CD 2.3

CD 2.3 - 150921 AHA response to OCC following meeting

Andy Green

From: Andy Green
Sent: 21 September 2015 14:43
To: 'Matthew Parry'
Cc: Chris Still
Subject: FW: 1361: WHITE POST ROAD, BANBURY
Attachments: Table 1361-SEPT-1.pdf; 1361 Site access priority AM 2025 WITH.pdf; 1361 Site access priority PM 2025 WITH.pdf; 1361-22.pdf

Matthew

Please find attached our Highways Consultants email to OCC Highways FYI

Andy

From: Simon Helme [mailto:aha@ashleyhelme.co.uk]
Sent: 18 September 2015 14:23
To: 'White, Joy - Environment & Economy' <Joy.White@Oxfordshire.gov.uk>; 'Payne, Odele - Environment & Economy' <Odele.Payne@Oxfordshire.gov.uk>
Cc: Andy Green <A.Green@gladman.co.uk>; Chris Still <C.Still@gladman.co.uk>
Subject: 1361: WHITE POST ROAD, BANBURY

Joy

I Write further to our meeting on 11 September 2015 at your offices. We agreed that I would write to you setting out our assumptions and position on some of the highway/transport issues we discussed.

Site Access on White Post Road

We discussed the format of the proposed access junction on White Post Road. The TA report presents 2no options, being, a simple priority controlled 'T' junction and a roundabout. You suggested that we explore a third option in which White Post Road (N) and the Site access arm form the major road with White Post Road (S) forming the minor arm. We agreed that there was merit in this option.

Please find attached Drg No 1361/22. This follows the format of junction described above. This satisfies all the visibility requirements assuming a 30mph design speed. We have also undertaken a vehicle tracking exercise and I am confident that all movements and all vehicle types can be accommodated. The scheme includes provision for pedestrians and cyclists. I appreciate that a Stage 1 Road Safety Audit will need to be completed. However, I would like to incorporate any of your design changes/suggestions into the layout before the client commits to the expense of the RSA. Your thoughts would be welcomed.

We have undertaken PICADY analysis of the junction presented on Drg No 1361/22 and with the traffic flows shown on Figure D7, Appendix D of TA report 1361/7/B. The results of the PICADY analysis are presented in Table 1361/SEPT/1. I also attach the PICADY output files for your review.

The PICADY analysis confirms that the junction presented on Drg No 1361/22 can acceptably accommodate the AM & PM peak hour traffic flows for the 2025 With Development & Link Road scenario. This scenario assumes the full completion of the Banbury 16 & 17 residential schemes and the diversion of traffic presently using Wykham Lane to the Link Road.

The work undertaken to date indicates that 'Option 3' is feasible. I would appreciate your thoughts on the junction.

Link Road Geometry

There was lengthy discussion regarding the geometry of the Link Road. Our Drg No 1361/13/B suggests the following geometry:

- 6.75m carriageway,
- 1.0m verge and 3.0m shared footway/cycleway on the north side,
- 1.0m verge and 2.0m footway on the south side.

You agreed to discuss the geometry with colleagues and advise us of your requirements. The point was made at the meeting that the overall width of the 'corridor' is 13.75m, which is substantially wider than the typical 5.5m wide road with 2no 2.0m footways, which is the likely level of geometry if the proposed development was a stand-alone scheme. Thus, the requirement for the access road to be also a Link Road between White Post Road and Bloxham Road has a significant land-take and cost implications.

TRANSPORT ASSESSMENT

Committed Developments

The AHA TA report (ref 1361/7/B) has considered the traffic implications of 19no schemes across Banbury. I hope that you will appreciate that this was a considerable exercise. I have to say, I have not seen this level of exercise replicated in any of the many TA reports that I have reviewed for other sites in Banbury.

We have reviewed the TA reports for the 5no sites you have listed.

13/01528/OUT Land north of Crouch Hill Farm

This is a scheme of 40 dwellings and the application was supported by only a Transport Statement with no assessment of traffic impact on the wider network.

13/00158/OUT Land adjoining Foxhill & 13/00159/OUT Hardwick Farm

Both of these TA reports include 3no junctions that are also included in the AHA TA study network. However, both reports use a 3.5% materiality test and, as a result of this, it is argued that both developments do not impact on the 3no 'overlapping' junctions and modelling is not undertaken.

13/01789/OUT Land off Warwick Road & 14/00066/OUT Land north of Hanwell Fields

Both of the TA reports for these schemes do not adopt junctions which overlap with AHA study network.

All five of the permitted schemes that you have listed do not include any impact assessment work at junctions which comprises the AHA TA study network. Consequently, it is reasonable to interpret that OCC has accepted that the traffic impact of the 5no permitted schemes at junctions within the AHA TA study network is **not** material. I consider there to be no justifiable reason for their inclusion in the transport submission for the White Post Road scheme.

Background Traffic Assumptions

The approach we have taken to background traffic growth is set out in Technical Filenote 1C, Appendix C. The section headed 'Methodology' sets out the selection criteria we have adopted, which I consider to be reasonable.

The TEMPRO model assumes that the number of households in Banbury will grow by 2363 between 2013 and 2025. If this is left unchanged and traffic generated by permitted developments is added then this will lead to a significant overestimate of future flows. The approach adopted is to simply reduce the household growth in TEMPRO.

Para 8.4.3.2 in the AHA TA sets out the total growth at the AHA TA study junctions from 2013/2015 to 2025. This demonstrates that we have tested a situation in which virtually all of the study junctions receive an increase in traffic of over 20%. Many of the junctions have over 30% growth. I am satisfied that this represents a very robust approach.

It is worth pointing out that TAs for the other Banbury 16/17 assume:

Wykham Park Farm

16% growth from 2014 to 2027 and only 2no committed developments.

Land to the West of Bloxham Road

About 7% growth from 2014 to 2019 and only 1 no committed development.

Land to the East of Bloxham Road

About 4.5% growth from 2011 to 2016 no committed developments.

Consequently, I consider the resultant background growth adopted in the AHA TA to be very robust. It is clear that we have set a far more onerous set of conditions for the testing of the study network junctions than has been adopted by others.

