



Site 3, Iver Lane, Uxbridge

Highway Impact note

Introduction

1. This note has been prepared to support planning application 751/APP/2016/1661 and reviews the potential trip generation of the proposals and their impact on the access junction to the site on Iver Lane and the wider highway network. The access is assessed using junction modelling and swept path analysis.
2. The site is bound to the south by Iver Lane, to the west by the River Colne and to the east by Fray's River. Access to the site is taken from Iver Lane. The site's access forms the northern arm of a crossroads, Iver Lane forms the eastern and western arms and Old Mill Lane forms the southern arm.
3. Iver Lane forms part of the B470, it is a two way single carriageway road which runs in an east to west direction and is reasonably trafficked during the peak hours (circa 400 vehicles each way during the peak hours). Old Mill Lane is a narrow country road connecting to Packet Boat Lane to the south, it is lightly trafficked.
4. The proposals will be to occupy the currently vacant site with a plumbing and waste pipe distribution unit managed by John Davidson (Pipes) Ltd.

Trip rates

Existing situation

5. A survey of the junction was undertaken on the 19th May 2016 during the morning peak and evening peak periods (07:00 – 10:00 and 16:00 – 19:00). The survey counted vehicle movements through the junction and the vehicle types. The AM peak hour was recorded as 07:45 to 08:45; and the evening peak was 16:45 to 17:45. The classified vehicle count identified that during the AM peak there were 34 two-way HGV trips and 13 two-way HVG trips during the PM peak hour.

Proposed trips

6. The details of the proposed development's trips have been obtained from John Davidson (Pipes) Ltd based on their existing sites, as set out below:

7.00am – 7.15am

- 5no staff cars in

7.30am – 8.00am

- 1no JDP 26t HGV vehicle out – 1st run
- 1no JDP 3.5t Transit pick-up vehicle out – 1st run
- 5no customer vehicles in and out
- 2no supplier delivery vehicles in and out

8.00am- 12noon

- 10no customer vehicles in and out
- 4no supplier delivery vehicles in and out
- 1no JDP 26t HGV vehicle in – return journey
- 1no JDP 3.5t Transit pick-up vehicle – return journey
- 1no JDP 3.5t Transit pick-up vehicle out – 2nd run
- 1no JDP 3.5t Transit pick-up vehicle in – return journey

12noon – 4.00pm

- 10no customer vehicles in and out
- 2no supplier delivery vehicles out
- 1no JDP 26t HGV vehicle out – 3rd run
- 1no JDP 3.5t Transit pick-up vehicle out 3rd run
- 1no JDP 26t HGV in vehicle – return journey
- 1no JDP 3.5t Transit pick-up vehicle – return journey

4.00pm – 5.00pm

- 6no customer vehicles in and out
- 1no supplier delivery vehicle in and out

5.00pm – 5.30pm

- 5no JDP staff cars out

Junction model

7. A PICADY model has been constructed to analyse the performance of the Iver Lane, Old Mill Lane and the site's access junction. PICADY models are used to model three and four arm junctions and measures their performance in terms of capacity, delays and queues. The geometry of the junction has been measured using ordnance survey mapping.
8. In order to undertake a robust assessment the proposed peak hour trips have been established as follows:
 - The junctions AM peak hour is between 07:45 and 08:45, therefore all of the proposed trips between 07:30 – 08:00 and half of the trips between 08:00 and

12:00 have been included, this results in a total of 32 two-way trips in the AM peak hour.

- The junctions PM peak hour is between 16:45 and 17:45. All the proposed trips between 16:00 and 17:30 have been included resulting 19 two-way PM peak hour trips.

