MOTT MACDONALD

M20 Junction Assessments

Technical Note summarising the Results

November 2016

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Issue and Revision Record

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1 Introduction

1.1 Background

Mott MacDonald was commissioned by Maidstone Borough Council (MBC) to consider the capacity at four junctions along the M20, Junctions 5 to 8. The key driver for this study was Highways England's (HE) holding objection expressed in its Regulation 19 representation to the emerging Maidstone Borough Local Plan, due to the lack of information provided in terms of potential impacts on these junctions of proposed Local Plan development. These matters were clarified in a meeting attended by MBC, HE and Kent County Council (KCC) on 12 April 2016. Our Proposal responded directly to the brief received from MBC with the tasks set out below.

The first and second issues of this report were issued in September 2016. This third issue incorporates comments made by HE and their consultant Atkins which we received on 3 October 2016.

1.2 Scope of Work

MBC's brief set out tasks as below which were detailed further in our proposal. The scope of work below refers to both the brief, our proposal as well as the tasks that were carried out within this report.

1. Approach

Our approach set out two potential approaches, a modelling approach and a first principles approach. In the first instance, these approaches had to be considered in more detail as per below with the aim to get HE's approval.

a) A meeting was held with HE, Kent County Council (KCC), Amey and MBC on 18 May 2016 during which the potential approaches were discussed. HE suggested that a note containing a matrix setting out the benefits / disbenefits of each approach should be produced.
b) Subsequently, discussions were held with Amey (and KCC) as well as Mott MacDonald's strategic modelling specialist with the aim to agree a joint MBC / KCC view with regards to the model appropriateness and the likelihood of HE accepting any model data.
c) Following this, Amey compared the model data with the most recent survey data for Junctions 6 and 7, and updated their note which they had previously issued.
d) The updated note revealed an insufficiently good match between model data and count data.
e) Amey considered it unlikely that HE would accept the use of the model data for detailed junction assessments. We concurred with this view.
f) The "first principles approach" was therefore progressed and forms the basis for the assessments undertaken and reported in this document.

2. Flows for First Principles Approach:

The First Principles Approach required the following tasks:

a) Discussions and agreement with MBC as to how the proposed housing numbers would impact on the four junctions. In addition to MBC's own housing and employment numbers, this also required discussions and agreement on a working assumption with Tonbridge and Malling Borough Council (T&M) to establish their housing and employment numbers. Furthermore, HE requested that external impacts, such as development along the A249, would have to be taken into consideration. The Swale Local Plan was therefore interrogated and the likely numbers were added.
b) The development numbers, both housing and employment (jobs), likely to impact each of the four junctions were calculated. The Local Plan numbers were reviewed and categorised as follows: completed / built, consented / committed / approved (i.e. could go ahead without the Local Plan), non-consented / non-committed. The developments already completed were removed. The other two categories were split into Scenario 1 (consented) and Scenario 2 (consented plus non-consented, i.e. all development).
c) The use of TEMPro was discussed with MBC. The following approach was taken: background growth was calculated by removing all future growth in TEMPro. The development numbers in Scenario 1 were added to calculate growth factors for Scenario 1. This was repeated for Scenario 2, taking into consideration the development numbers for Maidstone, Tonbridge and Malling, and Swale in both scenarios.
d) Base traffic flow data was obtained based on turning counts. Existing flow diagrams and 2031 base flow diagrams adding TEMPro background growth were produced for each junction.
e) 'With development' flows for each junction were calculated for each scenario based on the growth factors as described in c) above. 2031 with development flow diagrams were produced for each junction.
f) Modelled flow changes due to the South East Maidstone Strategic Link (SEMSL) were obtained from Amey and the percentage difference with SEMSL was calculated by comparing the 2031 with all development flows to the scenario with the same flows but the Link introduced into the network.

3. Junction Models:

The following scope of work was required to establish the junction models:

a) All recent assessment work carried out at any of the four junctions was reviewed.
b) New models for each junction reflecting the existing layout of each junction were established and compared to existing models. Presently all junctions are roundabouts without signal control, therefore all base models were ARCADY models.
c) We tried to obtain 'as built' drawings to more accurately reflect existing geometries. Contact with KCC was made but no drawings were available.

4. Junction Assessments (Existing Junction Layouts) and Review of Assessment Results:

The following scope of work was required:

a) Each junction was assessed for its existing layout based on the flows established in item 2 above. The following scenarios were tested for both AM and PM peak hours:
    a. 2016 Existing Situation
    b. 2031 Future Situation including TEMPro background growth only
    c. 2031 With Consented Development (Scenario 1)
    d. 2031 With Consented and Non-Consented (ALL) Development (Scenario 2)

b) The results for each junction were reviewed and the impact of the addition of Non-Committed / Non-Consented Development, equating to the Local Plan impact, was considered.
c) Consideration was given as to whether mitigation would be required.

5. Mitigation

The following scope of work was required:

a) Any previous mitigation schemes were considered in detail and reviewed whether they could address any capacity restraints identified in point 4 above.
b) Where no existing mitigation existed, alternative mitigation options were considered.
c) Preliminary sketch drawings were produced for all junctions.
d) Based on the sketches, junction models were produced and the following scenarios were assessed:
    a. 2031 with Committed / Consented and Non-Committed / Non-Consented (All) Development (Scenario 2)
    b. 2031 with All Development and with SEMSL
e) The results for each of the junctions were reviewed and Scenario 2 with Mitigation was compared against Scenario 1 without Mitigation.

6. Reporting

a) This technical note was produced summarising all the above steps and outcomes. The note contains modelling outputs for existing layout and mitigation proposals as well as the preliminary sketches and any other supporting information.

1.3 Report Structure

This Technical Note is structured as follows:

- **Chapter 2** contains the traffic flows including 2016 Base Flows, 2031 Future Base Flows, With Development Flows for Scenario 1 and Scenario 2, as well as SEMSL Flows.
- In **Chapter 3**, the existing layout is reviewed, the ARCADY assessment results are presented and capacity issues are identified.
- **Chapter 4** contains the junction layout improvements proposed the impact of the development.
- The junction layout solutions are reviewed in **Chapter 5** including LinSig and ARCADY assessment results for the improvements proposed.
- **Chapter 6** looks at the merge assessment.
- **Chapter 7** summarises the work that has been undertaken.

2 Traffic Flows

2.1 Existing Traffic Flows

The existing traffic flows for each junction are based on the following reports and surveys:

- Junction 5: M20 Maidstone New Growth Point Study, Parsons Brinckerhoff Ltd., July 2007
- Junction 6: Traffic surveys included in this report which were undertaken on Thursday 9th June 2016 from 07:00-19:00 (**Appendix A)**
- Junction 7: K&M Traffic Surveys, May 2016, provided to us by dha transport
- Junction 8: Flows obtained from the 'Waterside Park M20 Junction 8, Maidstone' Transport Assessment, dha transport, September 2013.

The 2006 Base Flows for Junction 5 were uplifted to 2016 Base Flows using TEMPro. Version 6.2 (with planning dataset 62 and NTM dataset AF09) was used to update the flows to 2011 with Version 7.0 (with planning dataset 70 and NTM dataset AF15) used from 2011 to the 2016 base year as per guidance (**Table 1** and **Table 2**). The new TEMPro version 7.0 which was published in July 2016 does not contain data further back than 2011 with the guidance setting out how to deal with previous years. The growth rates for this junction were adjusted using the National Transport Model (NTM) for rural motorway in Tonbridge and Malling in accordance with the junction's geographical location.

The uplifted turning movement data was compared with 2014 link flow data for TRADS and published 2014 turning movement data collected in support of planning application 15/509962/OUT (Land at Fant Farm). The uplifted data compares well with these recent datasets and is therefore considered to be a reasonable reflection of existing traffic conditions at Junction 5.

Table 1: TEMPro Growth Rates for Tonbridge and Malling, 2006-2011

Time Period	Factor
AM Peak	1.046
PM Peak	1.051

Table 2: TEMPro Growth Rates for Tonbridge and Malling, 2011-2016

Time Period	Factor
AM Peak	1.120
PM Peak	1.122

The 2013 Base Flows for Junction 8 were uplifted to 2016 Base Flows using TEMPro (version 7 with planning dataset 70 and NTM dataset AF15), as shown in **Table 3**. The growth rates were adjusted using the National Transport Model (NTM) for rural motorway in Maidstone in accordance with the junction's geographical location.

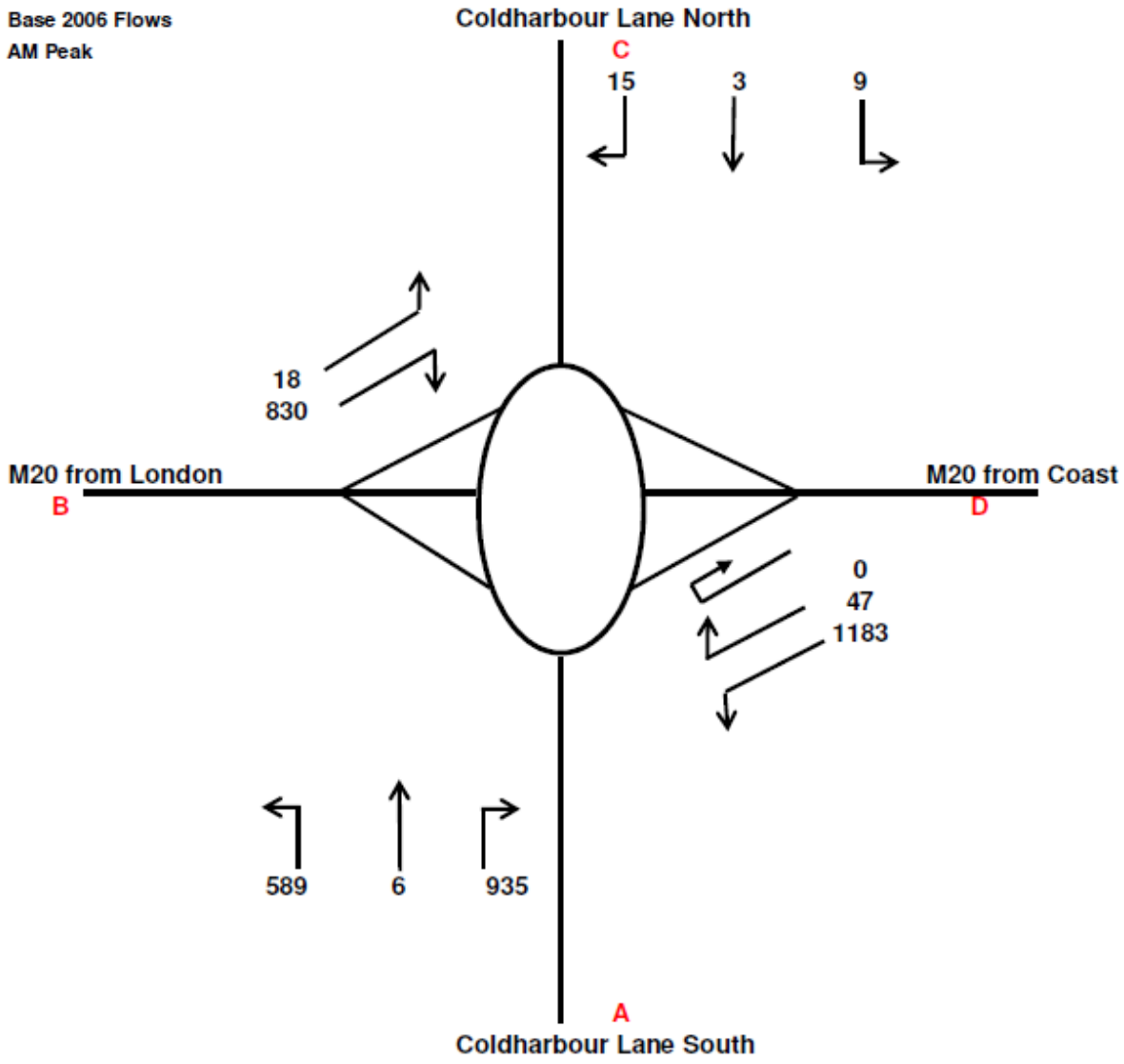
Table 3: TEMPro Growth Rates for Maidstone, 2013-2016

Time Period	Factor
AM Peak	1.062
PM Peak	1.062

Base flow diagrams for Junctions 5-8 are presented below in **Figure 1** to **Figure 12.**

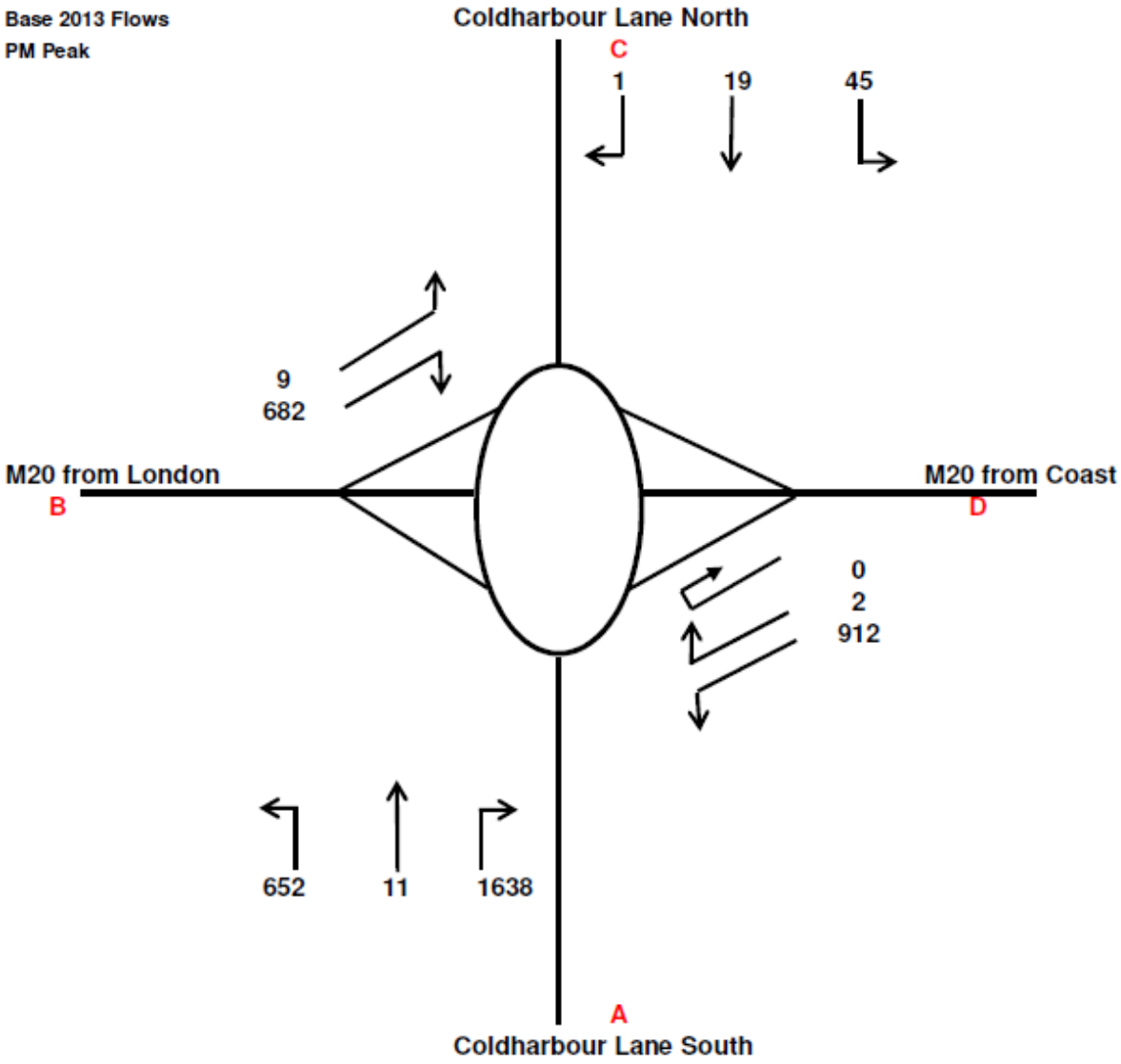
Junction 5

Figure 1: J5 Base 2006 Flows – AM Peak



Source: M20 Maidstone New Growth Point Study, Parsons Brinckerhoff Ltd., July 2007

Figure 2: J5 Base 2006 Flows – PM Peak



Source: M20 Maidstone New Growth Point Study, Parsons Brinckerhoff Ltd., July 2007

Figure 3: J5 Base 2016 Flows– AM Peak

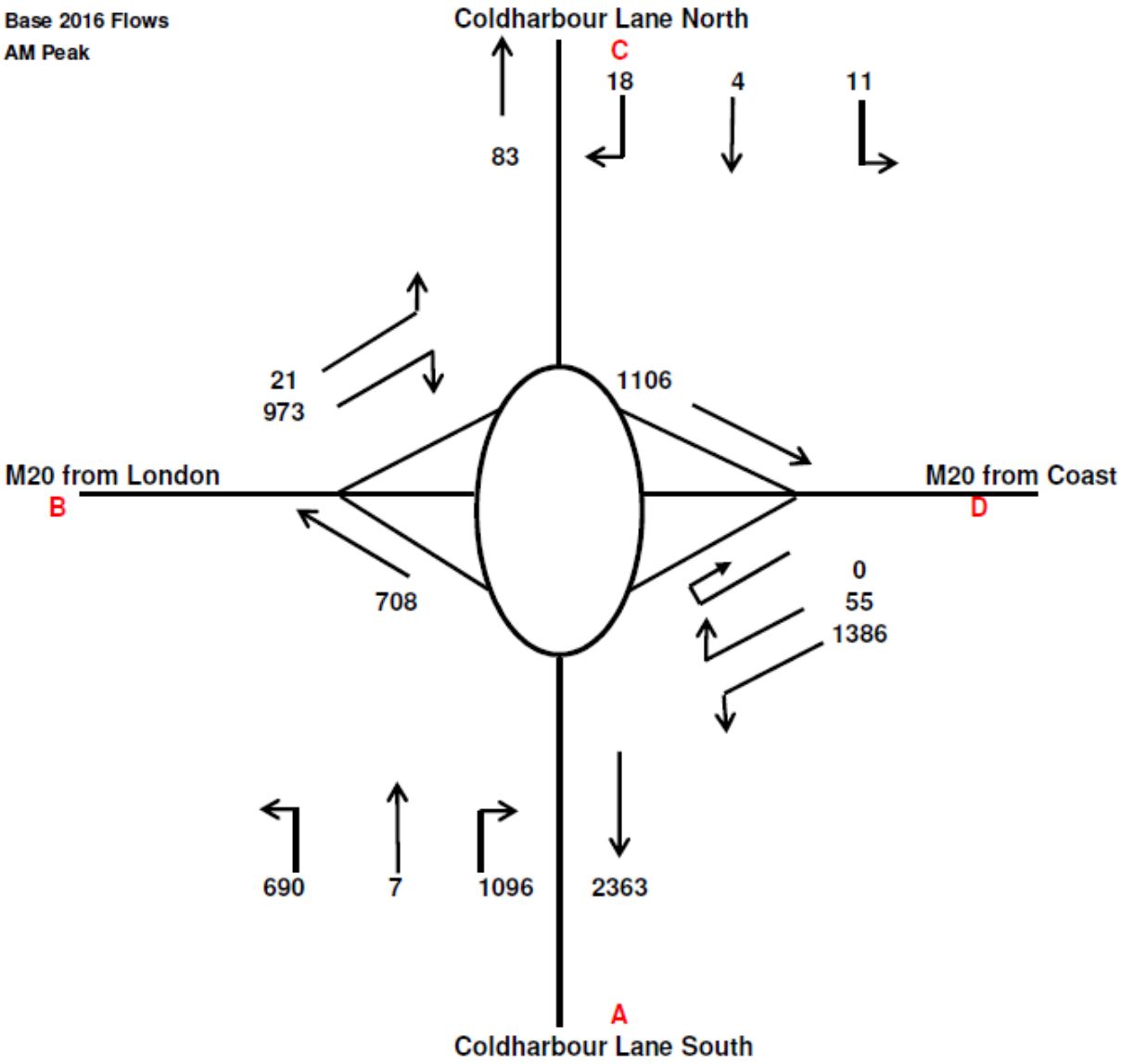
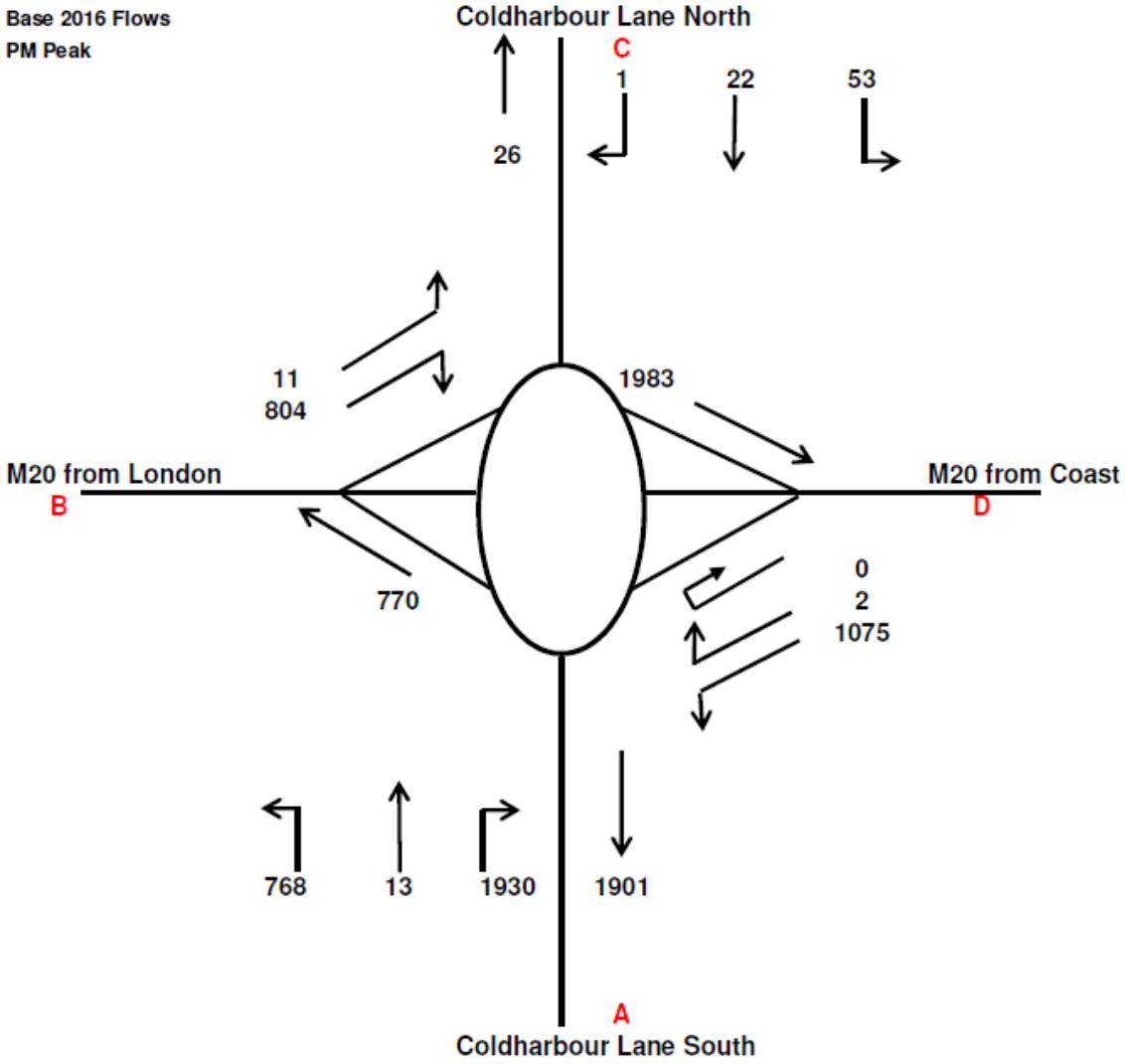


Figure 4: J5 Base 2016 Flows – PM Peak



Junction 6

Figure 5: J6 Base 2016 Flows – AM Peak

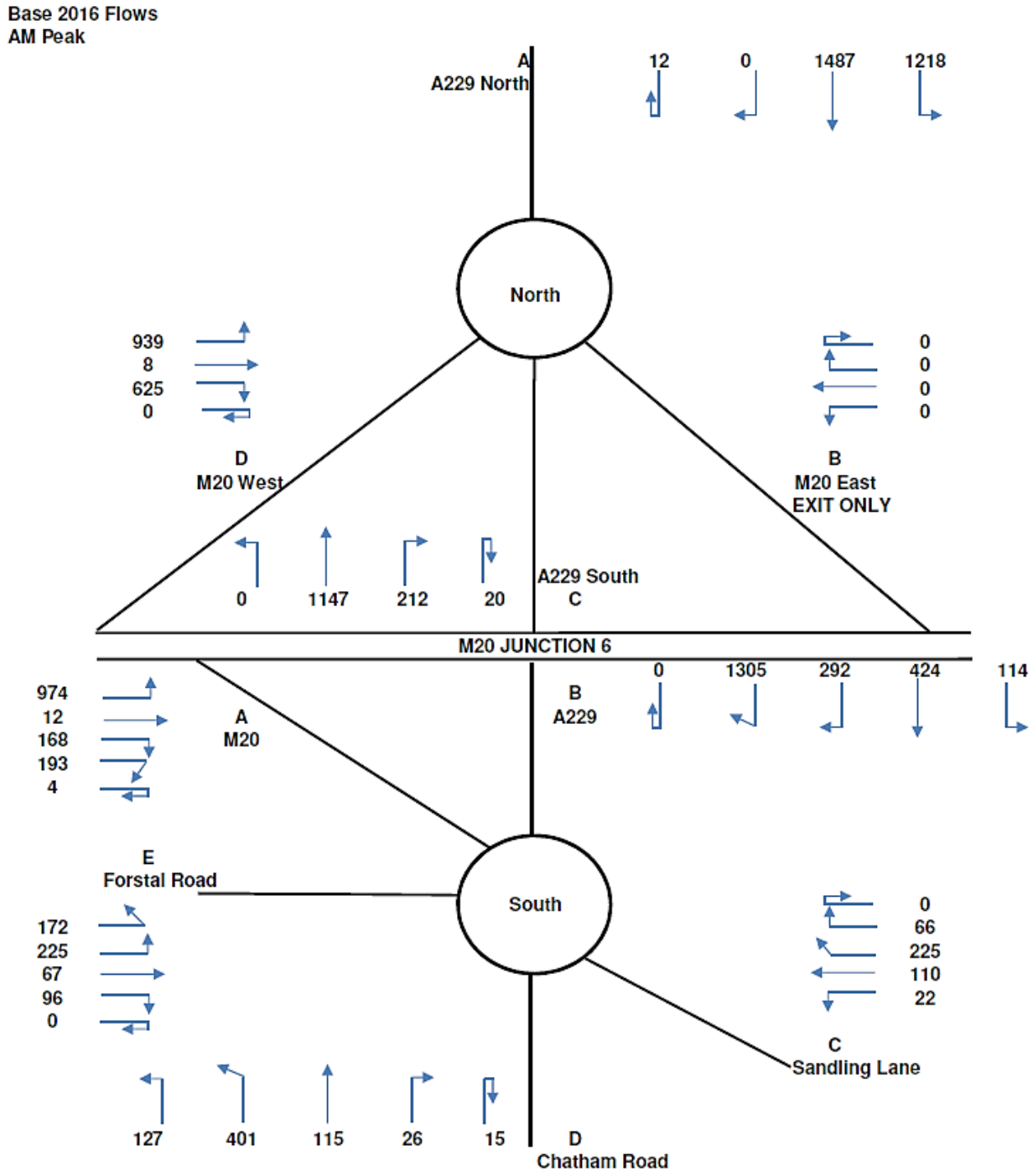
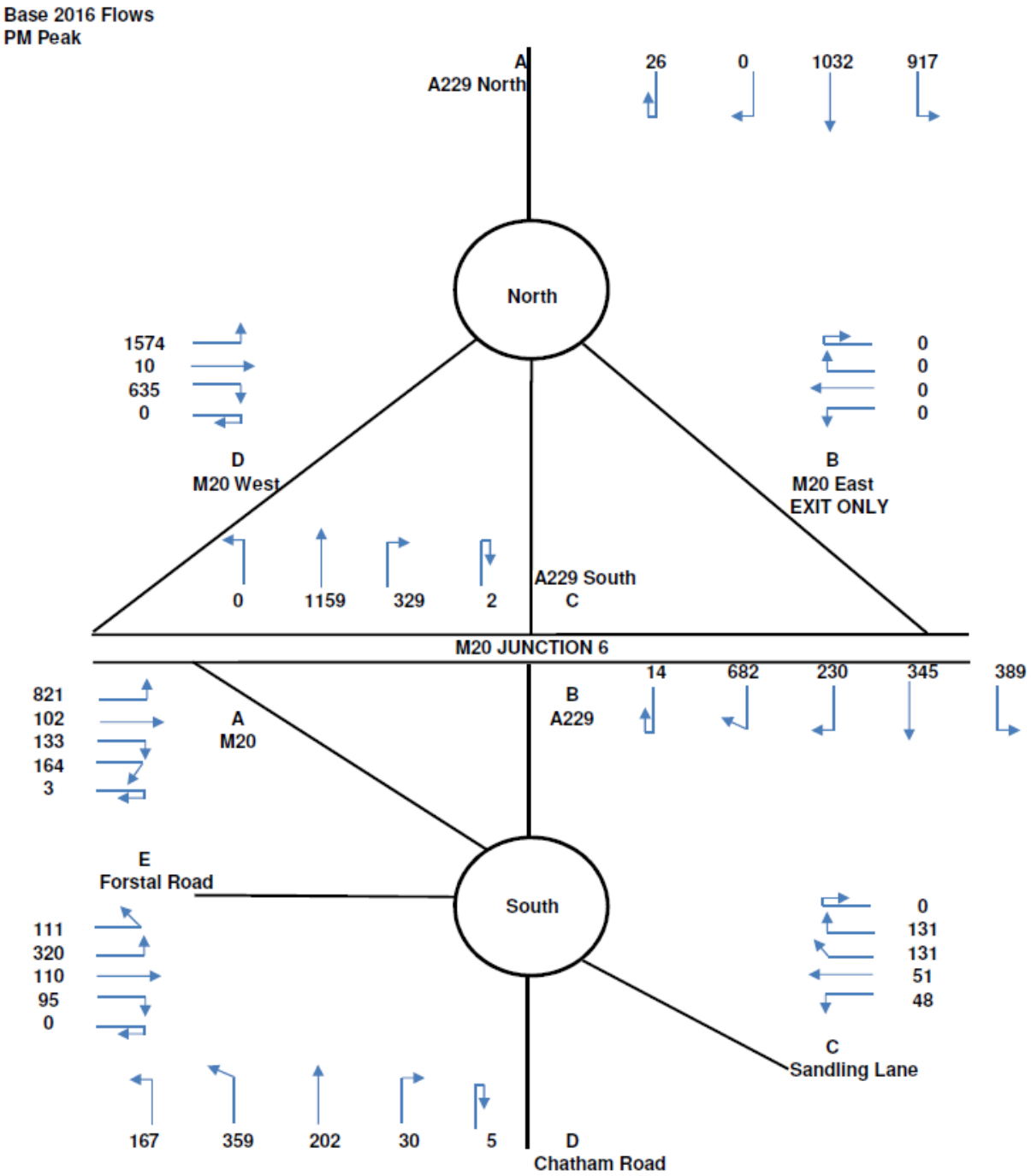


Figure 6: J6 Base 2016 Flows – PM Peak



It should be noted that the PCU conversion factors were amended in line with the other classified categories assigned for Junctions 5, 7 and 8. For these junctions, vehicles specified as a car or LGV were recorded under the same category ‘car’ and therefore assigned the same factor value (1.0). For Junction 6 they were recorded as two separate categories and although originally assigned different factor values (1.0 and 1.5 respectively) this was adjusted in line with the other junctions and both categories were assigned a value of 1.0.

Junction 7

Figure 7: J7 Base 2016 Flows – AM Peak

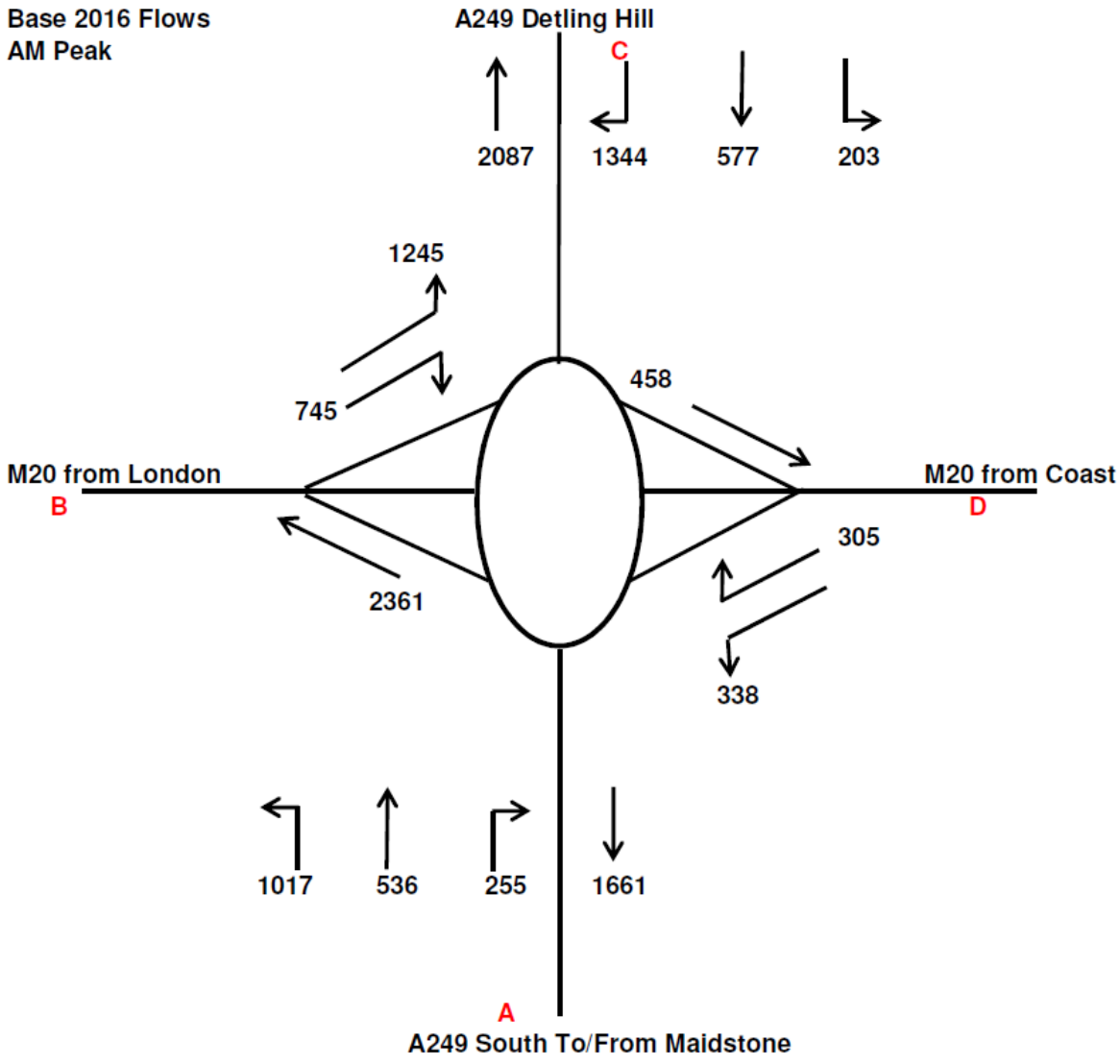
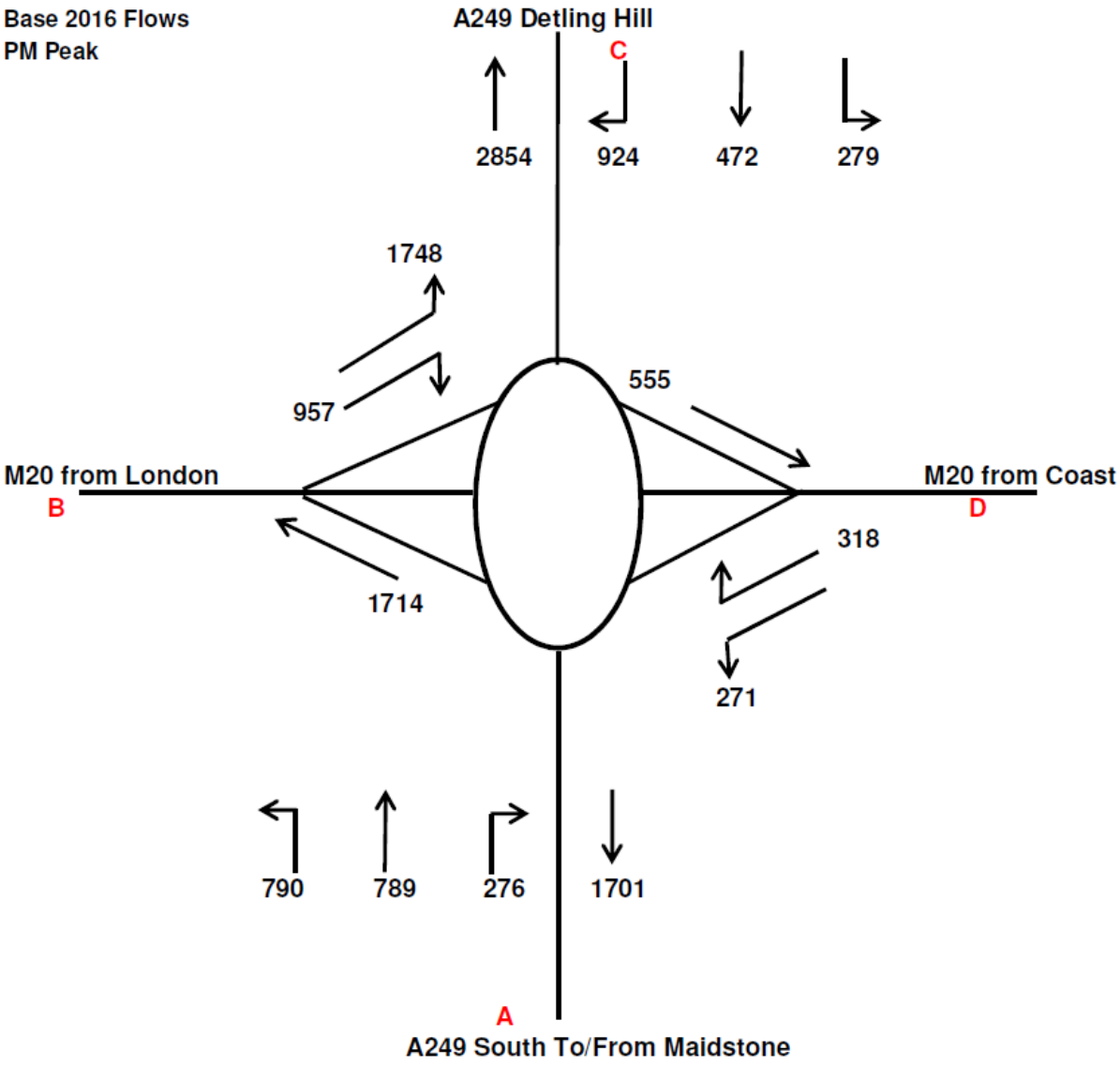
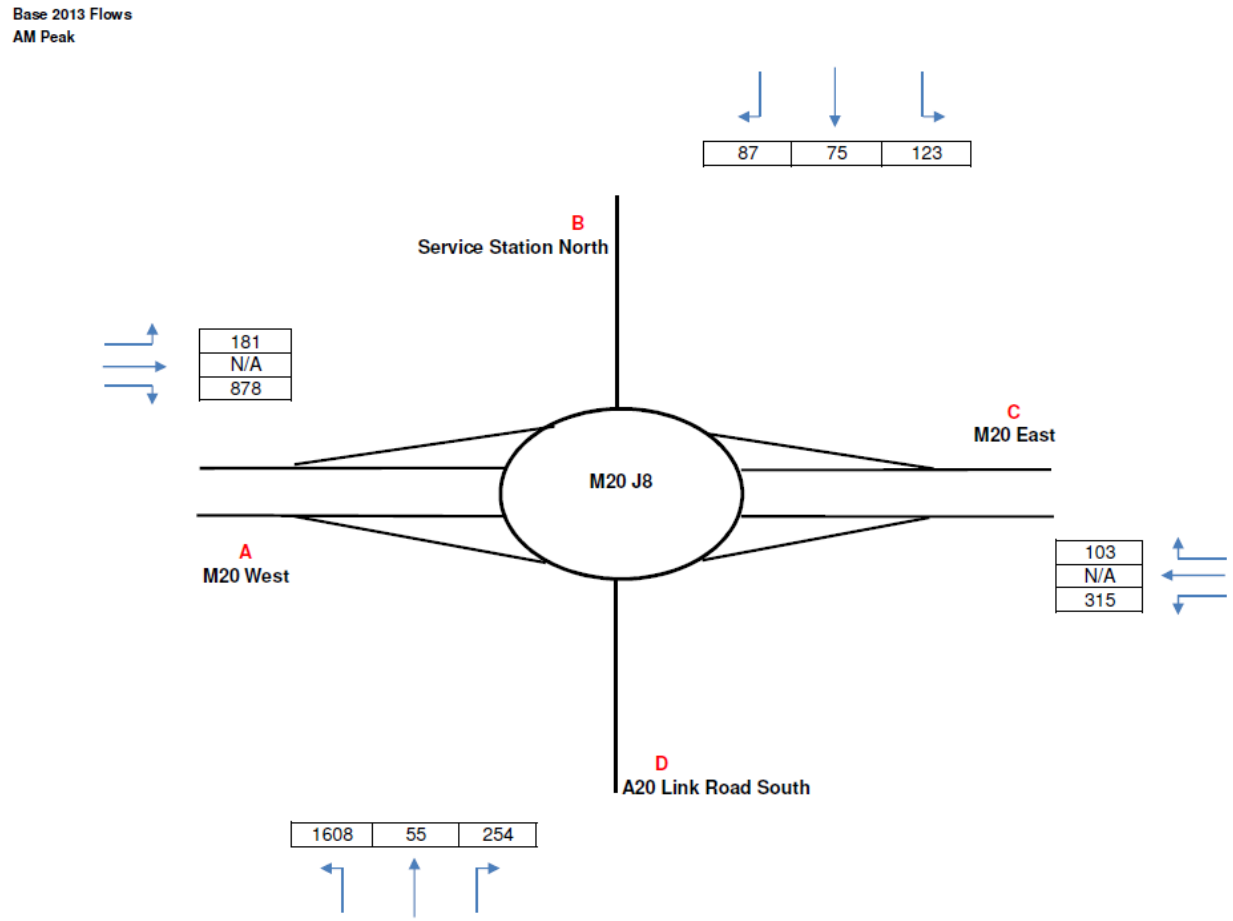


Figure 8: J7 Base 2016 Flows – PM Peak



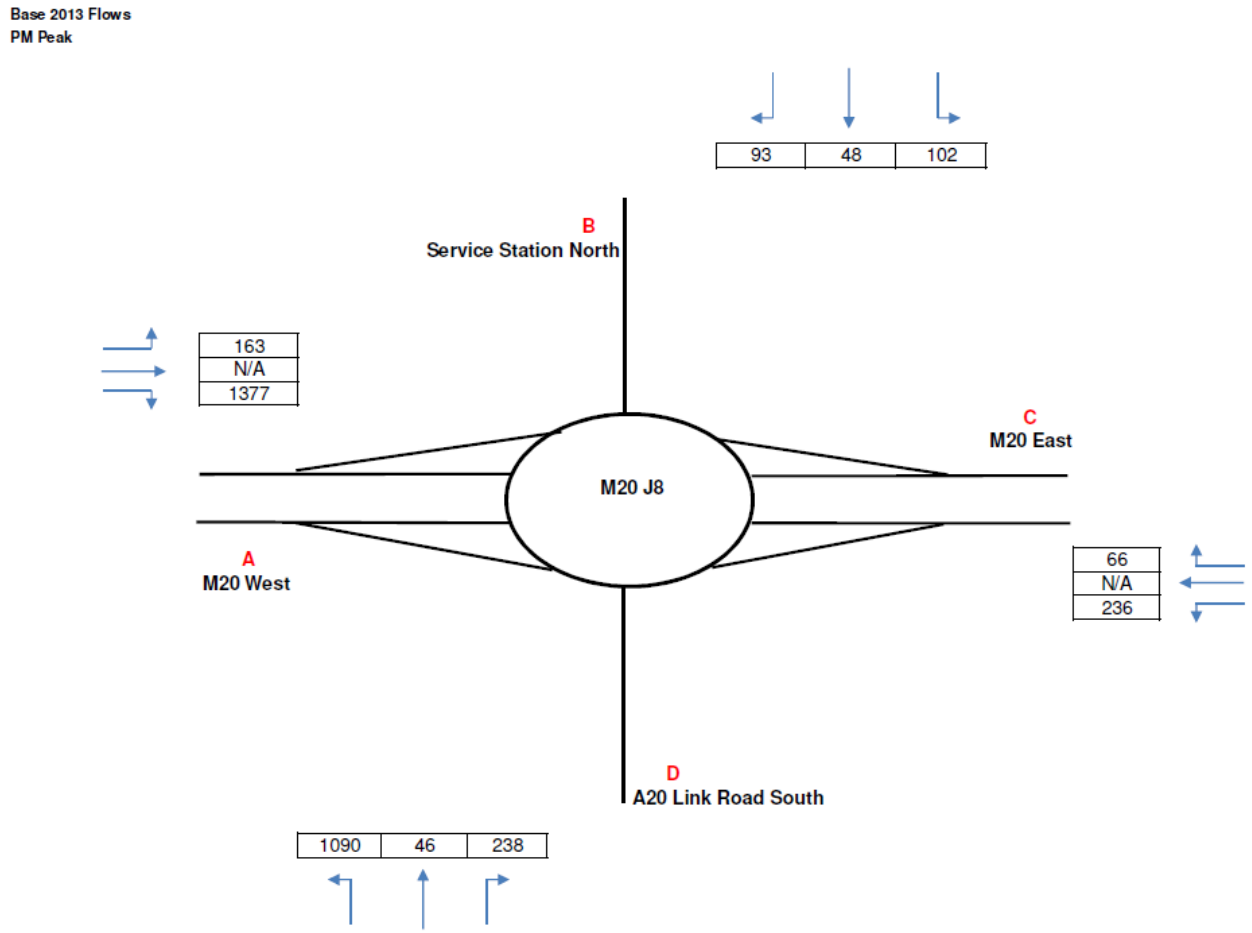
Junction 8

Figure 9: J8 Base 2013 Flows – AM Peak



Source: Waterside Park M20 Junction 8, Maidstone, dha transport, September 2013.

Figure 10: J8 Base 2013 Flows – PM Peak



Source: Waterside Park M20 Junction 8, Maidstone, dha transport, September 2013.

Figure 11: J8 Base 2016 Flows – AM Peak

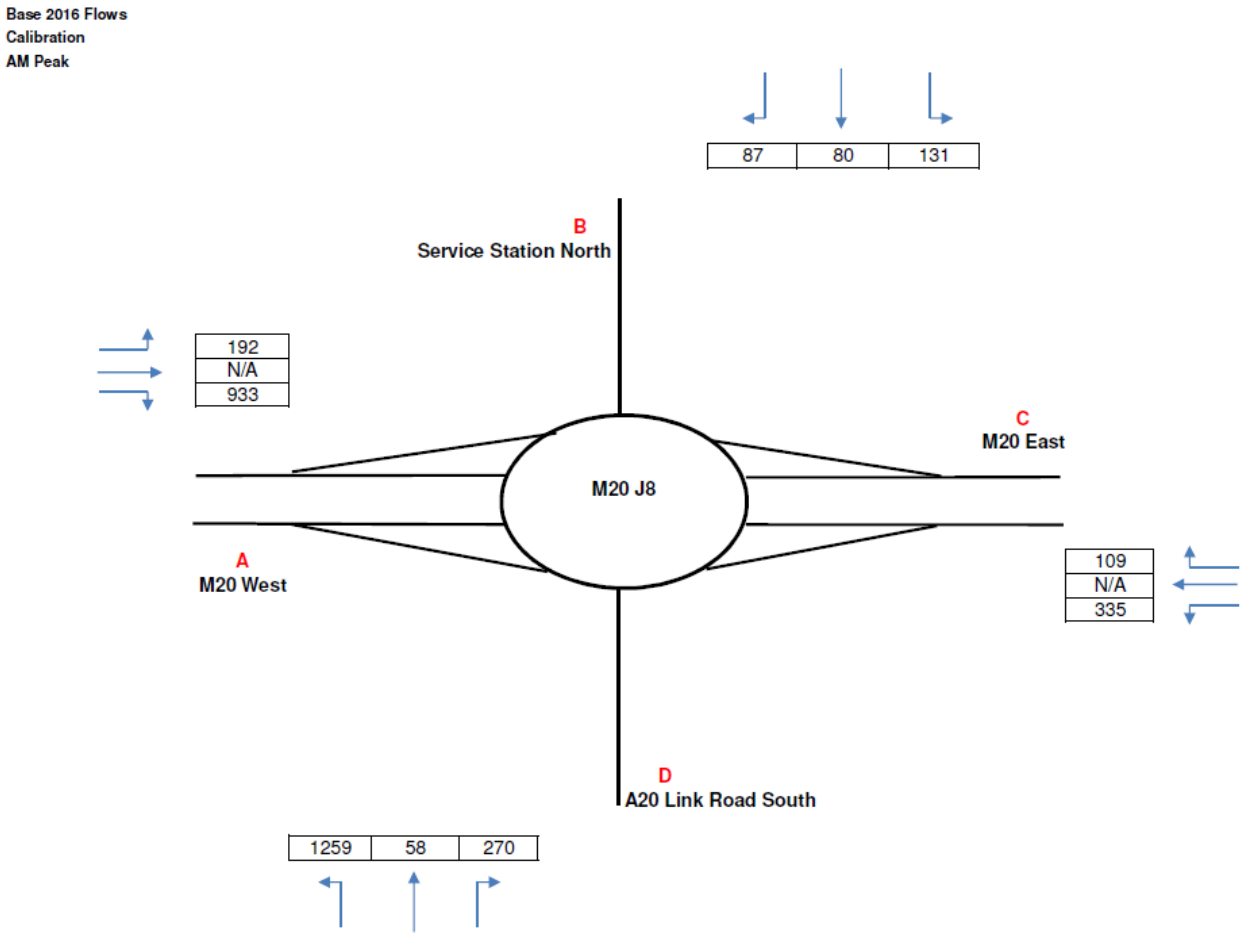
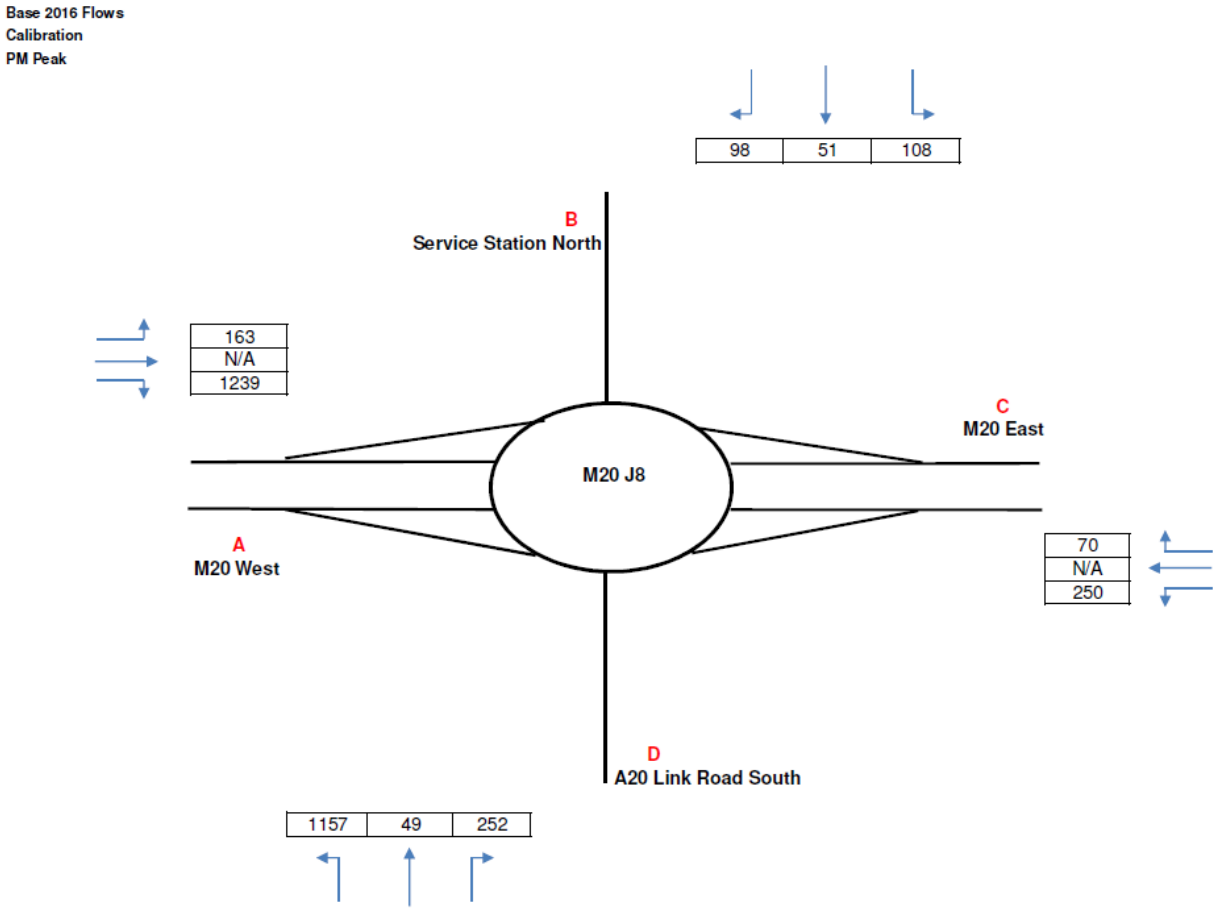


Figure 12: J8 Base 2016 Flows – PM Peak



Initial modelling results for Junction 8 produced significant queuing and delays for the existing 2016 scenario, exceeding the expected junction performance based on our local knowledge of this junction. Results were analysed and the surveyed flows for the left turn movement from the A20 Link Road South arm to the M20 West arm (on-slip) appeared particularly high for the AM peak, with significantly lower values for the ahead and right turn movements from the southern arm.

The 2013 flows used for the initial modelling which were obtained from the Waterside Park Transport Assessment were then compared to TRADS data for the M20 West arm, with both the on and off-slip roads showing significantly lower flows from the TRADS data for the years 2014, 2015 and 2016. The TRADS data illustrated a general decrease in flows rather than an increase in flows, which is assumed when applying the TEMPro factors to the 2013 traffic surveys.

TRADS data was used to replace the traffic survey data for the M20 West arm, using updated 2016 TRADS data in comparison to the 2013 traffic survey data.

For the AM peak, the TRADS on-slip data was used as the new total flow to the M20 West, replacing traffic survey movements to the M20 West from the south and north arms, keeping the same ratio of traffic between the north and the south arms.

For the PM peak, the TRADS off-slip data was used as the new total flow from the M20 West, replacing traffic survey movements from the M20 West to the south and north arms, using the same ratio between the north and the south arms.

With the traffic survey data obtained in the third week of May 2013, the third week in June was used as the most up to date representative sample for 2016 TRADS data, and the average of the AM and PM peak hours across the week was used as the new flow values. Flows of the eastbound on and off-slip roads were not adjusted.

2.2 Development Flows

The development flows consider household and job number assumptions for Maidstone, Tonbridge and Malling, and Swale. Maidstone includes the following developments:

- 5,171 approved units (as per the Maidstone Borough Local Plan Publication (Regulation 19) May 2016: Housing Sites)
- 3,457 pending units (as per the Maidstone Borough Local Plan Publication (Regulation 19) May 2016: Housing Sites)
- 3,790 units at Broad Allocation Sites (Invicta Park, Land at Lenham, Maidstone Town Centre)
- 2,860 housing units already built during the Local Plan period 1 April 2011 to 31 March 2016 (Source: Housing Topic Paper)
- 2,403 Extant Permission units (5,474 extant permission units as listed in Appendix C of the Housing Topic Paper minus the 3,072 extant units included in the Maidstone Borough Local Plan Publication)
- 1,600 units from the number of forecasted Windfall Sites
- 19,281 total housing units (sum of approved development, pending development, broad location, completed development, extant permissions and windfall sites)
- 721 units housing surplus (total housing units supply (19,821) minus the objectively assessed need number of units (18,650).

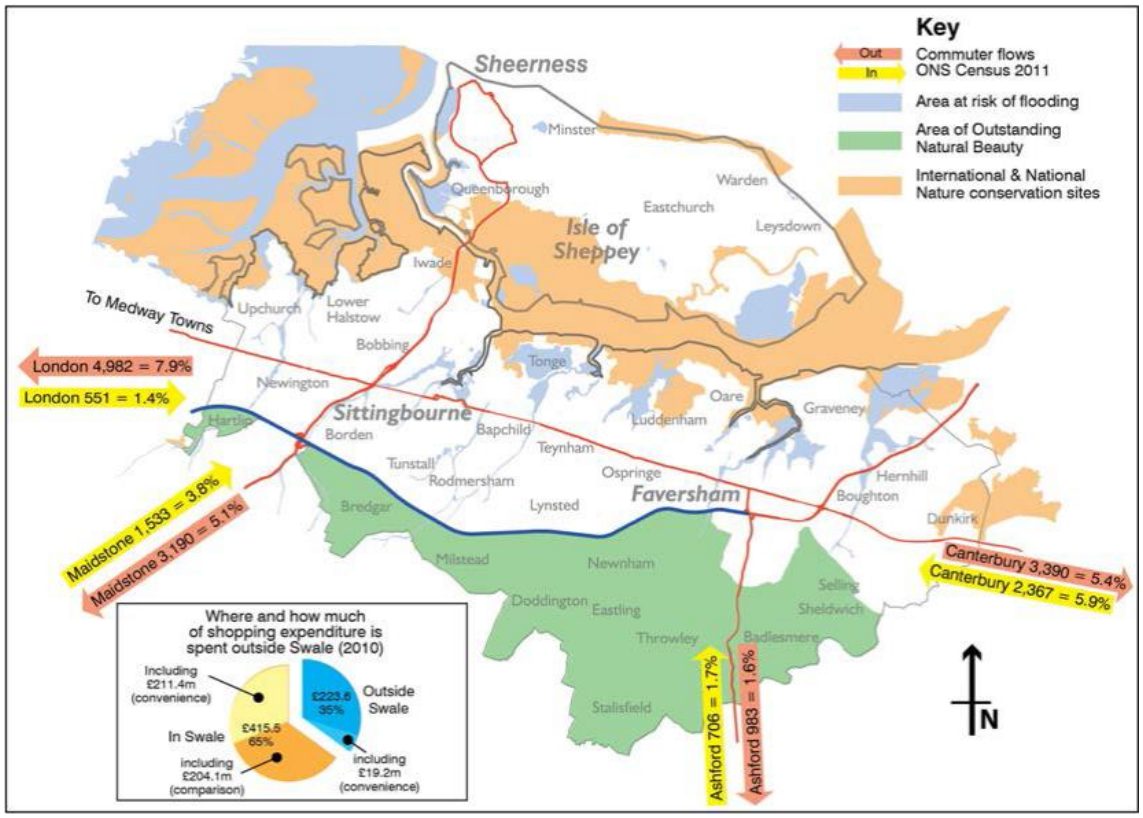
Scenario 1 includes approved development and extant permissions, with completed developments assumed to be included in the 2016 baseline, i.e. all *consented development*, totalling 7,574 units. The numbers are presented in **Table 4.**

Scenario 2 includes approved development, pending development, development in Broad Locations, extant permissions and windfall sites, i.e. both *consented* and *non-consented development*, totalling 15,700 units. The numbers are presented in **Table 5.**

Detailed discussions were held with officers of Tonbridge and Malling Borough Council with regards to sites to be included in their Regulation 18 Local Plan consultation and whether they were consented or non-consented. The numbers are presented in **Table 4** and **Table 5** below.

Contact was also made with officers from Swale Borough Council to establish the number of consented and non-consented households and jobs that could potentially impact the A249 and M20 Junction 7. The drawing shown in **Figure 13** below shows the commuter patterns of Swale based on the 2011 census. This suggests that 5.1% commute towards Maidstone with 7.9% towards London. In agreement with MBC officers it was assumed that all of the 5.1% would affect M20 Junction 7 and that a third of those travelling towards London (2.6%) would affect M20 Junction 7. Therefore, 7.7% of all consented and non-consented housing and employment in Swale would affect M20 Junction 7. The numbers are presented in **Table 4** and **Table 5** below.

Figure 13: Swale Commuter Flows



Source: Bearing Fruits 2031: The Swale Borough Local Plan Proposed Main Modifications June 2016. http://archive.swale.gov.uk/assets/Planning-General/Planning-Policy/Evidence-Base/Main-Modifications-June-2016/Local-Plan-Main-Modifications-Chapter-2.pdf

The locations of the household and employment developments was considered in detail and a likely distribution across the four motorway junctions was assumed. This is shown in **Appendix B**. The resulting household and employment (job) numbers are summarised below in **Table 4** and **Table 5**.

Scenario 1 – Consented Development

Table 4: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	1268	2295	2218	1056	6837
Maidstone Employment	0	42	4242	0	4285
Tonbridge and Malling Household	352	11	0	0	363
Tonbridge and Malling Employment	404	-34	0	0	371
Swale Household	0	0	262	0	262
Swale Employment	0	0	400	0	400
Overall Household	1620	2306	2480	1056	7462
Overall Employment	404	9	4642	0	5055

Scenario 2 – All Development (Consented and Non Consented Development)

Table 5: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	2183	5541	3736	2630	14090
Maidstone Employment	0	757	5117	883	6757
Tonbridge and Malling Household	2952	511	0	0	3463
Tonbridge and Malling Employment	1404	-34	0	0	1371
Swale Household	0	0	968	0	968
Swale Employment	0	0	400	0	400
Overall Household	5135	6052	4705	2630	18521
Overall Employment	1404	723	5517	883	8527

2.3 TEMPro

TEMPro (version 7 with planning dataset 70 and NTM dataset AF15) has been interrogated with regards to forecast background growth in traffic. The growth rates were adjusted using the National Transport Model (NTM) for rural motorway in Tonbridge and Malling for Junction 5 and in Maidstone for Junctions 6, 7 and 8. Growth rates between 2016 and 2031 have been generated for all junctions.

The methodology is further documented in **Appendix C** of this report, and was agreed and approved by Highways England on 19 October 2016.

Table 6 and **Table 7** show the background growth rates.

Table 6: TEMPro Background Growth Rates for Tonbridge and Malling 2016-2031

Time Period	Factor
AM peak	1.079485
PM peak	1.078403

Table 7: TEMPro Background Growth Rates for Maidstone: 2016-2031

Time Period	Factor
AM Peak	1.084134
PM Peak	1.083107

The proposed development generates two scenarios (Scenario 1 and Scenario 2) as explained in **Section 2.2** above. The housing and job numbers as presented in **Table 4** and **Table 5** above were inputted into TEMPro for each junction to obtain 'with development' growth factors for each scenario and junction, as shown in **Table 8** to **Table 11** below:

Table 8: 'With Development' TEMPro Growth Rates for Junction 5 in Tonbridge and Malling: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.097704928
Scenario 1 - PM Peak	1.097921193
Scenario 2 - AM Peak	1.138254536
Scenario 2 - PM Peak	1.141390373

Table 9: 'With Development' TEMPro Growth Rates for Junction 6 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.100408235
Scenario 1 - PM Peak	1.101219227
Scenario 2 - AM Peak	1.131658467
Scenario 2 - PM Peak	1.135010568

Table 10: 'With Development' TEMPro Growth Rates for Junction 7 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.133118253
Scenario 1 - PM Peak	1.131171871
Scenario 2 - AM Peak	1.154690644
Scenario 2 - PM Peak	1.153933718

Table 11: 'With Development' TEMPro Growth Rates for Junction 8 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.091595454
Scenario 1 - PM Peak	1.091379189
Scenario 2 - AM Peak	1.108680355
Scenario 2 - PM Peak	1.109166951

2.4 Future Base 2031 Flows

Based on the above factors in **Table 6** and **Table 7**, the 2031 future base flows were calculated. Note, they include background growth but no consented or non-consented development. The AM and PM peaks are illustrated in **Figure 14** to **Figure 21**.

Figure 14: Future Base 2031 Flows Junction 5 – AM Peak

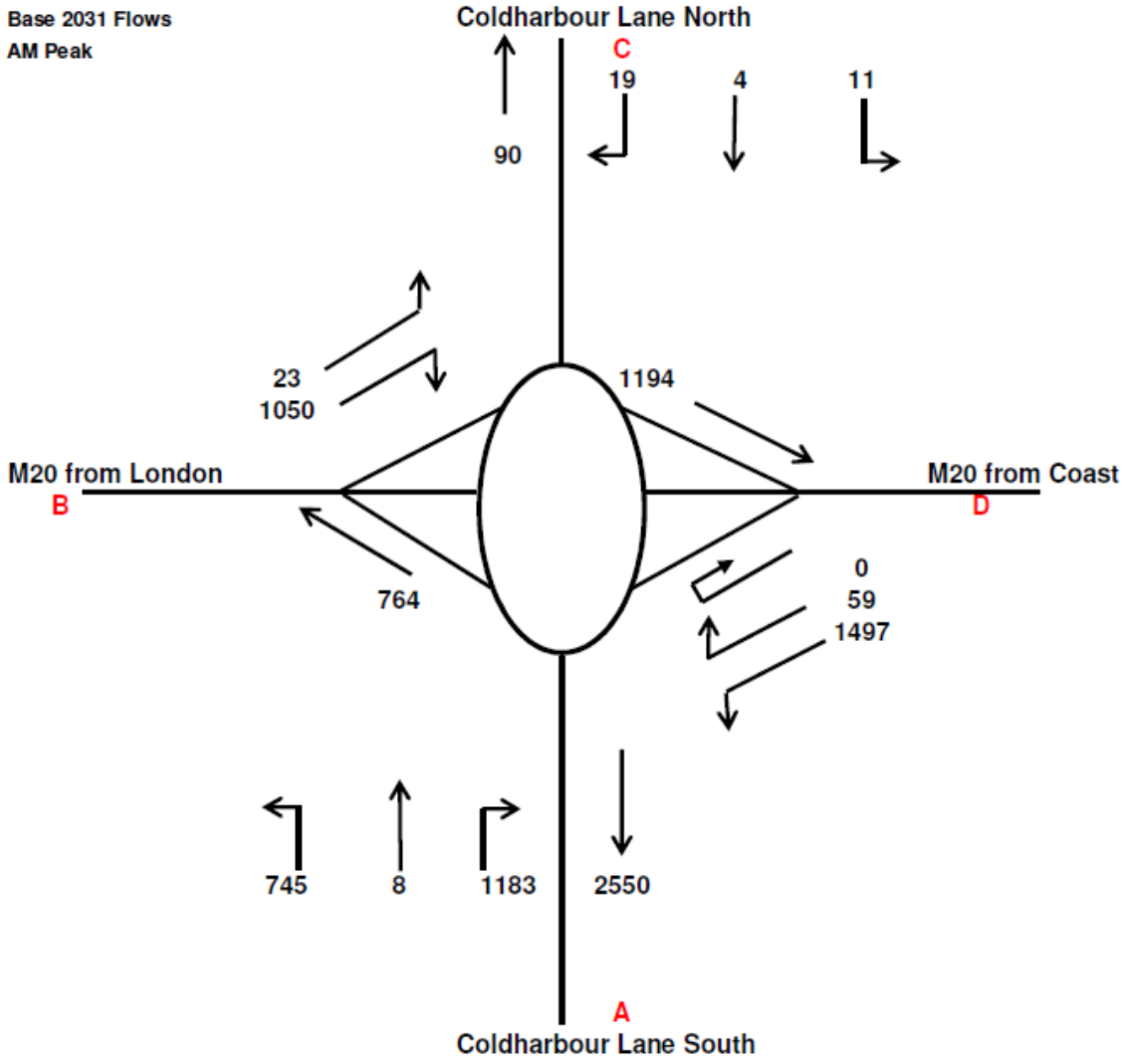


Figure 15: Future Base 2031 Flows Junction 5 – PM Peak

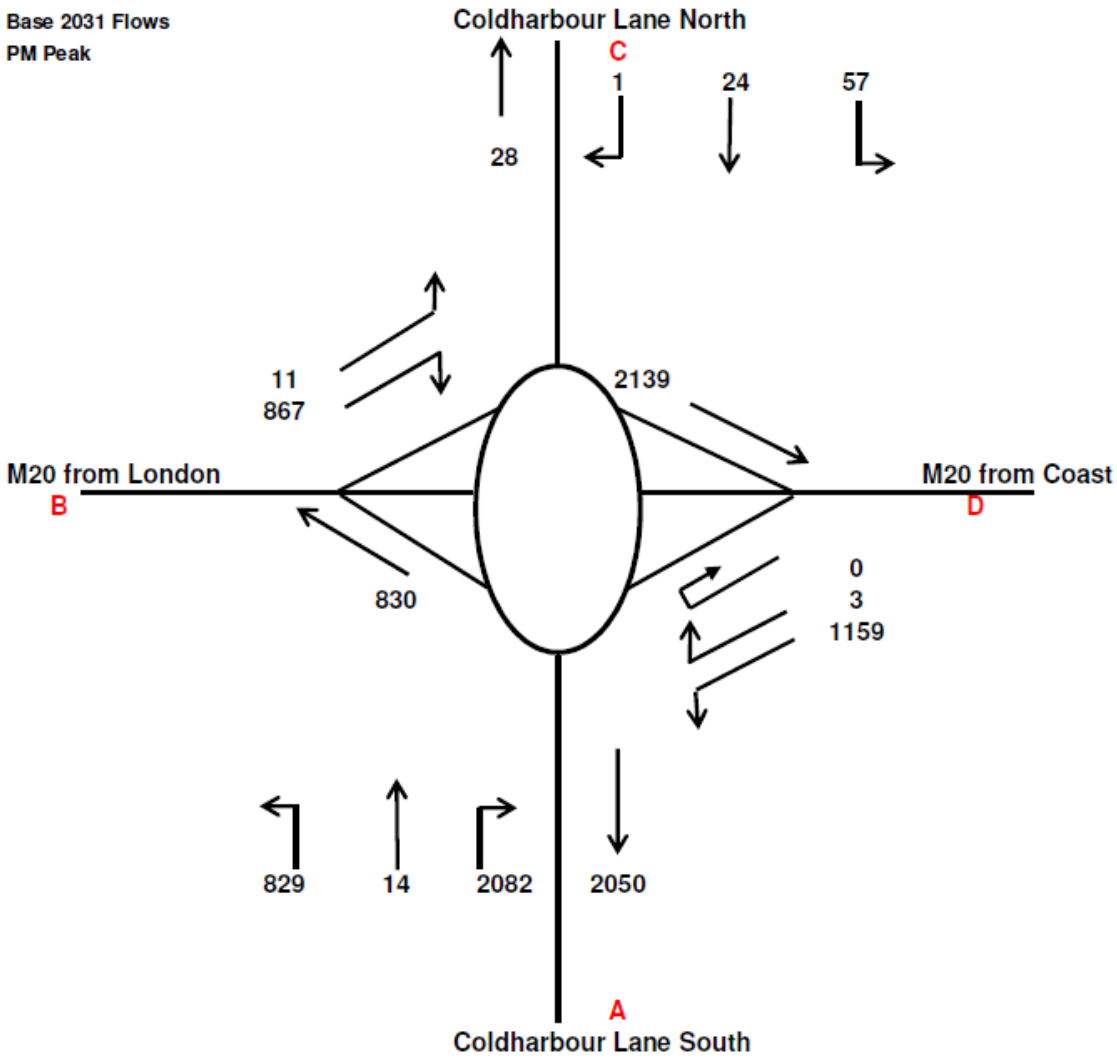


Figure 16: Future Base 2031 Flows Junction 6 – AM peak

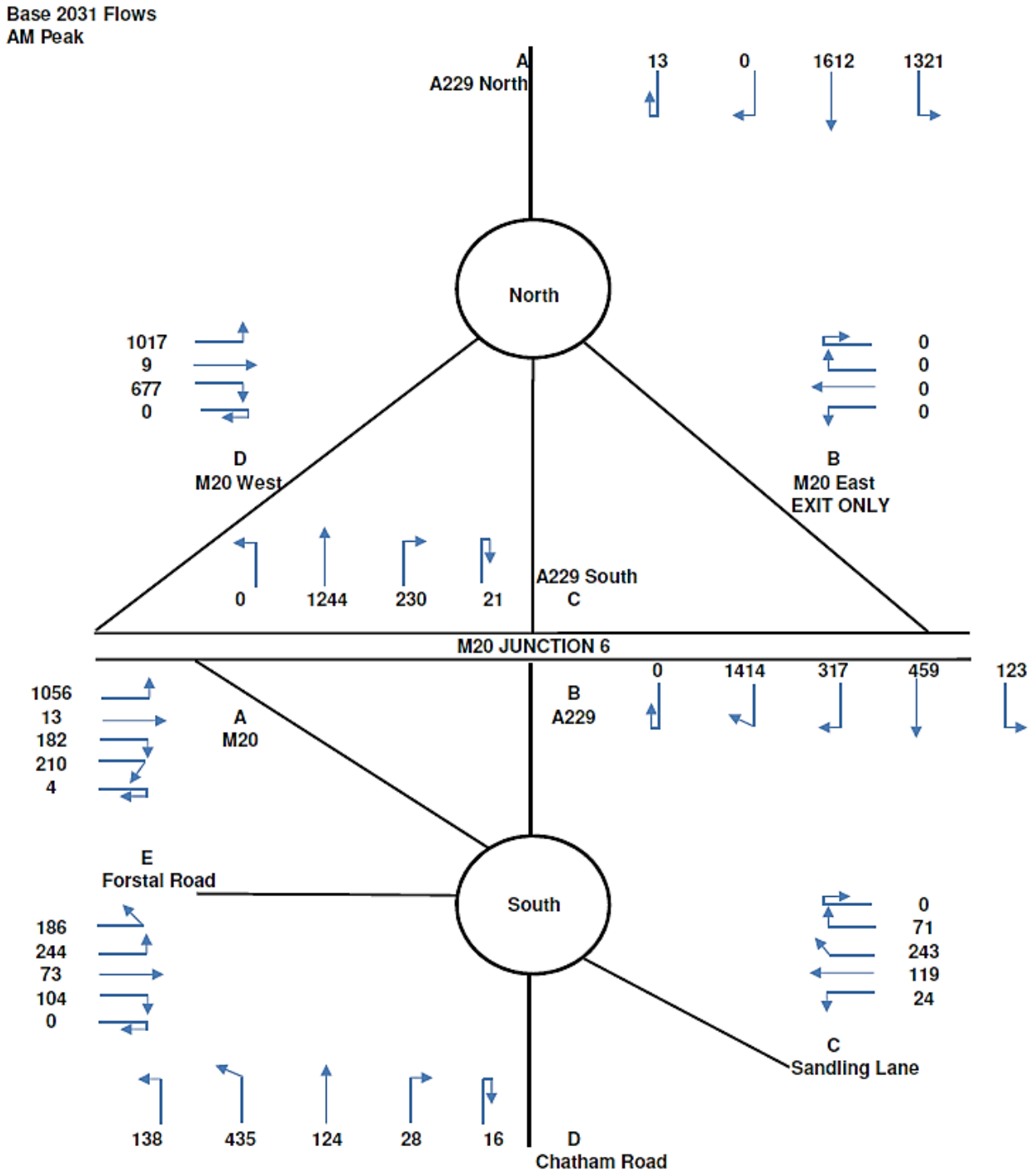


Figure 17: Future Base 2031 Flows Junction 6 – PM Peak

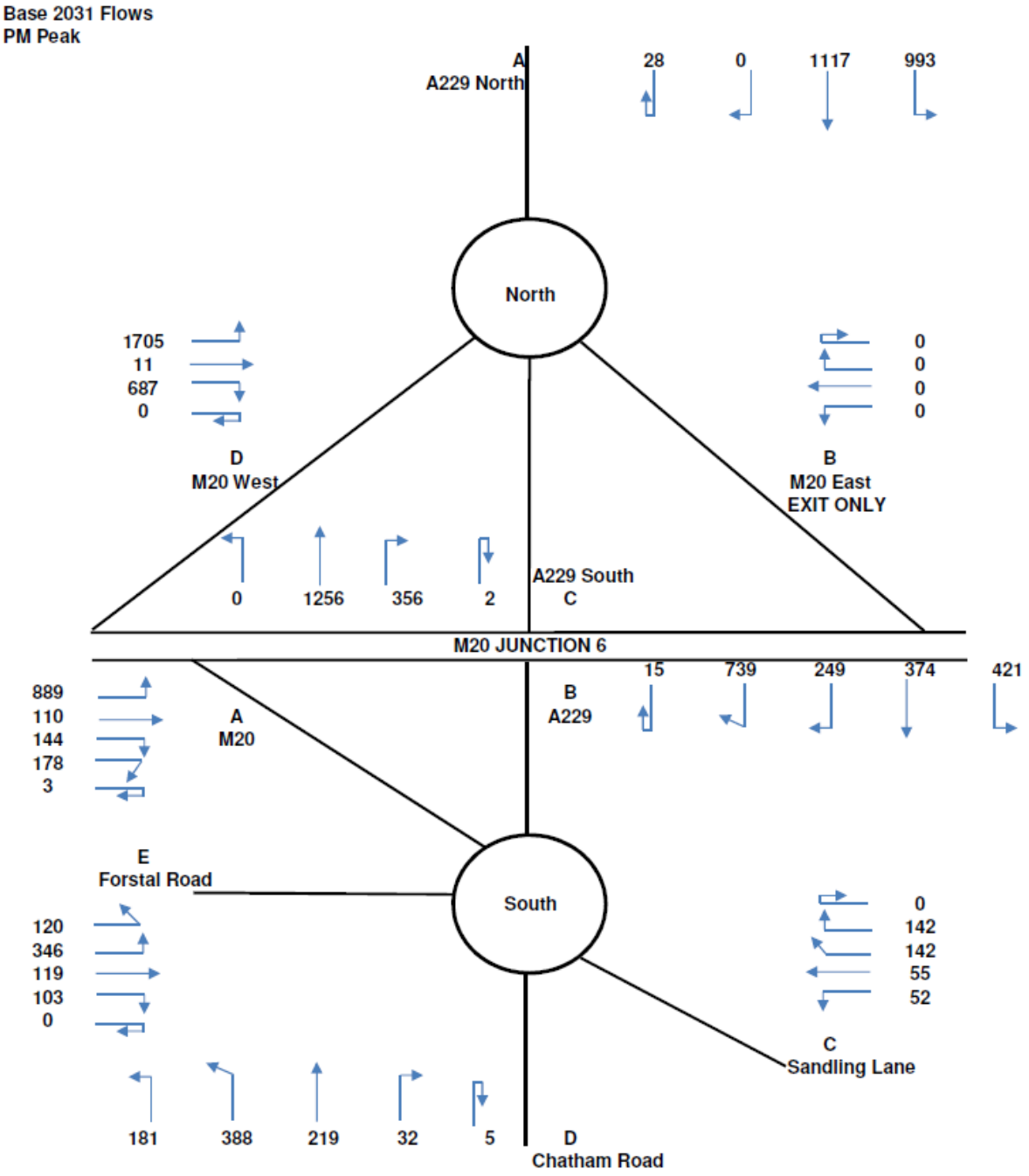


Figure 18: Future Base 2031 Flows Junction 7 – AM Peak

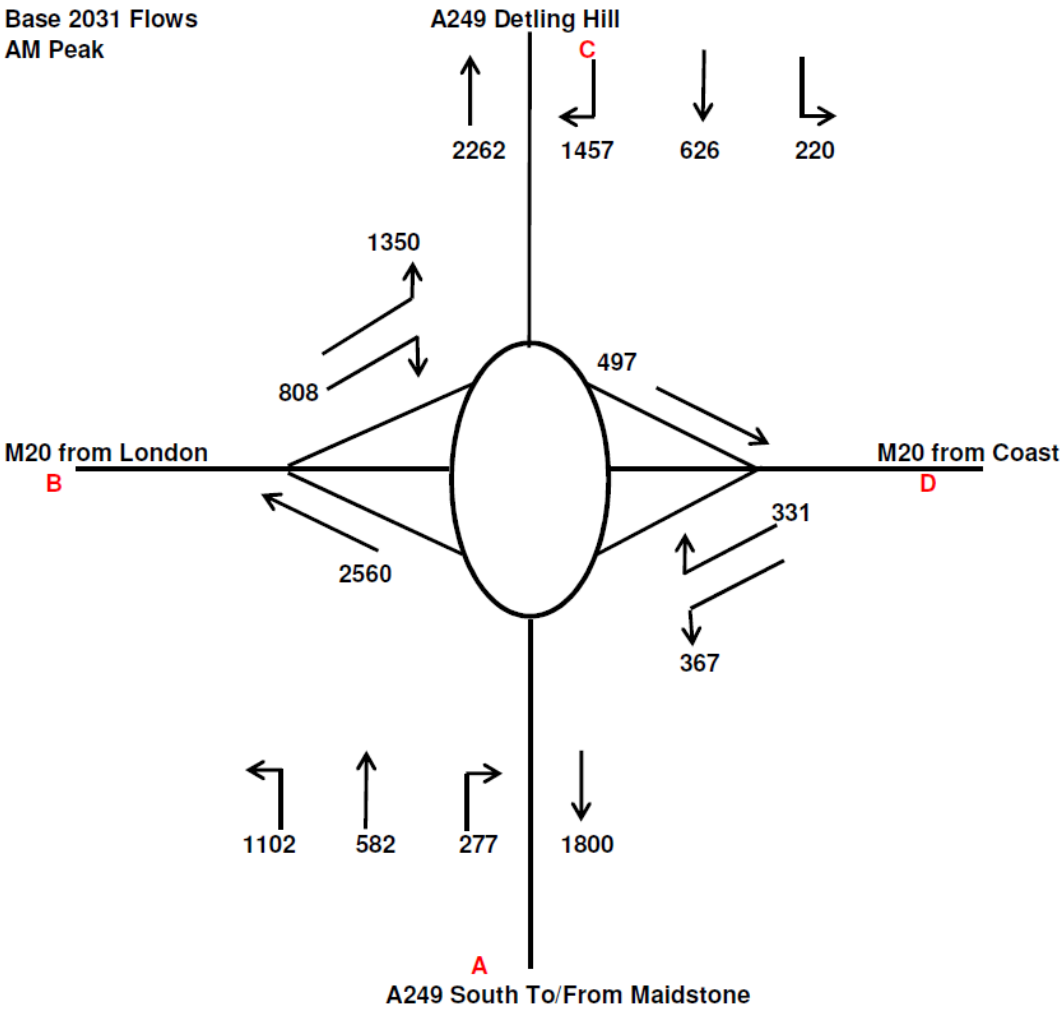


Figure 19: Future Base 2031 Flows Junction 7 – PM Peak

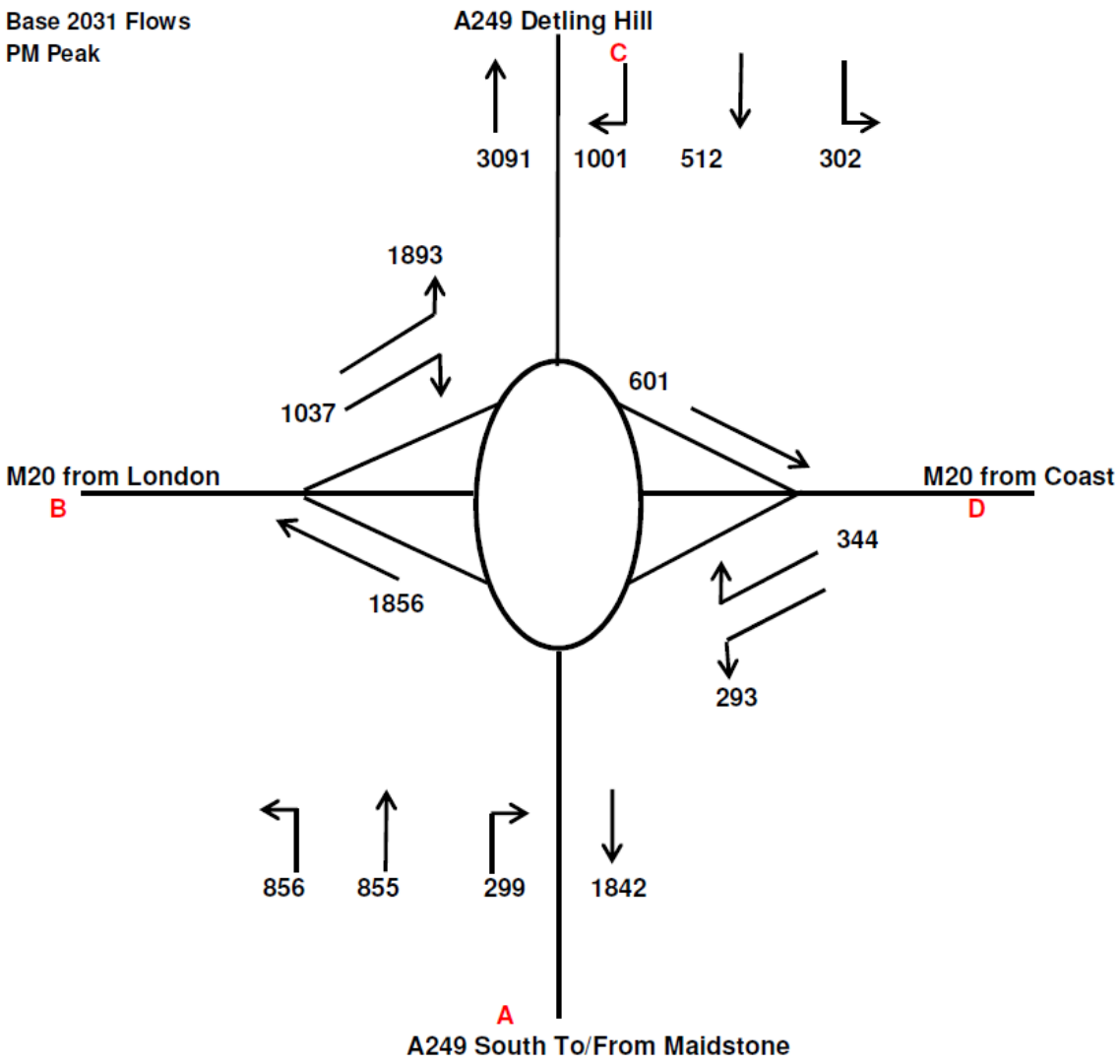


Figure 20: Future Base 2031 Flows Junction 8 – AM Peak

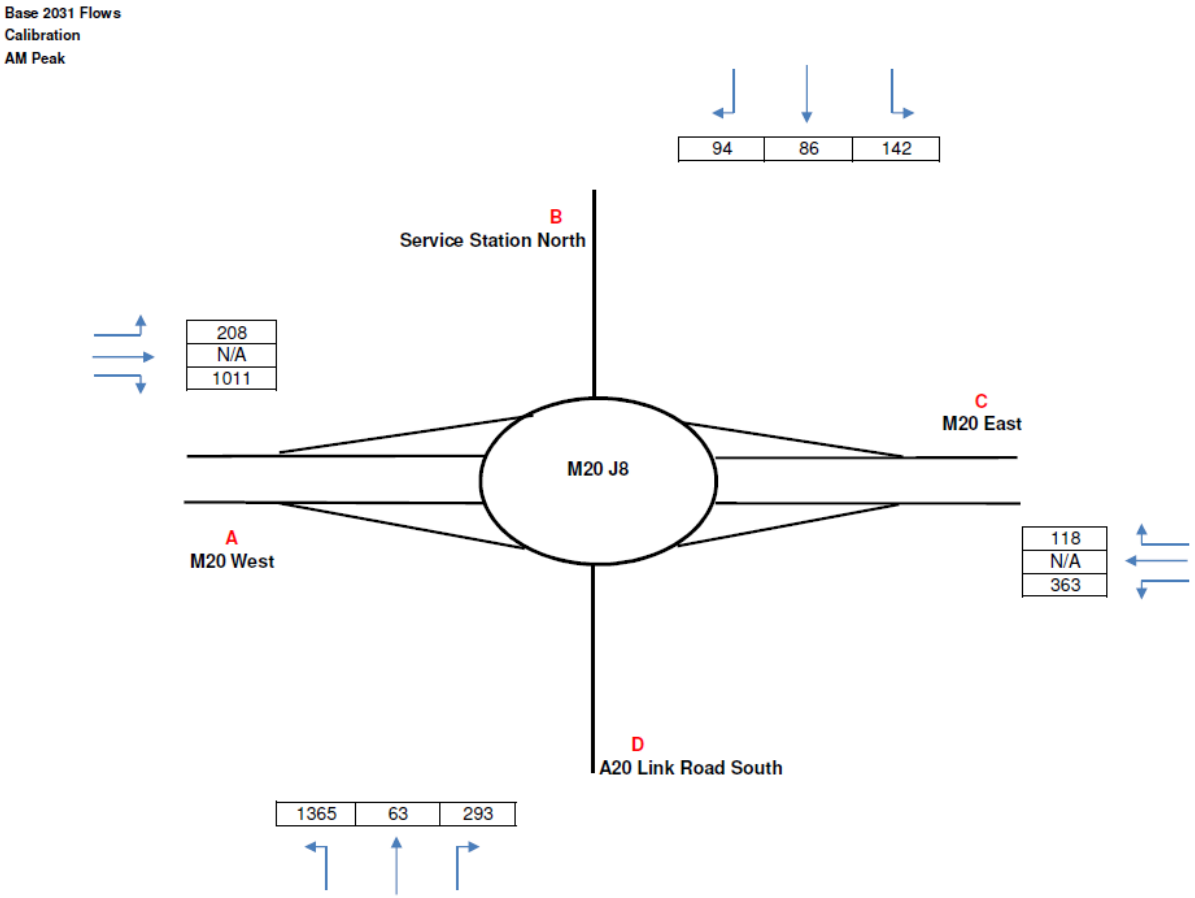
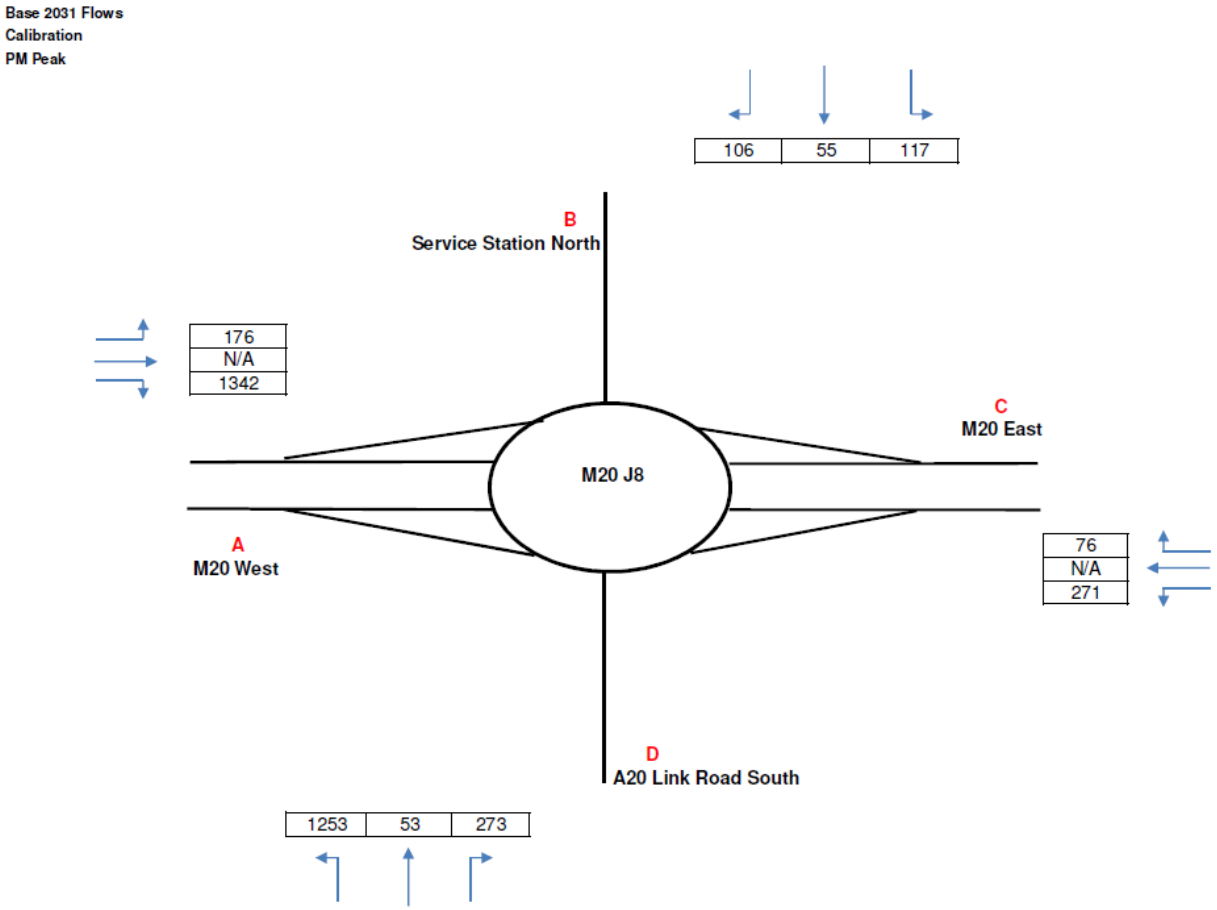


Figure 21: Future Base 2031 Flows Junction 8 – PM Peak



2.5 2031 'with consented development' Flows (Scenario 1)

The future base 2031 flows were multiplied by the 'with development' growth factors for Scenario 1 shown in **Section 2.3**. The resulting 2031 'with consented development' flows (Scenario 1) are shown in **Figure 22** to **Figure 29**.

Figure 22: Future 2031 'with consented development' Flows Junction 5 – AM Peak

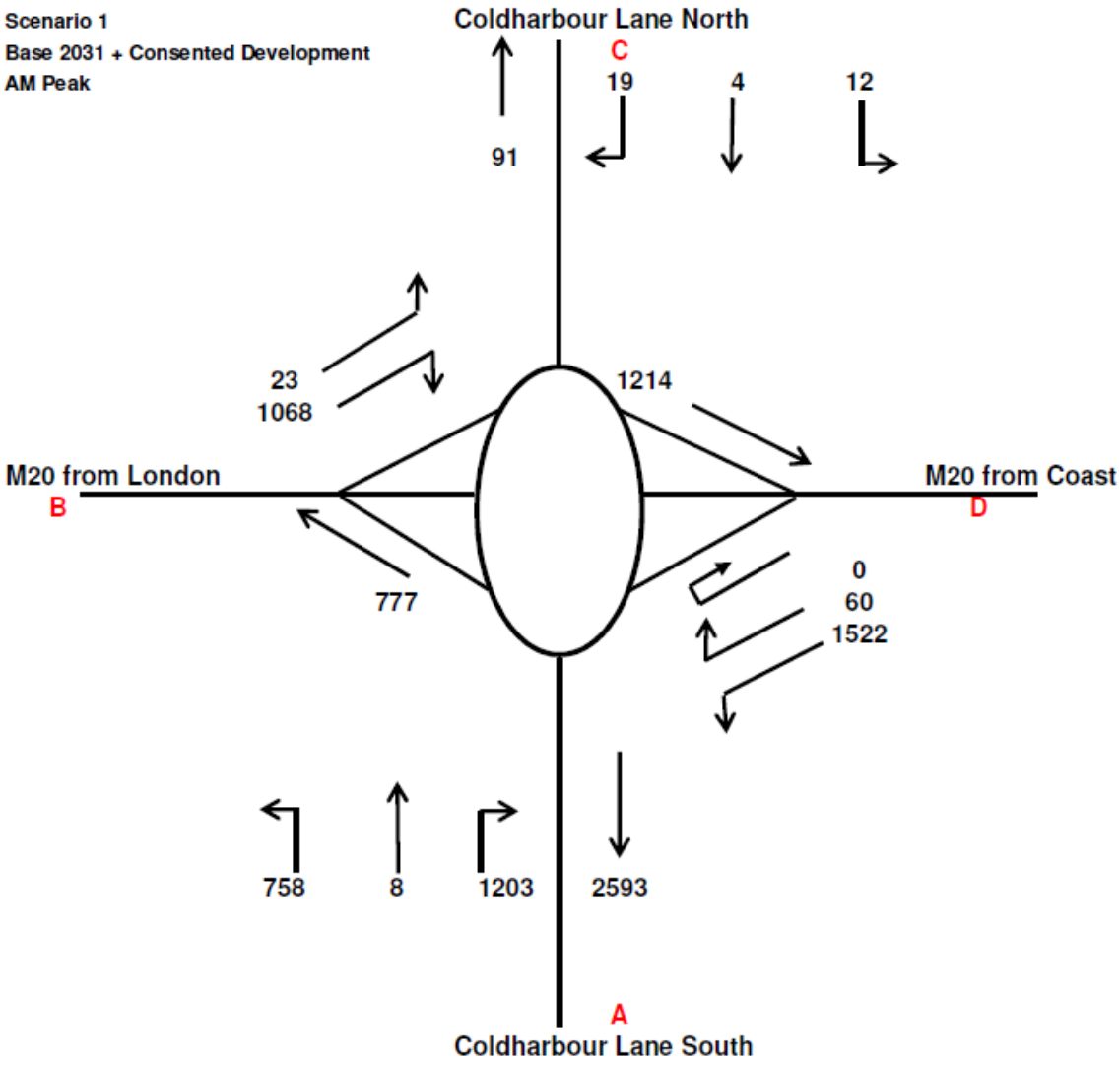


Figure 23: Future 2031 'with consented development' Flows Junction 5 – PM Peak

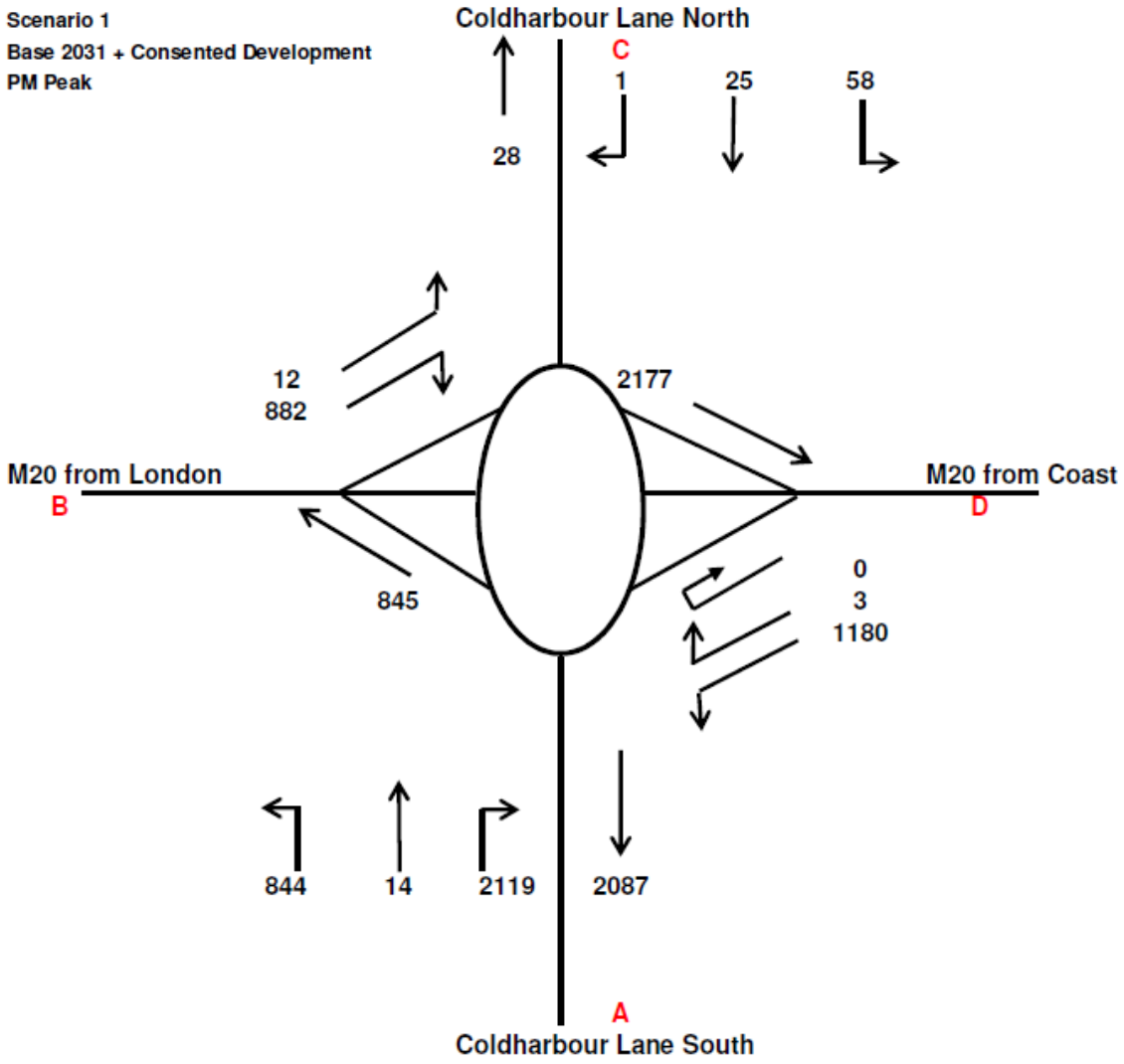


Figure 24: Future 2031 'with consented development' Flows Junction 6 – AM Peak

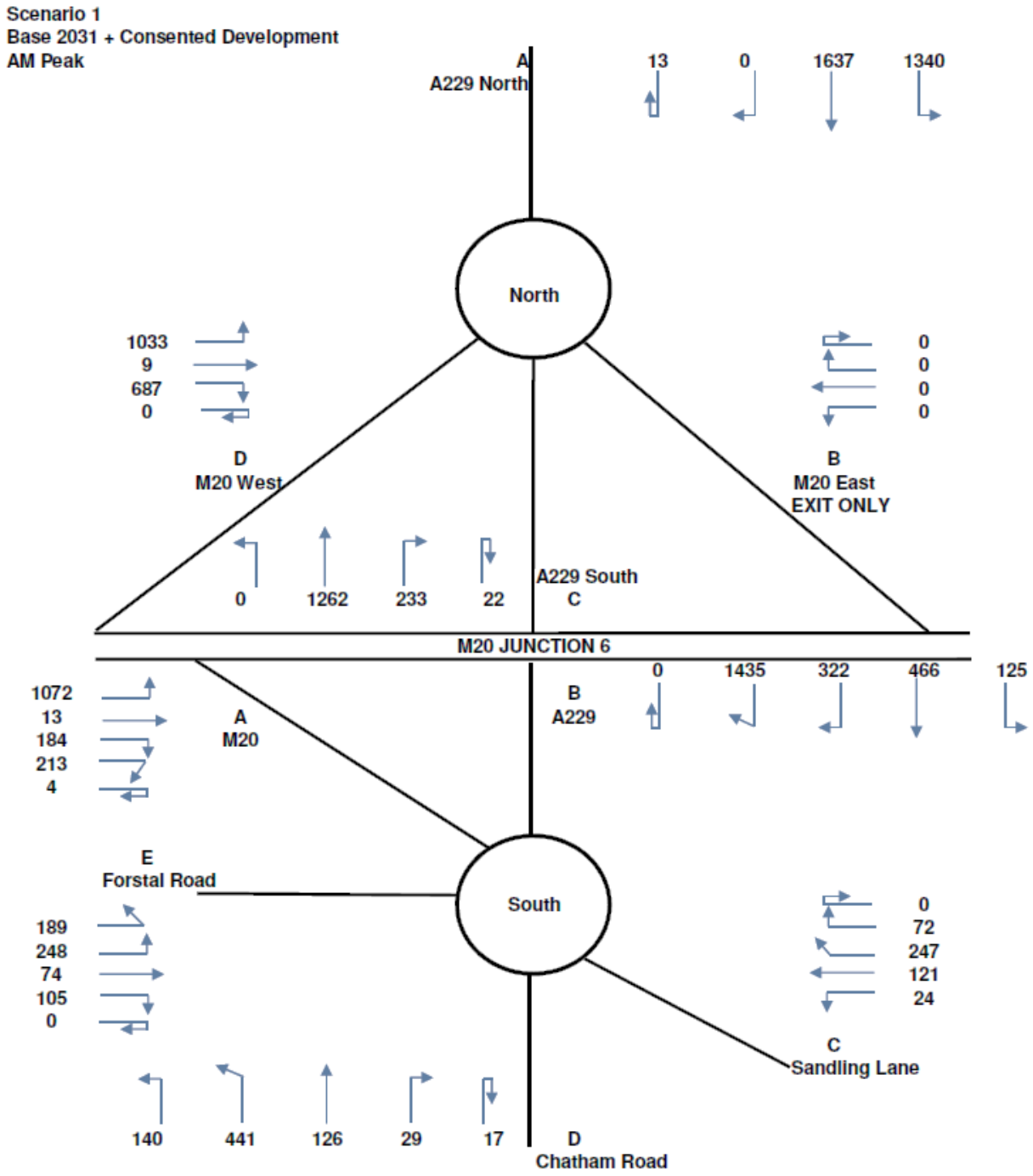


Figure 25: Future 2031 'with consented development' Flows Junction 6 – PM Peak

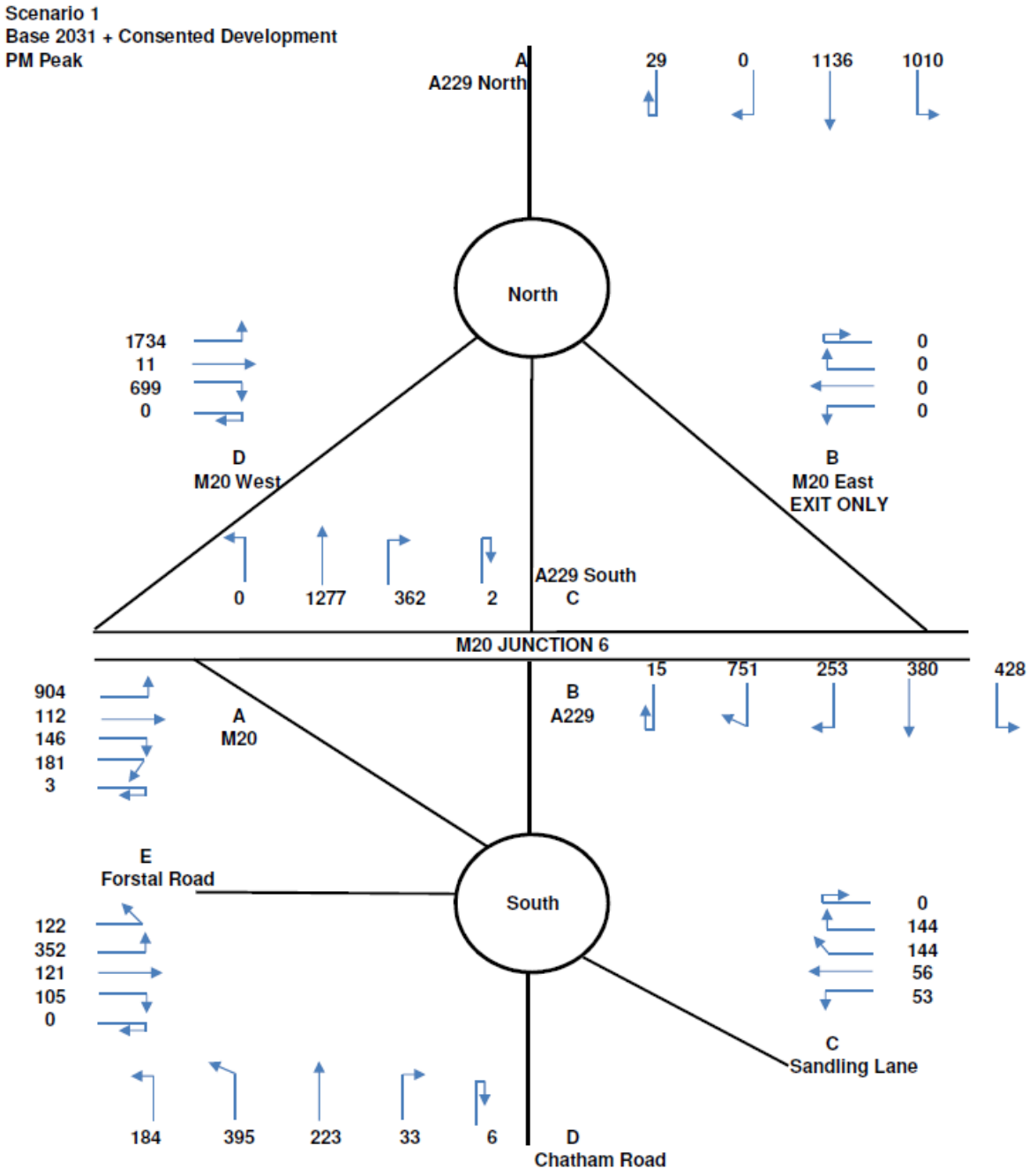


Figure 26: Future 2031 'with consented development' Flows Junction 7 – AM Peak

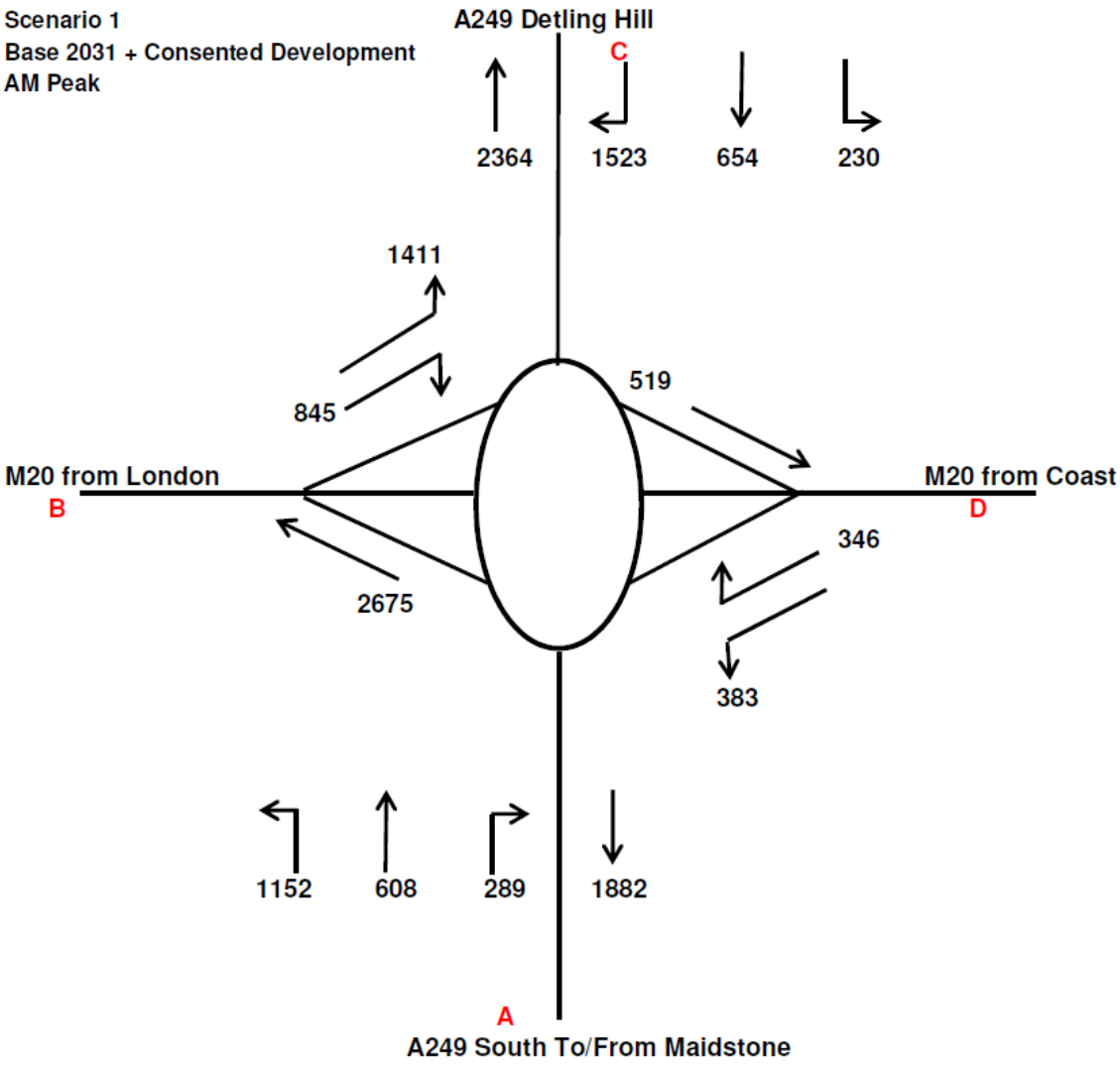


Figure 27: Future 2031 'with consented development' Flows Junction 7 – PM Peak

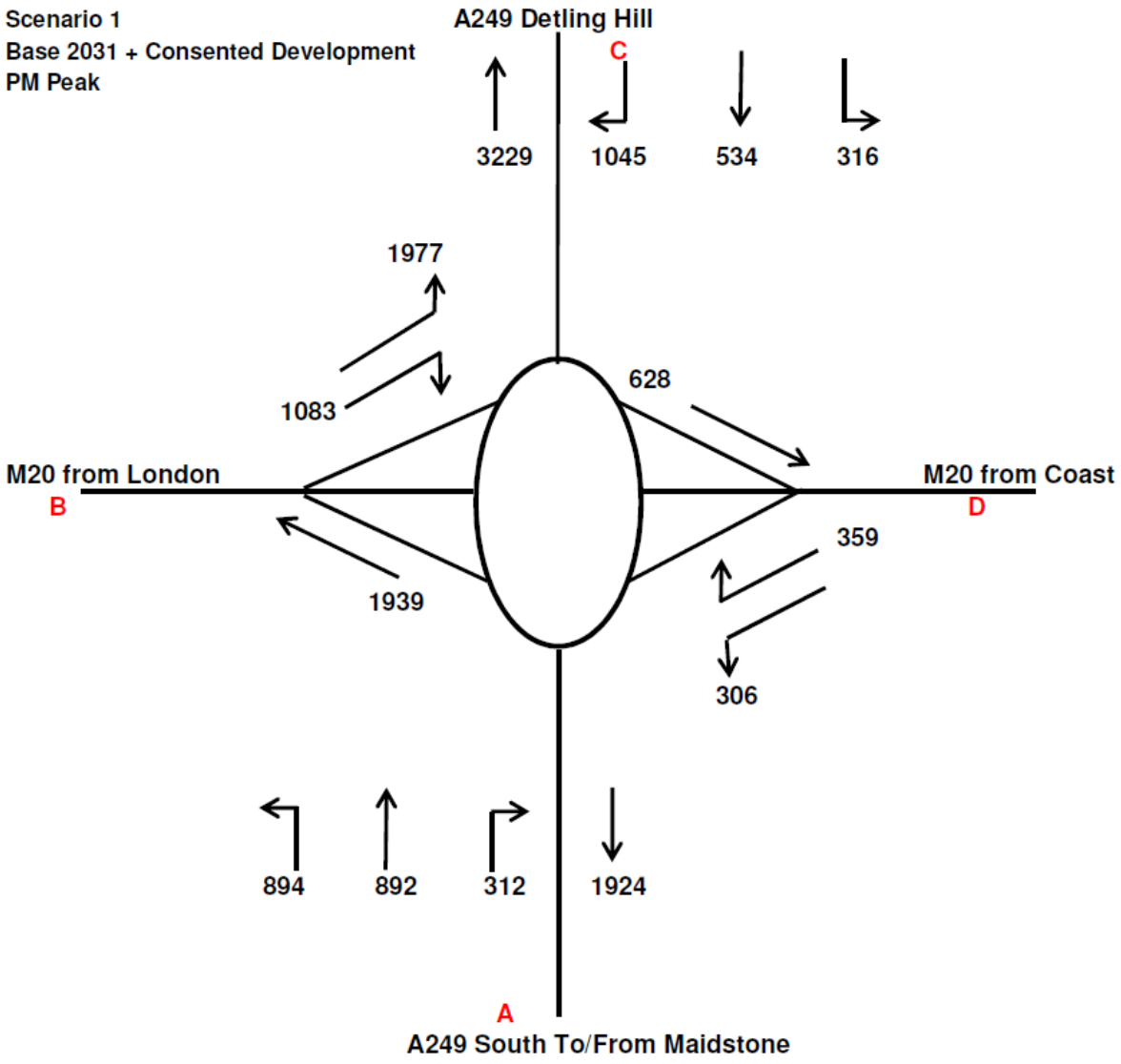


Figure 28: Future 2031 'with consented development' Flows Junction 8 – AM Peak

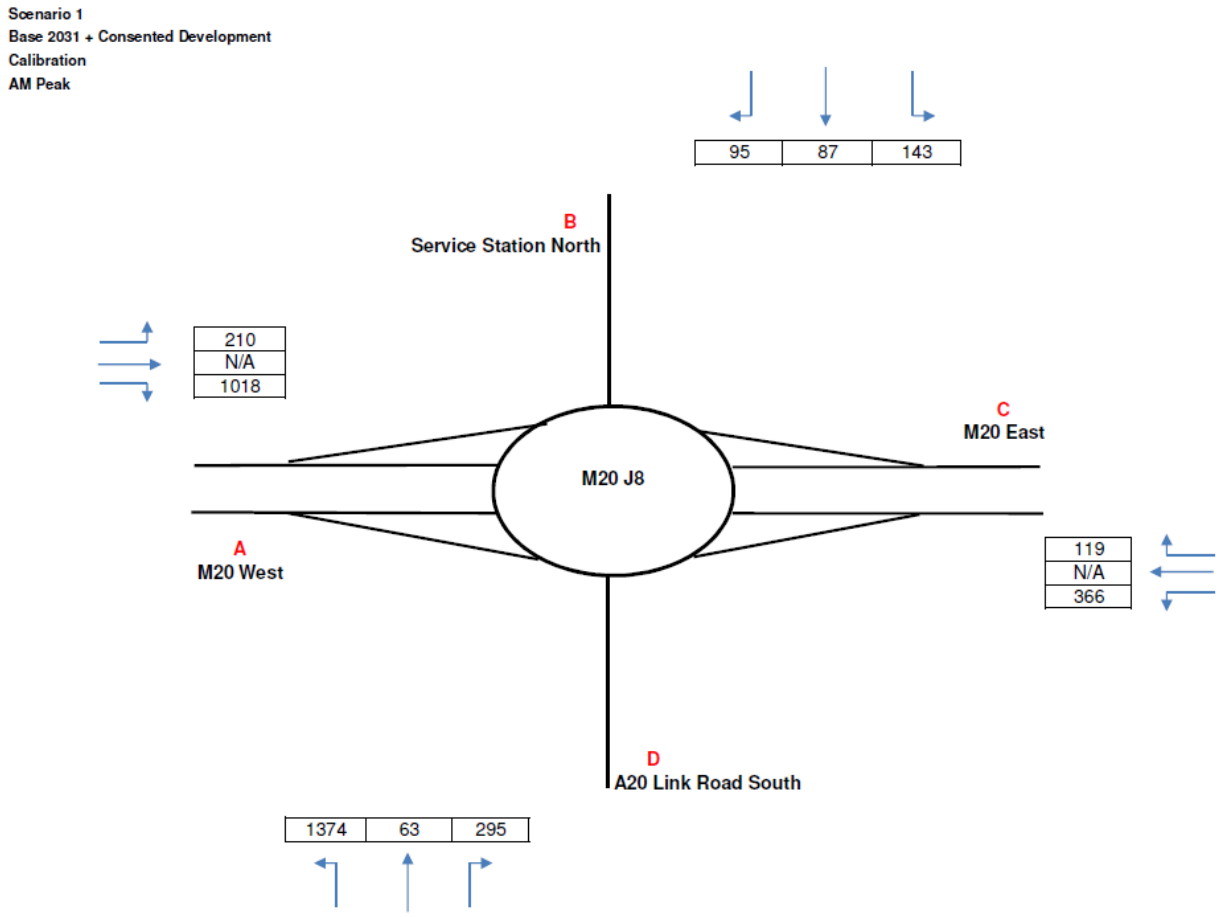
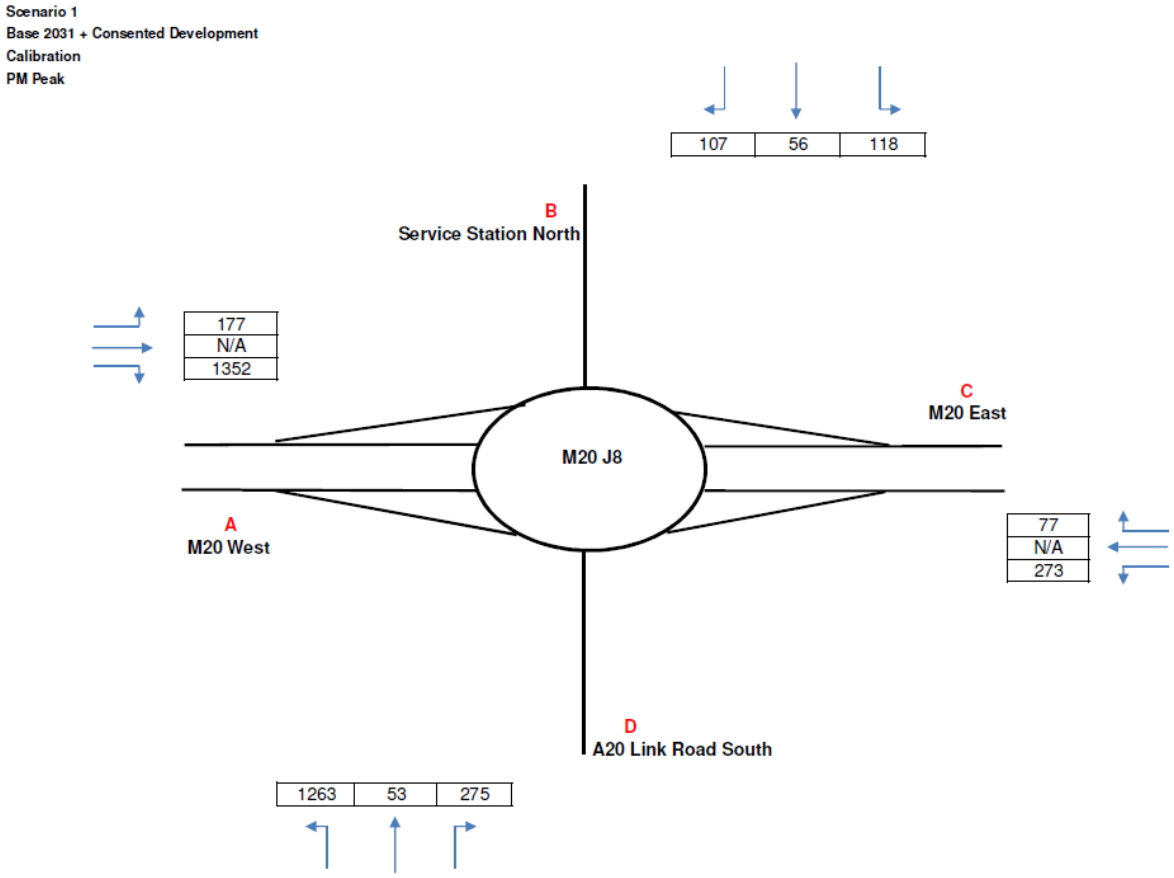


Figure 29: Future 2031 'with consented development' Flows Junction 8 – PM Peak



2.6 2031 'with all development' Flows (Scenario 2)

The future Base 2031 flows were multiplied by the 'with development' growth factors for Scenario 2 shown in **Section 2.3**. The resulting 2031 'with all development' flows (consented and non-consented, Scenario 2) are shown in **Figure 30** to **Figure 37**.

Figure 30: Future 2031 'with all development' Flows Junction 5 – AM Peak

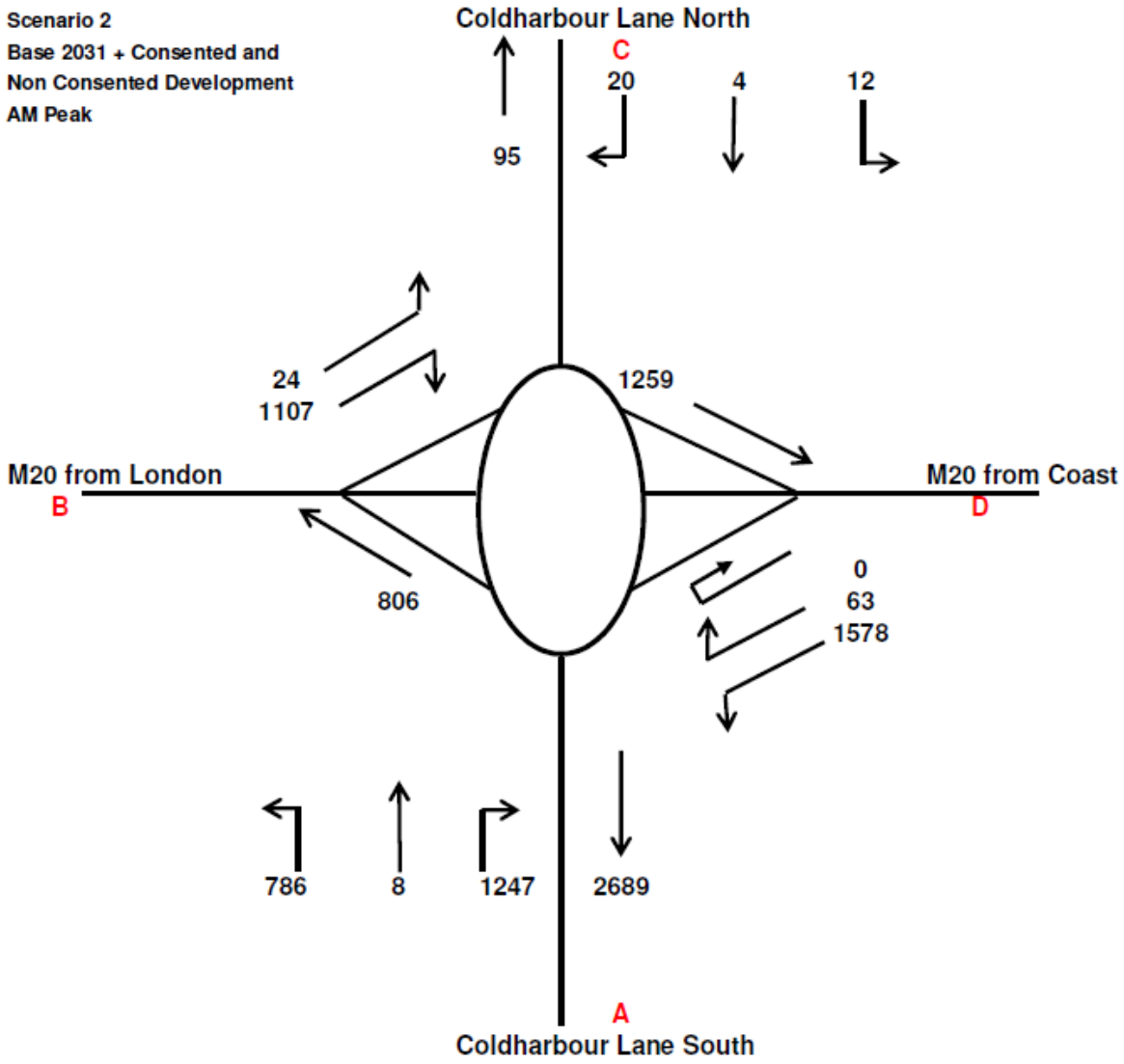


Figure 31: Future 2031 'with all development' Flows Junction 5 – PM Peak

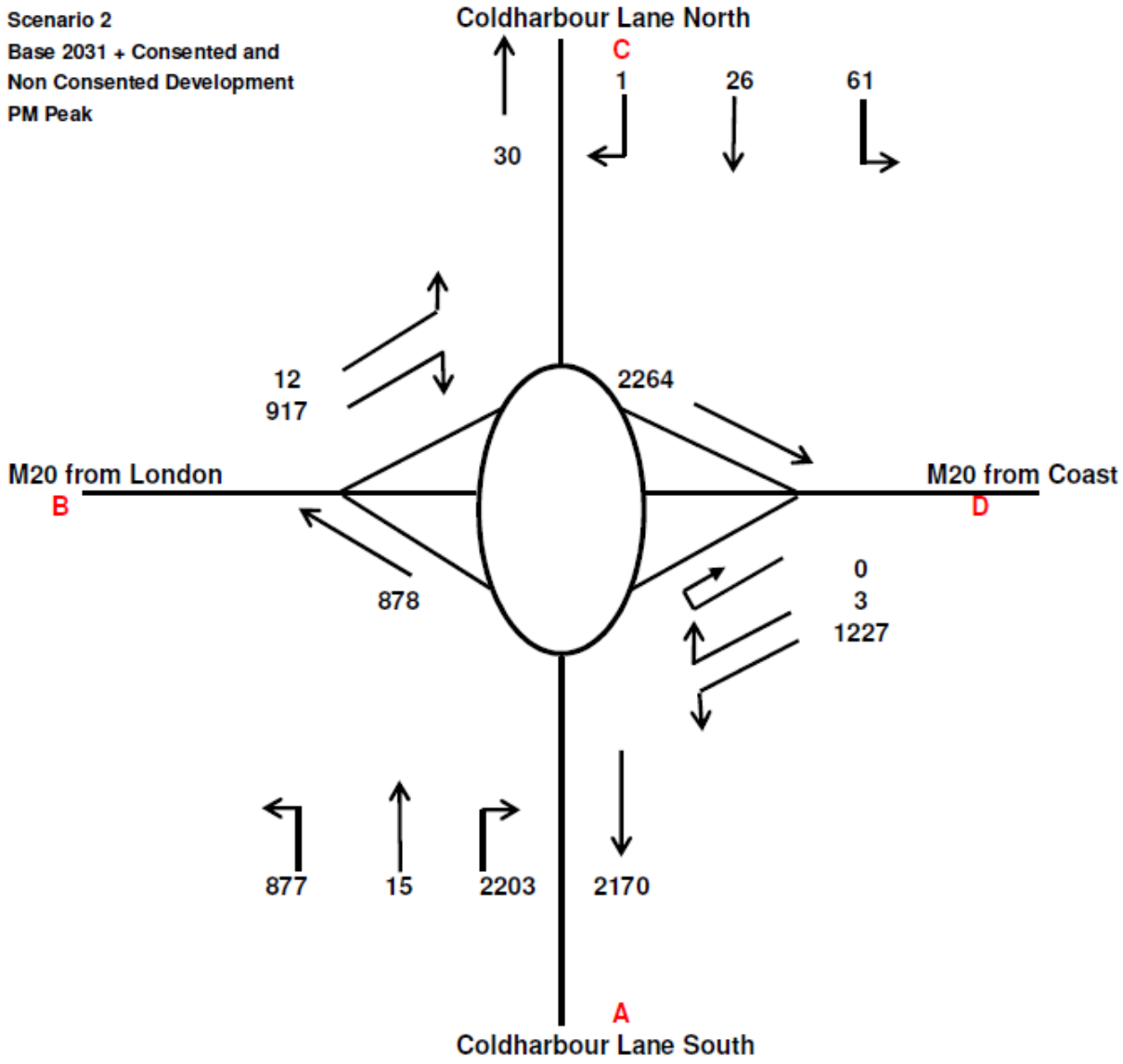


Figure 32: Future 2031 'with all development' Flows Junction 6 – AM Peak

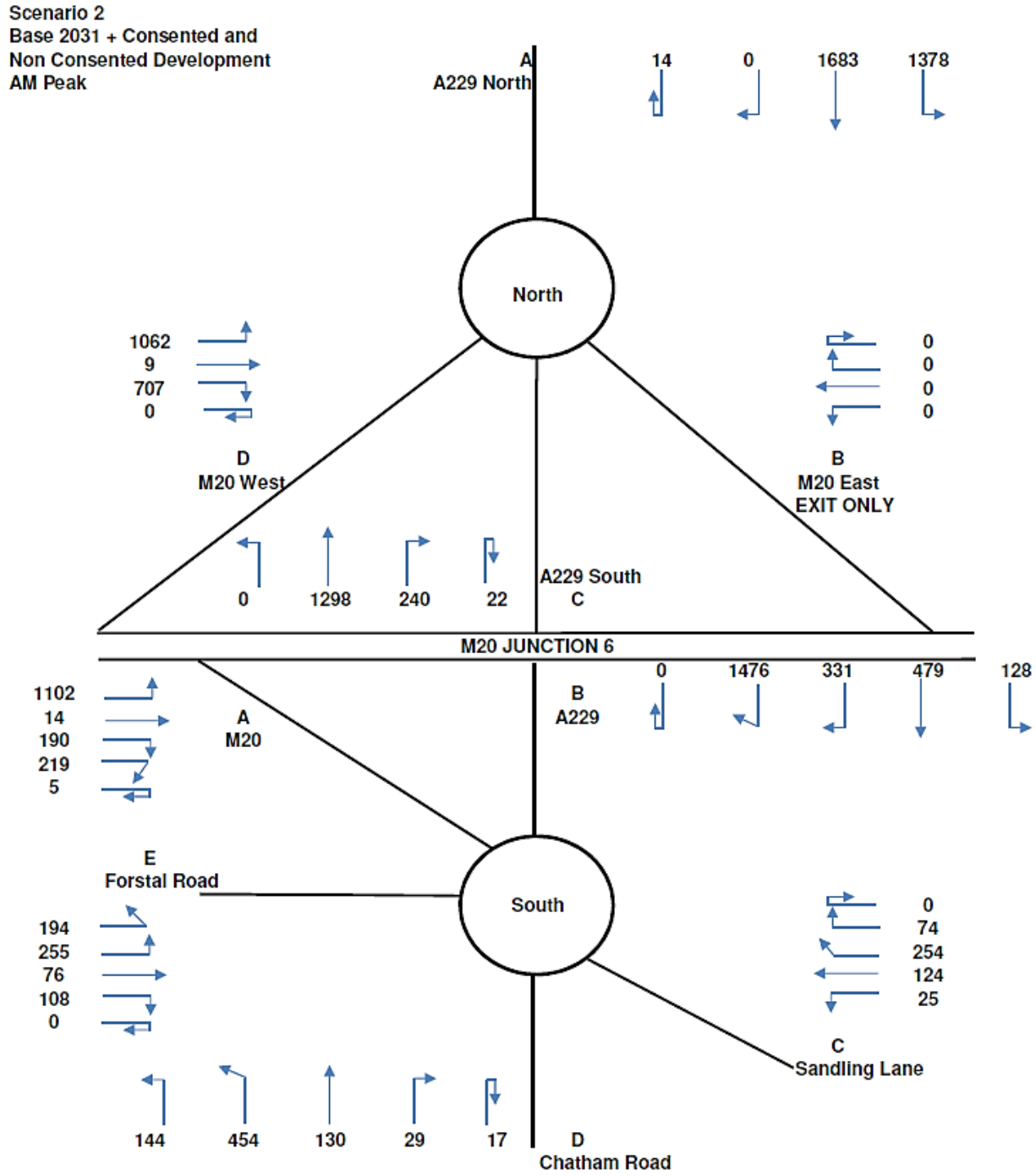


Figure 33: Future 2031 'with all development' Flows Junction 6 – PM Peak

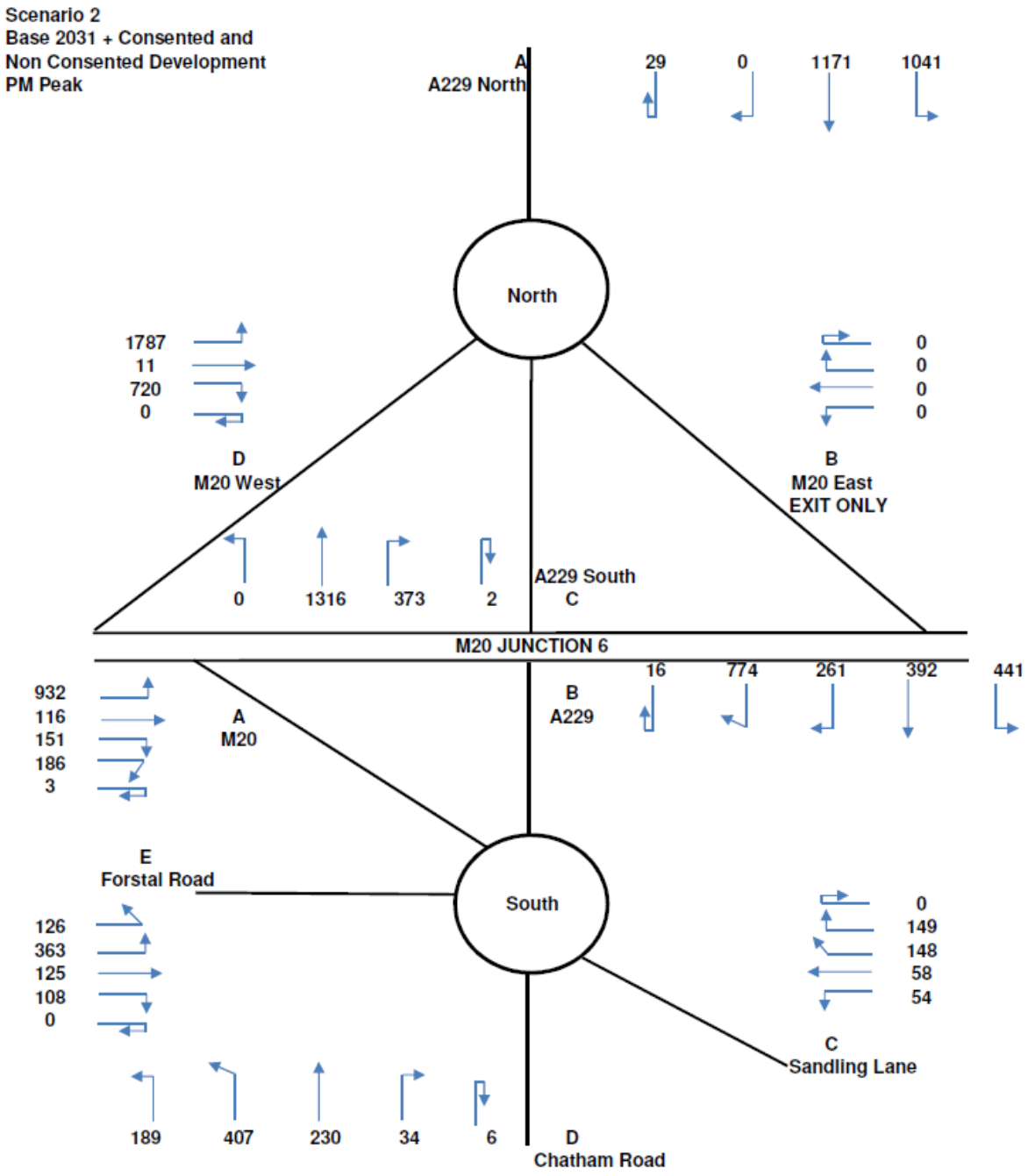


Figure 34: Future 2031 'with all development' Flows Junction 7 – AM Peak

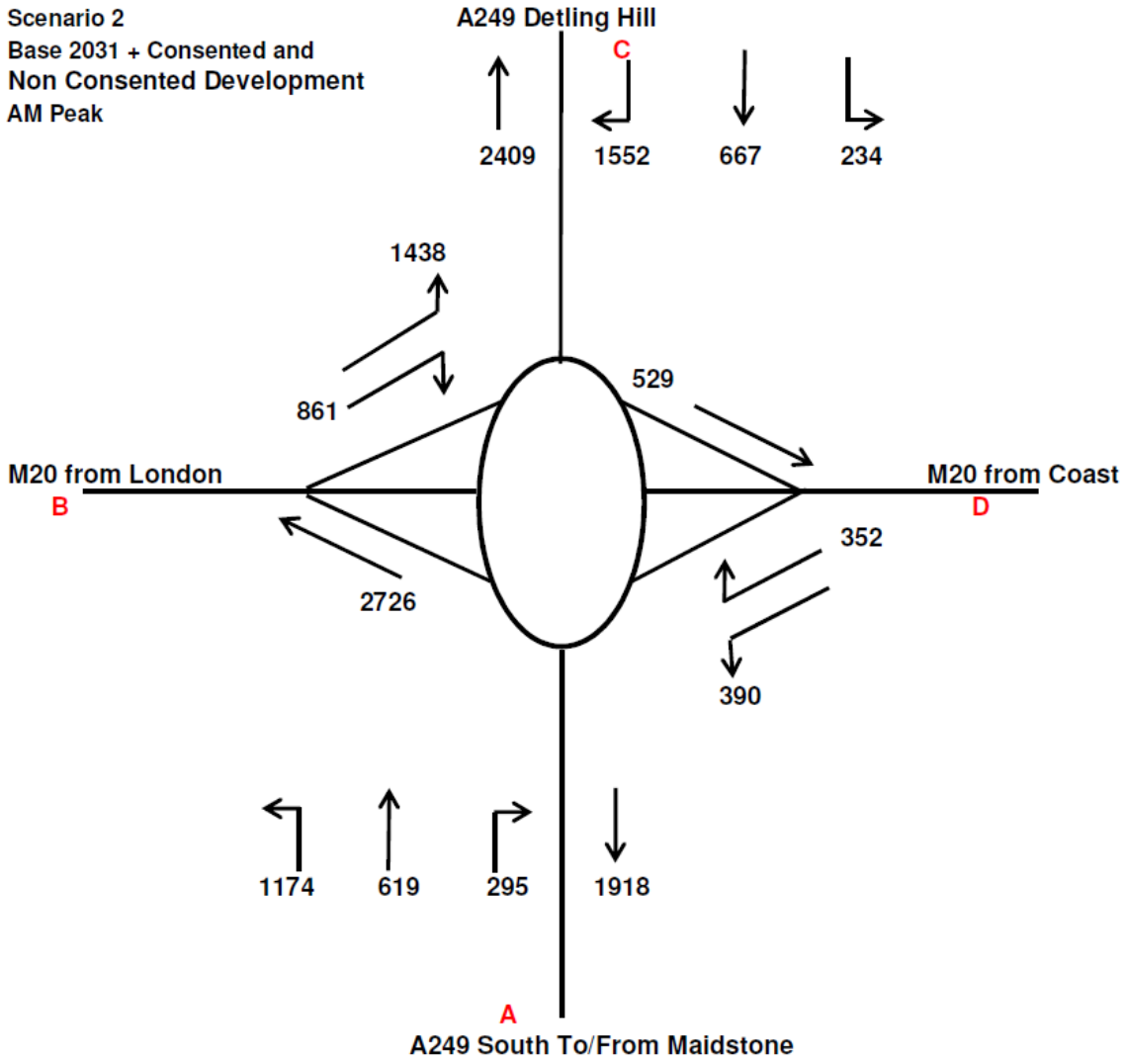


Figure 35: Future 2031 'with all development' Flows Junction 7 – PM Peak

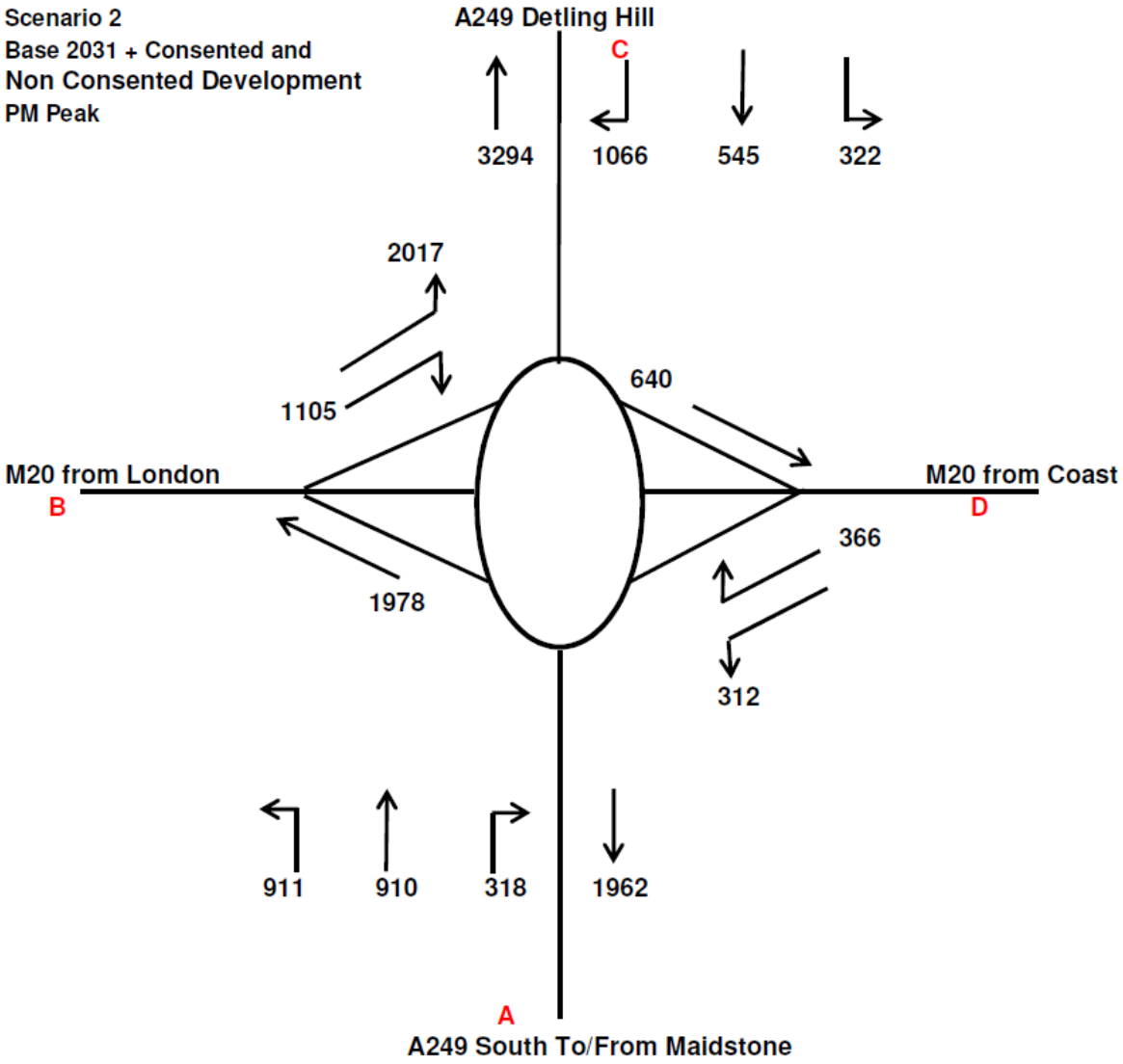


Figure 36: Future 2031 'with all development' Flows Junction 8 – AM Peak

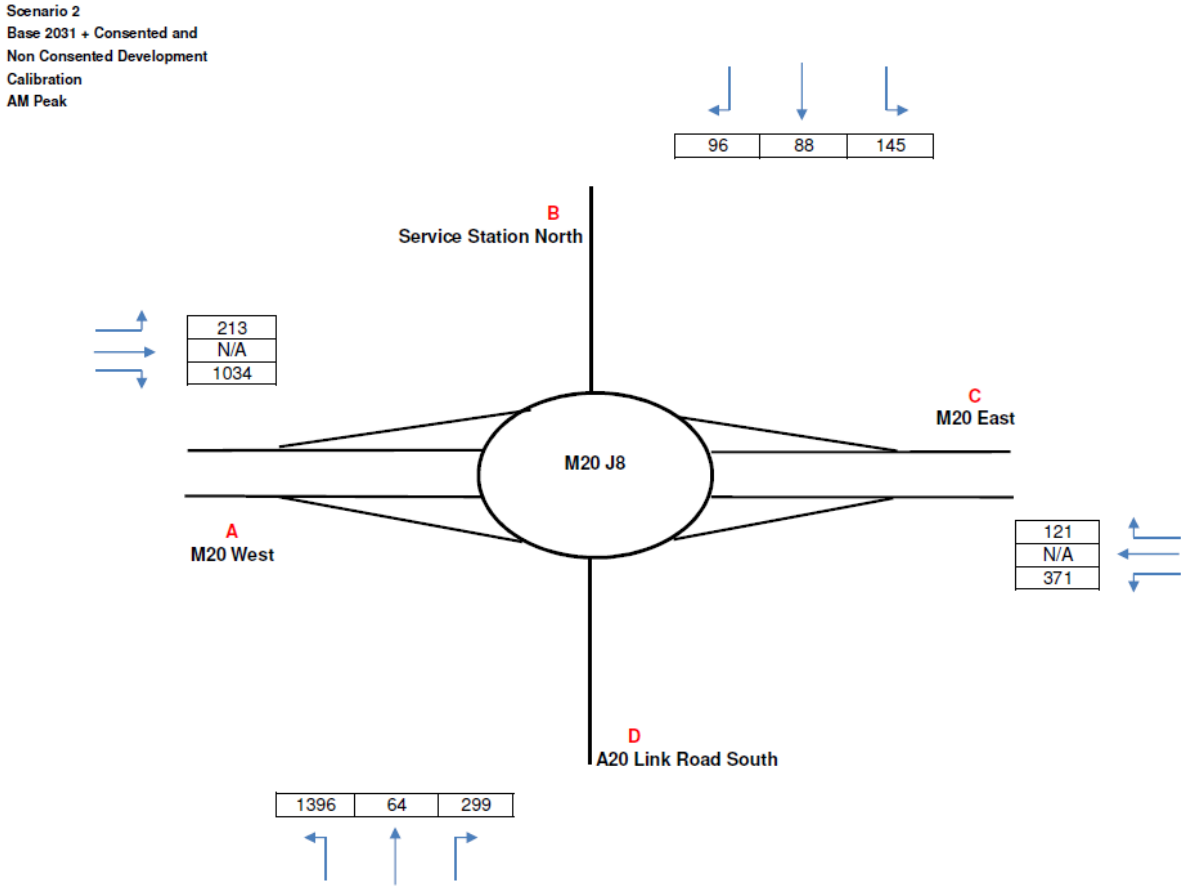
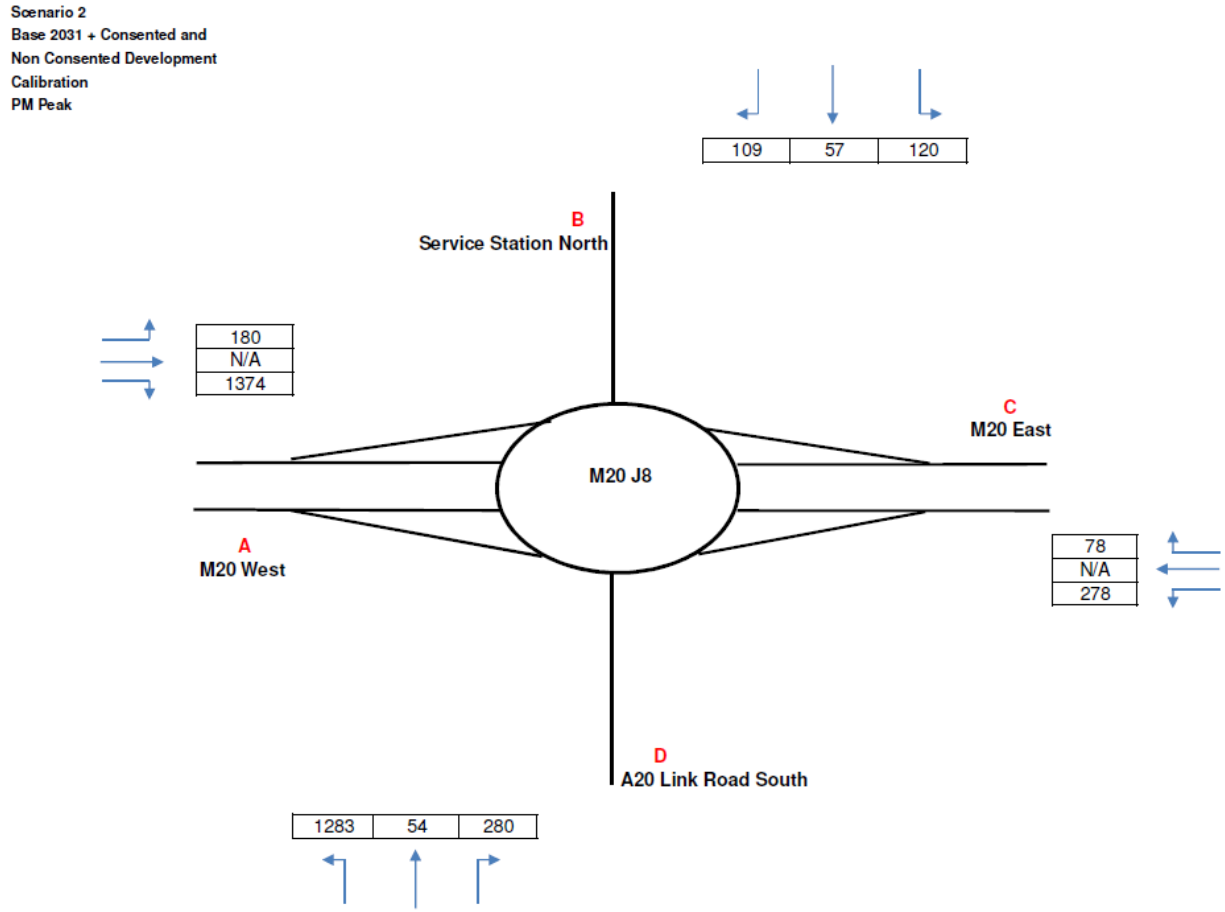


Figure 37: Future 2031 'with all development' Flows Junction 8 – PM Peak



2.7 SEMSL Flows

HE requested that the impact of the South East Maidstone Strategic Link (SEMSL) be considered. Flow information in the form of turning movements for each of the four motorway junctions was obtained from the strategic VISUM model from Amey for the 2031 DS4a (with SEMSL) and 2031 DS4b (without SEMSL) scenario runs.