Trip Generation Rates

I am aware that you would have adopted slightly different TRICS parameters than we have used. However, and putting to one side the selection process, I am confident that the results trip rates are robust. I provide below a short comparison of rates adopted by AHA and those used for the schemes to the west of the Site:

Scheme	**Units**	**AM**			**PM**		
		ARR	**DEP**	**2-WAY**	**ARR**	**DEP**	**2-WAY**
Land off White Post Road	280	0.156	0.441	0.597	0.413	0.245	0.658
Wykham Park Farm	1000	0.124	0.406	0.530	0.332	0.151	0.483
Land west of Bloxham Road	400	0.153	0.404	0.557	0.389	0.229	0.618
Land east of Bloxham Road	145	0.159	0.537	0.696	0.428	0.255	0.683.
Average		**0.148**	**0.447**	**0.595**	**0.391**	**0.220**	**0.611**

You will see that the AHA rates are higher than those in the Wykham Park Farm and land west of Bloxham Road TA reports. The AHA rates are also higher than the average of the 4no sites. Consequently, I am satisfied that we have adopted robust trip generation rates.

In the light of this comparison I would be grateful if you would confirm your acceptance to the adopted trip rates.

Survey Data

Please find attached to traffic count and queue survey data.

Trip Distribution

I explained at the meeting that we have adopted the Cherwell 006 and 007 Census output areas as a basis for deriving the trip distribution of development generated traffic. These output areas are predominantly residential in nature and it is reasonable to assume that development resident travel patterns would be similar. In contrast, output area Cherwell 008 is predominantly rural in nature and covers some smaller villages. I am not convinced that this output area provides the 'best match' for the development.

The AHA trip distribution is set on Figure B5, Appendix B of AHA TA report 1361/7/B. You will see that the distribution at the Site access is 87% to/from the north and 13% to/from the south. The TA assumes that 9.6% of the traffic to/from the north utilises the grade separated junction over Oxford Road to travel to/from the south. Thus, the TA assumes that 77.4% of development generated traffic passes through Banbury. I consider this to be a robust assumption.

I have reviewed the trip assignment assumptions adopted for the other Banbury 16/17 developments. These are:

Scheme	**Units**	**North**	**South**
Land off White Post Road	280	77.4%	22.6%

Wykham Park Farm	1000		81.0%	19.0%
Land west of Bloxham Road	400		70.0%	30.0%
Land east of Bloxham Road	145	AM	58.0%	42.0%
		PM	46.0%	54.0%.

You will see that the AHA distribution is very similar to that adopted for Wykham Park Farm. The adopted distribution for the White Post Road scheme is more onerous, in terms of impact at Banbury junctions, than the other two permitted schemes on Bloxham Road. Consequently, I am satisfied that the adopted distribution is robust.

In the light of this comparison I would be grateful if you would confirm your acceptance to the trip assignment.

Traffic Impact Materiality Threshold

We discussed the 'test' to be applied to determine if the level of development generated traffic at a junction is material and triggers a need for junction modelling. Para 8.10.2 of the AHA TA reports sets out 2no tests being:

- Test 1: More than 30 trips (2-way) at a junction,
- Test 2: % increase in 2025 Base flows is greater than 2.5%.

I pointed out at the meeting that this is a far more onerous set of test conditions than has been accepted by OCC for nearby schemes. For example, the 2no permitted schemes on Bloxham Road adopt a 5.0% test.

You stated at the meeting that the AHA adopted materiality test appeared reasonable. I would appreciate written confirmation that this is the case.

Additional Junctions

Geoffrey Arnold provided pre-application advice to the applicant via Lisa Michleson on 1 April 2015. This set out a requirement for 21no study junctions. Whilst this level of study network may be applicable for the very large scale Wykham Park Farm scheme, I considered it to represent too large a network for a scheme of only 280 dwellings. In reaching this view, I have reviewed the TA reports prepared for the schemes on the east (145 dwellings) and west (400 dwellings) of Bloxham Road and in both instances the adopted networks extend to only 7 or 8 study junctions.

Having given due regard to the level and distribution of development generated traffic. I considered that a network of 15no study junctions was appropriate. This is a considerably wider network than that adopted by the Bloxham Road schemes.

You stated at the meeting that you required additional junctions to be added to the AHA TA study network, being:

- Farmfield Road/Oxford Road,
- Bankside/Swan Close, and
- Concorde Avenue/Cherwell Drive roundabout.

The Farmfield Road/Oxford Road junction was set out in Geoffrey Arnold's pre-application note and you explained that this is connected in operation to another nearby junction. Consequently, I consider it reasonable to add this junction to the network.

With respect to the other 2no junctions you requested to be added, these were not included in Geoffrey Arnold's pre-application note. I would appreciate your confirmation that you have requested that the applicant for the WPF scheme include these junctions in their TA. If so, then we may be able to share count data, which will keep applicant costs to a minimum.

We discussed the junctions to the south of the Site in Adderbury namely:

- A4260/Twyford Road, and
- A4260/Aynho Road.

I do not have traffic flow data for these junctions, but the 2025 Base situation (refer Figure B4 of the AHA TA) shows that A4260 Oxford Road, south of Weeping Cross, is predicted to carry 2141 pcu in the AM and 2316 pcu in the PM peak hour. It is reasonable to assume that all of this traffic passes through the Twyford Road junction and the overwhelming majority passes through the Aynho Road junction. The proposed development is predicted to increase traffic on Oxford Road to the south by 32 vehicles in the AM and 36 vehicles in the PM peak hours. This represents increases of only **1.5%** and **1.6%** respectively. Thus, the AHA Test 1 materiality test is only just met. However, the %increase is well below Test 2 (ie 2.5% increase). Consequently, I am satisfied that the proposed development will **not** have a material impact at the 2no junctions in Adderbury and there is no technical justification to include them in the TA.

I would appreciate your confirmation if you agree with this conclusion. Alternatively, please set out your justification if you remain of the view that they should be added.

Transport Contributions

You explained that the Council would be seeking transport contributions under the 'Banbury Transport Strategy'. We explained that we would need to have a clear understanding as to how any monies collected would be used to be satisfied that the 3no tests set out in NPPF and CIL.

As set out above, there are significant land-take and financial costs in providing a site access junction and link road over and above what might reasonably be provided if the proposed development was a stand-alone scheme. You agreed that it is fair reasonable to discount the additional costs from the sum calculated through the Banbury Transport Strategy. I would appreciate written confirmation that I have accurately recorded the discussion.

Way Forward

I am aware that there will be other aspects to the development that remain to be resolved. However, I think it would be useful at this stage if we can reach agreement to the information put forward in this e-mail. I am endeavouring to keep client fee commitments to a minimum and at the same trying to make progress on agreeing matters. Your assistance would be greatly appreciated.