Assessment scenarios

9. The proposed site's anticipated opening times are 07:30 – 17:00 during the weekdays and closed over the weekends. Therefore this assessment will only assess the weekday AM and PM peak hours.
10. Two traffic flow scenarios have been used to assess the junction, these are set out below:
 - a. Existing 2016 (AM and PM peak hours)
 - b. Existing 2016 + proposed development trips (AM and PM peak hours)
11. Based on the existing vehicle flows to and from the proposed development, obtained from the classified vehicle count survey, it has been assumed that 70% of the proposed smaller vehicle trips will access and egress the site via Iver Lane to the east and 30% via Iver Lane to the west.
12. To the east of the site on Iver Lane there is a bridge with a vehicle weight limit of 7.5 tonnes. Therefore, it has been assumed that all HGV trips generated from the proposed development will access and egress the site via Iver Lane to the west.

Evaluation of model results

13. This section provides an evaluation of the results from the PICADY modelling work. The results output from PICADY are included in Appendix A.

Existing 2016

14. In the Existing 2016 scenario the junction operates within capacity with a maximum ratio of flow to capacity of 24% and 38% in the AM and PM peak hours respectively. This means that the most congested arm of the junction (the site access) is operating at only 38% capacity and well within the threshold for the junction.

Existing 2016 + proposed development trips

15. In the Existing 2016 + proposed development trips scenario whilst the maximum RFC increases to 48% on the access arm in the AM peak, it remains the same during the PM peak hour. However the junction continues to operate well within its capacity, suggesting that the proposals will have a negligible impact on the operation of the junction

PICADY summary

16. The above assessment shows that the existing junction currently performs well, and the introduction of additional vehicles generated from the proposed development will have a negligible impact on the junction. Therefore no mitigation will be required to improve the capacity of the access to accommodate for the proposed development.

Swept path analysis

17. The site's access is already used by HGVs serving the adjacent industrial units, however, a swept path analysis of the site's access has been undertaken to show that the largest expected vehicle is able to access the proposed development. Drawing 30884/AC/001 shows the swept path of a 16.5m articulated HGV accessing and exiting the site via Iver Lane west.

Impact on the wider highway network

18. As previously indicated the majority of regular sized vehicles arrive / depart to the east. However due to the weight restriction on the bridge adjacent to the site the larger vehicles are required to approach / depart to the west.
19. These larger vehicles are predominantly large box vans or smaller lorries with trailers, but do also include a small number of articulated vehicles. The assessment of the existing access shows that there were 13 HGVs entering the site and 21 vehicles exiting the site during the AM peak hour. This reduced to seven HGVs entering and six exiting during the PM peak hour.
20. By comparison the proposed development is envisaged to result in only three additional HGVs entering the site and three additional vehicles exiting the site during the AM peak hour with no extra vehicles during the PM peak. Of these it is expected that only one movement will be a 16.5m articulated vehicle. This equates to one additional HGV movement every ten minutes, caused by three additional vehicles.
21. There are expected to be in the region of 10 additional HGV trips throughout the day (five vehicles), which is less than two movements an hour. This number of HGVs is within the daily variation for the local highway network.
22. Even compared to the modest HGV trips already associated with the industrial site, the additional 8-10 HGVs (16-20 trips) is low and is unlikely to impact on the local highway network or cause an adverse impact on the surrounding neighbourhood.

Conclusion

23. Access to the site is taken to the south via Iver Lane, the site's access forms part of a crossroads junction. A PICADY assessment has been undertaken, which shows that the proposed development will not impact on the performance of the junction. Swept path analysis of the site's access shows that a large articulated vehicle can successfully access and egress the site. The trips generated by the development do not impact on the operation of the local highway and the modest number of HGVs should not have an adverse impact on the surrounding neighbourhood.
24. Therefore, based on the above assessment the proposed development should be acceptable on the grounds of the expected trip generation, access arrangements and impact on the highway.

Vehicle used

FTA Design Articulated Vehicle (1998)

Overall Length	16.480m
Overall Width	2.550m
Overall Body Height	3.870m
Min Body Ground Clearance	0.515m
Max Track Width	2.470m
Lock to Lock Time	3.00s
Kerb to Kerb Turning Radius	6.550m



This drawing has been prepared for planning purposes and should not be used for construction. It should be read in conjunction with TPP e-mail of 03/06/16.