The percent difference for each turning movement between the two runs was calculated and applied to the Future 2031 'with all development' flows (Scenario 2).

The calculated percentage difference with SEMSL for each movement at each junction and the SEMSL flows are shown in **Figure 38** to **Figure 53**.

Figure 38: J5 SEMSL AM growth factors

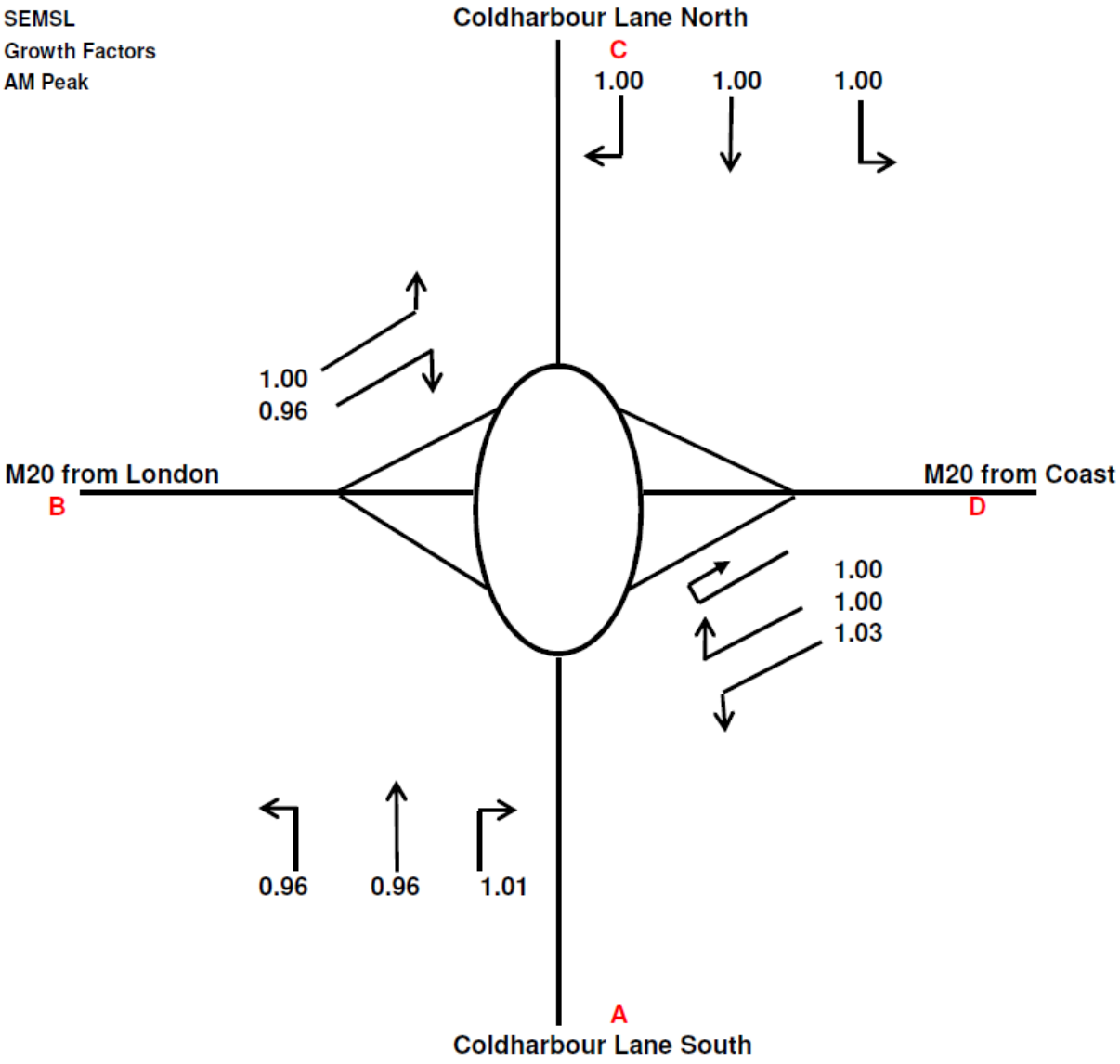


Figure 39: J5 SEMSL PM growth factors

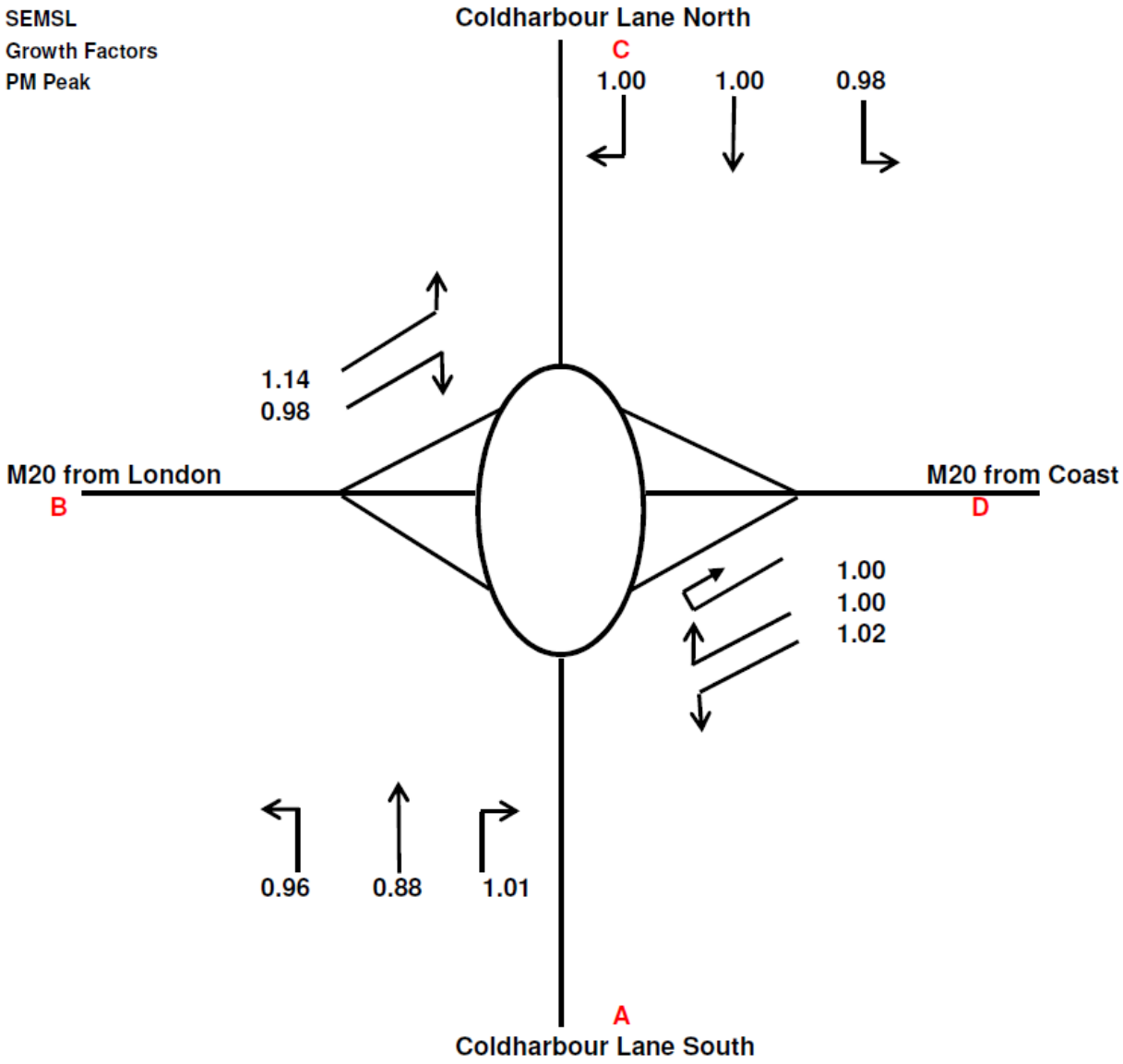


Figure 40: J5 SEMSL AM Flows

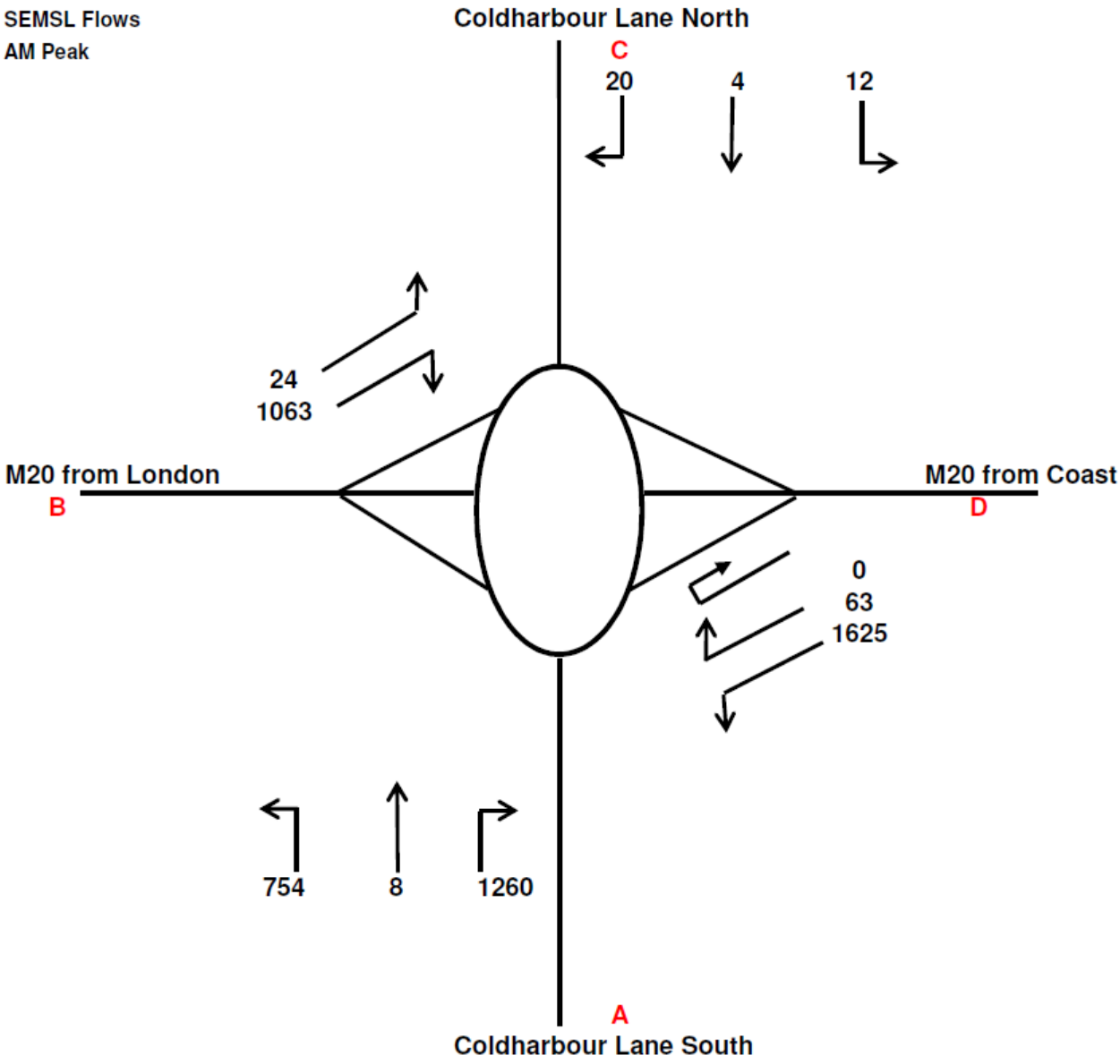


Figure 41: J5 SEMSL PM Flows

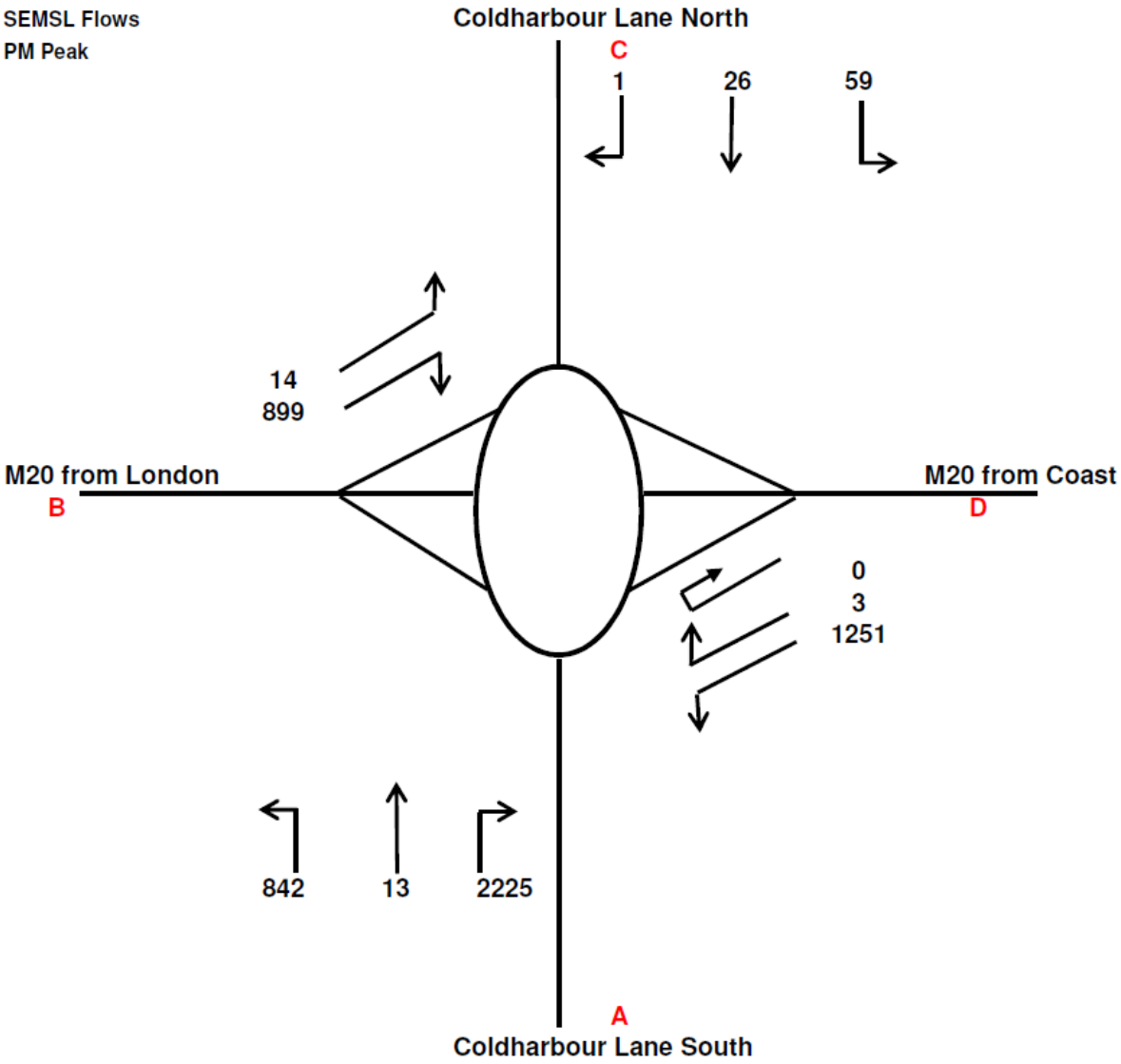


Figure 42: J6 SEMSL AM growth factors

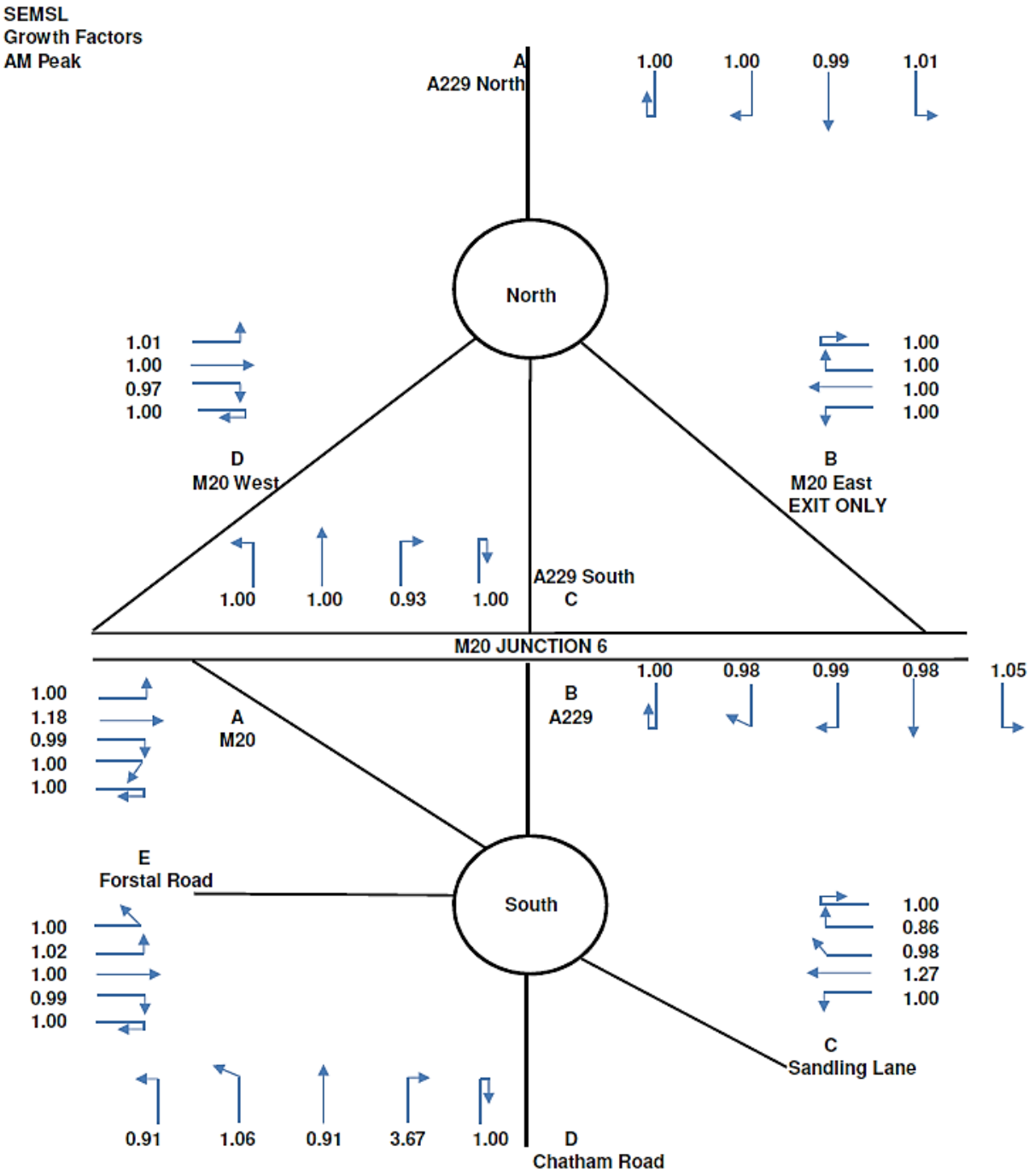


Figure 43: J6 SEMSL PM growth factors

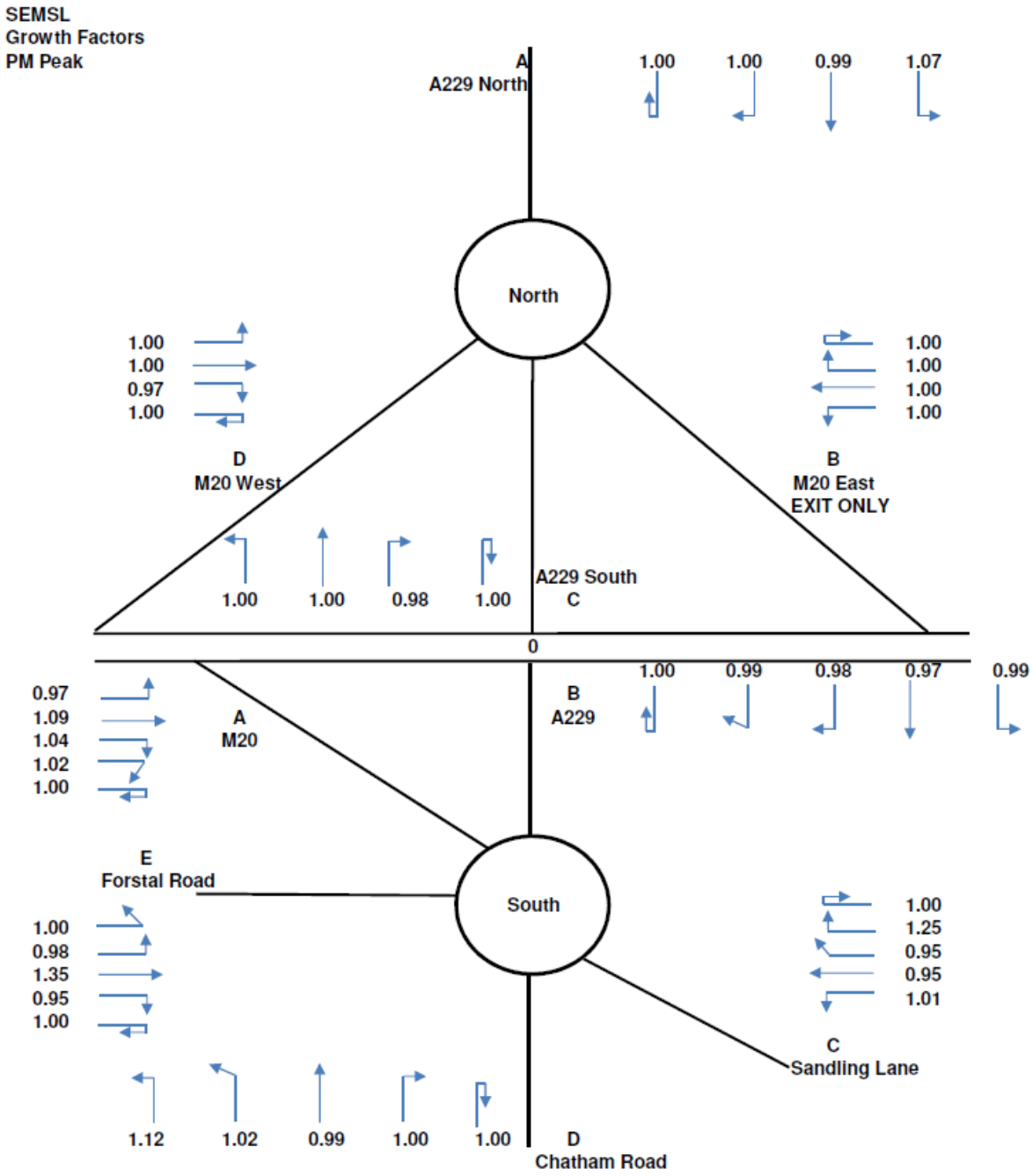


Figure 44: J6 SEMSL AM Flows

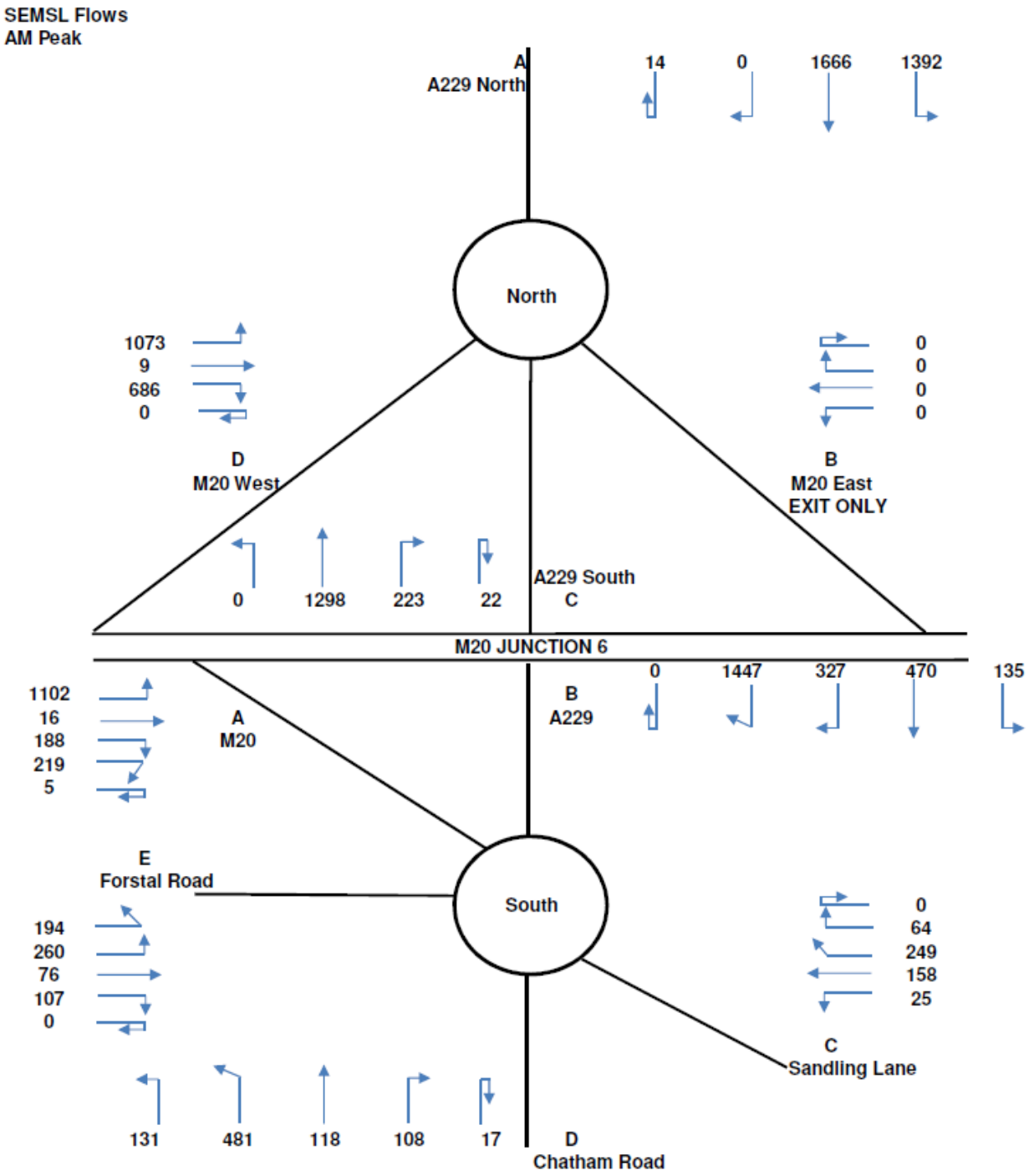


Figure 45: J6 SEMSL PM Flows

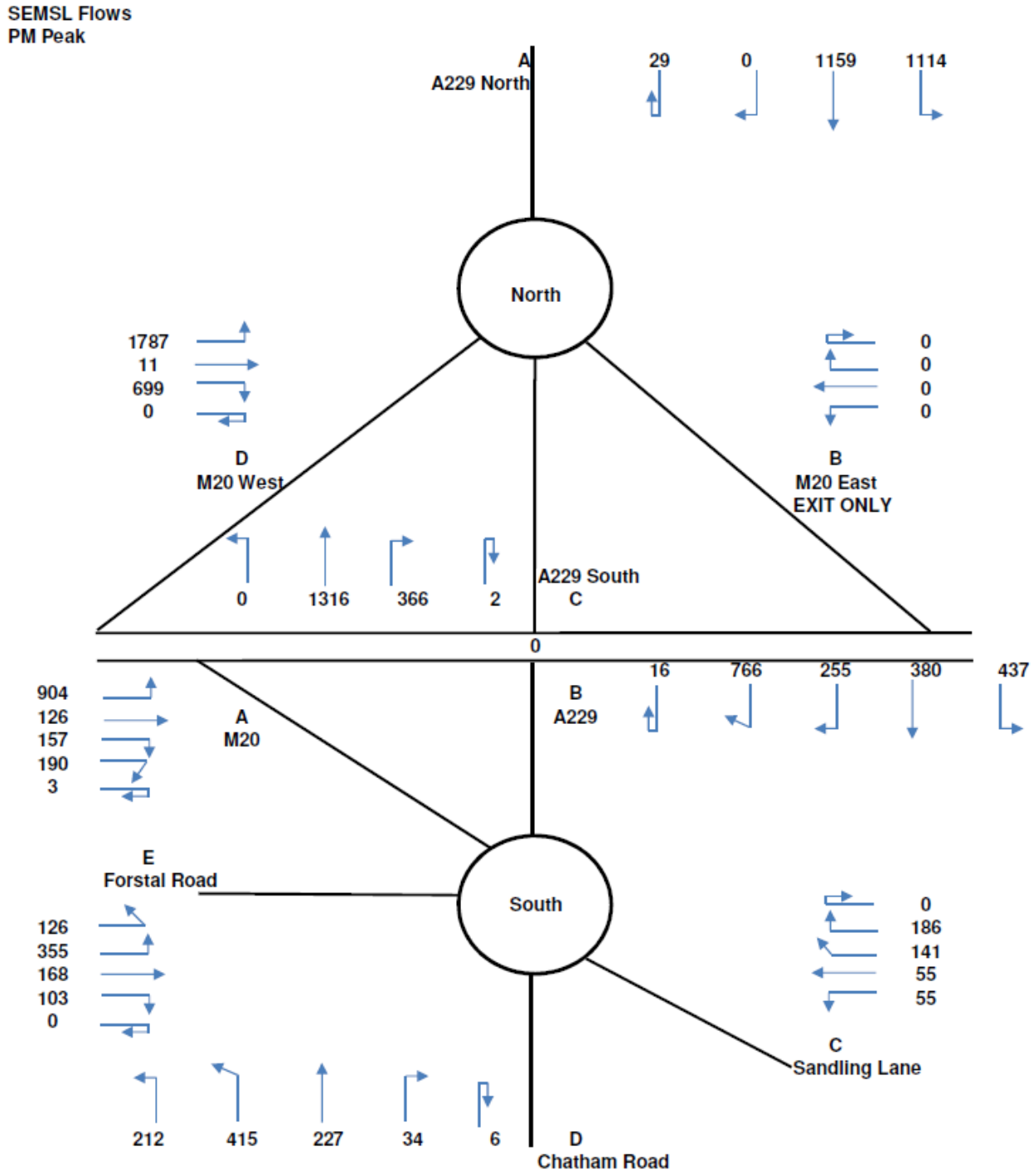


Figure 46: J7 SEMSL AM growth factors

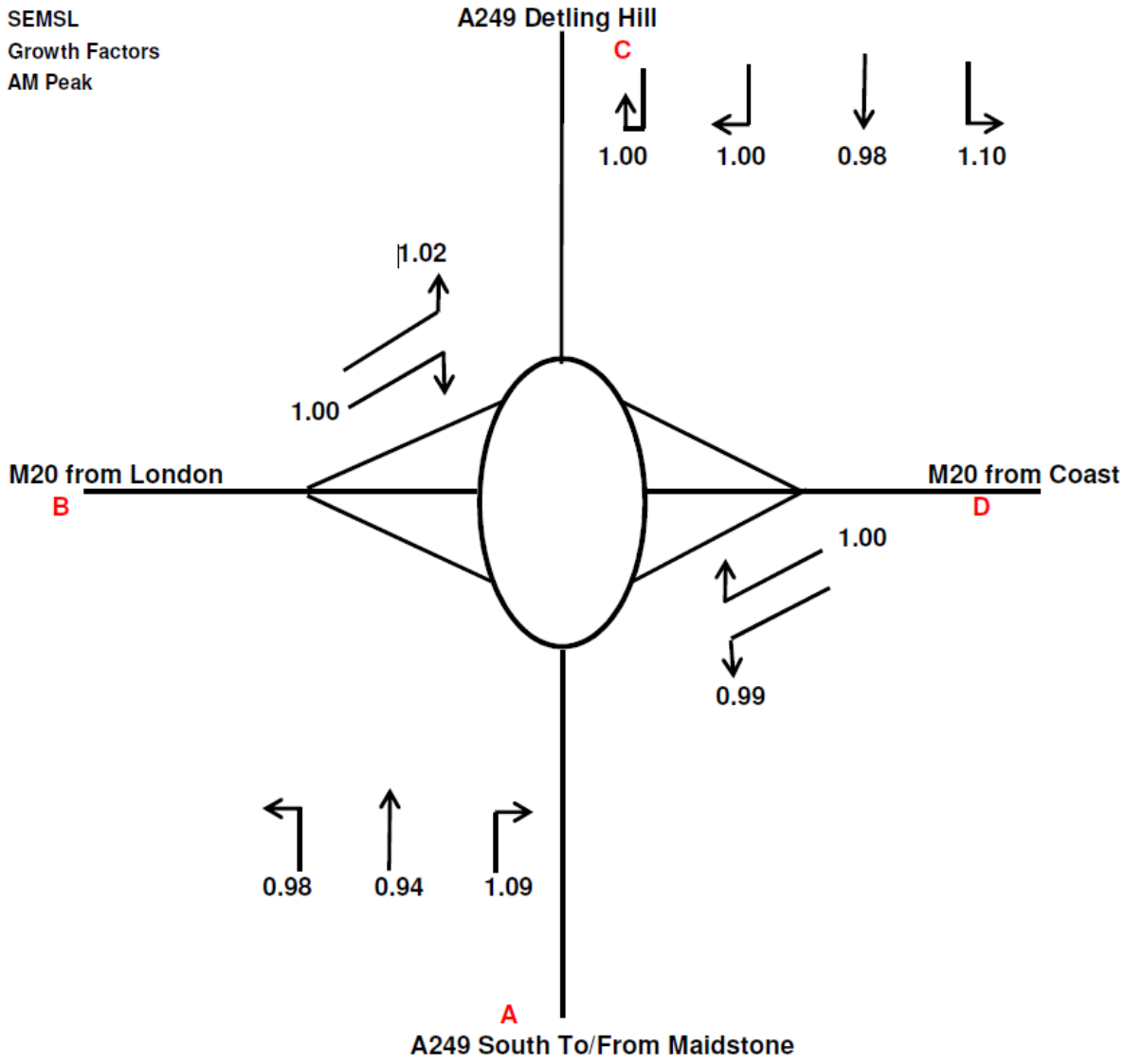


Figure 47: J7 SEMSL PM growth factors

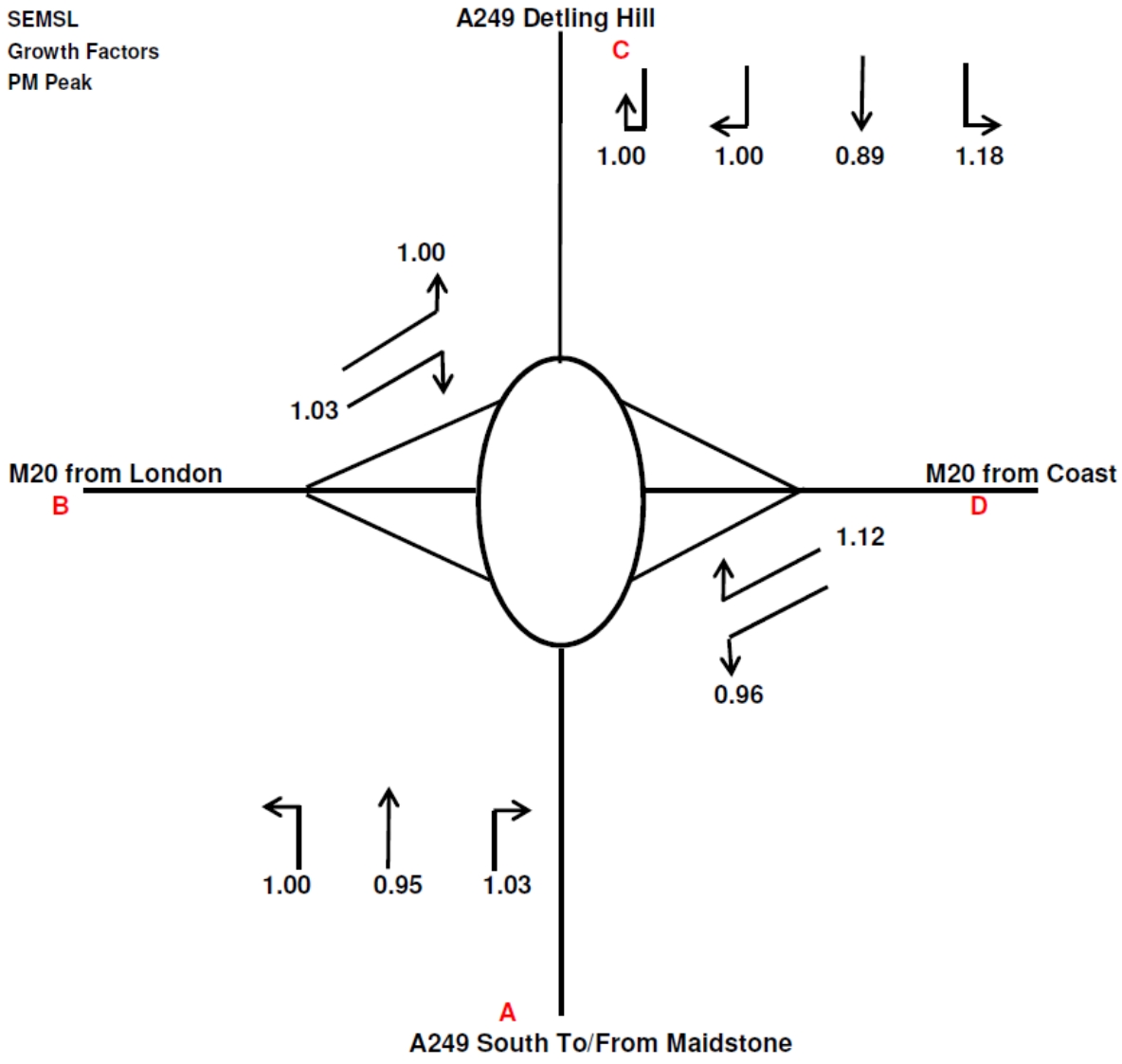


Figure 48: J7 SEMSL AM Flows

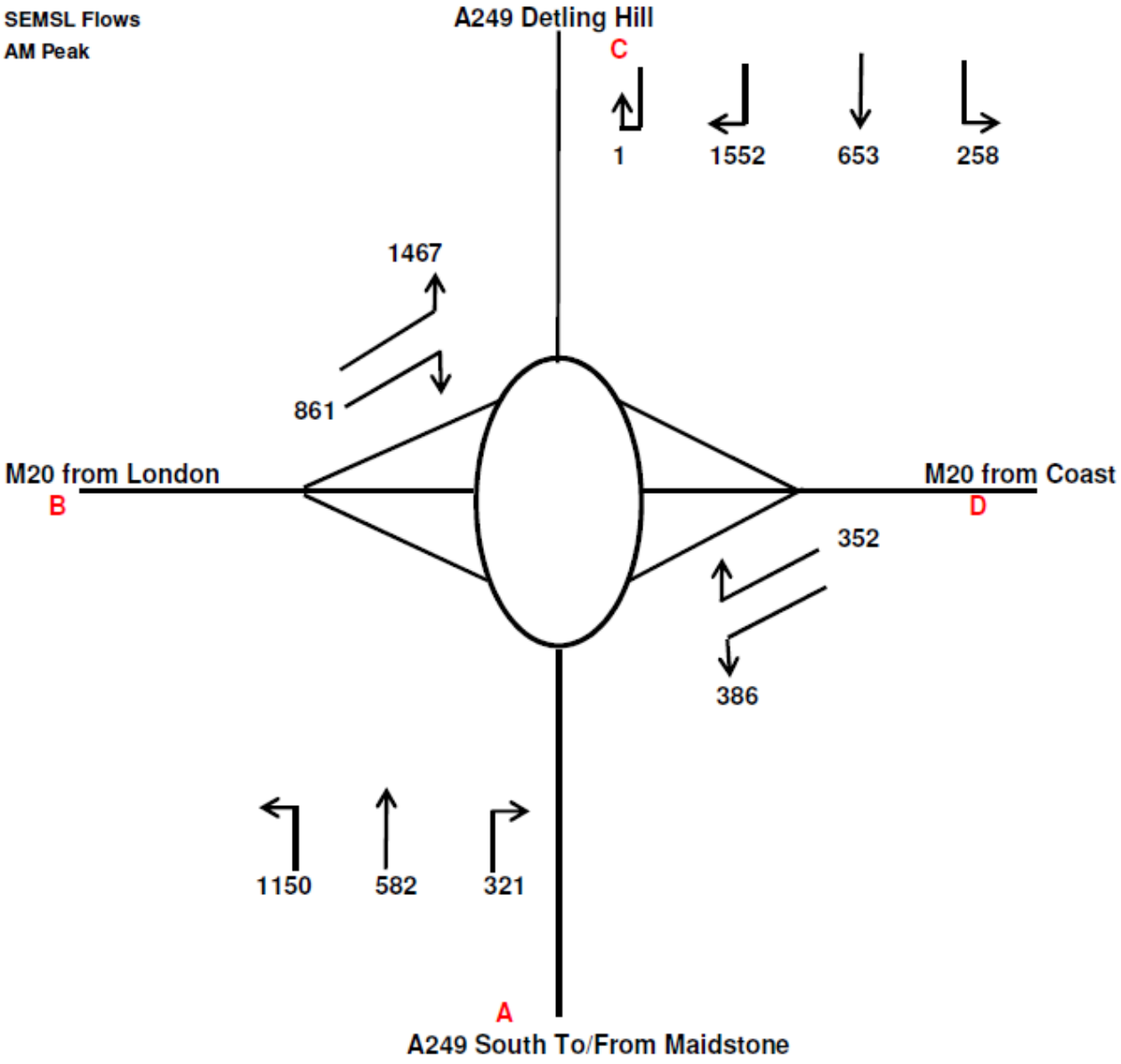


Figure 49: J7 SEMSL PM Flows

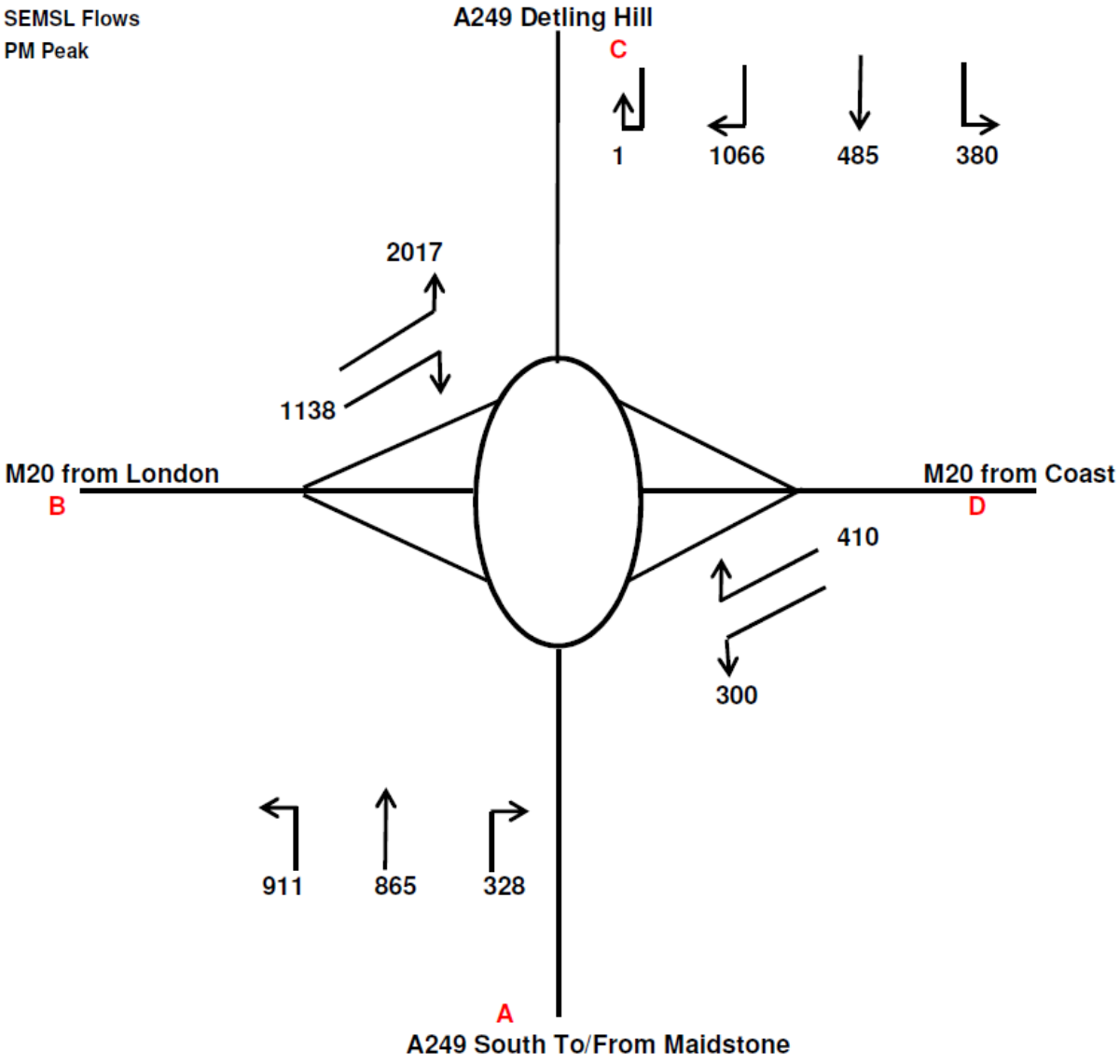


Figure 50: J8 SEMSL AM growth factors

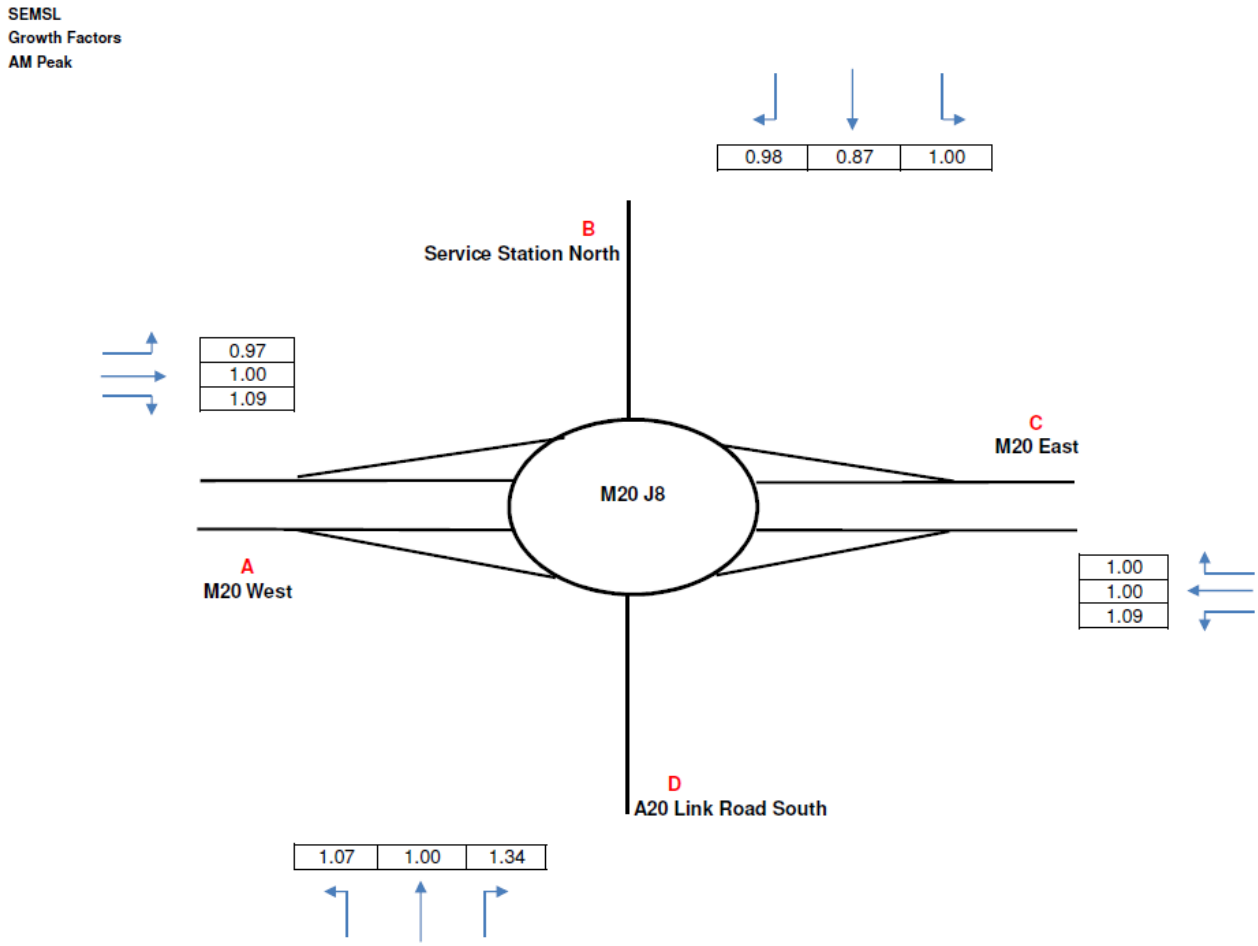


Figure 51: J8 SEMSL PM growth factors

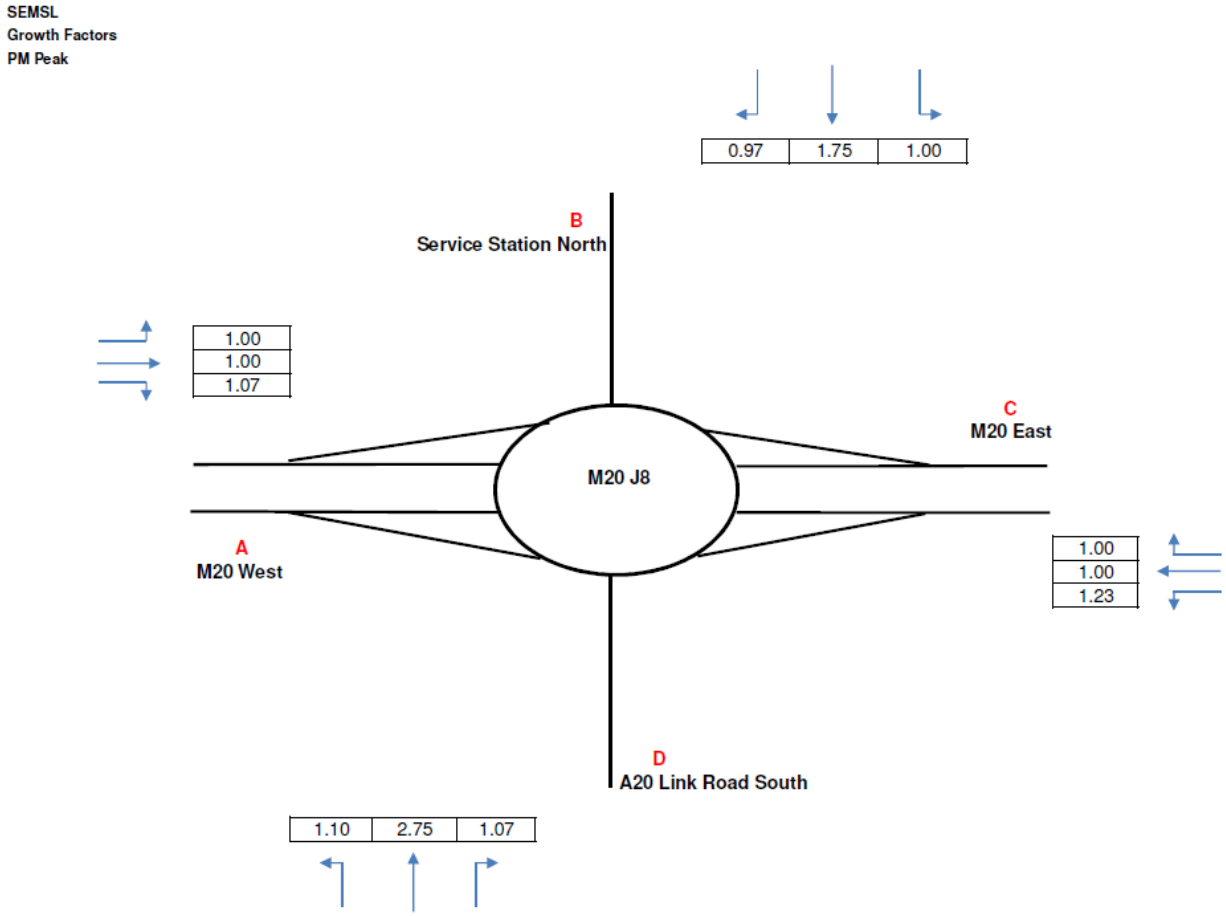


Figure 52: J8 SEMSL AM Flows

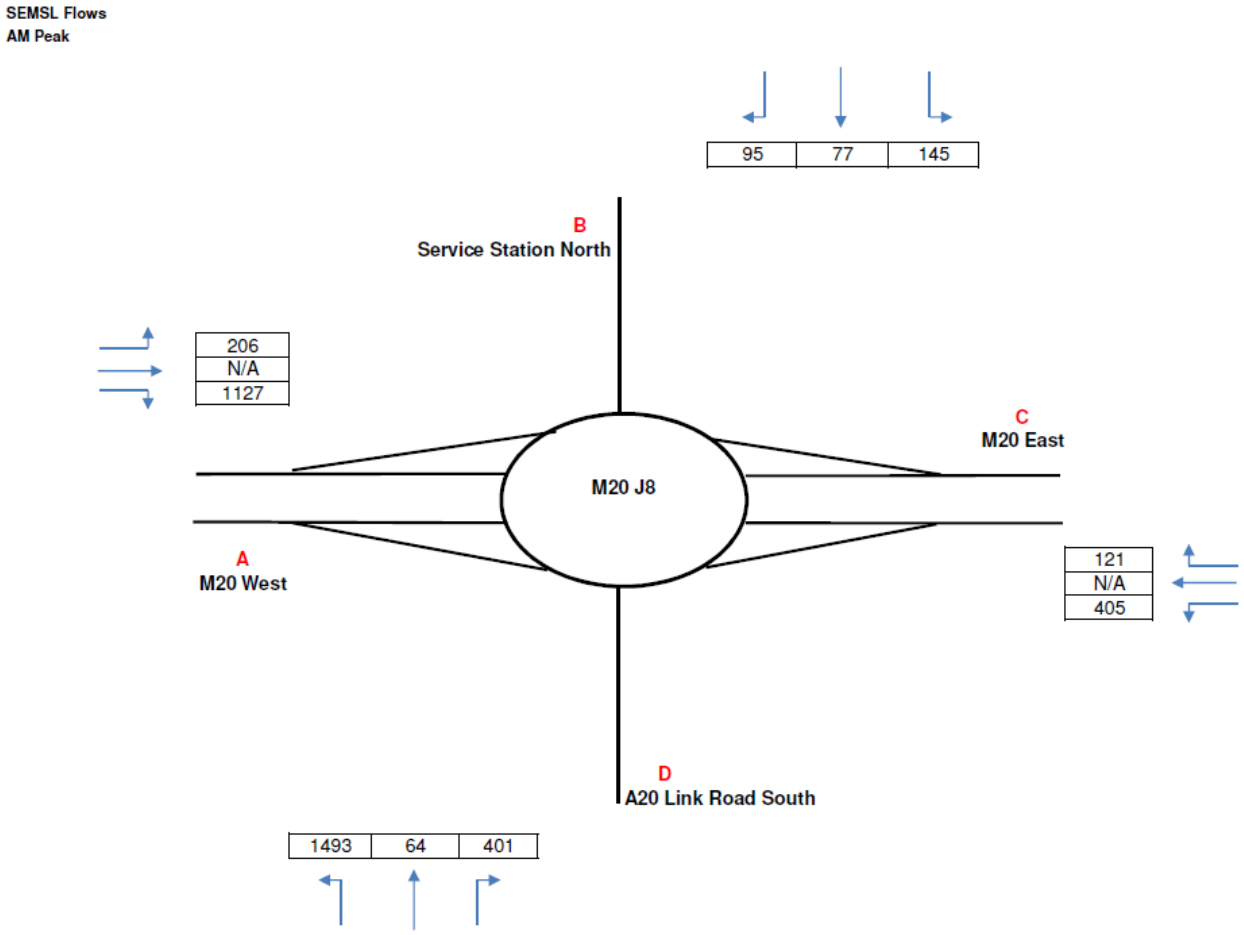
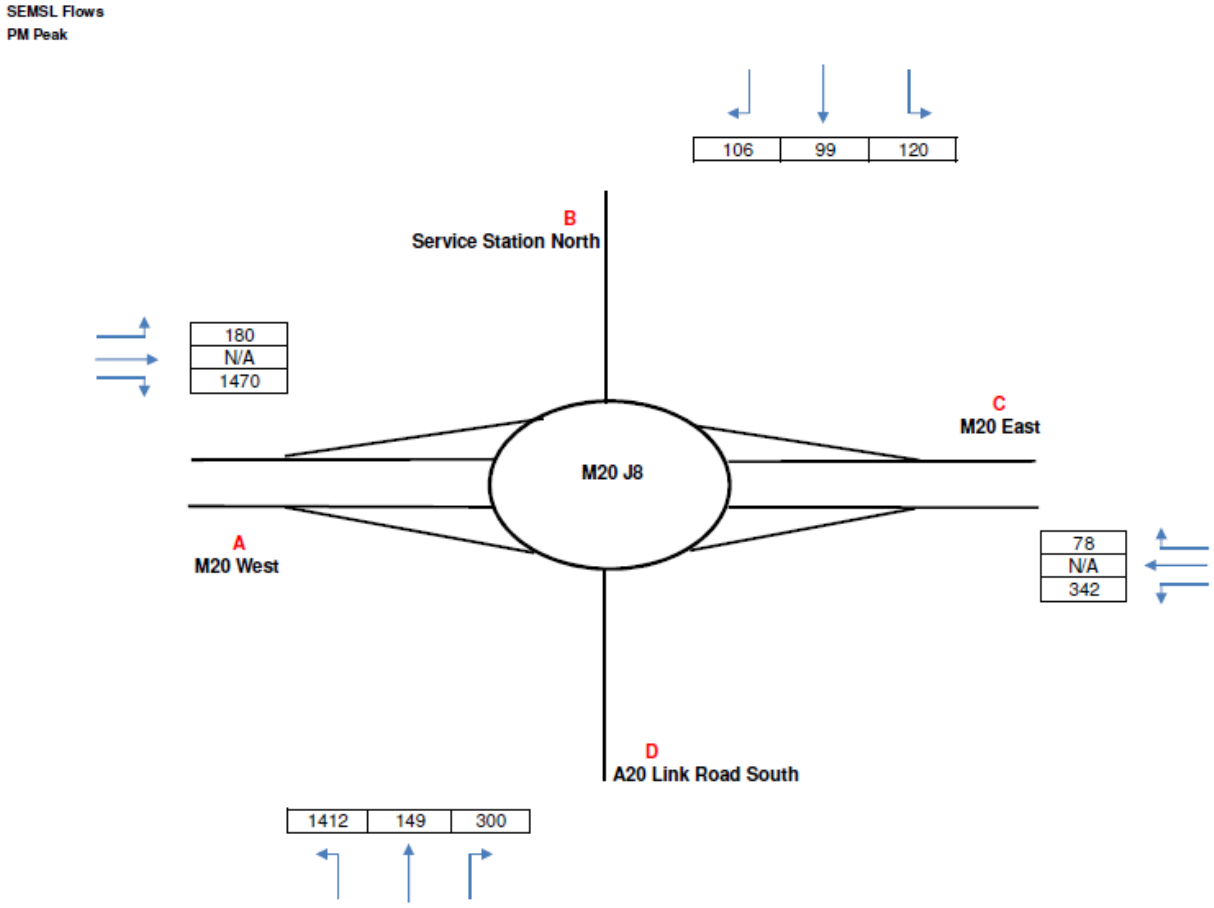


Figure 53: J8 SEMSL PM Flows



3 Assessment of Existing Junction Layouts

3.1 Junction Modelling

ARCADY models were produced to test the roundabouts with the existing layouts, and Junctions 5, 7 and 8 were set up as large roundabouts while Junction 6 was set up as a linked dumbbell roundabout.

ARCADY requires for large roundabouts to be set up when the junction has an overall diameter in excess of 130 metres or if it connects with a motorway passing under or over it (i.e. grade-separated). This is applicable to Junctions 5, 7 and 8. Circulatory flows were calculated for the large junctions, based on the amount of traffic emerging from each arm, and the turning proportions, during the central 30 minutes of the modelled period. For Junction 6, the guidance states that where a motorway exit slip-road connects with an all-purpose road at a small roundabout on a different level from, but not directly above or below, the motorway, this should be modelled as a dumbbell junction and not as a grade separated junction.

ARCADY is one of the components within TRL's industry-standard package 'Junctions 9' (version 9.0.1) for the modelling of roundabout and priority intersections, and provides the assessment of the capacity and operation of a roundabout. A ratio of flow to capacity (RFC) is calculated, as well as estimated maximum queue. An RFC of 0.85 or below is the desirable threshold, but a junction would be considered to operate within its theoretical capacity between an RFC of 0.85 and 1.00. Any RFC values exceeding 1.00 indicate the junction would operate over maximum capacity and would become saturated with queuing concerns.

It should be noted for the ARCADY results presented, the max queue, delay and RFC are the 'worst' values over the total time period modelled (90 minutes), and therefore it is possible that each of the values are taken from a different time segment (divided into 15-minute time segments). Furthermore, the use of lane allocation within the model means the RFC values are provided for the entry lanes only, taking the 'worse case' result for a single entry lane for the worst time segment. The queue and delay values stated in the tables are for all lanes of an arm (worst entry and approach lane queues / delays added together) for the worst time segment.

The assessment results for each junction can be found in **Table 12** to **Table 27** below, with full reports found in **Appendix D.**

Junction 5

Table 12: J5 Base 2016

	AM			PM		
Movement	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Coldharbour Lane South	3	6	0.62	69	91	1.00
M20 West	31	84	0.97	130	549	1.02
Coldharbour Lane North	0	12	0.11	1	30	0.36
M20 East	193	482	1.02	6	17	0.81

The assessment results for Base 2016 show the junction is already operating over desirable and theoretical capacity in both the AM and PM peak hours, with RFC values exceeding 0.85 and 1.00. During the AM peak hour, the M20 West arm is operating over desirable capacity, with an RFC value for 0.97, a queue of 31 PCUs and delay of 84 seconds. Furthermore, the M20 East arm is operating over theoretical capacity, with an RFC value of 1.02, a queue of 193 PCUs and delay of 482 seconds.

During the PM peak hour, Coldharbour Lane South and M20 West arms are both operating over theoretical capacity, with RFC values of 1.00 and 1.02, queues of 69 and 130 PCUs and delays of 91 and 549 seconds.

Table 13: J5 Base 2031

	AM			PM		
Movement	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Coldharbour Lane South	3	7	0.67	148	196	1.01
M20 West	94	232	1.00	189	788	1.02
Coldharbour Lane North	0	13	0.12	1	23	0.35
M20 East	326	804	1.01	11	27	0.89

The assessment results for Base 2031 show the growth in background traffic would cause the junction to further exceed theoretical capacity in the AM and PM peak, with RFC values exceeding 1.00. During the AM peak hour, the M20 West and M20 East arms will both exceed theoretical capacity. The M20 West arm presents an RFC value of 1.00, a queue of 94 PCUs and delay of 232 seconds. The M20 East arm presents an RFC value of 1.01, a queue of 326 PCUs and delay of 804 seconds.

During the PM peak hour, Coldharbour Lane South and M20 West arms would both operate over theoretical capacity (experiencing excessive queuing and significant congestion), with the M20 East arm operating over desirable capacity. The Coldharbour Lane South arm would have an RFC value of 1.01, queue of 148 PCUs and delay of 196 seconds, while the M20 West arm would have an RFC value of 1.02, queue of 189 PCUs and delay of 788 seconds and the M20 East arm would have an RFC value of 0.89, queue of 11 PCUs and delay of 27 seconds.

Table 14: J5 2031 + Consented Development

	AM			PM		
Movement	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Coldharbour Lane South	3	7	0.67	173	244	1.01
M20 West	112	275	1.00	199	834	1.01
Coldharbour Lane North	0	13	0.11	1	23	0.34
M20 East	347	854	1.00	13	31	0.91

The assessment results for 2031 + Consented Development show the growth in development traffic would cause the junction to further exceed capacity in the AM and PM peak, with RFC values exceeding 1.00. During the AM peak hour, the M20 West and M20 East arms will both exceed theoretical capacity. The M20 West arm presents an RFC value of 1.00, a queue of 112

PCUs and delay of 275 seconds. The M20 East arm presents an RFC value of 1.00, queuing of 347 PCUs and delay of 854 seconds.

During the PM peak hour, Coldharbour Lane South and M20 West arms would both operate over theoretical capacity, with the M20 East arm operating over desirable capacity. The Coldharbour Lane South arm would have an RFC of 1.01, queuing of 173 PCUs and delay of 244 seconds, whilst the M20 West arm would have an RFC 1.01, queuing of 199 PCUs and delay of 834 seconds and the M20 East arm would have an RFC value of 0.91, queue of 13 PCUs and delay of 31 seconds.

Table 15: J5 2031 + All Development

	AM			PM		
Movement	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Coldharbour Lane South	3	8	0.70	227	346	1.00
M20 West	148	382	1.01	226	913	1.01
Coldharbour Lane North	0	13	0.12	1	21	0.34
M20 East	423	975	1.01	21	47	0.95

The assessment results for 2031 + All Development show the growth in development traffic would lead to the junction further exceeding capacity in both the AM and PM peak, with RFC values over 1.00. During the AM peak, the M20 West and M20 East arms would both exceed theoretical capacity. The M20 West arm would have an RFC value of 1.01, a queue of 148 PCUs and delay of 382 seconds whilst the M20 East arm would have an RFC value of 1.01, a queue of 423 PCUs and delay of 975 seconds.

During the PM peak hour, Coldharbour Lane South and M20 West arms would both be exceeding theoretical capacity, with the M20 East arm exceeding desirable capacity. Coldharbour Lane South arm would have an RFC value of 1.00, a queue of 227 PCUs and delay of 346 seconds, whilst the M20 West arm would have an RFC value of 1.01, a queue of 226 PCUs and delay of 913 seconds and the M20 East arm would have an RFC value of 0.95, a queue of 21 PCUs and delay of 47 seconds.

Whilst the RFCs do not increase compared to Scenario 1, both queues and delays increase significantly.

Junction 6

It should be noted that the ARCADY model was adjusted for the Running Horse Roundabout at Junction 6, in order to calibrate against the traffic survey queue data obtained in June 2016. For the A229 North arm, the queueing counts illustrated significantly lower queuing than the queue lengths shown in the ARCADY model. It is expected that driver behaviour is influencing the queueing counts, with drivers using both lanes on entry to the M20 West arm (road markings assigning one lane only), and therefore lane allocation was adjusted to replicate this behaviour within the ARCADY model.

Table 16: J6 Base 2016

Movement	AM Queue (PCU)	Delay (s)	RFC	PM Queue (PCU)	Delay (s)	RFC
Cobtree Roundabout						
A229 North	3	6	0.69	2	5	0.50
M20 East	-	-	-	-	-	-
A229 South	32	85	0.99	72	190	1.10
M20 West	3	16	0.73	4	17	0.76
Running Horse Roundabout						
M20 West	118	315	1.00	140	460	0.92
A229 North	30	42	0.98	5	9	0.78
Sandling Lane	3	18	0.62	1	9	0.34
Chatham Road	2	10	0.58	2	8	0.48
Forstal Road	38	195	0.99	23	93	0.83

The assessment results for Base 2016 show the junction is already operating over both theoretical and desirable capacity in both the AM and PM peak hours, with RFC values exceeding 1.00 and 0.85 respectively.

During the AM Peak hour, the A229 South arm at Cobtree Roundabout exceeds desirable capacity while for the Running Horse Roundabout the A229 North and Forstal Road arms exceed desirable capacity and the M20 West exceeds theoretical capacity. The A229 South arm has an RFC value of 0.99, queue of 32 PCUs and delay of 85 seconds while the M20 West, A229 North and Forstal Road arms have RFC values of 1.00, 0.98 and 0.99, queues of 118, 30 and 38 PCUs and delays of 315, 42 and 195 seconds respectively.

During the PM peak hour, the A229 South arm at Cobtree Roundabout exceeds theoretical capacity with an RFC value of 1.10, queue of 72 PCUs and delay of 190 seconds. For the Running Horse Roundabout the M20 West exceeds desirable capacity with an RFC value of 0.92, queue of 140 PCUs and delay of 460 seconds.

Table 17: J6 Base 2031

Movement	AM Queue (PCU)	Delay (s)	RFC	PM Queue (PCU)	Delay (s)	RFC
Cobtree Roundabout						
A229 North	5	9	0.75	2	5	0.55
M20 East	-	-	-	-	-	-
A229 South	33	86	1.00	74	197	1.06
M20 West	6	24	0.80	5	22	0.82
Running Horse Roundabout						
M20 West	200	555	1.00	278	877	0.92
A229 North	86	105	1.06	7	12	0.84
Sandling Lane	3	22	0.69	1	11	0.38
Chatham Road	3	13	0.66	2	10	0.51
Forstal Road	77	439	1.02	59	268	0.87

The assessment results for the Base 2031 shows the growth in background traffic would cause the junction to exceed theoretical and desirable capacity in the AM and PM peak, with RFC values exceeding 1.00 and 0.85 respectively.

During the AM peak hour, the A229 South arm at Cobtree Roundabout and the M20 West, A229 North and Forstal Road arms at Running Horse Roundabout exceed theoretical capacity. The A229 South arm has an RFC value of 1.00, queue of 33 PCUs and delay of 86 seconds, while the M20 West, A229 North and Forstal Road arms have RFC values of 1.00, 1.06 and 1.02, queues of 200, 86 and 77 PCUs and delays of 555, 105 and 439 seconds respectively.

During the PM peak hour, the A229 South arm at Cobtree Roundabout exceeds theoretical capacity with an RFC value of 1.06, queue of 74 PCUs and delay of 197 seconds. At Running Horse Roundabout, the M20 West and Forstal Road arms exceed desirable capacity with RFC values of 0.92 and 0.87, queues of 278 and 59 PCUs and delays of 877 and 268 seconds.

Table 18: J6 2031 + Consented Development

Movement	AM Queue (PCU)	Delay (s)	RFC	PM Queue (PCU)	Delay (s)	RFC
Cobtree Roundabout						
A229 North	8	11	0.76	2	5	0.56
M20 East	-	-	-	-	-	-
A229 South	34	86	0.99	74	197	1.07
M20 West	7	26	0.80	6	26	0.84
Running Horse Roundabout						
M20 West	231	630	0.99	310	970	0.92
A229 North	104	127	1.08	7	13	0.85
Sandling Lane	3	23	0.71	2	11	0.38
Chatham Road	3	13	0.66	3	10	0.53
Forstal Road	83	506	1.02	69	328	0.88

The assessment results for the 2031 + Consented Development shows the growth in development traffic would cause the junction to again exceed theoretical capacity and desirable capacity during both the AM and PM peak hours, with RFC values exceeding 1.00 and 0.85 respectively.

During the AM peak hour, the A229 South arm at Cobtree Roundabout and the M20 West at Running Horse Roundabout exceed desirable capacity, whilst the A229 North and Forstal Road arms at Running Horse Roundabout exceed theoretical capacity. The A229 South arm has an RFC value of 0.99, queue of 34 PCUs and delay of 86 seconds, while the M20 West, A229 North and Forstal Road arms have RFC values of 0.99, 1.08 and 1.02, queues of 231, 104 and 83 PCUs and delays of 630, 127 and 506 seconds respectively.

During the PM peak hour, the A229 South arm at Cobtree Roundabout exceeds theoretical capacity with an RFC value of 1.07, queue of 74 PCUs and delay of 197 seconds. At Running Horse Roundabout, the M20 West and Forstal Road arms exceeds desirable capacity with RFC values of 0.92 and 0.88, queue of 310 and 69 PCUs and delay of 970 and 328 seconds.

Table 19: J6 2031 + All Development

Movement	AM Queue (PCU)	AM Delay (s)	AM RFC	PM Queue (PCU)	PM Delay (s)	PM RFC
Cobtree Roundabout						
A229 North	14	17	0.79	2	5	0.58
M20 East	-	-	-	-	-	-
A229 South	36	92	1.00	75	197	1.08
M20 West	12	48	0.82	6	28	0.87
Running Horse Roundabout						
M20 West	266	718	0.99	371	1117	0.93
A229 North	123	160	1.10	9	14	0.87
Sandling Lane	4	25	0.73	2	13	0.39
Chatham Road	3	14	0.69	3	11	0.56
Forstal Road	106	648	1.01	94	489	0.86

The assessment results for the 2031 + All Development shows the growth in development traffic would cause the junction to again exceed theoretical capacity and desirable capacity during both the AM and PM peak hours, with RFC values exceeding 1.00 and 0.85 respectively.

During the AM peak hour, the A229 South arm at Cobtree Roundabout and the A229 North and Forstal Road arms at Running Horse Roundabout exceed theoretical capacity, whilst the M20 West arm at Running Horse Roundabout exceeds desirable capacity. The A229 South arm has an RFC value of 1.00, queue of 36 PCUs and delay of 92 seconds, while the M20 West, A229 North and Forstal Road arms have RFC values of 0.99, 1.10 and 1.01, queues of 266, 123 and 106 PCUs and delays of 718, 160 and 648 seconds respectively.

During the PM peak hour, the A229 South arm at Cobtree Roundabout exceeds theoretical capacity with an RFC value of 1.08, queue of 75 PCUs and delay of 197 seconds, while the M20 West arm exceeds desirable capacity with an RFC value of 0.87, queue of 6 PCUs and delay of 28 seconds. At Running Horse Roundabout, the M20 West, A229 North and Forstal Road arms exceed desirable capacity with an RFC values of 0.93, 0.87 and 0.86, queues of 371, 9 and 94 PCUs and delays of 1117, 14 and 489 seconds respectively.

Junction 7

Table 20: J7 Base 2016

Movement	AM Queue (PCU)	AM Delay (s)	AM RFC	PM Queue (PCU)	PM Delay (s)	PM RFC
A249 South	3	12	0.68	27	71	1.01
M20 West	7	31	0.83	140	560	1.01
A249 Detling Hill	725	1267	1.03	260	611	1.02
M20 East	3	13	0.60	2	14	0.63

The assessment results for Base 2016 show the junction is already operating over theoretical capacity in both the AM and PM peak, with RFC values exceeding 1.00. During the AM peak hour, the A249 Detling Hill arm exceeds theoretical capacity with an RFC value of 1.03, queue of 725 PCUs and delay of 1267 seconds.

During the PM peak, the A249 South, M20 West and A249 Detling Hill arms all operate over theoretical capacity. The A249 South arm has an RFC value of 1.01, queue of 27 PCUs and delay of 71 seconds while M20 West arm has an RFC value of 1.01, queue of 140 PCUs and delay of 560 seconds and A249 Detling Hill arm has an RFC value of 1.02, queue of 260 PCUs and delay of 611 seconds.

The geometries for the half widths of Arms B and C (M20 West and A249 Detling Hill) have been changed in accordance with comments made by HE. Subsequently, the queues on these arms have increased significantly. However, when cross-referenced with queues shown in Google Typical Traffic for peak hours, the resulting queues from the Arcady assessments based on the original geometries compare significantly better, as detailed below:

- The AM queue (as per **Table 20**) for the A249 Detling Hill of 725 PCUs equates to a queue going back 4169m. However, as per Google Traffic the maximum slow moving queue is no further than 2.5km. This is in line with the previously modelled geometries in which a queue of 419 PCUs was expected equating to a 2409m queue.
- The PM queue (as per **Table 20**) for the A249 Detling Hill of 260 PCUs equates to 1495m queue and the M20 West queue of 140 PCUs equating to 805m. Google Traffic shows queues do not extend beyond 500m for the M20 West and beyond 750m for the A249 Detling Hill. These are again more in line with the previously modelled geometries which show a queue of 75 PCUs / 431m for the M20 West and 94 PCUs / 541m for the A249 Detling Hill.

Consequently, these inconsistencies in the base model affect the latter scenarios tested, with high and potentially exacerbated queues for the A249 Detling Hill and M20 West predicted.

Table 21: Base 2031

Movement	AM Queue (PCU)	Delay (s)	RFC	PM Queue (PCU)	Delay (s)	RFC
A249 South	4	15	0.74	59	151	1.11
M20 West	23	82	0.97	253	980	1.01
A249 Detling Hill	920	1399	1.00	349	694	1.03
M20 East	4	14	0.65	3	14	0.65

The assessment of results for the Base 2031 show the growth in background traffic would cause the junction to further exceed theoretical capacity in both the AM and PM peak, with the growth also causing the M20 West arm to exceed desirable capacity in the AM peak. During the AM peak hour, the A249 Detling Hill arm would have an RFC value of 1.00, queue of 920 PCUs and delay of 1399 seconds while the M20 West arm would have an RFC value of 0.97, queue of 23 PCUs and delay of 82 seconds.

During the PM peak the A249 South, M20 West and A249 Detling Hill arms would all further exceed theoretical capacity. The A249 South arm would have an RFC value of 1.11, queue of 59 PCUs and delay of 151 seconds while the M20 West arm would have and RFC value of 1.01, queue of 253 PCUs and delay of 980 seconds and the A249 Detling Hill arm would have an RFC of 1.03, queue of 349 PCUs and delay 694 seconds.

Table 22: 2031 + Consented Development

Movement	AM Queue (PCU)	AM Delay (s)	AM RFC	PM Queue (PCU)	PM Delay (s)	PM RFC
A249 South	5	17	0.79	83	235	1.18
M20 West	48	163	1.02	314	1200	1.03
A249 Detling Hill	1033	1430	1.01	404	734	1.04
M20 East	3	14	0.67	3	14	0.68

The assessment of results for the 2031 + Consented Development show the growth in development traffic would cause the junction to further exceed theoretical capacity during both the AM and PM peak. During the AM peak, the A249 Detling Hill arm would have an RFC value of 1.01, queue of 1033 PCUs and delay of 1430 seconds while the M20 West arm would have an RFC value of 1.02, queue of 48 PCUs and delay of 163 seconds.

During the PM peak the A249 South, M20 West and A249 Detling Hill arms would all further exceed theoretical capacity. The A249 South arm would have an RFC value of 1.18, queue of 83 PCUs and delay of 235 seconds while the M20 West arm would have an RFC value of 1.03, queue of 314 PCUs and delay of 1200 seconds and the A249 Detling Hill arm would have an RFC of 1.04, queue of 404 PCUs and delay 734 seconds.

Table 23: 2031 + All Development

Movement	AM Queue (PCU)	AM Delay (s)	AM RFC	PM Queue (PCU)	PM Delay (s)	PM RFC
A249 South	6	19	0.80	92	275	1.19
M20 West	65	222	1.02	348	1327	1.02
A249 Detling Hill	1077	1436	1.01	433	785	1.04
M20 East	3	14	0.68	3	14	0.68

The assessment of results for the 2031 + All Development show the growth in development traffic would cause the junction to further exceed theoretical capacity during both the AM and PM peak. During the AM peak, the A249 Detling Hill arm would have an RFC value of 1.01, queue of 1077 PCUs and delay of 1436 seconds while the M20 West arm would have an RFC value of 1.02, queue of 65 PCUs and delay of 222 seconds.

During the PM peak the A249 South, M20 West and A249 Detling Hill arms would all further exceed theoretical capacity. The A249 South arm would have an RFC value of 1.19, queue of 92 PCUs and delay of 275 seconds while the M20 West arm would have an RFC value of 1.02, queue of 348 PCUs and delay of 1327 seconds and the A249 Detling Hill arm would have an RFC of 1.04, queue of 433 PCUs and delay 785 seconds.

Junction 8

Table 24: Base 2016

Movement	AM Queue (PCU)	AM Delay (s)	AM RFC	PM Queue (PCU)	PM Delay (s)	PM RFC
M20 West	2	5	0.53	2	5	0.60
Service Station North	1	6	0.21	1	6	0.18
M20 East	2	11	0.54	2	12	0.49
A20 Link Road South	23	45	0.98	8	18	0.89

The assessment results for Base 2016 show the A20 Link Road South arm is already operating over desirable capacity in the AM peak hour, with an RFC value of 0.98, queue of 23 PCUs and

delay of 45 seconds. During the PM peak hour, the A20 Link Road South arm is also already operating over desirable capacity with an RFC value of 0.89, queue of 8 PCUs and delay of 18 seconds.

Table 25: Base 2031

	AM			PM		
Movement	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
M20 West	2	5	0.57	3	6	0.66
Service Station North	1	6	0.24	1	7	0.22
M20 East	2	15	0.63	2	17	0.59
A20 Link Road South	68	114	1.07	21	40	0.97

The assessment results for Base 2031 show the growth in background traffic would cause the junction to exceed theoretical capacity in the AM peak and desirable capacity in the PM peak, with RFC values exceeding 1.00 and 0.85 respectively. During the AM peak hour, the A20 Link Road South arm exceeds theoretical capacity with an RFC value of 1.07, queue of 68 PCUs and delay of 114 seconds. In the PM peak hour, the A20 Link Road South arm would exceed desirable capacity with an RFC value of 0.97, queue of 21 PCUs and delay of 40 seconds.

Table 26: 2031 + Consented Development

	AM			PM		
Movement	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
M20 West	2	5	0.58	3	6	0.67
Service Station North	1	6	0.23	1	8	0.23
M20 East	2	15	0.63	2	17	0.61
A20 Link Road South	73	120	1.08	21	41	0.97

The assessment results for 2031 + Consented Development show the growth in development traffic would cause the junction to exceed theoretical capacity in the AM and desirable capacity in the PM peak, with RFC values exceeding 1.00 and 0.85 respectively. During the AM peak hour, the A20 Link Road South arm exceeds theoretical capacity with an RFC value of 1.08, queue of 73 PCUs and delay of 120 seconds. In the PM peak hour, the A20 Link Road South arm would exceed desirable capacity with an RFC value of 0.97, queue of 21 PCUs and delay of 41 seconds.

Table 27: 2031 + All Development

	AM			PM		
Movement	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
M20 West	2	5	0.60	3	6	0.68
Service Station North	1	6	0.24	1	8	0.24
M20 East	3	17	0.65	2	19	0.61
A20 Link Road South	84	136	1.10	28	51	0.99

The assessment results for 2031 + All Development show the growth in development traffic would cause the junction to further exceed theoretical capacity in the AM and desirable capacity in the PM peak, with RFC values exceeding 1.00 and 0.85 respectively. During the AM peak hour, the A20 Link Road South arm exceeds theoretical capacity with an RFC value of 1.10, queue of 84 PCUs and delay of 136 seconds. In the PM peak hour, the A20 Link Road South arm exceeds desirable capacity with an RFC value of 0.99, queue of 28 PCUs and delay of 51 seconds.

3.2 Summary

The assessment results presented in **Section 3.1** above show Junctions 5, 6 and 7 to be over theoretical capacity in all scenarios. Whilst RFCs don't increase much (if at all) when comparing Scenario 1 (consented development) with Scenario 2 (all development), both queues and delays increase significantly when adding the non-consented development.

Junction 8 performs significantly better than the other three junctions. Its southern arm exceeds desirable capacity at existing and theoretical capacity in the future AM peaks and its desirable capacity in all PM peak. The increases in queuing and delays between Scenario 1 and 2 are however very small.

Based on these results, mitigation for the impact of the non-consented element of the Local Plan development should therefore be considered for all junctions, although as explained above, this impact is very small at Junction 8.

4 Proposed Junction Improvements

4.1 Proposed Improvements

4.1.1 Junction 5

This mitigation design was based on a drawing produced by Amey for Kent County Council (Indicative Layout: A20 / M20 Junction 5 Proposed Signalisation 4300390/000/09), presented at the October 2015 Maidstone Joint Transportation Board Meeting.

The circulatory carriageway of the roundabout at Junction 5 has been marked up to have three lanes except on the arm adjacent to Coldharbour Lane South. The M20 West, M20 East and Coldharbour Lane South arms, where there is currently congestion, are proposed to be signalised. No changes to the lane widths have been made and lane allocation is as shown in the drawing included in **Appendix E.1**.

Modelling results show that the junction would operate within theoretical capacity (below 100%) for all scenarios, as detailed in Chapter 5.

4.1.2 Junction 6 Cobtree Roundabout

The circulatory carriageway of Cobtree Roundabout at Junction 6 has been marked up to have two lanes except on the arm adjacent to the A229 South. The A229 South arm has been signalised and hatching removed to accommodate a 58m long flare. Lane allocation is shown in the option drawing which is included in **Appendix E.2**.

Modelling results show that the junction would operate within capacity for all scenarios, as detailed in Chapter 5.

4.1.3 Junction 6 Running Horse Roundabout

The Running Horse roundabout at Junction 6 was tested both with non-signalisation and signalisation improvements. It was found that considering all approaches, the non-signalised improvement scheme would perform better. The M20 West off-slip was amended, extending the storage of the two lanes at the approach from 7 PCUs per lane to 22 PCUs per lane, and the arm entry width was widened from 7m to 8m at the approach line. The A229 North arm was also amended, expanding from two lanes to three at the approach (removing existing hatching) with lane allocation feeding two lanes to the A229 south and two lanes to the M20 West on-slip. A sketch drawing is included in **Appendix E.2**.

Modelling results show that despite relatively similar RFC values to Scenario 1 with existing layout, the queues are significantly reduced for all arms in both the AM and PM peak (excluding Forstal Road arm in the AM peak) for the improved layout with Scenario 2. Although these queues still reach back to the M20 mainline, they are significantly reduced and it is therefore considered that the improved layout fully mitigates the impact of the Local Plan development on this junction.

4.1.4 Junction 7

This mitigation design was based on the drawings produced by dha transport (M20 Junction 7 Development Mitigation Scheme: Conceptual Design T0217/H/02 and T0217/H/03), presented within the Transport Assessment for Maidstone Medical Campus Limited, 'Proposed Medical Campus Newnham Park, Bearsted Road, Maidstone' June 2013 (JSL/T0217).

The circulatory carriageway of the roundabout at Junction 7 has been marked up to have three lanes throughout the roundabout. The left filter lanes on the A229 South and the M20 West arms have been removed to accommodate four lane approaches on these arms with the two nearside lanes catering for left turning vehicles. Both of these arms and the A249 Detling Hill arm have been signalised. Lane allocation is shown in the option drawing included in **Appendix E.3**.

We have assumed a higher saturation flow for M20 EB off-slip nearside lane than that calculated by the model using TRL RR67. The guidance states that on junction approaches with good visibility and large radii, where there are no obstructions (such as parked cars), with exit links of adequate width and alignment, the saturation flow can be increased by up to 10% above that calculated. In this instance, the calculated saturation flow was increased from 1936PCU/hr to 2000PCU/hr which equates to an increase of 3.3%.

Modelling results show that the junction would operate within theoretical capacity (below 100%) for all scenarios.

4.1.5 Junction 8

The circulatory carriageway of the roundabout at Junction 8 has been marked up to have two lanes throughout the roundabout. The A20 Link Road South arm where the current congestion occurs is proposed to be signalised. No changes to the lane widths have been made and lane allocation is shown in the option drawing included in **Appendix E.4**.

The modelling results show that the junction would operate within capacity for all scenarios.

4.2 Design Review

A design review of the improvements proposed in **Section 4.1** was carried out to understand the likelihood of any departure from standards or safety concerns these could pose.

The improvements are largely possible within the existing carriageways and can be achieved by road markings, introducing additional lanes on the roundabout circulatory carriageway and in some cases the introduction of signal control. In a few areas, existing kerblines are adjusted and traffic segregation islands removed to accommodate the proposals.

The relevant Traffic Regulation Orders to permit installation of traffic signals in the locations proposed will need to be considered further during future design phases.

The very initial feasibility designs presented in this report particularly aimed at improving lane discipline and user safety, and these are discussed in the paragraphs below.

4.2.1 Junction 5

This is an existing 4-arm grade separated roundabout junction with no lane markings on the circulatory carriageways providing sufficient width for 2 to 3 vehicles. The proposals improve that situation by providing both lane markings and destination/lane confirmation markings.

Additional capacity is achieved by applying signal control to the M20 and A20 arms which will also help to reduce vehicle speeds on what is a large roundabout of approximately 200m in diameter. The existing junction with the works unit will remain as a priority junction.

A segregating traffic island is proposed to further protect traffic flows between Coldharbour Lane and the westbound on-slip to the M20 from circulating traffic which will be developed during future design phases to be sufficiently wide to accommodate the traffic signals proposed in this location.

4.2.2 Junction 6

Junction 6 is a large gyratory that features two separate roundabouts, Cobtree Roundabout that is located north of the M20 and Running Horse Roundabout that is located to the south.

Cobtree Roundabout is a 4-arm grade separated roundabout above the A229 and features a circulatory carriageway that has been reduced in width through the use of road markings to between 1 and 2 lanes capacity although lane markings are either not provided or badly worn. The proposals introduce traffic signal control to the junction from the Running Horse roundabout (southern arm) and also improve lane delineation around the junction. This link would also be delineated to provide two lanes of traffic between the car dealership (Audi) and the junction.

Running Horse Roundabout is a 5-arm grade separated roundabout below the A229. The circulatory carriageway has been reduced in width through road markings to provide 2 lanes. Road markings have also been used to reduce entry widths on the approaches from the A229 northbound exit slip and from the southbound link from Cobtree Roundabout.

As the existing circulatory carriageway already benefits from lane markings and destination information, the improvements include redefining the hatch road marking to provide a third lane between the entry from Cobtree Roundabout and exit to the A229 southbound. Other road marking proposals include introducing a 3rd lane at the entry from Cobtree Roundabout and also re-marking of the entry from the M20 westbound exit slip to provide greater stacking capacity. This proposal will need to be examined in greater detail at future design stages and may require widening of the slip road to avoid a departure from TD27/05.

4.2.3 Junction 7

This is a large circular, 4-arm grade-separated roundabout which is currently marked to provide between 2 and 3 circulatory lanes, the section with 3 lanes being between the A249 southbound entry and its exit on the south side of the junction. The proposals involve the removal of traffic segregation islands between the entry to the roundabout from the M20 eastbound off-slip and A249 northbound exit, and between the A249 northbound entry and M20 westbound on-slip.

These proposals constitute a significant change as the introduction of 4 lane entries into a layout that has a 3 lane circulatory carriageway would require a departure from TD16/07. Lane markings are proposed to mitigate against the risk of 4 lanes of traffic trying to enter the circulatory carriageway at the same time but will require HE approval.

The entry from the M20 eastbound exit slip is further complicated as removal of the segregation island also removes a refuge from the pedestrian crossing and therefore requires a single crossing of 15m which would normally justify a staggered pedestrian crossing. It may not be possible to accommodate an island in the proposals and a suitable allowance has therefore been made in the signal settings. It is however proposed that the layout of this arm be considered further at design stage with a view to evaluate the best option.

The existing pedestrian route on the west side of the junction between the A249 (S) and A249 (N) will be rerouted to cross to the inside of the roundabout to avoid crossing the two lane westbound entry slip road and will also require examination during the design phase of whether a central pedestrian island is required.

4.2.4 Junction 8

The existing junction is provided as a large circular 4-arm, grade separated roundabout with no lane markings around the circulatory carriageway albeit that the entries imply 2-lane capacity.

The proposals are simply to introduce lane markings between exit and entries and to introduce traffic signal control to the junction of the approach from the A20. Road markings on other approaches will be refreshed.

5 Assessment of Improved Junction Layouts

5.1 Junction Modelling

LinSig models were produced to test the roundabouts with the improvement schemes, as described in **Section 4**, to evaluate whether the proposed improvements sufficiently mitigate the impacts of development Scenario 2 when compared to Scenario 1 with the existing layouts.

LinSig software has been used to model the signal controlled junctions. Output from LinSig refers to Degree of Saturation % (DoS%, which is the equivalent measure to RFC for roundabouts) as the primary measure of performance. A DoS of below 90% suggests a junction will operate within capacity. A DoS of 90% to 100% suggests a junction is over desired capacity but within its theoretical capacity, whilst a DoS in excess of 100% suggests a junction will be in excess of theoretical capacity.

The assessment results can be found for each junction in **Table 28** to **Table 33** below, with improvement drawings in **Appendix E** and full LinSig and ARCADY reports found in **Appendix F.**

Junction 5

Table 28: J5 2031 + All Development

	AM		PM	
Movement	DoS (%)	Mean Max Queue (PCU)	DoS (%)	Mean Max Queue (PCU)
M20 West	83.0%	12	96.2%	19
Coldharbour Lane North	5.9%	0	25.4%	1
M20 East	88.9%	17	86.5%	17
Coldharbour Lane South	68.1%	3	89.5%	27

The assessment results for 2031 + All Development show the junction to exceed desirable capacity in the PM peak, with DoS values above 90%. During the PM peak hour, M20 West arm exceeds desirable capacity and would have a DoS of 96.2% and queuing of 19 PCUs. During the AM peak the junction operates within desirable capacity, with the M20 East arm having the highest DoS of 88.9% and a queue of 17 PCUs.

Junction 6

Table 29: J6 Cobtree Roundabout 2031 + All Development

	AM		PM	
Movement	DoS (%)	Mean Max Queue (PCU)	DoS (%)	Mean Max Queue (PCU)
A229 North	81.4%	2	60.8%	1
M20 East	-	-	-	-
A229 South	86.0%	10	89.5%	12
M20 West	41.8%	0	45.1%	0

The assessment results for 2031 + All Development show the junction operates within desirable capacity in both the AM and PM peak, with DoS values below 90%. During the AM peak hour, A229 South arm would have the highest DoS of 86.0% and queuing of 10 PCUs. During the PM peak hour, the A229 South arm would again have the highest DoS of 89.5% and queuing of 12 PCUs.

Table 30: J6 Running Horse Roundabout 2031 + All Development

	AM			PM		
Movement	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
M20 West	126	293	1.00	99	263	1.00
A229 North	91	138	1.01	10	16	0.88
Sandling Lane	4	22	0.72	2	10	0.42
Chatham Road	3	13	0.67	2	8	0.58
Forstal Road	93	572	1.02	48	191	0.98

The ARCADY assessment results for the 2031 + All Development scenario show the junction exceeds theoretical and desirable capacity in both the AM and PM peak periods. During the AM peak the M20 West, A229 North and Forstal Road arms exceed theoretical capacity, with RFC values of 1.00, 1.01 and 1.02, queuing of 126, 91 and 93 PCUs, and delays of 293, 138 and 572 seconds. During the PM peak hour the M20 West arm has the highest RFC value of 1.00 and queuing of 99 PCUs, with Forstal Road and A229 North arms exceeding desirable capacity, with RFC values of 0.98 and 0.88 and queues of 48 and 10 PCUs respectively.

Junction 7

Table 31: J7 2031 + Consented Development

	AM		PM	
Movement	DoS (%)	Mean Max Queue (PCU)	DoS (%)	Mean Max Queue (PCU)
M20 West	83.7%	13	97.1%	35
A249 South	84.6%	12	83.6%	17
M20 East	84.1%	7	77.4%	6
A249 Detling Hill	87.0%	16	84.8%	17

The assessment results for the 2031 + Consented Development scenario show the junction to be operating within desirable capacity in the AM peak hour, and within theoretical capacity in the PM peak hour. During the AM peak hour, the A249 Detling Hill has the highest DoS value of 87.0% and queuing of 16 PCUs. During the PM peak hour, the M20 West arm exceeds desirable capacity with a DoS value of 97.1% and queuing of 35 PCUs, however this is within theoretical capacity. The three other arms are all within desirable capacity in the PM peak.

Table 32: J7 2031 + All Development

	AM		PM	
Movement	DoS (%)	Mean Max Queue (PCU)	DoS (%)	Mean Max Queue (PCU)
M20 West	84.0%	14	99.0%	42
A249 South	86.2%	13	87.0%	19
M20 East	88.9%	8	82.9%	8
A249 Detling Hill	88.7%	17	86.6%	18

The assessment results for the 2031 + All Development scenario show the junction to be operating within desirable capacity in the AM peak hour, and within theoretical capacity in the PM peak hour. During the AM peak hour, the M20 East arm has the highest DoS value of 88.9% and queuing of 8 PCUs. During the PM peak hour, the M20 West arm exceeds desirable capacity with a DoS value of 99.0% and queuing of 42 PCUs. The three other arms are all within desirable capacity during the PM peak hour.

Junction 8

Table 33: J8 2031 + All Development

	AM		PM	
Movement	DoS (%)	Mean Max Queue (PCU)	DoS (%)	Mean Max Queue (PCU)
M20 East	53.6%	1	49.4%	1
A20 Link Road South	89.8%	28	85.4%	18
M20 West	48.8%	1	56.7%	1
Service Station North	18.5%	0	18.2%	0

The assessment results for the 2031 + All Development scenario show the junction to operate within desirable capacity in both the AM and PM peak hours, with all DoS values below 90%. During the AM peak hour, A20 Link Road South arm would have the highest DoS of 89.8% and queuing of 28 PCUs. During the PM peak hour, the A20 Link Road South arm would again have the highest DoS of 85.4% and queuing of 18 PCUs.

5.2 South East Maidstone Strategic Link (SEMSL) Testing

Background

Turning movements from the strategic VISUM model were provided for each of the junctions by Amey, modelled with multiple nodes due to the complexities of the junctions and therefore with turning movements extracted using flow bundles. Turning movements were provided for both the 2031 DS4a (full Local Plan development and the proposed South East Maidstone Strategic Link (SEMSL)) and 2031 DS4b (full Local Plan development without SEMSL) scenario runs.

We calculated a factor for each turning movement, establishing the level of change from the scenario with all development but no SEMSL to that with the proposed SEMSL scenario, and applied this factor to the 2031+ All Development (Scenario 2) flows (including consented and non-consented developments).

A comparison between the 2031+ All Development (Scenario 2) flows and the amended 2031+ All Development (Scenario 2) flows adjusted with the SEMSL factors was undertaken (as shown in **Table 34** to **Table 37** below), assessing the difference in total entry flows into the junction for the AM and PM peaks. Junctions 5, 6 and 7 showed a difference of under 1% for each peak period. Remodelling with the SEMSL flows was therefore not undertaken for these junctions.

Junction 8 showed a difference of 7.4% in the AM peak and 10.4% in the PM peak. Further assessment was therefore undertaken for this junction with the flows reflecting the changes due to SEMSL. The results were compared against the 2031+ All Development (Scenario 2).

Table 34: Comparison of 2031+ All Development (Scenario 2) flows with 2031+ All Development (Scenario 2) flows adjusted with the SEMSL factors – Junction 5

	2031 + All Development Flows		SEMSL Flows	
Junction 5	AM	PM	AM	PM
Coldharbour Lane South	2041	3095	2022	3080
M20 West	1131	929	1087	912
Coldharbour Lane North	36	88	36	87
M20 East	1641	1230	1688	1255
Total	4849	5342	4833	5334
AM % Change		-0.34%		
PM % Change		-0.15%		

Table 35: Comparison of 2031+ All Development (Scenario 2) flows with 2031+ All Development (Scenario 2) flows adjusted with the SEMSL factors – Junction 6

	2031 + All Development Flows		SEMSL Flows	
Cobtree Roundabout	AM	PM	AM	PM
A229 North	3075	2241	3072	2302
M20 East	0	0	0	0
A229 South	1560	1691	1543	1684
M20 West	1778	2518	1767	2496
Running Horse Roundabout	AM	PM	AM	PM
M20 West	1530	1388	1531	1380
A229 North	2414	1884	2378	1855
Sandling Lane	477	409	495	436
Chatham Road	774	866	854	895
Forstal Road	633	722	637	753
Total	12241	11719	12277	11801
AM % Change		0.30%		
PM % Change		0.70%		

Table 36: Comparison of 2031+ All Development (Scenario 2) flows with 2031+ All Development (Scenario 2) flows adjusted with the SEMSL factors – Junction 7

	2031 + All Development Flows		SEMSL Flows	
Junction 7	AM	PM	AM	PM
A249 South	2088	2139	2054	2103
M20 West	2299	3122	2328	3155
A249 Detling Hill	2453	1933	2463	1931
M20 East	742	678	738	709
Total	7582	7872	7583	7899
AM % Change		0.01%		
PM % Change		0.34%		

Table 37: Comparison of 2031+ All Development (Scenario 2) flows with 2031+ All Development (Scenario 2) flows adjusted with the SEMSL factors – Junction 8

	2031 + All Development Flows		SEMSL Flows	
Junction 8	AM	PM	AM	PM
M20 West	1247	1554	1334	1650
Service Station North	329	286	316	325
M20 East	492	356	525	420
A20 Link Road South	1759	1617	1958	1859
Total	3827	3813	4133	4255
AM % Change		7.41%		
PM % Change		10.39%		

Junction Modelling

The results for the SEMSL modelling at Junction 8 are shown below in **Table 38**.

The assessment results for the SEMSL 2031+ All Development scenario show the junction would operate over desirable capacity in the AM peak (with DoS values exceeding 90%) and within capacity in the PM peak. During the AM peak hour, the A20 Link Road South arm exceeds desirable capacity with a DoS value of 91.9% and queue of 33 PCUs. In the PM peak, all arms operate within capacity, with the A20 Link Road South arm showing the highest DoS value and queueing, with 89.0% and 21 PCUs respectively.

Table 38: SEMSL 2031+ All Development – Junction 8

	AM		PM	
Movement	DoS (%)	Mean Max Queue (PCU)	DoS (%)	Mean Max Queue (PCU)
M20 West	54.8%	1	65.9%	1
Service Station North	19.7%	0	23.2%	0
M20 East	61.2%	1	67.2%	1
A20 Link Road South	91.9%	33	89.0%	21

5.3 Assessment Comparison

In the section below, the assessment results of Scenario 1 (consented development only) with existing junction layouts and of Scenario 2 (all development) with existing junction layouts and the improved junction layouts are compared to demonstrate whether the improvements provide sufficient mitigation for the Local Plan impacts (as shown in **Table 39** to **Table 48**).

RFC and DoS values are summarised to illustrate the total capacity of each arm at the junction, and the queue data is also summarised (mean max queue for LinSig results and total end queue for the worst time segment modelled for ARCADY results).

Junction 5

ARCADY with Scenario 1 flows (consented development) showed congestion on the M20 West and East arms during the AM peak, and on the Coldharbour Lane South, M20 West and M20 East arms during the PM peak.

Results from the LinSig model with 2031 + All Development based on the option drawing described in **Section 4** and included in **Appendix F** showed that the junction would operate

within capacity during the AM peak. During the PM peak the M20 West arm would be above desirable capacity but the DoS and queues are lower compared to Scenario 1 (consented flows only) with existing layout.

Table 39: RFC / DoS (%) for 2031 – Junction 5

J5	AM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	PM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	Remarks
Coldharbour Lane South	0.67	0.70	68.1	1.01	1.00	89.5	
M20 West	1.00	1.01	83.0	1.01	1.01	96.2	
Coldharbour Lane North	0.11	0.12	5.9	0.34	0.34	25.4	Not Signalised
M20 East	1.00	1.01	88.9	0.91	0.95	86.5	

The eastbound off-slip (western arm of junction) for both existing and improved layouts is approximately 22m long across 3 lanes, plus 265m across 2 lanes (excluding the dedicated motorway lane on the M20 mainline), providing for 104 PCUs. The queues for the existing layout in Scenario 1 are 112 PCUs (644m) for the AM peak and 199 PCUs (1144m) for the PM peak, exceeding the length of the slip road. The queues for the improved layout in Scenario 2 are 12 PCUs (69m) in the AM peak and 19 PCUs (109m) in the PM peak, with mitigation illustrating queue lengths are not expected to reach back to the M20 mainline.

The westbound off-slip (eastern arm of junction) for both existing and improved layouts is approximately 22m long across 3 lanes, plus 565m across 2 lanes (providing for 208 PCUs). The queues for the existing layout in Scenario 1 are 347 PCUs (1995m) for the AM peak and 13 PCUs (75m) for the PM peak, with queues exceeding the length of the slip road in the AM peak. The queues for the improved layout in Scenario 2 are 17 PCUs (98m) in the AM peak and the PM peak, with mitigation illustrating queue lengths are not expected to reach back to the M20 mainline.

Table 40: Queue Data for 2031 – Junction 5

J5	AM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	PM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	Remarks
Coldharbour Lane South	3	3	3	173	227	27	
M20 West	112	148	12	199	226	19	
Coldharbour Lane North	0	0	0	1	1	1	Not Signalised
M20 East	347	423	17	13	21	17	

Junction 6

For the Cobtree Roundabout, ARCADY with Scenario 1 flows (consented development) showed congestion on the A229 South arm during the AM Peak and the PM peak.

Results from the LinSig model with 2031 + All Development based on Mott MacDonald's option drawing proposing signalisation of the A229 South showed that the junction would operate within capacity in both the AM and PM peak.

Table 41: RFC / DoS (%) for 2031 – Junction 6 Cobtree Roundabout

J6 Cobtree Roundabout	AM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	PM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	Remarks
A229 North	0.76	0.79	81.4	0.56	0.58	60.8	Except South Circulatory all others 2 lane
A229 South	0.99	1.00	86.0	1.07	1.08	89.5	Signalised, lane and a flare of 10 PCU
M20 West	0.80	0.82	41.8	0.84	0.87	45.1	

The eastbound off-slip (western arm of junction) for both existing and improved layouts is approximately 44m long across 2 lanes, plus 315m across 1 lane (excluding the dedicated jet lane), providing for 70 PCUs. The queues for the existing layout in Scenario 1 are 7 PCUs (40m) in the AM peak and 6 PCUs (35m) in the PM peak. For the improved layout in Scenario 2, there are no expected queues in both the AM and PM peaks. The results show both existing and mitigated option layouts queue lengths are not expected to reach back to the M20 mainline.

Table 42: Queue Data for 2031 – Junction 6 Cobtree Roundabout

J6 Cobtree Roundabout	AM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	PM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	Remarks
A229 North	8	14	2	2	2	1	Except South Circulatory all others 2 lane
A229 South	34	36	10	74	75	12	Signalised, lane and a flare of 10 PCU
M20 West	7	12	0	6	6	0	

For the Running Horse Roundabout, ARCADY with Scenario 1 flows (consented development) showed congestion on the M20 West, A229 North and Forstal Road arms during the AM peak and on the M20 West and Forstal Road arms during the PM peak.

Results of the improved junction layout modelled in ARCADY with Scenario 2 (All Development) showed that despite relatively similar RFC values, the queues are significantly reduced for all arms in both the AM and PM peak (excluding Forstal Road arm in the AM peak).

Table 43: RFC for 2031 – Junction 6 Running Horse Roundabout

J6 Running Horse Roundabout	AM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	PM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	Remarks
M20 West	0.99	0.99	1.00	0.92	0.93	1.00	
A229 North	1.08	1.10	1.01	0.85	0.87	0.88	
Sandling Lane	0.71	0.73	0.72	0.38	0.39	0.42	
Chatham Road	0.66	0.69	0.67	0.53	0.56	0.58	
Forstal Road	1.02	1.01	1.02	0.88	0.86	0.98	

The westbound off-slip (western arm of junction) for the existing layout is approximately 38m long across 2 lanes, plus 287m across 1 lane (providing for 63 PCUs), and for the improved layout is approximately 125m long across 2 lanes, plus 200m across 1 lane (providing for 78 PCUs). The queues for the existing layout in Scenario 1 are 231 PCUs (1328m) in the AM peak and 310 PCUs (1783m) in the PM peak, exceeding the length of the slip road. The queues for the improved layout in Scenario 2 are 126 PCUs (725m) in the AM peak and 99 PCUs (569m) in the PM peak.

Although these results show queueing still to reach back to the M20 mainline within the mitigation option with Scenario 2, queue lengths are significantly improved in comparison to the existing layout with Scenario 1, reducing queues on mainline from 168 PCUs to 48 PCUs in the AM peak and from 247 PCUs to 21 PCUs in the PM peak. It is therefore considered that the improved layout fully mitigates the impact of the Local Plan development on this junction.

Table 44: Queue Data for 2031 – Junction 6 Running Horse Roundabout

J6 Running Horse Roundabout	AM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	PM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	Remarks
M20 West	231	266	126	310	371	99	
A229 North	104	123	91	7	9	10	
Sandling Lane	3	4	4	2	2	2	
Chatham Road	3	3	3	3	3	2	
Forstal Road	83	106	93	69	94	48	

Junction 7

Contrary to the other junctions, for Junction 7 the result comparison is for Future Base 2031 with the existing junction layout, compared to Scenarios 1 (consented development only) and 2 (all development) with the improved junction layout, because it is considered that the consented developments included in Scenario 1 (such as Kent Medical Campus) would trigger the improvements. HE confirmed that the test in this instance would be that the junction operates within its theoretical capacity with all development included. The assessment results demonstrate this being the case, hence no further mitigation is proposed.

ARCADY with Future Base 2031 flows showed congestion on the M20 West and A249 Detling Hill during the AM peak, and on the A249 South, M20 West and A249 Detling Hill arms during the PM peak.

Results from the LinSig model with both Scenario 1 (consented development) and Scenario 2 (all development) based on the sketch drawing included in **Appendix E.3** shows that the junction would be within desirable capacity during the AM peak and within theoretical capacity (below 100%) during the PM peak for both scenarios. Comparing the results below with Future Base 2031 with existing layout shows that the improvement scheme proposed would mitigate the impacts of both consented and non-consented development with improved RFC/DoS and queuing results.

Table 45: RFC / DoS (%) for Consented Development – Junction 7

J7	AM Existing Layout (Base 2031)	Improved Layout (S1)	Improved Layout (S2)	PM Existing Layout (Base 2031)	Improved Layout (S1)	Improved Layout (S2)	Remarks
A249 South	0.74	84.6	86.2	1.11	83.6	87.0	
M20 West	0.97	83.7	84.0	1.01	97.1	99.0	
A249 Detling Hill	1.00	87.0	88.7	1.03	84.8	86.6	
M20 East	0.65	84.1	88.9	0.65	77.4	82.9	

The eastbound off-slip (western arm of junction) for both existing and improved layouts is approximately 67m long across 2 lanes, plus 353m across 1 lane (excluding the dedicated motorway lane on the M20 mainline and dedicated jet lane), providing for 85 PCUs. The queues for the existing layout for Future Base 2031 are 23 PCUs (132m) for the AM peak and 253 (1455m) for the PM peak, with queues exceeding the length of the slip road in the PM peak. The queues for the improved layout in Scenario 1 and Scenario 2 are 13 PCUs (75m) and 14 PCUs (81m) for the AM peak and 35 PCUs (201m) and 42 PCUs (242m) for the PM peak, with mitigation illustrating queue lengths are not expected to reach back to the M20 mainline for both Scenario 1 and Scenario 2.

The westbound off-slip (eastern arm of junction) for both existing and improved layouts is approximately 45m long across 3 lanes, plus 345m across 2 lanes (providing for 143 PCUs). The queues for the existing layout for Future Base 2031 are 4 PCUs (23m) in the AM peak and 3 PCUs (17m) in the PM peak. The queues for the improved layout in Scenario 1 and Scenario 2 are 7 PCUs (40m) and 8 PCUs (46m) in the AM peak and 6 PCUs (35m) and 8 PCUs (46m) in the PM peak. The results show both existing and mitigated option layouts queue lengths are not expected to reach back to the M20 mainline.

Table 46: Queue Data for Consented Development – Junction 7

J7	AM Existing Layout (Base 2031)	Improved Layout (S1)	Improved Layout (S2)	PM Existing Layout (Base 2031)	Improved Layout (S1)	Improved Layout (S2)	Remarks
A249 South	4	12	13	59	17	19	
M20 West	23	13	14	253	35	42	
A249 Detling Hill	920	16	17	349	17	18	
M20 East	4	7	8	3	6	8	

Junction 8

ARCADY with Scenario 1 flows (consented development) showed congestion on the A20 Link Road South arm during the AM and PM peaks.

Results from the LinSig model with Scenario 2 (All Development) (assuming signalisation of the A20 Link Road South arm as shown in the sketch drawing included in **Appendix E.4)** shows that the junction would be within capacity during the AM and PM peak.

For the SEMSL scenario the A20 Link Road South arm would be slightly over desirable capacity in the AM peak but the results are insignificantly higher than those without SEMSL.

Table 47: RFC / DoS (%) for 2031 – Junction 8

J8	AM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	SEMSL	PM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	SEMSL	Remarks
M20 West	0.58	0.60	48.8	54.8	0.67	0.68	55.7	65.9	Not signalised
Service Station North	0.23	0.24	18.5	19.7	0.23	0.24	18.2	23.2	Not signalised
M20 East	0.63	0.65	53.6	61.2	0.61	0.61	49.4	67.2	Not signalised
A20 Link Road South	1.08	1.10	89.8	91.9	0.97	0.99	85.4	89.0	

The eastbound off-slip (western arm of junction) for both existing and improved layouts is approximately 257m long across 2 lanes, plus 110m across 1 lane (providing for 109 PCUs). The queues for the existing layout in Scenario 1 are 2 PCUs (12m) in the AM peak and 3 PCUs (17m) in the PM peak. The queues for the improved layout in Scenario 2 are 1 PCU (6m) in both the AM and PM peaks. The results show both existing and mitigated option layouts queue lengths are not expected to reach back to the M20 mainline.

The westbound off-slip (eastern arm of junction) for both existing and improved layouts is approximately 65m long across 2 lanes, plus 332m across 1 lane (providing for 80 PCUs). The queues for the existing layout in Scenario 1 are 2 PCUs (12m) in both the AM and PM peaks. The queues for the improved layout in Scenario 2 are 1 PCU (6m) in both the AM and PM peaks. The results show both existing and mitigated option layouts queue lengths are not expected to reach back to the M20 mainline.

Table 48: Queue Data for 2031 – Junction 8

J8	AM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	SEMSL	PM Existing Layout (S1)	Existing Layout (S2)	Improved Layout (S2)	SEMSL	Remarks
M20 West	2	2	1	1	3	3	1	1	Not signalised
Service Station North	1	1	0	0	1	1	0	0	Not signalised
M20 East	2	3	1	1	2	2	1	1	Not signalised
A20 Link Road South	73	84	28	33	21	28	18	21	

6 Merge Assessment

Merge and diverge assessments are used to determine the suitability of slip roads and the main carriageway where traffic joins and leaves a motorway. TD 22/06 'The Layout of Grade Separated Junctions' sets out the procedure to be followed in assessing merge and diverge arrangements. Hourly flows on the slip roads and main carriageway are plotted on the diagrams provided in TD 22/06 to determine the type of merge or diverge that should be provided. This includes the number of lanes on the main carriageway (before and after the merge or diverge) and on the slip road, as well as whether auxiliary lanes or ghost islands are required.

The Highway England TRADS database was interrogated to identify traffic flows along the M20 between Junctions 5 to 8 on the slip roads, distributor road and main carriageway. Flows were obtained for the full year of 2014, the most recent year available on the old TRADS database. Where this was not available, the latest year of data using the new TRADS system was used.

Thereafter, the 2014 flows were uplifted using TEMPro Version 7.0 (with planning dataset 70 and NTM dataset AF15) to provide flows for both 2016 and 2031 (as shown in **Table 49** and **Table 50**), assuming that no local development occurs i.e. zero additional houses and jobs. The growth rates for the junctions were adjusted using the National Transport Model (NTM) for rural motorway in Tonbridge and Malling for Junction 5, and in Maidstone for Junctions 6, 7 and 8 in accordance with the junction's geographical location.

Table 49: TEMPro Growth Rates for Tonbridge and Malling

Period	Time Period	Factor
2014-2016	AM Peak	1.0183
2014-2016	PM Peak	1.0187
2016-2031	AM Peak	1.0795
2016-2031	PM Peak	1.0784

Table 50: TEMPro Growth Rates for Maidstone

Period	Time Period	Factor
2014-2016	AM Peak	1.0135
2014-2016	PM Peak	1.0133
2016-2031	AM Peak	1.0841
2016-2031	PM Peak	1.0831

The development-only flows for Scenario 1 and Scenario 2 were calculated as shown in Chapter 2. Thereafter, the Scenario 1 development flows were added to the 2031 Base flows from the TRADS data, with the Scenario 2 development flows added onto the '2031 Base (TRADS) + Scenario 1' flows to create '2031 Base (TRADS) + Scenario 2' flows as shown in **Appendix G.1.**

The slip road and main carriageway flows for Scenarios 1 and 2 were plotted, in addition to Base 2016 and Base 2031 flows, for both AM and PM peaks for the merge/diverge assessments, as shown in **Appendix G.2.**

Table 51 and **Table 52** detail the type of merge / diverge layout that should be provided at each junction in the present and future years.

Table 51: Merge Flows – Junction Layouts

Merge Flows	Existing	Base 2016	Base 2031	Scenario 1	Scenario 2	SEMSL
AM Peak						
Junction 8 WB	B	B	B	B	E	E
Junction 7 WB	F	F	G	G	G	-
Junction 5E WB	C	F	F	F	F	-
Junction 5W WB	A	B	E	E	E	-
PM Peak						
Junction 8 WB	B	A or D	A or D	B	B	B
Junction 7 WB	F	F	F	F	F	-
Junction 5E WB	C	B	E	E	E	-
Junction 5W WB	A	E	E	A or D	A or D	-
AM Peak						
J8 EB	A	E	A or D	A or D	A or D	A or D
J7 EB	A	A or D	A or D	A or D	A or D	-
J6 EB	E	F	F	F	F	-
PM Peak						
J8 EB	A	A or D	A or D	A or D	A or D	A or D
J7 EB	A	E	E	E	E	-
J6 EB	E	F	G	G / F	F	-

The above table shows that in most circumstances the desirable layout changes with the different scenarios and is different from the existing layout. The required layouts are also different for the AM and PM peak. However, only for Junction 8 in the AM peak it changes between Scenario 1 and Scenario 2. Below the changes per junction are further detailed, in addition to the merge layouts.

Merge Layout Designs:

- A – Taper Merge
- B – Parallel Merge
- C – Ghost Island Merge
- D – 2 Lane Urban Merge
- E – Lane Gain
- F – Lane Gain with Ghost Island Merge
- G – 2 Lane Gain with Ghost Island
- H – Alternative Ghost Island Merge with Auxiliary Lane

Junction 8 - WB

The existing layout for Junction 8 WB is a parallel merge onto the main carriageway. The flows for the AM peak indicate that whilst most scenarios require no change in the road layout,

plotting the upstream mainline flows and merge flows onto the diagram for Scenario 2 this point just moves into design “E”, which would require a lane gain. The point in the diagram is however very much on the border between layout “B” and “E”. Flows should be monitored in the future to ascertain whether a change in layout would be required. During the PM peak, whilst Base 2016 and 2031 flows suggest a change in layout from a parallel merge to a taper merge or two lane urban merge, both Scenarios 1 and 2 require a parallel merge and therefore no change to the road layout.

Junction 8 - EB

The existing layout for Junction 8 EB is a taper merge. The flows for the AM peak indicate that a change would be required for the Base 2016 scenario to a lane gain. However, all other scenarios in the AM peak would need either a two lane merge or no changes to the layout, with the same outputs for all scenarios in the PM peak.

Junction 7 - WB

The existing layout for Junction 7 WB is a lane gain with a ghost island merge. Whilst the flows for the PM peak indicate that no changes will be required to the road layout, in the AM peak three scenarios require a change to a two lane gain with ghost island. However, it should be noted that this change in layout is triggered by the Base 2031 scenario and is therefore not solely needed to meet the requirements of the Local Plan development flows.

Junction 7 – EB

The existing layout for Junction 7 EB is a taper merge. The flows for the AM peak indicate that either no changes or a change to a two lane merge would be required for all scenarios. During the PM peak all scenarios would require a lane gain. As with the changes required for Junction 7 Westbound, it should be noted that the change in layout is triggered by the Base 2016 scenario in the PM peak and not resultant of Local Plan development flows.

Junction 6 – EB

The existing layout for Junction 6 is a lane gain. The flows for the AM peak indicate a change to a lane gain with ghost island merge would be required for all scenarios, and is therefore triggered by background growth and not Local Plan development. Furthermore, during the PM peak a change to a lane gain with ghost island merge would be required for Base 2016 and Scenario 2, whilst Base 2031 and Scenario 1 would require a change in layout to a two lane gain with ghost island.

Junction 5E - WB

The existing layout for Junction 5E is a ghost island merge. During the AM peak all future scenarios would require a change in layout to lane gain with ghost island merge. Again, it should be noted that the change in layout is triggered by the Base 2016 scenario and is therefore not resultant of Local Plan development. The flows from the PM peak indicate a change in layout to a parallel merge to meet the Base 2016 requirements and to a lane gain to meet all other scenarios. Therefore, whilst the AM and PM peak differ, the assessments show that for Junction 5E a lane gain is required.

Junction 5W - WB

The existing layout for Junction 5W is a taper merge. During the AM peak the Base 2016 scenario would require a change to a parallel merge whilst all other scenarios would need a lane gain. The PM peak flows indicate that a lane gain would be required for the Base 2016 and 2031 scenarios, however for Scenarios 1 or 2 a taper merge or two lane urban merge would be

sufficient. Therefore, the requirements during the AM and PM peak differ somewhat for the scenarios, from no change required to adding an extra lane.

Table 52: Diverge Flows – Junction Layouts

Diverge Flows	Existing	Base 2016	Base 2031	Scenario 1	Scenario 2	SEMSL
AM Peak						
J8 WB	A	A	A	A	A	A
J7 WB	A	A	A	C	C	-
J6 WB	C	D	D	D	D	-
PM Peak						
J8 WB	A	A	A	A	A	A
J7 WB	A	A	A	A	A	-
J6 WB	C	D	D	D	D	-
AM Peak						
J8 EB	A	A*	A	A	A	A
J7 EB	D	B / D	D	D	D	-
J5E EB	C	A	A	A	A	-
J5W EB	A	A	A	A / C	C	-
PM Peak						
J8 EB	A	A	C	C	C	D
J7 EB	D	E	E	E	E	-
J5E EB	C	C	C	A	A	-
J5W EB	A	A	A	C	C	-

The above table shows that in some circumstances the desirable layout is similar to the existing layout and consistent for all scenarios whilst others require changes in layout. Furthermore, there is little discrepancy between the AM and PM peaks. The changes required per junction are detailed below in addition to the diverge layouts.

Diverge Layout Diagrams:

- A – Taper Diverge
- B – Ghost Island diverge including for conversion of existing taper diverge (preferred) or parallel diverge (not preferred)
- C – Lane Drop at Taper Diverge
- D – Ghost Island diverge for Lane Drop including for conversion of existing Lane Drop at Taper Diverge (preferred) or Lane Drop at Parallel Diverge (not preferred)
- E – 2 Lane Drop

Junction 8 - WB

The existing layout for Junction 8 WB is a taper diverge. The flows for both the AM and PM peaks indicate that no changes to the road layout are required for all scenarios.

Junction 8 – EB

The existing layout for Junction 8 EB is a taper diverge. The flows for the AM peak indicate no changes to the road layout will be required, with the Base 2016 scenario falling out of range of any of the layout diagrams. During the PM peak, the Base 2016 scenario would require no change to the road layout, with Base 2031 and Scenarios 1 and 2 requiring a change to a lane

drop at the taper diverge. It should be noted that the change in road layout is a result of the background growth and not Local Plan development flows.

Junction 7 – WB

The existing layout for Junction 7 WB is a taper diverge. The flows for the PM peak demonstrate that no changes would be required for all scenarios. However, during the AM peak both Scenarios 1 and 2 would require a change in the road layout to a lane drop. It should be noted that the change in road layout is a result of consented development (Scenario 1), not non-consented development (Scenario 2).

Junction 7 – EB

The existing layout for Junction 7 EB is a ghost island diverge for lane drop including conversion of existing lane drop at taper diverge. The flows for the AM peak indicate that no changes to the road layout would be required for all scenarios. However, during the PM peak all scenarios indicate a change to a two lane drop would be required. Again, it should be noted that this change is a result of background growth in the Base 2016 scenario and not due to Local Plan development.

Junction 6 – WB

The existing layout of Junction 6 is a lane drop at the taper diverge. The flows for both the AM and PM peaks demonstrate that a change in the road layout will be required to a ghost island diverge for lane drop including the conversion of the existing lane drop to a taper diverge. It should be noted that the change in road layout is triggered by the 2016 Base scenario and not the Local Plan development.

Junction 5E – EB

The existing layout of Junction 5E is a lane drop at the taper diverge. The flows for the AM peak demonstrate that all scenarios would function with just a taper diverge at the junction. Furthermore, during the PM peak both Scenarios 1 and 2 would operate with just a taper diverge with Base 2016 and 2031 requiring no change to the road layout.

Junction 5W – EB

The existing layout of Junction 5W is a taper diverge. During both the AM and PM peaks for Base 2016 and 2031 no changes would be needed to the road layout. However, for both Scenarios 1 and 2 a change in the road layout would be required to include a lane drop at the taper diverge. It should be noted that the change in road layout is a result of consented development (Scenario 1), not non-consented development (Scenario 2).

7 Summary and Conclusions

Mott MacDonald was commissioned by Maidstone Borough Council (MBC) to consider the capacity at Junctions 5 to 8 of the M20.

The 2016 base flows are based on the following:

- Junction 5: M20 Maidstone New Growth Point Study, Parsons Brinckerhoff Ltd., July 2007
- Junction 6: Traffic surveys included in this report which were undertaken on Thursday 9th June 2016 from 07:00-19:00
- Junction 7: K&M Traffic Surveys, May 2016, provided to us by dha transport
- Junction 8: Flows obtained from the 'Waterside Park M20 Junction 8, Maidstone' Transport Assessment, dha transport, September 2013.

TEMPro version 7.0 was used to growth these base flows to 2031, creating Base 2031 flows which include background growth only. Background growth for Maidstone was 8.4% in the AM and 8.3% in the PM, whilst in Tonbridge and Malling background growth was 7.9% in the AM and 7.8% in the PM.

The Local Plan housing and employment numbers from Maidstone, Tonbridge and Malling, and Swale that would affect the four motorway junctions were calculated. They were categorised by consented (Scenario 1) and both consented and non-consented development (Scenario 2) with the difference between the latter and former representing the Local Plan impact. These numbers were then included in TEMPro to calculate scenario and junction-specific growth factors which were then applied to the 2031 Base flows.

7.7% of development traffic from Swale was assumed to affect Junction 7 in creating junction-specific growth factors. These growth factors for Scenario 1 and Scenario 2 are detailed below per junction.

Junction 5

- Scenario 1 – growth between 2016 and 2031 is 9.8% in both the AM and PM
- Scenario 2 - growth between 2016 and 2031 is 13.8% in the AM and 14.1% in the PM

Junction 6

- Scenario 1 – growth between 2016 and 2031 is 10% in the AM and 10.1% in the PM
- Scenario 2 – growth between 2016 and 2031 is 13.2% in the AM and 13.5% in the PM

Junction 7

- Scenario 1 – growth between 2016 and 2031 is 13.3% in the AM and 13.1% in the PM
- Scenario 2 – growth between 2016 and 2031 is 15.5% in the AM and 15.4% in the PM

Junction 8

- Scenario 1 – growth between 2016 and 2031 is 9.2% in the AM and 9.1% in the PM
- Scenario 2 - growth between 2016 and 2031 is 10.9% in the AM and 10.9% in the PM

Assessments were carried out for the following scenario for the existing junction layouts:

a. 2016 Existing Situation
b. 2031 Future Situation including TEMPro background growth only
c. 2031 With Consented Development (Scenario 1)
d. 2031 With Consented and Non-Consented (ALL) Development (Scenario 2)

The assessment results revealed that Junctions 5, 6 and 7 were over theoretical capacity with Junction 8 being over desirable capacity. Mitigation was therefore considered for all four junctions.

Improvement Layout Sketches are included in **Appendix E.1 to E.4** of this document.

Assessment were carried out testing these improvements to evaluate whether the proposed improvements sufficiently mitigate the impacts of development scenario 2 when compared to scenario 1 with the existing layouts. For Junction 7 where it is considered that Scenario 1 development would trigger the signalised improvements, the test requested by HE was for the junction to perform within theoretical capacity (below 100%) with all development added (Scenario 2).

The results show that in all but one case (Junction 6, Running Horse Roundabout, Forstal Road), the improvement scheme with Scenario 2 flows performs better than the existing layout with Scenario 1 flows. Junction 7 tested with Scenario 2 flows is shown to perform within its theoretical capacity. It is therefore considered that the improvements proposed sufficiently mitigate any impacts the non-consented developments contained in the Local Plan may have on the four motorway junctions.

In addition to the junction assessments, merge and diverge assessments were undertaken for each motorway mainline merge and diverge. The results show that whilst in most circumstances the layout for future scenarios is different from the existing layout and the required layouts also differ for the AM and PM peaks, only for Junction 8 westbound merge in the AM peak, a different layout would be required because of Scenario 2. The point in the diagram is however very much on the border towards the existing layout. Flows should be monitored in the future to ascertain whether a change in layout would be required. For all other merges and diverges, changes in the layout would not be required solely due to Scenario 2 (non-consented Local Plan development) flows, but because of earlier occurring scenarios.

In conclusion, the improvements proposed in this document mitigate any impacts of the Local Plan non-consented development at the four motorway junctions considered.

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A. ATC Results

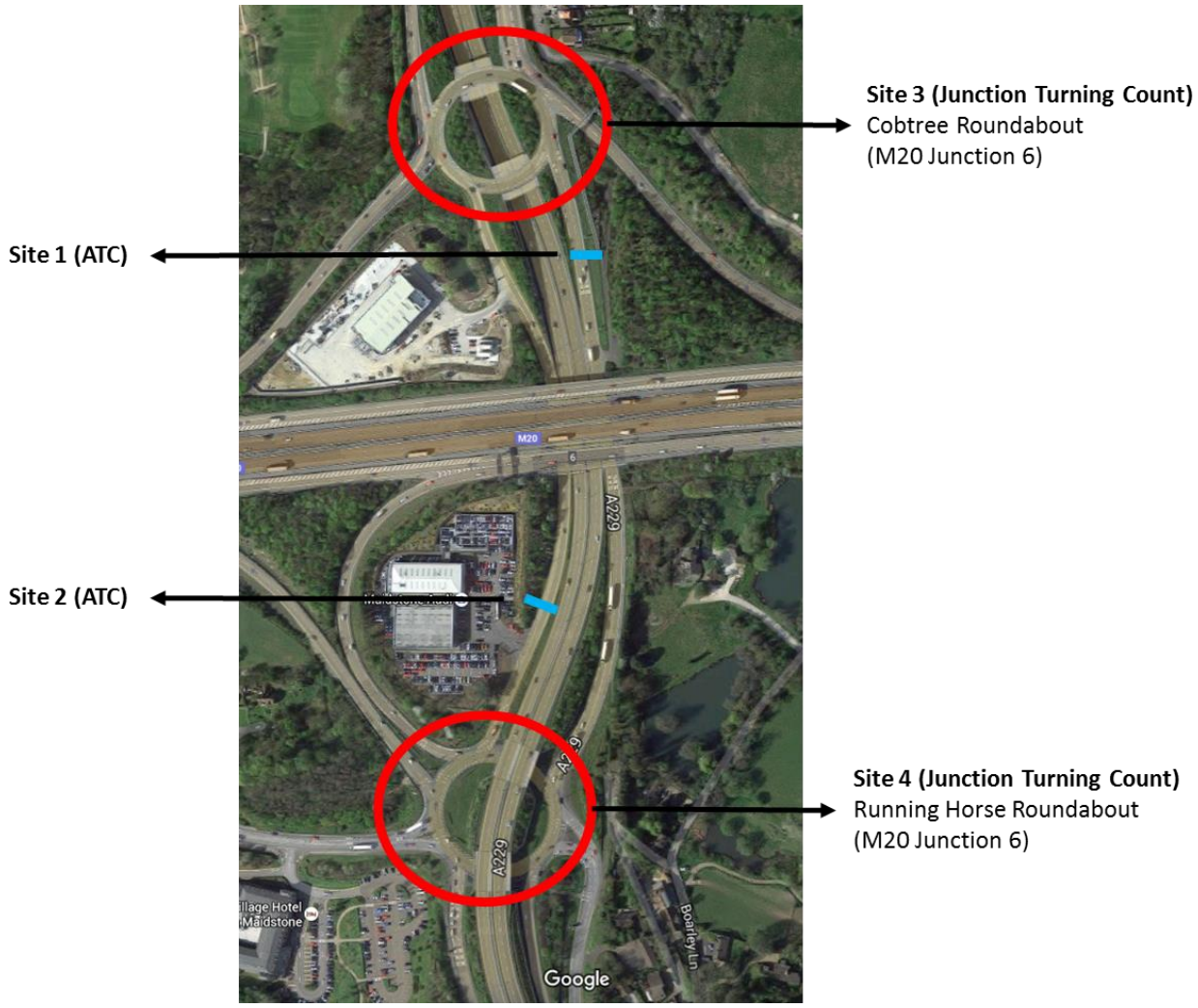
Traffic survey specification – M20 Junction 6, Maidstone, Kent

Location

The two junction turning counts and two ATC locations to be surveyed are:

- Site 1 (ATC)
- Site 2 (ATC)
- Site 3 (Junction Turning Count) – Cobtree Roundabout (M20 Junction 6)
- Site 4 (Junction Turning Count) – Running Horse Roundabout (M20 Junction 6)

The plan below shows the two junction turning count locations in addition to the two ATC locations.



Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

10/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

10/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	104	27	1	1	6	0	0	0	5	0	0	2	0	146
2	62	18	1	1	6	0	0	0	5	0	5	0	0	98
3	90	17	1	0	8	0	0	0	5	0	1	1	0	123
4	140	25	3	0	3	0	0	0	6	0	6	2	0	185
5	263	65	3	1	6	0	0	0	11	0	7	3	0	359
6	722	221	6	0	8	0	0	0	4	2	2	6	0	971
7	1368	371	12	3	25	1	0	2	12	12	1	16	0	1823
8	1879	330	21	5	14	3	2	2	7	19	5	16	0	2303
9	1653	263	33	2	14	1	2	3	12	6	7	15	0	2011
10	1215	197	24	2	24	1	4	3	5	8	3	19	0	1505
11	1027	220	29	1	11	3	0	0	14	5	6	14	0	1330
12	961	212	33	6	12	2	2	1	9	9	3	26	0	1276
13	1112	200	33	2	24	2	1	5	9	6	1	21	0	1416
14	1226	186	28	3	15	0	2	1	23	7	5	21	0	1517
15	1229	197	20	2	17	2	3	1	19	8	7	22	0	1527
16	1477	177	40	5	17	1	0	1	20	8	4	15	0	1765
17	1665	164	41	1	14	1	2	3	23	8	1	14	0	1937
18	1492	195	39	2	15	2	1	0	12	9	2	7	0	1776
19	1236	163	35	3	7	0	1	1	7	11	2	4	0	1470
20	922	107	10	1	10	0	2	2	7	3	1	9	0	1074
21	586	92	10	0	7	0	1	0	5	1	3	13	0	718
22	442	66	7	0	7	0	0	0	2	0	1	9	0	534
23	334	57	9	0	5	1	0	0	6	0	2	6	0	420
24	266	47	5	0	5	0	0	0	3	0	2	1	0	329
7-19	16172	2504	376	34	184	18	20	21	160	104	46	194	0	19833
6-22	19490	3140	415	38	233	19	23	25	186	120	52	241	0	23982
6-24	20090	3244	429	38	243	20	23	25	195	120	56	248	0	24731
0-24	21471	3617	444	41	280	20	23	25	231	122	77	262	0	26613

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Channel 1 - Northbound

10/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

10/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	0	0	0	0	1	8	18	31	40	20	13	15	146
2	0	0	0	0	1	1	22	25	25	9	6	9	98
3	0	0	0	0	1	4	9	38	39	22	4	6	123
4	0	0	0	0	3	8	32	50	40	24	17	11	185
5	0	0	0	0	2	13	58	72	86	62	31	35	359
6	0	0	0	1	6	28	147	264	244	134	84	63	971
7	0	0	4	15	74	215	405	487	327	166	78	52	1823
8	12	40	60	138	258	493	630	447	134	62	21	8	2303
9	24	58	74	50	98	388	674	428	156	43	10	8	2011
10	0	0	1	13	59	213	440	449	210	86	23	11	1505
11	0	0	0	3	18	133	416	389	234	94	27	16	1330
12	0	0	0	0	10	94	387	446	212	79	29	19	1276
13	0	0	0	2	18	129	387	460	283	88	34	15	1416
14	0	0	0	6	19	87	396	551	283	119	27	29	1517
15	0	0	0	2	42	113	362	579	252	121	36	20	1527
16	0	0	0	4	10	84	320	660	414	189	52	32	1765
17	0	0	4	4	21	107	448	712	390	152	73	26	1937
18	0	0	0	6	16	80	371	613	402	182	67	39	1776
19	0	0	0	4	3	49	251	523	372	169	66	33	1470
20	0	0	0	0	6	30	172	326	266	158	72	44	1074
21	0	0	0	0	0	25	89	193	193	126	47	45	718
22	0	0	0	0	7	20	64	148	138	85	41	31	534
23	0	0	0	0	2	15	80	148	90	40	26	19	420
24	0	0	0	0	1	24	56	86	88	45	14	15	329
7-19	36	98	139	232	572	1970	5082	6257	3342	1384	465	256	19833
6-22	36	98	143	247	659	2260	5812	7411	4266	1919	703	428	23982
6-24	36	98	143	247	662	2299	5948	7645	4444	2004	743	462	24731
0-24	36	98	143	248	676	2361	6234	8125	4918	2275	898	601	26613

Maidstone, Kent Site 1, A229 (SBD)

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Channel 1 - Northbound

11/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

11/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	139	27	1	0	5	0	0	0	4	1	1	1	0	179
2	100	21	4	0	7	0	0	0	4	0	2	3	0	141
3	83	22	1	0	7	1	0	0	4	0	3	4	0	125
4	126	20	1	0	6	0	0	0	1	0	1	1	0	156
5	148	28	4	0	8	0	1	1	3	1	3	1	0	198
6	405	65	3	0	2	2	0	1	5	0	2	8	0	493
7	597	130	8	2	8	1	1	1	6	4	0	9	0	767
8	837	188	18	0	16	1	1	1	3	2	2	10	0	1079
9	1082	202	24	0	15	0	2	1	8	9	0	13	0	1356
10	1024	167	30	1	11	4	0	3	5	8	3	11	0	1267
11	1139	250	28	2	18	1	1	2	9	4	0	9	0	1463
12	1290	221	25	0	9	1	2	2	10	6	0	11	0	1577
13	1249	220	37	1	14	1	0	0	11	10	3	15	0	1561
14	1305	246	34	1	13	0	2	0	10	7	1	9	0	1628
15	1092	256	29	0	11	0	0	1	12	4	1	5	0	1411
16	882	176	29	0	13	2	0	3	6	5	0	9	0	1125
17	816	198	21	3	8	1	0	0	8	2	0	12	0	1069
18	869	200	12	0	7	1	3	1	6	3	0	12	0	1114
19	755	166	11	1	5	0	0	0	6	5	1	6	0	956
20	622	131	10	1	4	0	1	0	1	2	1	4	0	777
21	362	73	5	0	5	0	1	0	0	2	0	7	0	455
22	311	57	5	0	4	0	0	1	1	0	1	8	0	388
23	375	90	7	0	6	0	0	0	0	1	0	8	0	487
24	240	76	1	1	0	0	0	0	1	0	0	0	0	319
7-19	12340	2490	298	9	140	12	11	14	94	65	11	122	0	15606
6-22	14232	2881	326	12	161	13	14	16	102	73	13	150	0	17993
6-24	14847	3047	334	13	167	13	14	16	103	74	13	158	0	18799
0-24	15848	3230	348	13	202	16	15	18	124	76	25	176	0	20091

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

11/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

11/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	0	0	0	0	0	4	34	44	45	20	19	13	179
2	0	0	0	0	1	3	17	31	46	23	13	7	141
3	0	0	0	0	3	5	7	27	35	18	16	14	125
4	0	0	0	0	0	2	35	42	26	33	10	8	156
5	0	0	0	0	3	11	18	51	48	28	16	23	198
6	0	0	0	0	0	3	42	106	143	80	73	46	493
7	0	0	0	0	0	6	90	164	224	148	77	58	767
8	0	0	0	0	1	5	15	105	298	327	154	96	78	1079
9	0	0	0	0	0	8	53	289	439	317	134	72	44	1356
10	0	0	0	0	3	1	51	277	423	292	117	64	39	1267
11	0	0	0	0	0	2	69	324	526	335	133	52	22	1463
12	0	0	0	0	1	8	68	345	525	364	161	62	43	1577
13	0	0	0	0	0	0	37	223	503	493	200	65	40	1561
14	0	0	0	0	0	5	37	299	524	442	212	79	30	1628
15	0	0	0	0	0	3	38	186	437	388	223	80	56	1411
16	0	0	0	0	0	0	14	134	317	369	167	69	55	1125
17	0	0	0	0	0	20	105	328	358	146	79	20	13	1069
18	0	0	0	0	0	8	48	234	353	277	129	41	24	1114
19	0	0	0	0	0	1	23	156	293	258	132	66	27	956
20	0	0	0	0	0	3	18	117	194	231	132	53	29	777
21	0	0	0	0	0	2	13	56	130	116	69	44	25	455
22	0	0	0	0	0	1	23	84	107	88	54	18	13	388
23	0	0	0	0	0	1	20	87	155	125	54	23	22	487
24	0	0	0	0	2	1	12	45	100	79	48	24	8	319
7-19	0	0	0	0	5	61	558	2900	4996	4008	1841	766	471	15606
6-22	0	0	0	0	5	67	618	3247	5591	4667	2244	958	596	17993
6-24	0	0	0	0	7	69	650	3379	5846	4871	2346	1005	626	18799
0-24	0	0	0	0	7	76	678	3532	6147	5214	2548	1152	737	20091

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

12/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

12/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	169	54	4	0	3	0	0	0	0	2	1	4	0	237
2	95	25	1	0	2	0	0	0	1	0	0	1	0	125
3	73	16	0	0	4	0	0	0	1	0	1	0	0	95
4	86	16	1	0	2	0	0	0	0	0	1	4	0	110
5	102	25	2	0	2	0	0	0	1	0	0	2	0	134
6	184	53	4	0	2	0	0	0	3	0	1	2	0	249
7	312	72	3	0	1	0	0	0	1	1	0	2	0	392
8	368	120	6	2	4	0	0	0	1	5	2	7	0	515
9	573	144	3	0	6	0	0	0	1	3	1	7	0	738
10	791	165	7	0	6	1	3	1	1	5	0	4	0	984
11	919	201	12	0	12	0	4	0	4	8	0	8	0	1168
12	980	203	7	1	5	1	1	0	4	4	1	7	0	1214
13	1095	180	18	1	6	1	0	0	1	6	0	13	0	1321
14	1038	168	15	0	4	0	0	3	12	2	0	3	0	1245
15	886	168	14	0	10	0	1	0	7	6	0	4	0	1096
16	784	174	12	1	4	0	0	0	4	6	0	4	0	989
17	810	164	17	0	5	0	1	0	4	9	0	9	0	1019
18	755	191	16	0	8	1	0	0	5	8	1	6	0	991
19	666	130	8	0	2	0	0	0	1	3	0	2	0	812
20	534	139	4	0	1	0	0	0	0	4	2	6	0	690
21	403	83	4	0	1	0	1	0	3	0	1	5	0	501
22	319	48	5	0	4	0	0	0	3	1	1	7	0	388
23	205	41	4	0	5	0	0	1	3	0	0	1	0	260
24	118	32	6	0	0	0	0	0	4	0	3	0	0	163
7-19	9665	2008	135	5	72	4	10	4	45	65	5	74	0	12092
6-22	11233	2350	151	5	79	4	11	4	52	71	9	94	0	14063
6-24	11556	2423	161	5	84	4	11	5	59	71	12	95	0	14486
0-24	12265	2612	173	5	99	4	11	5	65	73	16	108	0	15436

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

12/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

12/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	0	0	0	0	2	7	35	61	42	52	21	17	237
2	0	0	0	0	1	5	16	33	26	25	11	8	125
3	0	0	0	0	1	4	8	19	29	18	5	11	95
4	0	0	0	0	0	5	14	24	26	19	10	12	110
5	0	0	0	0	0	0	11	21	48	19	24	11	134
6	0	0	0	0	0	6	26	65	55	45	28	24	249
7	0	0	0	0	0	3	46	75	111	67	45	45	392
8	0	0	0	0	4	6	58	126	140	87	56	38	515
9	0	0	0	2	2	15	84	220	225	102	52	36	738
10	0	0	0	1	6	31	194	328	217	127	53	27	984
11	0	0	0	0	8	82	284	374	254	103	40	23	1168
12	0	0	0	0	2	60	282	449	263	106	32	20	1214
13	0	0	0	1	11	76	354	442	302	89	26	20	1321
14	0	0	0	0	6	72	272	453	286	95	39	22	1245
15	0	0	0	1	2	24	166	336	315	165	59	28	1096
16	0	0	0	0	0	16	131	353	263	118	71	37	989
17	0	0	0	0	1	16	137	303	273	170	75	44	1019
18	0	0	0	0	1	6	96	278	301	171	72	66	991
19	0	0	0	0	1	12	81	206	226	154	77	55	812
20	0	0	0	0	3	11	71	169	181	129	68	58	690
21	0	0	0	0	2	4	58	98	109	124	72	34	501
22	0	0	0	0	0	8	61	108	104	56	23	28	388
23	0	0	0	0	1	10	41	71	58	47	22	10	260
24	0	0	0	0	0	12	30	52	30	28	6	5	163
7-19	0	0	0	5	44	416	2139	3868	3065	1487	652	416	12092
6-22	0	0	0	5	49	442	2375	4318	3570	1863	860	581	14063
6-24	0	0	0	5	50	464	2446	4441	3658	1938	888	596	14486
0-24	0	0	0	5	54	491	2556	4664	3884	2116	987	679	15436

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

13/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

13/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	60	19	2	0	3	0	0	0	1	0	0	1	0	86
2	62	15	1	0	3	0	0	0	2	0	1	3	0	87
3	60	18	0	0	3	0	0	0	0	0	3	2	0	86
4	128	33	2	0	4	0	0	0	3	0	2	5	0	177
5	218	44	4	0	1	0	1	0	2	1	1	5	0	277
6	754	294	5	1	8	0	0	1	4	8	7	9	0	1091
7	1376	439	17	1	18	2	0	3	11	13	3	25	0	1908
8	1849	390	19	4	19	0	1	0	12	15	0	19	0	2328
9	1626	178	18	4	8	0	1	0	5	8	3	15	0	1866
10	1062	273	21	0	20	0	1	2	10	8	3	19	0	1419
11	822	242	28	4	12	0	0	1	7	11	5	23	0	1155
12	819	275	30	2	11	2	3	3	8	3	1	24	0	1181
13	844	270	24	4	18	1	2	1	10	7	6	36	0	1223
14	889	269	17	3	17	1	1	3	12	2	7	16	0	1237
15	875	260	37	2	20	1	0	1	13	5	3	31	0	1248
16	953	294	19	3	18	0	2	1	16	2	5	25	0	1338
17	1274	331	31	1	12	0	2	1	9	9	2	21	0	1693
18	1338	269	43	0	19	0	0	1	6	7	0	16	0	1699
19	988	203	11	3	10	0	0	1	10	10	5	6	0	1247
20	725	146	10	1	7	0	0	1	9	2	4	8	0	913
21	492	115	8	0	6	1	0	0	4	1	1	10	0	638
22	422	71	7	1	2	0	0	0	2	1	2	9	0	517
23	271	45	4	0	8	0	0	0	3	0	3	10	0	344
24	131	26	2	0	3	0	0	0	4	0	0	1	0	167
7-19	13339	3254	298	30	184	5	13	15	118	87	40	251	0	17634
6-22	16354	4025	340	33	217	8	13	19	144	104	50	303	0	21610
6-24	16756	4096	346	33	228	8	13	19	151	104	53	314	0	22121
0-24	18038	4519	360	34	250	8	14	20	163	113	67	339	0	23925

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

13/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

13/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	0	0	0	0	1	4	9	24	23	14	8	3	86
2	0	0	0	0	1	2	9	18	27	15	3	12	87
3	0	0	0	0	0	6	8	14	29	22	3	4	86
4	0	0	0	0	2	5	17	46	46	22	23	16	177
5	0	0	0	0	0	10	34	60	73	49	27	24	277
6	0	0	0	0	11	37	137	354	237	160	78	77	1091
7	0	0	14	23	65	189	492	471	373	148	79	54	1908
8	35	101	188	124	201	431	592	405	159	56	21	15	2328
9	124	256	334	127	231	297	261	142	57	29	6	2	1866
10	0	0	0	3	21	104	389	467	277	110	32	16	1419
11	0	0	0	0	4	59	260	421	255	100	39	17	1155
12	0	0	0	0	6	50	256	449	270	87	38	25	1181
13	0	0	0	1	7	79	285	400	284	111	34	22	1223
14	0	0	0	2	12	58	272	419	291	103	40	40	1237
15	0	0	0	2	18	106	270	437	246	106	45	18	1248
16	0	0	0	0	13	74	314	478	285	124	32	18	1338
17	0	0	0	0	15	64	334	631	393	167	54	35	1693
18	0	0	5	0	8	88	320	599	415	165	65	34	1699
19	0	0	0	0	3	53	175	375	340	178	64	59	1247
20	0	0	0	0	1	18	102	217	289	157	65	64	913
21	0	0	0	0	12	28	123	158	169	75	44	29	638
22	0	0	0	0	2	16	86	190	120	59	28	16	517
23	0	0	0	0	3	39	67	115	58	36	18	8	344
24	0	0	0	1	6	8	44	47	28	12	14	7	167
7-19	159	357	527	259	539	1463	3728	5223	3272	1336	470	301	17634
6-22	159	357	541	282	619	1714	4531	6259	4223	1775	686	464	21610
6-24	159	357	541	283	628	1761	4642	6421	4309	1823	718	479	22121
0-24	159	357	541	283	643	1825	4856	6937	4744	2105	860	615	23925

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

14/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

14/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	93	26	2	0	7	0	0	0	6	0	1	1	0	136
2	53	23	2	0	5	0	0	0	1	0	3	3	0	90
3	75	14	2	0	5	0	0	0	5	0	1	5	0	107
4	123	36	3	0	6	0	0	0	3	1	1	2	0	175
5	241	62	3	1	4	0	0	0	3	0	1	2	0	317
6	751	284	3	3	9	0	1	0	5	4	5	11	0	1076
7	1398	480	11	5	26	1	1	2	4	11	1	21	0	1961
8	1854	397	28	4	16	2	1	2	6	7	1	24	0	2342
9	1669	271	22	2	8	0	1	1	6	8	4	15	0	2007
10	1086	344	20	3	22	2	2	1	18	7	7	27	0	1539
11	819	266	27	0	12	1	1	1	16	15	3	33	0	1194
12	762	298	24	2	19	1	0	2	4	6	3	31	0	1152
13	855	266	25	1	14	3	1	2	7	6	4	23	0	1207
14	879	270	30	3	22	0	2	3	11	5	8	24	0	1257
15	863	272	26	1	22	0	2	2	12	9	4	31	0	1244
16	886	249	24	4	20	4	0	2	14	6	3	28	0	1240
17	1210	396	46	1	18	2	2	0	15	12	2	22	0	1726
18	1325	391	28	3	20	2	2	1	16	11	1	17	0	1817
19	978	292	18	0	19	0	0	0	6	7	5	8	0	1333
20	530	334	10	0	6	1	0	0	6	4	2	10	0	903
21	318	264	0	0	10	0	0	0	15	2	4	18	0	631
22	226	250	0	0	4	0	0	0	9	0	4	22	0	515
23	212	130	1	0	3	0	0	0	7	0	5	16	0	374
24	109	64	1	1	5	0	0	0	9	0	1	3	0	193
7-19	13186	3712	318	24	212	17	14	17	131	99	45	283	0	18058
6-22	15658	5040	339	29	258	19	15	19	165	116	56	354	0	22068
6-24	15979	5234	341	30	266	19	15	19	181	116	62	373	0	22635
0-24	17315	5679	356	34	302	19	16	19	204	121	74	397	0	24536

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

14/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

14/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	0	0	0	0	2	6	28	44	33	10	4	9	136
2	0	0	0	0	1	4	14	29	21	14	3	4	90
3	0	0	0	0	2	12	18	41	19	8	4	3	107
4	0	0	0	0	2	17	32	56	29	25	8	6	175
5	0	0	0	0	1	8	43	84	75	53	30	23	317
6	0	0	1	5	22	61	199	267	224	131	89	77	1076
7	0	0	15	41	136	297	460	488	269	135	68	52	1961
8	79	105	208	189	336	519	408	292	125	58	16	7	2342
9	53	225	221	192	253	283	389	262	89	28	8	4	2007
10	0	0	4	12	36	104	469	526	249	101	25	13	1539
11	0	0	1	2	6	39	266	394	309	111	43	23	1194
12	0	0	0	0	6	44	224	375	295	137	48	23	1152
13	0	0	0	1	3	54	218	381	339	134	42	35	1207
14	0	0	0	2	12	66	287	410	280	128	50	22	1257
15	0	0	0	0	9	59	267	419	315	104	54	17	1244
16	5	70	28	25	15	88	204	401	225	104	50	25	1240
17	0	0	0	0	3	58	325	605	440	198	54	43	1726
18	0	0	0	0	16	101	299	583	429	232	96	61	1817
19	0	0	0	0	11	26	160	394	387	222	82	51	1333
20	0	0	0	0	0	13	88	240	293	159	80	30	903
21	0	0	0	0	1	29	110	158	170	98	42	23	631
22	0	0	0	0	0	25	125	159	112	55	26	13	515
23	0	0	0	0	6	47	103	120	60	27	5	6	374
24	0	0	0	2	2	17	43	45	42	22	11	9	193
7-19	137	400	462	423	706	1441	3516	5042	3482	1557	568	324	18058
6-22	137	400	477	464	843	1805	4299	6087	4326	2004	784	442	22068
6-24	137	400	477	466	851	1869	4445	6252	4428	2053	800	457	22635
0-24	137	400	478	471	881	1977	4779	6773	4829	2294	938	579	24536

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

15/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

15/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	45	42	0	0	5	0	0	0	5	0	2	7	0	106
2	39	28	0	0	5	0	0	0	6	0	1	2	0	81
3	96	25	0	0	5	0	0	0	5	0	2	1	0	134
4	130	46	0	0	9	0	0	0	1	0	4	4	0	194
5	232	80	2	0	2	0	0	0	3	0	2	6	0	327
6	704	350	1	1	13	0	1	0	3	3	2	20	0	1098
7	1201	630	10	6	31	1	1	0	5	13	2	35	0	1935
8	1736	477	24	1	11	2	2	3	5	8	4	20	0	2293
9	1535	142	24	3	4	0	1	0	2	2	0	8	0	1721
10	970	385	24	1	12	2	0	2	6	11	4	24	0	1441
11	787	338	22	5	24	0	1	2	9	7	1	30	0	1226
12	703	327	16	4	16	1	3	2	7	4	7	40	0	1130
13	730	382	24	2	15	2	0	4	5	8	4	24	0	1200
14	727	402	16	2	23	3	3	4	10	5	7	27	0	1229
15	816	383	27	1	25	0	0	2	6	5	3	49	0	1317
16	1059	388	43	2	38	3	1	3	10	9	0	25	0	1581
17	1244	423	53	0	35	1	1	0	14	7	0	21	0	1799
18	1312	387	30	2	21	2	1	1	19	7	1	21	0	1804
19	1037	383	34	0	17	0	2	1	6	4	2	14	0	1500
20	720	255	15	1	15	0	0	0	5	7	3	13	0	1034
21	497	188	8	0	14	1	0	0	5	4	1	12	0	730
22	434	168	11	0	5	1	0	1	4	3	0	24	0	651
23	292	104	11	0	8	1	0	0	1	1	2	12	0	432
24	153	62	7	0	4	0	0	0	5	0	0	2	0	233
7-19	12656	4417	337	23	241	16	15	24	99	77	33	303	0	18241
6-22	15508	5658	381	30	306	19	16	25	118	104	39	387	0	22591
6-24	15953	5824	399	30	318	20	16	25	124	105	41	401	0	23256
0-24	17199	6395	402	31	357	20	17	25	147	108	54	441	0	25196

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

15/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

15/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	0	0	0	3	0	9	21	31	30	6	3	3	106
2	0	1	0	0	2	3	7	27	22	8	6	5	81
3	0	0	0	0	0	6	14	44	36	21	9	4	134
4	0	0	0	0	0	5	17	37	67	40	15	13	194
5	0	0	0	0	1	11	27	63	76	94	29	26	327
6	0	0	0	0	7	18	116	257	273	205	104	118	1098
7	0	0	8	13	50	211	374	447	373	220	127	112	1935
8	76	262	239	158	237	367	367	286	167	73	36	25	2293
9	146	345	417	216	261	171	117	38	10	0	0	0	1721
10	32	31	37	25	44	102	286	386	312	119	32	35	1441
11	0	0	0	0	9	43	205	436	310	139	53	31	1226
12	0	0	0	0	14	51	178	318	328	150	49	42	1130
13	0	0	0	1	3	65	195	401	300	144	51	40	1200
14	0	0	0	0	2	21	172	362	329	207	76	60	1229
15	0	0	0	0	9	52	228	402	342	164	72	48	1317
16	0	0	3	2	16	55	223	462	442	233	84	61	1581
17	0	0	0	0	2	33	206	577	505	299	109	68	1799
18	0	0	0	0	0	37	189	521	555	296	119	87	1804
19	0	0	0	3	0	7	107	358	466	333	126	100	1500
20	0	0	0	0	2	2	69	216	290	232	123	100	1034
21	0	0	0	0	2	12	77	211	190	127	63	48	730
22	0	0	0	0	3	14	74	186	211	80	45	38	651
23	0	0	0	1	0	5	67	135	138	53	16	17	432
24	0	0	0	1	0	13	32	59	57	27	29	15	233
7-19	254	638	696	405	597	1004	2473	4547	4066	2157	807	597	18241
6-22	254	638	704	418	654	1243	3067	5607	5130	2816	1165	895	22591
6-24	254	638	704	420	654	1261	3166	5801	5325	2896	1210	927	23256
0-24	254	639	704	423	664	1313	3368	6260	5829	3270	1376	1096	25196

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

16/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

16/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 1, A229 (SBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

16/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

16/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-20	21-30	31-35	36-40	41-45	46-50	51-55	56-60	61-65	66-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

09/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	59	10	0	0	2	0	0	0	6	0	1	1	0	79
2	62	9	0	0	0	0	1	0	8	0	0	3	0	83
3	58	12	0	0	3	0	0	0	4	0	1	0	0	78
4	76	8	0	0	4	0	0	0	6	0	1	0	0	95
5	98	11	0	0	2	0	0	1	4	0	0	4	0	120
6	269	28	1	1	5	0	0	1	7	0	0	5	0	317
7	578	69	1	0	4	0	1	0	8	0	3	4	0	668
8	1068	130	3	2	4	0	3	2	13	0	1	9	0	1235
9	963	144	1	4	8	0	3	0	17	1	1	13	0	1155
10	749	107	2	1	8	0	1	0	16	0	0	12	0	896
11	651	84	2	2	4	0	3	0	24	0	4	6	0	780
12	645	94	4	1	6	0	2	0	16	0	5	9	0	782
13	707	94	3	2	12	1	2	1	20	0	7	5	0	854
14	646	109	4	3	14	0	0	1	21	0	6	11	0	815
15	752	115	4	5	21	1	3	1	15	0	4	16	0	937
16	881	131	2	1	9	0	1	2	12	0	4	8	0	1051
17	1084	149	5	3	12	0	0	0	22	0	6	10	0	1291
18	1242	121	0	0	7	0	0	1	8	0	3	11	0	1393
19	963	58	4	0	9	0	0	1	16	0	2	7	0	1060
20	521	27	2	0	3	0	1	0	5	0	1	5	0	565
21	393	32	1	0	4	0	0	0	5	0	1	1	0	437
22	335	24	0	0	4	0	0	0	4	0	1	0	0	368
23	279	22	2	0	1	0	0	0	2	0	0	1	0	307
24	138	13	0	0	2	0	0	0	1	0	0	2	0	156
7-19	10351	1336	34	24	114	2	18	9	200	1	43	117	0	12249
6-22	12178	1488	38	24	129	2	20	9	222	1	49	127	0	14287
6-24	12595	1523	40	24	132	2	20	9	225	1	49	130	0	14750
0-24	13217	1601	41	25	148	2	21	11	260	1	52	143	0	15522

Channel 2 - Southbound

09/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

09/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	6	17	19	24	8	3	2	0	0	79
2	0	0	1	16	9	18	24	10	3	2	0	0	83
3	0	0	0	2	30	19	14	13	0	0	0	0	78
4	0	0	3	8	16	30	25	8	4	1	0	0	95
5	1	0	0	1	10	19	34	46	9	0	0	0	120
6	0	0	0	18	28	61	102	91	14	3	0	0	317
7	0	0	2	41	84	129	274	120	14	4	0	0	668
8	0	22	4	50	155	461	473	67	2	1	0	0	1235
9	0	0	3	51	232	418	378	66	6	1	0	0	1155
10	0	7	15	58	165	356	245	48	1	1	0	0	896
11	0	0	0	62	193	304	170	48	3	0	0	0	780
12	0	1	10	18	142	221	272	109	8	1	0	0	782
13	0	3	7	39	157	282	281	72	11	2	0	0	854
14	0	0	3	33	134	241	308	79	16	1	0	0	815
15	0	0	2	29	145	308	347	95	8	3	0	0	937
16	0	0	4	20	128	351	419	113	16	0	0	0	1051
17	93	310	335	154	114	139	112	28	6	0	0	0	1291
18	72	295	316	165	186	227	113	19	0	0	0	0	1393
19	2	7	15	47	157	359	358	98	15	2	0	0	1060
20	0	0	0	4	42	111	225	150	28	5	0	0	565
21	0	0	1	5	29	84	163	130	21	3	1	0	437
22	0	0	0	3	36	75	142	77	24	11	0	0	368
23	0	0	0	2	31	71	122	62	13	6	0	0	307
24	0	0	0	10	10	26	62	31	16	1	0	0	156
7-19	167	645	714	726	1908	3667	3476	842	92	12	0	0	12249
6-22	167	645	717	779	2099	4066	4280	1319	179	35	1	0	14287
6-24	167	645	717	791	2140	4163	4464	1412	208	42	1	0	14750
0-24	168	645	721	842	2250	4329	4687	1588	241	50	1	0	15522

Channel 2 - Southbound

09/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

10/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	97	6	0	0	0	0	1	0	0	0	0	0	0	104
2	78	11	0	0	1	0	0	0	2	0	0	0	0	92
3	53	10	1	0	0	0	0	0	0	0	0	0	0	64
4	60	6	0	0	0	0	0	0	0	0	0	0	0	66
5	98	9	1	0	0	0	0	0	1	0	0	2	0	111
6	297	33	3	0	0	0	0	0	2	0	0	3	0	338
7	618	73	2	1	3	0	1	0	5	0	2	5	0	710
8	1004	142	4	0	4	0	0	0	12	0	1	6	0	1173
9	890	138	2	2	8	0	1	1	22	0	5	7	0	1076
10	718	124	5	1	6	1	0	3	16	0	3	7	0	884
11	638	84	6	1	7	1	1	0	12	0	6	8	0	764
12	661	119	3	0	7	2	0	3	24	0	1	17	0	837
13	685	101	5	0	18	0	1	1	20	0	4	13	0	848
14	720	107	3	1	15	0	1	1	8	0	7	8	0	871
15	854	113	6	3	6	0	0	1	24	0	2	18	0	1027
16	973	143	4	0	7	0	0	2	22	0	3	18	0	1172
17	1093	154	4	5	9	0	0	1	17	0	5	13	0	1301
18	1241	108	3	1	6	0	0	1	14	0	3	10	0	1387
19	809	53	0	1	5	0	0	0	13	1	4	10	0	896
20	575	28	0	0	5	0	0	0	2	0	2	4	0	616
21	381	32	1	0	8	0	1	2	6	0	1	1	0	433
22	295	21	0	0	3	0	0	0	2	0	2	0	0	323
23	306	19	0	0	1	0	0	0	0	0	0	1	0	327
24	185	4	0	0	1	0	0	0	1	0	1	2	0	194
7-19	10286	1386	45	15	98	4	4	14	204	1	44	135	0	12236
6-22	12155	1540	48	16	117	4	6	16	219	1	51	145	0	14318
6-24	12646	1563	48	16	119	4	6	16	220	1	52	148	0	14839
0-24	13329	1638	53	16	120	4	7	16	225	1	52	153	0	15614

Channel 2 - Southbound

10/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

10/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	2	2	27	46	20	5	2	0	0	104
2	0	0	0	1	6	18	27	34	5	1	0	0	92
3	0	0	0	0	2	15	40	3	4	0	0	0	64
4	0	0	0	0	6	19	22	14	3	2	0	0	66
5	0	0	1	1	6	19	36	35	12	1	0	0	111
6	0	0	2	6	15	59	120	109	21	6	0	0	338
7	0	0	0	19	105	132	243	167	36	8	0	0	710
8	2	7	17	41	137	336	468	148	16	1	0	0	1173
9	0	0	1	30	117	331	458	127	10	2	0	0	1076
10	0	5	5	31	133	254	348	89	17	2	0	0	884
11	0	1	0	5	65	228	334	106	19	6	0	0	764
12	0	0	5	18	115	288	299	93	19	0	0	0	837
13	0	0	1	20	97	243	357	118	11	1	0	0	848
14	0	0	2	11	69	272	369	125	21	2	0	0	871
15	0	0	3	36	89	356	411	116	15	1	0	0	1027
16	70	184	106	35	96	239	333	98	11	0	0	0	1172
17	85	297	271	196	127	171	124	26	2	2	0	0	1301
18	137	524	446	170	60	35	15	0	0	0	0	0	1387
19	3	23	17	16	98	201	375	138	19	6	0	0	896
20	0	0	0	1	41	102	303	139	25	5	0	0	616
21	0	0	0	11	29	91	170	101	26	5	0	0	433
22	0	0	0	7	15	82	130	72	13	3	1	0	323
23	0	0	0	8	19	80	139	64	13	4	0	0	327
24	0	0	1	2	9	40	85	50	5	2	0	0	194
7-19	297	1041	874	609	1203	2954	3891	1184	160	23	0	0	12236
6-22	297	1041	874	647	1393	3361	4737	1663	260	44	1	0	14318
6-24	297	1041	875	657	1421	3481	4961	1777	278	50	1	0	14839
0-24	297	1041	878	667	1458	3638	5252	1992	328	62	1	0	15614

Channel 2 - Southbound

10/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

11/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	124	6	1	0	0	0	0	0	5	0	1	0	0	137
2	64	7	1	0	1	0	0	0	2	0	0	0	0	75
3	62	4	0	0	0	0	0	0	6	0	0	0	0	72
4	62	11	0	0	0	0	0	0	3	0	0	1	0	77
5	86	10	0	0	1	0	0	0	3	0	0	1	0	101
6	101	17	1	0	2	1	0	0	1	0	1	1	0	125
7	235	24	0	0	1	1	0	0	2	0	0	4	0	267
8	296	54	1	0	1	0	0	0	6	0	1	5	0	364
9	463	53	2	1	5	0	1	1	3	0	1	3	0	533
10	653	64	1	0	2	0	1	0	10	0	0	6	0	737
11	768	68	4	0	6	1	2	0	9	0	1	2	0	861
12	796	66	1	1	9	0	1	1	10	0	2	2	0	889
13	934	47	1	0	7	0	1	2	9	0	3	4	0	1008
14	862	58	0	0	2	0	0	1	10	0	3	3	0	939
15	794	37	1	0	6	0	0	0	16	0	2	2	0	858
16	850	42	0	2	2	0	1	0	9	0	0	5	0	911
17	951	44	0	0	4	0	0	2	10	0	0	2	0	1013
18	776	42	0	0	2	0	0	1	3	0	1	2	0	827
19	678	33	0	0	2	0	0	0	2	0	0	1	0	716
20	500	26	1	0	3	0	0	0	8	0	0	0	0	538
21	319	18	0	0	1	0	0	0	2	0	0	2	0	342
22	199	11	0	0	1	0	0	0	0	0	0	0	0	211
23	365	15	0	0	0	0	0	0	3	0	0	0	0	383
24	235	8	0	0	0	0	0	0	1	0	0	2	0	246
7-19	8821	608	11	4	48	1	7	8	97	0	14	37	0	9656
6-22	10074	687	12	4	54	2	7	8	109	0	14	43	0	11014
6-24	10674	710	12	4	54	2	7	8	113	0	14	45	0	11643
0-24	11173	765	15	4	58	3	7	8	133	0	16	48	0	12230

Channel 2 - Southbound

11/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

11/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	11	8	26	47	36	7	2	0	0	137
2	0	0	0	0	7	16	27	20	5	0	0	0	75
3	0	0	0	3	4	27	17	15	5	1	0	0	72
4	0	0	0	1	3	15	36	13	8	1	0	0	77
5	0	0	0	1	12	28	27	30	3	0	0	0	101
6	0	0	1	4	8	22	41	33	14	2	0	0	125
7	0	0	1	4	26	54	101	62	14	5	0	0	267
8	0	0	0	7	30	58	150	87	27	5	0	0	364
9	0	0	5	5	26	95	236	134	25	6	1	0	533
10	0	0	1	10	41	162	344	158	18	3	0	0	737
11	0	0	0	23	94	177	409	141	16	0	1	0	861
12	0	0	0	26	83	205	369	173	28	5	0	0	889
13	0	0	6	30	135	293	394	129	19	2	0	0	1008
14	0	0	1	24	91	264	381	152	24	2	0	0	939
15	0	0	0	15	85	209	357	165	23	3	1	0	858
16	1	0	0	8	52	245	440	143	16	6	0	0	911
17	73	143	99	71	64	219	258	77	8	1	0	0	1013
18	0	0	0	5	47	255	402	107	10	1	0	0	827
19	0	0	0	8	45	156	328	162	15	2	0	0	716
20	0	0	2	4	29	110	239	122	25	7	0	0	538
21	0	0	0	3	28	91	139	58	19	4	0	0	342
22	0	0	0	3	15	46	87	46	13	1	0	0	211
23	0	0	0	3	27	99	166	69	12	5	2	0	383
24	0	0	1	3	7	57	95	64	17	2	0	0	246
7-19	74	143	112	232	793	2338	4068	1628	229	36	3	0	9656
6-22	74	143	115	246	891	2639	4634	1916	300	53	3	0	11014
6-24	74	143	116	252	925	2795	4895	2049	329	60	5	0	11643
0-24	74	143	117	272	967	2929	5090	2196	371	66	5	0	12230

Channel 2 - Southbound

11/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

12/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	145	10	1	0	0	0	0	0	0	0	1	0	0	157
2	62	10	0	0	0	0	0	0	0	0	0	0	0	72
3	52	5	0	0	1	0	0	0	0	0	1	0	0	59
4	36	2	1	0	0	0	0	0	0	0	0	0	0	39
5	36	5	0	0	0	0	0	0	0	0	0	1	0	42
6	59	9	0	0	2	0	0	0	0	0	0	0	0	70
7	120	16	0	0	1	0	1	0	1	0	0	2	0	141
8	184	13	0	0	4	0	0	1	2	0	0	2	0	206
9	229	11	0	0	3	0	0	0	2	0	0	0	0	245
10	420	33	0	0	0	0	0	0	1	0	0	2	0	456
11	615	25	1	0	3	0	2	0	1	0	0	1	0	648
12	804	32	0	0	0	0	3	0	2	0	0	2	0	843
13	839	42	0	0	4	0	1	1	3	0	1	1	0	892
14	812	50	0	0	3	0	6	0	2	0	2	1	0	876
15	759	42	0	0	3	0	1	0	7	0	1	1	0	814
16	731	33	1	1	3	0	1	0	4	0	0	2	0	776
17	757	32	0	0	4	0	0	0	8	0	0	2	0	803
18	582	29	0	0	2	0	1	0	7	0	0	2	0	623
19	518	26	0	0	3	0	1	0	7	1	0	1	0	557
20	434	26	0	0	3	0	0	0	4	0	0	0	0	467
21	340	14	0	0	1	0	0	0	4	0	1	0	0	360
22	229	9	0	0	1	0	0	0	2	0	0	1	0	242
23	161	9	1	0	0	0	0	0	2	0	0	0	0	173
24	100	7	0	0	0	0	0	0	1	0	0	1	0	109
7-19	7250	368	2	1	32	0	16	2	46	1	4	17	0	7739
6-22	8373	433	2	1	38	0	17	2	57	1	5	20	0	8949
6-24	8634	449	3	1	38	0	17	2	60	1	5	21	0	9231
0-24	9024	490	5	1	41	0	17	2	60	1	7	22	0	9670

Channel 2 - Southbound

12/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

12/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	20	23	64	40	9	1	0	0	157
2	0	0	1	2	2	12	28	21	5	1	0	0	72
3	0	0	0	0	4	11	19	19	5	1	0	0	59
4	0	0	0	1	4	15	14	3	2	0	0	0	39
5	0	0	0	1	8	6	9	11	5	2	0	0	42
6	0	0	0	0	3	9	26	23	6	3	0	0	70
7	0	0	0	0	6	17	54	40	18	6	0	0	141
8	0	0	0	4	13	30	81	51	20	6	1	0	206
9	0	0	0	1	8	39	113	68	15	1	0	0	245
10	0	0	0	1	12	74	216	118	27	8	0	0	456
11	0	0	1	8	25	138	280	171	23	2	0	0	648
12	0	0	0	6	32	214	396	177	18	0	0	0	843
13	0	0	0	5	73	246	408	131	26	3	0	0	892
14	0	0	2	7	53	239	408	148	18	1	0	0	876
15	0	0	0	27	69	208	368	120	18	4	0	0	814
16	0	0	0	6	64	193	335	156	19	3	0	0	776
17	0	0	3	18	59	180	348	164	23	5	3	0	803
18	0	0	3	9	37	101	293	149	29	2	0	0	623
19	0	0	3	20	40	90	252	123	26	3	0	0	557
20	0	0	0	10	23	63	203	141	24	3	0	0	467
21	0	0	6	6	25	69	154	81	15	4	0	0	360
22	0	0	2	7	17	63	99	47	4	1	2	0	242
23	0	1	0	3	2	42	73	42	7	3	0	0	173
24	0	0	0	0	12	25	43	24	3	2	0	0	109
7-19	0	0	12	112	485	1752	3498	1576	262	38	4	0	7739
6-22	0	0	20	135	556	1964	4008	1885	323	52	6	0	8949
6-24	0	1	20	138	570	2031	4124	1951	333	57	6	0	9231
0-24	0	1	21	142	611	2107	4284	2068	365	65	6	0	9670

Channel 2 - Southbound

12/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

13/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	55	5	0	0	0	0	0	0	0	0	0	0	0	60
2	35	2	0	0	0	0	0	0	2	0	0	0	0	39
3	44	6	0	0	0	0	0	0	1	0	0	0	0	51
4	49	5	0	0	0	0	0	0	2	0	0	0	0	56
5	124	15	0	0	0	0	0	0	2	0	0	1	0	142
6	286	30	0	0	3	0	0	0	3	0	1	2	0	325
7	559	65	0	1	5	0	0	1	6	0	1	4	0	642
8	999	142	2	0	6	0	0	0	10	0	1	5	0	1165
9	922	138	3	0	4	0	0	1	14	0	1	5	0	1088
10	702	132	4	1	7	0	1	0	11	0	1	20	0	879
11	603	87	3	1	2	0	2	0	13	0	1	12	0	724
12	584	104	3	1	8	0	0	1	13	0	0	5	0	719
13	639	101	6	0	8	0	2	1	16	0	3	8	0	784
14	646	111	3	2	2	0	1	1	14	0	2	10	0	792
15	759	88	2	1	7	0	0	1	6	0	2	14	0	880
16	803	103	0	3	6	1	1	0	16	0	3	11	0	947
17	1069	163	0	1	2	0	2	1	9	0	5	9	0	1261
18	1164	139	9	0	10	0	0	0	18	0	6	9	0	1355
19	927	79	2	0	3	0	0	1	15	0	2	10	0	1039
20	547	40	0	0	6	0	0	0	9	0	0	3	0	605
21	329	21	0	0	2	0	0	0	2	0	0	1	0	355
22	248	17	0	0	0	0	0	0	1	0	0	0	0	266
23	239	11	0	0	2	0	0	0	1	0	0	0	0	253
24	97	6	0	1	2	0	0	0	3	0	0	1	0	110
7-19	9817	1387	37	10	65	1	9	7	155	0	27	118	0	11633
6-22	11500	1530	37	11	78	1	9	8	173	0	28	126	0	13501
6-24	11836	1547	37	12	82	1	9	8	177	0	28	127	0	13864
0-24	12429	1610	37	12	85	1	9	8	187	0	29	130	0	14537

Channel 2 - Southbound

13/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

13/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	1	0	6	23	24	3	3	0	0	60
2	0	0	1	1	1	6	14	11	5	0	0	0	39
3	0	0	0	1	11	6	16	14	2	1	0	0	51
4	0	0	7	0	13	3	24	8	1	0	0	0	56
5	0	0	0	4	12	14	67	38	7	0	0	0	142
6	1	1	1	7	23	50	129	92	20	1	0	0	325
7	0	0	1	13	31	108	260	191	34	4	0	0	642
8	0	0	12	30	133	402	465	113	9	1	0	0	1165
9	0	0	8	30	120	371	438	109	11	1	0	0	1088
10	0	0	1	37	111	260	326	125	16	2	1	0	879
11	0	0	4	14	97	226	262	109	11	1	0	0	724
12	0	0	5	11	102	223	272	94	10	2	0	0	719
13	0	0	1	20	109	294	267	82	9	2	0	0	784
14	0	4	7	10	72	241	313	120	21	4	0	0	792
15	0	0	0	8	51	279	380	136	24	2	0	0	880
16	0	0	0	10	117	335	343	120	20	2	0	0	947
17	7	53	79	75	144	421	396	77	9	0	0	0	1261
18	114	557	431	207	39	7	0	0	0	0	0	0	1355
19	25	254	237	46	61	108	174	112	20	2	0	0	1039
20	0	0	0	7	39	123	249	153	30	4	0	0	605
21	0	0	0	3	11	59	142	114	18	7	1	0	355
22	0	0	0	0	15	46	103	81	16	5	0	0	266
23	0	0	0	1	16	57	111	52	12	4	0	0	253
24	0	1	0	1	12	33	43	15	5	0	0	0	110
7-19	146	868	785	498	1156	3167	3636	1197	160	19	1	0	11633
6-22	146	868	786	521	1252	3503	4390	1736	258	39	2	0	13501
6-24	146	869	786	523	1280	3593	4544	1803	275	43	2	0	13864
0-24	147	870	795	537	1340	3678	4817	1990	313	48	2	0	14537

Channel 2 - Southbound

13/06/2016	Vehicle Speeds (MPH)											
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

14/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

14/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

14/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

14/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

Channel 1 - Northbound

15/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

15/06/2016	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Maidstone, Kent Site 2, A229 (NBD)

Produced by Streetwise Services Ltd.

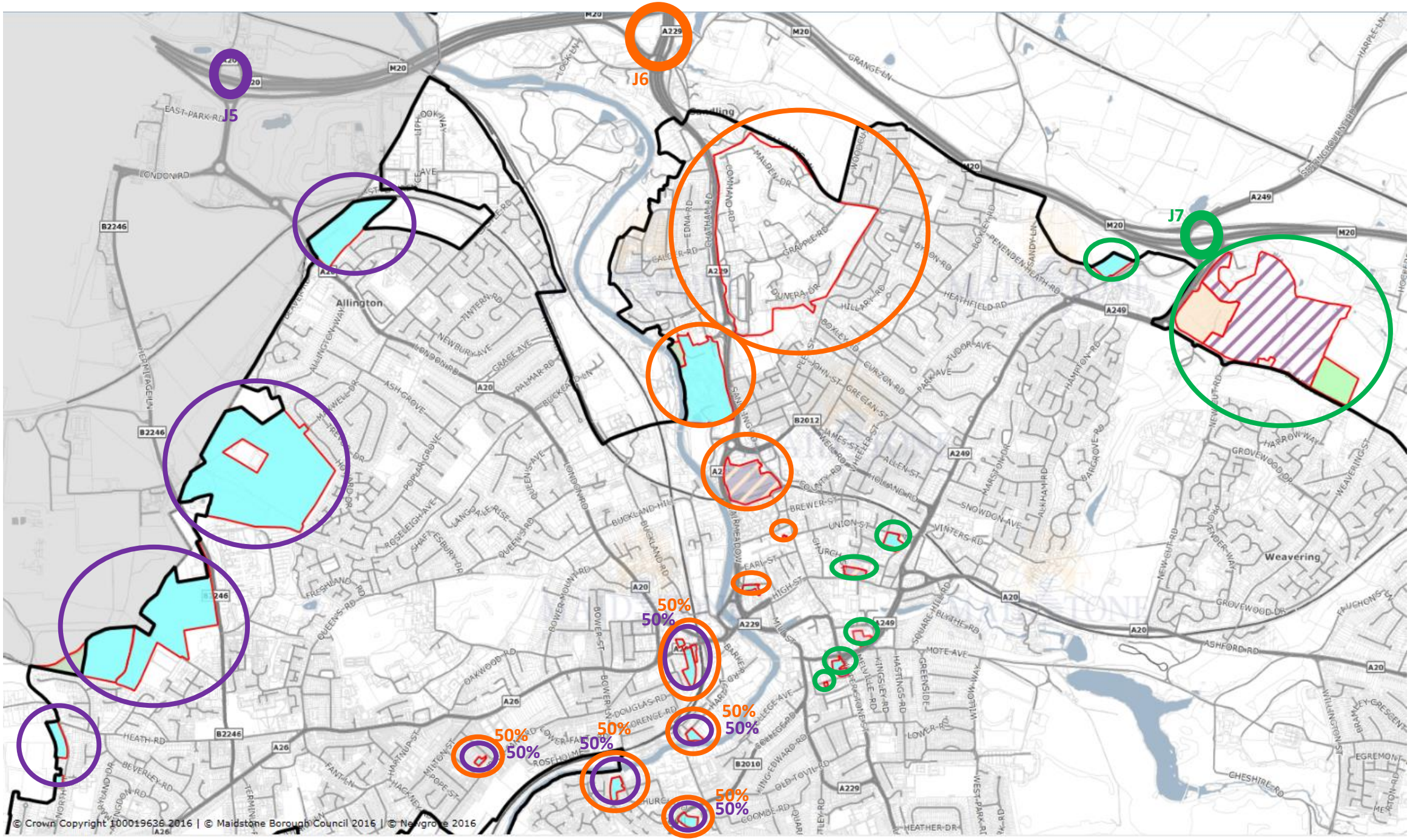
Channel 1 - Northbound

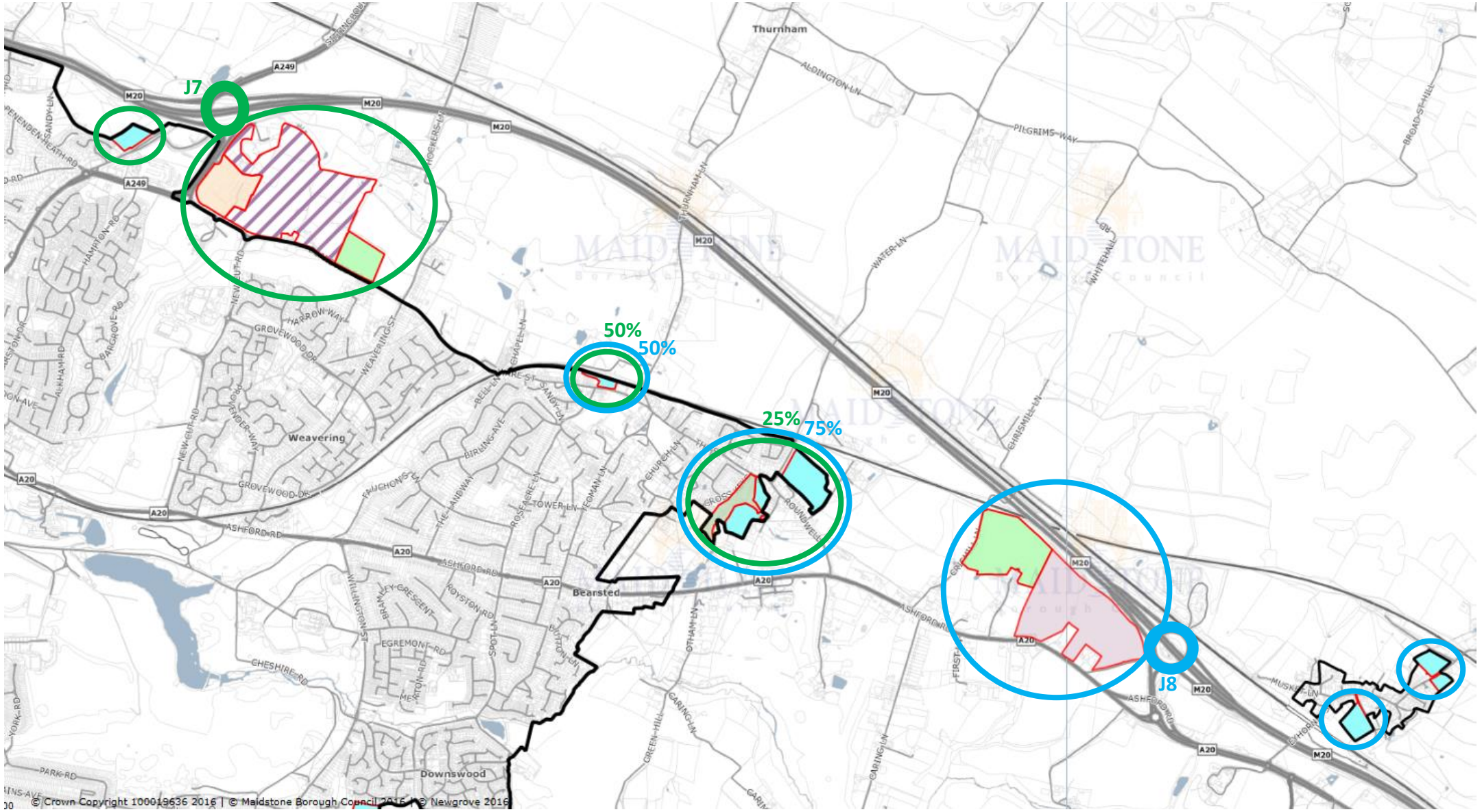
15/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0	0	0	0
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

Channel 2 - Southbound

15/06/2016	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	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
3	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
5	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
7	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
9	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
11	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
13	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
15	0	0	0	0	0	0	0	0	0	0	0	0	0
16	0	0	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0	0	0	0
21	0	0	0	0	0	0	0	0	0	0	0	0	0
22	0	0	0	0	0	0	0	0	0	0	0	0	0
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	0	0	0	0	0	0	0	0	0	0	0	0	0
6-22	0	0	0	0	0	0	0	0	0	0	0	0	0
6-24	0	0	0	0	0	0	0	0	0	0	0	0	0
0-24	0	0	0	0	0	0	0	0	0	0	0	0	0

B. Junction Distribution


J5
J6
J7
50%
50%
50%
50%
50%
50%
50%
50%
Allington
Weavering
© Crown Copyright 100019636 2016 | © Maidstone Borough Council 2016 | © Newgrove 2016


J7
J8
50%
50%
25%
75%
Thurnham
Weavering
Bearsted
Downswood
M20
A249
A20
ASHFORD RD
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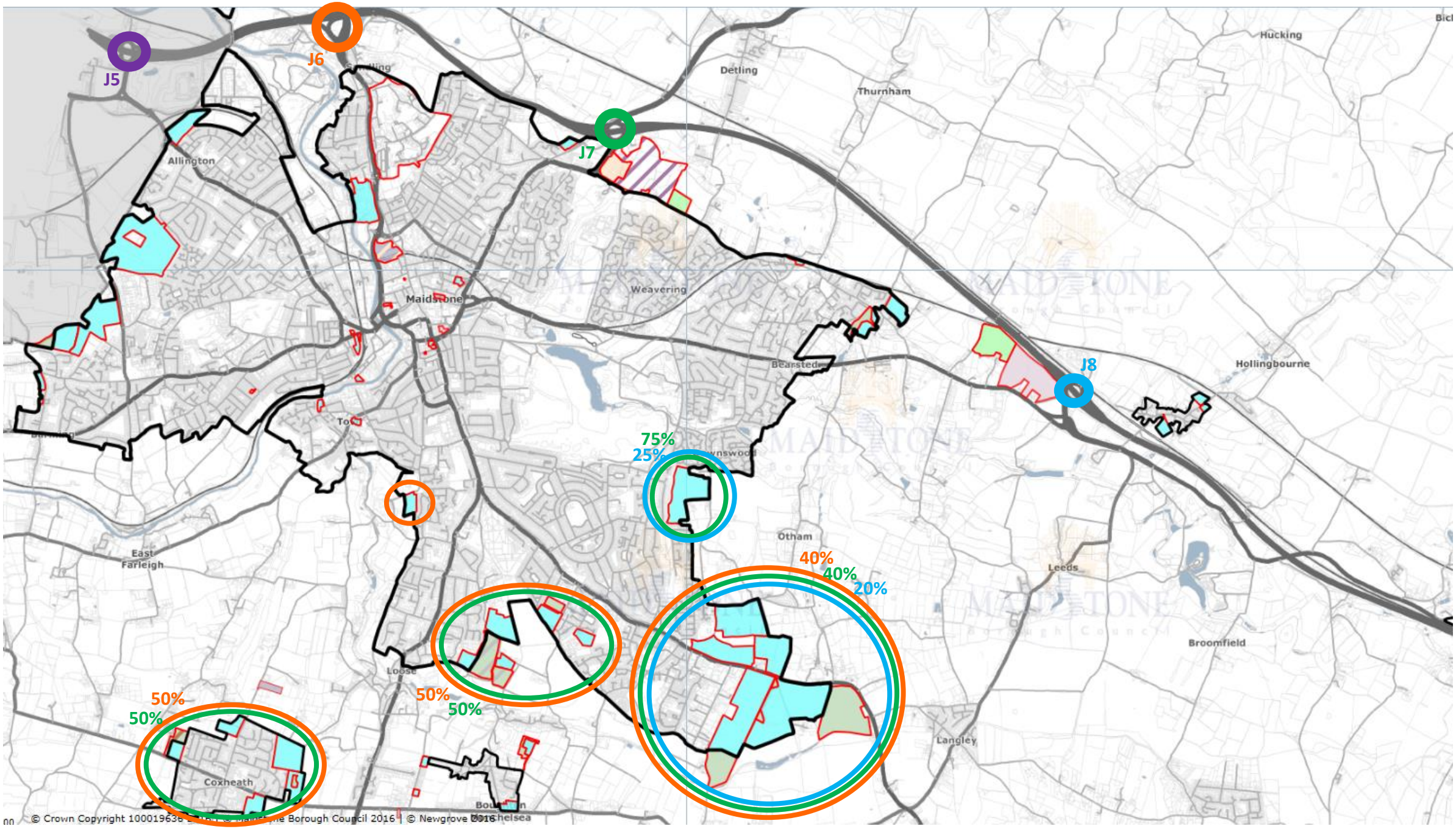
J5
J6
J7
J8
Allington
Maidstone
Detling
Thurnham
Weavering
Hucking
Hollingbourne
Otham
Leeds
Broomfield
Langley
East Farleigh
Coxheath
Loose
75%
25%
40%
40%
20%
50%
50%
50%
50%
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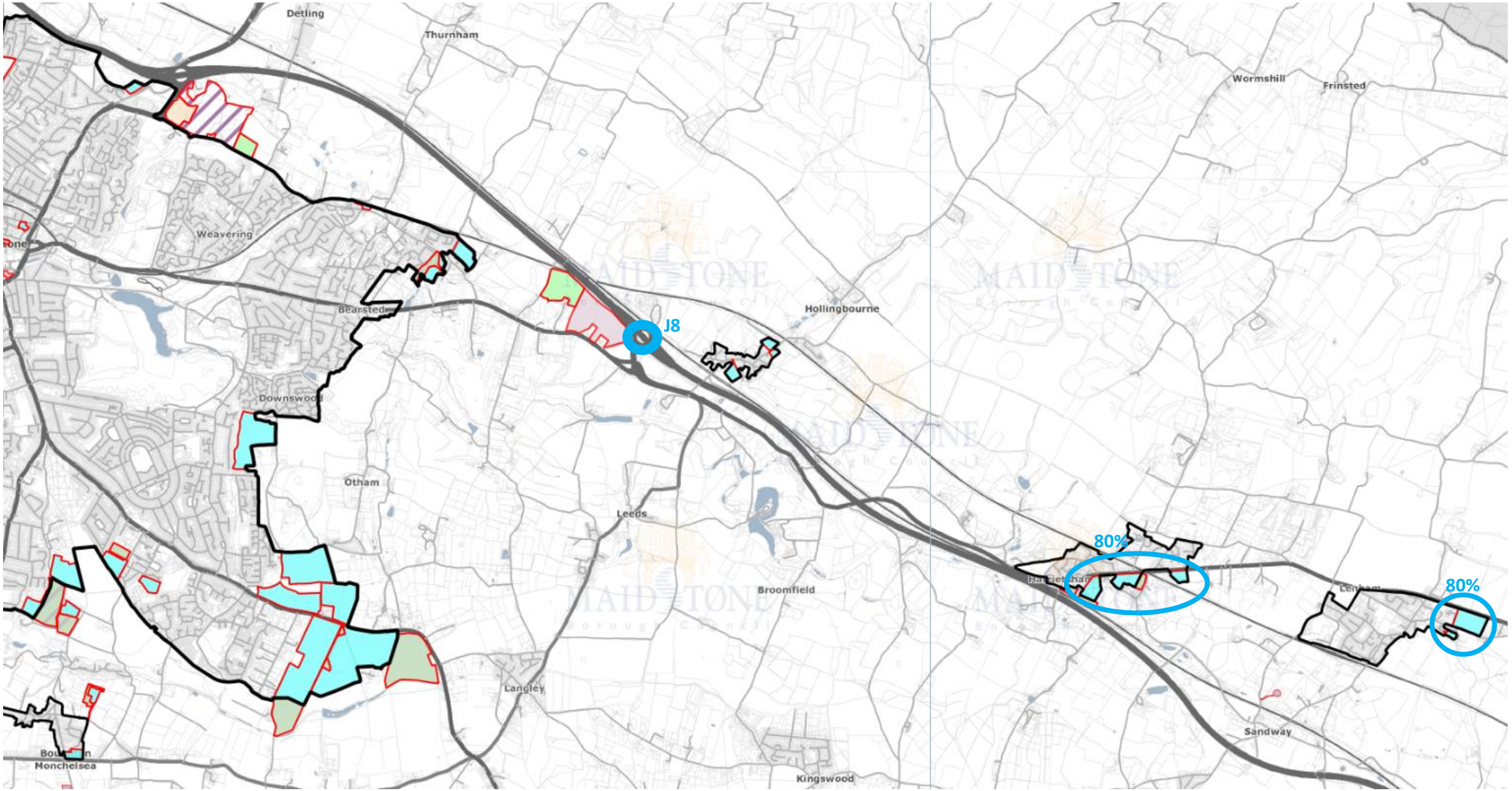
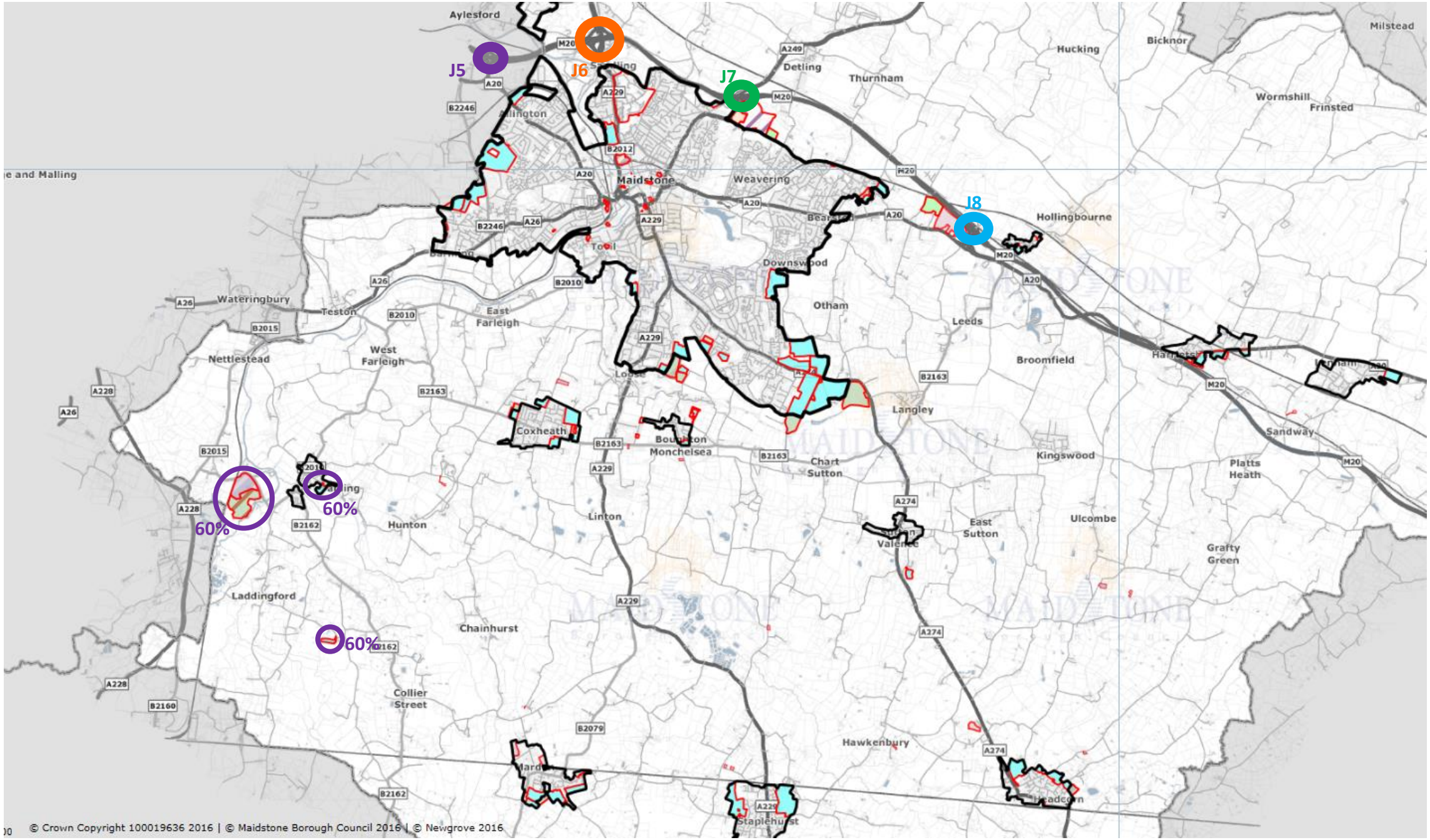

Detling
Thurnham
Wormshill
Frinsted
Weavering
Bearsted
J8
Hollingbourne
Downswood
Otham
Leeds
Broomfield
80%
80%
Langley
Sandway
Kingswood
Monchelsea


30%
30%
Marden
30%
30%
Staplehurst
Hawkenbury
30%
30%
Headcorn


J5
J6
J7
J8
60%
60%
60%
Aylesford
Detling
Thurnham
Hucking
Bicknor
Milstead
Wormshill
Frinsted
Maidstone
Weavering
Hollingbourne
Downswood
Otham
Leeds
Broomfield
Langley
Kingswood
Sandway
Platts Heath
Ulcombe
Grafty Green
East Sutton
Chart Sutton
Coxheath
Boughton Monchelsea
Linton
Hunton
Laddingford
Chainhurst
Collier Street
Hawkenbury
Staplehurst
Headcorn
Wateringbury
Teston
East Farleigh
West Farleigh
Nettlestead
Loose
Allington
Barming
Tovil
Bearsted
Harrietsham
Lenham
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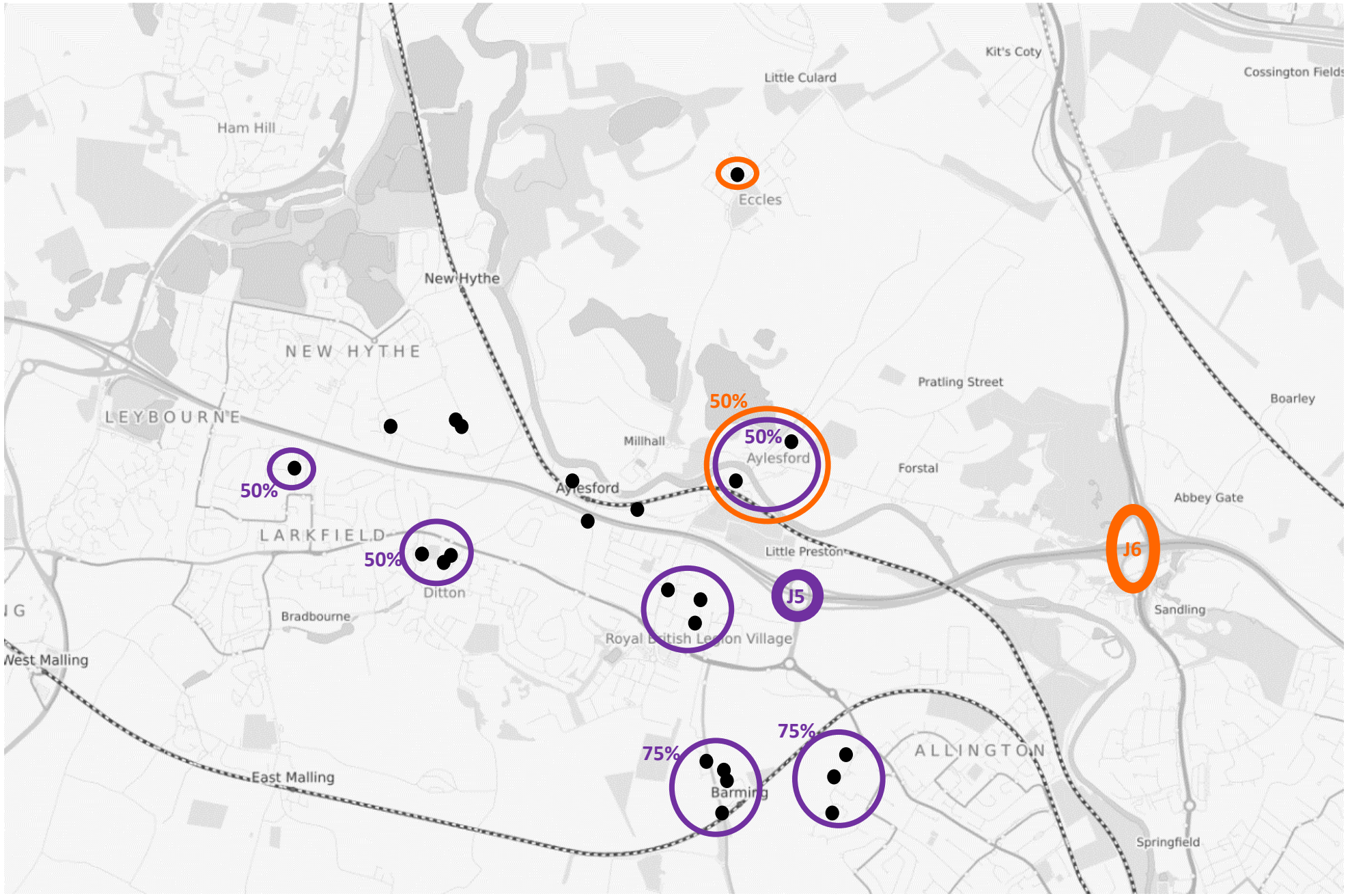

Kit's Coty
Little Culard
Cossington Fields
Ham Hill
Eccles
New Hythe
NEW HYTHE
LEYBOURNE
Pratling Street
Boarley
50%
50%
Millhall
Aylesford
Forstal
Abbey Gate
LARKFIELD
50%
Ditton
Little Preston
J6
J5
Sandling
Bradbourne
Royal British Legion Village
West Malling
75%
75%
ALLINGTON
East Malling
Barming
Springfield


Kit's Coty
Little Culard
Cossington Fields
Ham Hill
Eccles
New Hythe
NEW HYTHE
LEYBOURNE
Pratling Street
Boarley
Millhall
Aylesford
Abbey Gate
50%
LARKFIELD
Little Preston
J6
50%
J5
Ditton
Sandling
50%
Bradbourne
Royal British Legion Village
West Malling
ALLINGTON
East Malling
Barming
Springfield

C. TEMPro Methodology

M20 Junction Assessments

Further explanation on how TEMPro Growth Factors were derived

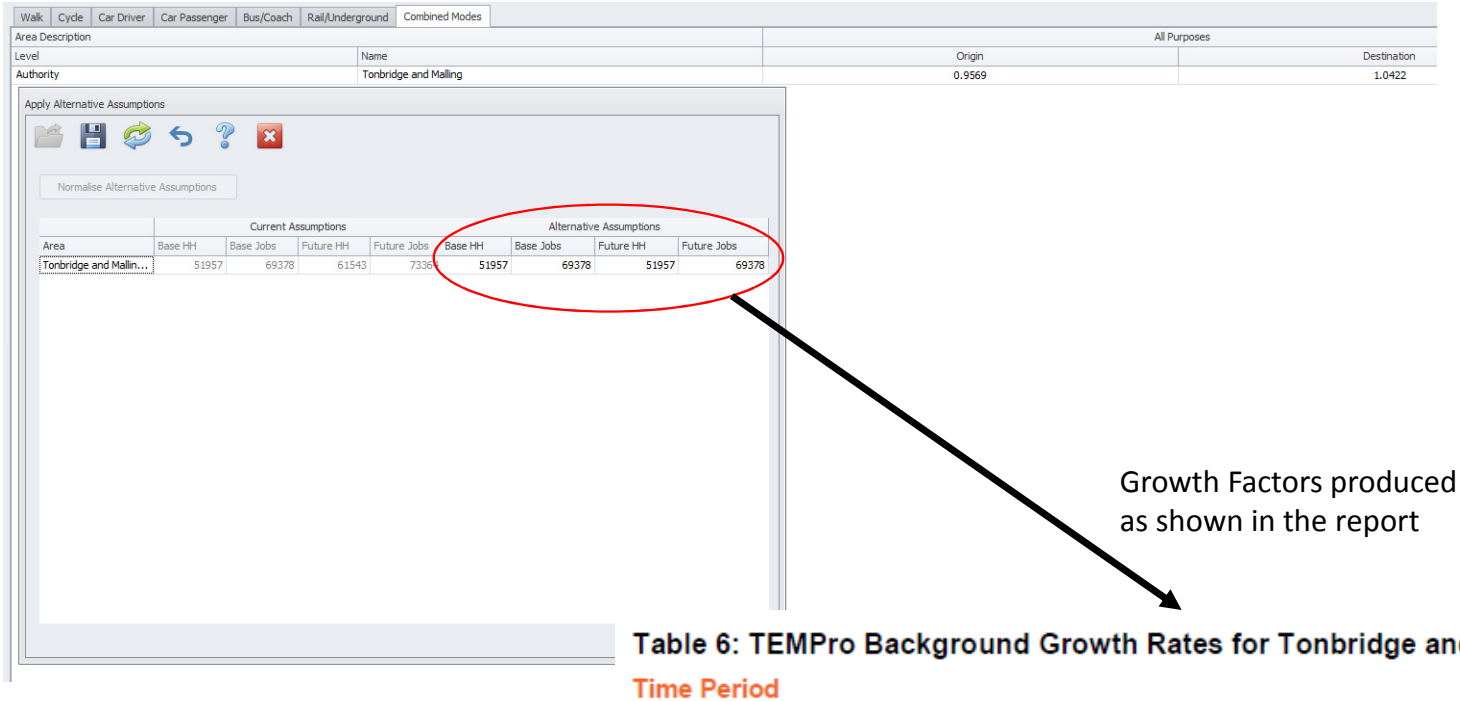
In a meeting between Highways England (HE) and Mott MacDonald (MM) on 6 October 2016, the approach taken in MM's report of September 2016 with regards to TEMPro growth factors was further explained to Kevin Bown (HE) and Nigel Walkden (Atkins, HE's consultant).

Kevin Bown requested that this was summarised in writing and submitted for further review.

MM's methodology (M20 Junctions 5 to 8 – Modelling Approach) which was submitted to HE by email on 18 July 2016 summarised our approach. Below sets out the approach and the sections in the report that contain the relevant information:

- Based on the location of individual developments in the Maidstone Local Plan, and development numbers for Tonbridge & Malling and Swale districts, it was considered which developments would affect which of the four motorway junctions. This is set out in the diagrams in Appendix B of the M20 Junctions report. It was assumed that all development from Swale would use M20 Junction 7 only and therefore this is not shown in the diagrams.
- Table 4 in Section 2 of the report presents the development numbers affecting each junction for Scenario 1 (consented development) and Table 5 for Scenario 2 (all development i.e. consented and non-consented development).
- Background growth was calculated by setting the future household and job numbers (in 2031) to the same as in 2016 in *Alternative Assumptions* in TEMPro. This assumes no household and employment growth within the area, thereby isolating the growth occurring in the area due to factors other than housing and job growth within the area. For M20 Junction 5 this was done for Tonbridge & Malling, for the other three junctions, the area of Maidstone was used. This is shown on Slides 1 and 2 of the attached.
- To calculate the growth for each junction, the development household and employment numbers were assigned to the relevant junction(s) and added into the TEMPro program using *Alternative Assumptions* (as per Appendix B of the report), with the total development numbers per junction added, shown in Tables 4 and 5 of the report. Slides 3 to 10 of the attached show how this was done in TEMPro and refer to the relevant tables in our report that contain the housing and job numbers, as well as the output tables containing the resulting growth factors.
- These growth factors were then used to growth the 2016 base flows to create 2031 + Consented Development and 2031 + All Development flows, as shown in Figures 22 to 37 in Section 2 of the report.

Slide 1: Tonbridge & Malling (background growth only) 2016-31

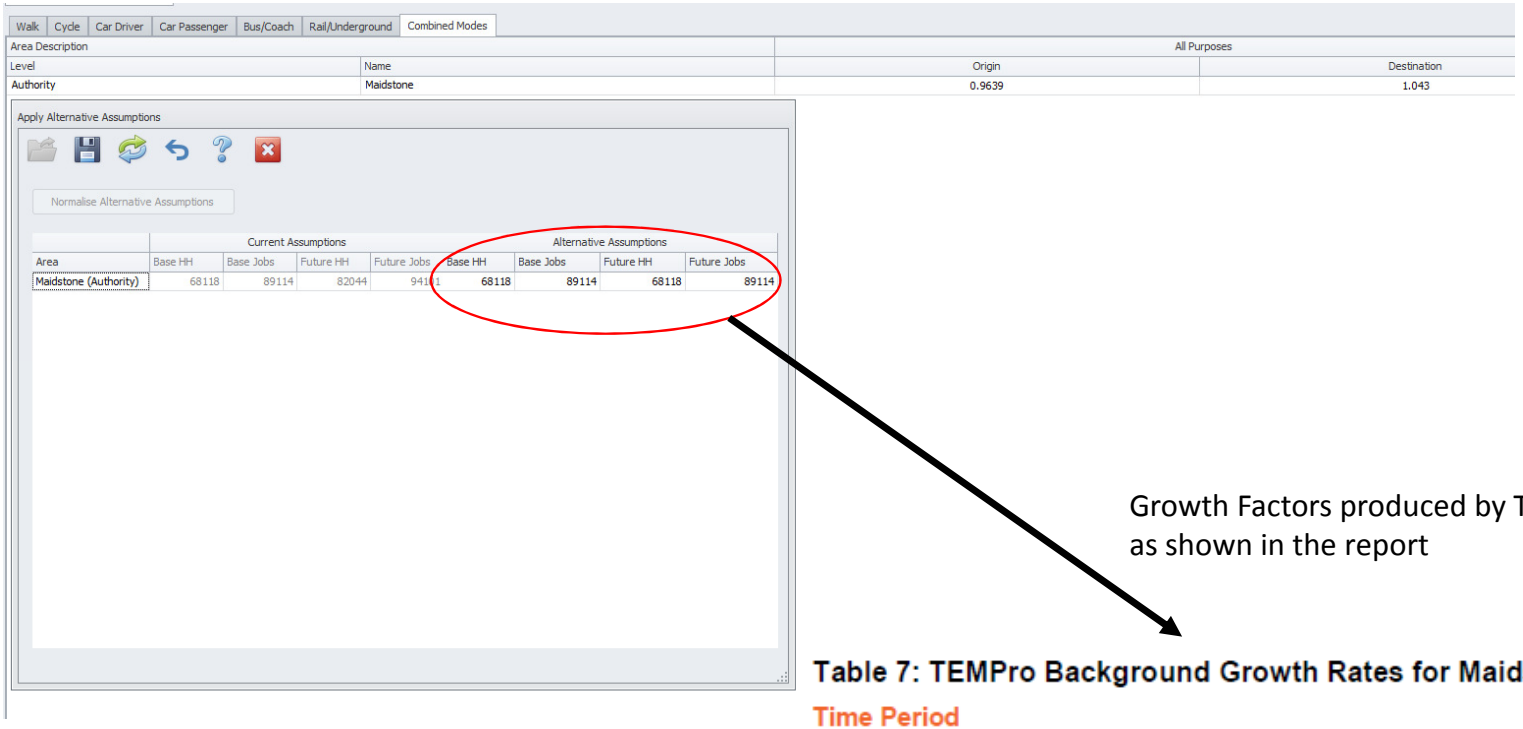


Growth Factors produced by TEMPro, as shown in the report

Table 6: TEMPro Background Growth Rates for Tonbridge and Malling 2016-2031

Time Period	Factor
AM peak	1.079485
PM peak	1.078403

Slide 2: Maidstone (background growth only) 2016-31

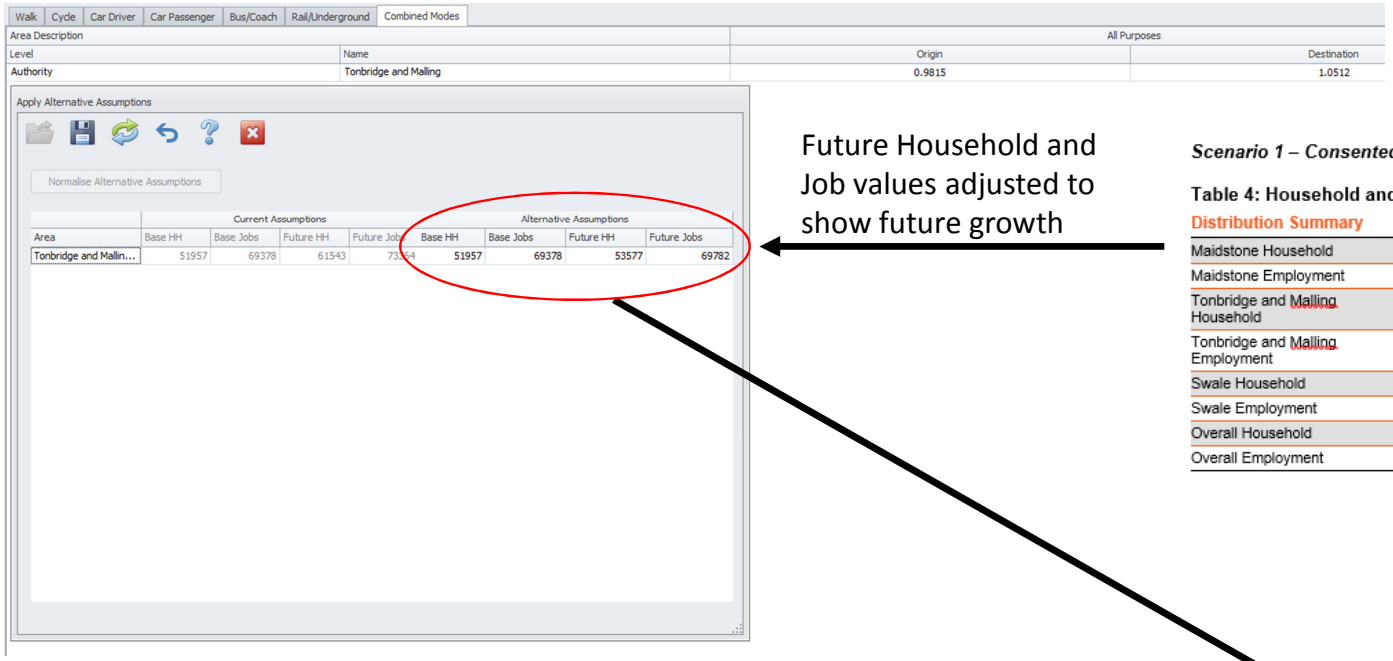


Growth Factors produced by TEMPro, as shown in the report

Table 7: TEMPro Background Growth Rates for Maidstone: 2016-2031

Time Period	Factor
AM Peak	1.084134
PM Peak	1.083107

Slide 3: J5 Scenario 1 (Tonbridge & Malling) 2016-31



Future Household and Job values adjusted to show future growth

Scenario 1 – Consented Development

Table 4: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	1268	2295	2218	1056	6837
Maidstone Employment	0	42	4242	0	4285
Tonbridge and Malling Household	352	11	0	0	363
Tonbridge and Malling Employment	404	-34	0	0	371
Swale Household	0	0	262	0	262
Swale Employment	0	0	400	0	400
Overall Household	1620	2306	2480	1056	7462
Overall Employment	404	9	4642	0	5055

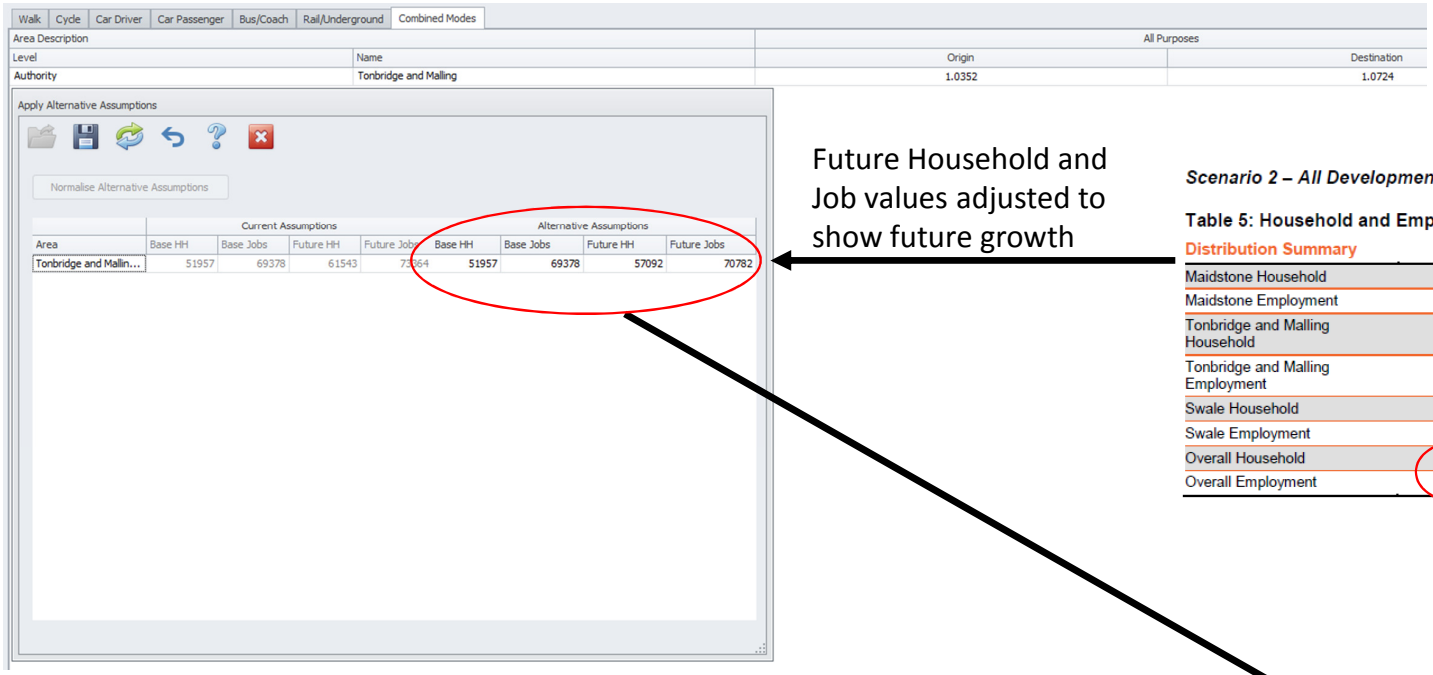
Consented Development affecting J5, as shown in the report

Growth Factors produced by TEMPro, as shown in the report

Table 8: 'With Development' TEMPro Growth Rates for Junction 5 in Tonbridge and Malling: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.097704928
Scenario 1 - PM Peak	1.097921193
Scenario 2 - AM Peak	1.138254536
Scenario 2 - PM Peak	1.141390373

Slide 4: J5 Scenario 2 (Tonbridge & Malling) 2016-31



Future Household and Job values adjusted to show future growth

Scenario 2 – All Development (Consented and Non Consented Development)

Table 5: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	2183	5541	3736	2630	14090
Maidstone Employment	0	757	5117	883	6757
Tonbridge and Malling Household	2952	511	0	0	3463
Tonbridge and Malling Employment	1404	-34	0	0	1371
Swale Household	0	0	968	0	968
Swale Employment	0	0	400	0	400
Overall Household	5135	6052	4705	2630	18521
Overall Employment	1404	723	5517	883	8527

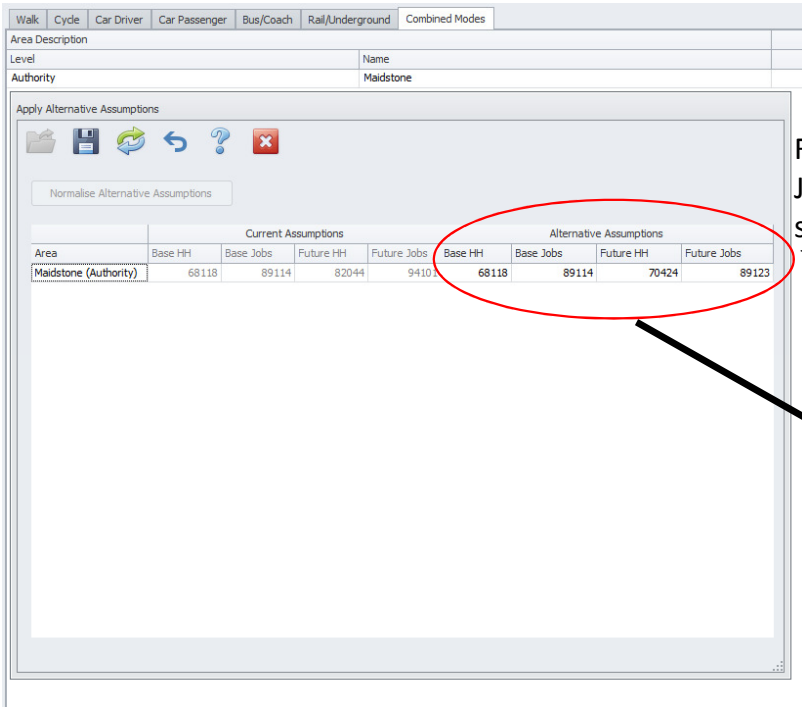
All Development affecting J5, as shown in the report

Growth Factors produced by TEMPro, as shown in the report

Table 8: 'With Development' TEMPro Growth Rates for Junction 5 in Tonbridge and Malling: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.097704928
Scenario 1 - PM Peak	1.097921193
Scenario 2 - AM Peak	1.138254536
Scenario 2 - PM Peak	1.141390373

Slide 5: J6 Scenario 1 (Maidstone) 2016-31



Future Household and Job values adjusted to show future growth

Scenario 1 – Consented Development

Table 4: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	1268	2295	2218	1056	6837
Maidstone Employment	0	42	4242	0	4285
Tonbridge and Malling Household	352	11	0	0	363
Tonbridge and Malling Employment	404	-34	0	0	371
Swale Household	0	0	262	0	262
Swale Employment	0	0	400	0	400
Overall Household	1620	2306	2480	1056	7462
Overall Employment	404	9	4642	0	5055

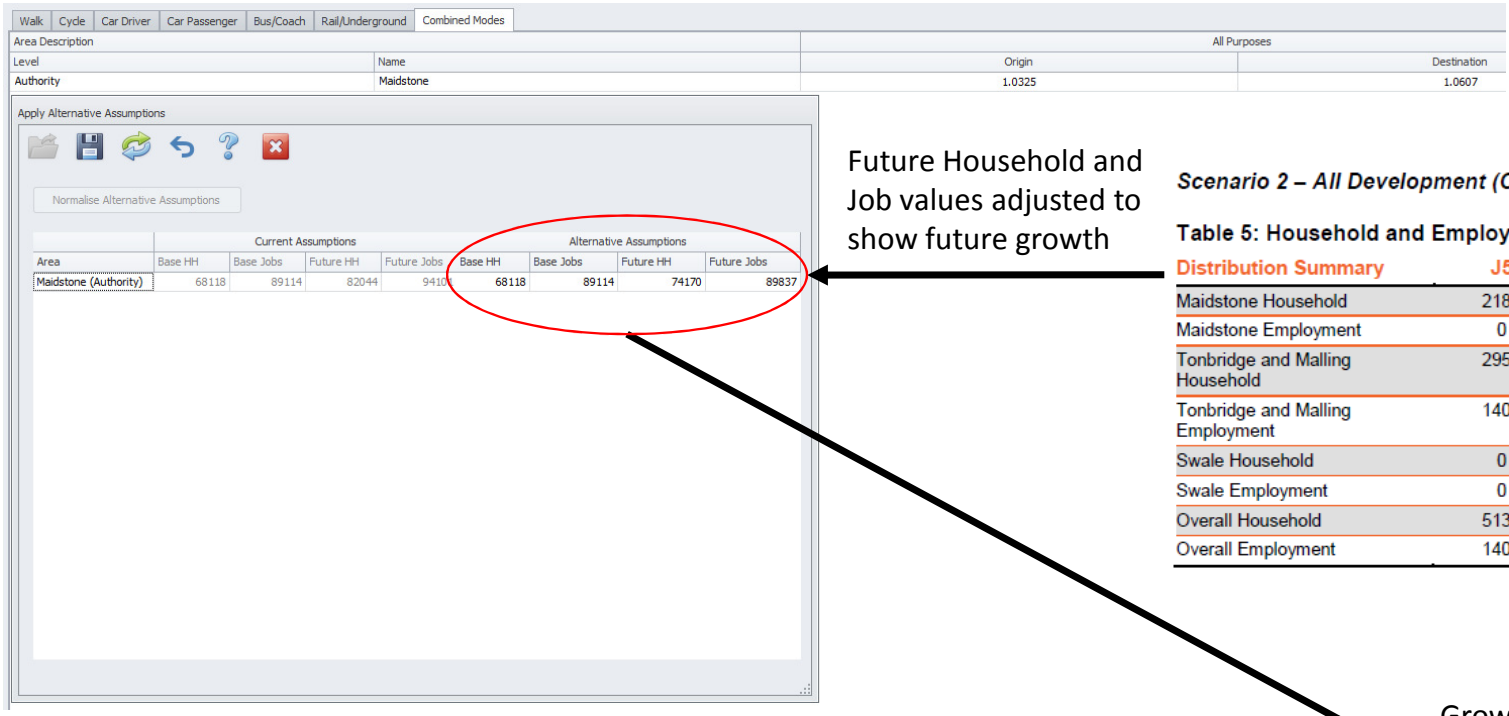
Consented Development affecting J6, as shown in the report

Growth Factors produced by TEMPro, as shown in the report

Table 9: 'With Development' TEMPro Growth Rates for Junction 6 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.100408235
Scenario 1 - PM Peak	1.101219227
Scenario 2 - AM Peak	1.131658467
Scenario 2 - PM Peak	1.135010568

Slide 6: J6 Scenario 2 (Maidstone) 2016-31



Future Household and Job values adjusted to show future growth

Scenario 2 – All Development (Consented and Non Consented Development)

Table 5: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	2183	5541	3736	2630	14090
Maidstone Employment	0	757	5117	883	6757
Tonbridge and Malling Household	2952	511	0	0	3463
Tonbridge and Malling Employment	1404	-34	0	0	1371
Swale Household	0	0	968	0	968
Swale Employment	0	0	400	0	400
Overall Household	5135	6052	4705	2630	18521
Overall Employment	1404	723	5517	883	8527

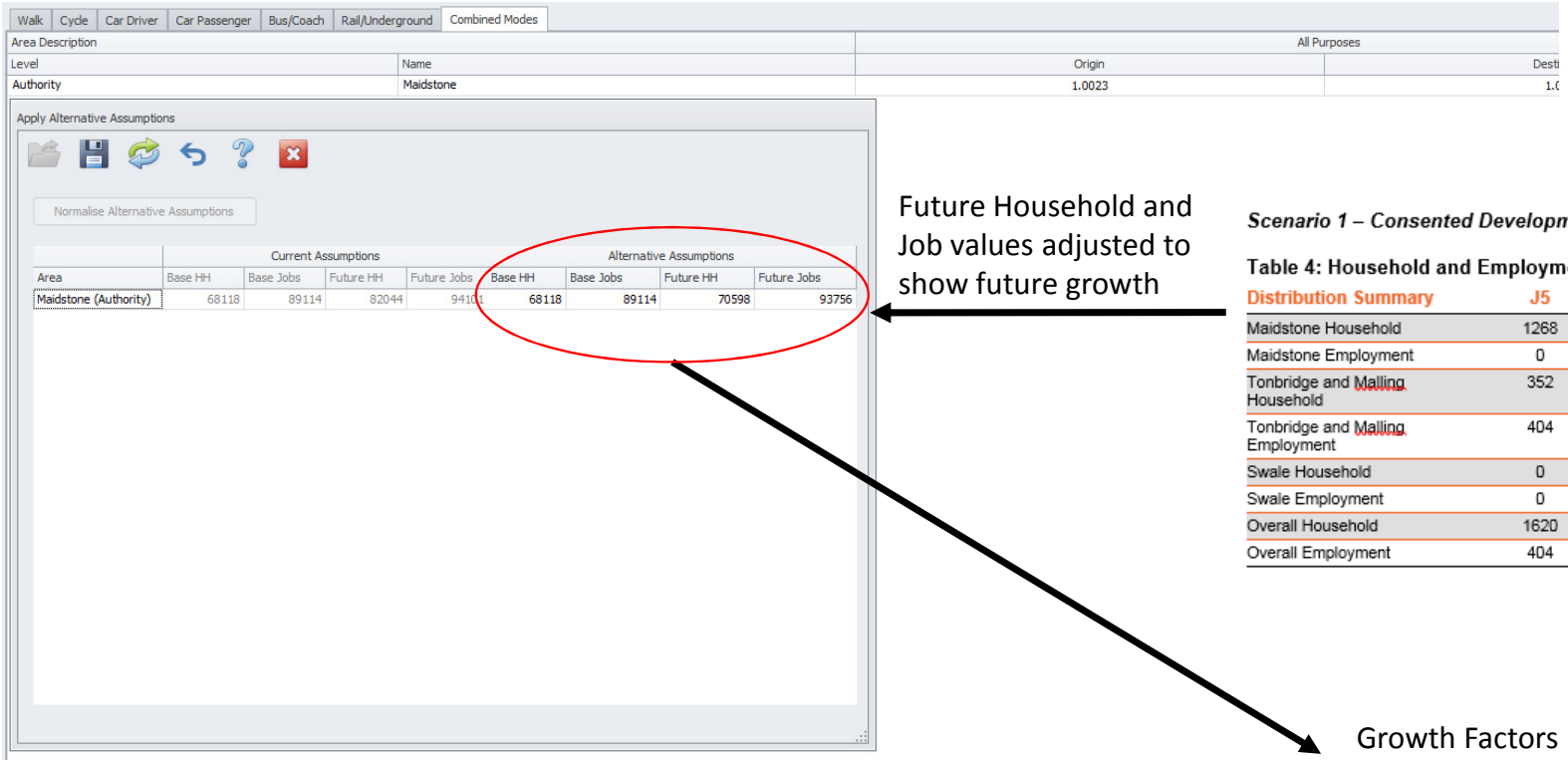
All Development affecting J6, as shown in the report

Growth Factors produced by TEMPro, as shown in the report

Table 9: 'With Development' TEMPro Growth Rates for Junction 6 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.100408235
Scenario 1 - PM Peak	1.101219227
Scenario 2 - AM Peak	1.131658467
Scenario 2 - PM Peak	1.135010568

Slide 7: J7 Scenario 1 (Maidstone) 2016-31



Future Household and Job values adjusted to show future growth

Scenario 1 – Consented Development

Table 4: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	1268	2295	2218	1056	6837
Maidstone Employment	0	42	4242	0	4285
Tonbridge and Malling Household	352	11	0	0	363
Tonbridge and Malling Employment	404	-34	0	0	371
Swale Household	0	0	262	0	262
Swale Employment	0	0	400	0	400
Overall Household	1620	2306	2480	1056	7462
Overall Employment	404	9	4642	0	5055

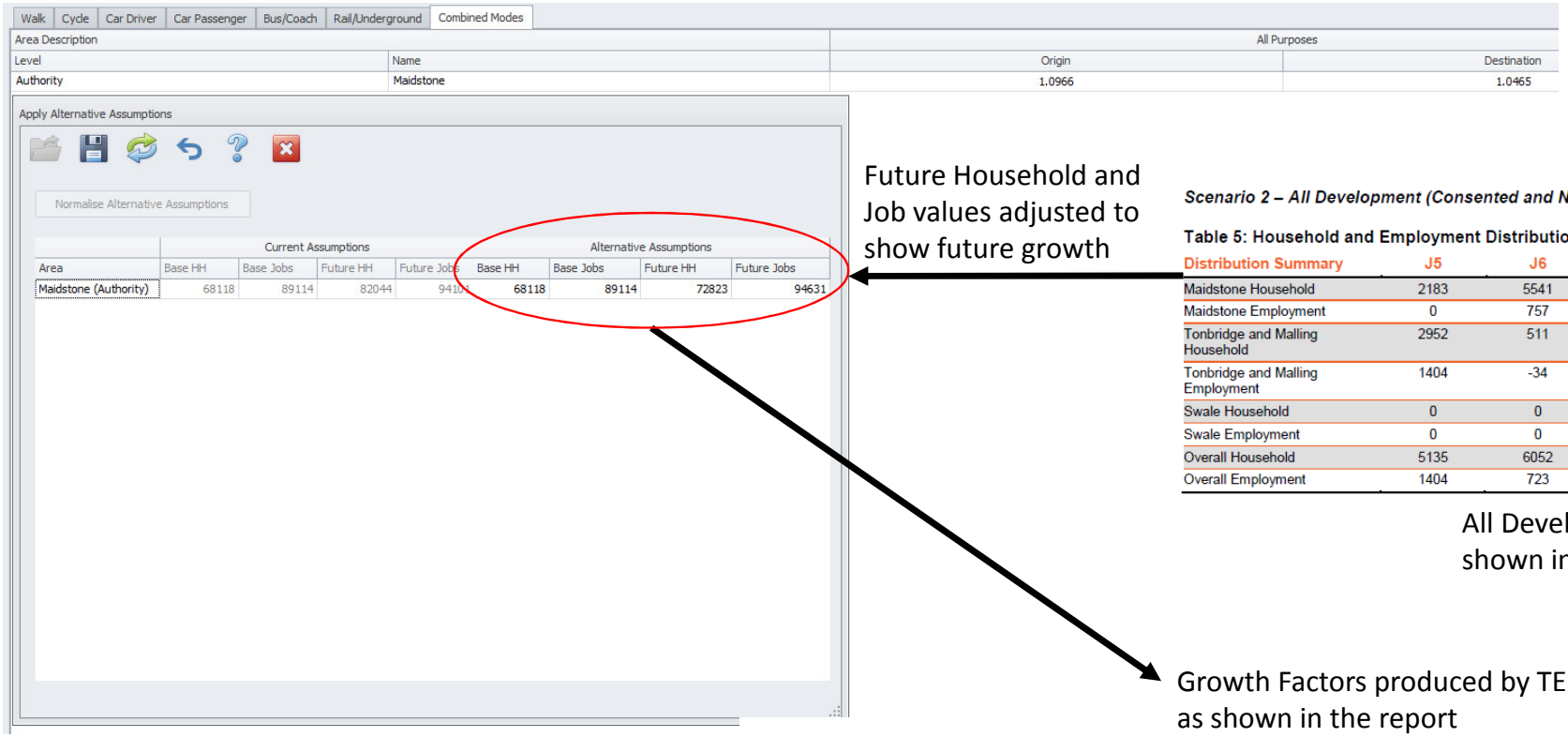
Consented Development affecting J7, as shown in the report

Growth Factors produced by TEMPro, as shown in the report

Table 10: 'With Development' TEMPro Growth Rates for Junction 7 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.133118253
Scenario 1 - PM Peak	1.131171871
Scenario 2 - AM Peak	1.154690644
Scenario 2 - PM Peak	1.153933718

Slide 8: J7 Scenario 2 (Maidstone) 2016-31



Future Household and Job values adjusted to show future growth

Scenario 2 – All Development (Consented and Non Consented Development)

Table 5: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	2183	5541	3736	2630	14090
Maidstone Employment	0	757	5117	883	6757
Tonbridge and Malling Household	2952	511	0	0	3463
Tonbridge and Malling Employment	1404	-34	0	0	1371
Swale Household	0	0	968	0	968
Swale Employment	0	0	400	0	400
Overall Household	5135	6052	4705	2630	18521
Overall Employment	1404	723	5517	883	8527

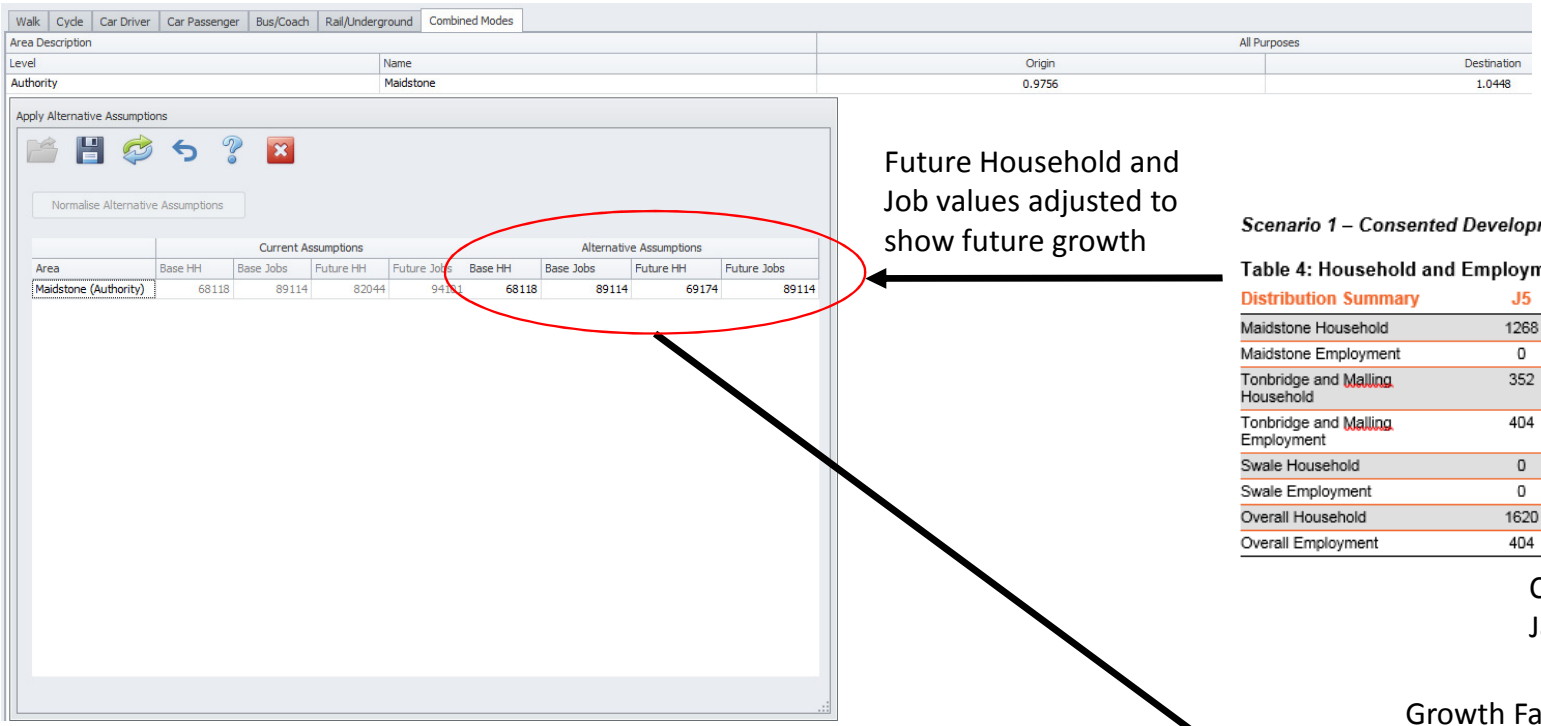
All Development affecting J7, as shown in the report

Growth Factors produced by TEMPro, as shown in the report

Table 10: 'With Development' TEMPro Growth Rates for Junction 7 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.133118253
Scenario 1 - PM Peak	1.131171871
Scenario 2 - AM Peak	1.154690644
Scenario 2 - PM Peak	1.153933718

Slide 9: J8 Scenario 1 (Maidstone) 2016-31



Future Household and Job values adjusted to show future growth

Scenario 1 – Consented Development

Table 4: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	1268	2295	2218	1056	6837
Maidstone Employment	0	42	4242	0	4285
Tonbridge and Malling Household	352	11	0	0	363
Tonbridge and Malling Employment	404	-34	0	0	371
Swale Household	0	0	262	0	262
Swale Employment	0	0	400	0	400
Overall Household	1620	2306	2480	1056	7462
Overall Employment	404	9	4642	0	5055

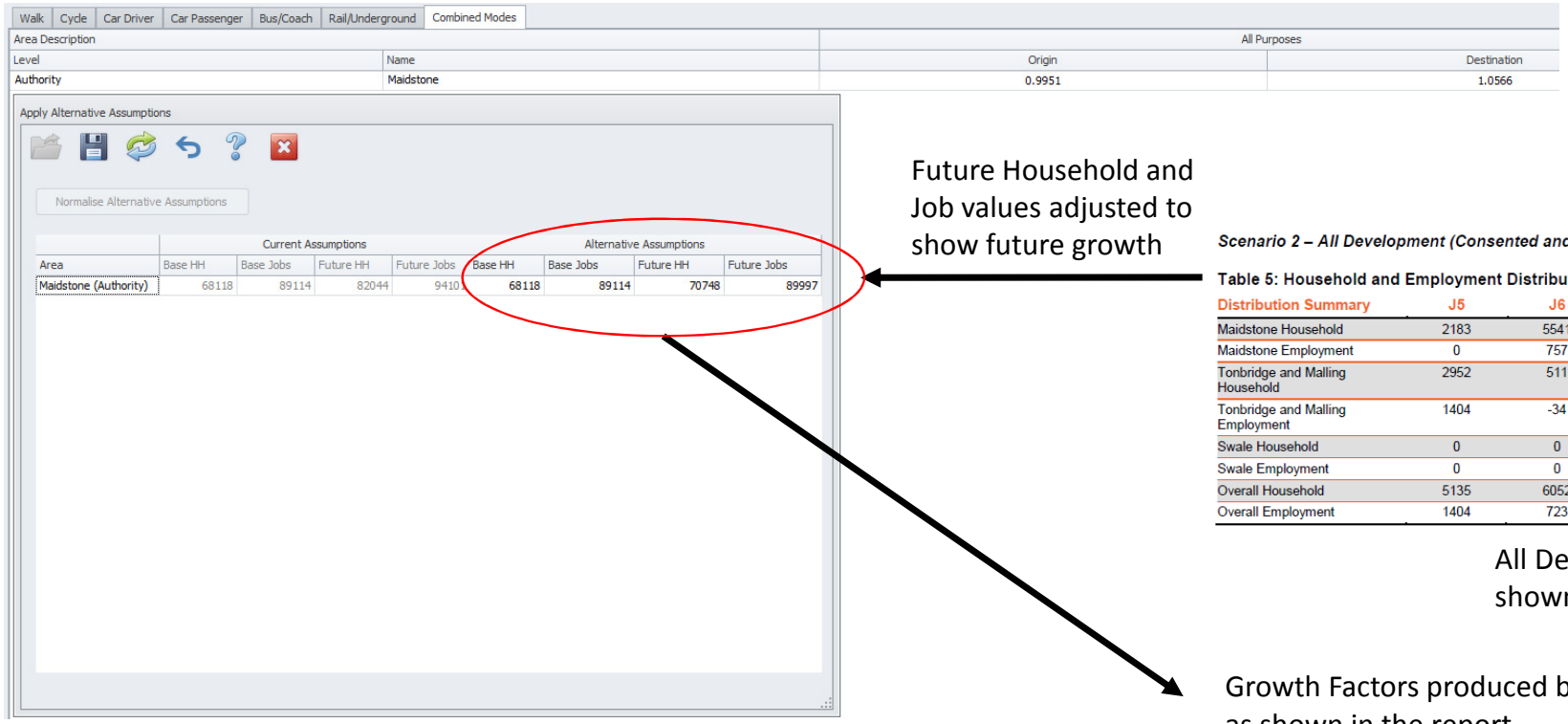
Consented Development affecting J8, as shown in the report

Growth Factors produced by TEMPro, as shown in the report

Table 11: 'With Development' TEMPro Growth Rates for Junction 8 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.091595454
Scenario 1 - PM Peak	1.091379189
Scenario 2 - AM Peak	1.108680355
Scenario 2 - PM Peak	1.109166951

Slide 10: J8 Scenario 2 (Maidstone) 2016-31



Future Household and Job values adjusted to show future growth

Scenario 2 – All Development (Consented and Non Consented Development)

Table 5: Household and Employment Distribution Summary

Distribution Summary	J5	J6	J7	J8	Total
Maidstone Household	2183	5541	3736	2630	14090
Maidstone Employment	0	757	5117	883	6757
Tonbridge and Malling Household	2952	511	0	0	3463
Tonbridge and Malling Employment	1404	-34	0	0	1371
Swale Household	0	0	968	0	968
Swale Employment	0	0	400	0	400
Overall Household	5135	6052	4705	2630	18521
Overall Employment	1404	723	5517	883	8527

All Development affecting J8, as shown in the report

Growth Factors produced by TEMPro, as shown in the report

Table 11: 'With Development' TEMPro Growth Rates for Junction 8 in Maidstone: 2016-2031

Time Period	Factor
Scenario 1 - AM Peak	1.091595454
Scenario 1 - PM Peak	1.091379189
Scenario 2 - AM Peak	1.108680355
Scenario 2 - PM Peak	1.109166951

Olley, Martina E

From: WALKDEN, NIGEL <Nigel.Walkden@highwaysengland.co.uk>
Sent: 19 October 2016 14:10
To: Olley, Martina E
Cc: Paul Goodenough; Bown, Kevin
Subject: RE: Draft HE Maidstone Local Plan M2 Junctions 5-8 Assessments

Follow Up Flag: Follow up
Flag Status: Completed

Hello Martina,

The approach is acceptable. You seem to have included the non-consented growth for the other Boroughs in the non-consented (All Development) scenarios. Given that we are looking at Maidstone's impacts in isolation we would not insist on this. We will now continue looking at the merge/diverge assessments and look forward to your response relating to our other comments.

Regards,

Nigel

Nigel Walkden BA MSc MBA CMILT
Managing Consultant, Transportation

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Web: http://www.highways.gov.uk

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Highways England:operating, maintaining and improving the strategic road network in England.

D. ARCADY Results

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

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: M20 Junction 5- 2016 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 5\ARCADY\Issue 2
Report generation date: 25/10/2016 10:52:36

«M20 Junction 5 - 2016, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 5 [Lane Simulation] - 2016			
Arm A	2.5	6.46		A
Arm B	31.0	84.05		F
Arm C	0.1	11.85		B
Arm D	193.4	481.70		F

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

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

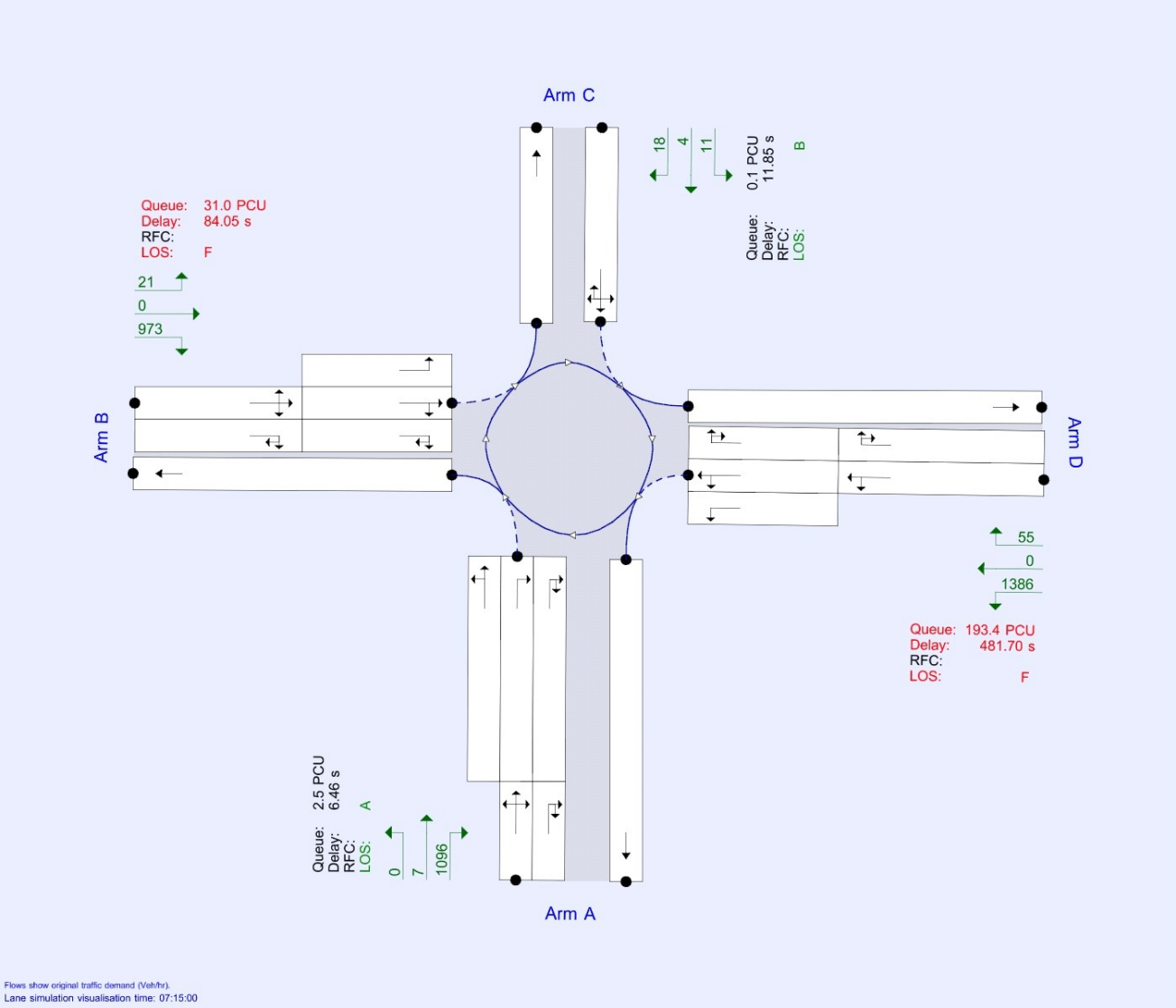
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1253327114	181	55.49

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 5	✓	✓	100.000	100.000

M20 Junction 5 - 2016, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 5 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 5	Large Roundabout	A,B,C,D	219.37	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road A20	
B	M20 West	
C	Coldharbour Lane	
D	M20 East	

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
A	7.10	8.10	30.0	45.5	125.0	14.0	
B	7.25	10.50	22.0	30.0	194.0	20.0	
C	4.25	4.25	0.0	20.0	125.0	25.0	
D	7.25	10.00	14.5	30.0	194.0	16.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	73	50.00
B	1158	155.00
C	2069	0.00
D	995	132.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.250	3373
B	1.082	3281
C	0.533	1696
D	1.098	3248

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C	✓	6.00	0	99999
		2	D	✓	6.00	0	99999
		3	D,A	✓	6.00	0	99999
	2	1	(D,B,C)		Infinity		
		2	(D,A)		Infinity		
B	1 [Give-way line]	1	C	✓	4.00	0	99999
		2	D,A	✓	4.00	0	99999
		3	A,B	✓	4.00	0	99999
	2	1	(D,A,C)		Infinity		
		2	(A,B)		Infinity		
C	1 [Give-way line]	1	D,A,B,C		Infinity	0	99999
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A,B	✓	4.00	0	99999
		3	D,C	✓	4.00	0	99999
	2	1	(A,B)		Infinity		
		2	(D,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.417	1124
		2	0.417	1124
		3	0.417	1124
B	1 [Give-way line]	1	0.361	1094
		2	0.361	1094
		3	0.361	1094
C	1 [Give-way line]	1	0.533	1696
D	1 [Give-way line]	1	0.366	1083
		2	0.366	1083
		3	0.366	1083

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓	✓	
		3	✓			✓
	2	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1			✓	✓
		2	✓			
		3	✓	✓		
	2	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1				✓
		2	✓	✓		
		3		✓	✓	
	2	1	✓	✓		✓
		2		✓	✓	
C	1 [Give-way line]	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1103	100.000
B		ONE HOUR	✓	994	100.000
C		ONE HOUR	✓	33	100.000
D		ONE HOUR	✓	1441	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	7	1096
	B	973	0	21	0
	C	4	18	0	11
	D	1386	0	55	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.01	0.99
	B	0.98	0.00	0.02	0.00
	C	0.12	0.55	0.00	0.33
	D	0.96	0.00	0.04	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	10	10	10	10
	B	10	10	10	10
	C	10	10	10	10
	D	10	10	10	10

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.100	1.100	1.100	1.100
	B	1.100	1.100	1.100	1.100
	C	1.100	1.100	1.100	1.100
	D	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	830	913
	B	748	823
	C	25	27
	D	1085	1193
07:30-07:45	A	992	1091
	B	894	983
	C	30	33
	D	1295	1425
07:45-08:00	A	1214	1336
	B	1094	1204
	C	36	40
	D	1587	1745
08:00-08:15	A	1214	1336
	B	1094	1204
	C	36	40
	D	1587	1745
08:15-08:30	A	992	1091
	B	894	983
	C	30	33
	D	1295	1425
08:30-08:45	A	830	913
	B	748	823
	C	25	27
	D	1085	1193

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	6.46	2.5	A	1115	1672
B	84.05	31.0	F	1000	1500
C	11.85	0.1	B	34	51
D	481.70	193.4	F	1448	2172

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	931	233	57	931	1956	0.0	1.1	4.647	A
B	817	204	973	820	16	0.0	1.8	7.502	A
C	28	7	1727	28	65	0.0	0.0	4.339	A
D	1195	299	822	1192	933	0.0	4.4	10.077	B

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1094	273	73	1095	2326	1.1	1.5	5.192	A
B	984	246	1149	988	19	1.8	3.6	12.097	B
C	34	9	2057	35	80	0.0	0.0	6.676	A
D	1420	355	992	1407	1100	4.4	15.2	30.249	D

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1326	332	90	1322	2472	1.5	2.5	6.283	A
B	1219	305	1390	1154	22	3.6	22.8	45.826	E
C	39	10	2445	40	99	0.0	0.1	10.634	B
D	1726	431	1156	1406	1329	15.2	97.5	147.275	F

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1338	334	92	1339	2462	2.5	2.3	6.457	A
B	1188	297	1408	1159	23	22.8	31.0	84.045	F
C	40	10	2466	40	101	0.1	0.1	11.851	B
D	1748	437	1161	1393	1344	97.5	188.6	378.039	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1091	273	72	1091	2402	2.3	1.7	5.187	A
B	971	243	1145	1012	18	31.0	4.1	38.979	E
C	34	9	2075	34	82	0.1	0.0	8.678	A
D	1417	354	1012	1461	1097	188.6	193.4	481.702	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	908	227	61	909	2356	1.7	1.2	4.686	A
B	822	206	955	824	16	4.1	1.8	8.673	A
C	29	7	1708	29	70	0.0	0.0	5.446	A
D	1180	295	825	1592	913	193.4	97.5	330.983	F

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	6	1100	0.006	6	0.0	0.0	4.122	A
			2	D	466	1100	0.423	465	0.0	0.6	4.660	A
			3	D,A	459	1100	0.417	460	0.0	0.5	4.638	A
		2	1	(D,B,C)	466			466	0.0	0.0	0.001	A
			2	(D,A)	464			464	0.0	0.0	0.001	A
	Exit	1	1		1956			1956	0.0	0.0	0.000	A
B	Entry	1	1	C	17	743	0.023	17	0.0	0.0	4.868	A
			2	D,A	403	743	0.543	403	0.0	1.0	7.291	A
			3	A,B	397	743	0.535	399	0.0	0.8	7.412	A
		2	1	(D,A,C)	421			422	0.0	0.0	0.209	A
			2	(A,B)	396			396	0.0	0.0	0.204	A
	Exit	1	1		16			16	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	28	776	0.036	28	0.0	0.0	4.339	A
	Exit	1	1		65			65	0.0	0.0	0.000	A
D	Entry	1	1	A	571	782	0.731	572	0.0	1.8	9.317	A
			2	A,B	580	782	0.741	578	0.0	1.9	9.198	A
			3	D,C	42	782	0.053	41	0.0	0.1	5.152	A
		2	1	(A,B)	1153			1150	0.0	0.7	0.987	A
			2	(D,C)	42			42	0.0	0.0	0.000	A
	Exit	1	1		933			933	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	7	1094	0.006	6	0.0	0.0	3.830	A
			2	D	547	1094	0.500	547	0.6	0.7	5.186	A
			3	D,A	540	1094	0.494	541	0.5	0.7	5.200	A
		2	1	(D,B,C)	547			547	0.0	0.0	0.008	A
			2	(D,A)	546			546	0.0	0.0	0.007	A
	Exit	1	1		2326			2326	0.0	0.0	0.000	A
B	Entry	1	1	C	20	679	0.030	20	0.0	0.1	5.999	A
			2	D,A	487	679	0.718	489	1.0	1.6	11.086	B
			3	A,B	476	679	0.701	479	0.8	1.5	11.186	B
		2	1	(D,A,C)	496			495	0.0	0.2	1.047	A
			2	(A,B)	488			488	0.0	0.2	1.051	A
	Exit	1	1		19			19	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	34	601	0.057	35	0.0	0.0	6.676	A
	Exit	1	1		80			80	0.0	0.0	0.000	A
D	Entry	1	1	A	671	720	0.933	669	1.8	3.3	15.462	C
			2	A,B	686	720	0.953	684	1.9	3.3	15.287	C
			3	D,C	54	720	0.075	54	0.1	0.1	5.707	A
		2	1	(A,B)	1366			1357	0.7	8.5	15.768	C
			2	(D,C)	54			54	0.0	0.0	0.000	A
	Exit	1	1		1100			1100	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	8	1087	0.007	8	0.0	0.0	3.705	A
			2	D	652	1087	0.600	649	0.7	1.3	6.261	A
			3	D,A	667	1087	0.614	666	0.7	1.1	6.249	A
		2	1	(D,B,C)	666			666	0.0	0.0	0.046	A
			2	(D,A)	661			661	0.0	0.0	0.039	A
	Exit	1	1		2472			2472	0.0	0.0	0.000	A
B	Entry	1	1	C	23	592	0.039	23	0.1	0.1	6.954	A
			2	D,A	574	592	0.969	572	1.6	3.6	19.962	C
			3	A,B	559	592	0.944	558	1.5	3.5	19.895	C
		2	1	(D,A,C)	612			582	0.2	7.9	26.084	D
			2	(A,B)	607			574	0.2	7.7	25.821	D
	Exit	1	1		22			22	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	39	394	0.100	40	0.0	0.1	10.634	B
	Exit	1	1		99			99	0.0	0.0	0.000	A
D	Entry	1	1	A	667	660	1.011	667	3.3	3.9	20.636	C
			2	A,B	672	660	1.019	671	3.3	3.9	20.291	C
			3	D,C	68	660	0.103	68	0.1	0.1	6.638	A
		2	1	(A,B)	1658			1338	8.5	89.6	132.038	F
			2	(D,C)	68			68	0.0	0.0	0.025	A
	Exit	1	1		1329			1329	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	8	1086	0.007	8	0.0	0.0	3.560	A
			2	D	661	1086	0.609	664	1.3	1.1	6.470	A
			3	D,A	668	1086	0.615	668	1.1	1.2	6.391	A
		2	1	(D,B,C)	667			666	0.0	0.0	0.041	A
			2	(D,A)	671			671	0.0	0.0	0.045	A
	Exit	1	1		2462			2462	0.0	0.0	0.000	A
B	Entry	1	1	C	24	586	0.042	25	0.1	0.0	6.905	A
			2	D,A	569	586	0.971	568	3.6	3.6	22.162	C
			3	A,B	566	586	0.966	566	3.5	3.6	22.534	C
		2	1	(D,A,C)	608			595	7.9	11.8	60.454	F
			2	(A,B)	580			564	7.7	11.9	63.705	F
	Exit	1	1		23			23	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	40	383	0.105	40	0.1	0.1	11.851	B
	Exit	1	1		101			101	0.0	0.0	0.000	A
D	Entry	1	1	A	664	658	1.009	663	3.9	3.9	21.329	C
			2	A,B	661	658	1.005	661	3.9	3.9	21.359	C
			3	D,C	68	658	0.104	69	0.1	0.1	6.729	A
		2	1	(A,B)	1680			1324	89.6	180.6	372.032	F
			2	(D,C)	68			68	0.0	0.0	0.064	A
	Exit	1	1		1344			1344	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	6	1094	0.005	6	0.0	0.0	3.453	A
			2	D	543	1094	0.496	543	1.1	0.9	5.161	A
			3	D,A	543	1094	0.496	542	1.2	0.9	5.230	A
		2	1	(D,B,C)	542			542	0.0	0.0	0.003	A
			2	(D,A)	550			550	0.0	0.0	0.003	A
	Exit	1	1		2402			2402	0.0	0.0	0.000	A
B	Entry	1	1	C	22	681	0.032	22	0.0	0.0	6.637	A
			2	D,A	490	681	0.719	494	3.6	1.6	15.762	C
			3	A,B	493	681	0.725	496	3.6	1.6	15.559	C
		2	1	(D,A,C)	489			506	11.8	0.5	23.994	C
			2	(A,B)	482			499	11.9	0.4	24.470	C
	Exit	1	1		18			18	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	34	591	0.058	34	0.1	0.0	8.678	A
	Exit	1	1		82			82	0.0	0.0	0.000	A
D	Entry	1	1	A	714	712	1.003	714	3.9	3.9	20.841	C
			2	A,B	693	712	0.974	693	3.9	3.9	20.794	C
			3	D,C	53	712	0.075	54	0.1	0.1	6.532	A
		2	1	(A,B)	1365			1408	180.6	185.5	481.389	F
			2	(D,C)	53			53	0.0	0.0	0.005	A
	Exit	1	1		1097			1097	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	6	1099	0.005	6	0.0	0.0	3.852	A
			2	D	448	1099	0.408	449	0.9	0.6	4.703	A
			3	D,A	454	1099	0.414	454	0.9	0.6	4.678	A
		2	1	(D,B,C)	458			458	0.0	0.0	0.001	A
			2	(D,A)	450			450	0.0	0.0	0.001	A
	Exit	1	1		2356			2356	0.0	0.0	0.000	A
B	Entry	1	1	C	19	749	0.025	19	0.0	0.0	5.961	A
			2	D,A	399	749	0.533	400	1.6	0.9	8.500	A
			3	A,B	405	749	0.540	405	1.6	0.9	8.414	A
		2	1	(D,A,C)	422			422	0.5	0.0	0.298	A
			2	(A,B)	400			400	0.4	0.0	0.311	A
	Exit	1	1		16			16	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	29	786	0.037	29	0.0	0.0	5.446	A
	Exit	1	1		70			70	0.0	0.0	0.000	A
D	Entry	1	1	A	767	781	0.982	768	3.9	3.8	18.267	C
			2	A,B	776	781	0.994	779	3.9	3.7	18.118	C
			3	D,C	45	781	0.058	46	0.1	0.1	5.821	A
		2	1	(A,B)	1135			1543	185.5	90.0	329.438	F
			2	(D,C)	45			45	0.0	0.0	0.000	A
	Exit	1	1		913			913	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 5 - 2016 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 5\ARCADY\Issue 2
Report generation date: 25/10/2016 10:58:24

«M20 Junction 5 - 2016, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 5 [Lane Simulation] - 2016			
Arm A	69.3	90.82		F
Arm B	130.1	548.90		F
Arm C	0.8	30.45		D
Arm D	6.4	16.82		C

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

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

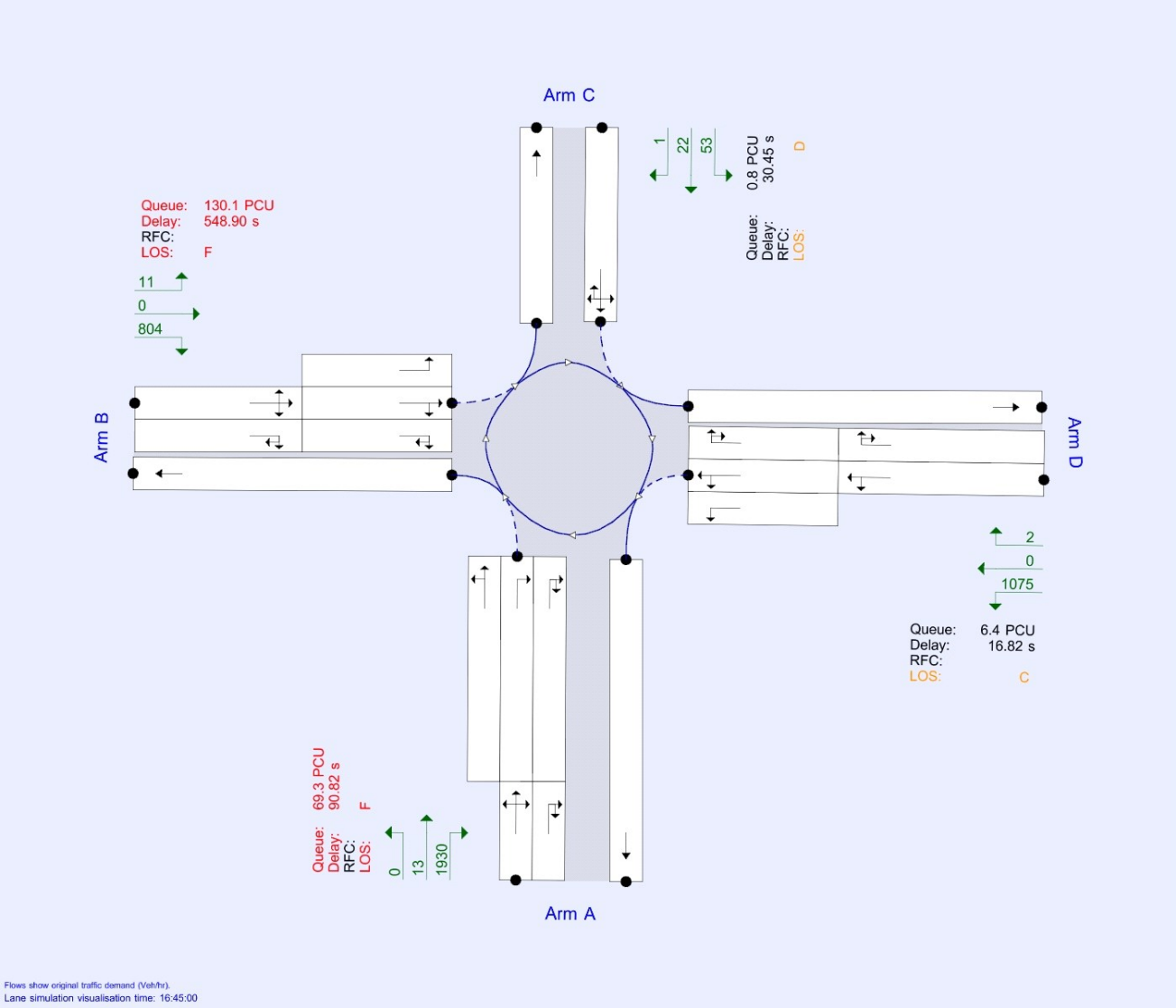
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	155173296	400	150.56

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 5	✓	✓	100.000	100.000

M20 Junction 5 - 2016, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 5 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 5	Large Roundabout	A,B,C,D	164.87	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road A20	
B	M20 West	
C	Coldharbour Lane	
D	M20 East	

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
A	7.10	8.10	30.0	45.5	125.0	14.0	
B	7.25	10.50	22.0	30.0	194.0	20.0	
C	4.25	4.25	0.0	20.0	125.0	25.0	
D	7.25	10.00	14.5	30.0	194.0	16.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	3	50.00
B	1945	155.00
C	2734	0.00
D	827	132.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.266	3389
B	0.890	3099
C	0.432	1542
D	1.138	3287

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C	✓	6.00	0	99999
		2	D	✓	6.00	0	99999
		3	D,A	✓	6.00	0	99999
	2	1	(D,B,C)		Infinity		
		2	(D,A)		Infinity		
B	1 [Give-way line]	1	C	✓	4.00	0	99999
		2	D,A	✓	4.00	0	99999
		3	A,B	✓	4.00	0	99999
	2	1	(D,A,C)		Infinity		
		2	(A,B)		Infinity		
C	1 [Give-way line]	1	D,A,B,C		Infinity	0	99999
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A,B	✓	4.00	0	99999
		3	D,C	✓	4.00	0	99999
	2	1	(A,B)		Infinity		
		2	(D,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.422	1130
		2	0.422	1130
		3	0.422	1130
B	1 [Give-way line]	1	0.297	1033
		2	0.297	1033
		3	0.297	1033
C	1 [Give-way line]	1	0.432	1542
D	1 [Give-way line]	1	0.379	1096
		2	0.379	1096
		3	0.379	1096

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓	✓	
		3	✓			✓
	2	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1			✓	✓
		2	✓			
		3	✓	✓		
	2	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1				✓
		2	✓	✓		
		3		✓	✓	
	2	1	✓	✓		✓
		2		✓	✓	
C	1 [Give-way line]	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1943	100.000
B		ONE HOUR	✓	815	100.000
C		ONE HOUR	✓	76	100.000
D		ONE HOUR	✓	1077	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	13	1930
	B	804	0	11	0
	C	22	1	0	53
	D	1075	0	2	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.01	0.99
	B	0.99	0.00	0.01	0.00
	C	0.29	0.01	0.00	0.70
	D	1.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	10	10	10	10
	B	10	10	10	10
	C	10	10	10	10
	D	10	10	10	10

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.100	1.100	1.100	1.100
	B	1.100	1.100	1.100	1.100
	C	1.100	1.100	1.100	1.100
	D	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	1463	1609
	B	614	675
	C	57	63
	D	811	892
17:00-17:15	A	1747	1921
	B	733	806
	C	68	75
	D	968	1065
17:15-17:30	A	2139	2353
	B	897	987
	C	84	92
	D	1186	1304
17:30-17:45	A	2139	2353
	B	897	987
	C	84	92
	D	1186	1304
17:45-18:00	A	1747	1921
	B	733	806
	C	68	75
	D	968	1065
18:00-18:15	A	1463	1609
	B	614	675
	C	57	63
	D	811	892

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	90.82	69.3	F	1965	2947
B	548.90	130.1	F	824	1237
C	30.45	0.8	D	77	116
D	16.82	6.4	C	1086	1629

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1610	402	2	1613	1587	0.0	3.5	7.739	A
B	680	170	1614	677	0.57	0.0	2.5	10.589	B
C	63	16	2270	63	21	0.0	0.1	6.813	A
D	901	225	687	903	1646	0.0	1.9	6.662	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1924	481	3	1913	1870	3.5	7.9	12.883	B
B	803	201	1915	795	0.90	2.5	8.0	26.795	D
C	74	19	2684	74	25	0.1	0.3	12.561	B
D	1062	265	807	1066	1951	1.9	3.0	9.797	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2353	588	4	2252	2066	7.9	43.7	47.155	E
B	978	245	2254	750	2	8.0	60.3	164.426	F
C	93	23	2976	93	28	0.3	0.7	24.309	C
D	1306	326	768	1302	2300	3.0	6.4	16.820	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2359	590	3	2248	2068	43.7	69.3	90.823	F
B	994	248	2250	745	2	60.3	124.6	456.361	F
C	92	23	2967	93	28	0.7	0.8	30.448	D
D	1306	326	763	1308	2298	6.4	6.1	16.247	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1932	483	2	2057	1894	69.3	18.8	62.440	F
B	813	203	2058	830	0.75	124.6	130.1	548.898	F
C	76	19	2861	75	28	0.8	0.5	22.200	C
D	1059	265	841	1056	2096	6.1	3.5	10.668	B

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1611	403	2	1612	1925	18.8	3.6	11.829	B
B	678	170	1613	1037	1	130.1	46.5	284.499	F
C	65	16	2624	65	26	0.5	0.3	13.775	B
D	883	221	1043	885	1646	3.5	2.8	10.454	B

Lane Results

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

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	11	1129	0.010	11	0.0	0.0	3.606	A
			2	D	806	1129	0.714	806	0.0	1.7	7.525	A
			3	D,A	793	1129	0.703	795	0.0	1.7	7.476	A
		2	1	(D,B,C)	808			809	0.0	0.0	0.265	A
			2	(D,A)	801			802	0.0	0.0	0.264	A
	Exit	1	1		1587			1587	0.0	0.0	0.000	A
B	Entry	1	1	C	8	554	0.015	8	0.0	0.0	6.039	A
			2	D,A	337	554	0.608	336	0.0	1.1	10.346	B
			3	A,B	334	554	0.603	333	0.0	1.2	10.285	B
		2	1	(D,A,C)	343			343	0.0	0.1	0.310	A
			2	(A,B)	336			336	0.0	0.1	0.329	A
	Exit	1	1		0.57			0.57	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	63	562	0.112	63	0.0	0.1	6.813	A
	Exit	1	1		21			21	0.0	0.0	0.000	A
D	Entry	1	1	A	449	835	0.538	449	0.0	0.9	6.601	A
			2	A,B	450	835	0.539	452	0.0	0.9	6.505	A
			3	D,C	1	835	0.002	2	0.0	0.0	3.825	A
		2	1	(A,B)	899			899	0.0	0.1	0.112	A
			2	(D,C)	1			1	0.0	0.0	0.000	A
	Exit	1	1		1646			1646	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	12	1128	0.011	12	0.0	0.0	3.673	A
			2	D	954	1128	0.846	952	1.7	3.1	10.628	B
			3	D,A	950	1128	0.842	949	1.7	3.0	10.629	B
		2	1	(D,B,C)	970			967	0.0	0.9	2.274	A
			2	(D,A)	954			950	0.0	0.9	2.273	A
	Exit	1	1		1870			1870	0.0	0.0	0.000	A
B	Entry	1	1	C	11	465	0.024	11	0.0	0.0	8.437	A
			2	D,A	395	465	0.849	393	1.1	2.5	19.531	C
			3	A,B	392	465	0.844	390	1.2	2.6	19.733	C
		2	1	(D,A,C)	402			398	0.1	1.5	7.052	A
			2	(A,B)	402			400	0.1	1.4	7.235	A
	Exit	1	1		0.90			0.90	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	74	383	0.194	74	0.1	0.3	12.561	B
	Exit	1	1		25			25	0.0	0.0	0.000	A
D	Entry	1	1	A	529	790	0.670	530	0.9	1.4	9.050	A
			2	A,B	533	790	0.675	534	0.9	1.4	8.998	A
			3	D,C	2	790	0.002	2	0.0	0.0	4.697	A
		2	1	(A,B)	1060			1062	0.1	0.2	0.779	A
			2	(D,C)	2			2	0.0	0.0	0.000	A
	Exit	1	1		1951			1951	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1128	0.013	15	0.0	0.0	3.404	A
			2	D	1128	1128	1.000	1127	3.1	5.7	16.874	C
			3	D,A	1112	1128	0.986	1110	3.0	5.7	17.112	C
		2	1	(D,B,C)	1180			1131	0.9	16.3	30.157	D
			2	(D,A)	1173			1124	0.9	16.0	30.168	D
	Exit	1	1		2066			2066	0.0	0.0	0.000	A
B	Entry	1	1	C	11	364	0.030	11	0.0	0.1	11.659	B
			2	D,A	367	364	1.008	367	2.5	3.9	34.297	D
			3	A,B	373	364	1.024	372	2.6	3.9	34.446	D
		2	1	(D,A,C)	503			390	1.5	26.1	127.757	F
			2	(A,B)	476			361	1.4	26.3	130.774	F
	Exit	1	1		2			2	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	93	257	0.363	93	0.3	0.7	24.309	C
	Exit	1	1		28			28	0.0	0.0	0.000	A
D	Entry	1	1	A	653	804	0.812	653	1.4	2.3	12.084	B
			2	A,B	649	804	0.807	647	1.4	2.3	12.122	B
			3	D,C	2	804	0.003	3	0.0	0.0	5.400	A
		2	1	(A,B)	1303			1302	0.2	1.8	4.709	A
			2	(D,C)	2			2	0.0	0.0	0.000	A
	Exit	1	1		2300			2300	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	16	1128	0.014	15	0.0	0.0	3.852	A
			2	D	1115	1128	0.989	1114	5.7	5.8	18.416	C
			3	D,A	1119	1128	0.992	1118	5.7	5.8	18.432	C
		2	1	(D,B,C)	1190			1136	16.3	28.8	72.561	F
			2	(D,A)	1170			1114	16.0	28.9	72.394	F
	Exit	1	1		2068			2068	0.0	0.0	0.000	A
B	Entry	1	1	C	11	365	0.029	11	0.1	0.0	11.257	B
			2	D,A	367	365	1.005	368	3.9	3.9	38.959	E
			3	A,B	367	365	1.005	367	3.9	3.9	39.025	E
		2	1	(D,A,C)	499			375	26.1	58.3	420.444	F
			2	(A,B)	495			371	26.3	58.4	417.182	F
	Exit	1	1		2			2	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	92	260	0.354	93	0.7	0.8	30.448	D
	Exit	1	1		28			28	0.0	0.0	0.000	A
D	Entry	1	1	A	651	806	0.807	651	2.3	2.2	11.696	B
			2	A,B	654	806	0.812	655	2.3	2.2	11.688	B
			3	D,C	2	806	0.002	2	0.0	0.0	5.106	A
		2	1	(A,B)	1304			1305	1.8	1.7	4.578	A
			2	(D,C)	2			2	0.0	0.0	0.000	A
	Exit	1	1		2298			2298	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1129	0.013	15	0.0	0.0	3.790	A
			2	D	1016	1129	0.900	1021	5.8	3.9	15.910	C
			3	D,A	1016	1129	0.900	1021	5.8	3.9	15.869	C
		2	1	(D,B,C)	971			1029	28.8	5.5	47.218	E
			2	(D,A)	961			1017	28.9	5.5	46.586	E
	Exit	1	1		1894			1894	0.0	0.0	0.000	A
B	Entry	1	1	C	12	422	0.028	12	0.0	0.0	11.043	B
			2	D,A	405	422	0.960	405	3.9	3.9	36.258	E
			3	A,B	413	422	0.979	413	3.9	3.9	36.068	E
		2	1	(D,A,C)	417			424	58.3	61.1	513.603	F
			2	(A,B)	396			406	58.4	61.1	522.323	F
	Exit	1	1		0.75			0.75	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	76	306	0.247	75	0.8	0.5	22.200	C
	Exit	1	1		28			28	0.0	0.0	0.000	A
D	Entry	1	1	A	526	777	0.677	525	2.2	1.6	9.620	A
			2	A,B	530	777	0.682	529	2.2	1.6	9.560	A
			3	D,C	2	777	0.002	2	0.0	0.0	4.917	A
		2	1	(A,B)	1057			1056	1.7	0.3	1.131	A
			2	(D,C)	2			2	0.0	0.0	0.000	A
	Exit	1	1		2096			2096	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	10	1129	0.009	10	0.0	0.0	3.563	A
			2	D	800	1129	0.709	800	3.9	1.6	8.716	A
			3	D,A	801	1129	0.710	801	3.9	1.7	8.675	A
		2	1	(D,B,C)	820			821	5.5	0.1	3.383	A
			2	(D,A)	791			792	5.5	0.1	3.486	A
	Exit	1	1		1925			1925	0.0	0.0	0.000	A
B	Entry	1	1	C	14	554	0.026	14	0.0	0.0	8.166	A
			2	D,A	505	554	0.910	511	3.9	3.1	26.323	D
			3	A,B	505	554	0.910	512	3.9	3.1	26.473	D
		2	1	(D,A,C)	359			527	61.1	20.3	251.952	F
			2	(A,B)	319			497	61.1	20.0	267.412	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	65	409	0.158	65	0.5	0.3	13.775	B
	Exit	1	1		26			26	0.0	0.0	0.000	A
D	Entry	1	1	A	442	700	0.631	442	1.6	1.3	9.678	A
			2	A,B	440	700	0.629	442	1.6	1.3	9.697	A
			3	D,C	1	700	0.002	1	0.0	0.0	5.764	A
		2	1	(A,B)	881			882	0.3	0.2	0.790	A
			2	(D,C)	1			1	0.0	0.0	0.000	A
	Exit	1	1		1646			1646	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

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Report generation date: 25/10/2016 11:03:12

«M20 Junction 5 - 2031, AM
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Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 5 [Lane Simulation] - 2031			
Arm A	3.2	7.19		A
Arm B	94.3	231.63		F
Arm C	0.2	12.84		B
Arm D	326.2	803.71		F

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

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

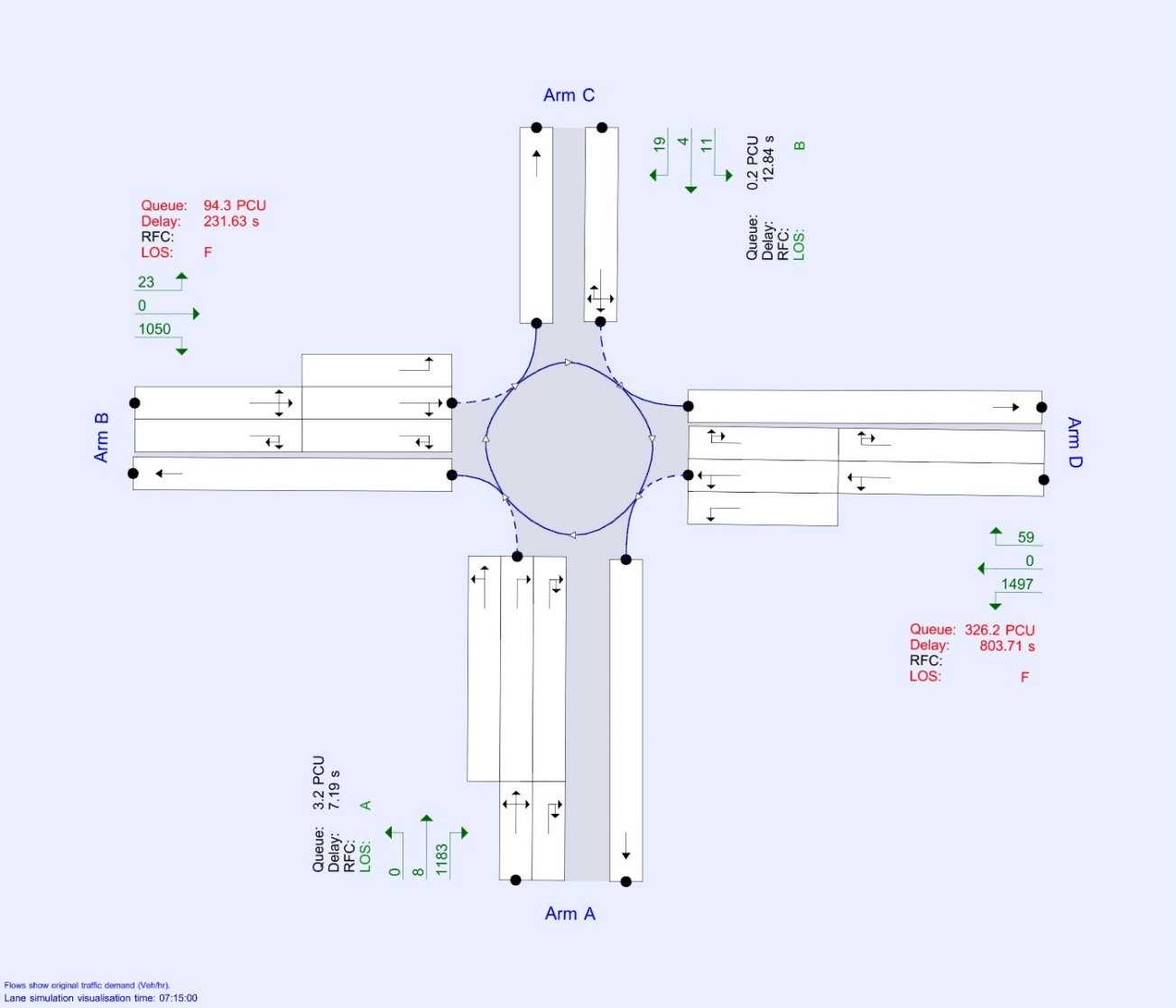
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1169090444	364	124.55