I look forward to hearing from you.

Kind regards

Simon Helme

ashleyhelme
76 Washway Road, Sale, Manchester M33 7RE
t 0161 972 0552 | **w** www.ashleyhelme.co.uk

transport planning
transport assessment
air quality assessment
sustainable travel
traffic management
travel plans
highway engineering

This page has been left intentionally blank

PEAK HOUR	WHITE POST ROAD (S) RIGHT			WHITE POST ROAD (S) LEFT			SITE RIGHT		
	RFC	Q	DEL	RFC	Q	DEL	RFC	Q	DEL
AM	0.492	0.93	0.32	0.306	0.43	0.17	0.204	0.25	0.14
PM	0.674	1.98	0.46	0.199	0.25	0.16	0.139	0.16	0.13

Notes:

1. Refer Figure D7, Appendix D in TA report ref 1361/7/B for traffic flows,
2. Refer Drg No 1361/22 for existing junction geometry,
3. Q= Queue (pcu),
4. DEL= Average delay per pcu (minutes).

TABLE 1361/SEPT/1 **PICADY ANALYSIS RESULTS**
SITE ACCESS/WHITE POST ROAD
2025 WITH DEVELOPMENT
AM & PM PEAK HOURS

This page has been left intentionally blank

PICADY

GUI Version: 5.1 AE
Analysis Program Release: 5.0 (MAY 2010)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	\\A..\Sept 2015 priority site access- right turn lane\1361 Site-White Post Road 2025 AM WITH - 2 LANES ON MINOR.vpi
Date Run	18 September 2015
Time Run	13:53:14
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	WHITE POST ROAD (N)	100
Arm B	WHITE POST ROAD (S)	100
Arm C	SITE	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	site right turn
Location	-
Date	17 September 2015
Enumerator	AHA [ANALYSIS1]
Job Number	-
Status	-
Client	-
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

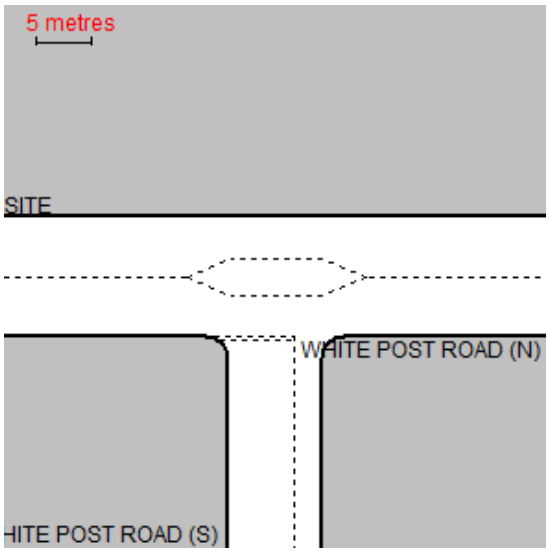
Parameter	Minor Arm B
Major Road Carriageway Width (m)	7.30
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	3.50
Minor Road First Lane Width (m)	3.00
Minor Road Second Lane Width (m)	3.00
Minor Road Visibility To Right (m)	60
Minor Road Visibility To Left (m)	150
Major Road Right Turn Visibility (m)	40
Major Road Right Turn Blocks Traffic	No

Slope and Intercept Values

Stream	Intercept for Stream	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	556.901	0.096	0.242	0.152	0.346
B-C	661.709	0.096	0.242	-	-
C-B	681.612	0.249	0.249	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	07:45-09:15	90	15

ODTAB Turning Counts

Demand Set: site right turn WITH DEV 2025
Modelling Period: 07:45-09:15

From/To	Arm A	Arm B	Arm C
Arm A	0.0	323.0	199.0
Arm B	164.0	0.0	140.0
Arm C	383.0	100.0	0.0

ODTAB Synthesised Flows

Demand Set: site right turn WITH DEV 2025
Modelling Period: 07:45-09:15

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	08:00	6.525	08:30	9.788	09:00	6.525
Arm B	08:00	3.800	08:30	5.700	09:00	3.800
Arm C	08:00	6.037	08:30	9.056	09:00	6.037

Heavy Vehicles Percentages

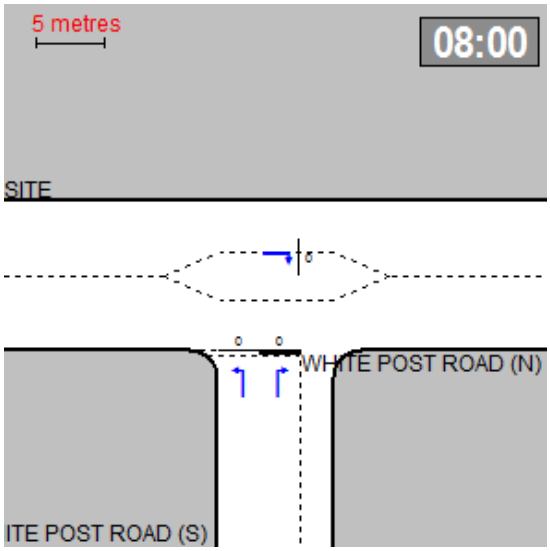
Demand Set: site right turn WITH DEV 2025
Modelling Period: 07:45-09:15

From/To	Arm A	Arm B	Arm C
Arm A	-	0.0	0.0
Arm B	0.0	-	0.0
Arm C	0.0	0.0	-

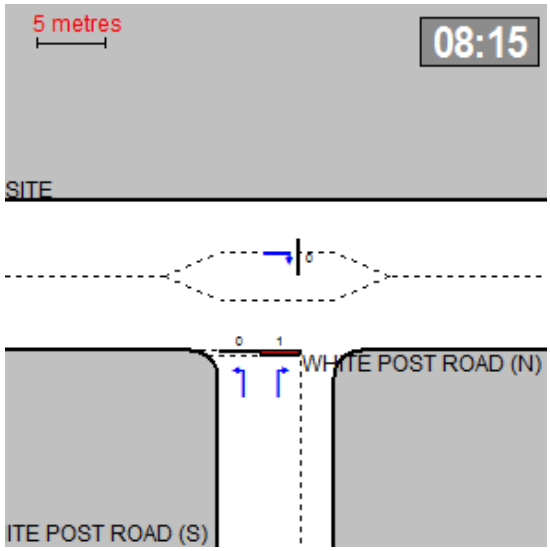
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15
View Extent: 40m

