | 0 | 4 | 0 | 2 | 0 | 43 | 0 | 0 | 0 | 0 | 2 | 16 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 12 | 140 | 1 | 19 | 34 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 6 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 4 | 7 | 1 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0715-0730 FACTOR | 0.237 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (0730-0745)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 9 | 0 |
| 2 | 0 | 0 | 4 | 27 | 6 | 8 | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 8 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 4 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 10 | 0 |
| 5 | 0 | 4 | 0 | 2 | 0 | 47 | 0 | 0 | 0 | 0 | 2 | 18 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 12 | 13 | 154 | 1 | 21 | 38 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 7 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 5 | 8 | 1 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0730-0745 FACTOR | 0.259 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (0730-0745)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 12 | 0 | 9 | 0 |
| 2 | 0 | 0 | 4 | 27 | 6 | 8 | 0 | 0 | 0 | 0 | 0 | 105 | 0 | 8 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 4 | 10 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 52 | 0 | 10 | 0 |
| 5 | 0 | 4 | 0 | 2 | 0 | 47 | 0 | 0 | 0 | 0 | 2 | 18 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 35 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 1 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 11 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| 12 | 13 | 154 | 1 | 21 | 38 | 1 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 7 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 5 | 8 | 1 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 0630-0645 FACTOR | 0.243 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (0800-0815)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 11 | 0 | 9 | 0 |
| 2 | 0 | 0 | 3 | 25 | 6 | 8 | 0 | 0 | 0 | 0 | 1 | 99 | 0 | 7 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 4 | 9 | 0 | 0 | 

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

## NSTM to VISSIM - Flow Matrix Calculations

Location of NSTM Outputs:
*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\180202 ADC-2031 Mit+RC NSTM Flows & LINSIG*
**NSTM2 2031 J3 Micro Sim Cordon Matrices - Adjusted v1**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\non TfL\02 REF CASE\Traffic Flows
**170526 15 MIN FACTORS**

### Calculation Details

Conversion of NSTM data into:
1) Warm Up, Peak and Cool Down Matrices
2) 15 minute matrices within Warm Up, Peak and Cool Down periods.

Conversion based on observed turning counts, with factors to split the traffic appropriately.

| SCENARIO: | 2031 WITH RAIL CENTRAL + MITIGATION DEVELOPMENT CASE |
|---|---|
| FLOWSET: | J3 |

**SCENARIO 2031 D1 - PM PEAK**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 48 | 9 | 841 | 2 | 19 | 0 | 0 | 0 | 0 | 10 | 195 | 0 | 25 | 0 |
| 2 | 73 | 0 | 25 | 1095 | 178 | 401 | 0 | 0 | 0 | 0 | 91 | 2397 | 105 | 51 | 0 |
| 3 | 21 | 84 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 18 | 3 | 0 | 0 |
| 4 | 929 | 926 | 87 | 0 | 116 | 3 | 0 | 2 | 0 | 2 | 35 | 1050 | 98 | 114 | 0 |
| 5 | 1 | 269 | 3 | 75 | 0 | 1113 | 0 | 2 | 0 | 1 | 276 | 794 | 0 | 0 | 0 |
| 6 | 8 | 139 | 11 | 13 | 928 | 0 | 0 | 3 | 0 | 1 | 1 | 160 | 3 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 14 | 9 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 15 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 48 | 427 | 21 | 100 | 120 | 1 | 0 | 5 | 0 | 2 | 0 | 2 | 13 | 14 | 0 |
| 12 | 323 | 2683 | 27 | 816 | 255 | 219 | 0 | 107 | 0 | 16 | 7 | 0 | 6 | 24 | 0 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 78 | 83 | 4 | 391 | 9 | 20 | 0 | 0 | 0 | 0 | 18 | 178 | 21 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

WARM UP FACTOR = 0.889

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1645)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 43 | 8 | 747 | 2 | 17 | 0 | 0 | 0 | 0 | 9 | 173 | 0 | 22 | 0 |
| 2 | 65 | 0 | 22 | 974 | 158 | 356 | 0 | 0 | 0 | 0 | 80 | 2131 | 93 | 45 | 0 |
| 3 | 18 | 75 | 0 | 29 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 16 | 3 | 0 | 0 |
| 4 | 825 | 823 | 77 | 0 | 103 | 3 | 0 | 2 | 0 | 2 | 32 | 933 | 87 | 101 | 0 |
| 5 | 1 | 239 | 3 | 67 | 0 | 989 | 0 | 1 | 0 | 0 | 245 | 706 | 0 | 0 | 0 |
| 6 | 8 | 124 | 9 | 11 | 825 | 0 | 0 | 2 | 0 | 1 | 1 | 143 | 3 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 13 | 8 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 13 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 43 | 380 | 18 | 89 | 106 | 1 | 0 | 4 | 0 | 1 | 0 | 2 | 11 | 12 | 0 |
| 12 | 287 | 2385 | 24 | 721 | 226 | 195 | 0 | 95 | 0 | 14 | 6 | 0 | 5 | 21 | 0 |
| 13 | 0 | 0 | 0 | 136 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 70 | 74 | 4 | 348 | 8 | 18 | 0 | 0 | 0 | 0 | 16 | 158 | 19 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |

1545-1600 FACTOR 0.227

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1600)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 10 | 2 | 170 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 39 | 0 | 5 | 0 |
| 2 | 15 | 0 | 5 | 221 | 36 | 81 | 0 | 0 | 0 | 0 | 18 | 484 | 21 | 10 | 0 |
| 3 | 4 | 17 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| 4 | 187 | 187 | 18 | 0 | 23 | 1 | 0 | 0 | 0 | 0 | 7 | 212 | 20 | 23 | 0 |
| 5 | 0 | 54 | 1 | 15 | 0 | 225 | 0 | 0 | 0 | 0 | 56 | 160 | 0 | 0 | 0 |
| 6 | 2 | 28 | 2 | 3 | 187 | 0 | 0 | 1 | 0 | 0 | 0 | 32 | 1 | 0 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10 | 86 | 4 | 20 | 24 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 3 | 3 | 0 |
| 12 | 65 | 541 | 6 | 165 | 51 | 44 | 44 | 22 | 0 | 3 | 1 | 0 | 1 | 5 | 0 |
| 13 | 0 | 0 | 0 | 31 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 16 | 17 | 1 | 79 | 2 | 4 | 0 | 0 | 0 | 0 | 4 | 36 | 4 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