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 5	✓	✓	100.000	100.000

M20 Junction 5 - 2031, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 5 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 5	Large Roundabout	A,B,C,D	391.31	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road A20	
B	M20 West	
C	Coldharbour Lane	
D	M20 East	

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
A	7.10	8.10	30.0	45.5	125.0	14.0	
B	7.25	10.50	22.0	30.0	194.0	20.0	
C	4.25	4.25	0.0	20.0	125.0	25.0	
D	7.25	10.00	14.5	30.0	194.0	16.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	78	50.00
B	1250	155.00
C	2233	0.00
D	1073	132.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.249	3372
B	1.060	3260
C	0.508	1658
D	1.079	3230

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C	✓	6.00	0	99999
		2	D	✓	6.00	0	99999
		3	D,A	✓	6.00	0	99999
	2	1	(D,B,C)		Infinity		
		2	(D,A)		Infinity		
B	1 [Give-way line]	1	C	✓	4.00	0	99999
		2	D,A	✓	4.00	0	99999
		3	A,B	✓	4.00	0	99999
	2	1	(D,A,C)		Infinity		
		2	(A,B)		Infinity		
C	1 [Give-way line]	1	D,A,B,C		Infinity	0	99999
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A,B	✓	4.00	0	99999
		3	D,C	✓	4.00	0	99999
	2	1	(A,B)		Infinity		
		2	(D,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.416	1124
		2	0.416	1124
		3	0.416	1124
B	1 [Give-way line]	1	0.353	1087
		2	0.353	1087
		3	0.353	1087
C	1 [Give-way line]	1	0.508	1658
D	1 [Give-way line]	1	0.360	1077
		2	0.360	1077
		3	0.360	1077

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓	✓	
		3	✓			✓
	2	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1			✓	✓
		2	✓			
		3	✓	✓		
	2	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1				✓
		2	✓	✓		
		3		✓	✓	
	2	1	✓	✓		✓
		2		✓	✓	
C	1 [Give-way line]	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2031	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1191	100.000
B		ONE HOUR	✓	1073	100.000
C		ONE HOUR	✓	34	100.000
D		ONE HOUR	✓	1556	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	8	1183
	B	1050	0	23	0
	C	4	19	0	11
	D	1497	0	59	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.01	0.99
	B	0.98	0.00	0.02	0.00
	C	0.12	0.56	0.00	0.32
	D	0.96	0.00	0.04	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	10	10	10	10
	B	10	10	10	10
	C	10	10	10	10
	D	10	10	10	10

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.100	1.100	1.100	1.100
	B	1.100	1.100	1.100	1.100
	C	1.100	1.100	1.100	1.100
	D	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	897	986
	B	808	889
	C	26	28
	D	1171	1289
07:30-07:45	A	1071	1178
	B	965	1061
	C	31	34
	D	1399	1539
07:45-08:00	A	1311	1442
	B	1181	1300
	C	37	41
	D	1713	1885
08:00-08:15	A	1311	1442
	B	1181	1300
	C	37	41
	D	1713	1885
08:15-08:30	A	1071	1178
	B	965	1061
	C	31	34
	D	1399	1539
08:30-08:45	A	897	986
	B	808	889
	C	26	28
	D	1171	1289

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	7.19	3.2	A	1202	1804
B	231.63	94.3	F	1081	1622
C	12.84	0.2	B	35	52
D	803.71	326.2	F	1571	2356

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	993	248	65	992	2120	0.0	1.4	4.803	A
B	894	224	1040	897	17	0.0	2.2	8.397	A
C	29	7	1864	30	73	0.0	0.0	4.696	A
D	1296	324	900	1286	994	0.0	7.1	14.119	B

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1181	295	78	1179	2393	1.4	1.9	5.539	A
B	1053	263	1237	1051	19	2.2	6.1	17.499	C
C	34	9	2200	34	88	0.0	0.1	7.642	A
D	1539	385	1053	1418	1182	7.1	37.7	58.491	F

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1431	358	93	1433	2457	1.9	3.0	7.029	A
B	1294	323	1502	1126	23	6.1	49.7	93.219	F
C	42	10	2524	41	104	0.1	0.2	12.311	B
D	1893	473	1130	1421	1435	37.7	154.5	248.225	F

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1451	363	97	1449	2453	3.0	3.2	7.191	A
B	1298	325	1522	1127	24	49.7	94.3	231.633	F
C	43	11	2540	43	108	0.2	0.2	12.844	B
D	1881	470	1131	1419	1452	154.5	270.9	561.782	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1178	295	76	1179	2484	3.2	1.9	5.670	A
B	1064	266	1237	1272	19	94.3	44.9	195.808	F
C	33	8	2415	32	94	0.2	0.1	10.988	B
D	1526	381	1266	1293	1181	270.9	326.2	803.709	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	980	245	67	983	2369	1.9	1.3	4.776	A
B	885	221	1034	933	16	44.9	3.2	41.647	E
C	28	7	1889	28	78	0.1	0.0	7.267	A
D	1290	322	931	1505	985	326.2	297.5	643.341	F

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	7	1097	0.006	7	0.0	0.0	3.602	A
			2	D	494	1097	0.451	494	0.0	0.7	4.823	A
			3	D,A	492	1097	0.448	492	0.0	0.7	4.796	A
		2	1	(D,B,C)	499			499	0.0	0.0	0.003	A
			2	(D,A)	494			494	0.0	0.0	0.002	A
	Exit	1	1		2120			2120	0.0	0.0	0.000	A
B	Entry	1	1	C	19	719	0.026	18	0.0	0.0	5.541	A
			2	D,A	438	719	0.609	439	0.0	1.0	8.183	A
			3	A,B	438	719	0.609	440	0.0	1.1	8.163	A
		2	1	(D,A,C)	458			458	0.0	0.0	0.261	A
			2	(A,B)	436			436	0.0	0.0	0.295	A
	Exit	1	1		17			17	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	29	712	0.041	30	0.0	0.0	4.696	A
	Exit	1	1		73			73	0.0	0.0	0.000	A
D	Entry	1	1	A	621	753	0.825	620	0.0	2.3	11.003	B
			2	A,B	620	753	0.824	618	0.0	2.4	11.170	B
			3	D,C	48	753	0.064	48	0.0	0.1	5.328	A
		2	1	(A,B)	1248			1241	0.0	2.3	3.314	A
			2	(D,C)	48			48	0.0	0.0	0.000	A
	Exit	1	1		994			994	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	8	1092	0.007	8	0.0	0.0	3.529	A
			2	D	585	1092	0.536	584	0.7	0.9	5.536	A
			3	D,A	588	1092	0.539	587	0.7	0.9	5.534	A
		2	1	(D,B,C)	595			595	0.0	0.0	0.016	A
			2	(D,A)	586			586	0.0	0.0	0.014	A
	Exit	1	1		2393			2393	0.0	0.0	0.000	A
B	Entry	1	1	C	22	649	0.034	22	0.0	0.0	6.427	A
			2	D,A	516	649	0.795	516	1.0	2.2	13.805	B
			3	A,B	513	649	0.790	513	1.1	2.2	13.894	B
		2	1	(D,A,C)	543			542	0.0	0.8	3.663	A
			2	(A,B)	511			509	0.0	0.9	3.862	A
	Exit	1	1		19			19	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	34	541	0.063	34	0.0	0.1	7.642	A
	Exit	1	1		88			88	0.0	0.0	0.000	A
D	Entry	1	1	A	685	698	0.981	683	2.3	3.7	17.986	C
			2	A,B	677	698	0.970	676	2.4	3.7	17.973	C
			3	D,C	59	698	0.084	58	0.1	0.1	6.125	A
		2	1	(A,B)	1480			1362	2.3	30.1	42.428	E
			2	(D,C)	59			59	0.0	0.0	0.017	A
	Exit	1	1		1182			1182	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	10	1085	0.009	10	0.0	0.0	3.788	A
			2	D	714	1085	0.658	715	0.9	1.5	6.949	A
			3	D,A	706	1085	0.650	708	0.9	1.4	6.927	A
		2	1	(D,B,C)	727			727	0.0	0.1	0.108	A
			2	(D,A)	703			703	0.0	0.0	0.111	A
	Exit	1	1		2457			2457	0.0	0.0	0.000	A
B	Entry	1	1	C	25	556	0.045	25	0.0	0.1	7.785	A
			2	D,A	550	556	0.990	549	2.2	3.9	23.252	C
			3	A,B	553	556	0.995	552	2.2	3.9	23.088	C
		2	1	(D,A,C)	667			582	0.8	21.0	69.514	F
			2	(A,B)	626			546	0.9	20.8	70.617	F
	Exit	1	1		23			23	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	42	376	0.111	41	0.1	0.2	12.311	B
	Exit	1	1		104			104	0.0	0.0	0.000	A
D	Entry	1	1	A	678	670	1.012	678	3.7	3.9	20.808	C
			2	A,B	672	670	1.003	673	3.7	3.9	20.926	C
			3	D,C	70	670	0.104	70	0.1	0.2	6.435	A
		2	1	(A,B)	1823			1350	30.1	146.5	236.650	F
			2	(D,C)	70			70	0.0	0.0	0.011	A
	Exit	1	1		1435			1435	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	10	1083	0.009	10	0.0	0.0	3.642	A
			2	D	716	1083	0.661	715	1.5	1.6	7.107	A
			3	D,A	725	1083	0.669	724	1.4	1.6	7.000	A
		2	1	(D,B,C)	734			734	0.1	0.1	0.164	A
			2	(D,A)	717			717	0.0	0.0	0.158	A
	Exit	1	1		2453			2453	0.0	0.0	0.000	A
B	Entry	1	1	C	25	549	0.046	25	0.1	0.0	8.097	A
			2	D,A	550	549	1.002	550	3.9	3.9	25.606	D
			3	A,B	551	549	1.004	551	3.9	3.9	25.603	D
		2	1	(D,A,C)	649			564	21.0	43.1	205.805	F
			2	(A,B)	649			562	20.8	43.2	208.095	F
	Exit	1	1		24			24	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	43	368	0.118	43	0.2	0.2	12.844	B
	Exit	1	1		108			108	0.0	0.0	0.000	A
D	Entry	1	1	A	673	670	1.005	672	3.9	3.9	21.043	C
			2	A,B	674	670	1.006	674	3.9	3.9	20.973	C
			3	D,C	73	670	0.109	73	0.2	0.1	6.698	A
		2	1	(A,B)	1808			1346	146.5	262.9	562.644	F
			2	(D,C)	73			73	0.0	0.0	0.004	A
	Exit	1	1		1452			1452	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	9	1092	0.008	9	0.0	0.0	3.787	A
			2	D	583	1092	0.534	583	1.6	1.0	5.653	A
			3	D,A	586	1092	0.537	587	1.6	0.9	5.675	A
		2	1	(D,B,C)	598			599	0.1	0.0	0.023	A
			2	(D,A)	580			580	0.0	0.0	0.024	A
	Exit	1	1		2484			2484	0.0	0.0	0.000	A
B	Entry	1	1	C	27	650	0.042	27	0.0	0.0	6.604	A
			2	D,A	621	650	0.956	624	3.9	3.4	21.671	C
			3	A,B	616	650	0.949	620	3.9	3.4	21.709	C
		2	1	(D,A,C)	537			635	43.1	19.1	175.061	F
			2	(A,B)	527			630	43.2	18.9	175.196	F
	Exit	1	1		19			19	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	33	432	0.075	32	0.2	0.1	10.988	B
	Exit	1	1		94			94	0.0	0.0	0.000	A
D	Entry	1	1	A	625	621	1.007	625	3.9	3.9	22.276	C
			2	A,B	611	621	0.983	611	3.9	3.9	22.502	C
			3	D,C	58	621	0.094	58	0.1	0.2	6.982	A
		2	1	(A,B)	1467			1236	262.9	318.2	815.340	F
			2	(D,C)	58			58	0.0	0.0	0.015	A
	Exit	1	1		1181			1181	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	6	1096	0.006	6	0.0	0.0	3.557	A
			2	D	489	1096	0.446	490	1.0	0.7	4.788	A
			3	D,A	486	1096	0.443	487	0.9	0.6	4.778	A
		2	1	(D,B,C)	493			493	0.0	0.0	0.001	A
			2	(D,A)	488			488	0.0	0.0	0.001	A
	Exit	1	1		2369			2369	0.0	0.0	0.000	A
B	Entry	1	1	C	21	721	0.029	21	0.0	0.0	6.091	A
			2	D,A	448	721	0.620	452	3.4	1.2	13.816	B
			3	A,B	457	721	0.633	460	3.4	1.2	13.716	B
		2	1	(D,A,C)	453			473	19.1	0.5	28.244	D
			2	(A,B)	432			453	18.9	0.4	29.842	D
	Exit	1	1		16			16	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	28	699	0.040	28	0.1	0.0	7.267	A
	Exit	1	1		78			78	0.0	0.0	0.000	A
D	Entry	1	1	A	730	742	0.985	731	3.9	3.9	20.571	C
			2	A,B	724	742	0.976	723	3.9	3.9	20.681	C
			3	D,C	51	742	0.069	51	0.2	0.1	6.378	A
		2	1	(A,B)	1238			1454	318.2	289.6	730.618	F
			2	(D,C)	51			51	0.0	0.0	0.005	A
	Exit	1	1		985			985	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 5 - 2031 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 5\ARCADY\Issue 2
Report generation date: 25/10/2016 11:08:46

«M20 Junction 5 - 2031, PM
- »Junction Network
- »Arms
- »Traffic Demand
- »Origin-Destination Data
- »Vehicle Mix
- »Detailed Demand Data
- »Results
- »Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 5 [Lane Simulation] - 2031			
Arm A	148.2	196.09		F
Arm B	188.8	787.88		F
Arm C	0.7	22.76		C
Arm D	11.0	27.37		D

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

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

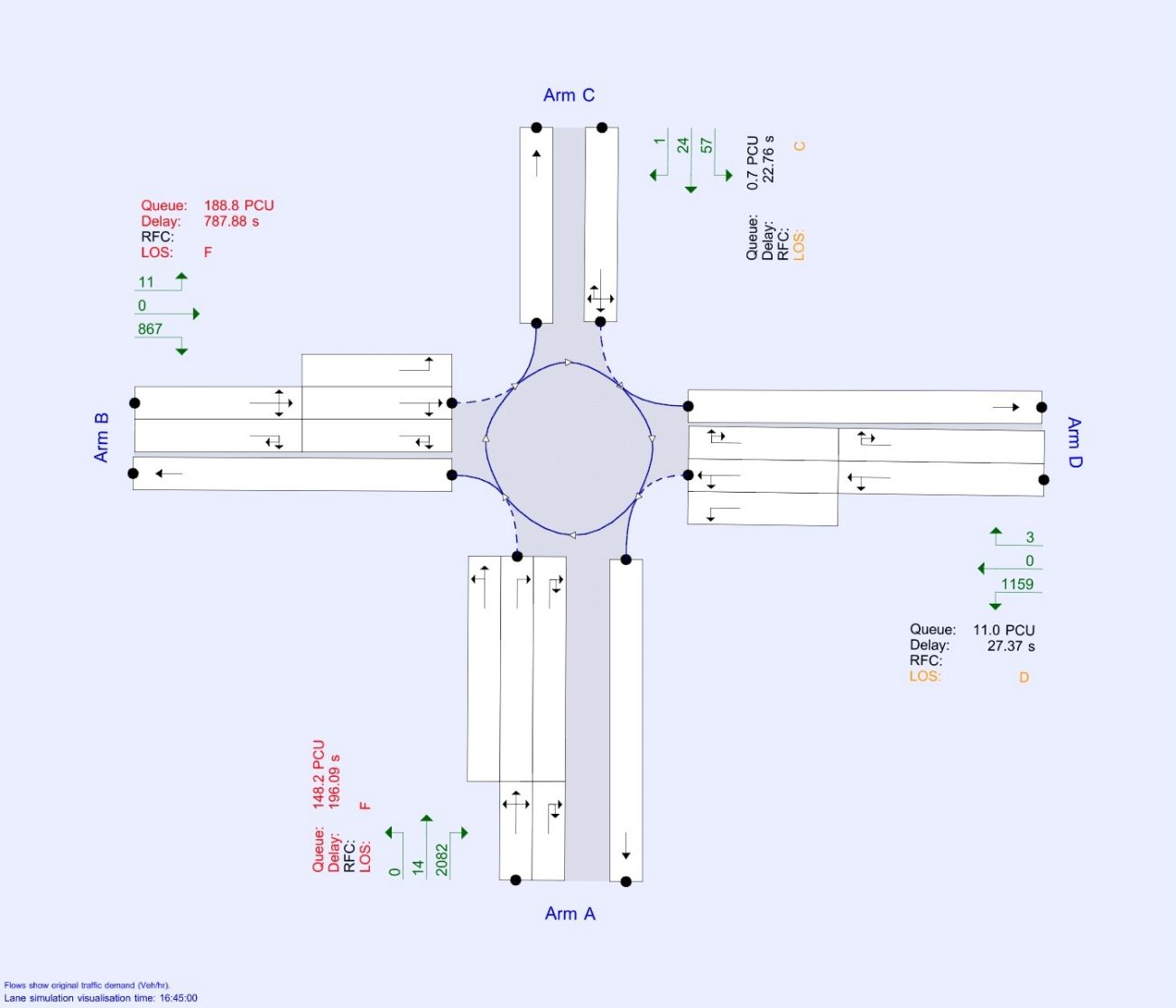
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1876723717	374	160.48

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 5	✓	✓	100.000	100.000

M20 Junction 5 - 2031, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 5 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 5	Large Roundabout	A,B,C,D	269.69	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road A20	
B	M20 West	
C	Coldharbour Lane	
D	M20 East	

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
A	7.10	8.10	30.0	45.5	125.0	14.0	
B	7.25	10.50	22.0	30.0	194.0	20.0	
C	4.25	4.25	0.0	20.0	125.0	25.0	
D	7.25	10.00	14.5	30.0	194.0	16.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	4	50.00
B	2099	155.00
C	2949	0.00
D	892	132.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.266	3389
B	0.852	3063
C	0.399	1492
D	1.123	3272

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C	✓	6.00	0	99999
		2	D	✓	6.00	0	99999
		3	D,A	✓	6.00	0	99999
	2	1	(D,B,C)		Infinity		
		2	(D,A)		Infinity		
B	1 [Give-way line]	1	C	✓	4.00	0	99999
		2	D,A	✓	4.00	0	99999
		3	A,B	✓	4.00	0	99999
	2	1	(D,A,C)		Infinity		
		2	(A,B)		Infinity		
C	1 [Give-way line]	1	D,A,B,C		Infinity	0	99999
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A,B	✓	4.00	0	99999
		3	D,C	✓	4.00	0	99999
	2	1	(A,B)		Infinity		
		2	(D,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.422	1130
		2	0.422	1130
		3	0.422	1130
B	1 [Give-way line]	1	0.284	1021
		2	0.284	1021
		3	0.284	1021
C	1 [Give-way line]	1	0.399	1492
D	1 [Give-way line]	1	0.374	1091
		2	0.374	1091
		3	0.374	1091

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓	✓	
		3	✓			✓
	2	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1			✓	✓
		2	✓			
		3	✓	✓		
	2	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1				✓
		2	✓	✓		
		3		✓	✓	
	2	1	✓	✓		✓
		2		✓	✓	
C	1 [Give-way line]	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2031	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	2096	100.000
B		ONE HOUR	✓	878	100.000
C		ONE HOUR	✓	82	100.000
D		ONE HOUR	✓	1162	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	14	2082
	B	867	0	11	0
	C	24	1	0	57
	D	1159	0	3	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.01	0.99
	B	0.99	0.00	0.01	0.00
	C	0.29	0.01	0.00	0.70
	D	1.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	10	10	10	10
	B	10	10	10	10
	C	10	10	10	10
	D	10	10	10	10

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.100	1.100	1.100	1.100
	B	1.100	1.100	1.100	1.100
	C	1.100	1.100	1.100	1.100
	D	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	1578	1736
	B	661	727
	C	62	68
	D	875	962
17:00-17:15	A	1884	2073
	B	789	868
	C	74	81
	D	1045	1149
17:15-17:30	A	2308	2539
	B	967	1063
	C	90	99
	D	1279	1407
17:30-17:45	A	2308	2539
	B	967	1063
	C	90	99
	D	1279	1407
17:45-18:00	A	1884	2073
	B	789	868
	C	74	81
	D	1045	1149
18:00-18:15	A	1578	1736
	B	661	727
	C	62	68
	D	875	962

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	196.09	148.2	F	2115	3172
B	787.88	188.8	F	888	1332
C	22.76	0.7	C	83	125
D	27.37	11.0	D	1172	1758

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1752	438	3	1753	1693	0.0	4.6	9.175	A
B	728	182	1756	727	0.71	0.0	3.5	12.912	B
C	68	17	2460	68	22	0.0	0.2	7.470	A
D	956	239	737	959	1791	0.0	2.2	7.365	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2063	516	4	2061	1977	4.6	12.0	18.663	C
B	865	216	2063	825	1	3.5	16.5	47.823	E
C	83	21	2862	82	27	0.2	0.4	14.405	B
D	1144	286	842	1139	2102	2.2	4.3	11.797	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2529	632	4	2280	2189	12.0	80.4	77.500	F
B	1063	266	2283	766	1	16.5	85.7	240.393	F
C	100	25	3020	99	29	0.4	0.7	22.179	C
D	1407	352	785	1408	2333	4.3	11.0	25.967	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2552	638	5	2260	2199	80.4	148.2	181.877	F
B	1075	269	2264	760	1	85.7	162.2	593.931	F
C	98	25	2996	100	28	0.7	0.6	22.761	C
D	1419	355	781	1423	2315	11.0	11.0	27.373	D

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2058	514	5	2243	1925	148.2	99.6	196.095	F
B	866	216	2247	770	1	162.2	188.8	787.883	F
C	83	21	2987	85	29	0.6	0.4	21.613	C
D	1146	287	786	1144	2287	11.0	3.9	14.248	B

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1736	434	4	1938	1878	99.6	18.4	80.675	F
B	732	183	1940	912	1	188.8	158.2	605.896	F
C	69	17	2826	70	26	0.4	0.3	17.451	C
D	960	240	923	959	1974	3.9	2.8	9.466	A

Lane Results

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

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	11	1128	0.010	11	0.0	0.0	3.536	A
			2	D	869	1128	0.771	869	0.0	2.2	8.644	A
			3	D,A	872	1128	0.773	873	0.0	2.1	8.668	A
		2	1	(D,B,C)	878			878	0.0	0.2	0.544	A
			2	(D,A)	875			874	0.0	0.2	0.546	A
	Exit	1	1		1693			1693	0.0	0.0	0.000	A
B	Entry	1	1	C	9	522	0.017	9	0.0	0.0	6.679	A
			2	D,A	362	522	0.694	363	0.0	1.5	12.026	B
			3	A,B	355	522	0.680	355	0.0	1.5	12.106	B
		2	1	(D,A,C)	370			369	0.0	0.2	0.880	A
			2	(A,B)	358			358	0.0	0.2	0.873	A
	Exit	1	1		0.71			0.71	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	68	510	0.134	68	0.0	0.2	7.470	A
	Exit	1	1		22			22	0.0	0.0	0.000	A
D	Entry	1	1	A	476	815	0.585	478	0.0	1.0	7.161	A
			2	A,B	477	815	0.586	479	0.0	1.1	7.170	A
			3	D,C	2	815	0.003	2	0.0	0.0	5.189	A
		2	1	(A,B)	953			954	0.0	0.1	0.204	A
			2	(D,C)	2			2	0.0	0.0	0.000	A
	Exit	1	1		1791			1791	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1128	0.013	15	0.0	0.0	3.550	A
			2	D	1021	1128	0.905	1021	2.2	3.8	13.014	B
			3	D,A	1025	1128	0.909	1025	2.1	3.8	12.947	B
		2	1	(D,B,C)	1040			1040	0.2	2.2	5.662	A
			2	(D,A)	1023			1021	0.2	2.2	5.741	A
	Exit	1	1		1977			1977	0.0	0.0	0.000	A
B	Entry	1	1	C	10	435	0.022	9	0.0	0.1	9.234	A
			2	D,A	406	435	0.934	404	1.5	3.3	24.563	C
			3	A,B	415	435	0.955	412	1.5	3.3	24.610	C
		2	1	(D,A,C)	433			417	0.2	5.0	23.149	C
			2	(A,B)	432			414	0.2	4.9	22.883	C
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	83	349	0.236	82	0.2	0.4	14.405	B
	Exit	1	1		27			27	0.0	0.0	0.000	A
D	Entry	1	1	A	570	775	0.735	569	1.0	1.8	10.340	B
			2	A,B	569	775	0.734	568	1.1	1.8	10.343	B
			3	D,C	3	775	0.004	3	0.0	0.0	4.983	A
		2	1	(A,B)	1141			1140	0.1	0.7	1.453	A
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2102			2102	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	16	1128	0.014	16	0.0	0.0	3.574	A
			2	D	1139	1128	1.010	1139	3.8	5.9	17.958	C
			3	D,A	1125	1128	0.998	1125	3.8	5.9	17.992	C
		2	1	(D,B,C)	1283			1159	2.2	34.3	59.632	F
			2	(D,A)	1246			1122	2.2	34.3	59.389	F
	Exit	1	1		2189			2189	0.0	0.0	0.000	A
B	Entry	1	1	C	10	372	0.027	10	0.1	0.0	11.244	B
			2	D,A	376	372	1.009	376	3.3	3.9	35.479	E
			3	A,B	380	372	1.021	380	3.3	3.9	35.575	E
		2	1	(D,A,C)	534			387	5.0	38.8	204.681	F
			2	(A,B)	529			379	4.9	39.0	204.198	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	100	286	0.349	99	0.4	0.7	22.179	C
	Exit	1	1		29			29	0.0	0.0	0.000	A
D	Entry	1	1	A	702	797	0.880	702	1.8	2.7	14.000	B
			2	A,B	703	797	0.882	703	1.8	2.7	14.011	B
			3	D,C	3	797	0.004	3	0.0	0.0	5.295	A
		2	1	(A,B)	1404			1404	0.7	5.6	11.964	B
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2333			2333	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	16	1128	0.014	16	0.0	0.0	3.691	A
			2	D	1123	1128	0.996	1123	5.9	5.9	18.897	C
			3	D,A	1122	1128	0.995	1121	5.9	6.0	18.982	C
		2	1	(D,B,C)	1264			1118	34.3	68.2	164.612	F
			2	(D,A)	1288			1143	34.3	68.1	161.458	F
	Exit	1	1		2199			2199	0.0	0.0	0.000	A
B	Entry	1	1	C	9	378	0.025	9	0.0	0.0	11.332	B
			2	D,A	377	378	0.997	377	3.9	3.9	37.676	E
			3	A,B	375	378	0.992	374	3.9	3.9	37.858	E
		2	1	(D,A,C)	534			376	38.8	77.2	553.052	F
			2	(A,B)	541			384	39.0	77.1	560.336	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	98	296	0.332	100	0.7	0.6	22.761	C
	Exit	1	1		28			28	0.0	0.0	0.000	A
D	Entry	1	1	A	711	798	0.891	711	2.7	2.7	13.910	B
			2	A,B	708	798	0.887	708	2.7	2.7	13.902	B
			3	D,C	4	798	0.005	4	0.0	0.0	4.512	A
		2	1	(A,B)	1416			1419	5.6	5.6	13.531	B
			2	(D,C)	4			4	0.0	0.0	0.000	A
	Exit	1	1		2315			2315	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1128	0.013	15	0.0	0.0	3.616	A
			2	D	1116	1128	0.990	1118	5.9	5.6	18.645	C
			3	D,A	1108	1128	0.983	1110	6.0	5.7	18.616	C
		2	1	(D,B,C)	1035			1128	68.2	44.0	179.587	F
			2	(D,A)	1023			1112	68.1	44.2	175.724	F
	Exit	1	1		1925			1925	0.0	0.0	0.000	A
B	Entry	1	1	C	10	383	0.027	11	0.0	0.0	11.698	B
			2	D,A	377	383	0.984	377	3.9	4.0	37.836	E
			3	A,B	382	383	0.999	382	3.9	4.0	37.307	E
		2	1	(D,A,C)	446			401	77.2	90.2	742.553	F
			2	(A,B)	419			369	77.1	90.6	769.545	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	83	299	0.277	85	0.6	0.4	21.613	C
	Exit	1	1		29			29	0.0	0.0	0.000	A
D	Entry	1	1	A	578	797	0.726	576	2.7	1.7	10.626	B
			2	A,B	565	797	0.709	565	2.7	1.7	10.787	B
			3	D,C	4	797	0.004	4	0.0	0.0	5.084	A
		2	1	(A,B)	1143			1143	5.6	0.5	3.685	A
			2	(D,C)	4			4	0.0	0.0	0.000	A
	Exit	1	1		2287			2287	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	13	1128	0.011	13	0.0	0.0	3.425	A
			2	D	949	1128	0.841	960	5.6	3.1	15.457	C
			3	D,A	954	1128	0.846	965	5.7	3.1	15.515	C
		2	1	(D,B,C)	860			953	44.0	6.1	65.510	F
			2	(D,A)	875			963	44.2	6.0	65.711	F
	Exit	1	1		1878			1878	0.0	0.0	0.000	A
B	Entry	1	1	C	10	470	0.022	11	0.0	0.0	9.744	A
			2	D,A	451	470	0.961	451	4.0	4.0	33.486	D
			3	A,B	450	470	0.959	450	4.0	3.9	33.303	D
		2	1	(D,A,C)	374			466	90.2	75.0	581.272	F
			2	(A,B)	358			446	90.6	75.3	581.961	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	69	364	0.189	70	0.4	0.3	17.451	C
	Exit	1	1		26			26	0.0	0.0	0.000	A
D	Entry	1	1	A	480	745	0.644	480	1.7	1.3	8.896	A
			2	A,B	476	745	0.639	476	1.7	1.3	8.858	A
			3	D,C	3	745	0.004	3	0.0	0.0	5.337	A
		2	1	(A,B)	957			956	0.5	0.2	0.628	A
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		1974			1974	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 5- Dev Scenario 1 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 5\ARCADY\Issue 2
Report generation date: 25/10/2016 11:17:51

«M20 Junction 5 - Dev Scenario 1, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 5 [Lane Simulation] - Dev Scenario 1			
Arm A	3.1	7.31		A
Arm B	111.9	275.36		F
Arm C	0.2	13.27		B
Arm D	347.4	854.27		F

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

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

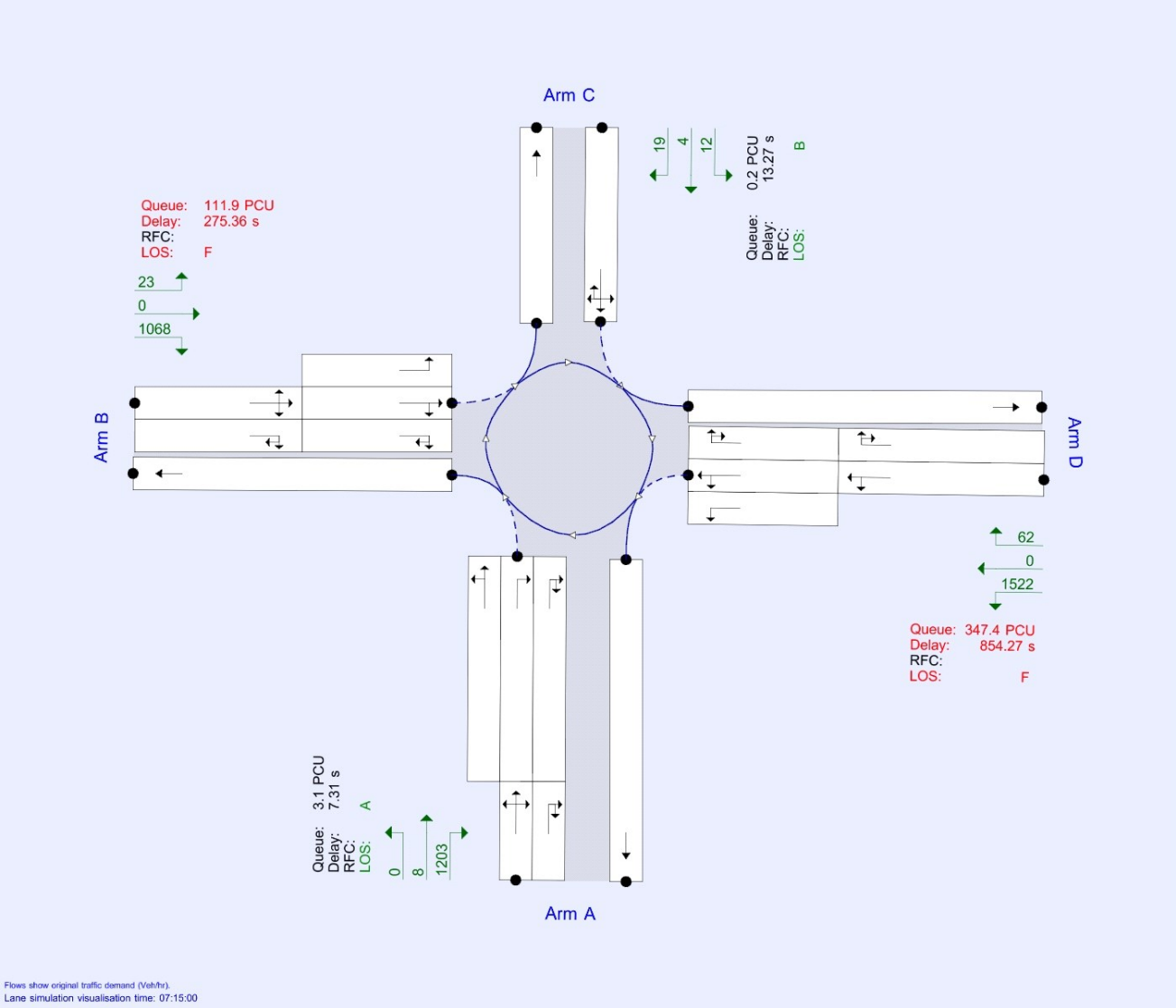
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	819442685	990	346.37

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 5	✓	✓	100.000	100.000

M20 Junction 5 - Dev Scenario 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 5 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 5	Large Roundabout	A,B,C,D	424.11	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road A20	
B	M20 West	
C	Coldharbour Lane	
D	M20 East	

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
A	7.10	8.10	30.0	45.5	125.0	14.0	
B	7.25	10.50	22.0	30.0	194.0	20.0	
C	4.25	4.25	0.0	20.0	125.0	25.0	
D	7.25	10.00	14.5	30.0	194.0	16.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	79	50.00
B	1271	155.00
C	2271	0.00
D	1091	132.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.249	3371
B	1.055	3255
C	0.502	1649
D	1.075	3226

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C	✓	6.00	0	99999
		2	D	✓	6.00	0	99999
		3	D,A	✓	6.00	0	99999
	2	1	(D,B,C)		Infinity		
		2	(D,A)		Infinity		
B	1 [Give-way line]	1	C	✓	4.00	0	99999
		2	D,A	✓	4.00	0	99999
		3	A,B	✓	4.00	0	99999
	2	1	(D,A,C)		Infinity		
		2	(A,B)		Infinity		
C	1 [Give-way line]	1	D,A,B,C		Infinity	0	99999
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A,B	✓	4.00	0	99999
		3	D,C	✓	4.00	0	99999
	2	1	(A,B)		Infinity		
		2	(D,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.416	1124
		2	0.416	1124
		3	0.416	1124
B	1 [Give-way line]	1	0.352	1085
		2	0.352	1085
		3	0.352	1085
C	1 [Give-way line]	1	0.502	1649
D	1 [Give-way line]	1	0.358	1075
		2	0.358	1075
		3	0.358	1075

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓	✓	
		3	✓			✓
	2	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1			✓	✓
		2	✓			
		3	✓	✓		
	2	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1				✓
		2	✓	✓		
		3		✓	✓	
	2	1	✓	✓		✓
		2		✓	✓	
C	1 [Give-way line]	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Dev Scenario 1	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1211	100.000
B		ONE HOUR	✓	1091	100.000
C		ONE HOUR	✓	35	100.000
D		ONE HOUR	✓	1584	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	8	1203
	B	1068	0	23	0
	C	4	19	0	12
	D	1522	0	62	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.01	0.99
	B	0.98	0.00	0.02	0.00
	C	0.11	0.54	0.00	0.34
	D	0.96	0.00	0.04	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	10	10	10	10
	B	10	10	10	10
	C	10	10	10	10
	D	10	10	10	10

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.100	1.100	1.100	1.100
	B	1.100	1.100	1.100	1.100
	C	1.100	1.100	1.100	1.100
	D	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	912	1003
	B	821	903
	C	26	29
	D	1193	1312
07:30-07:45	A	1089	1198
	B	981	1079
	C	31	35
	D	1424	1566
07:45-08:00	A	1333	1467
	B	1201	1321
	C	39	42
	D	1744	1918
08:00-08:15	A	1333	1467
	B	1201	1321
	C	39	42
	D	1744	1918
08:15-08:30	A	1089	1198
	B	981	1079
	C	31	35
	D	1424	1566
08:30-08:45	A	912	1003
	B	821	903
	C	26	29
	D	1193	1312

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	7.31	3.1	A	1222	1833
B	275.36	111.9	F	1100	1649
C	13.27	0.2	B	35	53
D	854.27	347.4	F	1598	2397

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1000	250	67	1000	2150	0.0	1.4	4.841	A
B	902	226	1051	905	16	0.0	2.5	8.801	A
C	29	7	1879	29	77	0.0	0.1	5.110	A
D	1313	328	905	1312	1003	0.0	7.0	15.137	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1196	299	79	1196	2421	1.4	2.0	5.586	A
B	1075	269	1256	1072	18	2.5	6.8	19.048	C
C	34	9	2237	34	91	0.1	0.1	7.916	A
D	1563	391	1072	1428	1200	7.0	43.1	66.274	F

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1457	364	99	1456	2433	2.0	3.0	7.235	A
B	1323	331	1532	1103	23	6.8	58.1	105.721	F
C	42	10	2526	42	108	0.1	0.2	12.583	B
D	1917	479	1107	1424	1461	43.1	164.3	267.318	F

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1468	367	97	1468	2435	3.0	3.1	7.315	A
B	1323	331	1541	1109	24	58.1	111.9	275.365	F
C	42	11	2544	43	106	0.2	0.1	13.266	B
D	1920	480	1114	1418	1473	164.3	287.2	590.636	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1206	301	81	1206	2485	3.1	2.0	5.704	A
B	1075	269	1268	1288	19	111.9	65.1	253.034	F
C	34	9	2460	34	97	0.1	0.1	10.929	B
D	1569	392	1284	1282	1210	287.2	347.4	854.267	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1005	251	68	1005	2368	2.0	1.5	4.896	A
B	899	225	1057	1007	16	65.1	5.6	69.582	F
C	29	7	1983	29	80	0.1	0.1	8.316	A
D	1305	326	1005	1431	1008	347.4	338.3	662.254	F

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	6	1096	0.006	7	0.0	0.0	3.570	A
			2	D	497	1096	0.454	497	0.0	0.7	4.846	A
			3	D,A	496	1096	0.453	496	0.0	0.7	4.846	A
		2	1	(D,B,C)	504			504	0.0	0.0	0.003	A
			2	(D,A)	496			496	0.0	0.0	0.004	A
	Exit	1	1		2150			2150	0.0	0.0	0.000	A
B	Entry	1	1	C	19	715	0.026	19	0.0	0.0	5.157	A
			2	D,A	441	715	0.616	442	0.0	1.1	8.450	A
			3	A,B	443	715	0.619	444	0.0	1.2	8.470	A
		2	1	(D,A,C)	456			456	0.0	0.1	0.395	A
			2	(A,B)	446			447	0.0	0.1	0.411	A
	Exit	1	1		16			16	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	29	706	0.042	29	0.0	0.1	5.110	A
	Exit	1	1		77			77	0.0	0.0	0.000	A
D	Entry	1	1	A	631	751	0.840	631	0.0	2.3	11.358	B
			2	A,B	629	751	0.837	629	0.0	2.3	11.412	B
			3	D,C	51	751	0.068	51	0.0	0.1	5.316	A
		2	1	(A,B)	1262			1259	0.0	2.3	4.103	A
			2	(D,C)	51			51	0.0	0.0	0.001	A
	Exit	1	1		1003			1003	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	8	1091	0.007	8	0.0	0.0	3.482	A
			2	D	594	1091	0.544	595	0.7	1.0	5.581	A
			3	D,A	594	1091	0.544	593	0.7	1.0	5.583	A
		2	1	(D,B,C)	604			604	0.0	0.0	0.017	A
			2	(D,A)	592			592	0.0	0.0	0.018	A
	Exit	1	1		2421			2421	0.0	0.0	0.000	A
B	Entry	1	1	C	23	643	0.035	23	0.0	0.0	6.403	A
			2	D,A	525	643	0.816	524	1.1	2.3	14.394	B
			3	A,B	527	643	0.820	526	1.2	2.3	14.324	B
		2	1	(D,A,C)	544			543	0.1	1.1	4.802	A
			2	(A,B)	532			532	0.1	1.0	4.797	A
	Exit	1	1		18			18	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	34	526	0.065	34	0.1	0.1	7.916	A
	Exit	1	1		91			91	0.0	0.0	0.000	A
D	Entry	1	1	A	683	691	0.988	683	2.3	3.8	18.585	C
			2	A,B	685	691	0.991	685	2.3	3.8	18.563	C
			3	D,C	61	691	0.088	60	0.1	0.1	6.237	A
		2	1	(A,B)	1502			1368	2.3	35.4	49.949	E
			2	(D,C)	61			61	0.0	0.0	0.002	A
	Exit	1	1		1200			1200	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	10	1083	0.009	10	0.0	0.0	3.640	A
			2	D	727	1083	0.671	727	1.0	1.4	7.107	A
			3	D,A	720	1083	0.665	720	1.0	1.5	7.160	A
		2	1	(D,B,C)	734			734	0.0	0.0	0.123	A
			2	(D,A)	723			723	0.0	0.0	0.122	A
	Exit	1	1		2433			2433	0.0	0.0	0.000	A
B	Entry	1	1	C	23	546	0.042	23	0.0	0.0	7.848	A
			2	D,A	537	546	0.983	536	2.3	3.9	23.853	C
			3	A,B	544	546	0.996	543	2.3	3.9	23.745	C
		2	1	(D,A,C)	662			553	1.1	25.2	81.985	F
			2	(A,B)	661			551	1.0	25.1	81.763	F
	Exit	1	1		23			23	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	42	381	0.109	42	0.1	0.2	12.583	B
	Exit	1	1		108			108	0.0	0.0	0.000	A
D	Entry	1	1	A	672	678	0.990	672	3.8	3.9	20.814	C
			2	A,B	677	678	0.998	677	3.8	3.9	20.721	C
			3	D,C	76	678	0.111	76	0.1	0.1	6.604	A
		2	1	(A,B)	1841			1349	35.4	156.4	257.238	F
			2	(D,C)	76			76	0.0	0.0	0.009	A
	Exit	1	1		1461			1461	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	9	1084	0.009	9	0.0	0.0	3.693	A
			2	D	729	1084	0.673	730	1.4	1.5	7.198	A
			3	D,A	729	1084	0.673	730	1.5	1.5	7.218	A
		2	1	(D,B,C)	736			737	0.0	0.0	0.128	A
			2	(D,A)	732			732	0.0	0.0	0.134	A
	Exit	1	1		2435			2435	0.0	0.0	0.000	A
B	Entry	1	1	C	25	543	0.045	24	0.0	0.1	8.291	A
			2	D,A	544	543	1.001	544	3.9	3.9	26.101	D
			3	A,B	541	543	0.996	541	3.9	3.9	26.056	D
		2	1	(D,A,C)	666			560	25.2	52.0	248.139	F
			2	(A,B)	657			549	25.1	52.0	252.772	F
	Exit	1	1		24			24	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	42	372	0.114	43	0.2	0.1	13.266	B
	Exit	1	1		106			106	0.0	0.0	0.000	A
D	Entry	1	1	A	673	676	0.995	673	3.9	3.9	20.851	C
			2	A,B	672	676	0.994	672	3.9	3.9	20.800	C
			3	D,C	73	676	0.108	73	0.1	0.1	6.656	A
		2	1	(A,B)	1848			1345	156.4	279.2	592.282	F
			2	(D,C)	73			73	0.0	0.0	0.020	A
	Exit	1	1		1473			1473	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	8	1090	0.007	8	0.0	0.0	3.698	A
			2	D	599	1090	0.549	600	1.5	1.0	5.694	A
			3	D,A	599	1090	0.550	599	1.5	1.0	5.696	A
		2	1	(D,B,C)	609			610	0.0	0.0	0.023	A
			2	(D,A)	596			596	0.0	0.0	0.023	A
	Exit	1	1		2485			2485	0.0	0.0	0.000	A
B	Entry	1	1	C	27	639	0.042	27	0.1	0.0	7.317	A
			2	D,A	629	639	0.985	631	3.9	3.7	22.363	C
			3	A,B	627	639	0.982	630	3.9	3.7	22.295	C
		2	1	(D,A,C)	548			653	52.0	28.9	230.661	F
			2	(A,B)	527			630	52.0	28.8	232.938	F
	Exit	1	1		19			19	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	34	415	0.082	34	0.1	0.1	10.929	B
	Exit	1	1		97			97	0.0	0.0	0.000	A
D	Entry	1	1	A	610	615	0.991	610	3.9	3.9	22.237	C
			2	A,B	611	615	0.992	611	3.9	3.9	22.246	C
			3	D,C	62	615	0.100	62	0.1	0.1	7.156	A
		2	1	(A,B)	1508			1220	279.2	339.5	868.951	F
			2	(D,C)	62			62	0.0	0.0	0.020	A
	Exit	1	1		1210			1210	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	6	1095	0.006	6	0.0	0.0	3.623	A
			2	D	502	1095	0.458	501	1.0	0.7	4.903	A
			3	D,A	497	1095	0.454	497	1.0	0.7	4.898	A
		2	1	(D,B,C)	507			507	0.0	0.0	0.004	A
			2	(D,A)	497			497	0.0	0.0	0.003	A
	Exit	1	1		2368			2368	0.0	0.0	0.000	A
B	Entry	1	1	C	22	713	0.031	22	0.0	0.0	6.136	A
			2	D,A	490	713	0.687	497	3.7	1.5	15.765	C
			3	A,B	483	713	0.677	488	3.7	1.5	15.857	C
		2	1	(D,A,C)	468			515	28.9	1.3	54.545	F
			2	(A,B)	431			480	28.8	1.3	55.243	F
	Exit	1	1		16			16	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	29	654	0.045	29	0.1	0.1	8.316	A
	Exit	1	1		80			80	0.0	0.0	0.000	A
D	Entry	1	1	A	691	715	0.966	691	3.9	3.9	21.615	C
			2	A,B	689	715	0.963	688	3.9	3.9	21.593	C
			3	D,C	52	715	0.073	52	0.1	0.1	6.697	A
		2	1	(A,B)	1253			1379	339.5	330.4	781.556	F
			2	(D,C)	52			52	0.0	0.0	0.015	A
	Exit	1	1		1008			1008	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 5 - Dev Scenario 1 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 5\ARCADY\Issue 2
Report generation date: 25/10/2016 11:22:08

«M20 Junction 5 - Dev Scenario 1, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 5 [Lane Simulation] - Dev Scenario 1			
Arm A	173.1	243.82		F
Arm B	198.8	833.52		F
Arm C	0.7	23.27		C
Arm D	13.2	31.23		D

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

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

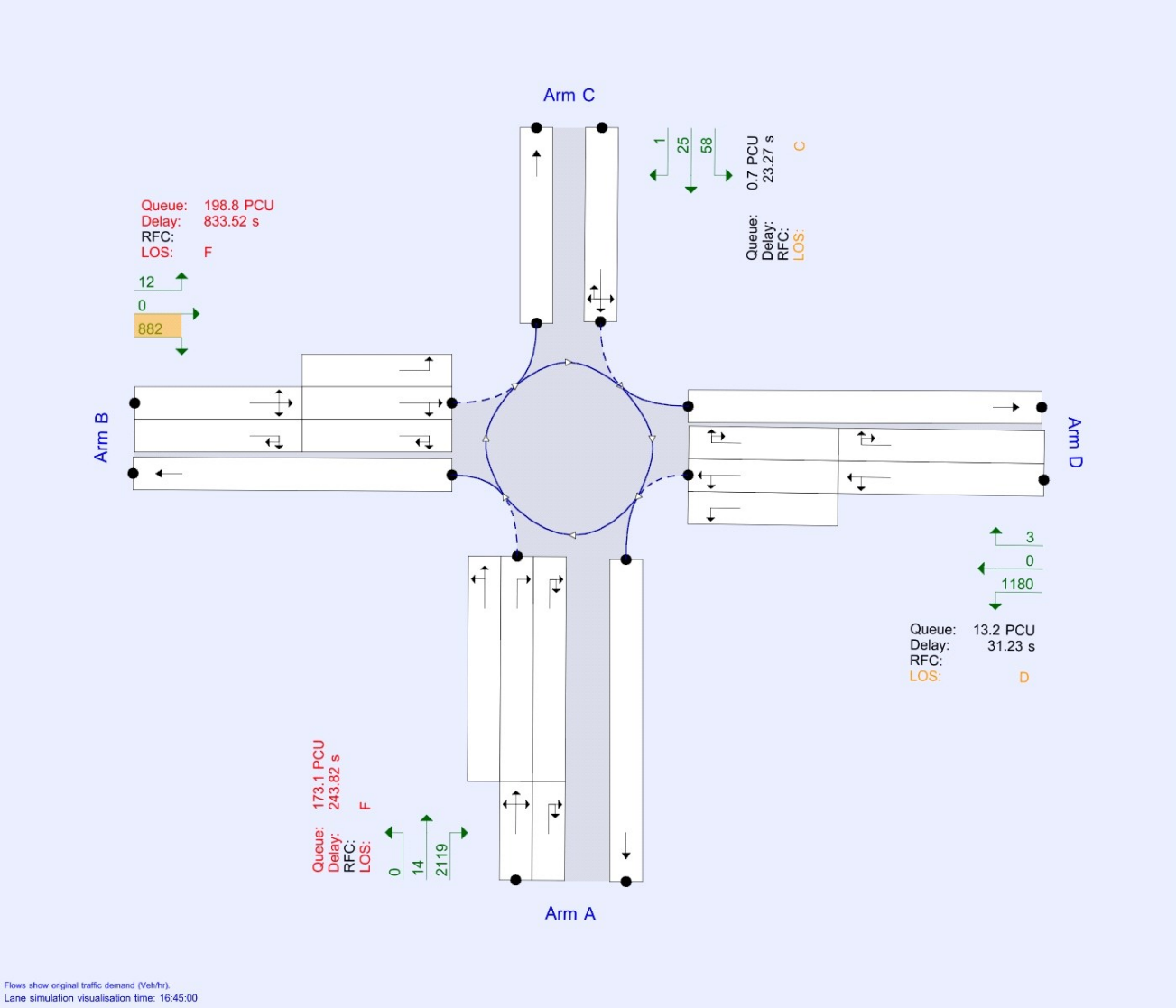
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1698872542	316	135.65

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 5	✓	✓	100.000	100.000

M20 Junction 5 - Dev Scenario 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 5 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 5	Large Roundabout	A,B,C,D	303.77	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road A20	
B	M20 West	
C	Coldharbour Lane	
D	M20 East	

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
A	7.10	8.10	30.0	45.5	125.0	14.0	
B	7.25	10.50	22.0	30.0	194.0	20.0	
C	4.25	4.25	0.0	20.0	125.0	25.0	
D	7.25	10.00	14.5	30.0	194.0	16.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	4	50.00
B	2136	155.00
C	3001	0.00
D	908	132.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.266	3389
B	0.843	3054
C	0.391	1480
D	1.119	3268

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C	✓	6.00	0	99999
		2	D	✓	6.00	0	99999
		3	D,A	✓	6.00	0	99999
	2	1	(D,B,C)		Infinity		
		2	(D,A)		Infinity		
B	1 [Give-way line]	1	C	✓	4.00	0	99999
		2	D,A	✓	4.00	0	99999
		3	A,B	✓	4.00	0	99999
	2	1	(D,A,C)		Infinity		
		2	(A,B)		Infinity		
C	1 [Give-way line]	1	D,A,B,C		Infinity	0	99999
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A,B	✓	4.00	0	99999
		3	D,C	✓	4.00	0	99999
	2	1	(A,B)		Infinity		
		2	(D,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.422	1130
		2	0.422	1130
		3	0.422	1130
B	1 [Give-way line]	1	0.281	1018
		2	0.281	1018
		3	0.281	1018
C	1 [Give-way line]	1	0.391	1480
D	1 [Give-way line]	1	0.373	1089
		2	0.373	1089
		3	0.373	1089

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓	✓	
		3	✓			✓
	2	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1			✓	✓
		2	✓			
		3	✓	✓		
	2	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1				✓
		2	✓	✓		
		3		✓	✓	
	2	1	✓	✓		✓
		2		✓	✓	
C	1 [Give-way line]	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	Dev Scenario 1	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	2133	100.000
B		ONE HOUR	✓	894	100.000
C		ONE HOUR	✓	84	100.000
D		ONE HOUR	✓	1183	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	14	2119
	B	882	0	12	0
	C	25	1	0	58
	D	1180	0	3	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.01	0.99
	B	0.99	0.00	0.01	0.00
	C	0.30	0.01	0.00	0.69
	D	1.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	10	10	10	10
	B	10	10	10	10
	C	10	10	10	10
	D	10	10	10	10

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.100	1.100	1.100	1.100
	B	1.100	1.100	1.100	1.100
	C	1.100	1.100	1.100	1.100
	D	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	1606	1766
	B	673	740
	C	63	70
	D	891	980
17:00-17:15	A	1918	2109
	B	804	884
	C	76	83
	D	1063	1170
17:15-17:30	A	2348	2583
	B	984	1083
	C	92	102
	D	1303	1433
17:30-17:45	A	2348	2583
	B	984	1083
	C	92	102
	D	1303	1433
17:45-18:00	A	1918	2109
	B	804	884
	C	76	83
	D	1063	1170
18:00-18:15	A	1606	1766
	B	673	740
	C	63	70
	D	891	980

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	243.82	173.1	F	2155	3233
B	833.52	198.8	F	902	1354
C	23.27	0.7	C	85	127
D	31.23	13.2	D	1193	1789

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1771	443	3	1772	1724	0.0	4.9	9.496	A
B	736	184	1775	734	0.87	0.0	3.7	13.537	B
C	70	18	2485	71	24	0.0	0.2	7.874	A
D	985	246	745	982	1810	0.0	2.6	7.672	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2095	524	4	2086	2020	4.9	14.8	21.115	C
B	881	220	2090	838	0.72	3.7	18.6	53.504	F
C	83	21	2900	81	27	0.2	0.5	15.813	C
D	1172	293	852	1172	2129	2.6	4.3	13.006	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2586	647	4	2262	2221	14.8	95.7	90.433	F
B	1087	272	2266	769	1	18.6	92.1	256.252	F
C	101	25	3005	102	29	0.5	0.6	21.868	C
D	1437	359	789	1437	2318	4.3	13.2	28.479	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2575	644	5	2283	2207	95.7	173.1	215.378	F
B	1073	268	2286	761	1	92.1	169.7	621.255	F
C	101	25	3020	100	27	0.6	0.7	23.265	C
D	1409	352	782	1430	2338	13.2	11.7	31.226	D

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2122	530	3	2273	1961	173.1	134.8	243.823	F
B	891	223	2275	767	0.84	169.7	198.8	833.517	F
C	83	21	3012	84	30	0.7	0.4	21.698	C
D	1182	295	780	1184	2316	11.7	4.2	15.501	C

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1781	445	3	2076	1824	134.8	34.0	120.962	F
B	747	187	2078	846	0.80	198.8	184.4	659.220	F
C	71	18	2896	71	28	0.4	0.4	17.855	C
D	971	243	856	971	2111	4.2	2.8	9.121	A

Lane Results

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

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	11	1128	0.010	11	0.0	0.0	3.767	A
			2	D	880	1128	0.780	878	0.0	2.3	8.785	A
			3	D,A	882	1128	0.782	882	0.0	2.2	8.779	A
		2	1	(D,B,C)	895			895	0.0	0.3	0.735	A
			2	(D,A)	877			878	0.0	0.2	0.742	A
	Exit	1	1		1724			1724	0.0	0.0	0.000	A
B	Entry	1	1	C	10	519	0.019	10	0.0	0.0	6.925	A
			2	D,A	362	519	0.698	363	0.0	1.6	12.307	B
			3	A,B	362	519	0.697	362	0.0	1.6	12.359	B
		2	1	(D,A,C)	379			378	0.0	0.3	1.211	A
			2	(A,B)	357			356	0.0	0.3	1.253	A
	Exit	1	1		0.87			0.87	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	70	507	0.139	71	0.0	0.2	7.874	A
	Exit	1	1		24			24	0.0	0.0	0.000	A
D	Entry	1	1	A	487	811	0.600	486	0.0	1.3	7.410	A
			2	A,B	494	811	0.609	493	0.0	1.2	7.359	A
			3	D,C	3	811	0.003	3	0.0	0.0	5.156	A
		2	1	(A,B)	982			981	0.0	0.2	0.284	A
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		1810			1810	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	13	1128	0.011	13	0.0	0.0	3.616	A
			2	D	1045	1128	0.926	1044	2.3	4.3	13.448	B
			3	D,A	1031	1128	0.914	1030	2.2	4.3	13.644	B
		2	1	(D,B,C)	1051			1047	0.3	3.1	7.564	A
			2	(D,A)	1044			1041	0.2	3.0	7.586	A
	Exit	1	1		2020			2020	0.0	0.0	0.000	A
B	Entry	1	1	C	11	431	0.026	11	0.0	0.0	9.012	A
			2	D,A	412	431	0.957	411	1.6	3.4	25.859	D
			3	A,B	417	431	0.968	416	1.6	3.4	25.724	D
		2	1	(D,A,C)	441			421	0.3	5.9	27.285	D
			2	(A,B)	440			420	0.3	6.0	27.763	D
	Exit	1	1		0.72			0.72	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	83	345	0.241	81	0.2	0.5	15.813	C
	Exit	1	1		27			27	0.0	0.0	0.000	A
D	Entry	1	1	A	581	772	0.753	581	1.3	1.9	10.902	B
			2	A,B	587	772	0.761	588	1.2	1.8	10.845	B
			3	D,C	3	772	0.004	3	0.0	0.0	4.855	A
		2	1	(A,B)	1169			1168	0.2	0.7	2.139	A
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2129			2129	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1128	0.014	16	0.0	0.0	3.705	A
			2	D	1124	1128	0.997	1123	4.3	5.9	18.402	C
			3	D,A	1124	1128	0.997	1123	4.3	5.9	18.337	C
		2	1	(D,B,C)	1292			1132	3.1	41.9	72.685	F
			2	(D,A)	1294			1131	3.0	41.9	71.509	F
	Exit	1	1		2221			2221	0.0	0.0	0.000	A
B	Entry	1	1	C	10	381	0.027	10	0.0	0.0	10.456	B
			2	D,A	381	381	0.998	381	3.4	3.9	35.536	E
			3	A,B	378	381	0.990	378	3.4	3.9	35.483	E
		2	1	(D,A,C)	554			394	5.9	42.1	215.069	F
			2	(A,B)	533			374	6.0	42.1	226.007	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	101	304	0.331	102	0.5	0.6	21.868	C
	Exit	1	1		29			29	0.0	0.0	0.000	A
D	Entry	1	1	A	713	795	0.897	713	1.9	3.0	14.543	B
			2	A,B	720	795	0.906	720	1.8	3.0	14.495	B
			3	D,C	3	795	0.004	3	0.0	0.0	5.004	A
		2	1	(A,B)	1434			1433	0.7	7.2	13.963	B
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2318			2318	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	14	1128	0.013	14	0.0	0.0	3.565	A
			2	D	1133	1128	1.004	1133	5.9	5.9	18.957	C
			3	D,A	1135	1128	1.007	1136	5.9	5.9	18.885	C
		2	1	(D,B,C)	1285			1139	41.9	80.6	198.304	F
			2	(D,A)	1290			1143	41.9	80.5	194.806	F
	Exit	1	1		2207			2207	0.0	0.0	0.000	A
B	Entry	1	1	C	9	376	0.025	9	0.0	0.1	11.127	B
			2	D,A	377	376	1.005	378	3.9	3.9	37.267	E
			3	A,B	374	376	0.996	374	3.9	3.9	37.363	E
		2	1	(D,A,C)	537			383	42.1	80.9	580.122	F
			2	(A,B)	536			378	42.1	80.9	588.607	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	101	298	0.340	100	0.6	0.7	23.265	C
	Exit	1	1		27			27	0.0	0.0	0.000	A
D	Entry	1	1	A	707	798	0.886	707	3.0	2.9	14.536	B
			2	A,B	719	798	0.901	719	3.0	2.8	14.314	B
			3	D,C	3	798	0.004	4	0.0	0.0	5.014	A
		2	1	(A,B)	1406			1425	7.2	6.0	16.870	C
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2338			2338	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	17	1128	0.015	17	0.0	0.0	3.637	A
			2	D	1134	1128	1.005	1135	5.9	5.9	18.917	C
			3	D,A	1119	1128	0.992	1120	5.9	5.8	18.932	C
		2	1	(D,B,C)	1057			1128	80.6	61.7	226.706	F
			2	(D,A)	1065			1142	80.5	61.3	223.433	F
	Exit	1	1		1961			1961	0.0	0.0	0.000	A
B	Entry	1	1	C	11	379	0.029	11	0.1	0.1	11.906	B
			2	D,A	374	379	0.987	373	3.9	3.9	37.584	E
			3	A,B	384	379	1.013	383	3.9	4.0	37.048	E
		2	1	(D,A,C)	453			393	80.9	95.3	789.114	F
			2	(A,B)	438			375	80.9	95.5	814.194	F
	Exit	1	1		0.84			0.84	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	83	301	0.276	84	0.7	0.4	21.698	C
	Exit	1	1		30			30	0.0	0.0	0.000	A
D	Entry	1	1	A	594	798	0.744	595	2.9	1.7	11.047	B
			2	A,B	586	798	0.734	587	2.8	1.8	11.253	B
			3	D,C	2	798	0.003	2	0.0	0.0	5.304	A
		2	1	(A,B)	1179			1180	6.0	0.7	4.507	A
			2	(D,C)	2			2	0.0	0.0	0.000	A
	Exit	1	1		2316			2316	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	14	1128	0.012	14	0.0	0.0	3.577	A
			2	D	1024	1128	0.908	1033	5.9	4.0	16.994	C
			3	D,A	1018	1128	0.903	1028	5.8	4.0	16.990	C
		2	1	(D,B,C)	877			1017	61.7	12.9	105.677	F
			2	(D,A)	904			1039	61.3	13.1	102.263	F
	Exit	1	1		1824			1824	0.0	0.0	0.000	A
B	Entry	1	1	C	12	434	0.027	12	0.1	0.0	9.847	A
			2	D,A	414	434	0.953	414	3.9	3.9	35.330	E
			3	A,B	420	434	0.968	420	4.0	3.9	35.433	E
		2	1	(D,A,C)	380			431	95.3	88.2	628.065	F
			2	(A,B)	366			415	95.5	88.2	645.430	F
	Exit	1	1		0.80			0.80	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	71	346	0.206	71	0.4	0.4	17.855	C
	Exit	1	1		28			28	0.0	0.0	0.000	A
D	Entry	1	1	A	486	770	0.631	487	1.7	1.2	8.486	A
			2	A,B	482	770	0.626	482	1.8	1.3	8.543	A
			3	D,C	3	770	0.003	3	0.0	0.0	5.169	A
		2	1	(A,B)	969			969	0.7	0.2	0.640	A
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2111			2111	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 5- Dev Scenario 2 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 5\ARCADY\Issue 2
Report generation date: 25/10/2016 11:26:24

«M20 Junction 5 - Dev Scenario 2, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 5 [Lane Simulation] - Dev Scenario 2			
Arm A	3.4	7.81		A
Arm B	147.9	381.86		F
Arm C	0.2	12.83		B
Arm D	423.2	974.90		F

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

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

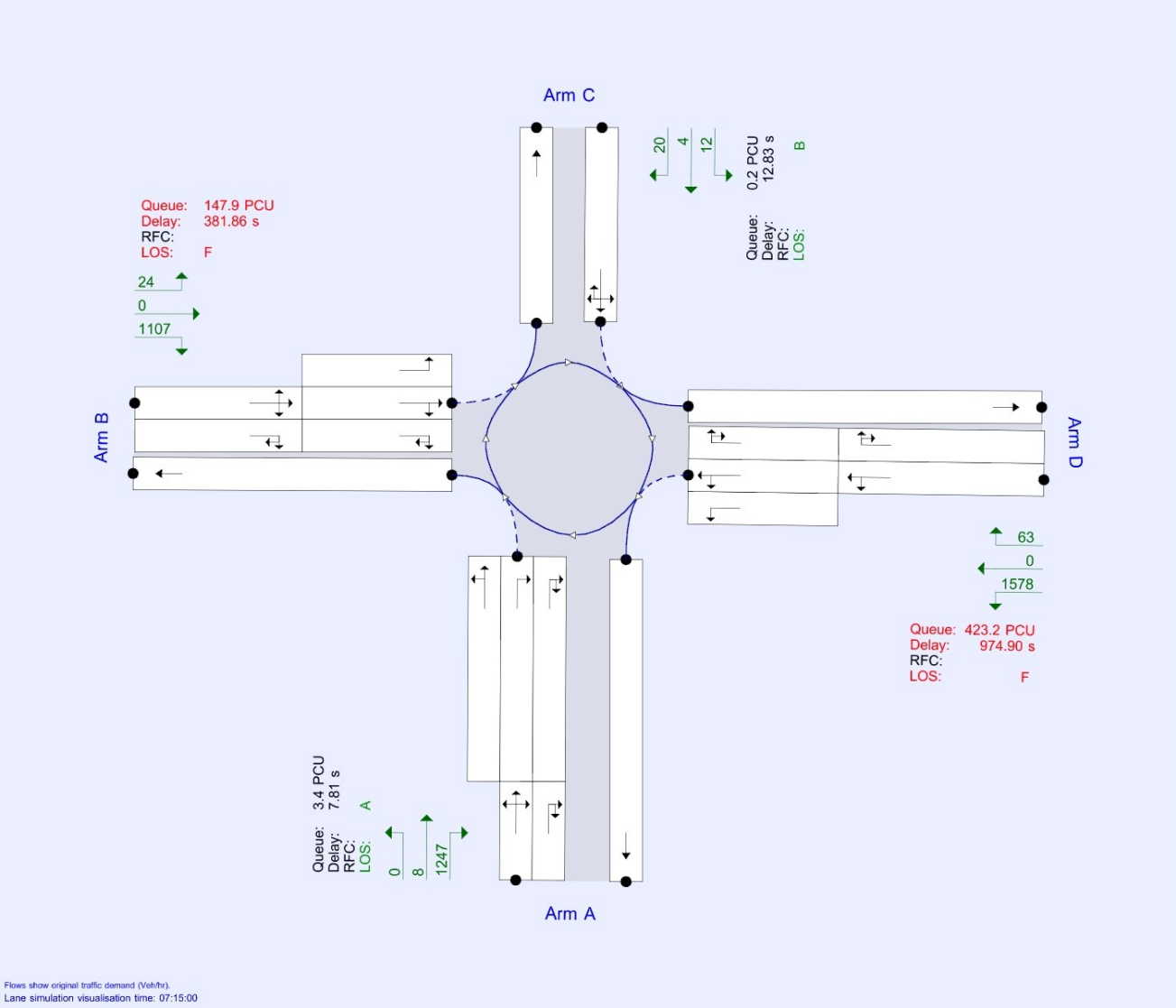
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1861949328	442	160.34

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 5	✓	✓	100.000	100.000

M20 Junction 5 - Dev Scenario 2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 5 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 5	Large Roundabout	A,B,C,D	503.76	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road A20	
B	M20 West	
C	Coldharbour Lane	
D	M20 East	

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
A	7.10	8.10	30.0	45.5	125.0	14.0	
B	7.25	10.50	22.0	30.0	194.0	20.0	
C	4.25	4.25	0.0	20.0	125.0	25.0	
D	7.25	10.00	14.5	30.0	194.0	16.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	83	50.00
B	1318	155.00
C	2354	0.00
D	1131	132.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.248	3370
B	1.043	3244
C	0.490	1630
D	1.066	3217

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C	✓	6.00	0	99999
		2	D	✓	6.00	0	99999
		3	D,A	✓	6.00	0	99999
	2	1	(D,B,C)		Infinity		
		2	(D,A)		Infinity		
B	1 [Give-way line]	1	C	✓	4.00	0	99999
		2	D,A	✓	4.00	0	99999
		3	A,B	✓	4.00	0	99999
	2	1	(D,A,C)		Infinity		
		2	(A,B)		Infinity		
C	1 [Give-way line]	1	D,A,B,C		Infinity	0	99999
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A,B	✓	4.00	0	99999
		3	D,C	✓	4.00	0	99999
	2	1	(A,B)		Infinity		
		2	(D,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.416	1123
		2	0.416	1123
		3	0.416	1123
B	1 [Give-way line]	1	0.348	1081
		2	0.348	1081
		3	0.348	1081
C	1 [Give-way line]	1	0.490	1630
D	1 [Give-way line]	1	0.355	1072
		2	0.355	1072
		3	0.355	1072

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓	✓	
		3	✓			✓
	2	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1			✓	✓
		2	✓			
		3	✓	✓		
	2	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1				✓
		2	✓	✓		
		3		✓	✓	
	2	1	✓	✓		✓
		2		✓	✓	
C	1 [Give-way line]	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	Dev Scenario 2	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1255	100.000
B		ONE HOUR	✓	1131	100.000
C		ONE HOUR	✓	36	100.000
D		ONE HOUR	✓	1641	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	8	1247
	B	1107	0	24	0
	C	4	20	0	12
	D	1578	0	63	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.01	0.99
	B	0.98	0.00	0.02	0.00
	C	0.11	0.56	0.00	0.33
	D	0.96	0.00	0.04	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	10	10	10	10
	B	10	10	10	10
	C	10	10	10	10
	D	10	10	10	10

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.100	1.100	1.100	1.100
	B	1.100	1.100	1.100	1.100
	C	1.100	1.100	1.100	1.100
	D	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	945	1039
	B	851	937
	C	27	30
	D	1235	1359
07:30-07:45	A	1128	1241
	B	1017	1118
	C	32	36
	D	1475	1623
07:45-08:00	A	1382	1520
	B	1245	1370
	C	40	44
	D	1807	1987
08:00-08:15	A	1382	1520
	B	1245	1370
	C	40	44
	D	1807	1987
08:15-08:30	A	1128	1241
	B	1017	1118
	C	32	36
	D	1475	1623
08:30-08:45	A	945	1039
	B	851	937
	C	27	30
	D	1235	1359

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	7.81	3.4	A	1260	1891
B	381.86	147.9	F	1136	1705
C	12.83	0.2	B	37	55
D	974.90	423.2	F	1659	2489

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1037	259	70	1038	2207	0.0	1.4	4.962	A
B	927	232	1090	928	17	0.0	2.9	9.330	A
C	30	8	1938	30	80	0.0	0.0	5.321	A
D	1356	339	928	1349	1040	0.0	10.1	19.458	C

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1239	310	83	1236	2442	1.4	2.1	5.733	A
B	1116	279	1300	1105	19	2.9	9.2	23.539	C
C	37	9	2308	37	96	0.0	0.1	8.302	A
D	1627	407	1103	1422	1242	10.1	59.2	89.223	F

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1509	377	100	1511	2446	2.1	3.4	7.577	A
B	1368	342	1587	1083	25	9.2	75.7	140.037	F
C	44	11	2563	44	108	0.1	0.2	12.742	B
D	1992	498	1091	1455	1516	59.2	196.5	329.050	F

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1522	380	100	1522	2429	3.4	3.4	7.807	A
B	1362	340	1597	1071	25	75.7	147.9	369.799	F
C	45	11	2561	45	107	0.2	0.1	12.834	B
D	1988	497	1078	1451	1528	196.5	331.7	684.058	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1226	307	83	1230	2488	3.4	2.0	5.745	A
B	1115	279	1293	1274	20	147.9	116.9	381.862	F
C	35	9	2470	35	97	0.1	0.1	10.857	B
D	1622	406	1272	1299	1234	331.7	401.0	974.897	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1030	257	68	1028	2442	2.0	1.6	4.919	A
B	930	233	1079	1222	17	116.9	25.2	165.244	F
C	31	8	2217	31	84	0.1	0.0	9.302	A
D	1369	342	1217	1293	1031	401.0	423.2	680.718	F

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	7	1094	0.007	7	0.0	0.0	3.505	A
			2	D	515	1094	0.471	516	0.0	0.7	4.951	A
			3	D,A	514	1094	0.470	514	0.0	0.7	4.985	A
		2	1	(D,B,C)	526			526	0.0	0.0	0.004	A
			2	(D,A)	511			511	0.0	0.0	0.004	A
	Exit	1	1		2207			2207	0.0	0.0	0.000	A
B	Entry	1	1	C	20	702	0.029	20	0.0	0.0	5.583	A
			2	D,A	454	702	0.647	455	0.0	1.3	8.967	A
			3	A,B	452	702	0.644	453	0.0	1.3	8.932	A
		2	1	(D,A,C)	471			471	0.0	0.1	0.446	A
			2	(A,B)	455			455	0.0	0.1	0.437	A
	Exit	1	1		17			17	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	30	682	0.044	30	0.0	0.0	5.321	A
	Exit	1	1		80			80	0.0	0.0	0.000	A
D	Entry	1	1	A	646	743	0.870	645	0.0	2.8	12.693	B
			2	A,B	652	743	0.877	651	0.0	2.8	12.691	B
			3	D,C	52	743	0.070	53	0.0	0.1	5.551	A
		2	1	(A,B)	1304			1298	0.0	4.5	7.226	A
			2	(D,C)	52			52	0.0	0.0	0.002	A
	Exit	1	1		1040			1040	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	8	1089	0.007	8	0.0	0.0	3.704	A
			2	D	617	1089	0.566	615	0.7	1.0	5.707	A
			3	D,A	614	1089	0.564	613	0.7	1.1	5.731	A
		2	1	(D,B,C)	622			622	0.0	0.0	0.026	A
			2	(D,A)	617			617	0.0	0.0	0.026	A
	Exit	1	1		2442			2442	0.0	0.0	0.000	A
B	Entry	1	1	C	25	629	0.040	25	0.0	0.0	6.573	A
			2	D,A	540	629	0.858	538	1.3	2.7	16.028	C
			3	A,B	543	629	0.863	542	1.3	2.6	15.802	C
		2	1	(D,A,C)	565			561	0.1	1.9	7.592	A
			2	(A,B)	551			547	0.1	1.9	7.874	A
	Exit	1	1		19			19	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	37	500	0.073	37	0.0	0.1	8.302	A
	Exit	1	1		96			96	0.0	0.0	0.000	A
D	Entry	1	1	A	679	680	0.998	679	2.8	3.9	19.357	C
			2	A,B	679	680	0.999	679	2.8	3.8	19.361	C
			3	D,C	64	680	0.094	64	0.1	0.1	6.247	A
		2	1	(A,B)	1563			1358	4.5	51.4	72.990	F
			2	(D,C)	64			64	0.0	0.0	0.004	A
	Exit	1	1		1242			1242	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	10	1082	0.009	10	0.0	0.0	3.634	A
			2	D	751	1082	0.695	752	1.0	1.6	7.413	A
			3	D,A	748	1082	0.691	749	1.1	1.6	7.466	A
		2	1	(D,B,C)	762			762	0.0	0.1	0.158	A
			2	(D,A)	747			747	0.0	0.0	0.160	A
	Exit	1	1		2446			2446	0.0	0.0	0.000	A
B	Entry	1	1	C	22	529	0.042	22	0.0	0.1	8.274	A
			2	D,A	534	529	1.008	533	2.7	3.9	25.035	D
			3	A,B	529	529	0.999	528	2.6	3.9	25.080	D
		2	1	(D,A,C)	696			554	1.9	33.9	112.181	F
			2	(A,B)	672			531	1.9	33.9	117.887	F
	Exit	1	1		25			25	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	44	376	0.118	44	0.1	0.2	12.742	B
	Exit	1	1		108			108	0.0	0.0	0.000	A
D	Entry	1	1	A	694	685	1.014	694	3.9	3.9	20.583	C
			2	A,B	685	685	1.001	685	3.8	3.9	20.752	C
			3	D,C	76	685	0.110	76	0.1	0.1	6.527	A
		2	1	(A,B)	1917			1380	51.4	188.5	321.433	F
			2	(D,C)	76			76	0.0	0.0	0.007	A
	Exit	1	1		1516			1516	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	9	1082	0.008	9	0.0	0.0	3.689	A
			2	D	754	1082	0.697	755	1.6	1.6	7.711	A
			3	D,A	759	1082	0.701	758	1.6	1.7	7.611	A
		2	1	(D,B,C)	766			766	0.1	0.0	0.168	A
			2	(D,A)	756			756	0.0	0.0	0.175	A
	Exit	1	1		2429			2429	0.0	0.0	0.000	A
B	Entry	1	1	C	23	526	0.044	23	0.1	0.1	8.661	A
			2	D,A	521	526	0.990	521	3.9	3.9	26.949	D
			3	A,B	527	526	1.002	527	3.9	3.9	26.775	D
		2	1	(D,A,C)	693			549	33.9	69.9	342.710	F
			2	(A,B)	669			523	33.9	70.0	346.262	F
	Exit	1	1		25			25	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	45	376	0.118	45	0.2	0.1	12.834	B
	Exit	1	1		107			107	0.0	0.0	0.000	A
D	Entry	1	1	A	689	689	1.000	689	3.9	3.9	20.505	C
			2	A,B	688	689	0.998	687	3.9	3.9	20.521	C
			3	D,C	74	689	0.107	74	0.1	0.1	6.556	A
		2	1	(A,B)	1914			1377	188.5	323.7	689.628	F
			2	(D,C)	74			74	0.0	0.0	0.011	A
	Exit	1	1		1528			1528	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	8	1089	0.007	8	0.0	0.0	3.525	A
			2	D	610	1089	0.560	611	1.6	1.0	5.745	A
			3	D,A	609	1089	0.559	610	1.7	1.0	5.742	A
		2	1	(D,B,C)	619			619	0.0	0.0	0.018	A
			2	(D,A)	608			608	0.0	0.0	0.020	A
	Exit	1	1		2488			2488	0.0	0.0	0.000	A
B	Entry	1	1	C	26	632	0.041	26	0.1	0.1	7.170	A
			2	D,A	625	632	0.989	625	3.9	3.9	23.094	C
			3	A,B	623	632	0.987	624	3.9	3.9	23.210	C
		2	1	(D,A,C)	547			626	69.9	54.6	360.807	F
			2	(A,B)	568			648	70.0	54.4	359.636	F
	Exit	1	1		20			20	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	35	421	0.083	35	0.1	0.1	10.857	B
	Exit	1	1		97			97	0.0	0.0	0.000	A
D	Entry	1	1	A	618	620	0.996	618	3.9	3.9	21.936	C
			2	A,B	618	620	0.996	618	3.9	3.9	21.998	C
			3	D,C	63	620	0.102	63	0.1	0.1	6.976	A
		2	1	(A,B)	1559			1236	323.7	393.1	998.034	F
			2	(D,C)	63			63	0.0	0.0	0.014	A
	Exit	1	1		1234			1234	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	7	1095	0.007	7	0.0	0.0	3.694	A
			2	D	509	1095	0.465	508	1.0	0.8	4.930	A
			3	D,A	513	1095	0.468	513	1.0	0.8	4.918	A
		2	1	(D,B,C)	518			518	0.0	0.0	0.003	A
			2	(D,A)	511			511	0.0	0.0	0.004	A
	Exit	1	1		2442			2442	0.0	0.0	0.000	A
B	Entry	1	1	C	26	706	0.037	26	0.1	0.0	6.579	A
			2	D,A	586	706	0.830	593	3.9	2.5	18.851	C
			3	A,B	596	706	0.844	604	3.9	2.5	18.671	C
		2	1	(D,A,C)	467			605	54.6	10.0	147.501	F
			2	(A,B)	464			602	54.4	10.1	146.437	F
	Exit	1	1		17			17	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	31	545	0.057	31	0.1	0.0	9.302	A
	Exit	1	1		84			84	0.0	0.0	0.000	A
D	Entry	1	1	A	618	640	0.966	618	3.9	3.9	23.092	C
			2	A,B	624	640	0.976	624	3.9	3.9	22.952	C
			3	D,C	51	640	0.080	51	0.1	0.1	7.107	A
		2	1	(A,B)	1318			1242	393.1	415.3	856.622	F
			2	(D,C)	51			51	0.0	0.0	0.014	A
	Exit	1	1		1031			1031	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 5 - Dev Scenario 2 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 5\ARCADY\Issue 2
Report generation date: 25/10/2016 11:31:50

«M20 Junction 5 - Dev Scenario 2, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 5 [Lane Simulation] - Dev Scenario 2			
Arm A	226.8	346.02		F
Arm B	226.2	912.99		F
Arm C	0.7	20.75		C
Arm D	20.9	46.91		E

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

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

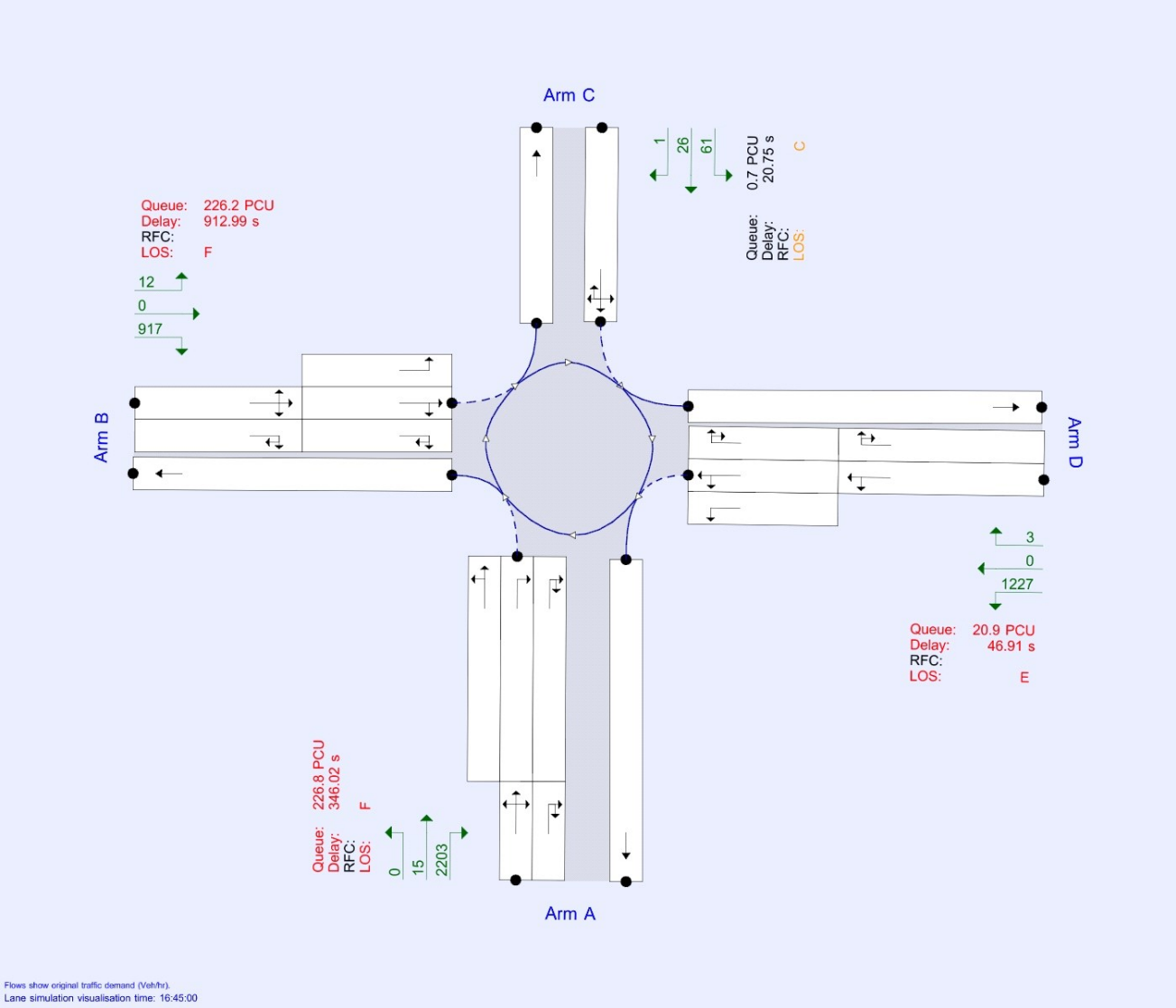
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	429637084	431	191.67

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 5	✓	✓	100.000	100.000

M20 Junction 5 - Dev Scenario 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 5 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 5	Large Roundabout	A,B,C,D	375.14	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	London Road A20	
B	M20 West	
C	Coldharbour Lane	
D	M20 East	

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
A	7.10	8.10	30.0	45.5	125.0	14.0	
B	7.25	10.50	22.0	30.0	194.0	20.0	
C	4.25	4.25	0.0	20.0	125.0	25.0	
D	7.25	10.00	14.5	30.0	194.0	16.0	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	4	50.00
B	2221	155.00
C	3120	0.00
D	944	132.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.266	3389
B	0.822	3035
C	0.373	1452
D	1.110	3260

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C	✓	6.00	0	99999
		2	D	✓	6.00	0	99999
		3	D,A	✓	6.00	0	99999
	2	1	(D,B,C)		Infinity		
		2	(D,A)		Infinity		
B	1 [Give-way line]	1	C	✓	4.00	0	99999
		2	D,A	✓	4.00	0	99999
		3	A,B	✓	4.00	0	99999
	2	1	(D,A,C)		Infinity		
		2	(A,B)		Infinity		
C	1 [Give-way line]	1	D,A,B,C		Infinity	0	99999
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A,B	✓	4.00	0	99999
		3	D,C	✓	4.00	0	99999
	2	1	(A,B)		Infinity		
		2	(D,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.422	1130
		2	0.422	1130
		3	0.422	1130
B	1 [Give-way line]	1	0.274	1012
		2	0.274	1012
		3	0.274	1012
C	1 [Give-way line]	1	0.373	1452
D	1 [Give-way line]	1	0.370	1087
		2	0.370	1087
		3	0.370	1087

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓	✓	
		3	✓			✓
	2	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1			✓	✓
		2	✓			
		3	✓	✓		
	2	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1				✓
		2	✓	✓		
		3		✓	✓	
	2	1	✓	✓		✓
		2		✓	✓	
C	1 [Give-way line]	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	Dev Scenario 2	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	2218	100.000
B		ONE HOUR	✓	929	100.000
C		ONE HOUR	✓	88	100.000
D		ONE HOUR	✓	1230	100.000

Origin-Destination Data

Demand (Veh/hr)

		To			
		A	B	C	D
From	A	0	0	15	2203
	B	917	0	12	0
	C	26	1	0	61
	D	1227	0	3	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.01	0.99
	B	0.99	0.00	0.01	0.00
	C	0.30	0.01	0.00	0.69
	D	1.00	0.00	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	10	10	10	10
	B	10	10	10	10
	C	10	10	10	10
	D	10	10	10	10

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.100	1.100	1.100	1.100
	B	1.100	1.100	1.100	1.100
	C	1.100	1.100	1.100	1.100
	D	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	1670	1837
	B	699	769
	C	66	73
	D	926	1019
17:00-17:15	A	1994	2193
	B	835	919
	C	79	87
	D	1106	1216
17:15-17:30	A	2442	2686
	B	1023	1125
	C	97	107
	D	1354	1490
17:30-17:45	A	2442	2686
	B	1023	1125
	C	97	107
	D	1354	1490
17:45-18:00	A	1994	2193
	B	835	919
	C	79	87
	D	1106	1216
18:00-18:15	A	1670	1837
	B	699	769
	C	66	73
	D	926	1019

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	346.02	226.8	F	2238	3357
B	912.99	226.2	F	938	1407
C	20.75	0.7	C	89	134
D	46.91	20.9	E	1242	1864

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1830	458	3	1829	1795	0.0	5.8	10.409	B
B	771	193	1831	767	0.78	0.0	4.5	15.382	C
C	70	18	2574	70	24	0.0	0.2	7.979	A
D	1024	256	779	1020	1865	0.0	2.8	8.411	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2193	548	4	2167	2039	5.8	22.3	28.260	D
B	908	227	2170	814	0.97	4.5	25.4	66.052	F
C	85	21	2955	86	29	0.2	0.3	14.801	B
D	1218	305	830	1213	2211	2.8	5.5	14.561	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2694	674	5	2265	2266	22.3	126.9	119.996	F
B	1130	283	2268	788	1	25.4	107.9	307.916	F
C	108	27	3026	107	30	0.3	0.7	20.224	C
D	1491	373	808	1462	2324	5.5	18.5	34.914	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2688	672	5	2271	2274	126.9	226.8	280.938	F
B	1125	281	2275	774	1	107.9	193.4	702.512	F
C	108	27	3020	109	28	0.7	0.6	20.749	C
D	1495	374	798	1482	2332	18.5	20.9	46.911	E

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	2184	546	4	2266	2022	226.8	206.7	346.017	F
B	926	232	2269	788	0.95	193.4	226.2	912.991	F
C	88	22	3029	89	28	0.6	0.5	18.796	C
D	1209	302	806	1219	2312	20.9	5.8	25.293	D

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1838	460	3	2236	1825	206.7	105.0	242.132	F
B	769	192	2238	798	0.97	226.2	221.8	735.123	F
C	75	19	3009	76	27	0.5	0.3	16.838	C
D	1018	254	810	1018	2274	5.8	2.7	10.362	B

Lane Results

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

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	12	1128	0.010	12	0.0	0.0	3.640	A
			2	D	908	1128	0.804	908	0.0	2.5	9.436	A
			3	D,A	910	1128	0.807	909	0.0	2.6	9.391	A
		2	1	(D,B,C)	913			914	0.0	0.3	1.026	A
			2	(D,A)	917			916	0.0	0.3	1.019	A
	Exit	1	1		1795			1795	0.0	0.0	0.000	A
B	Entry	1	1	C	10	510	0.020	10	0.0	0.0	7.035	A
			2	D,A	378	510	0.741	376	0.0	1.8	13.578	B
			3	A,B	381	510	0.748	380	0.0	1.9	13.665	B
		2	1	(D,A,C)	391			390	0.0	0.4	1.788	A
			2	(A,B)	380			379	0.0	0.4	1.805	A
	Exit	1	1		0.78			0.78	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	70	492	0.143	70	0.0	0.2	7.979	A
	Exit	1	1		24			24	0.0	0.0	0.000	A
D	Entry	1	1	A	509	798	0.637	508	0.0	1.3	7.941	A
			2	A,B	511	798	0.640	510	0.0	1.2	7.952	A
			3	D,C	2	798	0.003	2	0.0	0.0	4.746	A
		2	1	(A,B)	1021			1020	0.0	0.2	0.466	A
			2	(D,C)	2			2	0.0	0.0	0.000	A
	Exit	1	1		1865			1865	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	14	1128	0.013	14	0.0	0.0	3.417	A
			2	D	1074	1128	0.953	1073	2.5	4.8	14.905	B
			3	D,A	1081	1128	0.958	1080	2.6	4.7	14.803	B
		2	1	(D,B,C)	1088			1076	0.3	6.4	13.444	B
			2	(D,A)	1105			1093	0.3	6.4	13.344	B
	Exit	1	1		2039			2039	0.0	0.0	0.000	A
B	Entry	1	1	C	11	417	0.027	11	0.0	0.0	9.461	A
			2	D,A	405	417	0.971	401	1.8	3.7	27.600	D
			3	A,B	406	417	0.974	401	1.9	3.7	27.445	D
		2	1	(D,A,C)	457			413	0.4	9.1	37.934	E
			2	(A,B)	451			409	0.4	8.9	38.591	E
	Exit	1	1		0.97			0.97	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	85	349	0.244	86	0.2	0.3	14.801	B
	Exit	1	1		29			29	0.0	0.0	0.000	A
D	Entry	1	1	A	606	779	0.777	604	1.3	2.1	11.610	B
			2	A,B	609	779	0.782	606	1.2	2.2	11.489	B
			3	D,C	3	779	0.004	3	0.0	0.0	5.122	A
		2	1	(A,B)	1215			1215	0.2	1.2	3.014	A
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2211			2211	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1128	0.013	15	0.0	0.0	3.651	A
			2	D	1123	1128	0.996	1123	4.8	5.9	18.551	C
			3	D,A	1128	1128	1.000	1127	4.7	5.9	18.588	C
		2	1	(D,B,C)	1335			1120	6.4	57.5	101.833	F
			2	(D,A)	1360			1146	6.4	57.5	101.082	F
	Exit	1	1		2266			2266	0.0	0.0	0.000	A
B	Entry	1	1	C	12	390	0.030	12	0.0	0.0	11.604	B
			2	D,A	395	390	1.014	395	3.7	3.9	35.563	E
			3	A,B	381	390	0.978	381	3.7	3.9	36.014	E
		2	1	(D,A,C)	564			393	9.1	50.0	271.122	F
			2	(A,B)	566			395	8.9	50.0	272.982	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	108	323	0.336	107	0.3	0.7	20.224	C
	Exit	1	1		30			30	0.0	0.0	0.000	A
D	Entry	1	1	A	727	787	0.924	725	2.1	3.3	15.316	C
			2	A,B	736	787	0.935	734	2.2	3.3	15.271	C
			3	D,C	3	787	0.004	4	0.0	0.0	4.598	A
		2	1	(A,B)	1488			1463	1.2	11.8	19.623	C
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2324			2324	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1127	0.014	15	0.0	0.0	3.499	A
			2	D	1131	1127	1.003	1131	5.9	5.9	18.920	C
			3	D,A	1125	1127	0.998	1125	5.9	5.9	18.922	C
		2	1	(D,B,C)	1347			1138	57.5	107.5	263.218	F
			2	(D,A)	1341			1133	57.5	107.4	260.969	F
	Exit	1	1		2274			2274	0.0	0.0	0.000	A
B	Entry	1	1	C	9	388	0.023	9	0.0	0.0	11.331	B
			2	D,A	383	388	0.989	384	3.9	3.9	36.588	E
			3	A,B	381	388	0.981	381	3.9	4.0	36.909	E
		2	1	(D,A,C)	571			395	50.0	92.8	666.755	F
			2	(A,B)	554			378	50.0	92.7	666.071	F
	Exit	1	1		1			1	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	108	325	0.334	109	0.7	0.6	20.749	C
	Exit	1	1		28			28	0.0	0.0	0.000	A
D	Entry	1	1	A	730	791	0.922	728	3.3	3.3	15.741	C
			2	A,B	751	791	0.949	750	3.3	3.3	15.661	C
			3	D,C	4	791	0.005	4	0.0	0.0	5.113	A
		2	1	(A,B)	1491			1481	11.8	14.2	31.294	D
			2	(D,C)	4			4	0.0	0.0	0.000	A
	Exit	1	1		2332			2332	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1128	0.014	15	0.0	0.0	3.436	A
			2	D	1123	1128	0.996	1123	5.9	5.9	18.943	C
			3	D,A	1127	1128	0.999	1127	5.9	6.0	19.070	C
		2	1	(D,B,C)	1090			1131	107.5	97.5	331.194	F
			2	(D,A)	1093			1135	107.4	97.3	323.124	F
	Exit	1	1		2022			2022	0.0	0.0	0.000	A
B	Entry	1	1	C	10	390	0.025	10	0.0	0.0	11.169	B
			2	D,A	389	390	0.999	389	3.9	4.0	36.264	E
			3	A,B	390	390	1.000	390	4.0	4.0	36.177	E
		2	1	(D,A,C)	469			402	92.8	109.1	875.050	F
			2	(A,B)	457			387	92.7	109.2	891.586	F
	Exit	1	1		0.95			0.95	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	88	321	0.275	89	0.6	0.5	18.796	C
	Exit	1	1		28			28	0.0	0.0	0.000	A
D	Entry	1	1	A	608	788	0.771	609	3.3	2.0	12.567	B
			2	A,B	607	788	0.770	608	3.3	1.9	12.535	B
			3	D,C	3	788	0.003	3	0.0	0.0	4.952	A
		2	1	(A,B)	1206			1215	14.2	1.9	13.005	B
			2	(D,C)	3			3	0.0	0.0	0.000	A
	Exit	1	1		2312			2312	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	15	1128	0.013	15	0.0	0.0	3.579	A
			2	D	1104	1128	0.978	1108	5.9	5.5	18.655	C
			3	D,A	1109	1128	0.983	1113	6.0	5.5	18.794	C
		2	1	(D,B,C)	911			1107	97.5	47.0	224.230	F
			2	(D,A)	927			1121	97.3	46.9	221.287	F
	Exit	1	1		1825			1825	0.0	0.0	0.000	A
B	Entry	1	1	C	10	398	0.025	10	0.0	0.0	10.254	B
			2	D,A	394	398	0.989	394	4.0	3.9	35.928	E
			3	A,B	394	398	0.990	394	4.0	3.9	36.115	E
		2	1	(D,A,C)	381			395	109.1	107.0	711.296	F
			2	(A,B)	388			403	109.2	106.9	720.470	F
	Exit	1	1		0.97			0.97	0.0	0.0	0.000	A
C	Entry	1	1	D,A,B,C	75	329	0.227	76	0.5	0.3	16.838	C
	Exit	1	1		27			27	0.0	0.0	0.000	A
D	Entry	1	1	A	509	787	0.647	509	2.0	1.2	9.221	A
			2	A,B	508	787	0.645	507	1.9	1.3	9.146	A
			3	D,C	2	787	0.003	2	0.0	0.0	4.866	A
		2	1	(A,B)	1016			1016	1.9	0.2	1.260	A
			2	(D,C)	2			2	0.0	0.0	0.000	A
	Exit	1	1		2274			2274	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 6.j9
Path: C:\Users\rap67683\Desktop
Report generation date: 01/11/2016 11:52:01

»M20 Junction 6 - 2016, AM
»M20 Junction 6 - 2016, PM
»M20 Junction 6 - 2031, AM
»M20 Junction 6 - 2031, PM
»M20 Junction 6 - Dev Scenario 1, AM
»M20 Junction 6 - Dev Scenario 1, PM
»M20 Junction 6 - Dev Scenario 2, AM
»M20 Junction 6 - Dev Scenario 2, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 6 [Lane Simulation] - 2016							
Junction 1 - Arm A	2.9	6.47		A	1.7	4.62		A
Junction 1 - Arm C	31.5	85.21		F	72.3	189.88		F
Junction 1 - Arm D	3.0	16.47		C	3.6	16.87		C
Junction 2 - Arm A	118.2	315.09		F	140.0	459.59		F
Junction 2 - Arm B	30.4	42.38		E	4.7	9.15		A
Junction 2 - Arm C	2.5	17.57		C	1.1	9.26		A
Junction 2 - Arm D	2.3	10.40		B	1.7	7.90		A
Junction 2 - Arm E	38.1	194.79		F	23.3	93.40		F
	M20 Junction 6 [Lane Simulation] - 2031							
Junction 1 - Arm A	4.8	8.57		A	1.9	5.02		A
Junction 1 - Arm C	32.9	85.86		F	74.3	196.59		F
Junction 1 - Arm D	5.7	24.01		C	4.9	21.97		C
Junction 2 - Arm A	200.3	555.03		F	278.2	876.55		F
Junction 2 - Arm B	86.2	105.42		F	6.5	11.56		B
Junction 2 - Arm C	3.0	21.52		C	1.3	10.92		B
Junction 2 - Arm D	3.1	12.72		B	2.4	9.78		A
Junction 2 - Arm E	76.5	439.08		F	59.2	268.20		F
	M20 Junction 6 [Lane Simulation] - Dev Scenario 1							
Junction 1 - Arm A	7.6	10.72		B	2.0	5.17		A
Junction 1 - Arm C	33.6	85.81		F	74.1	196.50		F
Junction 1 - Arm D	7.3	25.95		D	6.2	26.26		D
Junction 2 - Arm A	230.9	630.45		F	310.1	970.35		F
Junction 2 - Arm B	103.5	126.57		F	7.4	12.79		B
Junction 2 - Arm C	3.2	22.89		C	1.5	11.29		B
Junction 2 - Arm D	3.0	12.83		B	2.5	10.09		B
Junction 2 - Arm E	82.5	506.43		F	68.9	327.85		F
	M20 Junction 6 [Lane Simulation] - Dev Scenario 2							
Junction 1 - Arm A	14.2	17.45		C	2.3	5.36		A
Junction 1 - Arm C	35.9	92.37		F	74.7	197.32		F
Junction 1 - Arm D	12.2	47.76		E	6.4	27.98		D
Junction 2 - Arm A	266.2	717.93		F	371.3	1117.15		F
Junction 2 - Arm B	122.5	159.27		F	8.7	14.30		B
Junction 2 - Arm C	3.7	24.63		C	1.5	12.52		B
Junction 2 - Arm D	3.2	13.98		B	3.1	11.32		B
Junction 2 - Arm E	105.5	648.48		F	94.3	488.74		F

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

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

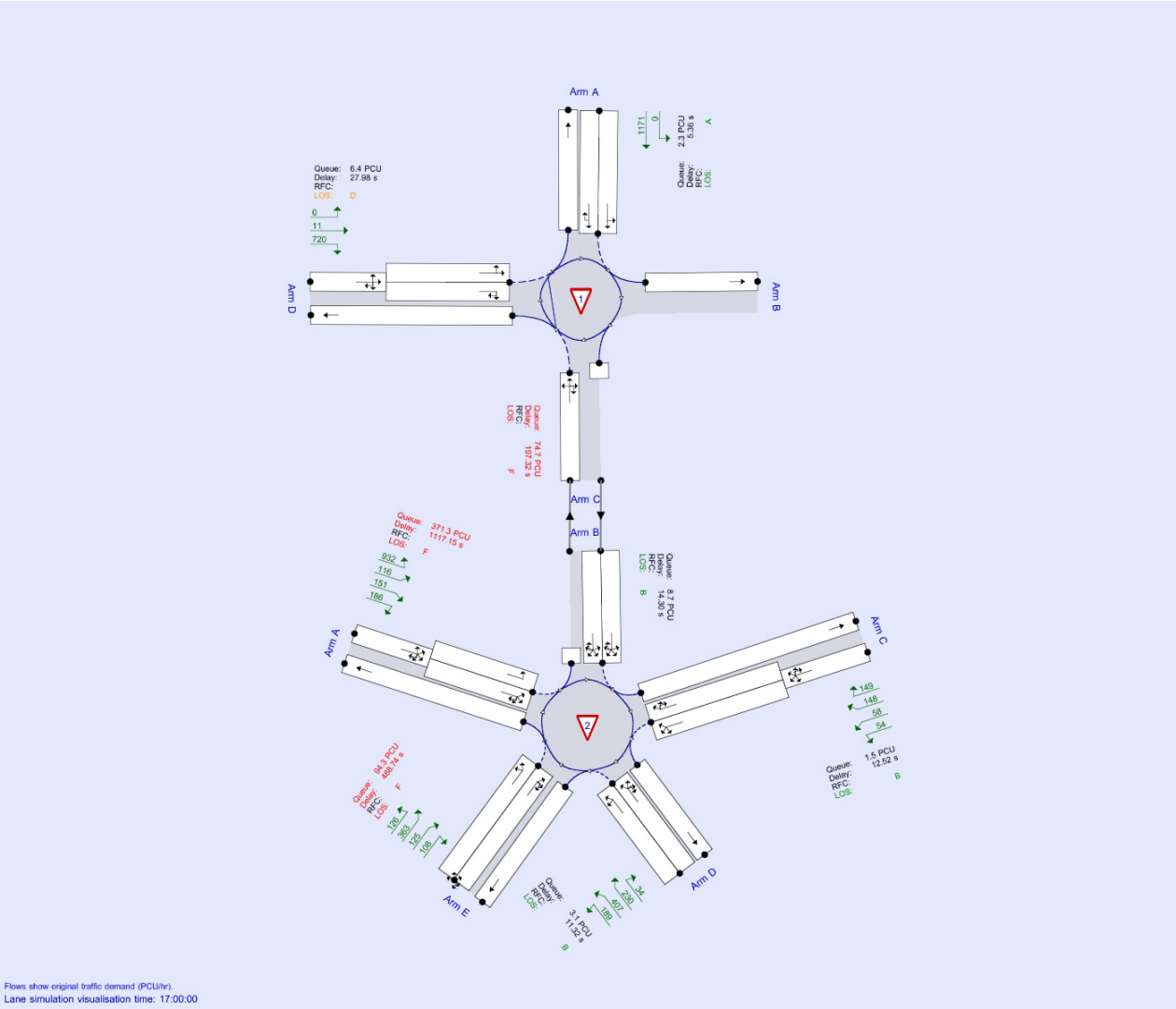
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1856418088	354	334.50

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:15	08:45	15	✓
D2	2016	PM	ONE HOUR	17:00	18:30	15	✓
D3	2031	AM	ONE HOUR	07:15	08:45	15	✓
D4	2031	PM	ONE HOUR	17:00	18:30	15	✓
D5	Dev Scenario 1	AM	ONE HOUR	07:15	08:45	15	✓
D6	Dev Scenario 1	PM	ONE HOUR	17:00	18:30	15	✓
D7	Dev Scenario 2	AM	ONE HOUR	07:15	08:45	15	✓
D8	Dev Scenario 2	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 6	✓	✓	100.000	100.000

M20 Junction 6 - 2016, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 Cobtree Roundabout	Standard Roundabout	A,B,C,D	38.94	E
2	M20 Junction 6 Running Horse Roundabout	Standard Roundabout	A,B,C,D,E	124.39	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description
1	A	A229 North	
	B	M20 East	
	C	A229 South	
	D	M20 West	
2	A	M20	
	B	A229	
	C	Sandling Lane	
	D	Chatham Road	
	E	Forstal Road	

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	A	8.80	9.60	4.7	33.0	87.0	14.6	
	B							✓
	C	4.00	4.50	1.5	19.0	87.0	12.5	
	D	5.30	9.80	30.0	29.2	87.0	16.0	
2	A	6.28	7.00	9.0	31.4	98.0	19.8	
	B	8.42	8.85	0.8	24.5	98.0	17.3	
	C	3.98	9.12	26.0	12.9	98.0	16.5	
	D	8.00	9.25	5.7	24.6	98.0	18.0	
	E	3.79	8.04	19.0	18.0	98.0	18.1	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1	A	0.665	3029
	B		
	C	0.424	1360
	D	0.615	2689
2	A	0.530	2187
	B	0.607	2737
	C	0.525	2202
	D	0.613	2782
	E	0.496	1967

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

Lane Simulation: Arm options

Junction	Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
1	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00
	D	Evenly split	10.00
2	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00
	D	Evenly split	10.00
	E	Evenly split	10.00

Lanes

Junction	Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
1	A	1 [Give-way line]	1	B,C		Infinity	0	99999
			2	A,C		Infinity	0	99999
	C	1 [Give-way line]	1	B,C,D,A	✓	78.00	0	99999
	D	1 [Give-way line]	1	B,A	✓	8.00	0	99999
			2	C,D	✓	8.00	0	99999
		2	1	(A,B,C,D)		Infinity		
2	A	1 [Give-way line]	1	B	✓	7.00	0	99999
			2	A,C,D,E	✓	7.00	0	99999
		2	1	(A,B,C,D,E)		Infinity		
	B	1 [Give-way line]	1	B,C,D,A,E	✓	78.00	0	99999
			2	A,B,C,D,E	✓	78.00	0	99999
	C	1 [Give-way line]	1	D,A,E	✓	9.00	0	99999
			2	A,B,C	✓	9.00	0	99999
		2	1	(A,B,C,D,E)		Infinity		
	D	1 [Give-way line]	1	A,E		Infinity	0	99999
			2	A,B,C,D		Infinity	0	99999
	E	1 [Give-way line]	1	B,A	✓	14.00	0	99999
			2	C,D,E	✓	14.00	0	99999
		2	1	(A,B,C,D,E)		Infinity		

Entry Lane slope and intercept

Junction	Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	A	1 [Give-way line]	1	0.333	1514
			2	0.333	1514
	C	1 [Give-way line]	1	0.424	1360
	D	1 [Give-way line]	1	0.307	1344
			2	0.307	1344
2	A	1 [Give-way line]	1	0.265	1093
			2	0.265	1093
	B	1 [Give-way line]	1	0.304	1369
			2	0.304	1369
	C	1 [Give-way line]	1	0.263	1101
			2	0.263	1101
	D	1 [Give-way line]	1	0.306	1391
			2	0.306	1391
	E	1 [Give-way line]	1	0.248	983
			2	0.248	983

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm			
				A	B	C	D
1	A	1 [Give-way line]	1		✓	✓	
			2	✓		✓	
	C	1 [Give-way line]	1	✓	✓	✓	✓
	D	1 [Give-way line]	1	✓	✓		
			2			✓	✓
		2	1	✓	✓	✓	✓

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm				
				A	B	C	D	E
2	A	1 [Give-way line]	1		✓			
			2	✓		✓	✓	✓
		2	1	✓	✓	✓	✓	✓
	B	1 [Give-way line]	1	✓	✓	✓	✓	✓
			2	✓	✓	✓	✓	✓
	C	1 [Give-way line]	1	✓			✓	✓
			2	✓	✓	✓		
		2	1	✓	✓	✓	✓	✓
	D	1 [Give-way line]	1	✓				✓
			2	✓	✓	✓	✓	
	E	1 [Give-way line]	1	✓	✓			
			2			✓	✓	✓
		2	1	✓	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:15	08:45	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1499	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	633	100.000
2	A		ONE HOUR	✓	1351	100.000
	B	✓				
	C		ONE HOUR	✓	423	100.000
	D		ONE HOUR	✓	684	100.000
	E		ONE HOUR	✓	560	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	12	0	1487	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1147	212	20	0
	D	0	8	625	0

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	4	974	12	168	193
	B	1305	0	114	424	292
	C	225	66	0	22	110
	D	401	115	26	15	127
	E	172	225	67	96	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	8	14	13	0
	D	0	0	11	0

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	8	0	2	4
	B	3	0	5	6	19
	C	2	7	0	0	4
	D	6	5	4	0	7
	E	28	20	0	12	7

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	6.47	2.9	A	1376	2065
	B					
	C	85.21	31.5	F	1246	1869
	D	16.47	3.0	C	577	865
2	A	315.09	118.2	F	1242	1863
	B	42.38	30.4	E	1955	2932
	C	17.57	2.5	C	386	579
	D	10.40	2.3	B	626	939
	E	194.79	38.1	F	513	769

Main Results for each time segment

07:15 - 07:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1123	281	651	1123	873	0.0	1.1	3.642	A
	B			0		170				
	C	1041	260	9	1043	1595	0.0	4.0	12.853	B
	D	470	118	1052	471	0	0.0	1.0	6.870	A
2	A	1018	255	464	1018	1567	0.0	4.1	13.097	B
	B	1595	399	442	1593	1041	0.0	2.7	5.436	A
	C	317	79	1870	317	165	0.0	0.7	6.595	A
	D	513	128	1639	513	549	0.0	0.8	4.800	A
	E	426	107	1608	423	544	0.0	2.0	12.495	B

07:30 - 07:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1343	336	776	1343	1028	1.1	1.7	4.413	A
	B			0		197				
	C	1229	307	11	1224	1911	4.0	9.6	23.554	C
	D	565	141	1236	568	0	1.0	1.6	9.878	A
2	A	1234	309	544	1200	1890	4.1	14.2	31.510	D
	B	1911	478	515	1913	1229	2.7	4.7	8.696	A
	C	382	96	2231	381	198	0.7	1.1	9.455	A
	D	614	154	1969	613	643	0.8	1.2	6.445	A
	E	497	124	1938	496	644	2.0	3.8	24.381	C

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1657	414	915	1657	1092	1.7	2.8	6.001	A
	B			0		214				
	C	1346	336	15	1301	2342	9.6	22.9	47.916	E
	D	689	172	1316	690	0	1.6	3.0	15.455	C
2	A	1482	371	626	1290	2271	14.2	64.9	114.747	F
	B	2342	586	570	2299	1346	4.7	22.6	25.420	D
	C	462	116	2642	463	228	1.1	2.2	15.646	C
	D	753	188	2350	751	756	1.2	2.3	9.357	A
	E	617	154	2348	549	753	3.8	21.4	84.458	F

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1654	413	920	1657	1099	2.8	2.9	6.472	A
	B			0		212				
	C	1342	336	13	1310	2352	22.9	30.7	72.942	F
	D	693	173	1322	697	0	3.0	3.0	16.467	C
2	A	1488	372	611	1284	2278	64.9	118.2	261.096	F
	B	2352	588	552	2336	1342	22.6	30.4	42.375	E
	C	462	115	2665	460	224	2.2	2.5	17.573	C
	D	743	186	2373	744	751	2.3	2.2	10.402	B
	E	618	155	2353	536	764	21.4	38.1	194.794	F

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1352	338	791	1354	1115	2.9	1.5	4.585	A
	B			0		211				
	C	1321	330	11	1327	1923	30.7	31.5	85.212	F
	D	570	143	1337	569	0	3.0	1.8	11.654	B
2	A	1209	302	614	1265	1941	118.2	103.1	315.091	F
	B	1923	481	558	1938	1321	30.4	5.7	19.442	C
	C	379	95	2288	379	207	2.5	1.2	12.378	B
	D	625	156	1991	626	677	2.2	1.2	7.515	A
	E	503	126	1959	595	657	38.1	16.3	158.404	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1130	283	687	1131	1055	1.5	1.2	3.868	A
	B			0		203				
	C	1198	300	10	1261	1605	31.5	19.0	69.993	F
	D	473	118	1271	471	0	1.8	1.3	8.792	A
2	A	1019	255	469	1229	1580	103.1	42.2	186.766	F
	B	1605	401	499	1605	1198	5.7	2.6	6.416	A
	C	315	79	1937	315	168	1.2	0.7	8.222	A
	D	508	127	1678	507	575	1.2	0.8	5.612	A
	E	415	104	1615	434	569	16.3	1.9	36.954	E

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	557	1298	0.429	557	0.0	0.6	3.663	A
				2	A,C	566	1298	0.436	566	0.0	0.5	3.621	A
		Exit	1	1		873			873	0.0	0.0	0.000	A
	B	Exit	1	1		170			170	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1041	1356	0.767	1043	0.0	4.0	12.853	B
		Exit	1	1		1595			1595	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	6	1021	0.006	6	0.0	0.0	3.225	A
				2	C,D	465	1021	0.455	465	0.0	1.0	6.861	A
			2	1	(A,B,C,D)	470			470	0.0	0.0	0.058	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	731	970	0.753	730	0.0	2.9	12.763	B
				2	A,C,D,E	288	970	0.297	288	0.0	0.4	5.346	A
			2	1	(A,B,C,D,E)	1018			1019	0.0	0.9	2.446	A
		Exit	1	1		1567			1567	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	798	1234	0.647	797	0.0	1.3	5.427	A
				2	A,B,C,D,E	796	1234	0.645	796	0.0	1.3	5.445	A
		Exit	1	1		1041			1041	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	180	610	0.295	180	0.0	0.4	6.772	A
				2	A,B,C	137	610	0.225	137	0.0	0.3	6.365	A
			2	1	(A,B,C,D,E)	317			317	0.0	0.0	0.000	A
		Exit	1	1		165			165	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	247	889	0.278	247	0.0	0.4	4.745	A
				2	A,B,C,D	266	889	0.299	266	0.0	0.4	4.851	A
		Exit	1	1		549			549	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	305	585	0.522	303	0.0	1.7	14.713	B
				2	C,D,E	121	585	0.206	120	0.0	0.3	7.651	A
			2	1	(A,B,C,D,E)	426			426	0.0	0.0	0.006	A
		Exit	1	1		544			544	0.0	0.0	0.000	A

07:30 - 07:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	666	1256	0.530	666	0.6	0.9	4.405	A
				2	A,C	677	1256	0.539	677	0.5	0.9	4.422	A
		Exit	1	1		1028			1028	0.0	0.0	0.000	A
	B	Exit	1	1		197			197	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1229	1355	0.907	1224	4.0	9.6	23.554	C
		Exit	1	1		1911			1911	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	7	965	0.007	7	0.0	0.0	3.863	A
				2	C,D	558	965	0.579	562	1.0	1.6	9.607	A
			2	1	(A,B,C,D)	565			565	0.0	0.0	0.346	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	874	949	0.920	868	2.9	5.2	19.198	C
				2	A,C,D,E	332	949	0.350	332	0.4	0.7	6.464	A
			2	1	(A,B,C,D,E)	1234			1206	0.9	8.3	15.851	C
		Exit	1	1		1890			1890	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	957	1212	0.790	958	1.3	2.4	8.692	A
				2	A,B,C,D,E	954	1212	0.787	956	1.3	2.3	8.699	A
		Exit	1	1		1229			1229	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	213	515	0.413	213	0.4	0.6	9.821	A
				2	A,B,C	169	515	0.328	168	0.3	0.5	8.998	A
			2	1	(A,B,C,D,E)	382			382	0.0	0.0	0.000	A
		Exit	1	1		198			198	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	300	787	0.381	299	0.4	0.5	6.354	A
				2	A,B,C,D	315	787	0.400	314	0.4	0.6	6.531	A
		Exit	1	1		643			643	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	350	503	0.695	350	1.7	3.2	29.690	D
				2	C,D,E	146	503	0.289	146	0.3	0.5	10.864	B
			2	1	(A,B,C,D,E)	497			495	0.0	0.2	0.665	A
		Exit	1	1		644			644	0.0	0.0	0.000	A

07:45 - 08:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	831	1210	0.687	830	0.9	1.4	5.978	A
				2	A,C	826	1210	0.682	827	0.9	1.4	6.024	A
		Exit	1	1		1092			1092	0.0	0.0	0.000	A
	B	Exit	1	1		214			214	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1346	1354	0.994	1301	9.6	22.9	47.916	E
		Exit	1	1		2342			2342	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	9	940	0.010	9	0.0	0.0	3.878	A
				2	C,D	682	940	0.726	681	1.6	2.7	13.703	B
			2	1	(A,B,C,D)	689			691	0.0	0.3	1.873	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	929	928	1.001	927	5.2	6.7	24.949	C
				2	A,C,D,E	363	928	0.391	363	0.7	0.8	7.954	A
			2	1	(A,B,C,D,E)	1482			1291	8.3	57.4	94.571	F
		Exit	1	1		2271			2271	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1176	1195	0.984	1157	2.4	11.3	25.347	D
				2	A,B,C,D,E	1166	1195	0.975	1143	2.3	11.4	25.493	D
		Exit	1	1		1346			1346	0.0	0.0	0.002	A
	C	Entry	1	1	D,A,E	249	408	0.612	249	0.6	1.3	16.575	C
				2	A,B,C	213	408	0.523	214	0.5	0.9	14.501	B
			2	1	(A,B,C,D,E)	462			463	0.0	0.0	0.015	A
		Exit	1	1		228			228	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	367	671	0.548	366	0.5	1.1	9.274	A
				2	A,B,C,D	386	671	0.575	384	0.6	1.2	9.436	A
		Exit	1	1		756			756	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	397	402	0.987	387	3.2	10.5	73.465	F
				2	C,D,E	163	402	0.405	162	0.5	0.9	17.408	C
			2	1	(A,B,C,D,E)	617			560	0.2	9.9	26.681	D
		Exit	1	1		753			753	0.0	0.0	0.000	A

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	826	1208	0.683	828	1.4	1.4	6.443	A
				2	A,C	828	1208	0.685	829	1.4	1.5	6.501	A
		Exit	1	1		1099			1099	0.0	0.0	0.000	A
	B	Exit	1	1		212			212	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1342	1355	0.991	1310	22.9	30.7	72.942	F
		Exit	1	1		2352			2352	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	938	0.008	8	0.0	0.0	3.731	A
				2	C,D	686	938	0.732	689	2.7	2.6	14.462	B
			2	1	(A,B,C,D)	693			694	0.3	0.4	2.118	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	929	932	0.997	930	6.7	6.8	26.324	D
				2	A,C,D,E	354	932	0.380	354	0.8	0.8	8.031	A
			2	1	(A,B,C,D,E)	1488			1283	57.4	110.7	240.006	F
		Exit	1	1		2278			2278	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1175	1201	0.978	1167	11.3	15.2	42.364	E
				2	A,B,C,D,E	1177	1201	0.980	1170	11.4	15.2	42.386	E
		Exit	1	1		1342			1342	0.0	0.0	0.011	A
	C	Entry	1	1	D,A,E	249	402	0.621	249	1.3	1.3	18.697	C
				2	A,B,C	213	402	0.530	211	0.9	1.1	16.179	C
			2	1	(A,B,C,D,E)	462			462	0.0	0.0	0.031	A
		Exit	1	1		224			224	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	364	664	0.548	365	1.1	1.0	10.241	B
				2	A,B,C,D	379	664	0.571	378	1.2	1.2	10.554	B
		Exit	1	1		751			751	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	383	401	0.957	381	10.5	12.0	105.994	F
				2	C,D,E	153	401	0.382	155	0.9	0.8	19.534	C
			2	1	(A,B,C,D,E)	618			536	9.9	25.3	116.251	F
		Exit	1	1		764			764	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	671	1251	0.536	671	1.4	0.8	4.578	A
				2	A,C	681	1251	0.544	682	1.5	0.8	4.593	A
		Exit	1	1		1115			1115	0.0	0.0	0.000	A
	B	Exit	1	1		211			211	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1321	1355	0.975	1327	30.7	31.5	85.212	F
		Exit	1	1		1923			1923	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	7	933	0.007	7	0.0	0.0	3.804	A
				2	C,D	563	933	0.603	562	2.6	1.7	11.130	B
			2	1	(A,B,C,D)	570			570	0.4	0.1	0.669	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	913	931	0.981	915	6.8	6.7	26.272	D
				2	A,C,D,E	353	931	0.380	350	0.8	0.9	8.107	A
			2	1	(A,B,C,D,E)	1209			1266	110.7	95.5	294.109	F
		Exit	1	1		1941			1941	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	959	1199	0.799	966	15.2	2.9	19.489	C
				2	A,B,C,D,E	964	1199	0.804	972	15.2	2.8	19.395	C
		Exit	1	1		1321			1321	0.0	0.0	0.029	A
	C	Entry	1	1	D,A,E	209	500	0.417	209	1.3	0.7	13.045	B
				2	A,B,C	170	500	0.339	171	1.1	0.5	11.560	B
			2	1	(A,B,C,D,E)	379			379	0.0	0.0	0.002	A
		Exit	1	1		207			207	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	302	781	0.387	302	1.0	0.6	7.463	A
				2	A,B,C,D	323	781	0.414	324	1.2	0.6	7.564	A
		Exit	1	1		677			677	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	404	498	0.812	426	12.0	7.4	83.238	F
				2	C,D,E	167	498	0.336	169	0.8	0.7	16.970	C
			2	1	(A,B,C,D,E)	503			572	25.3	8.3	100.574	F
		Exit	1	1		657			657	0.0	0.0	0.000	A

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	561	1286	0.437	562	0.8	0.6	3.870	A
				2	A,C	569	1286	0.442	570	0.8	0.6	3.867	A
		Exit	1	1		1055			1055	0.0	0.0	0.000	A
	B	Exit	1	1		203			203	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1198	1356	0.884	1261	31.5	19.0	69.993	F
		Exit	1	1		1605			1605	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	6	954	0.006	6	0.0	0.0	3.879	A
				2	C,D	467	954	0.489	465	1.7	1.2	8.738	A
			2	1	(A,B,C,D)	473			473	0.1	0.0	0.141	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	877	969	0.905	885	6.7	5.2	23.802	C
				2	A,C,D,E	341	969	0.352	344	0.9	0.6	7.450	A
			2	1	(A,B,C,D,E)	1019			1218	95.5	36.4	167.994	F
		Exit	1	1		1580			1580	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	809	1217	0.665	809	2.9	1.3	6.390	A
				2	A,B,C,D,E	795	1217	0.654	796	2.8	1.3	6.442	A
		Exit	1	1		1198			1198	0.0	0.0	0.016	A
	C	Entry	1	1	D,A,E	174	593	0.294	175	0.7	0.4	8.420	A
				2	A,B,C	140	593	0.237	140	0.5	0.3	7.965	A
			2	1	(A,B,C,D,E)	315			315	0.0	0.0	0.000	A
		Exit	1	1		168			168	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	246	877	0.280	244	0.6	0.4	5.535	A
				2	A,B,C,D	262	877	0.299	263	0.6	0.4	5.682	A
		Exit	1	1		575			575	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	299	583	0.513	309	7.4	1.5	34.865	D
				2	C,D,E	125	583	0.213	125	0.7	0.3	9.877	A
			2	1	(A,B,C,D,E)	415			424	8.3	0.2	13.666	B
		Exit	1	1		569			569	0.0	0.0	0.000	A

M20 Junction 6 - 2016, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 Cobtree Roundabout	Standard Roundabout	A,B,C,D	92.06	F
2	M20 Junction 6 Running Horse Roundabout	Standard Roundabout	A,B,C,D,E	138.67	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2016	PM	ONE HOUR	17:00	18:30	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1058	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	645	100.000
2	A		ONE HOUR	✓	1223	100.000
	B	✓				
	C		ONE HOUR	✓	361	100.000
	D		ONE HOUR	✓	763	100.000
	E		ONE HOUR	✓	636	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	26	0	1032	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1157	329	2	0
	D	0	10	635	0

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	3	821	102	133	164
	B	682	14	389	345	230
	C	131	131	0	48	51
	D	359	202	30	5	167
	E	111	320	110	95	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	4	0	5	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	5	4	0	0
	D	0	25	3	0

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	6	0	0	10
	B	3	0	1	3	19
	C	2	0	0	4	0
	D	5	4	0	0	4
	E	24	5	1	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	4.62	1.7	A	972	1457
	B					
	C	189.88	72.3	F	1325	1987
	D	16.87	3.6	C	594	890
2	A	459.59	140.0	F	1121	1682
	B	9.15	4.7	A	1532	2298
	C	9.26	1.1	A	331	497
	D	7.90	1.7	A	704	1056
	E	93.40	23.3	F	583	875

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	802	200	736	803	891	0.0	0.8	3.338	A
	B			0		258				
	C	1124	281	21	1122	1261	0.0	5.4	15.307	C
	D	484	121	1143	485	0	0.0	1.0	6.627	A
2	A	917	229	682	923	971	0.0	2.7	10.600	B
	B	1261	315	481	1261	1124	0.0	1.7	4.422	A
	C	270	67	1267	270	474	0.0	0.4	5.074	A
	D	574	144	1061	574	476	0.0	0.7	4.060	A
	E	478	120	1173	479	462	0.0	1.3	8.572	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	954	238	872	952	1015	0.8	1.1	3.778	A
	B			0		297				
	C	1336	334	24	1281	1503	5.4	20.5	38.791	E
	D	582	145	1304	583	0	1.0	1.7	9.796	A
2	A	1103	276	817	1091	1167	2.7	7.9	20.888	C
	B	1503	376	572	1500	1336	1.7	2.5	5.528	A
	C	322	81	1502	323	570	0.4	0.5	6.081	A
	D	688	172	1265	690	560	0.7	0.8	4.937	A
	E	575	144	1406	579	549	1.3	2.0	13.280	B

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1160	290	1007	1160	1073	1.1	1.7	4.519	A
	B			0		308				
	C	1481	370	30	1341	1829	20.5	59.1	109.145	F
	D	707	177	1371	709	0	1.7	3.3	15.651	C
2	A	1348	337	986	1143	1415	7.9	50.8	89.904	F
	B	1829	457	648	1830	1481	2.5	4.7	8.742	A
	C	407	102	1794	404	684	0.5	1.1	7.799	A
	D	846	212	1531	846	667	0.8	1.6	6.382	A
	E	700	175	1731	671	647	2.0	9.3	32.136	D

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1166	291	999	1166	1080	1.7	1.5	4.617	A
	B			0		300				
	C	1367	342	30	1341	1835	59.1	72.3	179.141	F
	D	714	179	1371	707	0	3.3	3.6	16.868	C
2	A	1345	336	948	993	1412	50.8	129.6	318.038	F
	B	1835	459	574	1837	1367	4.7	4.6	9.148	A
	C	396	99	1753	396	658	1.1	1.1	9.264	A
	D	841	210	1505	843	643	1.6	1.7	7.903	A
	E	696	174	1724	636	625	9.3	23.3	93.403	F

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	953	238	888	954	1078	1.5	1.2	3.922	A
	B			0		310				
	C	1345	336	24	1358	1507	72.3	70.2	189.881	F
	D	586	147	1381	585	0	3.6	1.7	11.333	B
2	A	1093	273	856	1063	1172	129.6	140.0	459.593	F
	B	1507	377	574	1506	1345	4.6	2.4	5.991	A
	C	322	80	1505	323	575	1.1	0.6	7.855	A
	D	692	173	1268	694	560	1.7	1.1	6.231	A
	E	570	143	1416	613	546	23.3	7.7	74.347	F

18:15 - 18:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	796	199	787	796	1059	1.2	0.8	3.562	A
	B			0		306				
	C	1296	324	19	1340	1257	70.2	59.9	174.314	F
	D	487	122	1360	486	0	1.7	1.3	8.539	A
2	A	921	230	685	1175	981	140.0	77.4	300.563	F
	B	1257	314	565	1261	1296	2.4	1.5	4.794	A
	C	272	68	1323	271	503	0.6	0.5	6.293	A
	D	583	146	1095	585	499	1.1	0.8	4.950	A
	E	480	120	1185	482	496	7.7	1.7	18.570	C

Lane Results

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

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	395	1269	0.311	395	0.0	0.4	3.288	A
				2	A,C	407	1269	0.320	408	0.0	0.4	3.388	A
		Exit	1	1		891			891	0.0	0.0	0.000	A
	B	Exit	1	1		258			258	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1124	1351	0.832	1122	0.0	5.4	15.307	C
		Exit	1	1		1261			1261	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	7	993	0.007	7	0.0	0.0	4.224	A
				2	C,D	477	993	0.480	478	0.0	0.9	6.632	A
			2	1	(A,B,C,D)	484			484	0.0	0.0	0.023	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	620	913	0.679	624	0.0	1.9	11.351	B
				2	A,C,D,E	300	913	0.328	299	0.0	0.6	6.176	A
			2	1	(A,B,C,D,E)	917			920	0.0	0.2	0.966	A
		Exit	1	1		971			971	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	627	1223	0.513	627	0.0	0.8	4.422	A
				2	A,B,C,D,E	634	1223	0.518	633	0.0	0.9	4.423	A
		Exit	1	1		1124			1124	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	124	768	0.161	124	0.0	0.2	5.037	A
				2	A,B,C	146	768	0.190	146	0.0	0.2	5.106	A
			2	1	(A,B,C,D,E)	270			270	0.0	0.0	0.000	A
		Exit	1	1		474			474	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	266	1066	0.250	266	0.0	0.4	3.978	A
				2	A,B,C,D	308	1066	0.289	308	0.0	0.4	4.130	A
		Exit	1	1		476			476	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	322	693	0.464	323	0.0	1.0	9.710	A
				2	C,D,E	156	693	0.226	156	0.0	0.3	6.366	A
			2	1	(A,B,C,D,E)	478			478	0.0	0.0	0.000	A
		Exit	1	1		462			462	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	473	1224	0.387	473	0.4	0.5	3.729	A
				2	A,C	481	1224	0.393	479	0.4	0.6	3.826	A
		Exit	1	1		1015			1015	0.0	0.0	0.000	A
	B	Exit	1	1		297			297	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1336	1350	0.989	1281	5.4	20.5	38.791	E
		Exit	1	1		1503			1503	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	10	943	0.010	10	0.0	0.0	4.554	A
				2	C,D	572	943	0.606	573	0.9	1.6	9.647	A
			2	1	(A,B,C,D)	582			582	0.0	0.1	0.206	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	737	877	0.841	734	1.9	4.0	17.250	C
				2	A,C,D,E	357	877	0.407	356	0.6	0.8	7.563	A
			2	1	(A,B,C,D,E)	1103			1094	0.2	3.1	6.769	A
		Exit	1	1		1167			1167	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	753	1195	0.630	752	0.8	1.2	5.484	A
				2	A,B,C,D,E	750	1195	0.628	748	0.9	1.3	5.572	A
		Exit	1	1		1336			1336	0.0	0.0	0.001	A
	C	Entry	1	1	D,A,E	150	707	0.212	150	0.2	0.2	6.029	A
				2	A,B,C	173	707	0.244	172	0.2	0.3	6.124	A
			2	1	(A,B,C,D,E)	322			322	0.0	0.0	0.000	A
		Exit	1	1		570			570	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	323	1003	0.322	323	0.4	0.4	4.724	A
				2	A,B,C,D	365	1003	0.364	367	0.4	0.4	5.124	A
		Exit	1	1		560			560	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	391	635	0.615	394	1.0	1.6	16.017	C
				2	C,D,E	185	635	0.291	185	0.3	0.4	7.854	A
			2	1	(A,B,C,D,E)	575			575	0.0	0.0	0.022	A
		Exit	1	1		549			549	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	575	1179	0.487	575	0.5	0.8	4.473	A
				2	A,C	585	1179	0.496	584	0.6	0.8	4.564	A
		Exit	1	1		1073			1073	0.0	0.0	0.000	A
	B	Exit	1	1		308			308	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1481	1347	1.099	1341	20.5	59.1	109.145	F
		Exit	1	1		1829			1829	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	11	923	0.012	11	0.0	0.0	4.934	A
				2	C,D	696	923	0.754	697	1.6	2.9	14.015	B
			2	1	(A,B,C,D)	707			708	0.1	0.5	1.709	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	763	832	0.917	759	4.0	6.6	27.182	D
				2	A,C,D,E	384	832	0.462	384	0.8	1.1	9.983	A
			2	1	(A,B,C,D,E)	1348			1147	3.1	43.0	67.870	F
		Exit	1	1		1415			1415	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	919	1172	0.784	920	1.2	2.3	8.691	A
				2	A,B,C,D,E	910	1172	0.776	910	1.3	2.4	8.793	A
		Exit	1	1		1482			1481	0.0	0.1	0.085	A
	C	Entry	1	1	D,A,E	193	630	0.306	191	0.2	0.5	7.374	A
				2	A,B,C	214	630	0.339	213	0.3	0.6	8.163	A
			2	1	(A,B,C,D,E)	407			407	0.0	0.0	0.001	A
		Exit	1	1		684			684	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	404	922	0.439	405	0.4	0.6	5.872	A
				2	A,B,C,D	442	922	0.479	442	0.4	0.9	6.842	A
		Exit	1	1		667			667	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	462	555	0.833	448	1.6	6.6	36.553	E
				2	C,D,E	223	555	0.401	223	0.4	0.7	10.898	B
			2	1	(A,B,C,D,E)	700			684	0.0	2.0	3.725	A
		Exit	1	1		647			647	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	577	1182	0.488	577	0.8	0.8	4.612	A
				2	A,C	589	1182	0.498	589	0.8	0.7	4.622	A
		Exit	1	1		1080			1080	0.0	0.0	0.000	A
	B	Exit	1	1		300			300	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1367	1347	1.015	1341	59.1	72.3	179.141	F
		Exit	1	1		1835			1835	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	11	923	0.012	11	0.0	0.0	4.961	A
				2	C,D	702	923	0.761	696	2.9	3.1	14.685	B
			2	1	(A,B,C,D)	714			713	0.5	0.5	2.303	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	665	842	0.789	665	6.6	6.7	35.042	E
				2	A,C,D,E	327	842	0.388	329	1.1	0.8	9.999	A
			2	1	(A,B,C,D,E)	1345			992	43.0	122.1	291.322	F
		Exit	1	1		1412			1412	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	914	1194	0.766	915	2.3	2.4	9.188	A
				2	A,B,C,D,E	921	1194	0.771	921	2.4	2.3	9.108	A
		Exit	1	1		1367			1367	0.1	0.2	0.451	A
	C	Entry	1	1	D,A,E	190	641	0.296	190	0.5	0.4	7.363	A
				2	A,B,C	207	641	0.323	206	0.6	0.7	10.954	B
			2	1	(A,B,C,D,E)	396			396	0.0	0.0	0.003	A
		Exit	1	1		658			658	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	416	929	0.448	417	0.6	0.7	6.375	A
				2	A,B,C,D	425	929	0.457	426	0.9	1.0	9.365	A
		Exit	1	1		643			643	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	438	556	0.788	429	6.6	10.3	71.906	F
				2	C,D,E	206	556	0.370	207	0.7	0.7	12.013	B
			2	1	(A,B,C,D,E)	696			644	2.0	12.4	40.601	E
		Exit	1	1		625			625	0.0	0.0	0.000	A

18:00 - 18:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	470	1219	0.385	470	0.8	0.6	3.911	A
				2	A,C	484	1219	0.397	484	0.7	0.6	3.932	A
		Exit	1	1		1078			1078	0.0	0.0	0.000	A
	B	Exit	1	1		310			310	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1345	1350	0.997	1358	72.3	70.2	189.881	F
		Exit	1	1		1507			1507	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	9	920	0.010	9	0.0	0.0	5.102	A
				2	C,D	578	920	0.628	576	3.1	1.7	10.989	B
			2	1	(A,B,C,D)	586			586	0.5	0.0	0.487	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	715	867	0.825	715	6.7	6.8	34.111	D
				2	A,C,D,E	348	867	0.402	348	0.8	0.9	9.433	A
			2	1	(A,B,C,D,E)	1093			1063	122.1	132.4	434.954	F
		Exit	1	1		1172			1172	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	754	1194	0.631	753	2.4	1.3	6.024	A
				2	A,B,C,D,E	754	1194	0.631	753	2.3	1.2	5.958	A
		Exit	1	1		1345			1345	0.2	0.2	0.475	A
	C	Entry	1	1	D,A,E	150	706	0.212	150	0.4	0.3	6.339	A
				2	A,B,C	172	706	0.243	173	0.7	0.4	9.189	A
			2	1	(A,B,C,D,E)	322			322	0.0	0.0	0.000	A
		Exit	1	1		575			575	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	334	1002	0.333	334	0.7	0.5	5.205	A
				2	A,B,C,D	358	1002	0.357	360	1.0	0.6	7.187	A
		Exit	1	1		560			560	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	403	633	0.637	418	10.3	4.7	57.923	F
				2	C,D,E	194	633	0.307	195	0.7	0.5	10.378	B
			2	1	(A,B,C,D,E)	570			597	12.4	2.5	34.856	D
		Exit	1	1		546			546	0.0	0.0	0.000	A

18:15 - 18:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	390	1252	0.311	390	0.6	0.4	3.534	A
				2	A,C	406	1252	0.324	406	0.6	0.4	3.589	A
		Exit	1	1		1059			1059	0.0	0.0	0.000	A
	B	Exit	1	1		306			306	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1296	1352	0.959	1340	70.2	59.9	174.314	F
		Exit	1	1		1257			1257	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	926	0.008	8	0.0	0.0	5.163	A
				2	C,D	480	926	0.518	478	1.7	1.3	8.477	A
			2	1	(A,B,C,D)	487			488	0.0	0.0	0.109	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	786	912	0.862	793	6.8	5.7	28.645	D
				2	A,C,D,E	385	912	0.422	383	0.9	1.0	9.188	A
			2	1	(A,B,C,D,E)	921			1172	132.4	70.7	280.151	F
		Exit	1	1		981			981	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	628	1197	0.525	629	1.3	0.8	4.792	A
				2	A,B,C,D,E	629	1197	0.526	632	1.2	0.7	4.796	A
		Exit	1	1		1296			1296	0.2	0.1	0.291	A
	C	Entry	1	1	D,A,E	126	754	0.168	126	0.3	0.2	5.490	A
				2	A,B,C	145	754	0.193	145	0.4	0.3	6.978	A
			2	1	(A,B,C,D,E)	272			272	0.0	0.0	0.000	A
		Exit	1	1		503			503	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	278	1055	0.264	279	0.5	0.3	4.341	A
				2	A,B,C,D	305	1055	0.289	306	0.6	0.4	5.501	A
		Exit	1	1		499			499	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	326	690	0.473	328	4.7	1.3	22.093	C
				2	C,D,E	154	690	0.223	154	0.5	0.3	7.143	A
			2	1	(A,B,C,D,E)	480			480	2.5	0.0	2.524	A
		Exit	1	1		496			496	0.0	0.0	0.000	A

M20 Junction 6 - 2031, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 Cobtree Roundabout	Standard Roundabout	A,B,C,D	40.72	E
2	M20 Junction 6 Running Horse Roundabout	Standard Roundabout	A,B,C,D,E	240.62	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D3	2031	AM	ONE HOUR	07:15	08:45	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1625	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	686	100.000
2	A		ONE HOUR	✓	1465	100.000
	B	✓				
	C		ONE HOUR	✓	457	100.000
	D		ONE HOUR	✓	741	100.000
	E		ONE HOUR	✓	607	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	13	0	1612	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1244	230	21	0
	D	0	9	677	0

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	4	1056	13	182	210
	B	1414	0	123	459	317
	C	243	71	0	24	119
	D	435	124	28	16	138
	E	186	244	73	104	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	8	14	13	0
	D	0	0	11	0

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	8	0	2	4
	B	3	0	5	6	19
	C	2	7	0	0	4
	D	6	5	4	0	7
	E	28	20	0	12	7

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	8.57	4.8	A	1490	2235
	B					
	C	85.86	32.9	F	1295	1942
	D	24.01	5.7	C	632	948
2	A	555.03	200.3	F	1343	2015
	B	105.42	86.2	F	2117	3175
	C	21.52	3.0	C	419	628
	D	12.72	3.1	B	680	1020
	E	439.08	76.5	F	557	835

Main Results for each time segment

07:15 - 07:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1224	306	711	1224	944	0.0	1.4	3.868	A
	B			0		183				
	C	1126	281	10	1126	1743	0.0	5.3	15.236	C
	D	521	130	1136	520	0	0.0	1.3	7.718	A
2	A	1103	276	498	1099	1720	0.0	6.2	16.832	C
	B	1743	436	471	1744	1126	0.0	3.3	6.484	A
	C	343	86	2037	344	178	0.0	0.8	7.367	A
	D	555	139	1788	555	592	0.0	1.0	5.213	A
	E	461	115	1758	460	585	0.0	2.5	15.054	C

07:30 - 07:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1464	366	833	1463	1069	1.4	2.1	4.900	A
	B			0		203				
	C	1303	326	12	1269	2081	5.3	14.4	30.686	D
	D	621	155	1282	620	0	1.3	2.1	11.323	B
2	A	1305	326	594	1255	2040	6.2	25.3	51.339	F
	B	2081	520	546	2075	1303	3.3	7.9	12.037	B
	C	409	102	2410	410	211	0.8	1.3	11.069	B
	D	666	166	2122	666	698	1.0	1.5	7.153	A
	E	547	137	2095	539	693	2.5	6.9	35.744	E

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1779	445	973	1779	1108	2.1	4.0	7.379	A
	B			0		209				
	C	1349	337	14	1312	2529	14.4	25.2	57.453	F
	D	763	191	1326	756	0	2.1	5.2	20.836	C
2	A	1616	404	625	1282	2364	25.3	108.3	190.771	F
	B	2529	632	557	2375	1349	7.9	51.8	48.965	E
	C	504	126	2701	503	232	1.3	3.0	19.189	C
	D	817	204	2443	814	761	1.5	3.0	11.196	B
	E	670	168	2469	520	789	6.9	39.7	157.794	F

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1781	445	974	1777	1114	4.0	4.8	8.569	A
	B			0		216				
	C	1343	336	14	1324	2520	25.2	30.1	76.813	F
	D	753	188	1338	750	0	5.2	5.7	24.005	C
2	A	1616	404	622	1279	2387	108.3	191.3	423.998	F
	B	2520	630	558	2399	1343	51.8	86.2	105.420	F
	C	501	125	2723	503	234	3.0	3.0	21.523	C
	D	824	206	2464	823	763	3.0	3.1	12.717	B
	E	667	167	2492	517	794	39.7	76.5	403.773	F

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1470	367	843	1470	1115	4.8	2.2	6.123	A
	B			0		216				
	C	1330	332	12	1329	2085	30.1	32.0	84.316	F
	D	618	154	1341	617	0	5.7	2.4	16.091	C
2	A	1316	329	625	1280	2182	191.3	200.3	555.026	F
	B	2085	521	575	2259	1330	86.2	32.7	89.038	F
	C	412	103	2605	412	229	3.0	1.9	16.300	C
	D	658	165	2274	659	743	3.1	1.6	9.142	A
	E	542	135	2209	598	725	76.5	67.6	439.084	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1222	305	739	1223	1105	2.2	1.3	4.275	A
	B			0		212				
	C	1318	330	10	1320	1741	32.0	32.9	85.855	F
	D	515	129	1329	516	0	2.4	1.4	10.018	B
2	A	1104	276	610	1270	1782	200.3	159.1	479.043	F
	B	1741	435	561	1762	1318	32.7	4.0	18.718	C
	C	343	86	2120	343	203	1.9	0.9	10.550	B
	D	558	139	1825	558	638	1.6	1.0	6.627	A
	E	454	113	1770	623	614	67.6	21.4	206.776	F

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	610	1278	0.477	610	0.0	0.7	3.861	A
				2	A,C	614	1278	0.481	614	0.0	0.7	3.875	A
		Exit	1	1		944			944	0.0	0.0	0.000	A
	B	Exit	1	1		183			183	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1126	1356	0.831	1126	0.0	5.3	15.236	C
		Exit	1	1		1743			1743	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	7	995	0.007	7	0.0	0.0	3.369	A
				2	C,D	514	995	0.517	513	0.0	1.3	7.666	A
			2	1	(A,B,C,D)	521			521	0.0	0.0	0.113	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	796	961	0.828	795	0.0	3.6	14.746	B
				2	A,C,D,E	304	961	0.316	303	0.0	0.5	5.725	A
			2	1	(A,B,C,D,E)	1103			1100	0.0	2.1	4.618	A
		Exit	1	1		1720			1720	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	869	1226	0.709	870	0.0	1.6	6.481	A
				2	A,B,C,D,E	874	1226	0.713	874	0.0	1.7	6.487	A
		Exit	1	1		1126			1126	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	193	566	0.341	193	0.0	0.5	7.635	A
				2	A,B,C	150	566	0.265	150	0.0	0.3	7.023	A
			2	1	(A,B,C,D,E)	343			343	0.0	0.0	0.000	A
		Exit	1	1		178			178	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	269	843	0.319	269	0.0	0.4	5.201	A
				2	A,B,C,D	286	843	0.339	286	0.0	0.5	5.223	A
		Exit	1	1		592			592	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	326	548	0.595	324	0.0	2.1	18.070	C
				2	C,D,E	135	548	0.247	136	0.0	0.4	8.424	A
			2	1	(A,B,C,D,E)	461			461	0.0	0.0	0.081	A
		Exit	1	1		585			585	0.0	0.0	0.000	A

