
Project	Wrexham Glyndŵr University
Location	Site 4: Gatewen Road
Title	Highways Addendum
Date	3 rd December 2018
Author(s)	Mark Lever
Project Code	2627
Version	2



1. Introduction

- 1.1 The following Highways Addendum has been produced to respond to a number of outstanding queries raised by Wrexham County Borough Council (WCBC) highways officers following submission of the relevant planning application (P/2018/0674) and a subsequent meeting on 12th September 2018.
- 1.2 The addendum should be read in addition to the submitted Transport Assessment (v3 dated 31st July 2018). In the case of conflicting information, that presented in the Highways Addendum should be taken as the most relevant and up-to-date.
- 1.3 The addendum is set out into the following chapters, reflecting each outstanding issue:
 - **Site access** – additional consideration regarding the suitability of the proposed access in relation to Manual for Streets guidance
 - **Trip generation** – Updating previously-presented data to match that provided by WCBC obtained from a nearby development
 - **Trip distribution** – Updating previously-presented flow diagrams in line with updated trip generation and to reflect a greater proportion of vehicles turning left out of the site access
 - **Junction assessment** – Updating previously-presented junction assessment results in line with updated trip generation and distribution
- 1.4 It is anticipated that following the submission of this Highways Addendum, WCBC highways officers will be in a position to confirm their support for the proposed development. It should continue to be noted that this application does not sit in isolation and forms one part of a wider masterplan for Wrexham Glyndŵr University.

2. Development Access

- 2.1 In considering the form of the proposed development access junction, WCBC has raised some concern over the introduction of a new staggered crossroads with little offset between the two minor arms.
- 2.2 It is accepted, however, that this section of Gatewen Road, whilst a classified B-road, should be treated as a residential street, particularly given the existing terraced properties and use of the street for parking. It is therefore most appropriate to apply Manual for Streets guidance rather than Design Manual for Roads and Bridges (DMRB) standards.
- 2.3 Speed surveys conducted over a period of 17 days revealed average 85th percentile speeds of 27.1mph eastbound and 26.3mph westbound, supporting the proposals to promote the use of Manual for Streets design guidance.
- 2.4 Reviewing Manual for Streets, it is apparent that unlike the DMRB, there is little concern over the use of crossroads or staggered junctions in residential areas.

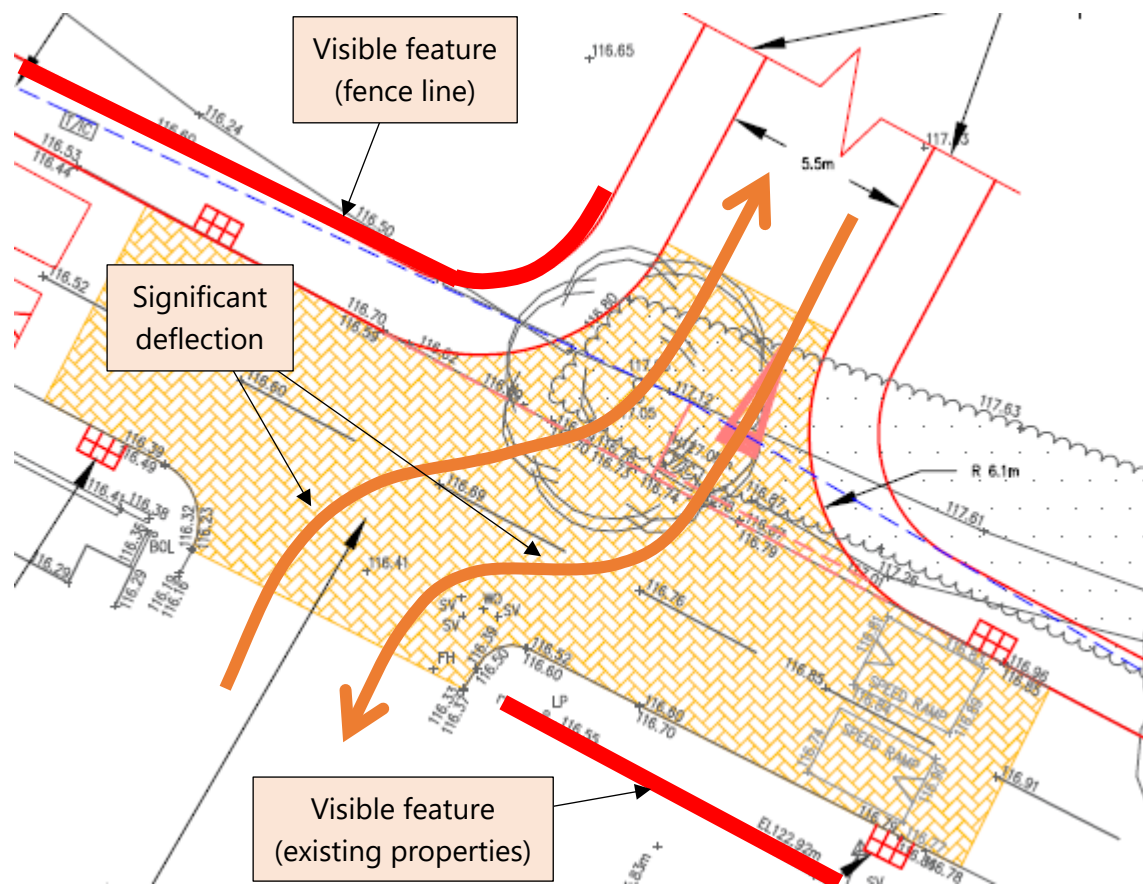
'7.3.1 Junctions that are commonly used in residential areas include:

- crossroads and staggered junctions;*
- T and Y junctions; and*
- roundabouts.'*

Manual for Streets (2007)

- 2.5 Figure 2-1 shows the proposed development access junction with annotations demonstrating the significant deflection required by vehicles proceeding across the junction from the minor arm. In conjunction with the visible features opposite either minor arm, it is considered that vehicle speeds will therefore be low. A full version of the proposed layout, including swept-path analysis is included in Appendix A.
- 2.6 Revised junction modelling, detailed in section 5, continues to show that capacity of the junction is not an issue – another reason for the DMRB typically preferring larger junction offsets for heavily-trafficked roads – not applicable in this setting.

Figure 2-1: Annotated proposed development access



Source: ITP DWG-2627-401 Rev C

3. Trip Generation

- 3.1 Trip rates have been provided by WCBC based on surveys conducted at Whitehead Drive – a similar residential development located immediately to the east of the proposed development. The trip rates are indicated in Table 3-1.

Table 3-1: Vehicle trip generation

		AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		Arr.	Dep.	Total	Arr.	Dep.	Total
Previous trip rate	per unit	0.167	0.435	0.602	0.402	0.219	0.621
Revised trip rate		0.120	0.497	0.617	0.438	0.219	0.657
Previous trip generation	112 units	19	49	68	45	25	70
Revised trip generation		13	56	69	49	25	74
Difference		-6	+7	+1	+4	±0	+4

Source: Previous: TRICS; Revised: WCBC

- 3.2 It is considered that the difference in trip rates between what was previously assessed and the revised rates is minor and, therefore, our previous conclusions remain the same. For completeness, the remainder of this addendum looks at the updated distribution and modelling of the development trips based on the revised trip generation.

4. Trip Distribution

- 4.1 Based on the revised trip rates discussed in section 3, revised flow diagrams have been included in Appendix B. The percentage distribution has not been altered and remains consistent with the Transport Assessment, based on previous assessment of 2011 origin destination census data.

5. Junction Assessments

- 5.1 Based on the revised trip rates discussed in section 3, and to accompany the revised flow diagrams, the modelling of the proposed site access and two existing junctions has been repeated. The summary tables (Table 5-1 – 5-3) below show the greatest-impact 2035 scenarios, however, as previously presented, 2020 (presumed opening year) assessment has also been included in the full modelling reports, included in Appendices C-E.

Proposed Development Access

- 5.2 For the proposed development access, modelling of the junction (using Junctions 9's PICADY) module has been carried out based on proposed layout as included in the Transport Assessment.

Table 5-1: Proposed development access summary

	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline + Development (Previous Transport Assessment Scenario)				
Gatewen Road (E)	0	0.03	<1	0.06
Site Access	<1	0.11	<1	0.05
2035 Baseline + Development (Revised Highways Addendum Scenario)				
Gatewen Road (E)	0	0.02	<1	0.06
Site Access	<1	0.12	<1	0.05

Existing Junctions

- 5.3 For both existing junctions, since no changes to the physical road layout are proposed, only the development flows have altered. For comparison the results presented include the 2035 without development scenario, which includes TEMPro growth to factor the baseline flows from 2018 and account for committed development, the previously-presented 2035 scenario, as in the Transport Assessment, as well as the revised scenario, based on the updated trip generation.

Table 5-2: Gatewen Road / Berse Road priority junction summary

	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline				
Gatewen Road (Left-Turn)	32	1.09	1	0.26
Gatewen Road (Right-Turn)	<1	1.10	0	0.02
Berse Road (E)	<1	0.27	1	0.64
2035 Baseline + Development (Previous Transport Assessment Scenario)				
Gatewen Road (Left-Turn)	50	1.18	<1	0.29
Gatewen Road (Right-Turn)	<1	1.18	0	0.02
Berse Road (E)	<1	0.31	2	0.70
2035 Baseline + Development (Revised Highways Addendum Scenario)				
Gatewen Road (Left-Turn)	68	1.25	<1	0.30
Gatewen Road (Right-Turn)	<1	1.25	0	0.02
Berse Road (E)	<1	0.32	3	0.72

Table 5-3: Berse Road / Rhyd Broughton Lane roundabout summary

	AM Peak		PM Peak	
	Queue (PCU)	RFC	Queue (PCU)	RFC
2035 Baseline				
Berse Rd (N)	8	0.90	2	0.62
Rhyd Broughton Ln	<1	0.28	1	0.50
Berse Rd (S)	71	1.09	<1	0.35
2035 Baseline + Development (Previous Transport Assessment Scenario)				
Berse Rd (N)	8	0.90	2	0.62
Rhyd Broughton Ln	<1	0.28	1	0.50
Berse Rd (S)	79	1.10	<1	0.35
2035 Baseline + Development (Revised Highways Addendum Scenario)				
Berse Rd (N)	11	0.93	2	0.66
Rhyd Broughton Ln	<1	0.28	1	0.54
Berse Rd (S)	122	1.16	<1	0.39