1600-1615 FACTOR 0.242

**VISSIM MATRIX - LIGHTS - WARM UP (1600-1615)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 10 | 2 | 181 | 0 | 4 | 0 | 0 | 0 | 0 | 2 | 42 | 0 | 5 | 0 |
| 2 | 16 | 0 | 5 | 236 | 38 | 86 | 0 | 0 | 0 | 0 | 19 | 516 | 23 | 11 | 0 |
| 3 | 4 | 18 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| 4 | 200 | 199 | 19 | 0 | 25 | 1 | 0 | 0 | 0 | 0 | 8 | 226 | 21 | 25 | 0 |
| 5 | 0 | 58 | 1 | 16 | 0 | 239 | 0 | 0 | 0 | 0 | 59 | 171 | 0 | 0 | 0 |
| 6 | 2 | 30 | 2 | 3 | 200 | 0 | 0 | 1 | 0 | 0 | 0 | 34 | 1 | 0 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 10 | 92 | 4 | 21 | 26 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 3 | 3 | 0 |
| 12 | 70 | 577 | 6 | 176 | 55 | 47 | 47 | 23 | 0 | 3 | 1 | 0 | 1 | 5 | 0 |
| 13 | 0 | 0 | 0 | 33 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 17 | 18 | 1 | 84 | 2 | 4 | 0 | 0 | 0 | 0 | 4 | 38 | 5 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

1615-1630 FACTOR 0.265

**VISSIM MATRIX - LIGHTS - WARM UP (1615-1630)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 11 | 2 | 198 | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 46 | 0 | 6 | 0 |
| 2 | 17 | 0 | 6 | 258 | 42 | 94 | 0 | 0 | 0 | 0 | 21 | 565 | 25 | 12 | 0 |
| 3 | 5 | 20 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| 4 | 219 | 218 | 20 | 0 | 27 | 1 | 0 | 0 | 0 | 0 | 8 | 247 | 23 | 27 | 0 |
| 5 | 0 | 63 | 1 | 18 | 0 | 262 | 0 | 0 | 0 | 0 | 65 | 187 | 0 | 0 | 0 |
| 6 | 2 | 33 | 2 | 3 | 219 | 0 | 0 | 1 | 0 | 0 | 0 | 38 | 1 | 0 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 11 | 101 | 5 | 24 | 28 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 3 | 0 |
| 12 | 76 | 632 | 6 | 192 | 60 | 52 | 52 | 25 | 0 | 4 | 2 | 0 | 1 | 6 | 0 |
| 13 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 18 | 20 | 1 | 92 | 2 | 5 | 0 | 0 | 0 | 0 | 4 | 42 | 5 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

1630-1645 FACTOR 0.266

**VISSIM MATRIX - LIGHTS - WARM UP (1630-1645)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 11 | 2 | 199 | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 46 | 0 | 6 | 0 |
| 2 | 17 | 0 | 6 | 259 | 42 | 95 | 0 | 0 | 0 | 0 | 21 | 567 | 25 | 12 | 0 |
| 3 | 5 | 20 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| 4 | 220 | 219 | 21 | 0 | 27 | 1 | 0 | 0 | 0 | 0 | 8 | 248 | 23 | 27 | 0 |
| 5 | 0 | 64 | 1 | 18 | 0 | 263 | 0 | 0 | 0 | 0 | 65 | 188 | 0 | 0 | 0 |
| 6 | 2 | 33 | 2 | 3 | 219 | 0 | 0 | 1 | 0 | 0 | 0 | 38 | 1 | 0 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 11 | 101 | 5 | 24 | 28 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 3 | 3 | 0 |
| 12 | 76 | 634 | 6 | 193 | 60 | 52 | 52 | 25 | 0 | 4 | 2 | 0 | 1 | 6 | 0 |
| 13 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 18 | 20 | 1 | 92 | 2 | 5 | 0 | 0 | 0 | 0 | 4 | 42 | 5 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1645)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**VISSIM MATRIX - LIGHTS - PEAK (1645-1745)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 48 | 9 | 841 | 2 | 19 | 0 | 0 | 0 | 0 | 10 | 195 | 0 | 25 | 0 |
| 2 | 73 | 0 | 25 | 1095 | 178 | 401 | 0 | 0 | 0 | 0 | 91 | 2397 | 105 | 51 | 0 |
| 3 | 21 | 84 | 0 | 33 | 2 | 1 | 0 | 0 | 0 | 0 | 2 | 18 | 3 | 0 | 0 |
| 4 | 929 | 926 | 87 | 0 | 116 | 3 | 0 | 2 | 0 | 2 | 35 | 1050 | 98 | 114 | 0 |
| 5 | 1 | 269 | 3 | 75 | 0 | 1113 | 0 | 2 | 0 | 1 | 276 | 794 | 0 | 0 | 0 |
| 6 | 8 | 139 | 11 | 13 | 928 | 0 | 0 | 3 | 0 | 1 | 1 | 160 | 3 | 2 | 0 |
| 7 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 14 | 9 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 0 | 0 | 0 | 1 | 15 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 48 | 427 | 21 | 100 | 120 | 1 | 0 | 5 | 0 | 2 | 0 | 2 | 13 | 14 | 0 |
| 12 | 323 | 2683 | 27 | 816 | 255 | 219 | 0 | 107 | 0 | 16 | 7 | 0 | 6 | 24 | 0 |
| 13 | 0 | 0 | 0 | 153 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 78 | 83 | 4 | 391 | 9 | 20 | 0 | 0 | 0 | 0 | 18 | 178 | 21 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

1645-1700 FACTOR 0.248

**VISSIM MATRIX - LIGHTS - PEAK (1645-1700)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 12 | 2 | 208 | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 48 | 0 | 6 | 0 |
| 2 | 18 | 0 | 6 | 272 | 44 | 99 | 0 | 0 | 0 | 0 | 22 | 595 | 26 | 13 | 0 |
| 3 | 5 | 21 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| 4 | 230 | 230 | 22 | 0 | 29 | 1 | 0 | 0 | 0 | 0 | 9 | 260 | 24 | 28 | 0 |
| 5 | 0 | 67 | 1 | 19 | 0 | 276 | 0 | 0 | 0 | 0 | 68 | 197 | 0 | 0 | 0 |
| 6 | 2 | 35 | 3 | 3 | 230 | 0 | 0 | 1 | 0 | 0 | 0 | 40 | 1 | 0 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 12 | 106 | 5 | 25 | 30 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 3 | 3 | 0 |
| 12 | 80 | 665 | 7 | 202 | 63 | 54 | 0 | 27 | 0 | 4 | 2 | 0 | 2 | 6 | 0 |
| 13 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 19 | 21 | 1 | 97 | 2 | 5 | 0 | 0 | 0 | 0 | 4 | 44 | 5 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