07:30 - 07:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	731	1237	0.591	730	0.7	1.1	4.886	A
				2	A,C	733	1237	0.593	733	0.7	1.1	4.914	A
		Exit	1	1		1069			1069	0.0	0.0	0.000	A
	B	Exit	1	1		203			203	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1303	1355	0.962	1269	5.3	14.4	30.686	D
		Exit	1	1		2081			2081	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	950	0.009	8	0.0	0.0	3.693	A
				2	C,D	612	950	0.644	612	1.3	2.0	10.877	B
			2	1	(A,B,C,D)	621			621	0.0	0.1	0.541	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	906	936	0.968	905	3.6	5.9	21.807	C
				2	A,C,D,E	351	936	0.375	350	0.5	0.8	7.080	A
			2	1	(A,B,C,D,E)	1305			1257	2.1	18.5	33.620	D
		Exit	1	1		2040			2040	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1041	1203	0.866	1037	1.6	4.0	12.073	B
				2	A,B,C,D,E	1040	1203	0.864	1037	1.7	3.9	12.002	B
		Exit	1	1		1303			1303	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	223	468	0.476	224	0.5	0.7	11.568	B
				2	A,B,C	186	468	0.398	186	0.3	0.6	10.445	B
			2	1	(A,B,C,D,E)	409			409	0.0	0.0	0.002	A
		Exit	1	1		211			211	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	322	741	0.435	322	0.4	0.7	7.108	A
				2	A,B,C,D	344	741	0.464	344	0.5	0.8	7.195	A
		Exit	1	1		698			698	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	385	464	0.830	382	2.1	5.3	41.150	E
				2	C,D,E	157	464	0.339	158	0.4	0.5	12.309	B
			2	1	(A,B,C,D,E)	547			543	0.0	1.1	3.415	A
		Exit	1	1		693			693	0.0	0.0	0.000	A

07:45 - 08:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	888	1191	0.746	888	1.1	2.0	7.350	A
				2	A,C	891	1191	0.749	891	1.1	2.0	7.408	A
		Exit	1	1		1108			1108	0.0	0.0	0.000	A
	B	Exit	1	1		209			209	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1349	1354	0.997	1312	14.4	25.2	57.453	F
		Exit	1	1		2529			2529	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	10	937	0.010	10	0.0	0.0	3.852	A
				2	C,D	751	937	0.802	746	2.0	3.9	16.465	C
			2	1	(A,B,C,D)	763			761	0.1	1.3	4.462	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	925	928	0.997	925	5.9	6.8	26.000	D
				2	A,C,D,E	357	928	0.385	357	0.8	0.8	8.105	A
			2	1	(A,B,C,D,E)	1616			1282	18.5	100.7	169.891	F
		Exit	1	1		2364			2364	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1266	1199	1.056	1189	4.0	25.9	48.986	E
				2	A,B,C,D,E	1263	1199	1.053	1186	3.9	25.9	48.944	E
		Exit	1	1		1349			1349	0.0	0.0	0.005	A
	C	Entry	1	1	D,A,E	269	392	0.685	268	0.7	1.7	20.350	C
				2	A,B,C	235	392	0.600	236	0.6	1.3	17.650	C
			2	1	(A,B,C,D,E)	504			504	0.0	0.0	0.078	A
		Exit	1	1		232			232	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	400	642	0.623	398	0.7	1.5	11.067	B
				2	A,B,C,D	417	642	0.650	415	0.8	1.5	11.320	B
		Exit	1	1		761			761	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	377	372	1.015	369	5.3	12.8	99.117	F
				2	C,D,E	152	372	0.408	151	0.5	1.0	20.680	C
			2	1	(A,B,C,D,E)	670			529	1.1	26.0	79.844	F
		Exit	1	1		789			789	0.0	0.0	0.000	A

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	888	1190	0.746	886	2.0	2.4	8.561	A
				2	A,C	893	1190	0.750	891	2.0	2.4	8.578	A
		Exit	1	1		1114			1114	0.0	0.0	0.000	A
	B	Exit	1	1		216			216	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1343	1354	0.992	1324	25.2	30.1	76.813	F
		Exit	1	1		2521			2520	0.0	0.0	0.011	A
	D	Entry	1	1	B,A	10	933	0.011	10	0.0	0.0	3.872	A
				2	C,D	739	933	0.792	740	3.9	3.9	18.006	C
			2	1	(A,B,C,D)	753			749	1.3	1.8	6.167	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	921	929	0.992	921	6.8	6.8	26.376	D
				2	A,C,D,E	358	929	0.386	358	0.8	0.9	8.250	A
			2	1	(A,B,C,D,E)	1616			1279	100.7	183.7	402.891	F
		Exit	1	1		2387			2387	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1255	1199	1.046	1194	25.9	43.1	105.672	F
				2	A,B,C,D,E	1266	1199	1.055	1205	25.9	43.0	105.169	F
		Exit	1	1		1343			1343	0.0	0.0	0.017	A
	C	Entry	1	1	D,A,E	268	386	0.694	269	1.7	1.7	22.600	C
				2	A,B,C	233	386	0.604	234	1.3	1.3	19.976	C
			2	1	(A,B,C,D,E)	501			501	0.0	0.0	0.143	A
		Exit	1	1		234			234	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	405	636	0.636	405	1.5	1.5	12.535	B
				2	A,B,C,D	419	636	0.660	418	1.5	1.6	12.891	B
		Exit	1	1		763			763	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	366	366	1.001	367	12.8	13.5	130.784	F
				2	C,D,E	151	366	0.413	150	1.0	1.1	26.358	D
			2	1	(A,B,C,D,E)	667			518	26.0	61.8	310.041	F
		Exit	1	1		794			794	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	733	1234	0.594	734	2.4	1.1	6.098	A
				2	A,C	736	1234	0.597	737	2.4	1.1	6.147	A
		Exit	1	1		1115			1115	0.0	0.0	0.000	A
	B	Exit	1	1		216			216	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1330	1355	0.981	1329	30.1	32.0	84.316	F
		Exit	1	1		2085			2085	0.0	0.0	0.017	A
	D	Entry	1	1	B,A	8	932	0.009	8	0.0	0.0	3.866	A
				2	C,D	609	932	0.653	609	3.9	2.1	13.458	B
			2	1	(A,B,C,D)	618			617	1.8	0.3	2.943	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	916	928	0.987	916	6.8	6.8	26.417	D
				2	A,C,D,E	363	928	0.391	364	0.9	0.8	7.951	A
			2	1	(A,B,C,D,E)	1316			1279	183.7	192.7	533.935	F
		Exit	1	1		2182			2182	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1041	1194	0.872	1128	43.1	16.4	88.966	F
				2	A,B,C,D,E	1044	1194	0.874	1131	43.0	16.3	89.110	F
		Exit	1	1		1330			1330	0.0	0.0	0.022	A
	C	Entry	1	1	D,A,E	223	417	0.535	223	1.7	1.1	17.360	C
				2	A,B,C	189	417	0.454	189	1.3	0.8	15.037	C
			2	1	(A,B,C,D,E)	412			412	0.0	0.0	0.006	A
		Exit	1	1		229			229	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	324	694	0.467	325	1.5	0.7	8.852	A
				2	A,B,C,D	334	694	0.482	335	1.6	0.8	9.420	A
		Exit	1	1		743			743	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	422	436	0.968	426	13.5	12.9	114.035	F
				2	C,D,E	172	436	0.394	172	1.1	1.0	21.970	C
			2	1	(A,B,C,D,E)	542			594	61.8	53.7	360.753	F
		Exit	1	1		725			725	0.0	0.0	0.000	A

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	608	1268	0.479	608	1.1	0.7	4.269	A
				2	A,C	614	1268	0.484	615	1.1	0.6	4.282	A
		Exit	1	1		1105			1105	0.0	0.0	0.000	A
	B	Exit	1	1		212			212	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1318	1356	0.973	1320	32.0	32.9	85.855	F
		Exit	1	1		1741			1741	0.0	0.0	0.001	A
	D	Entry	1	1	B,A	7	936	0.007	7	0.0	0.0	3.648	A
				2	C,D	508	936	0.543	509	2.1	1.3	9.787	A
			2	1	(A,B,C,D)	515			515	0.3	0.0	0.375	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	915	932	0.982	916	6.8	6.7	26.423	D
				2	A,C,D,E	356	932	0.383	354	0.8	0.9	8.117	A
			2	1	(A,B,C,D,E)	1104			1271	192.7	151.6	459.198	F
		Exit	1	1		1782			1782	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	872	1198	0.727	882	16.4	2.0	18.699	C
				2	A,B,C,D,E	869	1198	0.726	880	16.3	2.0	18.737	C
		Exit	1	1		1318			1318	0.0	0.0	0.031	A
	C	Entry	1	1	D,A,E	192	544	0.353	192	1.1	0.5	10.996	B
				2	A,B,C	151	544	0.277	151	0.8	0.4	9.990	A
			2	1	(A,B,C,D,E)	343			343	0.0	0.0	0.000	A
		Exit	1	1		203			203	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	271	832	0.326	271	0.7	0.4	6.490	A
				2	A,B,C,D	287	832	0.345	287	0.8	0.5	6.757	A
		Exit	1	1		638			638	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	416	545	0.763	448	12.9	7.1	82.152	F
				2	C,D,E	172	545	0.315	174	1.0	0.5	16.496	C
			2	1	(A,B,C,D,E)	454			588	53.7	13.8	155.025	F
		Exit	1	1		614			614	0.0	0.0	0.000	A

M20 Junction 6 - 2031, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 Cobtree Roundabout	Standard Roundabout	A,B,C,D	93.80	F
2	M20 Junction 6 Running Horse Roundabout	Standard Roundabout	A,B,C,D,E	274.68	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D4	2031	PM	ONE HOUR	17:00	18:30	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1145	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	698	100.000
2	A		ONE HOUR	✓	1324	100.000
	B	✓				
	C		ONE HOUR	✓	391	100.000
	D		ONE HOUR	✓	825	100.000
	E		ONE HOUR	✓	688	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	28	0	1117	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1256	356	2	0
	D	0	11	687	0

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	3	889	110	144	178
	B	739	15	421	374	249
	C	142	142	0	52	55
	D	388	219	32	5	181
	E	120	346	119	103	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	4	0	5	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	5	4	0	0
	D	0	25	3	0

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	6	0	0	10
	B	3	0	1	3	19
	C	2	0	0	4	0
	D	5	4	0	0	4
	E	24	5	1	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	5.02	1.9	A	1051	1576
	B					
	C	196.59	74.3	F	1354	2031
	D	21.97	4.9	C	639	958
2	A	876.55	278.2	F	1221	1831
	B	11.56	6.5	B	1654	2481
	C	10.92	1.3	B	361	541
	D	9.78	2.4	A	756	1134
	E	268.20	59.2	F	632	948

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	862	216	786	861	958	0.0	1.0	3.438	A
	B			0		269				
	C	1221	305	20	1199	1357	0.0	9.1	19.950	C
	D	526	132	1220	524	0	0.0	1.3	7.308	A
2	A	1006	252	738	1003	1048	0.0	4.2	12.530	B
	B	1357	339	521	1358	1221	0.0	1.9	4.706	A
	C	299	75	1366	299	513	0.0	0.5	5.337	A
	D	622	156	1152	623	512	0.0	0.7	4.299	A
	E	511	128	1273	513	502	0.0	1.6	9.902	A

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1034	258	913	1032	1060	1.0	1.3	4.048	A
	B			0		303				
	C	1434	359	25	1329	1617	9.1	34.2	60.486	F
	D	618	155	1355	619	0	1.3	2.0	11.239	B
2	A	1190	298	884	1164	1260	4.2	14.2	32.522	D
	B	1617	404	614	1619	1434	1.9	3.1	6.534	A
	C	352	88	1624	353	609	0.5	0.6	6.541	A
	D	747	187	1372	746	605	0.7	1.2	5.333	A
	E	626	156	1525	620	593	1.6	3.3	15.982	C

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1261	315	1066	1263	1072	1.3	1.9	5.011	A
	B			0		307				
	C	1422	355	29	1341	1993	34.2	69.4	147.163	F
	D	772	193	1369	769	0	2.0	4.9	20.740	C
2	A	1464	366	989	1028	1511	14.2	102.7	192.377	F
	B	1993	498	596	1998	1422	3.1	6.5	11.373	B
	C	433	108	1886	434	707	0.6	1.2	9.446	A
	D	901	225	1629	900	692	1.2	2.4	7.877	A
	E	764	191	1854	646	674	3.3	23.6	69.817	F

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1255	314	1062	1256	1083	1.9	1.7	5.025	A
	B			0		307				
	C	1357	339	31	1349	1981	69.4	74.3	194.007	F
	D	769	192	1379	766	0	4.9	4.7	21.973	C
2	A	1462	365	957	954	1509	102.7	225.7	614.813	F
	B	1981	495	554	1984	1357	6.5	6.2	11.562	B
	C	431	108	1843	432	695	1.2	1.3	10.915	B
	D	905	226	1608	906	668	2.4	2.4	9.784	A
	E	759	190	1857	609	657	23.6	59.2	247.422	F

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1031	258	922	1031	1079	1.7	1.3	4.155	A
	B			0		311				
	C	1351	338	25	1357	1617	74.3	73.1	196.593	F
	D	618	155	1382	618	0	4.7	2.1	13.532	B
2	A	1198	300	938	991	1268	225.7	278.2	876.547	F
	B	1617	404	578	1616	1351	6.2	3.1	6.813	A
	C	354	88	1590	354	605	1.3	0.8	8.811	A
	D	744	186	1339	743	604	2.4	1.4	7.044	A
	E	616	154	1517	690	566	59.2	43.1	268.199	F

18:15 - 18:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	862	215	825	862	1070	1.3	0.9	3.696	A
	B			0		305				
	C	1338	335	21	1348	1360	73.1	69.7	190.030	F
	D	528	132	1369	526	0	2.1	1.5	9.277	A
2	A	1004	251	808	1105	1066	278.2	260.9	707.355	F
	B	1360	340	575	1359	1338	3.1	2.0	5.184	A
	C	295	74	1400	295	535	0.8	0.5	7.026	A
	D	617	154	1163	617	532	1.4	0.9	5.536	A
	E	515	129	1273	601	506	43.1	11.1	110.669	F

Lane Results

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

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	424	1253	0.339	424	0.0	0.5	3.432	A
				2	A,C	438	1253	0.350	437	0.0	0.5	3.444	A
		Exit	1	1		958			958	0.0	0.0	0.000	A
	B	Exit	1	1		269			269	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1221	1351	0.903	1199	0.0	9.1	19.950	C
		Exit	1	1		1357			1357	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	969	0.009	8	0.0	0.0	4.625	A
				2	C,D	517	969	0.534	516	0.0	1.3	7.289	A
			2	1	(A,B,C,D)	526			526	0.0	0.0	0.050	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	677	898	0.754	674	0.0	2.9	12.815	B
				2	A,C,D,E	331	898	0.368	329	0.0	0.7	6.501	A
			2	1	(A,B,C,D,E)	1006			1007	0.0	0.7	1.799	A
		Exit	1	1		1048			1048	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	679	1210	0.561	679	0.0	0.9	4.726	A
				2	A,B,C,D,E	679	1210	0.561	679	0.0	0.9	4.686	A
		Exit	1	1		1221			1221	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	140	743	0.188	140	0.0	0.2	5.313	A
				2	A,B,C	159	743	0.215	159	0.0	0.3	5.359	A
			2	1	(A,B,C,D,E)	299			299	0.0	0.0	0.000	A
		Exit	1	1		513			513	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	288	1038	0.278	289	0.0	0.3	4.178	A
				2	A,B,C,D	334	1038	0.322	334	0.0	0.4	4.404	A
		Exit	1	1		512			512	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	347	668	0.519	349	0.0	1.2	11.457	B
				2	C,D,E	165	668	0.246	164	0.0	0.3	6.882	A
			2	1	(A,B,C,D,E)	511			511	0.0	0.0	0.003	A
		Exit	1	1		502			502	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	511	1211	0.422	510	0.5	0.6	4.025	A
				2	A,C	523	1211	0.432	522	0.5	0.7	4.072	A
		Exit	1	1		1060			1060	0.0	0.0	0.000	A
	B	Exit	1	1		303			303	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1434	1349	1.063	1329	9.1	34.2	60.486	F
		Exit	1	1		1617			1617	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	10	928	0.011	10	0.0	0.0	4.783	A
				2	C,D	608	928	0.655	608	1.3	1.9	10.853	B
			2	1	(A,B,C,D)	618			618	0.0	0.1	0.463	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	786	859	0.915	783	2.9	5.1	20.833	C
				2	A,C,D,E	381	859	0.443	381	0.7	0.9	8.508	A
			2	1	(A,B,C,D,E)	1190			1166	0.7	8.2	15.657	C
		Exit	1	1		1260			1260	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	809	1182	0.684	810	0.9	1.5	6.512	A
				2	A,B,C,D,E	808	1182	0.684	809	0.9	1.6	6.556	A
		Exit	1	1		1434			1434	0.0	0.0	0.003	A
	C	Entry	1	1	D,A,E	164	675	0.243	164	0.2	0.3	6.460	A
				2	A,B,C	188	675	0.279	189	0.3	0.3	6.611	A
			2	1	(A,B,C,D,E)	352			352	0.0	0.0	0.000	A
		Exit	1	1		609			609	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	351	970	0.362	351	0.3	0.5	5.147	A
				2	A,B,C,D	396	970	0.408	395	0.4	0.6	5.495	A
		Exit	1	1		605			605	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	423	606	0.699	419	1.2	2.6	19.464	C
				2	C,D,E	202	606	0.333	201	0.3	0.6	8.792	A
			2	1	(A,B,C,D,E)	626			625	0.0	0.0	0.149	A
		Exit	1	1		593			593	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	624	1160	0.538	624	0.6	0.9	5.008	A
				2	A,C	638	1160	0.550	639	0.7	0.9	5.014	A
		Exit	1	1		1072			1072	0.0	0.0	0.000	A
	B	Exit	1	1		307			307	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1422	1348	1.055	1341	34.2	69.4	147.163	F
		Exit	1	1		1993			1993	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	13	923	0.014	13	0.0	0.0	5.056	A
				2	C,D	760	923	0.822	756	1.9	3.7	16.699	C
			2	1	(A,B,C,D)	772			772	0.1	1.1	4.125	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	691	831	0.831	690	5.1	6.8	31.455	D
				2	A,C,D,E	339	831	0.408	338	0.9	1.0	10.394	B
			2	1	(A,B,C,D,E)	1464			1030	8.2	95.0	166.814	F
		Exit	1	1		1511			1511	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	994	1188	0.837	996	1.5	3.3	11.362	B
				2	A,B,C,D,E	999	1188	0.841	1001	1.6	3.3	11.384	B
		Exit	1	1		1422			1422	0.0	0.2	0.242	A
	C	Entry	1	1	D,A,E	205	606	0.338	207	0.3	0.4	8.191	A
				2	A,B,C	227	606	0.375	227	0.3	0.8	10.551	B
			2	1	(A,B,C,D,E)	433			433	0.0	0.0	0.000	A
		Exit	1	1		707			707	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	445	892	0.500	446	0.5	0.9	6.777	A
				2	A,B,C,D	456	892	0.511	455	0.6	1.5	8.909	A
		Exit	1	1		692			692	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	454	524	0.866	428	2.6	11.0	60.039	F
				2	C,D,E	218	524	0.416	217	0.6	0.9	13.071	B
			2	1	(A,B,C,D,E)	764			671	0.0	11.8	22.858	C
		Exit	1	1		674			674	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	623	1161	0.536	623	0.9	0.8	4.991	A
				2	A,C	632	1161	0.544	633	0.9	0.9	5.058	A
		Exit	1	1		1083			1083	0.0	0.0	0.000	A
	B	Exit	1	1		307			307	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1357	1347	1.008	1349	69.4	74.3	194.007	F
		Exit	1	1		1981			1981	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	12	920	0.013	12	0.0	0.0	5.034	A
				2	C,D	755	920	0.821	754	3.7	3.6	17.499	C
			2	1	(A,B,C,D)	769			767	1.1	1.1	4.627	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	642	840	0.764	642	6.8	6.8	37.935	E
				2	A,C,D,E	313	840	0.372	313	1.0	0.7	9.567	A
			2	1	(A,B,C,D,E)	1462			954	95.0	218.1	586.698	F
		Exit	1	1		1509			1509	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	990	1200	0.825	991	3.3	3.1	11.548	B
				2	A,B,C,D,E	991	1200	0.826	992	3.3	3.1	11.576	B
		Exit	1	1		1357			1357	0.2	0.2	0.627	A
	C	Entry	1	1	D,A,E	209	617	0.339	209	0.4	0.5	8.186	A
				2	A,B,C	222	617	0.360	223	0.8	0.8	13.434	B
			2	1	(A,B,C,D,E)	431			431	0.0	0.0	0.000	A
		Exit	1	1		695			695	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	458	898	0.510	459	0.9	1.0	7.334	A
				2	A,B,C,D	447	898	0.498	448	1.5	1.4	12.262	B
		Exit	1	1		668			668	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	415	523	0.792	410	11.0	13.1	106.189	F
				2	C,D,E	199	523	0.380	199	0.9	0.8	15.357	C
			2	1	(A,B,C,D,E)	759			613	11.8	45.2	172.932	F
		Exit	1	1		657			657	0.0	0.0	0.000	A

18:00 - 18:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	511	1208	0.423	511	0.8	0.6	4.122	A
				2	A,C	520	1208	0.430	520	0.9	0.6	4.187	A
		Exit	1	1		1079			1079	0.0	0.0	0.000	A
	B	Exit	1	1		311			311	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1351	1349	1.001	1357	74.3	73.1	196.593	F
		Exit	1	1		1617			1617	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	9	919	0.010	9	0.0	0.0	4.987	A
				2	C,D	610	919	0.663	609	3.6	2.0	12.546	B
			2	1	(A,B,C,D)	618			619	1.1	0.1	1.210	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	662	845	0.783	662	6.8	6.8	36.954	E
				2	A,C,D,E	328	845	0.388	329	0.7	0.9	9.667	A
			2	1	(A,B,C,D,E)	1198			990	218.1	270.6	853.494	F
		Exit	1	1		1268			1268	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	809	1193	0.678	809	3.1	1.5	6.819	A
				2	A,B,C,D,E	808	1193	0.678	808	3.1	1.5	6.807	A
		Exit	1	1		1351			1351	0.2	0.2	0.600	A
	C	Entry	1	1	D,A,E	170	684	0.249	170	0.5	0.3	6.839	A
				2	A,B,C	183	684	0.268	184	0.8	0.5	10.627	B
			2	1	(A,B,C,D,E)	354			354	0.0	0.0	0.000	A
		Exit	1	1		605			605	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	364	980	0.371	364	1.0	0.5	5.533	A
				2	A,B,C,D	380	980	0.388	380	1.4	0.8	8.501	A
		Exit	1	1		604			604	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	463	608	0.761	472	13.1	11.1	93.515	F
				2	C,D,E	218	608	0.359	218	0.8	0.8	13.323	B
			2	1	(A,B,C,D,E)	616			681	45.2	31.2	204.112	F
		Exit	1	1		566			566	0.0	0.0	0.000	A

18:15 - 18:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	421	1240	0.340	422	0.6	0.4	3.700	A
				2	A,C	440	1240	0.355	440	0.6	0.4	3.692	A
		Exit	1	1		1070			1070	0.0	0.0	0.000	A
	B	Exit	1	1		305			305	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1338	1351	0.991	1348	73.1	69.7	190.030	F
		Exit	1	1		1360			1360	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	924	0.009	8	0.0	0.0	4.865	A
				2	C,D	520	924	0.563	518	2.0	1.5	9.213	A
			2	1	(A,B,C,D)	528			528	0.1	0.0	0.129	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	744	879	0.847	745	6.8	6.8	33.713	D
				2	A,C,D,E	361	879	0.411	361	0.9	1.0	9.402	A
			2	1	(A,B,C,D,E)	1004			1106	270.6	253.0	693.220	F
		Exit	1	1		1066			1066	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	681	1194	0.570	680	1.5	1.0	5.173	A
				2	A,B,C,D,E	679	1194	0.569	679	1.5	1.0	5.195	A
		Exit	1	1		1338			1338	0.2	0.2	0.466	A
	C	Entry	1	1	D,A,E	136	734	0.186	136	0.3	0.2	5.897	A
				2	A,B,C	159	734	0.217	159	0.5	0.3	8.012	A
			2	1	(A,B,C,D,E)	295			295	0.0	0.0	0.000	A
		Exit	1	1		535			535	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	292	1035	0.283	292	0.5	0.3	4.599	A
				2	A,B,C,D	324	1035	0.314	324	0.8	0.6	6.395	A
		Exit	1	1		532			532	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	391	668	0.585	415	11.1	4.5	61.602	F
				2	C,D,E	186	668	0.279	187	0.8	0.5	10.211	B
			2	1	(A,B,C,D,E)	515			577	31.2	6.1	73.172	F
		Exit	1	1		506			506	0.0	0.0	0.000	A

M20 Junction 6 - Dev Scenario 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 Cobtree Roundabout	Standard Roundabout	A,B,C,D	41.68	E
2	M20 Junction 6 Running Horse Roundabout	Standard Roundabout	A,B,C,D,E	276.74	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D5	Dev Scenario 1	AM	ONE HOUR	07:15	08:45	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1650	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	696	100.000
2	A		ONE HOUR	✓	1486	100.000
	B	✓				
	C		ONE HOUR	✓	464	100.000
	D		ONE HOUR	✓	753	100.000
	E		ONE HOUR	✓	616	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	13	0	1637	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1262	233	22	0
	D	0	9	687	0

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	4	1072	13	184	213
	B	1435	0	125	466	322
	C	247	72	0	24	121
	D	441	126	29	17	140
	E	189	248	74	105	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	8	14	13	0
	D	0	0	11	0

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	8	0	2	4
	B	3	0	5	6	19
	C	2	7	0	0	4
	D	6	5	4	0	7
	E	28	20	0	12	7

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	10.72	7.6	B	1517	2275
	B					
	C	85.81	33.6	F	1292	1938
	D	25.95	7.3	D	640	961
2	A	630.45	230.9	F	1365	2047
	B	126.57	103.5	F	2148	3222
	C	22.89	3.2	C	426	640
	D	12.83	3.0	B	689	1033
	E	506.43	82.5	F	565	848

Main Results for each time segment

07:15 - 07:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1250	312	714	1246	951	0.0	1.8	3.923	A
	B			0		179				
	C	1130	283	10	1130	1771	0.0	5.8	16.640	C
	D	524	131	1141	524	0	0.0	1.1	7.463	A
2	A	1122	280	504	1111	1750	0.0	7.2	18.757	C
	B	1771	443	485	1773	1130	0.0	3.4	6.764	A
	C	343	86	2077	341	181	0.0	1.0	7.538	A
	D	560	140	1815	562	602	0.0	0.9	5.250	A
	E	468	117	1784	471	593	0.0	2.6	15.846	C

07:30 - 07:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1490	373	851	1490	1079	1.8	2.1	5.079	A
	B			0		208				
	C	1305	326	12	1285	2121	5.8	14.2	32.050	D
	D	633	158	1297	633	0	1.1	2.3	11.970	B
2	A	1340	335	594	1265	2097	7.2	31.1	61.279	F
	B	2121	530	554	2131	1305	3.4	8.1	13.787	B
	C	415	104	2469	413	215	1.0	1.6	11.503	B
	D	676	169	2172	678	710	0.9	1.4	7.714	A
	E	546	137	2149	543	701	2.6	7.5	38.029	E

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1810	452	980	1812	1107	2.1	4.2	7.984	A
	B			0		213				
	C	1333	333	14	1313	2565	14.2	25.2	58.400	F
	D	769	192	1327	760	0	2.3	5.4	21.298	C
2	A	1644	411	626	1272	2380	31.1	123.9	223.087	F
	B	2565	641	565	2384	1333	8.1	61.5	56.800	F
	C	517	129	2713	514	237	1.6	3.2	19.637	C
	D	832	208	2460	830	767	1.4	2.9	11.481	B
	E	681	170	2488	518	802	7.5	42.1	167.244	F

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1814	454	977	1784	1110	4.2	7.6	10.719	B
	B			0		214				
	C	1323	331	14	1319	2534	25.2	30.0	76.442	F
	D	775	194	1333	755	0	5.4	7.3	25.952	D
2	A	1628	407	620	1254	2392	123.9	214.6	481.120	F
	B	2534	634	550	2390	1323	61.5	103.5	126.575	F
	C	520	130	2706	521	234	3.2	3.2	22.895	C
	D	827	207	2459	827	768	2.9	3.0	12.830	B
	E	676	169	2501	510	785	42.1	82.5	431.048	F

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1477	369	851	1488	1109	7.6	2.4	8.837	A
	B			0		215				
	C	1327	332	11	1325	2113	30.0	32.3	85.814	F
	D	623	156	1336	624	0	7.3	3.1	20.985	C
2	A	1333	333	618	1262	2208	214.6	230.9	630.454	F
	B	2113	528	553	2321	1327	103.5	51.9	120.745	F
	C	413	103	2647	413	227	3.2	1.9	17.327	C
	D	668	167	2309	670	750	3.0	1.6	9.615	A
	E	557	139	2248	579	731	82.5	79.7	506.430	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1259	315	748	1260	1107	2.4	1.4	4.286	A
	B			0		213				
	C	1332	333	10	1325	1785	32.3	33.6	85.351	F
	D	519	130	1334	520	0	3.1	1.5	10.965	B
2	A	1122	281	624	1272	1848	230.9	189.9	555.397	F
	B	1785	446	565	1837	1332	51.9	4.9	31.424	D
	C	351	88	2197	354	205	1.9	0.9	11.857	B
	D	568	142	1893	571	659	1.6	1.0	7.028	A
	E	465	116	1835	637	628	79.7	36.3	279.815	F

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	624	1277	0.489	621	0.0	0.9	3.910	A
				2	A,C	626	1277	0.490	625	0.0	0.9	3.936	A
		Exit	1	1		951			951	0.0	0.0	0.000	A
	B	Exit	1	1		179			179	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1130	1356	0.834	1130	0.0	5.8	16.640	C
		Exit	1	1		1771			1771	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	6	994	0.007	6	0.0	0.0	3.440	A
				2	C,D	517	994	0.520	518	0.0	1.1	7.448	A
			2	1	(A,B,C,D)	524			524	0.0	0.0	0.073	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	799	960	0.832	797	0.0	3.8	15.353	C
				2	A,C,D,E	314	960	0.328	314	0.0	0.6	5.782	A
			2	1	(A,B,C,D,E)	1122			1113	0.0	2.8	6.081	A
		Exit	1	1		1750			1750	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	883	1221	0.723	884	0.0	1.7	6.792	A
				2	A,B,C,D,E	888	1221	0.727	889	0.0	1.7	6.736	A
		Exit	1	1		1130			1130	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	191	556	0.344	191	0.0	0.6	7.855	A
				2	A,B,C	151	556	0.272	150	0.0	0.4	7.130	A
			2	1	(A,B,C,D,E)	343			343	0.0	0.0	0.000	A
		Exit	1	1		181			181	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	271	835	0.324	271	0.0	0.4	5.138	A
				2	A,B,C,D	289	835	0.347	290	0.0	0.4	5.354	A
		Exit	1	1		602			602	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	330	542	0.609	334	0.0	2.2	19.175	C
				2	C,D,E	138	542	0.255	137	0.0	0.4	8.492	A
			2	1	(A,B,C,D,E)	468			468	0.0	0.0	0.089	A
		Exit	1	1		593			593	0.0	0.0	0.000	A

07:30 - 07:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	741	1231	0.602	740	0.9	1.1	5.062	A
				2	A,C	749	1231	0.608	750	0.9	1.1	5.097	A
		Exit	1	1		1079			1079	0.0	0.0	0.000	A
	B	Exit	1	1		208			208	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1305	1355	0.963	1285	5.8	14.2	32.050	D
		Exit	1	1		2121			2121	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	9	946	0.009	9	0.0	0.0	3.753	A
				2	C,D	624	946	0.659	624	1.1	2.0	11.158	B
			2	1	(A,B,C,D)	633			632	0.0	0.2	0.898	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	913	936	0.976	913	3.8	6.1	22.881	C
				2	A,C,D,E	352	936	0.376	352	0.6	0.7	7.271	A
			2	1	(A,B,C,D,E)	1340			1265	2.8	24.3	42.734	E
		Exit	1	1		2097			2097	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1052	1200	0.877	1057	1.7	4.1	13.830	B
				2	A,B,C,D,E	1069	1200	0.890	1073	1.7	4.0	13.745	B
		Exit	1	1		1305			1305	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	228	453	0.504	227	0.6	0.9	12.034	B
				2	A,B,C	187	453	0.412	185	0.4	0.7	10.849	B
			2	1	(A,B,C,D,E)	415			415	0.0	0.0	0.000	A
		Exit	1	1		215			215	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	333	725	0.460	335	0.4	0.7	7.613	A
				2	A,B,C,D	343	725	0.473	343	0.4	0.7	7.808	A
		Exit	1	1		710			710	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	381	451	0.844	381	2.2	5.8	44.617	E
				2	C,D,E	163	451	0.362	162	0.4	0.8	12.835	B
			2	1	(A,B,C,D,E)	546			544	0.0	0.9	3.425	A
		Exit	1	1		701			701	0.0	0.0	0.000	A

07:45 - 08:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	907	1188	0.764	908	1.1	2.1	7.950	A
				2	A,C	903	1188	0.760	904	1.1	2.1	8.018	A
		Exit	1	1		1107			1107	0.0	0.0	0.000	A
	B	Exit	1	1		213			213	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1333	1354	0.985	1313	14.2	25.2	58.400	F
		Exit	1	1		2565			2565	0.0	0.0	0.001	A
	D	Entry	1	1	B,A	10	936	0.011	10	0.0	0.0	3.864	A
				2	C,D	753	936	0.804	750	2.0	3.8	16.770	C
			2	1	(A,B,C,D)	769			763	0.2	1.6	4.638	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	912	928	0.983	912	6.1	6.8	26.403	D
				2	A,C,D,E	361	928	0.389	360	0.7	0.8	7.952	A
			2	1	(A,B,C,D,E)	1644			1273	24.3	116.4	201.956	F
		Exit	1	1		2380			2380	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1276	1197	1.066	1187	4.1	30.8	56.999	F
				2	A,B,C,D,E	1289	1197	1.077	1198	4.0	30.7	56.602	F
		Exit	1	1		1333			1333	0.0	0.0	0.007	A
	C	Entry	1	1	D,A,E	276	389	0.711	277	0.9	1.8	21.014	C
				2	A,B,C	241	389	0.619	237	0.7	1.5	17.904	C
			2	1	(A,B,C,D,E)	517			517	0.0	0.0	0.061	A
		Exit	1	1		237			237	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	409	637	0.642	408	0.7	1.4	11.333	B
				2	A,B,C,D	423	637	0.664	422	0.7	1.5	11.621	B
		Exit	1	1		767			767	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	374	367	1.019	364	5.8	13.0	100.778	F
				2	C,D,E	152	367	0.414	154	0.8	0.9	21.639	C
			2	1	(A,B,C,D,E)	681			526	0.9	28.2	88.052	F
		Exit	1	1		802			802	0.0	0.0	0.000	A

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	906	1189	0.762	891	2.1	3.8	10.768	B
				2	A,C	908	1189	0.764	894	2.1	3.8	10.670	B
		Exit	1	1		1110			1110	0.0	0.0	0.000	A
	B	Exit	1	1		214			214	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1323	1354	0.977	1319	25.2	30.0	76.442	F
		Exit	1	1		2534			2534	0.0	0.0	0.028	A
	D	Entry	1	1	B,A	10	935	0.011	10	0.0	0.0	4.076	A
				2	C,D	748	935	0.800	745	3.8	4.3	18.704	C
			2	1	(A,B,C,D)	775			758	1.6	2.9	7.299	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	906	929	0.975	906	6.8	6.8	26.671	D
				2	A,C,D,E	350	929	0.377	347	0.8	0.9	7.737	A
			2	1	(A,B,C,D,E)	1628			1256	116.4	206.9	459.984	F
		Exit	1	1		2392			2392	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1266	1201	1.054	1194	30.8	51.7	126.458	F
				2	A,B,C,D,E	1268	1201	1.055	1196	30.7	51.8	126.691	F
		Exit	1	1		1323			1323	0.0	0.0	0.018	A
	C	Entry	1	1	D,A,E	278	391	0.712	278	1.8	1.8	24.157	C
				2	A,B,C	243	391	0.622	243	1.5	1.4	20.553	C
			2	1	(A,B,C,D,E)	520			521	0.0	0.1	0.392	A
		Exit	1	1		234			234	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	407	637	0.638	408	1.4	1.4	12.429	B
				2	A,B,C,D	421	637	0.660	419	1.5	1.6	13.215	B
		Exit	1	1		768			768	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	359	364	0.988	359	13.0	13.7	132.725	F
				2	C,D,E	151	364	0.415	152	0.9	1.2	25.807	D
			2	1	(A,B,C,D,E)	676			510	28.2	67.6	336.166	F
		Exit	1	1		785			785	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	732	1231	0.595	737	3.8	1.2	8.841	A
				2	A,C	745	1231	0.605	751	3.8	1.2	8.833	A
		Exit	1	1		1109			1109	0.0	0.0	0.000	A
	B	Exit	1	1		215			215	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1327	1355	0.980	1325	30.0	32.3	85.814	F
		Exit	1	1		2113			2113	0.0	0.0	0.040	A
	D	Entry	1	1	B,A	8	934	0.008	8	0.0	0.0	4.070	A
				2	C,D	617	934	0.661	616	4.3	2.4	14.946	B
			2	1	(A,B,C,D)	623			625	2.9	0.7	6.494	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	913	930	0.982	914	6.8	6.7	26.483	D
				2	A,C,D,E	350	930	0.377	348	0.9	0.8	8.061	A
			2	1	(A,B,C,D,E)	1333			1263	206.9	223.4	609.511	F
		Exit	1	1		2208			2208	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1050	1201	0.875	1155	51.7	26.0	121.180	F
				2	A,B,C,D,E	1062	1201	0.885	1166	51.8	26.0	120.312	F
		Exit	1	1		1328			1327	0.0	0.0	0.027	A
	C	Entry	1	1	D,A,E	224	406	0.551	224	1.8	1.1	18.705	C
				2	A,B,C	190	406	0.467	188	1.4	0.9	15.650	C
			2	1	(A,B,C,D,E)	413			413	0.1	0.0	0.059	A
		Exit	1	1		227			227	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	327	683	0.478	328	1.4	0.8	9.389	A
				2	A,B,C,D	342	683	0.500	342	1.6	0.8	9.829	A
		Exit	1	1		750			750	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	414	426	0.971	417	13.7	13.2	119.468	F
				2	C,D,E	164	426	0.383	162	1.2	1.1	21.933	C
			2	1	(A,B,C,D,E)	557			577	67.6	65.4	424.554	F
		Exit	1	1		731			731	0.0	0.0	0.000	A

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	625	1266	0.494	626	1.2	0.7	4.269	A
				2	A,C	634	1266	0.501	634	1.2	0.8	4.302	A
		Exit	1	1		1107			1107	0.0	0.0	0.000	A
	B	Exit	1	1		213			213	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1332	1356	0.982	1325	32.3	33.6	85.351	F
		Exit	1	1		1785			1785	0.0	0.0	0.001	A
	D	Entry	1	1	B,A	6	934	0.006	6	0.0	0.0	3.783	A
				2	C,D	514	934	0.550	515	2.4	1.4	10.365	B
			2	1	(A,B,C,D)	519			520	0.7	0.0	0.789	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	920	928	0.991	919	6.7	6.8	26.128	D
				2	A,C,D,E	351	928	0.378	353	0.8	0.7	7.972	A
			2	1	(A,B,C,D,E)	1122			1271	223.4	182.4	536.788	F
		Exit	1	1		1848			1848	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	891	1197	0.745	919	26.0	2.4	31.387	D
				2	A,B,C,D,E	893	1197	0.746	918	26.0	2.5	31.461	D
		Exit	1	1		1332			1332	0.0	0.0	0.028	A
	C	Entry	1	1	D,A,E	193	524	0.368	194	1.1	0.5	12.234	B
				2	A,B,C	158	524	0.301	160	0.9	0.4	11.209	B
			2	1	(A,B,C,D,E)	351			351	0.0	0.0	0.085	A
		Exit	1	1		205			205	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	276	811	0.340	277	0.8	0.5	6.872	A
				2	A,B,C,D	293	811	0.361	294	0.8	0.5	7.175	A
		Exit	1	1		659			659	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	438	529	0.828	458	13.2	9.7	92.482	F
				2	C,D,E	175	529	0.331	178	1.1	0.7	17.748	C
			2	1	(A,B,C,D,E)	465			613	65.4	25.9	221.382	F
		Exit	1	1		628			628	0.0	0.0	0.000	A

M20 Junction 6 - Dev Scenario 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 Cobtree Roundabout	Standard Roundabout	A,B,C,D	93.88	F
2	M20 Junction 6 Running Horse Roundabout	Standard Roundabout	A,B,C,D,E	307.50	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D6	Dev Scenario 1	PM	ONE HOUR	17:00	18:30	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1165	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	710	100.000
2	A		ONE HOUR	✓	1346	100.000
	B	✓				
	C		ONE HOUR	✓	397	100.000
	D		ONE HOUR	✓	841	100.000
	E		ONE HOUR	✓	700	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	29	0	1136	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1277	362	2	0
	D	0	11	699	0

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	3	904	112	146	181
	B	751	15	428	380	253
	C	144	144	0	53	56
	D	395	223	33	6	184
	E	122	352	121	105	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	4	0	5	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	5	4	0	0
	D	0	25	3	0

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	6	0	0	10
	B	3	0	1	3	19
	C	2	0	0	4	0
	D	5	4	0	0	4
	E	24	5	1	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	5.17	2.0	A	1067	1601
	B					
	C	196.50	74.1	F	1352	2029
	D	26.26	6.2	D	652	978
2	A	970.35	310.1	F	1237	1856
	B	12.79	7.4	B	1685	2527
	C	11.29	1.5	B	365	547
	D	10.09	2.5	B	769	1153
	E	327.85	68.9	F	643	964

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	873	218	803	874	964	0.0	0.9	3.511	A
	B			0		278				
	C	1225	306	22	1213	1376	0.0	9.3	21.627	C
	D	531	133	1235	532	0	0.0	1.2	7.455	A
2	A	1016	254	747	1010	1068	0.0	4.8	13.263	B
	B	1376	344	531	1376	1225	0.0	2.0	4.816	A
	C	302	75	1386	301	521	0.0	0.5	5.375	A
	D	631	158	1167	632	521	0.0	0.8	4.343	A
	E	523	131	1293	522	506	0.0	1.8	10.255	B

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1046	262	937	1047	1066	0.9	1.2	4.129	A
	B			0		304				
	C	1436	359	27	1334	1654	9.3	38.3	67.504	F
	D	641	160	1361	642	0	1.2	2.3	12.006	B
2	A	1205	301	889	1170	1280	4.8	16.9	37.914	E
	B	1654	413	622	1649	1436	2.0	3.4	6.652	A
	C	358	89	1645	358	627	0.5	0.6	6.668	A
	D	756	189	1386	756	617	0.8	1.2	5.491	A
	E	634	158	1543	626	599	1.8	3.8	17.945	C

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1288	322	1078	1287	1082	1.2	2.0	5.106	A
	B			0		309				
	C	1417	354	31	1350	2025	38.3	70.6	153.931	F
	D	779	195	1381	780	0	2.3	5.4	22.717	C
2	A	1485	371	1004	1005	1543	16.9	115.7	224.105	F
	B	2025	506	591	2031	1417	3.4	7.4	12.786	B
	C	435	109	1905	435	717	0.6	1.3	9.617	A
	D	929	232	1640	927	700	1.2	2.4	8.070	A
	E	771	193	1894	653	673	3.8	29.0	88.899	F

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1283	321	1083	1284	1076	2.0	1.9	5.166	A
	B			0		308				
	C	1346	337	31	1342	2028	70.6	74.1	195.208	F
	D	787	197	1374	785	0	5.4	6.2	26.260	D
2	A	1493	373	959	934	1529	115.7	251.1	695.245	F
	B	2028	507	546	2029	1346	7.4	7.0	12.510	B
	C	437	109	1877	437	698	1.3	1.5	11.293	B
	D	920	230	1629	922	685	2.4	2.5	10.088	B
	E	772	193	1887	601	664	29.0	68.9	290.090	F

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1039	260	938	1038	1080	1.9	1.2	4.220	A
	B			0		306				
	C	1352	338	26	1352	1644	74.1	73.7	196.499	F
	D	640	160	1378	640	0	6.2	2.4	15.538	C
2	A	1214	303	950	979	1286	251.1	310.1	970.353	F
	B	1644	411	577	1646	1352	7.0	3.3	7.379	A
	C	356	89	1609	356	614	1.5	0.9	9.143	A
	D	750	188	1362	750	603	2.5	1.5	7.332	A
	E	632	158	1542	693	570	68.9	55.7	327.854	F

18:15 - 18:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	874	219	830	876	1070	1.2	0.8	3.755	A
	B			0		302				
	C	1337	334	22	1343	1381	73.7	71.4	192.445	F
	D	533	133	1365	534	0	2.4	1.4	9.849	A
2	A	1011	253	838	1077	1089	310.1	300.8	780.333	F
	B	1381	345	578	1382	1337	3.3	1.9	5.271	A
	C	300	75	1415	300	545	0.9	0.6	7.242	A
	D	627	157	1176	626	539	1.5	1.1	5.736	A
	E	526	131	1291	636	512	55.7	17.9	152.157	F

Lane Results

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

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	431	1247	0.346	431	0.0	0.5	3.500	A
				2	A,C	442	1247	0.355	443	0.0	0.5	3.521	A
		Exit	1	1		964			964	0.0	0.0	0.000	A
	B	Exit	1	1		278			278	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1225	1351	0.907	1213	0.0	9.3	21.627	C
		Exit	1	1		1376			1376	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	9	965	0.009	9	0.0	0.0	4.356	A
				2	C,D	522	965	0.542	523	0.0	1.2	7.453	A
			2	1	(A,B,C,D)	531			531	0.0	0.0	0.041	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	679	896	0.758	676	0.0	3.0	13.404	B
				2	A,C,D,E	335	896	0.374	334	0.0	0.8	6.578	A
			2	1	(A,B,C,D,E)	1016			1014	0.0	1.0	2.109	A
		Exit	1	1		1068			1068	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	686	1207	0.568	686	0.0	1.0	4.833	A
				2	A,B,C,D,E	691	1207	0.572	690	0.0	1.0	4.800	A
		Exit	1	1		1225			1225	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	139	737	0.188	138	0.0	0.2	5.349	A
				2	A,B,C	163	737	0.221	162	0.0	0.3	5.397	A
			2	1	(A,B,C,D,E)	302			302	0.0	0.0	0.000	A
		Exit	1	1		521			521	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	294	1033	0.285	295	0.0	0.4	4.250	A
				2	A,B,C,D	337	1033	0.326	338	0.0	0.4	4.424	A
		Exit	1	1		521			521	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	353	663	0.532	352	0.0	1.4	11.980	B
				2	C,D,E	170	663	0.257	169	0.0	0.4	6.842	A
			2	1	(A,B,C,D,E)	523			523	0.0	0.0	0.017	A
		Exit	1	1		506			506	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	517	1202	0.430	517	0.5	0.6	4.101	A
				2	A,C	529	1202	0.440	530	0.5	0.6	4.156	A
		Exit	1	1		1066			1066	0.0	0.0	0.000	A
	B	Exit	1	1		304			304	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1436	1349	1.065	1334	9.3	38.3	67.504	F
		Exit	1	1		1654			1654	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	11	926	0.012	11	0.0	0.0	4.693	A
				2	C,D	630	926	0.680	631	1.2	2.2	11.558	B
			2	1	(A,B,C,D)	641			640	0.0	0.1	0.524	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	786	858	0.916	784	3.0	5.2	21.784	C
				2	A,C,D,E	385	858	0.448	386	0.8	0.9	8.554	A
			2	1	(A,B,C,D,E)	1205			1170	1.0	10.8	20.348	C
		Exit	1	1		1280			1280	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	829	1180	0.703	827	1.0	1.7	6.651	A
				2	A,B,C,D,E	824	1180	0.699	822	1.0	1.7	6.654	A
		Exit	1	1		1436			1436	0.0	0.0	0.010	A
	C	Entry	1	1	D,A,E	166	669	0.248	166	0.2	0.3	6.529	A
				2	A,B,C	192	669	0.286	191	0.3	0.4	6.786	A
			2	1	(A,B,C,D,E)	358			358	0.0	0.0	0.000	A
		Exit	1	1		627			627	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	359	966	0.371	358	0.4	0.6	5.253	A
				2	A,B,C,D	398	966	0.412	398	0.4	0.7	5.701	A
		Exit	1	1		617			617	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	432	601	0.719	424	1.4	3.3	22.298	C
				2	C,D,E	201	601	0.335	202	0.4	0.5	8.802	A
			2	1	(A,B,C,D,E)	634			633	0.0	0.1	0.200	A
		Exit	1	1		599			599	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	641	1156	0.555	641	0.6	0.9	5.080	A
				2	A,C	647	1156	0.560	646	0.6	1.0	5.132	A
		Exit	1	1		1082			1082	0.0	0.0	0.000	A
	B	Exit	1	1		309			309	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1417	1347	1.052	1350	38.3	70.6	153.931	F
		Exit	1	1		2025			2025	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	13	920	0.014	13	0.0	0.0	4.763	A
				2	C,D	766	920	0.832	767	2.2	4.0	17.931	C
			2	1	(A,B,C,D)	779			778	0.1	1.4	4.869	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	679	827	0.821	678	5.2	6.9	32.305	D
				2	A,C,D,E	325	827	0.392	327	0.9	0.8	10.295	B
			2	1	(A,B,C,D,E)	1485			1004	10.8	108.0	197.875	F
		Exit	1	1		1543			1543	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1013	1189	0.852	1017	1.7	3.7	12.754	B
				2	A,B,C,D,E	1012	1189	0.851	1014	1.7	3.7	12.818	B
		Exit	1	1		1418			1417	0.0	0.2	0.266	A
	C	Entry	1	1	D,A,E	208	601	0.346	208	0.3	0.5	8.133	A
				2	A,B,C	227	601	0.378	228	0.4	0.8	10.926	B
			2	1	(A,B,C,D,E)	435			435	0.0	0.0	0.000	A
		Exit	1	1		717			717	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	462	888	0.520	460	0.6	1.0	6.819	A
				2	A,B,C,D	467	888	0.526	467	0.7	1.4	9.257	A
		Exit	1	1		700			700	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	451	514	0.878	434	3.3	11.7	67.884	F
				2	C,D,E	220	514	0.427	219	0.5	0.9	13.778	B
			2	1	(A,B,C,D,E)	771			671	0.1	16.4	36.346	E
		Exit	1	1		673			673	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	635	1154	0.550	635	0.9	1.0	5.134	A
				2	A,C	648	1154	0.562	649	1.0	0.9	5.198	A
		Exit	1	1		1076			1076	0.0	0.0	0.000	A
	B	Exit	1	1		308			308	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1346	1347	1.000	1342	70.6	74.1	195.208	F
		Exit	1	1		2028			2028	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	12	922	0.013	12	0.0	0.0	5.461	A
				2	C,D	773	922	0.838	774	4.0	4.2	19.150	C
			2	1	(A,B,C,D)	787			784	1.4	1.9	7.241	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	628	839	0.748	628	6.9	6.8	38.542	E
				2	A,C,D,E	304	839	0.362	306	0.8	0.7	9.712	A
			2	1	(A,B,C,D,E)	1493			932	108.0	243.5	666.853	F
		Exit	1	1		1529			1529	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1020	1203	0.848	1021	3.7	3.4	12.476	B
				2	A,B,C,D,E	1008	1203	0.838	1008	3.7	3.5	12.545	B
		Exit	1	1		1347			1346	0.2	0.3	0.639	A
	C	Entry	1	1	D,A,E	213	608	0.350	213	0.5	0.5	8.418	A
				2	A,B,C	224	608	0.368	224	0.8	0.9	13.965	B
			2	1	(A,B,C,D,E)	437			437	0.0	0.0	0.017	A
		Exit	1	1		698			698	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	469	892	0.526	470	1.0	0.9	7.562	A
				2	A,B,C,D	451	892	0.505	452	1.4	1.6	12.644	B
		Exit	1	1		685			685	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	407	516	0.789	404	11.7	13.6	113.717	F
				2	C,D,E	197	516	0.382	198	0.9	0.9	16.262	C
			2	1	(A,B,C,D,E)	772			604	16.4	54.5	211.137	F
		Exit	1	1		664			664	0.0	0.0	0.000	A

18:00 - 18:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	517	1202	0.430	517	1.0	0.6	4.216	A
				2	A,C	522	1202	0.434	521	0.9	0.7	4.224	A
		Exit	1	1		1080			1080	0.0	0.0	0.000	A
	B	Exit	1	1		306			306	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1352	1349	1.002	1352	74.1	73.7	196.499	F
		Exit	1	1		1644			1644	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	10	921	0.011	10	0.0	0.0	4.764	A
				2	C,D	631	921	0.685	630	4.2	2.2	13.658	B
			2	1	(A,B,C,D)	640			641	1.9	0.2	2.203	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	657	842	0.781	657	6.8	6.8	37.436	E
				2	A,C,D,E	322	842	0.382	322	0.7	0.9	9.520	A
			2	1	(A,B,C,D,E)	1214			979	243.5	302.4	947.780	F
		Exit	1	1		1286			1286	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	819	1193	0.686	821	3.4	1.6	7.371	A
				2	A,B,C,D,E	825	1193	0.692	825	3.5	1.7	7.387	A
		Exit	1	1		1352			1352	0.3	0.2	0.623	A
	C	Entry	1	1	D,A,E	170	679	0.250	170	0.5	0.3	7.057	A
				2	A,B,C	187	679	0.275	186	0.9	0.6	11.031	B
			2	1	(A,B,C,D,E)	356			356	0.0	0.0	0.000	A
		Exit	1	1		614			614	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	366	973	0.376	365	0.9	0.6	5.659	A
				2	A,B,C,D	384	973	0.395	385	1.6	0.9	8.946	A
		Exit	1	1		603			603	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	469	601	0.780	473	13.6	12.4	99.316	F
				2	C,D,E	219	601	0.365	220	0.9	0.8	13.561	B
			2	1	(A,B,C,D,E)	632			688	54.5	42.5	260.441	F
		Exit	1	1		570			570	0.0	0.0	0.000	A

18:15 - 18:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	432	1238	0.349	433	0.6	0.4	3.730	A
				2	A,C	442	1238	0.357	443	0.7	0.4	3.779	A
		Exit	1	1		1070			1070	0.0	0.0	0.000	A
	B	Exit	1	1		302			302	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1337	1351	0.990	1343	73.7	71.4	192.445	F
		Exit	1	1		1381			1381	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	9	925	0.009	9	0.0	0.0	4.780	A
				2	C,D	525	925	0.568	526	2.2	1.4	9.581	A
			2	1	(A,B,C,D)	533			534	0.2	0.0	0.354	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	723	871	0.830	723	6.8	6.8	34.620	D
				2	A,C,D,E	352	871	0.404	354	0.9	0.9	9.551	A
			2	1	(A,B,C,D,E)	1011			1075	302.4	293.1	769.368	F
		Exit	1	1		1089			1089	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	691	1193	0.579	691	1.6	0.9	5.259	A
				2	A,B,C,D,E	690	1193	0.579	691	1.7	0.9	5.284	A
		Exit	1	1		1337			1337	0.2	0.2	0.524	A
	C	Entry	1	1	D,A,E	140	730	0.192	140	0.3	0.3	5.927	A
				2	A,B,C	160	730	0.219	160	0.6	0.3	8.399	A
			2	1	(A,B,C,D,E)	300			300	0.0	0.0	0.000	A
		Exit	1	1		545			545	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	299	1030	0.290	298	0.6	0.5	4.762	A
				2	A,B,C,D	328	1030	0.318	328	0.9	0.6	6.631	A
		Exit	1	1		539			539	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	416	664	0.627	440	12.4	6.1	70.552	F
				2	C,D,E	195	664	0.294	196	0.8	0.5	10.986	B
			2	1	(A,B,C,D,E)	526			612	42.5	11.3	109.073	F
		Exit	1	1		512			512	0.0	0.0	0.000	A

M20 Junction 6 - Dev Scenario 2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 Cobtree Roundabout	Standard Roundabout	A,B,C,D	50.91	F
2	M20 Junction 6 Running Horse Roundabout	Standard Roundabout	A,B,C,D,E	329.14	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	Dev Scenario 2	AM	ONE HOUR	07:15	08:45	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1697	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	716	100.000
2	A		ONE HOUR	✓	1530	100.000
	B	✓				
	C		ONE HOUR	✓	477	100.000
	D		ONE HOUR	✓	774	100.000
	E		ONE HOUR	✓	633	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	14	0	1683	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1298	240	22	0
	D	0	9	707	0

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	5	1102	14	190	219
	B	1476	0	128	479	331
	C	254	74	0	25	124
	D	454	130	29	17	144
	E	194	255	76	108	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	3	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	8	14	13	0
	D	0	0	11	0

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	8	0	2	4
	B	3	0	5	6	19
	C	2	7	0	0	4
	D	6	5	4	0	7
	E	28	20	0	12	7

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	17.45	14.2	C	1557	2336
	B					
	C	92.37	35.9	F	1307	1960
	D	47.76	12.2	E	653	980
2	A	717.93	266.2	F	1401	2102
	B	159.27	122.5	F	2198	3297
	C	24.63	3.7	C	439	658
	D	13.98	3.2	B	707	1061
	E	648.48	105.5	F	579	869

Main Results for each time segment

07:15 - 07:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1284	321	739	1282	981	0.0	1.7	4.043	A
	B			0		186				
	C	1161	290	11	1165	1825	0.0	6.3	18.104	C
	D	539	135	1176	543	0	0.0	1.3	8.106	A
2	A	1152	288	520	1133	1800	0.0	8.9	20.987	C
	B	1825	456	492	1826	1161	0.0	3.8	7.096	A
	C	359	90	2132	359	186	0.0	0.9	7.970	A
	D	583	146	1872	585	618	0.0	1.0	5.430	A
	E	475	119	1846	474	611	0.0	3.1	17.140	C

07:30 - 07:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1523	381	853	1527	1075	1.7	2.0	5.237	A
	B			0		206				
	C	1309	327	12	1278	2162	6.3	17.4	36.163	E
	D	635	159	1290	638	0	1.3	2.4	12.428	B
2	A	1376	344	602	1261	2124	8.9	38.5	71.722	F
	B	2162	540	554	2156	1309	3.8	10.7	15.767	C
	C	429	107	2491	427	219	0.9	1.9	12.711	B
	D	695	174	2204	697	714	1.0	1.5	7.941	A
	E	568	142	2183	543	718	3.1	11.1	51.258	F

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1860	465	997	1860	1116	2.0	4.9	8.821	A
	B			0		211				
	C	1350	338	15	1323	2631	17.4	27.3	63.736	F
	D	778	194	1337	776	0	2.4	5.7	23.502	C
2	A	1684	421	623	1281	2405	38.5	140.1	255.028	F
	B	2631	658	554	2394	1350	10.7	73.7	66.797	F
	C	532	133	2716	532	232	1.9	3.6	21.618	C
	D	846	212	2480	847	768	1.5	3.2	12.271	B
	E	696	174	2526	503	801	11.1	53.8	227.444	F

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1872	468	970	1811	1120	4.9	14.2	16.815	C
	B			0		216				
	C	1349	337	16	1331	2548	27.3	32.6	81.663	F
	D	790	198	1347	743	0	5.7	12.2	39.182	E
2	A	1676	419	621	1288	2408	140.1	241.2	539.763	F
	B	2548	637	561	2399	1349	73.7	122.5	151.811	F
	C	523	131	2733	521	227	3.6	3.7	24.630	C
	D	853	213	2484	857	770	3.2	3.1	13.975	B
	E	690	173	2535	494	806	53.8	102.1	557.533	F

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1525	381	875	1547	1119	14.2	4.6	17.448	C
	B			0		210				
	C	1331	333	13	1326	2199	32.6	34.9	92.367	F
	D	639	160	1339	655	0	12.2	6.8	47.759	E
2	A	1371	343	617	1284	2275	241.2	266.2	717.933	F
	B	2199	550	570	2375	1331	122.5	82.7	159.273	F
	C	426	106	2710	426	235	3.7	2.2	18.575	C
	D	687	172	2369	693	768	3.1	1.8	10.183	B
	E	569	142	2320	572	742	102.1	105.5	648.482	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1278	319	770	1279	1120	4.6	1.6	5.386	A
	B			0		216				
	C	1340	335	10	1338	1823	34.9	35.9	92.100	F
	D	537	134	1348	542	0	6.8	2.0	18.258	C
2	A	1149	287	660	1265	1964	266.2	235.5	639.175	F
	B	1823	456	585	1991	1340	82.7	14.5	66.270	F
	C	363	91	2359	363	218	2.2	1.3	13.332	B
	D	581	145	2021	579	701	1.8	1.2	7.373	A
	E	478	119	1948	676	652	105.5	63.5	401.033	F

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	640	1269	0.505	639	0.0	0.8	4.031	A
				2	A,C	644	1269	0.508	643	0.0	0.8	4.055	A
		Exit	1	1		981			981	0.0	0.0	0.000	A
	B	Exit	1	1		186			186	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1161	1355	0.857	1165	0.0	6.3	18.104	C
		Exit	1	1		1825			1825	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	7	983	0.007	7	0.0	0.0	3.550	A
				2	C,D	532	983	0.542	536	0.0	1.2	8.023	A
			2	1	(A,B,C,D)	539			540	0.0	0.0	0.141	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	819	956	0.857	814	0.0	4.2	16.187	C
				2	A,C,D,E	319	956	0.334	319	0.0	0.6	5.889	A
			2	1	(A,B,C,D,E)	1152			1138	0.0	4.0	7.703	A
		Exit	1	1		1800			1800	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	914	1219	0.749	914	0.0	2.0	7.079	A
				2	A,B,C,D,E	911	1219	0.747	912	0.0	1.8	7.114	A
		Exit	1	1		1161			1161	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	199	541	0.367	199	0.0	0.5	8.256	A
				2	A,B,C	160	541	0.296	160	0.0	0.4	7.608	A
			2	1	(A,B,C,D,E)	359			359	0.0	0.0	0.000	A
		Exit	1	1		186			186	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	281	817	0.345	282	0.0	0.4	5.403	A
				2	A,B,C,D	302	817	0.370	302	0.0	0.5	5.455	A
		Exit	1	1		618			618	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	339	526	0.644	337	0.0	2.6	20.518	C
				2	C,D,E	136	526	0.259	136	0.0	0.4	8.985	A
			2	1	(A,B,C,D,E)	475			475	0.0	0.1	0.292	A
		Exit	1	1		611			611	0.0	0.0	0.000	A

07:30 - 07:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	754	1231	0.613	756	0.8	1.0	5.249	A
				2	A,C	769	1231	0.625	771	0.8	1.0	5.225	A
		Exit	1	1		1075			1075	0.0	0.0	0.000	A
	B	Exit	1	1		206			206	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1309	1355	0.967	1278	6.3	17.4	36.163	E
		Exit	1	1		2162			2162	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	948	0.009	8	0.0	0.0	3.697	A
				2	C,D	626	948	0.660	629	1.2	2.1	11.666	B
			2	1	(A,B,C,D)	635			634	0.0	0.2	0.854	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	914	934	0.979	908	4.2	6.5	23.277	C
				2	A,C,D,E	352	934	0.377	354	0.6	0.7	7.432	A
			2	1	(A,B,C,D,E)	1376			1266	4.0	31.4	52.817	F
		Exit	1	1		2124			2124	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1078	1200	0.898	1075	2.0	5.4	15.777	C
				2	A,B,C,D,E	1084	1200	0.903	1082	1.8	5.3	15.757	C
		Exit	1	1		1309			1309	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	234	447	0.524	233	0.5	1.1	13.373	B
				2	A,B,C	194	447	0.435	194	0.4	0.8	11.899	B
			2	1	(A,B,C,D,E)	429			429	0.0	0.0	0.000	A
		Exit	1	1		219			219	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	338	715	0.472	339	0.4	0.7	7.910	A
				2	A,B,C,D	357	715	0.499	358	0.5	0.8	7.970	A
		Exit	1	1		714			714	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	390	443	0.882	383	2.6	7.2	53.888	F
				2	C,D,E	160	443	0.361	160	0.4	0.7	13.811	B
			2	1	(A,B,C,D,E)	568			550	0.1	3.2	9.147	A
		Exit	1	1		718			718	0.0	0.0	0.000	A

07:45 - 08:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	929	1183	0.786	929	1.0	2.5	8.823	A
				2	A,C	931	1183	0.787	931	1.0	2.4	8.820	A
		Exit	1	1		1116			1116	0.0	0.0	0.000	A
	B	Exit	1	1		211			211	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1350	1354	0.997	1323	17.4	27.3	63.736	F
		Exit	1	1		2631			2631	0.0	0.0	0.002	A
	D	Entry	1	1	B,A	9	933	0.010	9	0.0	0.0	4.008	A
				2	C,D	769	933	0.824	766	2.1	4.2	17.793	C
			2	1	(A,B,C,D)	778			778	0.2	1.5	5.801	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	923	928	0.994	923	6.5	6.7	26.296	D
				2	A,C,D,E	359	928	0.387	358	0.7	1.0	8.098	A
			2	1	(A,B,C,D,E)	1684			1282	31.4	132.5	234.007	F
		Exit	1	1		2405			2405	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1317	1200	1.097	1199	5.4	36.9	66.816	F
				2	A,B,C,D,E	1314	1200	1.095	1196	5.3	36.8	66.778	F
		Exit	1	1		1350			1350	0.0	0.0	0.007	A
	C	Entry	1	1	D,A,E	285	388	0.734	285	1.1	2.0	22.815	C
				2	A,B,C	248	388	0.638	247	0.8	1.6	19.895	C
			2	1	(A,B,C,D,E)	532			533	0.0	0.0	0.152	A
		Exit	1	1		232			232	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	416	631	0.660	416	0.7	1.6	12.157	B
				2	A,B,C,D	430	631	0.682	431	0.8	1.6	12.379	B
		Exit	1	1		768			768	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	362	358	1.013	356	7.2	13.5	113.743	F
				2	C,D,E	148	358	0.415	147	0.7	1.2	23.356	C
			2	1	(A,B,C,D,E)	696			511	3.2	39.2	138.343	F
		Exit	1	1		801			801	0.0	0.0	0.000	A

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	931	1192	0.781	900	2.5	7.1	16.767	C
				2	A,C	941	1192	0.790	911	2.4	7.1	16.864	C
		Exit	1	1		1120			1120	0.0	0.0	0.000	A
	B	Exit	1	1		216			216	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1349	1353	0.997	1331	27.3	32.6	81.663	F
		Exit	1	1		2549			2548	0.0	0.1	0.069	A
	D	Entry	1	1	B,A	10	930	0.010	10	0.0	0.0	3.902	A
				2	C,D	742	930	0.798	734	4.2	5.4	21.980	C
			2	1	(A,B,C,D)	790			752	1.5	6.8	16.931	C
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	921	929	0.991	921	6.7	6.7	26.421	D
				2	A,C,D,E	367	929	0.395	367	1.0	0.9	8.101	A
			2	1	(A,B,C,D,E)	1676			1288	132.5	233.6	518.672	F
		Exit	1	1		2408			2408	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1281	1198	1.069	1207	36.9	61.2	151.861	F
				2	A,B,C,D,E	1267	1198	1.057	1192	36.8	61.3	151.760	F
		Exit	1	1		1349			1349	0.0	0.0	0.020	A
	C	Entry	1	1	D,A,E	280	384	0.730	277	2.0	2.1	25.325	D
				2	A,B,C	243	384	0.633	244	1.6	1.5	22.706	C
			2	1	(A,B,C,D,E)	523			523	0.0	0.1	0.487	A
		Exit	1	1		227			227	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	419	630	0.666	421	1.6	1.5	13.683	B
				2	A,B,C,D	434	630	0.689	435	1.6	1.6	14.256	B
		Exit	1	1		770			770	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	352	355	0.990	352	13.5	13.7	138.838	F
				2	C,D,E	144	355	0.405	143	1.2	1.2	27.145	D
			2	1	(A,B,C,D,E)	690			496	39.2	87.2	459.960	F
		Exit	1	1		806			806	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	756	1223	0.618	767	7.1	2.3	17.594	C
				2	A,C	769	1223	0.629	780	7.1	2.3	17.304	C
		Exit	1	1		1119			1119	0.0	0.0	0.000	A
	B	Exit	1	1		210			210	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1331	1354	0.983	1326	32.6	34.9	92.367	F
		Exit	1	1		2199			2199	0.1	0.0	0.122	A
	D	Entry	1	1	B,A	7	933	0.008	7	0.0	0.0	4.103	A
				2	C,D	644	933	0.690	647	5.4	3.2	20.713	C
			2	1	(A,B,C,D)	639			651	6.8	3.6	27.698	D
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	920	930	0.989	920	6.7	6.8	26.381	D
				2	A,C,D,E	365	930	0.392	364	0.9	0.8	8.176	A
			2	1	(A,B,C,D,E)	1371			1285	233.6	258.7	697.297	F
		Exit	1	1		2275			2275	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1106	1196	0.925	1193	61.2	41.4	158.756	F
				2	A,B,C,D,E	1094	1196	0.915	1182	61.3	41.3	159.794	F
		Exit	1	1		1331			1331	0.0	0.0	0.035	A
	C	Entry	1	1	D,A,E	231	390	0.593	231	2.1	1.3	19.699	C
				2	A,B,C	195	390	0.501	196	1.5	0.9	16.920	C
			2	1	(A,B,C,D,E)	426			426	0.1	0.0	0.198	A
		Exit	1	1		235			235	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	337	665	0.506	340	1.5	0.9	9.977	A
				2	A,B,C,D	350	665	0.526	353	1.6	0.9	10.378	B
		Exit	1	1		768			768	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	407	409	0.996	407	13.7	13.7	123.937	F
				2	C,D,E	163	409	0.399	165	1.2	0.9	23.140	C
			2	1	(A,B,C,D,E)	569			570	87.2	90.9	566.850	F
		Exit	1	1		742			742	0.0	0.0	0.000	A

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	638	1258	0.507	639	2.3	0.8	5.385	A
				2	A,C	639	1258	0.508	640	2.3	0.9	5.388	A
		Exit	1	1		1120			1120	0.0	0.0	0.000	A
	B	Exit	1	1		216			216	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1340	1355	0.988	1338	34.9	35.9	92.100	F
		Exit	1	1		1823			1823	0.0	0.0	0.020	A
	D	Entry	1	1	B,A	7	930	0.007	7	0.0	0.0	3.825	A
				2	C,D	536	930	0.576	535	3.2	1.8	12.298	B
			2	1	(A,B,C,D)	537			542	3.6	0.2	6.696	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	910	919	0.991	911	6.8	6.7	26.478	D
				2	A,C,D,E	354	919	0.386	354	0.8	0.8	7.800	A
			2	1	(A,B,C,D,E)	1149			1264	258.7	227.9	622.746	F
		Exit	1	1		1964			1964	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	911	1191	0.765	995	41.4	7.3	66.331	F
				2	A,B,C,D,E	912	1191	0.766	996	41.3	7.3	66.210	F
		Exit	1	1		1340			1340	0.0	0.0	0.032	A
	C	Entry	1	1	D,A,E	201	482	0.418	201	1.3	0.7	13.794	B
				2	A,B,C	162	482	0.335	163	0.9	0.5	12.754	B
			2	1	(A,B,C,D,E)	363			363	0.0	0.0	0.004	A
		Exit	1	1		218			218	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	283	772	0.367	282	0.9	0.6	7.301	A
				2	A,B,C,D	297	772	0.385	297	0.9	0.6	7.441	A
		Exit	1	1		701			701	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	470	501	0.938	481	13.7	12.1	102.108	F
				2	C,D,E	194	501	0.388	195	0.9	1.0	19.665	C
			2	1	(A,B,C,D,E)	478			664	90.9	50.5	338.689	F
		Exit	1	1		652			652	0.0	0.0	0.000	A

M20 Junction 6 - Dev Scenario 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 Cobtree Roundabout	Standard Roundabout	A,B,C,D	93.48	F
2	M20 Junction 6 Running Horse Roundabout	Standard Roundabout	A,B,C,D,E	369.04	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	Dev Scenario 2	PM	ONE HOUR	17:00	18:30	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1200	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	731	100.000
2	A		ONE HOUR	✓	1388	100.000
	B	✓				
	C		ONE HOUR	✓	409	100.000
	D		ONE HOUR	✓	866	100.000
	E		ONE HOUR	✓	722	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	29	0	1171	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1316	373	2	0
	D	0	11	720	0

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	3	932	116	151	186
	B	774	16	441	392	261
	C	148	149	0	54	58
	D	407	230	34	6	189
	E	126	363	125	108	0

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	4	0	5	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	5	4	0	0
	D	0	25	3	0

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	6	0	0	10
	B	3	0	1	3	19
	C	2	0	0	4	0
	D	5	4	0	0	4
	E	24	5	1	2	0

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	5.36	2.3	A	1105	1657
	B					
	C	197.32	74.7	F	1359	2039
	D	27.98	6.4	D	668	1002
2	A	1117.15	371.3	F	1278	1916
	B	14.30	8.7	B	1735	2603
	C	12.52	1.5	B	375	562
	D	11.32	3.1	B	800	1199
	E	488.74	94.3	F	663	995

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	907	227	833	907	1000	0.0	1.1	3.555	A
	B			0		280				
	C	1256	314	21	1250	1438	0.0	11.6	27.268	D
	D	560	140	1272	561	0	0.0	1.2	8.005	A
2	A	1038	259	754	1041	1096	0.0	5.3	15.208	C
	B	1438	360	539	1438	1256	0.0	2.3	5.035	A
	C	302	76	1436	303	541	0.0	0.5	5.429	A
	D	643	161	1204	643	534	0.0	0.9	4.445	A
	E	535	134	1320	531	527	0.0	2.0	11.316	B

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1095	274	954	1094	1071	1.1	1.5	4.316	A
	B			0		307				
	C	1455	364	24	1347	1717	11.6	46.0	83.665	F
	D	657	164	1371	655	0	1.2	2.8	13.352	B
2	A	1257	314	929	1165	1339	5.3	23.8	44.556	E
	B	1717	429	639	1715	1455	2.3	3.4	7.237	A
	C	367	92	1711	366	643	0.5	0.7	7.116	A
	D	786	196	1439	787	639	0.9	1.3	5.751	A
	E	662	166	1614	654	612	2.0	4.9	20.776	C

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1308	327	1105	1306	1091	1.5	2.0	5.261	A
	B			0		312				
	C	1398	350	32	1360	2066	46.0	71.5	165.315	F
	D	806	202	1392	803	0	2.8	5.8	24.273	C
2	A	1516	379	983	981	1576	23.8	141.8	293.309	F
	B	2066	517	565	2073	1398	3.4	8.5	14.048	B
	C	451	113	1931	449	707	0.7	1.4	10.350	B
	D	957	239	1684	951	696	1.3	3.1	9.289	A
	E	793	198	1945	614	690	4.9	41.9	132.642	F

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1330	333	1094	1323	1082	2.0	2.3	5.364	A
	B			0		305				
	C	1351	338	32	1344	2080	71.5	74.7	196.063	F
	D	801	200	1376	799	0	5.8	6.4	27.984	D
2	A	1558	390	956	926	1575	141.8	291.0	819.652	F
	B	2080	520	532	2081	1351	8.5	8.7	14.304	B
	C	448	112	1900	449	712	1.4	1.5	12.523	B
	D	963	241	1670	970	679	3.1	2.8	11.316	B
	E	799	200	1958	573	682	41.9	94.3	410.974	F

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1083	271	945	1084	1079	2.3	1.4	4.363	A
	B			0		306				
	C	1347	337	26	1351	1697	74.7	73.7	197.321	F
	D	644	161	1377	646	0	6.4	2.4	15.533	C
2	A	1246	311	963	946	1328	291.0	362.2	1117.149	F
	B	1697	424	562	1691	1347	8.7	3.8	7.966	A
	C	375	94	1630	375	623	1.5	1.0	9.504	A
	D	793	198	1394	794	611	2.8	1.7	7.825	A
	E	652	163	1614	677	575	94.3	89.4	488.738	F

18:15 - 18:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	905	226	846	905	1074	1.4	0.9	3.765	A
	B			0		313				
	C	1348	337	23	1357	1415	73.7	72.0	193.998	F
	D	542	136	1380	540	0	2.4	1.7	10.437	B
2	A	1051	263	921	1015	1138	362.2	371.3	862.026	F
	B	1415	354	588	1415	1348	3.8	2.2	5.579	A
	C	304	76	1442	305	561	1.0	0.6	7.715	A
	D	656	164	1197	655	551	1.7	1.1	6.064	A
	E	540	135	1333	727	519	89.4	41.7	272.510	F

Lane Results

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

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	447	1237	0.362	448	0.0	0.5	3.551	A
				2	A,C	460	1237	0.372	460	0.0	0.6	3.559	A
		Exit	1	1		1000			1000	0.0	0.0	0.000	A
	B	Exit	1	1		280			280	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1256	1351	0.930	1250	0.0	11.6	27.268	D
		Exit	1	1		1438			1438	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	11	954	0.011	10	0.0	0.0	4.432	A
				2	C,D	549	954	0.576	551	0.0	1.2	7.948	A
			2	1	(A,B,C,D)	560			560	0.0	0.0	0.105	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	701	894	0.785	700	0.0	3.3	14.383	B
				2	A,C,D,E	341	894	0.381	341	0.0	0.7	6.827	A
			2	1	(A,B,C,D,E)	1038			1042	0.0	1.3	3.257	A
		Exit	1	1		1096			1096	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	719	1205	0.597	719	0.0	1.1	5.054	A
				2	A,B,C,D,E	719	1205	0.597	719	0.0	1.2	5.015	A
		Exit	1	1		1256			1256	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	143	724	0.198	143	0.0	0.2	5.374	A
				2	A,B,C	159	724	0.220	160	0.0	0.3	5.476	A
			2	1	(A,B,C,D,E)	302			302	0.0	0.0	0.000	A
		Exit	1	1		541			541	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	300	1022	0.293	299	0.0	0.4	4.329	A
				2	A,B,C,D	343	1022	0.335	344	0.0	0.5	4.546	A
		Exit	1	1		534			534	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	363	656	0.553	360	0.0	1.6	13.334	B
				2	C,D,E	172	656	0.262	171	0.0	0.4	7.324	A
			2	1	(A,B,C,D,E)	535			535	0.0	0.0	0.011	A
		Exit	1	1		527			527	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	546	1197	0.456	545	0.5	0.8	4.281	A
				2	A,C	549	1197	0.459	549	0.6	0.7	4.351	A
		Exit	1	1		1071			1071	0.0	0.0	0.000	A
	B	Exit	1	1		307			307	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1455	1350	1.078	1347	11.6	46.0	83.665	F
		Exit	1	1		1717			1717	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	9	923	0.010	9	0.0	0.0	4.832	A
				2	C,D	648	923	0.702	646	1.2	2.6	12.429	B
			2	1	(A,B,C,D)	657			656	0.0	0.2	0.992	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	786	847	0.928	779	3.3	5.9	22.831	C
				2	A,C,D,E	385	847	0.454	385	0.7	1.0	9.087	A
			2	1	(A,B,C,D,E)	1257			1171	1.3	16.8	25.943	D
		Exit	1	1		1339			1339	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	850	1175	0.724	848	1.1	1.7	7.267	A
				2	A,B,C,D,E	867	1175	0.738	867	1.2	1.7	7.207	A
		Exit	1	1		1455			1455	0.0	0.0	0.024	A
	C	Entry	1	1	D,A,E	172	652	0.264	172	0.2	0.3	6.985	A
				2	A,B,C	195	652	0.299	194	0.3	0.4	7.228	A
			2	1	(A,B,C,D,E)	367			367	0.0	0.0	0.000	A
		Exit	1	1		643			643	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	372	950	0.392	373	0.4	0.5	5.471	A
				2	A,B,C,D	413	950	0.435	414	0.5	0.7	6.000	A
		Exit	1	1		639			639	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	443	583	0.759	437	1.6	3.9	25.230	D
				2	C,D,E	217	583	0.372	217	0.4	0.5	9.512	A
			2	1	(A,B,C,D,E)	662			660	0.0	0.4	0.748	A
		Exit	1	1		612			612	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	650	1147	0.567	648	0.8	1.0	5.227	A
				2	A,C	658	1147	0.574	658	0.7	1.0	5.295	A
		Exit	1	1		1091			1091	0.0	0.0	0.000	A
	B	Exit	1	1		312			312	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1398	1346	1.039	1360	46.0	71.5	165.315	F
		Exit	1	1		2066			2066	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	12	916	0.013	12	0.0	0.0	4.897	A
				2	C,D	795	916	0.867	791	2.6	4.3	18.448	C
			2	1	(A,B,C,D)	806			807	0.2	1.5	5.903	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	659	833	0.791	657	5.9	6.9	34.168	D
				2	A,C,D,E	322	833	0.387	324	1.0	1.0	10.350	B
			2	1	(A,B,C,D,E)	1516			981	16.8	134.0	266.138	F
		Exit	1	1		1576			1576	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1025	1197	0.856	1029	1.7	4.2	14.090	B
				2	A,B,C,D,E	1041	1197	0.870	1044	1.7	4.3	14.007	B
		Exit	1	1		1400			1398	0.0	0.3	0.365	A
	C	Entry	1	1	D,A,E	219	594	0.368	218	0.3	0.5	8.441	A
				2	A,B,C	233	594	0.392	231	0.4	0.9	11.997	B
			2	1	(A,B,C,D,E)	451			451	0.0	0.0	0.042	A
		Exit	1	1		707			707	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	476	875	0.545	476	0.5	1.1	7.625	A
				2	A,B,C,D	481	875	0.549	475	0.7	1.9	10.879	B
		Exit	1	1		696			696	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	430	502	0.858	415	3.9	13.1	82.162	F
				2	C,D,E	200	502	0.400	199	0.5	1.0	15.111	C
			2	1	(A,B,C,D,E)	793			631	0.4	27.8	68.750	F
		Exit	1	1		690			690	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	660	1150	0.573	656	1.0	1.2	5.334	A
				2	A,C	670	1150	0.582	667	1.0	1.2	5.394	A
		Exit	1	1		1082			1082	0.0	0.0	0.000	A
	B	Exit	1	1		305			305	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1351	1346	1.003	1344	71.5	74.7	196.063	F
		Exit	1	1		2080			2080	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	12	921	0.013	12	0.0	0.0	5.252	A
				2	C,D	791	921	0.858	787	4.3	4.5	19.838	C
			2	1	(A,B,C,D)	801			803	1.5	1.8	8.339	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	625	840	0.744	625	6.9	6.8	38.887	E
				2	A,C,D,E	300	840	0.357	301	1.0	0.7	9.478	A
			2	1	(A,B,C,D,E)	1558			925	134.0	283.4	791.042	F
		Exit	1	1		1575			1575	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	1036	1207	0.858	1036	4.2	4.4	14.294	B
				2	A,B,C,D,E	1044	1207	0.865	1045	4.3	4.3	14.314	B
		Exit	1	1		1350			1351	0.3	0.3	0.678	A
	C	Entry	1	1	D,A,E	221	602	0.366	221	0.5	0.5	8.904	A
				2	A,B,C	227	602	0.378	228	0.9	1.0	15.869	C
			2	1	(A,B,C,D,E)	448			448	0.0	0.0	0.058	A
		Exit	1	1		712			712	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	492	879	0.560	497	1.1	1.0	8.347	A
				2	A,B,C,D	471	879	0.536	473	1.9	1.8	14.404	B
		Exit	1	1		679			679	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	391	498	0.783	387	13.1	13.9	124.297	F
				2	C,D,E	185	498	0.371	186	1.0	0.9	17.668	C
			2	1	(A,B,C,D,E)	799			576	27.8	79.5	326.873	F
		Exit	1	1		682			682	0.0	0.0	0.000	A

18:00 - 18:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	534	1200	0.445	535	1.2	0.6	4.359	A
				2	A,C	549	1200	0.458	548	1.2	0.7	4.368	A
		Exit	1	1		1079			1079	0.0	0.0	0.000	A
	B	Exit	1	1		306			306	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1347	1349	0.998	1351	74.7	73.7	197.321	F
		Exit	1	1		1697			1697	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	921	0.009	8	0.0	0.0	4.770	A
				2	C,D	636	921	0.691	638	4.5	2.2	13.787	B
			2	1	(A,B,C,D)	644			645	1.8	0.2	2.005	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	639	838	0.762	638	6.8	6.8	37.931	E
				2	A,C,D,E	309	838	0.368	308	0.7	0.8	9.237	A
			2	1	(A,B,C,D,E)	1246			948	283.4	354.6	1094.844	F
		Exit	1	1		1328			1328	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	852	1198	0.711	848	4.4	1.9	7.959	A
				2	A,B,C,D,E	845	1198	0.705	842	4.3	1.9	7.973	A
		Exit	1	1		1347			1347	0.3	0.3	0.645	A
	C	Entry	1	1	D,A,E	183	673	0.272	184	0.5	0.3	7.146	A
				2	A,B,C	193	673	0.286	191	1.0	0.7	11.689	B
			2	1	(A,B,C,D,E)	375			375	0.0	0.0	0.002	A
		Exit	1	1		623			623	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	388	964	0.402	389	1.0	0.6	5.884	A
				2	A,B,C,D	405	964	0.420	405	1.8	1.1	9.699	A
		Exit	1	1		611			611	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	459	584	0.787	461	13.9	13.5	108.000	F
				2	C,D,E	216	584	0.370	216	0.9	0.9	14.845	B
			2	1	(A,B,C,D,E)	652			675	79.5	74.9	417.474	F
		Exit	1	1		575			575	0.0	0.0	0.000	A

18:15 - 18:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	441	1233	0.357	440	0.6	0.5	3.753	A
				2	A,C	465	1233	0.377	465	0.7	0.4	3.776	A
		Exit	1	1		1074			1074	0.0	0.0	0.000	A
	B	Exit	1	1		313			313	0.0	0.0	0.000	A
	C	Entry	1	1	B,C,D,A	1348	1350	0.999	1357	73.7	72.0	193.998	F
		Exit	1	1		1415			1415	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	920	0.009	8	0.0	0.0	4.610	A
				2	C,D	534	920	0.580	531	2.2	1.7	10.138	B
			2	1	(A,B,C,D)	542			542	0.2	0.0	0.401	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	682	849	0.803	682	6.8	6.8	36.105	E
				2	A,C,D,E	333	849	0.392	334	0.8	0.8	9.426	A
			2	1	(A,B,C,D,E)	1051			1015	354.6	363.7	855.101	F
		Exit	1	1		1138			1138	0.0	0.0	0.000	A
	B	Entry	1	1	B,C,D,A,E	711	1190	0.598	712	1.9	1.1	5.529	A
				2	A,B,C,D,E	704	1190	0.591	703	1.9	1.1	5.630	A
		Exit	1	1		1348			1348	0.3	0.2	0.556	A
	C	Entry	1	1	D,A,E	146	722	0.201	146	0.3	0.2	6.196	A
				2	A,B,C	158	722	0.219	159	0.7	0.4	9.070	A
			2	1	(A,B,C,D,E)	304			304	0.0	0.0	0.002	A
		Exit	1	1		561			561	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	318	1024	0.310	317	0.6	0.4	4.895	A
				2	A,B,C,D	338	1024	0.330	338	1.1	0.7	7.159	A
		Exit	1	1		551			551	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	481	653	0.737	501	13.5	10.0	86.950	F
				2	C,D,E	224	653	0.342	226	0.9	0.6	12.489	B
			2	1	(A,B,C,D,E)	540			705	74.9	31.1	219.263	F
		Exit	1	1		519			519	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 7 - 2016 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 7\ARCADY\Issue 2
Report generation date: 25/10/2016 13:52:15

«M20 Junction 7 - 2016, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 7 [Lane Simulation] - 2016			
Arm A	2.9	12.30		B
Arm B	7.1	30.67		D
Arm C	724.6	1267.23		F
Arm D	2.7	12.99		B

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

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

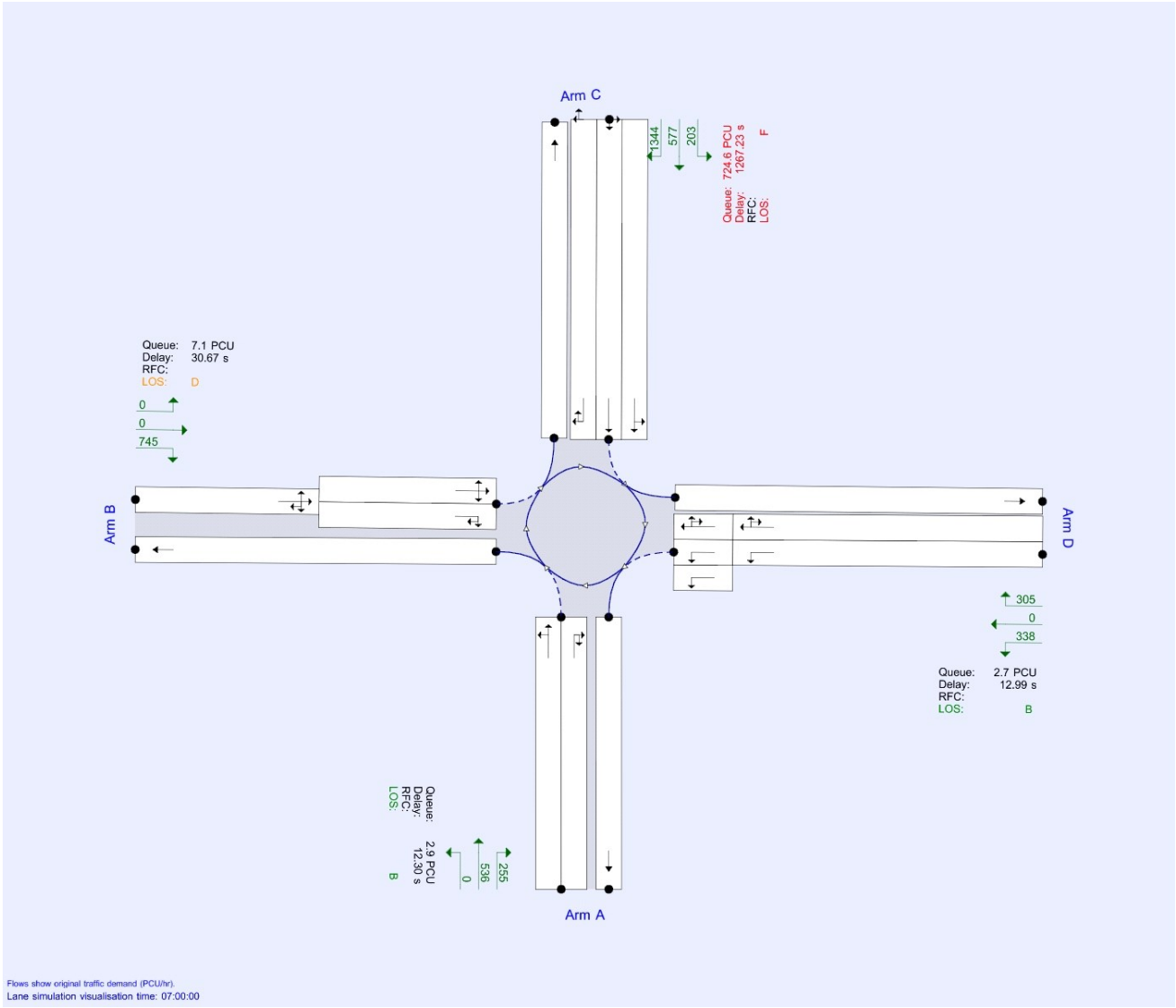
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	777377526	380	130.39

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 7	✓	✓	100.000	100.000

M20 Junction 7 - 2016, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 7 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 7	Large Roundabout	A,B,C,D	635.78	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A249 South	
B	M20 West	
C	A249 North	
D	M20 East	

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
A	6.10	7.00	18.5	50.7	180.0	12.0	
B	3.40	6.60	8.5	29.2	180.0	12.0	
C	7.41	12.05	4.9	25.0	180.0	12.3	
D	8.76	10.26	30.0	29.3	180.0	10.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1649	87.50
B	1096	132.00
C	1000	85.65
D	2666	112.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.822	2575
B	0.767	1912
C	1.072	3236
D	0.766	3313

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,A,C	✓	12.00	0	99999
		2	A,B	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	22.00	0	99999
		2	A	✓	22.00	0	99999
		3	B,C	✓	22.00	0	99999
	2	1	(D,A)		Infinity		
		2	(B,C)		Infinity		
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A	✓	4.00	0	99999
		3	D,B,C	✓	4.00	0	99999
	2	1	(A)		Infinity		
		2	(D,B,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.411	1287
		2	0.411	1287
B	1 [Give-way line]	1	0.383	956
		2	0.383	956
C	1 [Give-way line]	1	0.357	1079
		2	0.357	1079
		3	0.357	1079
D	1 [Give-way line]	1	0.255	1104
		2	0.255	1104
		3	0.255	1104

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓		
		3	✓		✓	✓
	2	1		✓		
		2	✓		✓	✓
A	1 [Give-way line]	1			✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2		✓		
		3			✓	✓
	2	1	✓	✓		
		2			✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:00	08:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	791	100.000
B		ONE HOUR	✓	745	100.000
C		ONE HOUR	✓	2124	100.000
D		ONE HOUR	✓	643	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	0	536	255
	B	745	0	0	0
	C	577	1344	0	203
	D	338	0	305	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.68	0.32
	B	1.00	0.00	0.00	0.00
	C	0.27	0.63	0.00	0.10
	D	0.53	0.00	0.47	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	3
	B	4	0	0	0
	C	6	6	0	12
	D	3	0	10	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.000	1.060	1.030
	B	1.040	1.000	1.000	1.000
	C	1.060	1.060	1.000	1.120
	D	1.030	1.000	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:00-07:15	A	596	596
	B	561	561
	C	1599	1599
	D	484	484
07:15-07:30	A	711	711
	B	670	670
	C	1909	1909
	D	578	578
07:30-07:45	A	871	871
	B	820	820
	C	2339	2339
	D	708	708
07:45-08:00	A	871	871
	B	820	820
	C	2339	2339
	D	708	708
08:00-08:15	A	711	711
	B	670	670
	C	1909	1909
	D	578	578
08:15-08:30	A	596	596
	B	561	561
	C	1599	1599
	D	484	484

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	12.30	2.9	B	725	1088
B	30.67	7.1	D	683	1024
C	1267.23	724.6	F	1953	2930
D	12.99	2.7	B	591	886

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	586	147	1039	586	1241	0.0	1.4	6.892	A
B	556	139	813	556	813	0.0	1.2	7.138	A
C	1595	399	747	1399	622	0.0	49.3	71.210	F
D	478	119	1802	478	344	0.0	1.0	7.015	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	720	180	1020	718	1505	1.4	2.0	8.926	A
B	672	168	991	675	747	1.2	2.0	10.461	B
C	1914	478	907	1456	759	49.3	160.7	323.841	F
D	580	145	1943	582	421	1.0	1.4	9.351	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	873	218	1022	876	1826	2.0	2.9	12.305	B
B	815	204	1209	816	690	2.0	6.2	23.068	C
C	2358	590	1095	1553	930	160.7	356.8	847.563	F
D	705	176	2145	703	502	1.4	2.7	12.306	B

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	868	217	1013	867	1836	2.9	2.8	11.505	B
B	818	204	1202	820	678	6.2	7.1	30.672	D
C	2354	588	1102	1541	920	356.8	554.9	1267.232	F
D	706	177	2140	709	503	2.7	2.7	12.991	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	703	176	1034	702	1494	2.8	1.8	9.028	A
B	675	169	977	672	759	7.1	2.1	13.826	B
C	1909	477	898	1453	751	554.9	671.5	864.338	F
D	583	146	1946	582	405	2.7	1.6	9.767	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	603	151	1037	603	1253	1.8	1.4	7.549	A
B	560	140	836	561	804	2.1	1.2	8.021	A
C	1590	397	756	1390	641	671.5	724.6	326.638	F
D	492	123	1799	491	347	1.6	1.2	8.034	A

Lane Results

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

Lanes: Main Results for each time segment

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	395	860	0.459	395	0.0	1.1	7.753	A
			2	D,A	191	860	0.223	191	0.0	0.3	5.145	A
	Exit	1	1		1241			1241	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	279	644	0.433	278	0.0	0.6	7.197	A
			2	A,B	278	644	0.431	278	0.0	0.6	7.080	A
		2	1	(D,A,B,C)	556			556	0.0	0.0	0.000	A
	Exit	1	1		813			813	0.0	0.0	0.000	A
C	Entry	1	1	D,A	339	812	0.417	338	0.0	0.7	6.201	A
			2	A	248	812	0.305	248	0.0	0.4	5.361	A
			3	B,C	833	812	1.026	813	0.0	21.3	64.603	F
		2	1	(D,A)	586			586	0.0	0.0	0.000	A
			2	(B,C)	1009			833	0.0	26.9	40.301	E
	Exit	1	1		622			622	0.0	0.0	0.000	A
D	Entry	1	1	A	125	644	0.193	125	0.0	0.2	5.617	A
			2	A	127	644	0.198	127	0.0	0.2	5.575	A
			3	D,B,C	226	644	0.350	227	0.0	0.5	8.381	A
		2	1	(A)	252			252	0.0	0.0	0.000	A
			2	(D,B,C)	226			226	0.0	0.0	0.309	A
	Exit	1	1		344			344	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	487	868	0.561	486	1.1	1.6	10.372	B
			2	D,A	233	868	0.268	232	0.3	0.4	5.995	A
	Exit	1	1		1505			1505	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	336	576	0.583	337	0.6	1.0	10.486	B
			2	A,B	336	576	0.584	338	0.6	1.0	10.436	B
		2	1	(D,A,B,C)	672			672	0.0	0.0	0.000	A
	Exit	1	1		747			747	0.0	0.0	0.000	A
C	Entry	1	1	D,A	402	754	0.533	402	0.7	1.0	7.985	A
			2	A	307	754	0.407	307	0.4	0.6	6.829	A
			3	B,C	747	754	0.991	747	21.3	21.9	103.428	F
		2	1	(D,A)	709			709	0.0	0.0	0.000	A
			2	(B,C)	1204			747	26.9	137.1	396.770	F
	Exit	1	1		759			759	0.0	0.0	0.000	A
D	Entry	1	1	A	155	608	0.254	155	0.2	0.3	6.672	A
			2	A	154	608	0.252	154	0.2	0.2	6.714	A
			3	D,B,C	272	608	0.447	273	0.5	0.8	11.445	B
		2	1	(A)	308			308	0.0	0.0	0.000	A
			2	(D,B,C)	272			272	0.0	0.1	1.084	A
	Exit	1	1		421			421	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	593	867	0.684	597	1.6	2.3	15.108	C
			2	D,A	279	867	0.322	279	0.4	0.6	6.497	A
	Exit	1	1		1826			1826	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	411	493	0.834	411	1.0	3.0	22.643	C
			2	A,B	403	493	0.819	405	1.0	3.0	22.889	C
		2	1	(D,A,B,C)	815			814	0.0	0.2	0.244	A
	Exit	1	1		690			690	0.0	0.0	0.000	A
C	Entry	1	1	D,A	472	688	0.687	470	1.0	1.8	11.463	B
			2	A	393	688	0.572	393	0.6	1.1	9.528	A
			3	B,C	690	688	1.003	690	21.9	21.9	112.615	F
		2	1	(D,A)	866			866	0.0	0.0	0.000	A
			2	(B,C)	1492			690	137.1	332.0	1213.695	F
	Exit	1	1		930			930	0.0	0.0	0.000	A
D	Entry	1	1	A	189	557	0.339	188	0.3	0.5	7.753	A
			2	A	182	557	0.327	182	0.2	0.5	7.780	A
			3	D,B,C	333	557	0.599	332	0.8	1.4	14.338	B
		2	1	(A)	371			371	0.0	0.0	0.003	A
			2	(D,B,C)	334			333	0.1	0.4	3.307	A
	Exit	1	1		502			502	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	585	871	0.671	585	2.3	2.2	14.110	B
			2	D,A	283	871	0.325	283	0.6	0.6	6.230	A
	Exit	1	1		1836			1836	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	410	495	0.828	411	3.0	3.4	29.069	D
			2	A,B	407	495	0.823	409	3.0	3.3	29.145	D
		2	1	(D,A,B,C)	818			817	0.2	0.5	1.477	A
	Exit	1	1		678			678	0.0	0.0	0.000	A
C	Entry	1	1	D,A	470	685	0.687	469	1.8	1.7	12.062	B
			2	A	393	685	0.574	393	1.1	1.1	10.012	B
			3	B,C	678	685	0.991	678	21.9	22.0	115.625	F
		2	1	(D,A)	863			863	0.0	0.0	0.000	A
			2	(B,C)	1490			678	332.0	530.2	1944.242	F
	Exit	1	1		920			920	0.0	0.0	0.000	A
D	Entry	1	1	A	185	558	0.332	185	0.5	0.5	7.864	A
			2	A	188	558	0.337	189	0.5	0.4	7.705	A
			3	D,B,C	334	558	0.599	335	1.4	1.4	14.898	B
		2	1	(A)	373			373	0.0	0.0	0.002	A
			2	(D,B,C)	333			334	0.4	0.4	4.205	A
	Exit	1	1		503			503	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	478	863	0.555	476	2.2	1.5	10.603	B
			2	D,A	224	863	0.260	226	0.6	0.3	5.770	A
	Exit	1	1		1494			1494	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	339	582	0.583	338	3.4	1.0	13.709	B
			2	A,B	337	582	0.579	335	3.3	1.1	13.683	B
		2	1	(D,A,B,C)	675			675	0.5	0.0	0.344	A
	Exit	1	1		759			759	0.0	0.0	0.000	A
C	Entry	1	1	D,A	394	758	0.520	393	1.7	0.9	8.630	A
			2	A	301	758	0.397	301	1.1	0.6	7.316	A
			3	B,C	759	758	1.002	759	22.0	21.9	105.725	F
		2	1	(D,A)	695			695	0.0	0.0	0.000	A
			2	(B,C)	1214			759	530.2	648.1	1799.787	F
	Exit	1	1		751			751	0.0	0.0	0.000	A
D	Entry	1	1	A	156	608	0.257	157	0.5	0.3	6.853	A
			2	A	150	608	0.247	150	0.4	0.3	6.947	A
			3	D,B,C	276	608	0.453	275	1.4	1.0	11.703	B
		2	1	(A)	307			307	0.0	0.0	0.000	A
			2	(D,B,C)	276			276	0.4	0.1	1.497	A
	Exit	1	1		405			405	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	408	861	0.474	407	1.5	1.1	8.527	A
			2	D,A	195	861	0.226	195	0.3	0.3	5.572	A
	Exit	1	1		1253			1253	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	281	636	0.443	283	1.0	0.6	7.964	A
			2	A,B	278	636	0.438	278	1.1	0.6	8.080	A
		2	1	(D,A,B,C)	560			560	0.0	0.0	0.000	A
	Exit	1	1		804			804	0.0	0.0	0.000	A
C	Entry	1	1	D,A	338	809	0.418	339	0.9	0.7	6.837	A
			2	A	248	809	0.306	248	0.6	0.4	5.802	A
			3	B,C	804	809	0.994	804	21.9	21.9	98.842	F
		2	1	(D,A)	586			586	0.0	0.0	0.000	A
			2	(B,C)	1004			804	648.1	701.6	899.379	F
	Exit	1	1		641			641	0.0	0.0	0.000	A
D	Entry	1	1	A	127	645	0.197	127	0.3	0.2	6.148	A
			2	A	130	645	0.201	130	0.3	0.2	6.201	A
			3	D,B,C	235	645	0.364	234	1.0	0.8	9.662	A
		2	1	(A)	257			257	0.0	0.0	0.001	A
			2	(D,B,C)	235			235	0.1	0.0	0.585	A
	Exit	1	1		347			347	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 7 - 2016 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 7\ARCADY\Issue 2
Report generation date: 25/10/2016 13:55:26

«M20 Junction 7 - 2016, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 7 [Lane Simulation] - 2016			
Arm A	26.5	71.21		F
Arm B	139.5	559.65		F
Arm C	260.0	610.52		F
Arm D	2.4	14.10		B

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

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

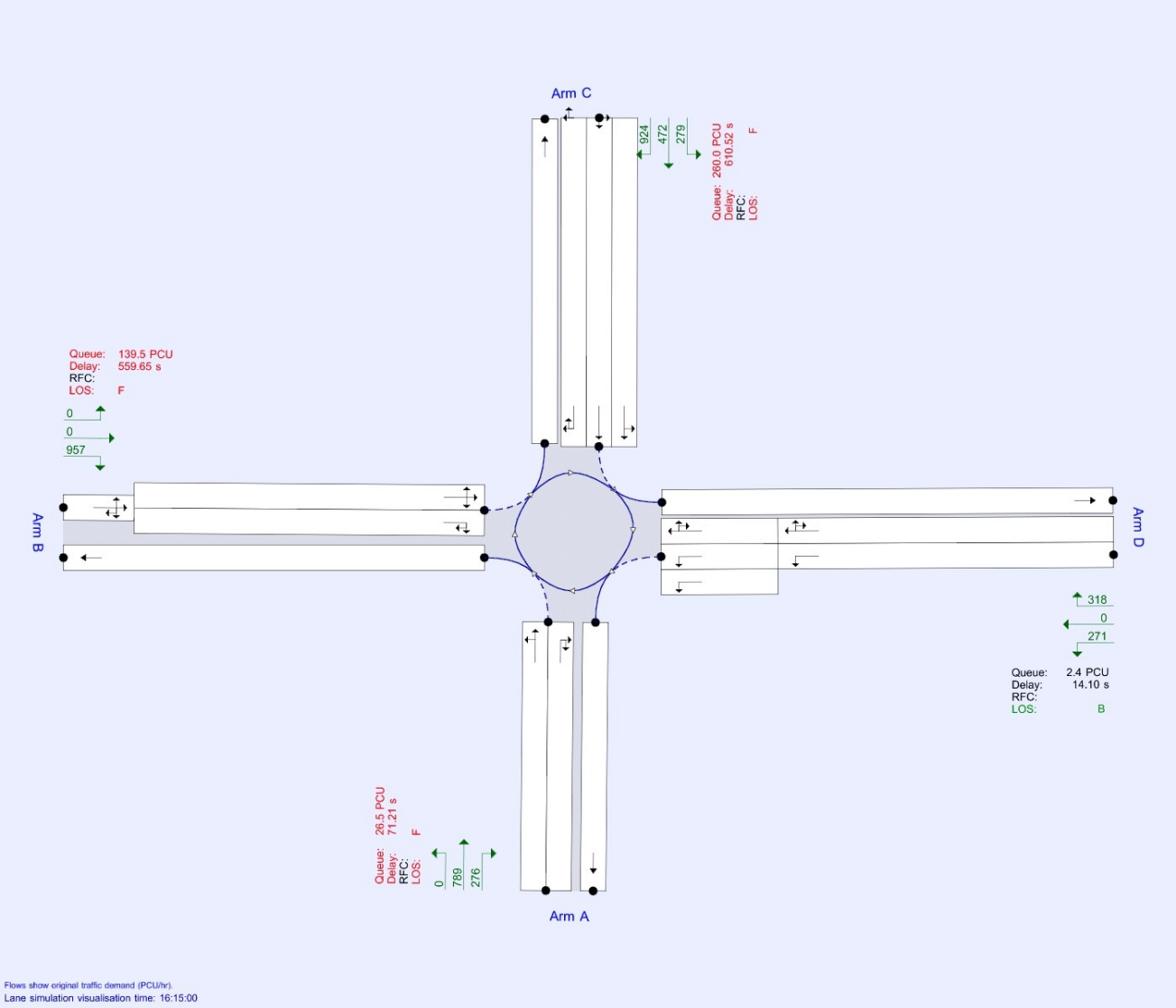
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1693948802	256	98.75

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 7	✓	✓	100.000	100.000

M20 Junction 7 - 2016, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 7 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 7	Large Roundabout	A,B,C,D	383.61	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A249 South	
B	M20 West	
C	A249 North	
D	M20 East	

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
A	6.10	7.00	18.5	50.7	180.0	12.0	
B	3.40	6.60	8.5	29.2	180.0	12.0	
C	7.41	12.05	4.9	25.0	180.0	12.3	
D	8.76	10.26	30.0	29.3	180.0	10.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1242	87.50
B	1383	132.00
C	1233	85.65
D	2353	112.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.907	2669
B	0.718	1846
C	1.017	3180
D	0.848	3386

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,A,C	✓	12.00	0	99999
		2	A,B	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	22.00	0	99999
		2	A	✓	22.00	0	99999
		3	B,C	✓	22.00	0	99999
	2	1	(D,A)		Infinity		
		2	(B,C)		Infinity		
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A	✓	4.00	0	99999
		3	D,B,C	✓	4.00	0	99999
	2	1	(A)		Infinity		
		2	(D,B,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.453	1335
		2	0.453	1335
B	1 [Give-way line]	1	0.359	923
		2	0.359	923
C	1 [Give-way line]	1	0.339	1060
		2	0.339	1060
		3	0.339	1060
D	1 [Give-way line]	1	0.283	1129
		2	0.283	1129
		3	0.283	1129

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓		
		3	✓		✓	✓
	2	1		✓		
		2	✓		✓	✓
A	1 [Give-way line]	1			✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2		✓		
		3			✓	✓
	2	1	✓	✓		
		2			✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2016	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1065	100.000
B		ONE HOUR	✓	957	100.000
C		ONE HOUR	✓	1675	100.000
D		ONE HOUR	✓	589	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	0	789	276
	B	957	0	0	0
	C	472	924	0	279
	D	271	0	318	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.74	0.26
	B	1.00	0.00	0.00	0.00
	C	0.28	0.55	0.00	0.17
	D	0.46	0.00	0.54	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	1
	B	3	0	0	0
	C	4	9	0	9
	D	1	0	7	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.000	1.020	1.010
	B	1.030	1.000	1.000	1.000
	C	1.040	1.090	1.000	1.090
	D	1.010	1.000	1.070	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A	802	802
	B	720	720
	C	1261	1261
	D	443	443
16:30-16:45	A	957	957
	B	860	860
	C	1506	1506
	D	529	529
16:45-17:00	A	1173	1173
	B	1054	1054
	C	1844	1844
	D	649	649
17:00-17:15	A	1173	1173
	B	1054	1054
	C	1844	1844
	D	649	649
17:15-17:30	A	957	957
	B	860	860
	C	1506	1506
	D	529	529
17:30-17:45	A	802	802
	B	720	720
	C	1261	1261
	D	443	443

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	71.21	26.5	F	976	1464
B	559.65	139.5	F	882	1323
C	610.52	260.0	F	1540	2310
D	14.10	2.4	B	541	811

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	796	199	914	799	1286	0.0	2.1	8.648	A
B	729	182	1039	728	675	0.0	2.7	11.254	B
C	1259	315	938	1239	828	0.0	11.0	21.894	C
D	442	111	1758	442	420	0.0	1.0	7.212	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	961	240	977	964	1510	2.1	4.5	15.773	C
B	857	214	1251	843	690	2.7	9.9	31.511	D
C	1497	374	1089	1363	1005	11.0	45.8	83.123	F
D	534	133	1954	533	499	1.0	1.7	10.220	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1170	292	1042	1139	1590	4.5	17.6	41.597	E
B	1050	263	1490	772	691	9.9	71.4	181.379	F
C	1861	465	1074	1518	1187	45.8	128.9	249.938	F
D	647	162	1984	648	608	1.7	2.3	13.375	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1163	291	1054	1126	1596	17.6	26.5	71.214	F
B	1050	263	1481	775	699	71.4	139.5	484.156	F
C	1840	460	1080	1528	1176	128.9	208.3	480.447	F
D	655	164	1992	658	616	2.3	2.4	14.103	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	968	242	962	1006	1575	26.5	8.5	50.531	F
B	875	219	1295	914	673	139.5	139.4	559.654	F
C	1514	379	1163	1348	1046	208.3	246.3	610.520	F
D	529	132	2005	531	505	2.4	1.6	10.693	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	799	200	867	801	1616	8.5	2.0	12.873	B
B	732	183	1040	1056	628	139.4	60.4	340.090	F
C	1271	318	1265	1196	831	246.3	260.0	273.153	F
D	439	110	2046	437	415	1.6	1.4	10.036	B

Lane Results

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

Lanes: Main Results for each time segment

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	586	920	0.637	589	0.0	1.8	10.048	B
			2	D,A	210	920	0.229	210	0.0	0.3	4.722	A
	Exit	1	1		1286			1286	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	363	550	0.660	362	0.0	1.4	11.274	B
			2	A,B	366	550	0.665	366	0.0	1.4	11.235	B
		2	1	(D,A,B,C)	729			729	0.0	0.0	0.000	A
	Exit	1	1		675			675	0.0	0.0	0.000	A
C	Entry	1	1	D,A	348	742	0.469	348	0.0	0.7	7.173	A
			2	A	216	742	0.291	216	0.0	0.3	5.591	A
			3	B,C	691	742	0.931	675	0.0	9.3	33.191	D
		2	1	(D,A)	563			563	0.0	0.0	0.000	A
			2	(B,C)	695			691	0.0	0.7	1.146	A
	Exit	1	1		828			828	0.0	0.0	0.000	A
D	Entry	1	1	A	102	632	0.161	102	0.0	0.2	5.362	A
			2	A	101	632	0.160	101	0.0	0.1	5.355	A
			3	D,B,C	239	632	0.378	239	0.0	0.6	8.496	A
		2	1	(A)	203			203	0.0	0.0	0.000	A
			2	(D,B,C)	239			239	0.0	0.0	0.371	A
	Exit	1	1		420			420	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	717	892	0.804	718	1.8	4.1	19.359	C
			2	D,A	245	892	0.275	246	0.3	0.3	5.557	A
	Exit	1	1		1510			1510	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	423	474	0.893	419	1.4	4.6	29.859	D
			2	A,B	429	474	0.905	425	1.4	4.6	30.038	D
		2	1	(D,A,B,C)	857			852	0.0	0.8	1.296	A
	Exit	1	1		690			690	0.0	0.0	0.000	A
C	Entry	1	1	D,A	406	691	0.588	406	0.7	1.2	9.852	A
			2	A	268	691	0.388	268	0.3	0.6	7.434	A
			3	B,C	706	691	1.022	690	9.3	20.8	88.311	F
		2	1	(D,A)	674			674	0.0	0.0	0.000	A
			2	(B,C)	823			706	0.7	23.3	54.646	F
	Exit	1	1		1005			1005	0.0	0.0	0.000	A
D	Entry	1	1	A	123	576	0.213	122	0.2	0.3	6.712	A
			2	A	124	576	0.214	124	0.1	0.3	6.715	A
			3	D,B,C	287	576	0.499	287	0.6	1.0	12.103	B
		2	1	(A)	246			246	0.0	0.0	0.000	A
			2	(D,B,C)	287			287	0.0	0.1	1.275	A
	Exit	1	1		499			499	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	867	862	1.005	837	4.1	17.0	53.887	F
			2	D,A	303	862	0.351	302	0.3	0.6	6.540	A
	Exit	1	1		1590			1590	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	394	388	1.014	389	4.6	12.0	88.113	F
			2	A,B	387	388	0.997	383	4.6	11.9	88.674	F
		2	1	(D,A,B,C)	1050			781	0.8	47.5	88.751	F
	Exit	1	1		691			691	0.0	0.0	0.000	A
C	Entry	1	1	D,A	479	696	0.689	476	1.2	1.8	12.423	B
			2	A	353	696	0.507	350	0.6	1.0	9.074	A
			3	B,C	691	696	0.994	691	20.8	21.9	113.729	F
		2	1	(D,A)	832			832	0.0	0.0	0.000	A
			2	(B,C)	1028			691	23.3	104.2	334.455	F
	Exit	1	1		1187			1187	0.0	0.0	0.000	A
D	Entry	1	1	A	150	568	0.264	150	0.3	0.3	7.160	A
			2	A	147	568	0.259	147	0.3	0.3	7.363	A
			3	D,B,C	350	568	0.616	350	1.0	1.4	14.812	B
		2	1	(A)	297			297	0.0	0.0	0.007	A
			2	(D,B,C)	350			350	0.1	0.4	4.032	A
	Exit	1	1		608			608	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	858	857	1.001	821	17.0	26.0	94.197	F
			2	D,A	305	857	0.355	305	0.6	0.5	6.746	A
	Exit	1	1		1596			1596	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	390	391	0.996	390	12.0	12.0	110.403	F
			2	A,B	385	391	0.985	386	11.9	12.0	111.610	F
		2	1	(D,A,B,C)	1050			775	47.5	115.5	377.725	F
	Exit	1	1		699			699	0.0	0.0	0.000	A
C	Entry	1	1	D,A	477	694	0.688	479	1.8	1.8	12.567	B
			2	A	350	694	0.505	349	1.0	0.9	8.955	A
			3	B,C	699	694	1.008	699	21.9	21.9	113.602	F
		2	1	(D,A)	827			827	0.0	0.0	0.000	A
			2	(B,C)	1012			699	104.2	183.6	759.364	F
	Exit	1	1		1176			1176	0.0	0.0	0.000	A
D	Entry	1	1	A	149	566	0.263	149	0.3	0.3	7.281	A
			2	A	153	566	0.271	154	0.3	0.3	7.173	A
			3	D,B,C	355	566	0.628	355	1.4	1.6	15.308	C
		2	1	(A)	302			302	0.0	0.0	0.000	A
			2	(D,B,C)	353			355	0.4	0.3	5.012	A
	Exit	1	1		616			616	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	718	899	0.800	757	26.0	8.1	66.386	F
			2	D,A	250	899	0.278	249	0.5	0.4	5.708	A
	Exit	1	1		1575			1575	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	457	458	0.998	457	12.0	12.0	97.758	F
			2	A,B	457	458	0.998	457	12.0	11.9	97.883	F
		2	1	(D,A,B,C)	875			914	115.5	115.5	470.588	F
	Exit	1	1		673			673	0.0	0.0	0.000	A
C	Entry	1	1	D,A	407	666	0.611	405	1.8	1.3	10.675	B
			2	A	271	666	0.406	270	0.9	0.6	7.931	A
			3	B,C	673	666	1.011	673	21.9	21.9	116.434	F
		2	1	(D,A)	677			677	0.0	0.0	0.000	A
			2	(B,C)	837			673	183.6	222.4	1042.069	F
	Exit	1	1		1046			1046	0.0	0.0	0.000	A
D	Entry	1	1	A	120	562	0.214	119	0.3	0.3	6.811	A
			2	A	123	562	0.219	122	0.3	0.3	6.837	A
			3	D,B,C	286	562	0.509	289	1.6	0.9	12.685	B
		2	1	(A)	244			244	0.0	0.0	0.000	A
			2	(D,B,C)	285			286	0.3	0.1	1.577	A
	Exit	1	1		505			505	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	590	942	0.627	592	8.1	1.8	15.632	C
			2	D,A	208	942	0.221	209	0.4	0.2	5.092	A
	Exit	1	1		1616			1616	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	512	550	0.931	530	12.0	9.6	77.690	F
			2	A,B	508	550	0.924	526	11.9	9.6	78.537	F
		2	1	(D,A,B,C)	732			1020	115.5	41.1	264.186	F
	Exit	1	1		628			628	0.0	0.0	0.000	A
C	Entry	1	1	D,A	339	631	0.536	342	1.3	1.0	10.193	B
			2	A	226	631	0.358	226	0.6	0.6	7.695	A
			3	B,C	628	631	0.995	628	21.9	21.9	122.466	F
		2	1	(D,A)	564			564	0.0	0.0	0.000	A
			2	(B,C)	706			628	222.4	236.5	833.109	F
	Exit	1	1		831			831	0.0	0.0	0.000	A
D	Entry	1	1	A	101	551	0.183	100	0.3	0.2	7.017	A
			2	A	99	551	0.180	99	0.3	0.2	6.826	A
			3	D,B,C	239	551	0.433	239	0.9	0.9	11.966	B
		2	1	(A)	200			200	0.0	0.0	0.000	A
			2	(D,B,C)	239			239	0.1	0.1	0.844	A
	Exit	1	1		415			415	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 7 - 2031 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 7\ARCADY\Issue 2
Report generation date: 25/10/2016 14:04:31

«M20 Junction 7 - 2031, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 7 [Lane Simulation] - 2031			
Arm A	3.9	14.69		B
Arm B	22.5	82.33		F
Arm C	920.2	1399.13		F
Arm D	3.5	14.33		B

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

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

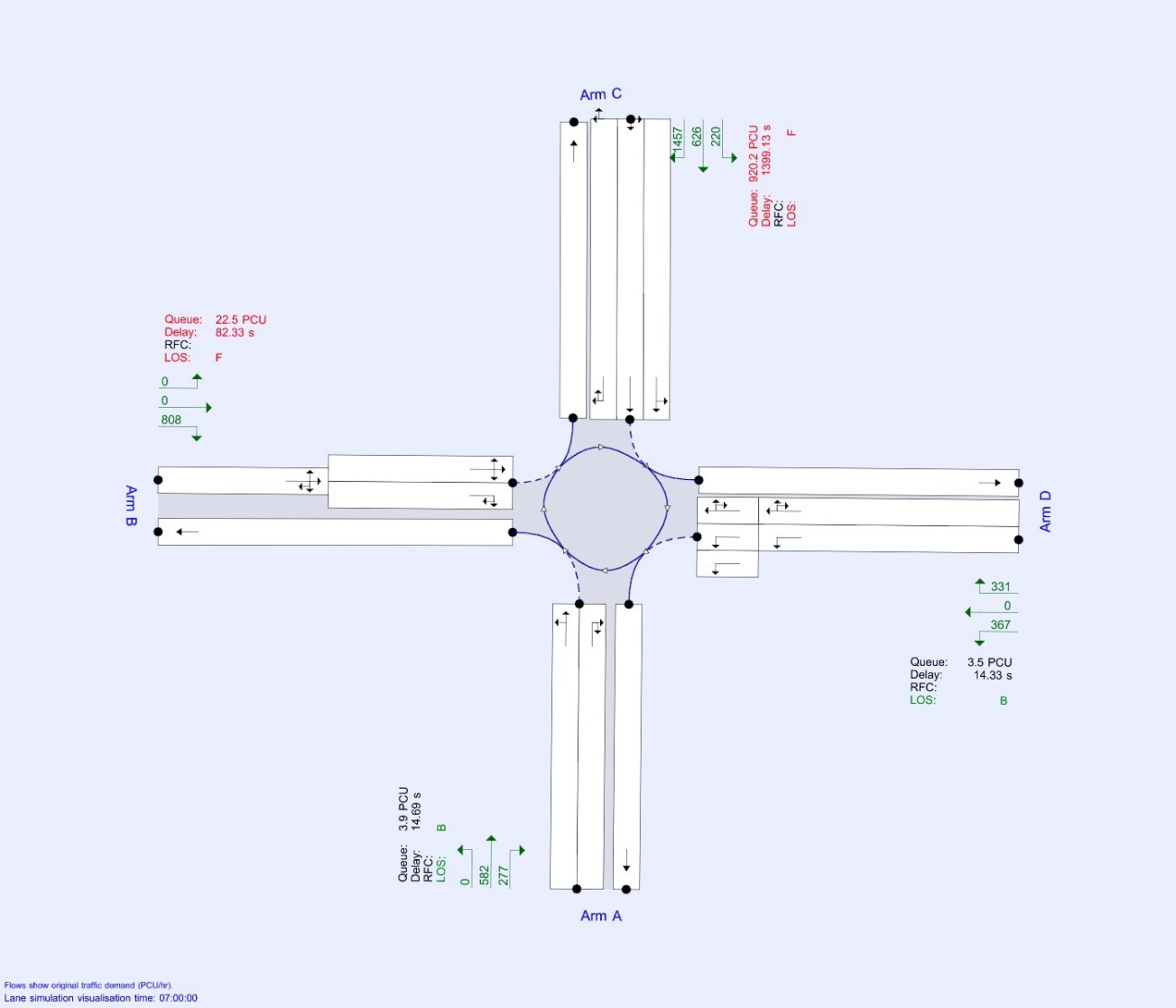
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	2083735628	410	157.94

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 7	✓	✓	100.000	100.000

M20 Junction 7 - 2031, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 7 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 7	Large Roundabout	A,B,C,D	709.41	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A249 South	
B	M20 West	
C	A249 North	
D	M20 East	

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
A	6.10	7.00	18.5	50.7	180.0	12.0	
B	3.40	6.60	8.5	29.2	180.0	12.0	
C	7.41	12.05	4.9	25.0	180.0	12.3	
D	8.76	10.26	30.0	29.3	180.0	10.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1788	87.50
B	1190	132.00
C	1085	85.65
D	2891	112.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.793	2542
B	0.751	1891
C	1.053	3217
D	0.707	3261

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,A,C	✓	12.00	0	99999
		2	A,B	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	22.00	0	99999
		2	A	✓	22.00	0	99999
		3	B,C	✓	22.00	0	99999
	2	1	(D,A)		Infinity		
		2	(B,C)		Infinity		
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A	✓	4.00	0	99999
		3	D,B,C	✓	4.00	0	99999
	2	1	(A)		Infinity		
		2	(D,B,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.396	1271
		2	0.396	1271
B	1 [Give-way line]	1	0.375	945
		2	0.375	945
C	1 [Give-way line]	1	0.351	1072
		2	0.351	1072
		3	0.351	1072
D	1 [Give-way line]	1	0.236	1087
		2	0.236	1087
		3	0.236	1087

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓		
		3	✓		✓	✓
	2	1		✓		
		2	✓		✓	✓
A	1 [Give-way line]	1			✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2		✓		
		3			✓	✓
	2	1	✓	✓		
		2			✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2031	AM	ONE HOUR	07:00	08:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	859	100.000
B		ONE HOUR	✓	808	100.000
C		ONE HOUR	✓	2303	100.000
D		ONE HOUR	✓	698	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	0	582	277
	B	808	0	0	0
	C	626	1457	0	220
	D	367	0	331	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.68	0.32
	B	1.00	0.00	0.00	0.00
	C	0.27	0.63	0.00	0.10
	D	0.53	0.00	0.47	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	3
	B	4	0	0	0
	C	6	6	0	12
	D	3	0	10	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.000	1.060	1.030
	B	1.040	1.000	1.000	1.000
	C	1.060	1.060	1.000	1.120
	D	1.030	1.000	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:00-07:15	A	647	647
	B	608	608
	C	1734	1734
	D	525	525
07:15-07:30	A	772	772
	B	726	726
	C	2070	2070
	D	627	627
07:30-07:45	A	946	946
	B	890	890
	C	2536	2536
	D	769	769
07:45-08:00	A	946	946
	B	890	890
	C	2536	2536
	D	769	769
08:00-08:15	A	772	772
	B	726	726
	C	2070	2070
	D	627	627
08:15-08:30	A	647	647
	B	608	608
	C	1734	1734
	D	525	525

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	14.69	3.9	B	787	1180
B	82.33	22.5	F	742	1113
C	1399.13	920.2	F	2116	3174
D	14.33	3.5	B	644	966

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	648	162	1027	649	1357	0.0	1.4	7.447	A
B	607	152	896	608	781	0.0	1.5	8.005	A
C	1743	436	817	1422	687	0.0	76.3	110.149	F
D	525	131	1860	524	379	0.0	1.2	7.258	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	774	193	1030	772	1625	1.4	2.3	10.026	B
B	727	182	1071	726	731	1.5	3.0	13.445	B
C	2073	518	975	1490	822	76.3	219.5	476.140	F
D	633	158	2020	634	444	1.2	1.7	9.633	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	948	237	1033	947	1943	2.3	3.9	14.439	B
B	892	223	1316	852	665	3.0	15.9	44.911	E
C	2540	635	1158	1595	1009	219.5	453.2	1133.226	F
D	771	193	2205	772	548	1.7	3.2	13.352	B

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	943	236	1027	947	1956	3.9	3.6	14.687	B
B	889	222	1314	865	660	15.9	22.5	82.329	F
C	2526	631	1172	1595	1008	453.2	687.0	1399.129	F
D	780	195	2209	774	558	3.2	3.5	14.335	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	766	191	1008	764	1645	3.6	2.0	9.902	A
B	727	182	1059	753	713	22.5	3.2	36.980	E
C	2070	518	1003	1472	809	687.0	839.6	861.429	F
D	626	157	2029	624	446	3.5	1.9	10.631	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	642	161	1037	643	1361	2.0	1.4	8.167	A
B	610	152	893	611	787	3.2	1.6	9.599	A
C	1744	436	816	1426	688	839.6	920.2	327.530	F
D	529	132	1870	528	373	1.9	1.2	8.150	A

Lane Results

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

Lanes: Main Results for each time segment

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	439	864	0.508	440	0.0	1.2	8.424	A
			2	D,A	209	864	0.241	209	0.0	0.3	5.442	A
	Exit	1	1		1357			1357	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	304	609	0.500	305	0.0	0.8	8.035	A
			2	A,B	303	609	0.498	304	0.0	0.7	7.975	A
		2	1	(D,A,B,C)	607			607	0.0	0.0	0.000	A
	Exit	1	1		781			781	0.0	0.0	0.000	A
C	Entry	1	1	D,A	370	786	0.471	369	0.0	0.8	6.766	A
			2	A	274	786	0.349	273	0.0	0.6	5.823	A
			3	B,C	786	786	1.001	781	0.0	21.9	74.391	F
		2	1	(D,A)	643			643	0.0	0.0	0.000	A
			2	(B,C)	1099			786	0.0	52.9	88.974	F
	Exit	1	1		687			687	0.0	0.0	0.000	A
D	Entry	1	1	A	140	649	0.215	139	0.0	0.3	5.793	A
			2	A	139	649	0.214	139	0.0	0.3	5.677	A
			3	D,B,C	247	649	0.380	247	0.0	0.6	8.644	A
		2	1	(A)	278			278	0.0	0.0	0.000	A
			2	(D,B,C)	246			247	0.0	0.0	0.417	A
	Exit	1	1		379			379	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	524	863	0.608	524	1.2	1.9	11.963	B
			2	D,A	249	863	0.289	249	0.3	0.5	6.112	A
	Exit	1	1		1625			1625	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	362	543	0.666	362	0.8	1.5	13.452	B
			2	A,B	365	543	0.671	365	0.7	1.5	13.412	B
		2	1	(D,A,B,C)	727			726	0.0	0.0	0.004	A
	Exit	1	1		731			731	0.0	0.0	0.000	A
C	Entry	1	1	D,A	423	730	0.579	423	0.8	1.1	8.948	A
			2	A	335	730	0.459	335	0.6	0.7	7.461	A
			3	B,C	731	730	1.001	731	21.9	22.0	107.351	F
		2	1	(D,A)	757			757	0.0	0.0	0.000	A
			2	(B,C)	1316			731	52.9	195.8	632.116	F
	Exit	1	1		822			822	0.0	0.0	0.000	A
D	Entry	1	1	A	166	611	0.271	166	0.3	0.3	6.885	A
			2	A	171	611	0.279	170	0.3	0.4	6.842	A
			3	D,B,C	296	611	0.485	298	0.6	0.9	11.651	B
		2	1	(A)	337			337	0.0	0.0	0.001	A
			2	(D,B,C)	296			296	0.0	0.1	1.291	A
	Exit	1	1		444			444	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	640	862	0.743	640	1.9	3.3	18.156	C
			2	D,A	308	862	0.357	306	0.5	0.6	6.817	A
	Exit	1	1		1943			1943	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	439	451	0.972	428	1.5	6.6	40.481	E
			2	A,B	435	451	0.964	424	1.5	6.7	40.529	E
		2	1	(D,A,B,C)	892			874	0.0	2.6	3.731	A
	Exit	1	1		665			665	0.0	0.0	0.000	A
C	Entry	1	1	D,A	502	666	0.754	499	1.1	2.2	13.787	B
			2	A	434	666	0.652	431	0.7	1.6	11.421	B
			3	B,C	665	666	0.999	665	22.0	22.0	116.391	F
		2	1	(D,A)	936			936	0.0	0.0	0.000	A
			2	(B,C)	1604			665	195.8	427.5	1660.676	F
	Exit	1	1		1009			1009	0.0	0.0	0.000	A
D	Entry	1	1	A	204	568	0.359	204	0.3	0.5	7.784	A
			2	A	199	568	0.350	199	0.4	0.5	7.863	A
			3	D,B,C	369	568	0.650	369	0.9	1.7	14.983	B
		2	1	(A)	402			403	0.0	0.0	0.007	A
			2	(D,B,C)	368			369	0.1	0.5	4.812	A
	Exit	1	1		548			548	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	638	864	0.738	640	3.3	3.1	18.562	C
			2	D,A	305	864	0.353	307	0.6	0.5	6.849	A
	Exit	1	1		1956			1956	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	438	452	0.970	434	6.6	7.9	61.907	F
			2	A,B	435	452	0.963	431	6.7	8.0	61.674	F
		2	1	(D,A,B,C)	889			873	2.6	6.5	20.128	C
	Exit	1	1		660			660	0.0	0.0	0.000	A
C	Entry	1	1	D,A	509	661	0.770	505	2.2	2.4	15.332	C
			2	A	432	661	0.653	430	1.6	1.8	12.984	B
			3	B,C	660	661	0.998	660	22.0	21.9	118.842	F
		2	1	(D,A)	940			940	0.0	0.0	0.000	A
			2	(B,C)	1585			660	427.5	660.9	2332.609	F
	Exit	1	1		1008			1008	0.0	0.0	0.000	A
D	Entry	1	1	A	205	567	0.362	204	0.5	0.5	8.110	A
			2	A	204	567	0.359	203	0.5	0.5	8.174	A
			3	D,B,C	368	567	0.650	367	1.7	1.7	15.925	C
		2	1	(A)	409			409	0.0	0.0	0.011	A
			2	(D,B,C)	371			368	0.5	0.7	5.631	A
	Exit	1	1		558			558	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	517	872	0.593	515	3.1	1.7	11.799	B
			2	D,A	248	872	0.285	250	0.5	0.4	6.040	A
	Exit	1	1		1645			1645	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	367	548	0.671	377	7.9	1.6	31.805	D
			2	A,B	367	548	0.670	376	8.0	1.6	31.433	D
		2	1	(D,A,B,C)	727			734	6.5	0.0	7.450	A
	Exit	1	1		713			713	0.0	0.0	0.000	A
C	Entry	1	1	D,A	425	720	0.590	425	2.4	1.2	10.778	B
			2	A	333	720	0.463	333	1.8	0.7	9.129	A
			3	B,C	713	720	0.990	713	21.9	21.9	113.885	F
		2	1	(D,A)	758			758	0.0	0.0	0.000	A
			2	(B,C)	1312			713	660.9	815.8	1799.994	F
	Exit	1	1		809			809	0.0	0.0	0.000	A
D	Entry	1	1	A	166	609	0.272	166	0.5	0.3	7.063	A
			2	A	164	609	0.269	164	0.5	0.3	7.059	A
			3	D,B,C	296	609	0.486	294	1.7	1.1	12.832	B
		2	1	(A)	330			330	0.0	0.0	0.001	A
			2	(D,B,C)	297			296	0.7	0.1	2.126	A
	Exit	1	1		446			446	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	437	860	0.508	438	1.7	1.1	9.359	A
			2	D,A	205	860	0.239	205	0.4	0.3	5.709	A
	Exit	1	1		1361			1361	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	308	610	0.505	309	1.6	0.8	9.595	A
			2	A,B	301	610	0.494	302	1.6	0.8	9.619	A
		2	1	(D,A,B,C)	610			610	0.0	0.0	0.001	A
	Exit	1	1		787			787	0.0	0.0	0.000	A
C	Entry	1	1	D,A	368	786	0.469	368	1.2	0.9	7.378	A
			2	A	271	786	0.345	271	0.7	0.5	6.363	A
			3	B,C	787	786	1.002	787	21.9	22.0	101.117	F
		2	1	(D,A)	640			640	0.0	0.0	0.000	A
			2	(B,C)	1105			787	815.8	896.9	899.761	F
	Exit	1	1		688			688	0.0	0.0	0.000	A
D	Entry	1	1	A	138	647	0.213	138	0.3	0.2	6.148	A
			2	A	140	647	0.217	141	0.3	0.2	6.239	A
			3	D,B,C	251	647	0.388	250	1.1	0.7	9.908	A
		2	1	(A)	278			278	0.0	0.0	0.000	A
			2	(D,B,C)	251			251	0.1	0.0	0.598	A
	Exit	1	1		373			373	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 7 - 2031 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 7\ARCADY\Issue 2
Report generation date: 25/10/2016 14:12:42

«M20 Junction 7 - 2031, PM
- »Junction Network
- »Arms
- »Traffic Demand
- »Origin-Destination Data
- »Vehicle Mix
- »Detailed Demand Data
- »Results
- »Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 7 [Lane Simulation] - 2031			
Arm A	58.5	150.61		F
Arm B	253.3	979.95		F
Arm C	348.5	694.20		F
Arm D	2.8	13.85		B

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

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

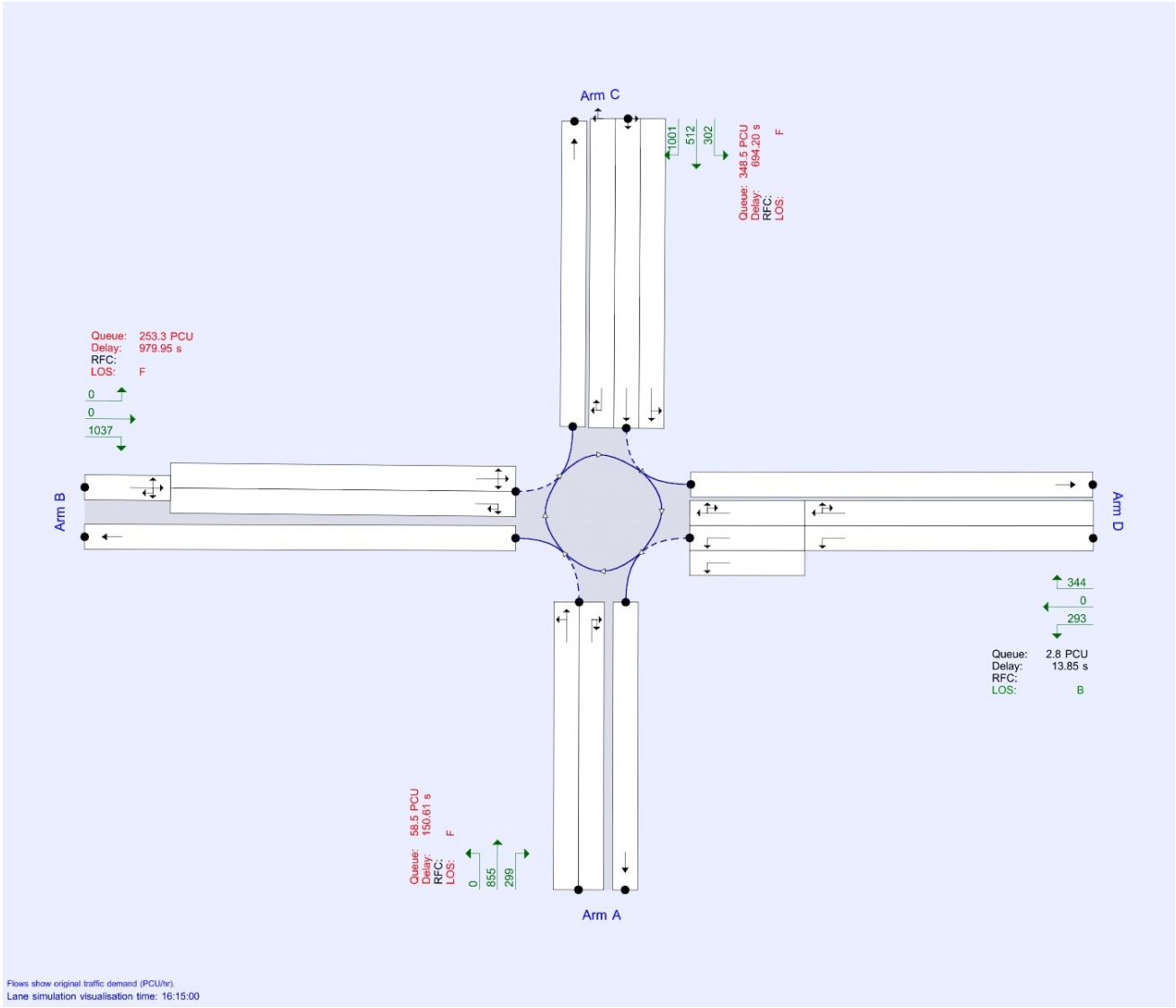
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	464063781	418	175.16

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 7	✓	✓	100.000	100.000

M20 Junction 7 - 2031, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 7 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 7	Large Roundabout	A,B,C,D	530.22	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A249 South	
B	M20 West	
C	A249 North	
D	M20 East	

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
A	6.10	7.00	18.5	50.7	180.0	12.0	
B	3.40	6.60	8.5	29.2	180.0	12.0	
C	7.41	12.05	4.9	25.0	180.0	12.3	
D	8.76	10.26	30.0	29.3	180.0	10.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1345	87.50
B	1498	132.00
C	1336	85.65
D	2550	112.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.885	2645
B	0.698	1819
C	0.993	3156
D	0.796	3340

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,A,C	✓	12.00	0	99999
		2	A,B	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	22.00	0	99999
		2	A	✓	22.00	0	99999
		3	B,C	✓	22.00	0	99999
	2	1	(D,A)		Infinity		
		2	(B,C)		Infinity		
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A	✓	4.00	0	99999
		3	D,B,C	✓	4.00	0	99999
	2	1	(A)		Infinity		
		2	(D,B,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.443	1323
		2	0.443	1323
B	1 [Give-way line]	1	0.349	910
		2	0.349	910
C	1 [Give-way line]	1	0.331	1052
		2	0.331	1052
		3	0.331	1052
D	1 [Give-way line]	1	0.265	1113
		2	0.265	1113
		3	0.265	1113

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓		
		3	✓		✓	✓
	2	1		✓		
		2	✓		✓	✓
A	1 [Give-way line]	1			✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2		✓		
		3			✓	✓
	2	1	✓	✓		
		2			✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2031	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1154	100.000
B		ONE HOUR	✓	1037	100.000
C		ONE HOUR	✓	1815	100.000
D		ONE HOUR	✓	637	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	0	855	299
	B	1037	0	0	0
	C	512	1001	0	302
	D	293	0	344	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.74	0.26
	B	1.00	0.00	0.00	0.00
	C	0.28	0.55	0.00	0.17
	D	0.46	0.00	0.54	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	1
	B	3	0	0	0
	C	4	9	0	9
	D	1	0	7	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.000	1.020	1.010
	B	1.030	1.000	1.000	1.000
	C	1.040	1.090	1.000	1.090
	D	1.010	1.000	1.070	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A	869	869
	B	781	781
	C	1366	1366
	D	480	480
16:30-16:45	A	1037	1037
	B	932	932
	C	1632	1632
	D	573	573
16:45-17:00	A	1271	1271
	B	1142	1142
	C	1998	1998
	D	701	701
17:00-17:15	A	1271	1271
	B	1142	1142
	C	1998	1998
	D	701	701
17:15-17:30	A	1037	1037
	B	932	932
	C	1632	1632
	D	573	573
17:30-17:45	A	869	869
	B	781	781
	C	1366	1366
	D	480	480

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	150.61	58.5	F	1059	1588
B	979.95	253.3	F	955	1433
C	694.20	348.5	F	1665	2497
D	13.85	2.8	B	582	874

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	874	219	947	876	1381	0.0	2.9	10.410	B
B	778	195	1137	774	687	0.0	4.2	14.950	B
C	1366	342	1003	1296	907	0.0	20.7	33.472	D
D	481	120	1847	481	452	0.0	1.2	7.661	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1034	259	1000	1026	1577	2.9	7.0	20.884	C
B	940	235	1335	864	691	4.2	24.6	65.019	F
C	1628	407	1132	1413	1067	20.7	73.9	136.889	F
D	566	142	2011	566	535	1.2	1.7	10.637	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1269	317	1074	1163	1646	7.0	33.4	67.217	F
B	1150	288	1538	750	699	24.6	118.9	341.423	F
C	2008	502	1079	1601	1209	73.9	179.2	359.894	F
D	700	175	2020	699	659	1.7	2.8	13.815	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1268	317	1066	1179	1618	33.4	58.5	148.315	F
B	1148	287	1554	737	691	118.9	219.9	803.409	F
C	1986	497	1065	1583	1227	179.2	281.4	650.970	F
D	691	173	1993	691	654	2.8	2.8	13.849	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1032	258	1016	1125	1533	58.5	36.9	150.608	F
B	935	234	1441	808	700	219.9	253.3	979.947	F
C	1635	409	1071	1434	1178	281.4	330.7	694.199	F
D	578	145	1970	579	535	2.8	1.7	10.765	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	873	218	918	946	1561	36.9	8.8	62.041	F
B	780	195	1202	952	662	253.3	218.9	788.117	F
C	1364	341	1183	1274	970	330.7	348.5	271.738	F
D	478	119	2000	479	457	1.7	1.3	9.375	A