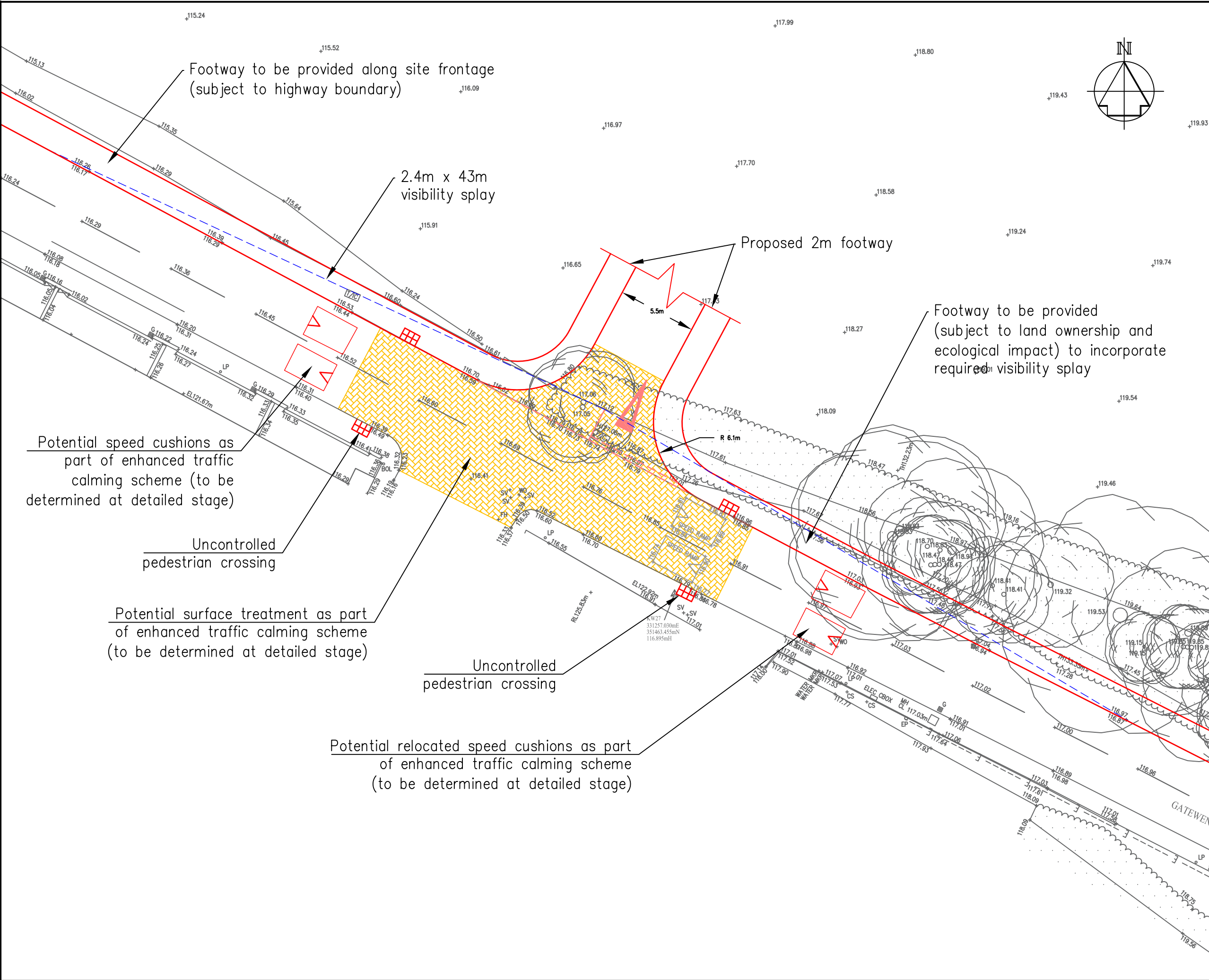
6. Conclusion

- 6.1 The Highways Addendum, in conjunction with the previously-submitted Transport Assessment, presents a transparent assessment of the traffic and transport impact of the proposed development, which in this case is not considered to be severe. This is based on the following key features and findings:
- The proposed development is located within a sustainable location, adjacent to existing bus and cycle networks and within walking distance of local schools and amenities.
 - The proposed development is predicted to generate a modest number of car-based trips; however, options are available for those seeking to travel by alternative, sustainable, modes. The site benefits in particular from its location immediately adjacent to a former railway path that provides a traffic-free route from the site to the centre of Wrexham.
 - Despite issues being recognised at the DIY roundabout during peak periods, WCBC has acknowledged that the peak periods in Wrexham are relatively short in duration. The marginal impact of the proposed development on the junction is not deemed severe.
 - Work carried out as part of the assessment of the Plas Coch Campus has included detailed modelling of the DIY junction with a view to exploring ways that WCBC could improve the efficiency of the junction therefore helping to alleviate existing congestion. It is considered that resolving issues at this bottleneck junction will be the key to unlocking the surrounding highway network and should alleviate issues at other junction between the site and Wrexham town centre and hospital.
- 6.2 Based on the feedback received to date by WCBC, it is considered that all outstanding issues have now been addressed. Based on the information presented within this Highways Addendum, ITP consider that WCBC should be in a position to support the proposed development.

