



CBO
TRANSPORT

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Project: Proposed Residential Development
Land South of Holt Road, Wrexham

Client: Barratt Homes and Bloor Homes North West

Document: Transport Assessment
Figures and Appendices



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2

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Final

Date:
20.12.18



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Figure 1.1 Site Location - Strategic

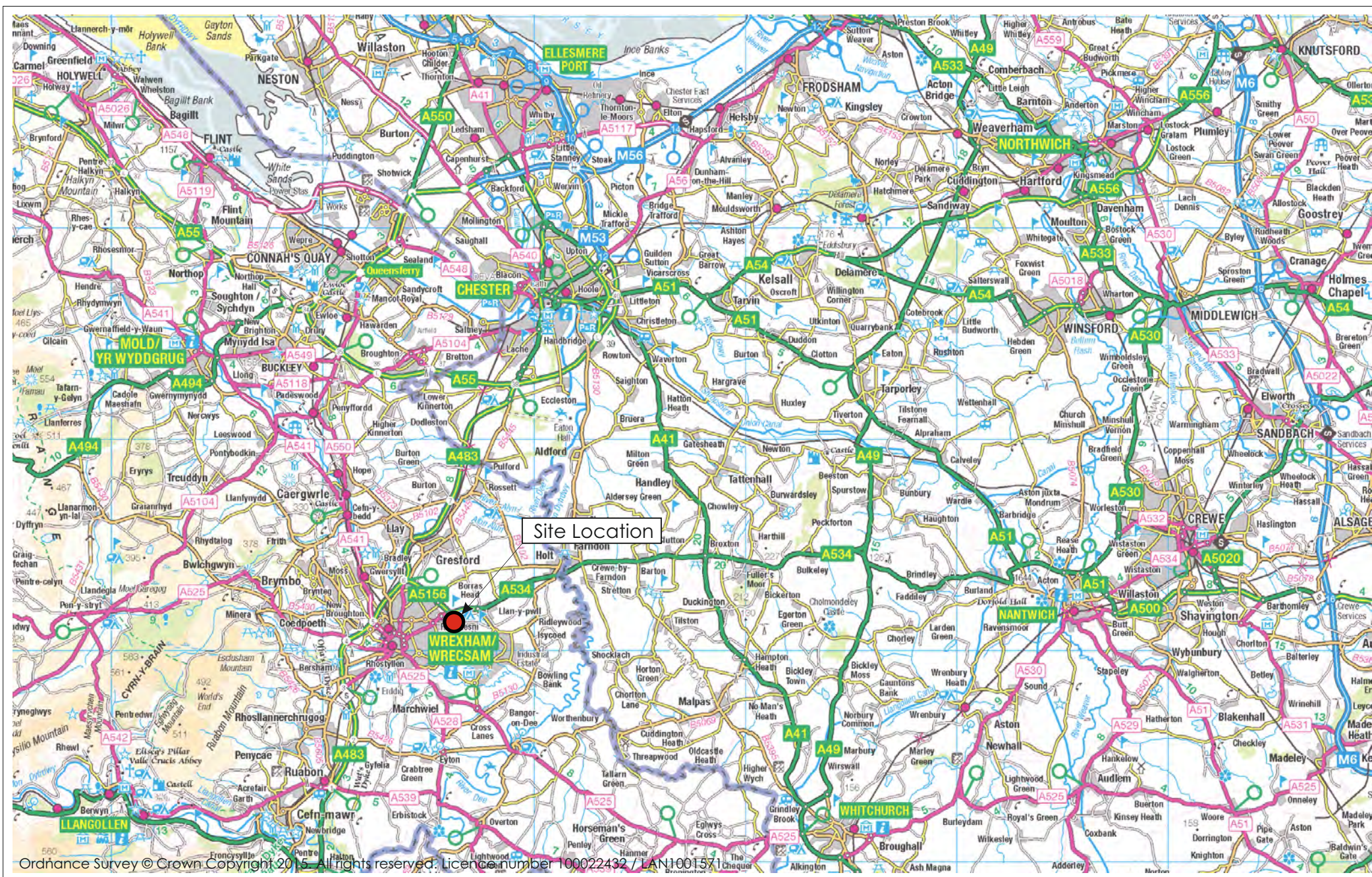


Figure 1.2 Site Location (Local)

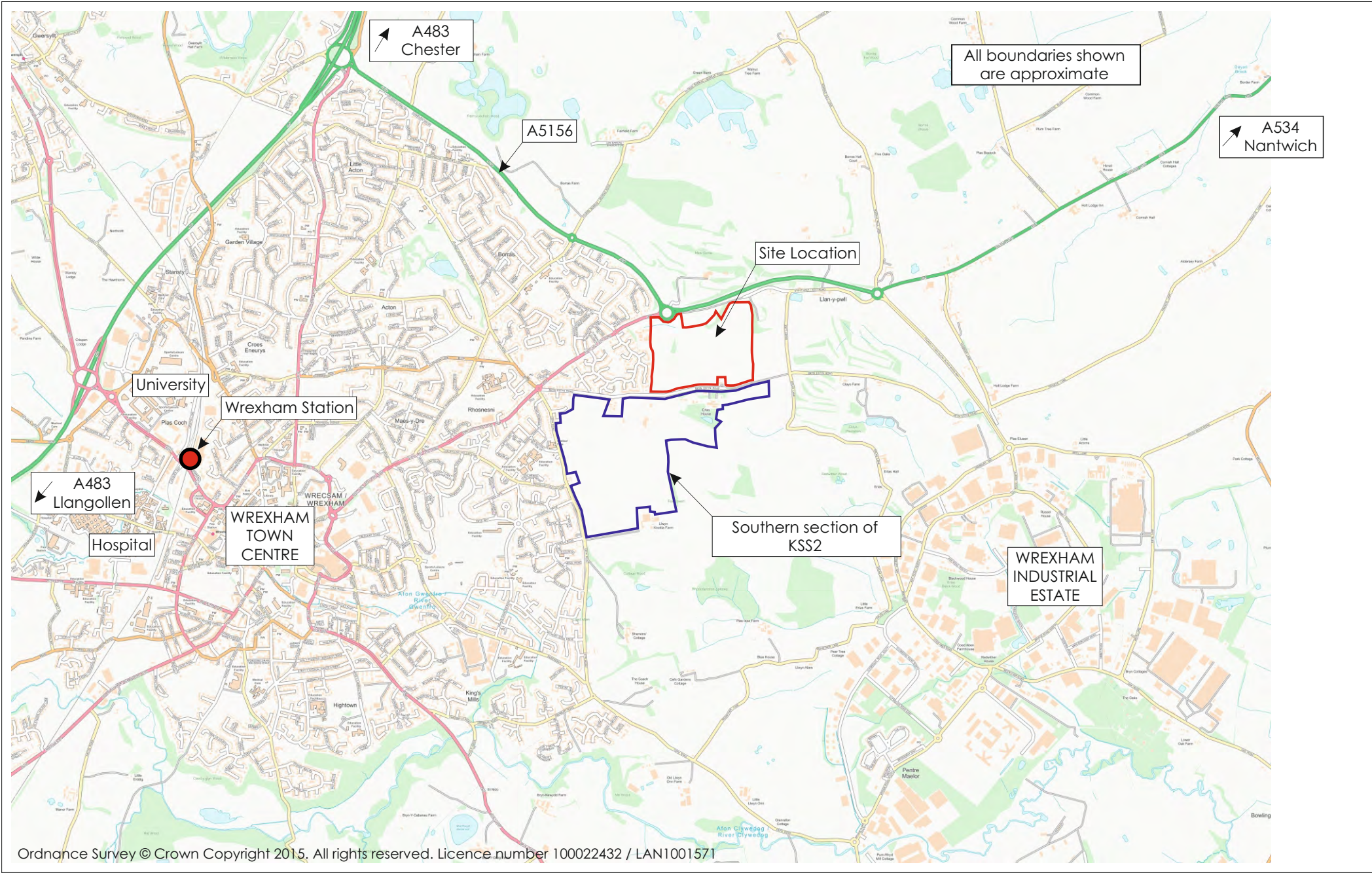


Figure 1.3 Local Context

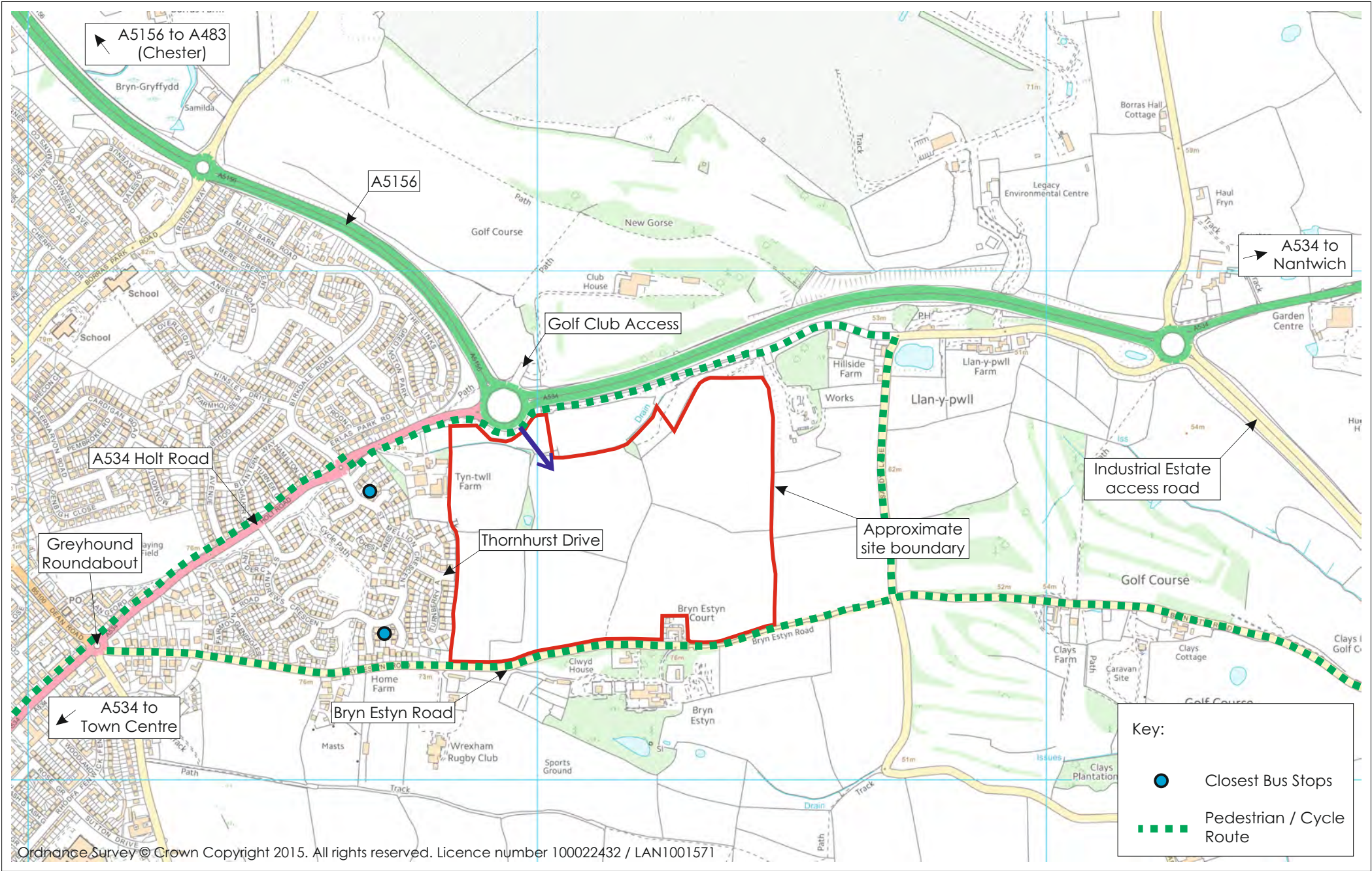


Figure 2.1 Existing Traffic Flows: Weekday Morning Peak

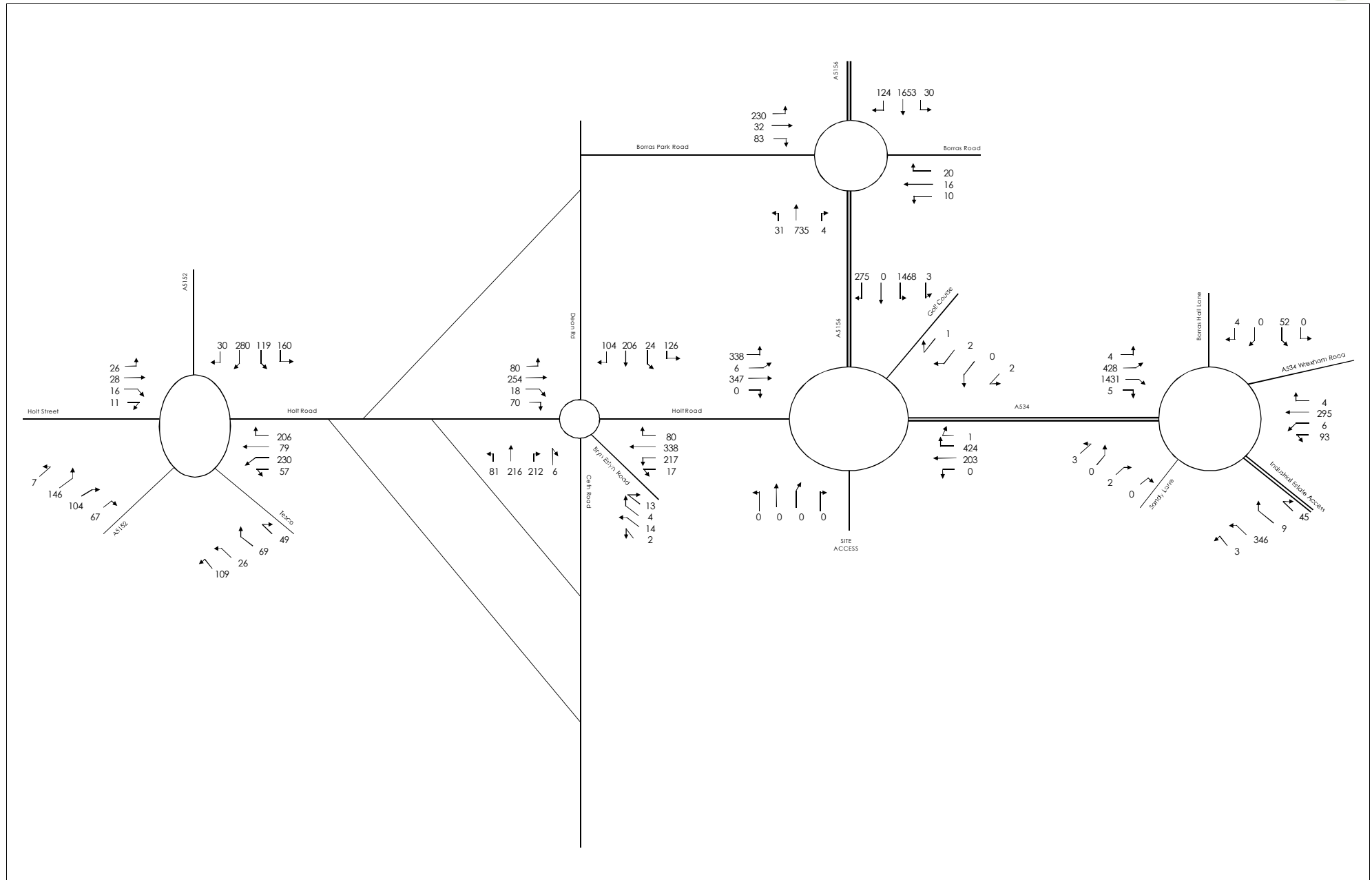


Figure 2.2 Existing Traffic Flows: Weekday Evening Peak

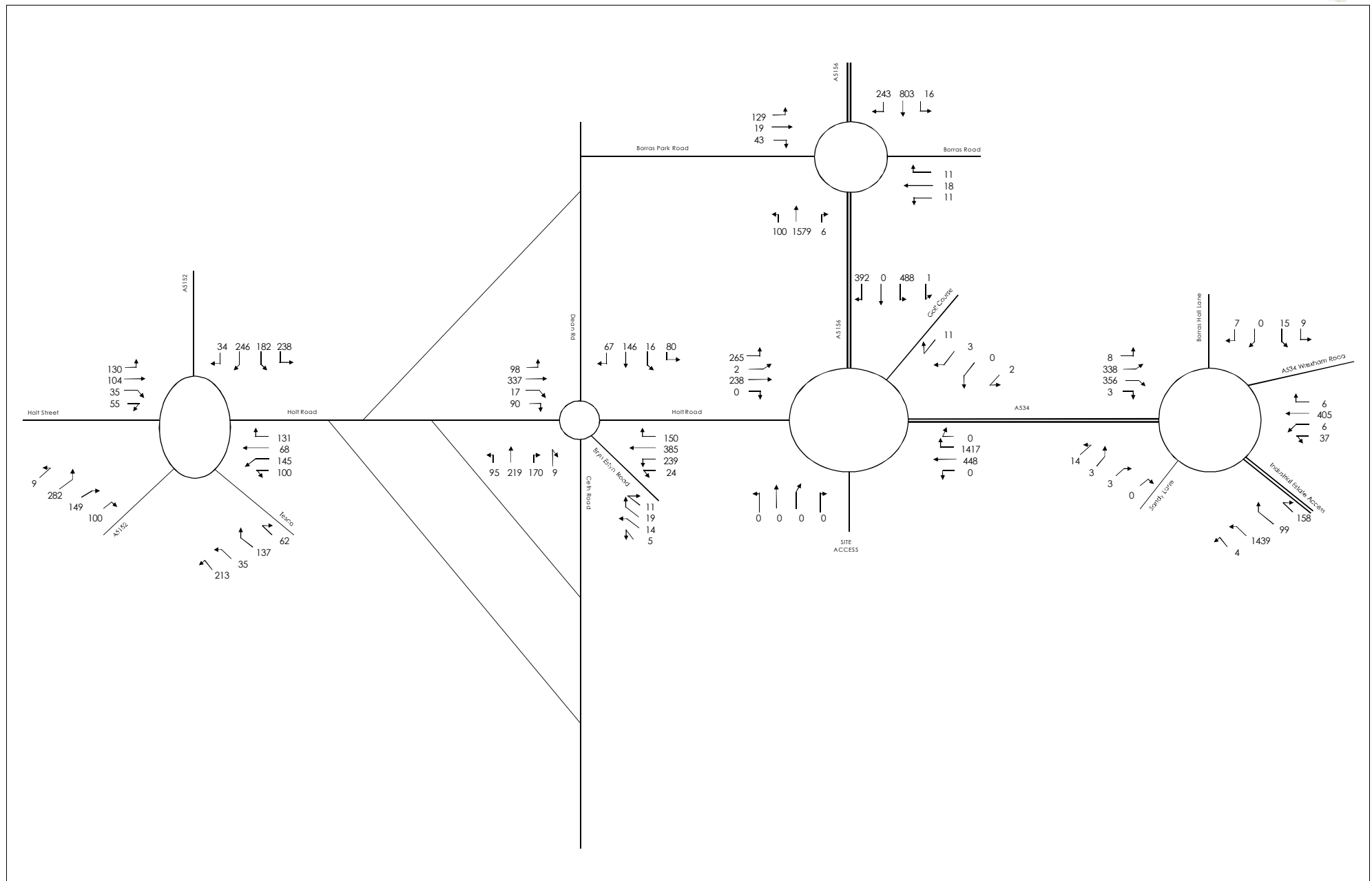


Figure 3.1 Local Facilities

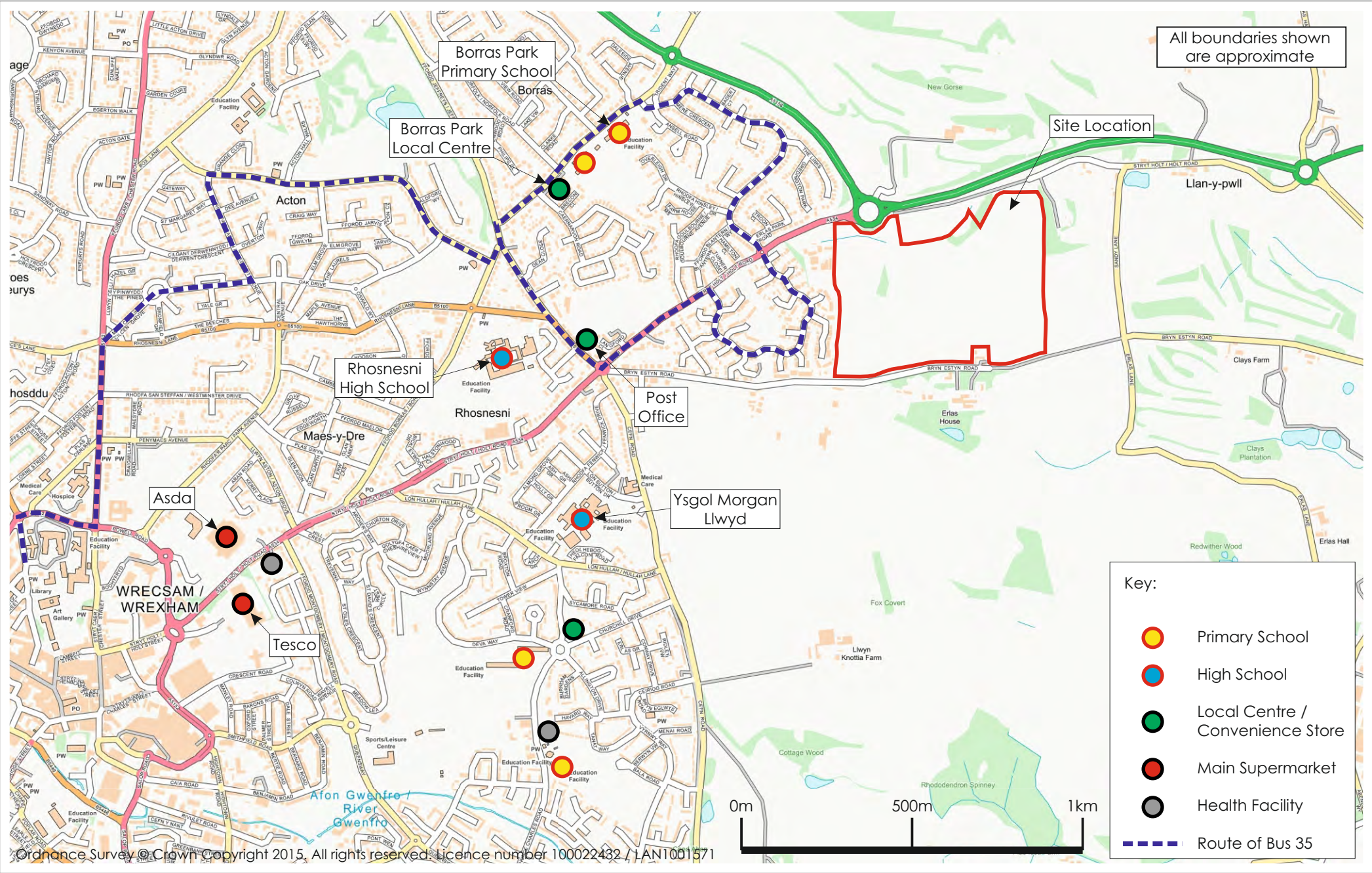


Figure 5.1 Development Traffic Flows: Morning Peak

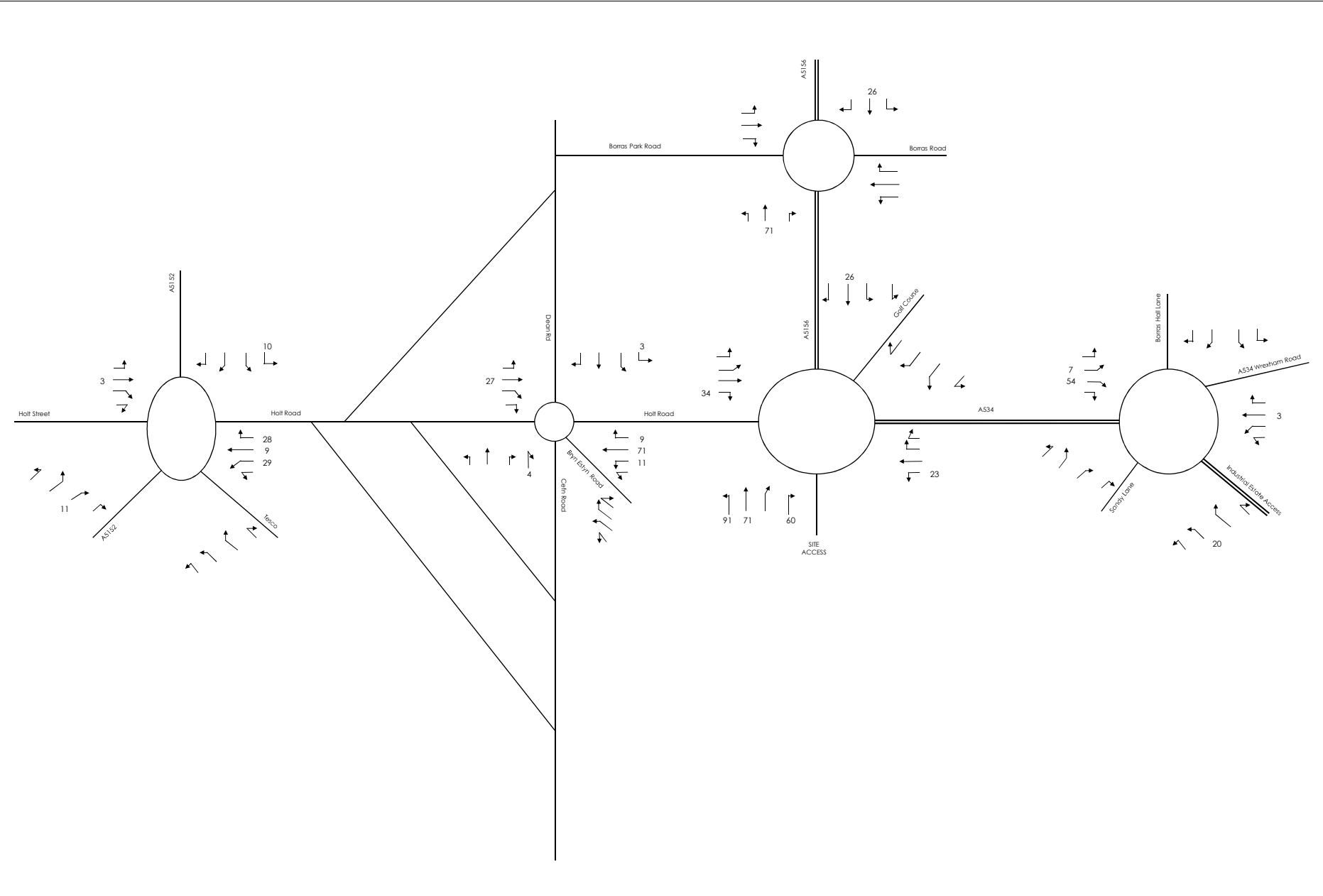


Figure 5.2 Development Traffic Flows: Evening Peak

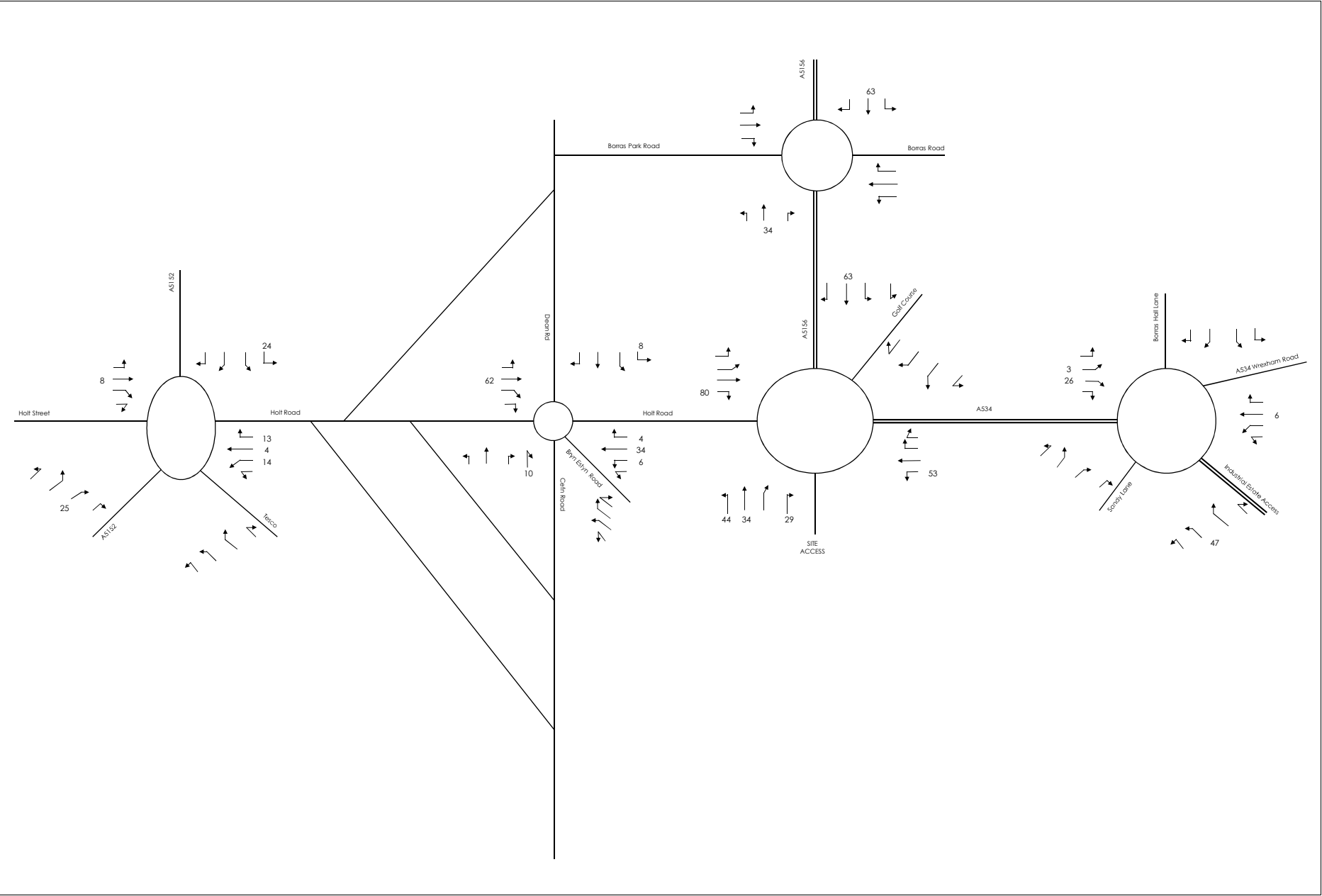


Figure 5.3 Future Year Existing plus Development Traffic Flows: Weekday Morning Peak

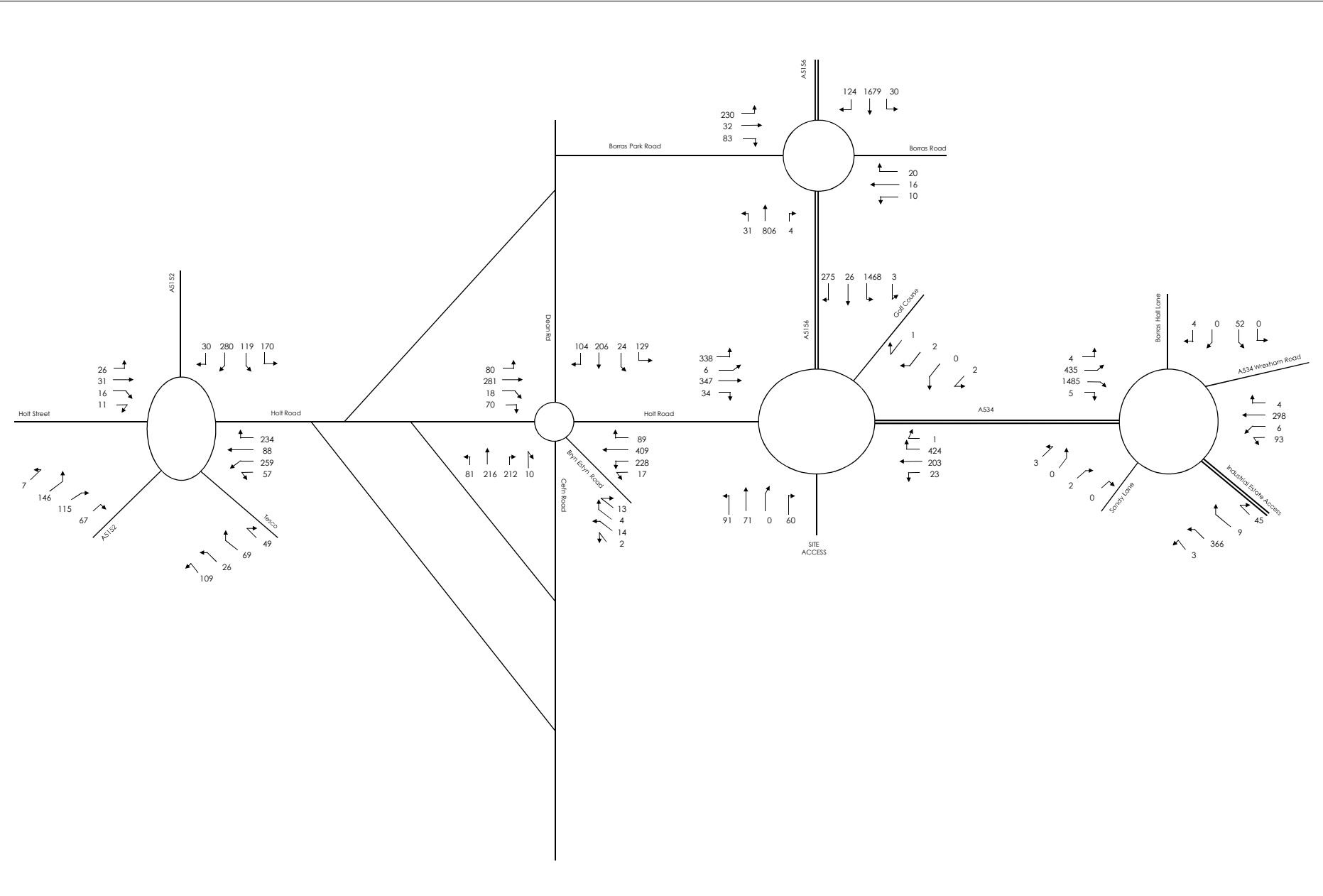


Figure 5.4 Future Year Existing plus Development Traffic Flows: Weekday Evening Peak

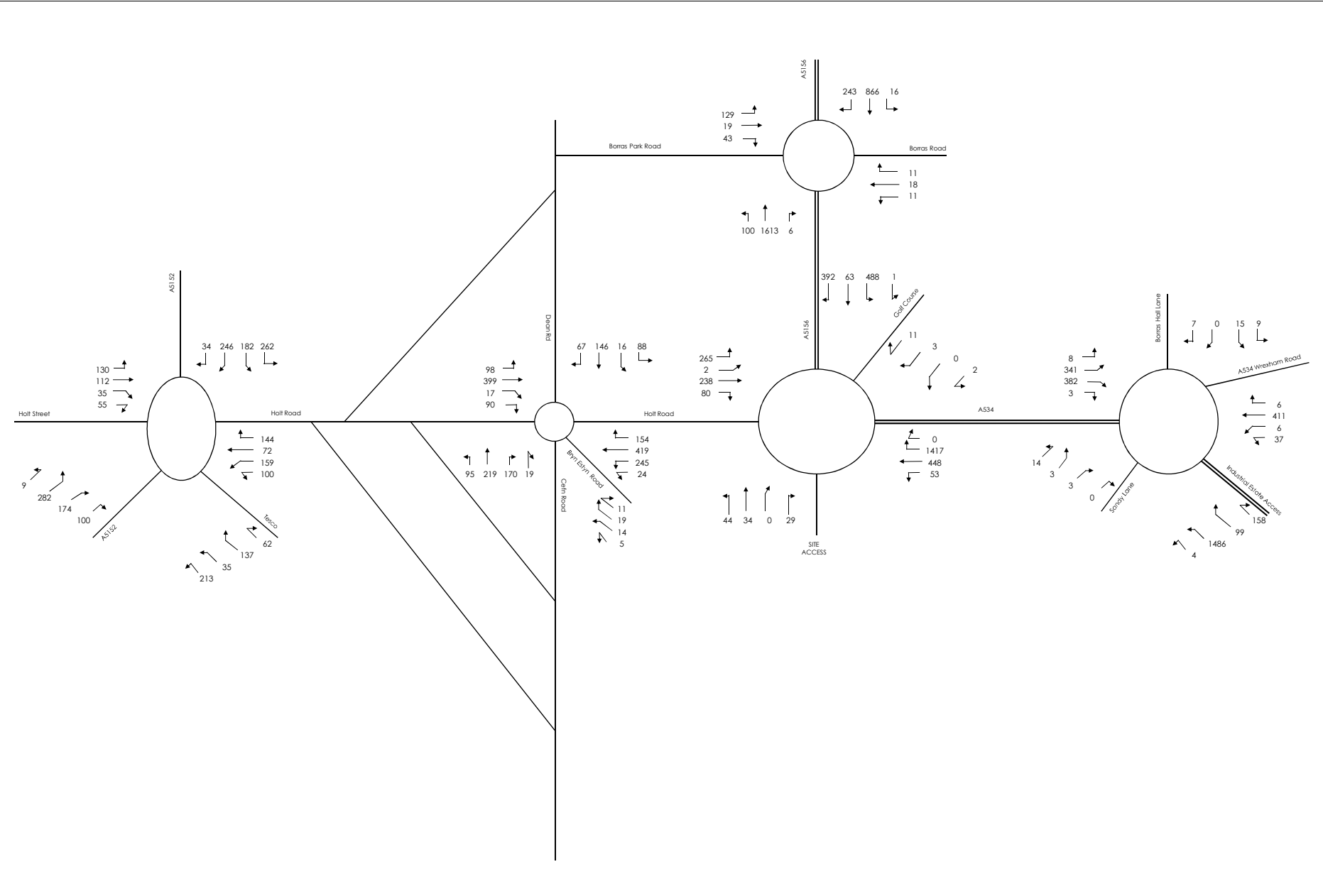


Figure 5.5 Future Year TEMPRO Growth Traffic Flows: Weekday Morning Peak

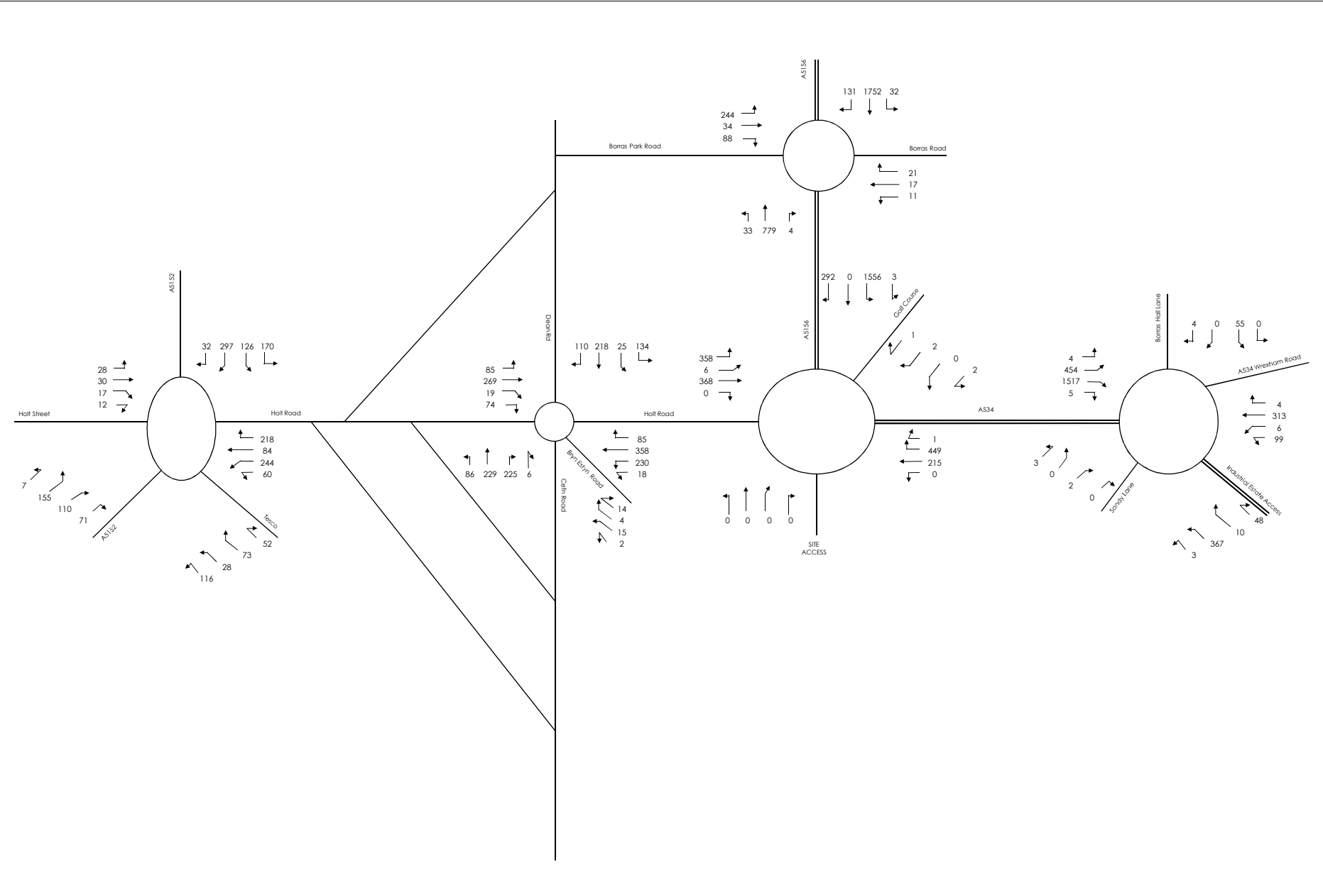


Figure 5.6 Future Year TEMPRO Growth Traffic Flows: Weekday Evening Peak

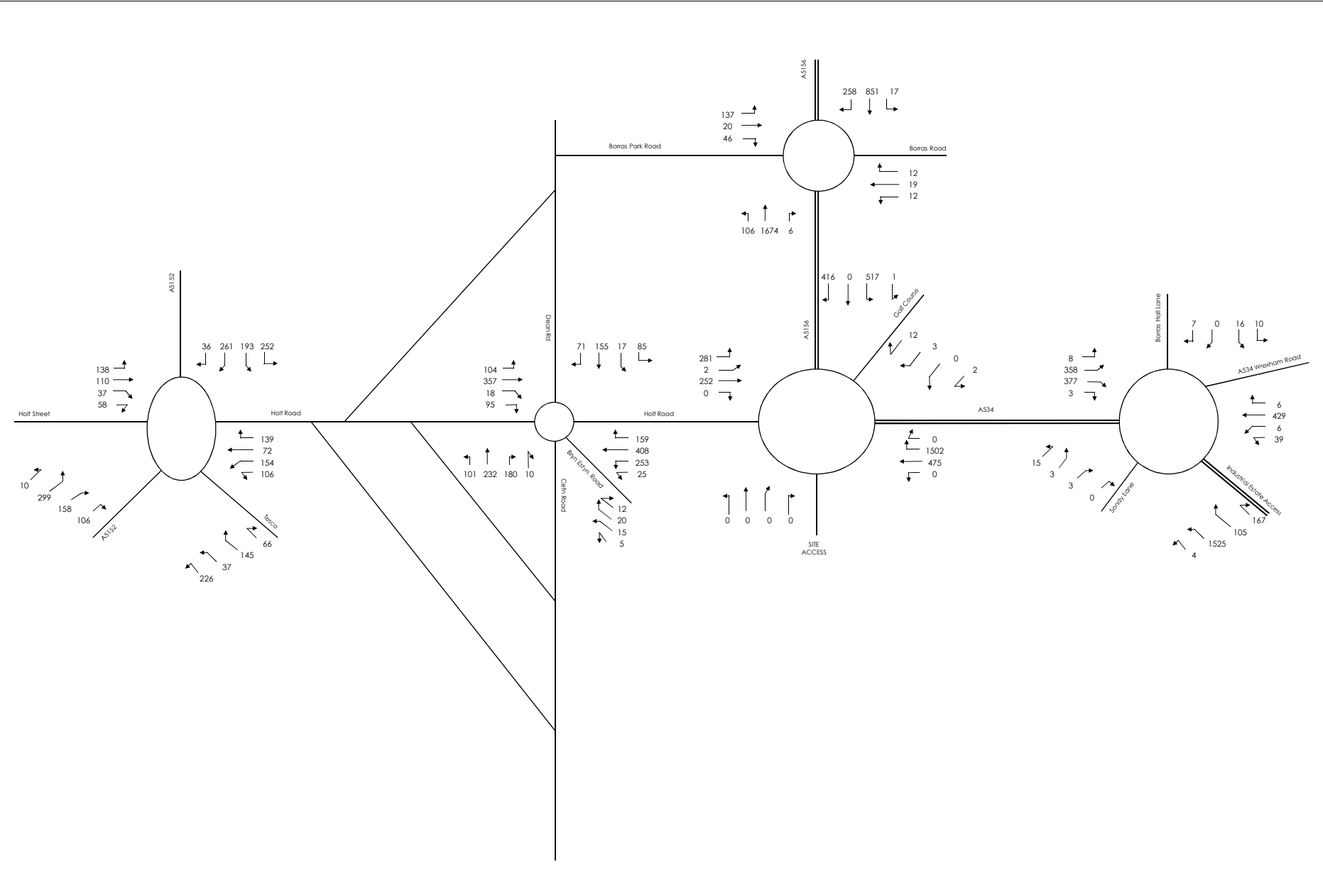


Figure 5.7 Future Year TEMPRO Growth plus Development Traffic Flows: Weekday Morning Peak

