Technical Note_Rev3

Project:	**Mildenhall Hub**	Job No:	**60525557**
Subject:	**Transport Assessment Addendum**		
Prepared by:	**C Brooks**	Date:	**25th July 2017**
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1.0 Introduction and Background

1.1 This Technical Note (TN) has been prepared by AECOM on behalf of Forest Heath District Council (FHDC) as an Addendum to the Transport Assessment (TA) which accompanied the planning application (planning reference DC/17/1106/FUL) for Mildenhall Hub, a proposed development on land off Queensway in Mildenhall, Suffolk.

1.2 The TN has been prepared in response to comments made by the local highway authority, Suffolk County Council (SCC) and Highways England (HE) in relation to the approach of the TA.

1.3 It was agreed during pre-application discussions with SCC that the approach to the TA would follow a netting off process where the traffic associated with the existing uses of the sites relocating to the Mildenhall Hub could be removed from the highway network and then applied to the new site. Following submission of the planning application it has been clarified by SCC that although this approach was agreed, a sensitivity test should be undertaken. The sensitivity test is required to identify the cumulative impacts of the proposed development should those sites, where existing uses are relocating to the Mildenhall Hub, be developed for the purposes as set out in the Local Plan.

1.4 Furthermore, the assessment undertaken within the submitted TA ensured a worst case by not allowing for a mode shift from car trips to more sustainable modes given the site's more sustainable location within the town nor did it consider the impact of co-locating a number of public service uses. This TN sets out how the application of mode shift and linking of trips, impacts on the total number of vehicular trips generated by the proposed development, and thus the impact on the local road network.

1.5 The fire station relocation is no longer part of the proposed development and all data in this Addendum reflects this.

2.0 Proposed Development Trip Reduction

Proposed Development Vehicular Trips

2.1 The vehicular trip rates for each use in each of the peak hours as assessed within the TA is set re-produced in **Table 2.1** below.

Table 2.1: Proposed Development Vehicular Trips from TA

Element	AM Peak (08:00-09:00)			PM Peak (16:45-17:45)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
School	208	130	338	29	46	75
Leisure Centre	39	27	66	86	62	148
Police	4	0	4	3	8	11
NHS & Library	9	3	12	0	18	18
FHDC Office	68	5	73	15	57	72
6TH Form	58	34	92	49	42	91
Total	**386**	**199**	**585**	**182**	**233**	**415**

Mode Shift

2.2 A Travel Plan is to be implemented at the site which will encourage use of more sustainable modes through measures such as promoting walking and cycling routes to the site and the links to the public transport network and therefore in turn reducing the number of vehicular trips associated with the proposed development.

2.3 Although a Travel Plan is to be implemented no allowance was made within the TA for the likelihood that there could be a change in people's travel habits in terms of mode choice. By not reducing trips, the assessment is seen to be robust however in real terms it could be considered to be an overestimation of trips.

2.4 The Travel Plan sets a target of reducing car driver trips by 15% over a five year period between the originally proposed year of opening 2019 and 2024. It is considered that due to the implementation of measures associated with the Travel Plan that over the two years between 2019 and 2021, the anticipated proportion of the target met will be 5%.

2.5 This is considered to be realistic, bearing in mind the development will include a public bus stop and the critical mass at the co-located site will support bus service improvements.

2.6 On this basis the vehicular trips derived for the proposed development have been reduced by 5% to take mode shift into account. The resulting number of vehicular trips which would occur in the weekday AM and PM are set out in **Table 2.2** below.

Table 2.2: Reduced Proposed Development Vehicular Trips – 5% Reduction for Mode Shift

Element	AM Peak (08:00-09:00)			PM Peak (16:45-17:45)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
School	198	123	321	27	44	71
Leisure Centre	37	25	62	80	58	138
Police	4	0	4	3	8	11
NHS & Library	9	3	11	0	17	17
FHDC Office	65	5	70	14	54	68
6TH Form	55	32	87	47	40	87
Total	**368**	**188**	**556**	**171**	**221**	**392**

Linked Trips

2.7 Due to the colocation of a number of existing public services which are currently spread across Mildenhall, there will be an occurrence of linked trips which cannot currently take place, therefore reducing the number of trips made within the town as a whole. No allowance was made within the original TA for the possibility of trips between the uses proposed on site being linked to ensure a robust assessment.

2.8 A review of the proposed uses shows that although there would be some linking of trips over the course of the day between the uses, the amount undertaken in the peak hours is likely to be relatively small. When considering trip linking between uses on a site a reduction should not be applied to all uses but instead uses classified into primary and secondary and then a reduction applied to the secondary use only. The trip generation identifies that the highest trip generator will be the school. Therefore, for the purposes of trip linking this is considered to be the primary use of the site with all other uses secondary. It is considered that approximately some 5% of vehicular trips associated with the secondary uses would be linked to the school. Therefore, a 5% reduction of trips associated with the secondary uses has been applied. The resulting total number of vehicular trips associated with the proposed development is set out in **Table 2.3** below.

Table 2.3: Reduced Proposed Development Vehicular Trips – 5% Reduction for Linked Trips

Element	AM Peak (08:00-09:00)			PM Peak (16:45-17:45)			Notes
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way	
School	198	123	321	27	44	71	Primary Use
Leisure Centre	35	24	59	76	55	131	5% Linked Trips
Police	4	0	4	3	8	11	Unlikely to be linked to other uses in peak hours
NHS & Library	8	3	11	0	16	16	5% Linked Trips
FHDC Visitors	11	5	16	11	51	62	5% Linked Trips
FHDC Staff	53	0	53	3	1	4	Unlikely to be linked to other uses in peak hours
6TH Form	52	31	83	44	38	82	5% Linked Trips
Total	**361**	**186**	**547**	**164**	**213**	**377**	

2.9 It should be noted that the trips shown in **Table 2.3** above take account of the assumed linkage of trips.

2.10 Furthermore, it should be noted that the 5% linked trips between the sixth form and the school is considered to be conservative as these two uses are more likely to have a greater number of linked trips than other uses.

2.11 The vehicular trips relating to the proposed development as set out in the TA and reproduced in **Table 2.1** have been replaced within those set out in **Table 2.3** above. **Table 2.4** below sets out the net change in trips arising from the mode shift and linked trip reductions.

Table 2.4: Total Number of Trips Removed from the Proposed Development Trip Generation

Element	AM Peak (08:00-09:00)			PM Peak (16:45-17:45)		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
School	-10	-7	-17	-2	-2	-4
Leisure Centre	-4	-3	-7	-10	-7	-17
Police	0	0	0	0	0	0
NHS & Library	-1	0	-1	0	-2	-2
FHDC Offices	-4	0	-4	-1	-5	-6
6TH Form	-6	-3	-9	-5	-4	-9
Total	**-25**	**-13**	**-38**	**-18**	**-20**	**-38**

3.0 Existing Site Trips and Proposed Site Trips

3.1 As part of the assessment included in the TA, the proposed uses of the existing sites were not assessed. This was considered appropriate because these sites were unlikely to be re-used under their existing consent and therefore new planning applications would need to be submitted for these sites to come back into use.

3.2 As part of this sensitivity test, it is proposed that the existing sites be assessed under their proposed use within the FHDC Local Plan which is currently being examined by the Secretary of State. Existing vehicular trips associated with the existing uses which are to relocate to the proposed development were identified within the TA and removed from the highway network before being added back after the baseline 2016 traffic had been factored to the opening year of 2019. As part of this assessment these trips have been removed and replaced with trips associated with alternative uses.

3.3 The vehicular trips set out in **Table 2.3** have been added to the network using the same distribution as assessed previously. These trips are now considered to be 'new' to the local road network.

4.0 Existing Sites Future Uses

4.1 The Forest Heath Local Plan is currently being examined by the Secretary for State before being adopted by FHDC. The Local Plan includes a number of sites across the FHDC area which has been put forward for development up to 2031. Within Mildenhall, a total of six sites were included and assessed within the Evidence Base. **Table 4.1** sets out the sites assessed in the Evidence Base for the Local Plan and identifies which of the sites have been included in this assessment.

Table 4.1: Local Plan Assessment Sites - Mildenhall

	Local Plan Assessment Site	Included in TN Assessment
1	Land West of Mildenhall – mixed use to include 1,250 dwellings, a minimum of of 2.6 ha employment, schools, leisure facilities and public services	X – dwellings and employment Schools, leisure facilities and public services to relocated to Hub site
2	Land at 54 Kingsway – 5 dwellings but land for up to 20 dwellings	X
3	District Council Offices, College Heath Road – land for up to 89 dwellings	FHDC, library, health centre and police station to relocate to Hub site
4	Former Build's Yard, north of Worlington Road – land for up to 9 dwellings	X
5	Land South of Worlington Road, adjacent to the former dairy site – land for up to 78 dwellings	X
6	Mildenhall Academy and Dome Leisure Centre site – land available for B1 and B2 use. 4.05ha	School and leisure centre to relocate to Hub site
7	Mildenhall Swimming Pool – land available for retail	Swimming pool to relocate to Hub site

4.2 Those sites not included in this assessment were excluded as it was agreed with FHDC and SCC that it was unlikely that they would come forward before 2021, the new year of assessment.

5.0 Trip Generation, Assignment and Distribution

FHDC Offices, Health Centre, Library and Police Station Site - Residential

5.1 As part of the Cumulative Impact Study undertaken by AECOM on behalf of FHDC as part of the Local Plan evidence base, vehicular trip rates were derived to estimate the number of vehicular movements likely to be generated in the weekday AM and PM peak hours by the proposed residential use of the FHDC office, health centre, library and police station site. These trip rates have been reused within this assessment to ensure that there is a consistent approach to the assessment of the Local Plan sites.

5.2 The AM and PM peak hour trip rates and the respective number of vehicular trips generated by the proposed residential site which comprises some 89 dwellings on land where the existing FHDC offices, the health centre, the library and the police station are currently located.

Table 5.1: Residential Trip Rates and Vehicular Trips

Time Period	Vehicular Trip Rates per Dwelling			Vehicular Trips – 89 Dwellings		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
AM Peak 08:00-09:00	0.13	0.50	0.63	12	45	57
PM Peak 16:45-17:45	0.33	0.21	0.54	29	19	48

5.3 These residential trips allow for an element of employment growth in the area by assuming that patterns reflect the latest Census 2011 data, which suggests that 46% of people living in Forest Heath, work in Forest Heath.

5.4 The distribution and assignment of the vehicular trips set out above for this site has been taken directly from the Cumulative Impact Study undertaken for the Local Plan thus ensuring the sensitivity test is consistent with the Local Plan evidence base.

Leisure Centre and Mildenhall Academy Secondary School - Employment

5.5 To reduce the likelihood of double counting within the Cumulative Impact Study for the Local Plan, employment trips were derived using a TEMPRO traffic growth factor. For the purposes of this sensitivity test, it is not considered appropriate to use this methodology as the growth factor relates to the entirety of FHDC's area and not solely Mildenhall.

5.6 To derive trips for the employment use at the leisure centre and school site, reference was made to the Trip Rate Information Computer System (TRICS) database. It is understood that the site could accommodate some 13,400m^2 of B1(b), B1(c) and B2 uses of which some 81% would relate to general industry. On this basis, when deriving vehicular trip rates from TRICS, the land use Industrial Estate has been chosen. **Table 5.2** below sets out the vehicular trip rates and the number of vehicular trips which would be generated by the proposed land use. A copy of the TRICS output is included at **Appendix A**.

Table 5.2: Employment Trip Rates and Vehicular Trips

Time Period	Vehicular Trip Rates per 100m^2			Vehicular Trips – 13,400m^2		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
AM Peak 08:00-09:00	0.526	0.104	0.630	70	14	84
PM Peak 16:45-17:45	0.070	0.331	0.400	9	44	54

5.7 The distribution and assignment of the vehicular trips set out above for this site has been undertaken using the Census 2011 Travel to Work information contained within the Cumulative Impact Study used as an evidence base for the Local Plan.

Swimming Pool - Retail

5.8 Due to the small nature of the swimming pool site and its location within Mildenhall town centre adjacent to the existing Sainsbury's foodstore, it has been allocated within the Local Plan as a separate retail site.

5.9 For the purposes of this sensitivity test, vehicular trips for the site have been derived from the TRICS database. As no details regarding the development are known, vehicular trip rates have been derived for a non-food retail unit. This is due to its proximity to the Sainsbury's foodstore. Furthermore, no floor area is available therefore for the purposes of this sensitivity test it is assumed that the development would provide a similar floor area to the swimming pool therefore the vehicular trip rates have been applied to a floor area of 800m^2. **Table 5.3** below sets out the vehicular trip rates and the number of vehicular trips which would be generated by the proposed land use. A copy of the TRICS output is included at **Appendix B**.

Table 5.3: Retail Trip Rates and Vehicular Trips

Time Period	Vehicular Trip Rates per 100m^2			Vehicular Trips – 800m^2		
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
AM Peak 08:00-09:00	0.840	0.640	1.480	7	5	12
PM Peak 16:45-17:45	1.180	1.040	2.220	9	8	17

5.10 Due to the position of the proposed site in the centre of Mildenhall and being adjacent to a number of existing car parks which serve the town centre and the Sainsbury's foodstore it is considered that a significant proportion of the trips generated by the proposed development would already be travelling to the town centre. Therefore the vehicular trips set out above in **Table 5.3** have been reduced such that only 10% are considered 'new' to the network. This is consistent with research contained within the TRICS Research Report 95-2 'Pass by and diverted traffic – a resume'. These trips are set out in **Table 5.4** below.

Table 5.4: Reduced Retail Vehicular Trips – 10%

Time Period	Vehicular Trips – 10%		
	Arrivals	Departures	Two-Way
AM Peak 08:00-09:00	1	1	2
PM Peak 16:45-17:45	1	1	2

5.11 These vehicular trips have been distributed across the highway network using the same distribution as that previously identified for the swimming pool in the TA when removing trips from the network.

Summary of Existing Site Future Use Vehicular Trips

5.12 **Table 5.5** below summarises the vehicular trips predicted to be generated by the proposed future uses included in the Local Plan at the existing sites. This table also sets out the vehicular trips generated at the existing sites under their existing use as well as identifying the change in vehicular trip generation at each of the site following their change of use.

Table 5.5: Existing Site Future Use and Existing Site Existing Use Vehicular Trip Comparison

Time Period	Existing Site, Existing Use			Existing Site, Future Use			Difference (Future Use-Existing Use)		
	Swimming Pool			Retail					
	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way	Arrivals	Departures	Two-Way
AM Peak 08:00-09:00	5	5	10	1	1	2	-4	-4	-8
PM Peak 16:45-17:45	15	15	30	1	1	2	-14	-14	-28
Time Period	**School and Leisure**			**Employment**			**Difference (Future Use-Existing Use)**		
AM Peak 08:00-09:00	200	133	333	70	14	84	-130	-119	-249
PM Peak 16:45-17:45	24	46	70	9	44	53	-15	-2	-17
Time Period	**Office, Health Centre, Library & Police**			**Residential**			**Difference (Future Use-Existing Use)**		
AM Peak 08:00-09:00	87	8	95	12	45	57	-75	+37	-38
PM Peak 16:45-17:45	18	83	101	29	19	48	+11	-64	-53
Time Period	**Existing Site, Existing Use – Total**			**Existing Site, Future Use - Total**			**Difference (Future Use-Existing Use)**		
AM Peak 08:00-09:00	292	146	438	83	60	143	-209	-86	-295
PM Peak 16:45-17:45	57	144	201	39	64	103	-18	-80	-98

5.13 **Table 5.5** confirms that the change of use at the existing sites would result in a reduction in vehicular trips on the local road network in 2021.

6.0 Future Year – 2019 to 2021

6.1 The assessment set out in the TA was based upon an opening year of 2019 as this is when the Hub was due to open. Following discussions with SCC it has been agreed that a new future year for assessment be considered. This is 2021, the year when it is considered reasonable for the existing sites to be redeveloped.

6.2 To derive 2021 traffic flows, a traffic growth factor has been derived from TEMPRO. This has been derived through using the alternative assumptions tool whereby all future growth in relating to house building and new jobs has been reduced to 0 from their proposed rates as vehicular trips relating to new jobs and houses has been added on manually. This was agreed as an appropriate way forward with both FHDC and SCC,A factor is still derived from TEMPRO which accounts for background traffic growth relating to changes in car ownership and usage. The factors derived are:

- 2016 – 2021 AM Peak 1.024
- 2016 – 2021 PM Peak 1.019

6.3 To derive the revised 2021 Without Development AM and PM peak hours traffic flows, the traffic associated with the existing development sites has been removed from the network and the traffic growth factors set out above applied before re-adding the traffic associated with the existing development sites. These revised traffic flows are identified on **Figures 6.1** and **6.2** included at **Appendix C**.

6.4 The 2021 With Development AM and PM peak hour traffic flows have been derived by removing the existing development trips from the 2021 Without Development flows, adding on trips relating to the proposed development and the proposed future uses. These revised traffic flows are identified on **Figures 6.3** and **6.4** included at **Appendix C**.

7.0 2021 Without and With Development Junction Modelling Results

7.1 Capacity assessments for the 2021 Without and With Development scenarios have been carried out using the 2021 Without and With Development AM and PM peak hour flows as illustrated on **Figures 6.1** to **6.4**. A copy of the modelling outputs for all junctions assessed is included at **Appendix D**.

Junction 1 – North Terrace / Kingsway / High Street three-arm roundabout

7.2 **Table 7.1** sets out the results for the North Terrace / Kingsway / High Street three-arm roundabout.

Table 7.1: North Terrace / Kingsway / High Street three-arm roundabout – 2021 'Without Development' and 'With Development'

Approach	2021 Without Development				2021 With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	RFC (%)	Max Q (Vehs)	RFC (%)	Max Q (Vehs)	RFC (%)	Max Q (Vehs)	RFC (%)	Max Q (Vehs)
A1101 North Terrace	0.66	2	0.83	5	0.84	5	0.92	9
A1101 Kingsway	0.47	1	0.71	2	0.61	2	0.75	3
B1102 High Street	0.82	4	0.86	6	0.96	13	1.04	31

2021 Without Development

7.3 The results confirm that in the 2021 Without Development scenario, the junction is predicted to operate within capacity in the AM peak and slightly over in the PM peak on only the B1102 High Street approach. In both peak hours, queuing and delay is considered to be minimal.

7.4 **Diagram 1** below illustrates the maximum length of queues predicted in the AM and PM peak hours in the 2021 Without Development scenario.

Diagram 1: Maximum Queues Predicted in 2021 Without Development AM and PM Peak Scenarios

2021 With Development

7.5 In the 2021 With Development scenario, the junction is predicted to operate within capacity on the A1101 North Terrace and A1101 Kingsway approaches in the AM with the B1102 High Street approach operating within maximum theoretical capacity. In the PM peak, both the A1101 North Terrace and A1101 Kingsway approaches are predicted to operate within theoretical maximum capacity. The B1102 High Street approach is shown to operate over capacity however is the peak over the course of the hour with a more detailed review of the results confirming that this would only occur for up to 30 minutes of the hour assessed and therefore at all other times the junction would operate within theoretical maximum capacity.

7.6 The level of queuing in the 2021 With Development PM peak does increase significantly from that experienced in the Without Development scenario albeit this could be due to the fact that after a junction exceeds an RFC value of 1, simulated queues increase exponentially.