Appendix A

Proposed Site Access Layout

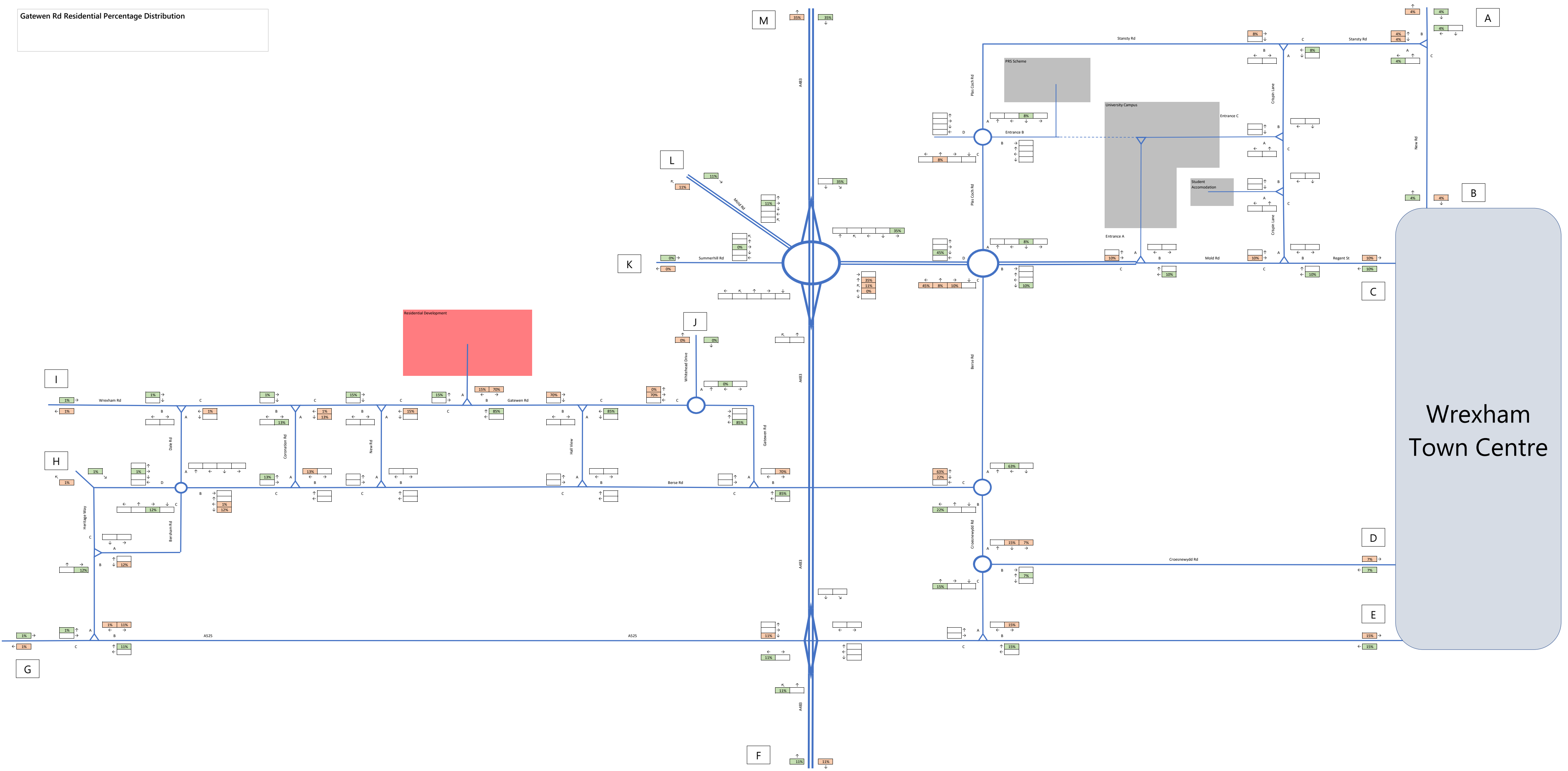
ITP DWG-2627-401 Rev C



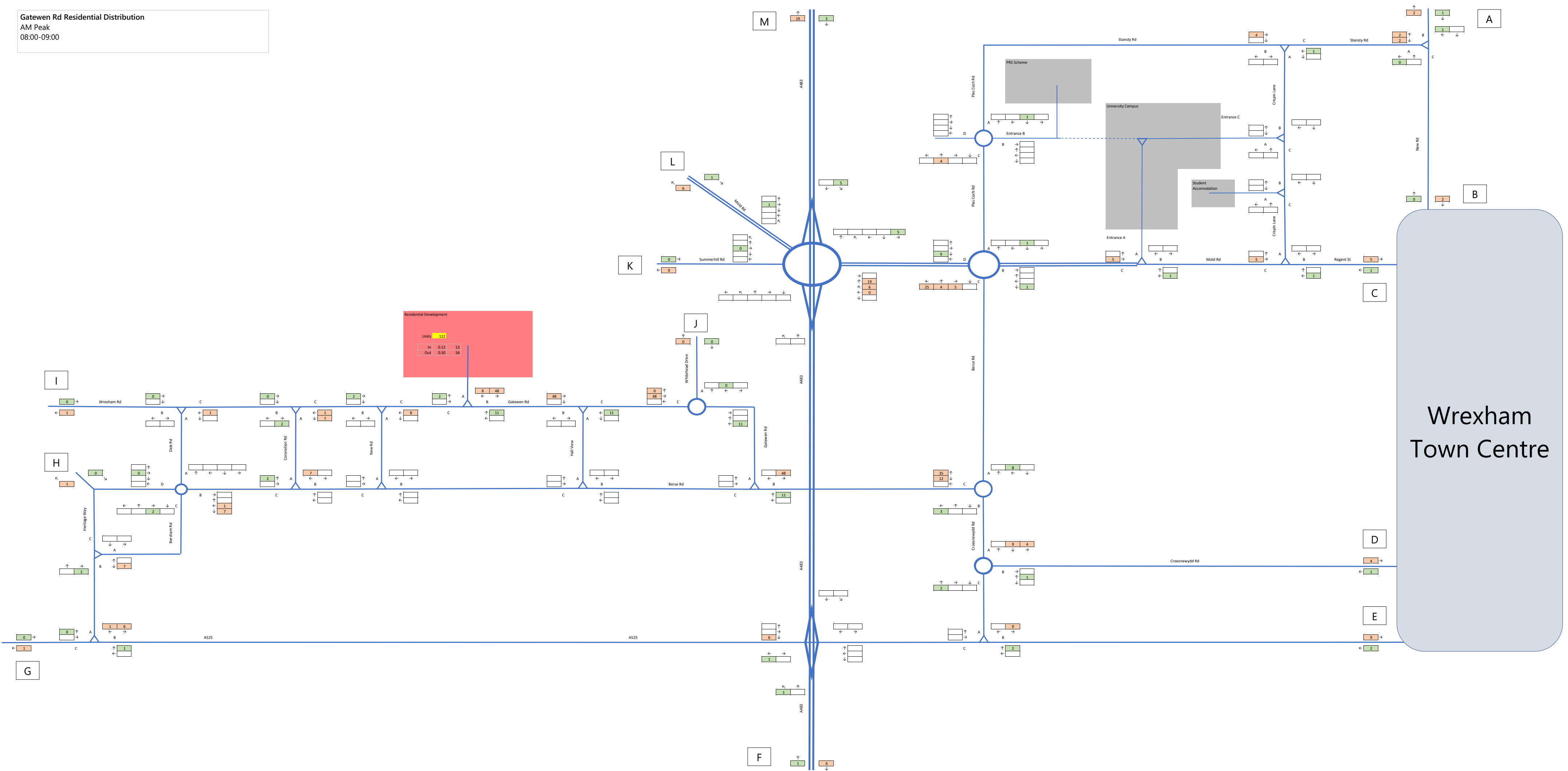
Appendix B

Flow Diagram

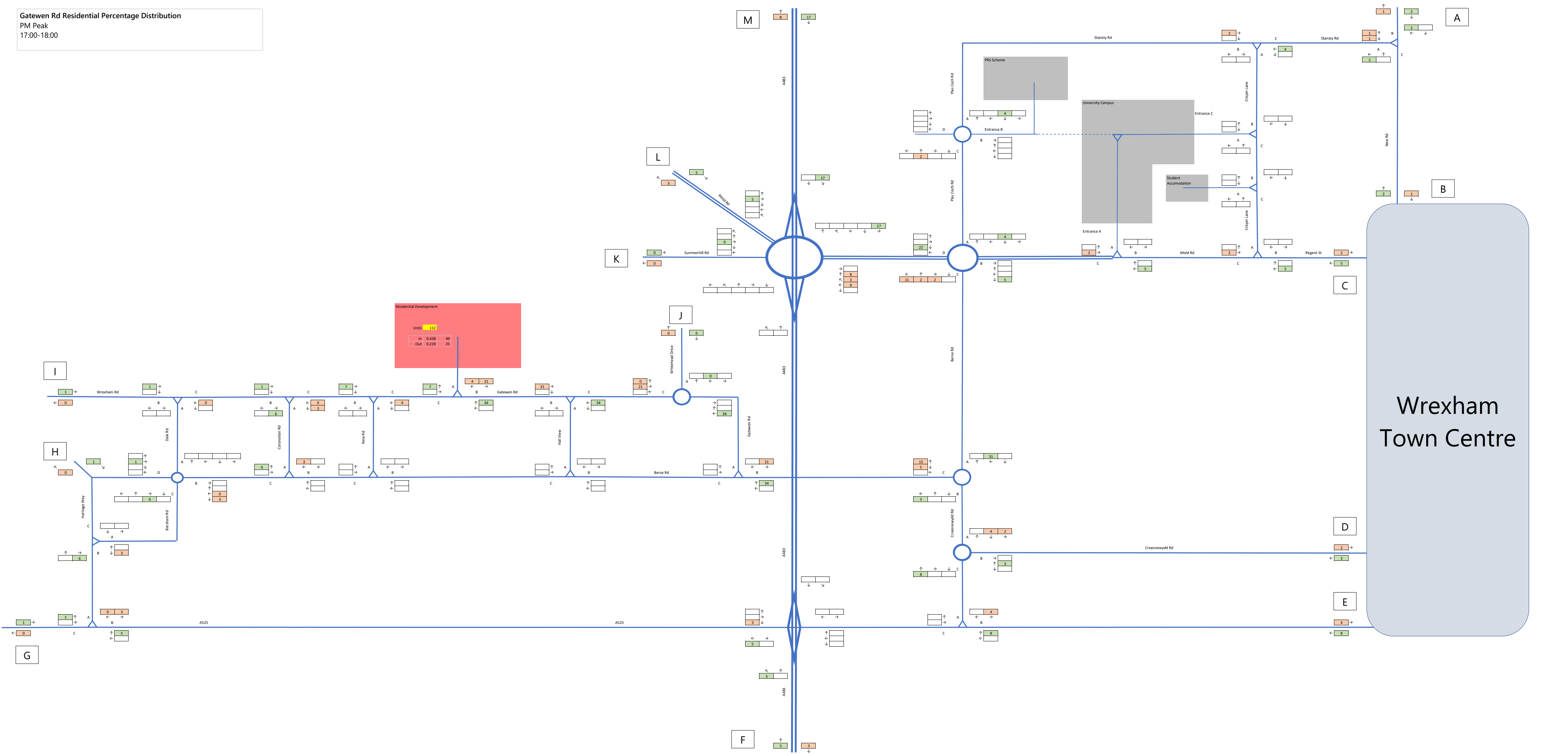
Gatewen Rd Residential Percentage Distribution



AM Peak
08:00-09:00



Gatewen Rd Residential Percentage Distribution
PM Peak
17:00-18:00

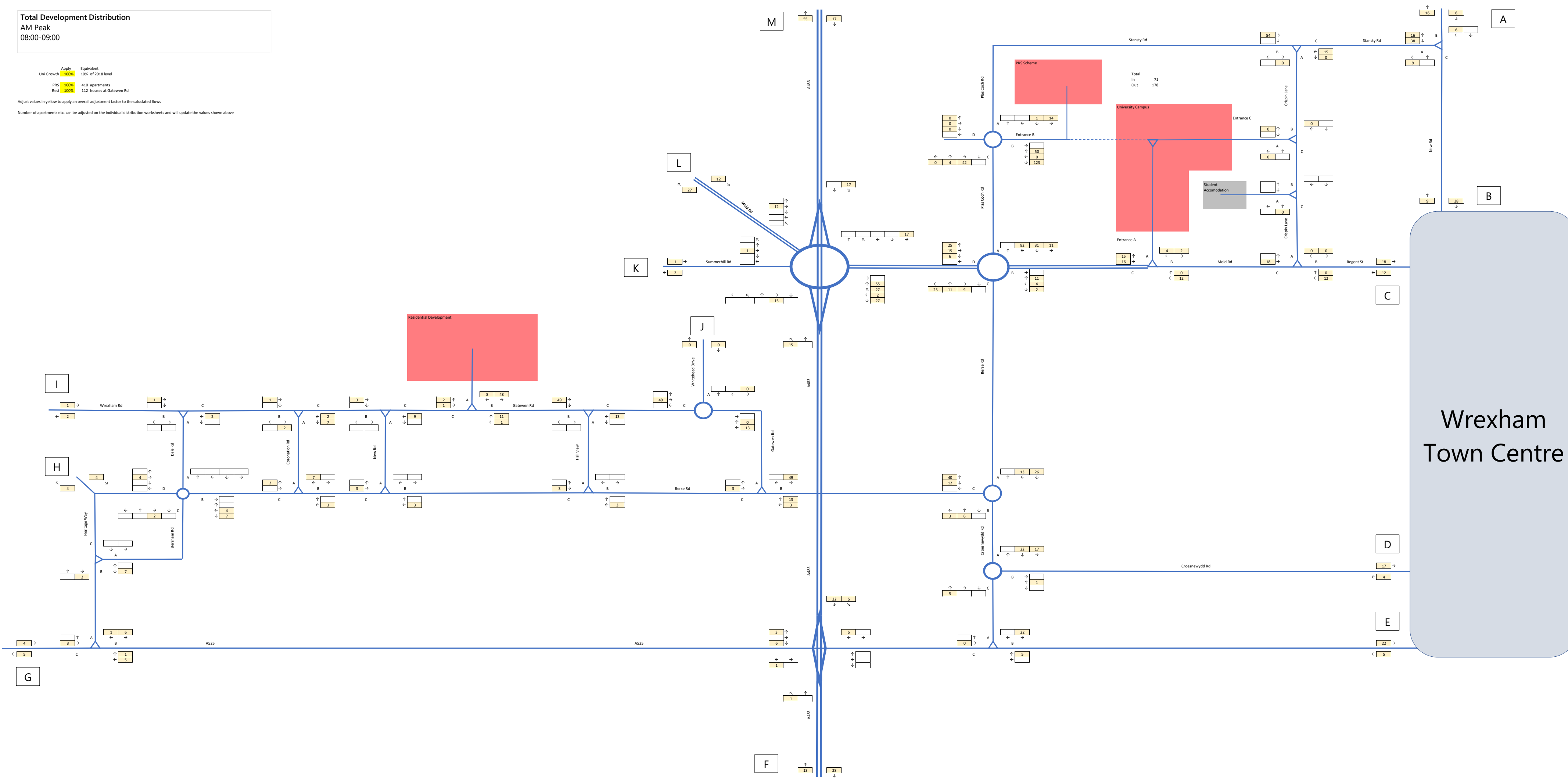


AM Peak
08:00-09:00

	Apply	Equivalent
Uni Growth	100%	10% of 2018 level
PRS	100%	410 apartments
Resi	100%	112 houses at Gatewen Rd

Adjust values in yellow to apply an overall adjustment factor to the calculated flows

Number of apartments etc. can be adjusted on the individual distribution worksheets and will update the values shown above