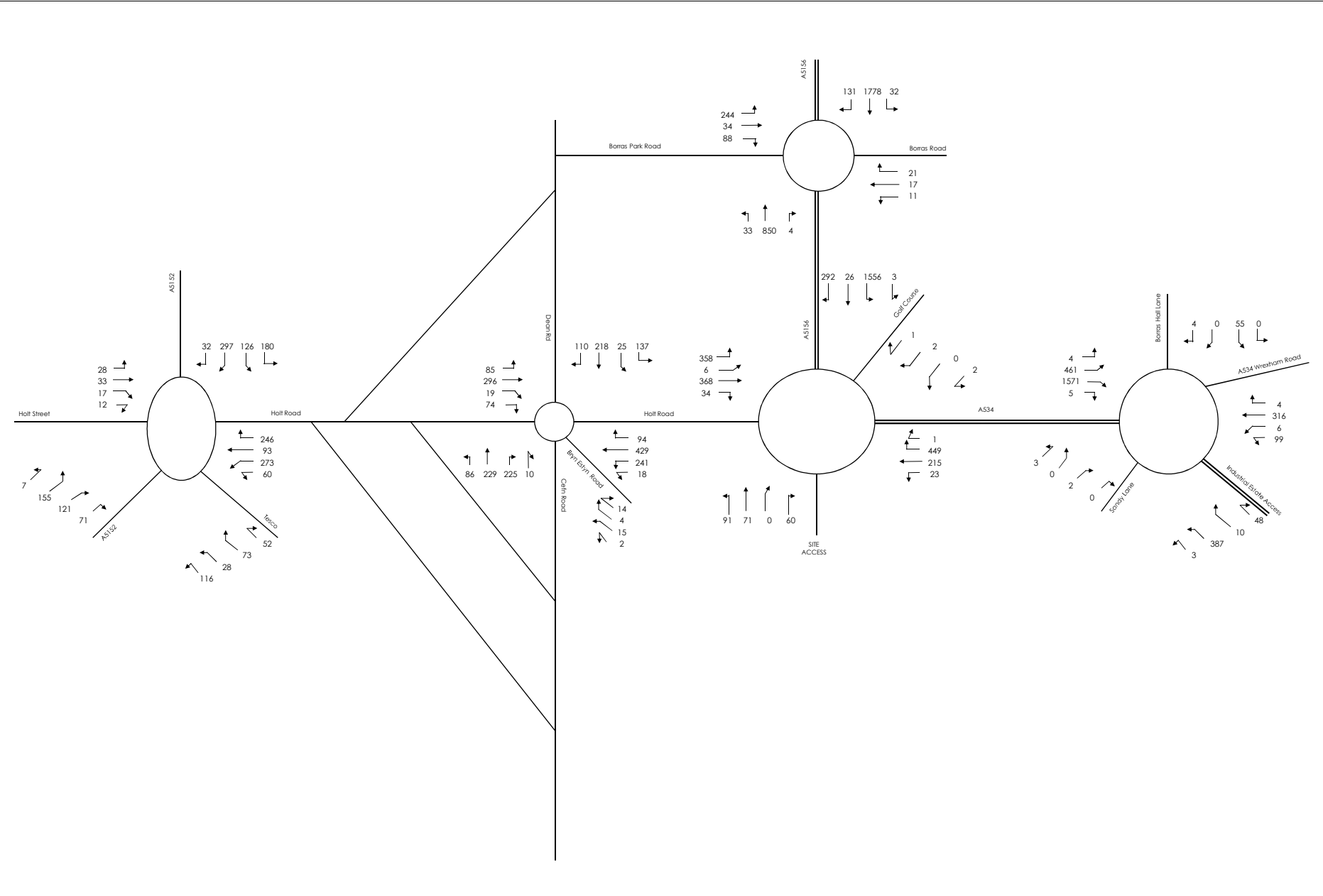
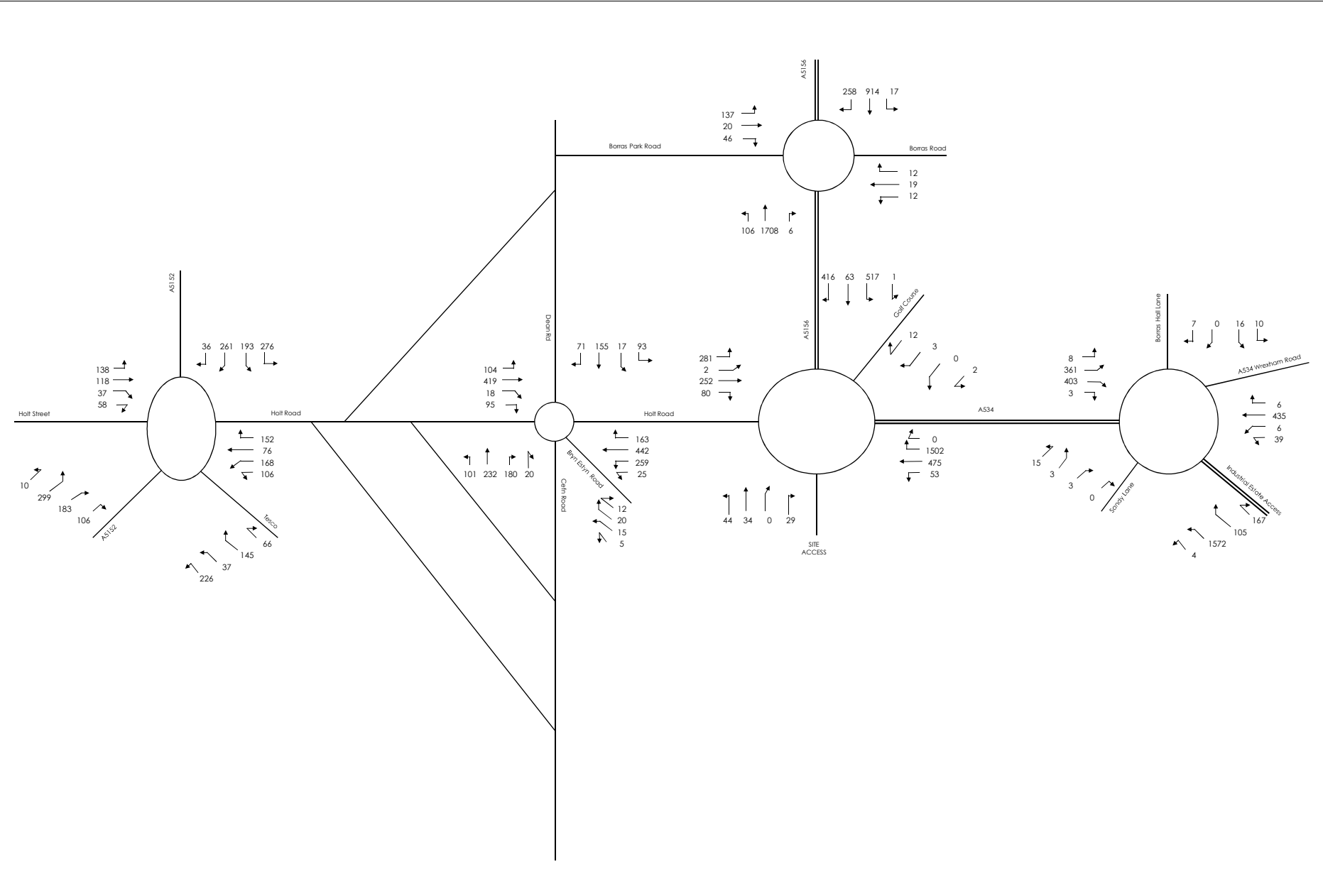


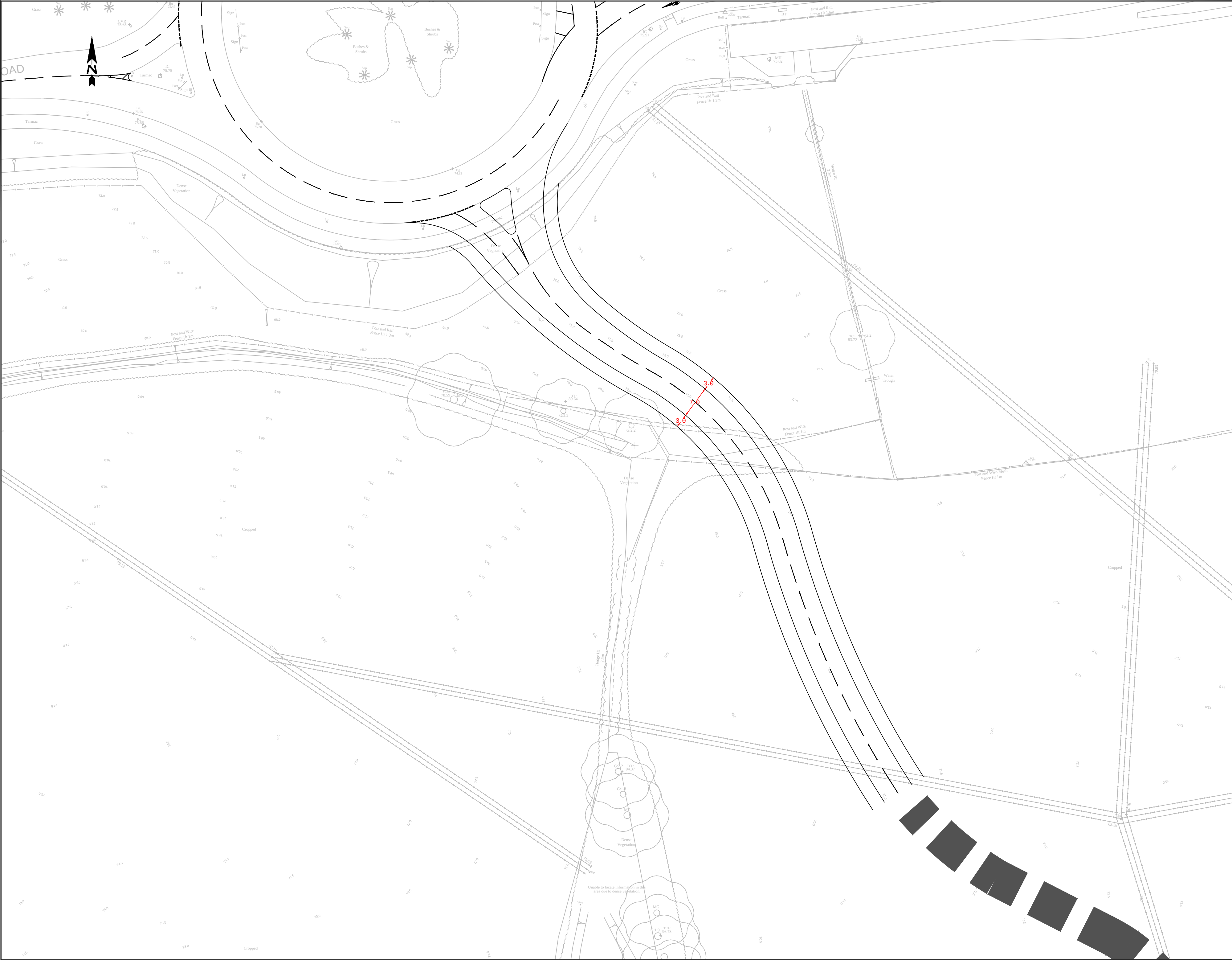
Figure 5.8 Future Year TEMPRO Growth plus Development Traffic Flows: Weekday Evening Peak





Appendix A: Site Access Drawings





Rev.	Date	Revision Details	Drawn	Checked	Appr.



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Client		
-		

Project		
Wrexham		

Drawing Title		
Proposed Site Access off A5156/A534 Roundabout		

Drawn	Checked	Approved
LPB	PC	PC

Scale / Size	Date
1:500 @ A2	07/08/2018

Status	Drw No	Rev
Information	CBO-0322-011	



Appendix B: Site Masterplan





LANDSCAPE ARCHITECTURE
ENVIRONMENTAL PLANNING
MASTERPLANNING
URBAN DESIGN

**RANDALL
THORP**

Canada House, 3 Chepstow Street, Manchester M1 5FW
0161 228 7721 mail@randallthorp.co.uk www.randallthorp.co.uk

Key:

- Site boundary
- Open space
- Undevelopable sloping land
- Potential residential development
- Primary access point (as per CBO Site Access plan ref CBO-0322-011)
- Potential secondary link
- Strategic link road
- Primary roads
- Secondary roads
- Tertiary roads
- Footpaths
- Strategic cycle link
- Existing pedestrian and cycle routes
- Existing vegetation
- Existing pond to be retained
- Proposed woodland
- Proposed trees
- Play area
- Indicative SuDs attenuation areas (if required)

**BARRATT
HOMES**
built around you

BLOOR HOMES
built around you

Land South of Holt Road, Wrexham

Draft Illustrative Concept Layout

Drwg No: 661B-04 C
Drawn by: SB
Rev by: SB
QM Status: Checked
Scale: 1:2500 @ A3

Date: 30.01.18
Checker: DL
Rev checker: DL
Product Status: Issue

Illustrative Land Use Summary:

Site area:	28.52 ha
Residential development:	15.55 ha
Visually prominent land:	1.99 ha
Undevelopable land (open space):	3.28 ha
SuDS ponds:	0.65 ha
Woodland buffers:	1.35 ha
Other informal open space:	5.70 ha



Appendix C: TRICS Information



Calculation Reference: AUDIT-743001-180710-0721

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	KC KENT	2 days
03	SOUTH WEST	
	DV DEVON	1 days
	SM SOMERSET	1 days
	WL WILTSHIRE	1 days
04	EAST ANGLIA	
	NF NORFOLK	1 days
	SF SUFFOLK	2 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	2 days
	WY WEST YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
 Actual Range: 7 to 363 (units:)
 Range Selected by User: 100 to 4334 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/12 to 27/11/17

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Tuesday	4 days
Wednesday	6 days
Thursday	4 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	14 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	8
Edge of Town	5
Neighbourhood Centre (PPS6 Local Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	13
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

ITP 50 North Thirteenth Street Milton Keynes

Licence No: 743001

Secondary Filtering selection:

Use Class:

C3 14 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

10,001 to 15,000	5 days
15,001 to 20,000	3 days
20,001 to 25,000	3 days
25,001 to 50,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

25,001 to 50,000	1 days
50,001 to 75,000	4 days
75,001 to 100,000	5 days
100,001 to 125,000	1 days
125,001 to 250,000	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	9 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No 14 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present 14 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CH-03-A-08 WHITCHURCH ROAD BOUGHTON HEATH CHESTER Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 11 Survey date: TUESDAY 22/05/12	CHESHIRE	Survey Type: MANUAL
2	DV-03-A-01 TERRACED HOUSES BRONSHILL ROAD TORQUAY Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 37 Survey date: WEDNESDAY 30/09/15	DEVON	Survey Type: MANUAL
3	KC-03-A-03 MIXED HOUSES & FLATS HYTHE ROAD WILLESBOROUGH ASHFORD Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 51 Survey date: THURSDAY 14/07/16	KENT	Survey Type: MANUAL
4	KC-03-A-06 MIXED HOUSES & FLATS MARGATE ROAD HERNE BAY Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 363 Survey date: WEDNESDAY 27/09/17	KENT	Survey Type: MANUAL
5	LN-03-A-03 SEMI DETACHED ROOKERY LANE BOULTHAM LINCOLN Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 22 Survey date: TUESDAY 18/09/12	LINCOLNSHIRE	Survey Type: MANUAL
6	NF-03-A-03 DETACHED HOUSES HALING WAY THETFORD Edge of Town Residential Zone Total Number of dwellings: 10 Survey date: WEDNESDAY 16/09/15	NORFOLK	Survey Type: MANUAL
7	NY-03-A-10 HOUSES AND FLATS BOROUGHBRIDGE ROAD RIPON Edge of Town No Sub Category Total Number of dwellings: 71 Survey date: TUESDAY 17/09/13	NORTH YORKSHIRE	Survey Type: MANUAL
8	NY-03-A-13 TERRACED HOUSES CATTERICK ROAD OLD HOSPITAL COMPOUND CATTERICK GARRISON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 10 Survey date: WEDNESDAY 10/05/17	NORTH YORKSHIRE	Survey Type: MANUAL
9	SF-03-A-04 DETACHED & BUNGALOWS NORMANSTON DRIVE LOWESTOFT Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 7 Survey date: TUESDAY 23/10/12	SUFFOLK	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10	SF-03-A-05	DETACHED HOUSES	SUFFOLK
	VALE LANE		
	BURY ST EDMUNDS		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	18	
	Survey date: WEDNESDAY	09/09/15	Survey Type: MANUAL
11	SH-03-A-06	BUNGALOWS	SHROPSHIRE
	ELLESMERE ROAD		
	SHREWSBURY		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	16	
	Survey date: THURSDAY	22/05/14	Survey Type: MANUAL
12	SM-03-A-01	DETACHED & SEMI	SOMERSET
	WEMBDON ROAD		
	NORTHFIELD		
	BRIDGWATER		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	33	
	Survey date: THURSDAY	24/09/15	Survey Type: MANUAL
13	WL-03-A-02	SEMI DETACHED	WILTSHIRE
	HEADLANDS GROVE		
	SWINDON		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	27	
	Survey date: THURSDAY	22/09/16	Survey Type: MANUAL
14	WY-03-A-01	MIXED HOUSING	WEST YORKSHIRE
	SPRING VALLEY CRESCENT		
	BRAMLEY		
	LEEDS		
	Neighbourhood Centre (PPS6 Local Centre)		
	Residential Zone		
	Total Number of dwellings:	46	
	Survey date: WEDNESDAY	21/09/16	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	14	52	0.069	14	52	0.292	14	52	0.361
08:00 - 09:00	14	52	0.134	14	52	0.403	14	52	0.537
09:00 - 10:00	14	52	0.148	14	52	0.166	14	52	0.314
10:00 - 11:00	14	52	0.140	14	52	0.159	14	52	0.299
11:00 - 12:00	14	52	0.144	14	52	0.151	14	52	0.295
12:00 - 13:00	14	52	0.168	14	52	0.162	14	52	0.330
13:00 - 14:00	14	52	0.173	14	52	0.184	14	52	0.357
14:00 - 15:00	14	52	0.148	14	52	0.181	14	52	0.329
15:00 - 16:00	14	52	0.258	14	52	0.191	14	52	0.449
16:00 - 17:00	14	52	0.323	14	52	0.179	14	52	0.502
17:00 - 18:00	14	52	0.370	14	52	0.180	14	52	0.550
18:00 - 19:00	14	52	0.278	14	52	0.199	14	52	0.477
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.353			2.447			4.800

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	7 - 363 (units:)
Survey date date range:	01/01/12 - 27/11/17
Number of weekdays (Monday-Friday):	14
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-743001-180710-0724

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : B - AFFORDABLE/LOCAL AUTHORITY HOUSES
 VEHICLES

Selected regions and areas:

04	EAST ANGLIA	
	NF NORFOLK	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	2 days
08	NORTH WEST	
	GM GREATER MANCHESTER	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	Number of dwellings
Actual Range:	29 to 54 (units:)
Range Selected by User:	100 to 473 (units:)

Public Transport Provision:

Selection by:	Include all surveys
---------------	---------------------

Date Range:	01/01/12 to 13/09/17
-------------	----------------------

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Tuesday	1 days
Wednesday	2 days
Thursday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	4 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre	1
Suburban Area (PPS6 Out of Centre)	2
Edge of Town	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	2
Built-Up Zone	1
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3	4 days
----	--------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

ITP 50 North Thirteenth Street Milton Keynes

Licence No: 743001

Secondary Filtering selection (Cont.):

Population within 1 mile:

10,001 to 15,000	1 days
25,001 to 50,000	3 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

75,001 to 100,000	3 days
250,001 to 500,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	4 days
------------	--------

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	4 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	4 days
-----------------	--------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	GM-03-B-01	TERRACED HOUSES		GREATER MANCHESTER
	NEWBOLD			
	ROCHDALE			
	Suburban Area (PPS6 Out of Centre)			
	No Sub Category			
	Total Number of dwellings:	43		
	Survey date: WEDNESDAY	21/10/15	Survey Type: MANUAL	
2	NF-03-B-01	TERRACED HOUSES		NORFOLK
	NELSON ROAD NORTH			
	GREAT YARMOUTH			
	Edge of Town Centre			
	Residential Zone			
	Total Number of dwellings:	45		
	Survey date: WEDNESDAY	13/09/17	Survey Type: MANUAL	
3	WY-03-B-02	MIXED HOUSES		WEST YORKSHIRE
	WHITEACRE STREET			
	DEIGHTON			
	HUDDERSFIELD			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	54		
	Survey date: TUESDAY	17/09/13	Survey Type: MANUAL	
4	WY-03-B-03	TERRACED HOUSES		WEST YORKSHIRE
	LINCOLN GREEN ROAD			
	LEEDS			
	Suburban Area (PPS6 Out of Centre)			
	Built-Up Zone			
	Total Number of dwellings:	29		
	Survey date: THURSDAY	19/09/13	Survey Type: MANUAL	

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

ITP 50 North Thirteenth Street Milton Keynes

Licence No: 743001

TRIP RATE for Land Use 03 - RESIDENTIAL/B - AFFORDABLE/LOCAL AUTHORITY HOUSES

VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	4	43	0.041	4	43	0.099	4	43	0.140
08:00 - 09:00	4	43	0.170	4	43	0.251	4	43	0.421
09:00 - 10:00	4	43	0.205	4	43	0.222	4	43	0.427
10:00 - 11:00	4	43	0.193	4	43	0.152	4	43	0.345
11:00 - 12:00	4	43	0.123	4	43	0.111	4	43	0.234
12:00 - 13:00	4	43	0.123	4	43	0.140	4	43	0.263
13:00 - 14:00	4	43	0.088	4	43	0.105	4	43	0.193
14:00 - 15:00	4	43	0.140	4	43	0.158	4	43	0.298
15:00 - 16:00	4	43	0.263	4	43	0.240	4	43	0.503
16:00 - 17:00	4	43	0.211	4	43	0.181	4	43	0.392
17:00 - 18:00	4	43	0.275	4	43	0.175	4	43	0.450
18:00 - 19:00	4	43	0.170	4	43	0.105	4	43	0.275
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.002			1.939			3.941

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	29 - 54 (units:)
Survey date range:	01/01/12 - 13/09/17
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	0

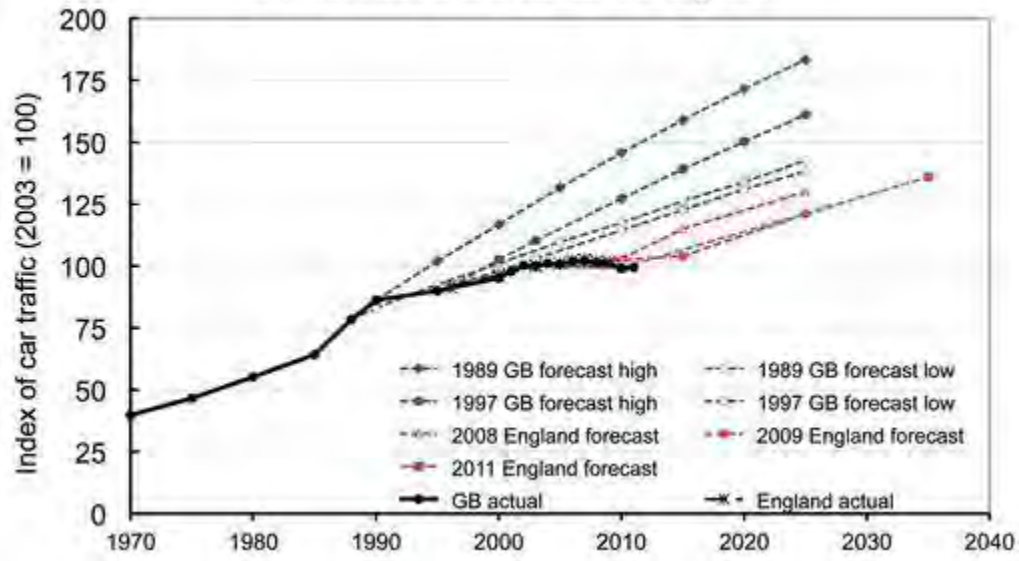
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.



Appendix D: Traffic Growth Graph



DfT Forecasts and actual car traffic growth





Appendix E: A5156 / A534 / Site Access: Model Results



Table E1: A5156 / Golf Club / A34 / Site Access: Junctions 9 Results – Weekday Morning Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A5156								
7:30 – 7:45	0.913	9	0.932	11	0.974	17	0.994	21
7:45 – 8:00	1.008	28	1.028	36	1.075	63	1.096	77
8:00 – 8:15	0.750	3	0.779	4	0.799	4	0.830	6
8:15 – 8:30	0.906	8	0.938	11	0.965	15	0.998	24
8:30 – 8:45	0.774	4	0.804	4	0.825	5	0.856	7
8:45 – 9:00	0.625	2	0.652	2	0.666	2	0.694	2
9:00 – 9:15	0.431	1	0.450	1	0.458	1	0.478	1
9:15 – 9:30	0.413	1	0.431	1	0.439	1	0.458	1
Golf Course Access								
7:30 – 7:45	0.018	0	0.020	0	0.022	0	0.024	0
7:45 – 8:00	0.024	0	0.027	0	0.027	0	0.030	0
8:00 – 8:15	0.013	0	0.015	0	0.018	0	0.024	0
8:15 – 8:30	0.000	0	0.000	0	0.000	0	0.000	0
8:30 – 8:45	0.013	0	0.015	0	0.015	0	0.018	0
8:45 – 9:00	0.025	0	0.028	0	0.029	0	0.032	0
9:00 – 9:15	0.012	0	0.012	0	0.013	0	0.014	0
9:15 – 9:30	0.006	0	0.006	0	0.006	0	0.007	0
A534 (E)								
7:30 – 7:45	0.249	0	0.256	0	0.264	0	0.272	0
7:45 – 8:00	0.268	0	0.276	0	0.284	0	0.292	0
8:00 – 8:15	0.297	0	0.311	0	0.318	1	0.333	1
8:15 – 8:30	0.292	0	0.305	0	0.310	1	0.324	1
8:30 – 8:45	0.306	0	0.320	1	0.326	1	0.341	1
8:45 – 9:00	0.314	1	0.327	1	0.334	1	0.348	1
9:00 – 9:15	0.279	0	0.292	0	0.297	0	0.310	1
9:15 – 9:30	0.241	0	0.254	0	0.256	0	0.269	0
Site Access								
7:30 – 7:45	N/A	N/A	0.113	0	N/A	N/A	0.115	0
7:45 – 8:00	N/A	N/A	0.115	0	N/A	N/A	0.117	0
8:00 – 8:15	N/A	N/A	0.173	0	N/A	N/A	0.178	0
8:15 – 8:30	N/A	N/A	0.173	0	N/A	N/A	0.177	0
8:30 – 8:45	N/A	N/A	0.173	0	N/A	N/A	0.178	0
8:45 – 9:00	N/A	N/A	0.172	0	N/A	N/A	0.176	0
9:00 – 9:15	N/A	N/A	0.078	0	N/A	N/A	0.079	0
9:15 – 9:30	N/A	N/A	0.075	0	N/A	N/A	0.076	0
A534 (W)								
7:30 – 7:45	0.526	1	0.550	1	0.562	1	0.587	1
7:45 – 8:00	0.523	1	0.547	1	0.559	1	0.584	1
8:00 – 8:15	0.485	1	0.530	1	0.520	1	0.566	1
8:15 – 8:30	0.439	1	0.482	1	0.470	1	0.515	1
8:30 – 8:45	0.530	1	0.576	1	0.567	1	0.616	2
8:45 – 9:00	0.458	1	0.502	1	0.491	1	0.537	1
9:00 – 9:15	0.264	0	0.295	0	0.282	0	0.314	1
9:15 – 9:30	0.279	0	0.311	0	0.299	0	0.331	1

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Table X2: A5156 / Golf Club / A34 / Site Access: Junctions 9 Results – Weekday Evening Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A5156								
16:00 – 16:15	0.277	0	0.309	0	0.295	0	0.327	1
16:15 – 16:30	0.329	1	0.377	1	0.350	1	0.400	1
16:30 – 16:45	0.328	1	0.378	1	0.349	1	0.401	1
16:45 – 17:00	0.388	1	0.443	1	0.413	1	0.470	1
17:00 – 17:15	0.370	1	0.423	1	0.394	1	0.448	1
17:15 – 17:30	0.406	1	0.461	1	0.431	1	0.488	1
17:30 – 17:45	0.475	1	0.540	1	0.506	1	0.572	1
17:45 – 18:00	0.338	1	0.392	1	0.359	1	0.416	1
Golf Course Access								
16:00 – 16:15	0.009	0	0.010	0	0.010	0	0.011	0
16:15 – 16:30	0.020	0	0.024	0	0.022	0	0.026	0
16:30 – 16:45	0.030	0	0.036	0	0.032	0	0.039	0
16:45 – 17:00	0.010	0	0.013	0	0.012	0	0.014	0
17:00 – 17:15	0.016	0	0.019	0	0.017	0	0.020	0
17:15 – 17:30	0.027	0	0.032	0	0.030	0	0.036	0
17:30 – 17:45	0.018	0	0.023	0	0.020	0	0.025	0
17:45 – 18:00	0.040	0	0.048	0	0.044	0	0.053	0
A534 (E)								
16:00 – 16:15	0.656	2	0.695	2	0.698	2	0.738	3
16:15 – 16:30	0.656	2	0.752	3	0.699	2	0.801	4
16:30 – 16:45	0.844	5	0.966	15	0.899	8	1.028	32
16:45 – 17:00	0.654	2	0.756	3	0.697	2	0.808	4
17:00 – 17:15	0.861	6	0.988	19	0.918	9	1.051	40
17:15 – 17:30	0.819	5	0.941	18	0.873	7	1.003	48
17:30 – 17:45	0.720	3	0.840	6	0.769	3	0.896	11
17:45 – 18:00	0.561	1	0.653	2	0.598	2	0.695	2
Site Access								
16:00 – 16:15	N/A	N/A	0.122	0	N/A	N/A	0.129	0
16:15 – 16:30	N/A	N/A	0.148	0	N/A	N/A	0.159	0
16:30 – 16:45	N/A	N/A	0.198	0	N/A	N/A	0.212	0
16:45 – 17:00	N/A	N/A	0.155	0	N/A	N/A	0.176	0
17:00 – 17:15	N/A	N/A	0.204	0	N/A	N/A	0.217	0
17:15 – 17:30	N/A	N/A	0.202	0	N/A	N/A	0.223	0
17:30 – 17:45	N/A	N/A	0.180	0	N/A	N/A	0.217	0
17:45 – 18:00	N/A	N/A	0.133	0	N/A	N/A	0.143	0
A534 (W)								
16:00 – 16:15	0.381	1	0.453	1	0.416	1	0.490	1
16:15 – 16:30	0.415	1	0.541	1	0.452	1	0.587	1
16:30 – 16:45	0.521	1	0.680	2	0.574	1	0.732	3
16:45 – 17:00	0.440	1	0.582	1	0.481	1	0.646	2
17:00 – 17:15	0.483	1	0.634	2	0.532	1	0.679	2
17:15 – 17:30	0.468	1	0.624	2	0.516	1	0.678	2
17:30 – 17:45	0.520	1	0.688	2	0.570	1	0.776	3
17:45 – 18:00	0.419	1	0.553	1	0.455	1	0.601	2

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Junctions 9				
ARCADY 9 - Roundabout Module				
Version: 9.0.2.5947 © Copyright TRL Limited, 2017				
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 770558 software@trl.co.uk 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: A534_A5156 Rbt Existing Layout TA.j9
Path: L:\Projects\CBO-0322 Tyn Twll, Holt Road, Wrexham\ARCADY\A534_A5156
Report generation date: 14/08/2018 12:06:17

- »Existing Layout - Existing / No Growth Future Year Base, AM
- »Existing Layout - Existing / No Growth Future Year Base, PM
- »Existing Layout - Growthed Future Year Base, AM
- »Existing Layout - Growthed Future Year Base, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	Existing Layout - Existing / No Growth Future Year Base									
Arm 1	27.6	37.96	1.01	E	-1 % [Arm 1]	0.9	2.93	0.48	A	14 % [Arm 3]
Arm 2	0.0	21.37	0.03	C		0.0	5.55	0.04	A	
Arm 3	0.5	2.50	0.31	A		5.7	10.13	0.86	B	
Arm 4	1.1	5.29	0.53	A		1.1	7.36	0.52	A	
	Existing Layout - Growthed Future Year Base									
Arm 1	62.5	72.06	1.07	F	-7 % [Arm 1]	1.0	3.12	0.51	A	7 % [Arm 3]
Arm 2	0.0	24.09	0.03	C		0.0	5.83	0.04	A	
Arm 3	0.5	2.58	0.33	A		9.3	14.87	0.92	B	
Arm 4	1.3	5.80	0.57	A		1.3	8.58	0.57	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.
 Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Holt Road, Wrexham
Location	A535 / A5156 Junction
Site number	
Date	21/05/2017
Version	
Status	Planning

Identifier	
Client	
Jobnumber	CBO-0322
Enumerator	
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	perMin	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D3	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D4	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Existing Layout	✓	100.000	100.000

Existing Layout - Existing / No Growth Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A534/A5156 Exitsing	Standard Roundabout	1, 2, 3, 4	23.17	C

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-1	Arm 1

Arms

Arms

Arm	Name	Description
1	A5156	
2	Golf Course	
3	A534	
4	Holt Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	7.30	10.50	11.0	34.0	90.0	41.0	
2	3.65	4.70	5.0	16.0	90.0	40.0	
3	7.30	9.60	15.0	38.0	90.0	40.0	
4	3.65	7.50	18.0	26.0	90.0	40.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/min)
1	0.589	44.418
2	0.380	20.590
3	0.588	44.142
4	0.459	29.273

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.23	47.25	8.05
	2	0.07	0.00	0.07	0.03
	3	13.52	0.05	0.00	5.95
	4	10.37	0.30	10.67	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.00	0.85	0.14
	2	0.40	0.00	0.40	0.20
	3	0.69	0.00	0.00	0.30
	4	0.49	0.01	0.50	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	0	7	8
	2	0	0	25	0
	3	26	0	0	5
	4	5	6	3	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.000	1.070	1.080
	2	1.000	1.000	1.250	1.000
	3	1.260	1.000	1.000	1.050
	4	1.050	1.060	1.030	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	34.40	36.85
	2	0.07	0.08
	3	8.53	10.20
	4	13.07	13.59
07:45-08:00	1	38.00	40.70
	2	0.07	0.08
	3	9.13	10.91
	4	12.87	13.39
08:00-08:15	1	28.53	30.56
	2	0.07	0.08
	3	10.27	12.28
	4	11.73	12.20
08:15-08:30	1	34.73	37.20
	2	0.00	0.00
	3	10.00	11.95
	4	10.67	11.10
08:30-08:45	1	29.20	31.28
	2	0.07	0.08
	3	10.60	12.67
	4	12.73	13.24
08:45-09:00	1	23.93	25.63
	2	0.20	0.22
	3	11.00	13.15
	4	10.93	11.37
09:00-09:15	1	17.07	18.28
	2	0.13	0.14

09:15-09:30	3	9.93	11.87
	4	6.40	6.66
	1	16.27	17.43
	2	0.07	0.08
	3	8.60	10.28
	4	6.93	7.21

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	1.01	37.96	27.6	E	27.77	3331.94
2	0.03	21.37	0.0	C	0.09	10.20
3	0.31	2.50	0.5	A	9.76	1170.90
4	0.53	5.29	1.1	A	10.67	1279.95

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	34.40	516.00	6.70	37.67	0.913	33.81	12.24	0.0	8.8	13.950	B
2	0.07	1.05	40.17	3.93	0.018	0.07	0.35	0.0	0.0	15.515	C
3	8.53	127.95	4.94	34.30	0.249	8.51	35.30	0.0	0.3	2.323	A
4	13.07	196.05	5.94	24.84	0.526	13.00	7.51	0.0	1.1	5.033	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	38.00	570.00	6.64	37.70	1.008	36.74	12.60	8.8	27.6	37.959	E
2	0.07	1.05	43.02	2.88	0.024	0.07	0.36	0.0	0.0	21.367	C
3	9.13	136.95	5.37	34.08	0.268	9.13	37.73	0.3	0.4	2.404	A
4	12.87	193.05	6.37	24.60	0.523	12.87	8.12	1.1	1.1	5.112	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	28.53	427.95	6.06	38.03	0.750	30.16	12.84	27.6	3.1	9.277	A
2	0.07	1.05	35.91	5.50	0.013	0.07	0.32	0.0	0.0	11.045	B
3	10.27	154.05	4.42	34.58	0.297	10.27	31.56	0.4	0.4	2.467	A
4	11.73	175.95	7.16	24.16	0.485	11.74	7.52	1.1	1.0	4.834	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
-----	------------------------	-------------------------	----------------------------	--------------------	-----	----------------------	----------------------------------	-------------------	-----------------	-----------	-----

1	34.73	520.95	5.52	38.34	0.906	34.39	12.12	3.1	8.3	14.077	B
2	0.00	0.00	39.58	4.14	0.000	0.00	0.32	0.0	0.0	0.000	A
3	10.00	150.00	4.99	34.28	0.292	10.00	34.60	0.4	0.4	2.472	A
4	10.67	160.05	6.95	24.28	0.439	10.68	8.03	1.0	0.8	4.415	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	29.20	438.00	6.56	37.75	0.774	29.52	13.54	8.3	3.5	7.549	A
2	0.07	1.05	35.75	5.57	0.013	0.07	0.33	0.0	0.0	10.903	B
3	10.60	159.00	4.32	34.63	0.306	10.60	31.49	0.4	0.4	2.495	A
4	12.73	190.95	7.39	24.04	0.530	12.71	7.52	0.8	1.1	5.287	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	23.93	358.95	5.66	38.26	0.625	24.05	13.02	3.5	1.7	4.258	A
2	0.20	3.00	29.43	7.90	0.025	0.20	0.28	0.0	0.0	7.790	A
3	11.00	165.00	3.61	35.02	0.314	11.00	26.02	0.4	0.5	2.497	A
4	10.93	163.95	7.73	23.86	0.458	10.95	6.88	1.1	0.9	4.654	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.07	256.05	3.33	39.58	0.431	17.13	10.06	1.7	0.8	2.679	A
2	0.13	1.95	20.28	11.26	0.012	0.13	0.19	0.0	0.0	5.395	A
3	9.93	148.95	2.56	35.57	0.279	9.93	17.85	0.5	0.4	2.340	A
4	6.40	96.00	6.96	24.28	0.264	6.43	5.54	0.9	0.4	3.369	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.27	244.05	3.58	39.44	0.413	16.27	9.35	0.8	0.7	2.590	A
2	0.07	1.05	19.67	11.48	0.006	0.07	0.19	0.0	0.0	5.256	A
3	8.60	129.00	2.40	35.65	0.241	8.60	17.34	0.4	0.3	2.218	A
4	6.93	103.95	6.01	24.81	0.279	6.93	5.00	0.4	0.4	3.355	A

Existing Layout - Existing / No Growth Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A534/A5156 Exitsing	Standard Roundabout	1, 2, 3, 4	7.60	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	14	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.15	16.57	11.92
	2	0.32	0.00	0.08	0.15
	3	42.35	0.02	0.00	14.17
	4	9.02	0.13	7.75	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.01	0.58	0.42
	2	0.58	0.00	0.15	0.27
	3	0.75	0.00	0.00	0.25
	4	0.53	0.01	0.46	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	0	11	1
	2	0	0	20	0
	3	4	0	0	1
	4	2	0	3	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.000	1.110	1.010
	2	1.000	1.000	1.200	1.000
	3	1.040	1.000	1.000	1.010
	4	1.020	1.000	1.030	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	11.00	11.75

	2	0.13	0.13
	3	26.27	27.12
	4	7.40	7.58
16:15-16:30	1	13.00	13.88
	2	0.27	0.28
	3	25.93	26.77
	4	8.07	8.27
16:30-16:45	1	12.87	13.74
	2	0.40	0.41
	3	33.33	34.41
	4	8.80	9.01
16:45-17:00	1	15.27	16.31
	2	0.13	0.13
	3	25.53	26.36
	4	8.60	8.81
17:00-17:15	1	14.60	15.59
	2	0.20	0.21
	3	33.73	34.83
	4	8.13	8.33
17:15-17:30	1	16.00	17.08
	2	0.33	0.34
	3	31.73	32.76
	4	8.13	8.33
17:30-17:45	1	18.53	19.79
	2	0.20	0.21
	3	27.53	28.42
	4	9.80	10.04
17:45-18:00	1	13.27	14.17
	2	0.53	0.55
	3	22.07	22.79
	4	8.67	8.88

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.48	2.93	0.9	A	14.32	1718.09
2	0.04	5.55	0.0	A	0.27	32.85
3	0.86	10.13	5.7	B	28.27	3391.80
4	0.52	7.36	1.1	A	8.45	1014.00

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
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1	11.00	165.00	3.44	39.64	0.277	10.97	23.59	0.0	0.4	2.091	A
2	0.13	1.95	14.29	14.40	0.009	0.13	0.12	0.0	0.0	4.204	A
3	26.27	394.05	4.68	40.06	0.656	26.14	9.74	0.0	1.9	4.273	A
4	7.40	111.00	19.67	19.41	0.381	7.36	11.15	0.0	0.6	4.962	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.00	195.00	3.77	39.46	0.329	12.99	23.88	0.4	0.5	2.267	A
2	0.27	4.05	16.62	13.48	0.020	0.27	0.14	0.0	0.0	4.540	A
3	25.93	388.95	5.64	39.51	0.656	25.93	11.26	1.9	1.9	4.417	A
4	8.07	121.05	19.59	19.45	0.415	8.06	11.98	0.6	0.7	5.268	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.87	193.05	4.10	39.27	0.328	12.87	29.72	0.5	0.5	2.274	A
2	0.40	6.00	16.83	13.41	0.030	0.40	0.15	0.0	0.0	4.611	A
3	33.33	499.95	5.70	39.48	0.844	33.12	11.53	1.9	5.1	9.141	A
4	8.80	132.00	25.05	16.90	0.521	8.78	13.76	0.7	1.1	7.360	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.27	229.05	4.03	39.31	0.388	15.26	23.96	0.5	0.6	2.493	A
2	0.13	1.95	19.13	12.50	0.010	0.13	0.16	0.0	0.0	4.851	A
3	25.53	382.95	6.46	39.03	0.654	25.74	12.80	5.1	1.9	4.584	A
4	8.60	129.00	19.37	19.55	0.440	8.62	12.84	1.1	0.8	5.498	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.60	219.00	3.80	39.44	0.370	14.60	29.52	0.6	0.6	2.417	A
2	0.20	3.00	18.25	12.84	0.016	0.20	0.15	0.0	0.0	4.745	A
3	33.73	505.95	6.25	39.16	0.861	33.47	12.20	1.9	5.7	10.130	B
4	8.13	121.95	25.20	16.83	0.483	8.12	14.52	0.8	0.9	6.882	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.00	240.00	3.80	39.44	0.406	15.99	28.35	0.6	0.7	2.559	A
2	0.33	4.95	19.64	12.30	0.027	0.33	0.16	0.0	0.0	5.013	A
3	31.73	475.95	6.94	38.76	0.819	31.80	13.03	5.7	4.7	8.716	A
4	8.13	121.95	24.02	17.38	0.468	8.13	14.71	0.9	0.9	6.488	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.53	277.95	4.57	39.00	0.475	18.52	26.06	0.7	0.9	2.928	A
2	0.20	3.00	22.91	11.02	0.018	0.20	0.18	0.0	0.0	5.548	A
3	27.53	412.95	7.88	38.22	0.720	27.67	15.23	4.7	2.6	5.759	A

4	9.80	147.00	20.85	18.86	0.520	9.79	14.69	0.9	1.1	6.605	A
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17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.27	199.05	4.06	39.29	0.338	13.30	21.54	0.9	0.5	2.310	A
2	0.53	7.95	17.21	13.26	0.040	0.53	0.14	0.0	0.0	4.714	A
3	22.07	331.05	5.98	39.31	0.561	22.16	11.76	2.6	1.3	3.517	A
4	8.67	130.05	16.91	20.70	0.419	8.69	11.23	1.1	0.7	5.006	A

Existing Layout - Growthed Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A534/A5156 Exiting	Standard Roundabout	1, 2, 3, 4	42.59	E

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-7	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.25	50.08	8.53
	2	0.07	0.00	0.07	0.03
	3	14.33	0.05	0.00	6.30
	4	10.98	0.32	11.30	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.00	0.85	0.14
	2	0.40	0.00	0.40	0.20
	3	0.69	0.00	0.00	0.30
	4	0.49	0.01	0.50	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	0	7	8
	2	0	0	25	0
	3	26	0	0	5
	4	5	6	3	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.000	1.070	1.080
	2	1.000	1.000	1.250	1.000
	3	1.260	1.000	1.000	1.050
	4	1.050	1.060	1.030	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	36.46	39.05
	2	0.07	0.08
	3	9.04	10.81
	4	13.85	14.41
07:45-08:00	1	40.28	43.15
	2	0.07	0.08
	3	9.68	11.57
	4	13.64	14.19
08:00-08:15	1	30.24	32.39
	2	0.07	0.08
	3	10.89	13.02
	4	12.43	12.93
08:15-08:30	1	36.81	39.43
	2	0.00	0.00
	3	10.60	12.67
	4	11.31	11.76
08:30-08:45	1	30.95	33.15
	2	0.07	0.08
	3	11.24	13.44
	4	13.49	14.03
08:45-09:00	1	25.37	27.18
	2	0.21	0.23
	3	11.66	13.94
	4	11.59	12.06
09:00-09:15	1	18.09	19.38
	2	0.14	0.15

	3	10.53	12.59
	4	6.78	7.05
09:15-09:30	1	17.25	18.48
	2	0.07	0.08
	3	9.12	10.90
	4	7.35	7.65

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	1.07	72.06	62.5	F	29.43	3531.76
2	0.03	24.09	0.0	C	0.09	10.50
3	0.33	2.58	0.5	A	10.34	1241.40
4	0.57	5.80	1.3	A	11.31	1356.60

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.46	546.90	7.10	37.44	0.974	35.34	12.97	0.0	16.8	22.226	C
2	0.07	1.05	42.07	3.24	0.022	0.07	0.36	0.0	0.0	18.934	C
3	9.04	135.60	5.16	34.18	0.264	9.02	36.98	0.0	0.4	2.382	A
4	13.85	207.75	6.30	24.65	0.562	13.77	7.88	0.0	1.3	5.474	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	40.28	604.20	7.03	37.48	1.075	37.23	13.36	16.8	62.5	72.063	F
2	0.07	1.05	43.90	2.56	0.027	0.07	0.37	0.0	0.0	24.091	C
3	9.68	145.20	5.44	34.04	0.284	9.68	38.53	0.4	0.4	2.462	A
4	13.64	204.60	6.76	24.39	0.559	13.64	8.36	1.3	1.3	5.580	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	30.24	453.60	6.42	37.83	0.799	34.12	13.62	62.5	4.3	32.443	D
2	0.07	1.05	40.19	3.92	0.018	0.07	0.35	0.0	0.0	15.581	C
3	10.89	163.35	4.99	34.28	0.318	10.89	35.28	0.4	0.5	2.565	A
4	12.43	186.45	7.60	23.92	0.520	12.44	8.28	1.3	1.1	5.230	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
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1	36.81	552.15	5.85	38.15	0.965	36.07	12.85	4.3	15.4	23.112	C
2	0.00	0.00	41.58	3.40	0.000	0.00	0.34	0.0	0.0	0.000	A
3	10.60	159.00	5.23	34.15	0.310	10.60	36.35	0.5	0.5	2.547	A
4	11.31	169.65	7.37	24.05	0.470	11.32	8.46	1.1	0.9	4.720	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	30.95	464.25	6.95	37.53	0.825	31.65	14.36	15.4	5.0	11.263	B
2	0.07	1.05	38.24	4.65	0.015	0.07	0.35	0.0	0.0	13.089	B
3	11.24	168.60	4.63	34.47	0.326	11.24	33.68	0.5	0.5	2.582	A
4	13.49	202.35	7.84	23.79	0.567	13.46	8.02	0.9	1.3	5.796	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	25.37	380.55	6.00	38.07	0.666	25.57	13.81	5.0	2.0	4.872	A
2	0.21	3.15	31.26	7.22	0.029	0.21	0.30	0.0	0.0	8.552	A
3	11.66	174.90	3.83	34.89	0.334	11.66	27.64	0.5	0.5	2.581	A
4	11.59	173.85	8.19	23.60	0.491	11.61	7.30	1.3	1.0	5.013	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.09	271.35	3.53	39.47	0.458	18.17	10.67	2.0	0.9	2.829	A
2	0.14	2.10	21.50	10.80	0.013	0.14	0.20	0.0	0.0	5.626	A
3	10.53	157.95	2.72	35.48	0.297	10.54	18.92	0.5	0.4	2.406	A
4	6.78	101.70	7.38	24.05	0.282	6.82	5.87	1.0	0.4	3.489	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.25	258.75	3.80	39.31	0.439	17.25	9.92	0.9	0.8	2.719	A
2	0.07	1.05	20.86	11.05	0.006	0.07	0.20	0.0	0.0	5.467	A
3	9.12	136.80	2.54	35.58	0.256	9.13	18.38	0.4	0.3	2.270	A
4	7.35	110.25	6.37	24.60	0.299	7.35	5.29	0.4	0.4	3.476	A