1700-1715 FACTOR 0.248

**VISSIM MATRIX - LIGHTS - PEAK (1700-1715)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 12 | 2 | 208 | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 48 | 0 | 6 | 0 |
| 2 | 18 | 0 | 6 | 272 | 44 | 99 | 0 | 0 | 0 | 0 | 22 | 595 | 26 | 13 | 0 |
| 3 | 5 | 21 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| 4 | 230 | 230 | 22 | 0 | 29 | 1 | 0 | 0 | 0 | 0 | 9 | 260 | 24 | 28 | 0 |
| 5 | 0 | 67 | 1 | 19 | 0 | 276 | 0 | 0 | 0 | 0 | 68 | 197 | 0 | 0 | 0 |
| 6 | 2 | 35 | 3 | 3 | 230 | 0 | 0 | 1 | 0 | 0 | 0 | 40 | 1 | 0 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 12 | 106 | 5 | 25 | 30 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 3 | 3 | 0 |
| 12 | 80 | 665 | 7 | 202 | 63 | 54 | 0 | 27 | 0 | 4 | 2 | 0 | 2 | 6 | 0 |
| 13 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 19 | 21 | 1 | 97 | 2 | 5 | 0 | 0 | 0 | 0 | 4 | 44 | 5 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

1715-1730 FACTOR 0.251

**VISSIM MATRIX - LIGHTS - PEAK (1715-1730)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 12 | 2 | 211 | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 49 | 0 | 6 | 0 |
| 2 | 18 | 0 | 6 | 275 | 45 | 101 | 0 | 0 | 0 | 0 | 23 | 602 | 26 | 13 | 0 |
| 3 | 5 | 21 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| 4 | 233 | 232 | 22 | 0 | 29 | 1 | 0 | 0 | 0 | 0 | 9 | 264 | 24 | 29 | 0 |
| 5 | 0 | 68 | 1 | 19 | 0 | 279 | 0 | 0 | 0 | 0 | 69 | 199 | 0 | 0 | 0 |
| 6 | 2 | 35 | 3 | 3 | 233 | 0 | 0 | 1 | 0 | 0 | 0 | 40 | 1 | 1 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 12 | 107 | 5 | 25 | 30 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 4 | 3 | 0 |
| 12 | 81 | 673 | 7 | 205 | 64 | 55 | 0 | 27 | 0 | 4 | 2 | 0 | 2 | 6 | 0 |
| 13 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 20 | 21 | 1 | 98 | 2 | 5 | 0 | 0 | 0 | 0 | 5 | 45 | 5 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

1730-1745 FACTOR 0.253

**VISSIM MATRIX - LIGHTS - PEAK (1730-1745)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 12 | 2 | 213 | 1 | 5 | 0 | 0 | 0 | 0 | 2 | 49 | 0 | 6 | 0 |
| 2 | 18 | 0 | 6 | 277 | 45 | 101 | 0 | 0 | 0 | 0 | 23 | 607 | 26 | 13 | 0 |
| 3 | 5 | 21 | 0 | 8 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 1 | 0 | 0 |
| 4 | 235 | 234 | 22 | 0 | 29 | 1 | 0 | 0 | 0 | 0 | 9 | 266 | 25 | 29 | 0 |
| 5 | 0 | 68 | 1 | 19 | 0 | 282 | 0 | 0 | 0 | 0 | 70 | 201 | 0 | 0 | 0 |
| 6 | 2 | 35 | 3 | 3 | 235 | 0 | 0 | 1 | 0 | 0 | 0 | 41 | 1 | 1 | 0 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 12 | 108 | 5 | 25 | 30 | 0 | 0 | 1 | 0 | 0 | 0 | 3 | 4 | 3 | 0 |
| 12 | 82 | 679 | 7 | 206 | 64 | 56 | 0 | 27 | 0 | 4 | 2 | 0 | 2 | 6 | 0 |
| 13 | 0 | 0 | 0 | 39 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 20 | 21 | 1 | 99 | 2 | 5 | 0 | 0 | 0 | 0 | 5 | 45 | 5 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

COOL DOWN FACTOR = 0.470

**VISSIM MATRIX - LIGHTS - COOL DOWN (1745-1815)**
**LIGHTS (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 23 | 4 | 395 | 1 | 9 | 0 | 0 | 0 | 0 | 5 | 92 | 0 | 12 | 0 |
| 2 | 34 | 0 | 12 | 515 | 84 | 188 | 0 | 0 | 0 | 0 | 43 | 1127 | 49 | 24 | 0 |
| 3 | 10 | 40 | 0 | 16 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 8 | 1 | 0 | 0 |
| 4 | 436 | 435 | 41 | 0 | 55 | 2 | 0 | 1 | 0 | 1 | 17 | 493 | 46 | 54 | 0 |
| 5 | 0 | 126 | 2 | 35 

MULTIMODAL
MODELLING | ANALYSIS | PRESENTATION

**Project:** 02664 Northampton Gateway
**Prepared by:** DB
**Checked by:** LB

**NSTM to VISSIM - Flow Matrix Calculations**

Location of NSTM Outputs:
*L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\02_COMMS\Received\180202 ADC-2031 Mit+RC NSTM Flows & LINSIG*
**NSTM2 2031 J3 Micro Sim Cordon Matrices - Adjusted v1**

Location of 15 Min and Hourly Factor Calcs:
L:\Team Folders\PROJECTS\02664 M1J15 Northampton Gateway\03_TECH\01_VISSIM\non TfL\02 REF CASE\Traffic Flows
**170526 15 MIN FACTORS**

## Calculation Details

Conversion of NSTM data into:
1) Warm Up, Peak and Cool Down Matrices
2) 15 minute matrices within Warm Up, Peak and Cool Down periods.

Conversion based on observed turning counts, with factors to split the traffic appropriately.

