Time Window	Swan Valley Traffic Count			Swan Valley Traffic Count			Trip rates per 100sqm/GFA									Predicted Daily Traffic Profile									
							Light vehicles			Heavy vehicles			Total vehicles			Light vehicles			Heavy vehicles			Total vehicles			% HGV
	Arrive			Depart			trip rates per 100 sqm			trip rates per 100 sqm			trip rates per 100 sqm												
	Lights	Heavies	Total	Lights	Heavies	Total	Arrive	Depart	Two-way	Arrive	Depart	Two-way	Arrive	Depart	Two-way	Arrive	Depart	Two-way	Arrive	Depart	Two-way	Arrive	Depart	Two-way	Two-way
00.00-01.00	14	10	24	10	16	26	0.010	0.007	0.017	0.007	0.012	0.019	0.017	0.019	0.036	3	2	6	2	4	7	5	6	11	63.6%
01.00-02.00	9	15	24	3	15	18	0.007	0.002	0.009	0.011	0.011	0.022	0.017	0.013	0.031	2	1	3	4	4	7	6	5	11	63.6%
02.00-03.00	6	16	22	23	16	39	0.004	0.017	0.021	0.012	0.012	0.023	0.016	0.028	0.044	1	6	8	4	4	7	5	10	15	46.7%
03.00-04.00	10	11	21	13	17	30	0.007	0.009	0.017	0.008	0.012	0.020	0.015	0.022	0.037	2	3	6	3	4	7	5	7	12	58.3%
04.00-05.00	32	15	47	15	10	25	0.023	0.011	0.034	0.011	0.007	0.018	0.034	0.018	0.052	8	4	12	4	2	7	12	6	18	38.9%
05.00-06.00	224	23	247	108	14	122	0.163	0.079	0.241	0.017	0.010	0.027	0.180	0.089	0.268	56	27	83	6	3	10	62	30	92	10.9%
06.00-07.00	107	23	130	79	10	89	0.078	0.057	0.135	0.017	0.007	0.024	0.095	0.065	0.159	27	20	46	6	2	9	33	22	55	16.4%
07.00-08.00	123	21	144	39	28	67	0.089	0.028	0.118	0.015	0.020	0.036	0.105	0.049	0.153	31	10	40	5	7	12	36	17	53	22.6%
08.00-09.00	167	17	184	18	21	39	0.121	0.013	0.135	0.024	0.022	0.046	0.145	0.035	0.181	42	4	46	8	8	15	50	12	62	24.2%
09.00-10.00	80	22	102	25	20	45	0.058	0.018	0.076	0.016	0.015	0.031	0.074	0.033	0.107	20	6	26	5	5	11	25	11	36	30.6%
10.00-11.00	62	25	87	38	27	65	0.045	0.028	0.073	0.018	0.020	0.038	0.063	0.047	0.111	15	9	25	6	7	13	21	16	37	35.1%
11.00-12.00	47	22	69	35	21	56	0.034	0.025	0.060	0.016	0.015	0.031	0.050	0.041	0.091	12	9	20	5	5	11	17	14	31	35.5%
12.00-13.00	68	17	85	76	15	91	0.049	0.055	0.105	0.012	0.011	0.023	0.062	0.066	0.128	17	19	36	4	4	8	21	23	44	18.2%
13.00-14.00	111	14	125	80	23	103	0.081	0.058	0.139	0.010	0.017	0.027	0.091	0.075	0.166	28	20	48	3	6	10	31	26	57	17.5%
14.00-15.00	54	17	71	122	27	149	0.039	0.089	0.128	0.012	0.020	0.032	0.052	0.108	0.160	13	30	44	4	7	11	17	37	54	20.4%
15.00-16.00	31	11	42	154	21	175	0.023	0.112	0.135	0.008	0.015	0.023	0.031	0.127	0.158	8	38	46	3	5	8	11	43	54	14.8%
16.00-17.00	55	23	78	192	14	206	0.040	0.140	0.180	0.017	0.010	0.027	0.057	0.150	0.207	14	48	62	6	3	10	20	51	71	14.1%
17.00-18.00	40	18	58	149	22	171	0.029	0.108	0.137	0.021	0.019	0.040	0.050	0.127	0.177	10	37	47	7	7	14	17	44	61	23.0%
18.00-19.00	123	22	145	122	18	140	0.089	0.089	0.178	0.016	0.013	0.029	0.105	0.102	0.207	31	30	61	5	4	10	36	34	70	14.3%
19.00-20.00	18	19	37	46	13	59	0.013	0.033	0.047	0.014	0.009	0.023	0.027	0.043	0.070	4	11	16	5	3	8	9	14	23	34.8%
20.00-21.00	21	21	42	24	17	41	0.015	0.017	0.033	0.015	0.012	0.028	0.031	0.030	0.060	5	6	11	5	4	9	10	10	20	45.0%
21.00-22.00	48	13	61	18	19	37	0.035	0.013	0.048	0.009	0.014	0.023	0.044	0.027	0.071	12	4	16	3	5	8	15	9	24	33.3%
22.00-23.00	4	12	16	34	15	49	0.003	0.025	0.028	0.009	0.011	0.020	0.012	0.036	0.047	1	8	9	3	4	7	4	12	16	43.8%
23.00-00.00	3	14	17	11	16	27	0.002	0.008	0.010	0.010	0.012	0.022	0.012	0.020	0.032	1	3	3	3	4	7	4	7	11	63.6%
Totals	1457	421	1878	1434	435	1869	1.060	1.043	2.103	0.326	0.326	0.652	1.385	1.369	2.754	363	355	718	109	111	220	472	466	938	23.5%