7.7 Due to the proximity of the junction with Queensway, a proportion of the traffic which forms the queues predicted to occur at the stop line on the B1102 High Street approach will relate to traffic associated with Queensway. The traffic flows for 2021 With Development confirm that approximately 49% of traffic at the stop line in the PM peak would come from Queensway with the remainder from B1102 High Street. It is therefore likely that of the vehicles predicted to be queuing at the stop line up to 15 would be related to Queensway with the remaining 16 vehicles queued on B1102 High Street in the PM peak hour. These vehicles would be queued to the junction with New Street on both B1102 High Street and Queensway. It should be noted that this queue is the maximum which occurs over the course of the peak hour and therefore represents the worst case.

7.8 **Diagram 2** below illustrates the maximum length of queues predicted in the AM and PM peak hours in the 2021 With Development scenario.

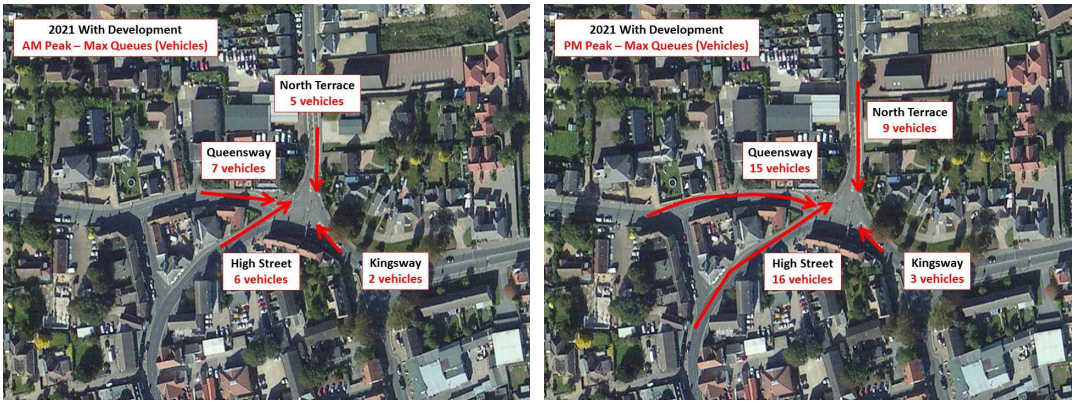


Diagram 2: Maximum Queues Predicted in 2021 With Development AM and PM Peak Scenarios

7.9 As stated in paragraph 7.5 the queues in the PM peak hour of the 2021 With Development scenario is only predicted to occur for a period of up to 30 minutes. At all other times, queuing at the junction is predicted to be significantly less.

7.10 Furthermore, it should be noted that the results of the sensitivity test predict that the junction would operate slightly better than that set out in the TA which accompanied the planning application for the proposed development.

7.11 The junction has been reviewed as part of a number of studies being undertaken by both FHDC and SCC to determine what, if any, improvements to increase capacity, reduce delay and queuing and the operation of the junction can be identified. These studies found that given the spatial constraints at this junction there are no obvious improvements to facilitate the capacity enhancements required to enable the junction to accommodate planned growth with queuing.

7.12 There is potential for a localised management scheme including a package of measures such as a restriction of some movements to be implemented to make Mildenhall and this junction less attractive for through-traffic, allowing local traffic and pedestrian movements to be prioritised, facilitating enhanced pedestrian/ cycle linkages to the town centre and enhanced public realm to create a greater sense of place at the junction. This is something that is expected to be explored as planned growth in Mildenhall comes forward. Furthermore, it is acknowledged that for Mildenhall to cater for growth beyond that set out in the Local Plan, including the redevelopment of RAF Mildenhall, some form of relief road would be required.

Junction 2 – Kingsway / College Heath Road signalised 'T' junction

7.13 **Table 7.2** sets out the results for the Kingsway / College Heath Road signalised 'T' junction.

Table 7.2: Kingsway / College Heath Road signalised 'T' junction – 2021 'Without Development' & 2021 'With Development'

Link	2021 Without Development				2021 With Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)	DoS	MMQ (PCU)
1/1 College Heath Road Left Right	64.5%	4.4	75.7%	6.0	70.9%	5.5	67.5%	4.4
2/1 A1101 Kingsway (East) Right Ahead	65.9%	11.9	75.5%	14.6	70.9%	13.2	73.9%	14.5
3/1 A1101 Kingsway (West) Left Ahead	57.8%	7.3	63.1%	8.2	61.7%	8.0	66.9%	9.2
Practical Reserve Capacity	36.6%		18.9%		26.9%		21.8%	
Total Delay (pcuHr)	8.87		11.52		10.32		10.59	
Cycle Time	90		90		90		9	

7.14 The results confirm that the junction would continue to operate with spare capacity in both peaks in the 2019 Without Development and With Development scenarios. It should be noted that the relocating of the FHDC Offices, the library and the health centre would provide a benefit to the operation of the College Heath Road approach due to there being a reduction in traffic over that generated in the without development scenario.

7.15 As set out in the TA no improvements would be considered necessary at this junction to mitigate the impact of the proposed development.

Junction 3 – Queensway / Sheldrick Way priority 'T' junction

7.16 The Queensway / Sheldrick Way priority 'T' junction has been assessed using the existing layout for the 2019 'Without Development' scenario and the proposed layout with the repositioned Queensway / Sheldrick Way priority 'T' junction in the 2019 'With Development' scenario. This is because the repositioning of the junction will only take place should the development come forward.

7.17 **Table 7.3** sets out the results for the Queensway / Sheldrick Way priority 'T' junction.

Table 7.3: Queensway / Sheldrick Way priority 'T' junction (Existing Layout) – 2021 'Without Development'

Approach	2021 Without Development					
	AM Peak			PM Peak		
	RFC (%)	Max Q (Vehs)	Max Delay (s)	RFC (%)	Max Q (Vehs)	Max Delay (s)
Site Access to Queensway Westbound and Queensway Eastbound (B-AC)	0.04	0	6.08	0.06	0	5.84
Queensway Eastbound to Queensway Westbound and Site Access (C-AB)	0.07	0	4.92	0.05	0	4.74

7.18 **Table 7.3** sets out the results for the Queensway / Sheldrick Way priority 'T' junction.

Table 7.3: Queensway / Sheldrick Way priority 'T' junction (Existing Layout) – 2021 'Without Development'

Approach	2021 With Development					
	AM Peak			PM Peak		
	RFC (%)	Max Q (Vehs)	Max Delay (s)	RFC (%)	Max Q (Vehs)	Max Delay (s)
Site Access to Queensway Eastbound (B-C)	0.31	0	8.72	0.33	1	8.44
Site Access to Queensway Westbound (B-A)	0.18	0	16.22	0.18	0	11.97
Queensway Eastbound to Queensway Westbound and Site Access (C-AB)	0.68	3	14.54	0.31	1	6.47

7.19 The results confirm that the junction would operate with spare capacity in both the AM and PM peaks in the in the 2021 Without Development and 2021 With Development scenarios. On this basis, the proposed geometric design is considered to be sufficient to cater for the traffic associated with the proposed development.

8.0 Mitigation

8.1 No mitigation is proposed for the A1101 Kingsway / College Heath Road signalised 'T' junction.

8.2 As per the conclusions of the TA, mitigation to improve capacity is not considered to be required at the Queensway / Sheldrick Way priority 'T' junction however changes to the junction's position are to be made to allow improved access for fire tenders and coaches who may be accessing the site at the same time. This includes the realignment and slight widening of Sheldrick Way, repositioning of the junction on Queensway some 25 metres to the west and the provision of passing places. As a result of the repositioning, the existing Zebra crossing facility provided on Queensway will be relocated to the east of the junction with Sheldrick Way.

8.3 A number of studies have been undertaken which consider the future increase in traffic associated with further development in the town, and the impact which this has on the A1101 North Terrace / A1101 Kingsway / B1102 High Street three-arm roundabout with Queensway junction. These studies highlight that little can be carried out at the junction to increase capacity and reduce delays. To facilitate planned growth associated with the local plan local traffic management measures, aimed at reducing traffic through Queensway are expected to come forward but the Mildenhall Hub impacts are not significant enough to warrant this. A long-term relief road for Mildenhall to remove through traffic from the town centre will be required to accommodate growth beyond that set out in the Local Plan, including the redevelopment of RAF Mildenhall. Furthermore, this is a key town centre location where priority should be given to providing pedestrian and cycle access over increasing access for vehicles.

8.4 However to improve the operation of the junction, a number of operational measures as set out in the TA could be implemented to improve the efficiency of the junction in the town centre. These would include:

- Providing a Yellow Box Junction in place of the existing 'Keep Clear' markings to ensure that right turning traffic into Queensway is able to manoeuvre more freely and thus reducing delay for vehicles travelling to the Hub. A Yellow Box Junction would be an enforceable arrangement.
- Encouraging further use of New Street which may require removal of on-street parking.
- Restricting on-street parking on Queensway; and,
- Encouraging use of more sustainable modes of transport through promotion of initiatives set out in the Travel Plan.

8.5 FHDC will also investigate the possibility of enabling cyclists to use the links from High Street to Church Walk which are currently prohibited to cycling.

9.0 Summary and Conclusions

9.1 This Technical Note has been prepared by AECOM on behalf of FHDC as an Addendum to the TA which accompanied the planning application for Mildenhall Hub, a proposed development off Queensway in Mildenhall, Suffolk. The TN has been prepared in response to comments made by the local highway authority, SCC and HE in relation to the approach of the TA.

9.2 A revised set of traffic flows have been derived for use in a sensitivity test whereby the trips associated with the proposed development have been reduced to take into account mode shift and linking of trips between uses. Background growth has also been amended to take into account the change in future year to 2021 and also the fact that vehicular trips for those uses in the Local Plan have been added directly to the network rather than through traffic growth factors derived from TEMPRO.

9.3 The junctions as assessed previously in the TA, the Queensway / Sheldrick Way priority 'T' junction, A1101 North Terrace / A1101 Kingsway / B1102 High Street three-arm roundabout and the A1101 Kingsway / College Heath Road signalised 'T' junction, have been reassessed as part of the sensitivity test.

9.4 The results confirm that both Queensway / Sheldrick Way priority 'T' junction and the A1101 Kingsway / College Heath Road signalised 'T' junction are predicted to operate within capacity in the future year 2021 With Development scenario. The A1101 North Terrace / A1101 Kingsway / B1102 High Street three-arm roundabout is predicted to operate slightly over capacity in the PM peak of the 2021 With Development scenario however the results predict that the junction would operate slightly better than that previously assessed within the TA.

9.5 Due to this it is not considered necessary to provide any further mitigation than that previously proposed within the TA at any of the junctions whereby the following was proposed:

- Possibility of providing a Yellow Box Junction in place of the existing 'Keep Clear' markings to ensure that right turning traffic into Queensway is able to manoeuvre more freely and thus reducing delay for vehicles travelling to the Hub. A Yellow Box Junction would be an enforceable arrangement.
- Encouraging further use of New Street which may require removal of on-street parking.
- Restricting on-street parking on Queensway; and,
- Encouraging use of more sustainable modes of transport through promotion of initiatives set out in the Travel Plan.

9.6 FHDC will investigate the possibility of enabling cyclists to use the links from High Street to Church Walk which are currently prohibited to cycling.

10.0 Conclusion

10.1 In conclusion, it is considered that the sensitivity test reaffirms the conclusions drawn in the TA submitted with the application in that the cumulative residual impact of the development is not severe in the context of the National Planning Policy Framework and therefore the Highway Authority should be able to provide a positive recommendation for approval of the application.

Appendices

Appendix A

TRICS Trip Rates - Employment

Calculation Reference: AUDIT-204614-170724-0749

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : D - INDUSTRIAL ESTATE
MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	KC	KENT	1 days

Secondary Filtering selection:

Parameter:	Gross floor area
Actual Range:	7525 to 10715 (units: sqm)
Range Selected by User:	552 to 15000 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/09 to 02/12/14

Selected survey days:

Monday	1 days
Wednesday	1 days

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town	2

Selected Location Sub Categories:

Residential Zone	2

Secondary Filtering selection:

Use Class:

B2	2 days

Population within 1 mile:

25,001 to 50,000	2 days

Population within 5 miles:

25,001 to 50,000	1 days
125,001 to 250,000	1 days

Car ownership within 5 miles:

1.1 to 1.5	2 days

Travel Plan:

No	2 days

PTAL Rating:

No PTAL Present	2 days

LIST OF SITES relevant to selection parameters

1 ES-02-D-06 INDUSTRIAL ESTATE EAST SUSSEX
COURTLANDS ROAD

EASTBOURNE
Edge of Town
Residential Zone
Total Gross floor area: 7525 sqm
Survey date: MONDAY 21/10/13 Survey Type: MANUAL

2 KC-02-D-02 INDUSTRIAL ESTATE KENT
SOUTHWELL ROAD

DEAL
Edge of Town
Residential Zone
Total Gross floor area: 10715 sqm
Survey date: WEDNESDAY 28/11/12 Survey Type: MANUAL

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
HI-02-D-03	Scotland
WM-02-D-02	Birmingham

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL VEHICLES
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	2	9120	0.077	2	9120	0.011	2	9120	0.088
07:30 - 08:00	2	9120	0.203	2	9120	0.049	2	9120	0.252
08:00 - 08:30	2	9120	0.274	2	9120	0.038	2	9120	0.312
08:30 - 09:00	2	9120	0.252	2	9120	0.066	2	9120	0.318
09:00 - 09:30	2	9120	0.175	2	9120	0.071	2	9120	0.246
09:30 - 10:00	2	9120	0.137	2	9120	0.099	2	9120	0.236
10:00 - 10:30	2	9120	0.137	2	9120	0.126	2	9120	0.263
10:30 - 11:00	2	9120	0.099	2	9120	0.088	2	9120	0.187
11:00 - 11:30	2	9120	0.082	2	9120	0.088	2	9120	0.170
11:30 - 12:00	2	9120	0.132	2	9120	0.110	2	9120	0.242
12:00 - 12:30	2	9120	0.121	2	9120	0.143	2	9120	0.264
12:30 - 13:00	2	9120	0.088	2	9120	0.143	2	9120	0.231
13:00 - 13:30	2	9120	0.154	2	9120	0.121	2	9120	0.275
13:30 - 14:00	2	9120	0.099	2	9120	0.170	2	9120	0.269
14:00 - 14:30	2	9120	0.159	2	9120	0.088	2	9120	0.247
14:30 - 15:00	2	9120	0.126	2	9120	0.121	2	9120	0.247
15:00 - 15:30	2	9120	0.110	2	9120	0.137	2	9120	0.247
15:30 - 16:00	2	9120	0.148	2	9120	0.175	2	9120	0.323
16:00 - 16:30	2	9120	0.115	2	9120	0.159	2	9120	0.274
16:30 - 17:00	2	9120	0.099	2	9120	0.269	2	9120	0.368
17:00 - 17:30	2	9120	0.060	2	9120	0.351	2	9120	0.411
17:30 - 18:00	2	9120	0.027	2	9120	0.175	2	9120	0.202
18:00 - 18:30	2	9120	0.016	2	9120	0.088	2	9120	0.104
18:30 - 19:00	2	9120	0.038	2	9120	0.060	2	9120	0.098
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			2.928			2.946			5.874

Parameter summary

Trip rate parameter range selected:	7525 - 10715 (units: sqm)
Survey date date range:	01/01/09 - 02/12/14
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	2

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE
MULTI-MODAL PSVS
Calculation factor: 100 sqm
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
07:30 - 08:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
08:00 - 08:30	2	9120	0.005	2	9120	0.000	2	9120	0.005
08:30 - 09:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
09:00 - 09:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
09:30 - 10:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
10:00 - 10:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
10:30 - 11:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
11:00 - 11:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
11:30 - 12:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
12:00 - 12:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
12:30 - 13:00	2	9120	0.000	2	9120	0.005	2	9120	0.005
13:00 - 13:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
13:30 - 14:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
14:00 - 14:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
14:30 - 15:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
15:00 - 15:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
15:30 - 16:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
16:00 - 16:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
16:30 - 17:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
17:00 - 17:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
17:30 - 18:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
18:00 - 18:30	2	9120	0.000	2	9120	0.000	2	9120	0.000
18:30 - 19:00	2	9120	0.000	2	9120	0.000	2	9120	0.000
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			0.005			0.005			0.010

Appendix B

TRICS Trip Rates – Non Food Retail

Calculation Reference: AUDIT-204614-170722-0729

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE
MULTI-MODAL VEHICLES

Selected regions and areas:
09 NORTH
CB CUMBRIA 1 days

Secondary Filtering selection:

Parameter: Gross floor area
Actual Range: 2500 to 2500 (units: sqm)
Range Selected by User: 290 to 5000 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/09 to 17/10/11

Selected survey days:
Friday 1 days

Selected survey types:
Manual count 1 days
Directional ATC Count 0 days

Selected Locations:
Edge of Town Centre 1

Selected Location Sub Categories:
Built-Up Zone 1

Secondary Filtering selection:

Use Class:
A1 1 days

Population within 1 mile:
15,001 to 20,000 1 days

Population within 5 miles:
125,001 to 250,000 1 days

Car ownership within 5 miles:
1.1 to 1.5 1 days

Petrol filling station:
Included in the survey count 0 days
Excluded from count or no filling station 1 days

Travel Plan:
No 1 days

PTAL Rating:
No PTAL Present 1 days

LIST OF SITES relevant to selection parameters

1 CB-01-G-02 STAPLES CUMBRIA
JAMES STREET

CARLISLE
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 2500 sqm
Survey date: FRIDAY 05/02/10 Survey Type: MANUAL