BASED ON ORDNANCE SURVEY MAPPING AND REPRODUCED BY TRANSPORT PLANNING PRACTICE WITH THE PERMISSION OF THE CONTROLLER OF HMSO © CROWN COPYRIGHT

SITE 3, IVER LANE UXBRIDGE

Swept path analysis of 16.5m articulated HGV

SCALE @ A3 1:500
0 5 10m

DATE
03/06/16

DRAWN BY
LD

CHECKED
HB

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DRAWING NUMBER
30884/AC/001
REV
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Appendix A

PICADY report

Junctions 9																
PICADY 9 - Priority Intersection Module																
Version: 9.0.0.4211 [] © Copyright TRL Limited, 2016																
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk																
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution																

Filename: Iver Lane PICADY-Vehicles.j9
Path: T:\30000_projects\30884 Site 3, Iver Lane, Uxbridge\PICADY
Report generation date: 03/06/2016 15:24:47

- »Iver Road - 2016, Existing AM
- »Iver Road - 2016, Existing PM
- »Iver Road - 2016, Existing + proposed AM
- »Iver Road - 2016, Existing + proposed PM

Summary of junction performance

	Existing AM				Existing PM				Existing + proposed AM				Existing + propose PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	L
Iver Road - 2016																
Stream B-ACD	0.3	23.39	0.24	C	0.2	11.62	0.19	B	0.9	31.92	0.48	D	0.3	11.73	0.19	
Stream A-B																
Stream A-C																
Stream A-D	0.2	8.46	0.14	A	0.0	8.76	0.05	A	0.2	8.68	0.15	A	0.0	8.81	0.05	
Stream D-ABC	0.2	11.51	0.15	B	0.6	13.36	0.38	B	0.2	11.88	0.15	B	0.6	13.40	0.38	
Stream C-D																
Stream C-A																
Stream C-B	0.1	11.22	0.10	B	0.0	7.06	0.02	A	0.2	11.83	0.17	B	0.0	7.19	0.04	