	B8 Swan Valley Statistics
GFA /sqm	137500
Employees	1780
Ratio	1 per 77sqm

	Proposed use	
GFA /sqm	34286	
Employees	445	
Ratio	1 per 77	sqm

TABLE 2: UNIT 2 TRIP GENERATION

APPENDIX I

2011 MODAL SPLIT CENSUS DATA

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

population	All usual residents aged 16 and over in employment the week before the census
units	Persons
date	2011

Method of Travel to Work	E02003460: Milton Keynes 002			E02003460: Milton Keynes 004			E02003460: Milton Keynes 007		
All categories: Method of travel to work	2,795	2,791	100.0%	3,156	3,149	100.0%	4,777	4,770	100.0%
Work mainly at or from home	0			0			0		
Underground, metro, light rail or tram	11	11	0.39%	2	2	0.06%	3	3	0.06%
Train	24	24	0.86%	13	13	0.41%	29	29	0.61%
Bus, minibus or coach	66	66	2.36%	89	89	2.83%	136	136	2.85%
Taxi	20	20	0.72%	12	12	0.38%	21	21	0.44%
Motorcycle, scooter or moped	34	34	1.22%	24	24	0.76%	29	29	0.61%
Driving a car or van	2,277	2,277	81.58%	2,361	2,361	74.98%	4,024	4,024	84.36%
Passenger in a car or van	162	162	5.80%	168	168	5.34%	259	259	5.43%
Bicycle	51	51	1.83%	93	93	2.95%	126	126	2.64%
On foot	146	146	5.23%	387	387	12.29%	143	143	3.00%
Other method of travel to work	4			7			7		

Trip Type	MSOA 002	MSOA 004	MSOA 007	Proposed
on foot	5.23%	12.29%	3.00%	7.64%
bicycle	1.83%	2.95%	2.64%	2.80%
bus	2.36%	2.83%	2.85%	2.84%
train	1.25%	0.48%	0.67%	0.57%
motorcycle/moped	1.22%	0.76%	0.61%	0.69%
car driver	81.58%	74.98%	84.36%	79.67%
passenger	5.80%	5.34%	5.43%	5.38%
taxi	0.72%	0.38%	0.44%	0.41%
total	100.0%	100.0%	100.0%	100.0%