Lane Results

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

Lanes: Main Results for each time segment

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	644	903	0.713	647	0.0	2.5	12.298	B
			2	D,A	230	903	0.255	230	0.0	0.4	5.078	A
	Exit	1	1		1381			1381	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	390	513	0.761	387	0.0	2.1	14.912	B
			2	A,B	388	513	0.757	387	0.0	2.1	14.962	B
		2	1	(D,A,B,C)	778			778	0.0	0.0	0.010	A
	Exit	1	1		687			687	0.0	0.0	0.000	A
C	Entry	1	1	D,A	369	720	0.513	370	0.0	0.9	7.852	A
			2	A	240	720	0.333	239	0.0	0.5	6.207	A
			3	B,C	727	720	1.009	687	0.0	15.2	47.644	E
		2	1	(D,A)	609			609	0.0	0.0	0.000	A
			2	(B,C)	757			727	0.0	4.1	6.479	A
	Exit	1	1		907			907	0.0	0.0	0.000	A
D	Entry	1	1	A	110	623	0.177	110	0.0	0.2	5.596	A
			2	A	110	623	0.176	110	0.0	0.2	5.680	A
			3	D,B,C	262	623	0.420	260	0.0	0.8	8.959	A
		2	1	(A)	220			220	0.0	0.0	0.000	A
			2	(D,B,C)	261			262	0.0	0.0	0.536	A
	Exit	1	1		452			452	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	766	880	0.871	758	2.5	6.6	26.188	D
			2	D,A	268	880	0.304	268	0.4	0.4	5.885	A
	Exit	1	1		1577			1577	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	445	443	1.003	431	2.1	8.7	52.830	F
			2	A,B	446	443	1.005	433	2.1	8.7	52.552	F
		2	1	(D,A,B,C)	940			891	0.0	7.3	10.527	B
	Exit	1	1		691			691	0.0	0.0	0.000	A
C	Entry	1	1	D,A	425	677	0.627	425	0.9	1.3	10.889	B
			2	A	297	677	0.439	297	0.5	0.7	7.854	A
			3	B,C	695	677	1.027	691	15.2	21.8	104.092	F
		2	1	(D,A)	722			722	0.0	0.0	0.000	A
			2	(B,C)	907			695	4.1	50.1	135.502	F
	Exit	1	1		1067			1067	0.0	0.0	0.000	A
D	Entry	1	1	A	127	580	0.219	127	0.2	0.3	6.753	A
			2	A	130	580	0.225	130	0.2	0.3	6.725	A
			3	D,B,C	309	580	0.533	309	0.8	1.1	12.440	B
		2	1	(A)	257			257	0.0	0.0	0.000	A
			2	(D,B,C)	309			309	0.0	0.1	1.685	A
	Exit	1	1		535			535	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	941	848	1.110	834	6.6	32.8	88.601	F
			2	D,A	328	848	0.387	329	0.4	0.6	7.165	A
	Exit	1	1		1646			1646	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	374	373	1.004	374	8.7	12.0	107.511	F
			2	A,B	376	373	1.009	376	8.7	12.0	107.328	F
		2	1	(D,A,B,C)	1150			750	7.3	95.0	231.013	F
	Exit	1	1		699			699	0.0	0.0	0.000	A
C	Entry	1	1	D,A	515	695	0.741	516	1.3	2.0	14.140	B
			2	A	386	695	0.555	386	0.7	1.1	10.216	B
			3	B,C	699	695	1.006	699	21.8	21.9	113.758	F
		2	1	(D,A)	901			901	0.0	0.0	0.000	A
			2	(B,C)	1107			699	50.1	154.2	537.119	F
	Exit	1	1		1209			1209	0.0	0.0	0.000	A
D	Entry	1	1	A	162	577	0.280	162	0.3	0.3	7.316	A
			2	A	162	577	0.281	163	0.3	0.3	7.116	A
			3	D,B,C	376	577	0.651	375	1.1	1.6	15.074	C
		2	1	(A)	324			324	0.0	0.0	0.000	A
			2	(D,B,C)	376			376	0.1	0.6	4.685	A
	Exit	1	1		659			659	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	940	851	1.105	852	32.8	57.8	198.252	F
			2	D,A	328	851	0.385	327	0.6	0.7	7.051	A
	Exit	1	1		1618			1618	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	371	367	1.011	371	12.0	12.0	116.499	F
			2	A,B	366	367	0.998	366	12.0	12.0	117.293	F
		2	1	(D,A,B,C)	1148			737	95.0	195.9	693.359	F
	Exit	1	1		691			691	0.0	0.0	0.000	A
C	Entry	1	1	D,A	511	700	0.730	512	2.0	2.0	13.876	B
			2	A	379	700	0.541	380	1.1	0.9	9.928	A
			3	B,C	691	700	0.988	691	21.9	21.9	113.489	F
		2	1	(D,A)	889			889	0.0	0.0	0.000	A
			2	(B,C)	1097			691	154.2	256.5	1069.670	F
	Exit	1	1		1227			1227	0.0	0.0	0.000	A
D	Entry	1	1	A	158	584	0.270	158	0.3	0.3	7.158	A
			2	A	158	584	0.270	158	0.3	0.3	7.110	A
			3	D,B,C	374	584	0.640	375	1.6	1.6	15.158	C
		2	1	(A)	316			316	0.0	0.0	0.001	A
			2	(D,B,C)	376			374	0.6	0.5	4.757	A
	Exit	1	1		654			654	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	770	873	0.882	861	57.8	36.6	201.087	F
			2	D,A	262	873	0.300	264	0.7	0.4	6.141	A
	Exit	1	1		1533			1533	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	406	406	0.999	406	12.0	12.0	106.950	F
			2	A,B	401	406	0.988	401	12.0	12.0	107.434	F
		2	1	(D,A,B,C)	935			807	195.9	229.4	894.442	F
	Exit	1	1		700			700	0.0	0.0	0.000	A
C	Entry	1	1	D,A	435	697	0.623	435	2.0	1.4	10.842	B
			2	A	300	697	0.430	299	0.9	0.7	7.983	A
			3	B,C	700	697	1.004	700	21.9	21.9	112.906	F
		2	1	(D,A)	735			735	0.0	0.0	0.000	A
			2	(B,C)	901			700	256.5	306.7	1325.472	F
	Exit	1	1		1178			1178	0.0	0.0	0.000	A
D	Entry	1	1	A	132	591	0.224	132	0.3	0.2	6.607	A
			2	A	131	591	0.221	130	0.3	0.3	6.673	A
			3	D,B,C	317	591	0.536	317	1.6	1.1	12.572	B
		2	1	(A)	263			263	0.0	0.0	0.000	A
			2	(D,B,C)	316			317	0.5	0.1	1.897	A
	Exit	1	1		535			535	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	643	916	0.702	715	36.6	8.5	82.392	F
			2	D,A	231	916	0.252	232	0.4	0.3	5.484	A
	Exit	1	1		1561			1561	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	478	490	0.975	478	12.0	12.0	92.133	F
			2	A,B	473	490	0.966	474	12.0	12.0	93.194	F
		2	1	(D,A,B,C)	780			951	229.4	194.9	736.137	F
	Exit	1	1		662			662	0.0	0.0	0.000	A
C	Entry	1	1	D,A	366	660	0.555	368	1.4	1.0	9.750	A
			2	A	244	660	0.369	244	0.7	0.5	7.345	A
			3	B,C	662	660	1.003	662	21.9	21.9	115.585	F
		2	1	(D,A)	610			610	0.0	0.0	0.000	A
			2	(B,C)	754			662	306.7	325.1	895.481	F
	Exit	1	1		970			970	0.0	0.0	0.000	A
D	Entry	1	1	A	112	583	0.192	112	0.2	0.2	6.597	A
			2	A	112	583	0.192	112	0.3	0.2	6.575	A
			3	D,B,C	254	583	0.436	256	1.1	0.8	11.105	B
		2	1	(A)	224			224	0.0	0.0	0.001	A
			2	(D,B,C)	254			254	0.1	0.1	0.830	A
	Exit	1	1		457			457	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 7 - Dev Scenario 1 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 7\ARCADY\Issue 2
Report generation date: 25/10/2016 14:19:22

«M20 Junction 7 - Dev Scenario 1, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 7 [Lane Simulation] - Dev Scenario 1			
Arm A	4.9	16.59		C
Arm B	47.5	162.83		F
Arm C	1033.0	1429.97		F
Arm D	3.4	14.14		B

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

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

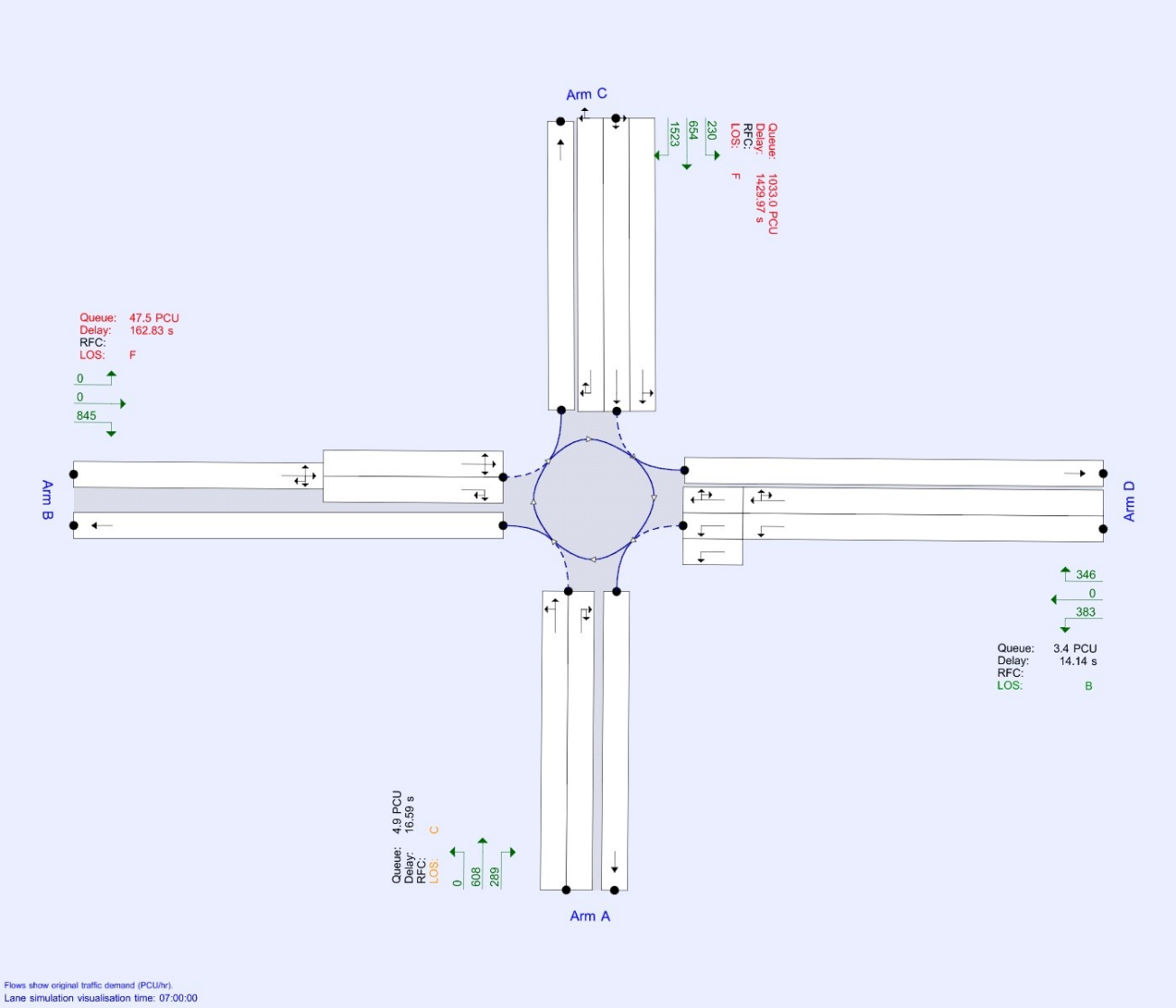
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	154090770	352	145.07

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 7	✓	✓	100.000	100.000

M20 Junction 7 - Dev Scenario 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 7 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 7	Large Roundabout	A,B,C,D	739.57	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A249 South	
B	M20 West	
C	A249 North	
D	M20 East	

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
A	6.10	7.00	18.5	50.7	180.0	12.0	
B	3.40	6.60	8.5	29.2	180.0	12.0	
C	7.41	12.05	4.9	25.0	180.0	12.3	
D	8.76	10.26	30.0	29.3	180.0	10.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1869	87.50
B	1243	132.00
C	1134	85.65
D	3022	112.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.776	2524
B	0.742	1878
C	1.041	3205
D	0.672	3231

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,A,C	✓	12.00	0	99999
		2	A,B	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	22.00	0	99999
		2	A	✓	22.00	0	99999
		3	B,C	✓	22.00	0	99999
	2	1	(D,A)		Infinity		
		2	(B,C)		Infinity		
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A	✓	4.00	0	99999
		3	D,B,C	✓	4.00	0	99999
	2	1	(A)		Infinity		
		2	(D,B,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.388	1262
		2	0.388	1262
B	1 [Give-way line]	1	0.371	939
		2	0.371	939
C	1 [Give-way line]	1	0.347	1068
		2	0.347	1068
		3	0.347	1068
D	1 [Give-way line]	1	0.224	1077
		2	0.224	1077
		3	0.224	1077

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓		
		3	✓		✓	✓
	2	1		✓		
		2	✓		✓	✓
A	1 [Give-way line]	1			✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2		✓		
		3			✓	✓
	2	1	✓	✓		
		2			✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	Dev Scenario 1	AM	ONE HOUR	07:00	08:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	897	100.000
B		ONE HOUR	✓	845	100.000
C		ONE HOUR	✓	2407	100.000
D		ONE HOUR	✓	729	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	0	608	289
	B	845	0	0	0
	C	654	1523	0	230
	D	383	0	346	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.68	0.32
	B	1.00	0.00	0.00	0.00
	C	0.27	0.63	0.00	0.10
	D	0.53	0.00	0.47	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	3
	B	4	0	0	0
	C	6	6	0	12
	D	3	0	10	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.000	1.060	1.030
	B	1.040	1.000	1.000	1.000
	C	1.060	1.060	1.000	1.120
	D	1.030	1.000	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:00-07:15	A	675	675
	B	636	636
	C	1812	1812
	D	549	549
07:15-07:30	A	806	806
	B	760	760
	C	2164	2164
	D	655	655
07:30-07:45	A	988	988
	B	930	930
	C	2650	2650
	D	803	803
07:45-08:00	A	988	988
	B	930	930
	C	2650	2650
	D	803	803
08:00-08:15	A	806	806
	B	760	760
	C	2164	2164
	D	655	655
08:15-08:30	A	675	675
	B	636	636
	C	1812	1812
	D	549	549

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	16.59	4.9	C	823	1235
B	162.83	47.5	F	772	1158
C	1429.97	1033.0	F	2213	3319
D	14.14	3.4	B	672	1008

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	679	170	1038	678	1417	0.0	1.6	7.717	A
B	628	157	939	631	777	0.0	1.6	8.613	A
C	1821	455	849	1443	721	0.0	90.6	131.588	F
D	555	139	1903	552	389	0.0	1.5	7.412	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	813	203	1026	808	1693	1.6	2.8	11.060	B
B	763	191	1124	760	710	1.6	3.9	16.367	C
C	2168	542	1018	1505	866	90.6	253.4	563.580	F
D	660	165	2061	658	462	1.5	2.0	9.739	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	987	247	1058	988	1977	2.8	4.9	16.571	C
B	935	234	1373	846	672	3.9	27.2	70.238	F
C	2652	663	1161	1639	1058	253.4	504.8	1282.863	F
D	804	201	2231	804	568	2.0	3.4	14.060	B

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	983	246	1055	979	1994	4.9	4.8	16.592	C
B	924	231	1366	851	669	27.2	47.5	162.834	F
C	2648	662	1167	1641	1049	504.8	755.9	1429.968	F
D	809	202	2239	810	570	3.4	3.3	14.145	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	801	200	976	804	1808	4.8	2.1	10.828	B
B	754	188	1119	879	661	47.5	10.9	108.571	F
C	2160	540	1135	1452	863	755.9	931.4	863.894	F
D	660	165	2123	661	463	3.3	2.0	10.994	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	675	169	1034	672	1415	2.1	1.8	8.216	A
B	627	157	933	629	773	10.9	1.7	15.094	C
C	1829	457	847	1448	715	931.4	1033.0	328.086	F
D	545	136	1901	547	394	2.0	1.2	8.517	A

Lane Results

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

Lanes: Main Results for each time segment

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	460	859	0.536	460	0.0	1.3	8.840	A
			2	D,A	218	859	0.254	218	0.0	0.3	5.416	A
	Exit	1	1		1417			1417	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	317	591	0.536	317	0.0	0.8	8.575	A
			2	A,B	312	591	0.528	314	0.0	0.8	8.652	A
		2	1	(D,A,B,C)	628			628	0.0	0.0	0.000	A
	Exit	1	1		777			777	0.0	0.0	0.000	A
C	Entry	1	1	D,A	381	774	0.493	382	0.0	0.8	7.037	A
			2	A	284	774	0.367	285	0.0	0.5	6.035	A
			3	B,C	778	774	1.006	777	0.0	21.9	77.855	F
		2	1	(D,A)	666			666	0.0	0.0	0.000	A
			2	(B,C)	1155			778	0.0	67.4	118.094	F
	Exit	1	1		721			721	0.0	0.0	0.000	A
D	Entry	1	1	A	144	650	0.222	143	0.0	0.3	5.745	A
			2	A	148	650	0.228	148	0.0	0.3	5.721	A
			3	D,B,C	263	650	0.404	261	0.0	0.8	8.922	A
		2	1	(A)	293			293	0.0	0.0	0.000	A
			2	(D,B,C)	263			263	0.0	0.0	0.492	A
	Exit	1	1		389			389	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	556	864	0.643	551	1.3	2.3	13.336	B
			2	D,A	257	864	0.297	258	0.3	0.4	6.334	A
	Exit	1	1		1693			1693	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	383	522	0.734	381	0.8	2.0	16.408	C
			2	A,B	380	522	0.727	379	0.8	1.9	16.283	C
		2	1	(D,A,B,C)	763			763	0.0	0.0	0.020	A
	Exit	1	1		710			710	0.0	0.0	0.000	A
C	Entry	1	1	D,A	438	715	0.613	439	0.8	1.3	9.718	A
			2	A	354	715	0.494	356	0.5	0.8	8.130	A
			3	B,C	710	715	0.993	710	21.9	21.9	109.339	F
		2	1	(D,A)	792			792	0.0	0.0	0.000	A
			2	(B,C)	1376			710	67.4	229.4	765.317	F
	Exit	1	1		866			866	0.0	0.0	0.000	A
D	Entry	1	1	A	173	615	0.281	173	0.3	0.4	6.684	A
			2	A	169	615	0.275	170	0.3	0.3	6.831	A
			3	D,B,C	317	615	0.516	316	0.8	1.2	11.775	B
		2	1	(A)	343			343	0.0	0.0	0.001	A
			2	(D,B,C)	317			317	0.0	0.1	1.450	A
	Exit	1	1		462			462	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	673	852	0.791	672	2.3	4.3	21.197	C
			2	D,A	314	852	0.369	315	0.4	0.5	7.052	A
	Exit	1	1		1977			1977	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	437	430	1.016	422	2.0	9.2	55.097	F
			2	A,B	437	430	1.018	423	1.9	9.2	55.473	F
		2	1	(D,A,B,C)	935			874	0.0	8.8	13.164	B
	Exit	1	1		672			672	0.0	0.0	0.000	A
C	Entry	1	1	D,A	522	666	0.785	518	1.3	2.6	15.457	C
			2	A	453	666	0.680	448	0.8	1.9	12.739	B
			3	B,C	672	666	1.010	672	21.9	22.0	116.924	F
		2	1	(D,A)	975			975	0.0	0.0	0.000	A
			2	(B,C)	1677			672	229.4	478.4	1897.106	F
	Exit	1	1		1058			1058	0.0	0.0	0.000	A
D	Entry	1	1	A	211	577	0.365	211	0.4	0.5	7.746	A
			2	A	207	577	0.358	207	0.3	0.5	7.720	A
			3	D,B,C	387	577	0.670	386	1.2	1.7	15.418	C
		2	1	(A)	417			417	0.0	0.0	0.009	A
			2	(D,B,C)	387			387	0.1	0.7	5.985	A
	Exit	1	1		568			568	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	668	853	0.783	662	4.3	4.2	21.292	C
			2	D,A	316	853	0.370	317	0.5	0.6	6.895	A
	Exit	1	1		1994			1994	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	430	433	0.993	424	9.2	10.9	86.436	F
			2	A,B	433	433	1.001	427	9.2	10.9	85.331	F
		2	1	(D,A,B,C)	924			862	8.8	25.7	76.635	F
	Exit	1	1		669			669	0.0	0.0	0.000	A
C	Entry	1	1	D,A	518	663	0.781	519	2.6	2.3	16.628	C
			2	A	453	663	0.682	453	1.9	1.7	13.931	B
			3	B,C	669	663	1.008	669	22.0	21.9	118.475	F
		2	1	(D,A)	971			971	0.0	0.0	0.000	A
			2	(B,C)	1677			669	478.4	729.9	2509.755	F
	Exit	1	1		1049			1049	0.0	0.0	0.000	A
D	Entry	1	1	A	210	575	0.365	209	0.5	0.5	8.011	A
			2	A	214	575	0.371	214	0.5	0.5	7.884	A
			3	D,B,C	386	575	0.671	387	1.7	1.7	15.652	C
		2	1	(A)	424			424	0.0	0.0	0.009	A
			2	(D,B,C)	385			386	0.7	0.6	5.825	A
	Exit	1	1		570			570	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	545	883	0.617	548	4.2	1.6	13.086	B
			2	D,A	256	883	0.290	256	0.6	0.5	6.192	A
	Exit	1	1		1808			1808	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	415	524	0.791	439	10.9	4.0	59.872	F
			2	A,B	414	524	0.790	439	10.9	4.0	59.956	F
		2	1	(D,A,B,C)	754			829	25.7	3.0	53.042	F
	Exit	1	1		661			661	0.0	0.0	0.000	A
C	Entry	1	1	D,A	433	675	0.641	434	2.3	1.4	12.390	B
			2	A	356	675	0.527	357	1.7	0.9	10.492	B
			3	B,C	661	675	0.980	661	21.9	22.0	119.239	F
		2	1	(D,A)	788			788	0.0	0.0	0.000	A
			2	(B,C)	1372			661	729.9	907.2	1799.489	F
	Exit	1	1		863			863	0.0	0.0	0.000	A
D	Entry	1	1	A	173	601	0.287	173	0.5	0.3	7.269	A
			2	A	173	601	0.287	173	0.5	0.3	7.174	A
			3	D,B,C	315	601	0.525	315	1.7	1.1	13.118	B
		2	1	(A)	345			345	0.0	0.0	0.000	A
			2	(D,B,C)	315			315	0.6	0.2	2.346	A
	Exit	1	1		463			463	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	457	861	0.531	455	1.6	1.5	9.504	A
			2	D,A	218	861	0.253	218	0.5	0.3	5.592	A
	Exit	1	1		1415			1415	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	312	593	0.526	313	4.0	0.8	14.661	B
			2	A,B	315	593	0.532	316	4.0	0.9	14.729	B
		2	1	(D,A,B,C)	627			627	3.0	0.0	1.619	A
	Exit	1	1		773			773	0.0	0.0	0.000	A
C	Entry	1	1	D,A	385	775	0.497	385	1.4	0.9	8.143	A
			2	A	290	775	0.375	290	0.9	0.5	6.946	A
			3	B,C	773	775	0.998	773	22.0	21.9	105.558	F
		2	1	(D,A)	675			675	0.0	0.0	0.000	A
			2	(B,C)	1154			773	907.2	1009.6	899.624	F
	Exit	1	1		715			715	0.0	0.0	0.000	A
D	Entry	1	1	A	142	651	0.218	143	0.3	0.2	6.336	A
			2	A	142	651	0.219	143	0.3	0.3	6.212	A
			3	D,B,C	260	651	0.400	260	1.1	0.7	10.351	B
		2	1	(A)	284			284	0.0	0.0	0.000	A
			2	(D,B,C)	260			260	0.2	0.0	0.826	A
	Exit	1	1		394			394	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 7 - Dev Scenario 1 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 7\ARCADY\Issue 2
Report generation date: 25/10/2016 14:25:28

«M20 Junction 7 - Dev Scenario 1, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 7 [Lane Simulation] - Dev Scenario 1			
Arm A	83.2	235.31		F
Arm B	313.7	1199.96		F
Arm C	404.3	734.26		F
Arm D	3.1	14.45		B

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

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

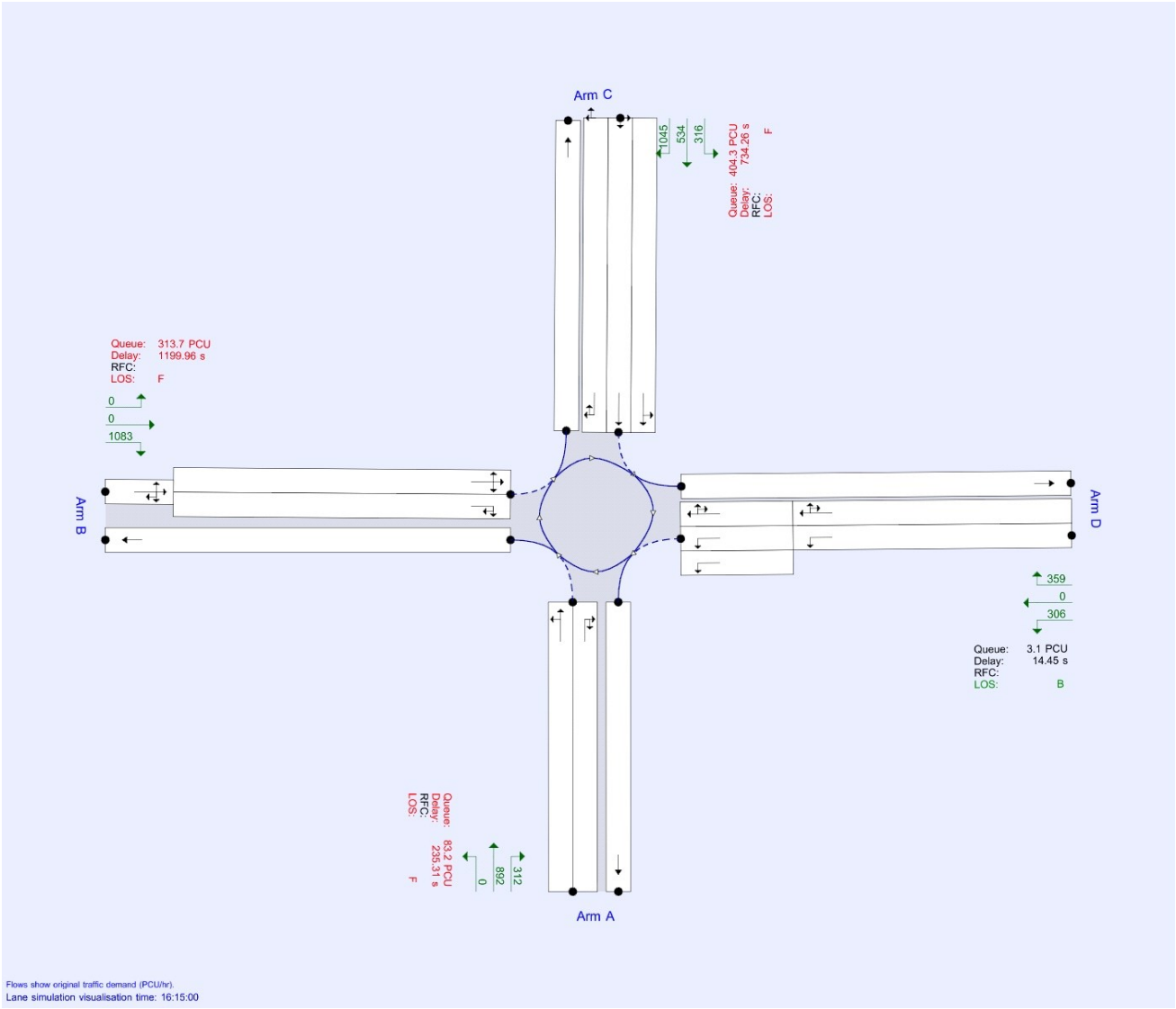
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	226895470	263	114.46

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 7	✓	✓	100.000	100.000

M20 Junction 7 - Dev Scenario 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 7 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 7	Large Roundabout	A,B,C,D	615.65	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A249 South	
B	M20 West	
C	A249 North	
D	M20 East	

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
A	6.10	7.00	18.5	50.7	180.0	12.0	
B	3.40	6.60	8.5	29.2	180.0	12.0	
C	7.41	12.05	4.9	25.0	180.0	12.3	
D	8.76	10.26	30.0	29.3	180.0	10.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1404	87.50
B	1563	132.00
C	1395	85.65
D	2662	112.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.873	2632
B	0.687	1804
C	0.979	3142
D	0.767	3314

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,A,C	✓	12.00	0	99999
		2	A,B	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	22.00	0	99999
		2	A	✓	22.00	0	99999
		3	B,C	✓	22.00	0	99999
	2	1	(D,A)		Infinity		
		2	(B,C)		Infinity		
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A	✓	4.00	0	99999
		3	D,B,C	✓	4.00	0	99999
	2	1	(A)		Infinity		
		2	(D,B,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.436	1316
		2	0.436	1316
B	1 [Give-way line]	1	0.344	902
		2	0.344	902
C	1 [Give-way line]	1	0.326	1047
		2	0.326	1047
		3	0.326	1047
D	1 [Give-way line]	1	0.256	1105
		2	0.256	1105
		3	0.256	1105

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓		
		3	✓		✓	✓
	2	1		✓		
		2	✓		✓	✓
A	1 [Give-way line]	1			✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2		✓		
		3			✓	✓
	2	1	✓	✓		
		2			✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	Dev Scenario 1	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1204	100.000
B		ONE HOUR	✓	1083	100.000
C		ONE HOUR	✓	1895	100.000
D		ONE HOUR	✓	665	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	0	892	312
	B	1083	0	0	0
	C	534	1045	0	316
	D	306	0	359	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.74	0.26
	B	1.00	0.00	0.00	0.00
	C	0.28	0.55	0.00	0.17
	D	0.46	0.00	0.54	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	1
	B	3	0	0	0
	C	4	9	0	9
	D	1	0	7	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.000	1.020	1.010
	B	1.030	1.000	1.000	1.000
	C	1.040	1.090	1.000	1.090
	D	1.010	1.000	1.070	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A	906	906
	B	815	815
	C	1427	1427
	D	501	501
16:30-16:45	A	1082	1082
	B	974	974
	C	1704	1704
	D	598	598
16:45-17:00	A	1326	1326
	B	1192	1192
	C	2086	2086
	D	732	732
17:00-17:15	A	1326	1326
	B	1192	1192
	C	2086	2086
	D	732	732
17:15-17:30	A	1082	1082
	B	974	974
	C	1704	1704
	D	598	598
17:30-17:45	A	906	906
	B	815	815
	C	1427	1427
	D	501	501

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	235.31	83.2	F	1105	1658
B	1199.96	313.7	F	995	1493
C	734.26	404.3	F	1736	2605
D	14.45	3.1	B	611	916

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	896	224	970	898	1450	0.0	3.3	11.389	B
B	824	206	1174	815	694	0.0	5.7	17.521	C
C	1424	356	1049	1343	940	0.0	24.5	38.526	E
D	505	126	1913	507	480	0.0	1.1	7.767	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1076	269	1002	1070	1606	3.3	8.8	25.767	D
B	976	244	1388	839	684	5.7	37.5	94.018	F
C	1717	429	1116	1458	1111	24.5	90.9	168.139	F
D	601	150	2009	599	565	1.1	1.9	11.089	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1336	334	1093	1181	1652	8.8	46.6	90.405	F
B	1200	300	1576	728	699	37.5	149.7	457.736	F
C	2072	518	1071	1631	1233	90.9	207.3	422.424	F
D	734	183	2013	732	689	1.9	3.1	14.004	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1328	332	1099	1175	1652	46.6	83.2	209.861	F
B	1190	297	1576	720	698	149.7	265.5	992.691	F
C	2084	521	1064	1642	1232	207.3	320.2	734.261	F
D	737	184	2014	738	692	3.1	3.1	14.450	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1092	273	1011	1147	1550	83.2	68.3	235.313	F
B	970	242	1465	793	694	265.5	313.7	1199.960	F
C	1706	427	1080	1463	1178	320.2	378.7	725.055	F
D	590	148	1971	590	572	3.1	1.7	11.081	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	904	226	941	1054	1514	68.3	26.0	132.019	F
B	812	203	1323	890	672	313.7	301.6	885.067	F
C	1415	354	1122	1302	1091	378.7	404.3	273.313	F
D	495	124	1959	496	465	1.7	1.3	9.307	A

Lane Results

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

Lanes: Main Results for each time segment

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	661	893	0.740	664	0.0	3.0	13.628	B
			2	D,A	235	893	0.263	235	0.0	0.4	5.082	A
	Exit	1	1		1450			1450	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	413	498	0.829	409	0.0	2.8	17.535	C
			2	A,B	410	498	0.822	406	0.0	2.8	17.391	C
		2	1	(D,A,B,C)	824			823	0.0	0.0	0.048	A
	Exit	1	1		694			694	0.0	0.0	0.000	A
C	Entry	1	1	D,A	390	705	0.553	392	0.0	1.1	8.665	A
			2	A	258	705	0.366	258	0.0	0.6	6.402	A
			3	B,C	729	705	1.035	694	0.0	16.7	52.713	F
		2	1	(D,A)	648			648	0.0	0.0	0.000	A
			2	(B,C)	776			729	0.0	6.2	9.925	A
	Exit	1	1		940			940	0.0	0.0	0.000	A
D	Entry	1	1	A	115	616	0.187	116	0.0	0.2	5.738	A
			2	A	115	616	0.187	115	0.0	0.2	5.556	A
			3	D,B,C	276	616	0.448	276	0.0	0.7	9.202	A
		2	1	(A)	230			230	0.0	0.0	0.002	A
			2	(D,B,C)	275			276	0.0	0.0	0.483	A
	Exit	1	1		480			480	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	799	878	0.909	793	3.0	8.3	32.656	D
			2	D,A	277	878	0.315	277	0.4	0.5	6.065	A
	Exit	1	1		1606			1606	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	432	425	1.016	416	2.8	10.7	66.255	F
			2	A,B	437	425	1.029	423	2.8	10.7	66.067	F
		2	1	(D,A,B,C)	976			869	0.0	16.1	25.063	D
	Exit	1	1		684			684	0.0	0.0	0.000	A
C	Entry	1	1	D,A	454	683	0.665	457	1.1	1.3	11.783	B
			2	A	314	683	0.460	317	0.6	0.7	8.783	A
			3	B,C	684	683	1.002	684	16.7	21.9	110.525	F
		2	1	(D,A)	768			768	0.0	0.0	0.000	A
			2	(B,C)	949			684	6.2	67.1	188.075	F
	Exit	1	1		1111			1111	0.0	0.0	0.000	A
D	Entry	1	1	A	139	591	0.235	139	0.2	0.2	6.722	A
			2	A	141	591	0.238	141	0.2	0.2	6.727	A
			3	D,B,C	322	591	0.545	318	0.7	1.3	12.891	B
		2	1	(A)	280			280	0.0	0.0	0.000	A
			2	(D,B,C)	322			322	0.0	0.2	2.137	A
	Exit	1	1		565			565	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	994	839	1.184	838	8.3	45.8	119.538	F
			2	D,A	343	839	0.409	343	0.5	0.8	7.272	A
	Exit	1	1		1652			1652	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	364	361	1.010	364	10.7	12.0	115.082	F
			2	A,B	364	361	1.009	364	10.7	12.0	114.550	F
		2	1	(D,A,B,C)	1200			728	16.1	125.7	340.898	F
	Exit	1	1		699			699	0.0	0.0	0.000	A
C	Entry	1	1	D,A	534	698	0.765	532	1.3	2.4	14.995	B
			2	A	400	698	0.574	400	0.7	1.2	10.966	B
			3	B,C	699	698	1.001	699	21.9	21.9	113.686	F
		2	1	(D,A)	934			934	0.0	0.0	0.000	A
			2	(B,C)	1138			699	67.1	181.7	651.852	F
	Exit	1	1		1233			1233	0.0	0.0	0.000	A
D	Entry	1	1	A	169	590	0.286	169	0.2	0.3	6.823	A
			2	A	169	590	0.286	169	0.2	0.3	7.001	A
			3	D,B,C	395	590	0.669	394	1.3	1.8	15.128	C
		2	1	(A)	337			337	0.0	0.0	0.000	A
			2	(D,B,C)	397			395	0.2	0.7	5.264	A
	Exit	1	1		689			689	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	982	836	1.175	831	45.8	82.5	281.551	F
			2	D,A	346	836	0.414	344	0.8	0.8	7.569	A
	Exit	1	1		1652			1652	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	360	360	0.999	360	12.0	12.0	120.197	F
			2	A,B	359	360	0.997	359	12.0	12.0	118.445	F
		2	1	(D,A,B,C)	1190			719	125.7	241.5	882.590	F
	Exit	1	1		698			698	0.0	0.0	0.000	A
C	Entry	1	1	D,A	533	700	0.761	536	2.4	2.1	14.359	B
			2	A	408	700	0.582	408	1.2	1.2	10.260	B
			3	B,C	699	700	0.998	698	21.9	22.0	113.002	F
		2	1	(D,A)	941			941	0.0	0.0	0.000	A
			2	(B,C)	1144			699	181.7	294.9	1229.541	F
	Exit	1	1		1232			1232	0.0	0.0	0.000	A
D	Entry	1	1	A	166	590	0.282	167	0.3	0.3	7.060	A
			2	A	169	590	0.286	169	0.3	0.3	6.998	A
			3	D,B,C	402	590	0.682	402	1.8	1.8	15.424	C
		2	1	(A)	335			335	0.0	0.0	0.006	A
			2	(D,B,C)	402			402	0.7	0.6	5.646	A
	Exit	1	1		692			692	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	806	874	0.921	860	82.5	67.8	316.440	F
			2	D,A	287	874	0.328	287	0.8	0.6	6.358	A
	Exit	1	1		1550			1550	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	398	399	0.998	398	12.0	12.0	109.204	F
			2	A,B	395	399	0.991	395	12.0	12.0	109.165	F
		2	1	(D,A,B,C)	970			793	241.5	289.8	1112.760	F
	Exit	1	1		694			694	0.0	0.0	0.000	A
C	Entry	1	1	D,A	451	695	0.649	454	2.1	1.4	11.552	B
			2	A	314	695	0.452	316	1.2	0.7	8.328	A
			3	B,C	694	695	0.999	694	22.0	21.9	112.369	F
		2	1	(D,A)	766			766	0.0	0.0	0.000	A
			2	(B,C)	941			694	294.9	354.7	1486.353	F
	Exit	1	1		1178			1178	0.0	0.0	0.000	A
D	Entry	1	1	A	136	601	0.226	136	0.3	0.2	6.509	A
			2	A	136	601	0.227	137	0.3	0.2	6.574	A
			3	D,B,C	318	601	0.529	317	1.8	1.1	12.918	B
		2	1	(A)	272			272	0.0	0.0	0.000	A
			2	(D,B,C)	319			318	0.6	0.2	2.324	A
	Exit	1	1		572			572	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	673	905	0.743	822	67.8	25.6	180.521	F
			2	D,A	231	905	0.255	232	0.6	0.4	5.467	A
	Exit	1	1		1514			1514	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	446	447	0.997	446	12.0	12.0	97.853	F
			2	A,B	444	447	0.992	444	12.0	12.0	98.754	F
		2	1	(D,A,B,C)	812			890	289.8	277.7	865.445	F
	Exit	1	1		672			672	0.0	0.0	0.000	A
C	Entry	1	1	D,A	380	681	0.557	378	1.4	1.2	9.779	A
			2	A	252	681	0.370	252	0.7	0.6	7.419	A
			3	B,C	672	681	0.987	672	21.9	21.9	114.639	F
		2	1	(D,A)	632			632	0.0	0.0	0.000	A
			2	(B,C)	783			672	354.7	380.6	899.964	F
	Exit	1	1		1091			1091	0.0	0.0	0.000	A
D	Entry	1	1	A	114	604	0.189	114	0.2	0.2	6.279	A
			2	A	113	604	0.187	113	0.2	0.2	6.233	A
			3	D,B,C	268	604	0.443	269	1.1	0.8	11.053	B
		2	1	(A)	227			227	0.0	0.0	0.000	A
			2	(D,B,C)	267			268	0.2	0.0	1.008	A
	Exit	1	1		465			465	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 7 - Dev Scenario 2 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 7\ARCADY\Issue 2
Report generation date: 25/10/2016 14:29:12

«M20 Junction 7 - Dev Scenario 2 , AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 7 [Lane Simulation] - Dev Scenario 2			
Arm A	5.5	19.07		C
Arm B	65.3	222.46		F
Arm C	1076.8	1436.18		F
Arm D	3.4	14.16		B

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

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

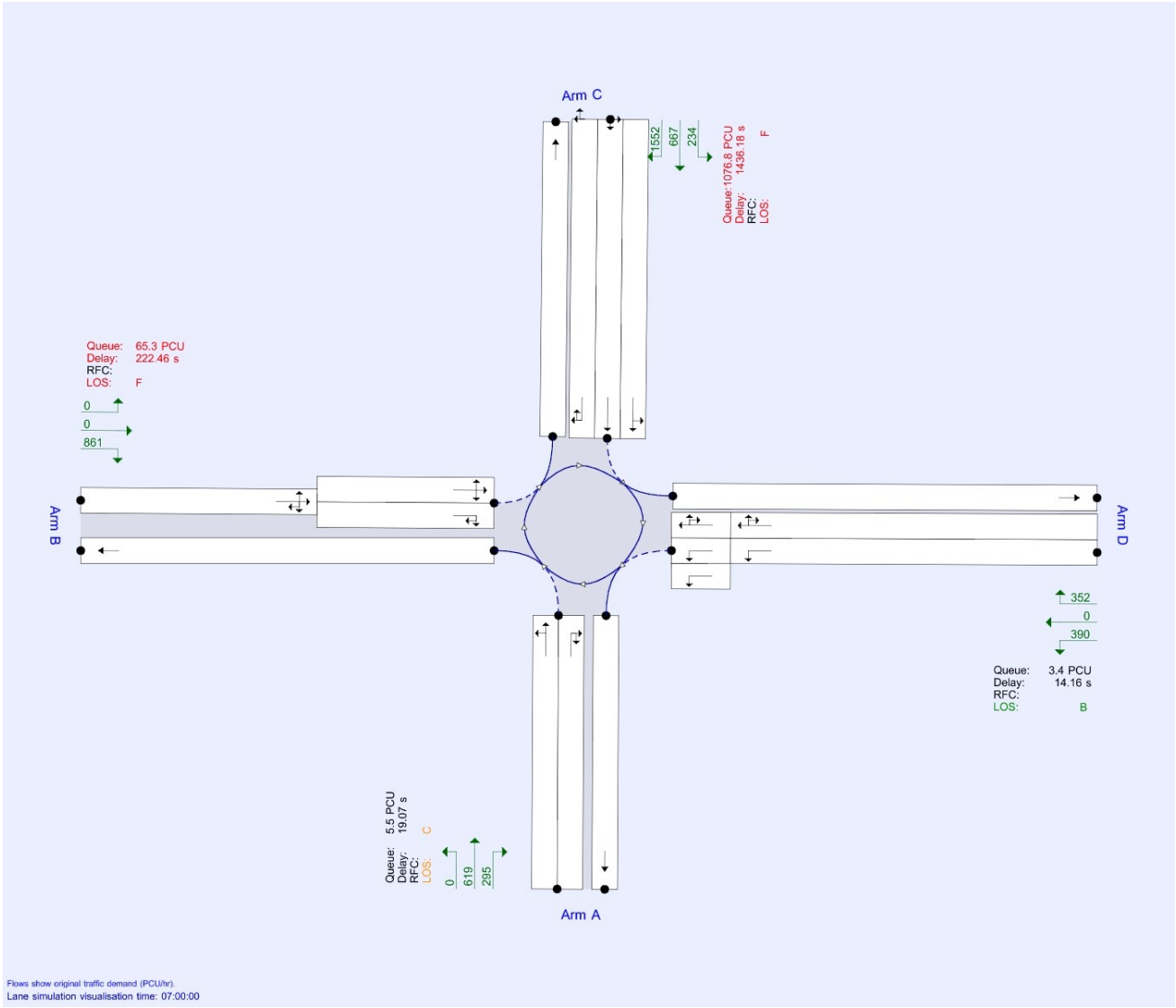
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	416180760	225	96.07

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 7	✓	✓	100.000	100.000

M20 Junction 7 - Dev Scenario 2 , AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 7 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 7	Large Roundabout	A,B,C,D	751.14	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A249 South	
B	M20 West	
C	A249 North	
D	M20 East	

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
A	6.10	7.00	18.5	50.7	180.0	12.0	
B	3.40	6.60	8.5	29.2	180.0	12.0	
C	7.41	12.05	4.9	25.0	180.0	12.3	
D	8.76	10.26	30.0	29.3	180.0	10.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1904	87.50
B	1266	132.00
C	1156	85.65
D	3080	112.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.768	2516
B	0.738	1873
C	1.036	3200
D	0.657	3217

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,A,C	✓	12.00	0	99999
		2	A,B	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	22.00	0	99999
		2	A	✓	22.00	0	99999
		3	B,C	✓	22.00	0	99999
	2	1	(D,A)		Infinity		
		2	(B,C)		Infinity		
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A	✓	4.00	0	99999
		3	D,B,C	✓	4.00	0	99999
	2	1	(A)		Infinity		
		2	(D,B,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.384	1258
		2	0.384	1258
B	1 [Give-way line]	1	0.369	936
		2	0.369	936
C	1 [Give-way line]	1	0.345	1067
		2	0.345	1067
		3	0.345	1067
D	1 [Give-way line]	1	0.219	1072
		2	0.219	1072
		3	0.219	1072

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓		
		3	✓		✓	✓
	2	1		✓		
		2	✓		✓	✓
A	1 [Give-way line]	1			✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2		✓		
		3			✓	✓
	2	1	✓	✓		
		2			✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	Dev Scenario 2	AM	ONE HOUR	07:00	08:30	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	914	100.000
B		ONE HOUR	✓	861	100.000
C		ONE HOUR	✓	2453	100.000
D		ONE HOUR	✓	742	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	0	619	295
	B	861	0	0	0
	C	667	1552	0	234
	D	390	0	352	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.68	0.32
	B	1.00	0.00	0.00	0.00
	C	0.27	0.63	0.00	0.10
	D	0.53	0.00	0.47	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	6	3
	B	4	0	0	0
	C	6	6	0	12
	D	3	0	10	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.000	1.060	1.030
	B	1.040	1.000	1.000	1.000
	C	1.060	1.060	1.000	1.120
	D	1.030	1.000	1.100	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:00-07:15	A	688	688
	B	648	648
	C	1847	1847
	D	559	559
07:15-07:30	A	822	822
	B	774	774
	C	2205	2205
	D	667	667
07:30-07:45	A	1006	1006
	B	948	948
	C	2701	2701
	D	817	817
07:45-08:00	A	1006	1006
	B	948	948
	C	2701	2701
	D	817	817
08:00-08:15	A	822	822
	B	774	774
	C	2205	2205
	D	667	667
08:15-08:30	A	688	688
	B	648	648
	C	1847	1847
	D	559	559

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	19.07	5.5	C	838	1257
B	222.46	65.3	F	794	1190
C	1436.18	1076.8	F	2247	3371
D	14.16	3.4	B	687	1030

Main Results for each time segment

07:00 - 07:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	685	171	1020	687	1446	0.0	1.5	7.829	A
B	658	165	950	653	757	0.0	2.1	8.959	A
C	1843	461	871	1434	732	0.0	94.3	135.959	F
D	556	139	1911	556	395	0.0	1.3	7.461	A

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	819	205	1036	817	1724	1.5	2.6	10.490	B
B	775	194	1141	772	712	2.1	4.4	17.582	C
C	2207	552	1036	1519	878	94.3	264.0	586.834	F
D	676	169	2081	680	474	1.3	2.0	9.754	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1009	252	1058	1004	2008	2.6	5.5	17.482	C
B	963	241	1389	838	672	4.4	34.6	85.906	F
C	2702	676	1163	1666	1064	264.0	522.8	1328.201	F
D	823	206	2247	819	584	2.0	3.4	13.683	B

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	997	249	1063	997	1994	5.5	5.5	19.074	C
B	943	236	1393	835	666	34.6	65.3	222.457	F
C	2678	669	1154	1653	1074	522.8	782.8	1436.185	F
D	826	206	2230	827	577	3.4	3.2	14.164	B

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	820	205	964	819	1885	5.5	2.3	11.412	B
B	778	194	1138	934	646	65.3	26.0	175.167	F
C	2182	546	1201	1450	870	782.8	964.3	862.086	F
D	670	167	2176	673	475	3.2	1.8	11.046	B

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	699	175	1017	698	1473	2.3	1.8	8.454	A
B	645	161	968	661	746	26.0	2.0	31.675	D
C	1872	468	887	1434	742	964.3	1076.8	326.855	F
D	572	143	1917	572	403	1.8	1.4	8.749	A

Lane Results

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

Lanes: Main Results for each time segment

07:00 - 07:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	469	866	0.542	469	0.0	1.2	9.009	A
			2	D,A	216	866	0.250	217	0.0	0.3	5.434	A
	Exit	1	1		1446			1446	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	327	586	0.559	325	0.0	1.1	9.040	A
			2	A,B	331	586	0.565	329	0.0	1.0	8.879	A
		2	1	(D,A,B,C)	658			658	0.0	0.0	0.000	A
	Exit	1	1		757			757	0.0	0.0	0.000	A
C	Entry	1	1	D,A	385	766	0.503	386	0.0	0.8	7.186	A
			2	A	293	766	0.382	292	0.0	0.7	6.175	A
			3	B,C	758	766	0.989	757	0.0	21.9	78.818	F
		2	1	(D,A)	678			678	0.0	0.0	0.000	A
			2	(B,C)	1165			758	0.0	70.8	123.757	F
	Exit	1	1		732			732	0.0	0.0	0.000	A
D	Entry	1	1	A	144	654	0.221	145	0.0	0.3	5.698	A
			2	A	147	654	0.225	148	0.0	0.2	5.798	A
			3	D,B,C	263	654	0.403	263	0.0	0.7	8.844	A
		2	1	(A)	292			292	0.0	0.0	0.000	A
			2	(D,B,C)	264			263	0.0	0.1	0.630	A
	Exit	1	1		395			395	0.0	0.0	0.000	A

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	556	860	0.647	553	1.2	2.1	12.631	B
			2	D,A	263	860	0.306	263	0.3	0.5	6.146	A
	Exit	1	1		1724			1724	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	385	515	0.748	385	1.1	2.2	17.475	C
			2	A,B	389	515	0.755	388	1.0	2.2	17.646	C
		2	1	(D,A,B,C)	775			775	0.0	0.0	0.018	A
	Exit	1	1		712			712	0.0	0.0	0.000	A
C	Entry	1	1	D,A	447	709	0.630	446	0.8	1.3	10.137	B
			2	A	361	709	0.510	361	0.7	1.0	8.433	A
			3	B,C	712	709	1.003	712	21.9	21.9	109.822	F
		2	1	(D,A)	808			808	0.0	0.0	0.000	A
			2	(B,C)	1399			712	70.8	239.7	801.623	F
	Exit	1	1		878			878	0.0	0.0	0.000	A
D	Entry	1	1	A	175	617	0.283	175	0.3	0.4	6.683	A
			2	A	180	617	0.292	180	0.2	0.3	6.647	A
			3	D,B,C	323	617	0.523	324	0.7	1.1	11.709	B
		2	1	(A)	355			355	0.0	0.0	0.001	A
			2	(D,B,C)	321			323	0.1	0.1	1.704	A
	Exit	1	1		474			474	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	683	851	0.803	678	2.1	4.9	22.465	C
			2	D,A	326	851	0.382	325	0.5	0.6	7.248	A
	Exit	1	1		2008			2008	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	432	424	1.020	420	2.2	10.2	62.771	F
			2	A,B	430	424	1.015	418	2.2	10.2	62.533	F
		2	1	(D,A,B,C)	963			862	0.0	14.3	20.627	C
	Exit	1	1		672			672	0.0	0.0	0.000	A
C	Entry	1	1	D,A	525	665	0.789	527	1.3	2.6	16.157	C
			2	A	466	665	0.701	467	1.0	1.9	13.825	B
			3	B,C	672	665	1.010	672	21.9	21.9	116.682	F
		2	1	(D,A)	991			991	0.0	0.0	0.000	A
			2	(B,C)	1711			672	239.7	496.5	1971.499	F
	Exit	1	1		1064			1064	0.0	0.0	0.000	A
D	Entry	1	1	A	216	580	0.371	215	0.4	0.5	7.876	A
			2	A	218	580	0.375	218	0.3	0.5	7.819	A
			3	D,B,C	388	580	0.668	386	1.1	1.8	15.326	C
		2	1	(A)	434			433	0.0	0.0	0.007	A
			2	(D,B,C)	389			388	0.1	0.6	5.259	A
	Exit	1	1		584			584	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	677	850	0.797	678	4.9	4.8	24.963	C
			2	D,A	320	850	0.377	319	0.6	0.8	6.989	A
	Exit	1	1		1994			1994	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	416	422	0.985	415	10.2	11.3	94.489	F
			2	A,B	421	422	0.997	420	10.2	11.3	94.782	F
		2	1	(D,A,B,C)	943			837	14.3	42.6	128.381	F
	Exit	1	1		666			666	0.0	0.0	0.000	A
C	Entry	1	1	D,A	532	668	0.797	530	2.6	2.6	16.321	C
			2	A	457	668	0.684	457	1.9	1.9	13.942	B
			3	B,C	666	668	0.997	666	21.9	21.9	117.442	F
		2	1	(D,A)	989			989	0.0	0.0	0.000	A
			2	(B,C)	1688			666	496.5	756.4	2551.436	F
	Exit	1	1		1074			1074	0.0	0.0	0.000	A
D	Entry	1	1	A	216	584	0.369	217	0.5	0.5	7.746	A
			2	A	213	584	0.365	214	0.5	0.4	7.776	A
			3	D,B,C	397	584	0.679	396	1.8	1.7	15.525	C
		2	1	(A)	429			429	0.0	0.0	0.002	A
			2	(D,B,C)	397			397	0.6	0.7	6.160	A
	Exit	1	1		577			577	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	553	887	0.624	552	4.8	1.9	14.058	B
			2	D,A	266	887	0.300	267	0.8	0.4	6.091	A
	Exit	1	1		1885			1885	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	444	517	0.859	465	11.3	7.0	72.967	F
			2	A,B	448	517	0.868	469	11.3	7.0	73.523	F
		2	1	(D,A,B,C)	778			892	42.6	12.1	106.157	F
	Exit	1	1		646			646	0.0	0.0	0.000	A
C	Entry	1	1	D,A	440	652	0.675	439	2.6	1.6	12.979	B
			2	A	365	652	0.559	364	1.9	1.1	10.665	B
			3	B,C	646	652	0.991	646	21.9	22.0	120.987	F
		2	1	(D,A)	805			805	0.0	0.0	0.000	A
			2	(B,C)	1377			646	756.4	939.6	1799.700	F
	Exit	1	1		870			870	0.0	0.0	0.000	A
D	Entry	1	1	A	178	596	0.299	179	0.5	0.4	7.032	A
			2	A	176	596	0.295	176	0.4	0.4	7.162	A
			3	D,B,C	317	596	0.531	318	1.7	1.0	13.286	B
		2	1	(A)	354			354	0.0	0.0	0.000	A
			2	(D,B,C)	316			317	0.7	0.1	2.518	A
	Exit	1	1		475			475	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	473	867	0.545	472	1.9	1.4	9.802	A
			2	D,A	226	867	0.261	226	0.4	0.3	5.695	A
	Exit	1	1		1473			1473	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	329	579	0.567	332	7.0	1.0	25.320	D
			2	A,B	323	579	0.558	328	7.0	1.0	25.939	D
		2	1	(D,A,B,C)	645			652	12.1	0.0	10.390	B
	Exit	1	1		746			746	0.0	0.0	0.000	A
C	Entry	1	1	D,A	392	761	0.515	389	1.6	1.1	8.998	A
			2	A	299	761	0.393	298	1.1	0.6	7.428	A
			3	B,C	746	761	0.981	746	22.0	22.0	108.989	F
		2	1	(D,A)	691			691	0.0	0.0	0.000	A
			2	(B,C)	1181			746	939.6	1053.1	899.949	F
	Exit	1	1		742			742	0.0	0.0	0.000	A
D	Entry	1	1	A	150	652	0.230	151	0.4	0.2	6.365	A
			2	A	151	652	0.231	151	0.4	0.3	6.437	A
			3	D,B,C	271	652	0.415	270	1.0	0.8	10.792	B
		2	1	(A)	301			301	0.0	0.0	0.000	A
			2	(D,B,C)	271			271	0.1	0.1	0.797	A
	Exit	1	1		403			403	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 7\ARCADY\Issue 2
Report generation date: 25/10/2016 14:33:28

«M20 Junction 7 - Dev Scenario 2, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 7 [Lane Simulation] - Dev Scenario 2			
Arm A	92.3	275.41		F
Arm B	348.3	1327.18		F
Arm C	433.0	784.61		F
Arm D	3.3	14.04		B

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

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

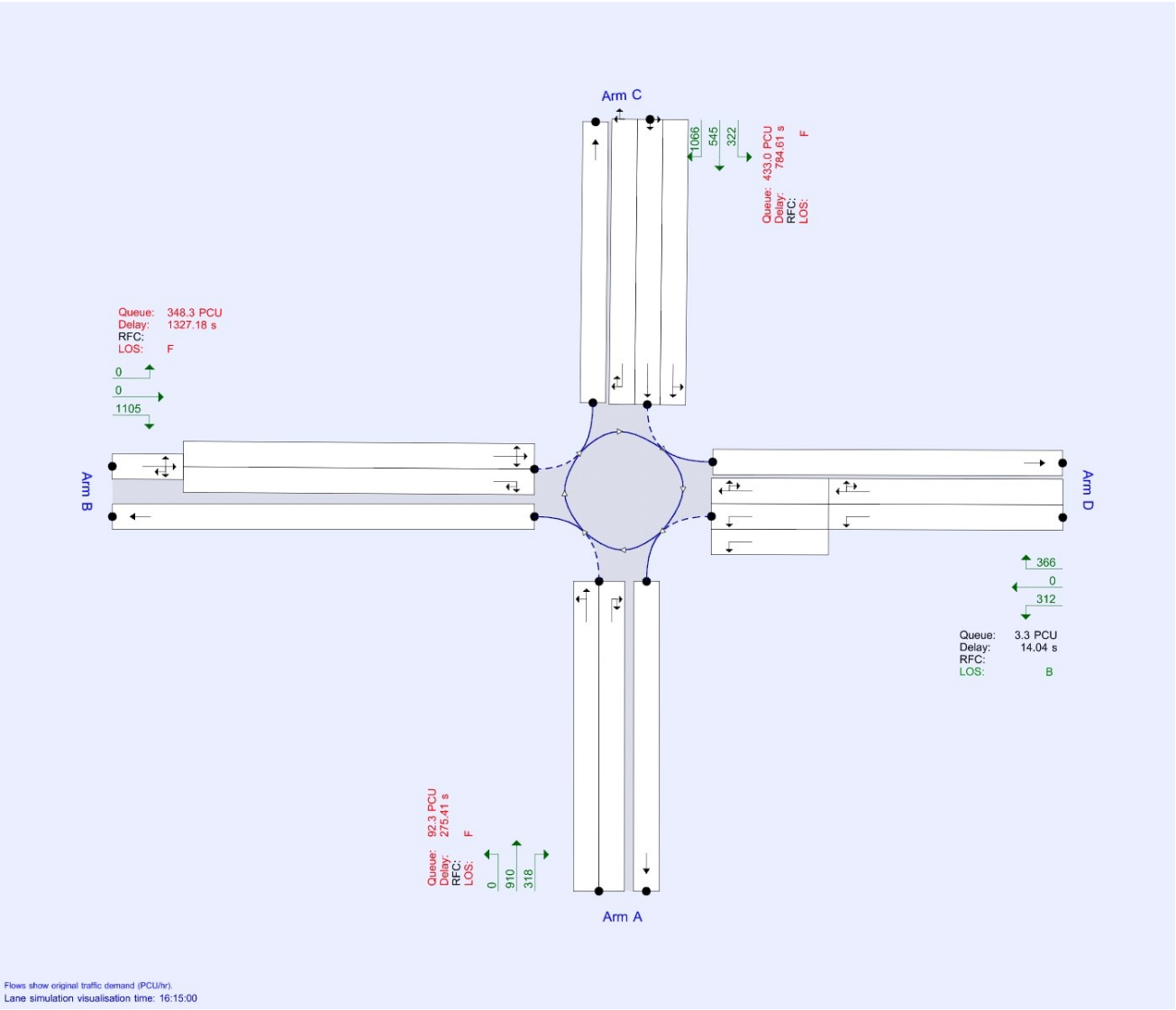
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	681283508	268	120.37

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 7	✓	✓	100.000	100.000

M20 Junction 7 - Dev Scenario 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 7 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 7	Large Roundabout	A,B,C,D	674.19	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	A249 South	
B	M20 West	
C	A249 North	
D	M20 East	

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
A	6.10	7.00	18.5	50.7	180.0	12.0	
B	3.40	6.60	8.5	29.2	180.0	12.0	
C	7.41	12.05	4.9	25.0	180.0	12.3	
D	8.76	10.26	30.0	29.3	180.0	10.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	1432	87.50
B	1594	132.00
C	1423	85.65
D	2716	112.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	0.867	2625
B	0.682	1797
C	0.973	3136
D	0.753	3302

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,A,C	✓	12.00	0	99999
		2	A,B	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	22.00	0	99999
		2	A	✓	22.00	0	99999
		3	B,C	✓	22.00	0	99999
	2	1	(D,A)		Infinity		
		2	(B,C)		Infinity		
D	1 [Give-way line]	1	A	✓	4.00	0	99999
		2	A	✓	4.00	0	99999
		3	D,B,C	✓	4.00	0	99999
	2	1	(A)		Infinity		
		2	(D,B,C)		Infinity		

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.433	1313
		2	0.433	1313
B	1 [Give-way line]	1	0.341	898
		2	0.341	898
C	1 [Give-way line]	1	0.324	1045
		2	0.324	1045
		3	0.324	1045
D	1 [Give-way line]	1	0.251	1101
		2	0.251	1101
		3	0.251	1101

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓		
		2		✓		
		3	✓		✓	✓
	2	1		✓		
		2	✓		✓	✓
A	1 [Give-way line]	1			✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓	✓		✓
		2		✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2		✓		
		3			✓	✓
	2	1	✓	✓		
		2			✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	Dev Scenario 2	PM	ONE HOUR	16:15	17:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1228	100.000
B		ONE HOUR	✓	1105	100.000
C		ONE HOUR	✓	1933	100.000
D		ONE HOUR	✓	678	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	0	910	318
	B	1105	0	0	0
	C	545	1066	0	322
	D	312	0	366	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.00	0.74	0.26
	B	1.00	0.00	0.00	0.00
	C	0.28	0.55	0.00	0.17
	D	0.46	0.00	0.54	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	0	2	1
	B	3	0	0	0
	C	4	9	0	9
	D	1	0	7	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.000	1.020	1.010
	B	1.030	1.000	1.000	1.000
	C	1.040	1.090	1.000	1.090
	D	1.010	1.000	1.070	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:15-16:30	A	925	925
	B	832	832
	C	1455	1455
	D	510	510
16:30-16:45	A	1104	1104
	B	993	993
	C	1738	1738
	D	610	610
16:45-17:00	A	1352	1352
	B	1217	1217
	C	2128	2128
	D	746	746
17:00-17:15	A	1352	1352
	B	1217	1217
	C	2128	2128
	D	746	746
17:15-17:30	A	1104	1104
	B	993	993
	C	1738	1738
	D	610	610
17:30-17:45	A	925	925
	B	832	832
	C	1455	1455
	D	510	510

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	275.41	92.3	F	1124	1686
B	1327.18	348.3	F	1017	1525
C	784.61	433.0	F	1781	2672
D	14.04	3.3	B	625	937

Main Results for each time segment

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	933	233	970	933	1474	0.0	3.9	12.167	B
B	836	209	1218	823	686	0.0	7.3	21.805	C
C	1470	367	1067	1345	974	0.0	30.3	45.052	E
D	522	130	1922	522	489	0.0	1.3	7.792	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1084	271	1018	1072	1595	3.9	10.9	29.627	D
B	994	249	1403	823	686	7.3	46.2	115.780	F
C	1745	436	1105	1465	1121	30.3	98.4	186.069	F
D	612	153	2000	613	570	1.3	1.8	11.367	B

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1351	338	1092	1194	1652	10.9	50.6	100.662	F
B	1235	309	1587	702	698	46.2	169.1	531.626	F
C	2139	535	1057	1666	1233	98.4	222.1	455.511	F
D	738	184	2008	736	715	1.8	3.2	14.036	B

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1349	337	1094	1189	1665	50.6	92.3	231.459	F
B	1218	304	1592	710	691	169.1	294.4	1113.978	F
C	2144	536	1059	1656	1243	222.1	343.1	784.607	F
D	751	188	2012	747	703	3.2	3.3	13.960	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1102	275	1019	1169	1549	92.3	81.6	275.408	F
B	985	246	1502	773	686	294.4	348.3	1327.177	F
C	1741	435	1062	1472	1212	343.1	406.6	729.666	F
D	610	153	1957	611	578	3.3	1.8	11.288	B

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	924	231	964	1077	1517	81.6	37.4	163.687	F
B	831	208	1356	871	685	348.3	346.4	899.119	F
C	1449	362	1115	1339	1112	406.6	433.0	273.485	F
D	514	129	1966	514	487	1.8	1.4	9.296	A

Lane Results

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

Lanes: Main Results for each time segment

16:15 - 16:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	689	892	0.772	689	0.0	3.5	14.634	B
			2	D,A	244	892	0.274	244	0.0	0.4	5.187	A
	Exit	1	1		1474			1474	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	415	483	0.859	410	0.0	3.5	21.572	C
			2	A,B	418	483	0.864	413	0.0	3.5	21.393	C
		2	1	(D,A,B,C)	836			833	0.0	0.3	0.242	A
	Exit	1	1		686			686	0.0	0.0	0.000	A
C	Entry	1	1	D,A	397	699	0.568	395	0.0	1.2	8.464	A
			2	A	264	699	0.378	264	0.0	0.6	6.552	A
			3	B,C	729	699	1.043	686	0.0	18.3	57.494	F
		2	1	(D,A)	661			661	0.0	0.0	0.000	A
			2	(B,C)	809			729	0.0	10.3	16.187	C
	Exit	1	1		974			974	0.0	0.0	0.000	A
D	Entry	1	1	A	117	618	0.190	118	0.0	0.2	5.501	A
			2	A	120	618	0.194	120	0.0	0.2	5.588	A
			3	D,B,C	285	618	0.462	284	0.0	0.8	9.174	A
		2	1	(A)	237			237	0.0	0.0	0.000	A
			2	(D,B,C)	285			285	0.0	0.1	0.660	A
	Exit	1	1		489			489	0.0	0.0	0.000	A

16:30 - 16:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	801	871	0.920	790	3.5	10.4	37.784	E
			2	D,A	283	871	0.324	282	0.4	0.5	6.379	A
	Exit	1	1		1595			1595	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	426	420	1.015	413	3.5	11.2	73.601	F
			2	A,B	423	420	1.008	410	3.5	11.2	73.142	F
		2	1	(D,A,B,C)	994			849	0.3	23.8	39.140	E
	Exit	1	1		686			686	0.0	0.0	0.000	A
C	Entry	1	1	D,A	456	687	0.664	456	1.2	1.6	12.040	B
			2	A	323	687	0.470	323	0.6	0.8	8.663	A
			3	B,C	687	687	1.000	686	18.3	21.8	111.303	F
		2	1	(D,A)	779			779	0.0	0.0	0.000	A
			2	(B,C)	966			687	10.3	74.3	220.677	F
	Exit	1	1		1121			1121	0.0	0.0	0.000	A
D	Entry	1	1	A	142	599	0.237	142	0.2	0.3	6.688	A
			2	A	140	599	0.233	140	0.2	0.3	6.806	A
			3	D,B,C	331	599	0.552	332	0.8	1.1	13.101	B
		2	1	(A)	282			282	0.0	0.0	0.000	A
			2	(D,B,C)	330			331	0.1	0.2	2.361	A
	Exit	1	1		570			570	0.0	0.0	0.000	A

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	998	839	1.189	839	10.4	49.8	133.585	F
			2	D,A	354	839	0.421	354	0.5	0.7	7.653	A
	Exit	1	1		1652			1652	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	350	357	0.980	350	11.2	12.0	118.334	F
			2	A,B	352	357	0.987	352	11.2	12.0	116.842	F
		2	1	(D,A,B,C)	1235			702	23.8	145.2	412.079	F
	Exit	1	1		698			698	0.0	0.0	0.000	A
C	Entry	1	1	D,A	548	703	0.780	546	1.6	2.2	16.458	C
			2	A	419	703	0.597	421	0.8	1.2	11.626	B
			3	B,C	698	703	0.994	698	21.8	21.9	114.007	F
		2	1	(D,A)	967			967	0.0	0.0	0.000	A
			2	(B,C)	1172			698	74.3	196.9	712.673	F
	Exit	1	1		1233			1233	0.0	0.0	0.000	A
D	Entry	1	1	A	173	597	0.290	173	0.3	0.4	7.144	A
			2	A	170	597	0.285	170	0.3	0.4	7.015	A
			3	D,B,C	395	597	0.661	394	1.1	1.8	15.126	C
		2	1	(A)	343			343	0.0	0.0	0.001	A
			2	(D,B,C)	395			395	0.2	0.6	5.156	A
	Exit	1	1		715			715	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	997	838	1.189	840	49.8	91.4	310.685	F
			2	D,A	352	838	0.420	350	0.7	0.9	7.870	A
	Exit	1	1		1665			1665	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	351	355	0.988	351	12.0	12.0	120.959	F
			2	A,B	358	355	1.008	358	12.0	12.0	119.519	F
		2	1	(D,A,B,C)	1218			710	145.2	270.5	1003.879	F
	Exit	1	1		691			691	0.0	0.0	0.000	A
C	Entry	1	1	D,A	544	702	0.775	539	2.2	2.7	15.648	C
			2	A	425	702	0.606	426	1.2	1.3	11.229	B
			3	B,C	691	702	0.984	691	21.9	21.9	113.963	F
		2	1	(D,A)	969			969	0.0	0.0	0.000	A
			2	(B,C)	1175			691	196.9	317.2	1327.986	F
	Exit	1	1		1243			1243	0.0	0.0	0.000	A
D	Entry	1	1	A	171	596	0.287	171	0.4	0.4	7.042	A
			2	A	174	596	0.291	173	0.4	0.4	7.113	A
			3	D,B,C	405	596	0.680	403	1.8	1.8	15.095	C
		2	1	(A)	345			345	0.0	0.0	0.000	A
			2	(D,B,C)	407			405	0.6	0.7	5.076	A
	Exit	1	1		703			703	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	814	871	0.935	880	91.4	81.1	371.076	F
			2	D,A	288	871	0.330	290	0.9	0.5	6.516	A
	Exit	1	1		1549			1549	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	381	386	0.987	382	12.0	12.0	110.957	F
			2	A,B	391	386	1.012	391	12.0	12.0	110.370	F
		2	1	(D,A,B,C)	985			773	270.5	324.3	1241.889	F
	Exit	1	1		686			686	0.0	0.0	0.000	A
C	Entry	1	1	D,A	459	701	0.655	460	2.7	1.5	11.586	B
			2	A	325	701	0.464	326	1.3	0.8	8.242	A
			3	B,C	687	701	0.980	686	21.9	21.9	112.658	F
		2	1	(D,A)	785			785	0.0	0.0	0.000	A
			2	(B,C)	956			687	317.2	382.4	1548.393	F
	Exit	1	1		1212			1212	0.0	0.0	0.000	A
D	Entry	1	1	A	139	610	0.227	139	0.4	0.2	6.542	A
			2	A	139	610	0.229	140	0.4	0.2	6.630	A
			3	D,B,C	333	610	0.545	333	1.8	1.2	12.937	B
		2	1	(A)	278			278	0.0	0.0	0.000	A
			2	(D,B,C)	332			333	0.7	0.2	2.643	A
	Exit	1	1		578			578	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	B,C	679	895	0.759	833	81.1	37.0	228.634	F
			2	D,A	245	895	0.273	244	0.5	0.4	5.596	A
	Exit	1	1		1517			1517	0.0	0.0	0.000	A
B	Entry	1	1	D,A,C	436	436	1.000	436	12.0	12.0	100.514	F
			2	A,B	434	436	0.995	434	12.0	12.0	101.280	F
		2	1	(D,A,B,C)	831			870	324.3	322.4	891.650	F
	Exit	1	1		685			685	0.0	0.0	0.000	A
C	Entry	1	1	D,A	393	684	0.575	395	1.5	1.0	9.513	A
			2	A	258	684	0.377	259	0.8	0.5	7.328	A
			3	B,C	686	684	1.003	685	21.9	21.9	112.640	F
		2	1	(D,A)	651			651	0.0	0.0	0.000	A
			2	(B,C)	798			686	382.4	409.5	899.146	F
	Exit	1	1		1112			1112	0.0	0.0	0.000	A
D	Entry	1	1	A	118	607	0.194	119	0.2	0.2	6.308	A
			2	A	117	607	0.193	117	0.2	0.2	6.380	A
			3	D,B,C	279	607	0.460	279	1.2	0.9	11.024	B
		2	1	(A)	235			235	0.0	0.0	0.000	A
			2	(D,B,C)	279			279	0.2	0.0	0.986	A
	Exit	1	1		487			487	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 8 - 2016 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 8\ARCADY\Issue 2
Report generation date: 25/10/2016 14:39:04

«M20 Junction 8 - 2016, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 8 [Lane Simulation] - 2016			
Arm A	1.6	4.54		A
Arm B	0.6	5.58		A
Arm C	1.5	11.21		B
Arm D	23.1	44.86		E

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

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

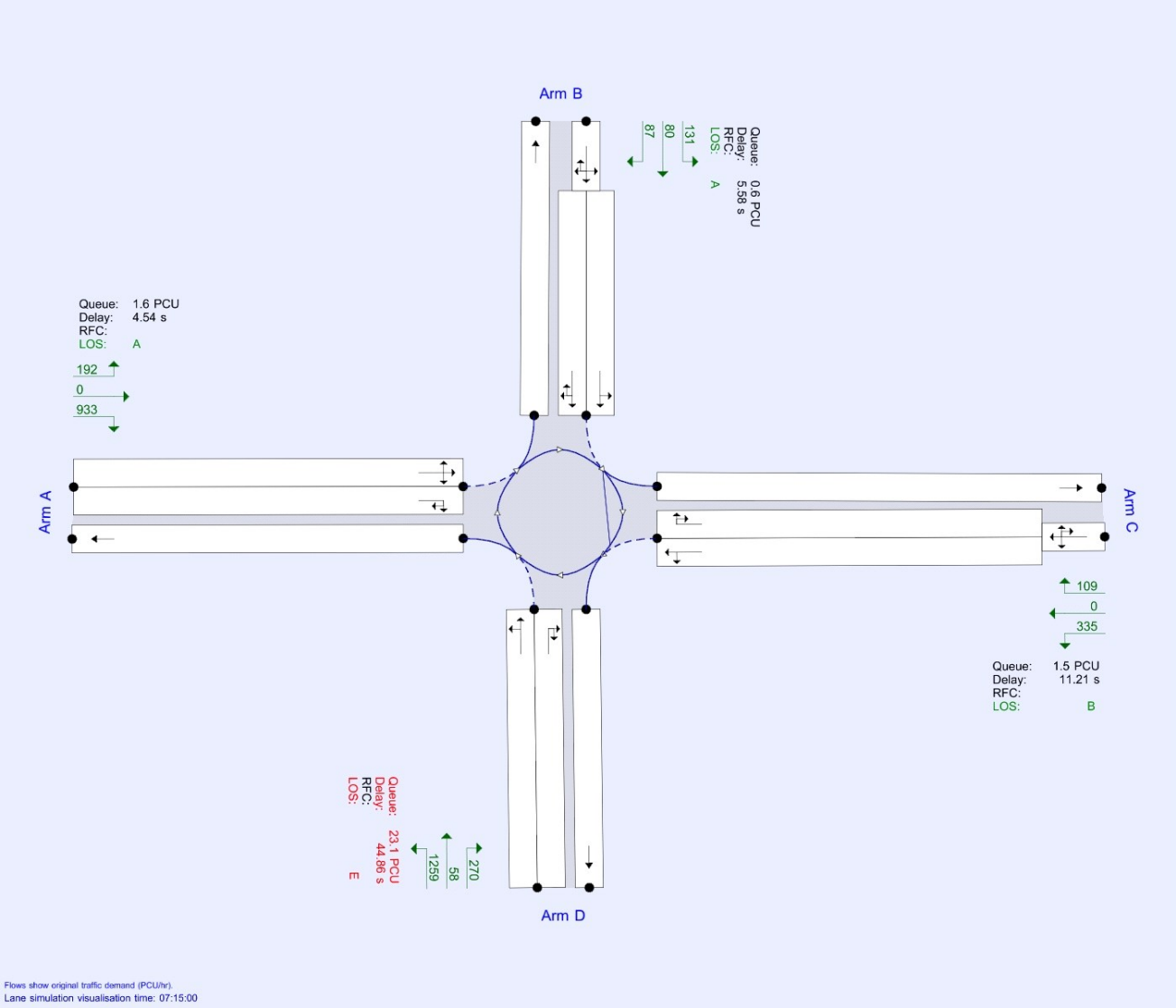
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	263146767	286	46.57

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 8	✓	✓	100.000	100.000

M20 Junction 8 - 2016, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 8 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 8	Large Roundabout	A,B,C,D	24.01	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	M20 West	
B	Service Station North	
C	M20 East	
D	A20 Link Road South	

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
A	7.80	7.90	2.0	45.0	170.0	12.0	
B	5.50	10.75	12.0	26.3	170.0	7.5	
C	6.00	6.50	22.0	41.4	170.0	14.0	
D	7.30	8.25	5.1	32.7	170.0	14.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	437	122.00
B	1203	0.00
C	1100	125.50
D	196	81.40

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.163	3110
B	0.975	3130
C	0.894	2461
D	1.200	3216

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	D,B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,C	✓	7.00	0	99999
		2	D,A,B	✓	7.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	12.00	0	99999
		2	B,C	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
D	1 [Give-way line]	1	A,B		Infinity	0	99999
		2	D,C		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.582	1555
		2	0.582	1555
B	1 [Give-way line]	1	0.487	1565
		2	0.487	1565
C	1 [Give-way line]	1	0.447	1230
		2	0.447	1230
D	1 [Give-way line]	1	0.600	1608
		2	0.600	1608

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓			✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2016	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1125	100.000
B		ONE HOUR	✓	298	100.000
C		ONE HOUR	✓	444	100.000
D		ONE HOUR	✓	1587	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	192	0	933
	B	87	0	131	80
	C	0	109	0	335
	D	1259	58	270	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.17	0.00	0.83
	B	0.29	0.00	0.44	0.27
	C	0.00	0.25	0.00	0.75
	D	0.79	0.04	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	8
	B	21	0	17	14
	C	0	20	0	5
	D	4	15	4	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.200	1.000	1.080
	B	1.210	1.000	1.170	1.140
	C	1.000	1.200	1.000	1.050
	D	1.040	1.150	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	847	847
	B	224	224
	C	334	334
	D	1195	1195
07:30-07:45	A	1011	1011
	B	268	268
	C	399	399
	D	1427	1427
07:45-08:00	A	1239	1239
	B	328	328
	C	489	489
	D	1747	1747
08:00-08:15	A	1239	1239
	B	328	328
	C	489	489
	D	1747	1747
08:15-08:30	A	1011	1011
	B	268	268
	C	399	399
	D	1427	1427
08:30-08:45	A	847	847
	B	224	224
	C	334	334
	D	1195	1195

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	4.54	1.6	A	1033	1549
B	5.58	0.6	A	274	411
C	11.21	1.5	B	408	612
D	44.86	23.1	E	1456	2185

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	844	211	332	845	1021	0.0	0.9	3.373	A
B	225	56	904	225	273	0.0	0.3	3.962	A
C	339	85	823	340	307	0.0	0.5	5.734	A
D	1208	302	148	1205	1014	0.0	2.3	6.558	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1004	251	397	1005	1211	0.9	1.2	3.833	A
B	270	67	1075	270	327	0.3	0.4	4.575	A
C	399	100	982	396	363	0.5	1.1	7.448	A
D	1427	357	179	1430	1200	2.3	3.9	9.879	A

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1245	311	475	1247	1455	1.2	1.6	4.528	A
B	333	83	1333	333	389	0.4	0.5	5.361	A
C	484	121	1227	484	439	1.1	1.5	10.572	B
D	1753	438	214	1716	1497	3.9	18.2	27.848	D

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1242	310	483	1244	1457	1.6	1.5	4.536	A
B	326	82	1331	327	396	0.5	0.6	5.576	A
C	488	122	1215	487	443	1.5	1.5	11.211	B
D	1728	432	217	1723	1485	18.2	23.1	44.861	E

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1011	253	390	1012	1219	1.5	1.0	3.889	A
B	268	67	1078	268	324	0.6	0.4	4.717	A
C	398	100	990	396	357	1.5	1.0	8.166	A
D	1416	354	177	1433	1209	23.1	4.6	21.898	C

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	850	213	333	852	1024	1.0	0.7	3.520	A
B	224	56	912	225	273	0.4	0.2	4.135	A
C	339	85	830	338	307	1.0	0.5	6.449	A
D	1207	302	150	1207	1018	4.6	2.3	6.995	A

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	467	1362	0.343	467	0.0	0.5	3.522	A
			2	D,A	377	1362	0.277	378	0.0	0.4	3.195	A
	Exit	1	1		1021			1021	0.0	0.0	0.000	A
B	Entry	1	1	D,C	129	1125	0.114	130	0.0	0.1	4.004	A
			2	D,A,B	96	1125	0.085	96	0.0	0.1	3.906	A
		2	1	(D,A,B,C)	225			225	0.0	0.0	0.000	A
	Exit	1	1		273			273	0.0	0.0	0.000	A
C	Entry	1	1	D,A	257	863	0.298	257	0.0	0.4	5.842	A
			2	B,C	82	863	0.095	82	0.0	0.1	5.350	A
		2	1	(D,A,B,C)	339			339	0.0	0.0	0.001	A
	Exit	1	1		307			307	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1002	1519	0.659	999	0.0	2.1	7.310	A
			2	D,C	206	1519	0.136	206	0.0	0.2	2.853	A
	Exit	1	1		1014			1014	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	550	1324	0.415	550	0.5	0.7	3.992	A
			2	D,A	455	1324	0.343	455	0.4	0.5	3.646	A
	Exit	1	1		1211			1211	0.0	0.0	0.000	A
B	Entry	1	1	D,C	153	1041	0.147	153	0.1	0.2	4.717	A
			2	D,A,B	117	1041	0.112	117	0.1	0.2	4.379	A
		2	1	(D,A,B,C)	270			270	0.0	0.0	0.000	A
	Exit	1	1		327			327	0.0	0.0	0.000	A
C	Entry	1	1	D,A	300	791	0.380	297	0.4	0.8	7.800	A
			2	B,C	99	791	0.125	99	0.1	0.2	6.248	A
		2	1	(D,A,B,C)	399			399	0.0	0.0	0.000	A
	Exit	1	1		363			363	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1184	1501	0.789	1186	2.1	3.7	11.328	B
			2	D,C	243	1501	0.162	244	0.2	0.2	2.974	A
	Exit	1	1		1200			1200	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	672	1279	0.526	673	0.7	0.9	4.764	A
			2	D,A	573	1279	0.448	574	0.5	0.7	4.260	A
	Exit	1	1		1455			1455	0.0	0.0	0.000	A
B	Entry	1	1	D,C	188	916	0.205	187	0.2	0.3	5.510	A
			2	D,A,B	144	916	0.158	146	0.2	0.2	5.161	A
		2	1	(D,A,B,C)	333			333	0.0	0.0	0.000	A
	Exit	1	1		389			389	0.0	0.0	0.000	A
C	Entry	1	1	D,A	367	682	0.539	367	0.8	1.3	11.441	B
			2	B,C	117	682	0.171	118	0.2	0.3	7.463	A
		2	1	(D,A,B,C)	484			484	0.0	0.0	0.001	A
	Exit	1	1		439			439	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1457	1480	0.984	1420	3.7	17.9	32.926	D
			2	D,C	296	1480	0.200	296	0.2	0.3	3.120	A
	Exit	1	1		1497			1497	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	667	1274	0.523	667	0.9	0.9	4.757	A
			2	D,A	575	1274	0.451	576	0.7	0.7	4.286	A
	Exit	1	1		1457			1457	0.0	0.0	0.000	A
B	Entry	1	1	D,C	186	917	0.203	187	0.3	0.3	5.690	A
			2	D,A,B	140	917	0.153	140	0.2	0.2	5.422	A
		2	1	(D,A,B,C)	326			326	0.0	0.0	0.001	A
	Exit	1	1		396			396	0.0	0.0	0.000	A
C	Entry	1	1	D,A	367	687	0.534	365	1.3	1.3	12.163	B
			2	B,C	121	687	0.175	121	0.3	0.2	7.835	A
		2	1	(D,A,B,C)	488			488	0.0	0.0	0.015	A
	Exit	1	1		443			443	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1429	1478	0.967	1424	17.9	22.8	53.509	F
			2	D,C	299	1478	0.202	299	0.3	0.3	3.168	A
	Exit	1	1		1485			1485	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	550	1328	0.414	550	0.9	0.6	4.092	A
			2	D,A	461	1328	0.347	463	0.7	0.4	3.656	A
	Exit	1	1		1219			1219	0.0	0.0	0.000	A
B	Entry	1	1	D,C	151	1040	0.145	151	0.3	0.2	4.736	A
			2	D,A,B	117	1040	0.112	117	0.2	0.1	4.693	A
		2	1	(D,A,B,C)	268			268	0.0	0.0	0.000	A
	Exit	1	1		324			324	0.0	0.0	0.000	A
C	Entry	1	1	D,A	299	788	0.380	298	1.3	0.7	8.560	A
			2	B,C	99	788	0.126	98	0.2	0.3	6.780	A
		2	1	(D,A,B,C)	398			398	0.0	0.0	0.002	A
	Exit	1	1		357			357	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1176	1502	0.783	1192	22.8	4.5	25.786	D
			2	D,C	240	1502	0.160	240	0.3	0.2	3.012	A
	Exit	1	1		1209			1209	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	464	1362	0.341	464	0.6	0.5	3.670	A
			2	D,A	387	1362	0.284	388	0.4	0.3	3.343	A
	Exit	1	1		1024			1024	0.0	0.0	0.000	A
B	Entry	1	1	D,C	128	1121	0.114	128	0.2	0.1	4.201	A
			2	D,A,B	97	1121	0.087	96	0.1	0.1	4.047	A
		2	1	(D,A,B,C)	224			224	0.0	0.0	0.000	A
	Exit	1	1		273			273	0.0	0.0	0.000	A
C	Entry	1	1	D,A	255	859	0.297	256	0.7	0.4	6.602	A
			2	B,C	83	859	0.097	83	0.3	0.2	5.914	A
		2	1	(D,A,B,C)	339			339	0.0	0.0	0.000	A
	Exit	1	1		307			307	0.0	0.0	0.000	A
D	Entry	1	1	A,B	999	1518	0.658	1000	4.5	2.1	7.832	A
			2	D,C	208	1518	0.137	207	0.2	0.2	2.940	A
	Exit	1	1		1018			1018	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

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Filename: M20 Junction 8 - 2016 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 8\ARCADY\Issue 2
Report generation date: 25/10/2016 14:41:46

«M20 Junction 8 - 2016, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 8 [Lane Simulation] - 2016			
Arm A	2.1	4.86		A
Arm B	0.5	6.14		A
Arm C	1.5	12.30		B
Arm D	8.4	18.29		C

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

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

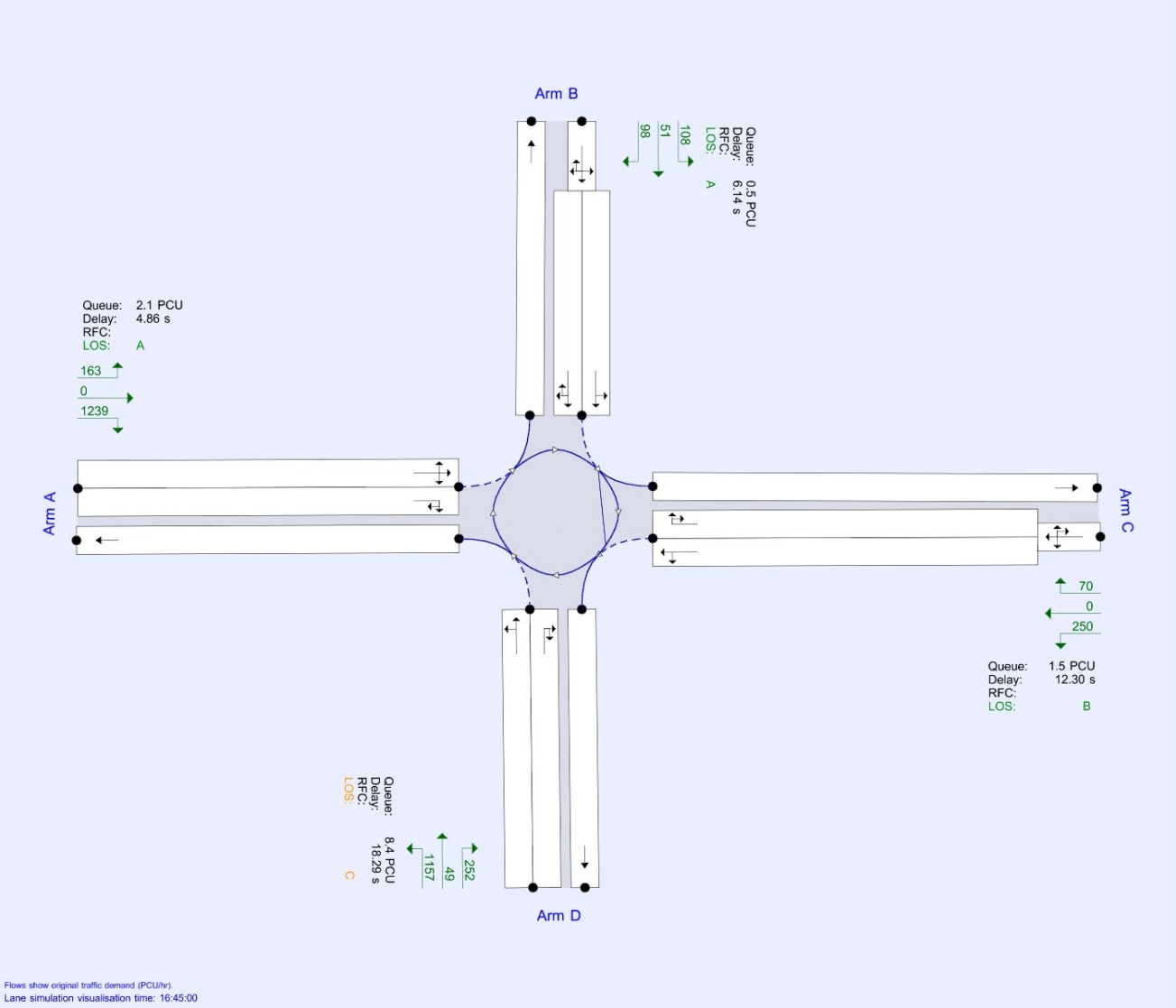
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	135901970	183	30.16

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 8	✓	✓	100.000	100.000

M20 Junction 8 - 2016, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 8 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 8	Large Roundabout	A,B,C,D	11.36	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	M20 West	
B	Service Station North	
C	M20 East	
D	A20 Link Road South	

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
A	7.80	7.90	2.0	45.0	170.0	12.0	
B	5.50	10.75	12.0	26.3	170.0	7.5	
C	6.00	6.50	22.0	41.4	170.0	14.0	
D	7.30	8.25	5.1	32.7	170.0	14.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	371	122.00
B	1491	0.00
C	1388	125.50
D	168	81.40

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.178	3126
B	0.911	3064
C	0.837	2394
D	1.206	3223

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	D,B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,C	✓	7.00	0	99999
		2	D,A,B	✓	7.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	12.00	0	99999
		2	B,C	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
D	1 [Give-way line]	1	A,B		Infinity	0	99999
		2	D,C		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.589	1563
		2	0.589	1563
B	1 [Give-way line]	1	0.455	1532
		2	0.455	1532
C	1 [Give-way line]	1	0.418	1197
		2	0.418	1197
D	1 [Give-way line]	1	0.603	1611
		2	0.603	1611

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓			✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

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

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1402	100.000
B		ONE HOUR	✓	257	100.000
C		ONE HOUR	✓	320	100.000
D		ONE HOUR	✓	1458	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	163	0	1239
	B	98	0	108	51
	C	0	70	0	250
	D	1157	49	252	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.12	0.00	0.88
	B	0.38	0.00	0.42	0.20
	C	0.00	0.22	0.00	0.78
	D	0.79	0.03	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	3
	B	6	0	18	15
	C	0	11	0	2
	D	4	2	4	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.200	1.000	1.030
	B	1.060	1.000	1.180	1.150
	C	1.000	1.110	1.000	1.020
	D	1.040	1.020	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	1055	1055
	B	193	193
	C	241	241
	D	1098	1098
17:00-17:15	A	1260	1260
	B	231	231
	C	288	288
	D	1311	1311
17:15-17:30	A	1544	1544
	B	283	283
	C	352	352
	D	1605	1605
17:30-17:45	A	1544	1544
	B	283	283
	C	352	352
	D	1605	1605
17:45-18:00	A	1260	1260
	B	231	231
	C	288	288
	D	1311	1311
18:00-18:15	A	1055	1055
	B	193	193
	C	241	241
	D	1098	1098

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	4.86	2.1	A	1282	1923
B	6.14	0.5	A	233	350
C	12.30	1.5	B	295	442
D	18.29	8.4	C	1338	2008

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1059	265	276	1059	951	0.0	1.1	3.294	A
B	191	48	1122	191	213	0.0	0.2	4.021	A
C	238	60	1047	238	266	0.0	0.4	5.696	A
D	1105	276	124	1103	1161	0.0	1.7	5.512	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1254	314	334	1257	1140	1.1	1.2	3.791	A
B	235	59	1335	235	256	0.2	0.4	4.950	A
C	292	73	1245	292	325	0.4	0.7	7.686	A
D	1321	330	151	1322	1386	1.7	3.0	7.680	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1539	385	399	1538	1385	1.2	2.1	4.642	A
B	277	69	1632	277	305	0.4	0.5	6.096	A
C	350	87	1526	347	383	0.7	1.5	11.795	B
D	1600	400	185	1599	1687	3.0	8.4	15.950	C

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1527	382	408	1527	1384	2.1	2.1	4.862	A
B	283	71	1624	283	310	0.5	0.5	6.140	A
C	349	87	1518	351	389	1.5	1.2	12.299	B
D	1602	400	191	1601	1678	8.4	8.1	18.286	C

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1259	315	337	1257	1117	2.1	1.5	3.928	A
B	227	57	1344	227	250	0.5	0.4	5.097	A
C	295	74	1245	295	326	1.2	0.6	8.636	A
D	1298	324	152	1302	1388	8.1	2.6	9.403	A

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1054	264	281	1054	945	1.5	1.1	3.401	A
B	187	47	1120	188	214	0.4	0.2	4.480	A
C	246	61	1039	246	269	0.6	0.4	6.622	A
D	1105	276	123	1103	1162	2.6	1.8	5.497	A

Lane Results

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

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	563	1400	0.402	564	0.0	0.7	3.414	A
			2	D,A	496	1400	0.354	495	0.0	0.5	3.162	A
	Exit	1	1		951			951	0.0	0.0	0.000	A
B	Entry	1	1	D,C	99	1021	0.097	99	0.0	0.1	4.211	A
			2	D,A,B	92	1021	0.090	92	0.0	0.1	3.835	A
		2	1	(D,A,B,C)	191			191	0.0	0.0	0.000	A
	Exit	1	1		213			213	0.0	0.0	0.000	A
C	Entry	1	1	D,A	187	759	0.247	187	0.0	0.3	5.752	A
			2	B,C	51	759	0.068	51	0.0	0.1	5.474	A
		2	1	(D,A,B,C)	238			238	0.0	0.0	0.000	A
	Exit	1	1		266			266	0.0	0.0	0.000	A
D	Entry	1	1	A,B	919	1537	0.598	917	0.0	1.5	6.098	A
			2	D,C	186	1537	0.121	186	0.0	0.2	2.703	A
	Exit	1	1		1161			1161	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	661	1366	0.484	663	0.7	0.7	3.938	A
			2	D,A	594	1366	0.434	594	0.5	0.6	3.634	A
	Exit	1	1		1140			1140	0.0	0.0	0.000	A
B	Entry	1	1	D,C	121	924	0.131	121	0.1	0.2	5.199	A
			2	D,A,B	114	924	0.124	114	0.1	0.2	4.703	A
		2	1	(D,A,B,C)	235			235	0.0	0.0	0.000	A
	Exit	1	1		256			256	0.0	0.0	0.000	A
C	Entry	1	1	D,A	231	676	0.342	231	0.3	0.6	8.021	A
			2	B,C	61	676	0.091	62	0.1	0.1	6.355	A
		2	1	(D,A,B,C)	292			292	0.0	0.0	0.000	A
	Exit	1	1		325			325	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1094	1520	0.720	1096	1.5	2.8	8.657	A
			2	D,C	227	1520	0.149	227	0.2	0.2	2.939	A
	Exit	1	1		1386			1386	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	802	1328	0.604	801	0.7	1.1	4.800	A
			2	D,A	737	1328	0.555	737	0.6	0.9	4.476	A
	Exit	1	1		1385			1385	0.0	0.0	0.000	A
B	Entry	1	1	D,C	142	788	0.180	142	0.2	0.3	6.563	A
			2	D,A,B	134	788	0.170	134	0.2	0.2	5.646	A
		2	1	(D,A,B,C)	277			277	0.0	0.0	0.000	A
	Exit	1	1		305			305	0.0	0.0	0.000	A
C	Entry	1	1	D,A	272	559	0.488	269	0.6	1.3	12.656	B
			2	B,C	77	559	0.138	78	0.1	0.2	8.338	A
		2	1	(D,A,B,C)	350			350	0.0	0.0	0.003	A
	Exit	1	1		383			383	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1330	1500	0.887	1330	2.8	8.1	18.623	C
			2	D,C	270	1500	0.180	269	0.2	0.3	3.073	A
	Exit	1	1		1687			1687	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	798	1323	0.603	798	1.1	1.1	5.005	A
			2	D,A	729	1323	0.551	729	0.9	1.0	4.711	A
	Exit	1	1		1384			1384	0.0	0.0	0.000	A
B	Entry	1	1	D,C	146	792	0.184	146	0.3	0.3	6.456	A
			2	D,A,B	137	792	0.173	137	0.2	0.2	5.834	A
		2	1	(D,A,B,C)	283			283	0.0	0.0	0.000	A
	Exit	1	1		310			310	0.0	0.0	0.000	A
C	Entry	1	1	D,A	268	562	0.478	269	1.3	1.0	13.264	B
			2	B,C	80	562	0.143	81	0.2	0.2	8.508	A
		2	1	(D,A,B,C)	349			349	0.0	0.0	0.000	A
	Exit	1	1		389			389	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1329	1496	0.888	1328	8.1	7.9	21.453	C
			2	D,C	273	1496	0.183	273	0.3	0.3	3.116	A
	Exit	1	1		1678			1678	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	663	1364	0.486	662	1.1	0.8	4.063	A
			2	D,A	595	1364	0.436	594	1.0	0.7	3.783	A
	Exit	1	1		1117			1117	0.0	0.0	0.000	A
B	Entry	1	1	D,C	117	920	0.127	117	0.3	0.2	5.314	A
			2	D,A,B	110	920	0.119	110	0.2	0.2	4.884	A
		2	1	(D,A,B,C)	227			227	0.0	0.0	0.000	A
	Exit	1	1		250			250	0.0	0.0	0.000	A
C	Entry	1	1	D,A	230	676	0.341	230	1.0	0.5	9.004	A
			2	B,C	65	676	0.096	65	0.2	0.1	7.183	A
		2	1	(D,A,B,C)	295			295	0.0	0.0	0.000	A
	Exit	1	1		326			326	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1067	1520	0.702	1072	7.9	2.5	10.770	B
			2	D,C	231	1520	0.152	231	0.3	0.2	2.850	A
	Exit	1	1		1388			1388	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	558	1398	0.399	558	0.8	0.6	3.507	A
			2	D,A	497	1398	0.356	496	0.7	0.5	3.285	A
	Exit	1	1		945			945	0.0	0.0	0.000	A
B	Entry	1	1	D,C	98	1022	0.096	98	0.2	0.1	4.731	A
			2	D,A,B	89	1022	0.088	90	0.2	0.1	4.222	A
		2	1	(D,A,B,C)	187			187	0.0	0.0	0.000	A
	Exit	1	1		214			214	0.0	0.0	0.000	A
C	Entry	1	1	D,A	193	762	0.253	194	0.5	0.3	6.858	A
			2	B,C	53	762	0.070	52	0.1	0.1	5.702	A
		2	1	(D,A,B,C)	246			246	0.0	0.0	0.000	A
	Exit	1	1		269			269	0.0	0.0	0.000	A
D	Entry	1	1	A,B	915	1537	0.595	913	2.5	1.6	6.043	A
			2	D,C	190	1537	0.124	190	0.2	0.2	2.884	A
	Exit	1	1		1162			1162	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 8 - 2031 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 8\ARCADY\Issue 2
Report generation date: 25/10/2016 14:44:34

«M20 Junction 8 - 2031, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
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»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 8 [Lane Simulation] - 2031			
Arm A	2.0	5.03		A
Arm B	0.7	5.94		A
Arm C	2.4	14.83		B
Arm D	68.2	113.57		F

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

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

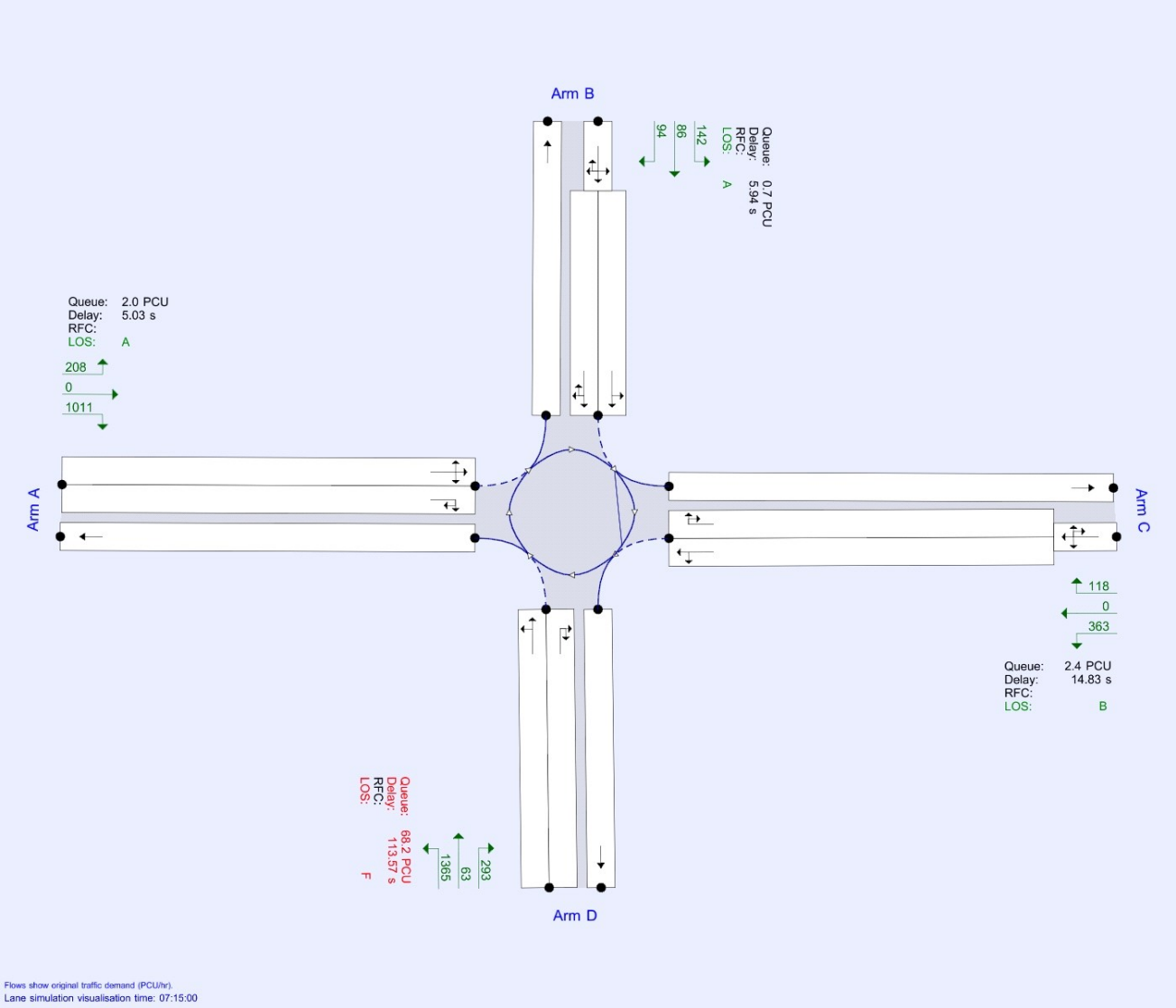
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1431662888	330	62.51

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 8	✓	✓	100.000	100.000

M20 Junction 8 - 2031, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 8 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 8	Large Roundabout	A,B,C,D	56.29	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	M20 West	
B	Service Station North	
C	M20 East	
D	A20 Link Road South	

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
A	7.80	7.90	2.0	45.0	170.0	12.0	
B	5.50	10.75	12.0	26.3	170.0	7.5	
C	6.00	6.50	22.0	41.4	170.0	14.0	
D	7.30	8.25	5.1	32.7	170.0	14.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	474	122.00
B	1304	0.00
C	1191	125.50
D	212	81.40

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.155	3102
B	0.952	3107
C	0.876	2440
D	1.196	3213

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	D,B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,C	✓	7.00	0	99999
		2	D,A,B	✓	7.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	12.00	0	99999
		2	B,C	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
D	1 [Give-way line]	1	A,B		Infinity	0	99999
		2	D,C		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.577	1551
		2	0.577	1551
B	1 [Give-way line]	1	0.476	1554
		2	0.476	1554
C	1 [Give-way line]	1	0.438	1220
		2	0.438	1220
D	1 [Give-way line]	1	0.598	1606
		2	0.598	1606

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓			✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2031	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1219	100.000
B		ONE HOUR	✓	322	100.000
C		ONE HOUR	✓	481	100.000
D		ONE HOUR	✓	1721	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	208	0	1011
	B	94	0	142	86
	C	0	118	0	363
	D	1365	63	293	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.17	0.00	0.83
	B	0.29	0.00	0.44	0.27
	C	0.00	0.25	0.00	0.75
	D	0.79	0.04	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	8
	B	21	0	17	14
	C	0	20	0	5
	D	4	15	4	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.200	1.000	1.080
	B	1.210	1.000	1.170	1.140
	C	1.000	1.200	1.000	1.050
	D	1.040	1.150	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	918	918
	B	242	242
	C	362	362
	D	1296	1296
07:30-07:45	A	1096	1096
	B	289	289
	C	432	432
	D	1547	1547
07:45-08:00	A	1342	1342
	B	355	355
	C	530	530
	D	1895	1895
08:00-08:15	A	1342	1342
	B	355	355
	C	530	530
	D	1895	1895
08:15-08:30	A	1096	1096
	B	289	289
	C	432	432
	D	1547	1547
08:30-08:45	A	918	918
	B	242	242
	C	362	362
	D	1296	1296

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.03	2.0	A	1119	1678
B	5.94	0.7	A	296	444
C	14.83	2.4	B	440	660
D	113.57	68.2	F	1580	2370

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	927	232	361	928	1102	0.0	1.0	3.526	A
B	243	61	992	243	296	0.0	0.3	3.990	A
C	361	90	904	361	332	0.0	0.7	6.193	A
D	1302	325	162	1301	1103	0.0	3.2	7.762	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1091	273	426	1090	1314	1.0	1.4	4.074	A
B	285	71	1173	286	343	0.3	0.4	4.758	A
C	433	108	1067	432	392	0.7	1.1	8.433	A
D	1559	390	189	1551	1311	3.2	7.0	14.156	B

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1348	337	515	1347	1485	1.4	2.0	5.000	A
B	356	89	1441	356	421	0.4	0.7	5.862	A
C	531	133	1312	526	485	1.1	2.4	13.464	B
D	1893	473	227	1773	1612	7.0	40.8	54.120	F

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1331	333	516	1330	1494	2.0	2.0	5.028	A
B	355	89	1430	354	415	0.7	0.6	5.939	A
C	525	131	1299	528	484	2.4	2.0	14.827	B
D	1891	473	228	1781	1599	40.8	68.2	113.567	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1104	276	428	1101	1426	2.0	1.3	4.167	A
B	291	73	1177	290	351	0.6	0.4	4.935	A
C	426	106	1075	427	392	2.0	1.0	9.144	A
D	1548	387	184	1670	1318	68.2	29.5	96.291	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	911	228	360	914	1120	1.3	1.0	3.701	A
B	246	61	985	246	289	0.4	0.3	4.362	A
C	365	91	900	366	331	1.0	0.7	7.077	A
D	1287	322	163	1317	1103	29.5	3.6	24.392	C

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	512	1342	0.381	512	0.0	0.6	3.687	A
			2	D,A	415	1342	0.309	416	0.0	0.4	3.333	A
	Exit	1	1		1102			1102	0.0	0.0	0.000	A
B	Entry	1	1	D,C	139	1081	0.128	139	0.0	0.2	3.975	A
			2	D,A,B	104	1081	0.096	104	0.0	0.1	4.011	A
		2	1	(D,A,B,C)	243			243	0.0	0.0	0.000	A
	Exit	1	1		296			296	0.0	0.0	0.000	A
C	Entry	1	1	D,A	271	824	0.330	271	0.0	0.6	6.401	A
			2	B,C	90	824	0.109	90	0.0	0.2	5.477	A
		2	1	(D,A,B,C)	361			361	0.0	0.0	0.000	A
	Exit	1	1		332			332	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1079	1509	0.715	1078	0.0	3.1	8.782	A
			2	D,C	223	1509	0.148	223	0.0	0.2	2.845	A
	Exit	1	1		1103			1103	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	593	1305	0.455	593	0.6	0.8	4.249	A
			2	D,A	498	1305	0.382	497	0.4	0.6	3.872	A
	Exit	1	1		1314			1314	0.0	0.0	0.000	A
B	Entry	1	1	D,C	163	995	0.163	162	0.2	0.3	4.864	A
			2	D,A,B	123	995	0.123	124	0.1	0.1	4.615	A
		2	1	(D,A,B,C)	285			285	0.0	0.0	0.000	A
	Exit	1	1		343			343	0.0	0.0	0.000	A
C	Entry	1	1	D,A	328	752	0.436	327	0.6	0.8	8.917	A
			2	B,C	105	752	0.140	106	0.2	0.2	6.718	A
		2	1	(D,A,B,C)	433			433	0.0	0.0	0.000	A
	Exit	1	1		392			392	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1292	1493	0.865	1284	3.1	6.8	16.461	C
			2	D,C	266	1493	0.178	267	0.2	0.2	3.102	A
	Exit	1	1		1311			1311	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	718	1254	0.573	717	0.8	1.2	5.254	A
			2	D,A	630	1254	0.503	630	0.6	0.8	4.716	A
	Exit	1	1		1485			1485	0.0	0.0	0.000	A
B	Entry	1	1	D,C	206	867	0.237	205	0.3	0.4	6.105	A
			2	D,A,B	151	867	0.174	151	0.1	0.3	5.519	A
		2	1	(D,A,B,C)	356			356	0.0	0.0	0.005	A
	Exit	1	1		421			421	0.0	0.0	0.000	A
C	Entry	1	1	D,A	403	645	0.625	398	0.8	2.1	14.671	B
			2	B,C	128	645	0.198	128	0.2	0.3	8.359	A
		2	1	(D,A,B,C)	531			531	0.0	0.1	0.168	A
	Exit	1	1		485			485	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1569	1470	1.067	1449	6.8	40.5	64.566	F
			2	D,C	323	1470	0.220	323	0.2	0.3	3.325	A
	Exit	1	1		1612			1612	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	712	1253	0.569	712	1.2	1.2	5.263	A
			2	D,A	618	1253	0.493	618	0.8	0.9	4.764	A
	Exit	1	1		1494			1494	0.0	0.0	0.000	A
B	Entry	1	1	D,C	202	872	0.231	201	0.4	0.3	6.077	A
			2	D,A,B	153	872	0.176	153	0.3	0.3	5.750	A
		2	1	(D,A,B,C)	355			355	0.0	0.0	0.003	A
	Exit	1	1		415			415	0.0	0.0	0.000	A
C	Entry	1	1	D,A	400	650	0.616	402	2.1	1.7	16.388	C
			2	B,C	125	650	0.193	125	0.3	0.4	8.480	A
		2	1	(D,A,B,C)	525			526	0.1	0.0	0.194	A
	Exit	1	1		484			484	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1562	1470	1.063	1452	40.5	67.9	136.434	F
			2	D,C	329	1470	0.224	329	0.3	0.3	3.288	A
	Exit	1	1		1599			1599	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	598	1304	0.458	597	1.2	0.7	4.374	A
			2	D,A	506	1304	0.388	504	0.9	0.6	3.929	A
	Exit	1	1		1426			1426	0.0	0.0	0.000	A
B	Entry	1	1	D,C	167	993	0.168	167	0.3	0.2	4.988	A
			2	D,A,B	124	993	0.125	123	0.3	0.2	4.859	A
		2	1	(D,A,B,C)	291			291	0.0	0.0	0.001	A
	Exit	1	1		351			351	0.0	0.0	0.000	A
C	Entry	1	1	D,A	324	749	0.433	325	1.7	0.8	9.740	A
			2	B,C	101	749	0.135	102	0.4	0.2	7.016	A
		2	1	(D,A,B,C)	426			426	0.0	0.0	0.000	A
	Exit	1	1		392			392	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1284	1496	0.858	1406	67.9	29.3	115.552	F
			2	D,C	264	1496	0.177	264	0.3	0.3	3.098	A
	Exit	1	1		1318			1318	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	496	1343	0.369	497	0.7	0.5	3.867	A
			2	D,A	415	1343	0.309	416	0.6	0.5	3.507	A
	Exit	1	1		1120			1120	0.0	0.0	0.000	A
B	Entry	1	1	D,C	140	1084	0.129	140	0.2	0.2	4.391	A
			2	D,A,B	106	1084	0.098	106	0.2	0.1	4.322	A
		2	1	(D,A,B,C)	246			246	0.0	0.0	0.001	A
	Exit	1	1		289			289	0.0	0.0	0.000	A
C	Entry	1	1	D,A	275	826	0.333	276	0.8	0.5	7.298	A
			2	B,C	90	826	0.109	90	0.2	0.2	6.289	A
		2	1	(D,A,B,C)	365			365	0.0	0.0	0.000	A
	Exit	1	1		331			331	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1066	1509	0.707	1095	29.3	3.4	28.928	D
			2	D,C	221	1509	0.147	221	0.3	0.2	2.860	A
	Exit	1	1		1103			1103	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 8 - 2031 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 8\ARCADY\Issue 2
Report generation date: 25/10/2016 14:48:11

«M20 Junction 8 - 2031, PM
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Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 8 [Lane Simulation] - 2031			
Arm A	2.7	5.57		A
Arm B	0.6	6.95		A
Arm C	1.9	16.95		C
Arm D	20.8	40.40		E

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

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

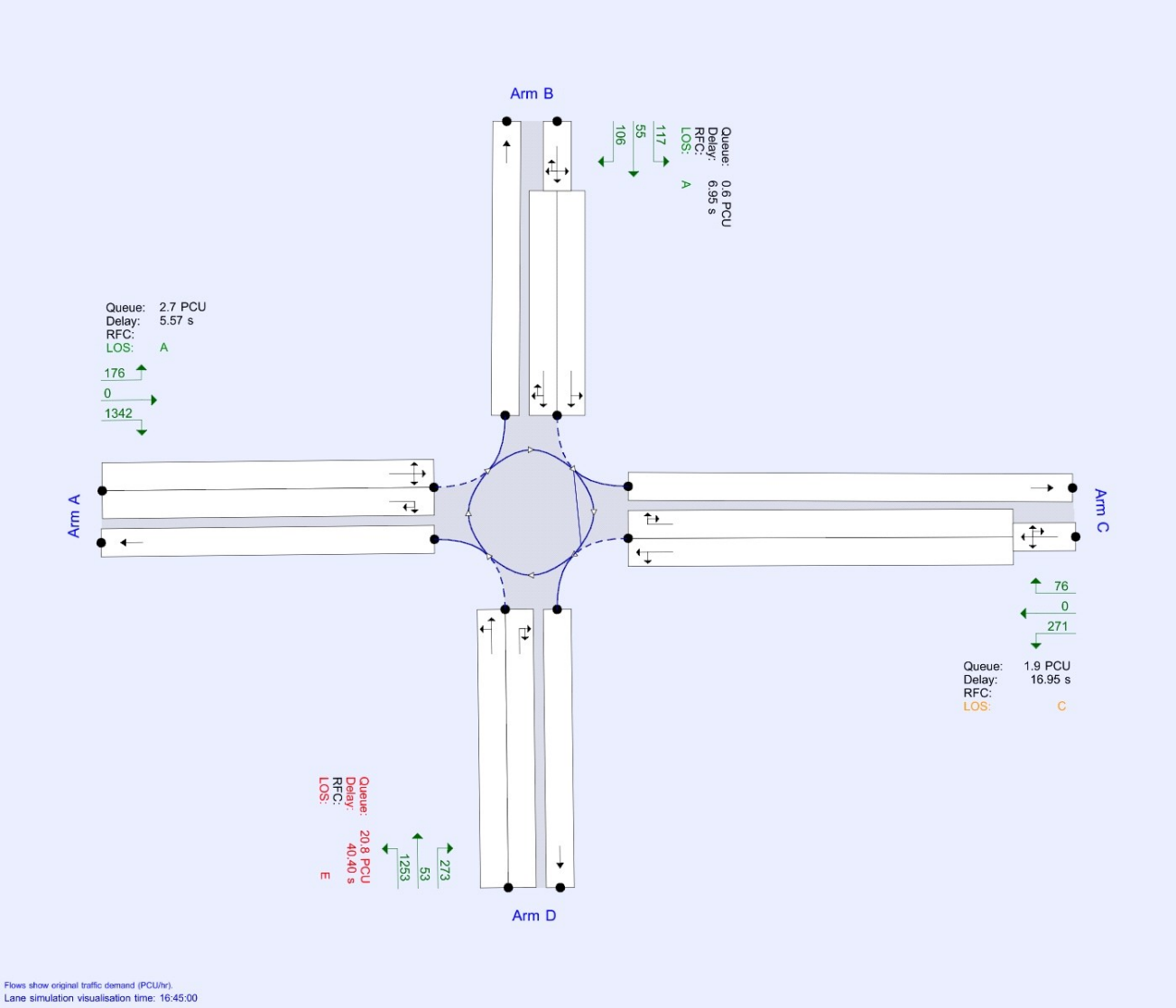
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	933442957	369	71.03

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 8	✓	✓	100.000	100.000

M20 Junction 8 - 2031, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 8 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 8	Large Roundabout	A,B,C,D	21.53	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	M20 West	
B	Service Station North	
C	M20 East	
D	A20 Link Road South	

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
A	7.80	7.90	2.0	45.0	170.0	12.0	
B	5.50	10.75	12.0	26.3	170.0	7.5	
C	6.00	6.50	22.0	41.4	170.0	14.0	
D	7.30	8.25	5.1	32.7	170.0	14.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	402	122.00
B	1615	0.00
C	1503	125.50
D	182	81.40

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.171	3118
B	0.883	3035
C	0.814	2367
D	1.203	3219

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	D,B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,C	✓	7.00	0	99999
		2	D,A,B	✓	7.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	12.00	0	99999
		2	B,C	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
D	1 [Give-way line]	1	A,B		Infinity	0	99999
		2	D,C		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.586	1559
		2	0.586	1559
B	1 [Give-way line]	1	0.442	1517
		2	0.442	1517
C	1 [Give-way line]	1	0.407	1184
		2	0.407	1184
D	1 [Give-way line]	1	0.601	1610
		2	0.601	1610

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓			✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2031	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1518	100.000
B		ONE HOUR	✓	278	100.000
C		ONE HOUR	✓	347	100.000
D		ONE HOUR	✓	1579	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	176	0	1342
	B	106	0	117	55
	C	0	76	0	271
	D	1253	53	273	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.12	0.00	0.88
	B	0.38	0.00	0.42	0.20
	C	0.00	0.22	0.00	0.78
	D	0.79	0.03	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	3
	B	6	0	18	15
	C	0	11	0	2
	D	4	2	4	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.200	1.000	1.030
	B	1.060	1.000	1.180	1.150
	C	1.000	1.110	1.000	1.020
	D	1.040	1.020	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	1143	1143
	B	209	209
	C	261	261
	D	1189	1189
17:00-17:15	A	1365	1365
	B	250	250
	C	312	312
	D	1419	1419
17:15-17:30	A	1671	1671
	B	306	306
	C	382	382
	D	1739	1739
17:30-17:45	A	1671	1671
	B	306	306
	C	382	382
	D	1739	1739
17:45-18:00	A	1365	1365
	B	250	250
	C	312	312
	D	1419	1419
18:00-18:15	A	1143	1143
	B	209	209
	C	261	261
	D	1189	1189

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.57	2.7	A	1388	2082
B	6.95	0.6	A	255	383
C	16.95	1.9	C	319	478
D	40.40	20.8	E	1449	2174

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1134	284	308	1136	1028	0.0	1.2	3.491	A
B	212	53	1213	212	230	0.0	0.3	4.297	A
C	264	66	1127	264	298	0.0	0.5	6.441	A
D	1192	298	143	1193	1248	0.0	2.0	6.028	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1359	340	359	1360	1224	1.2	1.6	4.128	A
B	247	62	1445	247	274	0.3	0.3	5.195	A
C	309	77	1345	309	347	0.5	0.7	8.530	A
D	1418	354	164	1420	1491	2.0	3.7	9.511	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1662	415	442	1663	1474	1.6	2.7	5.452	A
B	306	77	1770	306	335	0.3	0.6	6.765	A
C	381	95	1642	380	434	0.7	1.9	15.259	C
D	1751	438	194	1722	1828	3.7	16.3	26.082	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1669	417	441	1671	1476	2.7	2.7	5.569	A
B	304	76	1775	304	337	0.6	0.6	6.955	A
C	382	96	1655	383	425	1.9	1.8	16.955	C
D	1727	432	203	1714	1834	16.3	20.8	40.398	E

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1364	341	361	1364	1235	2.7	1.6	4.198	A
B	247	62	1452	246	273	0.6	0.4	5.513	A
C	315	79	1351	313	348	1.8	0.8	9.873	A
D	1424	356	163	1433	1501	20.8	4.8	19.978	C

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1142	285	300	1143	1023	1.6	1.2	3.649	A
B	215	54	1213	216	230	0.4	0.3	4.777	A
C	263	66	1132	261	297	0.8	0.6	7.133	A
D	1183	296	139	1185	1255	4.8	2.1	6.664	A

Lane Results

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

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	599	1379	0.435	600	0.0	0.6	3.589	A
			2	D,A	535	1379	0.388	536	0.0	0.5	3.384	A
	Exit	1	1		1028			1028	0.0	0.0	0.000	A
B	Entry	1	1	D,C	109	982	0.111	109	0.0	0.2	4.564	A
			2	D,A,B	103	982	0.105	103	0.0	0.1	4.032	A
		2	1	(D,A,B,C)	212			212	0.0	0.0	0.000	A
	Exit	1	1		230			230	0.0	0.0	0.000	A
C	Entry	1	1	D,A	204	725	0.281	204	0.0	0.5	6.687	A
			2	B,C	60	725	0.083	60	0.0	0.1	5.496	A
		2	1	(D,A,B,C)	264			264	0.0	0.0	0.000	A
	Exit	1	1		298			298	0.0	0.0	0.000	A
D	Entry	1	1	A,B	984	1524	0.645	985	0.0	1.9	6.700	A
			2	D,C	209	1524	0.137	209	0.0	0.2	2.818	A
	Exit	1	1		1248			1248	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	713	1349	0.529	714	0.6	0.9	4.254	A
			2	D,A	646	1349	0.479	646	0.5	0.8	3.993	A
	Exit	1	1		1224			1224	0.0	0.0	0.000	A
B	Entry	1	1	D,C	128	879	0.145	128	0.2	0.2	5.426	A
			2	D,A,B	119	879	0.135	119	0.1	0.1	4.969	A
		2	1	(D,A,B,C)	247			247	0.0	0.0	0.000	A
	Exit	1	1		274			274	0.0	0.0	0.000	A
C	Entry	1	1	D,A	242	636	0.380	241	0.5	0.6	8.972	A
			2	B,C	68	636	0.107	68	0.1	0.1	6.817	A
		2	1	(D,A,B,C)	309			309	0.0	0.0	0.000	A
	Exit	1	1		347			347	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1174	1511	0.777	1176	1.9	3.6	10.867	B
			2	D,C	244	1511	0.162	244	0.2	0.2	3.018	A
	Exit	1	1		1491			1491	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	862	1301	0.663	862	0.9	1.5	5.582	A
			2	D,A	800	1301	0.615	801	0.8	1.3	5.318	A
	Exit	1	1		1474			1474	0.0	0.0	0.000	A
B	Entry	1	1	D,C	161	736	0.218	161	0.2	0.4	7.184	A
			2	D,A,B	146	736	0.198	145	0.1	0.3	6.330	A
		2	1	(D,A,B,C)	306			306	0.0	0.0	0.007	A
	Exit	1	1		335			335	0.0	0.0	0.000	A
C	Entry	1	1	D,A	301	515	0.585	301	0.6	1.6	16.764	C
			2	B,C	80	515	0.154	79	0.1	0.3	9.135	A
		2	1	(D,A,B,C)	381			381	0.0	0.0	0.046	A
	Exit	1	1		434			434	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1447	1493	0.969	1418	3.6	16.0	30.890	D
			2	D,C	304	1493	0.204	304	0.2	0.3	3.191	A
	Exit	1	1		1828			1828	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	859	1301	0.660	860	1.5	1.4	5.748	A
			2	D,A	810	1301	0.623	811	1.3	1.3	5.385	A
	Exit	1	1		1476			1476	0.0	0.0	0.000	A
B	Entry	1	1	D,C	155	734	0.212	155	0.4	0.3	7.319	A
			2	D,A,B	149	734	0.204	149	0.3	0.3	6.595	A
		2	1	(D,A,B,C)	304			304	0.0	0.0	0.003	A
	Exit	1	1		337			337	0.0	0.0	0.000	A
C	Entry	1	1	D,A	297	510	0.582	297	1.6	1.5	18.731	C
			2	B,C	85	510	0.167	85	0.3	0.3	9.819	A
		2	1	(D,A,B,C)	382			382	0.0	0.0	0.052	A
	Exit	1	1		425			425	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1429	1488	0.960	1416	16.0	20.5	48.169	E
			2	D,C	298	1488	0.200	297	0.3	0.3	3.206	A
	Exit	1	1		1834			1834	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	715	1348	0.530	715	1.4	0.9	4.323	A
			2	D,A	649	1348	0.482	650	1.3	0.7	4.064	A
	Exit	1	1		1235			1235	0.0	0.0	0.000	A
B	Entry	1	1	D,C	128	876	0.146	127	0.3	0.2	5.786	A
			2	D,A,B	119	876	0.136	119	0.3	0.2	5.249	A
		2	1	(D,A,B,C)	247			247	0.0	0.0	0.000	A
	Exit	1	1		273			273	0.0	0.0	0.000	A
C	Entry	1	1	D,A	247	634	0.389	246	1.5	0.7	10.461	B
			2	B,C	68	634	0.107	68	0.3	0.2	7.554	A
		2	1	(D,A,B,C)	315			315	0.0	0.0	0.012	A
	Exit	1	1		348			348	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1177	1511	0.778	1186	20.5	4.5	23.508	C
			2	D,C	247	1511	0.164	247	0.3	0.3	2.967	A
	Exit	1	1		1501			1501	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	603	1383	0.436	603	0.9	0.7	3.756	A
			2	D,A	539	1383	0.390	540	0.7	0.5	3.534	A
	Exit	1	1		1023			1023	0.0	0.0	0.000	A
B	Entry	1	1	D,C	115	982	0.117	115	0.2	0.1	5.011	A
			2	D,A,B	100	982	0.102	100	0.2	0.1	4.548	A
		2	1	(D,A,B,C)	215			215	0.0	0.0	0.000	A
	Exit	1	1		230			230	0.0	0.0	0.000	A
C	Entry	1	1	D,A	205	723	0.283	203	0.7	0.5	7.367	A
			2	B,C	58	723	0.080	59	0.2	0.1	6.231	A
		2	1	(D,A,B,C)	263			263	0.0	0.0	0.000	A
	Exit	1	1		297			297	0.0	0.0	0.000	A
D	Entry	1	1	A,B	980	1526	0.642	982	4.5	1.9	7.461	A
			2	D,C	203	1526	0.133	203	0.3	0.1	2.869	A
	Exit	1	1		1255			1255	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 8 - Dev Scenario 1 AM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 8\ARCADY\Issue 2
Report generation date: 25/10/2016 14:51:58

«M20 Junction 8 - Dev Scenario 1, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 8 [Lane Simulation] - Dev Scenario 1			
Arm A	2.0	5.08		A
Arm B	0.7	6.02		A
Arm C	2.2	14.96		B
Arm D	73.1	120.15		F

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

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

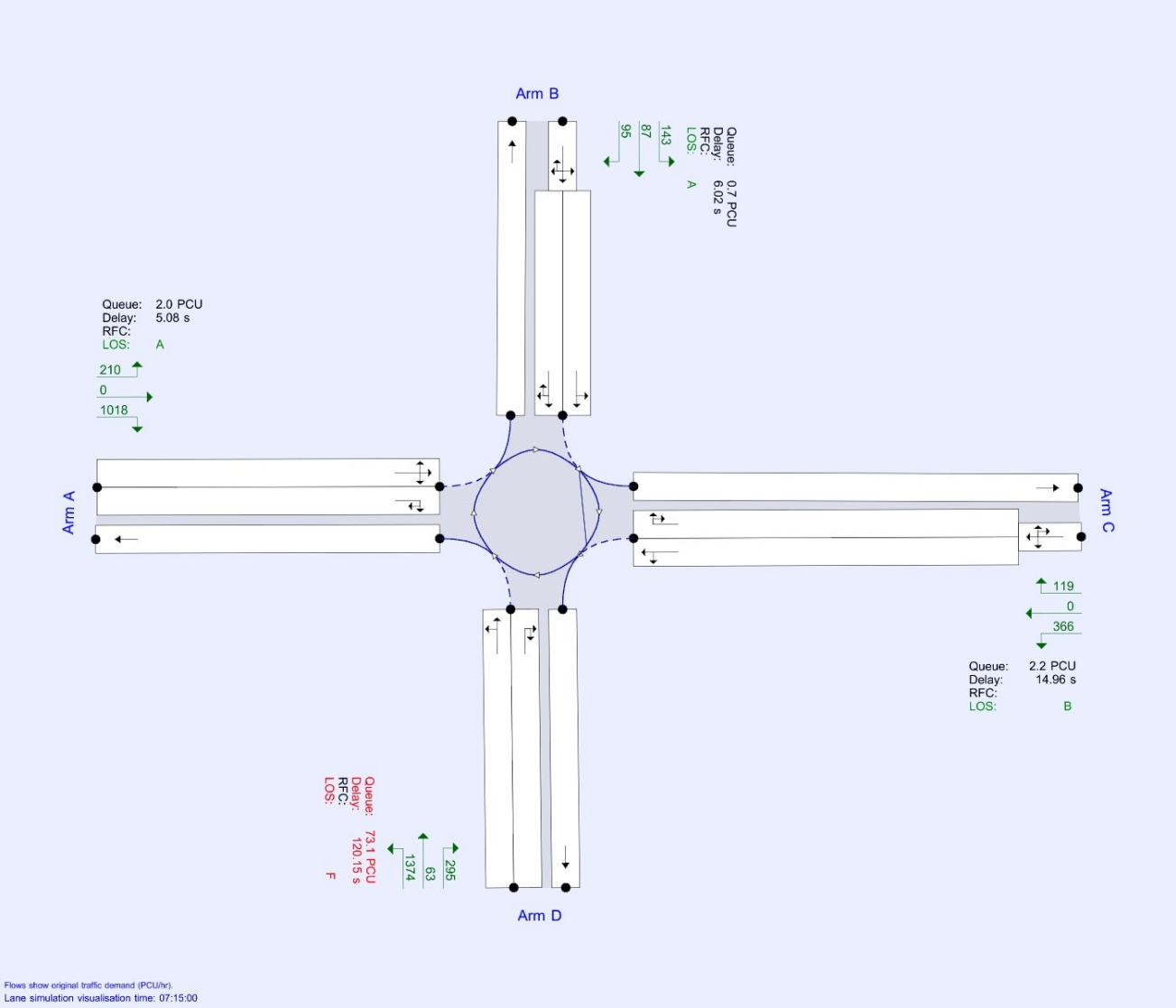
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	939218733	686	132.42

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 8	✓	✓	100.000	100.000

M20 Junction 8 - Dev Scenario 1, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 8 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 8	Large Roundabout	A,B,C,D	59.26	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	M20 West	
B	Service Station North	
C	M20 East	
D	A20 Link Road South	

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
A	7.80	7.90	2.0	45.0	170.0	12.0	
B	5.50	10.75	12.0	26.3	170.0	7.5	
C	6.00	6.50	22.0	41.4	170.0	14.0	
D	7.30	8.25	5.1	32.7	170.0	14.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	477	122.00
B	1313	0.00
C	1200	125.50
D	214	81.40

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.154	3101
B	0.950	3105
C	0.874	2438
D	1.196	3212

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	D,B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,C	✓	7.00	0	99999
		2	D,A,B	✓	7.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	12.00	0	99999
		2	B,C	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
D	1 [Give-way line]	1	A,B		Infinity	0	99999
		2	D,C		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.577	1550
		2	0.577	1550
B	1 [Give-way line]	1	0.475	1552
		2	0.475	1552
C	1 [Give-way line]	1	0.437	1219
		2	0.437	1219
D	1 [Give-way line]	1	0.598	1606
		2	0.598	1606

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓			✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	Dev Scenario 1	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1228	100.000
B		ONE HOUR	✓	325	100.000
C		ONE HOUR	✓	485	100.000
D		ONE HOUR	✓	1732	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	210	0	1018
	B	95	0	143	87
	C	0	119	0	366
	D	1374	63	295	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.17	0.00	0.83
	B	0.29	0.00	0.44	0.27
	C	0.00	0.25	0.00	0.75
	D	0.79	0.04	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	8
	B	21	0	17	14
	C	0	20	0	5
	D	4	15	4	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.200	1.000	1.080
	B	1.210	1.000	1.170	1.140
	C	1.000	1.200	1.000	1.050
	D	1.040	1.150	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	925	925
	B	245	245
	C	365	365
	D	1304	1304
07:30-07:45	A	1104	1104
	B	292	292
	C	436	436
	D	1557	1557
07:45-08:00	A	1352	1352
	B	358	358
	C	534	534
	D	1907	1907
08:00-08:15	A	1352	1352
	B	358	358
	C	534	534
	D	1907	1907
08:15-08:30	A	1104	1104
	B	292	292
	C	436	436
	D	1557	1557
08:30-08:45	A	925	925
	B	245	245
	C	365	365
	D	1304	1304

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.08	2.0	A	1126	1688
B	6.02	0.7	A	298	447
C	14.96	2.2	B	446	670
D	120.15	73.1	F	1587	2381

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	918	229	361	917	1109	0.0	1.0	3.549	A
B	244	61	985	244	293	0.0	0.3	4.064	A
C	364	91	900	363	329	0.0	0.7	6.329	A
D	1305	326	162	1308	1102	0.0	2.9	7.535	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1097	274	428	1095	1315	1.0	1.4	4.080	A
B	290	72	1171	290	353	0.3	0.4	4.823	A
C	440	110	1068	441	392	0.7	1.1	8.736	A
D	1549	387	194	1549	1315	2.9	7.2	15.085	C

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1359	340	520	1360	1501	1.4	1.9	4.990	A
B	359	90	1446	358	434	0.4	0.7	5.857	A
C	538	135	1326	540	478	1.1	2.2	14.306	B
D	1901	475	239	1782	1627	7.2	43.1	56.677	F

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1352	338	525	1353	1499	1.9	2.0	5.081	A
B	355	89	1445	356	433	0.7	0.6	6.024	A
C	532	133	1316	534	486	2.2	2.0	14.960	B
D	1911	478	236	1787	1614	43.1	73.1	120.154	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1104	276	435	1103	1444	2.0	1.4	4.186	A
B	296	74	1181	295	357	0.6	0.5	5.041	A
C	437	109	1078	436	397	2.0	1.1	9.395	A
D	1555	389	193	1686	1321	73.1	34.8	108.336	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	924	231	358	926	1146	1.4	0.9	3.672	A
B	246	62	988	246	296	0.5	0.3	4.324	A
C	367	92	905	367	328	1.1	0.7	6.907	A
D	1301	325	162	1343	1110	34.8	3.8	29.473	D

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	504	1342	0.376	504	0.0	0.5	3.709	A
			2	D,A	413	1342	0.308	413	0.0	0.4	3.360	A
	Exit	1	1		1109			1109	0.0	0.0	0.000	A
B	Entry	1	1	D,C	139	1085	0.128	139	0.0	0.2	4.095	A
			2	D,A,B	105	1085	0.097	105	0.0	0.1	4.021	A
		2	1	(D,A,B,C)	244			244	0.0	0.0	0.000	A
	Exit	1	1		293			293	0.0	0.0	0.000	A
C	Entry	1	1	D,A	273	825	0.330	273	0.0	0.5	6.535	A
			2	B,C	91	825	0.111	91	0.0	0.2	5.611	A
		2	1	(D,A,B,C)	364			364	0.0	0.0	0.000	A
	Exit	1	1		329			329	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1085	1509	0.719	1087	0.0	2.7	8.501	A
			2	D,C	221	1509	0.146	221	0.0	0.2	2.864	A
	Exit	1	1		1102			1102	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	595	1303	0.457	594	0.5	0.8	4.292	A
			2	D,A	502	1303	0.385	501	0.4	0.6	3.837	A
	Exit	1	1		1315			1315	0.0	0.0	0.000	A
B	Entry	1	1	D,C	164	996	0.165	164	0.2	0.3	4.898	A
			2	D,A,B	125	996	0.126	126	0.1	0.2	4.717	A
		2	1	(D,A,B,C)	290			290	0.0	0.0	0.002	A
	Exit	1	1		353			353	0.0	0.0	0.000	A
C	Entry	1	1	D,A	332	752	0.441	333	0.5	0.8	9.250	A
			2	B,C	108	752	0.144	108	0.2	0.3	6.918	A
		2	1	(D,A,B,C)	440			440	0.0	0.0	0.002	A
	Exit	1	1		392			392	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1286	1490	0.863	1286	2.7	7.0	17.569	C
			2	D,C	263	1490	0.176	264	0.2	0.2	3.040	A
	Exit	1	1		1315			1315	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	728	1250	0.582	728	0.8	1.1	5.249	A
			2	D,A	631	1250	0.505	631	0.6	0.8	4.702	A
	Exit	1	1		1501			1501	0.0	0.0	0.000	A
B	Entry	1	1	D,C	202	865	0.233	202	0.3	0.4	5.985	A
			2	D,A,B	157	865	0.181	156	0.2	0.3	5.671	A
		2	1	(D,A,B,C)	359			359	0.0	0.0	0.006	A
	Exit	1	1		434			434	0.0	0.0	0.000	A
C	Entry	1	1	D,A	404	639	0.633	406	0.8	1.8	15.751	C
			2	B,C	134	639	0.210	133	0.3	0.4	8.407	A
		2	1	(D,A,B,C)	538			539	0.0	0.0	0.169	A
	Exit	1	1		478			478	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1579	1463	1.079	1460	7.0	42.8	67.622	F
			2	D,C	323	1463	0.221	322	0.2	0.3	3.291	A
	Exit	1	1		1627			1627	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	724	1248	0.581	725	1.1	1.1	5.344	A
			2	D,A	628	1248	0.504	628	0.8	0.9	4.788	A
	Exit	1	1		1499			1499	0.0	0.0	0.000	A
B	Entry	1	1	D,C	203	866	0.234	203	0.4	0.4	6.177	A
			2	D,A,B	153	866	0.176	153	0.3	0.2	5.814	A
		2	1	(D,A,B,C)	355			355	0.0	0.0	0.002	A
	Exit	1	1		433			433	0.0	0.0	0.000	A
C	Entry	1	1	D,A	400	644	0.621	402	1.8	1.7	16.584	C
			2	B,C	133	644	0.206	133	0.4	0.3	8.695	A
		2	1	(D,A,B,C)	532			533	0.0	0.0	0.133	A
	Exit	1	1		486			486	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1585	1465	1.082	1461	42.8	72.8	144.311	F
			2	D,C	326	1465	0.222	327	0.3	0.3	3.330	A
	Exit	1	1		1614			1614	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	600	1300	0.462	600	1.1	0.8	4.388	A
			2	D,A	503	1300	0.387	503	0.9	0.6	3.953	A
	Exit	1	1		1444			1444	0.0	0.0	0.000	A
B	Entry	1	1	D,C	168	991	0.169	167	0.4	0.3	5.082	A
			2	D,A,B	128	991	0.129	127	0.2	0.2	4.984	A
		2	1	(D,A,B,C)	296			296	0.0	0.0	0.000	A
	Exit	1	1		357			357	0.0	0.0	0.000	A
C	Entry	1	1	D,A	329	747	0.441	329	1.7	0.9	10.038	B
			2	B,C	107	747	0.144	107	0.3	0.2	7.151	A
		2	1	(D,A,B,C)	437			437	0.0	0.0	0.005	A
	Exit	1	1		397			397	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1288	1490	0.864	1419	72.8	34.6	130.091	F
			2	D,C	266	1490	0.179	266	0.3	0.2	3.069	A
	Exit	1	1		1321			1321	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	508	1344	0.378	509	0.8	0.5	3.838	A
			2	D,A	416	1344	0.309	417	0.6	0.4	3.476	A
	Exit	1	1		1146			1146	0.0	0.0	0.000	A
B	Entry	1	1	D,C	141	1083	0.130	141	0.3	0.2	4.363	A
			2	D,A,B	105	1083	0.097	105	0.2	0.1	4.271	A
		2	1	(D,A,B,C)	246			246	0.0	0.0	0.000	A
	Exit	1	1		296			296	0.0	0.0	0.000	A
C	Entry	1	1	D,A	276	823	0.336	276	0.9	0.5	7.127	A
			2	B,C	91	823	0.110	91	0.2	0.2	6.138	A
		2	1	(D,A,B,C)	367			367	0.0	0.0	0.000	A
	Exit	1	1		328			328	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1081	1509	0.716	1124	34.6	3.6	34.969	D
			2	D,C	220	1509	0.146	219	0.2	0.2	2.885	A
	Exit	1	1		1110			1110	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 8 - Dev Scenario 1 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 8\ARCADY\Issue 2
Report generation date: 25/10/2016 14:56:51

«M20 Junction 8 - Dev Scenario 1, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 8 [Lane Simulation] - Dev Scenario 1			
Arm A	2.6	5.52		A
Arm B	0.8	7.73		A
Arm C	2.1	17.20		C
Arm D	21.1	41.43		E

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

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

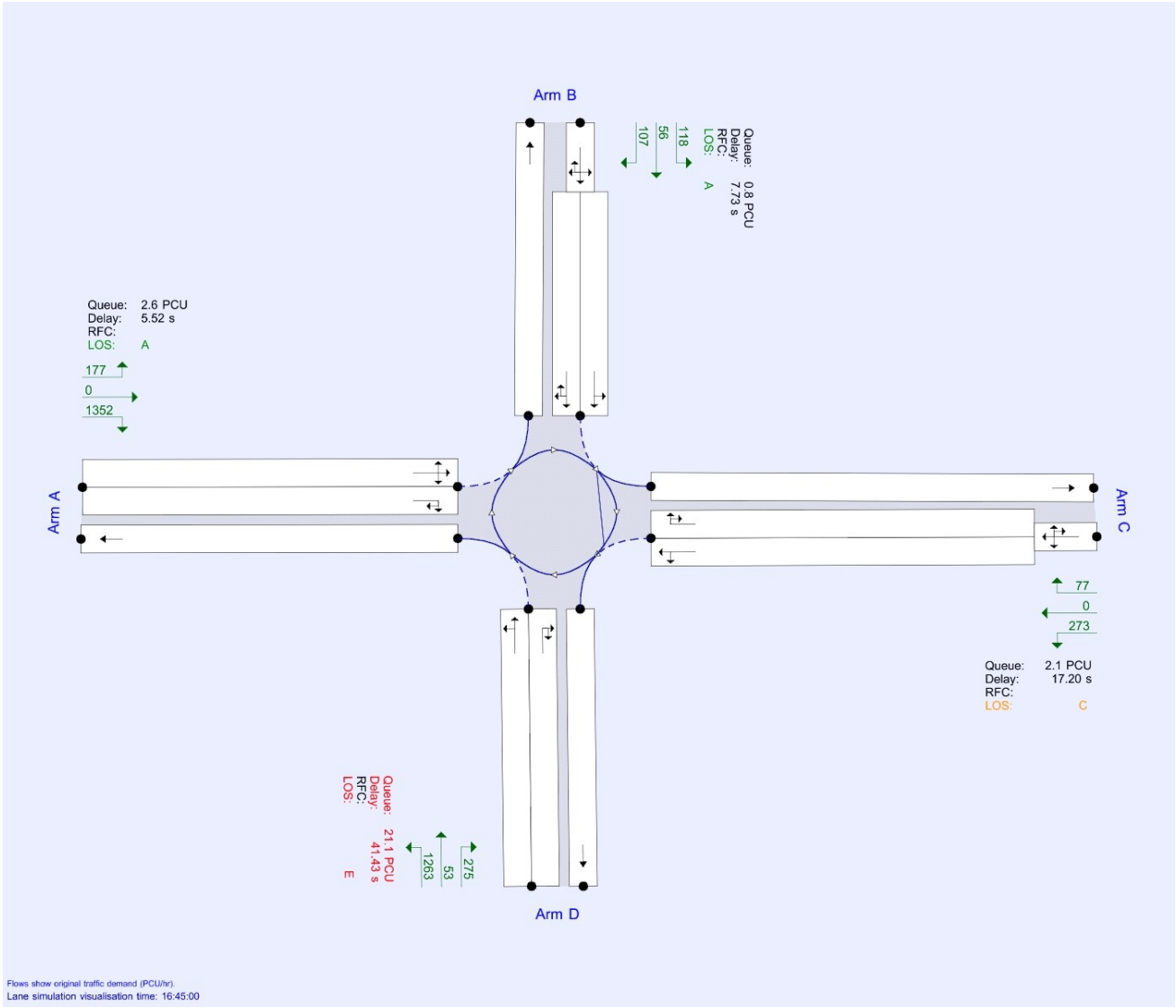
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	2025209267	235	45.63

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 8	✓	✓	100.000	100.000

M20 Junction 8 - Dev Scenario 1, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 8 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 8	Large Roundabout	A,B,C,D	21.98	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	M20 West	
B	Service Station North	
C	M20 East	
D	A20 Link Road South	