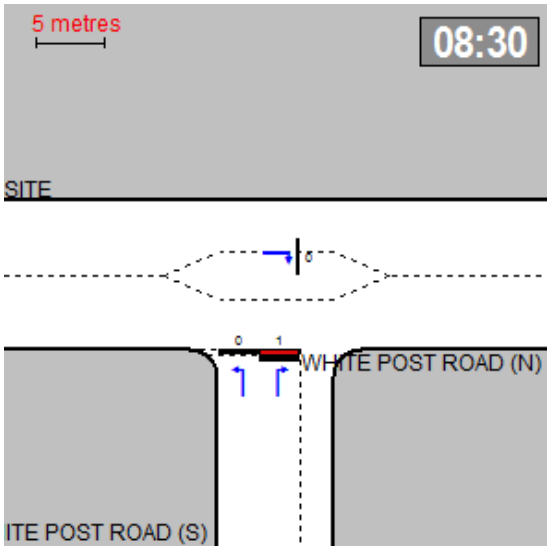
Queue Interval 1: 07:45-08:00



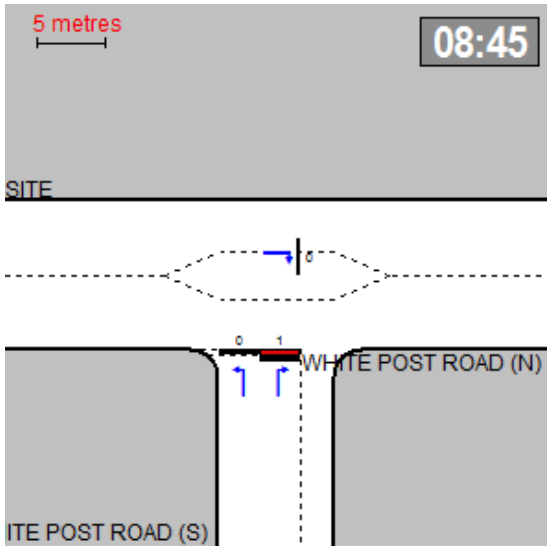
Queue Interval 2: 08:00-08:15



Queue Interval 3: 08:15-08:30

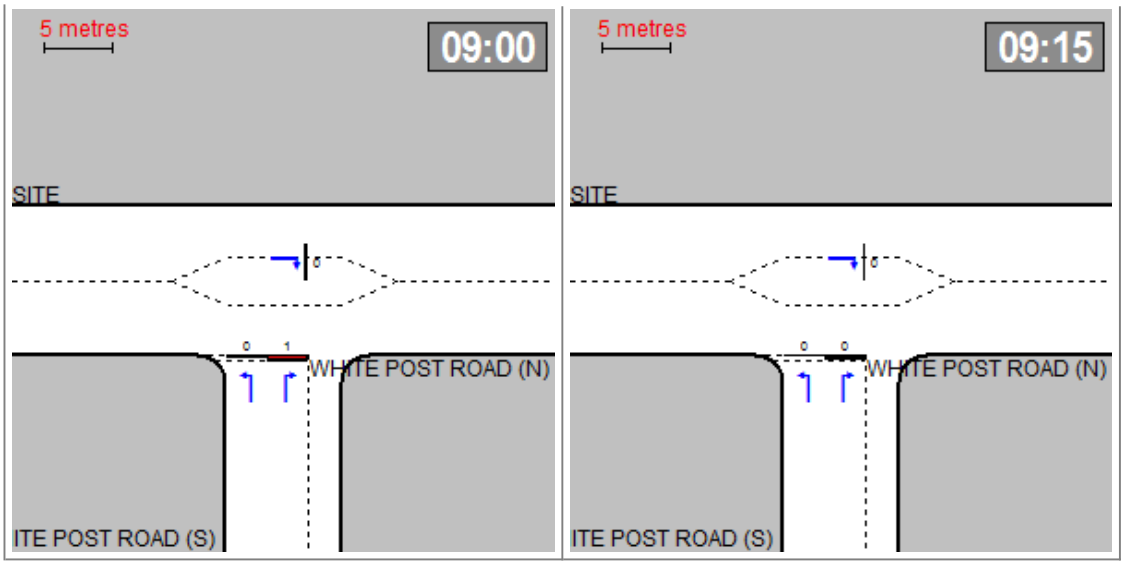


Queue Interval 4: 08:30-08:45



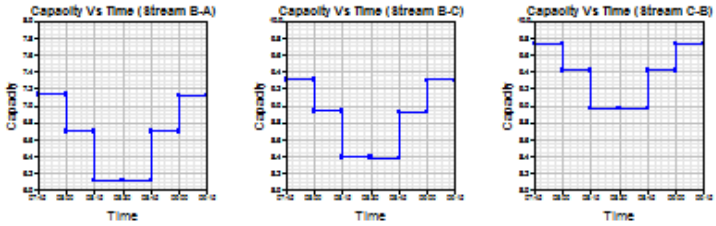
Queue Interval 5: 08:45-09:00

Queue Interval 6: 09:00-09:15


5 metres
09:00
SITE
WHITE POST ROAD (N)
ITE POST ROAD (S)
5 metres
09:15
SITE
WHITE POST ROAD (N)
ITE POST ROAD (S)

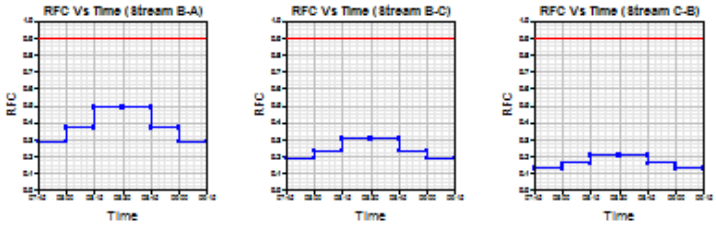
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



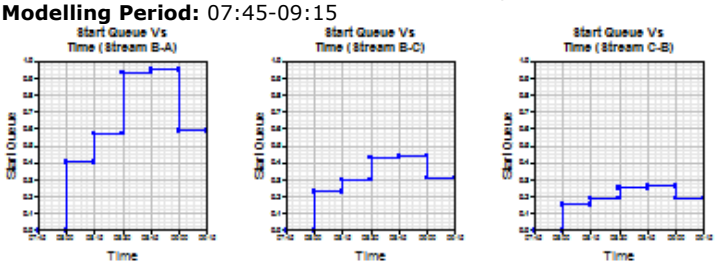
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