Existing Layout - Growthed Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A534/A5156 Exiting	Standard Roundabout	1, 2, 3, 4	10.44	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	7	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
From		1	2	3	4
	1	0.00	0.17	17.57	12.63
	2	0.33	0.00	0.08	0.17
	3	44.88	0.02	0.00	15.02
	4	9.55	0.13	8.22	0.00

Proportions

	To				
From		1	2	3	4
	1	0.00	0.01	0.58	0.42
	2	0.57	0.00	0.14	0.29
	3	0.75	0.00	0.00	0.25
	4	0.53	0.01	0.46	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		1	2	3	4
	1	0	0	11	1
	2	0	0	20	0
	3	4	0	0	1
	4	2	0	3	0

Average PCU Per Veh

	To				
From		1	2	3	4
	1	1.000	1.000	1.110	1.010
	2	1.000	1.000	1.200	1.000
	3	1.040	1.000	1.000	1.010
	4	1.020	1.000	1.030	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	11.66	12.45
	2	0.14	0.14

	3	27.85	28.75
	4	7.84	8.03
16:15-16:30	1	13.78	14.71
	2	0.29	0.30
	3	27.49	28.38
	4	8.55	8.76
16:30-16:45	1	13.64	14.56
	2	0.42	0.43
	3	35.33	36.48
	4	9.33	9.56
16:45-17:00	1	16.19	17.29
	2	0.14	0.14
	3	27.06	27.94
	4	9.12	9.34
17:00-17:15	1	15.48	16.53
	2	0.21	0.22
	3	35.75	36.91
	4	8.62	8.83
17:15-17:30	1	16.96	18.11
	2	0.35	0.36
	3	33.63	34.72
	4	8.62	8.83
17:30-17:45	1	19.64	20.97
	2	0.21	0.22
	3	29.18	30.13
	4	10.39	10.64
17:45-18:00	1	14.07	15.02
	2	0.56	0.58
	3	23.39	24.15
	4	9.19	9.41

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.51	3.12	1.0	A	15.18	1821.31
2	0.04	5.83	0.0	A	0.29	34.80
3	0.92	14.87	9.3	B	29.96	3595.20
4	0.57	8.58	1.3	A	8.96	1074.90

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.66	174.90	3.64	39.53	0.295	11.63	24.99	0.0	0.4	2.149	A

2	0.14	2.10	15.15	14.09	0.010	0.14	0.13	0.0	0.0	4.301	A
3	27.85	417.75	4.96	39.90	0.698	27.70	10.33	0.0	2.3	4.860	A
4	7.84	117.60	20.84	18.86	0.416	7.79	11.82	0.0	0.7	5.397	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.78	206.70	3.99	39.33	0.350	13.77	25.31	0.4	0.5	2.347	A
2	0.29	4.35	17.62	13.12	0.022	0.29	0.15	0.0	0.0	4.677	A
3	27.49	412.35	5.98	39.31	0.699	27.49	11.93	2.3	2.3	5.071	A
4	8.55	128.25	20.76	18.90	0.452	8.54	12.70	0.7	0.8	5.790	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.64	204.60	4.35	39.13	0.349	13.64	31.39	0.5	0.5	2.355	A
2	0.42	6.30	17.83	13.04	0.032	0.42	0.15	0.0	0.0	4.754	A
3	35.33	529.95	6.03	39.28	0.899	34.96	12.22	2.3	7.8	12.928	B
4	9.33	139.95	26.44	16.25	0.574	9.30	14.56	0.8	1.3	8.582	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.19	242.85	4.27	39.17	0.413	16.18	25.50	0.5	0.7	2.608	A
2	0.14	2.10	20.29	12.07	0.012	0.14	0.16	0.0	0.0	5.031	A
3	27.06	405.90	6.85	38.81	0.697	27.42	13.58	7.8	2.3	5.431	A
4	9.12	136.80	20.63	18.96	0.481	9.15	13.64	1.3	0.9	6.129	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.48	232.20	4.03	39.31	0.394	15.48	31.15	0.7	0.7	2.517	A
2	0.21	3.15	19.35	12.43	0.017	0.21	0.16	0.0	0.0	4.907	A
3	35.75	536.25	6.62	38.94	0.918	35.29	12.94	2.3	9.3	14.870	B
4	8.62	129.30	26.57	16.19	0.532	8.61	15.35	0.9	1.1	7.895	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.96	254.40	4.03	39.31	0.431	16.95	30.08	0.7	0.8	2.684	A
2	0.35	5.25	20.82	11.85	0.030	0.35	0.17	0.0	0.0	5.214	A
3	33.63	504.45	7.35	38.52	0.873	33.75	13.82	9.3	7.4	12.946	B
4	8.62	129.30	25.49	16.70	0.516	8.62	15.61	1.1	1.1	7.438	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.64	294.60	4.85	38.84	0.506	19.62	27.71	0.8	1.0	3.118	A
2	0.21	3.15	24.28	10.50	0.020	0.21	0.19	0.0	0.0	5.833	A
3	29.18	437.70	8.34	37.95	0.769	29.45	16.14	7.4	3.4	7.264	A
4	10.39	155.85	22.19	18.23	0.570	10.38	15.60	1.1	1.3	7.617	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.07	211.05	4.31	39.15	0.359	14.10	22.86	1.0	0.6	2.399	A
2	0.56	8.40	18.26	12.87	0.044	0.56	0.15	0.0	0.0	4.873	A
3	23.39	350.85	6.34	39.10	0.598	23.52	12.47	3.4	1.5	3.881	A
4	9.19	137.85	17.94	20.22	0.455	9.22	11.92	1.3	0.8	5.471	A

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: A534_A5156 Rbt Proposed Access TA.j9

Path: L:\Projects\CBO-0322 Tyn Twll, Holt Road, Wrexham\ARCADY\A534_A5156

Report generation date: 14/08/2018 12:09:11

- »Site Access Layout - No Growth Future Year Base Plus Dev, AM
- »Site Access Layout - No Growth Future Year Base Plus Dev, PM
- »Site Access Layout - Growthed Future Year Base Plus Dev, AM
- »Site Access Layout - Growthed Future Year Base Plus Dev, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	Site Access Layout - No Growth Future Year Base Plus Dev									
Arm 1	36.0	46.93	1.03	E	-3 % [Arm 1]	1.2	3.56	0.54	A	0 % [Arm 3]
Arm 2	0.0	23.68	0.03	C		0.1	6.96	0.05	A	
Arm 3	0.5	2.57	0.33	A		19.4	32.59	0.99	D	
Arm 4	0.2	3.37	0.17	A		0.3	8.55	0.20	A	
Arm 5	1.3	6.10	0.58	A		2.1	12.30	0.69	B	
	Site Access Layout - Growthed Future Year Base Plus Dev									
Arm 1	77.1	88.05	1.10	F	-8 % [Arm 1]	1.3	3.84	0.57	A	-5 % [Arm 3]
Arm 2	0.0	26.10	0.03	D		0.1	7.40	0.05	A	
Arm 3	0.5	2.67	0.35	A		47.8	83.30	1.05	F	
Arm 4	0.2	3.48	0.18	A		0.3	9.59	0.22	A	
Arm 5	1.6	6.79	0.62	A		3.3	16.87	0.78	C	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Holt Road, Wrexham
Location	A535 / A5156 Junction
Site number	
Date	21/05/2017

Version	
Status	Planning
Identifier	
Client	
Jobnumber	CBO-0322
Enumerator	
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	perMin	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D2	No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓
D3	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D4	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Site Access Layout	✓	100.000	100.000

Site Access Layout - No Growth Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A534/A5156 Exiting	Standard Roundabout	1, 2, 3, 4, 5	26.92	D

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-3	Arm 1

Arms

Arms

Arm	Name	Description
1	A5156	
2	Golf Course	
3	A534	
4	Site Access	
5	A534	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	7.30	10.50	11.0	34.0	90.0	41.0	
2	3.65	4.70	5.0	16.0	90.0	40.0	
3	7.30	9.60	15.0	38.0	90.0	40.0	
4	3.50	7.50	18.4	24.0	90.0	32.0	
5	3.65	7.50	18.0	26.0	90.0	40.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/min)
1	0.589	44.418
2	0.380	20.590
3	0.588	44.142
4	0.467	29.624
5	0.459	29.273

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.23	47.25	0.85	8.05
	2	0.07	0.00	0.07	0.00	0.03
	3	13.52	0.05	0.00	0.67	5.95
	4	2.00	0.00	1.53	0.00	2.35
	5	10.37	0.30	10.67	1.02	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.00	0.84	0.02	0.14
	2	0.40	0.00	0.40	0.00	0.20
	3	0.67	0.00	0.00	0.03	0.29
	4	0.34	0.00	0.26	0.00	0.40
	5	0.46	0.01	0.48	0.05	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	7	0	8
	2	0	0	25	0	0
	3	26	0	0	0	5
	4	0	0	0	0	0
	5	5	6	3	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.000	1.070	1.000	1.080
	2	1.000	1.000	1.250	1.000	1.000
	3	1.260	1.000	1.000	1.000	1.050
	4	1.000	1.000	1.000	1.000	1.000
	5	1.050	1.060	1.030	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	34.60	37.02
	2	0.07	0.08
	3	8.70	10.34
	4	2.53	2.53
	5	13.34	13.85
07:45-08:00	1	38.20	40.88
	2	0.07	0.08
	3	9.30	11.06
	4	2.53	2.53
	5	13.14	13.64
08:00-08:15	1	29.01	31.04
	2	0.07	0.08
	3	10.64	12.65
	4	3.73	3.73
	5	12.30	12.77
08:15-08:30	1	35.21	37.68
	2	0.00	0.00
	3	10.37	12.33
	4	3.73	3.73
	5	11.24	11.67
08:30-08:45	1	29.68	31.76
	2	0.07	0.08
	3	10.97	13.04
	4	3.73	3.73

	5	13.30	13.81
08:45-09:00	1	24.41	26.12
	2	0.20	0.22
	3	11.37	13.52
	4	3.73	3.73
	5	11.50	11.94
09:00-09:15	1	17.60	18.83
	2	0.13	0.14
	3	10.36	12.32
	4	1.77	1.77
	5	7.03	7.30
09:15-09:30	1	16.80	17.98
	2	0.07	0.08
	3	9.03	10.74
	4	1.77	1.77
	5	7.56	7.85

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	1.03	46.93	36.0	E	28.19	3382.66
2	0.03	23.68	0.0	C	0.09	10.20
3	0.33	2.57	0.5	A	10.09	1211.10
4	0.17	3.37	0.2	A	2.94	352.80
5	0.58	6.10	1.3	A	11.18	1341.16

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	34.60	519.00	7.79	37.11	0.932	33.90	12.85	0.0	10.5	16.171	C
2	0.07	1.05	41.35	3.54	0.020	0.07	0.34	0.0	0.0	17.272	C
3	8.70	130.50	5.99	33.97	0.256	8.68	35.42	0.0	0.3	2.370	A
4	2.53	37.95	13.27	22.47	0.113	2.52	1.40	0.0	0.1	3.005	A
5	13.34	200.10	7.37	24.26	0.550	13.26	8.42	0.0	1.2	5.414	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	38.20	573.00	7.73	37.14	1.028	36.50	13.21	10.5	36.0	46.927	E
2	0.07	1.05	43.88	2.60	0.027	0.07	0.35	0.0	0.0	23.683	C
3	9.30	139.50	6.40	33.76	0.276	9.30	37.55	0.3	0.4	2.453	A
4	2.53	37.95	14.24	21.95	0.115	2.53	1.46	0.1	0.1	3.088	A
5	13.14	197.10	7.80	24.03	0.547	13.14	8.98	1.2	1.2	5.509	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	29.01	435.15	7.59	37.22	0.779	31.16	14.12	36.0	3.7	13.610	B
2	0.07	1.05	38.44	4.62	0.015	0.07	0.32	0.0	0.0	13.200	B
3	10.64	159.60	5.52	34.22	0.311	10.64	32.99	0.4	0.4	2.543	A
4	3.73	55.95	14.78	21.61	0.173	3.72	1.38	0.1	0.2	3.354	A
5	12.30	184.50	9.41	23.21	0.530	12.30	9.09	1.2	1.1	5.503	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	35.21	528.15	7.03	37.54	0.938	34.70	13.43	3.7	11.3	18.470	C
2	0.00	0.00	41.41	3.51	0.000	0.00	0.32	0.0	0.0	0.000	A
3	10.37	155.55	5.99	33.97	0.305	10.37	35.43	0.4	0.4	2.542	A
4	3.73	55.95	14.98	21.52	0.173	3.73	1.38	0.2	0.2	3.372	A
5	11.24	168.60	9.21	23.32	0.482	11.25	9.50	1.1	0.9	4.977	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	29.68	445.20	8.12	36.93	0.804	30.15	14.80	11.3	4.3	9.402	A
2	0.07	1.05	37.93	4.81	0.015	0.07	0.33	0.0	0.0	12.648	B
3	10.97	164.55	5.40	34.28	0.320	10.97	32.60	0.4	0.5	2.572	A
4	3.73	55.95	14.95	21.51	0.173	3.73	1.42	0.2	0.2	3.374	A
5	13.30	199.50	9.64	23.09	0.576	13.27	9.04	0.9	1.3	6.097	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	24.41	366.15	7.18	37.46	0.652	24.57	14.31	4.3	1.9	4.709	A
2	0.20	3.00	31.46	7.19	0.028	0.20	0.28	0.0	0.0	8.579	A
3	11.37	170.55	4.52	34.75	0.327	11.37	27.14	0.5	0.5	2.565	A
4	3.73	55.95	14.62	21.65	0.172	3.73	1.27	0.2	0.2	3.349	A
5	11.50	172.50	9.96	22.91	0.502	11.52	8.39	1.3	1.0	5.277	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.60	264.00	4.28	39.09	0.450	17.67	10.88	1.9	0.8	2.809	A
2	0.13	1.95	21.76	10.73	0.012	0.13	0.19	0.0	0.0	5.660	A
3	10.36	155.40	3.19	35.45	0.292	10.36	18.70	0.5	0.4	2.393	A
4	1.77	26.55	12.62	22.71	0.078	1.78	0.93	0.2	0.1	2.866	A
5	7.03	105.45	8.09	23.82	0.295	7.07	6.32	1.0	0.4	3.592	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.80	252.00	4.54	38.95	0.431	16.80	10.19	0.8	0.8	2.709	A
2	0.07	1.05	21.15	10.96	0.006	0.07	0.19	0.0	0.0	5.507	A
3	9.03	135.45	3.04	35.53	0.254	9.03	18.18	0.4	0.3	2.266	A

4	1.77	26.55	11.18	23.51	0.075	1.77	0.90	0.1	0.1	2.761	A
5	7.56	113.40	7.16	24.33	0.311	7.56	5.78	0.4	0.4	3.577	A

Site Access Layout - No Growth Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A534/A5156 Exiting	Standard Roundabout	1, 2, 3, 4, 5	20.22	C

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	0	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	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)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.15	16.57	2.22	11.92
	2	0.32	0.00	0.08	0.00	0.15
	3	42.35	0.02	0.00	1.68	14.17
	4	1.22	0.00	0.95	0.00	1.43
	5	9.02	0.13	7.75	2.60	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.00	0.54	0.07	0.39
	2	0.58	0.00	0.15	0.00	0.27
	3	0.73	0.00	0.00	0.03	0.24
	4	0.34	0.00	0.26	0.00	0.40
	5	0.46	0.01	0.40	0.13	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:00 - 16:15

	To					
		1	2	3	4	5
From	1	0	0	11	0	1
	2	0	0	20	0	0
	3	4	0	0	0	1
	4	0	0	0	0	0
	5	2	0	3	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.000	1.110	1.000	1.010
	2	1.000	1.000	1.200	1.000	1.000
	3	1.040	1.000	1.000	1.000	1.010
	4	1.000	1.000	1.000	1.000	1.000
	5	1.020	1.000	1.030	1.000	1.000

Heavy Vehicle Percentages

16:15 - 16:30

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

16:30 - 16:45

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

16:45 - 17:00

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

17:00 - 17:15

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

17:15 - 17:30

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

17:30 - 17:45

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

17:45 - 18:00

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	12.03	12.79
	2	0.13	0.13
	3	27.04	27.89
	4	1.80	1.80
	5	8.60	8.78
16:15-16:30	1	14.03	15.43
	2	0.27	0.30
	3	26.70	29.37
	4	1.80	1.98

	5	9.27	10.20
16:30-16:45	1	13.97	15.37
	2	0.40	0.44
	3	34.18	37.60
	4	1.80	1.98
	5	10.10	11.11
16:45-17:00	1	16.37	18.01
	2	0.13	0.14
	3	26.38	29.02
	4	1.80	1.98
	5	9.90	10.89
17:00-17:15	1	15.70	17.27
	2	0.20	0.22
	3	34.58	38.04
	4	1.80	1.98
	5	9.43	10.37
17:15-17:30	1	17.10	18.81
	2	0.33	0.36
	3	32.58	35.84
	4	1.80	1.98
	5	9.43	10.37
17:30-17:45	1	19.73	21.70
	2	0.20	0.22
	3	28.43	31.27
	4	1.80	1.98
	5	11.20	12.32
17:45-18:00	1	14.47	15.92
	2	0.53	0.58
	3	22.97	25.27
	4	1.80	1.98
	5	10.07	11.08

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.54	3.56	1.2	A	15.42	1850.99
2	0.05	6.96	0.1	A	0.27	32.85
3	0.99	32.59	19.4	D	29.11	3492.90
4	0.20	8.55	0.3	A	1.80	216.00
5	0.69	12.30	2.1	B	9.75	1170.01

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side)	Start queue	End queue	Delay (s)	LOS
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	(Veh/min)	(Veh)	(Veh/min)				(Veh/min)	(Veh)	(Veh)		
1	12.03	180.45	5.07	38.92	0.309	12.00	24.19	0.0	0.4	2.227	A
2	0.13	1.95	16.95	13.41	0.010	0.13	0.12	0.0	0.0	4.516	A
3	27.04	405.60	6.75	38.92	0.695	26.89	10.33	0.0	2.2	4.930	A
4	1.80	27.00	30.86	14.78	0.122	1.79	2.78	0.0	0.1	4.616	A
5	8.60	129.00	20.72	19.00	0.453	8.55	11.93	0.0	0.8	5.711	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.03	210.45	5.45	37.17	0.377	14.02	24.43	0.4	0.6	2.590	A
2	0.27	4.05	19.33	11.37	0.024	0.27	0.14	0.0	0.0	5.404	A
3	26.70	400.50	7.88	35.50	0.752	26.65	11.72	2.2	3.0	6.740	A
4	1.80	27.00	31.52	12.20	0.148	1.80	3.01	0.1	0.2	5.764	A
5	9.27	139.05	20.63	17.15	0.541	9.25	12.69	0.8	1.2	7.574	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.97	209.55	5.88	36.91	0.378	13.97	29.75	0.6	0.6	2.614	A
2	0.40	6.00	19.71	11.23	0.036	0.40	0.15	0.0	0.0	5.541	A
3	34.18	512.70	8.08	35.38	0.966	33.36	12.03	3.0	15.2	23.692	C
4	1.80	27.00	38.13	9.10	0.198	1.80	3.31	0.2	0.2	8.204	A
5	10.10	151.50	25.59	14.86	0.680	10.04	14.34	1.2	2.0	12.295	B

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.37	245.55	5.83	36.95	0.443	16.36	25.05	0.6	0.8	2.913	A
2	0.13	1.95	22.03	10.34	0.013	0.13	0.16	0.0	0.0	5.876	A
3	26.38	395.70	8.93	34.87	0.756	27.18	13.23	15.2	3.2	8.571	A
4	1.80	27.00	32.82	11.59	0.155	1.80	3.29	0.2	0.2	6.134	A
5	9.90	148.50	20.94	17.00	0.582	9.94	13.69	2.0	1.4	8.555	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.70	235.50	5.54	37.11	0.423	15.70	29.45	0.8	0.7	2.804	A
2	0.20	3.00	21.10	10.70	0.019	0.20	0.15	0.0	0.0	5.715	A
3	34.58	518.70	8.62	35.06	0.986	33.51	12.68	3.2	19.3	28.289	D
4	1.80	27.00	38.78	8.80	0.204	1.80	3.35	0.2	0.3	8.555	A
5	9.43	141.45	25.58	14.87	0.634	9.41	14.99	1.4	1.7	10.960	B

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.10	256.50	5.55	37.11	0.461	17.09	28.90	0.7	0.8	2.998	A
2	0.33	4.95	22.49	10.17	0.032	0.33	0.16	0.0	0.0	6.098	A
3	32.58	488.70	9.37	34.62	0.941	32.64	13.45	19.3	18.4	32.586	D
4	1.80	27.00	38.58	8.90	0.202	1.80	3.43	0.3	0.3	8.454	A
5	9.43	141.45	25.03	15.12	0.624	9.43	15.35	1.7	1.7	10.550	B

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.73	295.95	6.49	36.56	0.540	19.71	27.19	0.8	1.2	3.556	A
2	0.20	3.00	26.02	8.83	0.023	0.20	0.18	0.0	0.0	6.955	A
3	28.43	426.45	10.69	33.84	0.840	29.28	15.53	18.4	5.7	15.132	C
4	1.80	27.00	36.21	10.00	0.180	1.80	3.75	0.3	0.2	7.321	A
5	11.20	168.00	22.51	16.28	0.688	11.17	15.51	1.7	2.1	11.668	B

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.47	217.05	5.93	36.89	0.392	14.50	22.49	1.2	0.6	2.684	A
2	0.53	7.95	20.29	11.01	0.048	0.53	0.15	0.0	0.1	5.726	A
3	22.97	344.55	8.44	35.16	0.653	23.22	12.37	5.7	1.9	5.126	A
4	1.80	27.00	28.60	13.56	0.133	1.80	3.06	0.2	0.2	5.106	A
5	10.07	151.05	18.29	18.21	0.553	10.13	12.12	2.1	1.3	7.471	A

Site Access Layout - Growthed Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A534/A5156 Exitsing	Standard Roundabout	1, 2, 3, 4, 5	49.09	E

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-8	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000

2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.25	50.08	0.85	8.53
	2	0.07	0.00	0.07	0.00	0.03
	3	14.33	0.05	0.00	0.67	6.30
	4	2.00	0.00	1.53	0.00	2.35
	5	10.98	0.32	11.30	1.02	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.00	0.84	0.01	0.14
	2	0.40	0.00	0.40	0.00	0.20
	3	0.67	0.00	0.00	0.03	0.30
	4	0.34	0.00	0.26	0.00	0.40
	5	0.47	0.01	0.48	0.04	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	7	0	8
	2	0	0	25	0	0
	3	26	0	0	0	5
	4	0	0	0	0	0
	5	5	6	3	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.000	1.070	1.000	1.080
	2	1.000	1.000	1.250	1.000	1.000
	3	1.260	1.000	1.000	1.000	1.050
	4	1.000	1.000	1.000	1.000	1.000
	5	1.050	1.060	1.030	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	36.66	39.23
	2	0.07	0.08
	3	9.21	10.95
	4	2.53	2.53
	5	14.12	14.66
07:45-08:00	1	40.48	43.32
	2	0.07	0.08
	3	9.85	11.71
	4	2.53	2.53
	5	13.91	14.44
08:00-08:15	1	30.72	32.87
	2	0.07	0.08
	3	11.26	13.39
	4	3.73	3.73
	5	13.00	13.50
08:15-08:30	1	37.29	39.91
	2	0.00	0.00

	3	10.97	13.05
	4	3.73	3.73
	5	11.88	12.34
08:30-08:45	1	31.43	33.63
	2	0.07	0.08
	3	11.61	13.81
	4	3.73	3.73
	5	14.06	14.60
08:45-09:00	1	25.85	27.66
	2	0.21	0.23
	3	12.03	14.31
	4	3.73	3.73
	5	12.16	12.63
09:00-09:15	1	18.62	19.93
	2	0.14	0.15
	3	10.96	13.03
	4	1.77	1.77
	5	7.41	7.69
09:15-09:30	1	17.78	19.03
	2	0.07	0.08
	3	9.55	11.36
	4	1.77	1.77
	5	7.98	8.29

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	1.10	88.05	77.1	F	29.85	3582.45
2	0.03	26.10	0.0	D	0.09	10.50
3	0.35	2.67	0.5	A	10.68	1281.59
4	0.18	3.48	0.2	A	2.94	352.80
5	0.62	6.79	1.6	A	11.82	1417.80

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.66	549.90	8.18	36.88	0.994	35.24	13.57	0.0	21.4	26.506	D
2	0.07	1.05	43.06	2.91	0.024	0.07	0.36	0.0	0.0	21.094	C
3	9.21	138.15	6.18	33.86	0.272	9.19	36.95	0.0	0.4	2.429	A
4	2.53	37.95	13.97	22.09	0.115	2.52	1.39	0.0	0.1	3.064	A
5	14.12	211.80	7.73	24.06	0.587	14.03	8.77	0.0	1.4	5.925	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	40.48	607.20	8.12	36.92	1.096	36.77	13.97	21.4	77.1	88.052	F
2	0.07	1.05	44.53	2.37	0.030	0.07	0.36	0.0	0.0	26.101	D
3	9.85	147.75	6.42	33.73	0.292	9.85	38.18	0.4	0.4	2.511	A
4	2.53	37.95	14.84	21.62	0.117	2.53	1.43	0.1	0.1	3.142	A
5	13.91	208.65	8.18	23.81	0.584	13.91	9.18	1.4	1.4	6.058	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	30.72	460.80	7.95	37.02	0.830	35.47	14.90	77.1	5.8	61.774	F
2	0.07	1.05	43.08	2.90	0.024	0.07	0.35	0.0	0.0	21.168	C
3	11.26	168.90	6.18	33.86	0.333	11.25	36.97	0.4	0.5	2.654	A
4	3.73	55.95	16.01	20.95	0.178	3.72	1.42	0.1	0.2	3.483	A
5	13.00	195.00	9.85	22.97	0.566	13.01	9.89	1.4	1.3	6.028	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	37.29	559.35	7.36	37.35	0.998	36.11	14.17	5.8	23.5	32.440	D
2	0.00	0.00	43.14	2.87	0.000	0.00	0.34	0.0	0.0	0.000	A
3	10.97	164.55	6.19	33.85	0.324	10.97	36.95	0.5	0.5	2.622	A
4	3.73	55.95	15.79	21.08	0.177	3.73	1.37	0.2	0.2	3.457	A
5	11.88	178.20	9.63	23.08	0.515	11.90	9.89	1.3	1.1	5.372	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	31.43	471.45	8.50	36.71	0.856	32.56	15.61	23.5	6.5	17.455	C
2	0.07	1.05	40.71	3.79	0.018	0.07	0.35	0.0	0.0	16.130	C
3	11.61	174.15	5.76	34.08	0.341	11.61	35.02	0.5	0.5	2.669	A
4	3.73	55.95	15.94	20.97	0.178	3.73	1.43	0.2	0.2	3.479	A
5	14.06	210.90	10.09	22.83	0.616	14.03	9.58	1.1	1.6	6.787	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	25.85	387.75	7.52	37.26	0.694	26.13	15.09	6.5	2.3	5.518	A
2	0.21	3.15	33.35	6.50	0.032	0.21	0.30	0.0	0.0	9.539	A
3	12.03	180.45	4.76	34.61	0.348	12.03	28.80	0.5	0.5	2.656	A
4	3.73	55.95	15.51	21.17	0.176	3.73	1.27	0.2	0.2	3.439	A
5	12.16	182.40	10.43	22.65	0.537	12.19	8.82	1.6	1.2	5.750	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.62	279.30	4.48	38.98	0.478	18.71	11.49	2.3	0.9	2.975	A
2	0.14	2.10	22.99	10.28	0.014	0.14	0.20	0.0	0.0	5.916	A
3	10.96	164.40	3.35	35.35	0.310	10.97	19.78	0.5	0.5	2.460	A
4	1.77	26.55	13.38	22.30	0.079	1.78	0.93	0.2	0.1	2.926	A

5	7.41	111.15	8.51	23.58	0.314	7.46	6.65	1.2	0.5	3.731	A
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09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.78	266.70	4.75	38.82	0.458	17.78	10.76	0.9	0.8	2.854	A
2	0.07	1.05	22.33	10.53	0.007	0.07	0.20	0.0	0.0	5.736	A
3	9.55	143.25	3.18	35.44	0.269	9.56	19.22	0.5	0.4	2.317	A
4	1.77	26.55	11.84	23.15	0.076	1.77	0.89	0.1	0.1	2.808	A
5	7.98	119.70	7.53	24.12	0.331	7.98	6.08	0.5	0.5	3.715	A

Site Access Layout - Growthed Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A534/A5156 Exitsing	Standard Roundabout	1, 2, 3, 4, 5	47.42	E

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-5	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	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)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.17	17.57	2.22	12.63
	2	0.33	0.00	0.08	0.00	0.17
	3	44.88	0.02	0.00	1.68	15.02
	4	1.22	0.00	0.95	0.00	1.43
	5	9.55	0.13	8.22	2.60	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.01	0.54	0.07	0.39
	2	0.57	0.00	0.14	0.00	0.29
	3	0.73	0.00	0.00	0.03	0.24
	4	0.34	0.00	0.26	0.00	0.40
	5	0.47	0.01	0.40	0.13	0.00

Vehicle Mix

Heavy Vehicle Percentages

16:00 - 16:15

	To					
		1	2	3	4	5
From	1	0	0	11	0	1
	2	0	0	20	0	0
	3	4	0	0	0	1
	4	0	0	0	0	0
	5	2	0	3	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.000	1.110	1.000	1.010
	2	1.000	1.000	1.200	1.000	1.000
	3	1.040	1.000	1.000	1.000	1.010
	4	1.000	1.000	1.000	1.000	1.000
	5	1.020	1.000	1.030	1.000	1.000

Heavy Vehicle Percentages

16:15 - 16:30

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

16:30 - 16:45

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

16:45 - 17:00

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

17:00 - 17:15

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

17:15 - 17:30

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

17:30 - 17:45

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Heavy Vehicle Percentages

17:45 - 18:00

	To					
		1	2	3	4	5
From	1	10	10	10	10	10
	2	10	10	10	10	10
	3	10	10	10	10	10
	4	10	10	10	10	10
	5	10	10	10	10	10

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.100	1.100	1.100	1.100	1.100
	2	1.100	1.100	1.100	1.100	1.100
	3	1.100	1.100	1.100	1.100	1.100
	4	1.100	1.100	1.100	1.100	1.100
	5	1.100	1.100	1.100	1.100	1.100

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	12.69	13.49
	2	0.14	0.14
	3	28.62	29.52
	4	1.80	1.80
	5	9.04	9.23
16:15-16:30	1	14.81	16.29
	2	0.29	0.32
	3	28.26	31.09
	4	1.80	1.98

	5	9.75	10.73
16:30-16:45	1	14.74	16.21
	2	0.42	0.46
	3	36.18	39.80
	4	1.80	1.98
	5	10.63	11.69
16:45-17:00	1	17.29	19.02
	2	0.14	0.15
	3	27.91	30.70
	4	1.80	1.98
	5	10.42	11.46
17:00-17:15	1	16.58	18.24
	2	0.21	0.23
	3	36.60	40.26
	4	1.80	1.98
	5	9.92	10.91
17:15-17:30	1	18.06	19.87
	2	0.35	0.39
	3	34.48	37.93
	4	1.80	1.98
	5	9.92	10.91
17:30-17:45	1	20.84	22.92
	2	0.21	0.23
	3	30.08	33.09
	4	1.80	1.98
	5	11.79	12.97
17:45-18:00	1	15.27	16.80
	2	0.56	0.62
	3	24.29	26.72
	4	1.80	1.98
	5	10.59	11.65

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.57	3.84	1.3	A	16.29	1954.21
2	0.05	7.40	0.1	A	0.29	34.80
3	1.05	83.30	47.8	F	30.80	3696.31
4	0.22	9.59	0.3	A	1.80	216.00
5	0.78	16.87	3.3	C	10.26	1230.91

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side)	Start queue	End queue	Delay (s)	LOS
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	(Veh/min)	(Veh)	(Veh/min)				(Veh/min)	(Veh)	(Veh)		
1	12.69	190.35	5.28	38.80	0.327	12.66	25.59	0.0	0.5	2.292	A
2	0.14	2.10	17.80	13.10	0.011	0.14	0.13	0.0	0.0	4.628	A
3	28.62	429.30	7.03	38.75	0.738	28.44	10.91	0.0	2.8	5.718	A
4	1.80	27.00	32.69	13.90	0.129	1.79	2.78	0.0	0.1	4.949	A
5	9.04	135.60	21.88	18.45	0.490	8.98	12.59	0.0	0.9	6.293	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.81	222.15	5.67	37.04	0.400	14.80	25.84	0.5	0.7	2.696	A
2	0.29	4.35	20.33	10.99	0.026	0.29	0.15	0.0	0.0	5.605	A
3	28.26	423.90	8.22	35.30	0.801	28.19	12.39	2.8	3.8	8.337	A
4	1.80	27.00	33.40	11.33	0.159	1.80	3.01	0.1	0.2	6.294	A
5	9.75	146.25	21.79	16.62	0.587	9.72	13.41	0.9	1.4	8.663	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.74	221.10	6.12	36.77	0.401	14.74	30.76	0.7	0.7	2.722	A
2	0.42	6.30	20.70	10.85	0.039	0.42	0.15	0.0	0.0	5.754	A
3	36.18	542.70	8.42	35.18	1.028	34.30	12.71	3.8	32.0	40.214	E
4	1.80	27.00	39.44	8.49	0.212	1.79	3.28	0.2	0.3	8.949	A
5	10.63	159.45	26.32	14.52	0.732	10.55	14.91	1.4	2.6	14.801	B

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.29	259.35	6.07	36.80	0.470	17.28	27.24	0.7	0.9	3.072	A
2	0.14	2.10	23.19	9.90	0.014	0.14	0.16	0.0	0.0	6.149	A
3	27.91	418.65	9.32	34.64	0.806	29.75	14.01	32.0	4.4	16.602	C
4	1.80	27.00	35.76	10.22	0.176	1.80	3.32	0.3	0.2	7.133	A
5	10.42	156.30	22.85	16.12	0.646	10.47	14.71	2.6	1.9	10.702	B

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.58	248.70	5.78	36.98	0.448	16.58	30.26	0.9	0.8	2.942	A
2	0.21	3.15	22.20	10.28	0.020	0.21	0.16	0.0	0.0	5.959	A
3	36.60	549.00	8.99	34.84	1.051	34.20	13.42	4.4	40.4	48.210	E
4	1.80	27.00	39.87	8.29	0.217	1.80	3.32	0.2	0.3	9.231	A
5	9.92	148.80	26.13	14.61	0.679	9.91	15.54	1.9	2.0	12.704	B

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.06	270.90	5.78	36.97	0.488	18.05	30.21	0.8	0.9	3.169	A
2	0.35	5.25	23.67	9.72	0.036	0.35	0.17	0.0	0.0	6.402	A
3	34.48	517.20	9.78	34.37	1.003	34.01	14.23	40.4	47.5	83.303	F
4	1.80	27.00	40.38	8.05	0.223	1.80	3.42	0.3	0.3	9.590	A
5	9.92	148.80	26.07	14.64	0.678	9.92	16.11	2.0	2.1	12.694	B

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	20.84	312.60	6.74	36.41	0.572	20.81	29.86	0.9	1.3	3.841	A
2	0.21	3.15	27.36	8.31	0.025	0.21	0.19	0.0	0.0	7.403	A
3	30.08	451.20	11.15	33.57	0.896	32.49	16.42	47.5	11.4	54.643	F
4	1.80	27.00	39.85	8.30	0.217	1.80	3.79	0.3	0.3	9.228	A
5	11.79	176.85	24.88	15.19	0.776	11.71	16.77	2.1	3.2	16.873	C

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.27	229.05	6.20	36.73	0.416	15.31	24.05	1.3	0.7	2.806	A
2	0.56	8.40	21.36	10.60	0.053	0.56	0.15	0.0	0.1	5.976	A
3	24.29	364.35	8.81	34.94	0.695	24.89	13.10	11.4	2.3	6.322	A
4	1.80	27.00	30.63	12.61	0.143	1.81	3.08	0.3	0.2	5.558	A
5	10.59	158.85	19.55	17.63	0.601	10.70	12.88	3.2	1.5	8.790	A



Appendix F: Greyhound Roundabout: Model Results



Table F1: Holt Rd / Bryn Estyn Rd / Cefn Rd / Dean Road: Junctions 9 Results – Weekday Morning Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
Holt Road (E)								
7:30 – 7:45	0.419	1	0.484	1	0.449	1	0.515	1
7:45 – 8:00	0.554	1	0.621	2	0.594	1	0.662	2
8:00 – 8:15	0.627	2	0.728	3	0.672	2	0.774	3
8:15 – 8:30	0.769	3	0.875	6	0.827	4	0.934	9
8:30 – 8:45	0.843	5	0.954	11	0.910	7	1.023	19
8:45 – 9:00	0.869	6	0.975	15	0.936	10	1.044	31
9:00 – 9:15	0.618	2	0.665	1	0.663	2	0.711	3
9:15 – 9:30	0.460	1	0.505	1	0.491	1	0.536	1
Bryn Estyn Road								
7:30 – 7:45	0.025	0	0.026	0	0.028	0	0.029	0
7:45 – 8:00	0.056	0	0.059	0	0.061	0	0.064	0
8:00 – 8:15	0.036	0	0.039	0	0.040	0	0.043	0
8:15 – 8:30	0.067	0	0.073	0	0.075	0	0.082	0
8:30 – 8:45	0.067	0	0.073	0	0.076	0	0.082	0
8:45 – 9:00	0.121	0	0.132	0	0.137	0	0.146	0
9:00 – 9:15	0.052	0	0.056	0	0.058	0	0.066	0
9:15 – 9:30	0.043	0	0.045	0	0.047	0	0.049	0
Cefn Road								
7:30 – 7:45	0.422	1	0.441	1	0.452	1	0.473	1
7:45 – 8:00	0.484	1	0.508	1	0.523	1	0.548	1
8:00 – 8:15	0.639	2	0.680	2	0.690	2	0.734	3
8:15 – 8:30	0.690	2	0.735	3	0.748	3	0.796	4
8:30 – 8:45	0.991	12	1.053	17	1.077	20	1.134	27
8:45 – 9:00	0.824	6	0.879	10	0.898	12	0.945	25
9:00 – 9:15	0.458	1	0.487	1	0.499	1	0.543	1
9:15 – 9:30	0.445	1	0.463	1	0.479	1	0.498	1
Holt Road (W)								
7:30 – 7:45	0.456	1	0.474	1	0.489	1	0.507	1
7:45 – 8:00	0.402	1	0.420	1	0.431	1	0.450	1
8:00 – 8:15	0.473	1	0.511	1	0.510	1	0.549	1
8:15 – 8:30	0.540	1	0.579	1	0.583	1	0.622	2
8:30 – 8:45	0.585	1	0.620	2	0.625	2	0.658	2
8:45 – 9:00	0.606	2	0.649	2	0.660	2	0.692	2
9:00 – 9:15	0.392	1	0.435	1	0.427	1	0.482	1
9:15 – 9:30	0.328	1	0.366	1	0.352	1	0.391	1
Dean Road								
7:30 – 7:45	0.345	1	0.349	1	0.373	1	0.377	1
7:45 – 8:00	0.426	1	0.430	1	0.459	1	0.465	1
8:00 – 8:15	0.374	1	0.383	1	0.404	1	0.415	1
8:15 – 8:30	0.534	1	0.548	1	0.579	1	0.594	1
8:30 – 8:45	0.714	2	0.728	3	0.770	3	0.784	3
8:45 – 9:00	0.559	1	0.575	1	0.610	2	0.622	2
9:00 – 9:15	0.385	1	0.397	1	0.418	1	0.435	1
9:15 – 9:30	0.212	0	0.218	0	0.228	0	0.234	0

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Table X2: Holt Rd / Bryn Estyn Rd / Cefn Rd / Dean Road: Junctions 9 Results – Weekday Evening Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
Holt Road (E)								
16:00 – 16:15	0.564	1	0.610	2	0.602	2	0.649	2
16:15 – 16:30	0.745	3	0.791	4	0.799	4	0.845	5
16:30 – 16:45	0.828	4	0.872	6	0.987	6	0.931	9
16:45 – 17:00	0.802	4	0.847	6	0.860	6	0.906	9
17:00 – 17:15	0.911	8	0.955	11	0.976	13	1.020	21
17:15 – 17:30	0.897	8	0.943	12	0.962	15	1.009	27
17:30 – 17:45	0.912	9	0.960	14	0.978	18	1.026	36
17:45 – 18:00	0.844	6	0.891	10	0.903	12	0.951	29
Bryn Estyn Road								
16:00 – 16:15	0.051	0	0.053	0	0.056	0	0.058	0
16:15 – 16:30	0.069	0	0.071	0	0.077	0	0.080	0
16:30 – 16:45	0.089	0	0.093	0	0.100	0	0.104	0
16:45 – 17:00	0.033	0	0.035	0	0.038	0	0.040	0
17:00 – 17:15	0.140	0	0.145	0	0.157	0	0.161	0
17:15 – 17:30	0.161	0	0.168	0	0.182	0	0.187	0
17:30 – 17:45	0.134	0	0.140	0	0.152	0	0.156	0
17:45 – 18:00	0.110	0	0.116	0	0.126	0	0.133	0
Cefn Road								
16:00 – 16:15	0.576	1	0.605	2	0.622	2	0.652	2
16:15 – 16:30	0.655	2	0.688	2	0.711	2	0.747	3
16:30 – 16:45	0.810	4	0.848	5	0.882	6	0.922	7
16:45 – 17:00	0.653	2	0.687	5	0.711	3	0.748	3
17:00 – 17:15	0.753	3	0.790	3	0.820	4	0.855	5
17:15 – 17:30	0.952	9	0.997	12	1.040	16	1.080	21
17:30 – 17:45	0.646	2	0.682	2	0.705	3	0.737	3
17:45 – 18:00	0.623	2	0.662	2	0.688	2	0.728	3
Holt Road (W)								
16:00 – 16:15	0.437	1	0.514	1	0.471	1	0.550	1
16:15 – 16:30	0.701	2	0.783	3	0.758	3	0.841	5
16:30 – 16:45	0.719	2	0.809	4	0.777	3	0.869	6
16:45 – 17:00	0.706	2	0.793	4	0.764	3	0.856	6
17:00 – 17:15	0.740	3	0.830	4	0.801	4	0.891	7
17:15 – 17:30	0.676	2	0.767	4	0.726	3	0.814	5
17:30 – 17:45	0.618	2	0.717	3	0.677	2	0.781	4
17:45 – 18:00	0.669	2	0.763	3	0.724	3	0.821	4
Dean Road								
16:00 – 16:15	0.276	0	0.292	0	0.297	0	0.314	1
16:15 – 16:30	0.345	1	0.366	1	0.374	1	0.397	1
16:30 – 16:45	0.340	1	0.363	1	0.370	1	0.394	1
16:45 – 17:00	0.393	1	0.419	1	0.428	1	0.456	1
17:00 – 17:15	0.326	1	0.348	1	0.354	1	0.378	1
17:15 – 17:30	0.413	1	0.438	1	0.446	1	0.474	1
17:30 – 17:45	0.364	1	0.389	1	0.397	1	0.426	1
17:45 – 18:00	0.328	1	0.351	1	0.356	1	0.381	1

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: Greyhound TA.j9

Path: L:\Projects\CBO-0322 Tyn Twll, Holt Road, Wrexham\ARCADY\Greyhound

Report generation date: 14/08/2018 12:31:59

- »Existing Layout - Existing / No Growth Future Year Base, AM
- »Existing Layout - Existing / No Growth Future Year Base, PM
- »Existing Layout - No Growth Future Year Base Plus Dev, AM
- »Existing Layout - No Growth Future Year Base Plus Dev, PM
- »Existing Layout - Growthed Future Year Base, AM
- »Existing Layout - Growthed Future Year Base, PM
- »Existing Layout - Growthed Future Year Base Plus Dev, AM
- »Existing Layout - Growthed Future Year Base Plus Dev, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (min)	RFC	LOS	Network Residual Capacity	Queue (Veh)	Delay (min)	RFC	LOS	Network Residual Capacity
	Existing Layout - Existing / No Growth Future Year Base									
Arm A	5.7	0.50	0.87	D	-7 % [Arm C]	8.6	0.65	0.91	E	-6 % [Arm C]
Arm B	0.1	0.16	0.12	A		0.2	0.16	0.16	A	
Arm C	11.7	0.96	0.99	F		8.8	0.87	0.95	F	
Arm D	1.5	0.20	0.61	B		2.7	0.30	0.74	C	
Arm E	2.4	0.24	0.71	B		0.7	0.12	0.41	A	
	Existing Layout - No Growth Future Year Base Plus Dev									
Arm A	14.7	1.12	0.98	F	-12 % [Arm C]	14.4	1.03	0.96	F	-9 % [Arm C]
Arm B	0.2	0.18	0.13	B		0.2	0.17	0.17	B	
Arm C	17.2	1.46	1.05	F		11.9	1.12	1.00	F	
Arm D	1.8	0.23	0.65	B		4.4	0.44	0.83	D	
Arm E	2.5	0.26	0.73	C		0.8	0.13	0.44	A	
	Existing Layout - Growthed Future Year Base									
Arm A	9.8	0.80	0.94	E	-13 % [Arm C]	18.3	1.27	0.98	F	-11 % [Arm C]
Arm B	0.2	0.17	0.14	B		0.2	0.17	0.18	B	
Arm C	20.4	1.75	1.08	F		16.0	1.37	1.04	F	
Arm D	1.9	0.24	0.66	B		3.7	0.39	0.80	C	
Arm E	3.1	0.30	0.77	C		0.8	0.13	0.45	A	
	Existing Layout - Growthed Future Year Base Plus Dev									
Arm A	31.0	2.05	1.04	F	-16 %	35.5	2.23	1.03	F	-14 %