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
A	7.80	7.90	2.0	45.0	170.0	12.0	
B	5.50	10.75	12.0	26.3	170.0	7.5	
C	6.00	6.50	22.0	41.4	170.0	14.0	
D	7.30	8.25	5.1	32.7	170.0	14.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	405	122.00
B	1627	36.50
C	1515	125.50
D	184	81.40

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.170	3118
B	0.881	2953
C	0.812	2364
D	1.202	3219

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	D,B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,C	✓	7.00	0	99999
		2	D,A,B	✓	7.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	12.00	0	99999
		2	B,C	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
D	1 [Give-way line]	1	A,B		Infinity	0	99999
		2	D,C		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.585	1559
		2	0.585	1559
B	1 [Give-way line]	1	0.440	1477
		2	0.440	1477
C	1 [Give-way line]	1	0.406	1182
		2	0.406	1182
D	1 [Give-way line]	1	0.601	1610
		2	0.601	1610

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓			✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	Dev Scenario 1	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1529	100.000
B		ONE HOUR	✓	281	100.000
C		ONE HOUR	✓	350	100.000
D		ONE HOUR	✓	1591	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	177	0	1352
	B	107	0	118	56
	C	0	77	0	273
	D	1263	53	275	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.12	0.00	0.88
	B	0.38	0.00	0.42	0.20
	C	0.00	0.22	0.00	0.78
	D	0.79	0.03	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	3
	B	6	0	18	15
	C	0	11	0	2
	D	4	2	4	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.200	1.000	1.030
	B	1.060	1.000	1.180	1.150
	C	1.000	1.110	1.000	1.020
	D	1.040	1.020	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	1151	1151
	B	212	212
	C	263	263
	D	1198	1198
17:00-17:15	A	1375	1375
	B	253	253
	C	315	315
	D	1430	1430
17:15-17:30	A	1683	1683
	B	309	309
	C	385	385
	D	1752	1752
17:30-17:45	A	1683	1683
	B	309	309
	C	385	385
	D	1752	1752
17:45-18:00	A	1375	1375
	B	253	253
	C	315	315
	D	1430	1430
18:00-18:15	A	1151	1151
	B	212	212
	C	263	263
	D	1198	1198

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.52	2.6	A	1400	2100
B	7.73	0.8	A	259	388
C	17.20	2.1	C	322	483
D	41.43	21.1	E	1453	2179

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1152	288	307	1154	1027	0.0	1.1	3.514	A
B	207	52	1232	206	229	0.0	0.4	4.434	A
C	266	66	1140	267	299	0.0	0.6	6.534	A
D	1196	299	138	1196	1269	0.0	2.2	6.336	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1375	344	357	1372	1221	1.1	1.8	4.164	A
B	255	64	1463	256	266	0.4	0.4	5.569	A
C	311	78	1362	310	357	0.6	0.9	9.061	A
D	1423	356	159	1419	1514	2.2	4.0	9.488	A

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1684	421	442	1691	1477	1.8	2.6	5.444	A
B	306	76	1797	303	337	0.4	0.8	7.080	A
C	393	98	1675	393	425	0.9	2.1	17.201	C
D	1739	435	204	1715	1863	4.0	18.1	27.664	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1675	419	444	1676	1489	2.6	2.5	5.518	A
B	311	78	1774	311	346	0.8	0.8	7.731	A
C	379	95	1657	384	427	2.1	1.4	17.033	C
D	1739	435	205	1728	1837	18.1	21.1	41.433	E

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1368	342	365	1371	1242	2.5	1.5	4.276	A
B	261	65	1461	260	274	0.8	0.6	5.907	A
C	316	79	1362	319	360	1.4	0.7	10.131	B
D	1432	358	165	1442	1515	21.1	4.9	20.509	C

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1147	287	298	1147	1021	1.5	1.1	3.601	A
B	211	53	1215	210	231	0.6	0.3	4.894	A
C	266	66	1131	265	294	0.7	0.5	7.048	A
D	1187	297	132	1187	1265	4.9	2.2	6.959	A

Lane Results

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

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	610	1379	0.442	611	0.0	0.7	3.606	A
			2	D,A	542	1379	0.393	543	0.0	0.5	3.414	A
	Exit	1	1		1027			1027	0.0	0.0	0.000	A
B	Entry	1	1	D,C	108	934	0.116	107	0.0	0.2	4.574	A
			2	D,A,B	99	934	0.106	99	0.0	0.1	4.296	A
		2	1	(D,A,B,C)	207			207	0.0	0.0	0.000	A
	Exit	1	1		229			229	0.0	0.0	0.000	A
C	Entry	1	1	D,A	206	720	0.286	207	0.0	0.4	6.711	A
			2	B,C	60	720	0.083	59	0.0	0.2	5.860	A
		2	1	(D,A,B,C)	266			266	0.0	0.0	0.000	A
	Exit	1	1		299			299	0.0	0.0	0.000	A
D	Entry	1	1	A,B	986	1527	0.646	985	0.0	2.1	7.068	A
			2	D,C	210	1527	0.138	211	0.0	0.1	2.867	A
	Exit	1	1		1269			1269	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	724	1350	0.536	722	0.7	1.0	4.293	A
			2	D,A	651	1350	0.482	650	0.5	0.8	4.027	A
	Exit	1	1		1221			1221	0.0	0.0	0.000	A
B	Entry	1	1	D,C	135	832	0.162	136	0.2	0.2	5.968	A
			2	D,A,B	120	832	0.144	120	0.1	0.2	5.166	A
		2	1	(D,A,B,C)	255			255	0.0	0.0	0.000	A
	Exit	1	1		266			266	0.0	0.0	0.000	A
C	Entry	1	1	D,A	246	629	0.392	246	0.4	0.7	9.546	A
			2	B,C	64	629	0.102	64	0.2	0.2	7.089	A
		2	1	(D,A,B,C)	311			311	0.0	0.0	0.000	A
	Exit	1	1		357			357	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1174	1514	0.776	1171	2.1	3.7	10.851	B
			2	D,C	249	1514	0.165	248	0.1	0.3	3.028	A
	Exit	1	1		1514			1514	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	869	1300	0.669	873	1.0	1.4	5.628	A
			2	D,A	815	1300	0.627	818	0.8	1.2	5.255	A
	Exit	1	1		1477			1477	0.0	0.0	0.000	A
B	Entry	1	1	D,C	157	686	0.229	155	0.2	0.4	7.475	A
			2	D,A,B	148	686	0.216	147	0.2	0.4	6.689	A
		2	1	(D,A,B,C)	306			306	0.0	0.0	0.000	A
	Exit	1	1		337			337	0.0	0.0	0.000	A
C	Entry	1	1	D,A	306	503	0.608	306	0.7	1.8	18.921	C
			2	B,C	87	503	0.173	87	0.2	0.2	9.453	A
		2	1	(D,A,B,C)	393			393	0.0	0.1	0.214	A
	Exit	1	1		425			425	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1440	1487	0.968	1415	3.7	17.8	32.811	D
			2	D,C	300	1487	0.201	299	0.3	0.3	3.120	A
	Exit	1	1		1863			1863	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	867	1299	0.667	867	1.4	1.3	5.672	A
			2	D,A	809	1299	0.622	808	1.2	1.2	5.358	A
	Exit	1	1		1489			1489	0.0	0.0	0.000	A
B	Entry	1	1	D,C	161	696	0.231	160	0.4	0.5	8.236	A
			2	D,A,B	150	696	0.216	150	0.4	0.3	7.227	A
		2	1	(D,A,B,C)	311			311	0.0	0.0	0.006	A
	Exit	1	1		346			346	0.0	0.0	0.000	A
C	Entry	1	1	D,A	296	510	0.580	299	1.8	1.2	18.544	C
			2	B,C	84	510	0.164	85	0.2	0.2	10.004	B
		2	1	(D,A,B,C)	379			379	0.1	0.0	0.319	A
	Exit	1	1		427			427	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1441	1486	0.970	1430	17.8	20.9	49.365	E
			2	D,C	298	1486	0.201	298	0.3	0.3	3.206	A
	Exit	1	1		1837			1837	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	711	1345	0.528	712	1.3	0.9	4.428	A
			2	D,A	657	1345	0.489	659	1.2	0.6	4.115	A
	Exit	1	1		1242			1242	0.0	0.0	0.000	A
B	Entry	1	1	D,C	138	833	0.166	138	0.5	0.3	6.239	A
			2	D,A,B	123	833	0.148	122	0.3	0.3	5.583	A
		2	1	(D,A,B,C)	261			261	0.0	0.0	0.000	A
	Exit	1	1		274			274	0.0	0.0	0.000	A
C	Entry	1	1	D,A	247	630	0.393	250	1.2	0.6	10.698	B
			2	B,C	69	630	0.110	69	0.2	0.2	7.917	A
		2	1	(D,A,B,C)	316			316	0.0	0.0	0.001	A
	Exit	1	1		360			360	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1184	1510	0.784	1194	20.9	4.7	24.176	C
			2	D,C	248	1510	0.164	248	0.3	0.2	2.938	A
	Exit	1	1		1515			1515	0.0	0.0	0.000	A

18:00 - 18:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	601	1384	0.434	602	0.9	0.6	3.740	A
			2	D,A	545	1384	0.394	546	0.6	0.5	3.452	A
	Exit	1	1		1021			1021	0.0	0.0	0.000	A
B	Entry	1	1	D,C	113	942	0.120	113	0.3	0.2	5.204	A
			2	D,A,B	97	942	0.103	97	0.3	0.1	4.585	A
		2	1	(D,A,B,C)	211			211	0.0	0.0	0.000	A
	Exit	1	1		231			231	0.0	0.0	0.000	A
C	Entry	1	1	D,A	211	723	0.292	211	0.6	0.4	7.261	A
			2	B,C	54	723	0.075	54	0.2	0.1	6.186	A
		2	1	(D,A,B,C)	266			266	0.0	0.0	0.000	A
	Exit	1	1		294			294	0.0	0.0	0.000	A
D	Entry	1	1	A,B	984	1530	0.643	984	4.7	2.0	7.827	A
			2	D,C	203	1530	0.133	203	0.2	0.1	2.836	A
	Exit	1	1		1265			1265	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Report generation date: 25/10/2016 14:59:53

«M20 Junction 8 - Dev Scenario 2, AM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 8 [Lane Simulation] - Dev Scenario 2			
Arm A	2.3	5.19		A
Arm B	0.6	6.21		A
Arm C	2.5	16.71		C
Arm D	83.7	135.68		F

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

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

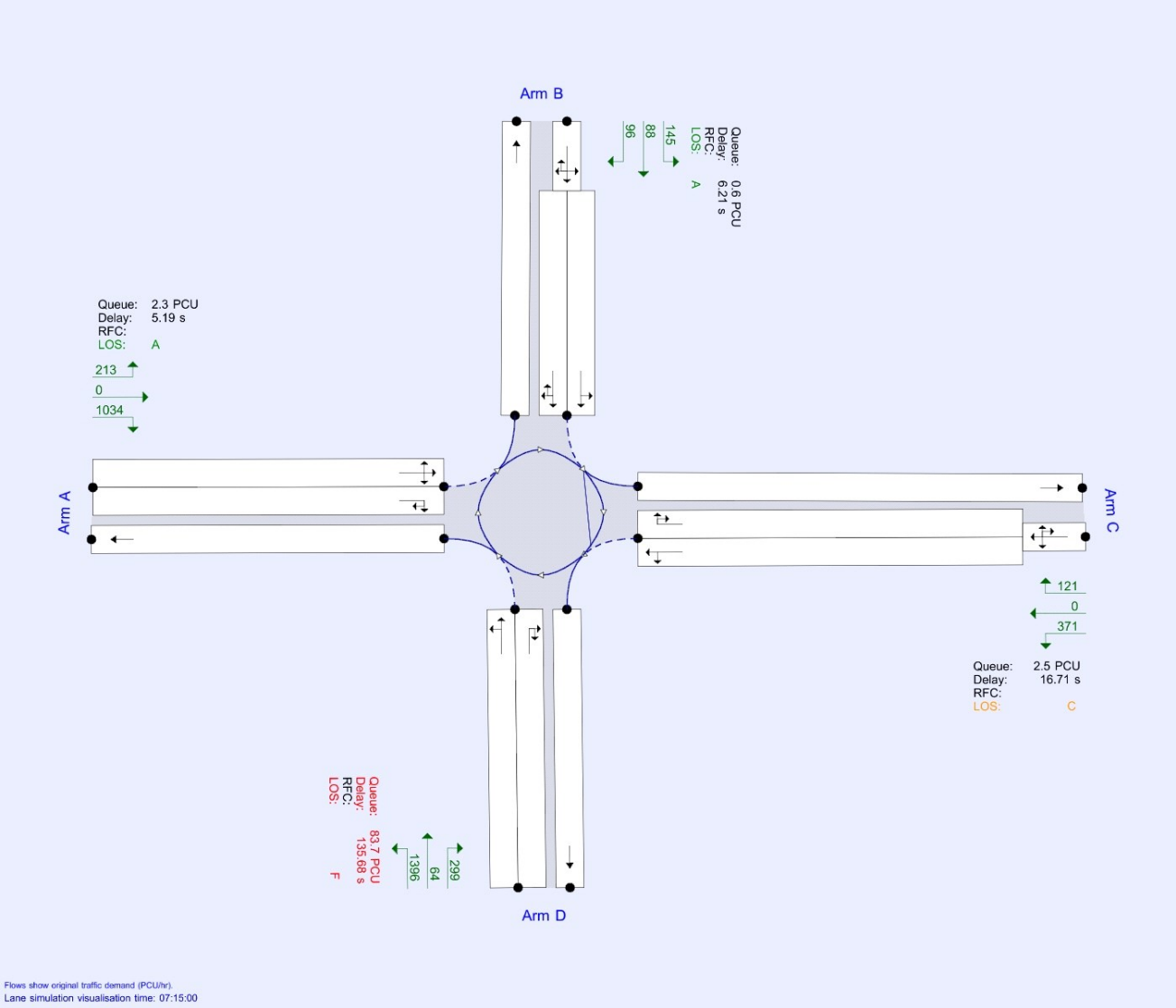
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1911330742	398	80.48

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 8	✓	✓	100.000	100.000

M20 Junction 8 - Dev Scenario 2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 8 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 8	Large Roundabout	A,B,C,D	66.60	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	M20 West	
B	Service Station North	
C	M20 East	
D	A20 Link Road South	

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
A	7.80	7.90	2.0	45.0	170.0	12.0	
B	5.50	10.75	12.0	26.3	170.0	7.5	
C	6.00	6.50	22.0	41.4	170.0	14.0	
D	7.30	8.25	5.1	32.7	170.0	14.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	484	122.00
B	1333	0.00
C	1218	125.50
D	217	77.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.153	3099
B	0.946	3100
C	0.871	2433
D	1.195	3221

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	D,B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,C	✓	7.00	0	99999
		2	D,A,B	✓	7.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	12.00	0	99999
		2	B,C	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
D	1 [Give-way line]	1	A,B		Infinity	0	99999
		2	D,C		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.576	1550
		2	0.576	1550
B	1 [Give-way line]	1	0.473	1550
		2	0.473	1550
C	1 [Give-way line]	1	0.435	1217
		2	0.435	1217
D	1 [Give-way line]	1	0.598	1610
		2	0.598	1610

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓			✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	Dev Scenario 2	AM	ONE HOUR	07:15	08:45	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1247	100.000
B		ONE HOUR	✓	329	100.000
C		ONE HOUR	✓	492	100.000
D		ONE HOUR	✓	1759	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	213	0	1034
	B	96	0	145	88
	C	0	121	0	371
	D	1396	64	299	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.17	0.00	0.83
	B	0.29	0.00	0.44	0.27
	C	0.00	0.25	0.00	0.75
	D	0.79	0.04	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	8
	B	21	0	17	14
	C	0	20	0	5
	D	4	15	4	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.200	1.000	1.080
	B	1.210	1.000	1.170	1.140
	C	1.000	1.200	1.000	1.050
	D	1.040	1.150	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	A	939	939
	B	248	248
	C	370	370
	D	1324	1324
07:30-07:45	A	1121	1121
	B	296	296
	C	442	442
	D	1581	1581
07:45-08:00	A	1373	1373
	B	362	362
	C	542	542
	D	1937	1937
08:00-08:15	A	1373	1373
	B	362	362
	C	542	542
	D	1937	1937
08:15-08:30	A	1121	1121
	B	296	296
	C	442	442
	D	1581	1581
08:30-08:45	A	939	939
	B	248	248
	C	370	370
	D	1324	1324

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.19	2.3	A	1147	1721
B	6.21	0.6	A	305	457
C	16.71	2.5	C	453	679
D	135.68	83.7	F	1613	2420

Main Results for each time segment

07:15 - 07:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	946	237	366	945	1138	0.0	1.1	3.552	A
B	247	62	1010	247	301	0.0	0.3	4.049	A
C	374	93	925	373	332	0.0	0.7	6.271	A
D	1336	334	165	1338	1132	0.0	3.2	8.048	A

07:30 - 07:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1118	279	437	1117	1331	1.1	1.4	4.115	A
B	298	75	1197	298	357	0.3	0.4	4.852	A
C	447	112	1093	449	402	0.7	1.0	8.698	A
D	1574	394	197	1572	1346	3.2	7.6	15.788	C

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1379	345	523	1376	1502	1.4	2.3	5.172	A
B	368	92	1466	369	432	0.4	0.6	5.935	A
C	542	136	1349	540	486	1.0	2.5	14.889	B
D	1930	483	243	1782	1646	7.6	48.0	60.919	F

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1367	342	526	1370	1501	2.3	2.0	5.194	A
B	367	92	1461	367	435	0.6	0.6	6.214	A
C	546	137	1337	546	491	2.5	2.5	16.714	C
D	1932	483	240	1787	1643	48.0	83.7	135.680	F

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1128	282	445	1127	1474	2.0	1.4	4.244	A
B	298	75	1203	298	369	0.6	0.5	5.127	A
C	440	110	1098	441	403	2.5	1.1	9.743	A
D	1588	397	196	1723	1344	83.7	47.3	132.819	F

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	945	236	373	946	1186	1.4	1.0	3.724	A
B	249	62	1008	249	311	0.5	0.3	4.359	A
C	367	92	920	368	337	1.1	0.7	7.085	A
D	1319	330	164	1394	1125	47.3	6.6	44.755	E

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	518	1339	0.387	518	0.0	0.6	3.711	A
			2	D,A	428	1339	0.319	427	0.0	0.5	3.365	A
	Exit	1	1		1138			1138	0.0	0.0	0.000	A
B	Entry	1	1	D,C	139	1073	0.129	139	0.0	0.2	4.055	A
			2	D,A,B	109	1073	0.101	108	0.0	0.2	4.041	A
		2	1	(D,A,B,C)	247			247	0.0	0.0	0.000	A
	Exit	1	1		301			301	0.0	0.0	0.000	A
C	Entry	1	1	D,A	282	814	0.346	281	0.0	0.6	6.428	A
			2	B,C	92	814	0.113	92	0.0	0.2	5.725	A
		2	1	(D,A,B,C)	374			374	0.0	0.0	0.000	A
	Exit	1	1		332			332	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1111	1512	0.735	1113	0.0	3.1	9.108	A
			2	D,C	225	1512	0.149	226	0.0	0.2	2.875	A
	Exit	1	1		1132			1132	0.0	0.0	0.000	A

07:30 - 07:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	609	1298	0.469	609	0.6	0.8	4.322	A
			2	D,A	509	1298	0.392	508	0.5	0.6	3.878	A
	Exit	1	1		1331			1331	0.0	0.0	0.000	A
B	Entry	1	1	D,C	171	984	0.174	171	0.2	0.3	4.870	A
			2	D,A,B	127	984	0.129	127	0.2	0.2	4.823	A
		2	1	(D,A,B,C)	298			298	0.0	0.0	0.002	A
	Exit	1	1		357			357	0.0	0.0	0.000	A
C	Entry	1	1	D,A	335	741	0.452	337	0.6	0.8	9.197	A
			2	B,C	113	741	0.152	112	0.2	0.2	6.982	A
		2	1	(D,A,B,C)	447			447	0.0	0.0	0.004	A
	Exit	1	1		402			402	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1306	1493	0.875	1303	3.1	7.4	18.409	C
			2	D,C	268	1493	0.180	269	0.2	0.2	3.044	A
	Exit	1	1		1346			1346	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	743	1248	0.595	742	0.8	1.3	5.434	A
			2	D,A	636	1248	0.509	634	0.6	1.1	4.879	A
	Exit	1	1		1502			1502	0.0	0.0	0.000	A
B	Entry	1	1	D,C	207	857	0.241	208	0.3	0.3	6.041	A
			2	D,A,B	161	857	0.188	161	0.2	0.3	5.774	A
		2	1	(D,A,B,C)	368			368	0.0	0.0	0.009	A
	Exit	1	1		432			432	0.0	0.0	0.000	A
C	Entry	1	1	D,A	407	629	0.647	405	0.8	2.1	16.392	C
			2	B,C	135	629	0.215	134	0.2	0.4	8.840	A
		2	1	(D,A,B,C)	542			543	0.0	0.0	0.184	A
	Exit	1	1		486			486	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1604	1465	1.095	1456	7.4	47.7	72.835	F
			2	D,C	327	1465	0.223	326	0.2	0.3	3.290	A
	Exit	1	1		1646			1646	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	729	1246	0.585	730	1.3	1.2	5.470	A
			2	D,A	639	1246	0.512	640	1.1	0.8	4.891	A
	Exit	1	1		1501			1501	0.0	0.0	0.000	A
B	Entry	1	1	D,C	208	859	0.243	209	0.3	0.3	6.479	A
			2	D,A,B	159	859	0.185	158	0.3	0.3	5.817	A
		2	1	(D,A,B,C)	367			367	0.0	0.0	0.016	A
	Exit	1	1		435			435	0.0	0.0	0.000	A
C	Entry	1	1	D,A	412	635	0.649	412	2.1	2.1	18.442	C
			2	B,C	134	635	0.211	133	0.4	0.4	9.059	A
		2	1	(D,A,B,C)	546			546	0.0	0.0	0.344	A
	Exit	1	1		491			491	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1604	1467	1.093	1460	47.7	83.4	162.910	F
			2	D,C	327	1467	0.223	327	0.3	0.3	3.358	A
	Exit	1	1		1643			1643	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	615	1293	0.475	614	1.2	0.8	4.448	A
			2	D,A	513	1293	0.397	513	0.8	0.6	4.008	A
	Exit	1	1		1474			1474	0.0	0.0	0.000	A
B	Entry	1	1	D,C	169	981	0.172	169	0.3	0.3	5.227	A
			2	D,A,B	129	981	0.132	129	0.3	0.2	4.991	A
		2	1	(D,A,B,C)	298			298	0.0	0.0	0.000	A
	Exit	1	1		369			369	0.0	0.0	0.000	A
C	Entry	1	1	D,A	330	738	0.447	331	2.1	0.8	10.486	B
			2	B,C	110	738	0.149	110	0.4	0.3	7.168	A
		2	1	(D,A,B,C)	440			440	0.0	0.0	0.025	A
	Exit	1	1		403			403	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1318	1493	0.882	1452	83.4	47.1	159.440	F
			2	D,C	270	1493	0.181	271	0.3	0.2	3.055	A
	Exit	1	1		1344			1344	0.0	0.0	0.000	A

08:30 - 08:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	517	1335	0.387	517	0.8	0.6	3.904	A
			2	D,A	429	1335	0.321	429	0.6	0.5	3.511	A
	Exit	1	1		1186			1186	0.0	0.0	0.000	A
B	Entry	1	1	D,C	142	1073	0.132	142	0.3	0.2	4.400	A
			2	D,A,B	107	1073	0.099	107	0.2	0.1	4.304	A
		2	1	(D,A,B,C)	249			249	0.0	0.0	0.000	A
	Exit	1	1		311			311	0.0	0.0	0.000	A
C	Entry	1	1	D,A	276	816	0.339	277	0.8	0.6	7.323	A
			2	B,C	91	816	0.111	92	0.3	0.2	6.253	A
		2	1	(D,A,B,C)	367			367	0.0	0.0	0.000	A
	Exit	1	1		337			337	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1092	1513	0.722	1168	47.1	6.4	53.486	F
			2	D,C	227	1513	0.150	227	0.2	0.2	2.998	A
	Exit	1	1		1125			1125	0.0	0.0	0.000	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 8 - Dev Scenario 2 PM.j9
Path: P:\Southampton\ITW\Projects\344395 Maidstone BC Transport Planning\M20 Junctions\Junction 8\ARCADY\Issue 2
Report generation date: 25/10/2016 15:02:25

«M20 Junction 8 - Dev Scenario 2, PM
»Junction Network
»Arms
»Traffic Demand
»Origin-Destination Data
»Vehicle Mix
»Detailed Demand Data
»Results
»Lane Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 8 [Lane Simulation] - Dev Scenario 2			
Arm A	2.8	5.77		A
Arm B	0.7	7.70		A
Arm C	2.2	18.66		C
Arm D	28.4	50.82		F

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

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

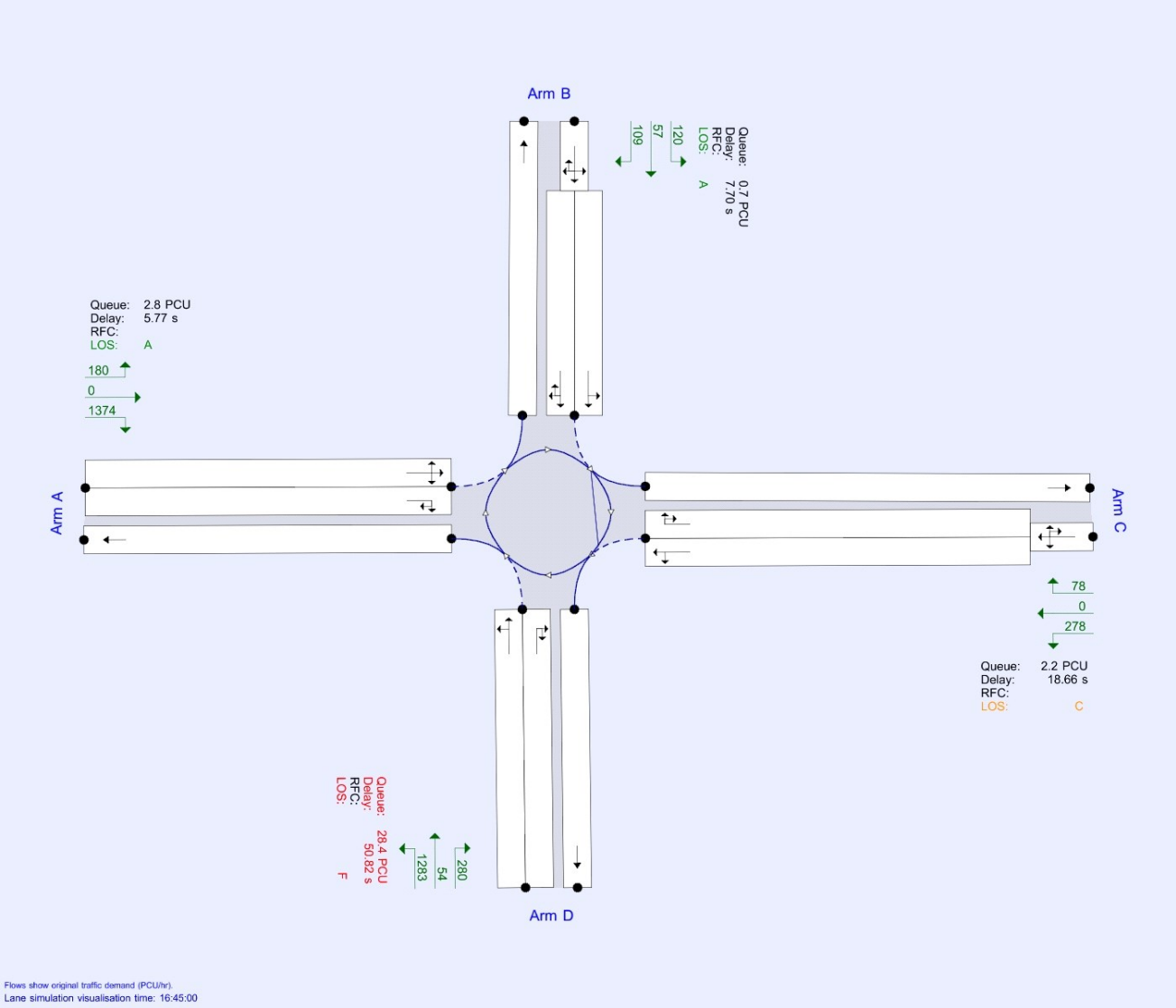
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1398134523	334	66.79

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 8	✓	✓	100.000	100.000

M20 Junction 8 - Dev Scenario 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 8 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 8	Large Roundabout	A,B,C,D	26.19	D

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
A	M20 West	
B	Service Station North	
C	M20 East	
D	A20 Link Road South	

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
A	7.80	7.90	2.0	45.0	170.0	12.0	
B	5.50	10.75	12.0	26.3	170.0	7.5	
C	6.00	6.50	22.0	41.4	170.0	14.0	
D	7.30	8.25	5.1	32.7	170.0	14.5	

Large Roundabout Data

Arm	Circulating flow (PCU/hr)	Entry-to-exit separation (m)
A	412	122.00
B	1654	36.50
C	1540	125.50
D	187	77.00

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
A	1.169	3116
B	0.875	2947
C	0.807	2359
D	1.202	3228

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

Lane Simulation: Arm options

Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
A	Evenly split	10.00
B	Evenly split	10.00
C	Evenly split	10.00
D	Evenly split	10.00

Lanes

Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
A	1 [Give-way line]	1	D,B,C		Infinity	0	99999
		2	D,A		Infinity	0	99999
B	1 [Give-way line]	1	D,C	✓	7.00	0	99999
		2	D,A,B	✓	7.00	0	99999
	2	1	(D,A,B,C)		Infinity		
C	1 [Give-way line]	1	D,A	✓	12.00	0	99999
		2	B,C	✓	12.00	0	99999
	2	1	(D,A,B,C)		Infinity		
D	1 [Give-way line]	1	A,B		Infinity	0	99999
		2	D,C		Infinity	0	99999

Entry Lane slope and intercept

Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
A	1 [Give-way line]	1	0.584	1558
		2	0.584	1558
B	1 [Give-way line]	1	0.437	1473
		2	0.437	1473
C	1 [Give-way line]	1	0.403	1179
		2	0.403	1179
D	1 [Give-way line]	1	0.601	1614
		2	0.601	1614

Lane Movements

Arm	Lane Level	Lane	Destination arm			
			D	A	B	C
D	1 [Give-way line]	1		✓	✓	
		2	✓			✓
A	1 [Give-way line]	1	✓		✓	✓
		2	✓	✓		
B	1 [Give-way line]	1	✓			✓
		2	✓	✓	✓	
	2	1	✓	✓	✓	✓
C	1 [Give-way line]	1	✓	✓		
		2			✓	✓
	2	1	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	Dev Scenario 2	PM	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		ONE HOUR	✓	1554	100.000
B		ONE HOUR	✓	286	100.000
C		ONE HOUR	✓	356	100.000
D		ONE HOUR	✓	1617	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	0	180	0	1374
	B	109	0	120	57
	C	0	78	0	278
	D	1283	54	280	0

Proportions

		To			
		A	B	C	D
From	A	0.00	0.12	0.00	0.88
	B	0.38	0.00	0.42	0.20
	C	0.00	0.22	0.00	0.78
	D	0.79	0.03	0.17	0.00

Vehicle Mix

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	0	20	0	3
	B	6	0	18	15
	C	0	11	0	2
	D	4	2	4	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.000	1.200	1.000	1.030
	B	1.060	1.000	1.180	1.150
	C	1.000	1.110	1.000	1.020
	D	1.040	1.020	1.040	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
16:45-17:00	A	1170	1170
	B	215	215
	C	268	268
	D	1217	1217
17:00-17:15	A	1397	1397
	B	257	257
	C	320	320
	D	1454	1454
17:15-17:30	A	1711	1711
	B	315	315
	C	392	392
	D	1780	1780
17:30-17:45	A	1711	1711
	B	315	315
	C	392	392
	D	1780	1780
17:45-18:00	A	1397	1397
	B	257	257
	C	320	320
	D	1454	1454
18:00-18:15	A	1170	1170
	B	215	215
	C	268	268
	D	1217	1217

Results

Results Summary for whole modelled period

Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
A	5.77	2.8	A	1430	2145
B	7.70	0.7	A	264	396
C	18.66	2.2	C	326	489
D	50.82	28.4	F	1483	2225

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1179	295	311	1178	1050	0.0	1.3	3.540	A
B	217	54	1256	218	233	0.0	0.3	4.514	A
C	265	66	1170	266	304	0.0	0.5	6.515	A
D	1221	305	143	1218	1292	0.0	2.1	6.277	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1405	351	367	1400	1248	1.3	2.0	4.257	A
B	255	64	1487	254	280	0.3	0.5	5.555	A
C	324	81	1383	323	358	0.5	0.9	9.289	A
D	1448	362	165	1449	1541	2.1	4.4	10.470	B

17:15 - 17:30

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1712	428	453	1712	1496	2.0	2.8	5.671	A
B	313	78	1818	315	347	0.5	0.6	7.267	A
C	389	97	1695	388	438	0.9	2.1	16.813	C
D	1782	445	208	1742	1875	4.4	19.5	29.193	D

17:30 - 17:45

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1702	426	453	1700	1513	2.8	2.8	5.770	A
B	319	80	1807	320	346	0.6	0.7	7.699	A
C	391	98	1687	390	440	2.1	2.2	18.663	C
D	1784	446	209	1758	1868	19.5	28.4	50.820	F

17:45 - 18:00

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1410	353	366	1414	1275	2.8	1.5	4.376	A
B	263	66	1501	263	280	0.7	0.5	6.017	A
C	315	79	1401	316	363	2.2	0.8	10.509	B
D	1449	362	165	1476	1552	28.4	5.8	27.099	D

18:00 - 18:15

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	1172	293	311	1172	1042	1.5	1.2	3.627	A
B	215	54	1245	214	238	0.5	0.3	4.871	A
C	275	69	1157	274	303	0.8	0.6	7.415	A
D	1215	304	141	1212	1290	5.8	2.3	7.278	A

Lane Results

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

Lanes: Main Results for each time segment

16:45 - 17:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	625	1376	0.454	625	0.0	0.7	3.625	A
			2	D,A	555	1376	0.403	553	0.0	0.7	3.449	A
	Exit	1	1		1050			1050	0.0	0.0	0.000	A
B	Entry	1	1	D,C	110	924	0.119	110	0.0	0.2	4.769	A
			2	D,A,B	107	924	0.116	108	0.0	0.1	4.268	A
		2	1	(D,A,B,C)	217			217	0.0	0.0	0.000	A
	Exit	1	1		233			233	0.0	0.0	0.000	A
C	Entry	1	1	D,A	209	708	0.295	209	0.0	0.4	6.763	A
			2	B,C	56	708	0.079	57	0.0	0.1	5.553	A
		2	1	(D,A,B,C)	265			265	0.0	0.0	0.000	A
	Exit	1	1		304			304	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1007	1528	0.659	1005	0.0	2.0	7.019	A
			2	D,C	214	1528	0.140	214	0.0	0.2	2.795	A
	Exit	1	1		1292			1292	0.0	0.0	0.000	A

17:00 - 17:15

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	740	1344	0.551	739	0.7	1.0	4.375	A
			2	D,A	665	1344	0.495	662	0.7	1.0	4.131	A
	Exit	1	1		1248			1248	0.0	0.0	0.000	A
B	Entry	1	1	D,C	132	823	0.160	132	0.2	0.3	5.775	A
			2	D,A,B	123	823	0.149	123	0.1	0.2	5.337	A
		2	1	(D,A,B,C)	255			255	0.0	0.0	0.000	A
	Exit	1	1		280			280	0.0	0.0	0.000	A
C	Entry	1	1	D,A	254	621	0.409	254	0.4	0.7	9.866	A
			2	B,C	69	621	0.111	68	0.1	0.2	7.008	A
		2	1	(D,A,B,C)	324			324	0.0	0.0	0.000	A
	Exit	1	1		358			358	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1199	1515	0.792	1200	2.0	4.2	12.039	B
			2	D,C	249	1515	0.165	250	0.2	0.2	2.966	A
	Exit	1	1		1541			1541	0.0	0.0	0.000	A

17:15 - 17:30

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	882	1293	0.682	882	1.0	1.5	5.838	A
			2	D,A	830	1293	0.642	831	1.0	1.2	5.498	A
	Exit	1	1		1496			1496	0.0	0.0	0.000	A
B	Entry	1	1	D,C	161	679	0.238	162	0.3	0.4	7.669	A
			2	D,A,B	152	679	0.223	152	0.2	0.3	6.871	A
		2	1	(D,A,B,C)	313			313	0.0	0.0	0.000	A
	Exit	1	1		347			347	0.0	0.0	0.000	A
C	Entry	1	1	D,A	302	496	0.609	301	0.7	1.9	18.641	C
			2	B,C	87	496	0.175	87	0.2	0.2	9.426	A
		2	1	(D,A,B,C)	389			388	0.0	0.0	0.056	A
	Exit	1	1		438			438	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1474	1489	0.990	1433	4.2	19.3	34.663	D
			2	D,C	307	1489	0.206	308	0.2	0.3	3.126	A
	Exit	1	1		1875			1875	0.0	0.0	0.000	A

17:30 - 17:45

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	877	1293	0.679	878	1.5	1.4	5.951	A
			2	D,A	825	1293	0.638	822	1.2	1.4	5.585	A
	Exit	1	1		1513			1513	0.0	0.0	0.000	A
B	Entry	1	1	D,C	164	683	0.241	164	0.4	0.4	8.072	A
			2	D,A,B	155	683	0.227	155	0.3	0.3	7.326	A
		2	1	(D,A,B,C)	319			319	0.0	0.0	0.003	A
	Exit	1	1		346			346	0.0	0.0	0.000	A
C	Entry	1	1	D,A	304	499	0.610	304	1.9	1.9	20.748	C
			2	B,C	87	499	0.174	86	0.2	0.3	10.410	B
		2	1	(D,A,B,C)	391			391	0.0	0.0	0.069	A
	Exit	1	1		440			440	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1477	1489	0.993	1450	19.3	28.2	60.709	F
			2	D,C	307	1489	0.206	308	0.3	0.2	3.160	A
	Exit	1	1		1868			1868	0.0	0.0	0.000	A

17:45 - 18:00

Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	740	1344	0.550	742	1.4	0.8	4.502	A
			2	D,A	670	1344	0.499	672	1.4	0.7	4.243	A
	Exit	1	1		1275			1275	0.0	0.0	0.000	A
B	Entry	1	1	D,C	139	817	0.170	139	0.4	0.3	6.312	A
			2	D,A,B	125	817	0.153	125	0.3	0.2	5.715	A
		2	1	(D,A,B,C)	263			263	0.0	0.0	0.000	A
	Exit	1	1		280			280	0.0	0.0	0.000	A
C	Entry	1	1	D,A	248	614	0.403	249	1.9	0.6	11.213	B
			2	B,C	67	614	0.109	67	0.3	0.2	7.702	A
		2	1	(D,A,B,C)	315			315	0.0	0.0	0.008	A
	Exit	1	1		363			363	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1199	1515	0.792	1226	28.2	5.6	32.173	D
			2	D,C	250	1515	0.165	250	0.2	0.2	3.020	A
	Exit	1	1		1552			1552	0.0	0.0	0.000	A

18:00 - 18:15

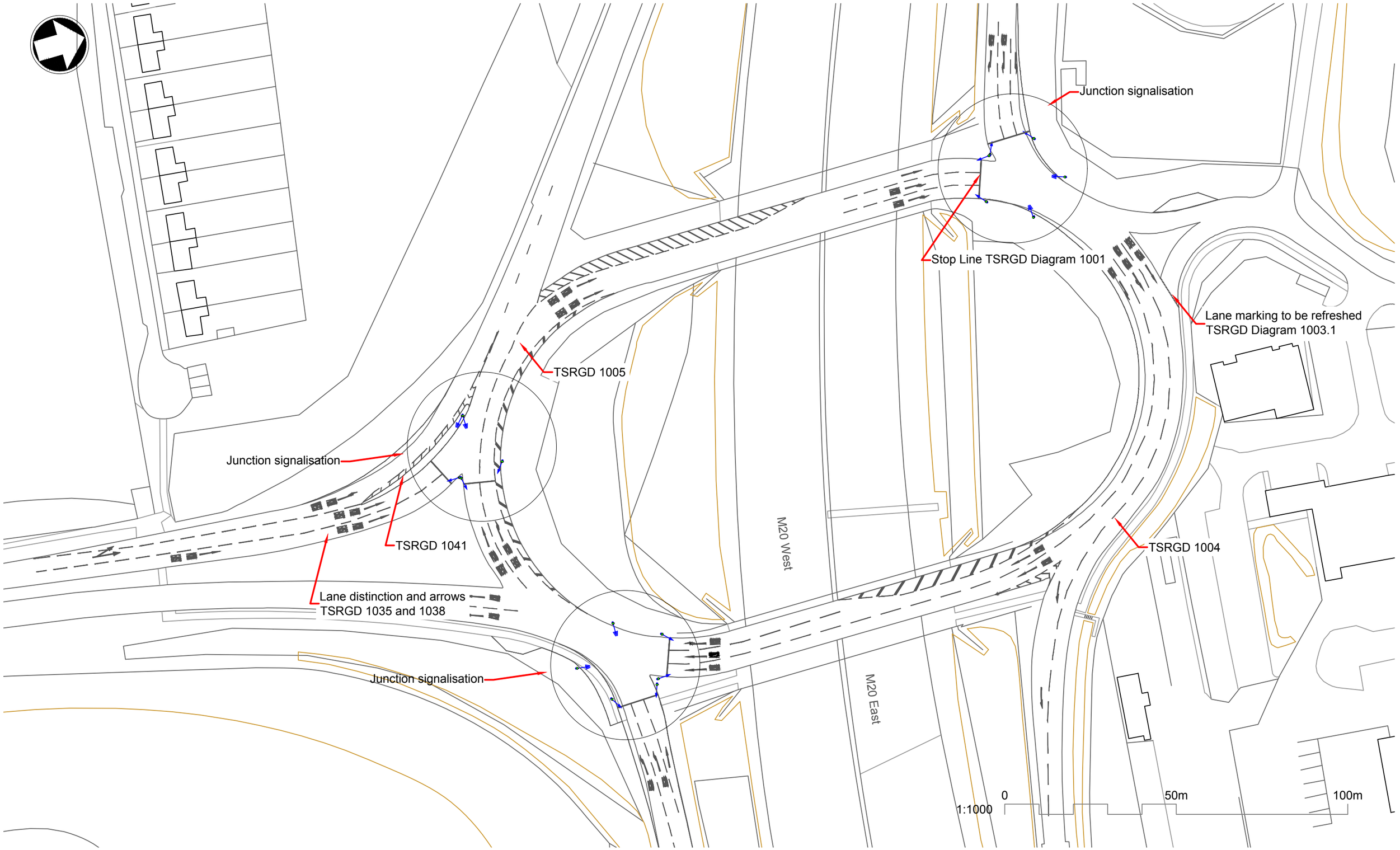
Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
A	Entry	1	1	D,B,C	624	1376	0.453	623	0.8	0.7	3.735	A
			2	D,A	548	1376	0.398	549	0.7	0.5	3.510	A
	Exit	1	1		1042			1042	0.0	0.0	0.000	A
B	Entry	1	1	D,C	112	929	0.120	112	0.3	0.2	5.107	A
			2	D,A,B	103	929	0.111	102	0.2	0.1	4.640	A
		2	1	(D,A,B,C)	215			215	0.0	0.0	0.000	A
	Exit	1	1		238			238	0.0	0.0	0.000	A
C	Entry	1	1	D,A	215	713	0.301	214	0.6	0.5	7.689	A
			2	B,C	60	713	0.084	60	0.2	0.1	6.377	A
		2	1	(D,A,B,C)	275			275	0.0	0.0	0.000	A
	Exit	1	1		303			303	0.0	0.0	0.000	A
D	Entry	1	1	A,B	1004	1529	0.656	1001	5.6	2.1	8.209	A
			2	D,C	212	1529	0.138	212	0.2	0.1	2.841	A
	Exit	1	1		1290			1290	0.0	0.0	0.000	A

E. Improved Junction Layouts

Maidstone Borough Council
Maidstone House, King Street
Maidstone, Kent
ME15 6JQ

Appendix E1:
M20 Junction 5

MOTT MACDONALD



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Appendix E2:
M20 Junction 6 (North)
Cobtree Roundabout

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Reduce extent of chevron marking
TSRGD Diagram 1040.4

Reposition existing Chevron marking
TSRGD Diagram 1040.4

Existing Road Marking to Remain

Stop Line TSRGD Diagram 1001

Junction signalisation

Insert A

See insert A

Pond

ROMAN ROAD

1:1000 0 50m 100m

1:500 0 25m 50m

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Appendix E2:
M20 Junction 6 (South)
Running Horse Roundabout

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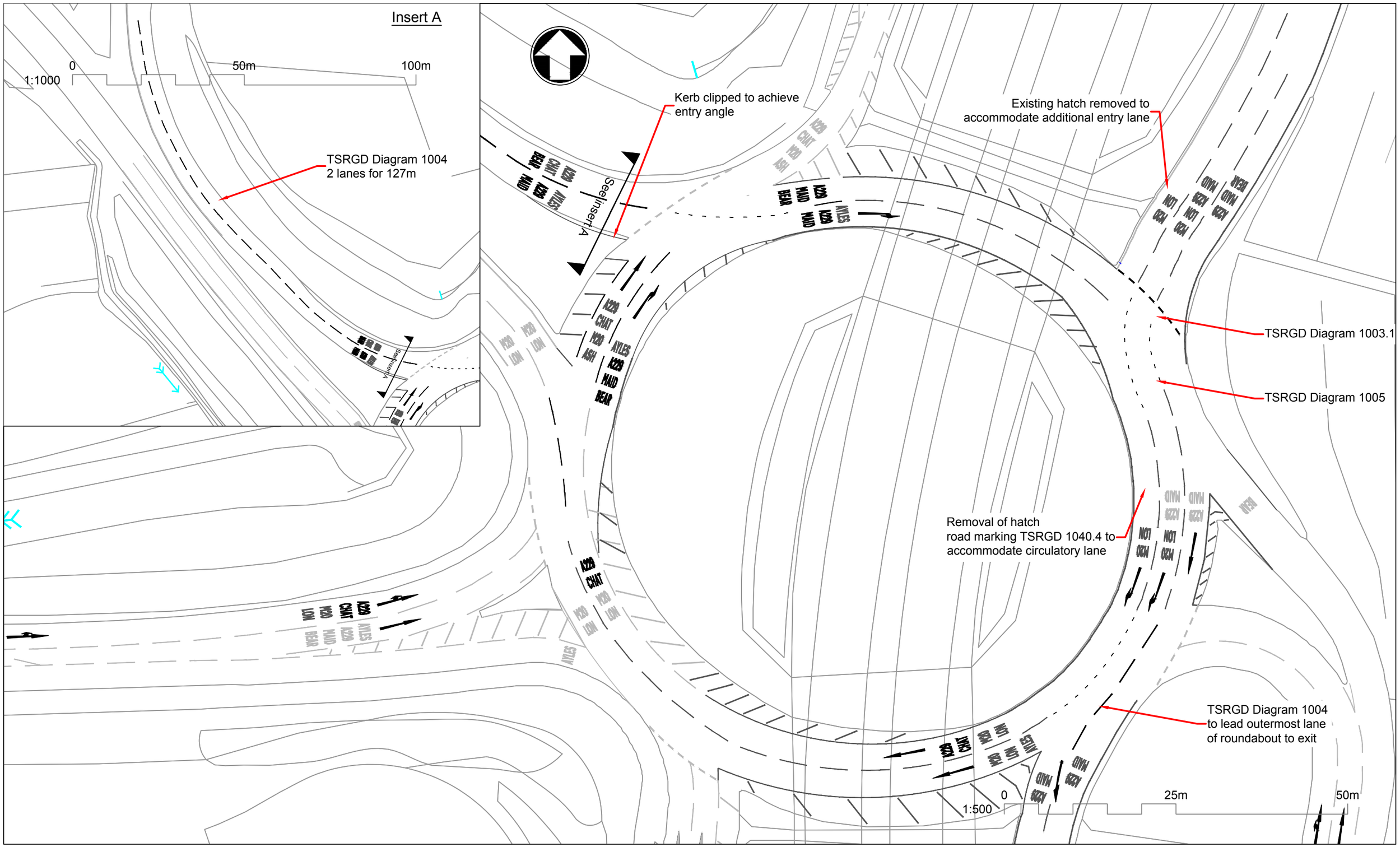

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Appendix E3:
M20 Junction 7

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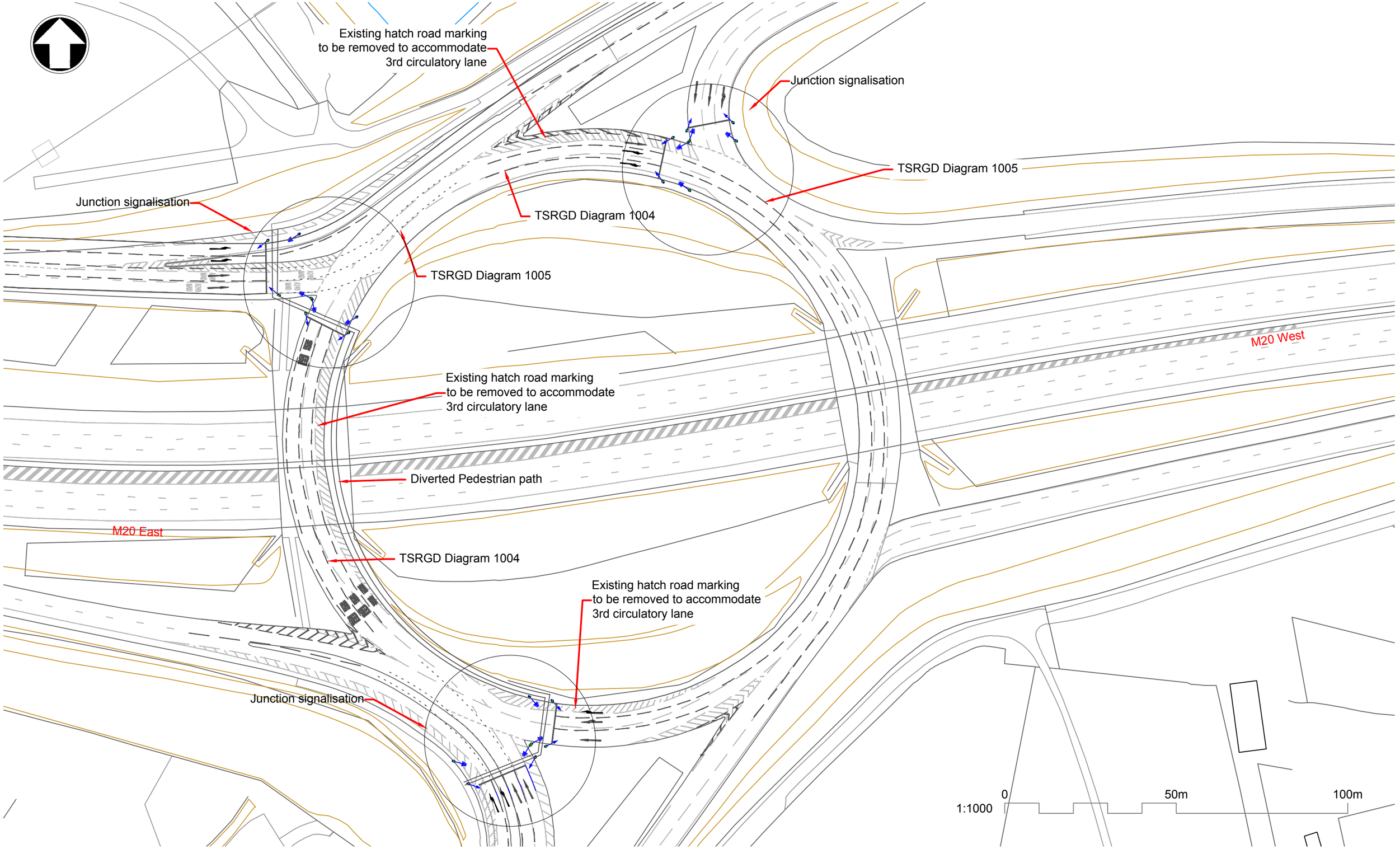

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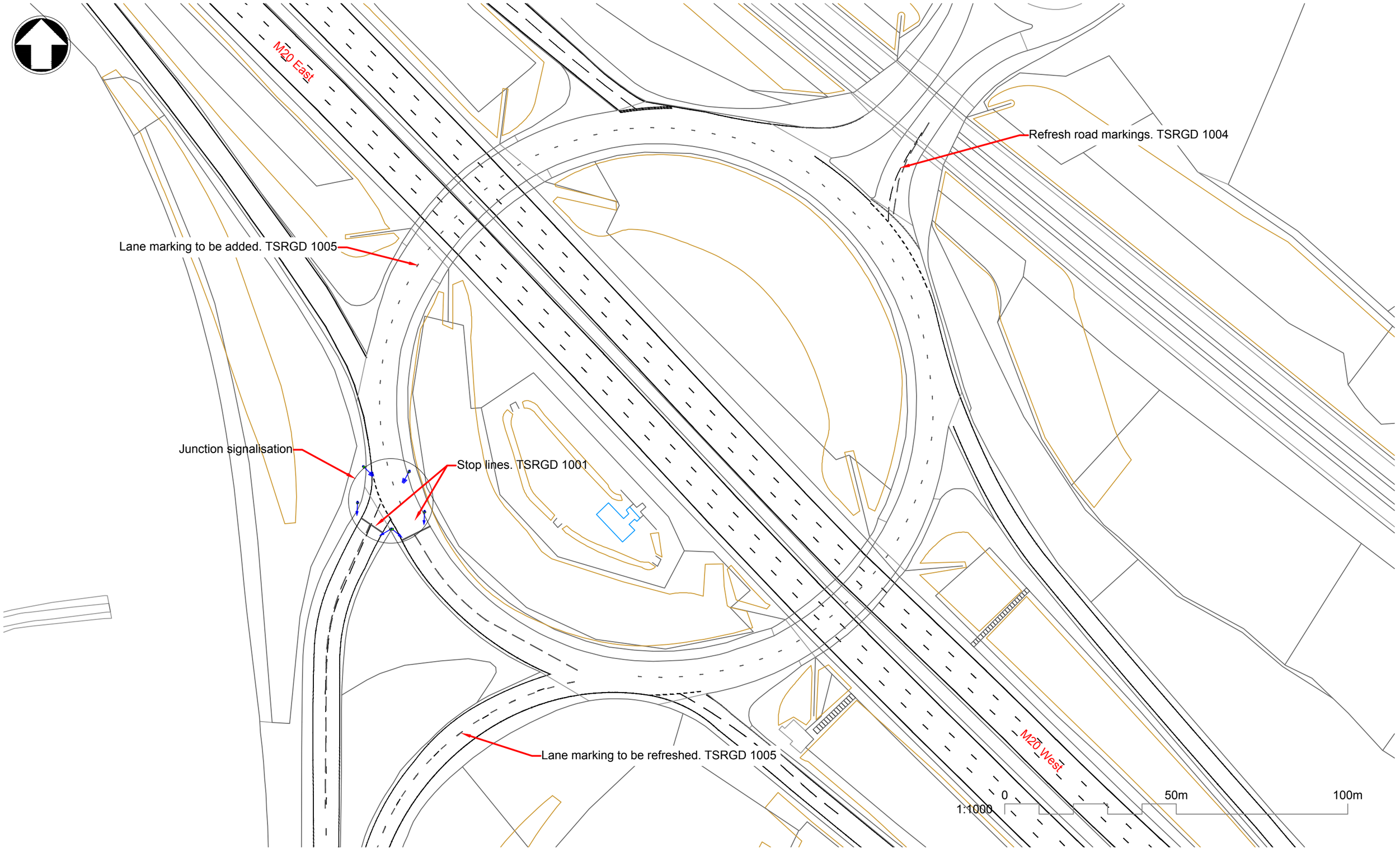
Appendix E4:
M20 Junction 8

MOTT MACDONALD



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F. Junction Improvement Modelling

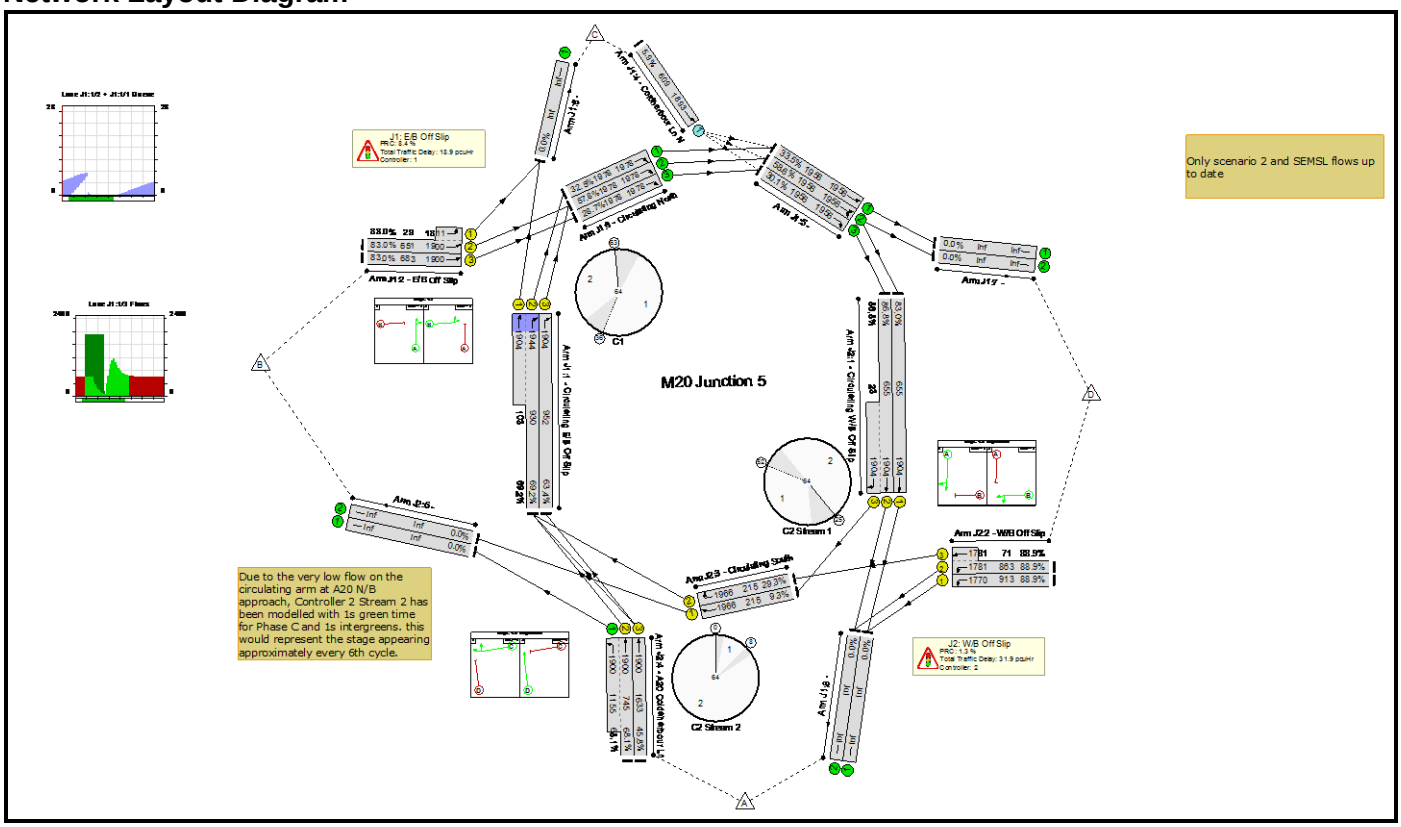
Basic Results Summary

User and Project Details

Project:	**M20 Junctions**
Title:	**M20 J5 - MM Option 1**
Location:	Maidstone
File name:	M20 J5 - MM Option1.lsg3x
Author:	David Parkin
Company:	Mott MacDonald
Address:	Southampton
Notes:	Traffic signals on N/B A20 Approach as well as slip roads.

Scenario 7: 'All Dev 2031 AM' (FG7: 'All Dev 2031 AM ', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J5 - MM Option 1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.9%**	**36**	**0**	**0**	**50.8**	**-**	**-**
J1: E/B Off Slip	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**83.0%**	**36**	**0**	**0**	**18.9**	**-**	**-**
1/2+1/1	Circulating E/B Off Slip Right Ahead	U	C1:A		1	31	-	714	1944:1904	930+103	69.2 : 69.2%	-	-	-	3.2	16.3	11.5
1/3	Circulating E/B Off Slip Right	U	C1:A		1	31	-	604	1904	952	63.4%	-	-	-	2.8	16.8	7.8
2/2+2/1	E/B Off Slip Ahead Left	U	C1:B		1	22	-	564	1900:1811	651+29	83.0 : 83.0%	-	-	-	5.3	33.6	11.3
2/3	E/B Off Slip Ahead	U	C1:B		1	22	-	567	1900	683	83.0%	-	-	-	5.3	33.7	11.5
3/1	Circulating North Right	U	-		-	-	-	643	1978	1978	32.5%	-	-	-	0.2	1.3	0.2
3/2	Circulating North Right	U	-		-	-	-	1144	1978	1978	57.8%	-	-	-	0.7	2.2	0.7
3/3	Circulating North Right	U	-		-	-	-	567	1978	1978	28.7%	-	-	-	0.2	1.3	0.2
4/1	Coldharbour Ln N Ahead	O	-		-	-	-	36	1893	609	5.9%	36	0	0	0.0	4.7	0.1
5/1	Ahead	U	-		-	-	-	655	1956	1956	33.5%	-	-	-	0.3	1.4	0.3
5/2	Right Ahead	U	-		-	-	-	1147	1956	1956	58.6%	-	-	-	0.7	2.2	0.7
5/3	Right	U	-		-	-	-	588	1956	1956	30.1%	-	-	-	0.2	1.3	0.2
J2: W/B Off Slip	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.9%**	**0**	**0**	**0**	**31.9**	**-**	**-**
1/1	Circulating W/B Off Slip Ahead	U	C2:A		1	21	-	543	1904	655	83.0%	-	-	-	7.1	47.3	12.0
1/2+1/3	Circulating W/B Off Slip Right Ahead	U	C2:A		1	21	-	588	1904:1904	655+23	86.8 : 86.8%	-	-	-	8.3	50.8	13.2

Basic Results Summary

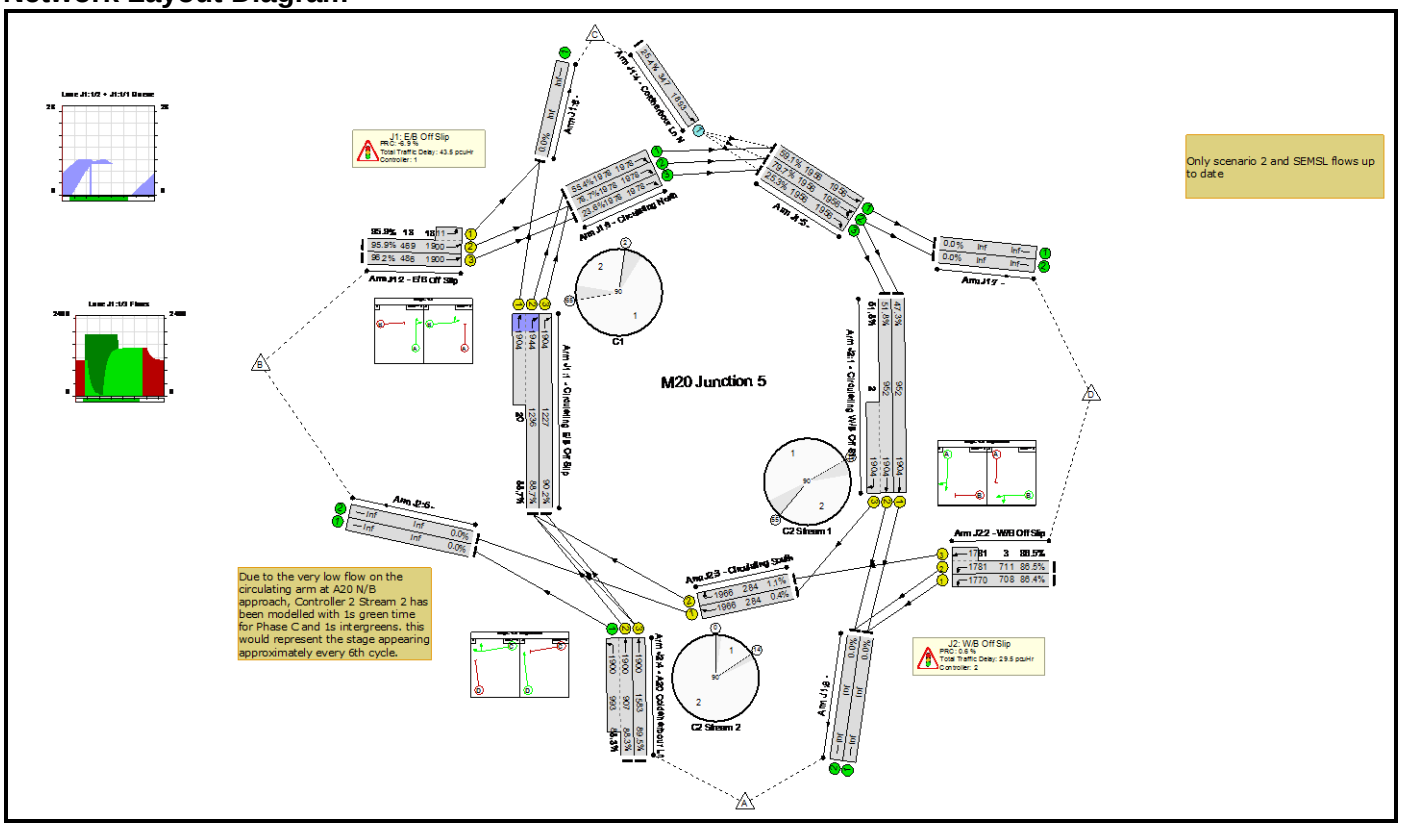
2/1	W/B Off Slip Left	U	C2:B		1	32	-	811	1770	913	88.9%	-	-	-	6.8	30.4	16.6
2/2+2/3	W/B Off Slip Ahead Left	U	C2:B		1	32	-	830	1781:1781	863+71	88.9 : 88.9%	-	-	-	6.9	29.7	16.6
3/1	Circulating South Ahead	U	C2:C		1	6	-	20	1966	215	9.3%	-	-	-	0.2	33.2	0.4
3/2	Circulating South Right	U	C2:C		1	6	-	63	1966	215	29.3%	-	-	-	0.8	44.1	1.2
4/2+4/1	A20 Coldaharbour Ln Ahead Left	U	C2:D -		1	54	-	1293	1900:1900	745+1155	68.1 : 68.1%	-	-	-	1.2	3.3	2.8
4/3	A20 Coldaharbour Ln Ahead	U	C2:D		1	54	-	748	1900	1633	45.8%	-	-	-	0.6	3.1	3.3

C1	PRC for Signalled Lanes (%):	8.4	Total Delay for Signalled Lanes (pcuHr):	16.60	Cycle Time (s):	64
C2	Stream: 1 PRC for Signalled Lanes (%):	1.3	Total Delay for Signalled Lanes (pcuHr):	29.12	Cycle Time (s):	64
C2	Stream: 2 PRC for Signalled Lanes (%):	32.3	Total Delay for Signalled Lanes (pcuHr):	2.78	Cycle Time (s):	64
	PRC Over All Lanes (%):	1.3	Total Delay Over All Lanes(pcuHr):	50.85		

Basic Results Summary

Scenario 8: 'All Dev 2031PM' (FG8: 'All Dev 2031 PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J5 - MM Option 1	-	-	-		-	-	-	-	-	-	**96.2%**	**88**	**0**	**0**	**73.0**	-	-
J1: E/B Off Slip	-	-	-		-	-	-	-	-	-	**96.2%**	**88**	**0**	**0**	**43.5**	-	-
1/2+1/1	Circulating E/B Off Slip Right Ahead	U	C1:A		1	57	-	1114	1944:1904	1236+20	88.7 : 88.7%	-	-	-	7.1	23.1	15.7
1/3	Circulating E/B Off Slip Right	U	C1:A		1	57	-	1107	1904	1227	90.2%	-	-	-	8.0	25.9	21.3
2/2+2/1	E/B Off Slip Ahead Left	U	C1:B		1	22	-	462	1900:1811	469+13	95.9 : 95.9%	-	-	-	11.1	86.9	18.1
2/3	E/B Off Slip Ahead	U	C1:B		1	22	-	467	1900	486	96.2%	-	-	-	11.4	88.0	18.5
3/1	Circulating North Right	U	-		-	-	-	1096	1978	1978	55.4%	-	-	-	0.6	2.0	0.6
3/2	Circulating North Right	U	-		-	-	-	1557	1978	1978	78.7%	-	-	-	1.8	4.2	1.8
3/3	Circulating North Right	U	-		-	-	-	467	1978	1978	23.6%	-	-	-	0.2	1.2	0.2
4/1	Coldharbour Ln N Ahead	O	-		-	-	-	88	1893	347	25.4%	88	0	0	0.4	16.0	1.1
5/1	Ahead	U	-		-	-	-	1156	1956	1956	59.1%	-	-	-	0.7	2.3	4.5
5/2	Right Ahead	U	-		-	-	-	1558	1956	1956	79.7%	-	-	-	1.9	4.5	1.9
5/3	Right	U	-		-	-	-	494	1956	1956	25.3%	-	-	-	0.2	1.2	0.2
J2: W/B Off Slip	-	-	-		-	-	-	-	-	-	**89.5%**	**0**	**0**	**0**	**29.5**	-	-
1/1	Circulating W/B Off Slip Ahead	U	C2:A		1	44	-	450	1904	952	47.3%	-	-	-	2.4	18.8	4.4
1/2+1/3	Circulating W/B Off Slip Right Ahead	U	C2:A		1	44	-	494	1904:1904	952+2	51.8 : 51.8%	-	-	-	2.5	18.4	4.6

Basic Results Summary

2/1	W/B Off Slip Left	U	C2:B		1	35	-	612	1770	708	86.4%	-	-	-	7.2	42.4	16.9
2/2+2/3	W/B Off Slip Ahead Left	U	C2:B		1	35	-	618	1781:1781	711+3	86.5 : 86.5%	-	-	-	7.3	42.3	17.1
3/1	Circulating South Ahead	U	C2:C		1	12	-	1	1966	284	0.4%	-	-	-	0.0	22.1	0.0
3/2	Circulating South Right	U	C2:C		1	12	-	3	1966	284	1.1%	-	-	-	0.0	56.9	0.1
4/2+4/1	A20 Coldaharbour Ln Ahead Left	U	C2:D -		1	74	-	1678	1900:1900	907+993	88.3 : 88.3%	-	-	-	4.1	8.9	9.2
4/3	A20 Coldaharbour Ln Ahead	U	C2:D		1	74	-	1417	1900	1583	89.5%	-	-	-	6.0	15.2	27.3

C1	PRC for Signalled Lanes (%):	-6.9	Total Delay for Signalled Lanes (pcuHr):	37.66	Cycle Time (s):	90
C2	Stream: 1 PRC for Signalled Lanes (%):	4.0	Total Delay for Signalled Lanes (pcuHr):	19.36	Cycle Time (s):	90
C2	Stream: 2 PRC for Signalled Lanes (%):	0.6	Total Delay for Signalled Lanes (pcuHr):	10.19	Cycle Time (s):	90
	PRC Over All Lanes (%):	-6.9	Total Delay Over All Lanes(pcuHr):	73.04		

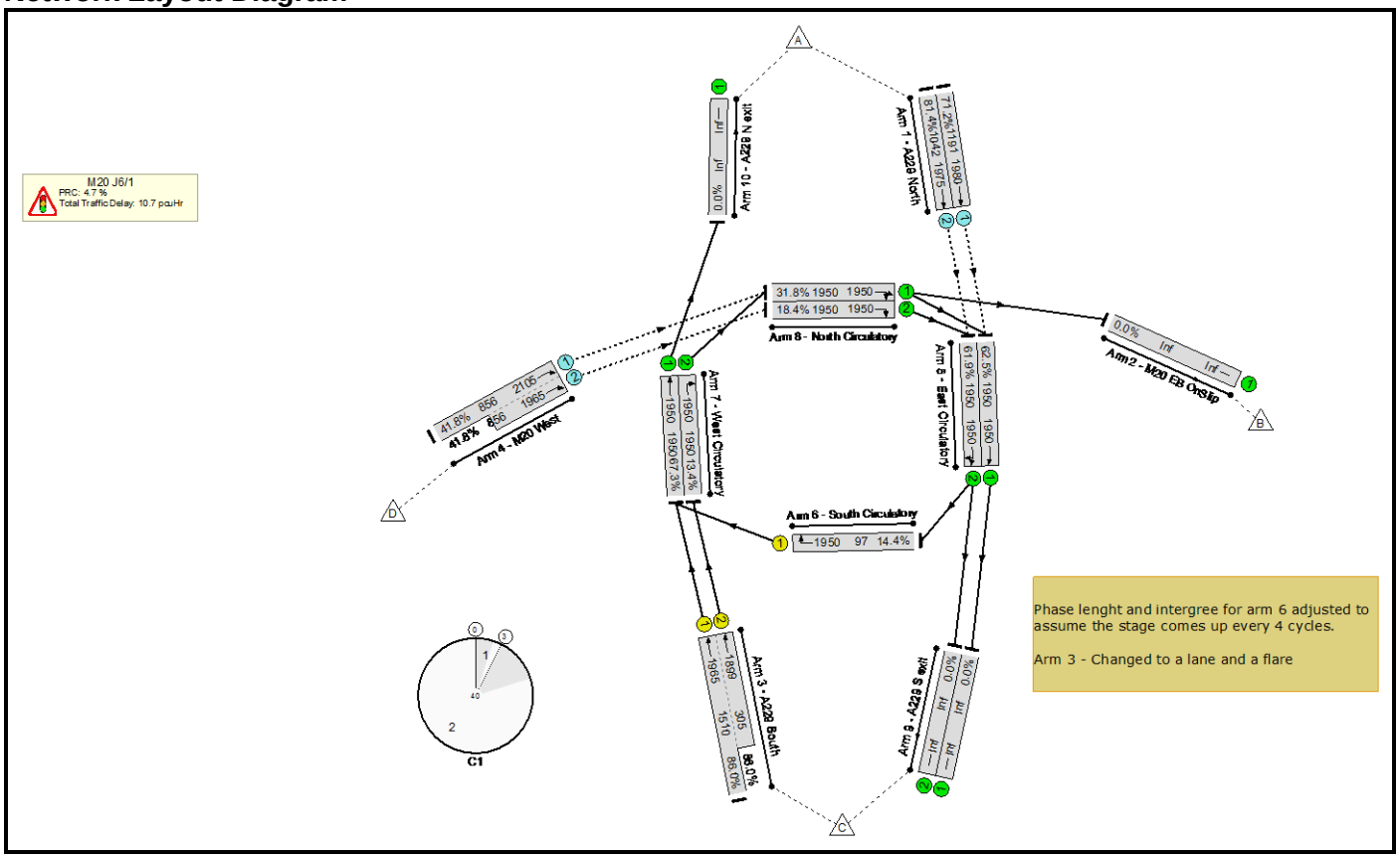
Basic Results Summary

User and Project Details

Project:	**Maidstone BC Transport Planning**
Title:	**M20 J6/1**
Location:	
File name:	Proposed_M20 J6_1_Option2.lsg3x
Author:	BR
Company:	MM
Address:	Soton
Notes:	

Scenario 1: 'All Dev 2031 AM' (FG3: 'All Dev 2031 AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J6/1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.0%**	**3129**	**0**	**0**	**10.7**	**-**	**-**
M20 J6/1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**86.0%**	**3129**	**0**	**0**	**10.7**	**-**	**-**
1/1	A229 North Ahead	O	-		-	-	-	848	1980	1191	71.2%	848	0	0	1.2	5.2	1.2
1/2	A229 North Ahead	O	-		-	-	-	849	1975	1042	81.4%	849	0	0	2.1	9.1	2.1
3/1+3/2	A229 South Ahead	U	B		1	32	-	1560	1965:1899	1510+305	86.0 : 86.0%	-	-	-	3.7	8.5	10.2
4/1+4/2	M20 West Ahead	O	-		-	-	-	716	2105:1965	856+856	41.8 : 41.8%	1432	0	0	0.4	1.8	0.4
5/1	East Circulatory Ahead	U	-		-	-	-	1219	1950	1950	62.5%	-	-	-	0.8	2.5	0.8
5/2	East Circulatory Right Ahead	U	-		-	-	-	1207	1950	1950	61.9%	-	-	-	0.8	2.4	0.8
6/1	South Circulatory Right	U	A		1	1	-	14	1950	97	14.4%	-	-	-	0.2	40.0	0.2
7/1	West Circulatory Ahead	U	-		-	-	-	1312	1950	1950	67.3%	-	-	-	1.0	2.8	3.2
7/2	West Circulatory Right	U	-		-	-	-	262	1950	1950	13.4%	-	-	-	0.1	1.1	0.1
8/1	North Circulatory Ahead Right	U	-		-	-	-	620	1950	1950	31.8%	-	-	-	0.2	1.4	0.2
8/2	North Circulatory Right	U	-		-	-	-	358	1950	1950	18.4%	-	-	-	0.1	1.1	0.1

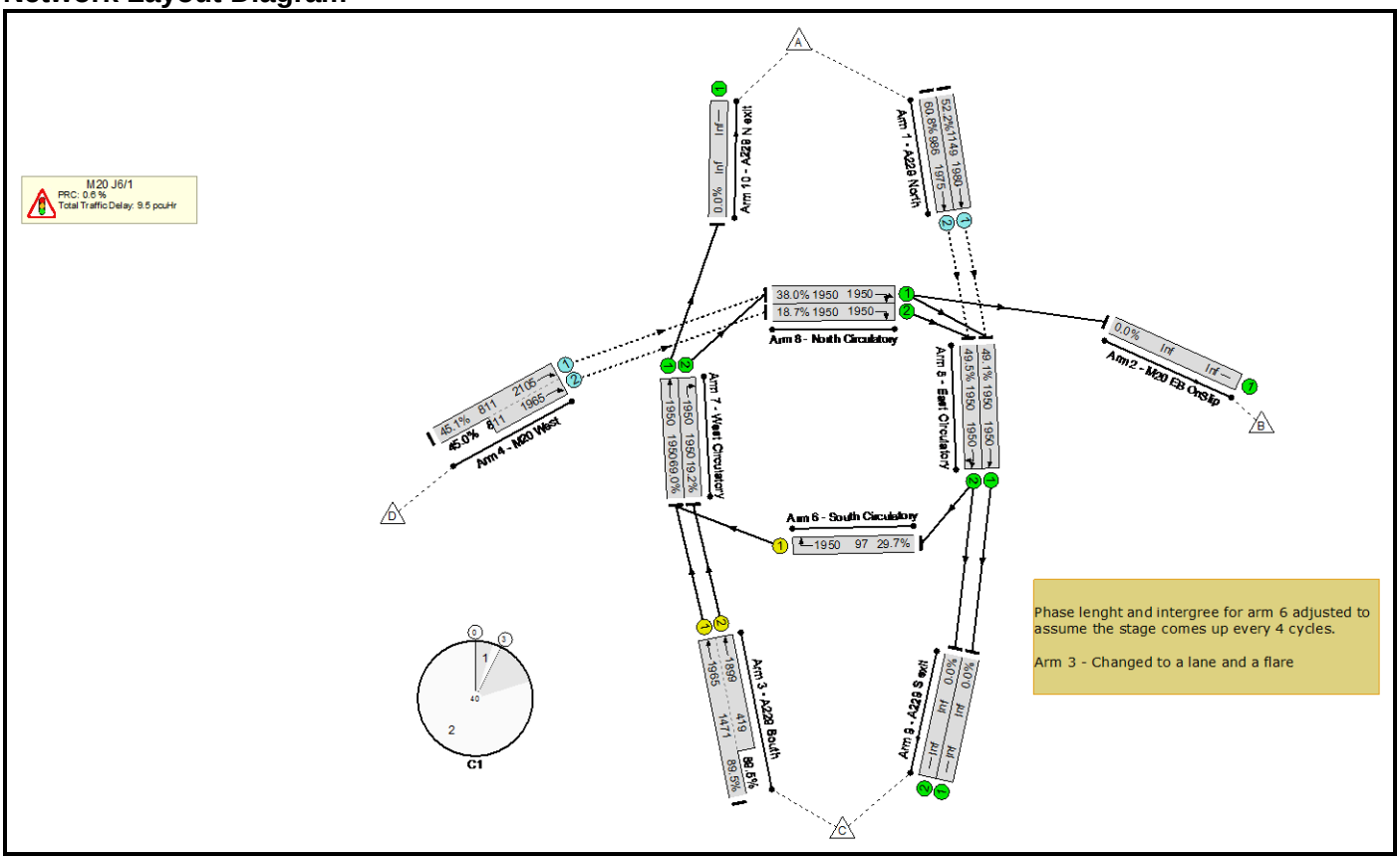
C1 PRC for Signalled Lanes (%): 4.7 Total Delay for Signalled Lanes (pcuHr): 3.86 Cycle Time (s): 40

PRC Over All Lanes (%): 4.7 Total Delay Over All Lanes(pcuHr): 10.68

Basic Results Summary

Scenario 2: 'All Dev 2031 PM' (FG4: 'All Dev 2031 PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J6/1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.5%**	**2662**	**0**	**0**	**9.5**	**-**	**-**
M20 J6/1	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.5%**	**2662**	**0**	**0**	**9.5**	**-**	**-**
1/1	A229 North Ahead	O	-		-	-	-	600	1980	1149	52.2%	600	0	0	0.5	3.3	0.5
1/2	A229 North Ahead	O	-		-	-	-	600	1975	986	60.8%	600	0	0	0.8	4.6	0.8
3/1+3/2	A229 South Ahead	U	B		1	32	-	1691	1965:1899	1471+419	89.5 : 89.5%	-	-	-	4.8	10.3	11.8
4/1+4/2	M20 West Ahead	O	-		-	-	-	731	2105:1965	811+811	45.1 : 45.0%	1462	0	0	0.4	2.0	0.4
5/1	East Circulatory Ahead	U	-		-	-	-	957	1950	1950	49.1%	-	-	-	0.5	1.8	0.5
5/2	East Circulatory Right Ahead	U	-		-	-	-	965	1950	1950	49.5%	-	-	-	0.5	1.8	0.5
6/1	South Circulatory Right	U	A		1	1	-	29	1950	97	29.7%	-	-	-	0.4	44.6	0.5
7/1	West Circulatory Ahead	U	-		-	-	-	1345	1950	1950	69.0%	-	-	-	1.1	3.0	4.4
7/2	West Circulatory Right	U	-		-	-	-	375	1950	1950	19.2%	-	-	-	0.1	1.1	0.1
8/1	North Circulatory Ahead Right	U	-		-	-	-	741	1950	1950	38.0%	-	-	-	0.3	1.5	0.3
8/2	North Circulatory Right	U	-		-	-	-	365	1950	1950	18.7%	-	-	-	0.1	1.1	0.1

C1 PRC for Signalled Lanes (%): 0.6 Total Delay for Signalled Lanes (pcuHr): 5.20 Cycle Time (s): 40

PRC Over All Lanes (%): 0.6 Total Delay Over All Lanes(pcuHr): 9.55

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.1.4646 []
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Filename: M20 Junction 6_v2 - Arm A widening.j9
Path: C:\Users\rap67683\Desktop
Report generation date: 01/11/2016 11:13:42

»M20 Junction 6 - Dev Scenario 2, AM
»M20 Junction 6 - Dev Scenario 2, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	M20 Junction 6 [Lane Simulation] - Dev Scenario 2							
Junction 1 - Arm A	83.8	147.83		F	2.1	5.55		A
Junction 1 - Arm C	29.3	71.90		F	61.2	136.74		F
Junction 1 - Arm D	67.0	381.81		F	13.0	55.77		F
Junction 2 - Arm A	125.8	292.98		F	99.1	262.98		F
Junction 2 - Arm B	90.6	138.26		F	9.9	15.68		C
Junction 2 - Arm C	3.6	21.95		C	1.5	10.08		B
Junction 2 - Arm D	3.1	13.19		B	2.3	8.48		A
Junction 2 - Arm E	92.8	571.76		F	48.4	190.76		F

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

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

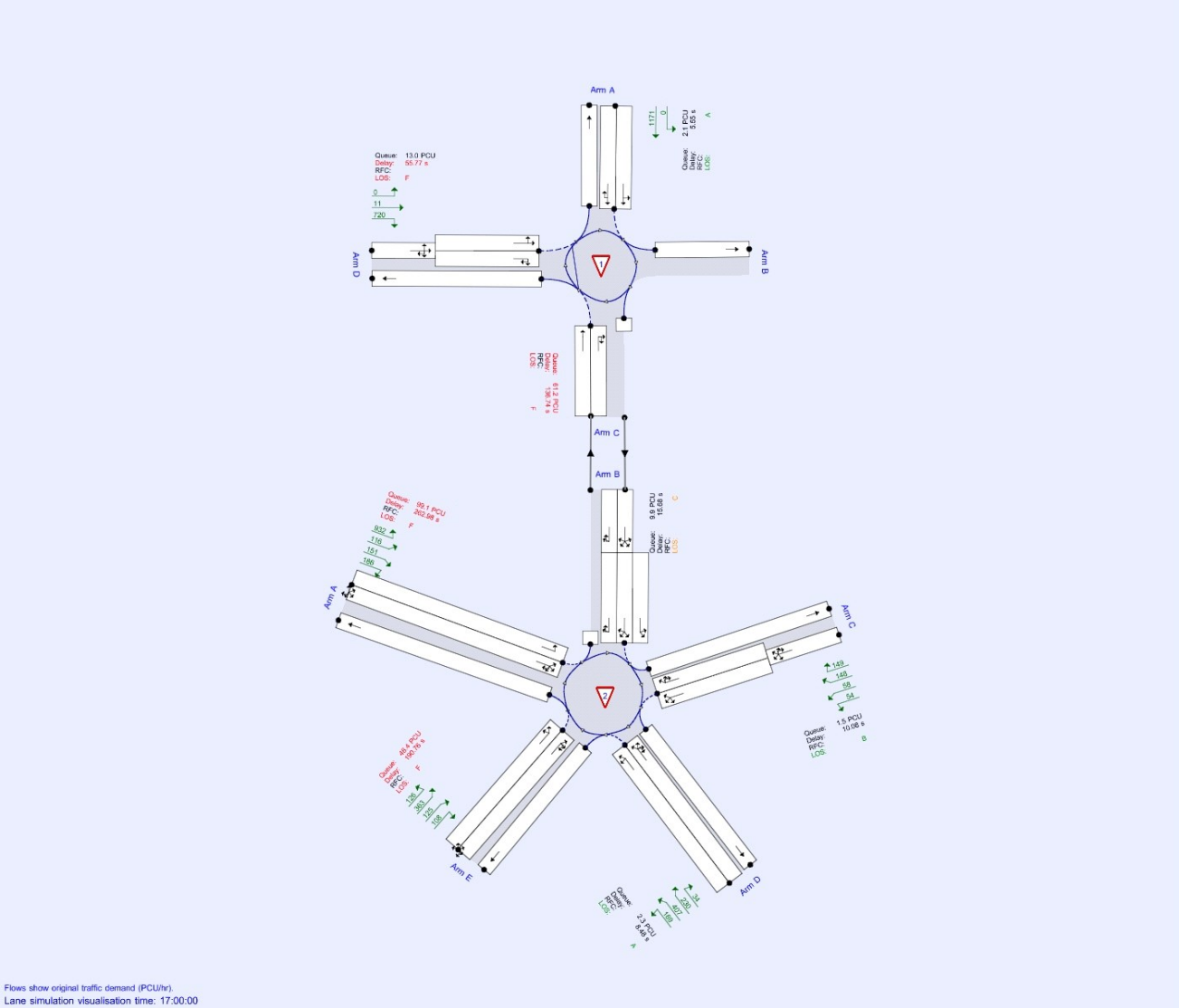
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	12/07/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	MOTTMAC\rap67683
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Lane Simulation options

Stop criteria (%)	Stop criteria time (s)	Stop criteria number of trials	Random seed	Results refresh speed (s)	Individual vehicle animation number of trials	Use crossings quick response	Last run random seed	Last run number of trials	Last run time taken (s)
1.00	100000	100000	-1	3	1	✓	1957792539	340	423.53

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	Dev Scenario 2	AM	ONE HOUR	07:15	08:45	15	✓
D8	Dev Scenario 2	PM	ONE HOUR	17:00	18:30	15	✓

Analysis Set Details

ID	Name	Use Lane Simulation	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	M20 Junction 6	✓	✓	100.000	100.000

M20 Junction 6 - Dev Scenario 2, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 1 - Arm D - Lane Simulation	Arm D: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm B - Lane Simulation	Arm B: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm E - Lane Simulation	Arm E: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 North	Standard Roundabout	A,B,C,D	161.24	F
2	M20 Junction 6 South	Standard Roundabout	A,B,C,D,E	200.39	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Junction	Arm	Name	Description
1	A	A229 North	
	B	M20 East	
	C	A229 South	
	D	M20 West	
2	A	M20	
	B	A229	
	C	Sandling Lane	
	D	Chatham Road	
	E	Forstal Road	

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	A	8.80	9.60	4.7	33.0	87.0	14.6	
	B							✓
	C	7.70	7.80	0.4	19.0	87.0	12.5	
	D	5.30	9.80	30.0	29.2	87.0	16.0	
2	A	6.30	8.00	30.0	31.4	98.0	19.8	
	B	7.28	12.31	12.7	24.5	98.0	17.3	
	C	3.98	9.12	26.0	12.9	98.0	16.5	
	D	8.00	9.25	5.7	24.6	98.0	18.0	
	E	3.79	8.04	19.0	18.0	98.0	18.1	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Junction	Arm	Final slope	Final intercept (PCU/hr)
1	A	0.665	3029
	B		
	C	0.585	2486
	D	0.615	2689
2	A	0.570	2469
	B	0.648	3030
	C	0.525	2202
	D	0.613	2782
	E	0.496	1967

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

Lane Simulation: Arm options

Junction	Arm	Lane capacity source	Traffic Considering Secondary Lanes (%)
1	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00
	D	Evenly split	10.00
2	A	Evenly split	10.00
	B	Evenly split	10.00
	C	Evenly split	10.00
	D	Evenly split	10.00
	E	Evenly split	10.00

Lanes

Junction	Arm	Lane level	Lane	Destination arms	Has limited storage	Storage (PCU)	Minimum capacity (PCU/hr)	Maximum capacity (PCU/hr)
1	A	1 [Give-way line]	1	B,C		Infinity	0	99999
			2	A,C		Infinity	0	99999
	C	1 [Give-way line]	1	A	✓	78.00	0	99999
			2	B,C	✓	78.00	0	99999
	D	1 [Give-way line]	1	B,A	✓	8.00	0	99999
			2	C,D	✓	8.00	0	99999
		2	1	(A,B,C,D)		Infinity		
2	A	1 [Give-way line]	1	B	✓	22.00	0	99999
			2	C,D,A,E	✓	22.00	0	99999
		2	2	(A,B,C,D,E)		Infinity		
	B	1 [Give-way line]	1	C,D	✓	7.00	0	99999
			2	A,D,E	✓	7.00	0	99999
			3	B,A	✓	7.00	0	99999
		2	1	(A,C,D,E)	✓	71.00		
			2	(A,B)	✓	71.00		
	C	1 [Give-way line]	1	D,A,E	✓	9.00	0	99999
			2	A,B,C	✓	9.00	0	99999
		2	1	(A,B,C,D,E)		Infinity		
	D	1 [Give-way line]	1	A,E		Infinity	0	99999
			2	A,B,C,D		Infinity	0	99999
	E	1 [Give-way line]	1	B,A	✓	14.00	0	99999
			2	C,D,E	✓	14.00	0	99999
		2	1	(A,B,C,D,E)		Infinity		

Entry Lane slope and intercept

Junction	Arm	Lane level	Lane	Final slope	Final intercept (PCU/hr)
1	A	1 [Give-way line]	1	0.333	1514
			2	0.333	1514
	C	1 [Give-way line]	1	0.292	1243
			2	0.292	1243
	D	1 [Give-way line]	1	0.307	1344
			2	0.307	1344
2	A	1 [Give-way line]	1	0.285	1235
			2	0.285	1235
	B	1 [Give-way line]	1	0.216	1010
			2	0.216	1010
			3	0.216	1010
	C	1 [Give-way line]	1	0.263	1101
			2	0.263	1101
	D	1 [Give-way line]	1	0.306	1391
			2	0.306	1391
	E	1 [Give-way line]	1	0.248	983
			2	0.248	983

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm			
				A	B	C	D
1	A	1 [Give-way line]	1		✓	✓	
			2	✓		✓	
	C	1 [Give-way line]	1	✓			
			2		✓	✓	
	D	1 [Give-way line]	1	✓	✓		
			2			✓	✓
		2	1	✓	✓	✓	✓

Lane Movements

Junction	Arm	Lane Level	Lane	Destination arm				
				A	B	C	D	E
2	A	1 [Give-way line]	1		✓			
			2	✓		✓	✓	✓
		2	2	✓	✓	✓	✓	✓
	B	1 [Give-way line]	1			✓	✓	
			2	✓			✓	✓
			3	✓	✓			
		2	1	✓		✓	✓	✓
			2	✓	✓			
	C	1 [Give-way line]	1	✓			✓	✓
			2	✓	✓	✓		
		2	1	✓	✓	✓	✓	✓
	D	1 [Give-way line]	1	✓				✓
			2	✓	✓	✓	✓	
	E	1 [Give-way line]	1	✓	✓			
			2			✓	✓	✓
		2	1	✓	✓	✓	✓	✓

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D7	Dev Scenario 2	AM	ONE HOUR	07:15	08:45	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1697	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	716	100.000
2	A		ONE HOUR	✓	1530	100.000
	B	✓				
	C		ONE HOUR	✓	477	100.000
	D		ONE HOUR	✓	774	100.000
	E		ONE HOUR	✓	633	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

From \ To	A	B	C	D
A	14	0	1683	0
B	Exit-only	Exit-only	Exit-only	Exit-only
C	1298	240	22	0
D	0	9	707	0

Proportions

From \ To	A	B	C	D
A	0.01	0.00	0.99	0.00
B	0.25	0.25	0.25	0.25
C	0.83	0.15	0.01	0.00
D	0.00	0.01	0.99	0.00

Junction 2

Demand (PCU/hr)

From \ To	A	B	C	D	E
A	5	1102	14	190	219
B	1476	0	128	479	331
C	254	74	0	25	124
D	454	130	29	17	144
E	194	255	76	108	0

Proportions

From \ To	A	B	C	D	E
A	0.00	0.72	0.01	0.12	0.14
B	0.61	0.00	0.05	0.20	0.14
C	0.53	0.16	0.00	0.05	0.26
D	0.59	0.17	0.04	0.02	0.19
E	0.31	0.40	0.12	0.17	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

From \ To	A	B	C	D
A	0	0	3	0
B	Exit-only	Exit-only	Exit-only	Exit-only
C	8	14	13	0
D	0	0	11	0

Average PCU Per Veh

From \ To	A	B	C	D
A	1.000	1.000	1.030	1.000
B	Exit-only	Exit-only	Exit-only	Exit-only
C	1.080	1.140	1.130	1.000
D	1.000	1.000	1.110	1.000

Junction 2

Heavy Vehicle Percentages

From \ To	A	B	C	D	E
A	0	8	0	2	4
B	3	0	5	6	19
C	2	7	0	0	4
D	6	5	4	0	7
E	28	20	0	12	7

Average PCU Per Veh

From \ To	A	B	C	D	E
A	1.000	1.080	1.000	1.020	1.040
B	1.030	1.000	1.050	1.060	1.190
C	1.020	1.070	1.000	1.000	1.040
D	1.060	1.050	1.040	1.000	1.070
E	1.280	1.200	1.000	1.120	1.070

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
07:15-07:30	1	A	1278	1278
		B	0	0
		C	1174	1174
		D	539	539
	2	A	1152	1152
		B	1817	1817
		C	359	359
		D	583	583
		E	477	477
07:30-07:45	1	A	1526	1526
		B	0	0
		C	1402	1402
		D	644	644
	2	A	1375	1375
		B	2170	2170
		C	429	429
		D	696	696
		E	569	569
07:45-08:00	1	A	1868	1868
		B	0	0
		C	1718	1718
		D	788	788
	2	A	1685	1685
		B	2658	2658
		C	525	525
		D	852	852
		E	697	697
08:00-08:15	1	A	1868	1868
		B	0	0
		C	1718	1718
		D	788	788
	2	A	1685	1685
		B	2658	2658
		C	525	525
		D	852	852
		E	697	697
08:15-08:30	1	A	1526	1526
		B	0	0
		C	1402	1402
		D	644	644
	2	A	1375	1375
		B	2170	2170
		C	429	429
		D	696	696
		E	569	569
08:30-08:45	1	A	1278	1278
		B	0	0
		C	1174	1174
		D	539	539
	2	A	1152	1152
		B	1817	1817
		C	359	359
		D	583	583
		E	477	477

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	147.83	83.8	F	1554	2330
	B					
	C	71.90	29.3	F	1395	2092
	D	381.81	67.0	F	659	989
2	A	292.98	125.8	F	1407	2110
	B	138.26	90.6	F	2157	3236
	C	21.95	3.6	C	441	661
	D	13.19	3.1	B	707	1061
	E	571.76	92.8	F	578	868

Main Results for each time segment

07:15 - 07:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1276	319	741	1275	991	0.0	1.5	3.981	A
	B			0		187				
	C	1185	296	10	1178	1819	0.0	5.1	12.694	B
	D	544	136	1188	543	0	0.0	1.6	8.286	A
2	A	1166	292	522	1160	1801	0.0	4.4	11.585	B
	B	1819	455	498	1822	1185	0.0	5.2	9.897	A
	C	365	91	2134	366	185	0.0	0.9	7.699	A
	D	584	146	1878	583	621	0.0	1.0	5.482	A
	E	481	120	1852	472	610	0.0	3.1	16.612	C

07:30 - 07:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1518	380	872	1516	1143	1.5	2.6	5.396	A
	B			0		220				
	C	1381	345	14	1360	2154	5.1	11.0	22.969	C
	D	643	161	1374	642	0	1.6	2.8	13.896	B
2	A	1383	346	605	1367	2126	4.4	12.7	25.899	D
	B	2154	539	591	2136	1381	5.2	20.2	26.459	D
	C	428	107	2514	430	213	0.9	1.5	12.333	B
	D	694	173	2210	692	734	1.0	1.6	7.932	A
	E	562	140	2179	552	723	3.1	9.8	47.643	E

07:45 - 08:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1866	467	905	1664	1210	2.6	34.7	31.690	D
	B			0		237				
	C	1464	366	14	1444	2317	11.0	21.9	45.735	E
	D	799	200	1459	657	0	2.8	24.6	63.763	F
2	A	1690	422	634	1452	2389	12.7	69.0	101.395	F
	B	2317	579	621	2248	1464	20.2	84.8	104.367	F
	C	522	130	2648	515	221	1.5	3.1	19.255	C
	D	846	212	2436	849	727	1.6	3.0	11.815	B
	E	692	173	2501	521	784	9.8	50.4	206.946	F

08:00 - 08:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1861	465	879	1666	1228	34.7	83.8	128.836	F
	B			0		240				
	C	1475	369	14	1466	2292	21.9	28.5	64.674	F
	D	783	196	1480	627	0	24.6	62.9	257.534	F
2	A	1669	417	636	1444	2369	69.0	125.8	246.083	F
	B	2292	573	605	2292	1475	84.8	90.6	138.263	F
	C	540	135	2667	533	230	3.1	3.6	21.948	C
	D	850	212	2431	851	769	3.0	3.1	13.191	B
	E	699	175	2478	527	804	50.4	92.8	486.665	F

08:15 - 08:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1533	383	892	1636	1235	83.8	53.9	147.825	F
	B			0		234				
	C	1470	367	13	1467	2282	28.5	29.3	71.905	F
	D	644	161	1480	647	0	62.9	67.0	381.809	F
2	A	1386	346	637	1450	2213	125.8	108.8	292.979	F
	B	2282	570	618	2306	1470	90.6	87.0	136.112	F
	C	428	107	2688	427	237	3.6	2.3	18.165	C
	D	693	173	2332	691	783	3.1	1.9	9.608	A
	E	568	142	2263	587	760	92.8	91.5	571.758	F

08:30 - 08:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1267	317	946	1373	1199	53.9	7.4	56.803	F
	B			0		229				
	C	1393	348	11	1427	2081	29.3	25.9	68.949	F
	D	543	136	1438	708	0	67.0	31.9	237.951	F
2	A	1146	287	628	1346	2022	108.8	47.8	179.816	F
	B	2081	520	581	2267	1393	87.0	53.1	102.202	F
	C	361	90	2610	362	239	2.3	1.4	14.284	B
	D	577	144	2172	576	800	1.9	1.2	7.773	A
	E	469	117	2018	632	730	91.5	54.6	359.333	F

Lane Results

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

Lanes: Main Results for each time segment

07:15 - 07:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	638	1268	0.503	636	0.0	0.8	3.966	A
				2	A,C	638	1268	0.504	639	0.0	0.7	3.995	A
		Exit	1	1		991			991	0.0	0.0	0.000	A
	B	Exit	1	1		187			187	0.0	0.0	0.000	A
	C	Entry	1	1	A	988	1240	0.796	980	0.0	4.8	14.369	B
				2	B,C	197	1240	0.159	198	0.0	0.2	3.992	A
		Exit	1	1		1819			1819	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	6	979	0.006	6	0.0	0.0	3.690	A
				2	C,D	538	979	0.549	537	0.0	1.5	8.176	A
			2	1	(A,B,C,D)	544			544	0.0	0.0	0.164	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	843	1086	0.777	838	0.0	4.0	14.352	B
				2	C,D,A,E	323	1086	0.297	322	0.0	0.4	4.693	A
			2	2	(A,B,C,D,E)	1166			1166	0.0	0.0	0.025	A
		Exit	1	1		1801			1801	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	386	902	0.428	387	0.0	0.7	6.336	A
				2	A,D,E	752	902	0.833	751	0.0	2.5	10.735	B
				3	B,A	683	902	0.757	683	0.0	2.0	9.857	A
			2	1	(A,C,D,E)	1238			1240	0.0	0.1	0.481	A
				2	(A,B)	581			581	0.0	0.0	0.268	A
		Exit	1	1		1185			1185	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	203	541	0.376	203	0.0	0.5	7.941	A
				2	A,B,C	162	541	0.299	162	0.0	0.4	7.395	A
			2	1	(A,B,C,D,E)	365			365	0.0	0.0	0.000	A
		Exit	1	1		185			185	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	279	815	0.342	278	0.0	0.5	5.431	A
				2	A,B,C,D	306	815	0.375	306	0.0	0.5	5.530	A
		Exit	1	1		621			621	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	341	525	0.650	333	0.0	2.7	20.020	C
				2	C,D,E	139	525	0.265	139	0.0	0.4	8.742	A
			2	1	(A,B,C,D,E)	481			480	0.0	0.1	0.174	A
		Exit	1	1		610			610	0.0	0.0	0.000	A

07:30 - 07:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	754	1224	0.616	753	0.8	1.3	5.428	A
				2	A,C	764	1224	0.624	763	0.7	1.3	5.364	A
		Exit	1	1		1143			1143	0.0	0.0	0.000	A
	B	Exit	1	1		220			220	0.0	0.0	0.000	A
	C	Entry	1	1	A	1150	1239	0.928	1129	4.8	10.7	26.518	D
				2	B,C	231	1239	0.187	231	0.2	0.3	4.149	A
		Exit	1	1		2154			2154	0.0	0.0	0.001	A
	D	Entry	1	1	B,A	8	922	0.008	8	0.0	0.0	3.714	A
				2	C,D	635	922	0.689	634	1.5	2.5	12.874	B
			2	1	(A,B,C,D)	643			643	0.0	0.3	1.124	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	985	1062	0.927	979	4.0	10.1	30.349	D
				2	C,D,A,E	388	1062	0.366	389	0.4	0.6	5.655	A
			2	2	(A,B,C,D,E)	1383			1374	0.0	2.0	2.581	A
		Exit	1	1		2126			2126	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	476	882	0.540	478	0.7	1.2	9.396	A
				2	A,D,E	835	882	0.946	834	2.5	4.8	18.702	C
				3	B,A	825	882	0.935	824	2.0	4.4	17.570	C
			2	1	(A,C,D,E)	1241			1223	0.1	8.4	14.309	B
				2	(A,B)	913			913	0.0	1.4	4.045	A
		Exit	1	1		1381			1381	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	231	441	0.524	233	0.5	0.9	13.267	B
				2	A,B,C	196	441	0.445	197	0.4	0.6	11.206	B
			2	1	(A,B,C,D,E)	428			428	0.0	0.0	0.001	A
		Exit	1	1		213			213	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	338	714	0.473	337	0.5	0.8	7.863	A
				2	A,B,C,D	356	714	0.499	355	0.5	0.8	7.996	A
		Exit	1	1		734			734	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	395	444	0.891	391	2.7	6.9	51.201	F
				2	C,D,E	161	444	0.364	161	0.4	0.7	13.813	B
			2	1	(A,B,C,D,E)	562			557	0.1	2.1	7.651	A
		Exit	1	1		723			723	0.0	0.0	0.000	A

07:45 - 08:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	939	1213	0.774	838	1.3	17.3	31.599	D
				2	A,C	928	1213	0.765	825	1.3	17.4	31.782	D
		Exit	1	1		1210			1210	0.0	0.0	0.000	A
	B	Exit	1	1		237			237	0.0	0.0	0.000	A
	C	Entry	1	1	A	1216	1239	0.982	1197	10.7	21.5	53.668	F
				2	B,C	248	1239	0.200	248	0.3	0.4	4.729	A
		Exit	1	1		2318			2317	0.0	0.3	0.200	A
	D	Entry	1	1	B,A	9	896	0.010	9	0.0	0.0	4.062	A
				2	C,D	662	896	0.739	648	2.5	6.9	27.054	D
			2	1	(A,B,C,D)	799			671	0.3	17.7	35.456	E
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	1055	1054	1.001	1038	10.1	21.1	61.188	F
				2	C,D,A,E	413	1054	0.392	413	0.6	0.7	6.634	A
			2	2	(A,B,C,D,E)	1690			1469	2.0	47.1	54.938	F
		Exit	1	1		2389			2389	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	490	876	0.560	490	1.2	2.0	13.030	B
				2	A,D,E	885	876	1.011	884	4.8	6.8	26.986	D
				3	B,A	873	876	0.997	874	4.4	6.4	26.115	D
			2	1	(A,C,D,E)	909			820	8.4	62.3	165.829	F
				2	(A,B)	1408			1429	1.4	7.2	18.862	C
		Exit	1	1		1464			1464	0.0	0.0	0.003	A
	C	Entry	1	1	D,A,E	278	406	0.686	275	0.9	1.8	20.291	C
				2	A,B,C	243	406	0.600	240	0.6	1.4	17.634	C
			2	1	(A,B,C,D,E)	522			522	0.0	0.0	0.174	A
		Exit	1	1		221			221	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	416	644	0.646	417	0.8	1.5	11.592	B
				2	A,B,C,D	430	644	0.668	432	0.8	1.6	12.026	B
		Exit	1	1		727			727	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	370	364	1.017	366	6.9	13.4	111.282	F
				2	C,D,E	159	364	0.437	155	0.7	1.3	22.576	C
			2	1	(A,B,C,D,E)	692			529	2.1	35.7	120.962	F
		Exit	1	1		784			784	0.0	0.0	0.000	A

08:00 - 08:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	929	1222	0.760	832	17.3	41.9	128.644	F
				2	A,C	932	1222	0.763	835	17.4	41.9	129.028	F
		Exit	1	1		1228			1228	0.0	0.0	0.000	A
	B	Exit	1	1		240			240	0.0	0.0	0.000	A
	C	Entry	1	1	A	1222	1239	0.986	1214	21.5	28.0	76.043	F
				2	B,C	253	1239	0.204	252	0.4	0.5	5.459	A
		Exit	1	1		2291			2292	0.3	0.4	0.488	A
	D	Entry	1	1	B,A	8	889	0.009	8	0.0	0.0	4.100	A
				2	C,D	620	889	0.697	619	6.9	7.8	43.544	E
			2	1	(A,B,C,D)	783			628	17.7	55.1	213.780	F
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	1043	1054	0.990	1043	21.1	21.7	74.197	F
				2	C,D,A,E	403	1054	0.382	402	0.7	0.9	7.156	A
			2	2	(A,B,C,D,E)	1669			1446	47.1	103.2	191.345	F
		Exit	1	1		2369			2369	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	542	879	0.616	542	2.0	2.2	14.900	B
				2	A,D,E	878	879	0.999	879	6.8	6.8	28.020	D
				3	B,A	871	879	0.990	871	6.4	6.5	26.681	D
			2	1	(A,C,D,E)	882			876	62.3	67.6	271.955	F
				2	(A,B)	1409			1415	7.2	7.4	20.018	C
		Exit	1	1		1475			1475	0.0	0.0	0.008	A
	C	Entry	1	1	D,A,E	289	401	0.720	284	1.8	2.0	23.044	C
				2	A,B,C	252	401	0.629	249	1.4	1.5	20.180	C
			2	1	(A,B,C,D,E)	540			541	0.0	0.0	0.240	A
		Exit	1	1		230			230	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	420	646	0.650	420	1.5	1.6	12.982	B
				2	A,B,C,D	430	646	0.666	431	1.6	1.5	13.393	B
		Exit	1	1		769			769	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	373	369	1.010	373	13.4	13.6	131.124	F
				2	C,D,E	154	369	0.417	153	1.3	1.3	26.917	D
			2	1	(A,B,C,D,E)	699			527	35.7	77.9	393.013	F
		Exit	1	1		804			804	0.0	0.0	0.000	A

08:15 - 08:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	769	1218	0.632	821	41.9	26.9	147.583	F
				2	A,C	764	1218	0.627	816	41.9	26.9	148.068	F
		Exit	1	1		1235			1235	0.0	0.0	0.000	A
	B	Exit	1	1		234			234	0.0	0.0	0.000	A
	C	Entry	1	1	A	1224	1239	0.987	1222	28.0	28.9	84.520	F
				2	B,C	246	1239	0.198	245	0.5	0.4	5.545	A
		Exit	1	1		2282			2282	0.4	0.3	0.487	A
	D	Entry	1	1	B,A	9	889	0.010	9	0.0	0.0	4.090	A
				2	C,D	638	889	0.718	638	7.8	7.6	44.820	E
			2	1	(A,B,C,D)	644			647	55.1	59.4	338.743	F
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	1040	1053	0.987	1044	21.7	20.9	73.697	F
				2	C,D,A,E	407	1053	0.386	407	0.9	0.8	7.101	A
			2	2	(A,B,C,D,E)	1386			1446	103.2	87.1	238.511	F
		Exit	1	1		2213			2213	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	550	876	0.627	553	2.2	2.0	14.799	B
				2	A,D,E	883	876	1.008	882	6.8	6.8	27.866	D
				3	B,A	871	876	0.994	871	6.5	6.4	26.721	D
			2	1	(A,C,D,E)	884			904	67.6	64.9	268.995	F
				2	(A,B)	1398			1400	7.4	6.9	18.700	C
		Exit	1	1		1470			1470	0.0	0.0	0.012	A
	C	Entry	1	1	D,A,E	232	396	0.585	231	2.0	1.3	19.235	C
				2	A,B,C	196	396	0.496	196	1.5	1.0	16.742	C
			2	1	(A,B,C,D,E)	428			428	0.0	0.0	0.082	A
		Exit	1	1		237			237	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	338	676	0.499	337	1.6	0.9	9.411	A
				2	A,B,C,D	355	676	0.525	355	1.5	0.9	9.794	A
		Exit	1	1		783			783	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	415	423	0.982	417	13.6	13.6	119.754	F
				2	C,D,E	167	423	0.396	170	1.3	0.9	22.737	C
			2	1	(A,B,C,D,E)	568			583	77.9	77.0	488.833	F
		Exit	1	1		760			760	0.0	0.0	0.000	A

08:30 - 08:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	628	1199	0.524	682	26.9	3.6	57.079	F
				2	A,C	639	1199	0.532	692	26.9	3.7	56.532	F
		Exit	1	1		1199			1199	0.0	0.0	0.000	A
	B	Exit	1	1		229			229	0.0	0.0	0.000	A
	C	Entry	1	1	A	1153	1240	0.930	1188	28.9	25.6	81.970	F
				2	B,C	240	1240	0.193	239	0.4	0.4	4.745	A
		Exit	1	1		2080			2081	0.3	0.1	0.318	A
	D	Entry	1	1	B,A	9	902	0.011	10	0.0	0.0	4.159	A
				2	C,D	684	902	0.758	698	7.6	5.2	35.836	E
			2	1	(A,B,C,D)	543			693	59.4	26.7	207.579	F
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	957	1056	0.906	978	20.9	15.1	64.455	F
				2	C,D,A,E	367	1056	0.348	368	0.8	0.6	6.502	A
			2	2	(A,B,C,D,E)	1146			1324	87.1	32.1	134.874	F
		Exit	1	1		2022			2022	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	556	884	0.628	560	2.0	2.1	14.648	B
				2	A,D,E	850	884	0.962	857	6.8	5.8	26.340	D
				3	B,A	843	884	0.953	851	6.4	5.1	24.270	C
			2	1	(A,C,D,E)	910			1062	64.9	37.0	188.733	F
				2	(A,B)	1171			1187	6.9	3.1	12.789	B
		Exit	1	1		1393			1393	0.0	0.0	0.018	A
	C	Entry	1	1	D,A,E	197	416	0.473	197	1.3	0.8	15.102	C
				2	A,B,C	165	416	0.396	165	1.0	0.6	13.300	B
			2	1	(A,B,C,D,E)	361			361	0.0	0.0	0.000	A
		Exit	1	1		239			239	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	280	725	0.387	279	0.9	0.6	7.601	A
				2	A,B,C,D	296	725	0.409	297	0.9	0.6	7.936	A
		Exit	1	1		800			800	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	444	483	0.917	455	13.6	11.4	100.852	F
				2	C,D,E	174	483	0.359	177	0.9	0.8	19.122	C
			2	1	(A,B,C,D,E)	469			617	77.0	42.5	297.676	F
		Exit	1	1		730			730	0.0	0.0	0.000	A

M20 Junction 6 - Dev Scenario 2, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Lane Simulation	A1 - M20 Junction 6 [Lane Simulation]	This analysis set uses Lane Simulation mode. This is provided as an investigative tool and the user should apply judgement when interpreting the results.
Last Run	Lane Simulation	Junction 1 - Arm C - Lane Simulation	Arm C: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Last Run	Lane Simulation	Junction 2 - Arm A - Lane Simulation	Arm A: Queue at end of modelled period is greater than 10 PCU. Delay is likely to have been underestimated.
Warning	Linked junction	Junction 1 - Arm C	Linked arm: Junction 1 Arm C has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)
Warning	Linked junction	Junction 2 - Arm B	Linked arm: Junction 2 Arm B has more than one lane at its upstream end. It is recommended that the upstream lane level for a linked arm should have only one lane (if necessary add a dummy lane level to do this)

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	M20 Junction 6 North	Standard Roundabout	A,B,C,D	76.39	F
2	M20 Junction 6 South	Standard Roundabout	A,B,C,D,E	103.30	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D8	Dev Scenario 2	PM	ONE HOUR	17:00	18:30	15	✓

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

Linked Arm Data

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

Demand overview (Traffic)

Junction	Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1	A		ONE HOUR	✓	1200	100.000
	B					
	C	✓				
	D		ONE HOUR	✓	731	100.000
2	A		ONE HOUR	✓	1388	100.000
	B	✓				
	C		ONE HOUR	✓	409	100.000
	D		ONE HOUR	✓	866	100.000
	E		ONE HOUR	✓	722	100.000

Origin-Destination Data

Junction 1

Demand (PCU/hr)

		To			
		A	B	C	D
From	A	29	0	1171	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1316	373	2	0
	D	0	11	720	0

Proportions

		To			
		A	B	C	D
From	A	0.02	0.00	0.98	0.00
	B	0.25	0.25	0.25	0.25
	C	0.78	0.22	0.00	0.00
	D	0.00	0.02	0.98	0.00

Junction 2

Demand (PCU/hr)

		To				
		A	B	C	D	E
From	A	3	932	116	151	186
	B	774	16	441	392	261
	C	148	149	0	54	58
	D	407	230	34	6	189
	E	126	363	125	108	0

Proportions

		To				
		A	B	C	D	E
From	A	0.00	0.67	0.08	0.11	0.13
	B	0.41	0.01	0.23	0.21	0.14
	C	0.36	0.36	0.00	0.13	0.14
	D	0.47	0.27	0.04	0.01	0.22
	E	0.17	0.50	0.17	0.15	0.00

Vehicle Mix

Junction 1

Heavy Vehicle Percentages

		To			
		A	B	C	D
From	A	4	0	5	0
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	5	4	0	0
	D	0	25	3	0

Average PCU Per Veh

		To			
		A	B	C	D
From	A	1.040	1.000	1.050	1.000
	B	Exit-only	Exit-only	Exit-only	Exit-only
	C	1.050	1.040	1.000	1.000
	D	1.000	1.250	1.030	1.000

Junction 2

Heavy Vehicle Percentages

		To				
		A	B	C	D	E
From	A	0	6	0	0	10
	B	3	0	1	3	19
	C	2	0	0	4	0
	D	5	4	0	0	4
	E	24	5	1	2	0

Average PCU Per Veh

		To				
		A	B	C	D	E
From	A	1.000	1.060	1.000	1.000	1.100
	B	1.030	1.000	1.010	1.030	1.190
	C	1.020	1.000	1.000	1.040	1.000
	D	1.050	1.040	1.000	1.000	1.040
	E	1.240	1.050	1.010	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Junction	Arm	Demand (PCU/hr)	Demand in PCU (PCU/hr)
17:00-17:15	1	A	903	903
		B	0	0
		C	1273	1273
		D	550	550
	2	A	1045	1045
		B	1418	1418
		C	308	308
		D	652	652
		E	544	544
17:15-17:30	1	A	1079	1079
		B	0	0
		C	1520	1520
		D	657	657
	2	A	1248	1248
		B	1694	1694
		C	368	368
		D	779	779
		E	649	649
17:30-17:45	1	A	1321	1321
		B	0	0
		C	1862	1862
		D	805	805
	2	A	1528	1528
		B	2074	2074
		C	450	450
		D	953	953
		E	795	795
17:45-18:00	1	A	1321	1321
		B	0	0
		C	1862	1862
		D	805	805
	2	A	1528	1528
		B	2074	2074
		C	450	450
		D	953	953
		E	795	795
18:00-18:15	1	A	1079	1079
		B	0	0
		C	1520	1520
		D	657	657
	2	A	1248	1248
		B	1694	1694
		C	368	368
		D	779	779
		E	649	649
18:15-18:30	1	A	903	903
		B	0	0
		C	1273	1273
		D	550	550
	2	A	1045	1045
		B	1418	1418
		C	308	308
		D	652	652
		E	544	544

Results

Results Summary for whole modelled period

Junction	Arm	Max delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1	A	5.55	2.1	A	1097	1646
	B					
	C	136.74	61.2	F	1517	2276
	D	55.77	13.0	F	671	1007
2	A	262.98	99.1	F	1276	1913
	B	15.68	9.9	C	1732	2598
	C	10.08	1.5	B	373	560
	D	8.48	2.3	A	793	1190
	E	190.76	48.4	F	664	996

Main Results for each time segment

17:00 - 17:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	893	223	834	892	1010	0.0	1.0	3.575	A
	B			0		292				
	C	1266	316	22	1273	1413	0.0	4.4	12.236	B
	D	549	137	1295	549	0	0.0	1.4	8.045	A
2	A	1044	261	777	1043	1103	0.0	3.2	9.591	A
	B	1413	353	554	1413	1266	0.0	2.9	6.795	A
	C	310	78	1423	312	544	0.0	0.4	5.525	A
	D	648	162	1199	650	535	0.0	0.8	4.412	A
	E	553	138	1328	552	522	0.0	2.0	10.693	B

17:15 - 17:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1067	267	997	1069	1179	1.0	1.2	4.258	A
	B			0		344				
	C	1512	378	27	1486	1696	4.4	13.3	24.391	C
	D	663	166	1513	663	0	1.4	2.8	14.768	B
2	A	1252	313	916	1254	1322	3.2	7.6	18.960	C
	B	1696	424	657	1702	1512	2.9	4.1	8.963	A
	C	365	91	1715	365	644	0.4	0.7	6.912	A
	D	785	196	1434	784	646	0.8	1.3	5.592	A
	E	649	162	1595	642	623	2.0	4.5	20.696	C

17:30 - 17:45

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1327	332	1159	1327	1265	1.2	2.1	5.365	A
	B			0		381				
	C	1682	421	32	1603	2073	13.3	40.3	65.304	F
	D	799	200	1635	789	0	2.8	10.6	38.278	E
2	A	1527	382	1059	1352	1591	7.6	45.8	70.858	F
	B	2073	518	728	2072	1682	4.1	9.9	15.005	C
	C	447	112	2035	446	765	0.7	1.2	9.182	A
	D	949	237	1723	950	759	1.3	2.1	7.621	A
	E	799	200	1939	710	734	4.5	24.3	75.631	F

17:45 - 18:00

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1320	330	1153	1322	1257	2.1	2.0	5.547	A
	B			0		368				
	C	1638	410	35	1582	2073	40.3	59.0	114.898	F
	D	804	201	1616	794	0	10.6	13.0	55.771	F
2	A	1531	383	1039	1293	1586	45.8	99.1	201.438	F
	B	2073	518	694	2070	1638	9.9	8.9	15.679	C
	C	450	112	2012	447	752	1.2	1.5	10.081	B
	D	946	236	1716	949	743	2.1	2.3	8.477	A
	E	792	198	1938	688	727	24.3	48.4	190.760	F

18:00 - 18:15

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	1077	269	1024	1079	1263	2.0	1.3	4.483	A
	B			0		363				
	C	1581	395	27	1590	1713	59.0	61.2	136.736	F
	D	663	166	1617	669	0	13.0	4.7	33.381	D
2	A	1255	314	985	1286	1334	99.1	87.9	262.978	F
	B	1713	428	689	1711	1581	8.9	4.8	10.584	B
	C	363	91	1736	361	665	1.5	0.9	8.434	A
	D	775	194	1448	775	648	2.3	1.3	6.642	A
	E	647	162	1586	733	638	48.4	26.4	177.058	F

18:15 - 18:30

Junction	Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Circulating flow (PCU/hr)	Throughput (PCU/hr)	Throughput (exit side) (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	899	225	866	899	1237	1.3	1.0	3.841	A
	B			0		319				
	C	1424	356	22	1528	1425	61.2	41.7	116.612	F
	D	551	138	1550	554	0	4.7	1.7	13.879	B
2	A	1046	262	809	1216	1110	87.9	34.0	149.308	F
	B	1425	356	601	1425	1424	4.8	3.0	7.687	A
	C	305	76	1466	307	560	0.9	0.5	6.677	A
	D	656	164	1222	654	551	1.3	1.0	5.158	A
	E	543	136	1335	584	541	26.4	4.9	55.314	F

Lane Results

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

Lanes: Main Results for each time segment

17:00 - 17:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	442	1237	0.357	441	0.0	0.5	3.553	A
				2	A,C	451	1237	0.365	451	0.0	0.5	3.595	A
		Exit	1	1		1010			1010	0.0	0.0	0.000	A
	B	Exit	1	1		292			292	0.0	0.0	0.000	A
	C	Entry	1	1	A	981	1237	0.793	988	0.0	4.1	14.618	B
				2	B,C	284	1237	0.230	285	0.0	0.3	3.960	A
		Exit	1	1		1413			1413	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	8	946	0.008	8	0.0	0.0	4.620	A
				2	C,D	541	946	0.572	541	0.0	1.4	7.947	A
			2	1	(A,B,C,D)	549			549	0.0	0.0	0.135	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	700	1014	0.690	699	0.0	2.6	11.662	B
				2	C,D,A,E	344	1014	0.340	344	0.0	0.6	5.376	A
			2	2	(A,B,C,D,E)	1044			1044	0.0	0.0	0.009	A
		Exit	1	1		1103			1103	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	489	890	0.550	490	0.0	1.0	7.420	A
				2	A,D,E	544	890	0.611	543	0.0	1.3	6.957	A
				3	B,A	379	890	0.426	380	0.0	0.6	5.677	A
			2	1	(A,C,D,E)	1110			1110	0.0	0.0	0.027	A
				2	(A,B)	303			303	0.0	0.0	0.000	A
		Exit	1	1		1266			1266	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	145	728	0.200	146	0.0	0.2	5.423	A
				2	A,B,C	165	728	0.226	166	0.0	0.2	5.610	A
			2	1	(A,B,C,D,E)	310			310	0.0	0.0	0.000	A
		Exit	1	1		544			544	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	304	1023	0.297	305	0.0	0.3	4.273	A
				2	A,B,C,D	344	1023	0.336	345	0.0	0.4	4.534	A
		Exit	1	1		535			535	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	373	655	0.569	373	0.0	1.5	12.456	B
				2	C,D,E	180	655	0.275	179	0.0	0.4	7.245	A
			2	1	(A,B,C,D,E)	553			553	0.0	0.0	0.004	A
		Exit	1	1		522			522	0.0	0.0	0.000	A

17:15 - 17:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	530	1183	0.448	531	0.5	0.6	4.234	A
				2	A,C	537	1183	0.454	538	0.5	0.6	4.281	A
		Exit	1	1		1179			1179	0.0	0.0	0.000	A
	B	Exit	1	1		344			344	0.0	0.0	0.000	A
	C	Entry	1	1	A	1176	1235	0.952	1152	4.1	12.8	30.144	D
				2	B,C	336	1235	0.272	334	0.3	0.5	4.210	A
		Exit	1	1		1696			1696	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	12	879	0.014	12	0.0	0.0	5.086	A
				2	C,D	651	879	0.740	651	1.4	2.6	13.575	B
			2	1	(A,B,C,D)	663			663	0.0	0.3	1.271	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	839	974	0.861	843	2.6	6.3	24.062	C
				2	C,D,A,E	413	974	0.424	411	0.6	0.9	6.556	A
			2	2	(A,B,C,D,E)	1252			1251	0.0	0.5	0.694	A
		Exit	1	1		1322			1322	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	583	868	0.672	586	1.0	1.5	9.684	A
				2	A,D,E	638	868	0.735	640	1.3	1.6	9.162	A
				3	B,A	475	868	0.547	476	0.6	1.0	7.316	A
			2	1	(A,C,D,E)	1323			1324	0.0	0.0	0.182	A
				2	(A,B)	372			372	0.0	0.0	0.007	A
		Exit	1	1		1512			1512	0.0	0.0	0.000	A
	C	Entry	1	1	D,A,E	168	651	0.259	168	0.2	0.4	6.804	A
				2	A,B,C	197	651	0.302	197	0.2	0.3	7.003	A
			2	1	(A,B,C,D,E)	365			365	0.0	0.0	0.000	A
		Exit	1	1		644			644	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	368	951	0.387	368	0.3	0.6	5.437	A
				2	A,B,C,D	417	951	0.438	416	0.4	0.7	5.728	A
		Exit	1	1		646			646	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	437	588	0.743	432	1.5	3.7	25.527	D
				2	C,D,E	211	588	0.358	211	0.4	0.6	9.621	A
			2	1	(A,B,C,D,E)	649			648	0.0	0.2	0.503	A
		Exit	1	1		623			623	0.0	0.0	0.000	A

17:30 - 17:45

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	659	1129	0.584	659	0.6	1.0	5.322	A
				2	A,C	668	1129	0.592	668	0.6	1.1	5.408	A
		Exit	1	1		1265			1265	0.0	0.0	0.000	A
	B	Exit	1	1		381			381	0.0	0.0	0.000	A
	C	Entry	1	1	A	1314	1234	1.065	1233	12.8	39.9	82.568	F
				2	B,C	368	1234	0.298	370	0.5	0.4	4.347	A
		Exit	1	1		2073			2073	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	13	842	0.016	13	0.0	0.0	5.535	A
				2	C,D	777	842	0.923	776	2.6	5.7	23.872	C
			2	1	(A,B,C,D)	799			790	0.3	4.8	14.417	B
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	930	933	0.997	901	6.3	19.6	58.689	F
				2	C,D,A,E	453	933	0.485	451	0.9	1.3	9.109	A
			2	2	(A,B,C,D,E)	1527			1383	0.5	24.9	27.376	D
		Exit	1	1		1591			1591	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	708	853	0.831	708	1.5	3.1	14.331	B
				2	A,D,E	751	853	0.881	748	1.6	3.2	13.669	B
				3	B,A	619	853	0.725	616	1.0	2.1	10.805	B
			2	1	(A,C,D,E)	1549			1554	0.0	1.5	2.505	A
				2	(A,B)	524			524	0.0	0.0	0.208	A
		Exit	1	1		1682			1682	0.0	0.0	0.013	A
	C	Entry	1	1	D,A,E	209	567	0.369	210	0.4	0.5	8.817	A
				2	A,B,C	238	567	0.419	237	0.3	0.7	9.496	A
			2	1	(A,B,C,D,E)	447			447	0.0	0.0	0.000	A
		Exit	1	1		765			765	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	449	863	0.520	449	0.6	0.9	7.227	A
				2	A,B,C,D	501	863	0.581	501	0.7	1.2	7.971	A
		Exit	1	1		759			759	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	492	503	0.979	476	3.7	11.1	63.230	F
				2	C,D,E	235	503	0.467	234	0.6	1.0	14.407	B
			2	1	(A,B,C,D,E)	799			727	0.2	12.2	26.959	D
		Exit	1	1		734			734	0.0	0.0	0.000	A

17:45 - 18:00

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	657	1131	0.581	657	1.0	1.0	5.517	A
				2	A,C	663	1131	0.587	665	1.1	1.0	5.575	A
		Exit	1	1		1257			1257	0.0	0.0	0.000	A
	B	Exit	1	1		368			368	0.0	0.0	0.000	A
	C	Entry	1	1	A	1279	1233	1.037	1223	39.9	58.5	146.511	F
				2	B,C	359	1233	0.291	359	0.4	0.4	4.444	A
		Exit	1	1		2073			2073	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	11	847	0.013	11	0.0	0.0	5.464	A
				2	C,D	785	847	0.926	783	5.7	5.8	26.803	D
			2	1	(A,B,C,D)	804			796	4.8	7.2	29.096	D
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	872	939	0.929	869	19.6	21.3	83.437	F
				2	C,D,A,E	424	939	0.452	425	1.3	1.3	9.989	A
			2	2	(A,B,C,D,E)	1531			1296	24.9	76.5	141.574	F
		Exit	1	1		1586			1586	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	707	860	0.822	709	3.1	2.7	14.747	B
				2	A,D,E	741	860	0.862	742	3.2	2.9	13.992	B
				3	B,A	618	860	0.718	619	2.1	1.8	11.072	B
			2	1	(A,C,D,E)	1550			1543	1.5	1.6	3.009	A
				2	(A,B)	522			522	0.0	0.0	0.236	A
		Exit	1	1		1639			1638	0.0	0.1	0.108	A
	C	Entry	1	1	D,A,E	215	573	0.375	214	0.5	0.6	9.254	A
				2	A,B,C	235	573	0.410	233	0.7	0.8	10.811	B
			2	1	(A,B,C,D,E)	450			450	0.0	0.0	0.002	A
		Exit	1	1		752			752	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	461	865	0.533	461	0.9	1.0	7.700	A
				2	A,B,C,D	485	865	0.561	487	1.2	1.3	9.188	A
		Exit	1	1		743			743	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	462	503	0.918	462	11.1	12.4	92.788	F
				2	C,D,E	227	503	0.451	226	1.0	1.1	17.283	C
			2	1	(A,B,C,D,E)	792			689	12.2	34.9	124.011	F
		Exit	1	1		727			727	0.0	0.0	0.000	A

18:00 - 18:15

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	532	1174	0.453	532	1.0	0.6	4.460	A
				2	A,C	545	1174	0.465	547	1.0	0.7	4.506	A
		Exit	1	1		1263			1263	0.0	0.0	0.000	A
	B	Exit	1	1		363			363	0.0	0.0	0.000	A
	C	Entry	1	1	A	1226	1235	0.993	1236	58.5	60.7	174.716	F
				2	B,C	355	1235	0.288	354	0.4	0.5	4.459	A
		Exit	1	1		1713			1713	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	11	847	0.013	11	0.0	0.0	5.409	A
				2	C,D	658	847	0.777	658	5.8	3.3	20.040	C
			2	1	(A,B,C,D)	663			669	7.2	1.4	14.056	B
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	856	954	0.897	866	21.3	19.7	85.358	F
				2	C,D,A,E	420	954	0.440	420	1.3	1.1	9.733	A
			2	2	(A,B,C,D,E)	1255			1276	76.5	67.1	203.463	F
		Exit	1	1		1334			1334	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	585	861	0.680	586	2.7	1.7	11.262	B
				2	A,D,E	645	861	0.749	642	2.9	1.9	10.270	B
				3	B,A	483	861	0.561	483	1.8	1.1	8.197	A
			2	1	(A,C,D,E)	1331			1332	1.6	0.1	0.760	A
				2	(A,B)	382			382	0.0	0.0	0.039	A
		Exit	1	1		1582			1581	0.1	0.1	0.179	A
	C	Entry	1	1	D,A,E	172	645	0.266	171	0.6	0.4	7.404	A
				2	A,B,C	191	645	0.296	190	0.8	0.5	9.336	A
			2	1	(A,B,C,D,E)	363			363	0.0	0.0	0.001	A
		Exit	1	1		665			665	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	368	947	0.389	367	1.0	0.6	5.983	A
				2	A,B,C,D	407	947	0.429	408	1.3	0.7	7.240	A
		Exit	1	1		648			648	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	483	591	0.818	500	12.4	9.0	77.745	F
				2	C,D,E	233	591	0.394	234	1.1	0.8	14.901	B
			2	1	(A,B,C,D,E)	647			716	34.9	16.5	122.932	F
		Exit	1	1		638			638	0.0	0.0	0.000	A

18:15 - 18:30

Junction	Arm	Side	Lane level	Lane	Destination arms	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	LOS
1	A	Entry	1	1	B,C	437	1226	0.356	438	0.6	0.4	3.838	A
				2	A,C	462	1226	0.377	461	0.7	0.6	3.843	A
		Exit	1	1		1237			1237	0.0	0.0	0.000	A
	B	Exit	1	1		319			319	0.0	0.0	0.000	A
	C	Entry	1	1	A	1111	1237	0.899	1216	60.7	41.3	152.709	F
				2	B,C	313	1237	0.253	312	0.5	0.4	4.178	A
		Exit	1	1		1425			1425	0.0	0.0	0.000	A
	D	Entry	1	1	B,A	9	868	0.010	9	0.0	0.0	5.441	A
				2	C,D	543	868	0.625	545	3.3	1.7	12.688	B
			2	1	(A,B,C,D)	551			552	1.4	0.0	1.502	A
		Exit	1	1		0			0	0.0	0.0	0.000	A
2	A	Entry	1	1	B	791	1004	0.788	828	19.7	11.0	65.069	F
				2	C,D,A,E	386	1004	0.384	388	1.1	0.8	8.067	A
			2	2	(A,B,C,D,E)	1046			1177	67.1	22.2	108.170	F
		Exit	1	1		1110			1110	0.0	0.0	0.000	A
	B	Entry	1	1	C,D	493	880	0.560	493	1.7	1.1	8.314	A
				2	A,D,E	546	880	0.621	547	1.9	1.2	7.867	A
				3	B,A	386	880	0.438	386	1.1	0.7	6.395	A
			2	1	(A,C,D,E)	1116			1116	0.1	0.0	0.087	A
				2	(A,B)	309			309	0.0	0.0	0.001	A
		Exit	1	1		1424			1424	0.1	0.0	0.122	A
	C	Entry	1	1	D,A,E	139	716	0.195	140	0.4	0.2	6.220	A
				2	A,B,C	166	716	0.232	167	0.5	0.3	7.062	A
			2	1	(A,B,C,D,E)	305			305	0.0	0.0	0.000	A
		Exit	1	1		560			560	0.0	0.0	0.000	A
	D	Entry	1	1	A,E	309	1016	0.304	309	0.6	0.4	4.747	A
				2	A,B,C,D	347	1016	0.341	345	0.7	0.6	5.525	A
		Exit	1	1		551			551	0.0	0.0	0.000	A
	E	Entry	1	1	B,A	385	653	0.590	400	9.0	2.6	40.273	E
				2	C,D,E	184	653	0.282	184	0.8	0.5	9.417	A
			2	1	(A,B,C,D,E)	543			569	16.5	1.8	29.864	D
		Exit	1	1		541			541	0.0	0.0	0.000	A

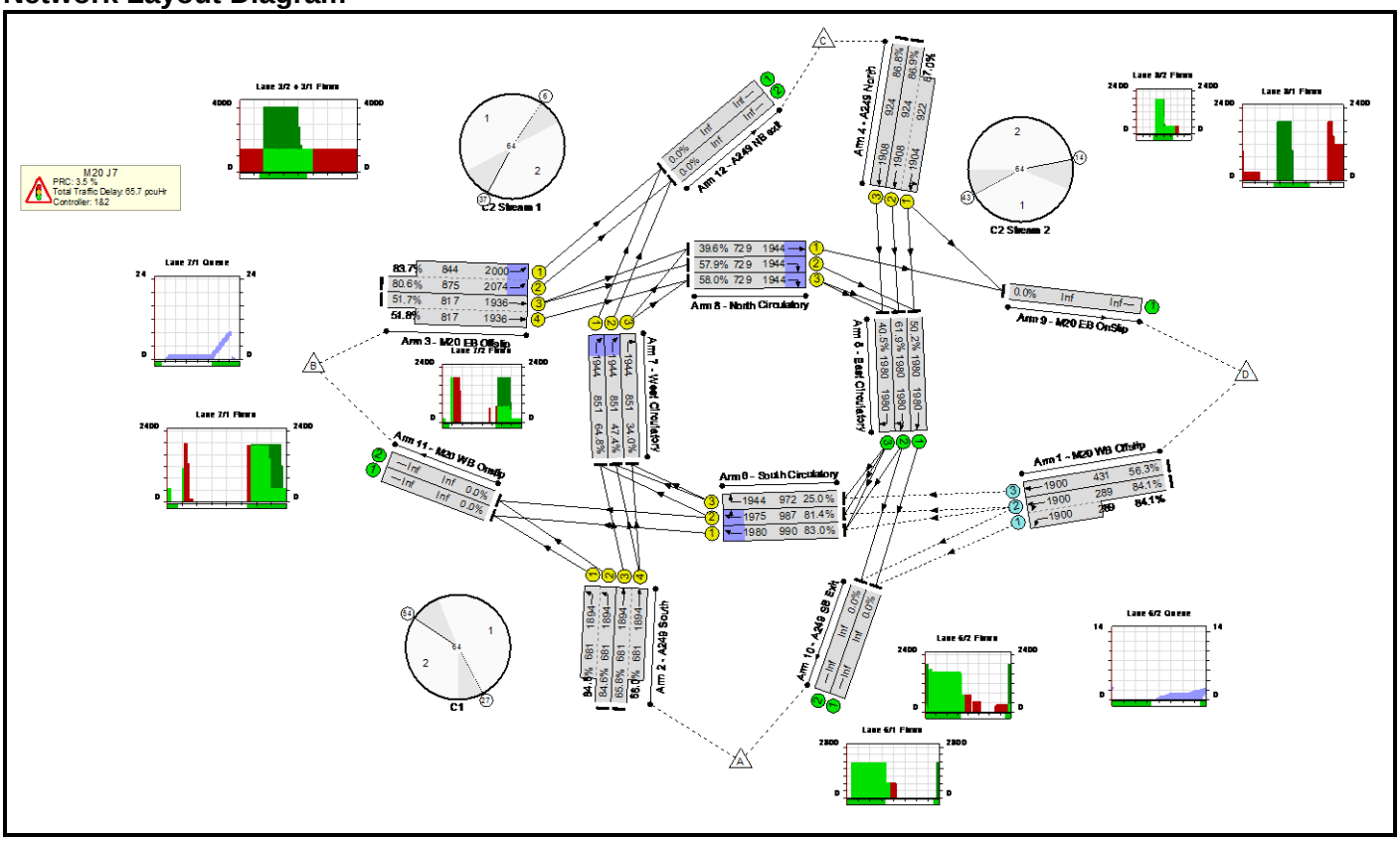
Basic Results Summary

User and Project Details

Project:	**Maidstone BC Transport Planning**
Title:	**M20 J7**
Location:	
File name:	Proposed_M20 J7.lsg3x
Author:	BR
Company:	MM
Address:	Soton
Notes:	

Scenario 5: 'Consented 2031 AM Sc1' (FG5: 'Consented 2031 AM Sc1', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J7	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.0%**	**1215**	**0**	**0**	**65.7**	**-**	**-**
M20 J7	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**87.0%**	**1215**	**0**	**0**	**65.7**	**-**	**-**
1/2+1/1	M20 WB Offslip Ahead Left	O	-		-	-	-	486	1900:1900	289+289	84.1 : 84.1%	972	0	0	3.6	26.4	6.6
1/3	M20 WB Offslip Ahead	O	-		-	-	-	243	1900	431	56.3%	243	0	0	1.1	16.6	3.0
2/2+2/1	A249 South Left	U	C1:B		1	22	-	1152	1894:1894	681+681	84.6 : 84.6%	-	-	-	8.7	27.3	12.0
2/3+2/4	A249 South Ahead	U	C1:B		1	22	-	897	1894:1894	681+681	65.8 : 66.0%	-	-	-	5.3	21.1	7.6
3/2+3/1	M20 EB Offslip Ahead	U	C2:B		1	26	-	1411	2074:2000	875+844	80.6 : 83.7%	-	-	-	8.7	22.1	13.2
3/3+3/4	M20 EB Offslip Ahead	U	C2:B		1	26	-	845	1936:1936	817+817	51.7 : 51.8%	-	-	-	3.7	16.0	6.1
4/2+4/1	A249 North Ahead Left	U	C2:D		1	30	-	1605	1908:1904	924+922	86.9 : 87.0%	-	-	-	9.8	22.0	15.9
4/3	A249 North Ahead	U	C2:D		1	30	-	802	1908	924	86.8%	-	-	-	6.4	28.7	15.6
5/1	East Circulatory Ahead	U	-		-	-	-	994	1980	1980	50.2%	-	-	-	0.5	1.8	0.5
5/2	East Circulatory Right Ahead	U	-		-	-	-	1226	1980	1980	61.9%	-	-	-	0.8	2.4	0.8
5/3	East Circulatory Right	U	-		-	-	-	802	1980	1980	40.5%	-	-	-	0.3	1.5	0.3
6/1	South Circulatory Ahead	U	C1:A		1	31	-	822	1980	990	83.0%	-	-	-	2.8	12.4	3.3
6/2	South Circulatory Right Ahead	U	C1:A		1	31	-	804	1975	987	81.4%	-	-	-	2.9	12.9	4.7

Basic Results Summary

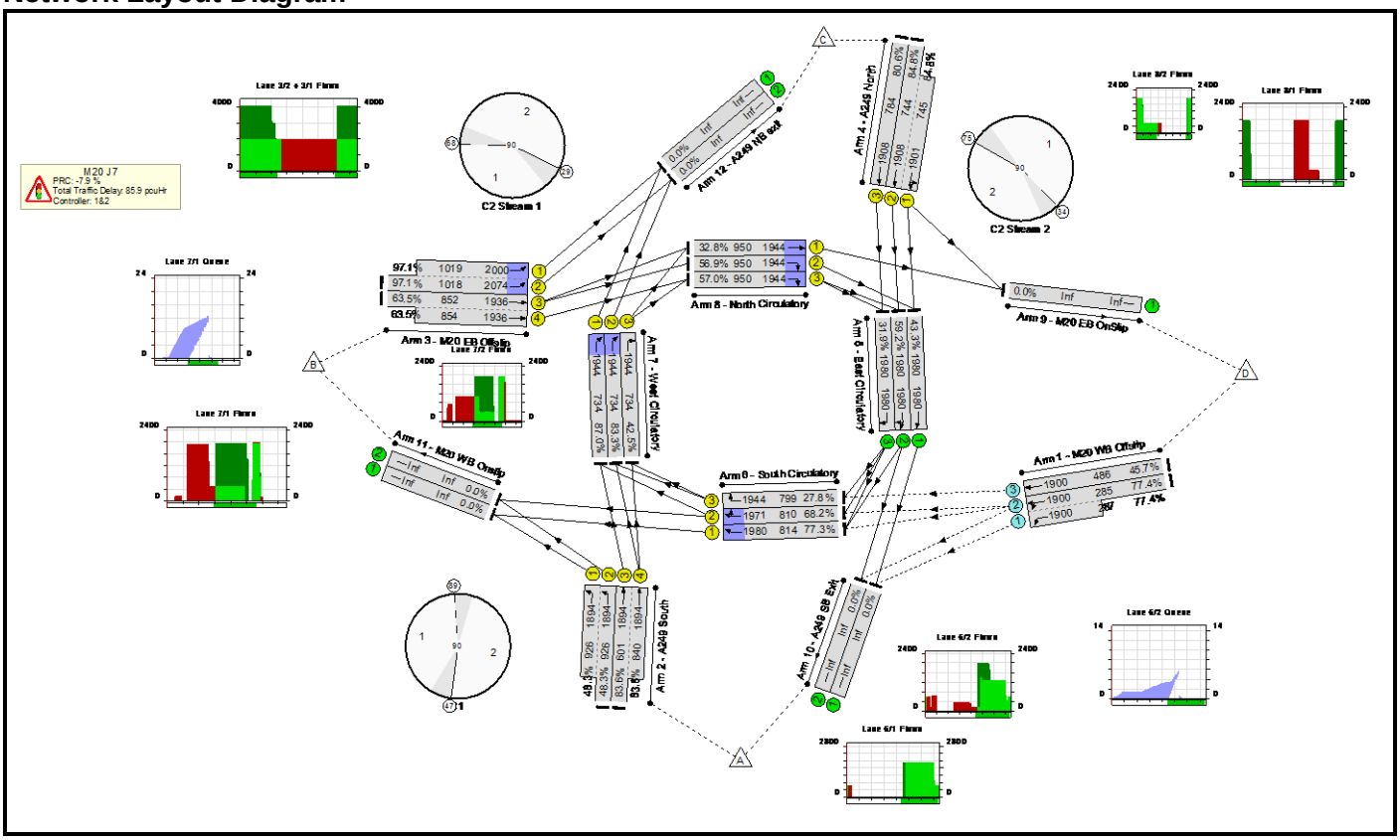
6/3	South Circulatory Right	U	C1:A		1	31	-	243	1944	972	25.0%	-	-	-	1.5	22.8	4.3
7/1	West Circulatory Right	U	C2:A		1	27	-	551	1944	851	64.8%	-	-	-	2.3	14.9	9.4
7/2	West Circulatory Right	U	C2:A		1	27	-	403	1944	851	47.4%	-	-	-	2.4	21.0	5.2
7/3	West Circulatory Right	U	C2:A		1	27	-	289	1944	851	34.0%	-	-	-	0.3	3.6	2.0
8/1	North Circulatory Ahead	U	C2:C		1	23	-	289	1944	729	39.6%	-	-	-	2.8	34.3	5.5
8/2	North Circulatory Right	U	C2:C		1	23	-	422	1944	729	57.9%	-	-	-	1.0	8.1	1.0
8/3	North Circulatory Right	U	C2:C		1	23	-	423	1944	729	58.0%	-	-	-	1.0	8.1	1.0