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

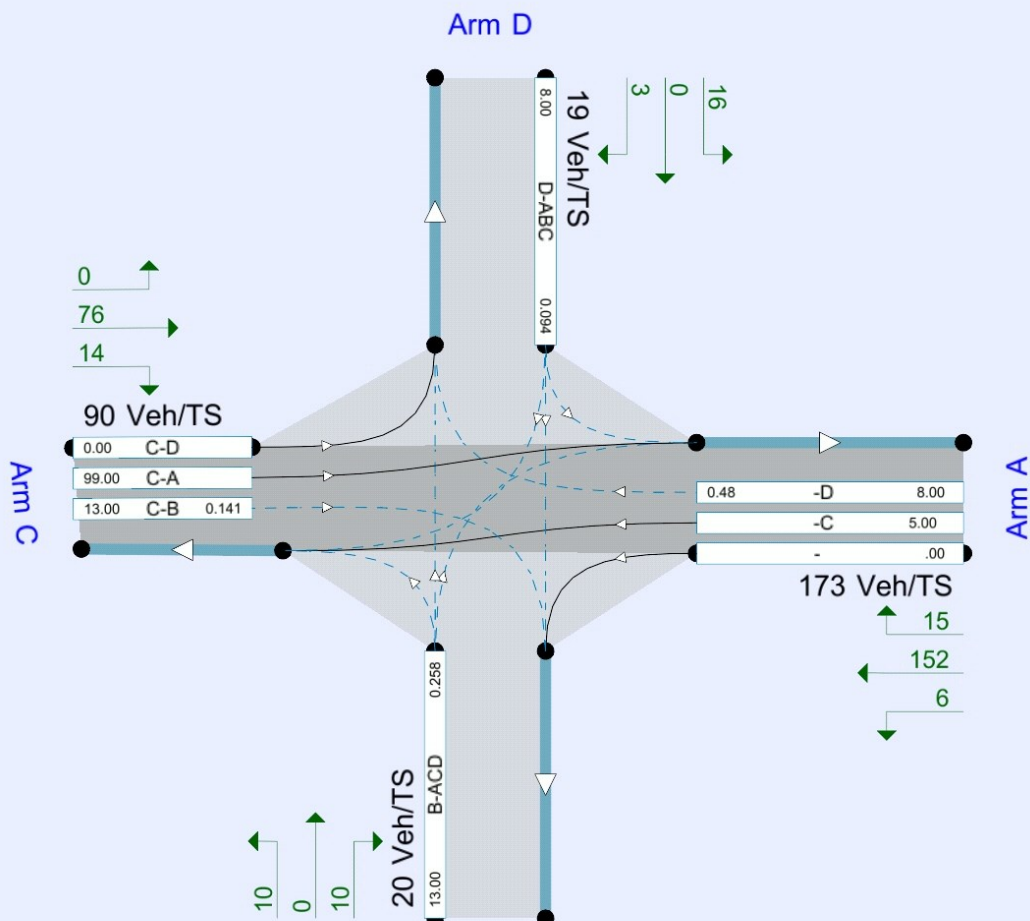
File summary

File Description

Title	30884 - Iver Lane, Site Access, Old Inn Lane Junction
Location	
Site number	
Date	26/05/2016
Version	
Status	
Identifier	
Client	
Jobnumber	
Enumerator	TPP111"techuser
Description	

Units

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



The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Model time period length (min)	Time segment length (min)
2016	Existing AM	DIRECT	07:45	08:45	60	15
2016	Existing PM	DIRECT	16:45	17:45	60	15
2016	Existing + proposed AM	DIRECT	07:45	08:45	60	15
2016	Existing + proposed PM	DIRECT	16:45	17:45	60	15

Iver Road - 2016, Existing AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Iver Road	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
30884	untitled	Crossroads	Two-way	2.28	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Iver Lane West		Major
B	Site access		Minor
C	Iver Lane East		Major
D	Old Inn Road		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A	6.55			99.0		-
C	6.55			99.0		-

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)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.90	25	43
D	One lane	3.20	17	27

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-C	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-A	Slope for D-B	Slope for D-C
30884	A-D	157.824	-	-	-	-	-	-	0.239	0.341	0.239	-	-	-
30884	B-A	138.117	0.098	0.248	0.248	-	-	-	0.156	0.355	-	0.248	0.248	0.124
30884	B-C	177.416	0.106	0.268	-	-	-	-	-	-	-	-	-	-
30884	B-D, nearside lane	138.117	0.098	0.248	0.248	-	-	-	0.156	0.355	0.156	-	-	-
30884	B-D, offside lane	138.117	0.098	0.248	0.248	-	-	-	0.156	0.355	0.156	-	-	-
30884	C-B	157.824	0.239	0.239	0.341	-	-	-	-	-	-	-	-	-
30884	D-A	163.426	-	-	-	-	-	-	0.247	-	0.098	-	-	-
30884	D-B, nearside lane	126.532	0.143	0.143	0.325	-	-	-	0.227	0.227	0.090	-	-	-
30884	D-B, offside lane	126.532	0.143	0.143	0.325	-	-	-	0.227	0.227	0.090	-	-	-
30884	D-C	126.532	-	0.143	0.325	0.114	0.227	0.227	0.227	0.227	0.090	-	-	-

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 Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Model time period length (min)	Time segment length (min)
D1	2016	Existing AM	DIRECT	07:45	08:45	60	15

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (Veh/TS)

(07:45-08:00)

		To			
From	A	0.000	6.000	154.000	17.000
	B	4.000	0.000	2.000	0.000
	C	98.000	9.000	0.000	0.000
	D	4.000	0.000	2.000	0.000

Demand (Veh/TS)

(08:00-08:15)

	To				
		A	B	C	D
From	A	0.000	5.000	161.000	9.000
	B	8.000	0.000	4.000	0.000
	C	96.000	8.000	0.000	0.000
	D	4.000	1.000	2.000	0.000

Demand (Veh/TS)

(08:15-08:30)

	To				
		A	B	C	D
From	A	0.000	4.000	152.000	14.000
	B	1.000	0.000	7.000	0.000
	C	88.000	5.000	0.000	1.000
	D	8.000	0.000	1.000	0.000