Person Trips - Total Development	on foot	bicycle	bus	train	motorcycle	car driver	passenger	taxi
	7.64%	2.80%	2.84%	0.57%	0.69%	79.67%	5.38%	0.41%
AM Peak	10	4	4	1	1	108	7	1
PM Peak	14	5	5	1	1	147	10	1
Daily	164	60	61	12	15	1706	115	9

APPENDIX J

TEMPRO OUTPUTS

Dataset Version:	72
Result Type:	Trip ends by time period
Base Year:	2016
Future Year:	2026
Trip Purpose Group:	All purposes
Time Period:	Weekday AM peak period (0700 - 0959)
Trip End Type:	Origin/Destination
Alternative Assumptions Applied:	No

Growth Factor

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	1.1389	1.1109

Future Year - Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	417	248

Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	3,001	2,241

Future Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	3,418	2,490

ALL ROADS	1.1721

Dataset Version:	72
Result Type:	Trip ends by time period
Base Year:	2016
Future Year:	2026
Trip Purpose Group:	All purposes
Time Period:	Weekday PM peak period (1600 - 1859)
Trip End Type:	Origin/Destination
Alternative Assumptions Applied:	No

Growth Factor

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	1.1214	1.1428

Future Year - Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	304	402

Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	2,502	2,815

Future Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	2,806	3,217

ALL ROADS	1.1796

2016 - 2026

Dataset Version:	72
Result Type:	Trip ends by time period
Base Year:	2018
Future Year:	2026
Trip Purpose Group:	All purposes
Time Period:	Weekday AM peak period (0700 - 0959)
Trip End Type:	Origin/Destination
Alternative Assumptions Applied:	No

Growth Factor

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	1.1063	1.0802

Future Year - Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	328	185

Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	3,090	2,305

Future Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	3,418	2,490

ALL ROADS	1.1344
URBAN trunk	1.1258

Dataset Version:	72
Result Type:	Trip ends by time period
Base Year:	2018
Future Year:	2026
Trip Purpose Group:	All purposes
Time Period:	Weekday PM peak period (1600 - 1859)
Trip End Type:	Origin/Destination
Alternative Assumptions Applied:	No

Growth Factor

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	1.0900	1.1095

Future Year - Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	232	318

Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	2,574	2,900

Future Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	2,806	3,217

ALL ROADS	1.1411
URBAN trunk	1.1325

2018 - 2026

Dataset Version: 72
Result Type: Trip ends by time period
Base Year: 2016
Future Year: 2020
Trip Purpose Group: All purposes
Time Period: Weekday AM peak period (0700 - 0959)
Trip End Type: Origin/Destination
Alternative Assumptions Applied: No
NTM: All Roads

Growth Factor

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	1.0590	1.0568

Future Year - Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	177	127

Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	3,001	2,241

Future Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	3,178	2,368

Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.066519

Dataset Version: 72
Result Type: Trip ends by time period
Base Year: 2016
Future Year: 2020
Trip Purpose Group: All purposes
Time Period: Weekday PM peak period (1600 - 1859)
Trip End Type: Origin/Destination
Alternative Assumptions Applied: No
NTM: All Roads

Growth Factor

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	1.0576	1.0600

Future Year - Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	144	169

Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	2,502	2,815

Future Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	2,646	2,984

Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.067426

2016 - 2020

Dataset Version: 72
Result Type: Trip ends by time period
Base Year: 2018
Future Year: 2020
Trip Purpose Group: All purposes
Time Period: Weekday AM peak period (0700 - 0959)
Trip End Type: Origin/Destination
Alternative Assumptions Applied: No
NTM: All Roads

Growth Factor

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	1.0287	1.0276

Future Year - Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	89	64

Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	3,090	2,305

Future Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	3,178	2,368

Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.032215

Dataset Version: 72
Result Type: Trip ends by time period
Base Year: 2018
Future Year: 2020
Trip Purpose Group: All purposes
Time Period: Weekday PM peak period (1600 - 1859)
Trip End Type: Origin/Destination
Alternative Assumptions Applied: No
NTM: All Roads