Arm B	0.2	0.19	0.15	B	[Arm C]	0.2	0.18	0.19	B	[Arm C]
Arm C	27.0	2.74	1.13	F		20.5	1.68	1.08	F	
Arm D	2.1	0.26	0.69	C		6.7	0.65	0.89	E	
Arm E	3.3	0.32	0.78	C		0.9	0.14	0.47	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Greyhound Roundabout
Location	Wrexham
Site number	
Date	19/12/2017
Version	
Status	
Identifier	
Client	
Jobnumber	CBO-0322
Enumerator	
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	perMin	min	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Average Delay threshold (min)	Queue threshold (PCU)
5.75			✓	Delay	0.85	0.60	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D3	No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D4	No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓
D5	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D6	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D7	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D8	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Existing Layout	✓	100.000	100.000

Existing Layout - Existing / No Growth Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (min)	Junction LOS
1	(untitled)	Standard Roundabout	A, B, C, D, E	0.49	D

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-7	Arm C

Arms

Arms

Arm	Name	Description
A	Holt Road (E)	
B	Bryn Estyn Road	
C	Cefn Road	
D	Holt Road (W)	
E	Dean Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
A	3.20	6.50	2.3	19.0	36.5	24.0	
B	3.50	4.20	0.3	8.0	36.5	36.0	
C	3.10	3.40	6.3	9.0	36.5	29.0	
D	3.30	5.30	1.6	8.0	36.5	24.0	
E	3.40	4.30	5.3	8.0	36.5	10.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/min)
A	0.548	19.490
B	0.476	16.389
C	0.483	16.014
D	0.504	17.703
E	0.547	20.035

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
A	Percentage		95.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT		100.000
B		DIRECT		100.000
C		DIRECT		100.000
D		DIRECT		100.000
E		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		A	B	C	D	E
	A	0.00	0.67	5.98	9.75	2.15
	B	0.32	0.00	0.12	0.38	0.17
	C	6.27	0.25	0.00	2.48	5.12
	D	8.20	0.60	1.80	0.00	2.05
	E	3.70	0.70	5.50	3.08	0.00

Proportions

	To					
		A	B	C	D	E
	A	0.00	0.04	0.32	0.53	0.12
	B	0.32	0.00	0.12	0.39	0.17
	C	0.44	0.02	0.00	0.18	0.36
	D	0.65	0.05	0.14	0.00	0.16
	E	0.28	0.05	0.42	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		A	B	C	D	E
	A	0	3	8	4	8
	B	11	0	0	4	0
	C	7	0	0	1	1
	D	4	3	1	0	1
	E	0	0	2	1	0

Average PCU Per Veh

	To					
		A	B	C	D	E
	A	1.000	1.030	1.080	1.040	1.080
	B	1.110	1.000	1.000	1.040	1.000
	C	1.070	1.000	1.000	1.010	1.010
	D	1.040	1.030	1.010	1.000	1.010
	E	1.000	1.000	1.020	1.010	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	A	6.27	6.63
	B	0.27	0.28
	C	5.40	5.60

	D	6.60	6.80
	E	5.27	5.33
07:45-08:00	A	8.07	8.53
	B	0.53	0.56
	C	5.80	6.01
	D	5.67	5.84
	E	6.60	6.67
08:00-08:15	A	9.33	9.86
	B	0.33	0.35
	C	7.53	7.80
	D	6.33	6.52
	E	5.53	5.59
08:15-08:30	A	10.80	11.42
	B	0.53	0.56
	C	7.60	7.88
	D	7.13	7.35
	E	7.67	7.75
08:30-08:45	A	11.20	11.84
	B	0.47	0.49
	C	10.60	10.99
	D	7.13	7.35
	E	9.80	9.91
08:45-09:00	A	12.13	12.82
	B	0.87	0.91
	C	8.60	8.91
	D	7.53	7.76
	E	7.67	7.75
09:00-09:15	A	9.13	9.65
	B	0.47	0.49
	C	5.33	5.52
	D	5.53	5.70
	E	6.00	6.07
09:15-09:30	A	7.27	7.69
	B	0.47	0.49
	C	5.60	5.80
	D	4.67	4.81
	E	3.40	3.44

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
A	0.87	0.50	5.7	D	9.27	1113.00
B	0.12	0.16	0.1	A	0.49	59.10
C	0.99	0.96	11.7	F	7.06	846.90
D	0.61	0.20	1.5	B	6.32	758.85
E	0.71	0.24	2.4	B	6.49	779.10

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	6.27	94.05	5.08	14.98	0.419	6.22	8.20	0.0	0.7	0.114	A
B	0.27	4.05	10.39	10.70	0.025	0.27	0.91	0.0	0.0	0.096	A
C	5.40	81.00	5.47	12.80	0.422	5.35	5.19	0.0	0.7	0.133	A
D	6.60	99.00	5.26	14.48	0.456	6.54	5.56	0.0	0.8	0.125	A
E	5.27	79.05	8.04	15.27	0.345	5.24	3.77	0.0	0.5	0.099	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	8.07	121.05	5.89	14.57	0.554	8.04	8.30	0.7	1.2	0.152	A
B	0.53	7.95	12.91	9.51	0.056	0.53	1.02	0.0	0.1	0.111	A
C	5.80	87.00	7.18	11.97	0.484	5.79	6.25	0.7	0.9	0.161	A
D	5.67	85.05	5.96	14.12	0.402	5.68	7.01	0.8	0.7	0.119	A
E	6.60	99.00	7.60	15.51	0.426	6.59	4.04	0.5	0.7	0.112	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.33	139.95	5.29	14.87	0.627	9.30	9.10	1.2	1.6	0.179	B
B	0.33	4.95	13.53	9.20	0.036	0.33	1.06	0.1	0.0	0.113	A
C	7.53	112.95	7.57	11.78	0.639	7.48	6.28	0.9	1.7	0.230	B
D	6.33	94.95	7.40	13.38	0.473	6.32	7.65	0.7	0.9	0.141	A
E	5.53	82.95	8.85	14.80	0.374	5.54	4.87	0.7	0.6	0.108	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	10.80	162.00	6.94	14.05	0.769	10.70	10.32	1.6	3.1	0.291	C
B	0.53	7.95	16.38	7.87	0.067	0.53	1.27	0.0	0.1	0.136	A
C	7.60	114.00	9.14	11.02	0.690	7.57	7.76	1.7	2.1	0.287	C
D	7.13	106.95	7.74	13.21	0.540	7.11	8.98	0.9	1.1	0.164	A
E	7.67	115.05	9.63	14.36	0.534	7.64	5.23	0.6	1.1	0.148	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	11.20	168.00	8.47	13.28	0.843	11.09	11.95	3.1	4.7	0.434	D
B	0.47	7.05	18.13	7.05	0.067	0.47	1.44	0.1	0.1	0.152	A
C	10.60	159.00	9.84	10.69	0.991	9.96	8.76	2.1	11.7	0.960	F
D	7.13	106.95	9.72	12.19	0.585	7.12	10.07	1.1	1.4	0.196	B
E	9.80	147.00	10.71	13.73	0.714	9.72	6.13	1.1	2.4	0.244	B

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.13	181.95	7.12	13.96	0.869	12.06	11.36	4.7	5.7	0.499	D

B	0.87	13.05	17.82	7.18	0.121	0.87	1.37	0.1	0.1	0.158	A
C	8.60	129.00	10.34	10.44	0.824	9.02	8.34	11.7	5.5	0.798	E
D	7.53	112.95	9.25	12.43	0.606	7.52	10.10	1.4	1.5	0.203	B
E	7.67	115.05	10.74	13.72	0.559	7.74	6.03	2.4	1.3	0.169	B

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.13	136.95	5.48	14.78	0.618	9.40	8.00	5.7	1.7	0.195	B
B	0.47	7.05	13.85	9.05	0.052	0.48	1.03	0.1	0.1	0.117	A
C	5.33	79.95	7.88	11.63	0.458	5.64	6.44	5.5	0.9	0.175	B
D	5.53	82.95	5.97	14.11	0.392	5.59	7.55	1.5	0.7	0.118	A
E	6.00	90.00	7.44	15.60	0.385	6.04	4.12	1.3	0.6	0.105	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	7.27	109.05	3.44	15.80	0.460	7.32	6.65	1.7	0.9	0.119	A
B	0.47	7.05	9.99	10.87	0.043	0.47	0.77	0.1	0.0	0.096	A
C	5.60	84.00	5.93	12.57	0.445	5.60	4.53	0.9	0.8	0.144	A
D	4.67	70.05	5.70	14.26	0.328	4.68	5.83	0.7	0.5	0.105	A
E	3.40	51.00	6.66	16.04	0.212	3.42	3.72	0.6	0.3	0.079	A

Existing Layout - Existing / No Growth Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (min)	Junction LOS
1	(untitled)	Standard Roundabout	A, B, C, D, E	0.53	D

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-6	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT		100.000
B		DIRECT		100.000
C		DIRECT		100.000
D		DIRECT		100.000
E		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		A	B	C	D	E
From	A	0.00	0.65	7.10	12.83	4.72
	B	0.32	0.00	0.13	0.50	0.62
	C	5.90	0.20	0.00	2.82	6.08
	D	10.78	0.43	2.70	0.00	3.20
	E	2.72	0.48	4.53	2.23	0.00

Proportions

	To					
		A	B	C	D	E
From	A	0.00	0.03	0.28	0.51	0.19
	B	0.20	0.00	0.09	0.32	0.39
	C	0.39	0.01	0.00	0.19	0.41
	D	0.63	0.03	0.16	0.00	0.19
	E	0.27	0.05	0.45	0.22	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		A	B	C	D	E
From	A	0	0	1	1	2
	B	0	0	0	0	0
	C	4	0	0	0	1
	D	1	0	0	0	0
	E	1	0	0	0	0

Average PCU Per Veh

	To					
		A	B	C	D	E
From	A	1.000	1.000	1.010	1.010	1.020
	B	1.000	1.000	1.000	1.000	1.000
	C	1.040	1.000	1.000	1.000	1.010
	D	1.010	1.000	1.000	1.000	1.000
	E	1.010	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	A	9.07	9.18
	B	0.53	0.53
	C	6.93	7.07
	D	6.00	6.04
	E	4.33	4.34
16:15-16:30	A	11.60	11.73
	B	0.60	0.60
	C	7.27	7.41
	D	9.33	9.39
	E	4.87	4.88
16:30-16:45	A	12.93	13.08
	B	0.73	0.73

	C	8.60	8.77
	D	9.07	9.13
	E	4.73	4.74
16:45-17:00	A	12.27	12.41
	B	0.27	0.27
	C	7.13	7.27
	D	9.40	9.46
	E	5.53	5.55
17:00-17:15	A	14.27	14.44
	B	1.07	1.07
	C	7.60	7.75
	D	9.47	9.53
	E	4.53	4.54
17:15-17:30	A	13.73	13.89
	B	1.20	1.20
	C	9.53	9.72
	D	8.20	8.25
	E	5.80	5.82
17:30-17:45	A	14.13	14.29
	B	1.00	1.00
	C	6.47	6.60
	D	8.07	8.12
	E	5.33	5.34
17:45-18:00	A	13.20	13.35
	B	0.87	0.87
	C	6.47	6.60
	D	8.93	8.99
	E	4.73	4.74

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
A	0.91	0.65	8.6	E	12.65	1518.00
B	0.16	0.16	0.2	A	0.78	94.05
C	0.95	0.87	8.8	F	7.50	900.00
D	0.74	0.30	2.7	C	8.56	1027.05
E	0.41	0.12	0.7	A	4.98	597.75

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.07	136.05	4.31	16.09	0.564	8.99	7.72	0.0	1.3	0.139	A
B	0.53	7.95	12.62	10.34	0.051	0.53	0.68	0.0	0.1	0.102	A

C	6.93	103.95	7.68	12.03	0.576	6.84	5.46	0.0	1.3	0.190	B
D	6.00	90.00	7.55	13.73	0.437	5.95	6.98	0.0	0.8	0.128	A
E	4.33	64.95	7.73	15.68	0.276	4.30	5.77	0.0	0.4	0.088	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	11.60	174.00	5.32	15.57	0.745	11.50	10.11	1.3	2.8	0.240	B
B	0.60	9.00	15.96	8.73	0.069	0.60	0.86	0.1	0.1	0.123	A
C	7.27	109.05	9.61	11.11	0.655	7.24	6.95	1.3	1.8	0.256	C
D	9.33	139.95	8.38	13.30	0.701	9.23	8.47	0.8	2.2	0.240	B
E	4.87	73.05	10.57	14.12	0.345	4.86	7.04	0.4	0.5	0.108	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.93	193.95	5.21	15.62	0.828	12.83	10.47	2.8	4.3	0.344	C
B	0.73	10.95	17.14	8.17	0.089	0.73	0.90	0.1	0.1	0.134	A
C	8.60	129.00	10.62	10.62	0.810	8.47	7.24	1.8	3.7	0.440	D
D	9.07	136.05	9.71	12.62	0.719	9.06	9.39	2.2	2.4	0.279	C
E	4.73	70.95	10.96	13.90	0.340	4.73	7.81	0.5	0.5	0.109	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.27	184.05	5.83	15.30	0.802	12.28	10.33	4.3	4.2	0.333	C
B	0.27	4.05	17.19	8.14	0.033	0.27	0.92	0.1	0.0	0.127	A
C	7.13	106.95	10.00	10.92	0.653	7.25	7.46	3.7	2.0	0.280	C
D	9.40	141.00	8.34	13.32	0.706	9.40	8.91	2.4	2.4	0.255	C
E	5.53	82.95	10.65	14.08	0.393	5.52	7.09	0.5	0.6	0.117	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.27	214.05	5.13	15.66	0.911	14.04	10.37	4.2	7.6	0.545	D
B	1.07	16.05	18.26	7.63	0.140	1.06	0.92	0.0	0.2	0.152	A
C	7.60	114.00	11.73	10.09	0.753	7.54	7.59	2.0	2.8	0.383	C
D	9.47	142.05	9.38	12.79	0.740	9.45	9.90	2.4	2.7	0.297	C
E	4.53	67.95	10.97	13.90	0.326	4.54	7.86	0.6	0.5	0.107	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.73	205.95	5.84	15.30	0.897	13.71	10.60	7.6	7.9	0.603	E
B	1.20	18.00	18.59	7.47	0.161	1.20	0.96	0.2	0.2	0.159	A
C	9.53	142.95	11.90	10.01	0.952	9.13	7.88	2.8	8.8	0.874	F
D	8.20	123.00	10.69	12.12	0.676	8.23	10.35	2.7	2.2	0.260	C
E	5.80	87.00	10.65	14.06	0.413	5.79	8.27	0.5	0.7	0.121	A

17:30 - 17:45

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side)	Start queue	End queue	Delay (min)	LOS
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	(Veh/min)	(Veh)	(Veh/min)				(Veh/min)	(Veh)	(Veh)		
A	14.13	211.95	5.46	15.50	0.912	14.08	9.49	7.9	8.6	0.653	E
B	1.00	15.00	18.62	7.46	0.134	1.00	0.92	0.2	0.2	0.155	A
C	6.47	97.05	11.88	10.02	0.646	6.93	7.74	8.8	1.9	0.366	C
D	8.07	121.05	8.85	13.06	0.618	8.10	9.96	2.2	1.7	0.203	B
E	5.33	79.95	9.61	14.65	0.364	5.34	7.34	0.7	0.6	0.107	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.20	198.00	5.16	15.65	0.844	13.37	9.63	8.6	6.1	0.468	D
B	0.87	13.05	17.65	7.92	0.110	0.87	0.89	0.2	0.1	0.142	A
C	6.47	97.05	11.13	10.38	0.623	6.48	7.39	1.9	1.7	0.258	C
D	8.93	133.95	8.28	13.36	0.669	8.91	9.34	1.7	1.9	0.224	B
E	4.73	70.95	10.06	14.40	0.328	4.74	7.13	0.6	0.5	0.103	A

Existing Layout - No Growth Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (min)	Junction LOS
1	(untitled)	Standard Roundabout	A, B, C, D, E	0.81	E

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-12	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

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

D		DIRECT		100.000
E		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		A	B	C	D	E
From	A	0.00	0.67	6.28	11.68	2.27
	B	0.32	0.00	0.12	0.38	0.17
	C	6.40	0.25	0.00	2.48	5.12
	D	9.05	0.60	1.80	0.00	2.05
	E	3.75	0.70	5.50	3.08	0.00

Proportions

	To					
		A	B	C	D	E
From	A	0.00	0.03	0.30	0.56	0.11
	B	0.32	0.00	0.12	0.39	0.17
	C	0.45	0.02	0.00	0.17	0.36
	D	0.67	0.04	0.13	0.00	0.15
	E	0.29	0.05	0.42	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		A	B	C	D	E
From	A	0	3	8	4	8
	B	11	0	0	4	0
	C	7	0	0	1	1
	D	4	3	1	0	1
	E	0	0	2	1	0

Average PCU Per Veh

	To					
		A	B	C	D	E
From	A	1.000	1.030	1.080	1.040	1.080
	B	1.110	1.000	1.000	1.040	1.000
	C	1.070	1.000	1.000	1.010	1.010
	D	1.040	1.030	1.010	1.000	1.010
	E	1.000	1.000	1.020	1.010	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	A	7.27	7.68
	B	0.27	0.28
	C	5.47	5.67
	D	6.83	7.04
	E	5.27	5.33
07:45-08:00	A	9.07	9.58
	B	0.53	0.56
	C	5.87	6.09
	D	5.90	6.08
	E	6.60	6.67
08:00-08:15	A	10.83	11.44
	B	0.33	0.35
	C	7.60	7.88
	D	6.80	7.01
	E	5.56	5.62
08:15-08:30	A	12.30	12.99
	B	0.53	0.56
	C	7.67	7.95
	D	7.60	7.84

	E	7.70	7.78
08:30-08:45	A	12.70	13.41
	B	0.47	0.49
	C	10.67	11.06
	D	7.60	7.84
	E	9.83	9.94
08:45-09:00	A	13.63	14.39
	B	0.87	0.91
	C	8.67	8.99
	D	8.00	8.25
	E	7.70	7.78
09:00-09:15	A	9.83	10.38
	B	0.47	0.49
	C	5.40	5.60
	D	6.06	6.25
	E	6.03	6.10
09:15-09:30	A	7.97	8.42
	B	0.47	0.49
	C	5.67	5.88
	D	5.20	5.36
	E	3.43	3.47

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
A	0.98	1.12	14.7	F	10.45	1254.01
B	0.13	0.18	0.2	B	0.49	59.10
C	1.05	1.46	17.2	F	7.13	855.30
D	0.65	0.23	1.8	B	6.75	809.85
E	0.73	0.26	2.5	C	6.51	781.80

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	7.27	109.05	5.03	15.02	0.484	7.21	8.56	0.0	0.9	0.127	A
B	0.27	4.05	11.33	10.26	0.026	0.27	0.91	0.0	0.0	0.100	A
C	5.47	82.05	6.29	12.40	0.441	5.42	5.31	0.0	0.8	0.142	A
D	6.83	102.45	5.39	14.41	0.474	6.77	6.32	0.0	0.9	0.130	A
E	5.27	79.05	8.36	15.09	0.349	5.23	3.80	0.0	0.5	0.101	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
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A	9.07	136.05	5.84	14.61	0.621	9.03	8.66	0.9	1.6	0.178	B
B	0.53	7.95	13.86	9.06	0.059	0.53	1.01	0.0	0.1	0.117	A
C	5.87	88.05	8.05	11.55	0.508	5.85	6.34	0.8	1.0	0.175	B
D	5.90	88.50	6.07	14.05	0.420	5.91	7.83	0.9	0.7	0.123	A
E	6.60	99.00	7.91	15.33	0.430	6.59	4.07	0.5	0.7	0.114	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	10.83	162.45	5.30	14.88	0.728	10.77	9.64	1.6	2.5	0.239	B
B	0.33	4.95	14.99	8.51	0.039	0.33	1.08	0.1	0.0	0.122	A
C	7.60	114.00	8.80	11.18	0.680	7.53	6.53	1.0	2.0	0.269	C
D	6.80	102.00	7.55	13.30	0.511	6.78	8.78	0.7	1.0	0.153	A
E	5.56	83.40	9.37	14.50	0.383	5.57	4.96	0.7	0.6	0.112	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.30	184.50	6.94	14.06	0.875	12.09	10.88	2.5	5.7	0.463	D
B	0.53	7.95	17.76	7.21	0.073	0.53	1.27	0.0	0.1	0.150	A
C	7.67	115.05	10.35	10.43	0.735	7.63	7.94	2.0	2.6	0.351	C
D	7.60	114.00	7.87	13.13	0.579	7.58	10.11	1.0	1.3	0.179	B
E	7.70	115.50	10.16	14.06	0.548	7.66	5.29	0.6	1.2	0.155	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.70	190.50	8.46	13.31	0.954	12.38	12.39	5.7	10.5	0.834	F
B	0.47	7.05	19.41	6.45	0.073	0.47	1.43	0.1	0.1	0.167	B
C	10.67	160.05	10.98	10.13	1.053	9.69	8.90	2.6	17.2	1.317	F
D	7.60	114.00	9.58	12.26	0.620	7.58	11.10	1.3	1.6	0.213	B
E	9.83	147.45	11.11	13.51	0.728	9.74	6.05	1.2	2.5	0.259	C

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.63	204.45	7.12	13.97	0.975	13.35	11.99	10.5	14.7	1.116	F
B	0.87	13.05	19.11	6.57	0.132	0.87	1.36	0.1	0.2	0.175	B
C	8.67	130.05	11.51	9.87	0.879	9.18	8.46	17.2	9.5	1.455	F
D	8.00	120.00	9.45	12.32	0.649	7.99	11.24	1.6	1.8	0.230	B
E	7.70	115.50	11.34	13.38	0.575	7.77	6.10	2.5	1.4	0.181	B

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.83	147.45	5.52	14.77	0.665	10.67	8.69	14.7	2.1	0.292	C
B	0.47	7.05	15.15	8.44	0.056	0.48	1.04	0.2	0.1	0.126	A
C	5.40	81.00	8.98	11.09	0.487	5.97	6.65	9.5	1.0	0.217	B
D	6.06	90.90	6.32	13.92	0.435	6.13	8.63	1.8	0.8	0.129	A
E	6.03	90.45	8.14	15.21	0.397	6.08	4.31	1.4	0.7	0.110	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	7.97	119.55	3.49	15.79	0.505	8.04	7.19	2.1	1.0	0.130	A
B	0.47	7.05	10.75	10.51	0.045	0.47	0.77	0.1	0.0	0.100	A
C	5.67	85.05	6.60	12.24	0.463	5.68	4.63	1.0	0.9	0.152	A
D	5.20	78.00	5.79	14.20	0.366	5.21	6.48	0.8	0.6	0.111	A
E	3.43	51.45	7.22	15.72	0.218	3.46	3.78	0.7	0.3	0.082	A

Existing Layout - No Growth Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (min)	Junction LOS
1	(untitled)	Standard Roundabout	A, B, C, D, E	0.75	E

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-9	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT		100.000
B		DIRECT		100.000
C		DIRECT		100.000
D		DIRECT		100.000
E		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		A	B	C	D	E
From	A	0.00	0.65	7.28	14.02	4.78
	B	0.32	0.00	0.13	0.50	0.62
	C	6.23	0.20	0.00	2.82	6.08
	D	12.93	0.43	2.70	0.00	3.20
	E	2.85	0.48	4.53	2.23	0.00

Proportions

	To					
		A	B	C	D	E
From	A	0.00	0.02	0.27	0.52	0.18
	B	0.20	0.00	0.09	0.32	0.39
	C	0.41	0.01	0.00	0.18	0.40
	D	0.67	0.02	0.14	0.00	0.17
	E	0.28	0.05	0.45	0.22	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		A	B	C	D	E
From	A	0	0	1	1	2
	B	0	0	0	0	0
	C	4	0	0	0	1
	D	1	0	0	0	0
	E	1	0	0	0	0

Average PCU Per Veh

	To					
		A	B	C	D	E
From	A	1.000	1.000	1.010	1.010	1.020
	B	1.000	1.000	1.000	1.000	1.000
	C	1.040	1.000	1.000	1.000	1.010
	D	1.010	1.000	1.000	1.000	1.000
	E	1.010	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	A	9.80	9.91
	B	0.53	0.53
	C	7.10	7.24
	D	7.00	7.05
	E	4.40	4.41
16:15-16:30	A	12.33	12.47
	B	0.60	0.60
	C	7.44	7.59
	D	10.33	10.40
	E	4.94	4.95
16:30-16:45	A	13.63	13.79
	B	0.73	0.73
	C	8.77	8.95
	D	10.14	10.21
	E	4.80	4.81
16:45-17:00	A	12.97	13.12
	B	0.27	0.27
	C	7.30	7.45
	D	10.47	10.54
	E	5.60	5.62
17:00-17:15	A	14.97	15.14
	B	1.07	1.07
	C	7.77	7.93
	D	10.54	10.61

	E	4.60	4.61
17:15-17:30	A	14.43	14.60
	B	1.20	1.20
	C	9.70	9.90
	D	9.27	9.33
	E	5.87	5.89
17:30-17:45	A	14.86	15.03
	B	1.00	1.00
	C	6.64	6.77
	D	9.24	9.30
	E	5.40	5.42
17:45-18:00	A	13.93	14.09
	B	0.87	0.87
	C	6.64	6.77
	D	10.10	10.17
	E	4.80	4.81

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
A	0.96	1.03	14.4	F	13.36	1603.79
B	0.17	0.17	0.2	B	0.78	94.05
C	1.00	1.12	11.9	F	7.67	920.40
D	0.83	0.44	4.4	D	9.64	1156.35
E	0.44	0.13	0.8	A	5.05	606.15

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.80	147.00	4.36	16.06	0.610	9.70	8.84	0.0	1.5	0.155	A
B	0.53	7.95	13.36	9.98	0.053	0.53	0.69	0.0	0.1	0.106	A
C	7.10	106.50	8.27	11.74	0.605	7.00	5.62	0.0	1.5	0.207	B
D	7.00	105.00	7.76	13.61	0.514	6.93	7.51	0.0	1.0	0.148	A
E	4.40	66.00	8.82	15.08	0.292	4.37	5.87	0.0	0.4	0.093	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.33	184.95	5.29	15.58	0.791	12.20	11.35	1.5	3.5	0.285	C
B	0.60	9.00	16.63	8.41	0.071	0.60	0.86	0.1	0.1	0.128	A
C	7.44	111.60	10.22	10.81	0.688	7.40	7.01	1.5	2.1	0.289	C
D	10.33	154.95	8.58	13.19	0.783	10.18	9.04	1.0	3.3	0.318	C
E	4.94	74.10	11.71	13.48	0.366	4.93	7.04	0.4	0.6	0.117	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.63	204.45	5.20	15.63	0.872	13.48	11.78	3.5	5.7	0.434	D
B	0.73	10.95	17.79	7.86	0.093	0.73	0.90	0.1	0.1	0.140	A
C	8.77	131.55	11.21	10.34	0.848	8.60	7.30	2.1	4.6	0.530	D
D	10.14	152.10	9.87	12.53	0.809	10.10	9.94	3.3	3.9	0.402	C
E	4.80	72.00	12.18	13.22	0.363	4.80	7.79	0.6	0.6	0.119	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.97	194.55	5.81	15.31	0.847	12.97	11.69	5.7	5.7	0.430	D
B	0.27	4.05	17.87	7.82	0.035	0.27	0.92	0.1	0.0	0.133	A
C	7.30	109.50	10.61	10.62	0.687	7.45	7.53	4.6	2.3	0.328	C
D	10.47	157.05	8.57	13.20	0.793	10.47	9.49	3.9	3.9	0.367	C
E	5.60	84.00	11.91	13.37	0.419	5.59	7.12	0.6	0.7	0.128	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.97	224.55	5.12	15.67	0.955	14.61	11.70	5.7	11.1	0.739	E
B	1.07	16.05	18.82	7.36	0.145	1.06	0.91	0.0	0.2	0.159	A
C	7.77	116.55	12.27	9.83	0.790	7.70	7.61	2.3	3.4	0.452	D
D	10.54	158.10	9.53	12.71	0.830	10.50	10.43	3.9	4.4	0.441	D
E	4.60	69.00	12.21	13.21	0.348	4.61	7.83	0.7	0.5	0.116	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.43	216.45	5.84	15.30	0.943	14.35	11.87	11.1	12.2	0.903	F
B	1.20	18.00	19.23	7.16	0.168	1.20	0.96	0.2	0.2	0.168	B
C	9.70	145.50	12.48	9.73	0.997	9.13	7.95	3.4	11.9	1.115	F
D	9.27	139.05	10.73	12.09	0.767	9.33	10.88	4.4	3.5	0.371	C
E	5.87	88.05	11.85	13.40	0.438	5.85	8.21	0.5	0.8	0.132	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.86	222.90	5.49	15.48	0.960	14.72	10.93	12.2	14.4	1.025	F
B	1.00	15.00	19.29	7.14	0.140	1.00	0.92	0.2	0.2	0.163	A
C	6.64	99.60	12.46	9.74	0.682	7.28	7.83	11.9	2.3	0.495	D
D	9.24	138.60	9.17	12.89	0.717	9.30	10.57	3.5	2.7	0.283	C
E	5.40	81.00	11.01	13.87	0.389	5.41	7.46	0.8	0.6	0.118	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.93	208.95	5.18	15.64	0.891	14.23	11.00	14.4	9.9	0.778	E
B	0.87	13.05	18.51	7.51	0.116	0.87	0.89	0.2	0.1	0.151	A
C	6.64	99.60	11.87	10.02	0.662	6.66	7.52	2.3	2.0	0.299	C

D	10.10	151.50	8.50	13.24	0.763	10.08	10.02	2.7	3.0	0.313	C
E	4.80	72.00	11.37	13.68	0.351	4.81	7.20	0.6	0.5	0.113	A

Existing Layout - Growthed Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (min)	Junction LOS
1	(untitled)	Standard Roundabout	A, B, C, D, E	0.79	E

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-13	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT		100.000
B		DIRECT		100.000
C		DIRECT		100.000
D		DIRECT		100.000
E		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		A	B	C	D	E
From	A	0.00	0.70	6.35	10.33	2.28
	B	0.33	0.00	0.12	0.40	0.18
	C	6.65	0.27	0.00	2.63	5.42
	D	8.70	0.63	1.90	0.00	2.17
	E	3.92	0.75	5.83	3.27	0.00

Proportions

	To					
		A	B	C	D	E
From	A	0.00	0.04	0.32	0.53	0.12
	B	0.32	0.00	0.11	0.39	0.18
	C	0.44	0.02	0.00	0.18	0.36
	D	0.65	0.05	0.14	0.00	0.16
	E	0.28	0.05	0.42	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		A	B	C	D	E
From	A	0	3	8	4	8
	B	11	0	0	4	0
	C	7	0	0	1	1
	D	4	3	1	0	1
	E	0	0	2	1	0

Average PCU Per Veh

	To					
		A	B	C	D	E
From	A	1.000	1.030	1.080	1.040	1.080
	B	1.110	1.000	1.000	1.040	1.000
	C	1.070	1.000	1.000	1.010	1.010
	D	1.040	1.030	1.010	1.000	1.010
	E	1.000	1.000	1.020	1.010	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	A	6.65	7.03
	B	0.29	0.30
	C	5.72	5.93
	D	7.00	7.21
	E	5.59	5.65
07:45-08:00	A	8.55	9.04
	B	0.56	0.59
	C	6.15	6.37
	D	6.01	6.19
	E	7.00	7.08
08:00-08:15	A	9.89	10.46
	B	0.35	0.37
	C	7.98	8.27
	D	6.71	6.91
	E	5.86	5.92
08:15-08:30	A	11.45	12.10
	B	0.56	0.59
	C	8.06	8.35
	D	7.56	7.79
	E	8.13	8.22
08:30-08:45	A	11.87	12.55
	B	0.50	0.53
	C	11.24	11.65
	D	7.56	7.79

	E	10.39	10.50
08:45-09:00	A	12.86	13.60
	B	0.92	0.97
	C	9.12	9.45
	D	7.98	8.22
	E	8.13	8.22
09:00-09:15	A	9.68	10.23
	B	0.50	0.53
	C	5.65	5.86
	D	5.86	6.04
	E	6.36	6.43
09:15-09:30	A	7.71	8.15
	B	0.50	0.53
	C	5.94	6.16
	D	4.95	5.10
	E	3.60	3.64

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
A	0.94	0.80	9.8	E	9.83	1179.90
B	0.14	0.17	0.2	B	0.52	62.70
C	1.08	1.75	20.4	F	7.48	897.90
D	0.66	0.24	1.9	B	6.70	804.45
E	0.77	0.30	3.1	C	6.88	825.90

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	6.65	99.75	5.38	14.83	0.449	6.60	8.69	0.0	0.8	0.121	A
B	0.29	4.35	11.01	10.41	0.028	0.29	0.97	0.0	0.0	0.099	A
C	5.72	85.80	5.80	12.64	0.452	5.67	5.50	0.0	0.8	0.142	A
D	7.00	105.00	5.58	14.32	0.489	6.94	5.89	0.0	0.9	0.134	A
E	5.59	83.85	8.53	14.99	0.373	5.55	3.99	0.0	0.6	0.105	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	8.55	128.25	6.24	14.40	0.594	8.51	8.80	0.8	1.4	0.169	B
B	0.56	8.40	13.68	9.15	0.061	0.56	1.08	0.0	0.1	0.116	A
C	6.15	92.25	7.61	11.77	0.523	6.13	6.62	0.8	1.1	0.177	B
D	6.01	90.15	6.32	13.94	0.431	6.02	7.42	0.9	0.8	0.127	A
E	7.00	105.00	8.06	15.25	0.459	6.98	4.28	0.6	0.8	0.121	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.89	148.35	5.61	14.71	0.672	9.85	9.64	1.4	2.0	0.204	B
B	0.35	5.25	14.33	8.83	0.040	0.35	1.13	0.1	0.0	0.118	A
C	7.98	119.70	8.03	11.56	0.690	7.91	6.66	1.1	2.1	0.269	C
D	6.71	100.65	7.84	13.16	0.510	6.69	8.10	0.8	1.0	0.154	A
E	5.86	87.90	9.38	14.50	0.404	5.87	5.15	0.8	0.7	0.116	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	11.45	171.75	7.35	13.84	0.827	11.30	10.94	2.0	4.2	0.373	C
B	0.56	8.40	17.31	7.43	0.075	0.56	1.34	0.0	0.1	0.146	A
C	8.06	120.90	9.66	10.77	0.748	8.02	8.21	2.1	2.8	0.356	C
D	7.56	113.40	8.20	12.97	0.583	7.54	9.48	1.0	1.4	0.183	B
E	8.13	121.95	10.20	14.03	0.579	8.09	5.53	0.7	1.3	0.167	B

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	11.87	178.05	8.96	13.04	0.910	11.66	12.45	4.2	7.3	0.634	E
B	0.50	7.50	19.11	6.59	0.076	0.50	1.51	0.1	0.1	0.164	A
C	11.24	168.60	10.36	10.44	1.077	10.07	9.25	2.8	20.4	1.441	F
D	7.56	113.40	9.90	12.10	0.625	7.54	10.53	1.4	1.6	0.218	B
E	10.39	155.85	11.14	13.49	0.770	10.27	6.31	1.3	3.1	0.300	C

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.86	192.90	7.56	13.74	0.936	12.70	12.10	7.3	9.8	0.804	E
B	0.92	13.80	18.81	6.71	0.137	0.91	1.45	0.1	0.2	0.172	B
C	9.12	136.80	10.91	10.16	0.898	9.67	8.82	20.4	12.1	1.749	F
D	7.98	119.70	9.90	12.10	0.660	7.96	10.68	1.6	1.9	0.241	B
E	8.13	121.95	11.44	13.32	0.610	8.23	6.42	3.1	1.6	0.200	B

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.68	145.20	5.83	14.60	0.663	10.19	8.68	9.8	2.0	0.251	C
B	0.50	7.50	14.92	8.55	0.058	0.51	1.11	0.2	0.1	0.124	A
C	5.65	84.75	8.51	11.32	0.499	6.39	6.91	12.1	1.0	0.234	B
D	5.86	87.90	6.70	13.74	0.427	5.93	8.20	1.9	0.8	0.129	A
E	6.36	95.40	8.09	15.23	0.418	6.42	4.55	1.6	0.7	0.114	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	7.71	115.65	3.64	15.70	0.491	7.78	7.06	2.0	1.0	0.127	A
B	0.50	7.50	10.61	10.58	0.047	0.50	0.82	0.1	0.0	0.099	A
C	5.94	89.10	6.30	12.39	0.479	5.95	4.81	1.0	0.9	0.155	A

D	4.95	74.25	6.05	14.07	0.352	4.96	6.19	0.8	0.5	0.110	A
E	3.60	54.00	7.07	15.80	0.228	3.63	3.95	0.7	0.3	0.082	A

Existing Layout - Growthed Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (min)	Junction LOS
1	(untitled)	Standard Roundabout	A, B, C, D, E	0.89	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-11	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT		100.000
B		DIRECT		100.000
C		DIRECT		100.000
D		DIRECT		100.000
E		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		A	B	C	D	E
From	A	0.00	0.68	7.53	13.60	5.00
	B	0.33	0.00	0.13	0.53	0.65
	C	6.25	0.22	0.00	2.98	6.45
	D	11.43	0.47	2.87	0.00	3.40
	E	2.88	0.52	4.80	2.37	0.00

Proportions

	To					
		A	B	C	D	E
From	A	0.00	0.03	0.28	0.51	0.19
	B	0.20	0.00	0.08	0.32	0.39
	C	0.39	0.01	0.00	0.19	0.41
	D	0.63	0.03	0.16	0.00	0.19
	E	0.27	0.05	0.45	0.22	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		A	B	C	D	E
From	A	0	0	1	1	2
	B	0	0	0	0	0
	C	4	0	0	0	1
	D	1	0	0	0	0
	E	1	0	0	0	0

Average PCU Per Veh

	To					
		A	B	C	D	E
From	A	1.000	1.000	1.010	1.010	1.020
	B	1.000	1.000	1.000	1.000	1.000
	C	1.040	1.000	1.000	1.000	1.010
	D	1.010	1.000	1.000	1.000	1.000
	E	1.010	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	A	9.61	9.72
	B	0.56	0.56
	C	7.35	7.50
	D	6.36	6.40
	E	4.59	4.60
16:15-16:30	A	12.30	12.44
	B	0.64	0.64
	C	7.71	7.86
	D	9.89	9.95
	E	5.16	5.17
16:30-16:45	A	13.71	13.87
	B	0.77	0.77
	C	9.12	9.30
	D	9.61	9.67
	E	5.01	5.02
16:45-17:00	A	13.01	13.16
	B	0.29	0.29
	C	7.56	7.71
	D	9.96	10.02
	E	5.86	5.88
17:00-17:15	A	15.13	15.31
	B	1.13	1.13
	C	8.06	8.22
	D	10.04	10.10

	E	4.80	4.81
17:15-17:30	A	14.55	14.72
	B	1.27	1.27
	C	10.10	10.30
	D	8.69	8.74
	E	6.15	6.17
17:30-17:45	A	14.98	15.15
	B	1.06	1.06
	C	6.86	7.00
	D	8.55	8.60
	E	5.65	5.67
17:45-18:00	A	13.99	14.15
	B	0.92	0.92
	C	6.86	7.00
	D	9.47	9.53
	E	5.01	5.02

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
A	0.98	1.27	18.3	F	13.41	1609.20
B	0.18	0.17	0.2	B	0.83	99.60
C	1.04	1.37	16.0	F	7.95	954.30
D	0.80	0.39	3.7	C	9.07	1088.55
E	0.45	0.13	0.8	A	5.28	633.45

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.61	144.15	4.57	15.95	0.602	9.51	8.17	0.0	1.5	0.153	A
B	0.56	8.40	13.36	9.98	0.056	0.56	0.73	0.0	0.1	0.106	A
C	7.35	110.25	8.13	11.82	0.622	7.24	5.78	0.0	1.6	0.214	B
D	6.36	95.40	7.99	13.50	0.471	6.30	7.38	0.0	0.9	0.138	A
E	4.59	68.85	8.18	15.43	0.297	4.56	6.11	0.0	0.4	0.092	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.30	184.50	5.64	15.40	0.799	12.16	10.68	1.5	3.6	0.296	C
B	0.64	9.60	16.88	8.29	0.077	0.64	0.92	0.1	0.1	0.131	A
C	7.71	115.65	10.17	10.84	0.711	7.66	7.34	1.6	2.3	0.309	C
D	9.89	148.35	8.87	13.05	0.758	9.76	8.96	0.9	2.9	0.293	C
E	5.16	77.40	11.17	13.78	0.374	5.15	7.45	0.4	0.6	0.116	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.71	205.65	5.52	15.46	0.887	13.53	11.05	3.6	6.3	0.473	D
B	0.77	11.55	18.10	7.71	0.100	0.77	0.96	0.1	0.1	0.144	A
C	9.12	136.80	11.21	10.34	0.882	8.90	7.65	2.3	5.6	0.615	E
D	9.61	144.15	10.21	12.36	0.777	9.59	9.90	2.9	3.3	0.355	C
E	5.01	75.15	11.57	13.56	0.370	5.01	8.23	0.6	0.6	0.117	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.01	195.15	6.19	15.12	0.860	13.01	10.97	6.3	6.3	0.476	D
B	0.29	4.35	18.22	7.65	0.038	0.29	0.98	0.1	0.0	0.136	A
C	7.56	113.40	10.61	10.63	0.711	7.76	7.91	5.6	2.6	0.369	C
D	9.96	149.40	8.90	13.03	0.764	9.96	9.46	3.3	3.3	0.326	C
E	5.86	87.90	11.31	13.71	0.428	5.85	7.55	0.6	0.7	0.127	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	15.13	226.95	5.44	15.50	0.976	14.67	10.97	6.3	13.3	0.856	F
B	1.13	16.95	19.13	7.21	0.157	1.12	0.97	0.0	0.2	0.164	A
C	8.06	120.90	12.28	9.83	0.820	7.97	7.98	2.6	3.9	0.511	D
D	10.04	150.60	9.88	12.54	0.801	10.01	10.37	3.3	3.7	0.388	C
E	4.80	72.00	11.61	13.54	0.354	4.81	8.28	0.7	0.6	0.115	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.55	218.25	6.19	15.12	0.962	14.42	11.09	13.3	15.2	1.108	F
B	1.27	19.05	19.59	6.99	0.182	1.27	1.02	0.2	0.2	0.175	B
C	10.10	151.50	12.54	9.71	1.040	9.29	8.32	3.9	16.0	1.373	F
D	8.69	130.35	10.99	11.96	0.726	8.75	10.84	3.7	2.8	0.317	C
E	6.15	92.25	11.15	13.79	0.446	6.13	8.60	0.6	0.8	0.130	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.98	224.70	5.80	15.32	0.978	14.78	10.21	15.2	18.3	1.275	F
B	1.06	15.90	19.59	6.99	0.152	1.06	0.98	0.2	0.2	0.169	B
C	6.86	102.90	12.49	9.73	0.705	7.75	8.16	16.0	2.6	0.677	E
D	8.55	128.25	9.69	12.63	0.677	8.59	10.56	2.8	2.2	0.250	C
E	5.65	84.75	10.35	14.23	0.397	5.66	7.93	0.8	0.7	0.117	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.99	209.85	5.48	15.49	0.903	14.42	10.21	18.3	11.8	1.002	F
B	0.92	13.80	18.95	7.30	0.126	0.92	0.95	0.2	0.1	0.157	A
C	6.86	102.90	11.98	9.98	0.688	6.88	7.90	2.6	2.3	0.326	C

D	9.47	142.05	8.83	13.07	0.724	9.45	10.03	2.2	2.5	0.274	C
E	5.01	75.15	10.67	14.07	0.356	5.02	7.61	0.7	0.6	0.111	A

Existing Layout - Growthed Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (min)	Junction LOS
1	(untitled)	Standard Roundabout	A, B, C, D, E	1.44	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-16	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT		100.000
B		DIRECT		100.000
C		DIRECT		100.000
D		DIRECT		100.000
E		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		A	B	C	D	E
From	A	0.00	0.70	6.65	12.27	2.40
	B	0.33	0.00	0.12	0.40	0.18
	C	6.78	0.27	0.00	2.63	5.42
	D	9.55	0.63	1.90	0.00	2.17
	E	3.97	0.75	5.83	3.27	0.00

Proportions

	To					
		A	B	C	D	E
From	A	0.00	0.03	0.30	0.56	0.11
	B	0.32	0.00	0.11	0.39	0.18
	C	0.45	0.02	0.00	0.17	0.36
	D	0.67	0.04	0.13	0.00	0.15
	E	0.29	0.05	0.42	0.24	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		A	B	C	D	E
From	A	0	3	8	4	8
	B	11	0	0	4	0
	C	7	0	0	1	1
	D	4	3	1	0	1
	E	0	0	2	1	0

Average PCU Per Veh

	To					
		A	B	C	D	E
From	A	1.000	1.030	1.080	1.040	1.080
	B	1.110	1.000	1.000	1.040	1.000
	C	1.070	1.000	1.000	1.010	1.010
	D	1.040	1.030	1.010	1.000	1.010
	E	1.000	1.000	1.020	1.010	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	A	7.65	8.08
	B	0.29	0.30
	C	5.79	6.00
	D	7.23	7.45
	E	5.59	5.65
07:45-08:00	A	9.55	10.09
	B	0.56	0.59
	C	6.22	6.45
	D	6.24	6.43
	E	7.00	7.08
08:00-08:15	A	11.39	12.03
	B	0.35	0.37
	C	8.05	8.35
	D	7.18	7.40
	E	5.89	5.95
08:15-08:30	A	12.95	13.68
	B	0.56	0.59
	C	8.13	8.43
	D	8.03	8.28
	E	8.16	8.25
08:30-08:45	A	13.37	14.12
	B	0.50	0.53
	C	11.31	11.73
	D	8.03	8.28

	E	10.42	10.53
08:45-09:00	A	14.36	15.17
	B	0.92	0.97
	C	9.19	9.53
	D	8.45	8.71
	E	8.16	8.25
09:00-09:15	A	10.38	10.96
	B	0.50	0.53
	C	5.72	5.93
	D	6.39	6.59
	E	6.39	6.46
09:15-09:30	A	8.41	8.88
	B	0.50	0.53
	C	6.01	6.23
	D	5.48	5.65
	E	3.63	3.67

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
A	1.04	2.05	31.0	F	11.01	1320.91
B	0.15	0.19	0.2	B	0.52	62.70
C	1.13	2.74	27.0	F	7.55	906.30
D	0.69	0.26	2.1	C	7.13	855.45
E	0.78	0.32	3.3	C	6.90	828.60