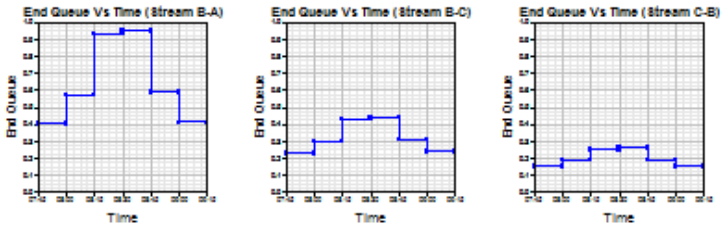
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



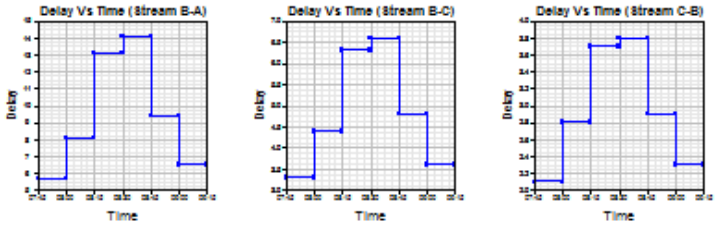
End Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15



Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
07:45-08:00	B-A	2.06	7.13	0.289	-	0.00	0.40	-	5.7	0.20
	B-C	1.76	9.31	0.189	-	0.00	0.23	-	3.3	0.13
	C-A	4.81	-	-	-	-	-	-	-	-
	C-B	1.25	9.73	0.129	-	0.00	0.15	-	2.1	0.12
	A-B	4.05	-	-	-	-	-	-	-	-
	A-C	2.50	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:00-08:15	B-A	2.46	6.70	0.367	-	0.40	0.57	-	8.1	0.23
	B-C	2.10	8.93	0.235	-	0.23	0.30	-	4.4	0.15
	C-A	5.74	-	-	-	-	-	-	-	-
	C-B	1.50	9.41	0.159	-	0.15	0.19	-	2.8	0.13
	A-B	4.84	-	-	-	-	-	-	-	-
	A-C	2.98	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:15-08:30	B-A	3.01	6.12	0.491	-	0.57	0.93	-	13.1	0.32
	B-C	2.57	8.39	0.306	-	0.30	0.43	-	6.3	0.17
	C-A	7.03	-	-	-	-	-	-	-	-
	C-B	1.84	8.97	0.204	-	0.19	0.25	-	3.7	0.14
	A-B	5.93	-	-	-	-	-	-	-	-
	A-C	3.65	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:30-08:45	B-A	3.01	6.12	0.492	-	0.93	0.95	-	14.1	0.32
	B-C	2.57	8.38	0.307	-	0.43	0.44	-	6.6	0.17
	C-A	7.03	-	-	-	-	-	-	-	-
	C-B	1.84	8.97	0.204	-	0.25	0.26	-	3.8	0.14
	A-B	5.93	-	-	-	-	-	-	-	-
	A-C	3.65	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
08:45-09:00	B-A	2.46	6.70	0.367	-	0.95	0.59	-	9.4	0.24
	B-C	2.10	8.92	0.235	-	0.44	0.31	-	4.8	0.15
	C-A	5.74	-	-	-	-	-	-	-	-
	C-B	1.50	9.41	0.159	-	0.26	0.19	-	2.9	0.13
	A-B	4.84	-	-	-	-	-	-	-	-
	A-C	2.98	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
09:00-09:15	B-A	2.06	7.12	0.289	-	0.59	0.41	-	6.5	0.20
	B-C	1.76	9.30	0.189	-	0.31	0.24	-	3.6	0.13
	C-A	4.81	-	-	-	-	-	-	-	-
	C-B	1.25	9.73	0.129	-	0.19	0.15	-	2.3	0.12
	A-B	4.05	-	-	-	-	-	-	-	-
	A-C	2.50	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 07:45 - 09:15
Modelling Period: 07:45-09:15

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	225.7	150.5	56.8	0.3	56.8	0.3
B-C	192.7	128.5	29.0	0.2	29.0	0.2
C-A	527.2	351.4	-	-	-	-
C-B	137.6	91.8	17.6	0.1	17.7	0.1
A-B	444.6	296.4	-	-	-	-
A-C	273.9	182.6	-	-	-	-
All	**1801.7**	**1201.2**	**103.5**	**0.1**	**103.5**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.
These will only be significantly different if there is a large queue remaining at the end of the time period.

PICADY 5 Run Successful

PICADY

GUI Version: 5.1 AE
Analysis Program Release: 5.0 (MAY 2010)

For sales and distribution information, program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA, UK

Tel: +44 (0)1344 770758
Fax:+44 (0)1344 770864
E-mail: software@trl.co.uk
Web: www.trlsoftware.co.uk

Run Analysis

Parameter	Values
File Run	\\A..\Sept 2015 priority site access- right turn lane\1361 Site-White Post Road 2025 PM WITH - 2 LANES ON MINOR.vpi
Date Run	18 September 2015
Time Run	13:54:48
Driving Side	Drive On The Left

Arm Names and Flow Scaling Factors

Arm	Arm Name	Flow Scaling Factor (%)
Arm A	WHITE POST ROAD (N)	100
Arm B	WHITE POST ROAD (S)	100
Arm C	SITE	100

Stream Labelling Convention

Stream A-B contains traffic going from A to B etc.