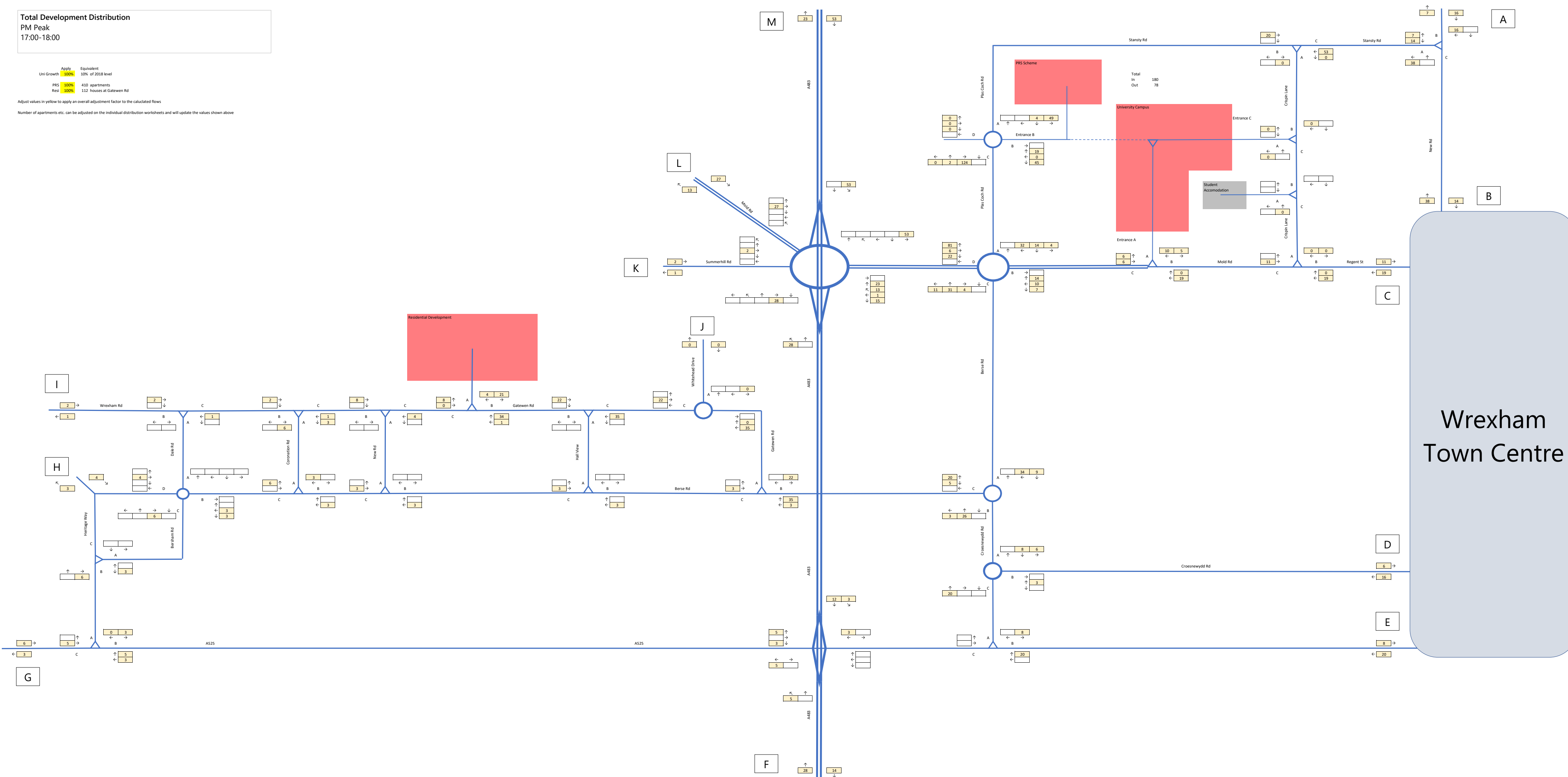


PM Peak
17:00-18:00

Uni Growth	Apply 100%	Equivalent 10% of 2018 level
PRS	100%	410 apartments
Resi	100%	112 houses at Gatewen Rd

Adjust values in yellow to apply an overall adjustment factor to the calculated flows

Number of apartments etc. can be adjusted on the individual distribution worksheets and will update the values shown above



Appendix C

Proposed Development Access PICADY Results

Junctions 9						
PICADY 9 - Priority Intersection Module						
Version: 9.5.0.6896						
© Copyright TRL Limited, 2018						
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Filename: GatewenRdAccess_231018.j9

Path: Z:\2600-2699\2627 Wrexham Glyndwr University\Data\Junction Assessment

Report generation date: 23/10/2018 15:14:27

- »Existing Layout - 2020 Baseline + Dev, AM Peak
- »Existing Layout - 2020 Baseline + Dev, PM Peak
- »Existing Layout - 2035 Baseline + Dev, AM Peak
- »Existing Layout - 2035 Baseline + Dev, PM Peak

Summary of junction performance

	AM Peak			PM Peak		
	Queue (PCU)	Delay (s)	RFC	Queue (PCU)	Delay (s)	RFC
Existing Layout - 2020 Baseline + Dev						
Stream B-ACD	0.0	0.00	0.00	0.0	0.00	0.00
Stream A-BCD	0.0	5.50	0.02	0.1	5.75	0.06
Stream D-ABC	0.1	7.88	0.12	0.1	6.82	0.05
Stream C-ABD	0.0	0.00	0.00	0.0	0.00	0.00
Existing Layout - 2035 Baseline + Dev						
Stream B-ACD	0.0	0.00	0.00	0.0	0.00	0.00
Stream A-BCD	0.0	5.49	0.02	0.1	5.76	0.06
Stream D-ABC	0.1	8.09	0.12	0.1	6.89	0.05
Stream C-ABD	0.0	0.00	0.00	0.0	0.00	0.00

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

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

File summary

File Description

Title	Wrexham Glyndwr University
Location	Gatewen Road
Site number	
Date	23/10/2018
Version	2
Status	
Identifier	
Client	
Jobnumber	2627
Enumerator	Mark Lever
Description	To accompany Highways Addendum, based on updated trip rates and revised distribution.

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D1	2018 Baseline	AM Peak	ONE HOUR	07:45	09:15	15				
D2	2018 Baseline	PM Peak	ONE HOUR	16:45	18:15	15				
D3	2020 Baseline + Dev	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	(D1*1.0335) +D7
D4	2020 Baseline + Dev	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	(D2*1.0316) +D8
D5	2035 Baseline + Dev	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	(D1*1.2062) +D7
D6	2035 Baseline + Dev	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	(D2*1.1991) +D8
D7	Dev	AM Peak	ONE HOUR	07:45	09:15	15				
D8	Dev	PM Peak	ONE HOUR	16:45	18:15	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 - 2020 Baseline + Dev, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way		1.13	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Gatewen Rd (E)		Major
B	New Rd		Minor
C	Gatewen Rd (W)		Major
D	Site Access		Minor

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
A - Gatewen Rd (E)	6.40			160.0	✓	0.00
C - Gatewen Rd (W)	6.40			170.0	✓	0.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - New Rd	One lane	4.60	15	15
D - Site Access	One lane	2.75	18	18

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for A-D	Slope for B-A	Slope for B-D	Slope for C-A	Slope for C-B	Slope for C-D	Slope for D-B	Slope for D-C
1	A-D	667	-	-	-	0.254	0.254	0.254	-	0.254	-	-
1	B-AD	568	0.102	0.257	-	-	-	0.162	0.367	0.162	0.102	0.257
1	B-C	735	0.111	0.280	-	-	-	-	-	-	0.111	0.280
1	C-B	672	0.256	0.256	-	-	-	-	-	-	0.256	0.256
1	D-A	619	-	-	-	0.236	0.093	0.236	-	0.093	-	-
1	D-BC	480	0.137	0.137	0.310	0.217	0.086	0.217	-	0.086	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D3	2020 Baseline + Dev	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	(D1*1.0335) +D7

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Gatewen Rd (E)		ONE HOUR	✓	119	100.000
B - New Rd		ONE HOUR	✓	0	100.000
C - Gatewen Rd (W)		ONE HOUR	✓	278	100.000
D - Site Access		ONE HOUR	✓	56	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Gatewen Rd (E)	B - New Rd	C - Gatewen Rd (W)	D - Site Access
From	A - Gatewen Rd (E)	0	108	11
	B - New Rd	0	0	0
	C - Gatewen Rd (W)	276	0	2
	D - Site Access	48	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A - Gatewen Rd (E)	B - New Rd	C - Gatewen Rd (W)	D - Site Access
From	A - Gatewen Rd (E)	0	0	0
	B - New Rd	0	0	0
	C - Gatewen Rd (W)	0	0	0
	D - Site Access	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	~1	A	0	0
A-BCD	0.02	5.50	0.0	0.5	A	12	18
A-B						0	0
A-C						98	146
D-ABC	0.12	7.88	0.1	0.5	A	51	77
C-ABD	0.00	0.00	0.0	~1	A	0	0
C-D						2	3
C-A						253	379

Existing Layout - 2020 Baseline + Dev, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way		1.60	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D4	2020 Baseline + Dev	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	(D2*1.0316) +D8

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Gatewen Rd (E)		ONE HOUR	✓	84	100.000
B - New Rd		ONE HOUR	✓	0	100.000
C - Gatewen Rd (W)		ONE HOUR	✓	129	100.000
D - Site Access		ONE HOUR	✓	25	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Gatewen Rd (E)	B - New Rd	C - Gatewen Rd (W)	D - Site Access
	A - Gatewen Rd (E)	0	0	50	34
	B - New Rd	0	0	0	0
	C - Gatewen Rd (W)	121	0	0	8
	D - Site Access	21	0	4	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Gatewen Rd (E)	B - New Rd	C - Gatewen Rd (W)	D - Site Access
	A - Gatewen Rd (E)	0	0	0	0
	B - New Rd	0	0	0	0
	C - Gatewen Rd (W)	0	0	0	0
	D - Site Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	~1	A	0	0
A-BCD	0.06	5.75	0.1	0.5	A	34	50
A-B						0	0
A-C						44	66
D-ABC	0.05	6.82	0.1	0.5	A	23	34
C-ABD	0.00	0.00	0.0	~1	A	0	0
C-D						7	11
C-A						111	166

Existing Layout - 2035 Baseline + Dev, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way		1.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D5	2035 Baseline + Dev	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	(D1*1.2062) +D7

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Gatewen Rd (E)		ONE HOUR	✓	137	100.000
B - New Rd		ONE HOUR	✓	0	100.000
C - Gatewen Rd (W)		ONE HOUR	✓	322	100.000
D - Site Access		ONE HOUR	✓	56	100.000

Origin-Destination Data

Demand (PCU/hr)

	To				
From		A - Gatewen Rd (E)	B - New Rd	C - Gatewen Rd (W)	D - Site Access
	A - Gatewen Rd (E)	0	0	126	11
	B - New Rd	0	0	0	0
	C - Gatewen Rd (W)	320	0	0	2
	D - Site Access	48	0	8	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Gatewen Rd (E)	B - New Rd	C - Gatewen Rd (W)	D - Site Access
	A - Gatewen Rd (E)	0	0	0	0
	B - New Rd	0	0	0	0
	C - Gatewen Rd (W)	0	0	0	0
	D - Site Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	~1	A	0	0
A-BCD	0.02	5.49	0.0	0.5	A	12	18
A-B						0	0
A-C						113	170
D-ABC	0.12	8.09	0.1	0.5	A	51	77
C-ABD	0.00	0.00	0.0	~1	A	0	0
C-D						2	3
C-A						294	441

Existing Layout - 2035 Baseline + Dev, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	Right-Left Stagger	Two-way		1.46	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D6	2035 Baseline + Dev	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	(D2*1.1991) +D8

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Gatewen Rd (E)		ONE HOUR	✓	92	100.000
B - New Rd		ONE HOUR	✓	0	100.000
C - Gatewen Rd (W)		ONE HOUR	✓	147	100.000
D - Site Access		ONE HOUR	✓	25	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A - Gatewen Rd (E)	B - New Rd	C - Gatewen Rd (W)	D - Site Access
From A - Gatewen Rd (E)	0	0	58	34
From B - New Rd	0	0	0	0
From C - Gatewen Rd (W)	139	0	0	8
From D - Site Access	21	0	4	0

Vehicle Mix

Heavy Vehicle Percentages

	To				
From		A - Gatewen Rd (E)	B - New Rd	C - Gatewen Rd (W)	D - Site Access
	A - Gatewen Rd (E)	0	0	0	0
	B - New Rd	0	0	0	0
	C - Gatewen Rd (W)	0	0	0	0
	D - Site Access	0	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-ACD	0.00	0.00	0.0	~1	A	0	0
A-BCD	0.06	5.76	0.1	0.5	A	34	51
A-B						0	0
A-C						50	75
D-ABC	0.05	6.89	0.1	0.5	A	23	34
C-ABD	0.00	0.00	0.0	~1	A	0	0
C-D						7	11
C-A						128	192