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	7.65	114.75	5.33	14.87	0.515	7.58	9.06	0.0	1.0	0.136	A
B	0.29	4.35	11.95	9.97	0.029	0.29	0.96	0.0	0.0	0.103	A
C	5.79	86.85	6.62	12.24	0.473	5.73	5.62	0.0	0.9	0.152	A
D	7.23	108.45	5.70	14.25	0.507	7.16	6.65	0.0	1.0	0.140	A
E	5.59	83.85	8.84	14.82	0.377	5.55	4.02	0.0	0.6	0.107	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	9.55	143.25	6.20	14.43	0.662	9.49	9.16	1.0	1.9	0.200	B
B	0.56	8.40	14.62	8.70	0.064	0.56	1.07	0.0	0.1	0.123	A
C	6.22	93.30	8.47	11.35	0.548	6.20	6.71	0.9	1.2	0.194	B
D	6.24	93.60	6.43	13.87	0.450	6.25	8.24	1.0	0.8	0.132	A
E	7.00	105.00	8.38	15.07	0.465	6.98	4.31	0.6	0.9	0.123	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	11.39	170.85	5.62	14.72	0.774	11.30	10.18	1.9	3.2	0.285	C
B	0.35	5.25	15.78	8.14	0.043	0.35	1.14	0.1	0.0	0.129	A
C	8.05	120.75	9.24	10.97	0.734	7.96	6.90	1.2	2.6	0.323	C
D	7.18	107.70	7.98	13.08	0.549	7.16	9.22	0.8	1.2	0.168	B
E	5.89	88.35	9.90	14.21	0.415	5.90	5.24	0.9	0.7	0.121	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	12.95	194.25	7.35	13.86	0.934	12.59	11.50	3.2	8.6	0.646	E
B	0.56	8.40	18.60	6.82	0.082	0.56	1.34	0.0	0.1	0.160	A
C	8.13	121.95	10.80	10.22	0.796	8.07	8.36	2.6	3.5	0.450	D
D	8.03	120.45	8.31	12.90	0.622	8.00	10.55	1.2	1.6	0.203	B
E	8.16	122.40	10.73	13.73	0.594	8.11	5.58	0.7	1.4	0.176	B

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.37	200.55	8.94	13.07	1.023	12.67	12.86	8.6	19.2	1.336	F
B	0.50	7.50	20.11	6.12	0.082	0.50	1.49	0.1	0.1	0.178	B
C	11.31	169.65	11.31	9.97	1.134	9.74	9.30	3.5	27.0	1.866	F
D	8.03	120.45	9.67	12.21	0.658	8.01	11.38	1.6	1.9	0.237	B
E	10.42	156.30	11.50	13.29	0.784	10.29	6.18	1.4	3.3	0.321	C

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.36	215.40	7.56	13.75	1.044	13.57	12.52	19.2	31.0	2.053	F
B	0.92	13.80	19.71	6.29	0.146	0.91	1.42	0.1	0.2	0.186	B
C	9.19	137.85	11.81	9.72	0.945	9.35	8.82	27.0	24.7	2.737	F
D	8.45	126.75	9.66	12.21	0.692	8.43	11.50	1.9	2.1	0.262	C
E	8.16	122.40	11.81	13.12	0.622	8.27	6.28	3.3	1.7	0.211	B

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	10.38	155.70	5.88	14.59	0.711	12.27	9.62	31.0	2.7	0.731	E
B	0.50	7.50	16.99	7.56	0.066	0.51	1.16	0.2	0.1	0.142	A
C	5.72	85.80	10.15	10.53	0.543	7.28	7.35	24.7	1.2	0.484	D
D	6.39	95.85	7.60	13.27	0.482	6.47	9.83	2.1	0.9	0.149	A
E	6.39	95.85	9.05	14.68	0.435	6.45	5.02	1.7	0.8	0.122	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	8.41	126.15	3.69	15.69	0.536	8.51	7.61	2.7	1.2	0.141	A
B	0.50	7.50	11.38	10.21	0.049	0.50	0.82	0.1	0.1	0.103	A
C	6.01	90.15	6.98	12.06	0.498	6.03	4.91	1.2	1.0	0.166	A

D	5.48	82.20	6.15	14.01	0.391	5.50	6.85	0.9	0.7	0.118	A
E	3.63	54.45	7.64	15.49	0.234	3.66	4.01	0.8	0.3	0.085	A

Existing Layout - Growthed Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (min)	Junction LOS
1	(untitled)	Standard Roundabout	A, B, C, D, E	1.37	F

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-14	Arm C

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A		DIRECT		100.000
B		DIRECT		100.000
C		DIRECT		100.000
D		DIRECT		100.000
E		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		A	B	C	D	E
From	A	0.00	0.68	7.72	14.78	5.07
	B	0.33	0.00	0.13	0.53	0.65
	C	6.58	0.22	0.00	2.98	6.45
	D	13.58	0.47	2.87	0.00	3.40
	E	3.02	0.52	4.80	2.37	0.00

Proportions

	To					
		A	B	C	D	E
From	A	0.00	0.02	0.27	0.52	0.18
	B	0.20	0.00	0.08	0.32	0.39
	C	0.41	0.01	0.00	0.18	0.40
	D	0.67	0.02	0.14	0.00	0.17
	E	0.28	0.05	0.45	0.22	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		A	B	C	D	E
From	A	0	0	1	1	2
	B	0	0	0	0	0
	C	4	0	0	0	1
	D	1	0	0	0	0
	E	1	0	0	0	0

Average PCU Per Veh

	To					
		A	B	C	D	E
From	A	1.000	1.000	1.010	1.010	1.020
	B	1.000	1.000	1.000	1.000	1.000
	C	1.040	1.000	1.000	1.000	1.010
	D	1.010	1.000	1.000	1.000	1.000
	E	1.010	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	A	10.34	10.46
	B	0.56	0.56
	C	7.52	7.67
	D	7.36	7.41
	E	4.66	4.67
16:15-16:30	A	13.03	13.18
	B	0.64	0.64
	C	7.88	8.04
	D	10.89	10.96
	E	5.23	5.24
16:30-16:45	A	14.41	14.58
	B	0.77	0.77
	C	9.29	9.48
	D	10.68	10.75
	E	5.08	5.09
16:45-17:00	A	13.71	13.87
	B	0.29	0.29
	C	7.73	7.89
	D	11.03	11.10
	E	5.93	5.95
17:00-17:15	A	15.83	16.01
	B	1.13	1.13
	C	8.23	8.40
	D	11.11	11.18

	E	4.87	4.88
17:15-17:30	A	15.25	15.43
	B	1.27	1.27
	C	10.27	10.48
	D	9.76	9.83
	E	6.22	6.24
17:30-17:45	A	15.71	15.89
	B	1.06	1.06
	C	7.03	7.17
	D	9.72	9.78
	E	5.72	5.74
17:45-18:00	A	14.72	14.89
	B	0.92	0.92
	C	7.03	7.17
	D	10.64	10.71
	E	5.08	5.09

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (min)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
A	1.03	2.23	35.5	F	14.13	1695.00
B	0.19	0.18	0.2	B	0.83	99.60
C	1.08	1.68	20.5	F	8.12	974.70
D	0.89	0.65	6.7	E	10.15	1217.84
E	0.47	0.14	0.9	A	5.35	641.85

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	10.34	155.10	4.62	15.93	0.649	10.22	9.29	0.0	1.8	0.172	B
B	0.56	8.40	14.10	9.63	0.058	0.56	0.74	0.0	0.1	0.110	A
C	7.52	112.80	8.72	11.53	0.652	7.40	5.94	0.0	1.8	0.236	B
D	7.36	110.40	8.20	13.38	0.550	7.28	7.91	0.0	1.2	0.162	A
E	4.66	69.90	9.27	14.82	0.314	4.63	6.21	0.0	0.5	0.098	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.03	195.45	5.60	15.42	0.845	12.83	11.90	1.8	4.7	0.362	C
B	0.64	9.60	17.52	7.98	0.080	0.64	0.91	0.1	0.1	0.136	A
C	7.88	118.20	10.76	10.55	0.747	7.82	7.40	1.8	2.7	0.357	C
D	10.89	163.35	9.06	12.94	0.841	10.67	9.51	1.2	4.5	0.406	C
E	5.23	78.45	12.29	13.16	0.397	5.22	7.45	0.5	0.7	0.126	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.41	216.15	5.51	15.47	0.931	14.13	12.33	4.7	8.9	0.628	E
B	0.77	11.55	18.69	7.42	0.104	0.77	0.95	0.1	0.1	0.150	A
C	9.29	139.35	11.76	10.08	0.922	8.99	7.70	2.7	7.2	0.762	E
D	10.68	160.20	10.33	12.30	0.869	10.61	10.42	4.5	5.6	0.557	D
E	5.08	76.20	12.75	12.90	0.394	5.08	8.18	0.7	0.7	0.128	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	13.71	205.65	6.17	15.13	0.906	13.70	12.34	8.9	9.0	0.679	E
B	0.29	4.35	18.89	7.33	0.040	0.29	0.98	0.1	0.0	0.142	A
C	7.73	115.95	11.21	10.34	0.748	8.00	7.98	7.2	3.2	0.465	D
D	11.03	165.45	9.16	12.89	0.856	11.03	10.04	5.6	5.7	0.528	D
E	5.93	88.95	12.59	13.00	0.456	5.92	7.60	0.7	0.8	0.141	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	15.83	237.45	5.43	15.51	1.020	15.06	12.28	9.0	20.5	1.203	F
B	1.13	16.95	19.53	7.02	0.161	1.12	0.96	0.0	0.2	0.169	B
C	8.23	123.45	12.69	9.63	0.855	8.12	7.95	3.2	4.8	0.615	E
D	11.11	166.65	10.00	12.47	0.891	11.04	10.82	5.7	6.7	0.647	E
E	4.87	73.05	12.82	12.87	0.378	4.88	8.22	0.8	0.6	0.125	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	15.25	228.75	6.20	15.12	1.009	14.83	12.35	20.5	26.8	1.770	F
B	1.27	19.05	20.02	6.79	0.187	1.27	1.01	0.2	0.2	0.181	B
C	10.27	154.05	12.96	9.50	1.080	9.22	8.33	4.8	20.5	1.683	F
D	9.76	146.40	10.94	11.98	0.814	9.88	11.24	6.7	4.9	0.501	D
E	6.22	93.30	12.35	13.12	0.474	6.20	8.48	0.6	0.9	0.144	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	15.71	235.65	5.83	15.31	1.026	15.13	11.69	26.8	35.5	2.232	F
B	1.06	15.90	19.98	6.80	0.156	1.06	0.98	0.2	0.2	0.174	B
C	7.03	105.45	12.88	9.54	0.737	8.18	8.17	20.5	3.2	1.038	F
D	9.72	145.80	10.03	12.45	0.781	9.79	11.03	4.9	3.9	0.387	C
E	5.72	85.80	11.79	13.43	0.426	5.73	8.02	0.9	0.8	0.130	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (min)	LOS
A	14.72	220.80	5.49	15.48	0.951	15.18	11.58	35.5	28.6	2.207	F
B	0.92	13.80	19.72	6.93	0.133	0.92	0.95	0.2	0.2	0.167	A
C	7.03	105.45	12.64	9.65	0.728	7.05	8.00	3.2	2.8	0.390	C

D	10.64	159.60	9.03	12.96	0.821	10.62	10.66	3.9	4.2	0.417	D
E	5.08	76.20	11.98	13.34	0.381	5.09	7.67	0.8	0.6	0.121	A



Appendix G: Industrial Estate Roundabout: Model Results



Table G1: A534 / Borrás Hall Ln / Ind Est Rd / Sandy Ln: Junctions 9 Results – Weekday Morning Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A534 (W)								
7:30 – 7:45	0.804	4	0.819	4	0.853	5	0.868	6
7:45 – 8:00	0.801	4	0.817	4	0.850	6	0.865	6
8:00 – 8:15	0.814	4	0.837	5	0.864	6	0.886	7
8:15 – 8:30	0.842	5	0.864	6	0.893	8	0.916	10
8:30 – 8:45	0.695	2	0.718	3	0.737	3	0.760	3
8:45 – 9:00	0.531	1	0.553	1	0.564	1	0.586	1
9:00 – 9:15	0.435	1	0.446	1	0.461	1	0.472	1
9:15 – 9:30	0.303	0	0.314	1	0.322	1	0.333	1
Borrás Hall Lane								
7:30 – 7:45	0.137	0	0.144	0	0.170	0	0.180	0
7:45 – 8:00	0.267	0	0.281	0	0.335	1	0.355	1
8:00 – 8:15	0.144	0	0.155	0	0.182	0	0.199	0
8:15 – 8:30	0.222	0	0.241	0	0.286	0	0.316	0
8:30 – 8:45	0.133	0	0.141	0	0.159	0	0.170	0
8:45 – 9:00	0.075	0	0.079	0	0.085	0	0.089	0
9:00 – 9:15	0.047	0	0.048	0	0.052	0	0.053	0
9:15 – 9:30	0.026	0	0.026	0	0.028	0	0.028	0
Wrexham Road								
7:30 – 7:45	0.371	1	0.381	1	0.419	1	0.431	1
7:45 – 8:00	0.431	1	0.443	1	0.490	1	0.505	1
8:00 – 8:15	0.450	1	0.469	1	0.511	1	0.534	1
8:15 – 8:30	0.661	2	0.690	2	0.755	3	0.788	3
8:30 – 8:45	0.527	1	0.547	1	0.591	2	0.615	2
8:45 – 9:00	0.305	0	0.315	1	0.334	1	0.345	1
9:00 – 9:15	0.273	0	0.278	0	0.297	0	0.302	0
9:15 – 9:30	0.298	0	0.303	0	0.321	1	0.326	1
Industrial Estate Road								
7:30 – 7:45	0.179	0	0.184	0	0.191	0	0.196	0
7:45 – 8:00	0.163	0	0.168	0	0.174	0	0.179	0
8:00 – 8:15	0.150	0	0.160	0	0.160	0	0.170	0
8:15 – 8:30	0.208	0	0.218	0	0.222	0	0.232	0
8:30 – 8:45	0.184	0	0.194	0	0.196	0	0.206	0
8:45 – 9:00	0.198	0	0.208	0	0.211	0	0.221	0
9:00 – 9:15	0.230	0	0.242	0	0.245	0	0.257	0
9:15 – 9:30	0.230	0	0.242	0	0.245	0	0.257	0
Sandy Lane								
7:30 – 7:45	0.000	0	0.000	0	0.000	0	0.000	0
7:45 – 8:00	0.000	0	0.000	0	0.000	0	0.000	0
8:00 – 8:15	0.000	0	0.000	0	0.000	0	0.000	0
8:15 – 8:30	0.011	0	0.011	0	0.012	0	0.012	0
8:30 – 8:45	0.006	0	0.006	0	0.006	0	0.006	0
8:45 – 9:00	0.011	0	0.011	0	0.011	0	0.011	0
9:00 – 9:15	0.006	0	0.006	0	0.006	0	0.006	0
9:15 – 9:30	0.011	0	0.011	0	0.012	0	0.012	0

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Table X2: A534 / Borrás Hall Ln / Ind Est Rd / Sandy Ln: Junctions 9 Results – Weekday Evening Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A534 (W)								
16:00 – 16:15	0.247	0	0.259	0	0.263	0	0.275	0
16:15 – 16:30	0.254	0	0.266	0	0.270	0	0.282	0
16:30 – 16:45	0.275	0	0.287	0	0.293	0	0.305	0
16:45 – 17:00	0.299	0	0.311	0	0.318	1	0.330	1
17:00 – 17:15	0.342	1	0.353	1	0.364	1	0.376	1
17:15 – 17:30	0.312	1	0.324	1	0.333	1	0.344	1
17:30 – 17:45	0.364	1	0.375	1	0.387	1	0.399	1
17:45 – 18:00	0.276	0	0.287	0	0.293	0	0.305	0
Borrás Hall Lane								
16:00 – 16:15	0.035	0	0.035	0	0.037	0	0.038	0
16:15 – 16:30	0.010	0	0.010	0	0.011	0	0.011	0
16:30 – 16:45	0.022	0	0.022	0	0.023	0	0.023	0
16:45 – 17:00	0.026	0	0.026	0	0.028	0	0.028	0
17:00 – 17:15	0.031	0	0.032	0	0.034	0	0.034	0
17:15 – 17:30	0.038	0	0.038	0	0.041	0	0.041	0
17:30 – 17:45	0.028	0	0.028	0	0.031	0	0.031	0
17:45 – 18:00	0.011	0	0.011	0	0.011	0	0.011	0
Wrexham Road								
16:00 – 16:15	0.314	1	0.320	1	0.335	1	0.342	1
16:15 – 16:30	0.316	1	0.322	1	0.337	1	0.344	1
16:30 – 16:45	0.313	1	0.320	1	0.335	1	0.341	1
16:45 – 17:00	0.369	1	0.376	1	0.395	1	0.402	1
17:00 – 17:15	0.361	1	0.368	1	0.388	1	0.394	1
17:15 – 17:30	0.336	1	0.342	1	0.359	1	0.366	1
17:30 – 17:45	0.362	1	0.369	1	0.388	1	0.396	1
17:45 – 18:00	0.320	1	0.326	1	0.342	1	0.348	1
Industrial Estate Road								
16:00 – 16:15	0.619	2	0.638	2	0.661	2	0.680	2
16:15 – 16:30	0.495	1	0.513	1	0.528	1	0.547	1
16:30 – 16:45	0.761	3	0.781	3	0.812	4	0.832	5
16:45 – 17:00	0.567	1	0.588	1	0.606	2	0.627	2
17:00 – 17:15	0.814	4	0.835	5	0.870	6	0.891	7
17:15 – 17:30	0.689	2	0.709	3	0.736	3	0.756	3
17:30 – 17:45	0.619	2	0.641	2	0.662	2	0.683	2
17:45 – 18:00	0.387	1	0.408	1	0.414	1	0.435	1
Sandy Lane								
16:00 – 16:15	0.031	0	0.032	0	0.037	0	0.039	0
16:15 – 16:30	0.012	0	0.013	0	0.014	0	0.014	0
16:30 – 16:45	0.032	0	0.034	0	0.039	0	0.042	0
16:45 – 17:00	0.008	0	0.008	0	0.008	0	0.009	0
17:00 – 17:15	0.191	0	0.205	0	0.248	0	0.269	0
17:15 – 17:30	0.010	0	0.010	0	0.011	0	0.012	0
17:30 – 17:45	0.008	0	0.009	0	0.009	0	0.010	0
17:45 – 18:00	0.022	0	0.022	0	0.024	0	0.025	0

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: A534_Industrial Estate Road TA.j9

Path: L:\Projects\CBO-0322 Tyn Twll, Holt Road, Wrexham\ARCADY\Ind Est

Report generation date: 14/08/2018 14:19:26

- »Existing / No Growth Future Year Base, AM
- »Existing / No Growth Future Year Base, PM
- »No Growth Future Year Base Plus Dev, AM
- »No Growth Future Year Base Plus Dev, PM
- »Growthed Future Year Base, AM
- »Growthed Future Year Base, PM
- »Growthed Future Year Base Plus Dev, AM
- »Growthed Future Year Base Plus Dev, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	Existing / No Growth Future Year Base									
Arm 1	5.1	8.62	0.84	A	12 % [Arm 3]	0.6	2.28	0.36	A	16 % [Arm 5]
Arm 2	0.4	12.18	0.27	B		0.0	3.66	0.04	A	
Arm 3	1.9	15.42	0.66	C		0.6	4.36	0.37	A	
Arm 4	0.3	2.29	0.23	A		4.2	7.73	0.81	A	
Arm 5	0.0	5.07	0.01	A		0.2	14.07	0.19	B	
	No Growth Future Year Base Plus Dev									
Arm 1	6.0	9.96	0.86	A	10 % [Arm 3]	0.6	2.33	0.38	A	14 % [Arm 5]
Arm 2	0.4	13.56	0.28	B		0.0	3.72	0.04	A	
Arm 3	2.1	17.31	0.69	C		0.6	4.46	0.38	A	
Arm 4	0.3	2.33	0.24	A		4.8	8.58	0.83	A	
Arm 5	0.0	5.13	0.01	A		0.3	15.30	0.20	C	
	Growthed Future Year Base									
Arm 1	7.6	12.37	0.89	B	6 % [Arm 3]	0.6	2.38	0.39	A	10 % [Arm 5]
Arm 2	0.5	16.17	0.34	C		0.0	3.79	0.04	A	
Arm 3	2.8	21.77	0.75	C		0.6	4.60	0.39	A	
Arm 4	0.3	2.35	0.25	A		6.1	10.50	0.87	B	
Arm 5	0.0	5.18	0.01	A		0.3	18.33	0.25	C	
	Growthed Future Year Base Plus Dev									
Arm 1	9.5	15.08	0.92	C	4 %	0.7	2.43	0.40	A	8 %

Arm 2	0.5	18.59	0.36	C	[Arm 3]	0.0	3.86	0.04	A	[Arm 5]
Arm 3	3.3	25.34	0.79	D		0.7	4.71	0.40	A	
Arm 4	0.3	2.39	0.26	A		7.2	12.00	0.89	B	
Arm 5	0.0	5.25	0.01	A		0.4	20.52	0.27	C	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	06/06/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CBO\Lucas
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	perMin	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D3	No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D4	No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓
D5	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D6	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D7	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D8	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Existing / No Growth Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	8.44	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	12	Arm 3

Arms

Arms

Arm	Name	Description
1	A534 West	
2	Borras Hall Lane	
3	Wrexham Road	
4	Industrial Estate Road	
5	Sandy Lane	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	7.30	10.40	6.5	31.8	70.0	51.0	
2	3.70	5.50	10.5	20.9	70.0	12.0	
3	3.60	7.40	12.9	26.4	70.0	46.0	
4	7.60	9.10	20.5	43.4	70.0	23.0	
5	3.60	6.00	14.3	15.7	70.0	41.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/min)
1	0.609	40.706
2	0.500	26.140
3	0.481	26.833
4	0.692	46.773
5	0.459	24.721

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1	Percentage	Predicted Queue too long	115.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.15	13.53	42.60	0.22
	2	0.17	0.00	0.42	1.62	0.00
	3	8.15	0.08	0.00	2.65	0.22
	4	11.18	0.47	1.35	0.00	0.13
	5	0.10	0.00	0.03	0.00	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.00	0.24	0.75	0.00
	2	0.08	0.00	0.19	0.73	0.00
	3	0.73	0.01	0.00	0.24	0.02
	4	0.85	0.04	0.10	0.00	0.01
	5	0.75	0.00	0.25	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	11	4	7	23
	2	0	0	4	1	0
	3	8	0	0	13	23
	4	28	4	33	0	25
	5	67	0	0	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.110	1.040	1.070	1.230
	2	1.000	1.000	1.040	1.010	1.000
	3	1.080	1.000	1.000	1.130	1.230
	4	1.280	1.040	1.330	1.000	1.250
	5	1.670	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	34.80	37.01
	2	1.00	1.01
	3	4.40	4.81
	4	6.20	7.91
	5	0.00	0.00

07:45-08:00	1	34.73	36.94
	2	1.93	1.96
	3	4.93	5.39
	4	5.60	7.15
	5	0.00	0.00
08:00-08:15	1	35.33	37.57
	2	1.00	1.01
	3	5.20	5.69
	4	5.13	6.55
	5	0.00	0.00
08:15-08:30	1	36.33	38.64
	2	1.40	1.42
	3	7.33	8.02
	4	6.93	8.84
	5	0.13	0.20
08:30-08:45	1	30.07	31.98
	2	1.27	1.29
	3	7.00	7.66
	4	6.13	7.82
	5	0.07	0.11
08:45-09:00	1	22.93	24.39
	2	1.00	1.01
	3	4.87	5.33
	4	6.80	8.68
	5	0.13	0.20
09:00-09:15	1	18.73	19.92
	2	0.73	0.74
	3	4.80	5.25
	4	7.93	10.12
	5	0.07	0.11
09:15-09:30	1	13.07	13.90
	2	0.47	0.48
	3	5.87	6.42
	4	7.80	9.96
	5	0.13	0.20

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.84	8.62	5.1	A	28.25	3389.86
2	0.27	12.18	0.4	B	1.10	132.00
3	0.66	15.42	1.9	C	5.55	666.00
4	0.23	2.29	0.3	A	6.56	787.80
5	0.01	5.07	0.0	A	0.07	8.10

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	34.80	522.00	0.89	43.29	0.804	34.54	8.54	0.0	3.9	6.672	A
2	1.00	15.00	35.08	7.28	0.137	0.99	0.34	0.0	0.2	9.517	A
3	4.40	66.00	26.97	11.85	0.371	4.36	9.10	0.0	0.6	7.975	A
4	6.20	93.00	3.53	34.57	0.179	6.19	27.81	0.0	0.2	2.112	A
5	0.00	0.00	9.43	12.97	0.000	0.00	0.28	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	34.73	520.95	0.81	43.35	0.801	34.73	8.53	3.9	4.0	6.954	A
2	1.93	28.95	35.21	7.22	0.267	1.92	0.33	0.2	0.4	11.278	B
3	4.93	73.95	27.87	11.44	0.431	4.92	9.26	0.6	0.7	9.178	A
4	5.60	84.00	4.02	34.28	0.163	5.60	28.77	0.2	0.2	2.091	A
5	0.00	0.00	9.34	13.04	0.000	0.00	0.29	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	35.33	529.95	0.75	43.40	0.814	35.31	8.26	4.0	4.2	7.388	A
2	1.00	15.00	35.75	6.95	0.144	1.01	0.32	0.4	0.2	10.127	B
3	5.20	78.00	27.58	11.56	0.450	5.20	9.18	0.7	0.8	9.418	A
4	5.13	76.95	4.17	34.19	0.150	5.13	28.61	0.2	0.2	2.064	A
5	0.00	0.00	9.01	13.18	0.000	0.00	0.29	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.33	544.95	1.05	43.17	0.842	36.28	11.43	4.2	5.1	8.618	A
2	1.40	21.00	36.92	6.31	0.222	1.39	0.40	0.2	0.3	12.184	B
3	7.33	109.95	28.62	11.08	0.661	7.26	9.70	0.8	1.9	15.422	C
4	6.93	103.95	5.77	33.25	0.208	6.92	30.11	0.2	0.3	2.278	A
5	0.13	2.00	12.34	11.97	0.011	0.13	0.35	0.0	0.0	5.068	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	30.07	451.05	0.92	43.27	0.695	30.25	10.55	5.1	2.3	4.675	A
2	1.27	19.05	30.82	9.52	0.133	1.28	0.35	0.3	0.2	7.287	A
3	7.00	105.00	23.96	13.27	0.527	7.05	8.14	1.9	1.1	9.715	A
4	6.13	91.95	5.58	33.37	0.184	6.13	25.43	0.3	0.2	2.204	A
5	0.07	1.05	11.39	12.33	0.006	0.07	0.32	0.0	0.0	4.893	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	22.93	343.95	1.01	43.19	0.531	23.01	9.57	2.3	1.1	2.985	A

2	1.00	15.00	23.68	13.25	0.075	1.00	0.34	0.2	0.1	4.901	A
3	4.87	73.05	18.25	15.95	0.305	4.92	6.43	1.1	0.4	5.458	A
4	6.80	102.00	3.91	34.35	0.198	6.80	19.26	0.2	0.2	2.177	A
5	0.13	2.00	10.45	12.60	0.011	0.13	0.25	0.0	0.0	4.811	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.73	280.95	1.15	43.07	0.435	18.75	10.39	1.1	0.8	2.469	A
2	0.73	10.95	19.54	15.41	0.047	0.73	0.37	0.1	0.0	4.089	A
3	4.80	72.00	14.81	17.57	0.273	4.80	5.46	0.4	0.4	4.701	A
4	7.93	118.95	3.78	34.42	0.230	7.93	15.83	0.2	0.3	2.264	A
5	0.07	1.05	11.47	12.20	0.006	0.07	0.25	0.0	0.0	4.946	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.07	196.05	1.16	43.07	0.303	13.09	11.09	0.8	0.4	2.002	A
2	0.47	7.05	13.89	18.37	0.026	0.47	0.36	0.0	0.0	3.354	A
3	5.87	88.05	10.30	19.68	0.298	5.87	4.06	0.4	0.4	4.342	A
4	7.80	117.00	4.55	33.97	0.230	7.80	11.62	0.3	0.3	2.292	A
5	0.13	2.00	12.11	11.99	0.011	0.13	0.24	0.0	0.0	5.057	A

Existing / No Growth Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	5.67	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	16	Arm 5

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.32	11.73	12.20	0.15
	2	0.22	0.00	0.18	0.50	0.00
	3	13.40	0.18	0.00	1.27	0.12
	4	42.70	2.75	4.00	0.00	0.12
	5	0.38	0.05	0.07	0.02	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.01	0.48	0.50	0.01
	2	0.24	0.00	0.20	0.56	0.00
	3	0.90	0.01	0.00	0.08	0.01
	4	0.86	0.06	0.08	0.00	0.00
	5	0.74	0.10	0.13	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	3	11	56
	2	0	0	0	3	0
	3	4	0	0	14	0
	4	4	1	7	0	14
	5	17	0	0	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.000	1.030	1.110	1.560
	2	1.000	1.000	1.000	1.030	1.000
	3	1.040	1.000	1.000	1.140	1.000
	4	1.040	1.010	1.070	1.000	1.140
	5	1.170	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	10.20	10.94
	2	0.67	0.68
	3	7.13	7.47
	4	24.93	25.95
	5	0.27	0.30
16:15-16:30	1	10.60	11.37
	2	0.20	0.20
	3	7.20	7.54
	4	19.93	20.75
	5	0.13	0.15
16:30-16:45	1	11.20	12.02
	2	0.40	0.41
	3	7.07	7.41
	4	30.67	31.93

	5	0.20	0.23
16:45-17:00	1	12.40	13.30
	2	0.47	0.48
	3	8.20	8.59
	4	22.47	23.39
	5	0.07	0.08
17:00-17:15	1	13.80	14.81
	2	0.53	0.54
	3	7.87	8.25
	4	32.40	33.73
	5	1.00	1.13
17:15-17:30	1	12.80	13.73
	2	0.67	0.68
	3	7.40	7.75
	4	27.60	28.73
	5	0.07	0.08
17:30-17:45	1	15.00	16.09
	2	0.47	0.48
	3	7.80	8.17
	4	24.67	25.68
	5	0.07	0.08
17:45-18:00	1	11.60	12.45
	2	0.20	0.20
	3	7.20	7.54
	4	15.60	16.24
	5	0.27	0.30

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.36	2.28	0.6	A	12.20	1464.00
2	0.04	3.66	0.0	A	0.45	54.15
3	0.37	4.36	0.6	A	7.48	898.05
4	0.81	7.73	4.2	A	24.78	2974.06
5	0.19	14.07	0.2	B	0.26	31.20

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.20	153.00	3.54	41.22	0.247	10.18	28.10	0.0	0.3	1.932	A
2	0.67	10.05	12.09	19.33	0.035	0.67	1.62	0.0	0.0	3.215	A
3	7.13	106.95	5.69	22.72	0.314	7.10	7.07	0.0	0.5	3.834	A
4	24.93	373.95	6.72	40.27	0.619	24.82	6.07	0.0	1.6	3.858	A

5	0.27	4.05	31.37	8.65	0.031	0.27	0.18	0.0	0.0	7.159	A
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16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.60	159.00	2.84	41.70	0.254	10.60	23.80	0.3	0.3	1.929	A
2	0.20	3.00	12.09	19.32	0.010	0.20	1.35	0.0	0.0	3.139	A
3	7.20	108.00	5.53	22.79	0.316	7.20	6.77	0.5	0.5	3.848	A
4	19.93	298.95	6.70	40.28	0.495	19.97	6.03	1.6	1.0	2.961	A
5	0.13	1.95	26.51	10.71	0.012	0.13	0.17	0.0	0.0	5.675	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.20	168.00	4.30	40.70	0.275	11.20	32.87	0.3	0.4	2.033	A
2	0.40	6.00	13.55	18.56	0.022	0.40	1.94	0.0	0.0	3.303	A
3	7.07	106.05	5.99	22.56	0.313	7.07	7.96	0.5	0.5	3.875	A
4	30.67	460.05	6.64	40.33	0.761	30.53	6.43	1.0	3.1	6.039	A
5	0.20	3.00	36.97	6.27	0.032	0.20	0.20	0.0	0.0	9.884	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.40	186.00	3.19	41.45	0.299	12.40	26.96	0.4	0.4	2.064	A
2	0.47	7.05	14.07	18.28	0.026	0.47	1.52	0.0	0.0	3.367	A
3	8.20	123.00	6.65	22.22	0.369	8.19	7.89	0.5	0.6	4.273	A
4	22.47	337.05	7.69	39.60	0.567	22.59	7.16	3.1	1.3	3.552	A
5	0.07	1.05	30.08	9.19	0.008	0.07	0.19	0.0	0.0	6.579	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.80	207.00	4.74	40.41	0.342	13.79	35.65	0.4	0.5	2.254	A
2	0.53	7.95	16.37	17.07	0.031	0.53	2.16	0.0	0.0	3.626	A
3	7.87	118.05	7.44	21.82	0.361	7.87	9.47	0.6	0.6	4.301	A
4	32.40	486.00	7.42	39.78	0.814	32.21	7.89	1.3	4.2	7.734	A
5	1.00	15.00	39.40	5.24	0.191	0.99	0.22	0.0	0.2	14.067	B

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.80	192.00	3.89	40.98	0.312	12.80	30.74	0.5	0.5	2.131	A
2	0.67	10.05	14.89	17.85	0.038	0.67	1.80	0.0	0.0	3.491	A
3	7.40	111.00	7.02	22.04	0.336	7.40	8.54	0.6	0.5	4.099	A
4	27.60	414.00	7.02	40.06	0.689	27.73	7.40	4.2	2.3	4.914	A
5	0.07	1.05	34.54	7.30	0.010	0.08	0.20	0.2	0.0	8.334	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.00	225.00	3.48	41.26	0.364	14.99	28.43	0.5	0.6	2.284	A

2	0.47	7.05	16.80	16.84	0.028	0.47	1.67	0.0	0.0	3.665	A
3	7.80	117.00	7.97	21.55	0.362	7.80	9.31	0.5	0.6	4.361	A
4	24.67	370.05	7.34	39.83	0.619	24.71	8.42	2.3	1.6	3.977	A
5	0.07	1.05	31.84	8.44	0.008	0.07	0.21	0.0	0.0	7.163	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.60	174.00	2.29	42.07	0.276	11.61	20.20	0.6	0.4	1.970	A
2	0.20	3.00	12.77	18.97	0.011	0.20	1.13	0.0	0.0	3.199	A
3	7.20	108.00	6.05	22.52	0.320	7.21	6.92	0.6	0.5	3.918	A
4	15.60	234.00	6.72	40.27	0.387	15.67	6.54	1.6	0.6	2.444	A
5	0.27	4.05	22.22	12.53	0.022	0.27	0.16	0.0	0.0	4.894	A

No Growth Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	9.56	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	10	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.15	13.65	44.02	0.22
	2	0.17	0.00	0.42	1.62	0.00
	3	8.20	0.08	0.00	2.65	0.22
	4	11.80	0.47	1.35	0.00	0.13
	5	0.10	0.00	0.03	0.00	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.00	0.24	0.76	0.00
	2	0.08	0.00	0.19	0.73	0.00
	3	0.74	0.01	0.00	0.24	0.02
	4	0.86	0.03	0.10	0.00	0.01
	5	0.75	0.00	0.25	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	11	4	7	23
	2	0	0	4	1	0
	3	8	0	0	13	23
	4	28	4	33	0	25
	5	67	0	0	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.110	1.040	1.070	1.230
	2	1.000	1.000	1.040	1.010	1.000
	3	1.080	1.000	1.000	1.130	1.230
	4	1.280	1.040	1.330	1.000	1.250
	5	1.670	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	35.47	37.73
	2	1.00	1.01
	3	4.40	4.81
	4	6.37	8.13
	5	0.00	0.00
07:45-08:00	1	35.40	37.65
	2	1.93	1.96
	3	4.93	5.39
	4	5.77	7.37
	5	0.00	0.00
08:00-08:15	1	36.30	38.61
	2	1.00	1.01
	3	5.23	5.72
	4	5.46	6.97
	5	0.00	0.00
08:15-08:30	1	37.30	39.67
	2	1.40	1.42
	3	7.36	8.05
	4	7.26	9.27
	5	0.13	0.20
08:30-08:45	1	31.04	33.02
	2	1.27	1.29
	3	7.03	7.69

	4	6.46	8.25
	5	0.07	0.11
08:45-09:00	1	23.90	25.42
	2	1.00	1.01
	3	4.90	5.36
	4	7.13	9.10
	5	0.13	0.20
09:00-09:15	1	19.20	20.42
	2	0.73	0.74
	3	4.83	5.28
	4	8.33	10.63
	5	0.07	0.11
09:15-09:30	1	13.54	14.40
	2	0.47	0.48
	3	5.90	6.46
	4	8.20	10.47
	5	0.13	0.20

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.86	9.96	6.0	A	29.02	3482.26
2	0.28	13.56	0.4	B	1.10	132.00
3	0.69	17.31	2.1	C	5.57	668.70
4	0.24	2.33	0.3	A	6.87	824.70
5	0.01	5.13	0.0	A	0.07	8.10

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	35.47	532.05	0.87	43.29	0.819	35.18	8.73	0.0	4.3	7.160	A
2	1.00	15.00	35.71	6.95	0.144	0.99	0.34	0.0	0.2	10.044	B
3	4.40	66.00	27.62	11.55	0.381	4.36	9.09	0.0	0.6	8.305	A
4	6.37	95.55	3.53	34.56	0.184	6.35	28.45	0.0	0.2	2.126	A
5	0.00	0.00	9.61	12.91	0.000	0.00	0.28	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	35.40	531.00	0.80	43.36	0.817	35.40	8.72	4.3	4.4	7.529	A
2	1.93	28.95	35.87	6.88	0.281	1.92	0.32	0.2	0.4	12.060	B
3	4.93	73.95	28.53	11.13	0.443	4.92	9.26	0.6	0.8	9.634	A
4	5.77	86.55	4.03	34.28	0.168	5.77	29.42	0.2	0.2	2.106	A

5	0.00	0.00	9.51	12.97	0.000	0.00	0.28	0.0	0.0	0.000	A
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08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.30	544.50	0.76	43.39	0.837	36.26	8.61	4.4	4.9	8.360	A
2	1.00	15.00	36.71	6.44	0.155	1.01	0.32	0.4	0.2	11.074	B
3	5.23	78.45	28.46	11.15	0.469	5.22	9.26	0.8	0.9	10.116	B
4	5.46	81.90	4.19	34.17	0.160	5.46	29.49	0.2	0.2	2.089	A
5	0.00	0.00	9.37	13.04	0.000	0.00	0.29	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	37.30	559.50	1.05	43.16	0.864	37.23	11.78	4.9	6.0	9.956	A
2	1.40	21.00	37.88	5.81	0.241	1.39	0.40	0.2	0.3	13.562	B
3	7.36	110.40	29.50	10.67	0.690	7.28	9.77	0.9	2.1	17.311	C
4	7.26	108.90	5.79	33.24	0.218	7.25	30.99	0.2	0.3	2.309	A
5	0.13	2.00	12.70	11.83	0.011	0.13	0.35	0.0	0.0	5.127	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	31.04	465.60	0.92	43.26	0.718	31.27	10.91	6.0	2.6	5.094	A
2	1.27	19.05	31.84	8.98	0.141	1.28	0.35	0.3	0.2	7.797	A
3	7.03	105.45	24.87	12.85	0.547	7.09	8.25	2.1	1.2	10.523	B
4	6.46	96.90	5.62	33.34	0.194	6.46	26.34	0.3	0.2	2.232	A
5	0.07	1.05	11.76	12.19	0.006	0.07	0.32	0.0	0.0	4.950	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	23.90	358.50	1.01	43.19	0.553	23.99	9.94	2.6	1.2	3.139	A
2	1.00	15.00	24.66	12.74	0.079	1.01	0.34	0.2	0.1	5.115	A
3	4.90	73.50	19.10	15.55	0.315	4.95	6.57	1.2	0.5	5.685	A
4	7.13	106.95	3.94	34.33	0.208	7.13	20.11	0.2	0.3	2.205	A
5	0.13	2.00	10.81	12.46	0.011	0.13	0.25	0.0	0.0	4.866	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.20	288.00	1.15	43.07	0.446	19.23	10.81	1.2	0.8	2.521	A
2	0.73	10.95	20.01	15.16	0.048	0.73	0.37	0.1	0.1	4.161	A
3	4.83	72.45	15.25	17.36	0.278	4.84	5.50	0.5	0.4	4.791	A
4	8.33	124.95	3.81	34.40	0.242	8.33	16.27	0.3	0.3	2.300	A
5	0.07	1.05	11.89	12.03	0.006	0.07	0.25	0.0	0.0	5.016	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.54	203.10	1.16	43.06	0.314	13.56	11.51	0.8	0.5	2.035	A

2	0.47	7.05	14.37	18.12	0.026	0.47	0.36	0.1	0.0	3.401	A
3	5.90	88.50	10.72	19.49	0.303	5.90	4.12	0.4	0.4	4.413	A
4	8.20	123.00	4.58	33.95	0.242	8.20	12.04	0.3	0.3	2.329	A
5	0.13	2.00	12.54	11.83	0.011	0.13	0.24	0.0	0.0	5.129	A

No Growth Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	6.17	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	14	Arm 5

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.32	11.80	13.07	0.15
	2	0.22	0.00	0.18	0.50	0.00
	3	13.53	0.18	0.00	1.27	0.12
	4	44.27	2.75	4.00	0.00	0.12
	5	0.38	0.05	0.07	0.02	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.01	0.47	0.52	0.01
	2	0.24	0.00	0.20	0.56	0.00
	3	0.90	0.01	0.00	0.08	0.01
	4	0.87	0.05	0.08	0.00	0.00
	5	0.74	0.10	0.13	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	3	11	56
	2	0	0	0	3	0
	3	4	0	0	14	0
	4	4	1	7	0	14
	5	17	0	0	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.000	1.030	1.110	1.560
	2	1.000	1.000	1.000	1.030	1.000
	3	1.040	1.000	1.000	1.140	1.000
	4	1.040	1.010	1.070	1.000	1.140
	5	1.170	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	10.67	11.46
	2	0.67	0.68
	3	7.20	7.54
	4	25.66	26.71
	5	0.27	0.30
16:15-16:30	1	11.07	11.89
	2	0.20	0.20
	3	7.27	7.62
	4	20.66	21.51
	5	0.13	0.15
16:30-16:45	1	11.67	12.53
	2	0.40	0.41
	3	7.14	7.48
	4	31.45	32.74
	5	0.20	0.23
16:45-17:00	1	12.87	13.82
	2	0.47	0.48
	3	8.27	8.66
	4	23.25	24.20
	5	0.07	0.08
17:00-17:15	1	14.27	15.33
	2	0.53	0.54
	3	7.94	8.32
	4	33.18	34.54

	5	1.00	1.13
17:15-17:30	1	13.27	14.25
	2	0.67	0.68
	3	7.47	7.83
	4	28.38	29.54
	5	0.07	0.08
17:30-17:45	1	15.47	16.62
	2	0.47	0.48
	3	7.87	8.24
	4	25.50	26.54
	5	0.07	0.08
17:45-18:00	1	12.07	12.96
	2	0.20	0.20
	3	7.27	7.62
	4	16.43	17.10
	5	0.27	0.30

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.38	2.33	0.6	A	12.67	1520.39
2	0.04	3.72	0.0	A	0.45	54.15
3	0.38	4.46	0.6	A	7.55	906.45
4	0.83	8.58	4.8	A	25.56	3067.65
5	0.20	15.30	0.3	C	0.26	31.20

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.67	160.05	3.53	41.18	0.259	10.65	28.90	0.0	0.3	1.964	A
2	0.67	10.05	12.56	19.08	0.035	0.67	1.62	0.0	0.0	3.258	A
3	7.20	108.00	6.09	22.52	0.320	7.17	7.13	0.0	0.5	3.901	A
4	25.66	384.90	6.79	40.23	0.638	25.54	6.47	0.0	1.7	4.056	A
5	0.27	4.05	32.16	8.31	0.032	0.27	0.18	0.0	0.0	7.457	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.07	166.05	2.86	41.64	0.266	11.07	24.59	0.3	0.4	1.962	A
2	0.20	3.00	12.57	19.07	0.010	0.20	1.35	0.0	0.0	3.182	A
3	7.27	109.05	5.94	22.58	0.322	7.27	6.83	0.5	0.5	3.918	A
4	20.66	309.90	6.77	40.23	0.513	20.71	6.44	1.7	1.1	3.078	A
5	0.13	1.95	27.31	10.37	0.013	0.13	0.17	0.0	0.0	5.864	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.67	175.05	4.27	40.68	0.287	11.67	33.73	0.4	0.4	2.068	A
2	0.40	6.00	14.00	18.31	0.022	0.40	1.93	0.0	0.0	3.348	A
3	7.14	107.10	6.41	22.35	0.320	7.14	7.99	0.5	0.5	3.945	A
4	31.45	471.75	6.71	40.28	0.781	31.29	6.85	1.1	3.4	6.562	A
5	0.20	3.00	37.80	5.92	0.034	0.20	0.20	0.0	0.0	10.494	B

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.87	193.05	3.21	41.40	0.311	12.87	27.81	0.4	0.4	2.102	A
2	0.47	7.05	14.55	18.02	0.026	0.47	1.53	0.0	0.0	3.417	A
3	8.27	124.05	7.09	22.00	0.376	8.26	7.93	0.5	0.6	4.364	A
4	23.25	348.75	7.76	39.55	0.588	23.38	7.59	3.4	1.4	3.739	A
5	0.07	1.05	30.95	8.82	0.008	0.07	0.19	0.0	0.0	6.855	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.27	214.05	4.70	40.39	0.353	14.26	36.51	0.4	0.5	2.296	A
2	0.53	7.95	16.82	16.83	0.032	0.53	2.14	0.0	0.0	3.680	A
3	7.94	119.10	7.90	21.59	0.368	7.94	9.46	0.6	0.6	4.397	A
4	33.18	497.70	7.49	39.74	0.835	32.96	8.35	1.4	4.8	8.584	A
5	1.00	15.00	40.22	4.89	0.205	0.98	0.22	0.0	0.3	15.305	C

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.27	199.05	3.88	40.94	0.324	13.27	31.63	0.5	0.5	2.170	A
2	0.67	10.05	15.35	17.60	0.038	0.67	1.80	0.0	0.0	3.543	A
3	7.47	112.05	7.46	21.82	0.342	7.47	8.56	0.6	0.5	4.185	A
4	28.38	425.70	7.09	40.02	0.709	28.53	7.85	4.8	2.5	5.294	A
5	0.07	1.05	35.42	6.93	0.010	0.09	0.20	0.3	0.0	8.789	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.47	232.05	3.49	41.21	0.375	15.46	29.33	0.5	0.6	2.330	A
2	0.47	7.05	17.28	16.58	0.028	0.47	1.67	0.0	0.0	3.724	A
3	7.87	118.05	8.44	21.31	0.369	7.87	9.31	0.5	0.6	4.463	A
4	25.50	382.50	7.41	39.79	0.641	25.55	8.90	2.5	1.8	4.226	A
5	0.07	1.05	32.75	8.06	0.009	0.07	0.21	0.0	0.0	7.507	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.07	181.05	2.34	42.00	0.287	12.08	21.06	0.6	0.4	2.007	A
2	0.20	3.00	13.27	18.70	0.011	0.20	1.15	0.0	0.0	3.243	A
3	7.27	109.05	6.47	22.31	0.326	7.28	6.99	0.6	0.5	3.994	A