Run Information

Parameter	Values
Run Title	site right turn
Location	-
Date	17 September 2015
Enumerator	AHA [ANALYSIS1]
Job Number	-
Status	-
Client	-
Description	-

Errors and Warnings

Parameter	Values
Warning	No Errors Or Warnings

Geometric Data

Geometric Parameters

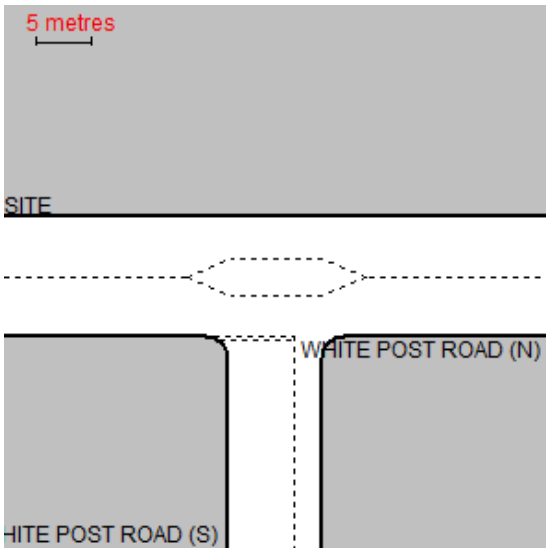
Parameter	Minor Arm B
Major Road Carriageway Width (m)	7.30
Major Road Kerbed Central Reserve Width (m)	0.00
Major Road Right Turning Lane Width (m)	3.50
Minor Road First Lane Width (m)	3.00
Minor Road Second Lane Width (m)	3.00
Minor Road Visibility To Right (m)	60
Minor Road Visibility To Left (m)	150
Major Road Right Turn Visibility (m)	40
Major Road Right Turn Blocks Traffic	No

Slope and Intercept Values

Stream	Intercept for Stream	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	556.901	0.096	0.242	0.152	0.346
B-C	661.709	0.096	0.242	-	-
C-B	681.612	0.249	0.249	-	-

Note: Streams may be combined in which case capacity will be adjusted
These values do not allow for any site-specific corrections

Junction Diagram



Demand Data

Modelling Periods

Parameter	Period	Duration (min)	Segment Length (min)
First Modelling Period	16:30-18:00	90	15

ODTAB Turning Counts

Demand Set: site right turn WITH DEV 2025
Modelling Period: 16:30-18:00

From/To	Arm A	Arm B	Arm C
Arm A	0.0	192.0	302.0
Arm B	243.0	0.0	84.0
Arm C	197.0	69.0	0.0

ODTAB Synthesised Flows

Demand Set: site right turn WITH DEV 2025
Modelling Period: 16:30-18:00

Arm	Rising Time	Rising Flow (veh/min)	Peak Time	Peak Flow (veh/min)	Falling Time	Falling Flow (veh/min)
Arm A	16:45	6.175	17:15	9.263	17:45	6.175
Arm B	16:45	4.088	17:15	6.131	17:45	4.088
Arm C	16:45	3.325	17:15	4.988	17:45	3.325

Heavy Vehicles Percentages

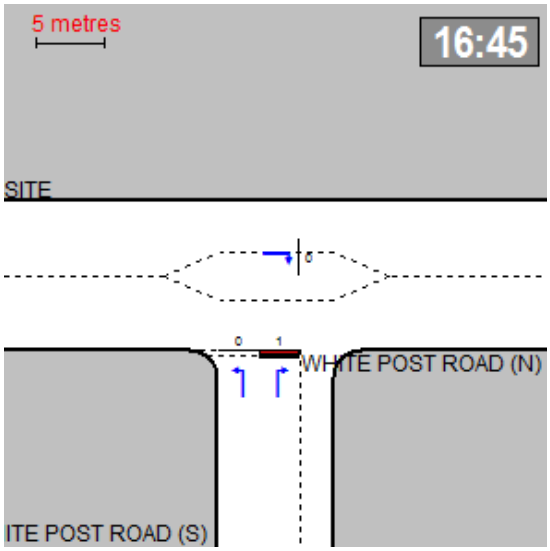
Demand Set: site right turn WITH DEV 2025
Modelling Period: 16:30-18:00

From/To	Arm A	Arm B	Arm C
Arm A	-	0.0	0.0
Arm B	0.0	-	0.0
Arm C	0.0	0.0	-

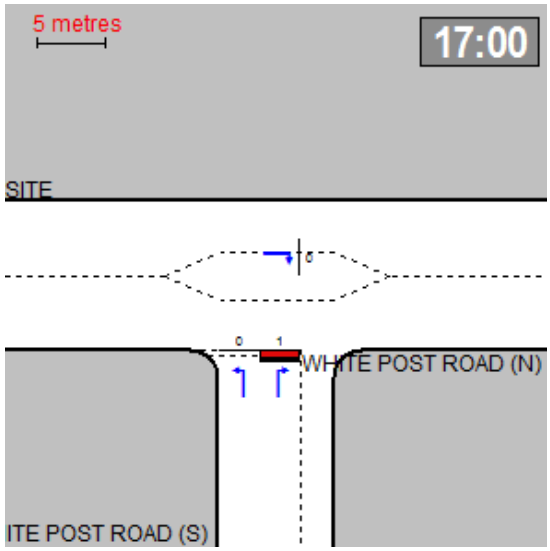
Queue Diagrams

Demand Set: Sum of Demand Sets for Modelling Period: 16:30 - 18:00
Modelling Period: 16:30-18:00
View Extent: 40m