Demand (Veh/TS)

(08:30-08:45)

	To				
		A	B	C	D
From	A	0.000	3.000	146.000	15.000
	B	5.000	0.000	6.000	0.000
	C	76.000	8.000	0.000	0.000
	D	16.000	0.000	3.000	0.000

Vehicle Mix

Heavy Vehicle proportion

(07:45-08:00)

	To				
		A	B	C	D
From	A	0	17	2	6
	B	75	0	50	0
	C	1	22	0	0
	D	50	0	0	0

Heavy Vehicle proportion

(08:00-08:15)

	To				
		A	B	C	D
From	A	0	20	2	0
	B	88	0	25	0
	C	0	13	0	0
	D	25	0	0	0

Heavy Vehicle proportion

(08:15-08:30)

	To				
		A	B	C	D
From	A	0	50	3	0
	B	100	0	43	0
	C	1	0	0	0
	D	13	0	0	0

Heavy Vehicle proportion

(08:30-08:45)

	To				
		A	B	C	D
From	A	0	67	4	0
	B	80	0	17	0
	C	0	50	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.24	23.39	0.3	C
A-B				
A-C				
A-D	0.14	8.46	0.2	A
D-ABC	0.15	11.51	0.2	B
C-D				
C-A				
C-B	0.10	11.22	0.1	B

Main Results for each time segment

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	6.00	50.69	0.118	5.87	0.1	20.024	C
A-B	6.00			6.00			
A-C	154.00			154.00			
A-D	17.00	123.06	0.138	16.84	0.2	8.460	A
D-ABC	6.00	84.43	0.071	5.92	0.1	11.454	B
C-D	0.00			0.00			
C-A	98.00			98.00			
C-B	9.00	92.21	0.098	8.89	0.1	10.789	B

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	12.00	50.09	0.240	11.83	0.3	23.394	C
A-B	5.00			5.00			
A-C	161.00			161.00			
A-D	9.00	131.64	0.068	9.08	0.1	7.649	A
D-ABC	7.00	91.58	0.076	6.99	0.1	11.507	B
C-D	0.00			0.00			
C-A	96.00			96.00			
C-B	8.00	100.83	0.079	8.02	0.1	10.134	B

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	8.00	78.25	0.102	8.18	0.1	13.792	B
A-B	4.00			4.00			
A-C	152.00			152.00			
A-D	14.00	134.63	0.104	13.96	0.1	7.457	A
D-ABC	9.00	116.31	0.077	9.00	0.1	8.483	A
C-D	1.00			1.00			
C-A	88.00			88.00			
C-B	5.00	113.94	0.044	5.04	0.1	8.939	A

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	11.00	64.65	0.170	10.92	0.2	16.978	C
A-B	3.00			3.00			
A-C	146.00			146.00			
A-D	15.00	135.57	0.111	14.99	0.1	7.463	A
D-ABC	19.00	127.07	0.149	18.90	0.2	8.672	A
C-D	0.00			0.00			
C-A	76.00			76.00			
C-B	8.00	76.98	0.104	7.95	0.1	11.220	B

Iver Road - 2016, Existing PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Iver Road	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
30884	untitled	Crossroads	Two-way	2.42	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Model time period length (min)	Time segment length (min)
D2	2016	Existing PM	DIRECT	16:45	17:45	60	15

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (Veh/TS)

(16:45-17:00)

	To				
		A	B	C	D
From	A	0.000	2.000	99.000	6.000
	B	4.000	0.000	6.000	2.000
	C	107.000	3.000	0.000	0.000
	D	21.000	0.000	1.000	0.000

Demand (Veh/TS)

(17:00-17:15)

	To				
		A	B	C	D
From	A	0.000	0.000	106.000	4.000
	B	5.000	0.000	8.000	0.000
	C	124.000	1.000	0.000	1.000
	D	30.000	1.000	2.000	0.000

Demand (Veh/TS)

(17:15-17:30)