4	16.43	246.45	6.79	40.22	0.408	16.50	6.96	1.8	0.7	2.538	A
5	0.27	4.05	23.12	12.14	0.022	0.27	0.17	0.0	0.0	5.053	A

Growthed Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	11.86	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	6	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

		To				
From		1	2	3	4	5
	1	0.00	0.17	14.35	45.15	0.23
	2	0.18	0.00	0.45	1.72	0.00
	3	8.63	0.08	0.00	2.82	0.23
	4	11.85	0.50	1.43	0.00	0.13
	5	0.10	0.00	0.03	0.00	0.00

Proportions

		To				
From		1	2	3	4	5
	1	0.00	0.00	0.24	0.75	0.00
	2	0.08	0.00	0.19	0.73	0.00
	3	0.73	0.01	0.00	0.24	0.02
	4	0.85	0.04	0.10	0.00	0.01
	5	0.75	0.00	0.25	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	11	4	7	23
	2	0	0	4	1	0
	3	8	0	0	13	23
	4	28	4	33	0	25
	5	67	0	0	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.110	1.040	1.070	1.230
	2	1.000	1.000	1.040	1.010	1.000
	3	1.080	1.000	1.000	1.130	1.230
	4	1.280	1.040	1.330	1.000	1.250
	5	1.670	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	36.89	39.23
	2	1.06	1.08
	3	4.66	5.10
	4	6.57	8.38
	5	0.00	0.00
07:45-08:00	1	36.81	39.15
	2	2.05	2.08
	3	5.23	5.72
	4	5.94	7.58
	5	0.00	0.00
08:00-08:15	1	37.45	39.83
	2	1.06	1.08
	3	5.51	6.03
	4	5.44	6.94
	5	0.00	0.00
08:15-08:30	1	38.51	40.96
	2	1.48	1.50
	3	7.77	8.50
	4	7.35	9.38
	5	0.14	0.21
08:30-08:45	1	31.87	33.90
	2	1.35	1.37
	3	7.42	8.12
	4	6.50	8.30
	5	0.07	0.11
08:45-09:00	1	24.31	25.85
	2	1.06	1.08
	3	5.16	5.65
	4	7.21	9.20
	5	0.14	0.21
09:00-09:15	1	19.85	21.11
	2	0.77	0.78
	3	5.09	5.57
	4	8.41	10.73
	5	0.07	0.11
09:15-09:30	1	13.85	14.73

	2	0.50	0.51
	3	6.22	6.81
	4	8.27	10.55
	5	0.14	0.21

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.89	12.37	7.6	B	29.94	3593.09
2	0.34	16.17	0.5	C	1.17	139.95
3	0.75	21.77	2.8	C	5.88	705.90
4	0.25	2.35	0.3	A	6.96	835.35
5	0.01	5.18	0.0	A	0.07	8.40

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.89	553.35	0.94	43.24	0.853	36.53	9.05	0.0	5.4	8.527	A
2	1.06	15.90	37.10	6.22	0.170	1.05	0.37	0.0	0.2	11.567	B
3	4.66	69.90	28.52	11.12	0.419	4.61	9.63	0.0	0.7	9.159	A
4	6.57	98.55	3.73	34.45	0.191	6.55	29.40	0.0	0.2	2.150	A
5	0.00	0.00	9.99	12.77	0.000	0.00	0.30	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.81	552.15	0.86	43.31	0.850	36.80	9.04	5.4	5.5	9.197	A
2	2.05	30.75	37.31	6.12	0.335	2.03	0.35	0.2	0.5	14.617	B
3	5.23	78.45	29.53	10.67	0.490	5.21	9.82	0.7	0.9	10.970	B
4	5.94	89.10	4.27	34.14	0.174	5.94	30.47	0.2	0.2	2.129	A
5	0.00	0.00	9.91	12.84	0.000	0.00	0.30	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	37.45	561.75	0.79	43.36	0.864	37.42	8.76	5.5	6.0	9.988	A
2	1.06	15.90	37.87	5.83	0.182	1.08	0.34	0.5	0.2	12.672	B
3	5.51	82.65	29.22	10.79	0.511	5.50	9.73	0.9	1.0	11.336	B
4	5.44	81.60	4.42	34.05	0.160	5.44	30.31	0.2	0.2	2.098	A
5	0.00	0.00	9.55	12.98	0.000	0.00	0.31	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total	Junction	Circulating	Capacity	RFC	Throughput	Throughput	Start	End	Delay	LOS
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	Demand (Veh/min)	Arrivals (Veh)	flow (Veh/min)	(Veh/min)		(Veh/min)	(exit side) (Veh/min)	queue (Veh)	queue (Veh)	(s)	
1	38.51	577.65	1.11	43.11	0.893	38.40	12.09	6.0	7.6	12.366	B
2	1.48	22.20	39.09	5.17	0.286	1.47	0.42	0.2	0.4	16.167	C
3	7.77	116.55	30.28	10.30	0.755	7.65	10.27	1.0	2.8	21.768	C
4	7.35	110.25	6.08	33.07	0.222	7.34	31.85	0.2	0.3	2.332	A
5	0.14	2.10	13.06	11.71	0.012	0.14	0.37	0.0	0.0	5.184	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	31.87	478.05	0.97	43.22	0.737	32.19	11.20	7.6	2.9	5.586	A
2	1.35	20.25	32.78	8.48	0.159	1.36	0.38	0.4	0.2	8.441	A
3	7.42	111.30	25.49	12.55	0.591	7.51	8.66	2.8	1.5	12.088	B
4	6.50	97.50	5.94	33.16	0.196	6.50	27.05	0.3	0.2	2.250	A
5	0.07	1.05	12.11	12.07	0.006	0.07	0.34	0.0	0.0	5.000	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	24.31	364.65	1.07	43.14	0.564	24.41	10.16	2.9	1.3	3.221	A
2	1.06	15.90	25.12	12.49	0.085	1.07	0.36	0.2	0.1	5.254	A
3	5.16	77.40	19.36	15.43	0.334	5.23	6.83	1.5	0.5	5.917	A
4	7.21	108.15	4.15	34.21	0.211	7.21	20.43	0.2	0.3	2.222	A
5	0.14	2.10	11.09	12.37	0.011	0.14	0.27	0.0	0.0	4.907	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.85	297.75	1.22	43.01	0.461	19.88	11.01	1.3	0.9	2.598	A
2	0.77	11.55	20.71	14.79	0.052	0.77	0.39	0.1	0.1	4.283	A
3	5.09	76.35	15.69	17.15	0.297	5.10	5.79	0.5	0.4	4.979	A
4	8.41	126.15	4.01	34.29	0.245	8.41	16.77	0.3	0.3	2.318	A
5	0.07	1.05	12.16	11.94	0.006	0.07	0.26	0.0	0.0	5.053	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.85	207.75	1.23	43.01	0.322	13.88	11.75	0.9	0.5	2.062	A
2	0.50	7.50	14.72	17.93	0.028	0.50	0.38	0.1	0.0	3.445	A
3	6.22	93.30	10.92	19.39	0.321	6.22	4.31	0.4	0.5	4.553	A
4	8.27	124.05	4.82	33.82	0.245	8.27	12.31	0.3	0.3	2.348	A
5	0.14	2.10	12.84	11.73	0.012	0.14	0.26	0.0	0.0	5.177	A

Growthed Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	7.27	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	10	Arm 5

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.33	12.43	12.93	0.17
	2	0.23	0.00	0.20	0.53	0.00
	3	14.20	0.20	0.00	1.35	0.12
	4	45.27	2.92	4.23	0.00	0.12
	5	0.40	0.05	0.07	0.02	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.01	0.48	0.50	0.01
	2	0.24	0.00	0.21	0.55	0.00
	3	0.89	0.01	0.00	0.09	0.01
	4	0.86	0.06	0.08	0.00	0.00
	5	0.75	0.09	0.13	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	3	11	56
	2	0	0	0	3	0
	3	4	0	0	14	0
	4	4	1	7	0	14
	5	17	0	0	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.000	1.030	1.110	1.560
	2	1.000	1.000	1.000	1.030	1.000
	3	1.040	1.000	1.000	1.140	1.000
	4	1.040	1.010	1.070	1.000	1.140
	5	1.170	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	10.81	11.60
	2	0.71	0.72
	3	7.56	7.92
	4	26.43	27.51
	5	0.29	0.33
16:15-16:30	1	11.24	12.06
	2	0.21	0.21
	3	7.63	7.99
	4	21.13	22.00
	5	0.14	0.16
16:30-16:45	1	11.87	12.74
	2	0.42	0.43
	3	7.49	7.85
	4	32.51	33.84
	5	0.21	0.24
16:45-17:00	1	13.14	14.10
	2	0.50	0.51
	3	8.69	9.10
	4	23.82	24.80
	5	0.07	0.08
17:00-17:15	1	14.63	15.70
	2	0.56	0.57
	3	8.34	8.74
	4	34.34	35.75
	5	1.06	1.20
17:15-17:30	1	13.57	14.56
	2	0.71	0.72
	3	7.84	8.21
	4	29.26	30.46
	5	0.07	0.08
17:30-17:45	1	15.90	17.06
	2	0.50	0.51
	3	8.27	8.66
	4	26.15	27.22
	5	0.07	0.08
17:45-18:00	1	12.30	13.20
	2	0.21	0.21
	3	7.63	7.99
	4	16.54	17.22
	5	0.29	0.33

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.39	2.38	0.6	A	12.93	1551.90

2	0.04	3.79	0.0	A	0.48	57.30
3	0.39	4.60	0.6	A	7.93	951.75
4	0.87	10.50	6.1	B	26.27	3152.71
5	0.25	18.33	0.3	C	0.28	33.00

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.81	162.15	3.75	41.07	0.263	10.79	29.79	0.0	0.4	1.981	A
2	0.71	10.65	12.81	18.95	0.037	0.71	1.72	0.0	0.0	3.288	A
3	7.56	113.40	6.03	22.55	0.335	7.53	7.49	0.0	0.5	3.986	A
4	26.43	396.45	7.13	39.99	0.661	26.30	6.43	0.0	1.9	4.344	A
5	0.29	4.35	33.24	7.84	0.037	0.29	0.18	0.0	0.0	7.941	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.24	168.60	3.01	41.57	0.270	11.24	25.24	0.4	0.4	1.977	A
2	0.21	3.15	12.82	18.94	0.011	0.21	1.43	0.0	0.0	3.205	A
3	7.63	114.45	5.86	22.61	0.337	7.63	7.17	0.5	0.5	4.003	A
4	21.13	316.95	7.10	40.00	0.528	21.18	6.39	1.9	1.1	3.198	A
5	0.14	2.10	28.11	10.01	0.014	0.14	0.18	0.0	0.0	6.077	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.87	178.05	4.54	40.53	0.293	11.87	34.80	0.4	0.4	2.093	A
2	0.42	6.30	14.35	18.14	0.023	0.42	2.06	0.0	0.0	3.385	A
3	7.49	112.35	6.35	22.37	0.335	7.49	8.42	0.5	0.5	4.032	A
4	32.51	487.65	7.03	40.05	0.812	32.31	6.81	1.1	4.1	7.562	A
5	0.21	3.15	39.14	5.34	0.039	0.21	0.20	0.0	0.0	11.684	B

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.14	197.10	3.39	41.31	0.318	13.14	28.62	0.4	0.5	2.129	A
2	0.50	7.50	14.91	17.84	0.028	0.50	1.62	0.0	0.0	3.459	A
3	8.69	130.35	7.05	22.02	0.395	8.68	8.36	0.5	0.6	4.496	A
4	23.82	357.30	8.15	39.28	0.606	23.99	7.58	4.1	1.6	3.968	A
5	0.07	1.05	31.94	8.39	0.008	0.07	0.20	0.0	0.0	7.210	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.63	219.45	5.00	40.22	0.364	14.62	37.71	0.5	0.6	2.343	A

2	0.56	8.40	17.34	16.56	0.034	0.56	2.28	0.0	0.0	3.748	A
3	8.34	125.10	7.88	21.59	0.386	8.34	10.02	0.6	0.6	4.528	A
4	34.34	515.10	7.86	39.48	0.870	34.04	8.36	1.6	6.1	10.497	B
5	1.06	15.90	41.67	4.27	0.248	1.04	0.23	0.0	0.3	18.333	C

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.57	203.55	4.13	40.81	0.333	13.57	32.66	0.6	0.5	2.205	A
2	0.71	10.65	15.79	17.37	0.041	0.71	1.92	0.0	0.0	3.599	A
3	7.84	117.60	7.44	21.82	0.359	7.84	9.06	0.6	0.6	4.294	A
4	29.26	438.90	7.44	39.77	0.736	29.48	7.85	6.1	2.8	5.949	A
5	0.07	1.05	36.70	6.37	0.011	0.09	0.21	0.3	0.0	9.579	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.90	238.50	3.69	41.11	0.387	15.89	30.15	0.5	0.6	2.379	A
2	0.50	7.50	17.81	16.31	0.031	0.50	1.77	0.0	0.0	3.795	A
3	8.27	124.05	8.45	21.30	0.388	8.27	9.86	0.6	0.6	4.602	A
4	26.15	392.25	7.79	39.52	0.662	26.21	8.93	2.8	2.0	4.526	A
5	0.07	1.05	33.77	7.62	0.009	0.07	0.22	0.0	0.0	7.952	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.30	184.50	2.43	41.97	0.293	12.31	21.43	0.6	0.4	2.025	A
2	0.21	3.15	13.54	18.56	0.011	0.21	1.21	0.0	0.0	3.271	A
3	7.63	114.45	6.41	22.33	0.342	7.64	7.34	0.6	0.5	4.085	A
4	16.54	248.10	7.12	39.99	0.414	16.63	6.93	2.0	0.7	2.578	A
5	0.29	4.35	23.57	11.94	0.024	0.29	0.17	0.0	0.0	5.149	A

Growthed Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	14.11	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	4	Arm 3

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.17	14.47	46.57	0.23
	2	0.18	0.00	0.45	1.72	0.00
	3	8.68	0.08	0.00	2.82	0.23
	4	12.47	0.50	1.43	0.00	0.13
	5	0.10	0.00	0.03	0.00	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.00	0.24	0.76	0.00
	2	0.08	0.00	0.19	0.73	0.00
	3	0.73	0.01	0.00	0.24	0.02
	4	0.86	0.03	0.10	0.00	0.01
	5	0.75	0.00	0.25	0.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	11	4	7	23
	2	0	0	4	1	0
	3	8	0	0	13	23
	4	28	4	33	0	25
	5	67	0	0	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.110	1.040	1.070	1.230
	2	1.000	1.000	1.040	1.010	1.000
	3	1.080	1.000	1.000	1.130	1.230
	4	1.280	1.040	1.330	1.000	1.250
	5	1.670	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	37.56	39.95
	2	1.06	1.08
	3	4.66	5.10
	4	6.74	8.60
	5	0.00	0.00

07:45-08:00	1	37.48	39.87
	2	2.05	2.08
	3	5.23	5.72
	4	6.11	7.80
	5	0.00	0.00
08:00-08:15	1	38.42	40.87
	2	1.06	1.08
	3	5.54	6.06
	4	5.77	7.36
	5	0.00	0.00
08:15-08:30	1	39.48	41.99
	2	1.48	1.50
	3	7.80	8.54
	4	7.68	9.80
	5	0.14	0.21
08:30-08:45	1	32.84	34.93
	2	1.35	1.37
	3	7.45	8.15
	4	6.83	8.72
	5	0.07	0.11
08:45-09:00	1	25.28	26.89
	2	1.06	1.08
	3	5.19	5.68
	4	7.54	9.62
	5	0.14	0.21
09:00-09:15	1	20.32	21.61
	2	0.77	0.78
	3	5.12	5.60
	4	8.81	11.25
	5	0.07	0.11
09:15-09:30	1	14.32	15.23
	2	0.50	0.51
	3	6.25	6.84
	4	8.67	11.07
	5	0.14	0.21

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.92	15.08	9.5	C	30.71	3685.51
2	0.36	18.59	0.5	C	1.17	139.95
3	0.79	25.34	3.3	D	5.90	708.60
4	0.26	2.39	0.3	A	7.27	872.25
5	0.01	5.25	0.0	A	0.07	8.40

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	37.56	563.40	0.93	43.25	0.868	37.15	9.24	0.0	6.1	9.303	A
2	1.06	15.90	37.72	5.90	0.180	1.05	0.36	0.0	0.2	12.332	B
3	4.66	69.90	29.15	10.82	0.431	4.61	9.61	0.0	0.7	9.583	A
4	6.74	101.10	3.73	34.45	0.196	6.72	30.03	0.0	0.2	2.163	A
5	0.00	0.00	10.16	12.70	0.000	0.00	0.29	0.0	0.0	0.000	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	37.48	562.20	0.85	43.31	0.865	37.47	9.23	6.1	6.2	10.220	B
2	2.05	30.75	37.97	5.77	0.355	2.03	0.35	0.2	0.5	15.945	C
3	5.23	78.45	30.19	10.36	0.505	5.21	9.82	0.7	1.0	11.623	B
4	6.11	91.65	4.27	34.13	0.179	6.11	31.13	0.2	0.2	2.142	A
5	0.00	0.00	10.08	12.77	0.000	0.00	0.30	0.0	0.0	0.000	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	38.42	576.30	0.81	43.35	0.886	38.35	9.10	6.2	7.2	11.763	B
2	1.06	15.90	38.82	5.33	0.199	1.08	0.34	0.5	0.3	14.168	B
3	5.54	83.10	30.09	10.38	0.534	5.53	9.81	1.0	1.1	12.346	B
4	5.77	86.55	4.44	34.03	0.170	5.77	31.18	0.2	0.2	2.123	A
5	0.00	0.00	9.91	12.84	0.000	0.00	0.31	0.0	0.0	0.000	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	39.48	592.20	1.11	43.11	0.916	39.33	12.43	7.2	9.5	15.085	C
2	1.48	22.20	40.01	4.68	0.316	1.47	0.42	0.3	0.4	18.589	C
3	7.80	117.00	31.15	9.89	0.788	7.66	10.33	1.1	3.3	25.342	D
4	7.68	115.20	6.09	33.06	0.232	7.67	32.71	0.2	0.3	2.363	A
5	0.14	2.10	13.40	11.58	0.012	0.14	0.37	0.0	0.0	5.244	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	32.84	492.60	0.98	43.21	0.760	33.26	11.58	9.5	3.2	6.264	A
2	1.35	20.25	33.86	7.92	0.170	1.37	0.38	0.4	0.2	9.176	A
3	7.45	111.75	26.44	12.11	0.615	7.56	8.78	3.3	1.7	13.489	B
4	6.83	102.45	5.99	33.12	0.206	6.83	28.01	0.3	0.3	2.282	A
5	0.07	1.05	12.48	11.93	0.006	0.07	0.34	0.0	0.0	5.061	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	25.28	379.20	1.07	43.13	0.586	25.40	10.52	3.2	1.4	3.408	A

2	1.06	15.90	26.11	11.97	0.089	1.07	0.37	0.2	0.1	5.505	A
3	5.19	77.85	20.21	15.03	0.345	5.26	6.96	1.7	0.5	6.189	A
4	7.54	113.10	4.19	34.18	0.221	7.54	21.29	0.3	0.3	2.251	A
5	0.14	2.10	11.46	12.23	0.011	0.14	0.27	0.0	0.0	4.964	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	20.32	304.80	1.23	43.01	0.472	20.36	11.43	1.4	0.9	2.652	A
2	0.77	11.55	21.19	14.54	0.053	0.77	0.39	0.1	0.1	4.360	A
3	5.12	76.80	16.13	16.94	0.302	5.13	5.83	0.5	0.4	5.081	A
4	8.81	132.15	4.04	34.27	0.257	8.81	17.22	0.3	0.3	2.356	A
5	0.07	1.05	12.59	11.78	0.006	0.07	0.26	0.0	0.0	5.125	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.32	214.80	1.23	43.00	0.333	14.35	12.17	0.9	0.5	2.096	A
2	0.50	7.50	15.20	17.68	0.028	0.50	0.38	0.1	0.0	3.492	A
3	6.25	93.75	11.33	19.20	0.326	6.25	4.36	0.4	0.5	4.632	A
4	8.67	130.05	4.85	33.79	0.257	8.67	12.73	0.3	0.3	2.387	A
5	0.14	2.10	13.26	11.56	0.012	0.14	0.26	0.0	0.0	5.252	A

Growthed Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	8.13	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	8	Arm 5

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	0.33	12.50	13.80	0.17
	2	0.23	0.00	0.20	0.53	0.00
	3	14.33	0.20	0.00	1.35	0.12
	4	46.83	2.92	4.23	0.00	0.12
	5	0.40	0.05	0.07	0.02	0.00

Proportions

	To					
		1	2	3	4	5
From	1	0.00	0.01	0.47	0.51	0.01
	2	0.24	0.00	0.21	0.55	0.00
	3	0.90	0.01	0.00	0.08	0.01
	4	0.87	0.05	0.08	0.00	0.00
	5	0.75	0.09	0.13	0.03	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	3	11	56
	2	0	0	0	3	0
	3	4	0	0	14	0
	4	4	1	7	0	14
	5	17	0	0	0	0

Average PCU Per Veh

	To					
		1	2	3	4	5
From	1	1.000	1.000	1.030	1.110	1.560
	2	1.000	1.000	1.000	1.030	1.000
	3	1.040	1.000	1.000	1.140	1.000
	4	1.040	1.010	1.070	1.000	1.140
	5	1.170	1.000	1.000	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	11.28	12.12
	2	0.71	0.72
	3	7.63	7.99
	4	27.16	28.27
	5	0.29	0.33
16:15-16:30	1	11.71	12.58
	2	0.21	0.21
	3	7.70	8.07
	4	21.86	22.76
	5	0.14	0.16
16:30-16:45	1	12.34	13.25
	2	0.42	0.43
	3	7.56	7.92
	4	33.29	34.65

	5	0.21	0.24
16:45-17:00	1	13.61	14.62
	2	0.50	0.51
	3	8.76	9.18
	4	24.60	25.61
	5	0.07	0.08
17:00-17:15	1	15.10	16.22
	2	0.56	0.57
	3	8.41	8.81
	4	35.12	36.56
	5	1.06	1.20
17:15-17:30	1	14.04	15.08
	2	0.71	0.72
	3	7.91	8.29
	4	30.04	31.27
	5	0.07	0.08
17:30-17:45	1	16.37	17.58
	2	0.50	0.51
	3	8.34	8.74
	4	26.98	28.08
	5	0.07	0.08
17:45-18:00	1	12.77	13.72
	2	0.21	0.21
	3	7.70	8.07
	4	17.37	18.08
	5	0.29	0.33

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.40	2.43	0.7	A	13.40	1608.30
2	0.04	3.86	0.0	A	0.48	57.30
3	0.40	4.71	0.7	A	8.00	960.15
4	0.89	12.00	7.2	B	27.05	3246.29
5	0.27	20.52	0.4	C	0.28	33.00

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.28	169.20	3.74	41.04	0.275	11.25	30.58	0.0	0.4	2.012	A
2	0.71	10.65	13.27	18.70	0.038	0.71	1.72	0.0	0.0	3.334	A
3	7.63	114.45	6.44	22.34	0.342	7.60	7.55	0.0	0.5	4.060	A
4	27.16	407.40	7.20	39.95	0.680	27.02	6.84	0.0	2.1	4.595	A

5	0.29	4.35	34.03	7.51	0.039	0.29	0.18	0.0	0.0	8.308	A
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16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.71	175.65	3.03	41.52	0.282	11.71	26.03	0.4	0.4	2.012	A
2	0.21	3.15	13.30	18.68	0.011	0.21	1.44	0.0	0.0	3.247	A
3	7.70	115.50	6.27	22.41	0.344	7.70	7.24	0.5	0.5	4.079	A
4	21.86	327.90	7.17	39.96	0.547	21.92	6.80	2.1	1.2	3.338	A
5	0.14	2.10	28.92	9.67	0.014	0.14	0.18	0.0	0.0	6.294	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.34	185.10	4.52	40.51	0.305	12.34	35.65	0.4	0.4	2.129	A
2	0.42	6.30	14.80	17.89	0.023	0.42	2.05	0.0	0.0	3.433	A
3	7.56	113.40	6.77	22.16	0.341	7.56	8.45	0.5	0.5	4.110	A
4	33.29	499.35	7.10	40.01	0.832	33.06	7.23	1.2	4.7	8.373	A
5	0.21	3.15	39.96	5.00	0.042	0.21	0.20	0.0	0.0	12.523	B

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.61	204.15	3.41	41.26	0.330	13.61	29.48	0.4	0.5	2.169	A
2	0.50	7.50	15.39	17.58	0.028	0.50	1.62	0.0	0.0	3.512	A
3	8.76	131.40	7.49	21.79	0.402	8.75	8.40	0.5	0.7	4.597	A
4	24.60	369.00	8.22	39.23	0.627	24.80	8.02	4.7	1.7	4.214	A
5	0.07	1.05	32.81	8.02	0.009	0.07	0.20	0.0	0.0	7.547	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.10	226.50	4.96	40.21	0.376	15.09	38.53	0.5	0.6	2.388	A
2	0.56	8.40	17.79	16.32	0.034	0.56	2.26	0.0	0.0	3.806	A
3	8.41	126.15	8.34	21.36	0.394	8.41	10.00	0.7	0.7	4.632	A
4	35.12	526.80	7.93	39.43	0.891	34.75	8.82	1.7	7.2	12.000	B
5	1.06	15.90	42.45	3.94	0.269	1.04	0.23	0.0	0.4	20.524	C

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.04	210.60	4.13	40.77	0.344	14.04	33.57	0.6	0.5	2.245	A
2	0.71	10.65	16.26	17.12	0.041	0.71	1.92	0.0	0.0	3.655	A
3	7.91	118.65	7.88	21.60	0.366	7.91	9.08	0.7	0.6	4.387	A
4	30.04	450.60	7.51	39.73	0.756	30.31	8.29	7.2	3.2	6.545	A
5	0.07	1.05	37.61	5.99	0.012	0.09	0.21	0.4	0.0	10.207	B

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.37	245.55	3.70	41.06	0.399	16.36	31.05	0.5	0.7	2.429	A

2	0.50	7.50	18.28	16.05	0.031	0.50	1.77	0.0	0.0	3.859	A
3	8.34	125.10	8.93	21.06	0.396	8.34	9.86	0.6	0.7	4.715	A
4	26.98	404.70	7.85	39.48	0.683	27.05	9.41	3.2	2.2	4.851	A
5	0.07	1.05	34.68	7.23	0.010	0.07	0.22	0.0	0.0	8.379	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.77	191.55	2.48	41.90	0.305	12.78	22.29	0.7	0.4	2.063	A
2	0.21	3.15	14.04	18.29	0.011	0.21	1.22	0.0	0.0	3.320	A
3	7.70	115.50	6.84	22.12	0.348	7.71	7.41	0.7	0.5	4.167	A
4	17.37	260.55	7.19	39.94	0.435	17.46	7.36	2.2	0.8	2.679	A
5	0.29	4.35	24.48	11.55	0.025	0.29	0.17	0.0	0.0	5.325	A



Appendix H: Borras Road Roundabout: Model Results



Table H1: A5156 / Borrás Road / Borrás Park Road: Junctions 9 Results – Weekday Morning Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A5156 (W)								
7:30 – 7:45	0.781	4	0.786	4	0.829	5	0.834	5
7:45 – 8:00	0.851	5	0.856	6	0.904	8	0.909	9
8:00 – 8:15	0.839	5	0.851	6	0.891	8	0.904	9
8:15 – 8:30	0.892	8	0.905	8	0.948	13	0.961	16
8:30 – 8:45	0.677	2	0.690	2	0.719	3	0.732	3
8:45 – 9:00	0.563	1	0.575	1	0.597	2	0.610	2
9:00 – 9:15	0.429	1	0.442	1	0.456	1	0.468	1
9:15 – 9:30	0.348	1	0.361	1	0.370	1	0.382	1
Borrás Road								
7:30 – 7:45	0.055	0	0.057	0	0.082	0	0.085	0
7:45 – 8:00	0.238	0	0.252	0	0.600	1	0.690	1
8:00 – 8:15	0.310	0	0.356	1	0.728	2	1.015	3
8:15 – 8:30	0.962	3	1.294	5	9999	18	9999	19
8:30 – 8:45	0.118	0	0.124	0	0.157	0	0.171	0
8:45 – 9:00	0.086	0	0.089	0	0.100	0	0.104	0
9:00 – 9:15	0.028	0	0.029	0	0.032	0	0.033	0
9:15 – 9:30	0.054	0	0.055	0	0.059	0	0.060	0
A5156 (E)								
7:30 – 7:45	0.338	1	0.362	1	0.359	1	0.384	1
7:45 – 8:00	0.377	1	0.402	1	0.400	1	0.425	1
8:00 – 8:15	0.401	1	0.437	1	0.426	1	0.462	1
8:15 – 8:30	0.391	1	0.427	1	0.411	1	0.447	1
8:30 – 8:45	0.384	1	0.421	1	0.414	1	0.452	1
8:45 – 9:00	0.365	1	0.401	1	0.388	1	0.424	1
9:00 – 9:15	0.325	1	0.342	1	0.345	1	0.362	1
9:15 – 9:30	0.370	1	0.387	1	0.393	1	0.410	1
Borrás Park Road								
7:30 – 7:45	0.367	1	0.381	1	0.401	1	0.417	1
7:45 – 8:00	0.445	1	0.464	1	0.488	1	0.509	1
8:00 – 8:15	0.578	1	0.615	2	0.637	2	0.678	2
8:15 – 8:30	0.523	1	0.554	1	0.567	1	0.603	2
8:30 – 8:45	0.361	1	0.384	1	0.404	1	0.431	1
8:45 – 9:00	0.322	1	0.341	1	0.353	1	0.376	1
9:00 – 9:15	0.232	0	0.239	0	0.254	0	0.261	0
9:15 – 9:30	0.209	0	0.215	0	0.229	0	0.236	0

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Table X2: A5156 / Borrás Road / Borrás Park Road: Junctions 9 Results – Weekday Evening Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A5156 (W)								
16:00 – 16:15	0.292	0	0.317	1	0.310	0	0.335	1
16:15 – 16:30	0.351	1	0.376	1	0.373	1	0.398	1
16:30 – 16:45	0.389	1	0.416	1	0.413	1	0.440	1
16:45 – 17:00	0.425	1	0.452	1	0.451	1	0.478	1
17:00 – 17:15	0.449	1	0.475	1	0.476	1	0.503	1
17:15 – 17:30	0.431	1	0.457	1	0.457	1	0.484	1
17:30 – 17:45	0.449	1	0.478	1	0.476	1	0.505	1
17:45 – 18:00	0.425	1	0.454	1	0.451	1	0.480	1
Borrás Road								
16:00 – 16:15	0.061	0	0.064	0	0.067	0	0.070	0
16:15 – 16:30	0.102	0	0.107	0	0.112	0	0.117	0
16:30 – 16:45	0.068	0	0.071	0	0.075	0	0.079	0
16:45 – 17:00	0.056	0	0.059	0	0.063	1	0.066	0
17:00 – 17:15	0.063	0	0.067	0	0.071	0	0.075	0
17:15 – 17:30	0.034	0	0.035	0	0.037	0	0.039	0
17:30 – 17:45	0.017	0	0.019	0	0.019	0	0.021	0
17:45 – 18:00	0.072	0	0.077	0	0.081	0	0.086	0
A5156 (E)								
16:00 – 16:15	0.692	2	0.708	2	0.736	3	0.753	3
16:15 – 16:30	0.655	2	0.671	2	0.698	2	0.714	3
16:30 – 16:45	0.773	3	0.790	4	0.824	5	0.841	5
16:45 – 17:00	0.587	1	0.603	2	0.625	2	0.642	2
17:00 – 17:15	0.829	5	0.846	5	0.884	7	0.901	8
17:15 – 17:30	0.646	2	0.662	2	0.688	2	0.705	2
17:30 – 17:45	0.662	2	0.678	2	0.705	2	0.721	3
17:45 – 18:00	0.503	1	0.519	1	0.536	1	0.552	1
Borrás Park Road								
16:00 – 16:15	0.334	1	0.349	1	0.397	1	0.417	1
16:15 – 16:30	0.425	1	0.443	1	0.497	1	0.520	1
16:30 – 16:45	0.527	1	0.558	1	0.651	2	0.695	2
16:45 – 17:00	0.426	1	0.442	1	0.487	1	0.506	1
17:00 – 17:15	0.547	1	0.583	1	0.694	2	0.747	2
17:15 – 17:30	0.308	1	0.321	1	0.361	1	0.379	1
17:30 – 17:45	0.420	1	0.437	1	0.489	1	0.511	1
17:45 – 18:00	0.257	0	0.265	0	0.287	0	0.296	0

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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Filename: A5156_Borras Rd TA.j9

Path: L:\Projects\CBO-0322 Tyn Twll, Holt Road, Wrexham\ARCADY\Borras Road

Report generation date: 14/08/2018 16:15:19

- »Existing / No Growth Future Year Base, AM
- »Existing / No Growth Future Year Base, PM
- »No Growth Future Year Base Plus Dev, AM
- »No Growth Future Year Base Plus Dev, PM
- »Growthed Future Year Base, AM
- »Growthed Future Year Base, PM
- »Growthed Future Year Base Plus Dev, AM
- »Growthed Future Year Base Plus Dev, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	Existing / No Growth Future Year Base									
Arm 1	7.5	12.95	0.89	B	-8 % [Arm 2]	0.8	2.60	0.45	A	4 % [Arm 4]
Arm 2	3.2	172.93	0.96	F		0.1	5.57	0.10	A	
Arm 3	0.7	2.86	0.40	A		4.6	8.92	0.83	A	
Arm 4	1.3	11.07	0.58	B		1.1	24.68	0.55	C	
	No Growth Future Year Base Plus Dev									
Arm 1	8.3	14.26	0.90	B	-9 % [Arm 2]	0.9	2.75	0.48	A	2 % [Arm 4]
Arm 2	5.4	258.05	1.29	F		0.1	5.92	0.11	A	
Arm 3	0.8	3.05	0.44	A		5.1	9.71	0.85	A	
Arm 4	1.5	12.80	0.61	B		1.3	28.28	0.58	D	
	Growthed Future Year Base									
Arm 1	13.4	21.68	0.95	C	-13 % [Arm 2]	0.9	2.75	0.48	A	-2 % [Arm 4]
Arm 2	17.7	592.06	999999999.00	F		0.1	5.95	0.11	A	
Arm 3	0.7	3.00	0.43	A		6.8	12.24	0.88	B	
Arm 4	1.7	13.25	0.64	B		2.0	40.72	0.69	E	
	Growthed Future Year Base Plus Dev									
Arm 1	15.6	24.62	0.96	C	-14 % [Arm 2]	1.0	2.91	0.51	A	-3 % [Arm 4]
Arm 2	19.2	627.06	999999999.00	F		0.1	6.35	0.12	A	
Arm 3	0.9	3.19	0.46	A		7.8	13.64	0.90	B	
Arm 4	2.0	15.69	0.68	C		2.4	49.70	0.75	E	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	06/06/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CBO\Lucas
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	perMin	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D3	No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D4	No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓
D5	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D6	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D7	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D8	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Existing / No Growth Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A5156/Borras Road	Standard Roundabout	1, 2, 3, 4	11.70	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-8	Arm 2

Arms

Arms

Arm	Name	Description
1	A5156 West	
2	Borras Road	
3	A5156 East	
4	Borras Park Road	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	7.40	9.00	10.0	24.1	50.0	31.0	
2	3.70	5.40	4.3	24.1	50.0	30.0	
3	7.40	9.00	10.3	41.8	50.0	38.0	
4	3.20	6.00	5.4	25.1	50.0	41.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/min)
1	0.776	42.921
2	0.547	22.662
3	0.771	42.671
4	0.516	20.871

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1	Percentage	Predicted Queue too long	105.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.80	49.77	3.87
	2	0.48	0.00	0.22	0.48
	3	24.83	0.13	0.00	1.05
	4	6.63	0.85	2.52	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.01	0.91	0.07
	2	0.41	0.00	0.18	0.41
	3	0.95	0.01	0.00	0.04
	4	0.66	0.09	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	2	8	3
	2	3	0	8	0
	3	16	0	0	5
	4	0	2	0	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.020	1.080	1.030
	2	1.030	1.000	1.080	1.000
	3	1.160	1.000	1.000	1.050
	4	1.000	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	31.67	34.06
	2	0.20	0.21
	3	11.93	13.78
	4	5.13	5.14
07:45-08:00	1	34.33	36.92
	2	0.47	0.48
	3	13.20	15.24
	4	5.87	5.88
08:00-08:15	1	33.53	36.06
	2	0.67	0.69
	3	14.00	16.17
	4	7.33	7.34
08:15-08:30	1	35.80	38.51

	2	1.00	1.03
	3	13.60	15.70
	4	6.73	6.74
08:30-08:45	1	27.53	29.61
	2	0.67	0.69
	3	13.47	15.55
	4	4.67	4.68
08:45-09:00	1	22.93	24.66
	2	0.73	0.75
	3	12.93	14.93
	4	4.27	4.28
09:00-09:15	1	17.60	18.93
	2	0.33	0.34
	3	11.67	13.48
	4	3.27	3.28
09:15-09:30	1	14.33	15.41
	2	0.73	0.75
	3	13.27	15.32
	4	2.73	2.73

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.89	12.95	7.5	B	27.21	3265.79
2	0.96	172.93	3.2	F	0.60	72.00
3	0.40	2.86	0.7	A	13.01	1561.05
4	0.58	11.07	1.3	B	5.00	600.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	31.67	475.05	1.78	40.55	0.781	31.44	14.81	0.0	3.5	6.433	A
2	0.20	3.00	32.26	3.64	0.055	0.20	0.96	0.0	0.1	17.401	C
3	11.93	178.95	2.39	35.31	0.338	11.90	30.06	0.0	0.5	2.559	A
4	5.13	76.95	11.50	13.98	0.367	5.09	2.79	0.0	0.6	6.722	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	34.33	514.95	2.04	40.35	0.851	34.20	16.66	3.5	5.4	9.550	A
2	0.47	7.05	35.17	1.98	0.238	0.45	1.07	0.1	0.3	38.990	E
3	13.20	198.00	2.80	35.03	0.377	13.19	32.83	0.5	0.6	2.747	A
4	5.87	88.05	12.85	13.18	0.445	5.86	3.15	0.6	0.8	8.173	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	33.53	502.95	2.53	39.98	0.839	33.53	18.47	5.4	5.3	9.331	A
2	0.67	10.05	34.88	2.16	0.310	0.66	1.18	0.3	0.4	39.682	E
3	14.00	210.00	2.92	34.95	0.401	14.00	32.61	0.6	0.7	2.863	A
4	7.33	109.95	13.70	12.68	0.578	7.29	3.22	0.8	1.3	11.068	B

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	35.80	537.00	2.34	40.12	0.892	35.66	17.79	5.3	7.5	12.949	B
2	1.00	15.00	36.83	1.04	0.962	0.81	1.17	0.4	3.2	172.929	F
3	13.60	204.00	3.20	34.76	0.391	13.60	34.45	0.7	0.6	2.837	A
4	6.73	100.95	13.38	12.87	0.523	6.74	3.41	1.3	1.1	9.819	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	27.53	412.95	1.65	40.64	0.677	27.88	16.34	7.5	2.1	4.829	A
2	0.67	10.05	28.66	5.70	0.118	0.88	0.88	3.2	0.1	12.960	B
3	13.47	202.05	2.70	35.11	0.384	13.47	26.84	0.6	0.6	2.775	A
4	4.67	70.05	13.29	12.93	0.361	4.71	2.88	1.1	0.6	7.325	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	22.93	343.95	1.51	40.75	0.563	22.99	15.48	2.1	1.3	3.386	A
2	0.73	10.95	23.72	8.52	0.086	0.73	0.77	0.1	0.1	7.705	A
3	12.93	193.95	2.23	35.42	0.365	12.93	22.23	0.6	0.6	2.667	A
4	4.27	64.05	12.71	13.27	0.322	4.28	2.45	0.6	0.5	6.677	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.60	264.00	1.16	41.01	0.429	17.64	13.46	1.3	0.8	2.569	A
2	0.33	4.95	18.20	11.67	0.028	0.33	0.60	0.1	0.0	5.292	A
3	11.67	175.05	1.53	35.91	0.325	11.68	17.01	0.6	0.5	2.476	A
4	3.27	49.05	11.34	14.08	0.232	3.28	1.86	0.5	0.3	5.565	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.33	214.95	0.99	41.15	0.348	14.34	14.77	0.8	0.5	2.241	A
2	0.73	10.95	14.82	13.61	0.054	0.73	0.51	0.0	0.1	4.659	A
3	13.27	199.05	1.61	35.85	0.370	13.26	13.94	0.5	0.6	2.656	A
4	2.73	40.95	13.03	13.08	0.209	2.73	1.85	0.3	0.3	5.798	A

Existing / No Growth Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A5156/Borras Road	Standard Roundabout	1, 2, 3, 4	7.56	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	4	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.52	25.12	7.93
	2	0.57	0.00	0.27	0.68
	3	46.47	0.27	0.00	3.23
	4	4.12	0.60	1.53	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.02	0.75	0.24
	2	0.37	0.00	0.18	0.45
	3	0.93	0.01	0.00	0.06
	4	0.66	0.10	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
	1	0	6	7	0
	2	0	0	6	0
	3	5	6	0	0
	4	0	0	2	0

Average PCU Per Veh

	To				
		1	2	3	4
	1	1.000	1.060	1.070	1.000
	2	1.000	1.000	1.060	1.000
	3	1.050	1.060	1.000	1.000
	4	1.000	1.000	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	12.27	12.92
	2	0.93	0.94
	3	26.33	27.56
	4	2.47	2.48
16:15-16:30	1	14.67	15.45
	2	1.40	1.41
	3	24.47	25.62
	4	3.47	3.49
16:30-16:45	1	16.27	17.14
	2	0.87	0.88
	3	28.93	30.28
	4	3.20	3.22
16:45-17:00	1	17.67	18.61
	2	0.67	0.68
	3	21.87	22.89
	4	4.07	4.09
17:00-17:15	1	18.80	19.80
	2	0.73	0.74
	3	30.73	32.17
	4	2.87	2.88
17:15-17:30	1	18.07	19.03
	2	0.40	0.40
	3	24.13	25.26
	4	2.60	2.61
17:30-17:45	1	18.73	19.73
	2	0.20	0.20
	3	24.73	25.89
	4	3.47	3.49
17:45-18:00	1	17.80	18.75
	2	0.87	0.88
	3	18.67	19.54
	4	2.87	2.88

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue	Max LOS	Average	Total Junction
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			(Veh)		Demand (Veh/min)	Arrivals (Veh)
1	0.45	2.60	0.8	A	16.79	2014.20
2	0.10	5.57	0.1	A	0.76	91.05
3	0.83	8.92	4.6	A	24.98	2997.89
4	0.55	24.68	1.1	C	3.13	375.30

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.27	184.05	0.97	42.02	0.292	12.24	26.30	0.0	0.4	2.013	A
2	0.93	13.95	12.65	15.23	0.061	0.93	0.56	0.0	0.1	4.193	A
3	26.33	394.95	3.66	38.07	0.692	26.18	9.92	0.0	2.2	4.988	A
4	2.47	37.05	24.83	7.40	0.334	2.44	5.00	0.0	0.5	12.027	B

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.67	220.05	1.31	41.75	0.351	14.66	25.57	0.4	0.5	2.214	A
2	1.40	21.00	15.28	13.74	0.102	1.40	0.69	0.1	0.1	4.861	A
3	24.47	367.05	4.62	37.36	0.655	24.49	12.06	2.2	1.9	4.669	A
4	3.47	52.05	23.43	8.16	0.425	3.45	5.68	0.5	0.7	12.709	B

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.27	244.05	1.24	41.81	0.389	16.26	29.24	0.5	0.6	2.348	A
2	0.87	13.05	16.79	12.87	0.068	0.87	0.71	0.1	0.1	4.999	A
3	28.93	433.95	4.56	37.40	0.773	28.84	13.10	1.9	3.3	6.928	A
4	3.20	48.00	27.30	6.07	0.527	3.18	6.10	0.7	1.1	20.581	C

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.67	265.05	1.51	41.60	0.425	17.66	23.40	0.6	0.7	2.507	A
2	0.67	10.05	18.39	11.97	0.056	0.67	0.78	0.1	0.1	5.311	A
3	21.87	328.05	4.73	37.28	0.587	21.99	14.34	3.3	1.4	3.957	A
4	4.07	61.05	20.82	9.56	0.426	4.09	5.90	1.1	0.8	11.021	B

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.80	282.00	1.13	41.89	0.449	18.80	30.53	0.7	0.8	2.597	A
2	0.73	10.95	19.20	11.50	0.063	0.73	0.73	0.1	0.1	5.570	A
3	30.73	460.95	5.04	37.05	0.829	30.52	14.89	1.4	4.6	8.917	A
4	2.87	43.05	28.82	5.25	0.547	2.84	6.75	0.8	1.1	24.679	C

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.07	271.05	1.03	41.97	0.431	18.07	24.50	0.8	0.8	2.512	A
2	0.40	6.00	18.44	11.93	0.034	0.40	0.66	0.1	0.0	5.206	A
3	24.13	361.95	4.60	37.37	0.646	24.31	14.24	4.6	1.8	4.656	A
4	2.60	39.00	22.89	8.44	0.308	2.65	6.03	1.1	0.5	10.437	B

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.73	280.95	1.31	41.75	0.449	18.73	25.34	0.8	0.8	2.605	A
2	0.20	3.00	19.29	11.46	0.017	0.20	0.75	0.0	0.0	5.331	A
3	24.73	370.95	4.59	37.38	0.662	24.72	14.90	1.8	1.9	4.738	A
4	3.47	52.05	23.20	8.27	0.420	3.45	6.12	0.5	0.7	12.412	B

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.80	267.00	1.09	41.93	0.425	17.80	19.65	0.8	0.7	2.488	A
2	0.87	13.05	18.24	12.05	0.072	0.87	0.65	0.0	0.1	5.364	A
3	18.67	280.05	4.92	37.14	0.503	18.73	14.18	1.9	1.0	3.271	A
4	2.87	43.05	17.84	11.16	0.257	2.89	5.81	0.7	0.3	7.275	A