Appendix D

Gatewen Road / Berse Road PICADY Results

Junctions 9			
PICADY 9 - Priority Intersection Module			
Version: 9.5.0.6896 © Copyright TRL Limited, 2018			
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk			
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Filename: BerseRdGatewenRd_231018.j9

Path: Z:\2600-2699\2627 Wrexham Glyndwr University\Data\Junction Assessment

Report generation date: 23/10/2018 15:19:59

- »Proposed Layout - 2018 Baseline, AM Peak
- »Proposed Layout - 2018 Baseline, PM Peak
- »Proposed Layout - 2020 Baseline, AM Peak
- »Proposed Layout - 2020 Baseline, PM Peak
- »Proposed Layout - 2020 Baseline + Dev, AM Peak
- »Proposed Layout - 2020 Baseline + Dev, PM Peak
- »Proposed Layout - 2035 Baseline, AM Peak
- »Proposed Layout - 2035 Baseline, PM Peak
- »Proposed Layout - 2035 Baseline + Dev, AM Peak
- »Proposed Layout - 2035 Baseline + Dev, PM Peak

Summary of junction performance

	AM Peak				PM Peak			
	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC	Queue (PCU)	95% Queue (PCU)	Delay (s)	RFC
Proposed Layout - 2018 Baseline								
Stream B-C	4.4	23.9	38.81	0.83	0.3	1.2	6.80	0.21
Stream B-A	0.0	0.5	27.37	0.01	0.0	0.5	12.54	0.02
Stream C-AB	0.3	1.3	10.14	0.21	1.1	3.1	12.67	0.52
Proposed Layout - 2020 Baseline								
Stream B-C	5.7	30.7	48.62	0.87	0.3	1.3	6.89	0.22
Stream B-A	0.0	0.5	39.71	0.01	0.0	0.5	12.89	0.02
Stream C-AB	0.3	1.3	10.41	0.22	1.2	3.2	13.21	0.54
Proposed Layout - 2020 Baseline + Dev								
Stream B-C	17.5	55.8	123.93	1.01	0.4	1.2	7.36	0.26
Stream B-A	0.4	0.5	3640.63	1.02	0.0	0.5	14.05	0.02
Stream C-AB	0.4	1.1	11.12	0.26	1.6	5.4	15.98	0.62
Proposed Layout - 2035 Baseline								
Stream B-C	31.5	69.3	206.38	1.09	0.3	1.1	7.40	0.26
Stream B-A	0.4	1.8	3443.32	1.10	0.0	0.5	15.13	0.02
Stream C-AB	0.4	1.4	12.09	0.27	1.8	6.7	16.94	0.64
Proposed Layout - 2035 Baseline + Dev								
Stream B-C	67.8	107.9	443.36	1.25	0.4	1.9	7.96	0.30
Stream B-A	0.5	1.2	3936.82	1.25	0.0	0.5	16.81	0.02
Stream C-AB	0.5	2.0	13.09	0.32	2.6	12.9	21.38	0.72

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

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

File summary

File Description

Title	Wrexham Glyndwr University
Location	Gatewen Rd
Site number	
Date	23/10/2018
Version	3
Status	
Identifier	
Client	Wrexham Glyndwr University
Jobnumber	2627
Enumerator	Mark Lever
Description	To accompany Highways Addendum, based on revised trip rates and trip distribution

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D1	2018 Baseline	AM Peak	ONE HOUR	07:45	09:15	15		✓		
D2	2018 Baseline	PM Peak	ONE HOUR	16:45	18:15	15		✓		
D3	2020 Baseline	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*1.0335
D4	2020 Baseline	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D2*1.0316
D5	2020 Baseline + Dev	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D3+D11
D6	2020 Baseline + Dev	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D4+D12
D7	2035 Baseline	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*1.2062
D8	2035 Baseline	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D2*1.1991
D9	2035 Baseline + Dev	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D7+D11
D10	2035 Baseline + Dev	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D8+D12
D11	Dev	AM Peak	ONE HOUR	07:45	09:15	15				
D12	Dev	PM Peak	ONE HOUR	16:45	18:15	15				

Analysis Set Details

ID	Name	Description	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	Proposed Layout	ITP DWG-2627-101	✓	100.000	100.000

Proposed Layout - 2018 Baseline, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		11.98	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	B5101 Berse Rd (W)		Major
B	Gatewen Rd		Minor
C	B5101 Berse Rd (E)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - B5101 Berse Rd (E)	7.60		✓	2.20	150.0	✓	10.00

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

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Gatewen Rd	One lane plus flare	10.00	9.70	5.60	3.80	3.60	✓	2.00	38	36

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	530	0.090	0.227	0.143	0.324
1	B-C	742	0.106	0.268	-	-
1	C-B	661	0.238	0.238	-	-

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

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

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

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2018 Baseline	AM Peak	ONE HOUR	07:45	09:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	738	100.000
B - Gatewen Rd		ONE HOUR	✓	396	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	223	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	2	736
	B - Gatewen Rd	1	0	395
	C - B5101 Berse Rd (E)	135	88	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	0	5
	B - Gatewen Rd	0	0	2
	C - B5101 Berse Rd (E)	24	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.83	38.81	4.4	23.9	E	362	544
B-A	0.01	27.37	0.0	0.5	D	0.92	1
C-AB	0.21	10.14	0.3	1.3	B	81	121
C-A						124	186
A-B						2	3
A-C						675	1013

Proposed Layout - 2018 Baseline, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		3.96	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D2	2018 Baseline	PM Peak	ONE HOUR	16:45	18:15	15	✓

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	241	100.000
B - Gatewen Rd		ONE HOUR	✓	132	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	767	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	7	234
	B - Gatewen Rd	4	0	128
	C - B5101 Berse Rd (E)	484	283	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	0	7
	B - Gatewen Rd	0	0	0
	C - B5101 Berse Rd (E)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.21	6.80	0.3	1.2	A	117	176
B-A	0.02	12.54	0.0	0.5	B	4	6
C-AB	0.52	12.67	1.1	3.1	B	260	390
C-A						444	666
A-B						6	10
A-C						215	322

Proposed Layout - 2020 Baseline, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		14.86	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D3	2020 Baseline	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*1.0335

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	763	100.000
B - Gatewen Rd		ONE HOUR	✓	409	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	230	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	2	761
	B - Gatewen Rd	1	0	408
	C - B5101 Berse Rd (E)	140	91	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	0	5
	B - Gatewen Rd	0	0	2
	C - B5101 Berse Rd (E)	24	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.87	48.62	5.7	30.7	E	375	562
B-A	0.01	39.71	0.0	0.5	E	0.95	1
C-AB	0.22	10.41	0.3	1.3	B	83	125
C-A						128	192
A-B						2	3
A-C						698	1047

Proposed Layout - 2020 Baseline, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		4.10	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D4	2020 Baseline	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D2*1.0316

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	249	100.000
B - Gatewen Rd		ONE HOUR	✓	136	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	791	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	7	241
	B - Gatewen Rd	4	0	132
	C - B5101 Berse Rd (E)	499	292	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	0	7
	B - Gatewen Rd	0	0	0
	C - B5101 Berse Rd (E)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.22	6.89	0.3	1.3	A	121	182
B-A	0.02	12.89	0.0	0.5	B	4	6
C-AB	0.54	13.21	1.2	3.2	B	268	402
C-A						458	687
A-B						7	10
A-C						222	332

Proposed Layout - 2020 Baseline + Dev, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		41.28	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D5	2020 Baseline + Dev	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D3+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	796	100.000
B - Gatewen Rd		ONE HOUR	✓	467	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	256	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	2	794
	B - Gatewen Rd	1	0	466
	C - B5101 Berse Rd (E)	151	106	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
	A - B5101 Berse Rd (W)	0	0	5
	B - Gatewen Rd	0	0	2
	C - B5101 Berse Rd (E)	22	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	1.01	123.93	17.5	55.8	F	428	642
B-A	1.02	3640.63	0.4	0.5	F	0.95	1
C-AB	0.26	11.12	0.4	1.1	B	97	146
C-A						138	207
A-B						2	3
A-C						728	1092

Proposed Layout - 2020 Baseline + Dev, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D6	2020 Baseline + Dev	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D4+D12

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	265	100.000
B - Gatewen Rd		ONE HOUR	✓	162	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	854	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	7	257
	B - Gatewen Rd	4	0	158
	C - B5101 Berse Rd (E)	521	333	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
	A - B5101 Berse Rd (W)	0	0	7
	B - Gatewen Rd	0	0	0
	C - B5101 Berse Rd (E)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.26	7.36	0.4	1.2	A	145	218
B-A	0.02	14.05	0.0	0.5	B	4	6
C-AB	0.62	15.98	1.6	5.4	C	307	460
C-A						477	716
AB						7	10
AC						236	354

Proposed Layout - 2035 Baseline, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		63.39	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D7	2035 Baseline	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D1*1.2062

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	890	100.000
B - Gatewen Rd		ONE HOUR	✓	478	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	269	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	2	888
	B - Gatewen Rd	1	0	476
	C - B5101 Berse Rd (E)	163	106	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	0	5
	B - Gatewen Rd	0	0	2
	C - B5101 Berse Rd (E)	24	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	1.09	206.38	31.5	69.3	F	437	656
B-A	1.10	3443.32	0.4	1.8	F	1	2
C-AB	0.27	12.09	0.4	1.4	B	97	146
C-A						149	224
A-B						2	3
A-C						815	1222

Proposed Layout - 2035 Baseline, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		5.11	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D8	2035 Baseline	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D2*1.1991

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	289	100.000
B - Gatewen Rd		ONE HOUR	✓	158	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	920	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	8	281
	B - Gatewen Rd	5	0	153
	C - B5101 Berse Rd (E)	580	339	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	0	7
	B - Gatewen Rd	0	0	0
	C - B5101 Berse Rd (E)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.26	7.40	0.3	1.1	A	141	211
B-A	0.02	15.13	0.0	0.5	C	4	7
C-AB	0.64	16.94	1.8	6.7	C	313	470
C-A						531	796
A-B						8	12
A-C						257	386

Proposed Layout - 2035 Baseline + Dev, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		138.72	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D9	2035 Baseline + Dev	AM Peak	ONE HOUR	07:45	09:15	15	✓	✓	Simple	D7+D11

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	923	100.000
B - Gatewen Rd		ONE HOUR	✓	536	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	295	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
From	A - B5101 Berse Rd (W)	0	2	921
	B - Gatewen Rd	1	0	534
	C - B5101 Berse Rd (E)	174	121	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
	A - B5101 Berse Rd (W)	0	0	5
	B - Gatewen Rd	0	0	2
	C - B5101 Berse Rd (E)	22	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	1.25	443.36	67.8	107.9	F	490	736
B-A	1.25	3936.82	0.5	1.2	F	1	2
C-AB	0.32	13.09	0.5	2.0	B	111	167
C-A						160	239
A-B						2	3
A-C						845	1267