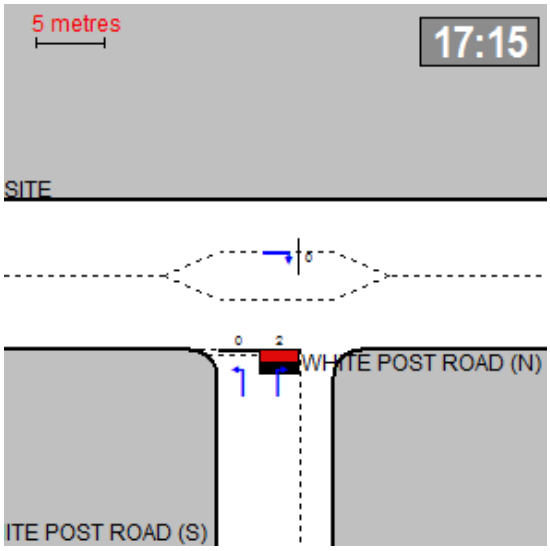
Queue Interval 1: 16:30-16:45



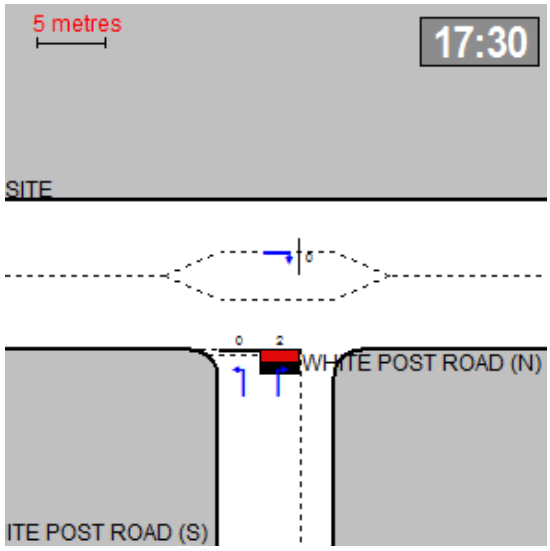
Queue Interval 2: 16:45-17:00



Queue Interval 3: 17:00-17:15

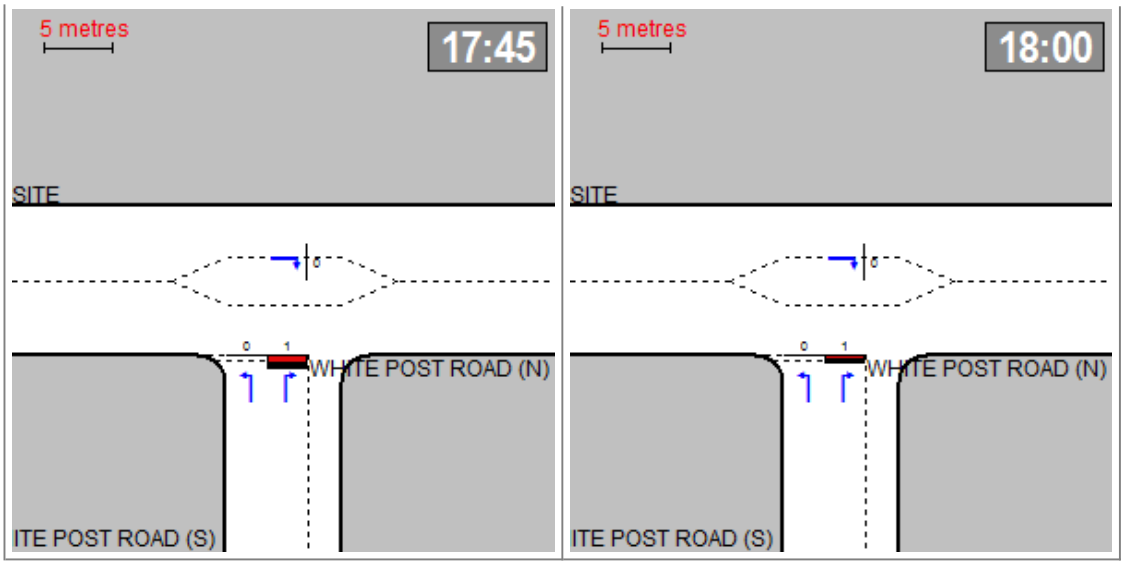


Queue Interval 4: 17:15-17:30



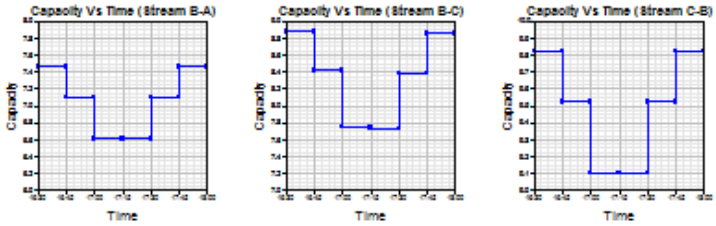
Queue Interval 5: 17:30-17:45

Queue Interval 6: 17:45-18:00


5 metres
17:45
SITE
WHITE POST ROAD (N)
ITE POST ROAD (S)
5 metres
18:00
SITE
WHITE POST ROAD (N)
ITE POST ROAD (S)

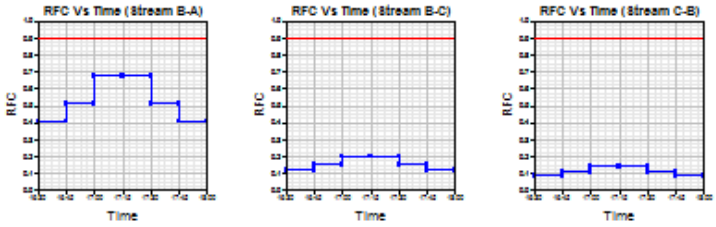
Capacity Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:30 - 18:00
Modelling Period: 16:30-18:00



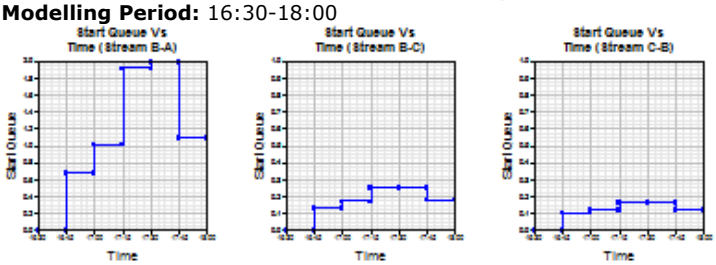
RFC Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:30 - 18:00
Modelling Period: 16:30-18:00



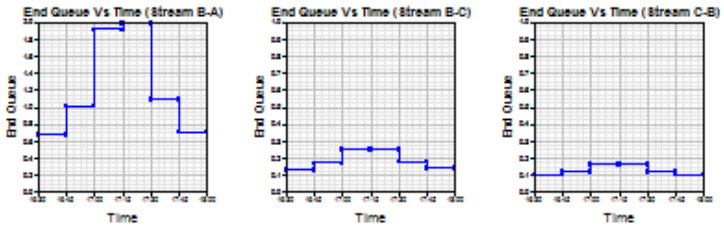
Start Queue Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:30 - 18:00
Modelling Period: 16:30-18:00



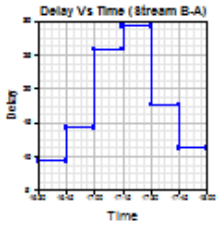
End Queue Graph

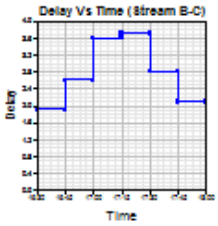
Demand Set: Sum of Demand Sets for Modelling Period: 16:30 - 18:00
Modelling Period: 16:30-18:00

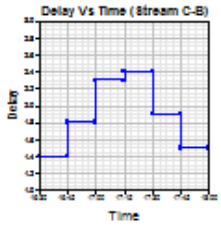


Delay Graph

Demand Set: Sum of Demand Sets for Modelling Period: 16:30 - 18:00
Modelling Period: 16:30-18:00