Growth Factor

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	1.0280	1.0291

Future Year - Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	72	84

Base Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	2,574	2,900

Future Year

	Area Description		All purposes	
	Level	Name	Origin	Destination
E02003460		Milton Keynes 002	2,646	2,984

Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.032617

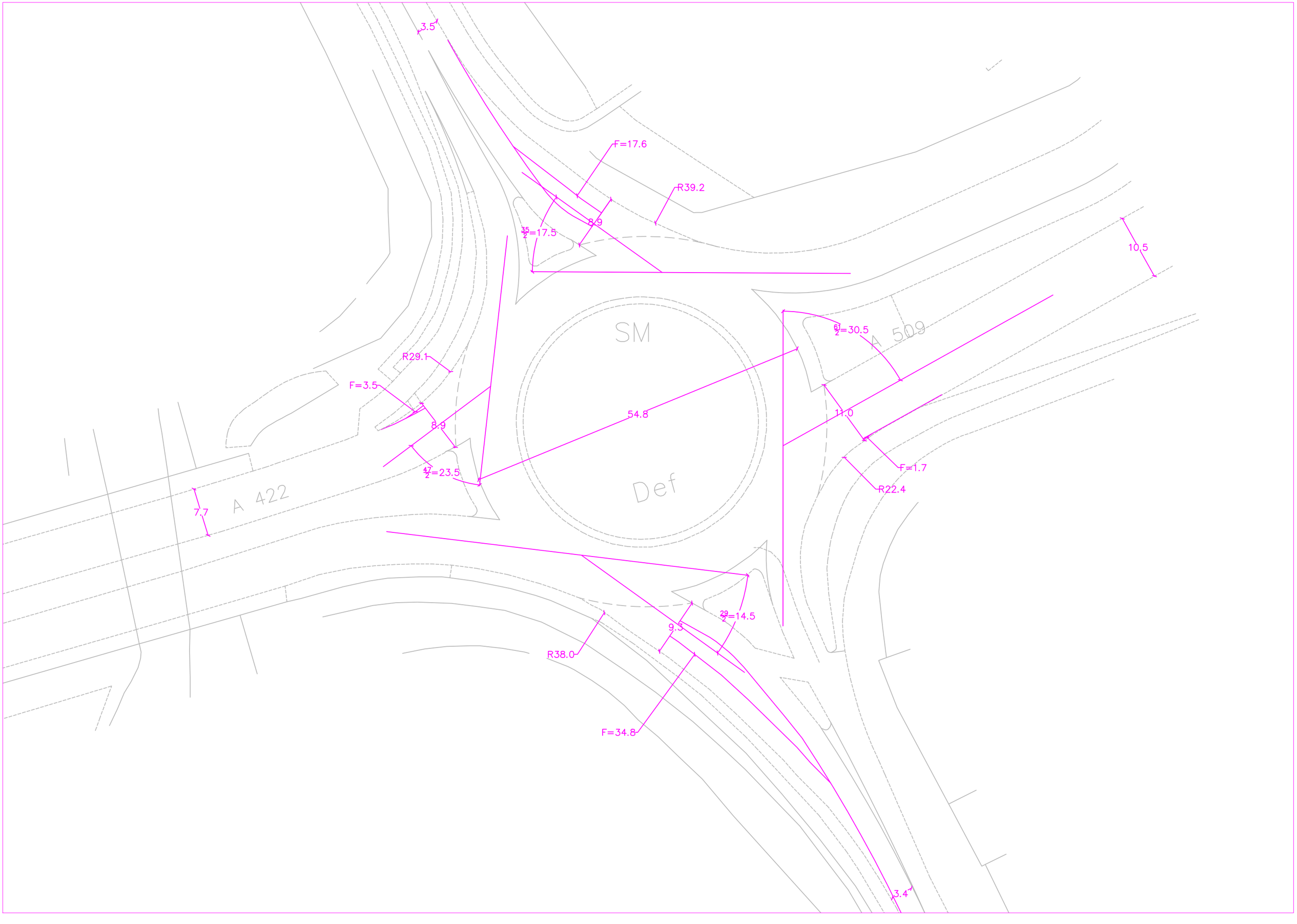
2018 - 2020

2018 to 2019 growth rates					
AM PEAK HOUR			PM PEAK HOUR		
ALL ROADS			ALL ROADS		
Level	Area	Local Growth Figure	Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.016079879	E02003460	Milton Keynes 002	1.016330379
E02003465	Milton Keynes 007	1.01713198	E02003465	Milton Keynes 007	1.016530779
E02003475	Milton Keynes 017	1.012622973	E02003475	Milton Keynes 017	1.012823373
urban principle			urban principle		
Level	Area	Local Growth Figure	Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.015135503	E02003460	Milton Keynes 002	1.01538577
E02003465	Milton Keynes 007	1.016186627	E02003465	Milton Keynes 007	1.015585984
E02003475	Milton Keynes 017	1.011681809	E02003475	Milton Keynes 017	1.011882024
urban trunk			urban trunk		
Level	Area	Local Growth Figure	Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.015443866	E02003460	Milton Keynes 002	1.01569421
E02003465	Milton Keynes 007	1.01649531	E02003465	Milton Keynes 007	1.015894485
E02003475	Milton Keynes 017	1.011989124	E02003475	Milton Keynes 017	1.012189399