	To				
		A	B	C	D
From	A	0.000	5.000	75.000	2.000
	B	7.000	0.000	4.000	0.000
	C	144.000	0.000	0.000	2.000
	D	35.000	3.000	4.000	0.000

Demand (Veh/TS)

(17:30-17:45)

	To				
		A	B	C	D
From	A	0.000	0.000	99.000	0.000
	B	9.000	0.000	10.000	1.000
	C	105.000	1.000	0.000	0.000
	D	30.000	0.000	2.000	0.000

Vehicle Mix

Heavy Vehicle proportion

(16:45-17:00)

	To				
		A	B	C	D
From	A	0	50	4	0
	B	25	0	17	0
	C	3	0	0	0
	D	0	0	0	0

Heavy Vehicle proportion

(17:00-17:15)

	To				
		A	B	C	D
From	A	0	0	2	25
	B	40	0	0	0
	C	0	0	0	0
	D	3	100	0	0

Heavy Vehicle proportion

(17:15-17:30)

	To				
		A	B	C	D
From	A	0	80	3	0
	B	14	0	0	0
	C	2	0	0	0
	D	3	33	0	0

Heavy Vehicle proportion

(17:30-17:45)

	To				
		A	B	C	D
From	A	0	0	0	0
	B	0	0	10	0
	C	1	0	0	0
	D	7	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.19	11.62	0.2	B
A-B				
A-C				
A-D	0.05	8.76	0.0	A
D-ABC	0.38	13.36	0.6	B
C-D				
C-A				
C-B	0.02	7.06	0.0	A

Main Results for each time segment

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	12.00	95.27	0.126	11.86	0.1	10.771	B
A-B	2.00			2.00			
A-C	99.00			99.00			
A-D	6.00	130.49	0.046	5.95	0.0	7.227	A
D-ABC	22.00	132.15	0.166	21.80	0.2	8.141	A
C-D	0.00			0.00			
C-A	107.00			107.00			
C-B	3.00	130.48	0.023	2.98	0.0	7.059	A

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	13.00	93.21	0.139	12.98	0.2	11.292	B
A-B	0.00			0.00			
A-C	106.00			106.00			
A-D	4.00	102.35	0.039	4.01	0.0	8.035	A
D-ABC	33.00	116.60	0.283	32.82	0.4	10.403	B
C-D	1.00			1.00			
C-A	124.00			124.00			
C-B	1.00	130.29	0.008	1.02	0.0	6.961	A

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	11.00	91.28	0.120	11.02	0.1	11.618	B
A-B	5.00			5.00			
A-C	75.00			75.00			
A-D	2.00	121.73	0.016	2.02	0.0	8.756	A
D-ABC	42.00	109.30	0.384	41.76	0.6	13.357	B
C-D	2.00			2.00			
C-A	144.00			144.00			
C-B	0.00	136.53	0.000	0.01	0.0	0.000	A

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	20.00	107.84	0.185	19.92	0.2	10.386	B
A-B	0.00			0.00			
A-C	99.00			99.00			
A-D	0.00	132.16	0.000	0.02	0.0	0.000	A
D-ABC	32.00	124.06	0.258	32.27	0.3	9.717	A
C-D	0.00			0.00			
C-A	105.00			105.00			
C-B	1.00	134.18	0.007	0.99	0.0	6.756	A

Iver Road - 2016, Existing + proposed AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Iver Road	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
30884	untitled	Crossroads	Two-way	3.99	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Model time period length (min)	Time segment length (min)
D3	2016	Existing + proposed AM	DIRECT	07:45	08:45	60	15

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (Veh/TS)

(07:45-08:00)

		To			
From		A	B	C	D
	A	0.000	9.000	157.000	18.000
	B	9.000	0.000	4.000	0.000
	C	99.000	13.000	0.000	0.000
	D	6.000	0.000	2.000	0.000

Demand (Veh/TS)

(08:00-08:15)

		To			
From		A	B	C	D
	A	0.000	8.000	165.000	9.000
	B	16.000	0.000	9.000	0.000
	C	96.000	12.000	0.000	0.000
	D	5.000	1.000	2.000	0.000