Proposed Layout - 2035 Baseline + Dev, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Demand Set Relationship	D5 - 2020 Baseline + Dev, AM Peak [Locked]	Demand Set relationships are chained. This may slow down the file.
Warning	Queue variations	Analysis Options	Queue percentiles may be unreliable if the mean queue in any time segment is very low or very high.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		6.66	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Locked	Run automatically	Relationship type	Relationship
D10	2035 Baseline + Dev	PM Peak	ONE HOUR	16:45	18:15	15	✓	✓	Simple	D8+D12

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

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - B5101 Berse Rd (W)		ONE HOUR	✓	305	100.000
B - Gatewen Rd		ONE HOUR	✓	184	100.000
C - B5101 Berse Rd (E)		ONE HOUR	✓	983	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
From		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
	A - B5101 Berse Rd (W)	0	8	297
	B - Gatewen Rd	5	0	179
	C - B5101 Berse Rd (E)	602	380	0

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - B5101 Berse Rd (W)	B - Gatewen Rd	C - B5101 Berse Rd (E)
	A - B5101 Berse Rd (W)	0	0	7
	B - Gatewen Rd	0	0	0
	C - B5101 Berse Rd (E)	7	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.30	7.96	0.4	1.9	A	165	247
B-A	0.02	16.81	0.0	0.5	C	4	7
C-AB	0.72	21.38	2.6	12.9	C	356	534
C-A						546	819
AB						8	12
AC						272	408

Appendix E

Berse Road / Rhyd Broughton Lane ARCADY Results

Junctions 8	
ARCADY 8 - Roundabout Module	
Version: 8.0.6.541 [19821,26/11/2015] © Copyright TRL Limited, 2018	
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Filename: BerseRd_231018.arc8

Path: Z:\2600-2699\2627 Wrexham Glyndwr University\Data\Junction Assessment

Report generation date: 23/10/2018 15:29:16

Summary of junction performance

	AM Peak				PM Peak			
	Queue (PCU)	95 % Queue (PCU)	Delay (s)	RFC	Queue (PCU)	95 % Queue (PCU)	Delay (s)	RFC
Existing Layout - 2018 Baseline								
B5101 Berse Rd (N)	2.69	4.18	9.56	0.72	1.05	?	4.42	0.51
Rhyd Broughton Ln	0.32	~1	2.76	0.23	0.69	1.07	4.15	0.39
B5101 Berse Rd (W)	6.63	23.87	20.19	0.87	0.40	~1	3.72	0.28
Existing Layout - 2020 Baseline								
B5101 Berse Rd (N)	3.14	?	10.85	0.76	1.12	?	4.59	0.52
Rhyd Broughton Ln	0.34	~1	2.79	0.23	0.74	~1	4.30	0.41
B5101 Berse Rd (W)	8.85	?	26.43	0.91	0.42	~1	3.79	0.29
Existing Layout - 2020 Baseline + Dev								
B5101 Berse Rd (N)	3.93	?	13.03	0.80	1.37	?	5.17	0.57
Rhyd Broughton Ln	0.35	~1	2.84	0.24	0.86	~1	4.74	0.44
B5101 Berse Rd (W)	20.52	?	55.40	0.98	0.51	~1	4.11	0.33
Existing Layout - 2035 Baseline								
B5101 Berse Rd (N)	8.29	?	25.49	0.90	1.63	?	5.78	0.62
Rhyd Broughton Ln	0.42	~1	2.98	0.28	1.06	?	5.33	0.50
B5101 Berse Rd (W)	71.47	?	155.10	1.09	0.55	~1	4.25	0.35
Existing Layout - 2035 Baseline + Dev								
B5101 Berse Rd (N)	10.71	?	31.73	0.93	2.02	?	6.67	0.66
Rhyd Broughton Ln	0.43	~1	3.03	0.28	1.25	?	6.02	0.54
B5101 Berse Rd (W)	121.86	?	277.97	1.16	0.66	~1	4.63	0.39

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

"D1 - 2018 Baseline, AM Peak" model duration: 07:45 - 09:15

"D2 - 2018 Baseline, PM Peak" model duration: 16:45 - 18:15

"D3 - 2020 Baseline, AM Peak" model duration: 07:45 - 09:15

"D4 - 2020 Baseline, PM Peak" model duration: 16:45 - 18:15

"D5 - 2020 Baseline + Dev, AM Peak" model duration: 07:45 - 09:15

"D6 - 2020 Baseline + Dev, PM Peak" model duration: 16:45 - 18:15

"D7 - 2035 Baseline, AM Peak" model duration: 07:45 - 09:15

"D8 - 2035 Baseline, PM Peak" model duration: 16:45 - 18:15

"D9 - 2035 Baseline + Dev, AM Peak" model duration: 07:45 - 09:15

"D10 - 2035 Baseline + Dev, PM Peak" model duration: 16:45 - 18:15

"D11 - Dev, AM Peak" model duration: 07:45 - 09:15

"D12 - Dev, PM Peak" model duration: 16:45 - 18:15

Run using Junctions 8.0.6.541 at 23/10/2018 15:29:11

File summary

Title	Wrexham Glyndwr University
Location	Gatewen Road
Site Number	
Date	23/10/2018
Version	3
Status	
Identifier	
Client	Wrexham Glyndwr University
Jobnumber	2627
Enumerator	Mark Lever
Description	To accompany Highways Addendum, based on revised trip rates and trip distribution

Analysis Options

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

Units

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

Existing Layout - 2018 Baseline, AM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2018 Baseline, AM Peak	2018 Baseline	AM Peak		ONE HOUR	07:45	09:15	90	15				✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				13.40	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	ONE HOUR	✓	937.00	100.000
Rhyd Broughton Ln	ONE HOUR	✓	382.00	100.000
B5101 Berse Rd (W)	ONE HOUR	✓	1127.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout (for whole period)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	812.000	125.000
	Rhyd Broughton Ln	287.000	0.000	95.000
	B5101 Berse Rd (W)	610.000	517.000	0.000

Turning Proportions (PCU) - Berse Rd roundabout (for whole period)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout (for whole period)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout (for whole period)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.72	9.56	2.69	4.18	A	859.81	1289.71	143.66	6.68	1.60	143.68	6.68
Rhyd Broughton Ln	0.23	2.76	0.32	~1	A	350.53	525.79	22.89	2.61	0.25	22.89	2.61
B5101 Berse Rd (W)	0.87	20.19	6.63	23.87	C	1034.15	1551.23	291.01	11.26	3.23	291.05	11.26

Existing Layout - 2018 Baseline, PM Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2018 Baseline, PM Peak	2018 Baseline	PM Peak		ONE HOUR	16:45	18:15	90	15				✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				4.19	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	ONE HOUR	✓	776.00	100.000
Rhyd Broughton Ln	ONE HOUR	✓	546.00	100.000
B5101 Berse Rd (W)	ONE HOUR	✓	354.00	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout (for whole period)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	232.000	544.000
	Rhyd Broughton Ln	331.000	0.000	215.000
	B5101 Berse Rd (W)	186.000	165.000	3.000

Turning Proportions (PCU) - Berse Rd roundabout (for whole period)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout (for whole period)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout (for whole period)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.51	4.42	1.05	?	A	712.07	1068.11	67.72	3.80	0.75	67.72	3.80
Rhyd Broughton Ln	0.39	4.15	0.69	1.07	A	501.02	751.53	45.01	3.59	0.50	45.01	3.59
B5101 Berse Rd (W)	0.28	3.72	0.40	~1	A	324.84	487.25	27.66	3.41	0.31	27.66	3.41

Existing Layout - 2020 Baseline, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2020 Baseline, AM Peak	2020 Baseline	AM Peak		Varies by Arm	07:45	09:15	90	15			✓	✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				16.77	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	DIRECT		N/A	100.000
Rhyd Broughton Ln	DIRECT		N/A	100.000
B5101 Berse Rd (W)	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	631.795	97.259
	Rhyd Broughton Ln	223.307	0.000	73.917
	B5101 Berse Rd (W)	474.625	402.264	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:00-08:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	754.425	116.137
	Rhyd Broughton Ln	266.650	0.000	88.264
	B5101 Berse Rd (W)	566.748	480.342	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:00-08:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	923.979	142.238
	Rhyd Broughton Ln	326.579	0.000	108.101
	B5101 Berse Rd (W)	694.122	588.297	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	923.979	142.238
	Rhyd Broughton Ln	326.579	0.000	108.101
	B5101 Berse Rd (W)	694.122	588.297	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:45-09:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	754.425	116.137
	Rhyd Broughton Ln	266.650	0.000	88.264
	B5101 Berse Rd (W)	566.748	480.342	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:45-09:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	631.795	97.259
	Rhyd Broughton Ln	223.307	0.000	73.917
	B5101 Berse Rd (W)	474.625	402.264	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:00-08:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:00-08:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:45-09:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:45-09:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.76	10.85	3.14	?	B	888.61	1332.92	161.76	7.28	1.80	161.78	7.28
Rhyd Broughton Ln	0.23	2.79	0.34	~1	A	362.27	543.41	23.89	2.64	0.27	23.89	2.64
B5101 Berse Rd (W)	0.91	26.43	8.85	?	D	1068.80	1603.20	356.29	13.33	3.96	356.34	13.34

Existing Layout - 2020 Baseline, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2020 Baseline, PM Peak	2020 Baseline	PM Peak		Varies by Arm	16:45	18:15	90	15			✓	✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				4.33	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	DIRECT		N/A	100.000
Rhyd Broughton Ln	DIRECT		N/A	100.000
B5101 Berse Rd (W)	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	180.181	422.494
	Rhyd Broughton Ln	257.069	0.000	166.978
	B5101 Berse Rd (W)	144.456	128.146	2.330

Turning Proportions (PCU) - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	215.154	504.499
	Rhyd Broughton Ln	306.965	0.000	199.388
	B5101 Berse Rd (W)	172.494	153.019	2.782

Turning Proportions (PCU) - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:15-17:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	263.509	617.882
	Rhyd Broughton Ln	375.954	0.000	244.200
	B5101 Berse Rd (W)	211.261	187.409	3.407

Turning Proportions (PCU) - Berse Rd roundabout - (17:15-17:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:30-17:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	263.509	617.882
	Rhyd Broughton Ln	375.954	0.000	244.200
	B5101 Berse Rd (W)	211.261	187.409	3.407

Turning Proportions (PCU) - Berse Rd roundabout - (17:30-17:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:45-18:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	215.154	504.499
	Rhyd Broughton Ln	306.965	0.000	199.388
	B5101 Berse Rd (W)	172.494	153.019	2.782

Turning Proportions (PCU) - Berse Rd roundabout - (17:45-18:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	180.181	422.494
	Rhyd Broughton Ln	257.069	0.000	166.978
	B5101 Berse Rd (W)	144.456	128.146	2.330

Turning Proportions (PCU) - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:00-17:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:15-17:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:15-17:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:30-17:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:30-17:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:45-18:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:45-18:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.52	4.59	1.12	?	A	734.57	1101.86	71.91	3.92	0.80	71.91	3.92
Rhyd Broughton Ln	0.41	4.30	0.74	~1	A	516.85	775.28	47.73	3.69	0.53	47.74	3.69
B5101 Berse Rd (W)	0.29	3.79	0.42	~1	A	335.10	502.65	28.99	3.46	0.32	28.99	3.46