| SCENARIO: | 2031 WITH RAIL CENTRAL + MITIGATION DEVELOPMENT CASE |
|---|---|
| FLOWSET: | J3 |

**SCENARIO 2031 D1 - PM PEAK**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 30 | 0 |
| 2 | 0 | 0 | 0 | 97 | 25 | 23 | 0 | 0 | 0 | 0 | 0 | 58 | 404 | 0 | 35 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 1 | 0 |
| 4 | 26 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 41 | 0 |
| 5 | 0 | 14 | 0 | 1 | 0 | 176 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 0 | 0 | 0 |
| 6 | 0 | 24 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 12 | 65 | 416 | 23 | 74 | 57 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 19 | 30 | 1 | 44 | 9 | 4 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| WARM UP FACTOR = | 0.889 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1645)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 1 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | 0 | 27 | 0 |
| 2 | 0 | 0 | 0 | 86 | 22 | 20 | 0 | 0 | 0 | 0 | 0 | 52 | 359 | 0 | 31 | 0 |
| 3 | 0 | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 30 | 0 | 1 | 0 |
| 4 | 23 | 18 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 | 36 | 0 |
| 5 | 0 | 12 | 0 | 1 | 0 | 156 | 0 | 0 | 0 | 0 | 0 | 9 | 44 | 0 | 0 | 0 |
| 6 | 0 | 21 | 0 | 0 | 82 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 3 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 12 | 57 | 370 | 20 | 62 | 51 | 63 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 23 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 17 | 27 | 1 | 39 | 8 | 3 | 0 | 0 | 0 | 0 | 1 | 21 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| 1545-1600 FACTOR | 0.227 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1600)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 6 | 0 |
| 2 | 0 | 0 | 0 | 20 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 12 | 81 | 0 | 7 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 | 0 |
| 4 | 5 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 8 | 0 |
| 5 | 0 | 3 | 0 | 0 | 0 | 36 | 0 | 0 | 0 | 0 | 0 | 2 | 10 | 0 | 0 | 0 |
| 6 | 0 | 5 | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 12 | 13 | 84 | 5 | 12 | 14 | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 4 | 6 | 0 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1600-1615 FACTOR | 0.242 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1600-1615)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 6 | 0 |
| 2 | 0 | 0 | 0 | 21 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 13 | 87 | 0 | 8 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 4 | 6 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 9 | 0 | 0 |
| 5 | 0 | 3 | 0 | 0 | 0 | 38 | 0 | 0 | 0 | 0 | 0 | 2 | 11 | 0 | 0 | 0 |
| 6 | 0 | 5 | 0 | 0 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 12 | 14 | 90 | 5 | 16 | 12 | 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 4 | 6 | 0 | 9 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1615-1630 FACTOR | 0.265 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1615-1630)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 7 | 0 |
| 2 | 0 | 0 | 0 | 23 | 6 | 5 | 0 | 0 | 0 | 0 | 14 | 95 | 0 | 8 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 4 | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 10 | 0 | 0 |
| 5 | 0 | 3 | 0 | 0 | 0 | 41 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 0 | 0 |
| 6 | 0 | 6 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 12 | 15 | 98 | 5 | 17 | 13 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 5 | 7 | 0 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1630-1645 FACTOR | 0.266 |
|---|---|

**VISSIM MATRIX - LIGHTS - WARM UP (1630-1645)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 7 | 0 |
| 2 | 0 | 0 | 0 | 23 | 6 | 5 | 0 | 0 | 0 | 0 | 14 | 95 | 0 | 8 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 4 | 6 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 10 | 0 |
| 5 | 0 | 3 | 0 | 0 | 0 | 42 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 0 | 0 |
| 6 | 0 | 6 | 0 | 0 | 22 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 12 | 15 | 98 | 5 | 17 | 14 | 17 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 5 | 7 | 0 | 10 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - WARM UP (1545-1645)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**VISSIM MATRIX - LIGHTS - PEAK (1645-1745)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 2 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 41 | 0 | 30 | 0 |
| 2 | 0 | 0 | 0 | 97 | 25 | 23 | 0 | 0 | 0 | 0 | 0 | 58 | 404 | 0 | 35 | 0 |
| 3 | 0 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 34 | 0 | 1 | 0 |
| 4 | 26 | 20 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 | 41 | 0 |
| 5 | 0 | 14 | 0 | 1 | 0 | 176 | 0 | 0 | 0 | 0 | 0 | 10 | 50 | 0 | 0 | 0 |
| 6 | 0 | 24 | 0 | 0 | 92 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 4 | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| 12 | 65 | 416 | 23 | 74 | 57 | 71 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 26 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 19 | 30 | 1 | 44 | 9 | 4 | 0 | 0 | 0 | 0 | 1 | 24 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |

| 1645-1700 FACTOR | 0.248 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (1645-1700)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 7 | 0 |
| 2 | 0 | 0 | 0 | 24 | 6 | 6 | 0 | 0 | 0 | 0 | 14 | 100 | 0 | 9 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 4 | 7 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 10 | 0 |
| 5 | 0 | 3 | 0 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 0 | 0 |
| 6 | 0 | 6 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 12 | 16 | 103 | 6 | 18 | 14 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 5 | 7 | 0 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1700-1715 FACTOR | 0.248 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (1700-1715)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 7 | 0 |
| 2 | 0 | 0 | 0 | 24 | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 100 | 0 | 9 | 0 |
| 3 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 | 0 |
| 4 | 7 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 10 | 0 |
| 5 | 0 | 3 | 0 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 0 | 0 |
| 6 | 0 | 6 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 12 | 16 | 103 | 6 | 18 | 14 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 5 | 7 | 0 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1715-1730 FACTOR | 0.251 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (1715-1730)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 8 | 0 |
| 2 | 0 | 0 | 0 | 24 | 6 | 6 | 0 | 0 | 0 | 0 | 15 | 101 | 0 | 9 | 0 |
| 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 4 | 7 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 10 | 0 |
| 5 | 0 | 3 | 0 | 0 | 0 | 44 | 0 | 0 | 0 | 0 | 0 | 2 | 12 | 0 | 0 | 0 |
| 6 | 0 | 6 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 12 | 16 | 103 | 6 | 18 | 14 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 5 | 8 | 0 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| 1730-1745 FACTOR | 0.253 |
|---|---|

**VISSIM MATRIX - LIGHTS - PEAK (1730-1745)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 0 | 8 | 0 |
| 2 | 0 | 0 | 0 | 24 | 6 | 6 | 0 | 0 | 0 | 0 | 15 | 102 | 0 | 9 | 0 |
| 3 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 |
| 4 | 7 | 5 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 10 | 0 |
| 5 | 0 | 4 | 0 | 0 | 0 | 45 | 0 | 0 | 0 | 0 | 0 | 2 | 13 | 0 | 0 | 0 |
| 6 | 0 | 6 | 0 | 0 | 23 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 1 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| 12 | 16 | 103 | 6 | 18 | 14 | 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 5 | 8 | 0 | 11 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**CHECK - ALL VALUES SHOULD EQUAL 0 IF CORRECT**

**VISSIM MATRIX - LIGHTS - PEAK (0715-0815)**
**HGV (VEH)**

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 12 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 13 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 15 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