TRIP RATE for Land Use 01 - RETAIL/G - OTHER INDIVIDUAL NON-FOOD SUPERSTORE

MULTI-MODAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

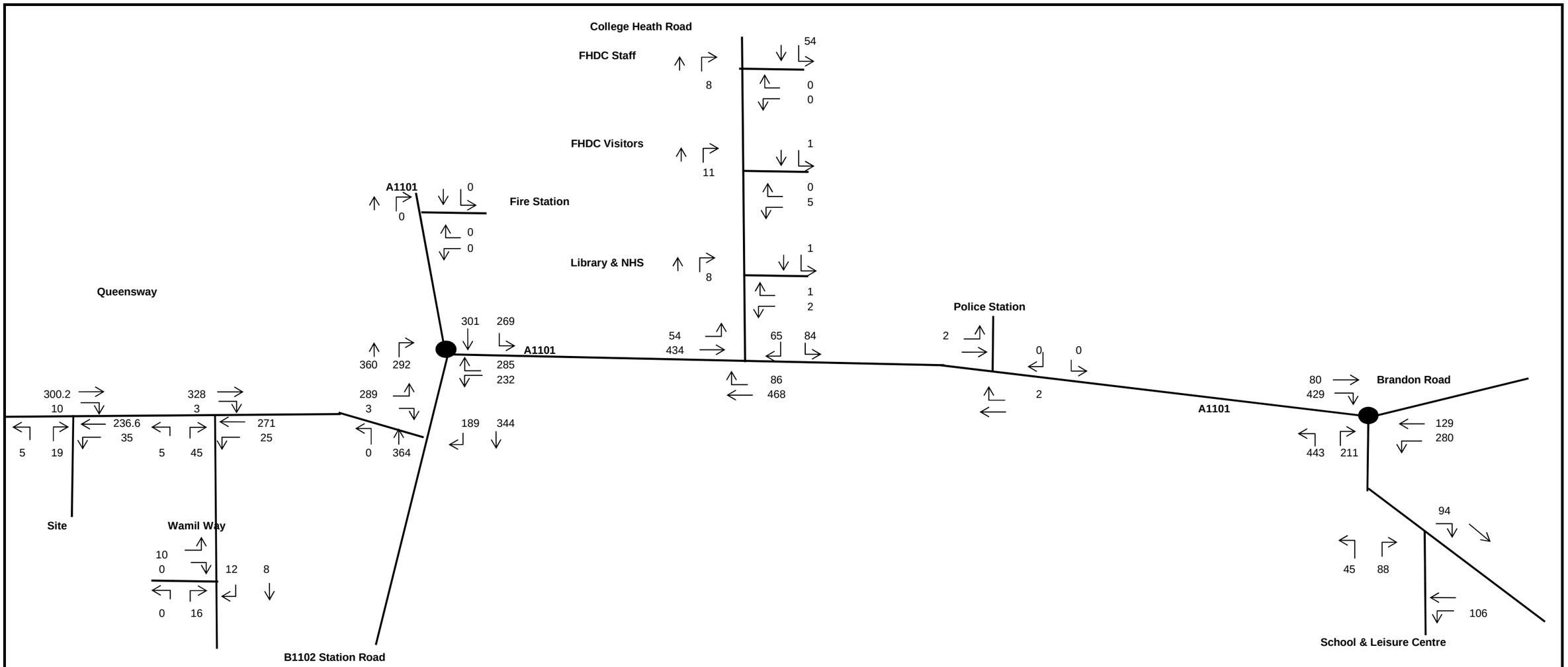
	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	2500	0.080	1	2500	0.000	1	2500	0.080
08:00 - 09:00	1	2500	0.840	1	2500	0.640	1	2500	1.480
09:00 - 10:00	1	2500	1.760	1	2500	1.560	1	2500	3.320
10:00 - 11:00	1	2500	1.520	1	2500	1.680	1	2500	3.200
11:00 - 12:00	1	2500	1.880	1	2500	2.000	1	2500	3.880
12:00 - 13:00	1	2500	1.960	1	2500	1.720	1	2500	3.680
13:00 - 14:00	1	2500	1.320	1	2500	1.400	1	2500	2.720
14:00 - 15:00	1	2500	1.600	1	2500	1.280	1	2500	2.880
15:00 - 16:00	1	2500	1.320	1	2500	1.520	1	2500	2.840
16:00 - 17:00	1	2500	1.440	1	2500	1.040	1	2500	2.480
17:00 - 18:00	1	2500	0.920	1	2500	1.040	1	2500	1.960
18:00 - 19:00	1	2500	0.360	1	2500	0.600	1	2500	0.960
19:00 - 20:00	1	2500	0.000	1	2500	0.360	1	2500	0.360
20:00 - 21:00	1	2500	0.000	1	2500	0.160	1	2500	0.160
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			15.000			15.000			30.000

Parameter summary

Trip rate parameter range selected:	2500 - 2500 (units: sqm)
Survey date date range:	01/01/09 - 17/10/11
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

Appendix C

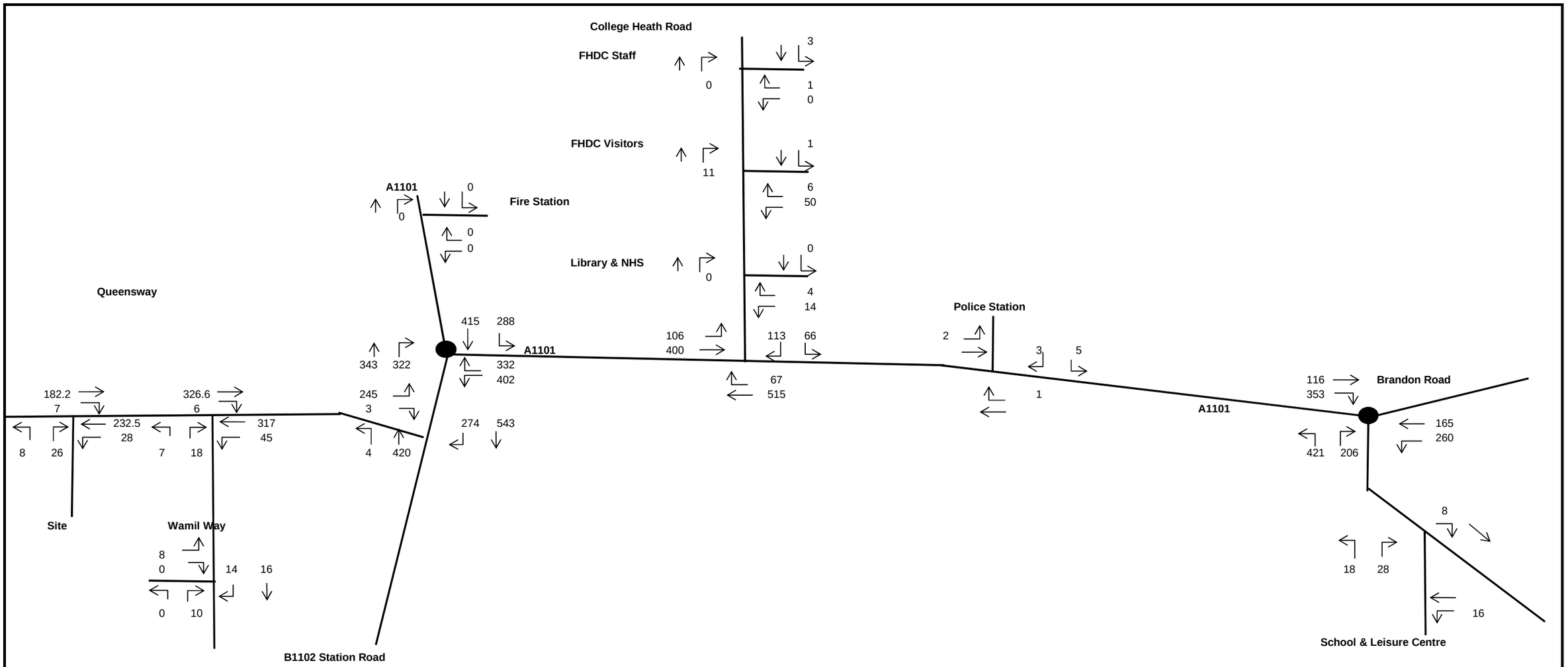
Traffic Flow Diagrams



Tempro Growth
AM Peak
1.02 2016-2021

KEY
X PCU's

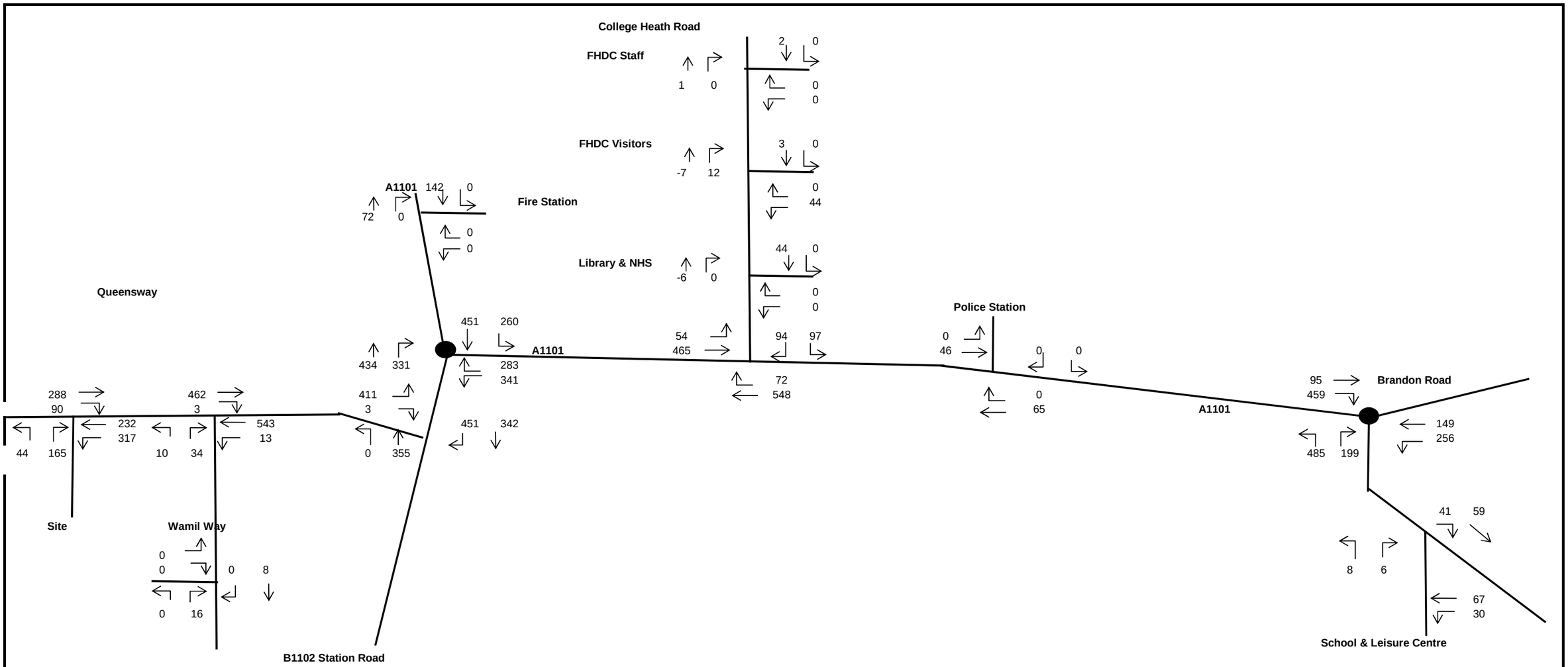
Project	**Mildenhall Hub**	AECOM	**Ref.**	**Date**
			60525557	**25/07/2017**
Client	**Forest Heath District Council**	**Figure 6.1: 2021 Without Development AM**	**Drawn**	**Checked**
			Caroline Brooks	**Georgia Ingleson**



Tempro Growth
PM Peak
1.019 2016-2021

KEY
X PCU's

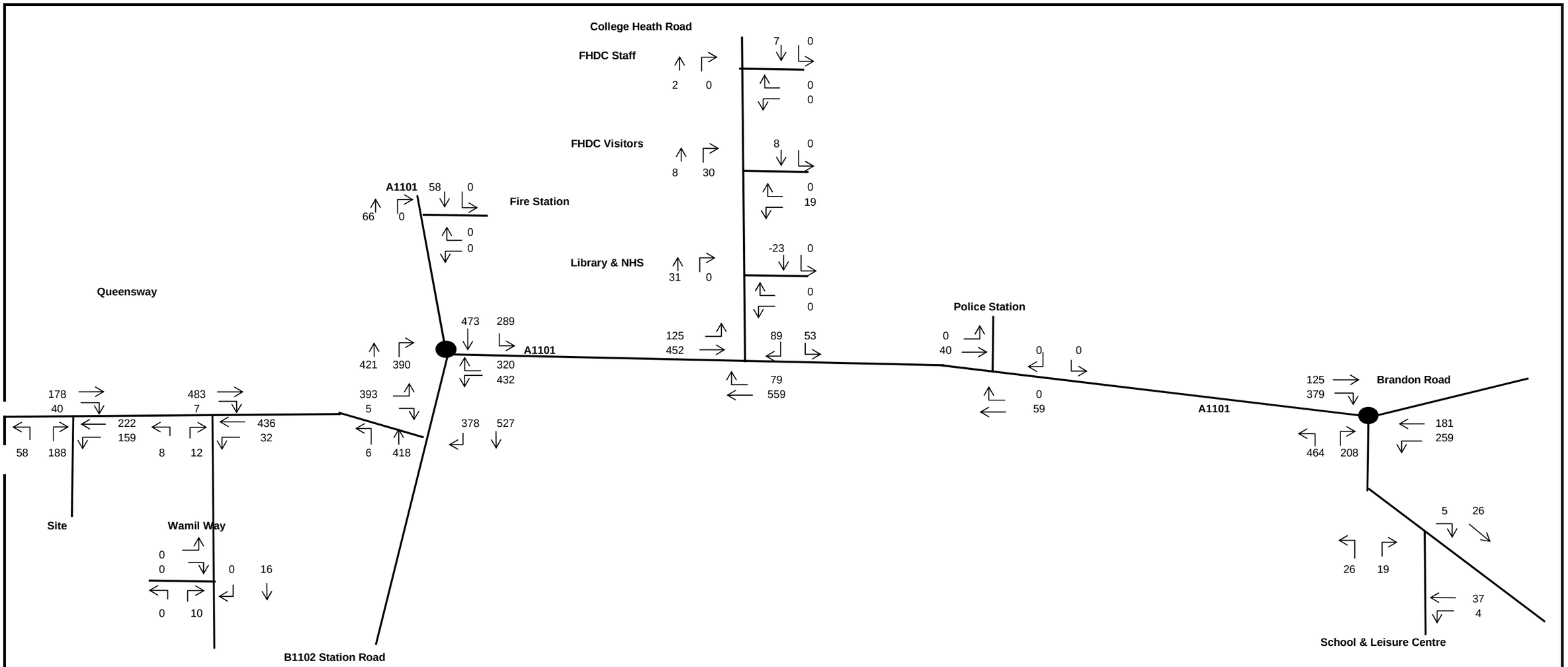
Project	**Mildenhall Hub**	AECOM	**Ref.**	**Date**
			60525557	**25/07/2017**
Client	**Forest Heath District Council**	**Figure 6.2: 2021 Without Developemt PM**	**Drawn**	**Checked**
			Caroline Brooks	**Georgia Ingleson**



KEY

X PCU's

Project	**Mildenhall Hub**	AECOM	**Ref.**	**Date**
			60525557	**25/07/2017**
Client	**Forest Heath District Council**	**Figure 6.3: 2021 With Development AM**	**Drawn**	**Checked**
			Caroline Brooks	**Georgia Ingleson**



KEY

X PCU's

Project	**Mildenhall Hub**	AECOM	**Ref.**	**Date**
			60525557	**25/07/2017**
Client	**Forest Heath District Council**	**Figure 6.4: 2021 With Development PM**	**Drawn**	**Checked**
			Caroline Brooks	**Georgia Ingleson**

Appendix D

Junction Modelling Results

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: Junction 1 - Site Access-Existing and Proposed.arc8
Path: \\Uknor1fp001\uknor1fp001-v1pcc\TI\Projects\60525557 - Mildenhall Hub\Calculations\Modelling
Report generation date: 25/07/2017 16:15:53

« Site Access - Existing - 2021 Without Dev ST, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Site Access - Existing - 2021 Without Dev ST			
Stream B-AC	0.04	6.08	0.04	A
Stream C-AB	0.12	4.92	0.07	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2016 Base, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base, PM" model duration: 16:30 - 18:00
"D3 - 2019 Without Dev, AM" model duration: 07:45 - 09:15
"D4 - 2019 Without Dev, PM" model duration: 16:30 - 18:00
"D5 - 2019 With Dev, AM" model duration: 07:45 - 09:15
"D6 - 2019 With Dev, PM" model duration: 16:30 - 18:00
"D7 - 2021 Without Dev ST, AM " model duration: 07:45 - 09:15
"D8 - 2021 Without Dev ST, PM" model duration: 16:30 - 18:00
"D9 - 2021 With Dev ST, AM" model duration: 07:45 - 09:15
"D10 - 2021 With Dev ST, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 25/07/2017 16:15:52

File summary

Title	(untitled)
Location	
Site Number	
Date	12/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	inglesong
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Site Access - Existing - 2021 Without Dev ST, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Site Access - Existing	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2021 Without Dev ST, AM	2021 Without Dev ST	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	5.30	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Queensway (West) Queensway (West)		Major
B	B	Site Access		Minor
C	C	Queensway (East)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	250.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										128	29

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	640.136	0.117	0.295	0.185	0.421
1	B-C	770.782	0.118	0.299	-	-
1	C-B	718.741	0.278	0.278	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	310.00	100.000
B	ONE HOUR	✓	24.00	100.000
C	ONE HOUR	✓	272.00	100.000

Turning Proportions

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

		To		
		A	B	C
From	A	0.000	10.000	300.000
	B	5.000	0.000	19.000
	C	237.000	35.000	0.000

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

		To		
		A	B	C
From	A	0.00	0.03	0.97
	B	0.21	0.00	0.79
	C	0.87	0.13	0.00

Vehicle Mix

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

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

Heavy Vehicle Percentages - Junction 1 (for whole period)

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.04	6.08	0.04	A
C-AB	0.07	4.92	0.12	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	18.07	17.96	0.00	657.38	0.027	0.03	5.630	A
C-AB	33.95	33.69	0.00	766.36	0.044	0.06	4.912	A
C-A	170.83	170.83	0.00	-	-	-	-	-
A-B	7.53	7.53	0.00	-	-	-	-	-
A-C	225.86	225.86	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	21.58	21.55	0.00	641.10	0.034	0.03	5.810	A
C-AB	42.69	42.61	0.00	776.64	0.055	0.09	4.906	A
C-A	201.83	201.83	0.00	-	-	-	-	-
A-B	8.99	8.99	0.00	-	-	-	-	-
A-C	269.69	269.69	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	26.42	26.39	0.00	618.40	0.043	0.04	6.080	A
C-AB	56.08	55.94	0.00	791.20	0.071	0.12	4.899	A
C-A	243.39	243.39	0.00	-	-	-	-	-
A-B	11.01	11.01	0.00	-	-	-	-	-
A-C	330.31	330.31	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	26.42	26.42	0.00	618.39	0.043	0.04	6.080	A
C-AB	56.12	56.12	0.00	791.24	0.071	0.12	4.899	A
C-A	243.36	243.36	0.00	-	-	-	-	-
A-B	11.01	11.01	0.00	-	-	-	-	-
A-C	330.31	330.31	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	21.58	21.61	0.00	641.08	0.034	0.04	5.813	A
C-AB	42.74	42.88	0.00	776.70	0.055	0.09	4.907	A
C-A	201.78	201.78	0.00	-	-	-	-	-
A-B	8.99	8.99	0.00	-	-	-	-	-
A-C	269.69	269.69	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	18.07	18.09	0.00	657.34	0.027	0.03	5.633	A
C-AB	34.03	34.12	0.00	766.42	0.044	0.07	4.919	A
C-A	170.75	170.75	0.00	-	-	-	-	-
A-B	7.53	7.53	0.00	-	-	-	-	-
A-C	225.86	225.86	0.00	-	-	-	-	-

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: Junction 1 - Site Access-Existing and Proposed.arc8
Path: \\Uknor1fp001\uknor1fp001-v1pcc\TI\Projects\60525557 - Mildenhall Hub\Calculations\Modelling
Report generation date: 25/07/2017 16:16:39

« Site Access - Existing - 2021 Without Dev ST, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Site Access - Existing - 2021 Without Dev ST			
Stream B-AC	0.06	5.84	0.06	A
Stream C-AB	0.08	4.74	0.05	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2016 Base, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base, PM" model duration: 16:30 - 18:00
"D3 - 2019 Without Dev, AM" model duration: 07:45 - 09:15
"D4 - 2019 Without Dev, PM" model duration: 16:30 - 18:00
"D5 - 2019 With Dev, AM" model duration: 07:45 - 09:15
"D6 - 2019 With Dev, PM" model duration: 16:30 - 18:00
"D7 - 2021 Without Dev ST, AM" model duration: 07:45 - 09:15
"D8 - 2021 Without Dev ST, PM " model duration: 16:30 - 18:00
"D9 - 2021 With Dev ST, AM" model duration: 07:45 - 09:15
"D10 - 2021 With Dev ST, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 25/07/2017 16:16:38