Existing Layout - 2020 Baseline + Dev, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2020 Baseline + Dev, AM Peak	2020 Baseline + Dev	AM Peak		Varies by Arm	07:45	09:15	90	15			✓	✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				31.36	D

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	DIRECT		N/A	100.000
Rhyd Broughton Ln	DIRECT		N/A	100.000
B5101 Berse Rd (W)	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	651.369	113.822
	Rhyd Broughton Ln	227.824	0.000	76.175
	B5101 Berse Rd (W)	532.594	411.298	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:00-08:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	777.799	135.914
	Rhyd Broughton Ln	272.044	0.000	90.961
	B5101 Berse Rd (W)	635.970	491.130	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:00-08:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:15-08:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	952.605	166.461
	Rhyd Broughton Ln	333.185	0.000	111.404
	B5101 Berse Rd (W)	778.900	601.509	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:15-08:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:30-08:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	952.605	166.461
	Rhyd Broughton Ln	333.185	0.000	111.404
	B5101 Berse Rd (W)	778.900	601.509	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:30-08:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:45-09:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	777.799	135.914
	Rhyd Broughton Ln	272.044	0.000	90.961
	B5101 Berse Rd (W)	635.970	491.130	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:45-09:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	651.369	113.822
	Rhyd Broughton Ln	227.824	0.000	76.175
	B5101 Berse Rd (W)	532.594	411.298	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.039	1.141
	Rhyd Broughton Ln	1.068	1.000	1.216
	B5101 Berse Rd (W)	1.064	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	3.9	14.1
	Rhyd Broughton Ln	6.8	0.0	21.6
	B5101 Berse Rd (W)	6.4	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:00-08:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.039	1.141
	Rhyd Broughton Ln	1.068	1.000	1.216
	B5101 Berse Rd (W)	1.064	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:00-08:15)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.9	14.1
	Rhyd Broughton Ln	6.8	0.0	21.6
	B5101 Berse Rd (W)	6.4	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:15-08:30)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.039	1.141
	Rhyd Broughton Ln	1.068	1.000	1.216
	B5101 Berse Rd (W)	1.064	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:15-08:30)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.9	14.1
	Rhyd Broughton Ln	6.8	0.0	21.6
	B5101 Berse Rd (W)	6.4	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:30-08:45)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.039	1.141
	Rhyd Broughton Ln	1.068	1.000	1.216
	B5101 Berse Rd (W)	1.064	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:30-08:45)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.9	14.1
	Rhyd Broughton Ln	6.8	0.0	21.6
	B5101 Berse Rd (W)	6.4	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:45-09:00)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.039	1.141
	Rhyd Broughton Ln	1.068	1.000	1.216
	B5101 Berse Rd (W)	1.064	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:45-09:00)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.9	14.1
	Rhyd Broughton Ln	6.8	0.0	21.6
	B5101 Berse Rd (W)	6.4	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.039	1.141
	Rhyd Broughton Ln	1.068	1.000	1.216
	B5101 Berse Rd (W)	1.064	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	3.9	14.1
	Rhyd Broughton Ln	6.8	0.0	21.6
	B5101 Berse Rd (W)	6.4	3.9	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.80	13.03	3.93	?	B	932.66	1398.99	192.69	8.26	2.14	192.71	8.27
Rhyd Broughton Ln	0.24	2.84	0.35	~1	A	370.53	555.80	24.80	2.68	0.28	24.80	2.68
B5101 Berse Rd (W)	0.98	55.40	20.52	?	F	1150.47	1725.70	642.43	22.34	7.14	642.50	22.34

Existing Layout - 2020 Baseline + Dev, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2020 Baseline + Dev, PM Peak	2020 Baseline + Dev	PM Peak		Varies by Arm	16:45	18:15	90	15			✓	✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				4.81	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	DIRECT		N/A	100.000
Rhyd Broughton Ln	DIRECT		N/A	100.000
B5101 Berse Rd (W)	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	186.957	466.912
	Rhyd Broughton Ln	276.643	0.000	169.237
	B5101 Berse Rd (W)	171.558	131.910	2.330

Turning Proportions (PCU) - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.43	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	223.245	557.538
	Rhyd Broughton Ln	330.339	0.000	202.085
	B5101 Berse Rd (W)	204.857	157.514	2.782

Turning Proportions (PCU) - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.43	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:15-17:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	273.418	682.842
	Rhyd Broughton Ln	404.581	0.000	247.503
	B5101 Berse Rd (W)	250.898	192.914	3.407

Turning Proportions (PCU) - Berse Rd roundabout - (17:15-17:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.43	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:30-17:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	273.418	682.842
	Rhyd Broughton Ln	404.581	0.000	247.503
	B5101 Berse Rd (W)	250.898	192.914	3.407

Turning Proportions (PCU) - Berse Rd roundabout - (17:30-17:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.43	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:45-18:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	223.245	557.538
	Rhyd Broughton Ln	330.339	0.000	202.085
	B5101 Berse Rd (W)	204.857	157.514	2.782

Turning Proportions (PCU) - Berse Rd roundabout - (17:45-18:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.43	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	186.957	466.912
	Rhyd Broughton Ln	276.643	0.000	169.237
	B5101 Berse Rd (W)	171.558	131.910	2.330

Turning Proportions (PCU) - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.43	0.01

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.024	1.053
	Rhyd Broughton Ln	1.065	1.000	1.089
	B5101 Berse Rd (W)	1.027	1.070	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	2.4	5.3
	Rhyd Broughton Ln	6.5	0.0	8.9
	B5101 Berse Rd (W)	2.7	7.0	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.024	1.053
	Rhyd Broughton Ln	1.065	1.000	1.089
	B5101 Berse Rd (W)	1.027	1.070	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:00-17:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.3
	Rhyd Broughton Ln	6.5	0.0	8.9
	B5101 Berse Rd (W)	2.7	7.0	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:15-17:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.024	1.053
	Rhyd Broughton Ln	1.065	1.000	1.089
	B5101 Berse Rd (W)	1.027	1.070	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:15-17:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.3
	Rhyd Broughton Ln	6.5	0.0	8.9
	B5101 Berse Rd (W)	2.7	7.0	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:30-17:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.024	1.053
	Rhyd Broughton Ln	1.065	1.000	1.089
	B5101 Berse Rd (W)	1.027	1.070	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:30-17:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.3
	Rhyd Broughton Ln	6.5	0.0	8.9
	B5101 Berse Rd (W)	2.7	7.0	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:45-18:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.024	1.053
	Rhyd Broughton Ln	1.065	1.000	1.089
	B5101 Berse Rd (W)	1.027	1.070	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:45-18:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.3
	Rhyd Broughton Ln	6.5	0.0	8.9
	B5101 Berse Rd (W)	2.7	7.0	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.024	1.053
	Rhyd Broughton Ln	1.065	1.000	1.089
	B5101 Berse Rd (W)	1.027	1.070	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	2.4	5.3
	Rhyd Broughton Ln	6.5	0.0	8.9
	B5101 Berse Rd (W)	2.7	7.0	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.57	5.17	1.37	?	A	796.97	1195.46	85.65	4.30	0.95	85.65	4.30
Rhyd Broughton Ln	0.44	4.74	0.86	~1	A	543.46	815.19	54.20	3.99	0.60	54.20	3.99
B5101 Berse Rd (W)	0.33	4.11	0.51	~1	A	372.72	559.09	34.43	3.69	0.38	34.43	3.70

Existing Layout - 2035 Baseline, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2035 Baseline, AM Peak	2035 Baseline	AM Peak		Varies by Arm	07:45	09:15	90	15			✓	✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				81.69	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	DIRECT		N/A	100.000
Rhyd Broughton Ln	DIRECT		N/A	100.000
B5101 Berse Rd (W)	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	737.370	113.511
	Rhyd Broughton Ln	260.622	0.000	86.269
	B5101 Berse Rd (W)	553.935	469.483	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:00-08:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	880.491	135.544
	Rhyd Broughton Ln	311.208	0.000	103.013
	B5101 Berse Rd (W)	661.453	560.608	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:00-08:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	1078.377	166.006
	Rhyd Broughton Ln	381.151	0.000	126.165
	B5101 Berse Rd (W)	810.111	686.602	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	1078.377	166.006
	Rhyd Broughton Ln	381.151	0.000	126.165
	B5101 Berse Rd (W)	810.111	686.602	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:45-09:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	880.491	135.544
	Rhyd Broughton Ln	311.208	0.000	103.013
	B5101 Berse Rd (W)	661.453	560.608	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:45-09:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	737.370	113.511
	Rhyd Broughton Ln	260.622	0.000	86.269
	B5101 Berse Rd (W)	553.935	469.483	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.87	0.13
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.54	0.46	0.00

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:00-08:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:00-08:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:45-09:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:45-09:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.033	1.138
	Rhyd Broughton Ln	1.068	1.000	1.224
	B5101 Berse Rd (W)	1.037	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	3.3	13.8
	Rhyd Broughton Ln	6.8	0.0	22.4
	B5101 Berse Rd (W)	3.7	3.9	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.90	25.49	8.29	?	D	1037.10	1555.65	341.85	13.18	3.80	341.89	13.19
Rhyd Broughton Ln	0.28	2.98	0.42	~1	A	422.81	634.21	29.40	2.78	0.33	29.40	2.78
B5101 Berse Rd (W)	1.09	155.10	71.47	?	F	1247.40	1871.10	2131.81	68.36	23.69	2131.94	68.36

Existing Layout - 2035 Baseline, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2035 Baseline, PM Peak	2035 Baseline	PM Peak		Varies by Arm	16:45	18:15	90	15			✓	✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				5.31	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	DIRECT		N/A	100.000
Rhyd Broughton Ln	DIRECT		N/A	100.000
B5101 Berse Rd (W)	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	209.437	491.093
	Rhyd Broughton Ln	298.809	0.000	194.090
	B5101 Berse Rd (W)	167.911	148.953	2.708

Turning Proportions (PCU) - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	250.088	586.414
	Rhyd Broughton Ln	356.807	0.000	231.763
	B5101 Berse Rd (W)	200.502	177.864	3.234

Turning Proportions (PCU) - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:15-17:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	306.294	718.207
	Rhyd Broughton Ln	436.997	0.000	283.850
	B5101 Berse Rd (W)	245.563	217.839	3.961

Turning Proportions (PCU) - Berse Rd roundabout - (17:15-17:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:30-17:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	306.294	718.207
	Rhyd Broughton Ln	436.997	0.000	283.850
	B5101 Berse Rd (W)	245.563	217.839	3.961

Turning Proportions (PCU) - Berse Rd roundabout - (17:30-17:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:45-18:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	250.088	586.414
	Rhyd Broughton Ln	356.807	0.000	231.763
	B5101 Berse Rd (W)	200.502	177.864	3.234

Turning Proportions (PCU) - Berse Rd roundabout - (17:45-18:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	209.437	491.093
	Rhyd Broughton Ln	298.809	0.000	194.090
	B5101 Berse Rd (W)	167.911	148.953	2.708