**

# Appendix C – Model Convergence

## 2031 Reference Case – AM

| AM PEAK (0715-0815) | | | | | | |
|---|---|---|---|---|---|---|
| | DMRB / TfL CRITERIA | | | | Network Performance | |
| | Volume Difference (0-5) | | Travel Time (0-20%) | | Total Travel Time | Difference from |
| Run Number | Paths | Edges | Paths | Edges | (h) | prev. run |
| 1 | 98% | 87% | 86% | 87% | 9077547.88 | - |
| 2 | 99% | 87% | 76% | 80% | 9113915.38 | 0.4% |
| 3 | 99% | 86% | 90% | 84% | 8968146.38 | -1.6% |
| 4 | 99% | 88% | 85% | 84% | 9000331.38 | 0.4% |
| 5 | 99% | 85% | 74% | 82% | 9170461.78 | 1.9% |
| 6 | 99% | 85% | 83% | 81% | 9115842.38 | -0.6% |
| 7 | 99% | 87% | 82% | 83% | 9169056.08 | 0.6% |
| 8 | 99% | 88% | 90% | 87% | 9098344.38 | -0.8% |
| 9 | 98% | 89% | 83% | 84% | 9140515.88 | 0.5% |
| 10 | 99% | 88% | 86% | 84% | 9054995.78 | -0.9% |
| 11 | 99% | 87% | 79% | 84% | 9059576.48 | 0.1% |
| 12 | 98% | 87% | 78% | 82% | 9200239.78 | 1.6% |
| 13 | 99% | 86% | 79% | 85% | 9156027.88 | -0.5% |
| 14 | 99% | 87% | 86% | 84% | 9042968.98 | -1.2% |
| 15 | 99% | 86% | 85% | 84% | 9154095.78 | 1.2% |
| 16 | 99% | 87% | 85% | 83% | 9034363.08 | -1.3% |
| 17 | 99% | 86% | 84% | 84% | 9076609.48 | 0.5% |
| 18 | 98% | 87% | 83% | 83% | 9203892.08 | 1.4% |
| 19 | 98% | 86% | 87% | 84% | 9151633.78 | -0.6% |
| 20 | 98% | 86% | 86% | 86% | 9004435.08 | -1.6% |
| | *Target is 95% for 4 consecutive runs* | | *Target is 95% for 4 consecutive runs* | | *Target is <1.0% difference for 4 consecutive runs* | |

Used for VISSIM modelling results

## 2031 Reference Case – PM

| PM PEAK (1645-1745) | | | | | | |
|---|---|---|---|---|---|---|
| | DMRB / TfL CRITERIA | | | | Network Performance | |
| | Volume Difference (0-5) | | Travel Time (0-20%) | | Total Travel Time | Difference from |
| Run Number | Paths | Edges | Paths | Edges | (h) | prev. run |
| 1 | 96% | 75% | 91% | 82% | 11970973.37 | - |
| 2 | 97% | 83% | 87% | 83% | 12291081.37 | 2.7% |
| 3 | 97% | 84% | 87% | 84% | 12315030.07 | 0.2% |
| 4 | 96% | 84% | 85% | 81% | 12121900.57 | -1.6% |
| 5 | 95% | 82% | 90% | 84% | 11895386.97 | -1.9% |
| 6 | 94% | 84% | 86% | 85% | 12091151.77 | 1.6% |
| 7 | 96% | 84% | 89% | 83% | 12005277.97 | -0.7% |
| 8 | 95% | 85% | 85% | 86% | 12307997.47 | 2.5% |
| 9 | 94% | 83% | 84% | 83% | 11994366.47 | -2.5% |
| 10 | 96% | 83% | 93% | 84% | 11993048.67 | 0.0% |
| 11 | 95% | 83% | 86% | 85% | 12153630.97 | 1.3% |
| 12 | 98% | 84% | 84% | 84% | 12119567.47 | -0.3% |
| 13 | 97% | 86% | 83% | 87% | 12221179.17 | 0.8% |
| 14 | 95% | 82% | 80% | 82% | 12191328.37 | -0.2% |
| 15 | 95% | 85% | 86% | 84% | 12032500.37 | -1.3% |
| 16 | 98% | 84% | 92% | 86% | 12127913.87 | 0.8% |
| 17 | 95% | 83% | 91% | 85% | 12201498.47 | 0.6% |
| 18 | 97% | 84% | 88% | 86% | 12179606.87 | -0.2% |
| 19 | 97% | 83% | 91% | 84% | 12144275.57 | -0.3% |
| 20 | 97% | 83% | 86% | 84% | 12386885.97 | 2.0% |
| | *Target is 95% for 4 consecutive runs* | | *Target is 95% for 4 consecutive runs* | | *Target is <1.0% difference for 4 consecutive runs* | |

Used for VISSIM modelling results

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## 2031 NG+RC – AM

| AM PEAK (0715-0815) | | | | | | |
|---|---|---|---|---|---|---|
| | DMRB / TfL CRITERIA | | | | Network Performance | |
| | Volume Difference (0-5) | | Travel Time (0-20%) | | Total Travel Time | Difference from |
| Run Number | Paths | Edges | Paths | Edges | (h) | prev. run |
| 1 | 100% | 86% | 100% | 87% | 10072048.38 | - |
| 2 | 100% | 83% | 91% | 86% | 10162656.18 | 0.9% |
| 3 | 100% | 82% | 97% | 86% | 10168220.68 | 0.1% |
| 4 | 100% | 86% | 98% | 90% | 10116206.98 | -0.5% |
| 5 | 100% | 85% | 100% | 88% | 10069997.38 | -0.5% |
| 6 | 100% | 85% | 99% | 86% | 10174186.98 | 1.0% |
| 7 | 100% | 84% | 99% | 87% | 10058137.88 | -1.1% |
| 8 | 100% | 86% | 93% | 88% | 10048639.68 | -0.1% |
| 9 | 100% | 86% | 99% | 89% | 10052924.58 | 0.0% |
| 10 | 100% | 86% | 100% | 88% | 10047768.58 | -0.1% |
| 11 | 99% | 88% | 99% | 87% | 10145578.78 | 1.0% |
| 12 | 99% | 83% | 99% | 87% | 9976488.18 | -1.7% |
| 13 | 100% | 81% | 99% | 90% | 10033657.88 | 0.6% |
| 14 | 100% | 83% | 100% | 87% | 10052540.58 | 0.2% |
| 15 | 100% | 86% | 95% | 86% | 10177823.08 | 1.2% |
| 16 | 100% | 84% | 99% | 89% | 10052583.38 | -1.2% |
| 17 | 100% | 86% | 98% | 87% | 10094736.18 | 0.4% |
| 18 | 100% | 83% | 97% | 85% | 10189093.08 | 0.9% |
| 19 | 100% | 81% | 98% | 86% | 9989724.38 | -2.0% |
| 20 | 100% | 87% | 99% | 87% | 10128130.88 | 1.4% |
| | *Target is 95% for 4 consecutive runs* | | *Target is 95% for 4 consecutive runs* | | *Target is <1.0% difference for 4 consecutive runs* | |