File summary

Title	(untitled)
Location	
Site Number	
Date	12/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	inglesong
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Site Access - Existing - 2021 Without Dev ST, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Site Access - Existing	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2021 Without Dev ST, PM	2021 Without Dev ST	PM		ONE HOUR	16:30	18:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	5.26	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Queensway (West) Queensway (West)		Major
B	B	Site Access		Minor
C	C	Queensway (East)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	250.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane	5.00										128	29

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	640.136	0.117	0.295	0.185	0.421
1	B-C	770.782	0.118	0.299	-	-
1	C-B	718.741	0.278	0.278	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	189.00	100.000
B	ONE HOUR	✓	34.00	100.000
C	ONE HOUR	✓	261.00	100.000

Turning Proportions

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

		To		
		A	B	C
From	A	0.000	7.000	182.000
	B	8.000	0.000	26.000
	C	233.000	28.000	0.000

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

		To		
		A	B	C
From	A	0.00	0.04	0.96
	B	0.24	0.00	0.76
	C	0.89	0.11	0.00

Vehicle Mix

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

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

Heavy Vehicle Percentages - Junction 1 (for whole period)

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.06	5.84	0.06	A
C-AB	0.05	4.74	0.08	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	25.60	25.44	0.00	680.04	0.038	0.04	5.498	A
C-AB	26.82	26.64	0.00	787.41	0.034	0.05	4.732	A
C-A	169.67	169.67	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	137.02	137.02	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	30.57	30.53	0.00	669.02	0.046	0.05	5.638	A
C-AB	33.58	33.52	0.00	801.21	0.042	0.06	4.689	A
C-A	201.05	201.05	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	163.61	163.61	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	37.43	37.38	0.00	653.64	0.057	0.06	5.841	A
C-AB	43.80	43.71	0.00	820.35	0.053	0.08	4.637	A
C-A	243.57	243.57	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	200.39	200.39	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	37.43	37.43	0.00	653.63	0.057	0.06	5.841	A
C-AB	43.82	43.82	0.00	820.38	0.053	0.08	4.636	A
C-A	243.54	243.54	0.00	-	-	-	-	-
A-B	7.71	7.71	0.00	-	-	-	-	-
A-C	200.39	200.39	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	30.57	30.61	0.00	669.00	0.046	0.05	5.639	A
C-AB	33.61	33.70	0.00	801.24	0.042	0.06	4.693	A
C-A	201.02	201.02	0.00	-	-	-	-	-
A-B	6.29	6.29	0.00	-	-	-	-	-
A-C	163.61	163.61	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-AC	25.60	25.63	0.00	680.01	0.038	0.04	5.501	A
C-AB	26.87	26.93	0.00	787.45	0.034	0.05	4.735	A
C-A	169.62	169.62	0.00	-	-	-	-	-
A-B	5.27	5.27	0.00	-	-	-	-	-
A-C	137.02	137.02	0.00	-	-	-	-	-

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: Junction 1 - Site Access-Existing and Proposed.arc8
Path: \\Uknor1fp001\uknor1fp001-v1pcc\TI\Projects\60525557 - Mildenhall Hub\Calculations\Modelling
Report generation date: 25/07/2017 16:17:07

« Site Access - Proposed - 2021 With Dev ST, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Site Access - Proposed - 2021 With Dev ST			
Stream B-C	0.44	8.72	0.31	A
Stream B-A	0.22	16.22	0.18	C
Stream C-AB	2.53	14.54	0.68	B
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2016 Base, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base, PM" model duration: 16:30 - 18:00
"D3 - 2019 Without Dev, AM" model duration: 07:45 - 09:15
"D4 - 2019 Without Dev, PM" model duration: 16:30 - 18:00
"D5 - 2019 With Dev, AM" model duration: 07:45 - 09:15
"D6 - 2019 With Dev, PM" model duration: 16:30 - 18:00
"D7 - 2021 Without Dev ST, AM" model duration: 07:45 - 09:15
"D8 - 2021 Without Dev ST, PM" model duration: 16:30 - 18:00
"D9 - 2021 With Dev ST, AM " model duration: 07:45 - 09:15
"D10 - 2021 With Dev ST, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 25/07/2017 16:17:06

File summary

Title	(untitled)
Location	
Site Number	
Date	12/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	inglesong
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Site Access - Proposed - 2021 With Dev ST, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Site Access - Proposed	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2021 With Dev ST, AM	2021 With Dev ST	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	13.19	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Queensway (West) Queensway (West)		Major
B	B	Site Access		Minor
C	C	Queensway (East)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	250.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane plus flare				10.00	6.84	4.11	3.62	3.62	✓	1.00	33	35

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	526.849	0.096	0.243	0.153	0.346
1	B-C	728.246	0.112	0.282	-	-
1	C-B	718.741	0.278	0.278	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	378.00	100.000
B	ONE HOUR	✓	209.00	100.000
C	ONE HOUR	✓	549.00	100.000

Turning Proportions

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

		To		
		A	B	C
From	A	0.000	90.000	288.000
	B	44.000	0.000	165.000
	C	232.000	317.000	0.000

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

		To		
		A	B	C
From	A	0.00	0.24	0.76
	B	0.21	0.00	0.79
	C	0.42	0.58	0.00

Vehicle Mix

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

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

Heavy Vehicle Percentages - Junction 1 (for whole period)

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.31	8.72	0.44	A
B-A	0.18	16.22	0.22	C
C-AB	0.68	14.54	2.53	B
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	124.22	123.27	0.00	643.31	0.193	0.24	6.910	A
B-A	33.13	32.72	0.00	356.10	0.093	0.10	11.119	B
C-AB	310.52	307.24	0.00	752.01	0.413	0.82	8.055	A
C-A	102.80	102.80	0.00	-	-	-	-	-
A-B	67.76	67.76	0.00	-	-	-	-	-
A-C	216.82	216.82	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	148.33	148.05	0.00	624.22	0.238	0.31	7.554	A
B-A	39.56	39.41	0.00	320.72	0.123	0.14	12.790	B
C-AB	392.98	391.21	0.00	760.67	0.517	1.26	9.740	A
C-A	100.56	100.56	0.00	-	-	-	-	-
A-B	80.91	80.91	0.00	-	-	-	-	-
A-C	258.91	258.91	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	181.67	181.17	0.00	594.91	0.305	0.43	8.690	A
B-A	48.44	48.15	0.00	271.70	0.178	0.21	16.082	C
C-AB	523.08	518.30	0.00	773.59	0.676	2.46	14.032	B
C-A	81.39	81.39	0.00	-	-	-	-	-
A-B	99.09	99.09	0.00	-	-	-	-	-
A-C	317.09	317.09	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	181.67	181.66	0.00	594.48	0.306	0.44	8.720	A
B-A	48.44	48.43	0.00	270.36	0.179	0.22	16.218	C
C-AB	524.71	524.41	0.00	774.84	0.677	2.53	14.543	B
C-A	79.75	79.75	0.00	-	-	-	-	-
A-B	99.09	99.09	0.00	-	-	-	-	-
A-C	317.09	317.09	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	148.33	148.82	0.00	623.79	0.238	0.32	7.589	A
B-A	39.56	39.84	0.00	318.81	0.124	0.14	12.919	B
C-AB	394.72	399.49	0.00	762.37	0.518	1.34	10.097	B
C-A	98.82	98.82	0.00	-	-	-	-	-
A-B	80.91	80.91	0.00	-	-	-	-	-
A-C	258.91	258.91	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	124.22	124.52	0.00	642.92	0.193	0.24	6.947	A
B-A	33.13	33.28	0.00	354.46	0.093	0.10	11.215	B
C-AB	311.74	313.68	0.00	752.97	0.414	0.86	8.252	A
C-A	101.57	101.57	0.00	-	-	-	-	-
A-B	67.76	67.76	0.00	-	-	-	-	-
A-C	216.82	216.82	0.00	-	-	-	-	-

Junctions 8

PICADY 8 - Priority Intersection Module

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: Junction 1 - Site Access-Existing and Proposed.arc8
Path: \\Uknor1fp001\uknor1fp001-v1pcc\TI\Projects\60525557 - Mildenhall Hub\Calculations\Modelling
Report generation date: 25/07/2017 16:17:41

« Site Access - Proposed - 2021 With Dev ST, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Site Access - Proposed - 2021 With Dev ST			
Stream B-C	0.48	8.44	0.33	A
Stream B-A	0.21	11.97	0.18	B
Stream C-AB	0.58	6.47	0.31	A
Stream C-A	-	-	-	-
Stream A-B	-	-	-	-
Stream A-C	-	-	-	-

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

"D1 - 2016 Base, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base, PM" model duration: 16:30 - 18:00
"D3 - 2019 Without Dev, AM" model duration: 07:45 - 09:15
"D4 - 2019 Without Dev, PM" model duration: 16:30 - 18:00
"D5 - 2019 With Dev, AM" model duration: 07:45 - 09:15
"D6 - 2019 With Dev, PM" model duration: 16:30 - 18:00
"D7 - 2021 Without Dev ST, AM" model duration: 07:45 - 09:15
"D8 - 2021 Without Dev ST, PM" model duration: 16:30 - 18:00
"D9 - 2021 With Dev ST, AM" model duration: 07:45 - 09:15
"D10 - 2021 With Dev ST, PM " model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 25/07/2017 16:17:40

File summary

Title	(untitled)
Location	
Site Number	
Date	12/12/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	inglesong
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Site Access - Proposed - 2021 With Dev ST, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Site Access - Proposed	N/A			100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Single Time Segment Only	Locked
2021 With Dev ST, PM	2021 With Dev ST	PM		ONE HOUR	16:30	18:00	90	15		

Junction Network

Junctions

Junction	Name	Junction Type	Major Road Direction	Arm Order	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way	A,B,C	7.96	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description	Arm Type
A	A	Queensway (West) Queensway (West)		Major
B	B	Site Access		Minor
C	C	Queensway (East)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Width of kerbed central reserve (m)	Has right turn bay	Width For Right Turn (m)	Visibility For Right Turn (m)	Blocks?	Blocking Queue (PCU)
C	6.00		0.00		2.20	250.00	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor Arm Type	Lane Width (m)	Lane Width (Left) (m)	Lane Width (Right) (m)	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate Flare Length	Flare Length (PCU)	Visibility To Left (m)	Visibility To Right (m)
B	One lane plus flare				10.00	6.84	4.11	3.62	3.62	✓	1.00	33	35

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	526.849	0.096	0.243	0.153	0.346
1	B-C	728.246	0.112	0.282	-	-
1	C-B	718.741	0.278	0.278	-	-

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

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	218.00	100.000
B	ONE HOUR	✓	246.00	100.000
C	ONE HOUR	✓	381.00	100.000

Turning Proportions

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

		To		
		A	B	C
From	A	0.000	40.000	178.000
	B	58.000	0.000	188.000
	C	222.000	159.000	0.000

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

		To		
		A	B	C
From	A	0.00	0.18	0.82
	B	0.24	0.00	0.76
	C	0.58	0.42	0.00

Vehicle Mix

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

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

Heavy Vehicle Percentages - Junction 1 (for whole period)

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

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.33	8.44	0.48	A
B-A	0.18	11.97	0.21	B
C-AB	0.31	6.47	0.58	A
C-A	-	-	-	-
A-B	-	-	-	-
A-C	-	-	-	-

Main Results for each time segment

Main results: (16:30-16:45)

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	141.54	140.47	0.00	668.05	0.212	0.27	6.809	A
B-A	43.67	43.21	0.00	420.85	0.104	0.11	9.521	A
C-AB	152.33	151.15	0.00	777.60	0.196	0.30	5.741	A
C-A	134.50	134.50	0.00	-	-	-	-	-
A-B	30.11	30.11	0.00	-	-	-	-	-
A-C	134.01	134.01	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	169.01	168.70	0.00	654.38	0.258	0.34	7.407	A
B-A	52.14	52.00	0.00	397.88	0.131	0.15	10.403	B
C-AB	191.27	190.87	0.00	790.11	0.242	0.40	6.010	A
C-A	151.24	151.24	0.00	-	-	-	-	-
A-B	35.96	35.96	0.00	-	-	-	-	-
A-C	160.02	160.02	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	206.99	206.46	0.00	633.88	0.327	0.48	8.411	A
B-A	63.86	63.62	0.00	364.75	0.175	0.21	11.945	B
C-AB	250.81	250.10	0.00	807.72	0.311	0.58	6.460	A
C-A	168.68	168.68	0.00	-	-	-	-	-
A-B	44.04	44.04	0.00	-	-	-	-	-
A-C	195.98	195.98	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	206.99	206.98	0.00	633.69	0.327	0.48	8.436	A
B-A	63.86	63.85	0.00	364.46	0.175	0.21	11.975	B
C-AB	251.00	250.98	0.00	807.91	0.311	0.58	6.474	A
C-A	168.49	168.49	0.00	-	-	-	-	-
A-B	44.04	44.04	0.00	-	-	-	-	-
A-C	195.98	195.98	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	169.01	169.53	0.00	654.14	0.258	0.35	7.438	A
B-A	52.14	52.37	0.00	397.47	0.131	0.15	10.440	B
C-AB	191.51	192.20	0.00	790.39	0.242	0.41	6.031	A
C-A	151.00	151.00	0.00	-	-	-	-	-
A-B	35.96	35.96	0.00	-	-	-	-	-
A-C	160.02	160.02	0.00	-	-	-	-	-

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

Stream	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
B-C	141.54	141.86	0.00	667.73	0.212	0.27	6.849	A
B-A	43.67	43.81	0.00	420.25	0.104	0.12	9.568	A
C-AB	152.67	153.09	0.00	777.86	0.196	0.30	5.769	A
C-A	134.16	134.16	0.00	-	-	-	-	-
A-B	30.11	30.11	0.00	-	-	-	-	-
A-C	134.01	134.01	0.00	-	-	-	-	-

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: Junction 2 - North Terrace _Kingsway_ High Street - Standard Rbt.arc8
Path: \\Uknor1fp001\uknor1fp001-v1pcc\TI\Projects\60525557 - Mildenhall Hub\Calculations\Modelling
Report generation date: 25/07/2017 16:21:18

« Existing - Standard Rbt - 2021 Without Dev ST, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing - Standard Rbt - 2021 Without Dev ST			
Arm A	1.89	11.02	0.66	B
Arm B	0.87	5.52	0.47	A
Arm C	4.19	21.91	0.82	C

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

"D1 - 2016 Base, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base, PM" model duration: 16:30 - 18:00
"D3 - 2019 Without Dev, AM" model duration: 07:45 - 09:15
"D4 - 2019 Without Dev, PM" model duration: 16:30 - 18:00
"D5 - 2019 With Dev, AM" model duration: 07:45 - 09:15
"D6 - 2019 With Dev, PM" model duration: 16:30 - 18:00
"D7 - 2019 With Dev Linked Trips, AM" model duration: 07:45 - 09:15
"D8 - 2019 With Dev Linked Trips, PM" model duration: 16:30 - 18:00
"D9 - 2021 Without Dev ST, AM " model duration: 07:45 - 09:15
"D10 - 2021 Without Dev ST, PM" model duration: 16:30 - 18:00
"D11 - 2021 With Dev ST, AM" model duration: 07:45 - 09:15
"D12 - 2021 With Dev ST, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 25/07/2017 16:21:18

File summary

Title	A1101 Kingsway / A1101 North Terrace / B1102 High Street Standard Roundabout
Location	
Site Number	
Date	12/07/2016
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	callawayc [UKSTA1PC40851]
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Existing - Standard Rbt - 2021 Without Dev ST, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing - Standard Rbt	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relati
2021 Without Dev ST, AM	2021 Without Dev ST	AM		ONE HOUR	07:45	09:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	untitled	Roundabout	A,B,C				13.47	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A1101 North Terrace	
B	B	A1101 Kingsway	
C	C	B1102 High Street	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	3.02	5.11	6.20	22.80	19.00	55.00	
B	3.74	5.06	5.60	28.70	19.00	20.00	
C	2.15	4.10	12.40	24.10	19.00	31.80	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.520	1121.221
B		(calculated)	(calculated)	0.624	1428.622
C		(calculated)	(calculated)	0.530	1046.670

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	570.00	100.000
B	ONE HOUR	✓	517.00	100.000
C	ONE HOUR	✓	653.00	100.000

Turning Proportions

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

		To		
		A	B	C
From	A	0.000	269.000	301.000
	B	285.000	0.000	232.000
	C	360.000	292.000	1.000

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

		To		
		A	B	C
From	A	0.00	0.47	0.53
	B	0.55	0.00	0.45
	C	0.55	0.45	0.00

Vehicle Mix

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

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

Heavy Vehicle Percentages - Junction 1 (for whole period)

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.66	11.02	1.89	B	523.04	784.56	109.28	8.36	1.21	109.29	8.36
B	0.47	5.52	0.87	A	474.41	711.61	56.13	4.73	0.62	56.13	4.73
C	0.82	21.91	4.19	C	599.20	898.81	202.71	13.53	2.25	202.75	13.53

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	429.13	107.28	426.19	482.23	218.63	0.00	1007.57	953.04	0.426	0.00	0.73	6.162	A
B	389.22	97.31	387.50	419.01	225.81	0.00	1287.67	1113.78	0.302	0.00	0.43	3.992	A
C	491.61	122.90	487.24	399.70	213.61	0.00	933.37	721.03	0.527	0.00	1.09	7.994	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	512.42	128.10	511.09	578.05	262.21	0.00	984.91	953.04	0.520	0.73	1.07	7.576	A
B	464.77	116.19	464.17	502.51	270.78	0.00	1259.59	1113.78	0.369	0.43	0.58	4.523	A
C	587.03	146.76	584.38	479.08	255.88	0.00	910.96	721.03	0.644	1.09	1.75	10.932	B

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	627.58	156.90	624.44	704.63	318.61	0.00	955.59	953.04	0.657	1.07	1.85	10.768	B
B	569.23	142.31	568.10	612.21	330.84	0.00	1222.10	1113.78	0.466	0.58	0.86	5.496	A
C	718.97	179.74	710.07	585.77	313.17	0.00	880.57	721.03	0.816	1.75	3.98	20.120	C

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	627.58	156.90	627.43	709.68	322.22	0.00	953.72	953.04	0.658	1.85	1.89	11.020	B
B	569.23	142.31	569.20	617.22	332.43	0.00	1221.11	1113.78	0.466	0.86	0.87	5.521	A
C	718.97	179.74	718.12	587.85	313.78	0.00	880.25	721.03	0.817	3.98	4.19	21.910	C

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	512.42	128.10	515.53	585.56	267.56	0.00	982.13	953.04	0.522	1.89	1.11	7.767	A
B	464.77	116.19	465.88	509.94	273.15	0.00	1258.11	1113.78	0.369	0.87	0.59	4.550	A
C	587.03	146.76	596.30	482.21	256.82	0.00	910.46	721.03	0.645	4.19	1.88	11.777	B

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	429.13	107.28	430.55	487.56	221.91	0.00	1005.86	953.04	0.427	1.11	0.75	6.272	A
B	389.22	97.31	389.84	424.35	228.12	0.00	1286.22	1113.78	0.303	0.59	0.44	4.018	A
C	491.61	122.90	494.57	403.06	214.90	0.00	932.69	721.03	0.527	1.88	1.14	8.271	A