Turning Proportions (PCU) - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.30	0.70
	Rhyd Broughton Ln	0.61	0.00	0.39
	B5101 Berse Rd (W)	0.53	0.47	0.01

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:00-17:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:15-17:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:15-17:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:30-17:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:30-17:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:45-18:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:45-18:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.022	1.031
	Rhyd Broughton Ln	1.053	1.000	1.090
	B5101 Berse Rd (W)	1.000	1.072	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	2.2	3.1
	Rhyd Broughton Ln	5.3	0.0	9.0
	B5101 Berse Rd (W)	0.0	7.2	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.62	5.78	1.63	?	A	853.84	1280.77	99.20	4.65	1.10	99.21	4.65
Rhyd Broughton Ln	0.50	5.33	1.06	?	A	600.77	901.16	65.31	4.35	0.73	65.31	4.35
B5101 Berse Rd (W)	0.35	4.25	0.55	~1	A	389.51	584.27	36.85	3.78	0.41	36.85	3.78

Existing Layout - 2035 Baseline + Dev, AM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2035 Baseline + Dev, AM Peak	2035 Baseline + Dev	AM Peak		Varies by Arm	07:45	09:15	90	15			✓	✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				142.56	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	DIRECT		N/A	100.000
Rhyd Broughton Ln	DIRECT		N/A	100.000
B5101 Berse Rd (W)	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	756.944	130.074
	Rhyd Broughton Ln	265.139	0.000	88.527
	B5101 Berse Rd (W)	611.905	478.517	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:00-08:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	903.865	155.321
	Rhyd Broughton Ln	316.602	0.000	105.710
	B5101 Berse Rd (W)	730.674	571.396	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:00-08:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:15-08:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	1107.004	190.229
	Rhyd Broughton Ln	387.757	0.000	129.468
	B5101 Berse Rd (W)	894.890	699.815	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:15-08:30)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:30-08:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	1107.004	190.229
	Rhyd Broughton Ln	387.757	0.000	129.468
	B5101 Berse Rd (W)	894.890	699.815	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:30-08:45)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (08:45-09:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	903.865	155.321
	Rhyd Broughton Ln	316.602	0.000	105.710
	B5101 Berse Rd (W)	730.674	571.396	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (08:45-09:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	756.944	130.074
	Rhyd Broughton Ln	265.139	0.000	88.527
	B5101 Berse Rd (W)	611.905	478.517	0.000

Turning Proportions (PCU) - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.85	0.15
	Rhyd Broughton Ln	0.75	0.00	0.25
	B5101 Berse Rd (W)	0.56	0.44	0.00

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.038	1.141
	Rhyd Broughton Ln	1.068	1.000	1.217
	B5101 Berse Rd (W)	1.060	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (07:45-08:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	3.8	14.1
	Rhyd Broughton Ln	6.8	0.0	21.7
	B5101 Berse Rd (W)	6.0	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:00-08:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.038	1.141
	Rhyd Broughton Ln	1.068	1.000	1.217
	B5101 Berse Rd (W)	1.060	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:00-08:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.8	14.1
	Rhyd Broughton Ln	6.8	0.0	21.7
	B5101 Berse Rd (W)	6.0	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.038	1.141
	Rhyd Broughton Ln	1.068	1.000	1.217
	B5101 Berse Rd (W)	1.060	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:15-08:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.8	14.1
	Rhyd Broughton Ln	6.8	0.0	21.7
	B5101 Berse Rd (W)	6.0	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.038	1.141
	Rhyd Broughton Ln	1.068	1.000	1.217
	B5101 Berse Rd (W)	1.060	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:30-08:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.8	14.1
	Rhyd Broughton Ln	6.8	0.0	21.7
	B5101 Berse Rd (W)	6.0	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (08:45-09:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.038	1.141
	Rhyd Broughton Ln	1.068	1.000	1.217
	B5101 Berse Rd (W)	1.060	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (08:45-09:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	3.8	14.1
	Rhyd Broughton Ln	6.8	0.0	21.7
	B5101 Berse Rd (W)	6.0	3.9	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.038	1.141
	Rhyd Broughton Ln	1.068	1.000	1.217
	B5101 Berse Rd (W)	1.060	1.039	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (09:00-09:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	3.8	14.1
	Rhyd Broughton Ln	6.8	0.0	21.7
	B5101 Berse Rd (W)	6.0	3.9	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.93	31.73	10.71	?	D	1081.15	1621.72	420.06	15.54	4.67	420.14	15.54
Rhyd Broughton Ln	0.28	3.03	0.43	~1	A	431.07	646.60	30.44	2.82	0.34	30.44	2.82
B5101 Berse Rd (W)	1.16	277.97	121.86	?	F	1329.07	1993.60	4546.34	136.83	50.51	4547.97	136.88

Existing Layout - 2035 Baseline + Dev, PM Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Flow Arm 1	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 2	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.
Warning	Flow Arm 3	Analysis Options	Queue Variations cannot be calculated for the selected traffic profile type.

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	R
2035 Baseline + Dev, PM Peak	2035 Baseline + Dev	PM Peak		Varies by Arm	16:45	18:15	90	15			✓	✓	

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
2	Berse Rd roundabout	Roundabout	1,2,3				6.02	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Arm	Name	Description
B5101 Berse Rd (N)	1	B5101 Berse Rd (N)	
Rhyd Broughton Ln	2	Rhyd Broughton Ln	
B5101 Berse Rd (W)	3	B5101 Berse Rd (W)	

Capacity Options

Name	Minimum Capacity (PCU/hr)	Maximum Capacity (PCU/hr)	Assume Flat Start Profile	Initial Queue (PCU)
B5101 Berse Rd (N)	0.00	99999.00		0.00
Rhyd Broughton Ln	0.00	99999.00		0.00
B5101 Berse Rd (W)	0.00	99999.00		0.00

Roundabout Geometry

Name	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
B5101 Berse Rd (N)	3.70	7.10	12.80	41.50	38.50	13.00	
Rhyd Broughton Ln	4.80	6.80	10.80	20.90	38.50	11.00	
B5101 Berse Rd (W)	3.50	5.60	21.20	25.50	38.50	18.00	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
B5101 Berse Rd (N)		(calculated)	(calculated)	0.695	1819.457
Rhyd Broughton Ln		(calculated)	(calculated)	0.718	1959.751
B5101 Berse Rd (W)		(calculated)	(calculated)	0.646	1624.209

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
B5101 Berse Rd (N)	DIRECT		N/A	100.000
Rhyd Broughton Ln	DIRECT		N/A	100.000
B5101 Berse Rd (W)	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.000	216.213	535.512
	Rhyd Broughton Ln	318.383	0.000	196.349
	B5101 Berse Rd (W)	195.013	152.717	2.708

Turning Proportions (PCU) - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	From			
	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.44	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:00-17:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	258.179	639.453
	Rhyd Broughton Ln	380.180	0.000	234.460
	B5101 Berse Rd (W)	232.865	182.359	3.234

Turning Proportions (PCU) - Berse Rd roundabout - (17:00-17:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.44	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:15-17:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	316.203	783.167
	Rhyd Broughton Ln	465.624	0.000	287.153
	B5101 Berse Rd (W)	285.200	223.344	3.961

Turning Proportions (PCU) - Berse Rd roundabout - (17:15-17:30)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.44	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:30-17:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	316.203	783.167
	Rhyd Broughton Ln	465.624	0.000	287.153
	B5101 Berse Rd (W)	285.200	223.344	3.961

Turning Proportions (PCU) - Berse Rd roundabout - (17:30-17:45)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.44	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (17:45-18:00)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.000	258.179	639.453
	Rhyd Broughton Ln	380.180	0.000	234.460
	B5101 Berse Rd (W)	232.865	182.359	3.234

Turning Proportions (PCU) - Berse Rd roundabout - (17:45-18:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.44	0.01

Turning Counts / Proportions (PCU/hr) - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.000	216.213	535.512
	Rhyd Broughton Ln	318.383	0.000	196.349
	B5101 Berse Rd (W)	195.013	152.717	2.708

Turning Proportions (PCU) - Berse Rd roundabout - (18:00-18:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.00	0.29	0.71
	Rhyd Broughton Ln	0.62	0.00	0.38
	B5101 Berse Rd (W)	0.56	0.44	0.01

Vehicle Mix

Average PCU Per Vehicle - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.024	1.050
	Rhyd Broughton Ln	1.064	1.000	1.089
	B5101 Berse Rd (W)	1.024	1.071	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (16:45-17:00)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	0.0	2.4	5.0
	Rhyd Broughton Ln	6.4	0.0	8.9
	B5101 Berse Rd (W)	2.4	7.1	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:00-17:15)

	To			
		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
From	B5101 Berse Rd (N)	1.000	1.024	1.050
	Rhyd Broughton Ln	1.064	1.000	1.089
	B5101 Berse Rd (W)	1.024	1.071	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:00-17:15)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.0
	Rhyd Broughton Ln	6.4	0.0	8.9
	B5101 Berse Rd (W)	2.4	7.1	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:15-17:30)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.024	1.050
	Rhyd Broughton Ln	1.064	1.000	1.089
	B5101 Berse Rd (W)	1.024	1.071	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:15-17:30)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.0
	Rhyd Broughton Ln	6.4	0.0	8.9
	B5101 Berse Rd (W)	2.4	7.1	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:30-17:45)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.024	1.050
	Rhyd Broughton Ln	1.064	1.000	1.089
	B5101 Berse Rd (W)	1.024	1.071	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:30-17:45)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.0
	Rhyd Broughton Ln	6.4	0.0	8.9
	B5101 Berse Rd (W)	2.4	7.1	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (17:45-18:00)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.024	1.050
	Rhyd Broughton Ln	1.064	1.000	1.089
	B5101 Berse Rd (W)	1.024	1.071	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (17:45-18:00)

		To		
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.0
	Rhyd Broughton Ln	6.4	0.0	8.9
	B5101 Berse Rd (W)	2.4	7.1	0.0

Average PCU Per Vehicle - Berse Rd roundabout - (18:00-18:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	1.000	1.024	1.050
	Rhyd Broughton Ln	1.064	1.000	1.089
	B5101 Berse Rd (W)	1.024	1.071	1.000

Heavy Vehicle Percentages - Berse Rd roundabout - (18:00-18:15)

	To			
From		B5101 Berse Rd (N)	Rhyd Broughton Ln	B5101 Berse Rd (W)
	B5101 Berse Rd (N)	0.0	2.4	5.0
	Rhyd Broughton Ln	6.4	0.0	8.9
	B5101 Berse Rd (W)	2.4	7.1	0.0

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max 95th percentile Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)	Total Queueing Delay (PCU-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (PCU-min/min)	Inclusive Total Queueing Delay (PCU-min)	Inclusive Average Queueing Delay (s)
B5101 Berse Rd (N)	0.66	6.67	2.02	?	A	916.24	1374.36	118.69	5.18	1.32	118.70	5.18
Rhyd Broughton Ln	0.54	6.02	1.25	?	A	627.38	941.07	74.70	4.76	0.83	74.70	4.76
B5101 Berse Rd (W)	0.39	4.63	0.66	~1	A	427.13	640.70	43.32	4.06	0.48	43.32	4.06