C1	PRC for Signalled Lanes (%):	6.4	Total Delay for Signalled Lanes (pcuHr):	21.21	Cycle Time (s):	64
C2	Stream: 1 PRC for Signalled Lanes (%):	7.6	Total Delay for Signalled Lanes (pcuHr):	17.34	Cycle Time (s):	64
C2	Stream: 2 PRC for Signalled Lanes (%):	3.5	Total Delay for Signalled Lanes (pcuHr):	20.84	Cycle Time (s):	64
	PRC Over All Lanes (%):	3.5	Total Delay Over All Lanes(pcuHr):	65.72		

Basic Results Summary

Scenario 6: 'Consented 2031 PM Sc1' (FG6: 'Consented 2031 PM Sc1', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J7	-	-	-		-	-	-	-	-	-	**97.1%**	**1108**	**0**	**0**	**85.9**	-	-
M20 J7	-	-	-		-	-	-	-	-	-	**97.1%**	**1108**	**0**	**0**	**85.9**	-	-
1/2+1/1	M20 WB Offslip Ahead Left	O	-		-	-	-	443	1900:1900	285+287	77.4 : 77.4%	886	0	0	2.5	20.4	6.4
1/3	M20 WB Offslip Ahead	O	-		-	-	-	222	1900	486	45.7%	222	0	0	0.7	11.6	2.6
2/2+2/1	A249 South Left	U	C1:B		1	43	-	894	1894:1894	926+926	48.3 : 48.3%	-	-	-	4.3	17.3	7.9
2/3+2/4	A249 South Ahead	U	C1:B		1	43	-	1204	1894:1894	601+840	83.6 : 83.6%	-	-	-	8.4	25.0	16.7
3/2+3/1	M20 EB Offslip Ahead	U	C2:B		1	46	-	1977	2074:2000	1018+1019	97.1 : 97.1%	-	-	-	22.9	41.6	34.7
3/3+3/4	M20 EB Offslip Ahead	U	C2:B		1	46	-	1083	1936:1936	852+854	63.5 : 63.5%	-	-	-	5.2	17.1	9.7
4/2+4/1	A249 North Ahead Left	U	C2:D		1	36	-	1263	1908:1901	744+745	84.8 : 84.8%	-	-	-	10.9	31.1	16.6
4/3	A249 North Ahead	U	C2:D		1	36	-	632	1908	784	80.6%	-	-	-	6.1	34.8	15.9
5/1	East Circulatory Ahead	U	-		-	-	-	857	1980	1980	43.3%	-	-	-	0.4	1.6	0.4
5/2	East Circulatory Right Ahead	U	-		-	-	-	1173	1980	1980	59.2%	-	-	-	0.7	2.2	0.7
5/3	East Circulatory Right	U	-		-	-	-	632	1980	1980	31.9%	-	-	-	0.2	1.3	0.2
6/1	South Circulatory Ahead	U	C1:A		1	36	-	629	1980	814	77.3%	-	-	-	2.0	11.3	2.2
6/2	South Circulatory Right Ahead	U	C1:A		1	36	-	553	1971	810	68.2%	-	-	-	2.3	15.1	6.7

Basic Results Summary

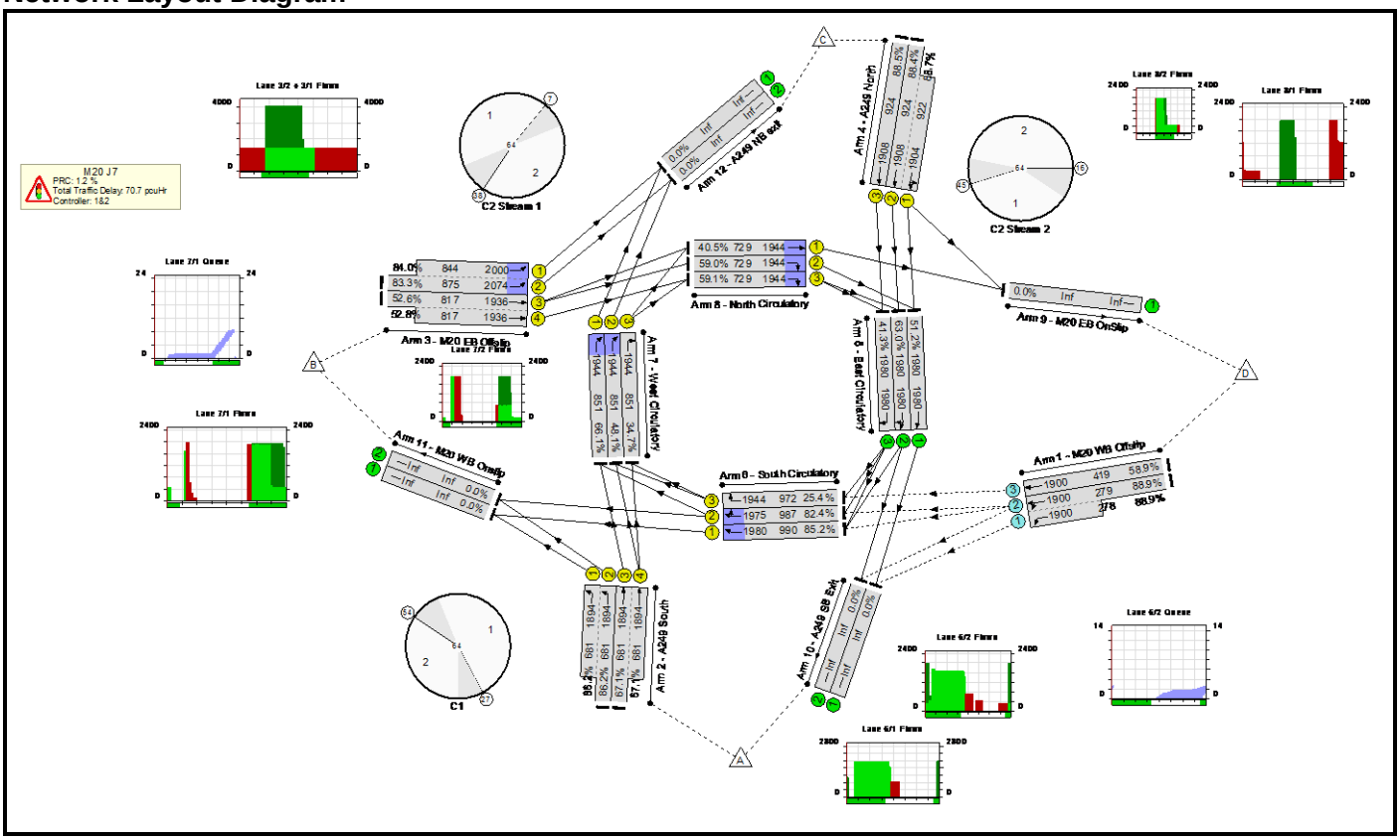
6/3	South Circulatory Right	U	C1:A		1	36	-	222	1944	799	27.8%	-	-	-	1.7	27.5	4.4
7/1	West Circulatory Right	U	C2:A		1	33	-	639	1944	734	87.0%	-	-	-	5.9	33.3	15.8
7/2	West Circulatory Right	U	C2:A		1	33	-	612	1944	734	83.3%	-	-	-	5.0	29.2	13.5
7/3	West Circulatory Right	U	C2:A		1	33	-	312	1944	734	42.5%	-	-	-	1.4	16.2	7.3
8/1	North Circulatory Ahead	U	C2:C		1	43	-	312	1944	950	32.8%	-	-	-	3.4	39.4	8.0
8/2	North Circulatory Right	U	C2:C		1	43	-	541	1944	950	56.9%	-	-	-	1.0	6.4	1.3
8/3	North Circulatory Right	U	C2:C		1	43	-	542	1944	950	57.0%	-	-	-	1.0	6.4	1.3

C1	PRC for Signalled Lanes (%):	7.7	Total Delay for Signalled Lanes (pcuHr):	18.65	Cycle Time (s):	90
C2	Stream: 1 PRC for Signalled Lanes (%):	-7.9	Total Delay for Signalled Lanes (pcuHr):	40.30	Cycle Time (s):	90
C2	Stream: 2 PRC for Signalled Lanes (%):	6.1	Total Delay for Signalled Lanes (pcuHr):	22.39	Cycle Time (s):	90
	PRC Over All Lanes (%):	-7.9	Total Delay Over All Lanes(pcuHr):	85.90		

Basic Results Summary

Scenario 7: 'All Dev 2031 AM' (FG7: 'All Dev 2031 AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J7	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.9%**	**1237**	**0**	**0**	**70.7**	**-**	**-**
M20 J7	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**88.9%**	**1237**	**0**	**0**	**70.7**	**-**	**-**
1/2+1/1	M20 WB Offslip Ahead Left	O	-		-	-	-	495	1900:1900	279+278	88.9 : 88.9%	990	0	0	4.7	34.3	7.8
1/3	M20 WB Offslip Ahead	O	-		-	-	-	247	1900	419	58.9%	247	0	0	1.2	17.9	3.1
2/2+2/1	A249 South Left	U	C1:B		1	22	-	1174	1894:1894	681+681	86.2 : 86.2%	-	-	-	9.2	28.3	12.7
2/3+2/4	A249 South Ahead	U	C1:B		1	22	-	914	1894:1894	681+681	67.1 : 67.1%	-	-	-	5.4	21.3	7.9
3/2+3/1	M20 EB Offslip Ahead	U	C2:B		1	26	-	1438	2074:2000	875+844	83.3 : 84.0%	-	-	-	9.1	22.8	13.9
3/3+3/4	M20 EB Offslip Ahead	U	C2:B		1	26	-	861	1936:1936	817+817	52.6 : 52.8%	-	-	-	3.8	16.1	6.2
4/2+4/1	A249 North Ahead Left	U	C2:D		1	30	-	1635	1908:1904	924+922	88.4 : 88.7%	-	-	-	10.5	23.1	16.7
4/3	A249 North Ahead	U	C2:D		1	30	-	818	1908	924	88.5%	-	-	-	7.0	30.8	16.6
5/1	East Circulatory Ahead	U	-		-	-	-	1014	1980	1980	51.2%	-	-	-	0.5	1.9	0.5
5/2	East Circulatory Right Ahead	U	-		-	-	-	1248	1980	1980	63.0%	-	-	-	0.9	2.5	0.9
5/3	East Circulatory Right	U	-		-	-	-	818	1980	1980	41.3%	-	-	-	0.4	1.5	0.4
6/1	South Circulatory Ahead	U	C1:A		1	31	-	843	1980	990	85.2%	-	-	-	3.4	14.6	4.2
6/2	South Circulatory Right Ahead	U	C1:A		1	31	-	814	1975	987	82.4%	-	-	-	3.2	13.9	5.0

Basic Results Summary

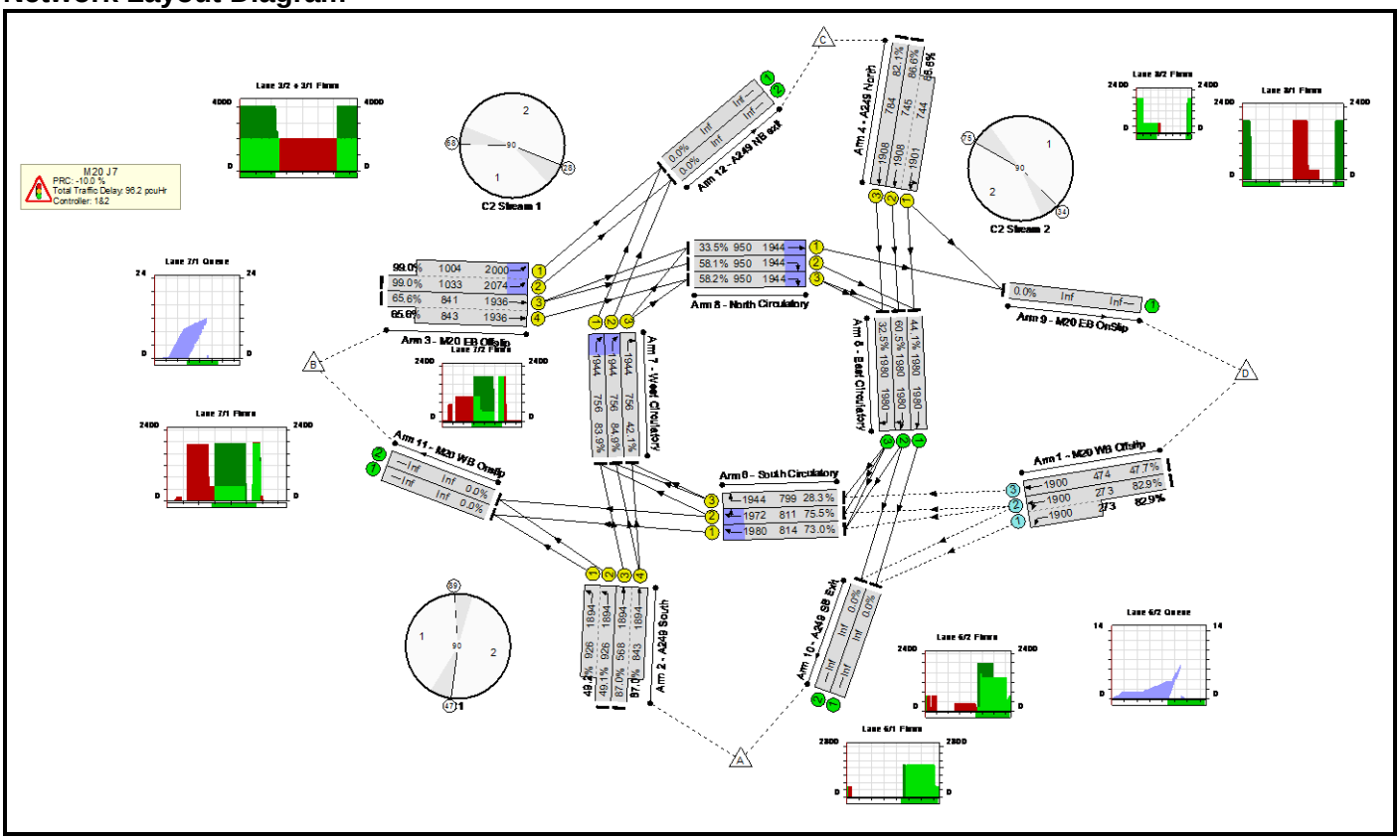
6/3	South Circulatory Right	U	C1:A		1	31	-	247	1944	972	25.4%	-	-	-	1.5	22.0	4.5
7/1	West Circulatory Right	U	C2:A		1	27	-	562	1944	851	66.1%	-	-	-	2.4	15.2	9.7
7/2	West Circulatory Right	U	C2:A		1	27	-	409	1944	851	48.1%	-	-	-	2.2	19.1	4.7
7/3	West Circulatory Right	U	C2:A		1	27	-	295	1944	851	34.7%	-	-	-	0.3	4.0	3.0
8/1	North Circulatory Ahead	U	C2:C		1	23	-	295	1944	729	40.5%	-	-	-	2.9	35.9	5.6
8/2	North Circulatory Right	U	C2:C		1	23	-	430	1944	729	59.0%	-	-	-	1.0	8.3	1.5
8/3	North Circulatory Right	U	C2:C		1	23	-	431	1944	729	59.1%	-	-	-	1.0	8.3	1.5

C1	PRC for Signalled Lanes (%):	4.4	Total Delay for Signalled Lanes (pcuHr):	22.75	Cycle Time (s): 64
C2	Stream: 1 PRC for Signalled Lanes (%):	7.1	Total Delay for Signalled Lanes (pcuHr):	17.84	Cycle Time (s): 64
C2	Stream: 2 PRC for Signalled Lanes (%):	1.5	Total Delay for Signalled Lanes (pcuHr):	22.42	Cycle Time (s): 64
	PRC Over All Lanes (%):	1.2	Total Delay Over All Lanes(pcuHr):	70.68	

Basic Results Summary

Scenario 8: 'All Dev 2031 PM' (FG8: 'All Dev 2031 PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J7	-	-	-		-	-	-	-	-	-	**99.0%**	**1130**	**0**	**0**	**96.2**	-	-
M20 J7	-	-	-		-	-	-	-	-	-	**99.0%**	**1130**	**0**	**0**	**96.2**	-	-
1/2+1/1	M20 WB Offslip Ahead Left	O	-		-	-	-	452	1900:1900	273+273	82.9 : 82.9%	904	0	0	3.3	26.2	7.5
1/3	M20 WB Offslip Ahead	O	-		-	-	-	226	1900	474	47.7%	226	0	0	0.8	12.4	2.8
2/2+2/1	A249 South Left	U	C1:B		1	43	-	911	1894:1894	926+926	49.1 : 49.2%	-	-	-	4.4	17.4	8.1
2/3+2/4	A249 South Ahead	U	C1:B		1	43	-	1228	1894:1894	568+843	87.0 : 87.0%	-	-	-	9.3	27.4	18.5
3/2+3/1	M20 EB Offslip Ahead	U	C2:B		1	45	-	2017	2074:2000	1033+1004	99.0 : 99.0%	-	-	-	30.0	53.5	42.2
3/3+3/4	M20 EB Offslip Ahead	U	C2:B		1	45	-	1105	1936:1936	841+843	65.6 : 65.6%	-	-	-	5.6	18.2	10.3
4/2+4/1	A249 North Ahead Left	U	C2:D		1	36	-	1289	1908:1901	745+744	86.6 : 86.6%	-	-	-	11.6	32.3	17.5
4/3	A249 North Ahead	U	C2:D		1	36	-	644	1908	784	82.1%	-	-	-	6.4	36.0	16.5
5/1	East Circulatory Ahead	U	-		-	-	-	874	1980	1980	44.1%	-	-	-	0.4	1.6	0.4
5/2	East Circulatory Right Ahead	U	-		-	-	-	1198	1980	1980	60.5%	-	-	-	0.8	2.3	0.8
5/3	East Circulatory Right	U	-		-	-	-	644	1980	1980	32.5%	-	-	-	0.2	1.3	0.2
6/1	South Circulatory Ahead	U	C1:A		1	36	-	594	1980	814	73.0%	-	-	-	1.6	9.8	1.8
6/2	South Circulatory Right Ahead	U	C1:A		1	36	-	612	1972	811	75.5%	-	-	-	2.8	16.6	8.3

Basic Results Summary

6/3	South Circulatory Right	U	C1:A		1	36	-	226	1944	799	28.3%	-	-	-	1.8	29.4	4.7
7/1	West Circulatory Right	U	C2:A		1	34	-	634	1944	756	83.9%	-	-	-	5.1	28.7	14.7
7/2	West Circulatory Right	U	C2:A		1	34	-	642	1944	756	84.9%	-	-	-	5.4	30.1	14.5
7/3	West Circulatory Right	U	C2:A		1	34	-	318	1944	756	42.1%	-	-	-	1.3	14.7	7.4
8/1	North Circulatory Ahead	U	C2:C		1	43	-	318	1944	950	33.5%	-	-	-	3.6	40.4	8.2
8/2	North Circulatory Right	U	C2:C		1	43	-	552	1944	950	58.1%	-	-	-	0.9	6.0	1.2
8/3	North Circulatory Right	U	C2:C		1	43	-	553	1944	950	58.2%	-	-	-	0.9	6.0	1.2

C1	PRC for Signalled Lanes (%):	3.4	Total Delay for Signalled Lanes (pcuHr):	20.03	Cycle Time (s):	90
C2	Stream: 1 PRC for Signalled Lanes (%):	-10.0	Total Delay for Signalled Lanes (pcuHr):	47.27	Cycle Time (s):	90
C2	Stream: 2 PRC for Signalled Lanes (%):	4.0	Total Delay for Signalled Lanes (pcuHr):	23.42	Cycle Time (s):	90
	PRC Over All Lanes (%):	-10.0	Total Delay Over All Lanes(pcuHr):	96.20		

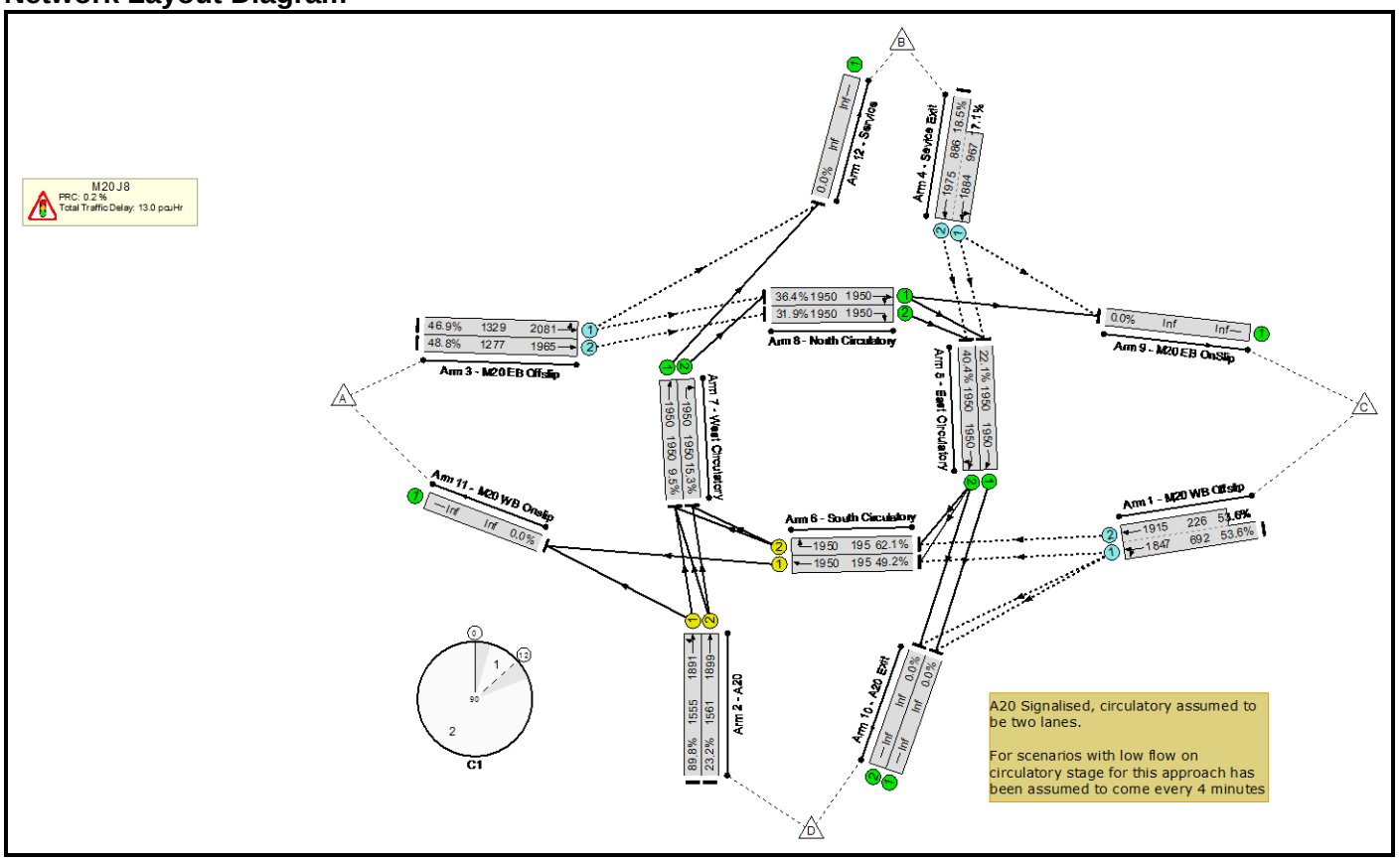
Basic Results Summary

User and Project Details

Project:	**M20 Junction Assessments**
Title:	**M20 J8**
Location:	
File name:	Proposed_M20 J8.lsg3x
Author:	BR
Company:	MM
Address:	Soton
Notes:	

Scenario 3: 'All Dev 2031 AM' (FG3: 'All Dev 2031 AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J8	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.8%**	**2889**	**0**	**0**	**13.0**	**-**	**-**
M20 J8	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**89.8%**	**2889**	**0**	**0**	**13.0**	**-**	**-**
1/1+1/2	M20 WB Offslip Ahead Left	O	-		-	-	-	492	1847:1915	692+226	53.6 : 53.6%	984	0	0	0.6	4.2	0.6
2/1	A20 Ahead Left	U	B		1	73	-	1396	1891	1555	89.8%	-	-	-	6.3	16.2	27.8
2/2	A20 Ahead	U	B		1	73	-	363	1899	1561	23.2%	-	-	-	0.3	3.3	2.1
3/1	M20 EB Offslip Ahead Left	O	-		-	-	-	624	2081	1329	46.9%	624	0	0	0.4	2.5	0.6
3/2	M20 EB Offslip Ahead	O	-		-	-	-	623	1965	1277	48.8%	623	0	0	0.5	2.7	0.6
4/2+4/1	Sevice Exit Ahead Left	O	-		-	-	-	329	1975:1884	886+967	18.5 : 17.1%	658	0	0	0.1	1.2	0.1
5/1	East Circulatory Ahead	U	-		-	-	-	431	1950	1950	22.1%	-	-	-	0.1	1.2	0.1
5/2	East Circulatory Right Ahead	U	-		-	-	-	787	1950	1950	40.4%	-	-	-	0.3	1.5	0.3
6/1	South Circulatory Ahead	U	A		1	8	-	96	1950	195	49.2%	-	-	-	1.5	56.4	2.7
6/2	South Circulatory Right	U	A		1	8	-	121	1950	195	62.1%	-	-	-	2.1	62.7	3.7
7/1	West Circulatory Ahead	U	-		-	-	-	185	1950	1950	9.5%	-	-	-	0.1	1.0	0.1
7/2	West Circulatory Right	U	-		-	-	-	299	1950	1950	15.3%	-	-	-	0.1	1.1	0.1

Basic Results Summary

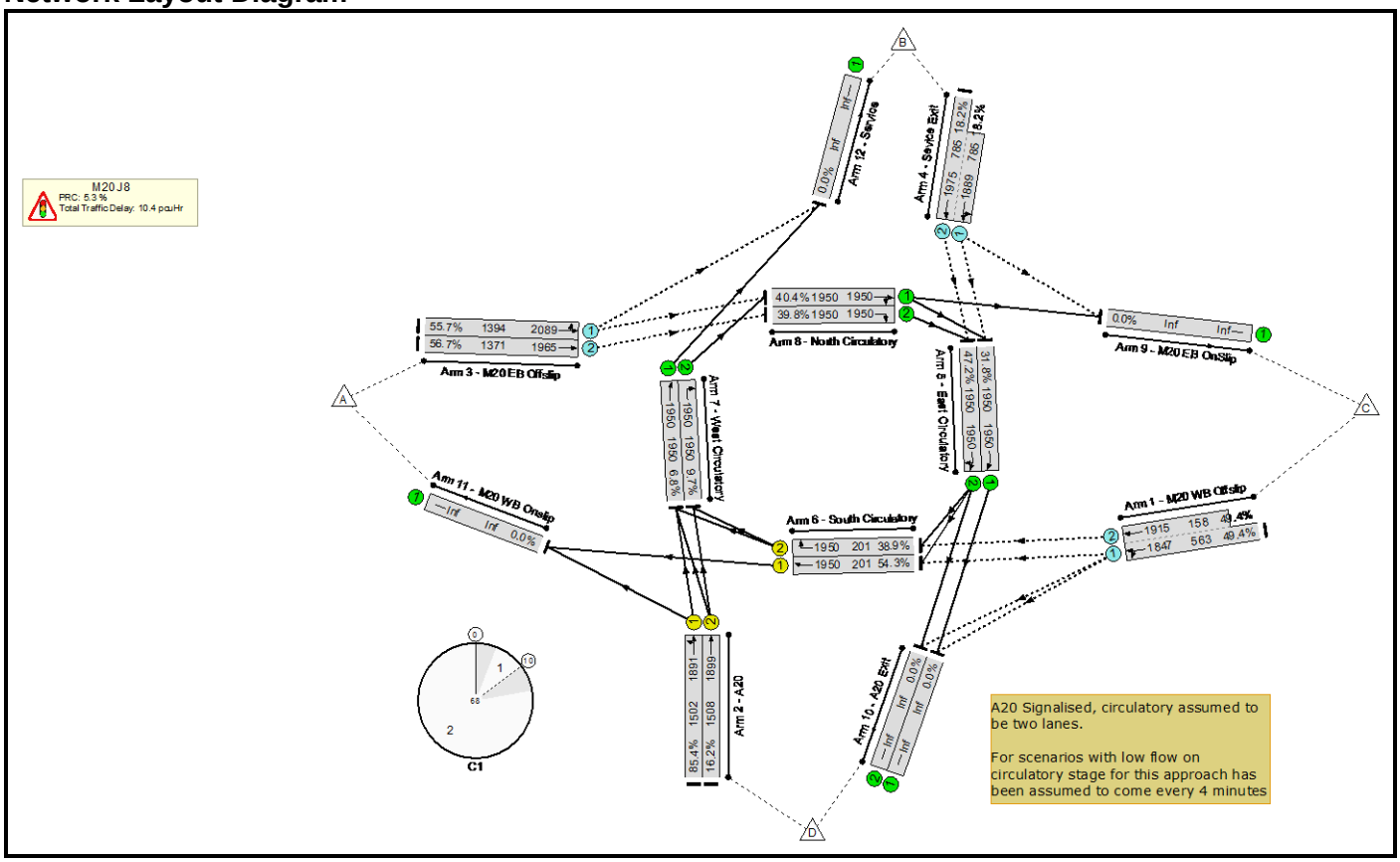
8/1	North Circulatory Right Ahead	U	-		-	-	-	710	1950	1950	36.4%	-	-	-	0.3	1.5	0.3
8/2	North Circulatory Right	U	-		-	-	-	623	1950	1950	31.9%	-	-	-	0.2	1.4	0.2

C1	PRC for Signalled Lanes (%):	0.2	Total Delay for Signalled Lanes (pcuHr):	10.22	Cycle Time (s):	90	
	PRC Over All Lanes (%):	0.2	Total Delay Over All Lanes(pcuHr):	12.97			

Basic Results Summary

Scenario 4: 'All Dev 2031 PM' (FG4: 'All Dev 2031 PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J8	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.4%**	**2838**	**0**	**0**	**10.4**	**-**	**-**
M20 J8	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**85.4%**	**2838**	**0**	**0**	**10.4**	**-**	**-**
1/1+1/2	M20 WB Offslip Ahead Left	O	-		-	-	-	356	1847:1915	563+158	49.4 : 49.4%	712	0	0	0.5	4.9	0.5
2/1	A20 Ahead Left	U	B		1	53	-	1283	1891	1502	85.4%	-	-	-	4.5	12.5	18.2
2/2	A20 Ahead	U	B		1	53	-	244	1899	1508	16.2%	-	-	-	0.2	3.1	1.2
3/1	M20 EB Offslip Ahead Left	O	-		-	-	-	777	2089	1394	55.7%	777	0	0	0.6	2.9	0.6
3/2	M20 EB Offslip Ahead	O	-		-	-	-	777	1965	1371	56.7%	777	0	0	0.7	3.0	0.7
4/2+4/1	Sevice Exit Ahead Left	O	-		-	-	-	286	1975:1889	785+785	18.2 : 18.2%	572	0	0	0.1	1.4	0.1
5/1	East Circulatory Ahead	U	-		-	-	-	620	1950	1950	31.8%	-	-	-	0.2	1.4	0.2
5/2	East Circulatory Right Ahead	U	-		-	-	-	920	1950	1950	47.2%	-	-	-	0.4	1.7	0.4
6/1	South Circulatory Ahead	U	A		1	6	-	109	1950	201	54.3%	-	-	-	1.5	48.4	2.5
6/2	South Circulatory Right	U	A		1	6	-	78	1950	201	38.9%	-	-	-	0.9	43.1	1.7
7/1	West Circulatory Ahead	U	-		-	-	-	132	1950	1950	6.8%	-	-	-	0.0	1.0	0.0
7/2	West Circulatory Right	U	-		-	-	-	190	1950	1950	9.7%	-	-	-	0.1	1.0	0.1

Basic Results Summary

8/1	North Circulatory Right Ahead	U	-		-	-	-	787	1950	1950	40.4%	-	-	-	0.3	1.5	0.3
8/2	North Circulatory Right	U	-		-	-	-	777	1950	1950	39.8%	-	-	-	0.3	1.5	0.3

C1	PRC for Signalled Lanes (%):	5.3	Total Delay for Signalled Lanes (pcuHr):	7.06	Cycle Time (s):	68	
	PRC Over All Lanes (%):	5.3	Total Delay Over All Lanes(pcuHr):	10.38			

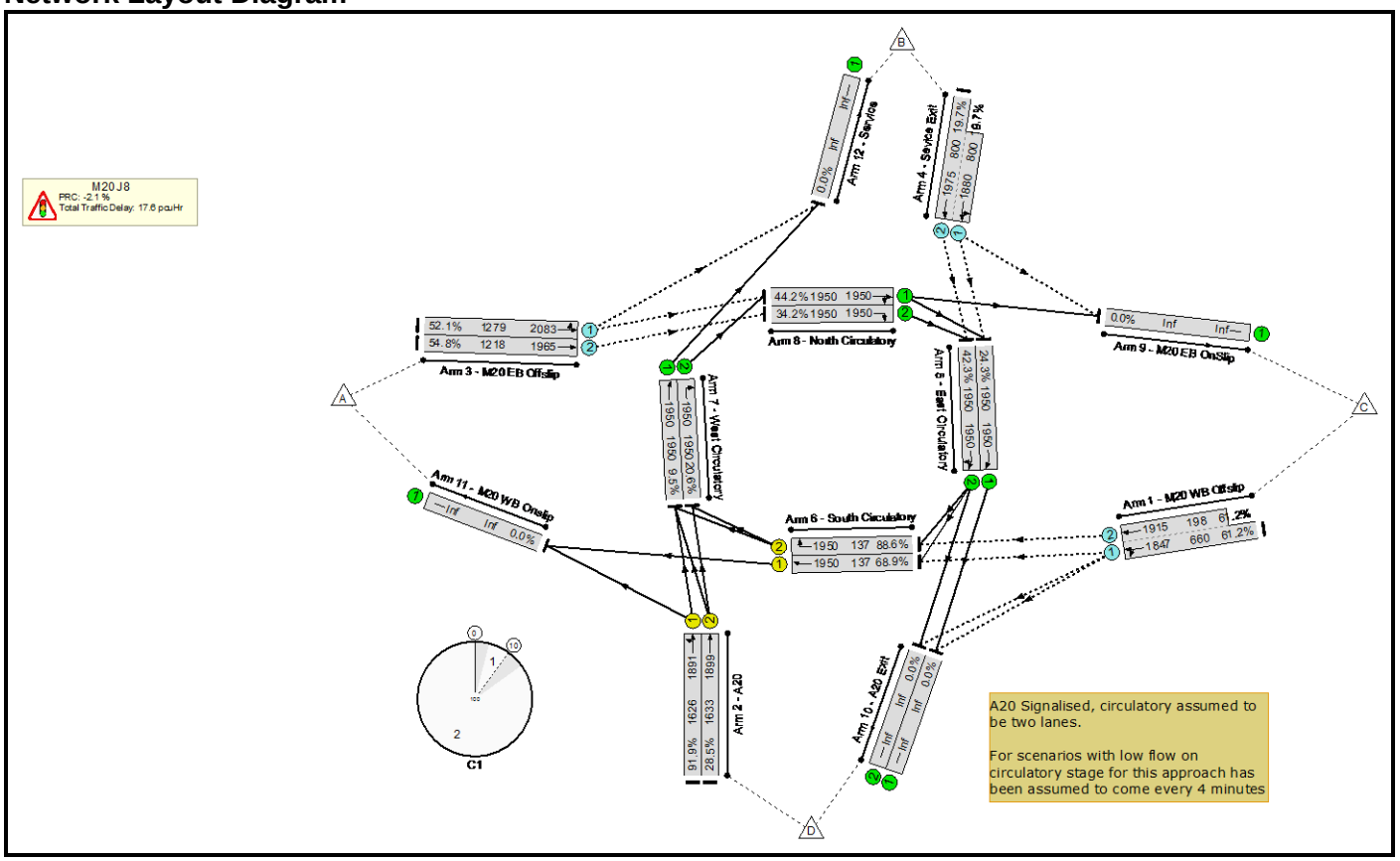
Basic Results Summary

User and Project Details

Project:	**M20 Junction Assessments**
Title:	**M20 J8**
Location:	
File name:	Proposed_M20 J8.lsg3x
Author:	BR
Company:	MM
Address:	Soton
Notes:	

Scenario 9: 'SEMSL 2031 AM' (FG9: 'SEMSL 2031 AM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J8	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.9%**	**3016**	**0**	**0**	**17.6**	**-**	**-**
M20 J8	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**91.9%**	**3016**	**0**	**0**	**17.6**	**-**	**-**
1/1+1/2	M20 WB Offslip Ahead Left	O	-		-	-	-	525	1847:1915	660+198	61.2 : 61.2%	1050	0	0	0.8	5.4	0.8
2/1	A20 Ahead Left	U	B		1	85	-	1494	1891	1626	91.9%	-	-	-	7.2	17.3	32.6
2/2	A20 Ahead	U	B		1	85	-	465	1899	1633	28.5%	-	-	-	0.4	2.8	2.5
3/1	M20 EB Offslip Ahead Left	O	-		-	-	-	667	2083	1279	52.1%	667	0	0	0.5	2.9	1.1
3/2	M20 EB Offslip Ahead	O	-		-	-	-	667	1965	1218	54.8%	667	0	0	0.6	3.3	1.2
4/2+4/1	Sevice Exit Ahead Left	O	-		-	-	-	316	1975:1880	800+800	19.7 : 19.7%	632	0	0	0.1	1.4	0.1
5/1	East Circulatory Ahead	U	-		-	-	-	473	1950	1950	24.3%	-	-	-	0.2	1.2	0.2
5/2	East Circulatory Right Ahead	U	-		-	-	-	825	1950	1950	42.3%	-	-	-	0.4	1.6	0.4
6/1	South Circulatory Ahead	U	A		1	6	-	94	1950	137	68.9%	-	-	-	2.2	85.8	3.6
6/2	South Circulatory Right	U	A		1	6	-	121	1950	137	88.6%	-	-	-	4.4	131.0	6.2
7/1	West Circulatory Ahead	U	-		-	-	-	185	1950	1950	9.5%	-	-	-	0.1	1.0	0.1
7/2	West Circulatory Right	U	-		-	-	-	401	1950	1950	20.6%	-	-	-	0.1	1.2	0.1

Basic Results Summary

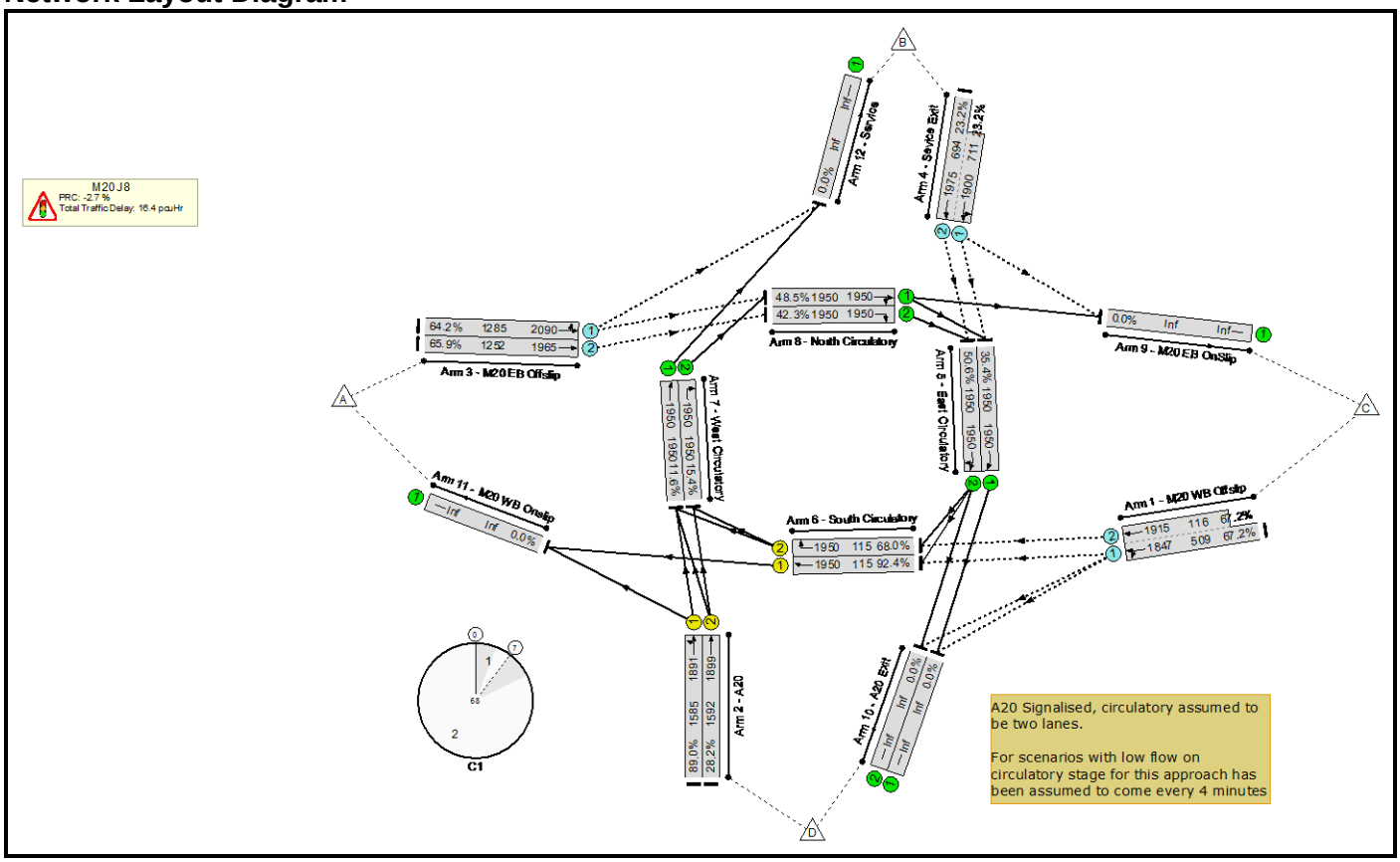
8/1	North Circulatory Right Ahead	U	-		-	-	-	861	1950	1950	44.2%	-	-	-	0.4	1.7	0.4
8/2	North Circulatory Right	U	-		-	-	-	667	1950	1950	34.2%	-	-	-	0.3	1.4	0.3

C1 PRC for Signalled Lanes (%): -2.1 Total Delay for Signalled Lanes (pcuHr): 14.18 Cycle Time (s): 100
PRC Over All Lanes (%): -2.1 Total Delay Over All Lanes(pcuHr): 17.60

Basic Results Summary

Scenario 10: 'SEMSL 2031 PM' (FG10: 'SEMSL 2031 PM', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Basic Results Summary

Network Results

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: M20 J8	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.4%**	**3142**	**0**	**0**	**16.4**	**-**	**-**
M20 J8	**-**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**92.4%**	**3142**	**0**	**0**	**16.4**	**-**	**-**
1/1+1/2	M20 WB Offslip Ahead Left	O	-		-	-	-	420	1847:1915	509+116	67.2 : 67.2%	840	0	0	1.0	8.7	1.0
2/1	A20 Ahead Left	U	B		1	56	-	1411	1891	1585	89.0%	-	-	-	5.3	13.4	20.7
2/2	A20 Ahead	U	B		1	56	-	449	1899	1592	28.2%	-	-	-	0.3	2.7	1.9
3/1	M20 EB Offslip Ahead Left	O	-		-	-	-	825	2090	1285	64.2%	825	0	0	0.9	3.9	0.9
3/2	M20 EB Offslip Ahead	O	-		-	-	-	825	1965	1252	65.9%	825	0	0	1.0	4.2	1.2
4/2+4/1	Sevice Exit Ahead Left	O	-		-	-	-	326	1975:1900	694+711	23.2 : 23.2%	652	0	0	0.2	1.7	0.2
5/1	East Circulatory Ahead	U	-		-	-	-	690	1950	1950	35.4%	-	-	-	0.3	1.4	0.3
5/2	East Circulatory Right Ahead	U	-		-	-	-	986	1950	1950	50.6%	-	-	-	0.5	1.9	0.5
6/1	South Circulatory Ahead	U	A		1	3	-	106	1950	115	92.4%	-	-	-	4.4	147.8	5.4
6/2	South Circulatory Right	U	A		1	3	-	78	1950	115	68.0%	-	-	-	1.7	77.9	2.4
7/1	West Circulatory Ahead	U	-		-	-	-	227	1950	1950	11.6%	-	-	-	0.1	1.0	0.1
7/2	West Circulatory Right	U	-		-	-	-	300	1950	1950	15.4%	-	-	-	0.1	1.1	0.1

Basic Results Summary

8/1	North Circulatory Right Ahead	U	-		-	-	-	945	1950	1950	48.5%	-	-	-	0.5	1.8	0.5
8/2	North Circulatory Right	U	-		-	-	-	825	1950	1950	42.3%	-	-	-	0.4	1.6	0.4

C1	PRC for Signalled Lanes (%):	-2.7	Total Delay for Signalled Lanes (pcuHr):	11.63	Cycle Time (s):	68	
	PRC Over All Lanes (%):	-2.7	Total Delay Over All Lanes(pcuHr):	16.43			

G. Merge Assessment Diagrams

TEMPro	T&M	M
2014-16	1.01827	1.013519
2016-31	1.07948	1.084134

Scenario	
2014 B	
2016 B	
2031 B	
S1-B	
S2-S1	
SEMSL	

AM Peak 07:00-08:00 AAWT Flows

Count Location

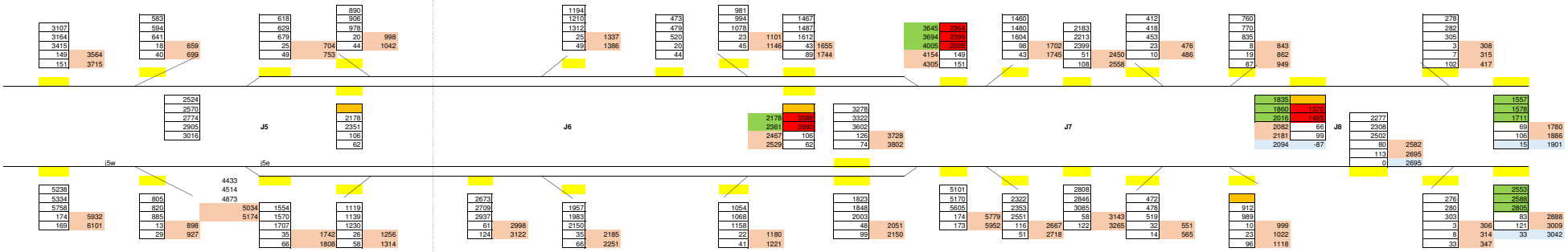
Flows have been calculated instead of using TRADs data (highlighted red)

No 2014 data available

2031 B + S1

2031 B + S2

2031 B + SEMSL



TEMPro	T&M	M
2014-16	1.01868	1.013313
2016-31	1.0784	1.083107

Scenario	
2014 B	
2016 B	
2031 B	
S1-B	
S2-S1	
SEMSL	

PM Peak 17:00-18:00 AAWT Flows

Count Location

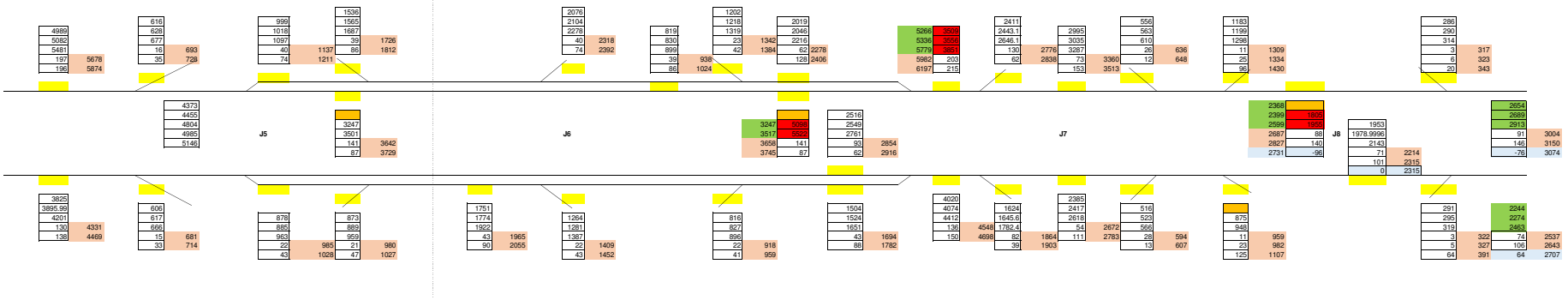
Flows have been calculated instead of using TRADs data (highlighted red)

No 2014 data available

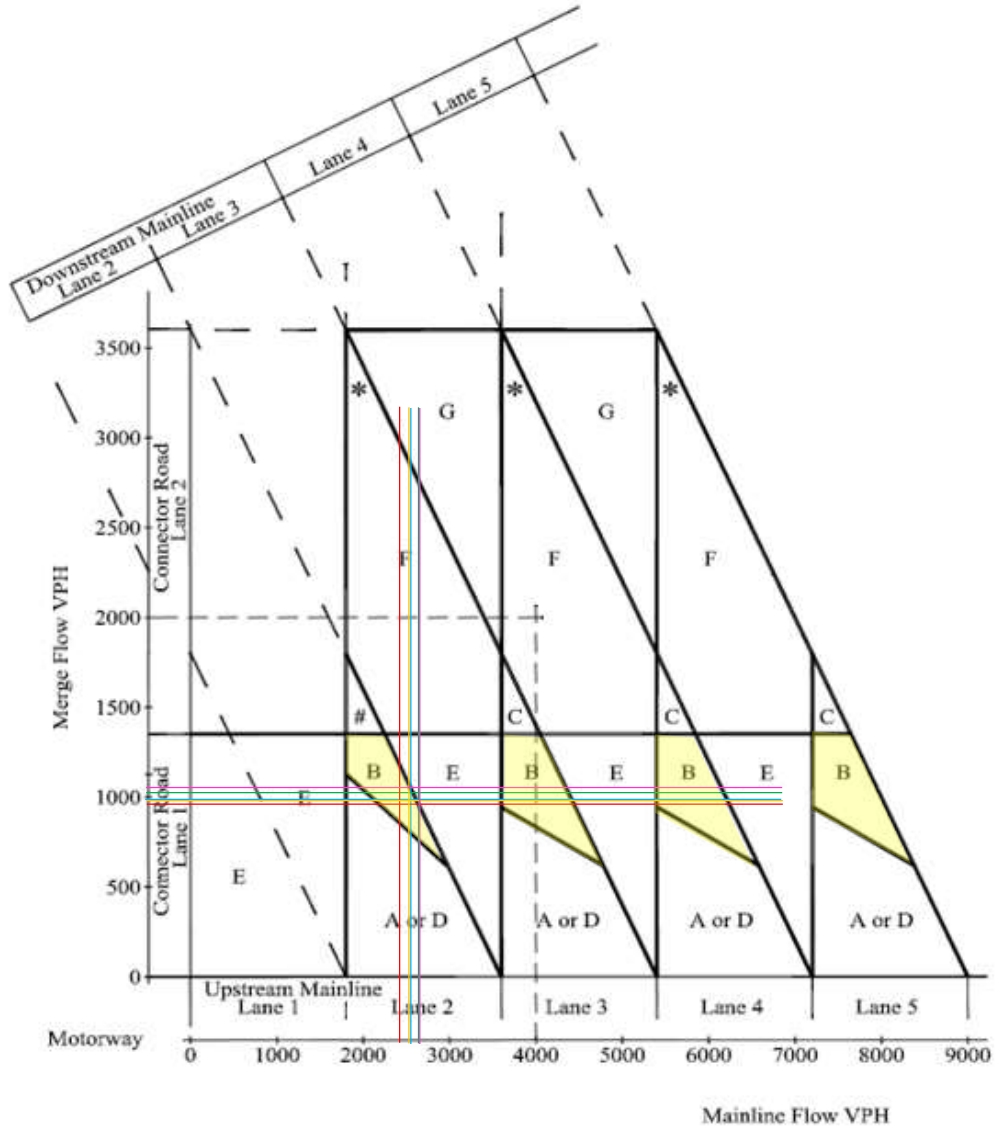
2031 B + S1

2031 B + S2

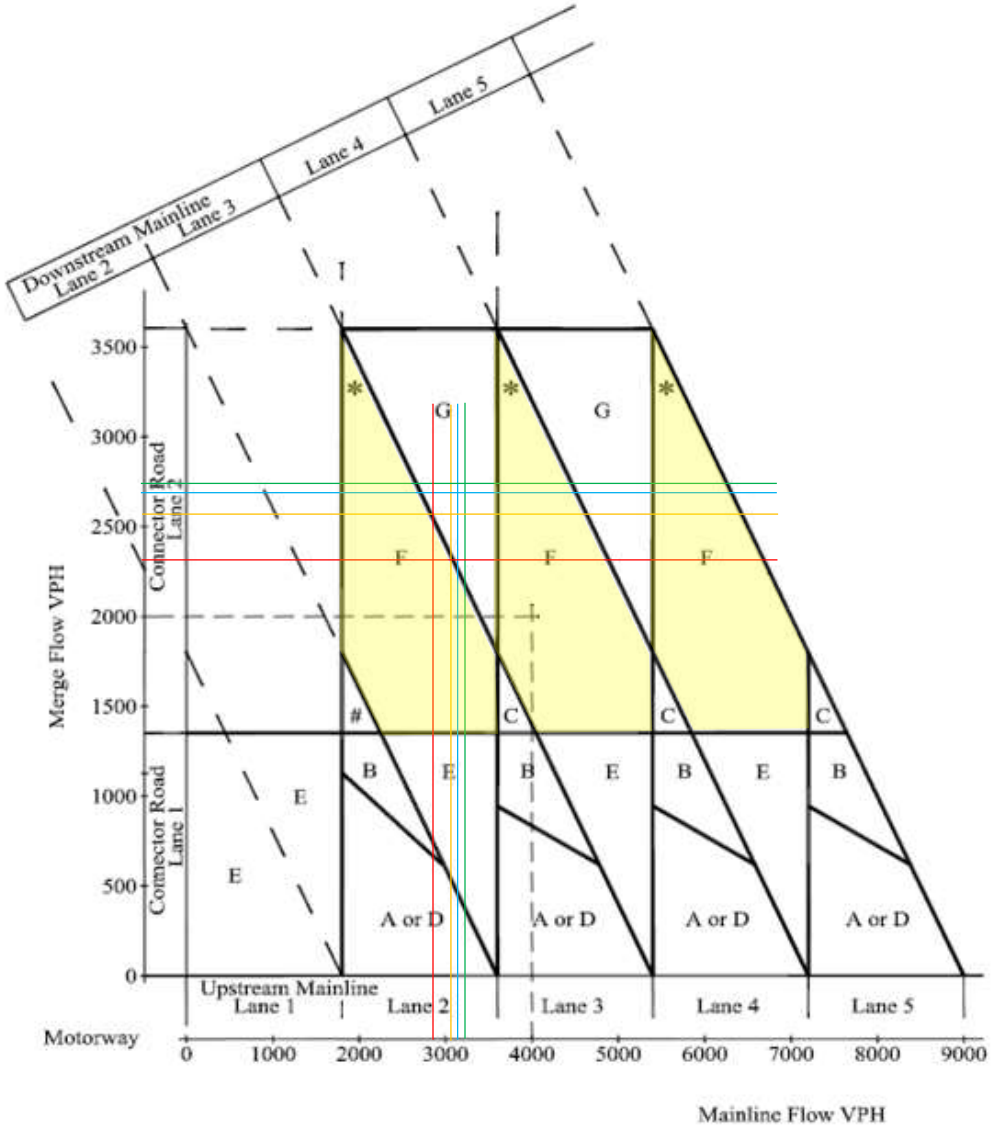
2031 B + SEMSL



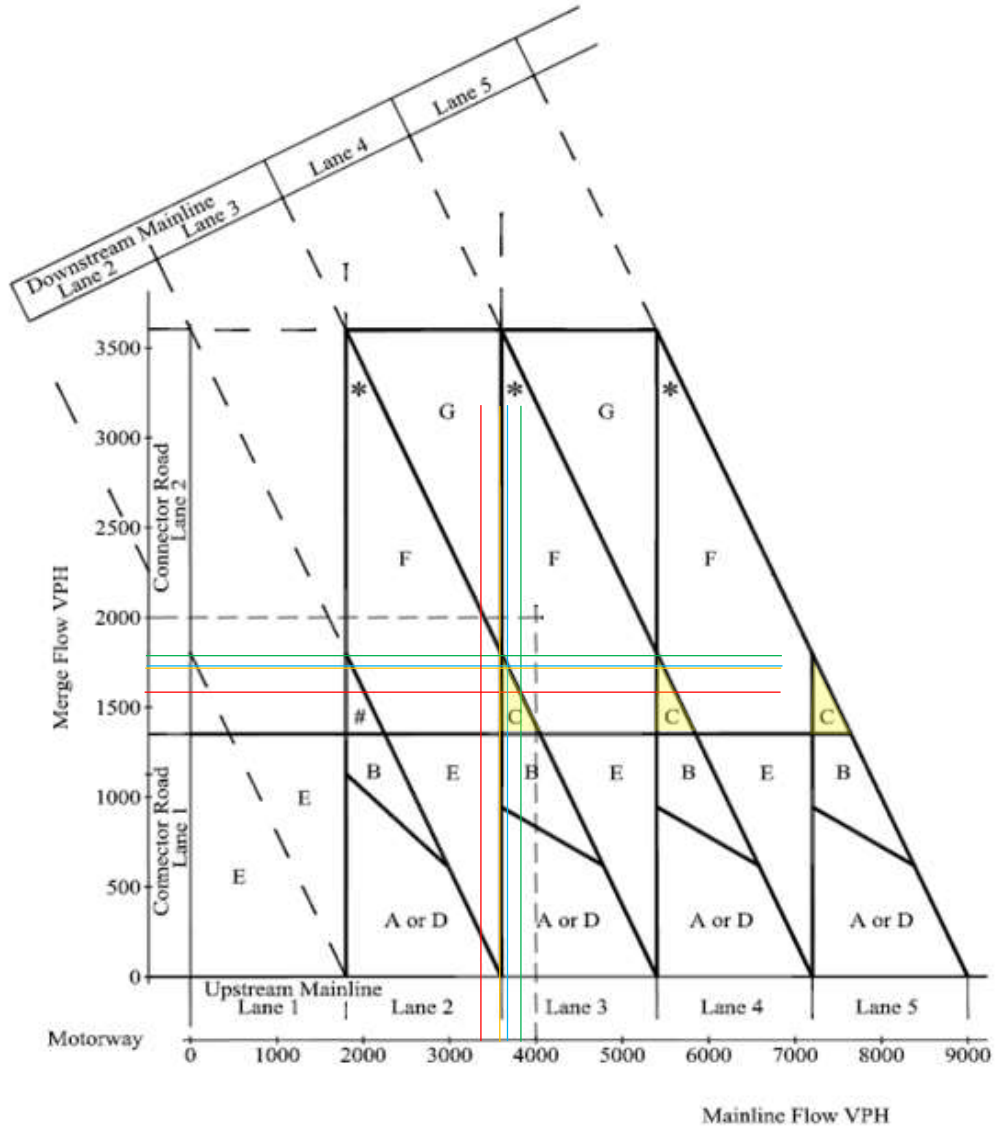
AM Peak Westbound –J8



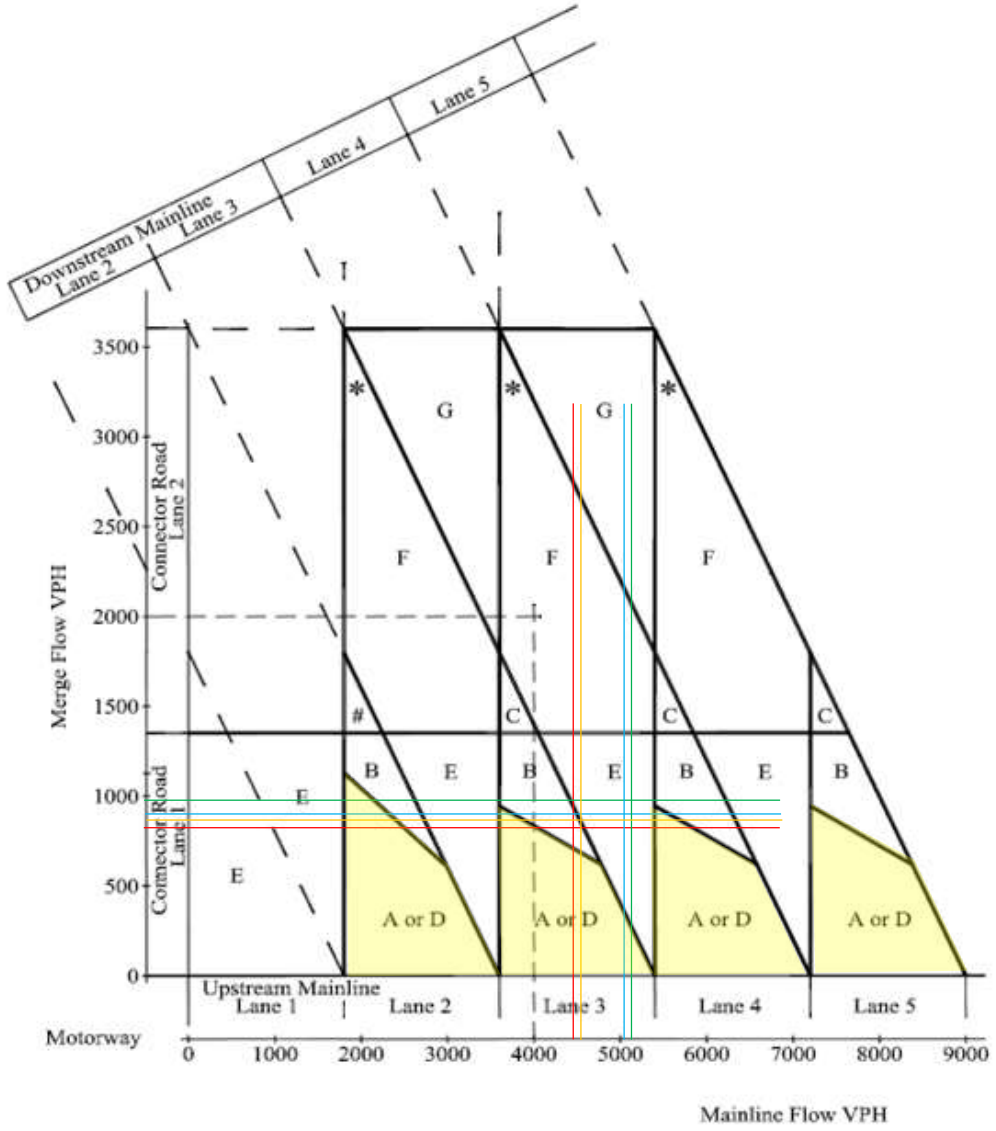
AM Peak Westbound J7



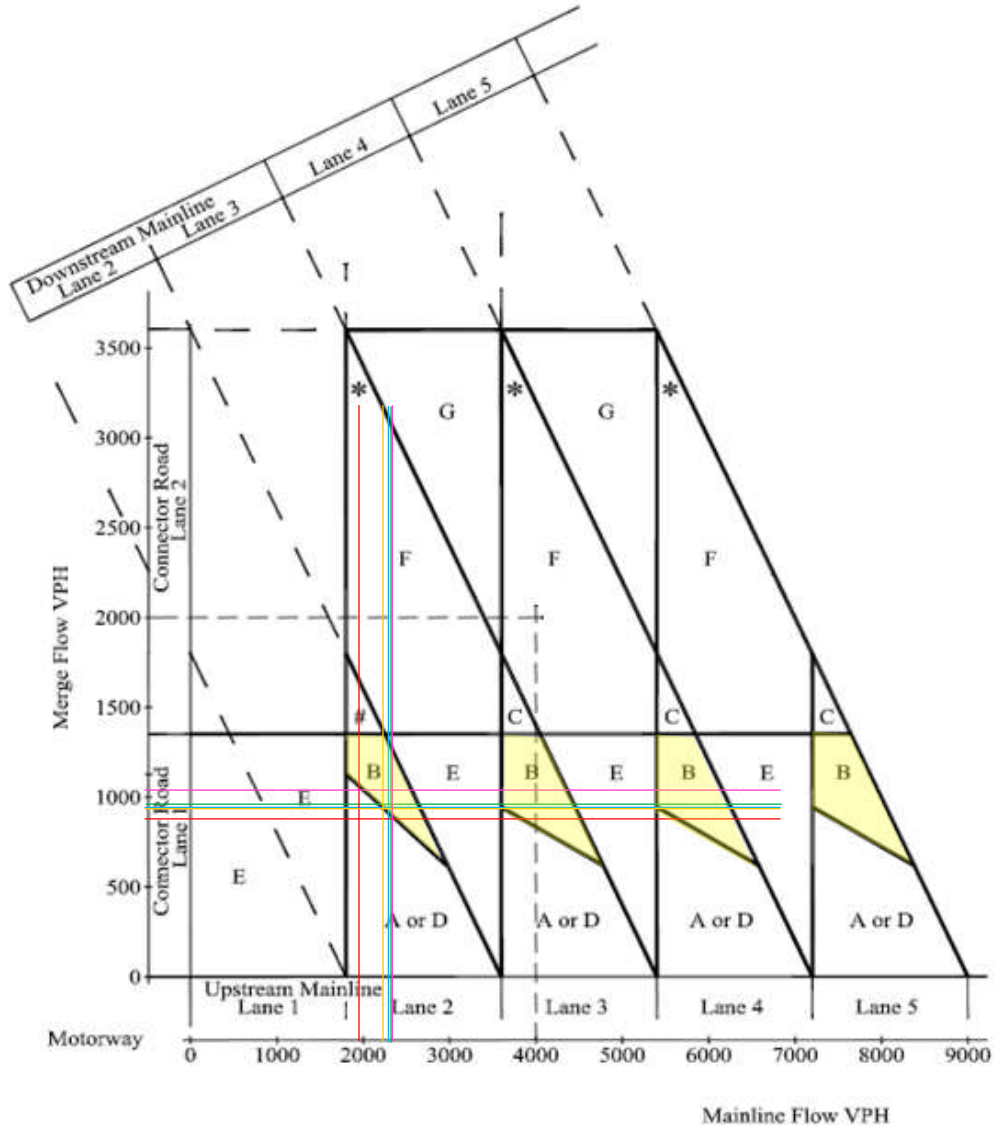
AM Peak Westbound –J5E



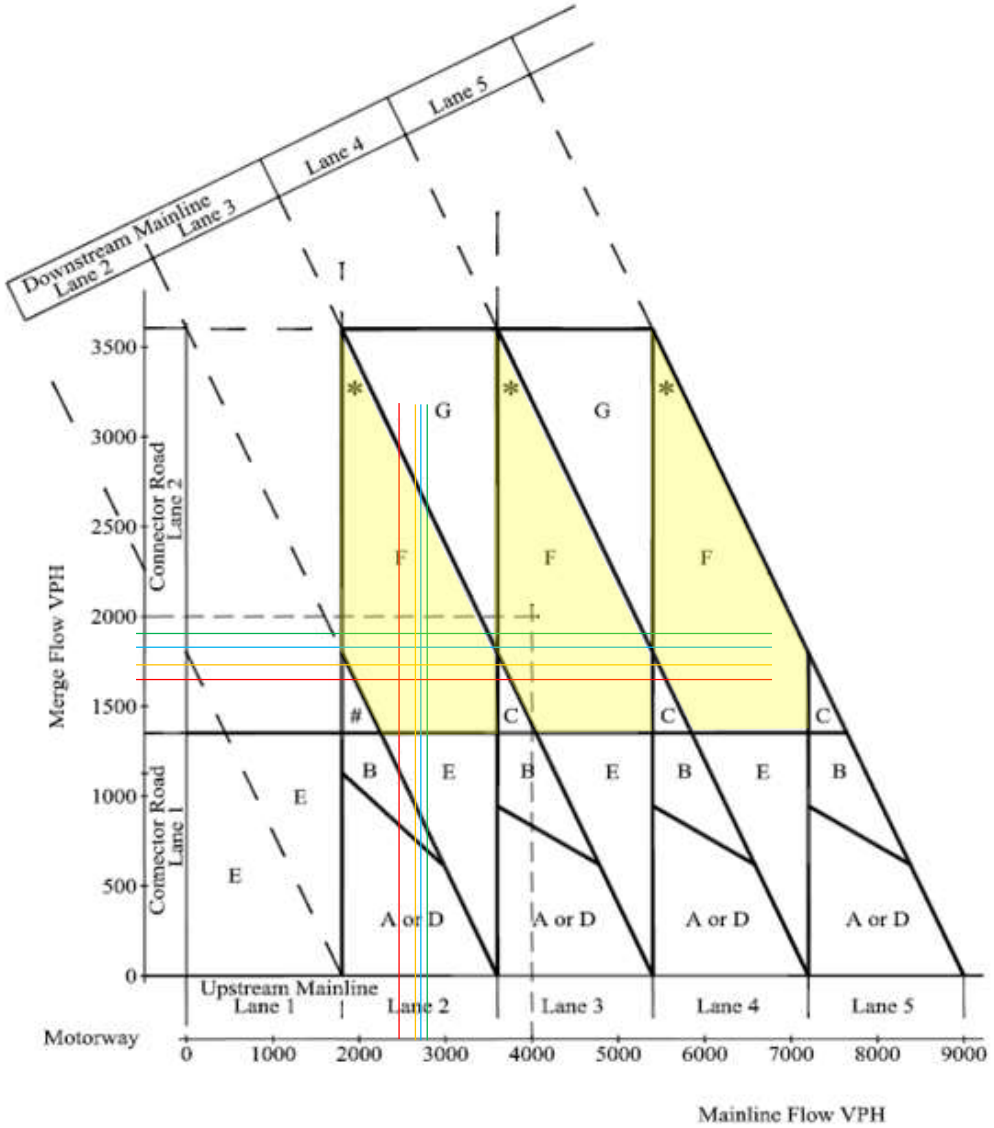
AM Peak Westbound –J5W



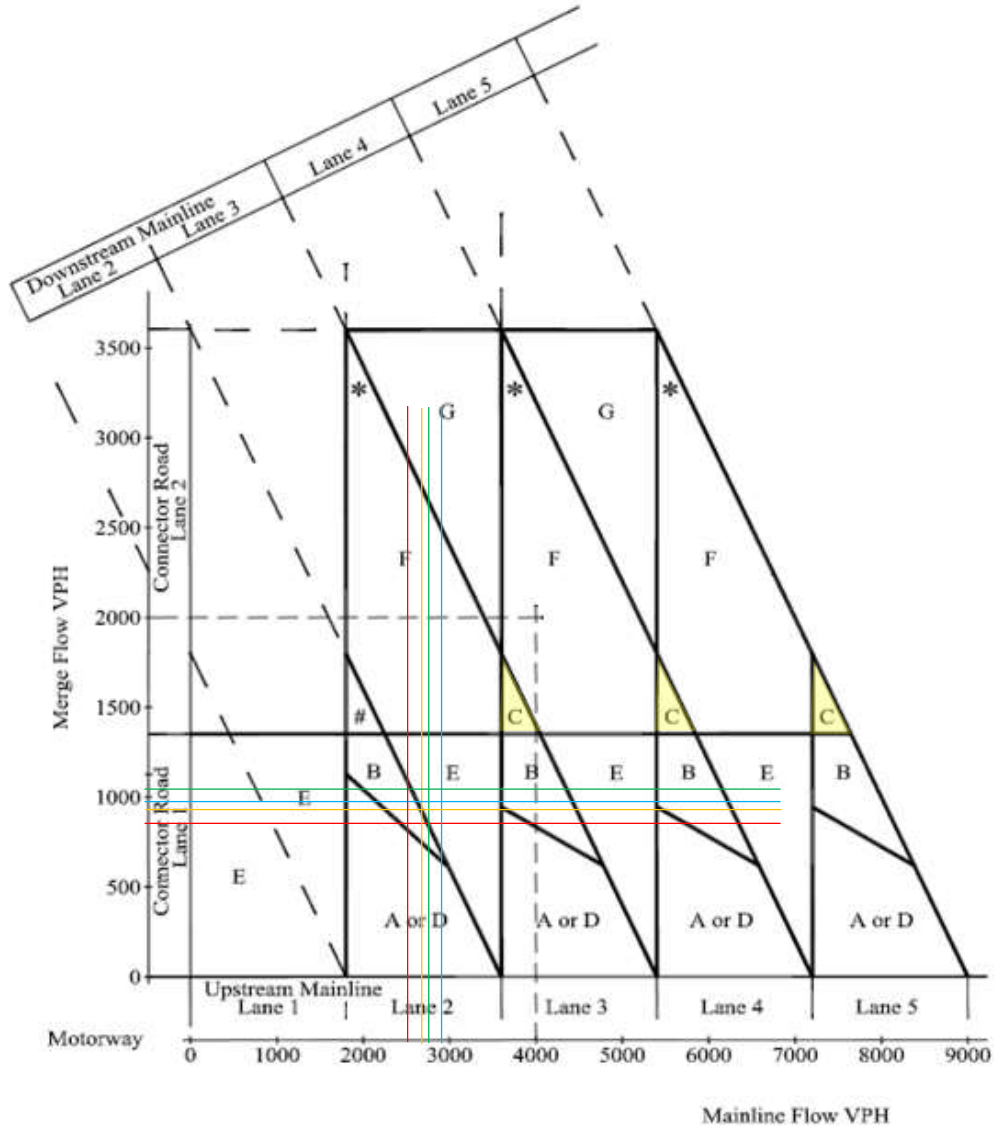
PM Peak Westbound –J8



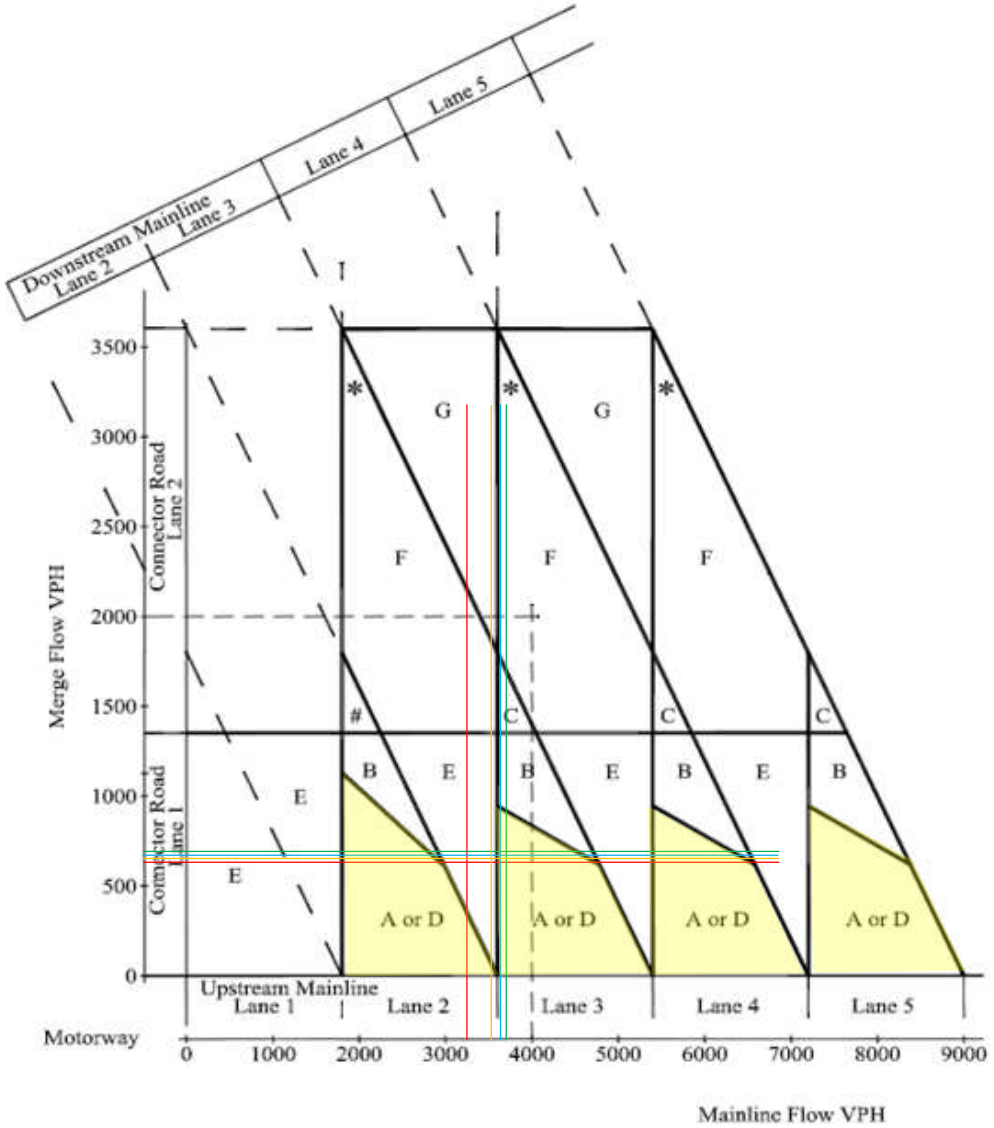
PM Peak Westbound J7



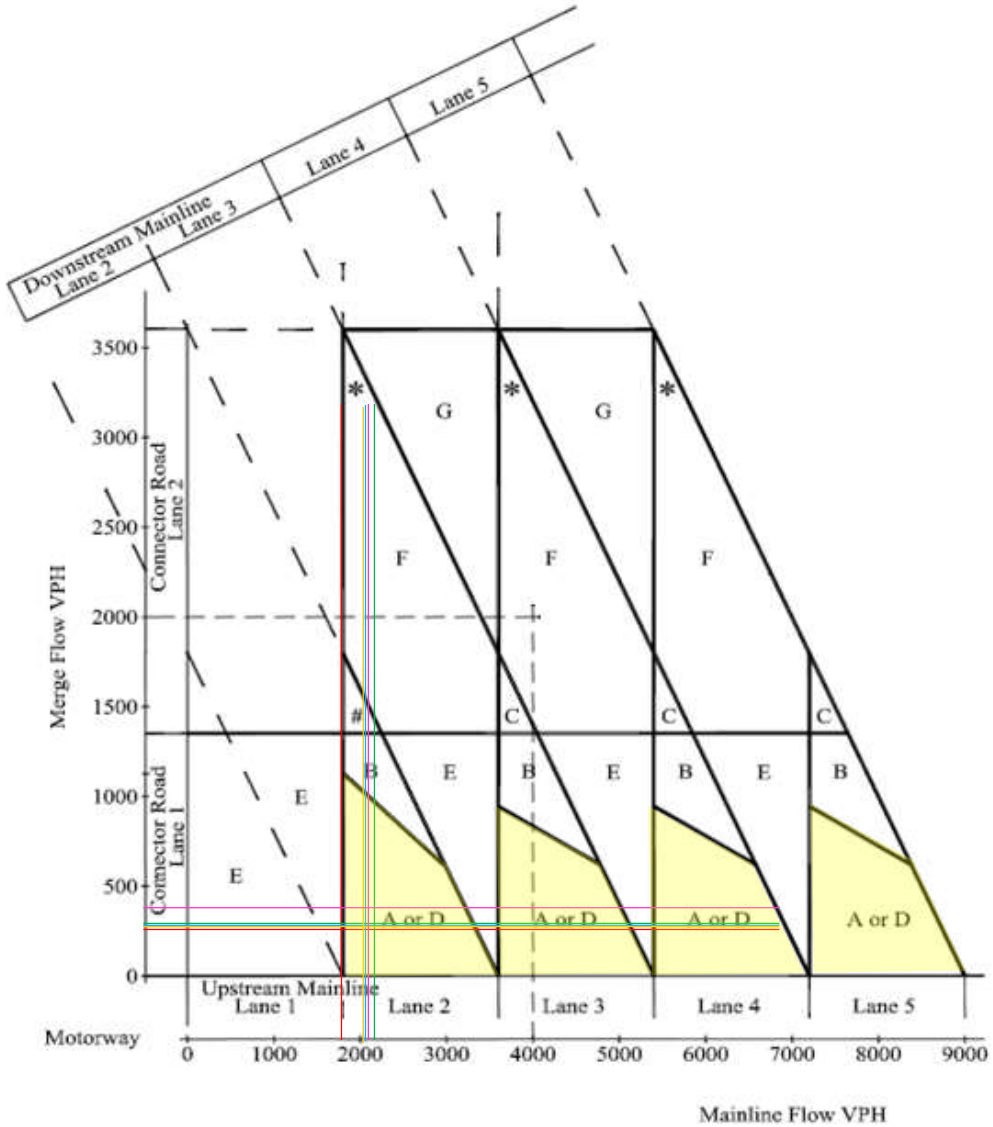
PM Peak Westbound –J5E



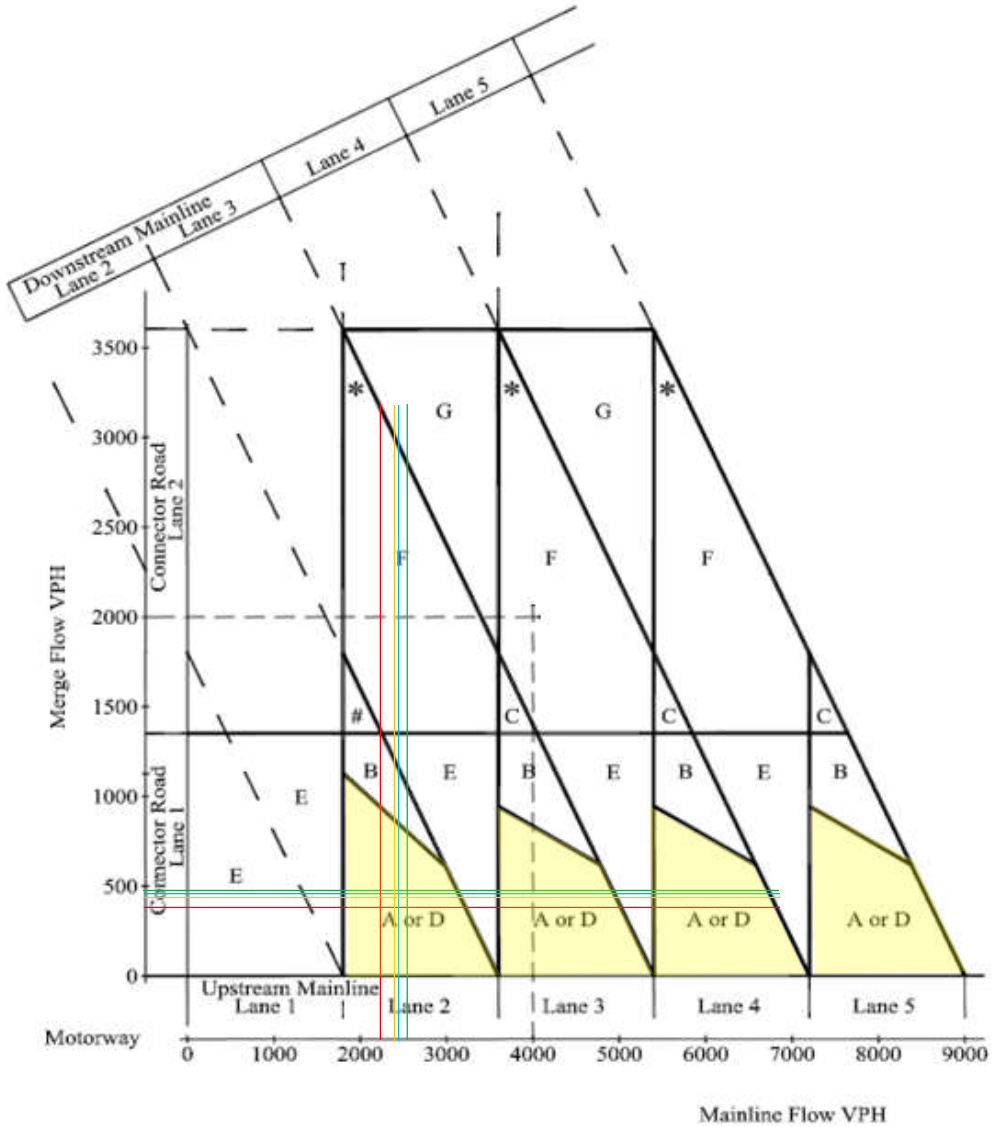
PM Peak Westbound –J5W



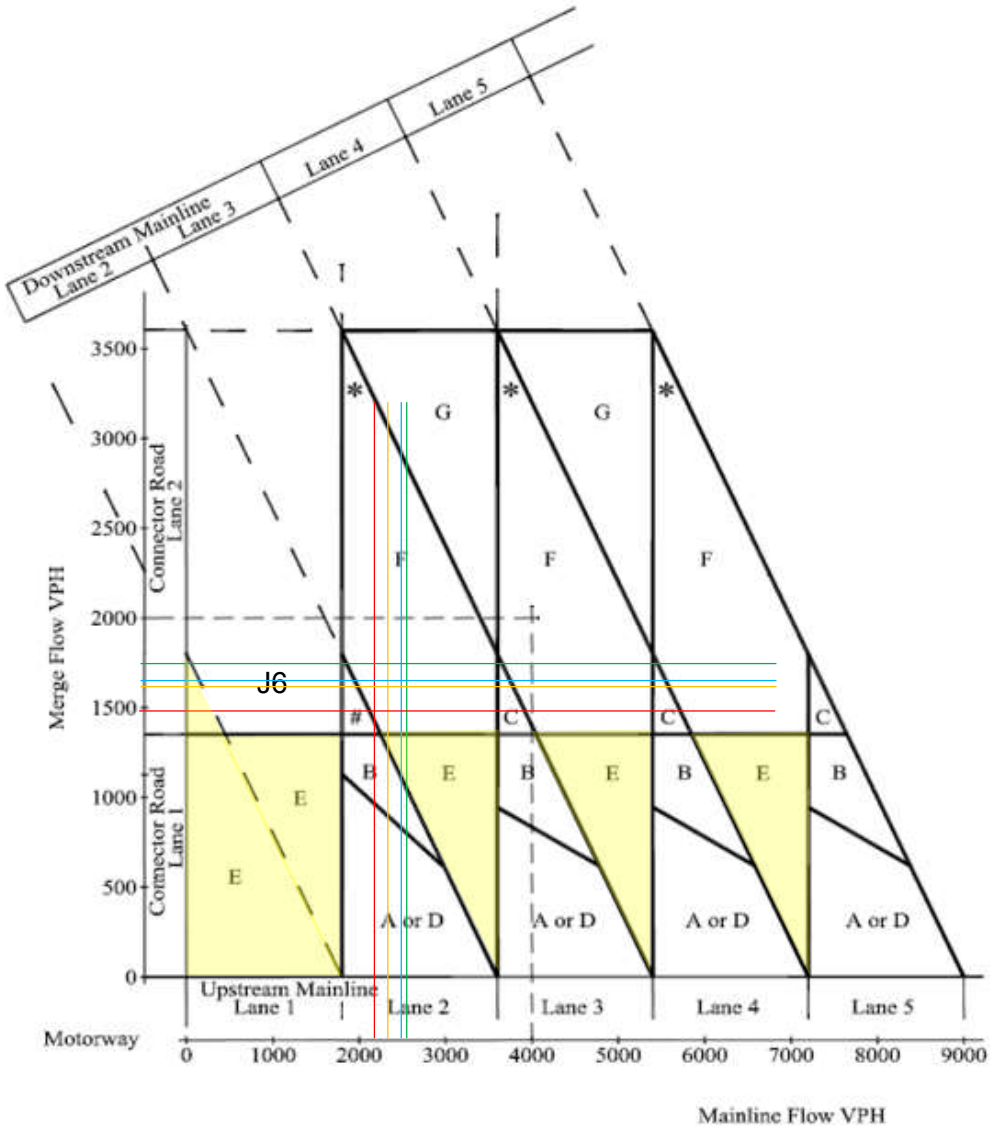
AM Peak Eastbound – J8



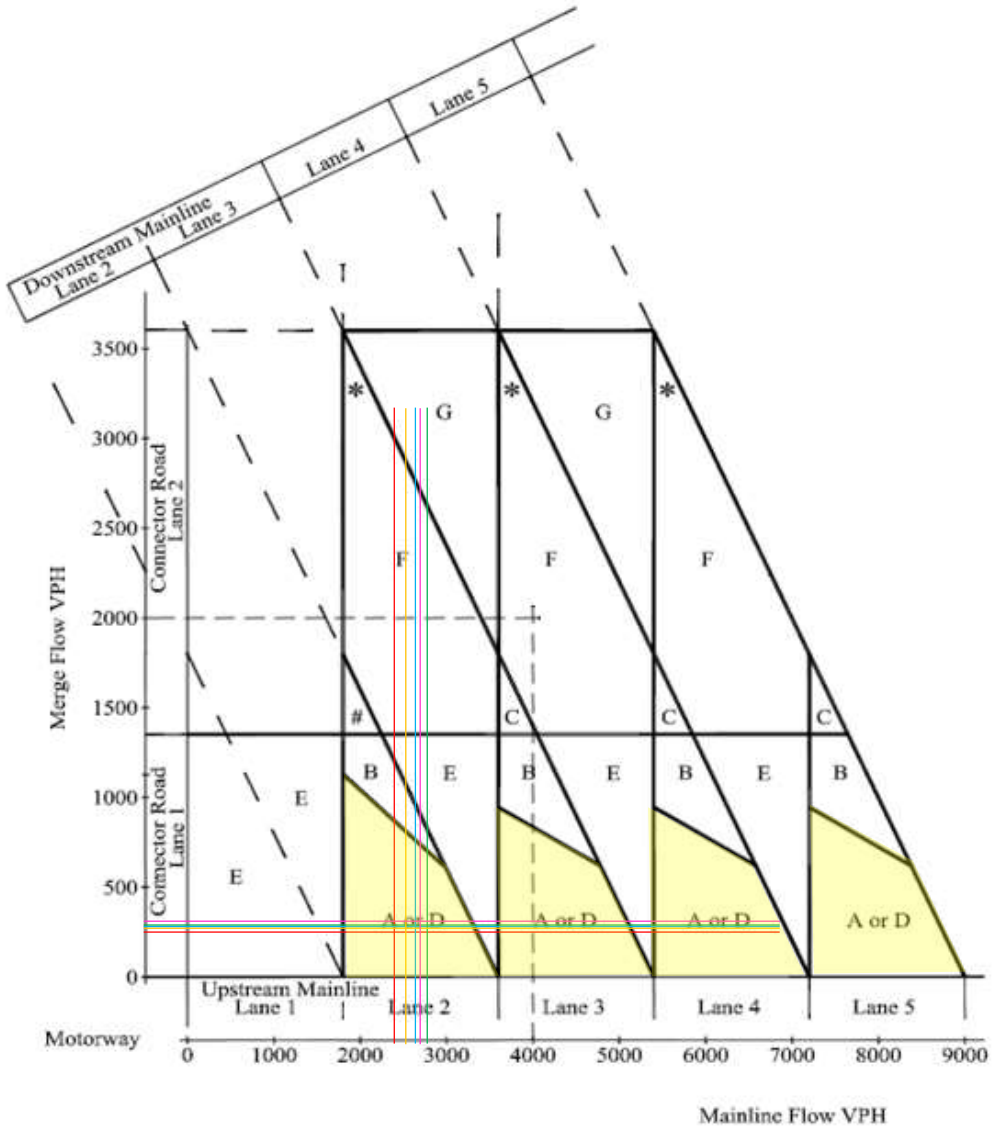
AM Peak Eastbound – J7



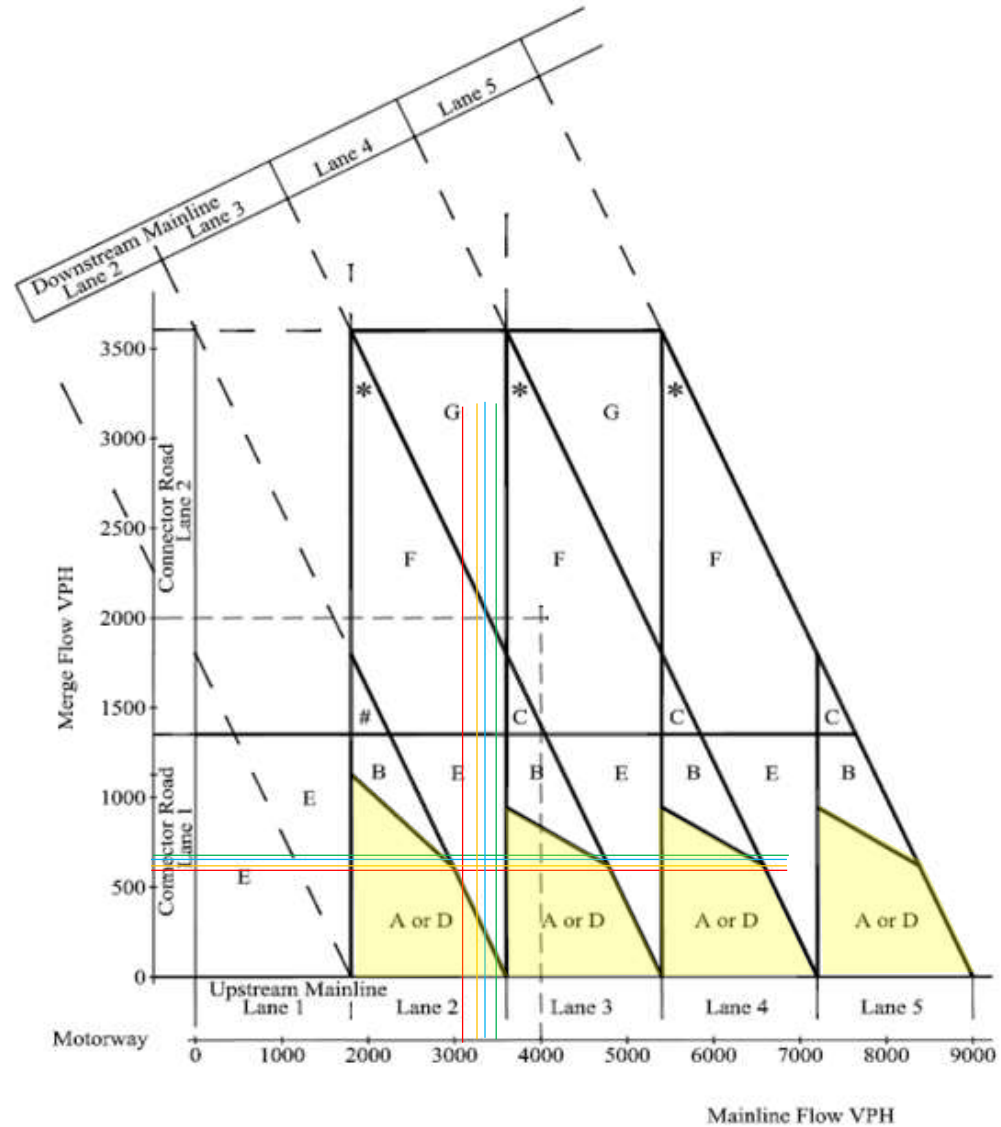
AM Peak Eastbound – J6



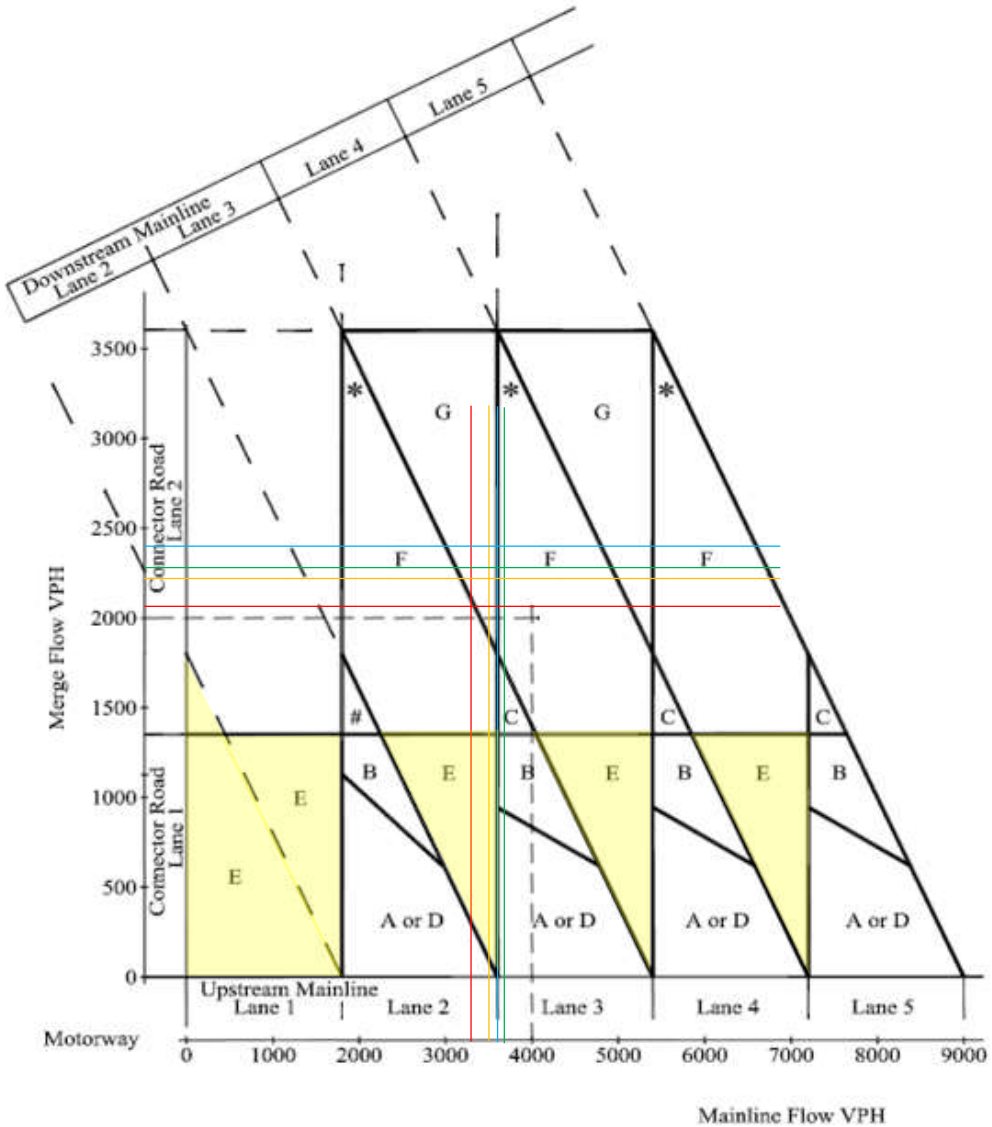
PM Peak Eastbound – J8



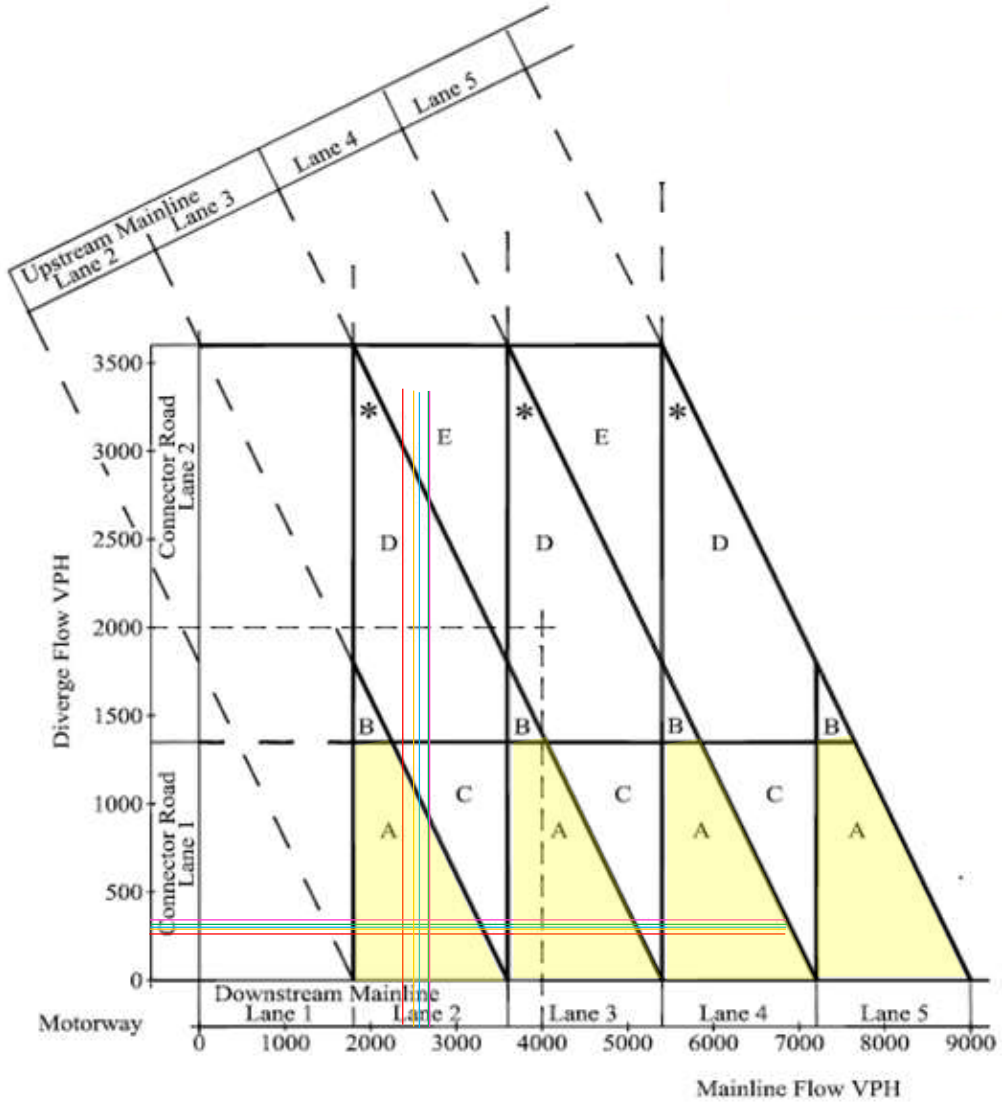
PM Peak Eastbound – J7



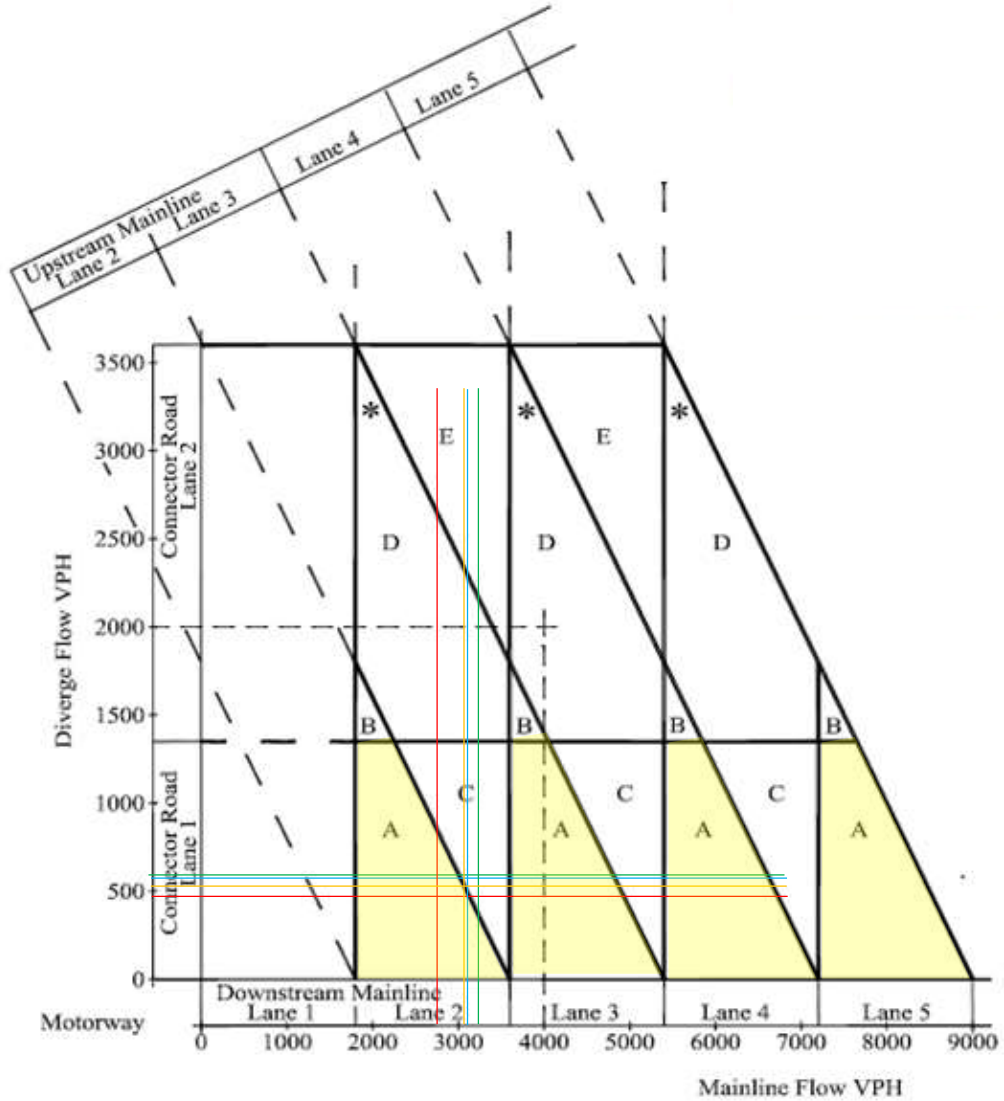
PM Peak Eastbound – J6



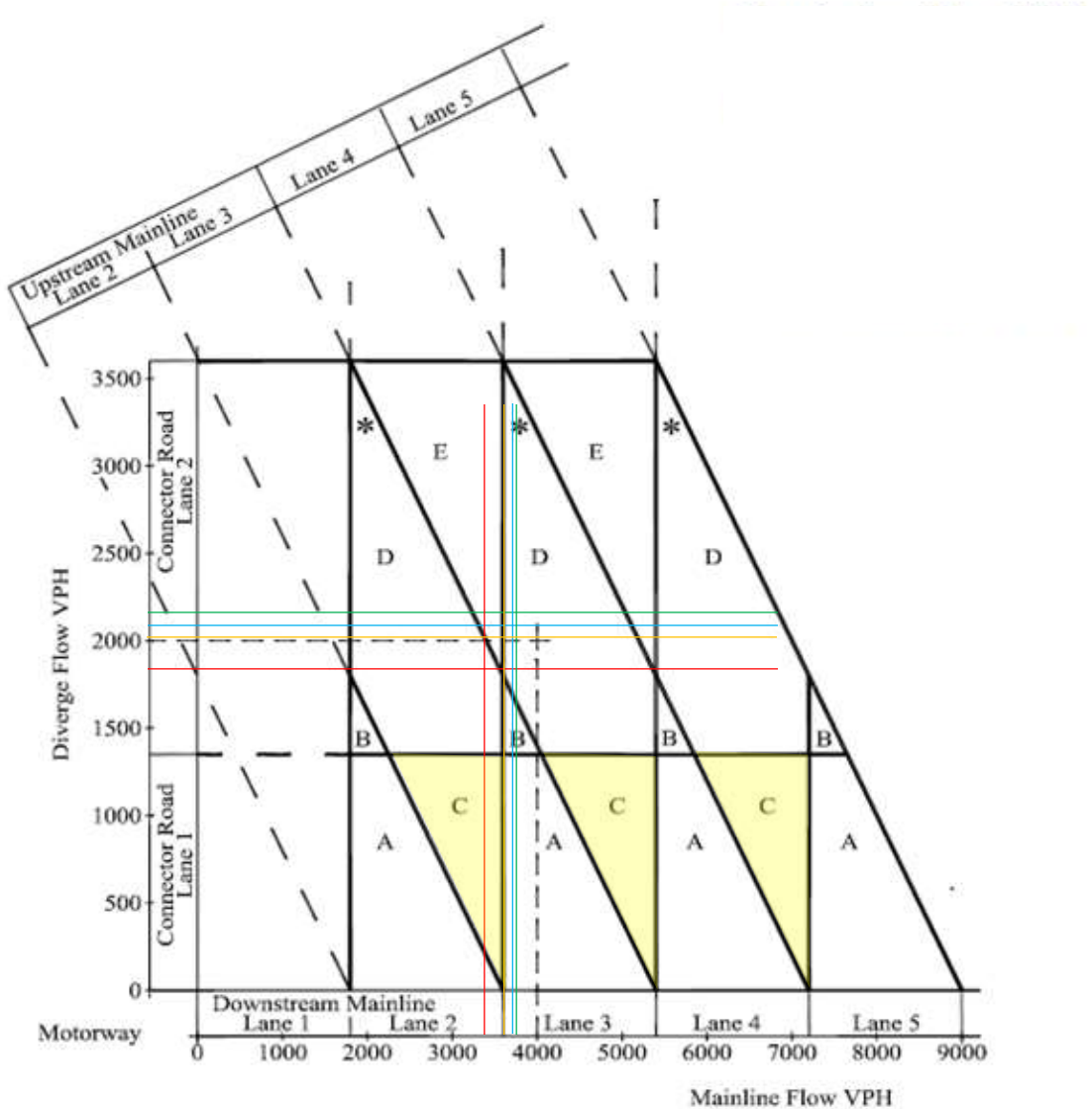
AM Peak Westbound –J8



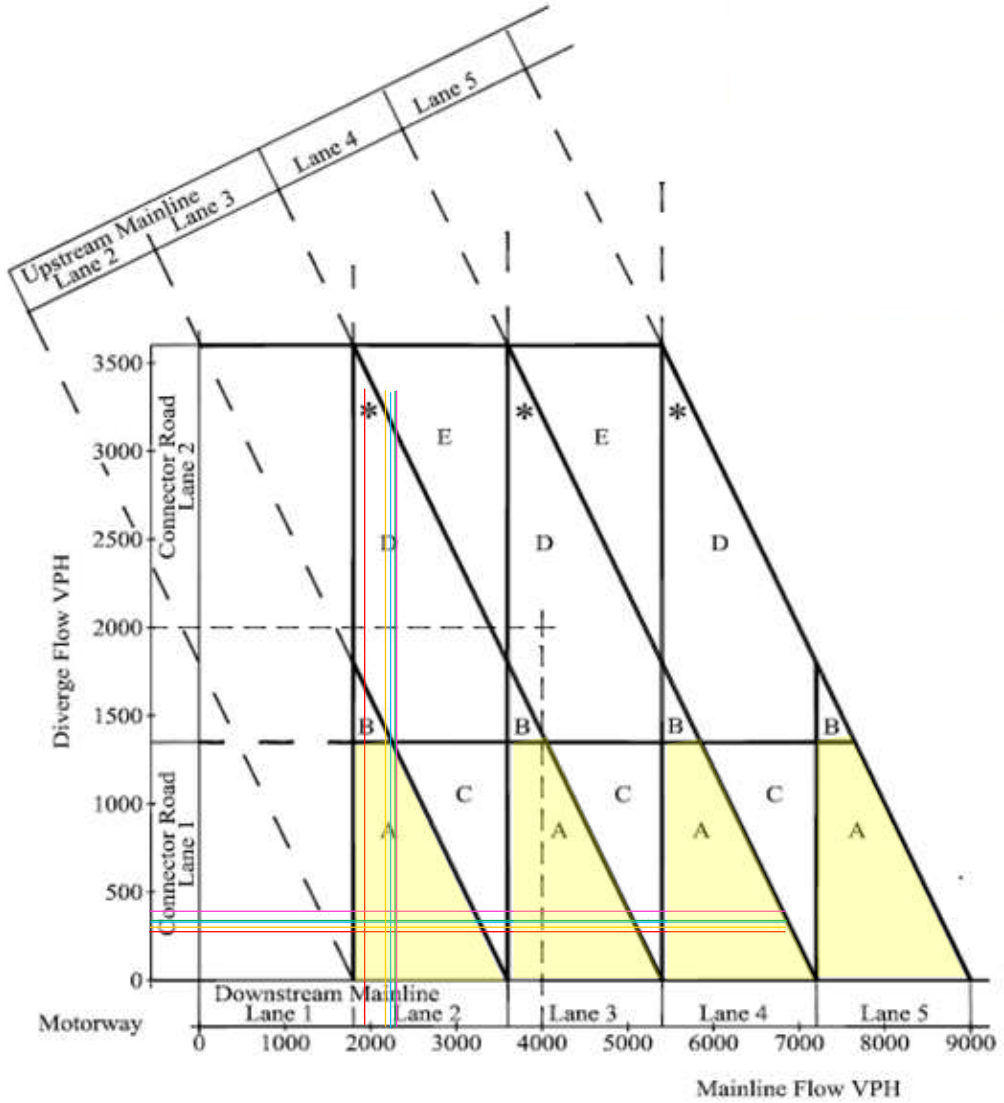
AM Peak Westbound –J7



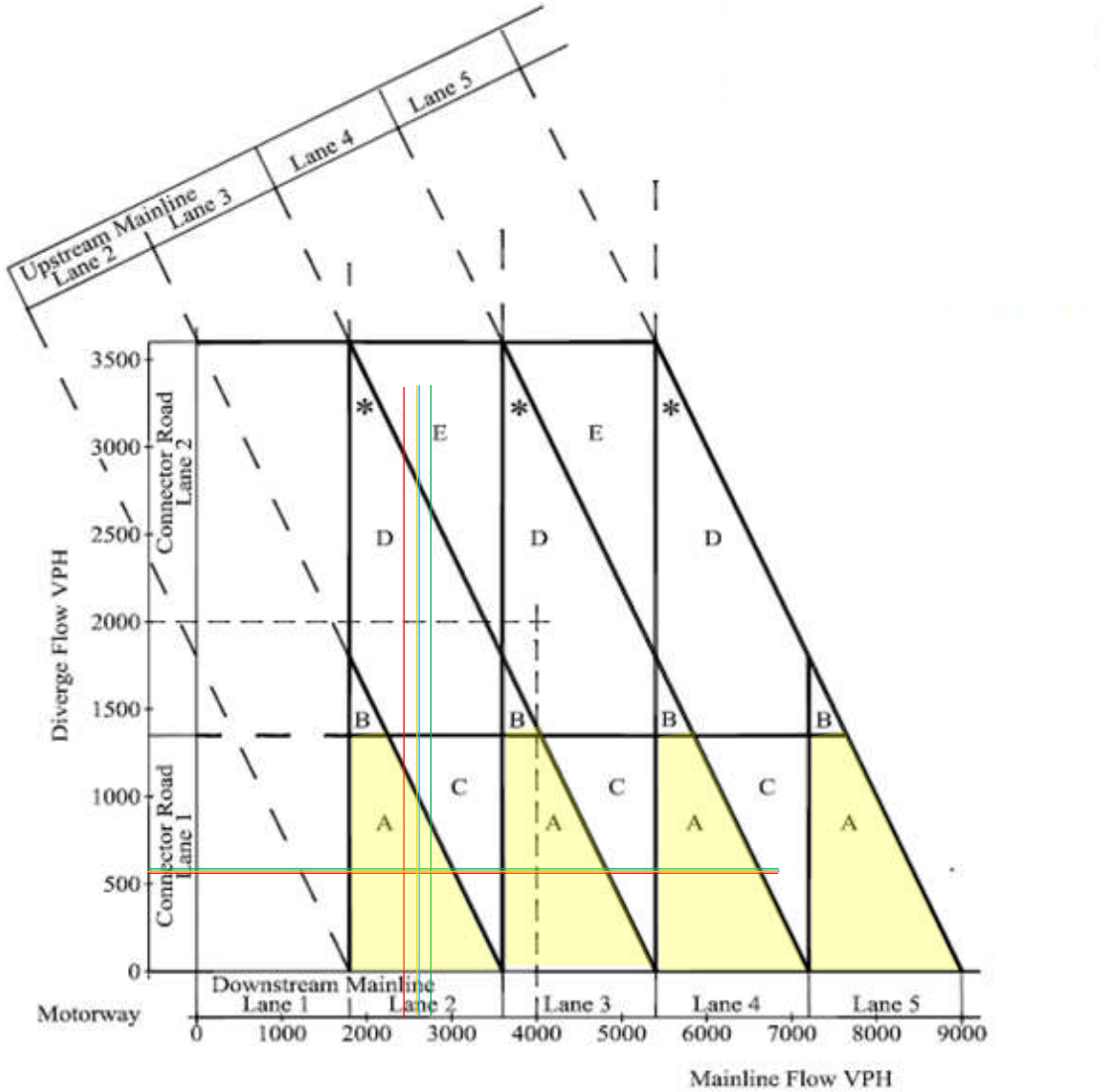
AM Peak Westbound –J6



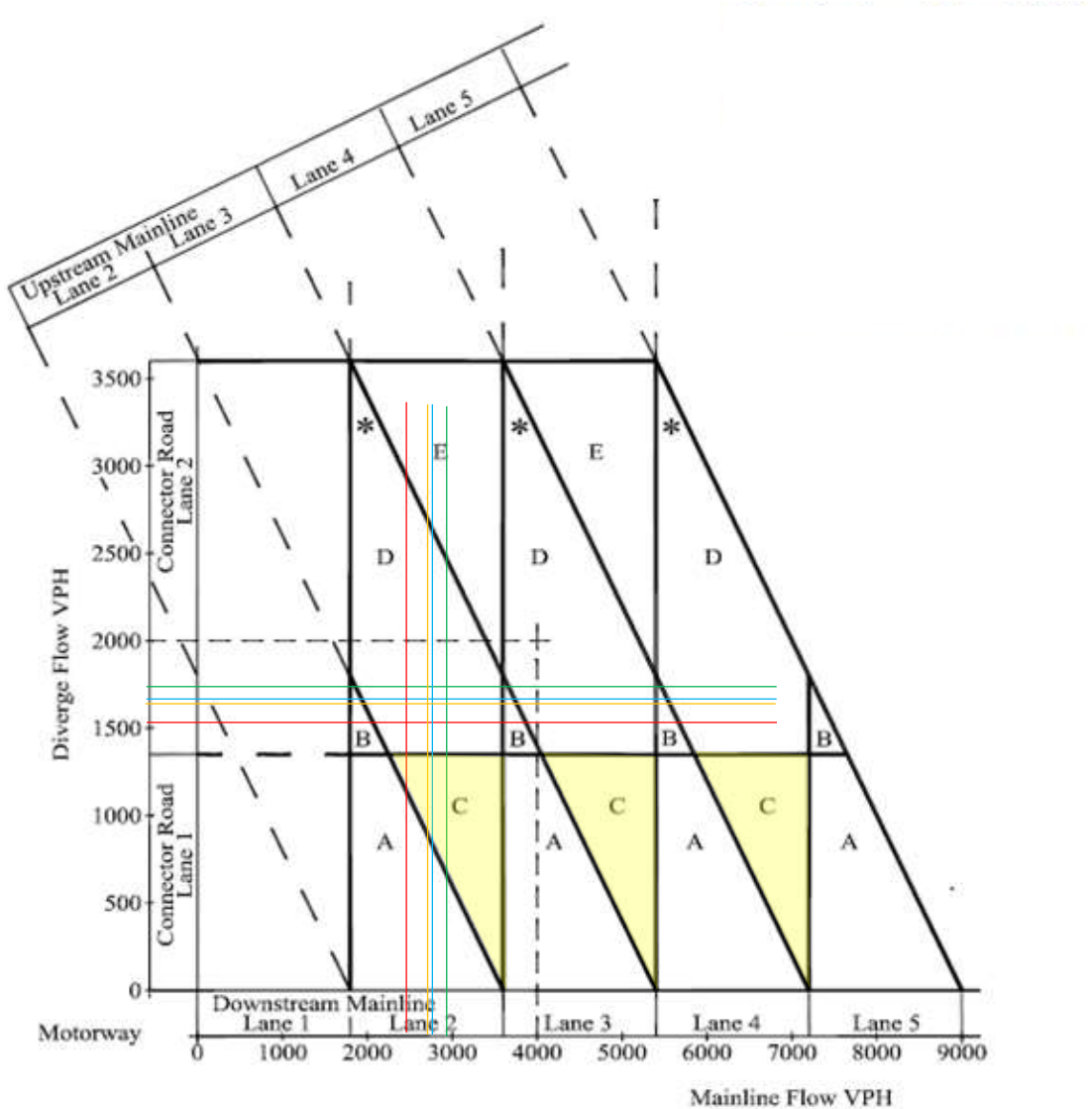
PM Peak Westbound –J8



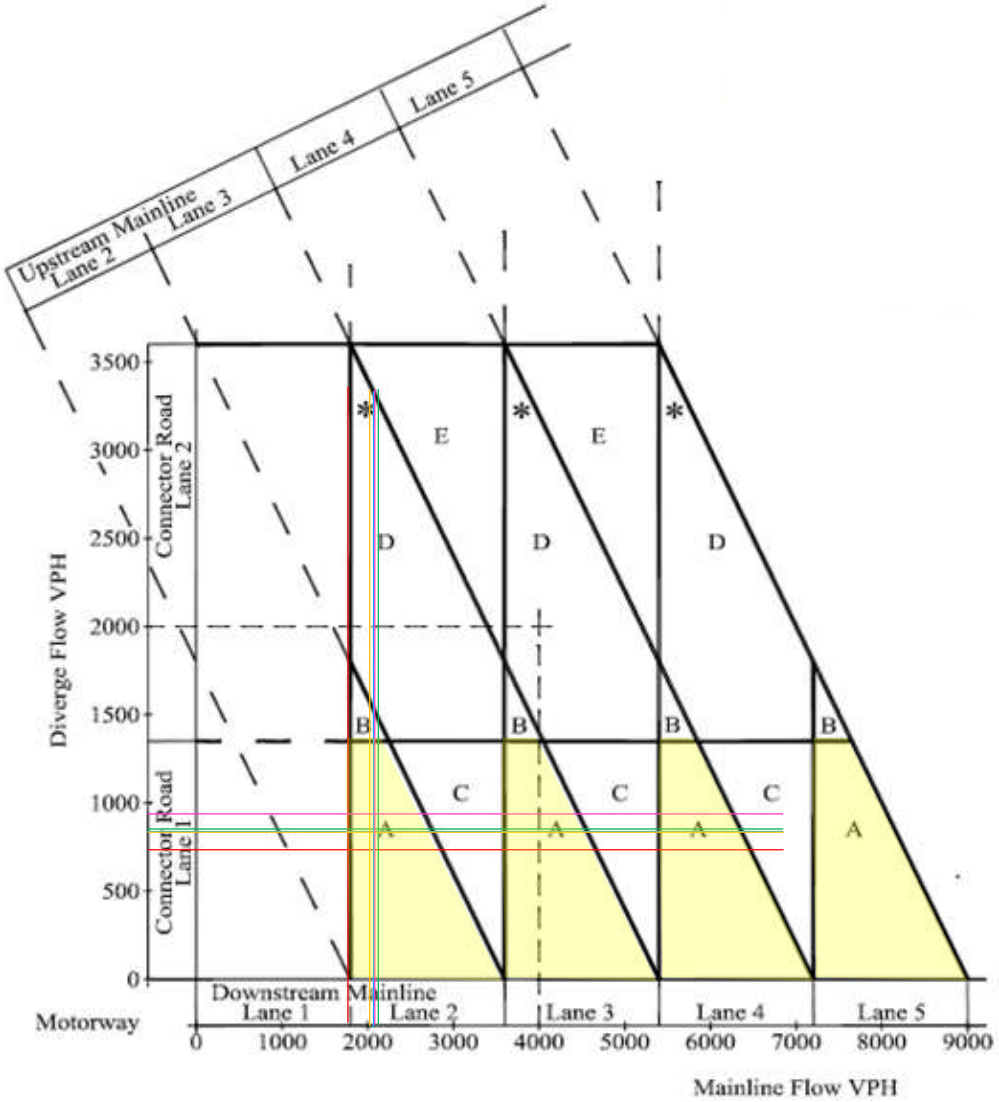
PM Peak Westbound –J7



PM Peak Westbound –J6



AM Peak Eastbound –J8



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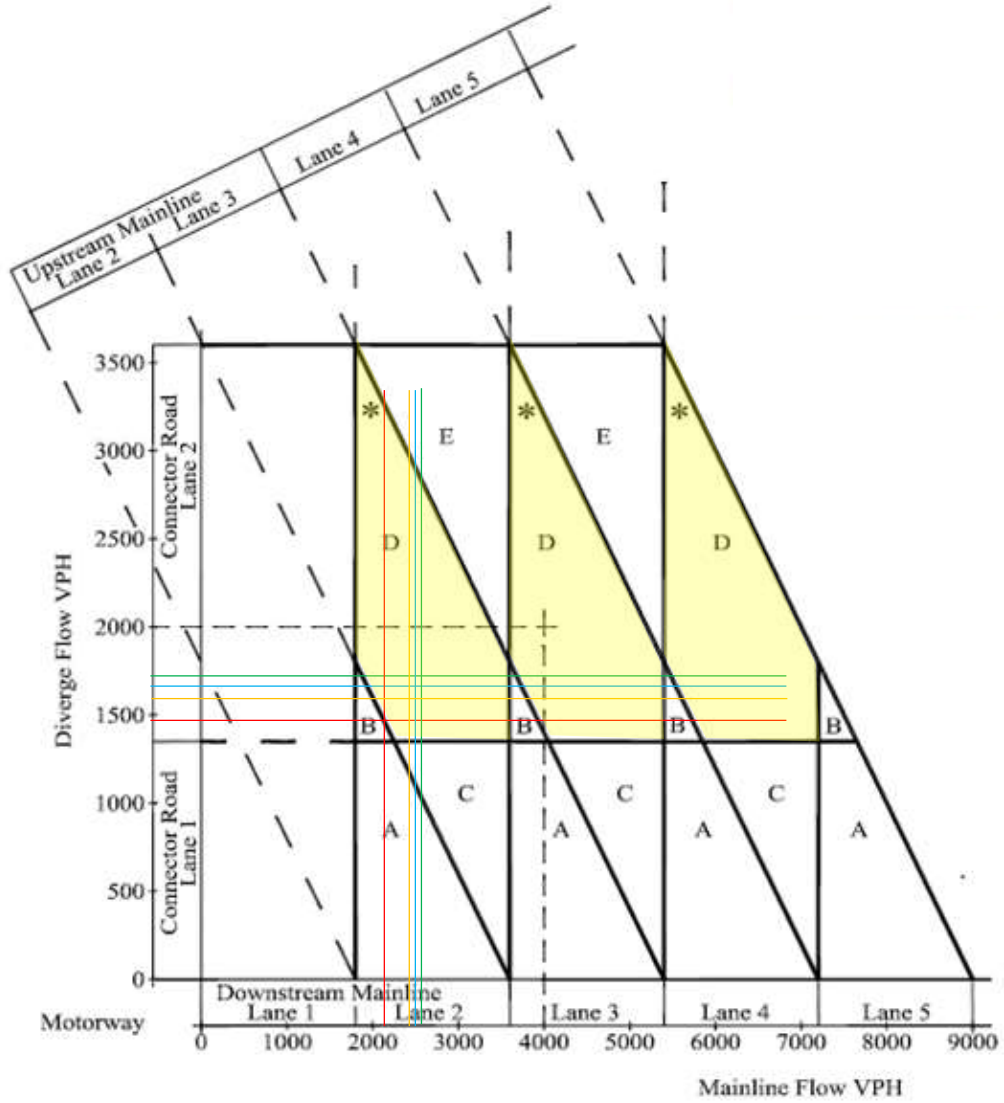
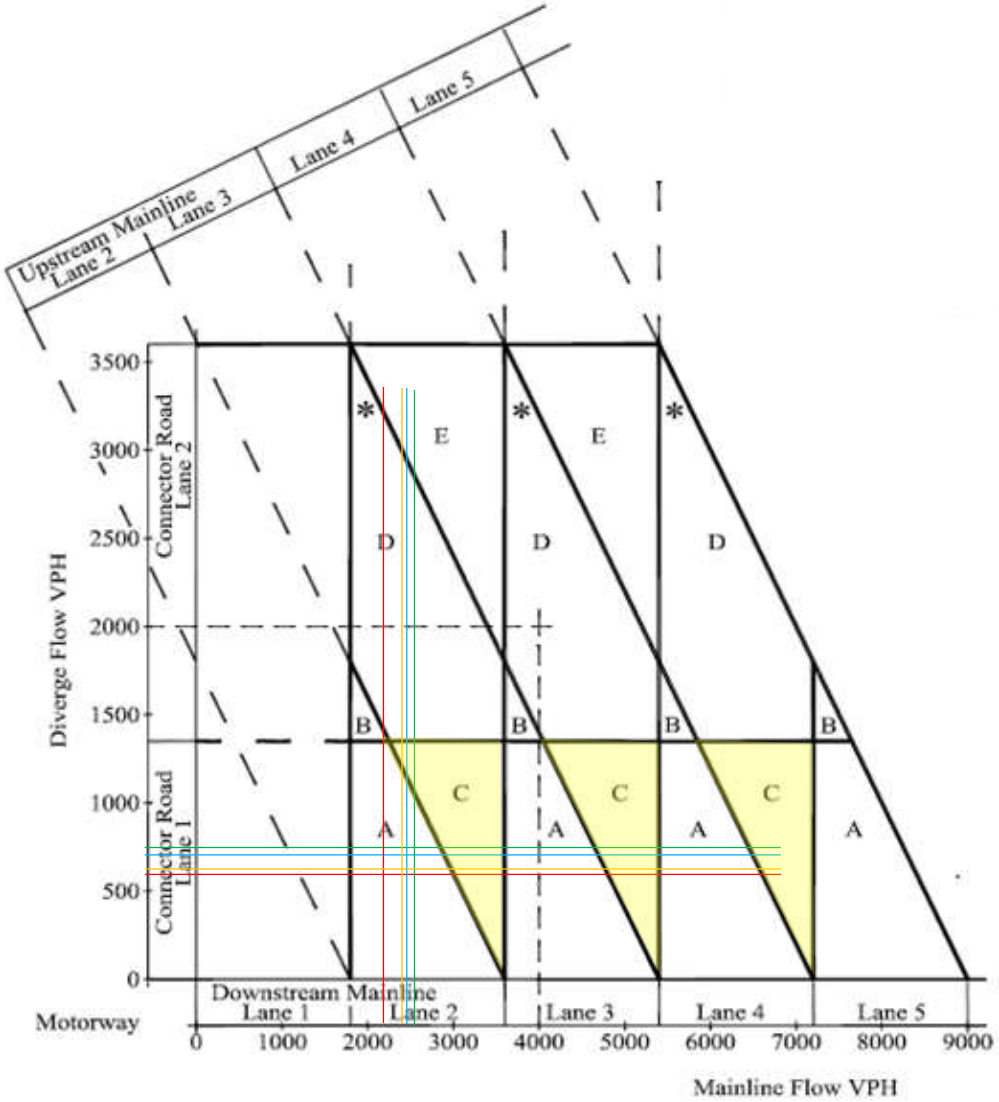
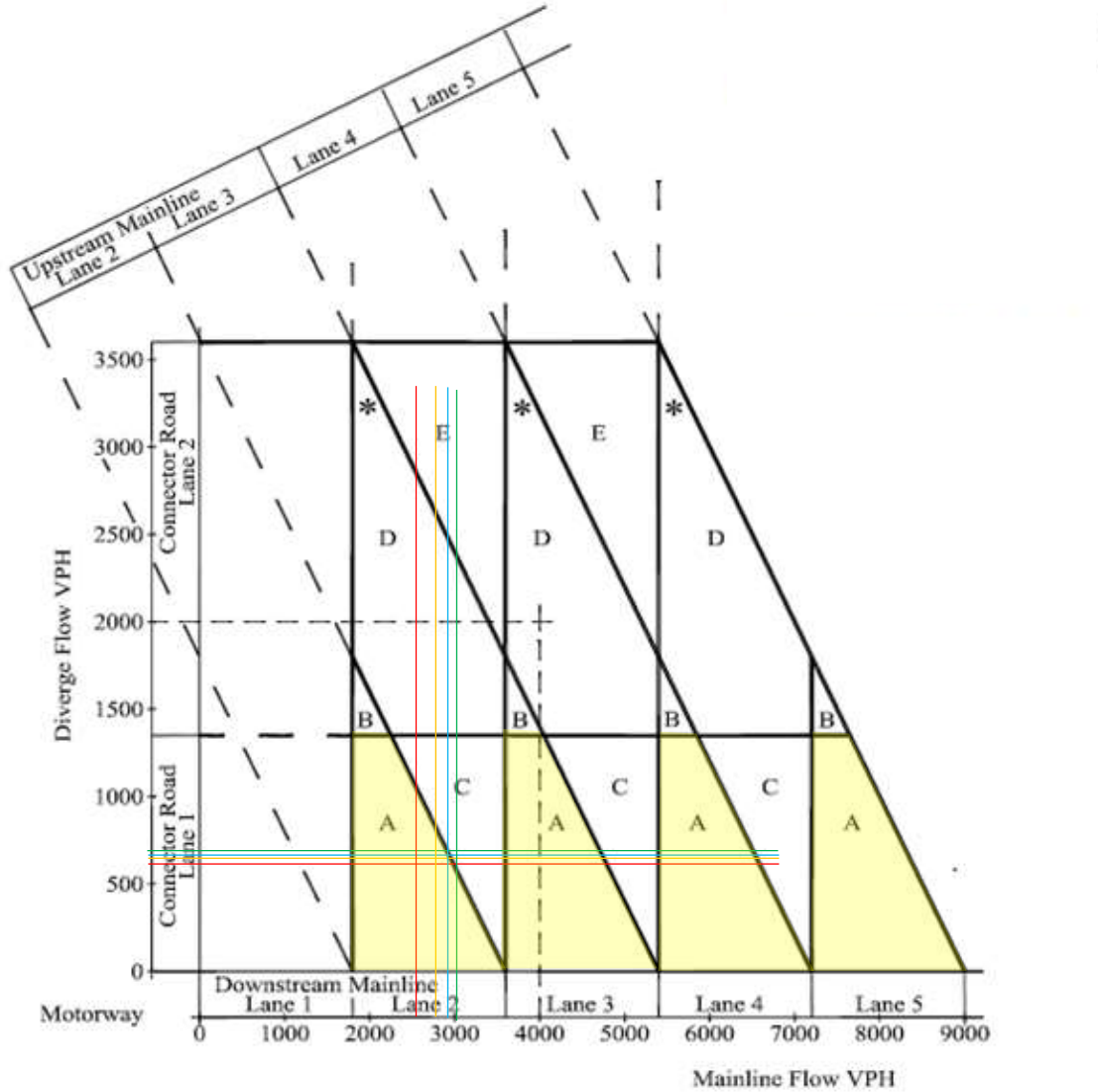


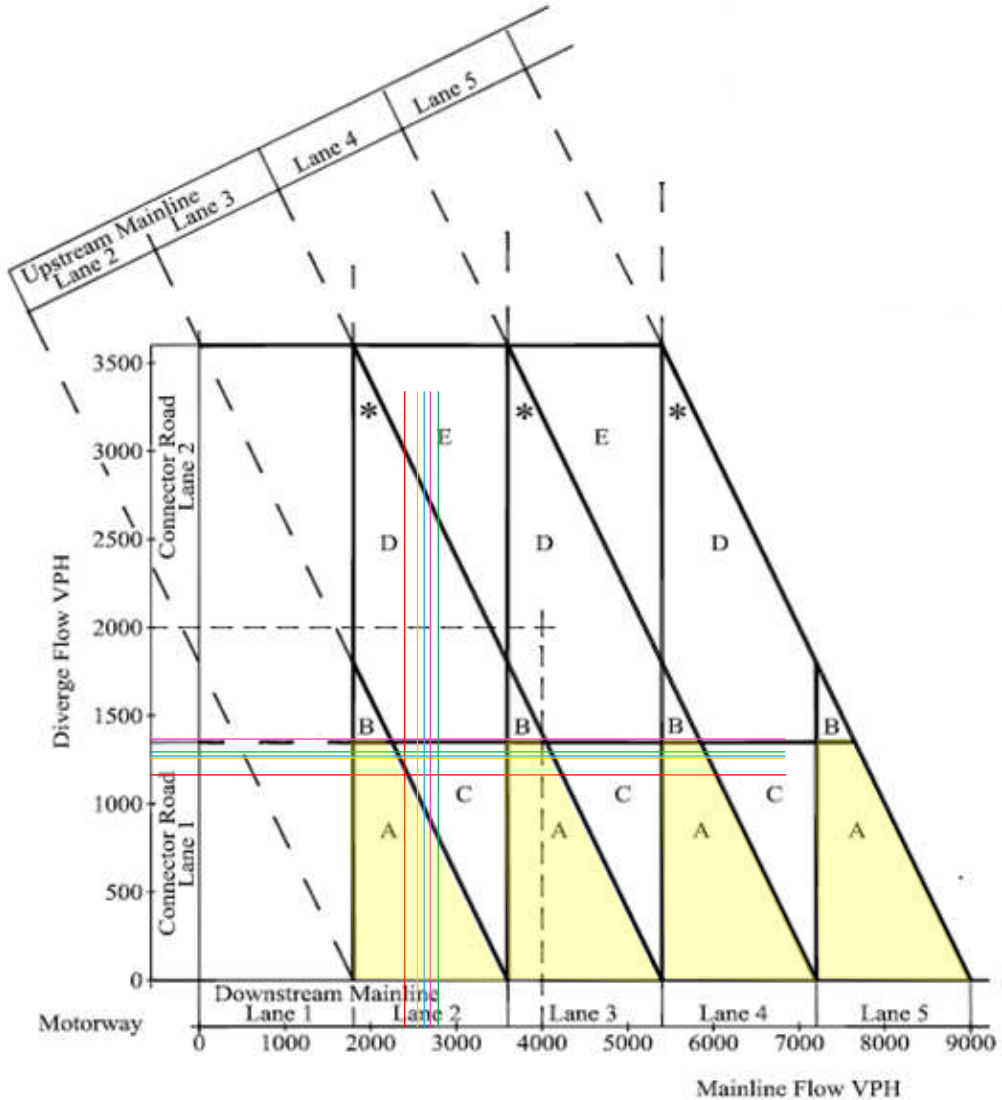
AM Peak Eastbound –J5E



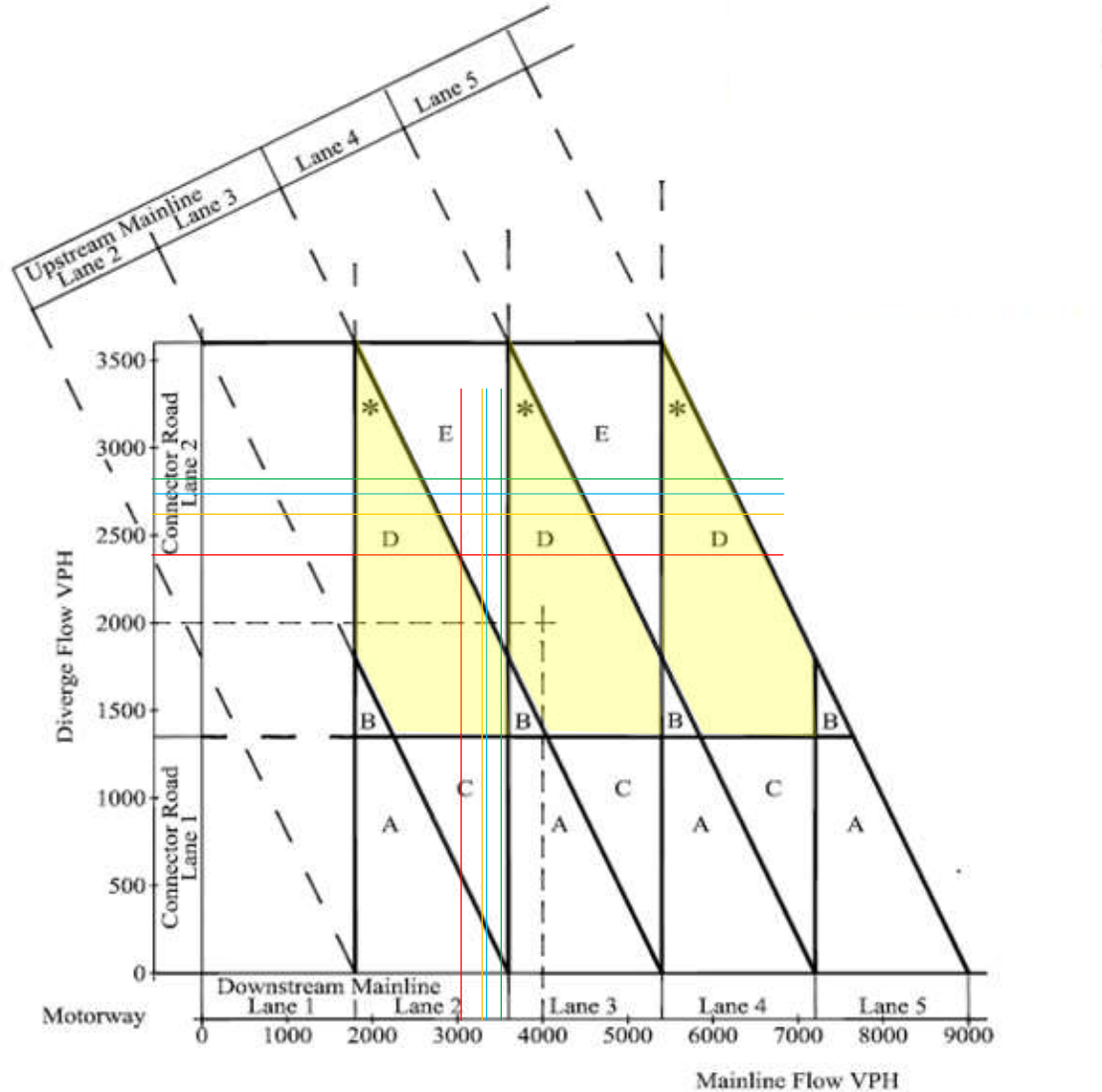
AM Peak Eastbound–J5W



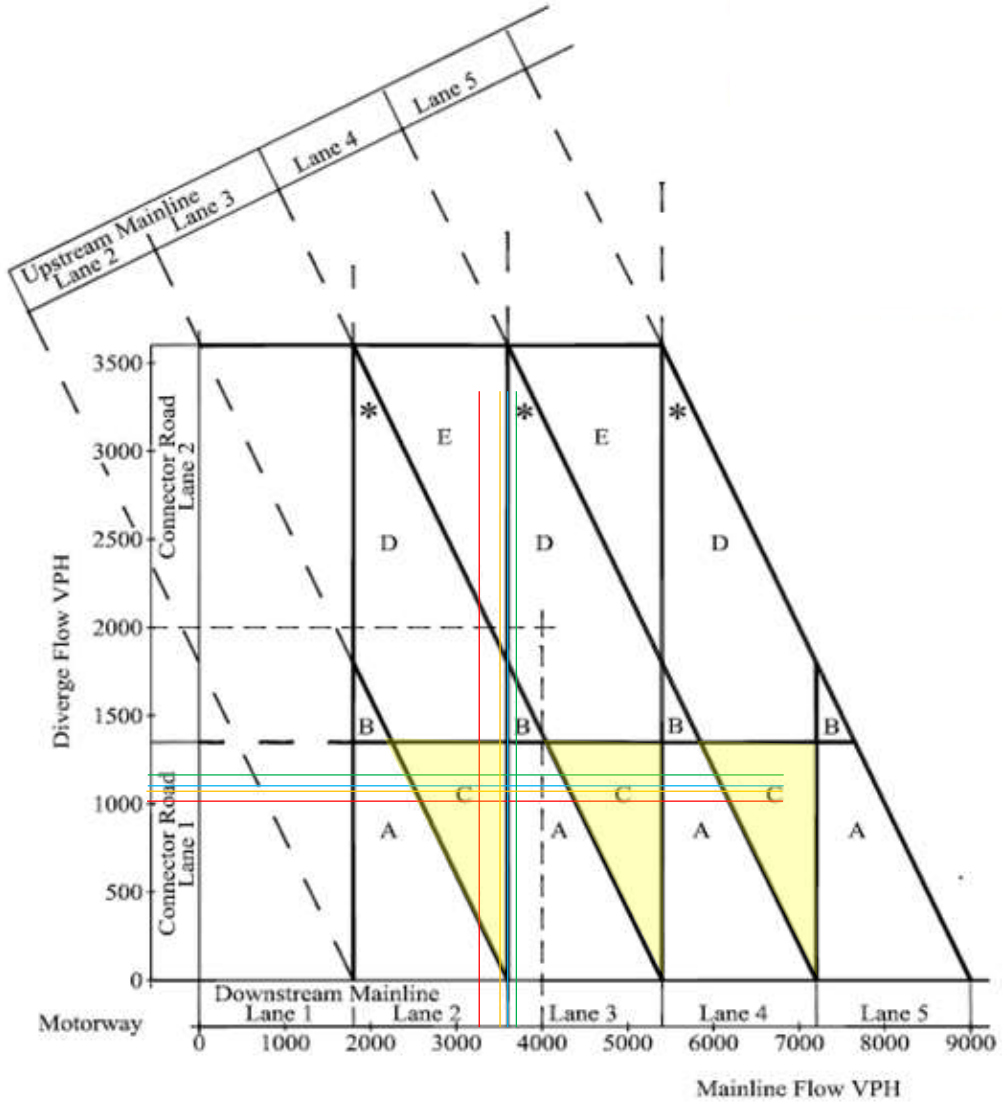
PM Peak Eastbound –J8



PM Peak Eastbound –J7



PM Peak Eastbound –J5E



PM Peak Eastbound–J5W