2018 to 2031 growth rates					
AM PEAK HOUR			PM PEAK HOUR		
ALL ROADS			ALL ROADS		
Level	Area	Local Growth Figure	Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.186709548	E02003460	Milton Keynes 002	1.19992643
E02003465	Milton Keynes 007	1.193526129	E02003465	Milton Keynes 007	1.194566828
E02003475	Milton Keynes 017	1.161108342	E02003475	Milton Keynes 017	1.16412637
urban principle			urban principle		
Level	Area	Local Growth Figure	Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.166524098	E02003460	Milton Keynes 002	1.179516167
E02003465	Milton Keynes 007	1.173224732	E02003465	Milton Keynes 007	1.174247729
E02003475	Milton Keynes 017	1.141358358	E02003475	Milton Keynes 017	1.144325051
urban trunk			urban trunk		
Level	Area	Local Growth Figure	Level	Area	Local Growth Figure
E02003460	Milton Keynes 002	1.176184817	E02003460	Milton Keynes 002	1.189284481
E02003465	Milton Keynes 007	1.182940943	E02003465	Milton Keynes 007	1.183972413
E02003475	Milton Keynes 017	1.150810664	E02003475	Milton Keynes 017	1.153801926

APPENDIX K

JUNCTION 1: TICKFORD ROUNDABOUT – ARCADY ASSESSMENT


3.5
F=17.6
R39.2
8.9
35/2=17.5
10.5
SM
61/2=30.5
A 509
R29.1
F=3.5
8.9
54.8
11.0
47/2=23.5
F=1.7
R22.4
A 422
7.7
Def
29/2=14.5
9.3
R38.0
F=34.8
3.4

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: App XX - Tickford Roundabout ARCADY Model Jan 19.arc8
Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP\ADC1392 Jan 19 - B8 Use\Tickford
Report generation date: 27/02/2019 11:10:48