No Growth Future Year Base Plus Dev, AM

Data Errors and Warnings*No errors or warnings*

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A5156/Borras Road	Standard Roundabout	1, 2, 3, 4	13.51	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-9	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.80	50.63	3.87
	2	0.48	0.00	0.22	0.48
	3	26.83	0.13	0.00	1.05
	4	6.63	0.85	2.52	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.01	0.92	0.07
	2	0.41	0.00	0.18	0.41
	3	0.96	0.00	0.00	0.04
	4	0.66	0.09	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	2	8	3
	2	3	0	8	0
	3	16	0	0	5
	4	0	2	0	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.020	1.080	1.030
	2	1.030	1.000	1.080	1.000
	3	1.160	1.000	1.000	1.050
	4	1.000	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	31.87	34.28
	2	0.20	0.21
	3	12.80	14.79
	4	5.13	5.14
07:45-08:00	1	34.53	37.14
	2	0.47	0.48
	3	14.07	16.25
	4	5.87	5.88
08:00-08:15	1	34.03	36.60
	2	0.67	0.69
	3	15.27	17.64
	4	7.33	7.34
08:15-08:30	1	36.30	39.05
	2	1.00	1.03
	3	14.87	17.18

	4	6.73	6.74
08:30-08:45	1	28.03	30.15
	2	0.67	0.69
	3	14.74	17.03
	4	4.67	4.68
08:45-09:00	1	23.43	25.20
	2	0.73	0.75
	3	14.20	16.40
	4	4.27	4.28
09:00-09:15	1	18.13	19.50
	2	0.33	0.34
	3	12.27	14.17
	4	3.27	3.28
09:15-09:30	1	14.86	15.98
	2	0.73	0.75
	3	13.87	16.02
	4	2.73	2.73

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.90	14.26	8.3	B	27.65	3317.69
2	1.29	258.05	5.4	F	0.60	72.00
3	0.44	3.05	0.8	A	14.01	1681.34
4	0.61	12.80	1.5	B	5.00	600.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	31.87	478.05	1.77	40.55	0.786	31.63	15.68	0.0	3.5	6.567	A
2	0.20	3.00	32.46	3.53	0.057	0.20	0.95	0.0	0.1	17.996	C
3	12.80	192.00	2.37	35.31	0.362	12.76	30.28	0.0	0.6	2.656	A
4	5.13	76.95	12.36	13.46	0.381	5.09	2.77	0.0	0.6	7.132	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	34.53	517.95	2.04	40.35	0.856	34.40	17.54	3.5	5.5	9.845	A
2	0.47	7.05	35.37	1.86	0.252	0.45	1.06	0.1	0.3	42.050	E
3	14.07	211.05	2.77	35.04	0.402	14.06	33.05	0.6	0.7	2.860	A
4	5.87	88.05	13.72	12.66	0.464	5.85	3.12	0.6	0.8	8.795	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	34.03	510.45	2.52	39.98	0.851	34.03	19.72	5.5	5.6	10.055	B
2	0.67	10.05	35.37	1.88	0.356	0.66	1.18	0.3	0.5	48.460	E
3	15.27	229.05	2.92	34.94	0.437	15.26	33.11	0.7	0.8	3.049	A
4	7.33	109.95	14.96	11.93	0.615	7.28	3.22	0.8	1.5	12.796	B

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.30	544.50	2.34	40.12	0.905	36.12	18.99	5.6	8.3	14.261	B
2	1.00	15.00	37.29	0.77	1.294	0.67	1.17	0.5	5.4	258.046	F
3	14.87	223.05	3.07	34.83	0.427	14.87	34.89	0.8	0.7	3.007	A
4	6.73	100.95	14.59	12.15	0.554	6.75	3.36	1.5	1.3	11.153	B

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	28.03	420.45	1.66	40.64	0.690	28.44	17.66	8.3	2.3	5.075	A
2	0.67	10.05	29.21	5.38	0.124	1.02	0.88	5.4	0.1	14.884	B
3	14.74	221.10	2.82	35.01	0.421	14.74	27.41	0.7	0.7	2.960	A
4	4.67	70.05	14.61	12.15	0.384	4.71	2.96	1.3	0.6	8.117	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	23.43	351.45	1.51	40.75	0.575	23.49	16.74	2.3	1.4	3.489	A
2	0.73	10.95	24.23	8.23	0.089	0.73	0.77	0.1	0.1	8.004	A
3	14.20	213.00	2.24	35.41	0.401	14.20	22.72	0.7	0.7	2.829	A
4	4.27	64.05	13.97	12.52	0.341	4.28	2.47	0.6	0.5	7.289	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.13	271.95	1.16	41.01	0.442	18.17	14.08	1.4	0.8	2.632	A
2	0.33	4.95	18.73	11.37	0.029	0.33	0.60	0.1	0.0	5.440	A
3	12.27	184.05	1.54	35.88	0.342	12.28	17.52	0.7	0.5	2.542	A
4	3.27	49.05	11.96	13.71	0.239	3.28	1.87	0.5	0.3	5.762	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	14.86	222.90	0.99	41.15	0.361	14.88	15.39	0.8	0.6	2.286	A
2	0.73	10.95	15.35	13.30	0.055	0.73	0.51	0.0	0.1	4.771	A
3	13.87	208.05	1.63	35.82	0.387	13.86	14.44	0.5	0.6	2.732	A
4	2.73	40.95	13.64	12.71	0.215	2.73	1.86	0.3	0.3	6.014	A

No Growth Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A5156/Borras Road	Standard Roundabout	1, 2, 3, 4	8.18	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	2	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.52	27.33	7.93
	2	0.57	0.00	0.27	0.68
	3	47.68	0.27	0.00	3.23
	4	4.12	0.60	1.53	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.01	0.76	0.22
	2	0.37	0.00	0.18	0.45
	3	0.93	0.01	0.00	0.06
	4	0.66	0.10	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
	1	0	6	7	0
	2	0	0	6	0
	3	5	6	0	0
	4	0	0	2	0

Average PCU Per Veh

	To				
		1	2	3	4
	1	1.000	1.060	1.070	1.000
	2	1.000	1.000	1.060	1.000
	3	1.050	1.060	1.000	1.000
	4	1.000	1.000	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	13.30	14.02
	2	0.93	0.94
	3	26.93	28.19
	4	2.47	2.48
16:15-16:30	1	15.70	16.55
	2	1.40	1.41
	3	25.07	26.25
	4	3.47	3.49
16:30-16:45	1	17.37	18.31
	2	0.87	0.88
	3	29.55	30.94
	4	3.20	3.22
16:45-17:00	1	18.77	19.79
	2	0.67	0.68
	3	22.49	23.54
	4	4.07	4.09
17:00-17:15	1	19.90	20.98
	2	0.73	0.74
	3	31.35	32.82
	4	2.87	2.88
17:15-17:30	1	19.17	20.21
	2	0.40	0.40
	3	24.75	25.91
	4	2.60	2.61
17:30-17:45	1	19.93	21.01
	2	0.20	0.20
	3	25.33	26.52
	4	3.47	3.49
17:45-18:00	1	19.00	20.03
	2	0.87	0.88
	3	19.27	20.17
	4	2.87	2.88

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue	Max LOS	Average	Total Junction
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			(Veh)		Demand (Veh/min)	Arrivals (Veh)
1	0.48	2.75	0.9	A	17.89	2147.09
2	0.11	5.92	0.1	A	0.76	91.05
3	0.85	9.71	5.1	A	25.59	3071.11
4	0.58	28.28	1.3	D	3.13	375.30

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.30	199.50	0.97	41.98	0.317	13.27	26.89	0.0	0.5	2.088	A
2	0.93	13.95	13.67	14.64	0.064	0.93	0.56	0.0	0.1	4.374	A
3	26.93	403.95	3.70	38.03	0.708	26.77	10.90	0.0	2.4	5.258	A
4	2.47	37.05	25.43	7.08	0.349	2.44	5.05	0.0	0.5	12.832	B

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.70	235.50	1.31	41.71	0.376	15.69	26.17	0.5	0.6	2.306	A
2	1.40	21.00	16.31	13.14	0.107	1.40	0.69	0.1	0.1	5.107	A
3	25.07	376.05	4.63	37.35	0.671	25.09	13.08	2.4	2.1	4.902	A
4	3.47	52.05	24.03	7.84	0.443	3.45	5.69	0.5	0.8	13.639	B

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.37	260.55	1.24	41.77	0.416	17.36	29.85	0.6	0.7	2.458	A
2	0.87	13.05	17.89	12.24	0.071	0.87	0.71	0.1	0.1	5.281	A
3	29.55	443.25	4.57	37.40	0.790	29.45	14.19	2.1	3.6	7.449	A
4	3.20	48.00	27.91	5.74	0.558	3.17	6.10	0.8	1.2	23.123	C

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.77	281.55	1.52	41.55	0.452	18.76	24.03	0.7	0.8	2.633	A
2	0.67	10.05	19.50	11.33	0.059	0.67	0.78	0.1	0.1	5.629	A
3	22.49	337.35	4.71	37.29	0.603	22.63	15.45	3.6	1.5	4.130	A
4	4.07	61.05	21.45	9.22	0.442	4.10	5.89	1.2	0.8	11.778	B

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.90	298.50	1.13	41.85	0.475	19.89	31.12	0.8	0.9	2.732	A
2	0.73	10.95	20.30	10.86	0.067	0.73	0.72	0.1	0.1	5.920	A
3	31.35	470.25	5.01	37.07	0.846	31.11	16.02	1.5	5.1	9.707	A
4	2.87	43.05	29.42	4.92	0.583	2.84	6.70	0.8	1.3	28.276	D

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.17	287.55	1.04	41.93	0.457	19.17	25.15	0.9	0.8	2.638	A
2	0.40	6.00	19.55	11.29	0.035	0.40	0.66	0.1	0.0	5.512	A
3	24.75	371.25	4.58	37.39	0.662	24.96	15.37	5.1	2.0	4.906	A
4	2.60	39.00	23.53	8.09	0.321	2.66	6.01	1.3	0.5	11.143	B

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.93	298.95	1.31	41.71	0.478	19.93	25.94	0.8	0.9	2.753	A
2	0.20	3.00	20.48	10.76	0.019	0.20	0.75	0.0	0.0	5.681	A
3	25.33	379.95	4.58	37.39	0.678	25.32	16.10	2.0	2.1	4.970	A
4	3.47	52.05	23.80	7.95	0.437	3.45	6.11	0.5	0.8	13.293	B

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.00	285.00	1.09	41.89	0.454	19.00	20.24	0.9	0.8	2.624	A
2	0.87	13.05	19.44	11.35	0.077	0.87	0.65	0.0	0.1	5.716	A
3	19.27	289.05	4.93	37.13	0.519	19.34	15.38	2.1	1.1	3.385	A
4	2.87	43.05	18.44	10.84	0.265	2.90	5.83	0.8	0.4	7.577	A

Growthed Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A5156/Borras Road	Standard Roundabout	1, 2, 3, 4	22.24	C

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-13	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.85	52.75	4.10
	2	0.52	0.00	0.23	0.52
	3	26.32	0.13	0.00	1.12
	4	7.03	0.90	2.67	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.01	0.91	0.07
	2	0.41	0.00	0.18	0.41
	3	0.95	0.00	0.00	0.04
	4	0.66	0.08	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	2	8	3
	2	3	0	8	0
	3	16	0	0	5
	4	0	2	0	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.020	1.080	1.030
	2	1.030	1.000	1.080	1.000
	3	1.160	1.000	1.000	1.050
	4	1.000	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	33.57	36.11
	2	0.21	0.22
	3	12.65	14.61
	4	5.44	5.45
07:45-08:00	1	36.39	39.14
	2	0.50	0.51
	3	13.99	16.16
	4	6.22	6.23
08:00-08:15	1	35.54	38.23
	2	0.71	0.73
	3	14.84	17.14
	4	7.77	7.78
08:15-08:30	1	37.95	40.82
	2	1.06	1.09
	3	14.42	16.65
	4	7.13	7.14
08:30-08:45	1	29.18	31.38

	2	0.71	0.73
	3	14.28	16.49
	4	4.95	4.96
08:45-09:00	1	24.31	26.15
	2	0.77	0.79
	3	13.71	15.83
	4	4.53	4.54
09:00-09:15	1	18.66	20.07
	2	0.35	0.36
	3	12.37	14.28
	4	3.47	3.48
09:15-09:30	1	15.19	16.34
	2	0.77	0.79
	3	14.07	16.25
	4	2.89	2.89

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.95	21.68	13.4	C	28.85	3461.86
2	999999999.00	592.06	17.7	F	0.64	76.20
3	0.43	3.00	0.7	A	13.79	1654.95
4	0.64	13.25	1.7	B	5.30	636.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	33.57	503.55	1.88	40.47	0.829	33.26	15.70	0.0	4.6	8.010	A
2	0.21	3.15	34.13	2.57	0.082	0.20	1.01	0.0	0.1	25.285	D
3	12.65	189.75	2.53	35.21	0.359	12.61	31.80	0.0	0.6	2.650	A
4	5.44	81.60	12.19	13.57	0.401	5.40	2.96	0.0	0.7	7.301	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.39	545.85	2.15	40.26	0.904	36.15	17.64	4.6	8.2	13.775	B
2	0.50	7.50	37.18	0.83	0.600	0.43	1.13	0.1	1.1	135.985	F
3	13.99	209.85	2.92	34.95	0.400	13.98	34.69	0.6	0.7	2.862	A
4	6.22	93.30	13.59	12.73	0.488	6.20	3.31	0.7	0.9	9.157	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
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1	35.54	533.10	2.67	39.87	0.891	35.54	19.56	8.2	8.2	13.859	B
2	0.71	10.65	36.96	0.98	0.728	0.66	1.25	1.1	1.8	168.718	F
3	14.84	222.60	3.07	34.85	0.426	14.84	34.56	0.7	0.7	2.997	A
4	7.77	116.55	14.50	12.20	0.637	7.72	3.40	0.9	1.7	13.249	B

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	37.95	569.25	2.48	40.02	0.948	37.61	18.51	8.2	13.4	21.684	C
2	1.06	15.90	38.85	0.00	999999999.000	0.00	1.23	1.8	17.7	592.060	F
3	14.42	216.30	2.67	35.11	0.411	14.42	36.18	0.7	0.7	2.899	A
4	7.13	106.95	13.84	12.58	0.567	7.15	3.26	1.7	1.3	11.114	B

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	29.18	437.70	1.75	40.57	0.719	29.90	17.71	13.4	2.6	5.993	A
2	0.71	10.65	30.71	4.53	0.157	1.87	0.93	17.7	0.2	35.615	E
3	14.28	214.20	3.65	34.46	0.414	14.28	28.93	0.7	0.7	2.973	A
4	4.95	74.25	14.47	12.25	0.404	4.99	3.47	1.3	0.7	8.312	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	24.31	364.65	1.59	40.69	0.597	24.38	16.42	2.6	1.5	3.698	A
2	0.77	11.55	25.17	7.70	0.100	0.78	0.81	0.2	0.1	8.674	A
3	13.71	205.65	2.37	35.33	0.388	13.71	23.58	0.7	0.6	2.777	A
4	4.53	67.95	13.48	12.81	0.353	4.54	2.60	0.7	0.6	7.260	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.66	279.90	1.23	40.96	0.456	18.70	14.27	1.5	0.8	2.700	A
2	0.35	5.25	19.30	11.04	0.032	0.36	0.63	0.1	0.0	5.615	A
3	12.37	185.55	1.62	35.84	0.345	12.38	18.04	0.6	0.5	2.557	A
4	3.47	52.05	12.02	13.67	0.254	3.48	1.98	0.6	0.3	5.899	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.19	227.85	1.04	41.11	0.370	15.21	15.66	0.8	0.6	2.317	A
2	0.77	11.55	15.71	13.10	0.059	0.77	0.54	0.0	0.1	4.866	A
3	14.07	211.05	1.71	35.78	0.393	14.06	14.77	0.5	0.6	2.762	A
4	2.89	43.35	13.81	12.62	0.229	2.89	1.96	0.3	0.3	6.171	A

Growthed Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A5156/Borras Road	Standard Roundabout	1, 2, 3, 4	10.50	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-2	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.55	26.62	8.42
	2	0.60	0.00	0.28	0.72
	3	49.25	0.28	0.00	3.43
	4	4.37	0.63	1.63	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.02	0.75	0.24
	2	0.38	0.00	0.18	0.45
	3	0.93	0.01	0.00	0.06
	4	0.66	0.10	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	6	7	0
	2	0	0	6	0
	3	5	6	0	0
	4	0	0	2	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.060	1.070	1.000
	2	1.000	1.000	1.060	1.000
	3	1.050	1.060	1.000	1.000
	4	1.000	1.000	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	13.01	13.70
	2	0.99	1.00
	3	27.91	29.22
	4	2.62	2.63
16:15-16:30	1	15.55	16.38
	2	1.48	1.50
	3	25.94	27.15
	4	3.68	3.70
16:30-16:45	1	17.25	18.17
	2	0.92	0.93
	3	30.67	32.11
	4	3.39	3.41
16:45-17:00	1	18.73	19.73
	2	0.71	0.72
	3	23.18	24.27
	4	4.31	4.33
17:00-17:15	1	19.93	20.99
	2	0.77	0.78
	3	32.57	34.09
	4	3.04	3.05
17:15-17:30	1	19.15	20.17
	2	0.42	0.42
	3	25.58	26.78
	4	2.76	2.77
17:30-17:45	1	19.85	20.91
	2	0.21	0.21
	3	26.21	27.44
	4	3.68	3.70
17:45-18:00	1	18.87	19.88
	2	0.92	0.93
	3	19.79	20.72
	4	3.04	3.05

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.48	2.75	0.9	A	17.79	2135.10
2	0.11	5.95	0.1	A	0.80	96.30
3	0.88	12.24	6.8	B	26.48	3177.76
4	0.69	40.72	2.0	E	3.32	397.80

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.01	195.15	1.03	41.97	0.310	12.98	27.85	0.0	0.4	2.067	A
2	0.99	14.85	13.41	14.80	0.067	0.99	0.60	0.0	0.1	4.344	A
3	27.91	418.65	3.88	37.91	0.736	27.73	10.52	0.0	2.7	5.798	A
4	2.62	39.30	26.30	6.61	0.397	2.58	5.31	0.0	0.6	14.745	B

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.55	233.25	1.39	41.69	0.373	15.54	27.10	0.4	0.6	2.294	A
2	1.48	22.20	16.20	13.21	0.112	1.48	0.73	0.1	0.1	5.111	A
3	25.94	389.10	4.89	37.16	0.698	25.96	12.79	2.7	2.4	5.373	A
4	3.68	55.20	24.84	7.40	0.497	3.66	6.02	0.6	1.0	15.941	C

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	17.25	258.75	1.30	41.76	0.413	17.24	30.93	0.6	0.7	2.447	A
2	0.92	13.80	17.80	12.30	0.075	0.92	0.75	0.1	0.1	5.275	A
3	30.67	460.05	4.84	37.20	0.824	30.53	13.88	2.4	4.5	8.808	A
4	3.39	50.85	28.90	5.21	0.651	3.34	6.47	1.0	1.7	31.291	D

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.73	280.95	1.61	41.52	0.451	18.72	24.86	0.7	0.8	2.632	A
2	0.71	10.65	19.51	11.33	0.063	0.71	0.83	0.1	0.1	5.648	A
3	23.18	347.70	5.01	37.07	0.625	23.36	15.20	4.5	1.7	4.434	A
4	4.31	64.65	22.12	8.86	0.487	4.36	6.26	1.7	1.0	13.475	B

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.93	298.95	1.19	41.85	0.476	19.92	32.21	0.8	0.9	2.736	A
2	0.77	11.55	20.35	10.85	0.071	0.77	0.76	0.1	0.1	5.952	A
3	32.57	488.55	5.35	36.83	0.884	32.23	15.77	1.7	6.8	12.245	B
4	3.04	45.60	30.43	4.38	0.694	2.97	7.15	1.0	2.0	40.718	E

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.15	287.25	1.11	41.91	0.457	19.15	26.11	0.9	0.8	2.638	A
2	0.42	6.30	19.56	11.30	0.037	0.42	0.71	0.1	0.0	5.518	A
3	25.58	383.70	4.88	37.17	0.688	25.89	15.10	6.8	2.2	5.457	A
4	2.76	41.40	24.37	7.64	0.361	2.85	6.40	2.0	0.6	12.762	B

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.85	297.75	1.39	41.69	0.476	19.85	26.85	0.8	0.9	2.746	A
2	0.21	3.15	20.44	10.80	0.019	0.21	0.80	0.0	0.0	5.669	A
3	26.21	393.15	4.87	37.18	0.705	26.20	15.78	2.2	2.4	5.461	A
4	3.68	55.20	24.58	7.52	0.489	3.66	6.49	0.6	0.9	15.419	C

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.87	283.05	1.16	41.88	0.451	18.88	20.84	0.9	0.8	2.608	A
2	0.92	13.80	19.34	11.42	0.081	0.92	0.69	0.0	0.1	5.707	A
3	19.79	296.85	5.22	36.92	0.536	19.87	15.04	2.4	1.2	3.536	A
4	3.04	45.60	18.92	10.58	0.287	3.07	6.16	0.9	0.4	8.031	A

Growthed Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A5156/Borras Road	Standard Roundabout	1, 2, 3, 4	24.24	C

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-14	Arm 2

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.85	53.62	4.10
	2	0.52	0.00	0.23	0.52
	3	28.32	0.13	0.00	1.12
	4	7.03	0.90	2.67	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.01	0.92	0.07
	2	0.41	0.00	0.18	0.41
	3	0.96	0.00	0.00	0.04
	4	0.66	0.08	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	2	8	3
	2	3	0	8	0
	3	16	0	0	5
	4	0	2	0	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.020	1.080	1.030
	2	1.030	1.000	1.080	1.000
	3	1.160	1.000	1.000	1.050
	4	1.000	1.020	1.000	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
07:30-07:45	1	33.77	36.32
	2	0.21	0.22
	3	13.52	15.62
	4	5.44	5.45
07:45-08:00	1	36.59	39.36
	2	0.50	0.51
	3	14.86	17.17
	4	6.22	6.23
08:00-08:15	1	36.04	38.77
	2	0.71	0.73
	3	16.11	18.61
	4	7.77	7.78
08:15-08:30	1	38.45	41.36
	2	1.06	1.09
	3	15.69	18.12
	4	7.13	7.14
08:30-08:45	1	29.68	31.92
	2	0.71	0.73
	3	15.55	17.96
	4	4.95	4.96
08:45-09:00	1	24.81	26.69
	2	0.77	0.79
	3	14.98	17.30
	4	4.53	4.54
09:00-09:15	1	19.19	20.64

	2	0.35	0.36
	3	12.97	14.98
	4	3.47	3.48
09:15-09:30	1	15.72	16.91
	2	0.77	0.79
	3	14.67	16.95
	4	2.89	2.89

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.96	24.62	15.6	C	29.28	3513.75
2	999999999.00	627.06	19.2	F	0.64	76.20
3	0.46	3.19	0.9	A	14.79	1775.26
4	0.68	15.69	2.0	C	5.30	636.00

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	33.77	506.55	1.88	40.47	0.834	33.45	16.57	0.0	4.8	8.211	A
2	0.21	3.15	34.32	2.46	0.085	0.20	1.00	0.0	0.1	26.532	D
3	13.52	202.80	2.51	35.22	0.384	13.48	32.02	0.0	0.6	2.755	A
4	5.44	81.60	13.05	13.05	0.417	5.39	2.93	0.0	0.7	7.789	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.59	548.85	2.15	40.26	0.909	36.33	18.51	4.8	8.6	14.338	B
2	0.50	7.50	37.37	0.72	0.690	0.42	1.12	0.1	1.3	169.889	F
3	14.86	222.90	2.88	34.96	0.425	14.85	34.90	0.6	0.7	2.981	A
4	6.22	93.30	14.46	12.22	0.509	6.20	3.27	0.7	1.0	9.932	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	36.04	540.60	2.66	39.87	0.904	36.02	20.77	8.6	8.9	15.344	C
2	0.71	10.65	37.44	0.70	1.015	0.58	1.25	1.3	3.3	532.685	F
3	16.11	241.65	2.99	34.89	0.462	16.10	35.02	0.7	0.9	3.191	A
4	7.77	116.55	15.73	11.46	0.678	7.70	3.37	1.0	2.0	15.687	C

08:15 - 08:30

Arm	Total Demand	Junction Arrivals	Circulating flow	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side)	Start queue	End queue	Delay (s)	LOS
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	(Veh/min)	(Veh)	(Veh/min)				(Veh/min)	(Veh)	(Veh)		
1	38.45	576.75	2.48	40.01	0.961	38.00	19.78	8.9	15.6	24.624	C
2	1.06	15.90	39.25	0.00	999999999.000	0.00	1.23	3.3	19.2	627.056	F
3	15.69	235.35	2.66	35.11	0.447	15.69	36.59	0.9	0.8	3.091	A
4	7.13	106.95	15.10	11.82	0.603	7.16	3.25	2.0	1.6	12.949	B

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	29.68	445.20	1.75	40.56	0.732	30.54	19.02	15.6	2.8	6.487	A
2	0.71	10.65	31.35	4.16	0.171	1.98	0.94	19.2	0.2	49.579	E
3	15.55	233.25	3.75	34.38	0.452	15.55	29.58	0.8	0.8	3.185	A
4	4.95	74.25	15.77	11.48	0.431	5.00	3.53	1.6	0.8	9.340	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	24.81	372.15	1.60	40.68	0.610	24.89	17.68	2.8	1.6	3.820	A
2	0.77	11.55	25.67	7.41	0.104	0.78	0.81	0.2	0.1	9.056	A
3	14.98	224.70	2.38	35.31	0.424	14.99	24.07	0.8	0.7	2.951	A
4	4.53	67.95	14.74	12.06	0.376	4.54	2.63	0.8	0.6	7.989	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.19	287.85	1.23	40.96	0.468	19.24	14.89	1.6	0.9	2.769	A
2	0.35	5.25	19.83	10.74	0.033	0.36	0.63	0.1	0.0	5.779	A
3	12.97	194.55	1.64	35.82	0.362	12.98	18.55	0.7	0.6	2.628	A
4	3.47	52.05	12.64	13.30	0.261	3.49	1.98	0.6	0.4	6.121	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	15.72	235.80	1.04	41.11	0.382	15.74	16.27	0.9	0.6	2.368	A
2	0.77	11.55	16.24	12.80	0.060	0.77	0.54	0.0	0.1	4.989	A
3	14.67	220.05	1.73	35.76	0.410	14.66	15.28	0.6	0.7	2.842	A
4	2.89	43.35	14.42	12.25	0.236	2.89	1.97	0.4	0.3	6.416	A

Growthed Future Year Base Plus Dev , PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	A5156/Borras Road	Standard Roundabout	1, 2, 3, 4	11.74	B

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	-3	Arm 4

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To				
		1	2	3	4
From	1	0.00	0.55	28.83	8.42
	2	0.60	0.00	0.28	0.72
	3	50.47	0.28	0.00	3.43
	4	4.37	0.63	1.63	0.00

Proportions

	To				
		1	2	3	4
From	1	0.00	0.01	0.76	0.22
	2	0.38	0.00	0.18	0.45
	3	0.93	0.01	0.00	0.06
	4	0.66	0.10	0.25	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To				
		1	2	3	4
From	1	0	6	7	0
	2	0	0	6	0
	3	5	6	0	0
	4	0	0	2	0

Average PCU Per Veh

	To				
		1	2	3	4
From	1	1.000	1.060	1.070	1.000
	2	1.000	1.000	1.060	1.000
	3	1.050	1.060	1.000	1.000
	4	1.000	1.000	1.020	1.000

Detailed Demand Data

Demand for each time segment

Time Segment	Arm	Demand (Veh/min)	Demand in PCU (PCU/min)
16:00-16:15	1	14.04	14.80

	2	0.99	1.00
	3	28.51	29.85
	4	2.62	2.63
16:15-16:30	1	16.58	17.48
	2	1.48	1.50
	3	26.54	27.78
	4	3.68	3.70
16:30-16:45	1	18.35	19.35
	2	0.92	0.93
	3	31.29	32.76
	4	3.39	3.41
16:45-17:00	1	19.83	20.91
	2	0.71	0.72
	3	23.80	24.92
	4	4.31	4.33
17:00-17:15	1	21.03	22.17
	2	0.77	0.78
	3	33.19	34.75
	4	3.04	3.05
17:15-17:30	1	20.25	21.35
	2	0.42	0.42
	3	26.20	27.43
	4	2.76	2.77
17:30-17:45	1	21.05	22.19
	2	0.21	0.21
	3	26.81	28.07
	4	3.68	3.70
17:45-18:00	1	20.07	21.16
	2	0.92	0.93
	3	20.39	21.35
	4	3.04	3.05

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.51	2.91	1.0	A	18.90	2268.00
2	0.12	6.35	0.1	A	0.80	96.30
3	0.90	13.64	7.8	B	27.09	3250.96
4	0.75	49.70	2.4	E	3.32	397.80

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
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1	14.04	210.60	1.03	41.94	0.335	14.01	28.43	0.0	0.5	2.145	A
2	0.99	14.85	14.44	14.21	0.070	0.99	0.60	0.0	0.1	4.537	A
3	28.51	427.65	3.93	37.87	0.753	28.31	11.49	0.0	3.0	6.158	A
4	2.62	39.30	26.89	6.29	0.417	2.57	5.35	0.0	0.7	15.960	C

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	16.58	248.70	1.39	41.65	0.398	16.57	27.71	0.5	0.7	2.390	A
2	1.48	22.20	17.23	12.62	0.117	1.48	0.73	0.1	0.1	5.383	A
3	26.54	398.10	4.90	37.15	0.714	26.57	13.80	3.0	2.6	5.688	A
4	3.68	55.20	25.44	7.08	0.520	3.66	6.03	0.7	1.0	17.421	C

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	18.35	275.25	1.30	41.72	0.440	18.34	31.53	0.7	0.8	2.566	A
2	0.92	13.80	18.89	11.67	0.079	0.92	0.75	0.1	0.1	5.587	A
3	31.29	469.35	4.84	37.19	0.841	31.13	14.97	2.6	5.0	9.636	A
4	3.39	50.85	29.50	4.88	0.695	3.32	6.47	1.0	2.0	37.046	E

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	19.83	297.45	1.62	41.47	0.478	19.82	25.51	0.8	0.9	2.769	A
2	0.71	10.65	20.61	10.69	0.066	0.71	0.83	0.1	0.1	6.009	A
3	23.80	357.00	5.00	37.08	0.642	24.01	16.32	5.0	1.8	4.664	A
4	4.31	64.65	22.76	8.51	0.506	4.37	6.25	2.0	1.1	14.708	B

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	21.03	315.45	1.18	41.82	0.503	21.02	32.77	0.9	1.0	2.885	A
2	0.77	11.55	21.44	10.21	0.075	0.77	0.76	0.1	0.1	6.353	A
3	33.19	497.85	5.31	36.85	0.901	32.79	16.90	1.8	7.8	13.641	B
4	3.04	45.60	31.00	4.07	0.747	2.95	7.10	1.1	2.4	49.701	E

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	20.25	303.75	1.12	41.86	0.484	20.25	26.79	1.0	0.9	2.778	A
2	0.42	6.30	20.67	10.65	0.039	0.42	0.71	0.1	0.0	5.865	A
3	26.20	393.00	4.86	37.18	0.705	26.56	16.23	7.8	2.4	5.831	A
4	2.76	41.40	25.04	7.28	0.379	2.88	6.38	2.4	0.6	13.988	B

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	21.05	315.75	1.39	41.65	0.505	21.05	27.45	0.9	1.0	2.911	A
2	0.21	3.15	21.64	10.10	0.021	0.21	0.80	0.0	0.0	6.067	A
3	26.81	402.15	4.86	37.18	0.721	26.80	16.99	2.4	2.5	5.775	A

4	3.68	55.20	25.18	7.20	0.511	3.65	6.48	0.6	1.0	16.795	C
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17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	20.07	301.05	1.16	41.84	0.480	20.08	21.44	1.0	0.9	2.757	A
2	0.92	13.80	20.54	10.73	0.086	0.92	0.69	0.0	0.1	6.112	A
3	20.39	305.85	5.22	36.91	0.552	20.48	16.23	2.5	1.2	3.668	A
4	3.04	45.60	19.52	10.26	0.296	3.08	6.18	1.0	0.4	8.401	A



Appendix I: Tesco Roundabout: Model Results



Table I1: A534 / A5152 / Tesco / Farndon Street: Junctions 9 Results – Weekday Morning Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A534								
7:30 – 7:45	0.231	0	0.266	0	0.247	0	0.282	0
7:45 – 8:00	0.228	0	0.263	0	0.244	0	0.281	0
8:00 – 8:15	0.323	1	0.376	1	0.346	1	0.401	1
8:15 – 8:30	0.405	1	0.460	1	0.435	1	0.491	1
8:30 – 8:45	0.541	1	0.597	2	0.583	1	0.640	2
8:45 – 9:00	0.451	1	0.509	1	0.487	1	0.546	1
9:00 – 9:15	0.409	1	0.438	1	0.440	1	0.467	1
19:15 – 9:30	0.281	0	0.307	0	0.302	0	0.328	1
Tesco Access								
7:30 – 7:45	0.142	0	0.145	0	0.152	0	0.156	0
7:45 – 8:00	0.170	0	0.173	0	0.182	0	0.186	0
8:00 – 8:15	0.169	0	0.175	0	0.182	0	0.189	0
8:15 – 8:30	0.174	0	0.180	0	0.188	0	0.195	0
8:30 – 8:45	0.159	0	0.166	0	0.174	0	0.181	0
8:45 – 9:00	0.209	0	0.217	0	0.227	0	0.236	0
9:00 – 9:15	0.155	0	0.158	0	0.168	0	0.172	0
9:15 – 9:30	0.183	0	0.186	0	0.197	0	0.201	0
Farndon Street								
7:30 – 7:45	0.165	0	0.171	0	0.176	0	0.182	0
7:45 – 8:00	0.171	0	0.178	0	0.183	0	0.190	0
8:00 – 8:15	0.217	0	0.229	0	0.232	0	0.245	0
8:15 – 8:30	0.224	0	0.237	0	0.240	0	0.254	0
8:30 – 8:45	0.233	0	0.247	0	0.251	0	0.265	0
8:45 – 9:00	0.239	0	0.253	0	0.257	0	0.271	0
9:00 – 9:15	0.228	0	0.240	0	0.245	0	0.257	0
9:15 – 9:30	0.188	0	0.199	0	0.201	0	0.213	0
Holt Road (W)								
7:30 – 7:45	0.029	0	0.031	0	0.031	0	0.033	0
7:45 – 8:00	0.065	0	0.067	0	0.070	0	0.072	0
8:00 – 8:15	0.043	0	0.048	0	0.047	0	0.051	0
8:15 – 8:30	0.053	0	0.058	0	0.057	0	0.063	0
8:30 – 8:45	0.074	0	0.079	0	0.080	0	0.085	0
8:45 – 9:00	0.086	0	0.092	0	0.094	0	0.100	0
9:00 – 9:15	0.122	0	0.128	0	0.132	0	0.138	0
9:15 – 9:30	0.096	0	0.102	0	0.103	0	0.109	0
A5152								
7:30 – 7:45	0.154	0	0.156	0	0.164	0	0.166	0
7:45 – 8:00	0.201	0	0.203	0	0.214	0	0.216	0
8:00 – 8:15	0.185	0	0.190	0	0.197	0	0.202	0
8:15 – 8:30	0.213	0	0.218	0	0.226	0	0.232	0
8:30 – 8:45	0.235	0	0.240	0	0.250	0	0.255	0
8:45 – 9:00	0.272	0	0.277	0	0.289	0	0.295	0
9:00 – 9:15	0.220	0	0.227	0	0.235	0	0.241	0
9:15 – 9:30	0.209	0	0.216	0	0.223	0	0.229	0

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Table X2: A534 / A5152 / Tesco / Farndon Street: Junctions 9 Results – Weekday Evening Peak

	Existing / No Growth Future Year Base		No Growth Future Year Base Plus Dev		Growthed Future Year Base		Growthed Future Year Base Plus Dev	
	RFC	Q	RFC	Q	RFC	Q	RFC	Q
A534								
16:00 – 16:15	0.370	1	0.398	1	0.399	1	0.428	1
16:15 – 16:30	0.352	1	0.380	1	0.380	1	0.408	1
16:30 – 16:45	0.350	1	0.377	1	0.378	1	0.405	1
16:45 – 17:00	0.311	1	0.339	1	0.336	1	0.363	1
17:00 – 17:15	0.393	1	0.421	1	0.426	1	0.454	1
17:15 – 17:30	0.338	1	0.366	1	0.365	1	0.394	1
17:30 – 17:45	0.387	1	0.415	1	0.417	1	0.447	1
17:45 – 18:00	0.415	1	0.444	1	0.448	1	0.478	1
Tesco Access								
16:00 – 16:15	0.298	0	0.303	0	0.321	1	0.327	1
16:15 – 16:30	0.317	1	0.322	1	0.342	1	0.348	1
16:30 – 16:45	0.310	1	0.315	1	0.334	1	0.340	1
16:45 – 17:00	0.278	1	0.283	0	0.300	0	0.305	0
17:00 – 17:15	0.274	0	0.278	0	0.296	0	0.301	0
17:15 – 17:30	0.325	1	0.330	1	0.351	1	0.357	1
17:30 – 17:45	0.301	0	0.307	0	0.326	1	0.332	1
17:45 – 18:00	0.292	0	0.298	0	0.316	1	0.322	1
Farndon Street								
16:00 – 16:15	0.371	1	0.393	1	0.398	1	0.421	1
16:15 – 16:30	0.304	0	0.326	1	0.327	1	0.349	1
16:30 – 16:45	0.335	1	0.358	1	0.360	1	0.383	1
16:45 – 17:00	0.345	1	0.367	1	0.370	1	0.393	1
17:00 – 17:15	0.470	1	0.494	1	0.505	1	0.530	1
17:15 – 17:30	0.372	1	0.395	1	0.399	1	0.423	1
17:30 – 17:45	0.379	1	0.405	1	0.407	1	0.433	1
17:45 – 18:00	0.325	1	0.350	1	0.350	1	0.375	1
Holt Road (W)								
16:00 – 16:15	0.263	0	0.278	0	0.287	0	0.303	0
16:15 – 16:30	0.195	0	0.207	0	0.212	0	0.225	0
16:30 – 16:45	0.244	0	0.260	0	0.266	0	0.282	0
16:45 – 17:00	0.259	0	0.275	0	0.282	0	0.299	0
17:00 – 17:15	0.312	1	0.331	1	0.343	1	0.363	1
17:15 – 17:30	0.275	0	0.291	0	0.300	0	0.318	1
17:30 – 17:45	0.287	0	0.304	0	0.313	1	0.332	1
17:45 – 18:00	0.227	0	0.242	0	0.246	0	0.263	0
A5152								
16:00 – 16:15	0.283	0	0.295	0	0.302	0	0.315	1
16:15 – 16:30	0.281	0	0.292	0	0.299	0	0.311	1
16:30 – 16:45	0.264	0	0.276	0	0.281	0	0.294	0
16:45 – 17:00	0.265	0	0.277	0	0.283	0	0.296	0
17:00 – 17:15	0.292	0	0.306	0	0.313	1	0.326	1
17:15 – 17:30	0.304	0	0.278	0	0.324	1	0.338	1
17:30 – 17:45	0.264	0	0.278	0	0.282	0	0.296	0
17:45 – 18:00	0.297	0	0.311	0	0.316	1	0.331	1

RFC: Ratio of Flow to Capacity. Q: Queue length in vehs

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.0.2.5947
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The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Tesco Junction TA.j9

Path: L:\Projects\CBO-0322 Tyn Twll, Holt Road, Wrexham\ARCADY\Tesco

Report generation date: 14/08/2018 17:30:36

- »Existing / No Growth Future Year Base, AM
- »Existing / No Growth Future Year Base, PM
- »Existing / No Growth Future Year Base Plus Dev, AM
- »Existing / No Growth Future Year Base Plus Dev, PM
- »Growthed Future Year Base, AM
- »Growthed Future Year Base, PM
- »Growthed Future Year Base Plus Dev, AM
- »Growthed Future Year Base Plus Dev, PM

Summary of junction performance

	AM					PM				
	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity	Queue (Veh)	Delay (s)	RFC	LOS	Network Residual Capacity
	Existing / No Growth Future Year Base									
Arm 1	1.2	5.89	0.54	A	54 % [Arm 1]	0.7	4.83	0.41	A	72 % [Arm 1]
Arm 2	0.3	3.29	0.21	A		0.5	3.55	0.32	A	
Arm 3	0.3	3.38	0.24	A		0.9	4.77	0.47	A	
Arm 4	0.1	3.20	0.12	A		0.5	4.69	0.31	A	
Arm 5	0.4	1.91	0.27	A		0.4	2.08	0.30	A	
	Existing / No Growth Future Year Base Plus Dev									
Arm 1	1.5	6.70	0.60	A	44 % [Arm 1]	0.8	5.09	0.44	A	65 % [Arm 1]
Arm 2	0.3	3.46	0.22	A		0.5	3.63	0.33	A	
Arm 3	0.3	3.52	0.25	A		1.0	5.04	0.49	A	
Arm 4	0.1	3.27	0.13	A		0.5	4.94	0.33	A	
Arm 5	0.4	1.93	0.28	A		0.5	2.14	0.32	A	
	Growthed Future Year Base									
Arm 1	1.4	6.57	0.58	A	45 % [Arm 1]	0.8	5.22	0.45	A	62 % [Arm 1]
Arm 2	0.3	3.46	0.23	A		0.5	3.76	0.35	A	
Arm 3	0.3	3.51	0.26	A		1.0	5.16	0.51	A	
Arm 4	0.2	3.30	0.13	A		0.5	5.08	0.34	A	
Arm 5	0.4	1.96	0.29	A		0.5	2.16	0.32	A	
	Growthed Future Year Base Plus Dev									
Arm 1	1.7	7.57	0.64	A	36 %	0.9	5.52	0.48	A	56 %

Arm 2	0.3	3.64	0.24	A	[Arm 1]	0.6	3.85	0.36	A	[Arm 1]
Arm 3	0.4	3.65	0.27	A		1.1	5.48	0.53	A	
Arm 4	0.2	3.37	0.14	A		0.6	5.37	0.36	A	
Arm 5	0.4	1.99	0.29	A		0.5	2.22	0.34	A	

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle. Network Residual Capacity indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	(untitled)
Location	
Site number	
Date	07/06/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	CBO\Lucas
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	perMin	s	-Min	perMin

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D3	Existing / No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D4	Existing / No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓
D5	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓
D6	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓
D7	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓
D8	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

Existing / No Growth Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	3.61	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	54	Arm 1

Arms

Arms

Arm	Name	Description
1	A534 Holt Road	
2	Tesco Access	
3	Farndon Street	
4	untitled	Holt Road West
5	A5152	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	4.10	6.40	16.4	13.0	45.0	21.0	
2	5.70	7.50	5.6	28.9	45.0	36.0	
3	3.30	8.60	17.0	19.1	45.0	38.0	
4	4.50	6.10	22.9	14.6	45.0	24.0	
5	7.50	11.00	15.0	15.9	125.0	30.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/min)
1	0.635	28.863
2	0.682	33.074
3	0.629	29.159
4	0.641	29.409
5	0.602	47.389

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length	Time segment length (min)	Run automatically
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						(min)		
D1	Existing / No Growth Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	2.35	5.87	2.10	5.75
	2	1.43	0.00	3.77	0.75	2.48
	3	3.12	2.17	0.00	0.23	4.50
	4	1.12	0.63	0.37	0.00	0.95
	5	4.92	4.68	8.10	0.65	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	1	4	6	5
	2	1	0	1	0	0
	3	5	1	0	0	3
	4	4	0	0	0	14
	5	5	0	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.54	5.89	1.2	A	8.03	963.90
2	0.21	3.29	0.3	A	4.21	505.80
3	0.24	3.38	0.3	A	5.01	601.05
4	0.12	3.20	0.1	A	1.53	183.90
5	0.27	1.91	0.4	A	9.18	1101.15

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	5.53	82.95	6.08	23.94	0.231	5.51	4.00	0.0	0.3	3.253	A
2	3.87	58.05	8.02	27.23	0.142	3.86	3.57	0.0	0.2	2.566	A
3	4.13	61.95	5.07	25.10	0.165	4.12	6.81	0.0	0.2	2.858	A
4	0.67	10.05	7.79	22.94	0.029	0.67	1.40	0.0	0.0	2.693	A
5	6.80	102.00	3.29	44.18	0.154	6.79	5.16	0.0	0.2	1.604	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	5.20	78.00	7.84	22.85	0.228	5.20	4.99	0.3	0.3	3.402	A
2	4.53	67.95	8.81	26.68	0.170	4.53	4.23	0.2	0.2	2.707	A
3	4.27	64.05	5.36	24.93	0.171	4.27	7.98	0.2	0.2	2.904	A
4	1.47	22.05	8.13	22.73	0.065	1.47	1.49	0.0	0.1	2.822	A
5	8.80	132.00	4.03	43.73	0.201	8.80	5.57	0.2	0.3	1.716	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.47	112.05	7.35	23.15	0.323	7.46	4.88	0.3	0.5	3.822	A
2	4.33	64.95	10.33	25.60	0.169	4.33	4.48	0.2	0.2	2.820	A
3	5.27	79.05	6.33	24.30	0.217	5.27	8.33	0.2	0.3	3.152	A
4	0.93	13.95	9.82	21.66	0.043	0.93	1.77	0.1	0.0	2.896	A
5	8.07	121.05	4.16	43.66	0.185	8.07	6.60	0.3	0.2	1.688	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.13	136.95	8.31	22.56	0.405	9.12	5.27	0.5	0.7	4.459	A
2	4.20	63.00	12.34	24.18	0.174	4.20	5.08	0.2	0.2	3.002	A
3	5.33	79.95	7.11	23.80	0.224	5.33	9.43	0.3	0.3	3.248	A
4	1.13	16.95	10.42	21.28	0.053	1.13	2.02	0.0	0.1	2.977	A
5	9.27	139.05	4.30	43.57	0.213	9.27	7.24	0.2	0.3	1.748	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.93	178.95	9.13	22.05	0.541	11.90	5.57	0.7	1.2	5.893	A
2	3.53	52.95	15.20	22.16	0.159	3.53	5.83	0.2	0.2	3.221	A
3	5.40	81.00	8.13	23.13	0.233	5.40	10.61	0.3	0.3	3.382	A
4	1.53	22.95	11.17	20.79	0.074	1.53	2.36	0.1	0.1	3.114	A
5	10.20	153.00	4.50	43.45	0.235	10.20	8.20	0.3	0.3	1.803	A