Queueing Delay Results for each time segment

Queueing Delay results: (07:45-08:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	10.56	0.70	6.162	A	A
B	6.29	0.42	3.992	A	A
C	15.50	1.03	7.994	A	A

Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	15.42	1.03	7.576	A	A
B	8.53	0.57	4.523	A	A
C	24.84	1.66	10.932	B	B

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	26.11	1.74	10.768	B	B
B	12.57	0.84	5.496	A	A
C	52.32	3.49	20.120	C	C

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	28.11	1.87	11.020	B	B
B	12.99	0.87	5.521	A	A
C	61.59	4.11	21.910	C	C

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	17.41	1.16	7.767	A	A
B	9.07	0.60	4.550	A	A
C	30.62	2.04	11.777	B	B

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	11.66	0.78	6.272	A	A
B	6.68	0.45	4.018	A	A
C	17.84	1.19	8.271	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: Junction 2 - North Terrace _Kingsway_ High Street - Standard Rbt.arc8
Path: \\Uknor1fp001\uknor1fp001-v1pcc\TI\Projects\60525557 - Mildenhall Hub\Calculations\Modelling
Report generation date: 25/07/2017 16:22:00

« Existing - Standard Rbt - 2021 Without Dev ST, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing - Standard Rbt - 2021 Without Dev ST			
Arm A	4.45	21.64	0.83	C
Arm B	2.36	10.72	0.71	B
Arm C	5.53	28.74	0.86	D

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

"D1 - 2016 Base, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base, PM" model duration: 16:30 - 18:00
"D3 - 2019 Without Dev, AM" model duration: 07:45 - 09:15
"D4 - 2019 Without Dev, PM" model duration: 16:30 - 18:00
"D5 - 2019 With Dev, AM" model duration: 07:45 - 09:15
"D6 - 2019 With Dev, PM" model duration: 16:30 - 18:00
"D7 - 2019 With Dev Linked Trips, AM" model duration: 07:45 - 09:15
"D8 - 2019 With Dev Linked Trips, PM" model duration: 16:30 - 18:00
"D9 - 2021 Without Dev ST, AM" model duration: 07:45 - 09:15
"D10 - 2021 Without Dev ST, PM " model duration: 16:30 - 18:00
"D11 - 2021 With Dev ST, AM" model duration: 07:45 - 09:15
"D12 - 2021 With Dev ST, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 25/07/2017 16:21:59

File summary

Title	A1101 Kingsway / A1101 North Terrace / B1102 High Street Standard Roundabout
Location	
Site Number	
Date	12/07/2016
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	callawayc [UKSTA1PC40851]
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Existing - Standard Rbt - 2021 Without Dev ST, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing - Standard Rbt	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relati
2021 Without Dev ST, PM	2021 Without Dev ST	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	untitled	Roundabout	A,B,C				20.08	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A1101 North Terrace	
B	B	A1101 Kingsway	
C	C	B1102 High Street	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	3.02	5.11	6.20	22.80	19.00	55.00	
B	3.74	5.06	5.60	28.70	19.00	20.00	
C	2.15	4.10	12.40	24.10	19.00	31.80	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.520	1121.221
B		(calculated)	(calculated)	0.624	1428.622
C		(calculated)	(calculated)	0.530	1046.670

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	703.00	100.000
B	ONE HOUR	✓	734.00	100.000
C	ONE HOUR	✓	666.00	100.000

Turning Proportions

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

		To		
		A	B	C
From	A	0.000	288.000	415.000
	B	332.000	0.000	402.000
	C	343.000	322.000	1.000

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

		To		
		A	B	C
From	A	0.00	0.41	0.59
	B	0.45	0.00	0.55
	C	0.52	0.48	0.00

Vehicle Mix

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

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

Heavy Vehicle Percentages - Junction 1 (for whole period)

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.83	21.64	4.45	C	645.09	967.63	211.39	13.11	2.35	211.43	13.11
B	0.71	10.72	2.36	B	673.53	1010.30	128.95	7.66	1.43	128.96	7.66
C	0.86	28.74	5.53	D	611.13	916.70	245.57	16.07	2.73	245.62	16.08

Main Results for each time segment

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	529.26	132.31	524.80	504.28	240.87	0.00	996.01	923.12	0.531	0.00	1.11	7.571	A
B	552.59	138.15	549.39	455.12	310.55	0.00	1234.77	1087.71	0.448	0.00	0.80	5.229	A
C	501.40	125.35	496.65	611.44	248.50	0.00	914.87	785.73	0.548	0.00	1.19	8.515	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	631.98	158.00	629.21	604.43	288.82	0.00	971.08	923.12	0.651	1.11	1.81	10.443	B
B	659.85	164.96	658.21	545.70	372.34	0.00	1196.20	1087.71	0.552	0.80	1.21	6.671	A
C	598.72	149.68	595.53	732.83	297.72	0.00	888.76	785.73	0.674	1.19	1.99	12.142	B

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	774.02	193.50	764.54	734.80	349.59	0.00	939.49	923.12	0.824	1.81	4.18	19.578	C
B	808.15	202.04	803.78	661.72	452.41	0.00	1146.21	1087.71	0.705	1.21	2.30	10.379	B
C	733.28	183.32	720.83	892.63	363.56	0.00	853.84	785.73	0.859	1.99	5.10	24.986	C

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	774.02	193.50	772.94	742.19	354.79	0.00	936.78	923.12	0.826	4.18	4.45	21.635	C
B	808.15	202.04	807.92	670.35	457.39	0.00	1143.11	1087.71	0.707	2.30	2.36	10.721	B
C	733.28	183.32	731.55	899.87	365.43	0.00	852.85	785.73	0.860	5.10	5.53	28.742	D

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	631.98	158.00	641.96	615.74	296.91	0.00	966.87	923.12	0.654	4.45	1.95	11.398	B
B	659.85	164.96	664.25	558.98	379.89	0.00	1191.48	1087.71	0.554	2.36	1.26	6.885	A
C	598.72	149.68	612.20	743.69	300.45	0.00	887.32	785.73	0.675	5.53	2.16	13.671	B

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	529.26	132.31	532.42	510.86	244.95	0.00	993.88	923.12	0.533	1.95	1.16	7.853	A
B	552.59	138.15	554.35	462.31	315.06	0.00	1231.95	1087.71	0.449	1.26	0.82	5.328	A
C	501.40	125.35	505.07	618.67	250.74	0.00	913.68	785.73	0.549	2.16	1.24	8.887	A

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	15.84	1.06	7.571	A	A
B	11.59	0.77	5.229	A	A
C	16.79	1.12	8.515	A	A

Queueing Delay results: (16:45-17:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	25.58	1.71	10.443	B	B
B	17.52	1.17	6.671	A	A
C	27.89	1.86	12.142	B	B

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	54.81	3.65	19.578	C	B
B	32.24	2.15	10.379	B	B
C	64.60	4.31	24.986	C	C

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	65.08	4.34	21.635	C	C
B	35.08	2.34	10.721	B	B
C	80.30	5.35	28.742	D	C

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	31.88	2.13	11.398	B	B
B	19.80	1.32	6.885	A	A
C	36.40	2.43	13.671	B	B

Queueing Delay results: (17:45-18:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	18.20	1.21	7.853	A	A
B	12.71	0.85	5.328	A	A
C	19.60	1.31	8.887	A	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: Junction 2 - North Terrace _Kingsway_ High Street - Standard Rbt.arc8
Path: \\Uknor1fp001\uknor1fp001-v1pcc\TI\Projects\60525557 - Mildenhall Hub\Calculations\Modelling
Report generation date: 25/07/2017 16:22:41

« Existing - Standard Rbt - 2021 With Dev ST, AM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing - Standard Rbt - 2021 With Dev ST			
Arm A	4.80	23.19	0.84	C
Arm B	1.57	8.34	0.61	A
Arm C	12.92	58.36	0.96	F

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

"D1 - 2016 Base, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base, PM" model duration: 16:30 - 18:00
"D3 - 2019 Without Dev, AM" model duration: 07:45 - 09:15
"D4 - 2019 Without Dev, PM" model duration: 16:30 - 18:00
"D5 - 2019 With Dev, AM" model duration: 07:45 - 09:15
"D6 - 2019 With Dev, PM" model duration: 16:30 - 18:00
"D7 - 2019 With Dev Linked Trips, AM" model duration: 07:45 - 09:15
"D8 - 2019 With Dev Linked Trips, PM" model duration: 16:30 - 18:00
"D9 - 2021 Without Dev ST, AM" model duration: 07:45 - 09:15
"D10 - 2021 Without Dev ST, PM" model duration: 16:30 - 18:00
"D11 - 2021 With Dev ST, AM " model duration: 07:45 - 09:15
"D12 - 2021 With Dev ST, PM" model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 25/07/2017 16:22:40

File summary

Title	A1101 Kingsway / A1101 North Terrace / B1102 High Street Standard Roundabout
Location	
Site Number	
Date	12/07/2016
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	callawayc [UKSTA1PC40851]
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Existing - Standard Rbt - 2021 With Dev ST, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing - Standard Rbt	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationshi
2021 With Dev ST, AM	2021 With Dev ST	AM		ONE HOUR	07:45	09:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	untitled	Roundabout	A,B,C				31.60	D

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A1101 North Terrace	
B	B	A1101 Kingsway	
C	C	B1102 High Street	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	3.02	5.11	6.20	22.80	19.00	55.00	
B	3.74	5.06	5.60	28.70	19.00	20.00	
C	2.15	4.10	12.40	24.10	19.00	31.80	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.520	1121.221
B		(calculated)	(calculated)	0.624	1428.622
C		(calculated)	(calculated)	0.530	1046.670

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	711.00	100.000
B	ONE HOUR	✓	624.00	100.000
C	ONE HOUR	✓	766.00	100.000

Turning Proportions

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

		To		
		A	B	C
From	A	0.000	260.000	451.000
	B	283.000	0.000	341.000
	C	434.000	331.000	1.000

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

		To		
		A	B	C
From	A	0.00	0.37	0.63
	B	0.45	0.00	0.55
	C	0.57	0.43	0.00

Vehicle Mix

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

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

Heavy Vehicle Percentages - Junction 1 (for whole period)

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.84	23.19	4.80	C	652.43	978.64	223.89	13.73	2.49	223.94	13.73
B	0.61	8.34	1.57	A	572.59	858.89	91.92	6.42	1.02	91.93	6.42
C	0.96	58.36	12.92	F	702.89	1054.34	450.99	25.66	5.01	451.08	25.67

Main Results for each time segment

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	535.28	133.82	530.68	535.11	247.23	0.00	992.70	942.56	0.539	0.00	1.15	7.717	A
B	469.78	117.44	467.29	440.55	337.37	0.00	1218.03	1054.76	0.386	0.00	0.62	4.780	A
C	576.68	144.17	570.41	592.73	211.93	0.00	934.27	792.96	0.617	0.00	1.57	9.734	A

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	639.17	159.79	636.23	641.07	296.17	0.00	967.26	942.56	0.661	1.15	1.88	10.777	B
B	560.96	140.24	559.85	527.93	404.47	0.00	1176.14	1054.76	0.477	0.62	0.90	5.830	A
C	688.62	172.15	683.33	710.41	253.91	0.00	912.00	792.96	0.755	1.57	2.89	15.383	C

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	782.83	195.71	772.57	771.35	352.60	0.00	937.92	942.56	0.835	1.88	4.45	20.581	C
B	687.04	171.76	684.46	634.05	491.12	0.00	1122.05	1054.76	0.612	0.90	1.54	8.178	A
C	843.38	210.85	813.52	865.16	310.42	0.00	882.03	792.96	0.956	2.89	10.36	40.980	E

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	782.83	195.71	781.43	783.56	361.09	0.00	933.51	942.56	0.839	4.45	4.80	23.195	C
B	687.04	171.76	686.93	645.75	496.76	0.00	1118.53	1054.76	0.614	1.54	1.57	8.336	A
C	843.38	210.85	833.11	872.15	311.54	0.00	881.44	792.96	0.957	10.36	12.92	58.358	F

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	639.17	159.79	650.04	667.46	315.09	0.00	957.42	942.56	0.668	4.80	2.08	12.098	B
B	560.96	140.24	563.52	551.85	413.28	0.00	1170.64	1054.76	0.479	1.57	0.93	5.953	A
C	688.62	172.15	726.98	721.23	255.57	0.00	911.12	792.96	0.756	12.92	3.33	22.870	C

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	535.28	133.82	538.80	544.12	252.85	0.00	989.78	942.56	0.541	2.08	1.20	8.045	A
B	469.78	117.44	470.96	449.11	342.54	0.00	1214.80	1054.76	0.387	0.93	0.64	4.847	A
C	576.68	144.17	583.37	599.90	213.59	0.00	933.38	792.96	0.618	3.33	1.66	10.472	B

Queueing Delay Results for each time segment

Queueing Delay results: (07:45-08:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	16.31	1.09	7.717	A	A
B	9.04	0.60	4.780	A	A
C	21.88	1.46	9.734	A	A

Queueing Delay results: (08:00-08:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	26.63	1.78	10.777	B	B
B	13.12	0.87	5.830	A	A
C	39.56	2.64	15.383	C	B

Queueing Delay results: (08:15-08:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	57.92	3.86	20.581	C	C
B	22.06	1.47	8.178	A	A
C	115.80	7.72	40.980	E	D

Queueing Delay results: (08:30-08:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	69.90	4.66	23.195	C	C
B	23.42	1.56	8.336	A	A
C	176.59	11.77	58.358	F	E

Queueing Delay results: (08:45-09:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	34.26	2.28	12.098	B	B
B	14.48	0.97	5.953	A	A
C	70.51	4.70	22.870	C	C

Queueing Delay results: (09:00-09:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	18.87	1.26	8.045	A	A
B	9.79	0.65	4.847	A	A
C	26.64	1.78	10.472	B	B

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.6.541 [19821,26/11/2015]
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Filename: Junction 2 - North Terrace _Kingsway_ High Street - Standard Rbt.arc8
Path: \\Uknor1fp001\uknor1fp001-v1pcc\TI\Projects\60525557 - Mildenhall Hub\Calculations\Modelling
Report generation date: 25/07/2017 16:23:14

« Existing - Standard Rbt - 2021 With Dev ST, PM
» Junction Network
» Arms
» Traffic Flows
» Entry Flows
» Turning Proportions
» Vehicle Mix
» Results

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Existing - Standard Rbt - 2021 With Dev ST			
Arm A	9.22	42.34	0.92	E
Arm B	2.89	12.92	0.75	B
Arm C	31.30	120.70	1.04	F

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

"D1 - 2016 Base, AM" model duration: 07:45 - 09:15
"D2 - 2016 Base, PM" model duration: 16:30 - 18:00
"D3 - 2019 Without Dev, AM" model duration: 07:45 - 09:15
"D4 - 2019 Without Dev, PM" model duration: 16:30 - 18:00
"D5 - 2019 With Dev, AM" model duration: 07:45 - 09:15
"D6 - 2019 With Dev, PM" model duration: 16:30 - 18:00
"D7 - 2019 With Dev Linked Trips, AM" model duration: 07:45 - 09:15
"D8 - 2019 With Dev Linked Trips, PM" model duration: 16:30 - 18:00
"D9 - 2021 Without Dev ST, AM" model duration: 07:45 - 09:15
"D10 - 2021 Without Dev ST, PM" model duration: 16:30 - 18:00
"D11 - 2021 With Dev ST, AM" model duration: 07:45 - 09:15
"D12 - 2021 With Dev ST, PM " model duration: 16:30 - 18:00

Run using Junctions 8.0.6.541 at 25/07/2017 16:23:14

File summary

Title	A1101 Kingsway / A1101 North Terrace / B1102 High Street Standard Roundabout
Location	
Site Number	
Date	12/07/2016
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	callawayc [UKSTA1PC40851]
Description	

Analysis Options

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

Units

Distance Units	Speed Units	Traffic Units Input	Traffic Units Results	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Existing - Standard Rbt - 2021 With Dev ST, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set (s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing - Standard Rbt	ARCADY		✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationshi
2021 With Dev ST, PM	2021 With Dev ST	PM		ONE HOUR	16:30	18:00	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	untitled	Roundabout	A,B,C				60.18	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A1101 North Terrace	
B	B	A1101 Kingsway	
C	C	B1102 High Street	

Capacity Options

Arm	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
A	0.00	99999.00		0.00
B	0.00	99999.00		0.00
C	0.00	99999.00		0.00

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	3.02	5.11	6.20	22.80	19.00	55.00	
B	3.74	5.06	5.60	28.70	19.00	20.00	
C	2.15	4.10	12.40	24.10	19.00	31.80	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.520	1121.221
B		(calculated)	(calculated)	0.624	1428.622
C		(calculated)	(calculated)	0.530	1046.670

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	762.00	100.000
B	ONE HOUR	✓	752.00	100.000
C	ONE HOUR	✓	812.00	100.000

Turning Proportions

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

		To		
		A	B	C
From	A	0.000	289.000	473.000
	B	320.000	0.000	432.000
	C	421.000	390.000	1.000

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

		To		
		A	B	C
From	A	0.00	0.38	0.62
	B	0.43	0.00	0.57
	C	0.52	0.48	0.00

Vehicle Mix

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

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

Heavy Vehicle Percentages - Junction 1 (for whole period)

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

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
A	0.92	42.34	9.22	E	699.22	1048.84	359.61	20.57	4.00	359.68	20.58
B	0.75	12.92	2.89	B	690.05	1035.07	150.04	8.70	1.67	150.06	8.70
C	1.04	120.70	31.30	F	745.11	1117.66	926.85	49.76	10.30	926.99	49.76

Main Results for each time segment

Main results: (16:30-16:45)

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	573.67	143.42	568.02	552.42	290.69	0.00	970.11	919.76	0.591	0.00	1.41	8.835	A
B	566.15	141.54	562.66	505.37	353.34	0.00	1208.06	1071.61	0.469	0.00	0.87	5.548	A
C	611.32	152.83	603.67	676.56	239.43	0.00	919.68	804.81	0.665	0.00	1.91	11.139	B

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	685.02	171.26	680.49	661.03	347.52	0.00	940.56	919.76	0.728	1.41	2.55	13.602	B
B	676.03	169.01	674.08	604.72	423.29	0.00	1164.39	1071.61	0.581	0.87	1.36	7.313	A
C	729.97	182.49	721.70	810.53	286.84	0.00	894.53	804.81	0.816	1.91	3.98	19.905	C

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	838.98	209.74	818.01	780.32	399.75	0.00	913.41	919.76	0.919	2.55	7.79	32.267	D
B	827.97	206.99	822.28	708.97	508.79	0.00	1111.02	1071.61	0.745	1.36	2.78	12.230	B
C	894.03	223.51	830.17	981.16	349.91	0.00	861.09	804.81	1.038	3.98	19.94	66.380	F

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	838.98	209.74	833.26	792.11	408.62	0.00	908.80	919.76	0.923	7.79	9.22	42.340	E
B	827.97	206.99	827.52	723.61	518.28	0.00	1105.10	1071.61	0.749	2.78	2.89	12.921	B
C	894.03	223.51	848.60	993.66	352.13	0.00	859.91	804.81	1.040	19.94	31.30	120.696	F

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	685.02	171.26	709.03	721.98	401.07	0.00	912.73	919.76	0.751	9.22	3.21	19.421	C
B	676.03	169.01	681.83	668.95	441.15	0.00	1153.25	1071.61	0.586	2.89	1.44	7.728	A
C	729.97	182.49	832.91	832.84	290.14	0.00	892.79	804.81	0.818	31.30	5.57	73.031	F