Used for VISSIM modelling results

## 2031 NG+RC – PM

| PM PEAK (1645-1745) | | | | | | |
|---|---|---|---|---|---|---|
| | DMRB / TfL CRITERIA | | | | Network Performance | |
| | Volume Difference (0-5) | | Travel Time (0-20%) | | Total Travel Time | Difference from |
| Run Number | Paths | Edges | Paths | Edges | (h) | prev. run |
| 1 | 100% | 88% | 93% | 87% | 9662519.78 | - |
| 2 | 100% | 90% | 90% | 89% | 9676813.48 | 0.1% |
| 3 | 100% | 90% | 92% | 90% | 9662456.88 | -0.1% |
| 4 | 100% | 88% | 91% | 88% | 9677502.18 | 0.2% |
| 5 | 100% | 89% | 92% | 86% | 9688598.98 | 0.1% |
| 6 | 100% | 87% | 93% | 90% | 9680135.08 | -0.1% |
| 7 | 100% | 91% | 97% | 91% | 9641602.98 | -0.4% |
| 8 | 100% | 90% | 96% | 89% | 9652168.58 | 0.1% |
| 9 | 100% | 89% | 90% | 88% | 9657403.28 | 0.1% |
| 10 | 100% | 90% | 92% | 88% | 9660738.08 | 0.0% |
| 11 | 100% | 90% | 94% | 88% | 9675990.58 | 0.2% |
| 12 | 100% | 89% | 97% | 91% | 9589362.18 | -0.9% |
| 13 | 100% | 88% | 91% | 89% | 9691063.08 | 1.1% |
| 14 | 100% | 90% | 92% | 89% | 9676536.58 | -0.1% |
| 15 | 100% | 89% | 98% | 91% | 9602458.58 | -0.8% |
| 16 | 100% | 88% | 91% | 89% | 9670834.28 | 0.7% |
| 17 | 100% | 87% | 98% | 90% | 9651115.88 | -0.2% |
| 18 | 100% | 88% | 95% | 90% | 9638284.98 | -0.1% |
| 19 | 100% | 88% | 99% | 89% | 9649194.38 | 0.1% |
| 20 | 100% | 90% | 78% | 88% | 9702914.78 | 0.6% |
| | *Target is 95% for 4 consecutive runs* | | *Target is 95% for 4 consecutive runs* | | *Target is <1.0% difference for 4 consecutive runs* | |

Used for VISSIM modelling results

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# Appendix D – Queue Results

## 2031 Queue Comparison – M1 J15 – AM PEAK

| | 2031 Reference Case | | 2031 NG+RC Case | |
|---|---|---|---|---|
| Time | Approach | Average | | Average | |
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | A45 North | 74 | 193 | 64 | 158 |
| 08:05 | | 160 | 292 | 96 | 207 |
| 08:10 | | 269 | 411 | 114 | 231 |
| 08:15 | | 481 | 757 | 120 | 256 |
| 08:20 | | 978 | 1399 | 190 | 336 |
| 08:25 | | 1723 | 2139 | 223 | 391 |
| 08:30 | | 2262 | 2496 | 297 | 497 |
| 08:35 | | 2421 | 2554 | 404 | 695 |
| 08:40 | | 2449 | 2555 | 396 | 673 |
| 08:45 | | 2444 | 2555 | 482 | 773 |
| 08:50 | | 2429 | 2556 | 485 | 739 |
| 08:55 | | 2439 | 2555 | 518 | 865 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | Saxon Avenue | 1 | 9 | 6 | 24 |
| 08:05 | | 2 | 9 | 6 | 25 |
| 08:10 | | 6 | 28 | 5 | 26 |
| 08:15 | | 2 | 13 | 6 | 22 |
| 08:20 | | 2 | 13 | 6 | 24 |
| 08:25 | | 2 | 11 | 7 | 24 |
| 08:30 | | 2 | 9 | 6 | 24 |
| 08:35 | | 2 | 10 | 6 | 23 |
| 08:40 | | 2 | 11 | 6 | 24 |
| 08:45 | | 2 | 10 | 6 | 25 |
| 08:50 | | 1 | 11 | 5 | 22 |
| 08:55 | | 1 | 10 | 6 | 24 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | M1 South-East | 19 | 61 | 35 | 94 |
| 08:05 | | 21 | 68 | 39 | 100 |
| 08:10 | | 21 | 68 | 49 | 111 |
| 08:15 | | 24 | 74 | 61 | 146 |
| 08:20 | | 25 | 77 | 93 | 200 |
| 08:25 | | 24 | 79 | 125 | 264 |
| 08:30 | | 21 | 70 | 185 | 356 |
| 08:35 | | 21 | 72 | 193 | 360 |
| 08:40 | | 22 | 73 | 238 | 422 |
| 08:45 | | 21 | 69 | 309 | 473 |
| 08:50 | | 20 | 65 | 309 | 470 |
| 08:55 | | 18 | 62 | 245 | 444 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | A508 | 73 | 137 | 11 | 47 |
| 08:05 | | 112 | 190 | 12 | 51 |
| 08:10 | | 175 | 263 | 12 | 51 |
| 08:15 | | 246 | 392 | 13 | 53 |
| 08:20 | | 396 | 563 | 15 | 57 |
| 08:25 | | 560 | 737 | 14 | 60 |
| 08:30 | | 724 | 899 | 15 | 57 |
| 08:35 | | 901 | 1073 | 11 | 51 |
| 08:40 | | 1123 | 1277 | 13 | 48 |
| 08:45 | | 1314 | 1452 | 13 | 51 |
| 08:50 | | 1486 | 1614 | 11 | 45 |
| 08:55 | | 1597 | 1745 | 13 | 52 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | M1 North-West | 24 | 82 | 10 | 39 |
| 08:05 | | 37 | 118 | 12 | 44 |
| 08:10 | | 44 | 120 | 14 | 48 |
| 08:15 | | 48 | 135 | 16 | 55 |
| 08:20 | | 58 | 166 | 30 | 79 |
| 08:25 | | 108 | 236 | 36 | 97 |
| 08:30 | | 206 | 354 | 54 | 129 |
| 08:35 | | 275 | 426 | 72 | 162 |
| 08:40 | | 349 | 482 | 94 | 221 |
| 08:45 | | 423 | 657 | 189 | 341 |
| 08:50 | | 570 | 820 | 320 | 541 |
| 08:55 | | 689 | 932 | 550 | 835 |