08:45 - 09:00

Arm	Total	Junction	Circulating	Capacity	RFC	Throughput	Throughput	Start	End	Delay	LOS
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	Demand (Veh/min)	Arrivals (Veh)	flow (Veh/min)	(Veh/min)		(Veh/min)	(exit side) (Veh/min)	queue (Veh)	queue (Veh)	(s)	
1	9.60	144.00	10.38	21.27	0.451	9.62	6.35	1.2	0.8	5.162	A
2	4.80	72.00	14.02	23.00	0.209	4.80	5.98	0.2	0.3	3.295	A
3	5.60	84.00	7.77	23.38	0.239	5.60	11.05	0.3	0.3	3.372	A
4	1.80	27.00	11.14	20.83	0.086	1.80	2.23	0.1	0.1	3.151	A
5	11.73	175.95	5.01	43.14	0.272	11.73	7.93	0.3	0.4	1.909	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.07	136.05	8.97	22.15	0.409	9.08	5.82	0.8	0.7	4.592	A
2	3.73	55.95	12.58	24.02	0.155	3.74	5.47	0.3	0.2	2.958	A
3	5.47	82.05	6.84	23.96	0.228	5.47	9.48	0.3	0.3	3.246	A
4	2.60	39.00	10.33	21.33	0.122	2.60	1.98	0.1	0.1	3.202	A
5	9.47	142.05	5.31	42.96	0.220	9.48	7.61	0.4	0.3	1.791	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	6.33	94.95	8.33	22.54	0.281	6.35	5.44	0.7	0.4	3.711	A
2	4.73	70.95	10.00	25.84	0.183	4.73	4.68	0.2	0.2	2.841	A
3	4.60	69.00	6.04	24.49	0.188	4.60	8.69	0.3	0.2	3.019	A
4	2.13	31.95	8.97	22.20	0.096	2.13	1.68	0.1	0.1	2.988	A
5	9.07	136.05	4.70	43.33	0.209	9.07	6.39	0.3	0.3	1.753	A

Existing / No Growth Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	3.77	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	72	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D2	Existing / No Growth Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	3.63	5.27	2.32	4.33
	2	2.30	0.00	6.78	1.40	4.43
	3	4.88	3.42	0.00	0.28	8.50
	4	3.55	1.23	1.42	0.00	4.12
	5	8.32	5.97	8.05	1.13	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	3	4	6
	2	1	0	2	0	0
	3	3	1	0	0	2
	4	0	1	0	0	2
	5	1	1	1	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.41	4.83	0.7	A	7.78	933.00
2	0.32	3.55	0.5	A	7.46	894.90
3	0.47	4.77	0.9	A	8.54	1024.95
4	0.31	4.69	0.5	A	5.16	619.20
5	0.30	2.08	0.4	A	11.73	1407.91

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.87	118.05	10.69	21.29	0.370	7.83	9.60	0.0	0.6	4.445	A
2	7.40	111.00	11.33	24.86	0.298	7.37	7.19	0.0	0.4	3.424	A
3	8.73	130.95	7.94	23.55	0.371	8.69	10.76	0.0	0.6	4.028	A
4	5.27	79.05	14.06	20.01	0.263	5.25	2.57	0.0	0.4	4.058	A
5	11.80	177.00	8.51	41.68	0.283	11.77	10.79	0.0	0.4	2.004	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.60	114.00	10.18	21.61	0.352	7.60	8.89	0.6	0.5	4.286	A
2	7.93	118.95	11.05	25.05	0.317	7.93	6.73	0.4	0.5	3.503	A
3	7.13	106.95	8.15	23.42	0.304	7.14	10.83	0.6	0.4	3.687	A
4	4.07	61.05	12.72	20.88	0.195	4.08	2.57	0.4	0.2	3.574	A
5	11.93	178.95	7.14	42.51	0.281	11.93	9.65	0.4	0.4	1.962	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.60	114.00	10.00	21.72	0.350	7.60	9.09	0.5	0.5	4.250	A
2	7.80	117.00	10.84	25.20	0.310	7.80	6.76	0.5	0.5	3.451	A
3	7.87	118.05	8.04	23.49	0.335	7.87	10.61	0.4	0.5	3.839	A
4	5.00	75.00	13.37	20.45	0.244	4.99	2.53	0.2	0.3	3.881	A
5	11.07	166.05	8.03	41.98	0.264	11.07	10.34	0.4	0.4	1.941	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	6.73	100.95	10.17	21.61	0.311	6.74	9.22	0.5	0.5	4.034	A
2	7.13	106.95	10.23	25.63	0.278	7.13	6.68	0.5	0.4	3.243	A
3	8.27	124.05	7.31	23.95	0.345	8.27	10.05	0.5	0.5	3.824	A
4	5.33	79.95	13.23	20.55	0.259	5.33	2.34	0.3	0.3	3.942	A
5	11.07	166.05	8.32	41.80	0.265	11.07	10.24	0.4	0.4	1.952	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.20	123.00	11.41	20.84	0.393	8.19	10.43	0.5	0.6	4.736	A
2	6.73	100.95	11.74	24.58	0.274	6.73	7.86	0.4	0.4	3.363	A
3	11.13	166.95	7.75	23.66	0.470	11.11	10.72	0.5	0.9	4.771	A
4	5.80	87.00	16.24	18.58	0.312	5.79	2.61	0.3	0.5	4.689	A
5	11.93	178.95	9.92	40.83	0.292	11.93	12.12	0.4	0.4	2.075	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.07	106.05	11.29	20.92	0.338	7.08	10.10	0.6	0.5	4.340	A

2	8.13	121.95	11.11	25.02	0.325	8.12	7.26	0.4	0.5	3.547	A
3	8.73	130.95	8.06	23.48	0.372	8.75	11.17	0.9	0.6	4.079	A
4	5.47	82.05	14.24	19.89	0.275	5.47	2.57	0.5	0.4	4.163	A
5	12.60	189.00	8.79	41.51	0.304	12.60	10.92	0.4	0.4	2.074	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.33	124.95	10.29	21.54	0.387	8.32	9.51	0.5	0.6	4.538	A
2	7.47	112.05	11.44	24.78	0.301	7.47	7.18	0.5	0.4	3.468	A
3	8.87	133.05	8.16	23.40	0.379	8.87	10.75	0.6	0.6	4.128	A
4	5.67	85.05	14.41	19.77	0.287	5.67	2.62	0.4	0.4	4.254	A
5	10.93	163.95	8.87	41.47	0.264	10.94	11.22	0.4	0.4	1.965	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.80	132.00	10.81	21.21	0.415	8.79	9.31	0.6	0.7	4.829	A
2	7.07	106.05	12.28	24.19	0.292	7.07	7.32	0.4	0.4	3.506	A
3	7.60	114.00	8.22	23.36	0.325	7.61	11.13	0.6	0.5	3.813	A
4	4.67	70.05	13.12	20.60	0.227	4.68	2.71	0.4	0.3	3.768	A
5	12.53	187.95	7.60	42.23	0.297	12.53	10.20	0.4	0.4	2.019	A

Existing / No Growth Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	3.98	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	44	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D3	Existing / No Growth Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	2.35	6.68	2.45	6.52
	2	1.43	0.00	3.77	0.75	2.48
	3	3.48	2.17	0.00	0.23	4.50
	4	1.27	0.63	0.37	0.00	0.95
	5	5.25	4.68	8.10	0.65	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	1	4	6	5
	2	1	0	1	0	0
	3	5	1	0	0	3
	4	4	0	0	0	14
	5	5	0	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.60	6.70	1.5	A	9.00	1079.70
2	0.22	3.46	0.3	A	4.21	505.80
3	0.25	3.52	0.3	A	5.19	622.95
4	0.13	3.27	0.1	A	1.61	192.60
5	0.28	1.93	0.4	A	9.34	1120.95

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	6.36	95.40	6.03	23.95	0.266	6.34	4.27	0.0	0.4	3.401	A
2	3.87	58.05	8.80	26.67	0.145	3.86	3.56	0.0	0.2	2.628	A
3	4.23	63.45	5.53	24.78	0.171	4.22	7.13	0.0	0.2	2.916	A
4	0.70	10.50	8.21	22.69	0.031	0.70	1.54	0.0	0.0	2.728	A
5	6.87	103.05	3.44	44.07	0.156	6.86	5.46	0.0	0.2	1.612	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	6.03	90.45	7.75	22.89	0.263	6.03	5.32	0.4	0.4	3.561	A
2	4.53	67.95	9.57	26.15	0.173	4.53	4.22	0.2	0.2	2.775	A
3	4.37	65.55	5.82	24.61	0.178	4.37	8.28	0.2	0.2	2.963	A
4	1.50	22.50	8.56	22.47	0.067	1.50	1.63	0.0	0.1	2.860	A
5	8.87	133.05	4.20	43.61	0.203	8.87	5.85	0.2	0.3	1.726	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.70	130.50	7.39	23.11	0.376	8.68	5.29	0.4	0.6	4.154	A
2	4.33	64.95	11.53	24.75	0.175	4.33	4.54	0.2	0.2	2.938	A
3	5.47	82.05	7.01	23.85	0.229	5.46	8.85	0.2	0.3	3.264	A
4	1.01	15.15	10.50	21.25	0.048	1.01	1.98	0.1	0.1	2.964	A
5	8.25	123.75	4.42	43.47	0.190	8.25	7.09	0.3	0.2	1.702	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.36	155.40	8.32	22.53	0.460	10.34	5.70	0.6	0.8	4.916	A
2	4.20	63.00	13.56	23.32	0.180	4.20	5.11	0.2	0.2	3.137	A
3	5.53	82.95	7.81	23.33	0.237	5.53	9.95	0.3	0.3	3.369	A
4	1.21	18.15	11.10	20.86	0.058	1.21	2.23	0.1	0.1	3.052	A
5	9.45	141.75	4.57	43.38	0.218	9.45	7.73	0.2	0.3	1.767	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.16	197.40	9.13	22.03	0.597	13.12	6.03	0.8	1.5	6.700	A
2	3.53	52.95	16.45	21.27	0.166	3.53	5.80	0.2	0.2	3.384	A
3	5.60	84.00	8.85	22.65	0.247	5.60	11.13	0.3	0.3	3.517	A
4	1.61	24.15	11.86	20.37	0.079	1.61	2.59	0.1	0.1	3.197	A
5	10.38	155.70	4.78	43.26	0.240	10.38	8.69	0.3	0.3	1.823	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.83	162.45	10.35	21.27	0.509	10.86	6.85	1.5	1.0	5.776	A
2	4.80	72.00	15.23	22.15	0.217	4.79	5.98	0.2	0.3	3.458	A
3	5.80	87.00	8.48	22.92	0.253	5.80	11.55	0.3	0.3	3.504	A

4	1.88	28.20	11.83	20.41	0.092	1.88	2.45	0.1	0.1	3.237	A
5	11.91	178.65	5.29	42.95	0.277	11.91	8.41	0.3	0.4	1.932	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.64	144.60	9.01	22.11	0.436	9.66	6.34	1.0	0.8	4.823	A
2	3.73	55.95	13.25	23.54	0.158	3.74	5.41	0.3	0.2	3.029	A
3	5.70	85.50	7.22	23.70	0.240	5.70	9.77	0.3	0.3	3.332	A
4	2.70	40.50	10.80	21.05	0.128	2.70	2.11	0.1	0.1	3.269	A
5	9.70	145.50	5.64	42.74	0.227	9.71	7.86	0.4	0.3	1.815	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	6.90	103.50	8.39	22.49	0.307	6.92	5.92	0.8	0.4	3.860	A
2	4.73	70.95	10.63	25.40	0.186	4.73	4.68	0.2	0.2	2.902	A
3	4.83	72.45	6.39	24.25	0.199	4.83	8.97	0.3	0.2	3.090	A
4	2.23	33.45	9.43	21.93	0.102	2.23	1.79	0.1	0.1	3.048	A
5	9.30	139.50	5.01	43.13	0.216	9.30	6.65	0.3	0.3	1.775	A

Existing / No Growth Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	3.96	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	65	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D4	Existing / No Growth Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	3.63	5.77	2.53	4.80
	2	2.30	0.00	6.78	1.40	4.43
	3	5.80	3.42	0.00	0.28	8.50
	4	3.93	1.23	1.42	0.00	4.12
	5	9.17	5.97	8.05	1.13	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	3	4	6
	2	1	0	2	0	0
	3	3	1	0	0	2
	4	0	1	0	0	2
	5	1	1	1	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.44	5.09	0.8	A	8.36	1003.80
2	0.33	3.63	0.5	A	7.46	894.90
3	0.49	5.04	1.0	A	9.00	1079.85
4	0.33	4.94	0.5	A	5.35	642.30
5	0.32	2.14	0.5	A	12.16	1459.20

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.47	127.05	10.66	21.29	0.398	8.43	10.65	0.0	0.7	4.646	A
2	7.40	111.00	11.91	24.45	0.303	7.37	7.17	0.0	0.4	3.506	A
3	9.16	137.40	8.28	23.31	0.393	9.12	11.00	0.0	0.6	4.214	A
4	5.44	81.60	14.72	19.57	0.278	5.41	2.68	0.0	0.4	4.229	A
5	12.20	183.00	9.14	41.31	0.295	12.17	11.00	0.0	0.4	2.057	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.20	123.00	10.17	21.59	0.380	8.20	9.87	0.7	0.6	4.482	A
2	7.93	118.95	11.64	24.64	0.322	7.93	6.73	0.4	0.5	3.590	A
3	7.56	113.40	8.49	23.19	0.326	7.57	11.08	0.6	0.5	3.844	A
4	4.24	63.60	13.38	20.45	0.207	4.25	2.68	0.4	0.3	3.707	A
5	12.33	184.95	7.71	42.16	0.292	12.33	9.92	0.4	0.4	2.010	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.18	122.70	10.02	21.69	0.377	8.18	10.12	0.6	0.6	4.443	A
2	7.80	117.00	11.43	24.78	0.315	7.80	6.77	0.5	0.5	3.535	A
3	8.32	124.80	8.37	23.26	0.358	8.32	10.86	0.5	0.6	4.014	A
4	5.20	78.00	14.05	20.01	0.260	5.19	2.64	0.3	0.3	4.046	A
5	11.49	172.35	8.66	41.60	0.276	11.49	10.59	0.4	0.4	1.992	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.31	109.65	10.18	21.59	0.339	7.32	10.27	0.6	0.5	4.205	A
2	7.13	106.95	10.80	25.23	0.283	7.13	6.70	0.5	0.4	3.315	A
3	8.72	130.80	7.63	23.73	0.367	8.72	10.30	0.6	0.6	3.997	A
4	5.53	82.95	13.90	20.11	0.275	5.53	2.45	0.3	0.4	4.114	A
5	11.49	172.35	8.97	41.41	0.277	11.49	10.46	0.4	0.4	2.005	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.78	131.70	11.37	20.85	0.421	8.77	11.62	0.5	0.7	4.960	A
2	6.73	100.95	12.32	24.17	0.278	6.73	7.82	0.4	0.4	3.440	A
3	11.58	173.70	8.09	23.43	0.494	11.55	10.96	0.6	1.0	5.042	A
4	6.00	90.00	16.92	18.14	0.331	5.99	2.72	0.4	0.5	4.937	A
5	12.35	185.25	10.64	40.40	0.306	12.35	12.28	0.4	0.4	2.139	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.65	114.75	11.26	20.92	0.366	7.66	11.21	0.7	0.6	4.530	A
2	8.13	121.95	11.66	24.63	0.330	8.12	7.26	0.4	0.5	3.632	A
3	9.18	137.70	8.39	23.25	0.395	9.20	11.39	1.0	0.7	4.275	A
4	5.67	85.05	14.92	19.45	0.291	5.68	2.67	0.5	0.4	4.357	A

5	13.02	195.30	9.46	41.12	0.317	13.02	11.14	0.4	0.5	2.135	A
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17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.93	133.95	10.34	21.49	0.415	8.92	10.63	0.6	0.7	4.769	A
2	7.47	112.05	12.07	24.34	0.307	7.47	7.19	0.5	0.4	3.557	A
3	9.37	140.55	8.52	23.16	0.405	9.37	11.03	0.7	0.7	4.350	A
4	5.87	88.05	15.15	19.29	0.304	5.87	2.73	0.4	0.4	4.470	A
5	11.40	171.00	9.56	41.05	0.278	11.41	11.46	0.5	0.4	2.023	A

17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.40	141.00	10.84	21.18	0.444	9.39	10.40	0.7	0.8	5.090	A
2	7.07	106.05	12.91	23.75	0.298	7.07	7.33	0.4	0.4	3.598	A
3	8.10	121.50	8.58	23.11	0.350	8.11	11.40	0.7	0.5	4.000	A
4	4.87	73.05	13.87	20.12	0.242	4.88	2.82	0.4	0.3	3.940	A
5	13.00	195.00	8.24	41.84	0.311	13.00	10.50	0.4	0.4	2.079	A

Growthed Future Year Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	3.87	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	45	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D5	Growthed Future Year Base	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000

2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	2.48	6.22	2.23	6.10
	2	1.52	0.00	4.00	0.80	2.63
	3	3.30	2.30	0.00	0.25	4.77
	4	1.18	0.67	0.38	0.00	1.00
	5	5.22	4.97	8.58	0.68	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	1	4	6	5
	2	1	0	1	0	0
	3	5	1	0	0	3
	4	4	0	0	0	14
	5	5	0	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.58	6.57	1.4	A	8.52	1021.80
2	0.23	3.46	0.3	A	4.47	535.95
3	0.26	3.51	0.3	A	5.31	637.35
4	0.13	3.30	0.2	A	1.63	195.15
5	0.29	1.96	0.4	A	9.73	1167.15

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	5.86	87.90	6.44	23.71	0.247	5.84	4.24	0.0	0.3	3.352	A

2	4.10	61.50	8.50	26.89	0.152	4.09	3.78	0.0	0.2	2.630	A
3	4.38	65.70	5.37	24.91	0.176	4.37	7.22	0.0	0.2	2.919	A
4	0.71	10.65	8.25	22.65	0.031	0.71	1.49	0.0	0.0	2.734	A
5	7.21	108.15	3.48	44.06	0.164	7.20	5.47	0.0	0.2	1.627	A

07:45 - 08:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	5.51	82.65	8.31	22.55	0.244	5.51	5.29	0.3	0.3	3.519	A
2	4.80	72.00	9.33	26.31	0.182	4.80	4.49	0.2	0.2	2.788	A
3	4.53	67.95	5.68	24.73	0.183	4.53	8.45	0.2	0.2	2.970	A
4	1.56	23.40	8.62	22.42	0.070	1.56	1.59	0.0	0.1	2.875	A
5	9.33	139.95	4.28	43.59	0.214	9.32	5.90	0.2	0.3	1.750	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.92	118.80	7.79	22.88	0.346	7.91	5.17	0.3	0.5	4.005	A
2	4.59	68.85	10.95	25.16	0.182	4.59	4.75	0.2	0.2	2.915	A
3	5.59	83.85	6.71	24.06	0.232	5.58	8.83	0.2	0.3	3.247	A
4	0.99	14.85	10.41	21.29	0.047	0.99	1.88	0.1	0.0	2.957	A
5	8.55	128.25	4.41	43.50	0.197	8.55	7.00	0.3	0.2	1.718	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.68	145.20	8.80	22.25	0.435	9.66	5.58	0.5	0.8	4.762	A
2	4.45	66.75	13.08	23.66	0.188	4.45	5.39	0.2	0.2	3.122	A
3	5.65	84.75	7.53	23.53	0.240	5.65	9.99	0.3	0.3	3.355	A
4	1.20	18.00	11.04	20.89	0.057	1.20	2.14	0.0	0.1	3.046	A
5	9.83	147.45	4.56	43.41	0.226	9.83	7.68	0.2	0.3	1.785	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	12.65	189.75	9.67	21.71	0.583	12.61	5.90	0.8	1.4	6.565	A
2	3.74	56.10	16.11	21.51	0.174	3.74	6.17	0.2	0.2	3.375	A
3	5.72	85.80	8.62	22.82	0.251	5.72	11.24	0.3	0.3	3.507	A
4	1.62	24.30	11.83	20.38	0.080	1.62	2.50	0.1	0.1	3.198	A
5	10.81	162.15	4.77	43.29	0.250	10.81	8.68	0.3	0.3	1.846	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.18	152.70	11.00	20.89	0.487	10.21	6.74	1.4	1.0	5.632	A
2	5.09	76.35	14.87	22.41	0.227	5.08	6.34	0.2	0.3	3.463	A
3	5.94	89.10	8.24	23.09	0.257	5.94	11.71	0.3	0.3	3.498	A
4	1.91	28.65	11.81	20.41	0.094	1.91	2.37	0.1	0.1	3.242	A
5	12.43	186.45	5.31	42.96	0.289	12.43	8.41	0.3	0.4	1.964	A

09:00 - 09:15

Arm	Total	Junction	Circulating	Capacity	RFC	Throughput	Throughput	Start	End	Delay	LOS
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	Demand (Veh/min)	Arrivals (Veh)	flow (Veh/min)	(Veh/min)		(Veh/min)	(exit side) (Veh/min)	queue (Veh)	queue (Veh)	(s)	
1	9.61	144.15	9.50	21.82	0.440	9.62	6.18	1.0	0.8	4.923	A
2	3.95	59.25	13.33	23.49	0.168	3.96	5.79	0.3	0.2	3.074	A
3	5.80	87.00	7.25	23.70	0.245	5.80	10.04	0.3	0.3	3.353	A
4	2.76	41.40	10.94	20.95	0.132	2.76	2.10	0.1	0.2	3.298	A
5	10.04	150.60	5.63	42.77	0.235	10.05	8.07	0.4	0.3	1.833	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	6.71	100.65	8.83	22.24	0.302	6.73	5.77	0.8	0.4	3.876	A
2	5.01	75.15	10.60	25.42	0.197	5.01	4.96	0.2	0.2	2.939	A
3	4.88	73.20	6.40	24.26	0.201	4.88	9.21	0.3	0.3	3.098	A
4	2.26	33.90	9.50	21.87	0.103	2.26	1.78	0.2	0.1	3.060	A
5	9.61	144.15	4.99	43.16	0.223	9.61	6.78	0.3	0.3	1.787	A

Growthed Future Year Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	4.04	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	62	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D6	Growthed Future Year Base	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	3.85	5.58	2.45	4.60
	2	2.43	0.00	7.18	1.48	4.70
	3	5.18	3.62	0.00	0.30	9.02
	4	3.77	1.30	1.50	0.00	4.37
	5	8.82	6.32	8.53	1.20	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	3	4	6
	2	1	0	2	0	0
	3	3	1	0	0	2
	4	0	1	0	0	2
	5	1	1	1	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.45	5.22	0.8	A	8.24	988.95
2	0.35	3.76	0.5	A	7.91	948.60
3	0.51	5.16	1.0	A	9.05	1086.45
4	0.34	5.08	0.5	A	5.47	656.40
5	0.32	2.16	0.5	A	12.44	1492.50

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.34	125.10	11.32	20.90	0.399	8.30	10.18	0.0	0.7	4.745	A
2	7.84	117.60	12.01	24.39	0.321	7.81	7.61	0.0	0.5	3.612	A
3	9.25	138.75	8.41	23.25	0.398	9.21	11.41	0.0	0.7	4.261	A
4	5.59	83.85	14.89	19.46	0.287	5.56	2.72	0.0	0.4	4.309	A
5	12.51	187.65	9.02	41.38	0.302	12.48	11.44	0.0	0.4	2.074	A

16:15 - 16:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.06	120.90	10.78	21.23	0.380	8.06	9.43	0.7	0.6	4.559	A
2	8.41	126.15	11.72	24.59	0.342	8.41	7.12	0.5	0.5	3.708	A
3	7.56	113.40	8.64	23.11	0.327	7.57	11.49	0.7	0.5	3.864	A
4	4.31	64.65	13.49	20.38	0.212	4.32	2.72	0.4	0.3	3.737	A
5	12.65	189.75	7.57	42.25	0.299	12.65	10.24	0.4	0.4	2.026	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.06	120.90	10.59	21.35	0.378	8.06	9.64	0.6	0.6	4.514	A
2	8.27	124.05	11.50	24.74	0.334	8.27	7.16	0.5	0.5	3.641	A
3	8.34	125.10	8.52	23.18	0.360	8.34	11.24	0.5	0.6	4.041	A
4	5.30	79.50	14.18	19.93	0.266	5.29	2.68	0.3	0.4	4.098	A
5	11.73	175.95	8.50	41.69	0.281	11.73	10.97	0.4	0.4	2.002	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.13	106.95	10.77	21.24	0.336	7.14	9.78	0.6	0.5	4.255	A
2	7.56	113.40	10.84	25.21	0.300	7.56	7.07	0.5	0.4	3.403	A
3	8.77	131.55	7.74	23.68	0.370	8.77	10.66	0.6	0.6	4.025	A
4	5.65	84.75	14.03	20.03	0.282	5.65	2.48	0.4	0.4	4.172	A
5	11.73	175.95	8.82	41.50	0.283	11.73	10.86	0.4	0.4	2.015	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.69	130.35	12.09	20.42	0.426	8.68	11.07	0.5	0.7	5.102	A
2	7.13	106.95	12.44	24.09	0.296	7.13	8.32	0.4	0.4	3.540	A
3	11.80	177.00	8.21	23.37	0.505	11.77	11.36	0.6	1.0	5.162	A
4	6.15	92.25	17.22	17.95	0.343	6.14	2.76	0.4	0.5	5.078	A
5	12.65	189.75	10.50	40.48	0.313	12.65	12.85	0.4	0.5	2.155	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.49	112.35	11.96	20.50	0.365	7.50	10.72	0.7	0.6	4.621	A
2	8.62	129.30	11.77	24.56	0.351	8.61	7.69	0.4	0.5	3.759	A
3	9.25	138.75	8.55	23.17	0.399	9.27	11.84	1.0	0.7	4.324	A
4	5.80	87.00	15.10	19.34	0.300	5.81	2.72	0.5	0.4	4.437	A
5	13.36	200.40	9.32	41.20	0.324	13.36	11.59	0.5	0.5	2.154	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.83	132.45	10.90	21.16	0.417	8.82	10.09	0.6	0.7	4.860	A
2	7.92	118.80	12.12	24.30	0.326	7.92	7.60	0.5	0.5	3.665	A
3	9.40	141.00	8.65	23.09	0.407	9.40	11.39	0.7	0.7	4.382	A
4	6.01	90.15	15.28	19.21	0.313	6.01	2.77	0.4	0.5	4.546	A

5	11.59	173.85	9.39	41.15	0.282	11.60	11.90	0.5	0.4	2.031	A
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17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.33	139.95	11.45	20.81	0.448	9.32	9.88	0.7	0.8	5.219	A
2	7.49	112.35	13.02	23.68	0.316	7.49	7.75	0.5	0.5	3.708	A
3	8.06	120.90	8.71	23.04	0.350	8.07	11.80	0.7	0.5	4.009	A
4	4.95	74.25	13.92	20.08	0.246	4.96	2.86	0.5	0.3	3.969	A
5	13.28	199.20	8.05	41.96	0.316	13.28	10.83	0.4	0.5	2.091	A

Growthed Future Year Base Plus Dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	4.32	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	36	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D7	Growthed Future Year Base Plus Dev	AM	DIRECT	07:30	09:30	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	2.48	7.03	2.58	6.87
	2	1.52	0.00	4.00	0.80	2.63
	3	3.67	2.30	0.00	0.25	4.77
	4	1.33	0.67	0.38	0.00	1.00
	5	5.55	4.97	8.58	0.68	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	1	4	6	5
	2	1	0	1	0	0
	3	5	1	0	0	3
	4	4	0	0	0	14
	5	5	0	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.64	7.57	1.7	A	9.48	1137.60
2	0.24	3.64	0.3	A	4.47	535.95
3	0.27	3.65	0.4	A	5.49	659.25
4	0.14	3.37	0.2	A	1.70	203.85
5	0.29	1.99	0.4	A	9.89	1186.95

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	6.69	100.35	6.39	23.73	0.282	6.66	4.51	0.0	0.4	3.512	A
2	4.10	61.50	9.28	26.34	0.156	4.09	3.78	0.0	0.2	2.695	A
3	4.48	67.20	5.83	24.60	0.182	4.47	7.53	0.0	0.2	2.979	A
4	0.74	11.10	8.67	22.40	0.033	0.74	1.63	0.0	0.0	2.770	A
5	7.28	109.20	3.64	43.95	0.166	7.27	5.77	0.0	0.2	1.635	A

07:45 - 08:00

Arm	Total	Junction	Circulating	Capacity	RFC	Throughput	Throughput	Start	End	Delay	LOS
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	Demand (Veh/min)	Arrivals (Veh)	flow (Veh/min)	(Veh/min)		(Veh/min)	(exit side) (Veh/min)	queue (Veh)	queue (Veh)	(s)	
1	6.34	95.10	8.22	22.60	0.281	6.34	5.62	0.4	0.4	3.689	A
2	4.80	72.00	10.09	25.78	0.186	4.80	4.47	0.2	0.2	2.859	A
3	4.63	69.45	6.14	24.42	0.190	4.63	8.75	0.2	0.2	3.031	A
4	1.59	23.85	9.04	22.17	0.072	1.59	1.72	0.0	0.1	2.914	A
5	9.40	141.00	4.45	43.47	0.216	9.39	6.18	0.2	0.3	1.760	A

08:00 - 08:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.15	137.25	7.83	22.84	0.401	9.13	5.58	0.4	0.7	4.371	A
2	4.59	68.85	12.15	24.31	0.189	4.59	4.81	0.2	0.2	3.041	A
3	5.79	86.85	7.39	23.61	0.245	5.78	9.35	0.2	0.3	3.366	A
4	1.07	16.05	11.09	20.88	0.051	1.07	2.09	0.1	0.1	3.031	A
5	8.73	130.95	4.67	43.32	0.202	8.73	7.48	0.3	0.3	1.736	A

08:15 - 08:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.91	163.65	8.82	22.22	0.491	10.89	6.02	0.7	1.0	5.286	A
2	4.45	66.75	14.30	22.79	0.195	4.45	5.42	0.2	0.2	3.270	A
3	5.85	87.75	8.23	23.07	0.254	5.85	10.51	0.3	0.3	3.484	A
4	1.28	19.20	11.72	20.47	0.063	1.28	2.36	0.1	0.1	3.125	A
5	10.01	150.15	4.83	43.23	0.232	10.01	8.17	0.3	0.3	1.805	A

08:30 - 08:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	13.88	208.20	9.67	21.70	0.640	13.83	6.36	1.0	1.7	7.574	A
2	3.74	56.10	17.36	20.63	0.181	3.74	6.14	0.2	0.2	3.551	A
3	5.92	88.80	9.34	22.35	0.265	5.92	11.76	0.3	0.4	3.651	A
4	1.70	25.50	12.52	19.95	0.085	1.70	2.73	0.1	0.1	3.286	A
5	10.99	164.85	5.05	43.10	0.255	10.99	9.18	0.3	0.3	1.867	A

08:45 - 09:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	11.41	171.15	10.97	20.89	0.546	11.44	7.23	1.7	1.2	6.373	A
2	5.09	76.35	16.08	21.55	0.236	5.08	6.34	0.2	0.3	3.644	A
3	6.14	92.10	8.95	22.62	0.271	6.14	12.21	0.4	0.4	3.639	A
4	1.99	29.85	12.50	19.99	0.100	1.99	2.59	0.1	0.1	3.333	A
5	12.61	189.15	5.60	42.77	0.295	12.61	8.89	0.3	0.4	1.989	A

09:00 - 09:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	10.18	152.70	9.54	21.78	0.467	10.20	6.69	1.2	0.9	5.193	A
2	3.95	59.25	14.00	23.01	0.172	3.96	5.74	0.3	0.2	3.151	A
3	6.03	90.45	7.63	23.45	0.257	6.03	10.33	0.4	0.3	3.447	A
4	2.86	42.90	11.42	20.66	0.138	2.86	2.24	0.1	0.2	3.370	A
5	10.27	154.05	5.96	42.55	0.241	10.28	8.32	0.4	0.3	1.861	A

09:15 - 09:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.28	109.20	8.88	22.19	0.328	7.31	6.25	0.9	0.5	4.040	A
2	5.01	75.15	11.23	24.98	0.201	5.01	4.96	0.2	0.2	3.004	A
3	5.11	76.65	6.75	24.03	0.213	5.12	9.48	0.3	0.3	3.175	A
4	2.36	35.40	9.97	21.59	0.109	2.36	1.90	0.2	0.1	3.120	A
5	9.84	147.60	5.29	42.96	0.229	9.84	7.04	0.3	0.3	1.811	A

Growthed Future Year Base Plus Dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout	1, 2, 3, 4, 5	4.26	A

Junction Network Options

Driving side	Lighting	Network residual capacity (%)	First arm reaching threshold
Left	Normal/unknown	56	Arm 1

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)	Run automatically
D8	Growthed Future Year Base Plus Dev	PM	DIRECT	16:00	18:00	120	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
1		DIRECT		100.000
2		DIRECT		100.000
3		DIRECT		100.000
4		DIRECT		100.000
5		DIRECT		100.000

Origin-Destination Data

Demand (Veh/min)

	To					
		1	2	3	4	5
From	1	0.00	3.85	6.08	2.67	5.07
	2	2.43	0.00	7.18	1.48	4.70
	3	6.10	3.62	0.00	0.30	9.02
	4	4.15	1.30	1.50	0.00	4.37
	5	9.67	6.32	8.53	1.20	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1	2	3	4	5
From	1	0	0	3	4	6
	2	1	0	2	0	0
	3	3	1	0	0	2
	4	0	1	0	0	2
	5	1	1	1	6	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/min)	Total Junction Arrivals (Veh)
1	0.48	5.52	0.9	A	8.83	1059.75
2	0.36	3.85	0.6	A	7.91	948.60
3	0.53	5.48	1.1	A	9.51	1141.35
4	0.36	5.37	0.6	A	5.66	679.50
5	0.34	2.22	0.5	A	12.87	1543.80

Main Results for each time segment

16:00 - 16:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.94	134.10	11.29	20.90	0.428	8.89	11.23	0.0	0.7	4.975	A
2	7.84	117.60	12.59	23.98	0.327	7.81	7.59	0.0	0.5	3.701	A
3	9.68	145.20	8.75	23.02	0.421	9.63	11.64	0.0	0.7	4.467	A
4	5.76	86.40	15.55	19.03	0.303	5.73	2.83	0.0	0.4	4.503	A
5	12.91	193.65	9.64	41.00	0.315	12.88	11.65	0.0	0.5	2.132	A

16:15 - 16:30

Arm	Total	Junction	Circulating	Capacity	RFC	Throughput	Throughput	Start	End	Delay	LOS
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	Demand (Veh/min)	Arrivals (Veh)	flow (Veh/min)	(Veh/min)		(Veh/min)	(exit side) (Veh/min)	queue (Veh)	queue (Veh)	(s)	
1	8.66	129.90	10.78	21.22	0.408	8.66	10.41	0.7	0.7	4.781	A
2	8.41	126.15	12.31	24.17	0.348	8.41	7.13	0.5	0.5	3.805	A
3	7.99	119.85	8.99	22.87	0.349	8.00	11.73	0.7	0.5	4.037	A
4	4.48	67.20	14.16	19.94	0.225	4.49	2.83	0.4	0.3	3.884	A
5	13.05	195.75	8.14	41.91	0.311	13.05	10.51	0.5	0.5	2.078	A

16:30 - 16:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.64	129.60	10.61	21.32	0.405	8.64	10.67	0.7	0.7	4.731	A
2	8.27	124.05	12.09	24.33	0.340	8.27	7.17	0.5	0.5	3.735	A
3	8.79	131.85	8.86	22.95	0.383	8.78	11.50	0.5	0.6	4.234	A
4	5.50	82.50	14.86	19.49	0.282	5.49	2.79	0.3	0.4	4.286	A
5	12.15	182.25	9.13	41.31	0.294	12.15	11.22	0.5	0.4	2.057	A

16:45 - 17:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	7.71	115.65	10.78	21.22	0.363	7.72	10.83	0.7	0.6	4.446	A
2	7.56	113.40	11.41	24.81	0.305	7.57	7.09	0.5	0.4	3.480	A
3	9.22	138.30	8.07	23.45	0.393	9.22	10.90	0.6	0.6	4.215	A
4	5.85	87.75	14.70	19.59	0.299	5.85	2.59	0.4	0.4	4.366	A
5	12.15	182.25	9.46	41.11	0.296	12.15	11.09	0.4	0.4	2.071	A

17:00 - 17:15

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.27	139.05	12.05	20.43	0.454	9.25	12.25	0.6	0.8	5.360	A
2	7.13	106.95	13.02	23.68	0.301	7.13	8.28	0.4	0.4	3.624	A
3	12.25	183.75	8.55	23.13	0.530	12.22	11.60	0.6	1.1	5.481	A
4	6.35	95.25	17.90	17.50	0.363	6.34	2.87	0.4	0.6	5.371	A
5	13.07	196.05	11.23	40.04	0.326	13.07	13.01	0.4	0.5	2.224	A

17:15 - 17:30

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	8.07	121.05	11.93	20.50	0.394	8.08	11.82	0.8	0.7	4.837	A
2	8.62	129.30	12.33	24.17	0.357	8.61	7.68	0.4	0.6	3.855	A
3	9.70	145.50	8.88	22.95	0.423	9.72	12.07	1.1	0.7	4.547	A
4	6.00	90.00	15.78	18.90	0.318	6.01	2.82	0.6	0.5	4.658	A
5	13.78	206.70	9.98	40.80	0.338	13.78	11.80	0.5	0.5	2.220	A

17:30 - 17:45

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.43	141.45	10.95	21.11	0.447	9.42	11.20	0.7	0.8	5.126	A
2	7.92	118.80	12.76	23.86	0.332	7.92	7.61	0.6	0.5	3.768	A
3	9.90	148.50	9.01	22.85	0.433	9.90	11.67	0.7	0.8	4.632	A
4	6.21	93.15	16.02	18.72	0.332	6.21	2.88	0.5	0.5	4.794	A
5	12.06	180.90	10.09	40.74	0.296	12.07	12.14	0.5	0.4	2.092	A

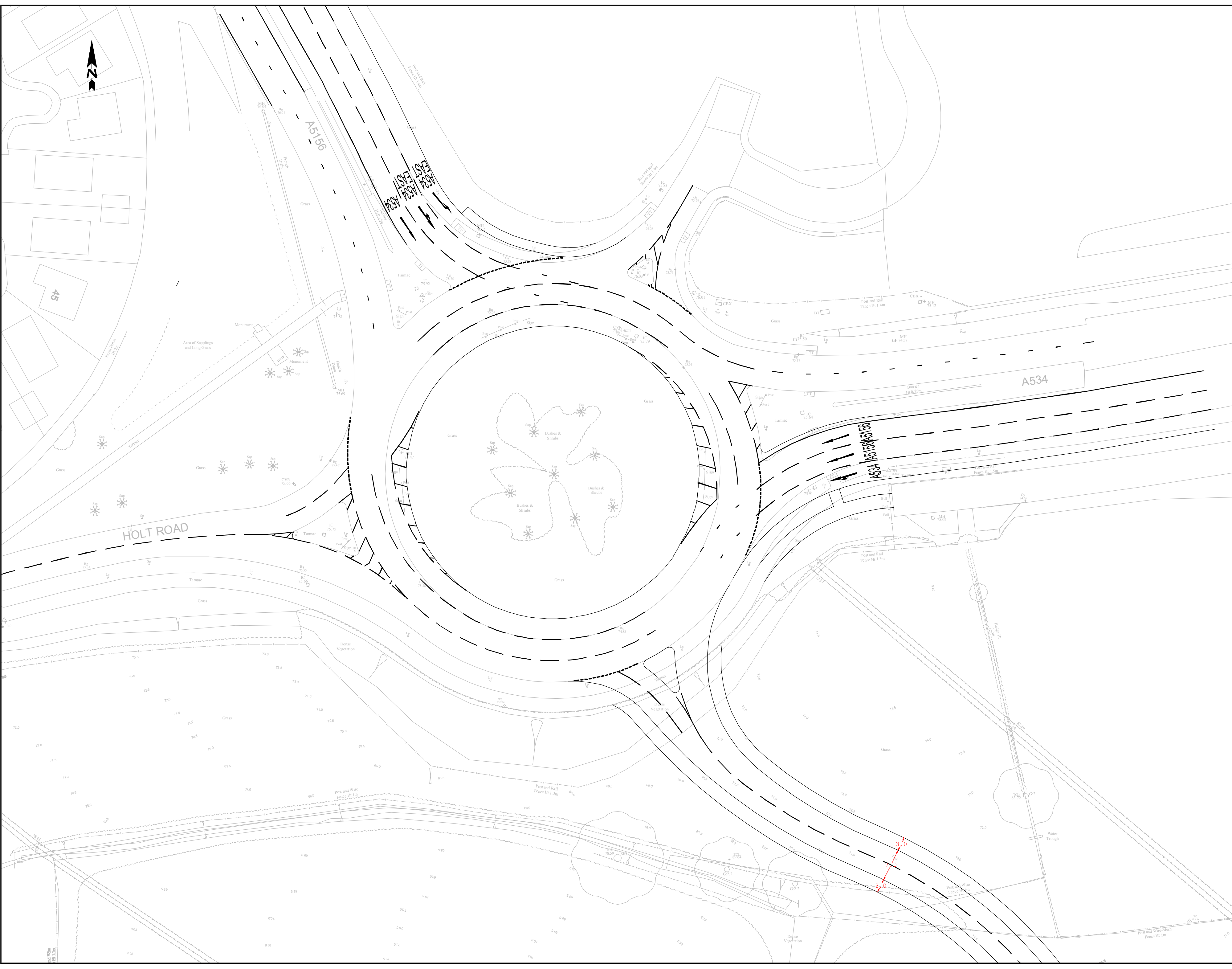
17:45 - 18:00

Arm	Total Demand (Veh/min)	Junction Arrivals (Veh)	Circulating flow (Veh/min)	Capacity (Veh/min)	RFC	Throughput (Veh/min)	Throughput (exit side) (Veh/min)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
1	9.93	148.95	11.48	20.78	0.478	9.92	10.96	0.8	0.9	5.523	A
2	7.49	112.35	13.65	23.24	0.322	7.49	7.76	0.5	0.5	3.809	A
3	8.56	128.40	9.07	22.80	0.375	8.57	12.07	0.8	0.6	4.218	A
4	5.15	77.25	14.66	19.60	0.263	5.16	2.98	0.5	0.4	4.158	A
5	13.75	206.25	8.70	41.57	0.331	13.75	11.12	0.4	0.5	2.156	A



Appendix J: Indicative Plans of Potential Highway Improvements





Rev.	Date	Revision Details	Drawn/Checked	Appr.



CBO
TRANSPORT

Barnett House
53 Fountain Street
Manchester
M2 2AN
T: 0161 235 6365
F: 0161 235 6566
E: info@cbotransport.co.uk
W: www.cbotransport.co.uk

Client
Barratt Homes and Bloor Homes North West

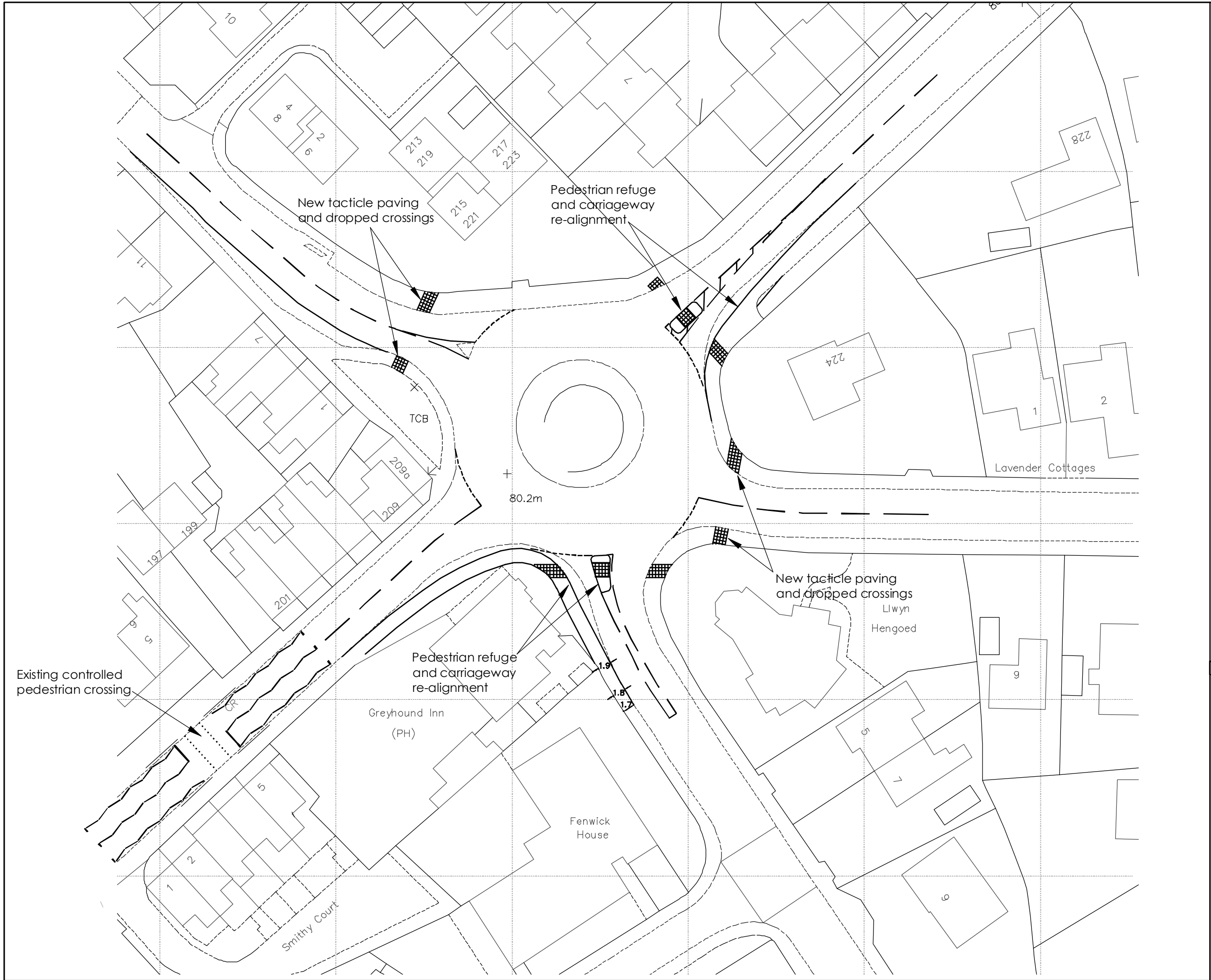
Project
Wrexham

Drawing Title
Indicative Potential Improvement Scheme:
A5156/A534 Roundabout

Drawn	Checked	Approved
SFB	PC	PC

Scale / Size	Date
1:500 @ A2	14.12.2018

Status	Drg No	Rev
Information	CBO-0322-012	



Rev.	Date	Revision Details	Drawn	Check	App.



CBO
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Client

Barratt Homes and Bloor Homes North West

Project

Land South of Holt Road, Wrexham

Drawing Title

Indicative Potential Pedestrian Crossing Improvement
Scheme: Greyhound Roundabout

Drawn	Checked	Approved
SFB	SFB	PRC

Scale / Size	Date
1:500 @ A3	17.12.18

Status	Drg No	Rev
Information	CBO-03222-013	