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

Arm	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Entry Flow (PCU/hr)	Exit Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	Saturation Capacity (PCU/hr)	RFC	Start Queue (PCU)	End Queue (PCU)	Delay (s)	LOS
A	573.67	143.42	580.52	566.05	301.11	0.00	964.69	919.76	0.595	3.21	1.50	9.532	A
B	566.15	141.54	568.33	520.51	361.12	0.00	1203.20	1071.61	0.471	1.44	0.90	5.689	A
C	611.32	152.83	625.32	687.60	241.84	0.00	918.40	804.81	0.666	5.57	2.07	12.823	B

Queueing Delay Results for each time segment

Queueing Delay results: (16:30-16:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	19.86	1.32	8.835	A	A
B	12.57	0.84	5.548	A	A
C	26.31	1.75	11.139	B	B

Queueing Delay results: (16:45-17:00)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	35.22	2.35	13.602	B	B
B	19.57	1.30	7.313	A	A
C	52.63	3.51	19.905	C	B

Queueing Delay results: (17:00-17:15)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	92.50	6.17	32.267	D	C
B	38.33	2.56	12.230	B	B
C	194.85	12.99	66.380	F	E

Queueing Delay results: (17:15-17:30)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	129.12	8.61	42.340	E	D
B	42.78	2.85	12.921	B	B
C	386.41	25.76	120.696	F	F

Queueing Delay results: (17:30-17:45)

Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	58.85	3.92	19.421	C	B
B	22.84	1.52	7.728	A	A
C	231.78	15.45	73.031	F	E

Queueing Delay results: (17:45-18:00)

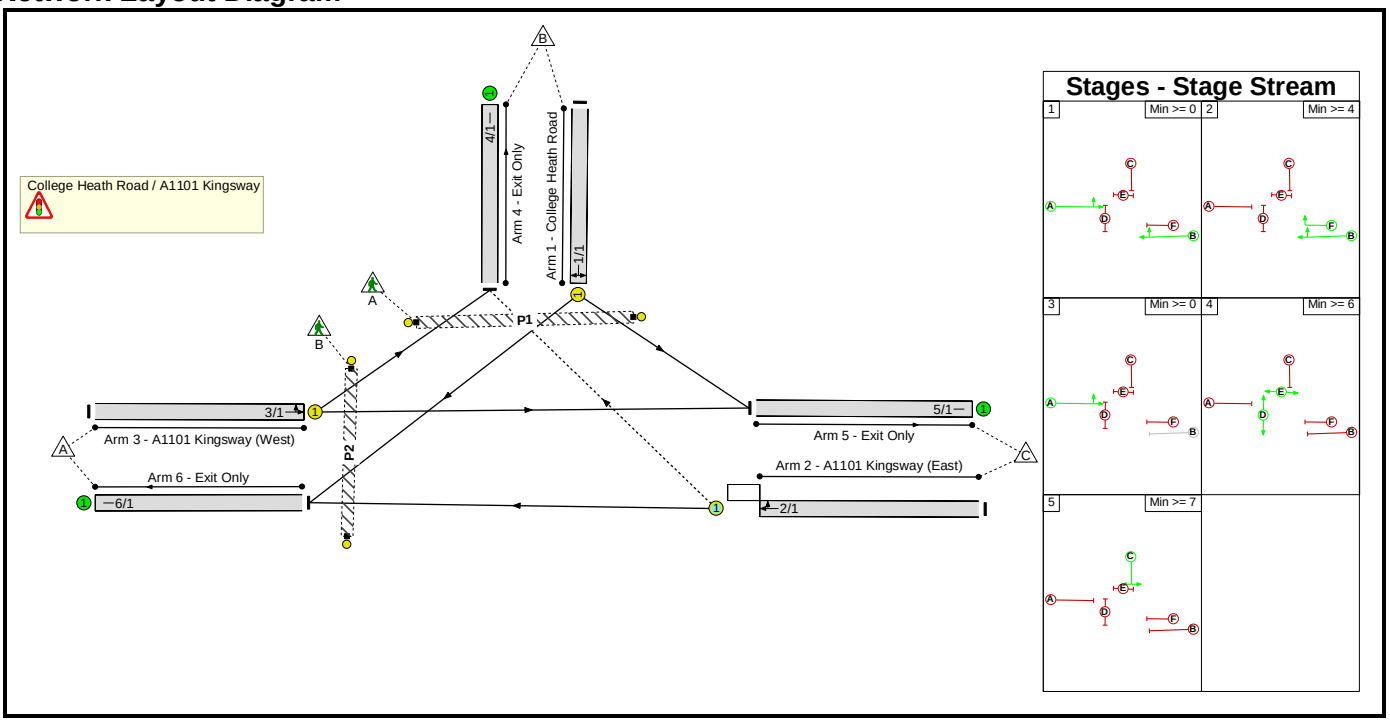
Arm	Queueing Total Delay (PCU-min)	Queueing Rate Of Delay (PCU-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	24.07	1.60	9.532	A	A
B	13.95	0.93	5.689	A	A
C	34.86	2.32	12.823	B	B

Full Input Data And Results

User and Project Details

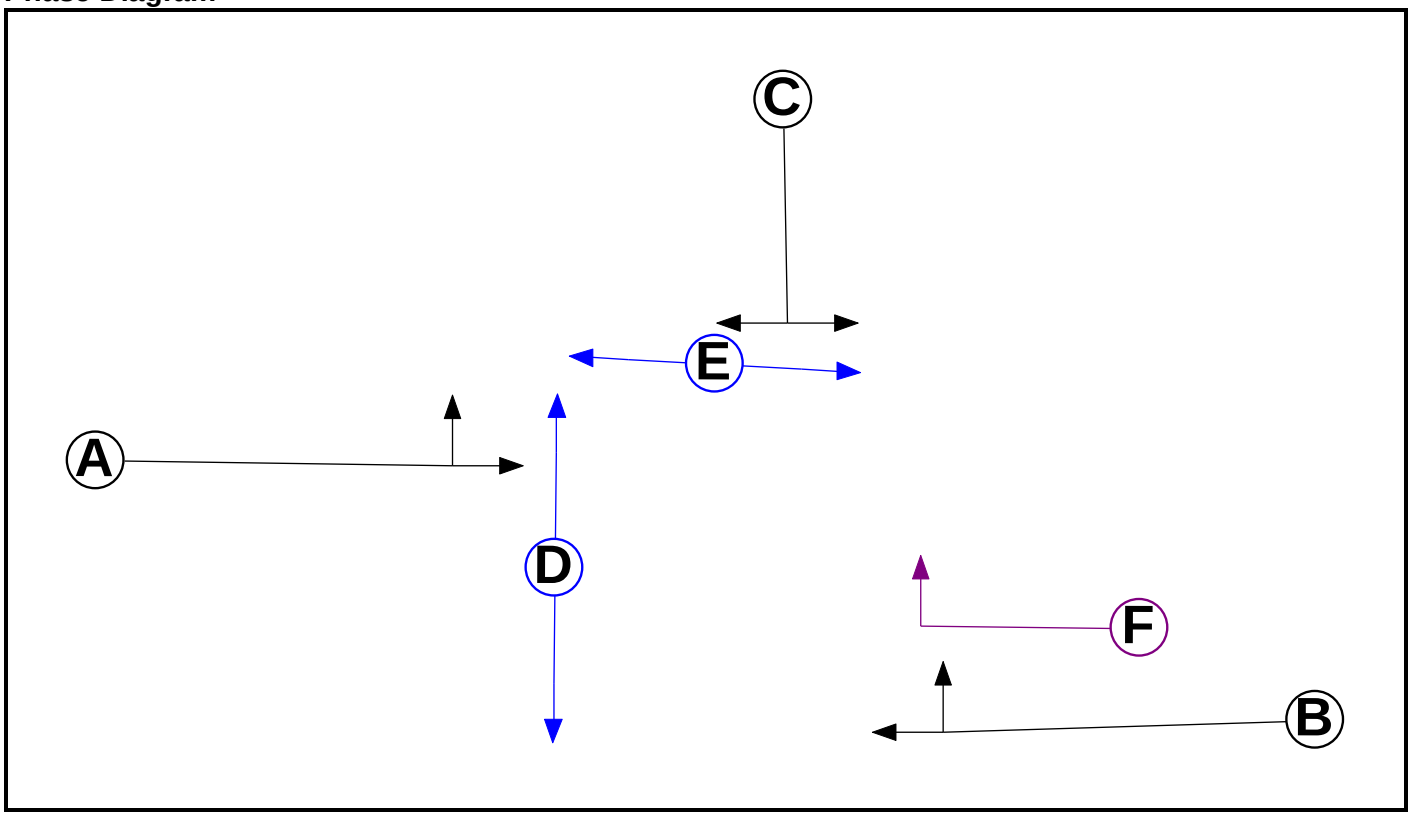
Project:	**Mildenhall Hub**
Title:	**Junction 3 - College Heath Road / A1101**
Location:	
File name:	Junction 3 - College Heath Road _ A1101 v3.lsg3x
Author:	
Company:	
Address:	
Notes:	

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		-9999	7
B	Traffic	1		-9999	7
C	Traffic	1		-9999	7
D	Pedestrian	1		-9999	6
E	Pedestrian	1		-9999	6
F	Ind. Arrow	1	B	-9999	4

Full Input Data And Results

Phase Intergreens Matrix

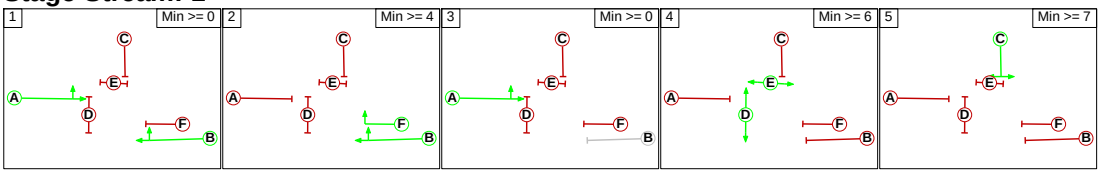
	Starting Phase						
		A	B	C	D	E	F
Terminating Phase	A		-	6	5	6	4
	B	-		6	8	8	-
	C	6	6		7	7	6
	D	9	9	9		-	-
	E	10	10	10	-		10
	F	7	-	6	-	5	

Phases in Stage

Stream	Stage No.	Phases in Stage
1	1	A B
1	2	B F
1	3	A
1	4	D E
1	5	C

Stage Diagram

Stage Stream: 1



Phase Delays

Stage Stream: 1

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

Prohibited Stage Change

Stage Stream: 1

	To Stage					
		1	2	3	4	5
From Stage	1		4	0	8	6
	2	7		7	8	6
	3	2	4		6	6
	4	10	10	10		10
	5	6	6	6	7	

Full Input Data And Results

Give-Way Lane Input Data

Junction: College Heath Road / A1101 Kingsway											
Lane	**Movement**	**Max Flow when Giving Way (PCU/Hr)**	**Min Flow when Giving Way (PCU/Hr)**	**Opposing Lane**	**Opp. Lane Coeff.**	**Opp. Mvmnts.**	**Right Turn Storage (PCU)**	**Non-Blocking Storage (PCU)**	**RTF**	**Right Turn Move up (s)**	**Max Turns in Intergreen (PCU)**
2/1 (A1101 Kingsway (East))	4/1 (Right)	1439	0	3/1	1.09	All	3.00	3.00	0.50	3	2.00

Full Input Data And Results

Lane Input Data

Junction: College Heath Road / A1101 Kingsway												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
1/1 (College Heath Road)	U	C	2	3	12.2	Geom	-	3.40	0.00	Y	Arm 5 Left	42.50
											Arm 6 Right	47.50
2/1 (A1101 Kingsway (East))	O	B F	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 4 Right	30.00
											Arm 6 Ahead	Inf
3/1 (A1101 Kingsway (West))	U	A	2	3	14.4	Geom	-	3.40	0.00	Y	Arm 4 Left	42.50
											Arm 5 Ahead	Inf
4/1 (Exit Only)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Exit Only)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Exit Only)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
7: '2021 Without Dev AM ST'	08:00	09:00	01:00	
8: '2021 Without Dev PM ST'	16:45	17:45	01:00	
9: '2021 With Dev AM ST'	08:00	09:00	01:00	
10: '2021 With Dev PM ST'	16:45	17:45	01:00	

Scenario 7: '2021 Without Dev AM ST' (FG7: '2021 Without Dev AM ST', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	54	434	488
	B	65	0	84	149
	C	468	86	0	554
	Tot.	533	140	518	1191

Traffic Lane Flows

Lane	Scenario 7: 2021 Without Dev AM ST
Junction: College Heath Road / A1101 Kingsway	
1/1	149
2/1	554
3/1	488
4/1	140
5/1	518
6/1	533

Full Input Data And Results

Lane Saturation Flows

Junction: College Heath Road / A1101 Kingsway

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (College Heath Road)	3.40	0.00	Y	Arm 5 Left	42.50	56.4 %	1891	1891
				Arm 6 Right	47.50	43.6 %		
2/1 (A1101 Kingsway (East))	3.40	0.00	Y	Arm 4 Right	30.00	15.5 %	1940	1940
				Arm 6 Ahead	Inf	84.5 %		
3/1 (A1101 Kingsway (West))	3.40	0.00	Y	Arm 4 Left	42.50	11.1 %	1947	1947
				Arm 5 Ahead	Inf	88.9 %		
4/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 8: '2021 Without Dev PM ST' (FG8: '2021 Without Dev PM ST', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	54	465	519
	B	94	0	97	191
	C	548	72	0	620
	Tot.	642	126	562	1330

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 8: 2021 Without Dev PM ST
Junction: College Heath Road / A1101 Kingsway	
1/1	191
2/1	620
3/1	519
4/1	126
5/1	562
6/1	642

Lane Saturation Flows

Junction: College Heath Road / A1101 Kingsway

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (College Heath Road)	3.40	0.00	Y	Arm 5 Left	42.50	50.8 %	1892	1892
				Arm 6 Right	47.50	49.2 %		
2/1 (A1101 Kingsway (East))	3.40	0.00	Y	Arm 4 Right	30.00	11.6 %	1944	1944
				Arm 6 Ahead	Inf	88.4 %		
3/1 (A1101 Kingsway (West))	3.40	0.00	Y	Arm 4 Left	42.50	10.4 %	1948	1948
				Arm 5 Ahead	Inf	89.6 %		
4/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 9: '2021 With Dev AM ST' (FG9: '2021 With Dev AM ST', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	106	400	506
	B	113	0	66	179
	C	515	67	0	582
	Tot.	628	173	466	1267

Traffic Lane Flows

Lane	Scenario 9: 2021 With Dev AM ST
Junction: College Heath Road / A1101 Kingsway	
1/1	179
2/1	582
3/1	506
4/1	173
5/1	466
6/1	628

Full Input Data And Results

Lane Saturation Flows

Junction: College Heath Road / A1101 Kingsway

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (College Heath Road)	3.40	0.00	Y	Arm 5 Left	42.50	36.9 %	1893	1893
				Arm 6 Right	47.50	63.1 %		
2/1 (A1101 Kingsway (East))	3.40	0.00	Y	Arm 4 Right	30.00	11.5 %	1944	1944
				Arm 6 Ahead	Inf	88.5 %		
3/1 (A1101 Kingsway (West))	3.40	0.00	Y	Arm 4 Left	42.50	20.9 %	1941	1941
				Arm 5 Ahead	Inf	79.1 %		
4/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf

Scenario 10: '2021 With Dev PM ST' (FG10: '2021 With Dev PM ST', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	125	452	577
	B	89	0	53	142
	C	559	79	0	638
	Tot.	648	204	505	1357

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 10: 2021 With Dev PM ST
Junction: College Heath Road / A1101 Kingsway	
1/1	142
2/1	638
3/1	577
4/1	204
5/1	505
6/1	648

Lane Saturation Flows

Junction: College Heath Road / A1101 Kingsway

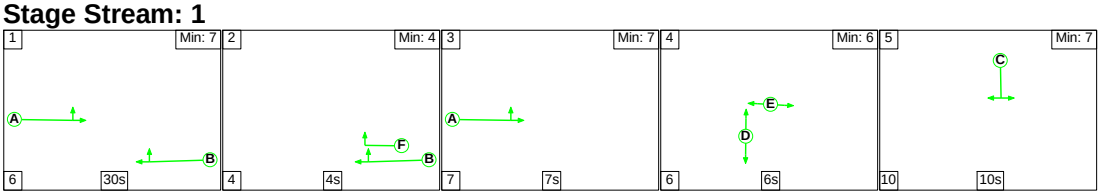
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (College Heath Road)	3.40	0.00	Y	Arm 5 Left	42.50	37.3 %	1893	1893
				Arm 6 Right	47.50	62.7 %		
2/1 (A1101 Kingsway (East))	3.40	0.00	Y	Arm 4 Right	30.00	12.4 %	1943	1943
				Arm 6 Ahead	Inf	87.6 %		
3/1 (A1101 Kingsway (West))	3.40	0.00	Y	Arm 4 Left	42.50	21.7 %	1940	1940
				Arm 5 Ahead	Inf	78.3 %		
4/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Exit Only Lane 1)	Infinite Saturation Flow						Inf	Inf

Full Input Data And Results

Scenario 7: '2021 Without Dev AM ST' (FG7: '2021 Without Dev AM ST', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1