Queues & Delays

Demand Set: Sum of Demand Sets for Modelling Period: 16:30 - 18:00
Modelling Period: 16:30-18:00

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:30-16:45	B-A	3.05	7.46	0.409	-	0.00	0.67	-	9.4	0.22
	B-C	1.05	8.87	0.119	-	0.00	0.13	-	1.9	0.13
	C-A	2.47	-	-	-	-	-	-	-	-
	C-B	0.87	9.82	0.088	-	0.00	0.10	-	1.4	0.11
	A-B	2.41	-	-	-	-	-	-	-	-
	A-C	3.79	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
16:45-17:00	B-A	3.64	7.10	0.513	-	0.67	1.01	-	14.3	0.29
	B-C	1.26	8.41	0.150	-	0.13	0.17	-	2.6	0.14
	C-A	2.95	-	-	-	-	-	-	-	-
	C-B	1.03	9.52	0.109	-	0.10	0.12	-	1.8	0.12
	A-B	2.88	-	-	-	-	-	-	-	-
	A-C	4.52	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:00-17:15	B-A	4.46	6.61	0.674	-	1.01	1.91	-	25.8	0.44
	B-C	1.54	7.75	0.199	-	0.17	0.25	-	3.6	0.16
	C-A	3.62	-	-	-	-	-	-	-	-
	C-B	1.27	9.10	0.139	-	0.12	0.16	-	2.3	0.13
	A-B	3.52	-	-	-	-	-	-	-	-
	A-C	5.54	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:15-17:30	B-A	4.46	6.61	0.674	-	1.91	1.98	-	29.3	0.46
	B-C	1.54	7.73	0.199	-	0.25	0.25	-	3.7	0.16
	C-A	3.62	-	-	-	-	-	-	-	-
	C-B	1.27	9.10	0.139	-	0.16	0.16	-	2.4	0.13
	A-B	3.52	-	-	-	-	-	-	-	-
	A-C	5.54	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:30-17:45	B-A	3.64	7.10	0.513	-	1.98	1.09	-	17.6	0.30
	B-C	1.26	8.38	0.150	-	0.25	0.18	-	2.8	0.14
	C-A	2.95	-	-	-	-	-	-	-	-
	C-B	1.03	9.52	0.109	-	0.16	0.12	-	1.9	0.12
	A-B	2.88	-	-	-	-	-	-	-	-
	A-C	4.52	-	-	-	-	-	-	-	-

Segment	Stream	Demand (veh/min)	Capacity (veh/min)	RFC	Ped. Flow (ped/min)	Start Queue (veh)	End Queue (veh)	Geometric Delay (veh.min/ segment)	Delay (veh.min/ segment)	Mean Arriving Vehicle Delay (min)
17:45-18:00	B-A	3.05	7.46	0.409	-	1.09	0.71	-	11.2	0.23
	B-C	1.05	8.85	0.119	-	0.18	0.14	-	2.1	0.13
	C-A	2.47	-	-	-	-	-	-	-	-
	C-B	0.87	9.82	0.088	-	0.12	0.10	-	1.5	0.11
	A-B	2.41	-	-	-	-	-	-	-	-
	A-C	3.79	-	-	-	-	-	-	-	-

Entry capacities marked with an '(X)' are dominated by a pedestrian crossing in that time segment.
In time segments marked with a '(B)', traffic leaving the junction may block back from a crossing so impairing normal operation of the junction.
Delays marked with '##' could not be calculated.

Overall Queues & Delays

Queueing Delay Information Over Whole Period

Demand Set: Sum of Demand Sets for Modelling Period: 16:30 - 18:00
Modelling Period: 16:30-18:00

Stream	Total Demand (veh)	Total Demand (veh/h)	Queueing Delay (min)	Queueing Delay (min/veh)	Inclusive Delay (min)	Inclusive Delay (min/veh)
B-A	334.5	223.0	107.7	0.3	107.7	0.3
B-C	115.6	77.1	16.6	0.1	16.6	0.1
C-A	271.2	180.8	-	-	-	-
C-B	95.0	63.3	11.3	0.1	11.3	0.1
A-B	264.3	176.2	-	-	-	-
A-C	415.7	277.1	-	-	-	-
All	**1496.2**	**997.5**	**135.6**	**0.1**	**135.6**	**0.1**

Delay is that occurring only within the time period.
Inclusive delay includes delay suffered by vehicles which are still queuing after the end of the time period.
These will only be significantly different if there is a large queue remaining at the end of the time period.

PICADY 5 Run Successful

Notes:

1. Do not scale from this drawing
2. This drawing is copyright and may not be copied or given to a third party without written authority from Ashley Helme Associates Ltd
3. Subject to detailed design
4. Based upon topographical survey

Introduce 3.5m wide right turn lane and 3.65m wide through lanes

Introduce 1.0m wide grass verge and 3.0m wide shared footway/cycleway

Introduce right turn lane

Introduce 2.5m wide pedestrian/cycle refuge

Introduce 6.75m wide Site access road

Introduce 2.5m wide pedestrian/cycle refuge

Introduce 2.0m wide cycle bypass

Relocated access road to Banbury Cricket Club and proposed car park.

Introduce 1.0m wide grass verge and 2.0m wide footway

Banbury Cricket Club access

Introduce car park to accommodate circa 26 vehicles

Close existing access to Banbury Cricket Club. Vehicular access relocated to Site access road. Maintain pedestrian access in this location.

Maintain existing puffing crossing

Key:

- Existing road markings
- Proposed kerbline
- Proposed road markings
- Proposed tactile paving
- Existing footway
- Proposed 2.0m wide footway
- Existing grass verge
- Proposed grass verge
- Proposed 3.0m wide shared footway/cycleway
- Proposed 2.0m wide cycle bypass
- National Cycle Network Route 5

Project: LAND TO THE WEST OF WHITE POST ROAD, BANBURY	Client: GLADMAN DEVELOPMENTS LTD	Drawing No: 1361/22	Rev:
Title: PROPOSED ACCESS ARRANGEMENTS		Date: SEPT 2015	Scale: 1:500@A2

ashleyhelme associates
76 washway road, sale, manchester, m33 7re
e: aha@ashleyhelme.co.uk t: 0161 972 0552 f: 0161 972 0553

This page has been left intentionally blank