Demand (Veh/TS)

(08:15-08:30)

		To			
From		A	B	C	D
	A	0.000	8.000	156.000	14.000
	B	4.000	0.000	13.000	0.000
	C	89.000	8.000	0.000	1.000
	D	9.000	0.000	1.000	0.000

Demand (Veh/TS)

(08:30-08:45)

		To			
From		A	B	C	D
	A	0.000	6.000	152.000	15.000
	B	10.000	0.000	10.000	0.000
	C	76.000	14.000	0.000	0.000
	D	16.000	0.000	3.000	0.000

Vehicle Mix

Heavy Vehicle proportion

(07:45-08:00)

	To				
		A	B	C	D
From	A	0	25	2	6
	B	67	0	33	0
	C	1	20	0	0
	D	50	0	0	0

Heavy Vehicle proportion

(08:00-08:15)

	To				
		A	B	C	D
From	A	0	29	2	0
	B	78	0	13	0
	C	0	9	0	0
	D	25	0	0	0

Heavy Vehicle proportion

(08:15-08:30)

	To				
		A	B	C	D
From	A	0	50	3	0
	B	75	0	30	0
	C	1	0	0	0
	D	13	0	0	0

Heavy Vehicle proportion

(08:30-08:45)

	To				
		A	B	C	D
From	A	0	50	4	0
	B	67	0	11	0
	C	0	40	0	0
	D	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.48	31.92	0.9	D
A-B				
A-C				
A-D	0.15	8.68	0.2	A
D-ABC	0.15	11.88	0.2	B
C-D				
C-A				
C-B	0.17	11.83	0.2	B

Main Results for each time segment

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	13.00	50.37	0.258	12.66	0.3	23.673	C
A-B	9.00			9.00			
A-C	157.00			157.00			
A-D	18.00	121.35	0.148	17.83	0.2	8.680	A
D-ABC	8.00	84.92	0.094	7.90	0.1	11.670	B
C-D	0.00			0.00			
C-A	99.00			99.00			
C-B	13.00	92.00	0.141	12.84	0.2	11.347	B

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	25.00	52.38	0.477	24.47	0.9	31.922	D
A-B	8.00			8.00			
A-C	165.00			165.00			
A-D	9.00	130.23	0.069	9.09	0.1	7.746	A
D-ABC	8.00	91.45	0.087	8.00	0.1	11.881	B
C-D	0.00			0.00			
C-A	96.00			96.00			
C-B	12.00	102.66	0.117	12.02	0.1	10.512	B

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	17.00	75.16	0.225	17.54	0.3	16.902	C
A-B	8.00			8.00			
A-C	156.00			156.00			
A-D	14.00	133.34	0.105	13.96	0.1	7.537	A
D-ABC	10.00	115.97	0.086	10.01	0.1	8.635	A
C-D	1.00			1.00			
C-A	89.00			89.00			
C-B	8.00	111.62	0.072	8.06	0.1	9.187	A

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	20.00	63.07	0.317	19.87	0.5	20.919	C
A-B	6.00			6.00			
A-C	152.00			152.00			
A-D	15.00	132.97	0.113	14.99	0.1	7.628	A
D-ABC	19.00	125.07	0.152	18.91	0.2	8.870	A
C-D	0.00			0.00			
C-A	76.00			76.00			
C-B	14.00	80.69	0.174	13.90	0.2	11.827	B

Iver Road - 2016, Existing + proposed PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Iver Road	100.000

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
30884	untitled	Crossroads	Two-way	2.53	A

Junction Network Options

[same as above]

Arms

Arms

[same as above]

Major Arm Geometry

[same as above]

Minor Arm Geometry

[same as above]

Slope / Intercept / Capacity

[same as above]

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Model start time (HH:mm)	Model finish time (HH:mm)	Model time period length (min)	Time segment length (min)
D4	2016	Existing + proposed PM	DIRECT	16:45	17:45	60	15

Vehicle mix varies over time	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
A		✓	100.000
B		✓	100.000
C		✓	100.000
D		✓	100.000