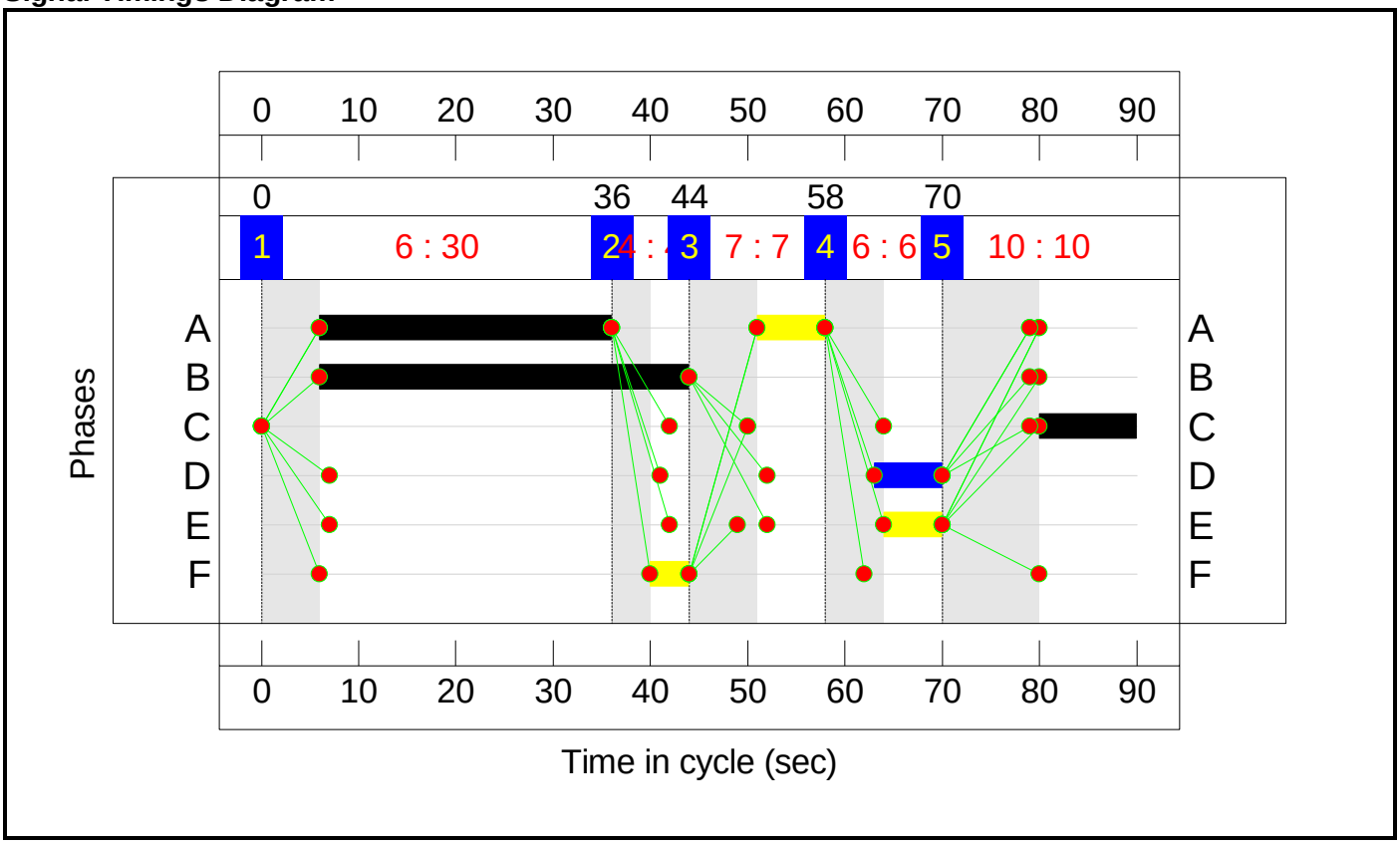


Stage Timings

Stage Stream: 1

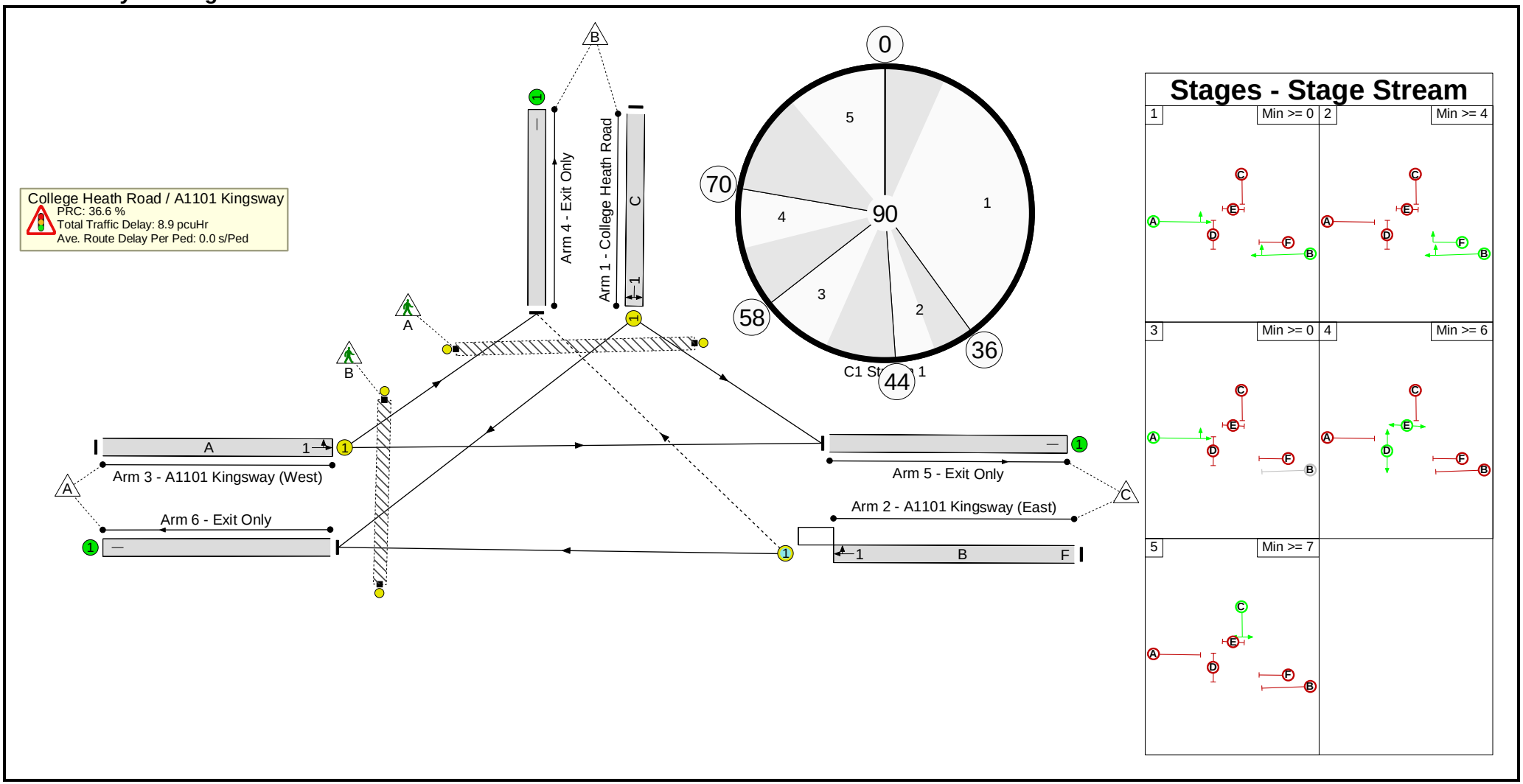
Stage	1	2	3	4	5
Duration	30	4	7	6	10
Change Point	0	36	44	58	70

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 3 - College Heath Road / A1101	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**65.9%**
College Heath Road / A1101 Kingsway	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**65.9%**
1/1	College Heath Road Left Right	U	1	N/A	C		1	10	-	149	1891	231	64.5%
2/1	A1101 Kingsway (East) Right Ahead	O	1	N/A	B	F	1	38	4	554	1940	841	65.9%
3/1	A1101 Kingsway (West) Left Ahead	U	1	N/A	A		2	37	-	488	1947	844	57.8%
4/1	Exit Only	U	N/A	N/A	-		-	-	-	140	Inf	Inf	0.0%
5/1	Exit Only	U	N/A	N/A	-		-	-	-	518	Inf	Inf	0.0%
6/1	Exit Only	U	N/A	N/A	-		-	-	-	533	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	1	-	E		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	1	-	D		1	7	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 3 - College Heath Road / A1101	**-**	**-**	**77**	**6**	**3**	**6.2**	**2.5**	**0.1**	**8.9**	**-**	**-**	**-**	**-**
College Heath Road / A1101 Kingsway	**-**	**-**	**77**	**6**	**3**	**6.2**	**2.5**	**0.1**	**8.9**	**-**	**-**	**-**	**-**
1/1	149	149	-	-	-	1.6	0.9	-	2.4	59.1	3.5	0.9	4.4
2/1	554	554	77	6	3	3.1	1.0	0.1	4.2	27.1	10.9	1.0	11.9
3/1	488	488	-	-	-	1.6	0.7	-	2.3	16.7	6.6	0.7	7.3
4/1	140	140	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	518	518	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	533	533	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-

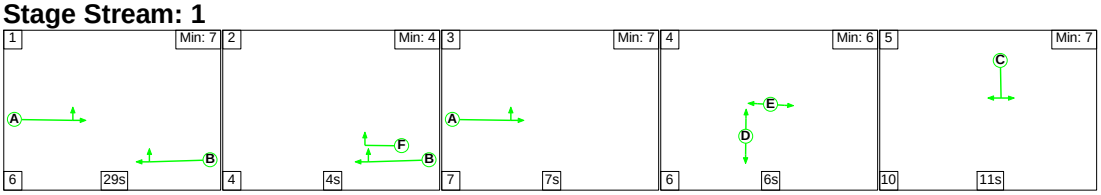
C1 Stream: 1 PRC for Signalled Lanes (%): 36.6 Total Delay for Signalled Lanes (pcuHr): 8.87 Cycle Time (s): 90
PRC Over All Lanes (%): 36.6 Total Delay Over All Lanes(pcuHr): 8.87

Full Input Data And Results

Scenario 8: '2021 Without Dev PM ST' (FG8: '2021 Without Dev PM ST', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1

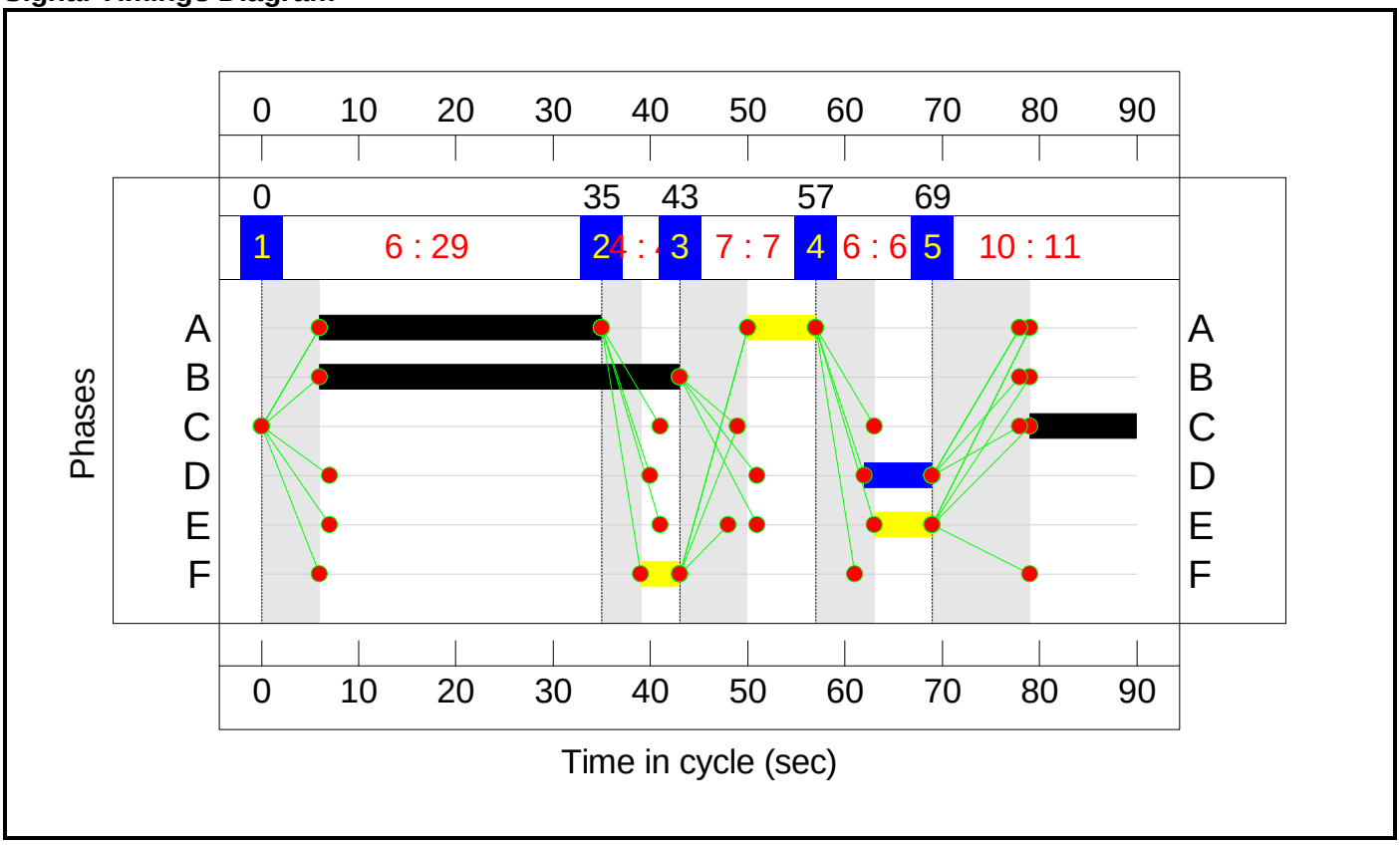


Stage Timings

Stage Stream: 1

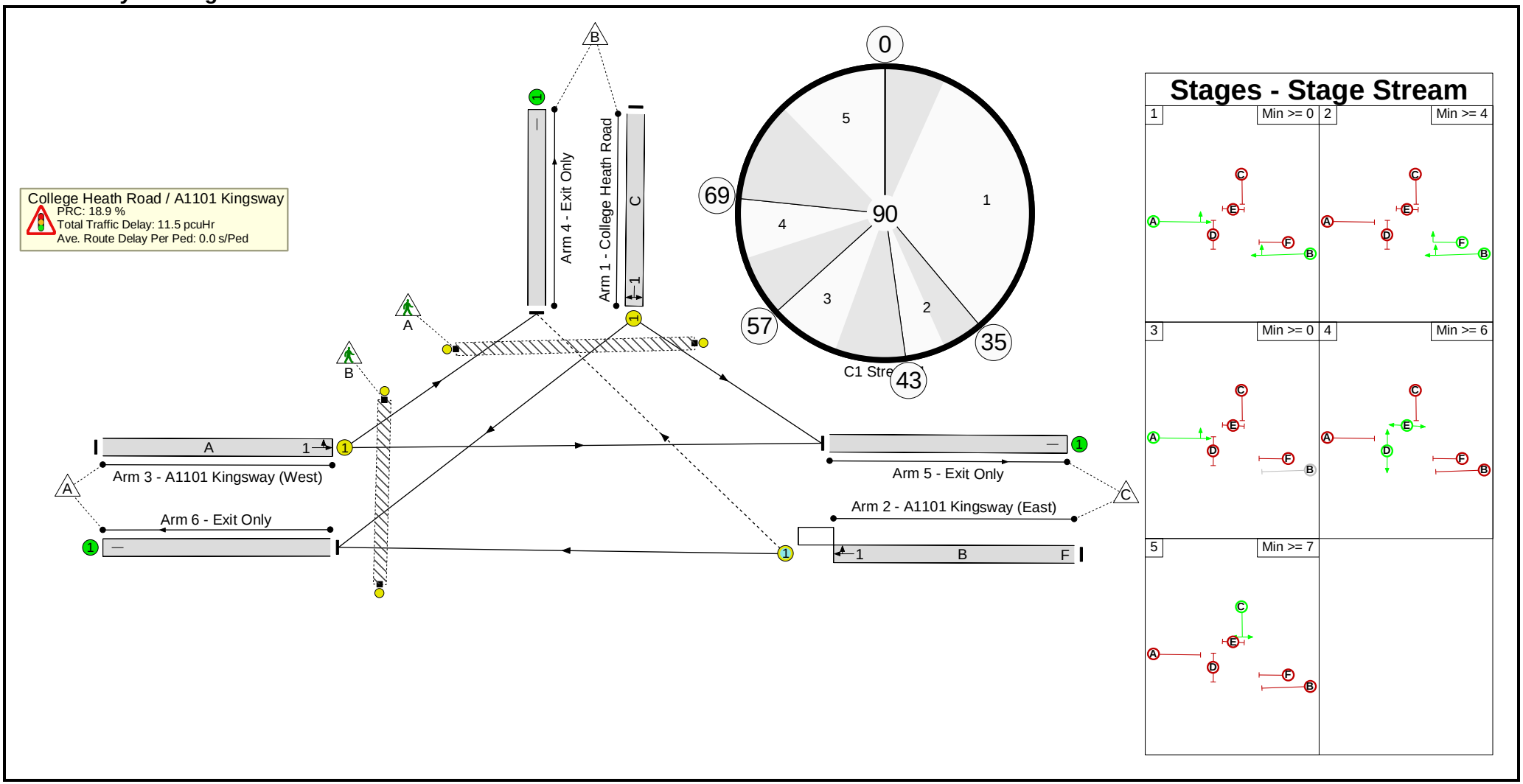
Stage	1	2	3	4	5
Duration	29	4	7	6	11
Change Point	0	35	43	57	69

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 3 - College Heath Road / A1101	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**75.7%**
College Heath Road / A1101 Kingsway	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**75.7%**
1/1	College Heath Road Left Right	U	1	N/A	C		1	11	-	191	1892	252	75.7%
2/1	A1101 Kingsway (East) Right Ahead	O	1	N/A	B	F	1	37	4	620	1944	821	75.5%
3/1	A1101 Kingsway (West) Left Ahead	U	1	N/A	A		2	36	-	519	1948	822	63.1%
4/1	Exit Only	U	N/A	N/A	-		-	-	-	126	Inf	Inf	0.0%
5/1	Exit Only	U	N/A	N/A	-		-	-	-	562	Inf	Inf	0.0%
6/1	Exit Only	U	N/A	N/A	-		-	-	-	642	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	1	-	E		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	1	-	D		1	7	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 3 - College Heath Road / A1101	**-**	**-**	**65**	**5**	**2**	**7.6**	**3.9**	**0.1**	**11.5**	**-**	**-**	**-**	**-**
College Heath Road / A1101 Kingsway	**-**	**-**	**65**	**5**	**2**	**7.6**	**3.9**	**0.1**	**11.5**	**-**	**-**	**-**	**-**
1/1	191	191	-	-	-	2.0	1.5	-	3.5	65.6	4.6	1.5	6.0
2/1	620	620	65	5	2	3.8	1.5	0.1	5.4	31.4	13.1	1.5	14.6
3/1	519	519	-	-	-	1.8	0.9	-	2.6	18.3	7.4	0.9	8.2
4/1	126	126	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	562	562	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	642	642	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-

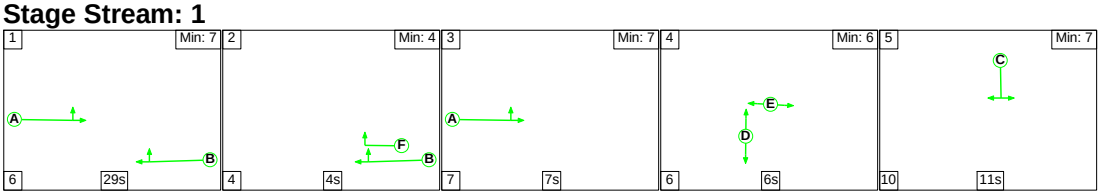
C1 Stream: 1 PRC for Signalled Lanes (%): 18.9 Total Delay for Signalled Lanes (pcuHr): 11.52 Cycle Time (s): 90
PRC Over All Lanes (%): 18.9 Total Delay Over All Lanes(pcuHr): 11.52

Full Input Data And Results

Scenario 9: '2021 With Dev AM ST' (FG9: '2021 With Dev AM ST', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1