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## 2031 Queue Comparison – M1 J15a – AM PEAK

| | | 2031 Reference Case | | 2031 Mitigation | |
|---|---|---|---|---|---|
| Time | Approach | Average | | Average | |
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | J15a - North Rbout - M1 SB Link | 116 | 198 | 29 | 73 |
| 08:05 | | 177 | 267 | 35 | 77 |
| 08:10 | | 290 | 407 | 42 | 86 |
| 08:15 | | 471 | 622 | 45 | 91 |
| 08:20 | | 692 | 868 | 59 | 107 |
| 08:25 | | 930 | 1090 | 80 | 132 |
| 08:30 | | 1180 | 1399 | 94 | 158 |
| 08:35 | | 1569 | 1837 | 116 | 175 |
| 08:40 | | 1952 | 2195 | 136 | 198 |
| 08:45 | | 2344 | 2592 | 163 | 227 |
| 08:50 | | 2692 | 2922 | 191 | 264 |
| 08:55 | | 3047 | 3273 | 199 | 274 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | J15a - North Rbout - A5123 | 10 | 62 | 6 | 20 |
| 08:05 | | 8 | 66 | 8 | 20 |
| 08:10 | | 13 | 71 | 7 | 21 |
| 08:15 | | 9 | 74 | 7 | 22 |
| 08:20 | | 10 | 76 | 8 | 23 |
| 08:25 | | 11 | 72 | 7 | 23 |
| 08:30 | | 6 | 60 | 7 | 22 |
| 08:35 | | 6 | 63 | 8 | 24 |
| 08:40 | | 8 | 67 | 7 | 24 |
| 08:45 | | 5 | 59 | 7 | 20 |
| 08:50 | | 6 | 58 | 8 | 22 |
| 08:55 | | 8 | 60 | 7 | 22 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | J15a - North Rbout - A43 South | 10 | 84 | 14 | 77 |
| 08:05 | | 11 | 92 | 13 | 69 |
| 08:10 | | 24 | 114 | 15 | 80 |
| 08:15 | | 26 | 139 | 18 | 91 |
| 08:20 | | 46 | 168 | 17 | 92 |
| 08:25 | | 52 | 173 | 23 | 96 |
| 08:30 | | 47 | 157 | 25 | 109 |
| 08:35 | | 54 | 180 | 35 | 121 |
| 08:40 | | 56 | 188 | 45 | 141 |
| 08:45 | | 53 | 176 | 41 | 119 |
| 08:50 | | 25 | 119 | 44 | 137 |
| 08:55 | | 25 | 126 | 57 | 151 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | J15a - South Rbout - A43 North | 1 | 20 | 15 | 38 |
| 08:05 | | 1 | 20 | 22 | 49 |
| 08:10 | | 0 | 15 | 20 | 46 |
| 08:15 | | 1 | 20 | 19 | 44 |
| 08:20 | | 0 | 17 | 26 | 50 |
| 08:25 | | 1 | 17 | 27 | 57 |
| 08:30 | | 0 | 13 | 25 | 59 |
| 08:35 | | 0 | 16 | 25 | 55 |
| 08:40 | | 0 | 14 | 27 | 56 |
| 08:45 | | 0 | 17 | 27 | 53 |
| 08:50 | | 1 | 21 | 25 | 51 |
| 08:55 | | 1 | 19 | 26 | 54 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | J15a - South Rbout - A43 South | 0 | 16 | 25 | 109 |
| 08:05 | | 0 | 11 | 19 | 92 |
| 08:10 | | 1 | 26 | 23 | 105 |
| 08:15 | | 1 | 19 | 29 | 113 |
| 08:20 | | 1 | 31 | 34 | 144 |
| 08:25 | | 2 | 30 | 36 | 151 |
| 08:30 | | 3 | 35 | 32 | 118 |
| 08:35 | | 7 | 45 | 27 | 122 |
| 08:40 | | 5 | 43 | 39 | 158 |
| 08:45 | | 10 | 51 | 33 | 123 |
| 08:50 | | 2 | 23 | 26 | 116 |
| 08:55 | | 1 | 24 | 43 | 128 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 08:00 | J15a - South Rbout - M1 NB Link | 88 | 177 | 24 | 82 |
| 08:05 | | 178 | 281 | 29 | 83 |
| 08:10 | | 325 | 434 | 40 | 100 |
| 08:15 | | 438 | 542 | 31 | 93 |
| 08:20 | | 603 | 689 | 36 | 99 |
| 08:25 | | 735 | 853 | 45 | 111 |
| 08:30 | | 920 | 1054 | 41 | 107 |
| 08:35 | | 1146 | 1287 | 57 | 130 |
| 08:40 | | 1391 | 1535 | 73 | 149 |
| 08:45 | | 1633 | 1798 | 104 | 185 |
| 08:50 | | 1868 | 1996 | 112 | 175 |
| 08:55 | | 2028 | 2156 | 131 | 219 |

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## 2031 Queue Comparison – M1 J15 – PM PEAK

| | | 2031 Reference Case | | 2031 NG+RC Case | |
|---|---|---|---|---|---|
| Time | Approach | Average | | Average | |
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | A45 North | 934 | 1182 | 44 | 131 |
| 17:05 | | 1234 | 1513 | 53 | 144 |
| 17:10 | | 1517 | 1774 | 60 | 152 |
| 17:15 | | 1794 | 2097 | 46 | 132 |
| 17:20 | | 2079 | 2350 | 48 | 138 |
| 17:25 | | 2308 | 2488 | 55 | 146 |
| 17:30 | | 2387 | 2545 | 57 | 150 |
| 17:35 | | 2391 | 2554 | 60 | 167 |
| 17:40 | | 2423 | 2555 | 59 | 159 |
| 17:45 | | 2426 | 2554 | 51 | 137 |
| 17:50 | | 2409 | 2553 | 50 | 132 |
| 17:55 | | 2440 | 2554 | 64 | 163 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | Saxon Avenue | 7 | 30 | 8 | 29 |
| 17:05 | | 7 | 30 | 7 | 31 |
| 17:10 | | 13 | 47 | 8 | 31 |
| 17:15 | | 11 | 38 | 5 | 23 |
| 17:20 | | 6 | 30 | 7 | 30 |
| 17:25 | | 7 | 28 | 7 | 26 |
| 17:30 | | 7 | 29 | 8 | 29 |
| 17:35 | | 8 | 35 | 7 | 28 |
| 17:40 | | 8 | 37 | 7 | 32 |
| 17:45 | | 7 | 30 | 7 | 28 |
| 17:50 | | 7 | 31 | 8 | 29 |
| 17:55 | | 5 | 25 | 8 | 31 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | M1 South-East | 14 | 50 | 24 | 65 |
| 17:05 | | 13 | 48 | 25 | 68 |
| 17:10 | | 13 | 48 | 26 | 68 |
| 17:15 | | 13 | 49 | 23 | 71 |
| 17:20 | | 12 | 46 | 26 | 71 |
| 17:25 | | 13 | 48 | 26 | 73 |
| 17:30 | | 13 | 46 | 23 | 69 |
| 17:35 | | 13 | 49 | 27 | 76 |
| 17:40 | | 14 | 52 | 26 | 74 |
| 17:45 | | 13 | 49 | 24 | 69 |
| 17:50 | | 12 | 42 | 26 | 77 |
| 17:55 | | 12 | 46 | 26 | 73 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | A508 | 84 | 179 | 23 | 73 |
| 17:05 | | 137 | 233 | 25 | 77 |
| 17:10 | | 164 | 263 | 25 | 79 |
| 17:15 | | 129 | 221 | 26 | 76 |
| 17:20 | | 105 | 206 | 25 | 77 |
| 17:25 | | 112 | 204 | 22 | 74 |
| 17:30 | | 82 | 191 | 25 | 73 |
| 17:35 | | 83 | 163 | 30 | 82 |
| 17:40 | | 105 | 220 | 30 | 81 |
| 17:45 | | 107 | 214 | 28 | 82 |
| 17:50 | | 73 | 148 | 24 | 78 |
| 17:55 | | 81 | 169 | 27 | 80 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | M1 North-West | 21 | 77 | 11 | 44 |
| 17:05 | | 23 | 86 | 12 | 45 |
| 17:10 | | 21 | 82 | 11 | 43 |
| 17:15 | | 27 | 92 | 12 | 43 |
| 17:20 | | 23 | 82 | 12 | 47 |
| 17:25 | | 23 | 85 | 11 | 41 |
| 17:30 | | 23 | 82 | 12 | 44 |
| 17:35 | | 19 | 74 | 12 | 42 |
| 17:40 | | 19 | 71 | 11 | 42 |
| 17:45 | | 15 | 63 | 11 | 43 |
| 17:50 | | 19 | 70 | 12 | 47 |
| 17:55 | | 18 | 79 | 11 | 45 |