Origin-Destination Data

Demand (Veh/TS)

(16:45-17:00)

		To			
From		A	B	C	D
	A	0.000	3.000	99.000	6.000
	B	6.000	0.000	11.000	2.000
	C	107.000	5.000	0.000	0.000
	D	21.000	0.000	1.000	0.000

Demand (Veh/TS)

(17:00-17:15)

		To			
From		A	B	C	D
	A	0.000	1.000	106.000	4.000
	B	5.000	0.000	8.000	0.000
	C	124.000	4.000	0.000	1.000
	D	30.000	1.000	2.000	0.000

Demand (Veh/TS)

(17:15-17:30)

		To			
From		A	B	C	D
	A	0.000	6.000	75.000	2.000
	B	7.000	0.000	4.000	0.000
	C	144.000	2.000	0.000	2.000
	D	35.000	3.000	4.000	0.000

Demand (Veh/TS)

(17:30-17:45)

		To			
From		A	B	C	D
	A	0.000	0.000	99.000	0.000
	B	9.000	0.000	10.000	1.000
	C	105.000	3.000	0.000	0.000
	D	30.000	0.000	2.000	0.000

Vehicle Mix

Heavy Vehicle proportion

(16:45-17:00)

	To				
		A	B	C	D
From	A	0	50	4	0
	B	25	0	17	0
	C	3	0	0	0
	D	0	0	0	0

Heavy Vehicle proportion

(17:00-17:15)

	To				
		A	B	C	D
From	A	0	0	2	25
	B	40	0	0	0
	C	0	0	0	0
	D	3	100	0	0

Heavy Vehicle proportion

(17:15-17:30)

	To				
		A	B	C	D
From	A	0	80	3	0
	B	14	0	0	0
	C	2	0	0	0
	D	3	33	0	0

Heavy Vehicle proportion

(17:30-17:45)

	To				
		A	B	C	D
From	A	0	0	0	0
	B	0	0	10	0
	C	1	0	0	0
	D	7	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS
B-ACD	0.19	11.73	0.3	B
A-B				
A-C				
A-D	0.05	8.81	0.0	A
D-ABC	0.38	13.40	0.6	B
C-D				
C-A				
C-B	0.04	7.19	0.0	A

Main Results for each time segment

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	19.00	97.47	0.195	18.76	0.2	11.401	B
A-B	3.00			3.00			
A-C	99.00			99.00			
A-D	6.00	129.81	0.046	5.95	0.0	7.267	A
D-ABC	22.00	131.89	0.167	21.80	0.2	8.160	A
C-D	0.00			0.00			
C-A	107.00			107.00			
C-B	5.00	130.12	0.038	4.96	0.0	7.189	A

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	13.00	92.40	0.141	13.07	0.2	11.509	B
A-B	1.00			1.00			
A-C	106.00			106.00			
A-D	4.00	101.53	0.039	4.01	0.0	8.102	A
D-ABC	33.00	116.40	0.284	32.82	0.4	10.427	B
C-D	1.00			1.00			
C-A	124.00			124.00			
C-B	4.00	130.05	0.031	4.01	0.0	7.139	A

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	11.00	90.49	0.121	11.02	0.1	11.735	B
A-B	6.00			6.00			
A-C	75.00			75.00			
A-D	2.00	121.04	0.016	2.02	0.0	8.807	A
D-ABC	42.00	109.09	0.385	41.76	0.6	13.399	B
C-D	2.00			2.00			
C-A	144.00			144.00			
C-B	2.00	136.10	0.015	2.02	0.0	6.712	A

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

Stream	Total Demand (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	LOS
B-ACD	20.00	107.31	0.186	19.92	0.2	10.451	B
A-B	0.00			0.00			
A-C	99.00			99.00			
A-D	0.00	131.48	0.000	0.02	0.0	0.000	A
D-ABC	32.00	123.99	0.258	32.27	0.3	9.724	A
C-D	0.00			0.00			
C-A	105.00			105.00			
C-B	3.00	134.18	0.022	2.99	0.0	6.859	A