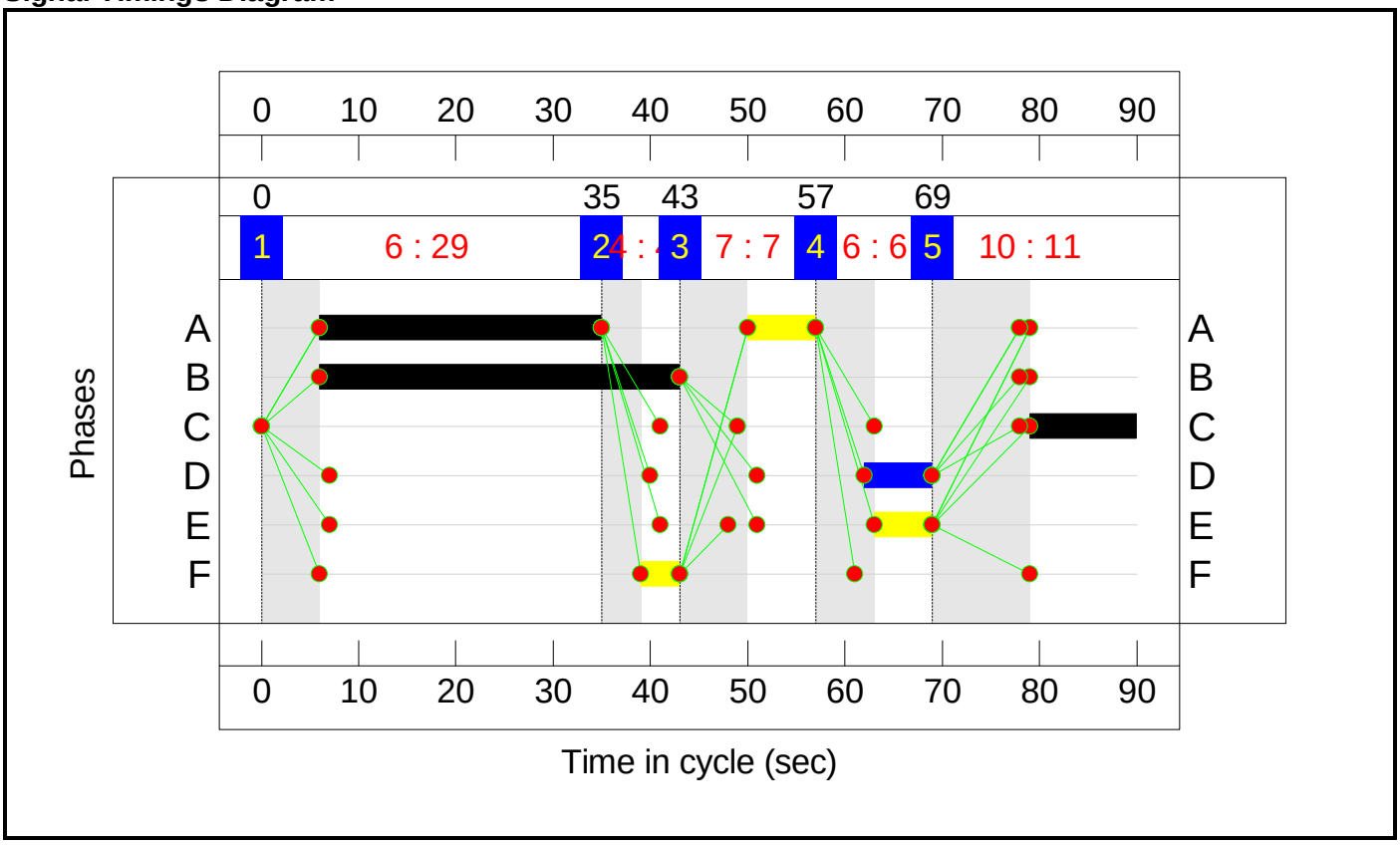


Stage Timings

Stage Stream: 1

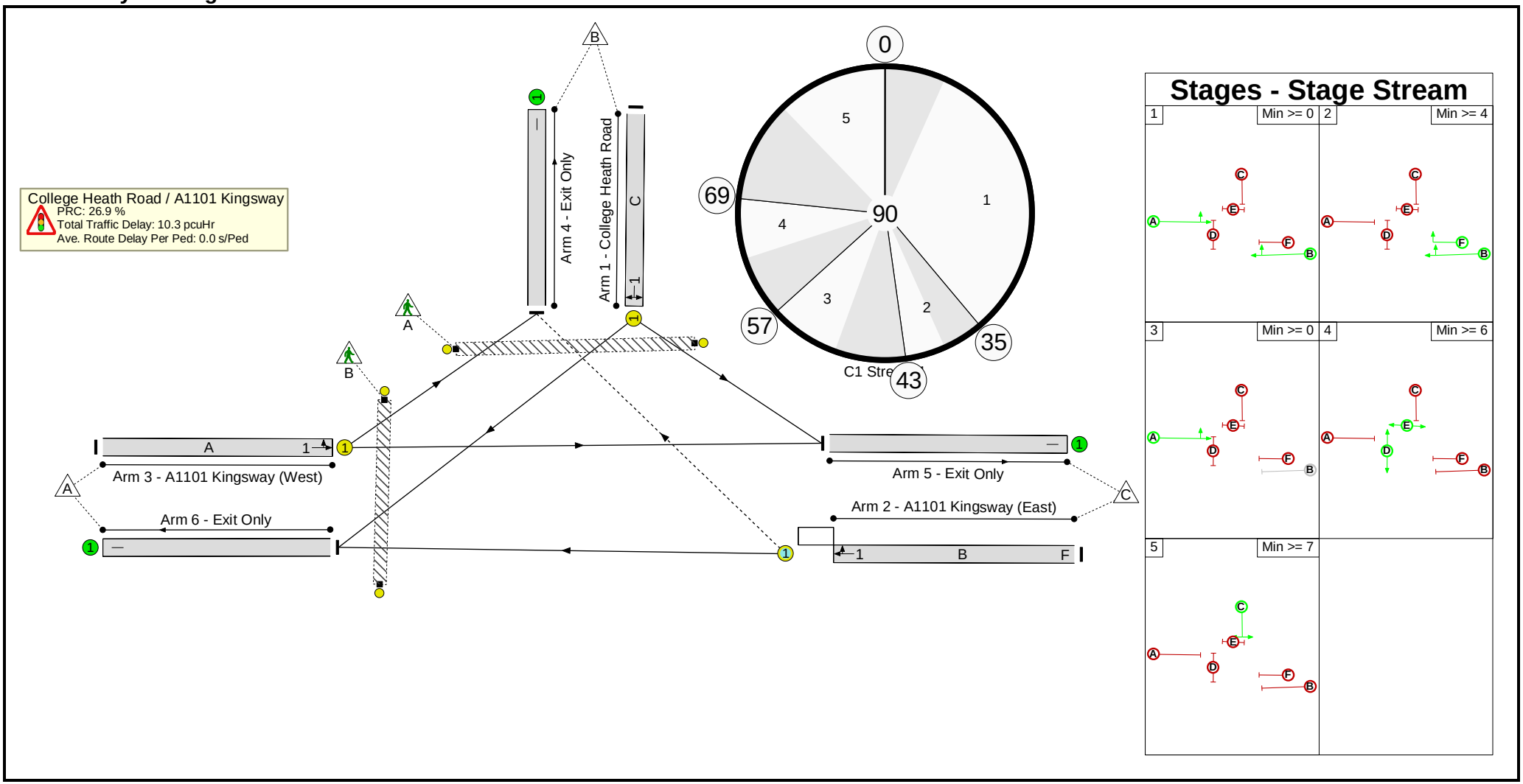
Stage	1	2	3	4	5
Duration	29	4	7	6	11
Change Point	0	35	43	57	69

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 3 - College Heath Road / A1101	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.9%**
College Heath Road / A1101 Kingsway	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**70.9%**
1/1	College Heath Road Left Right	U	1	N/A	C		1	11	-	179	1893	252	70.9%
2/1	A1101 Kingsway (East) Right Ahead	O	1	N/A	B	F	1	37	4	582	1944	821	70.9%
3/1	A1101 Kingsway (West) Left Ahead	U	1	N/A	A		2	36	-	506	1941	820	61.7%
4/1	Exit Only	U	N/A	N/A	-		-	-	-	173	Inf	Inf	0.0%
5/1	Exit Only	U	N/A	N/A	-		-	-	-	466	Inf	Inf	0.0%
6/1	Exit Only	U	N/A	N/A	-		-	-	-	628	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	1	-	E		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	1	-	D		1	7	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 3 - College Heath Road / A1101	**-**	**-**	**60**	**4**	**2**	**7.1**	**3.2**	**0.1**	**10.3**	**-**	**-**	**-**	**-**
College Heath Road / A1101 Kingsway	**-**	**-**	**60**	**4**	**2**	**7.1**	**3.2**	**0.1**	**10.3**	**-**	**-**	**-**	**-**
1/1	179	179	-	-	-	1.9	1.2	-	3.0	61.1	4.3	1.2	5.5
2/1	582	582	60	4	2	3.5	1.2	0.1	4.7	29.4	12.0	1.2	13.2
3/1	506	506	-	-	-	1.7	0.8	-	2.5	18.0	7.2	0.8	8.0
4/1	173	173	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	466	466	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	628	628	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-

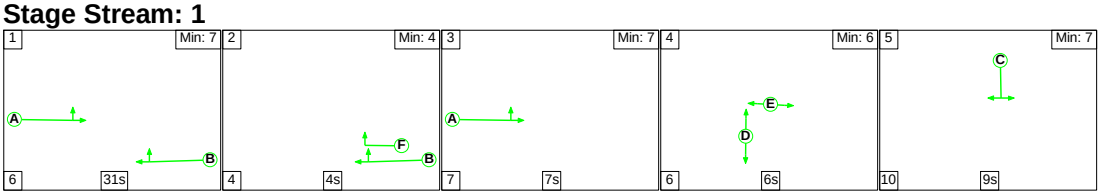
C1 Stream: 1 PRC for Signalled Lanes (%): 26.9 Total Delay for Signalled Lanes (pcuHr): 10.32 Cycle Time (s): 90
PRC Over All Lanes (%): 26.9 Total Delay Over All Lanes(pcuHr): 10.32

Full Input Data And Results

Scenario 10: '2021 With Dev PM ST' (FG10: '2021 With Dev PM ST', Plan 1: 'Network Control Plan 1')

Stage Sequence Diagram

Stage Stream: 1

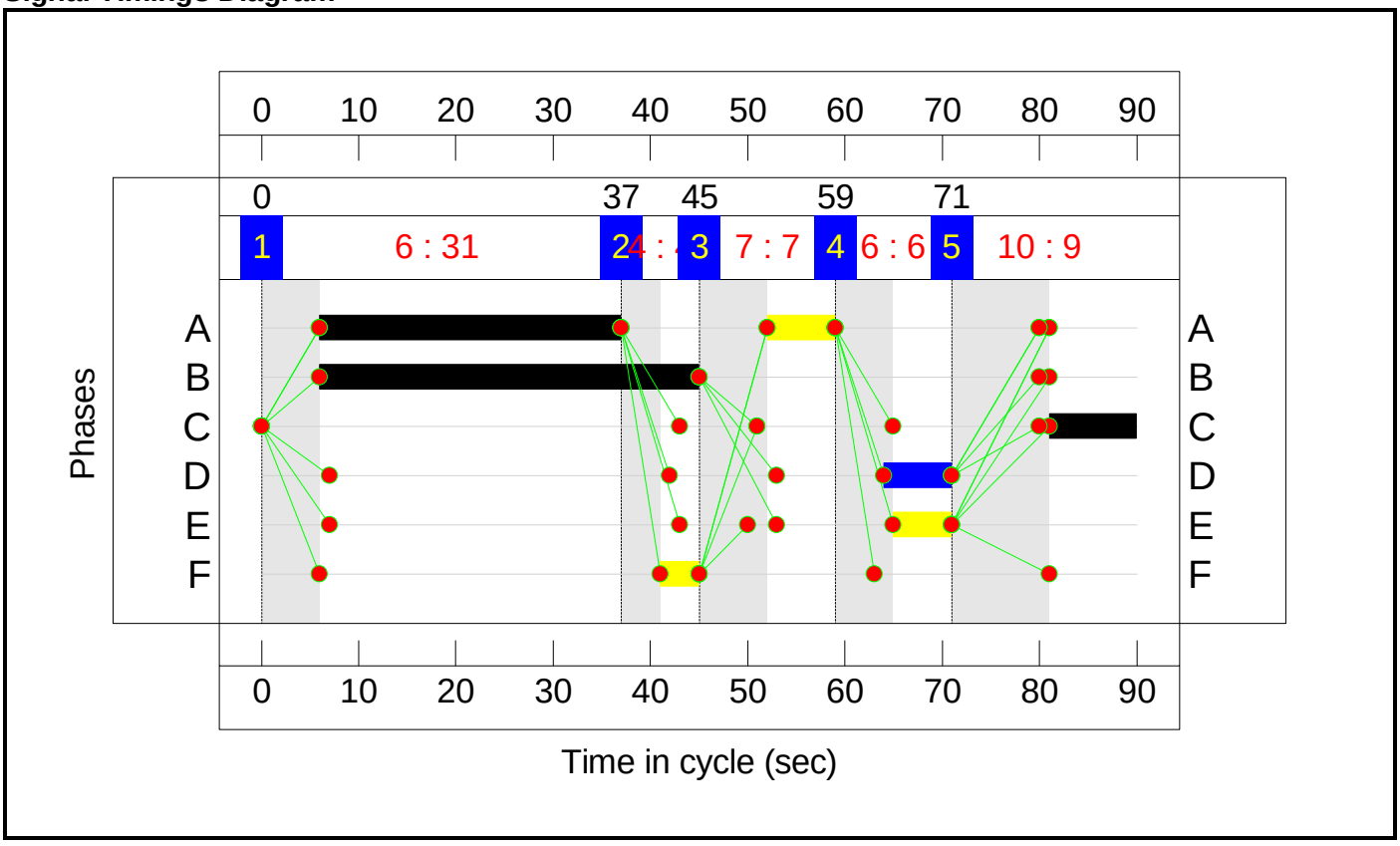


Stage Timings

Stage Stream: 1

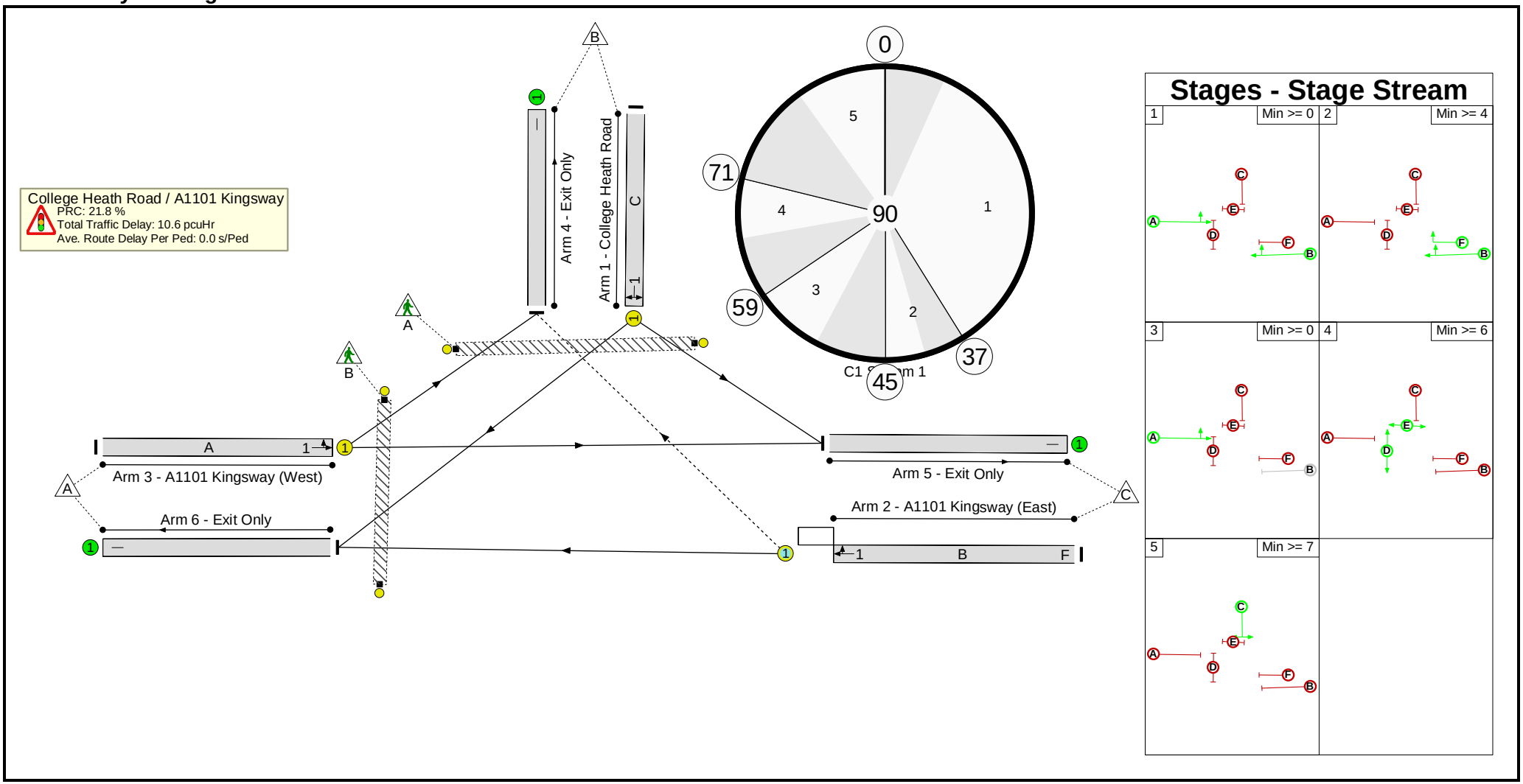
Stage	1	2	3	4	5
Duration	31	4	7	6	9
Change Point	0	37	45	59	71

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: Junction 3 - College Heath Road / A1101	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.9%**
College Heath Road / A1101 Kingsway	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**73.9%**
1/1	College Heath Road Left Right	U	1	N/A	C		1	9	-	142	1893	210	67.5%
2/1	A1101 Kingsway (East) Right Ahead	O	1	N/A	B	F	1	39	4	638	1943	864	73.9%
3/1	A1101 Kingsway (West) Left Ahead	U	1	N/A	A		2	38	-	577	1940	862	66.9%
4/1	Exit Only	U	N/A	N/A	-		-	-	-	204	Inf	Inf	0.0%
5/1	Exit Only	U	N/A	N/A	-		-	-	-	505	Inf	Inf	0.0%
6/1	Exit Only	U	N/A	N/A	-		-	-	-	648	Inf	Inf	0.0%
Ped Link: P1	Unnamed Ped Link	-	1	-	E		1	6	-	0	-	0	0.0%
Ped Link: P2	Unnamed Ped Link	-	1	-	D		1	7	-	0	-	0	0.0%

Full Input Data And Results

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Junction 3 - College Heath Road / A1101	**-**	**-**	**71**	**5**	**3**	**7.1**	**3.4**	**0.1**	**10.6**	**-**	**-**	**-**	**-**
College Heath Road / A1101 Kingsway	**-**	**-**	**71**	**5**	**3**	**7.1**	**3.4**	**0.1**	**10.6**	**-**	**-**	**-**	**-**
1/1	142	142	-	-	-	1.5	1.0	-	2.5	64.0	3.4	1.0	4.4
2/1	638	638	71	5	3	3.7	1.4	0.1	5.2	29.2	13.1	1.4	14.5
3/1	577	577	-	-	-	1.9	1.0	-	2.9	18.1	8.2	1.0	9.2
4/1	204	204	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	505	505	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	648	648	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
Ped Link: P1	0	0	-	-	-	-	-	-	-	-	-	-	-
Ped Link: P2	0	0	-	-	-	-	-	-	-	-	-	-	-

C1 Stream: 1 PRC for Signalled Lanes (%): 21.8 Total Delay for Signalled Lanes (pcuHr): 10.59 Cycle Time (s): 90
PRC Over All Lanes (%): 21.8 Total Delay Over All Lanes(pcuHr): 10.59