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## 2031 Queue Comparison – M1 J15a – PM PEAK

| | | 2031 Reference Case | | 2031 Mitigation | |
|---|---|---|---|---|---|
| Time | Approach | Average | | Average | |
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | J15a - North Rbout - M1 SB Link | 2805 | 3048 | 28 | 66 |
| 17:05 | | 3256 | 3510 | 31 | 68 |
| 17:10 | | 3755 | 4031 | 33 | 73 |
| 17:15 | | 4251 | 4511 | 29 | 68 |
| 17:20 | | 4660 | 4863 | 28 | 63 |
| 17:25 | | 4917 | 4989 | 31 | 68 |
| 17:30 | | 4973 | 5010 | 32 | 70 |
| 17:35 | | 4982 | 5010 | 34 | 71 |
| 17:40 | | 4988 | 5010 | 33 | 74 |
| 17:45 | | 4984 | 5010 | 30 | 67 |
| 17:50 | | 4980 | 5010 | 37 | 75 |
| 17:55 | | 4988 | 5010 | 37 | 75 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | J15a - North Rbout - A5123 | 1 | 22 | 9 | 24 |
| 17:05 | | 1 | 24 | 10 | 27 |
| 17:10 | | 1 | 21 | 9 | 27 |
| 17:15 | | 1 | 19 | 9 | 24 |
| 17:20 | | 1 | 24 | 9 | 27 |
| 17:25 | | 1 | 20 | 9 | 27 |
| 17:30 | | 1 | 20 | 9 | 28 |
| 17:35 | | 2 | 27 | 10 | 29 |
| 17:40 | | 1 | 28 | 9 | 27 |
| 17:45 | | 1 | 26 | 10 | 27 |
| 17:50 | | 1 | 26 | 10 | 27 |
| 17:55 | | 1 | 26 | 9 | 29 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | J15a - North Rbout - A43 South | 42 | 173 | 34 | 139 |
| 17:05 | | 69 | 200 | 28 | 141 |
| 17:10 | | 70 | 211 | 28 | 119 |
| 17:15 | | 55 | 194 | 49 | 159 |
| 17:20 | | 72 | 198 | 39 | 156 |
| 17:25 | | 77 | 223 | 49 | 163 |
| 17:30 | | 85 | 208 | 52 | 168 |
| 17:35 | | 94 | 233 | 48 | 180 |
| 17:40 | | 97 | 229 | 59 | 166 |
| 17:45 | | 85 | 239 | 56 | 156 |
| 17:50 | | 73 | 203 | 52 | 167 |
| 17:55 | | 95 | 233 | 53 | 168 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | J15a - South Rbout - A43 North | 0 | 3 | 10 | 27 |
| 17:05 | | 0 | 2 | 11 | 27 |
| 17:10 | | 0 | 3 | 11 | 28 |
| 17:15 | | 0 | 5 | 11 | 27 |
| 17:20 | | 0 | 3 | 11 | 28 |
| 17:25 | | 0 | 2 | 11 | 30 |
| 17:30 | | 0 | 2 | 9 | 26 |
| 17:35 | | 0 | 2 | 11 | 28 |
| 17:40 | | 0 | 2 | 11 | 31 |
| 17:45 | | 0 | 2 | 10 | 27 |
| 17:50 | | 0 | 2 | 11 | 27 |
| 17:55 | | 0 | 2 | 11 | 31 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | J15a - South Rbout - A43 South | 2 | 29 | 49 | 159 |
| 17:05 | | 8 | 49 | 49 | 162 |
| 17:10 | | 10 | 61 | 53 | 183 |
| 17:15 | | 4 | 38 | 68 | 211 |
| 17:20 | | 15 | 59 | 70 | 205 |
| 17:25 | | 8 | 56 | 72 | 213 |
| 17:30 | | 9 | 55 | 103 | 236 |
| 17:35 | | 18 | 78 | 156 | 322 |
| 17:40 | | 15 | 70 | 161 | 332 |
| 17:45 | | 12 | 71 | 208 | 345 |
| 17:50 | | 11 | 65 | 214 | 361 |
| 17:55 | | 26 | 84 | 243 | 399 |

| Time | Approach | Average | | Average | |
|---|---|---|---|---|---|
| | | Avg Queue Length (m) | Max Queue Length (m) | Avg Queue Length (m) | Max Queue Length (m) |
| 17:00 | J15a - South Rbout - M1 NB Link | 2156 | 2342 | 73 | 179 |
| 17:05 | | 2479 | 2671 | 80 | 189 |
| 17:10 | | 2787 | 2970 | 103 | 235 |
| 17:15 | | 3056 | 3219 | 139 | 288 |
| 17:20 | | 3277 | 3407 | 177 | 346 |
| 17:25 | | 3410 | 3548 | 233 | 425 |
| 17:30 | | 3457 | 3636 | 280 | 484 |
| 17:35 | | 3522 | 3678 | 359 | 592 |
| 17:40 | | 3572 | 3716 | 506 | 739 |
| 17:45 | | 3618 | 3750 | 593 | 805 |
| 17:50 | | 3652 | 3778 | 662 | 912 |
| 17:55 | | 3733 | 3840 | 760 | 981 |

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