» Existing layout - 2026 background, AM
» Existing layout - 2026 background, PM
» Existing layout - 2026 with dev, AM
» Existing layout - 2026 with dev, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
Existing layout - 2026 background								
Arm A	1.54	4.31	0.61	83.13	251.55	461.39	1.27	202.07
Arm B	3.31	13.23	0.77		3.90	27.00	0.81	
Arm C	14.95	26.94	0.95		1.41	3.53	0.59	
Arm D	101.03	434.40	1.36		15.69	45.79	0.96	
Existing layout - 2026 with dev								
Arm A	1.58	4.37	0.62	98.88	277.01	518.27	1.29	229.31
Arm B	3.41	13.66	0.78		4.02	27.85	0.81	
Arm C	17.59	31.36	0.96		1.45	3.63	0.59	
Arm D	118.65	509.07	1.43		20.04	56.49	0.98	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D3 - 2026 background, AM " model duration: 07:45 - 09:15
"D4 - 2026 background, PM" model duration: 16:45 - 18:15
"D5 - 2026 with dev, AM" model duration: 07:45 - 09:15
"D6 - 2026 with dev, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 27/02/2019 11:10:41

File summary

Title	Tickford Roundabout
Location	
Site Number	
Date	20/06/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ADCteam
Description	

Analysis Options

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

Units

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

Existing layout - 2026 background, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

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	Geometry measured from OS mapping	✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Re
2026 background, AM	2026 background	AM		ONE HOUR	07:45	09:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	A,B,C,D				83.13	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A422 (W)	
B	B	B526 (N)	
C	C	A509 (E)	
D	D	A509 (S)	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.70	8.90	3.50	29.10	54.80	23.50	
B	3.50	8.90	17.60	39.20	54.80	17.50	
C	10.50	11.00	1.70	22.40	54.80	30.50	
D	3.40	9.30	34.80	38.00	54.80	14.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.760	2601.341
B		(calculated)	(calculated)	0.661	2013.089
C		(calculated)	(calculated)	0.872	3270.968
D		(calculated)	(calculated)	0.726	2357.592

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	1177.00	100.000
B	ONE HOUR	✓	837.00	100.000
C	ONE HOUR	✓	1931.00	100.000
D	ONE HOUR	✓	704.00	100.000

Turning Proportions

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

		To			
		A	B	C	D
From	A	1.000	345.000	695.000	136.000
	B	615.000	1.000	30.000	191.000
	C	1482.000	27.000	0.000	422.000
	D	223.000	236.000	244.000	1.000

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

		To			
		A	B	C	D
From	A	0.00	0.29	0.59	0.12
	B	0.73	0.00	0.04	0.23
	C	0.77	0.01	0.00	0.22
	D	0.32	0.34	0.35	0.00

Vehicle Mix

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

		To			
		A	B	C	D
From	A	1.000	1.012	1.049	1.199
	B	1.015	2.000	1.067	1.037
	C	1.024	1.037	1.000	1.090
	D	1.099	1.093	1.090	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		A	B	C	D
From	A	0.0	1.2	4.9	19.9
	B	1.5	100.0	6.7	3.7
	C	2.4	3.7	0.0	9.0
	D	9.9	9.3	9.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	0.61	4.31	1.54	A	1080.03	1620.05	99.36	3.68	1.10	99.37	3.68
B	0.77	13.23	3.31	B	768.05	1152.07	162.73	8.47	1.81	162.74	8.48
C	0.95	26.94	14.95	D	1771.91	2657.87	484.15	10.93	5.38	484.18	10.93
D	1.36	434.40	101.03	F	646.00	969.00	2929.67	181.40	32.55	2929.70	181.41

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	886.10	221.53	883.35	1739.66	380.50	0.00	2166.00	2134.43	0.409	0.00	0.69	2.801	A
B	630.14	157.53	626.92	456.31	807.54	0.00	1405.76	781.97	0.448	0.00	0.80	4.604	A
C	1453.75	363.44	1448.38	726.44	708.02	0.00	2526.73	2251.94	0.575	0.00	1.34	3.322	A
D	530.01	132.50	526.16	562.41	1594.00	0.00	1073.67	568.80	0.494	0.00	0.96	6.530	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1058.09	264.52	1056.85	2079.13	453.03	0.00	2109.07	2134.44	0.502	0.69	1.00	3.416	A
B	752.45	188.11	750.22	544.84	965.04	0.00	1296.16	781.97	0.581	0.80	1.36	6.568	A
C	1735.92	433.98	1731.12	868.02	847.24	0.00	2404.29	2251.94	0.722	1.34	2.54	5.309	A
D	632.88	158.22	626.32	672.53	1905.84	0.00	862.02	568.80	0.734	0.96	2.60	14.879	B

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1295.90	323.97	1293.73	2458.81	429.93	0.00	2127.29	2134.44	0.609	1.00	1.54	4.307	A
B	921.56	230.39	914.07	605.57	1118.10	0.00	1190.16	781.97	0.774	1.36	3.23	12.709	B
C	2126.06	531.52	2085.75	999.44	1032.73	0.00	2241.07	2251.94	0.949	2.54	12.62	19.558	C
D	775.12	193.78	584.97	814.73	2303.76	0.00	591.97	568.80	1.309	2.60	50.14	178.080	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1295.90	323.97	1295.89	2483.61	421.20	0.00	2134.16	2134.44	0.607	1.54	1.54	4.294	A
B	921.56	230.39	921.26	602.15	1114.94	0.00	1192.39	781.97	0.773	3.23	3.31	13.234	B
C	2126.06	531.52	2116.73	996.32	1039.89	0.00	2234.89	2251.94	0.951	12.62	14.95	26.938	D
D	775.12	193.78	571.55	823.37	2333.27	0.00	571.93	568.80	1.355	50.14	101.03	434.403	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1058.09	264.52	1059.75	2188.83	586.58	0.00	2004.15	2134.44	0.528	1.54	1.13	3.820	A
B	752.45	188.11	759.47	611.61	1034.73	0.00	1247.13	781.97	0.603	3.31	1.55	7.486	A
C	1735.92	433.98	1784.98	937.43	856.76	0.00	2396.08	2251.94	0.724	14.95	2.69	6.355	A
D	632.88	158.22	820.67	687.01	1954.73	0.00	828.80	568.80	0.764	101.03	54.08	333.371	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	886.10	221.53	887.55	1820.61	528.31	0.00	2049.86	2134.43	0.432	1.13	0.77	3.102	A
B	630.14	157.53	632.81	530.15	885.72	0.00	1350.75	781.97	0.467	1.55	0.88	5.032	A
C	1453.75	363.44	1459.01	804.04	714.49	0.00	2521.10	2251.94	0.577	2.69	1.37	3.407	A
D	530.01	132.50	742.28	566.87	1606.64	0.00	1065.09	568.80	0.498	54.08	1.01	23.860	C

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	10.11	0.67	2.801	A	A
B	11.68	0.78	4.604	A	A
C	19.53	1.30	3.322	A	A
D	13.77	0.92	6.530	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	14.67	0.98	3.416	A	A
B	19.61	1.31	6.568	A	A
C	36.38	2.43	5.309	A	A
D	35.27	2.35	14.879	B	B

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	22.41	1.49	4.307	A	A
B	43.99	2.93	12.709	B	B
C	146.67	9.78	19.558	C	B
D	403.80	26.92	178.080	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	23.11	1.54	4.294	A	A
B	49.14	3.28	13.234	B	B
C	209.41	13.96	26.938	D	C
D	1133.93	75.60	434.403	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	17.34	1.16	3.820	A	A
B	24.63	1.64	7.486	A	A
C	50.93	3.40	6.355	A	A
D	1163.36	77.56	333.371	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	11.72	0.78	3.102	A	A
B	13.69	0.91	5.032	A	A
C	21.23	1.42	3.407	A	A
D	179.54	11.97	23.860	C	C

Existing layout - 2026 background, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

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	Geometry measured from OS mapping	✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Re
2026 background, PM	2026 background	PM		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
1	(untitled)	Roundabout	A,B,C,D				202.07	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A422 (W)	
B	B	B526 (N)	
C	C	A509 (E)	
D	D	A509 (S)	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.70	8.90	3.50	29.10	54.80	23.50	
B	3.50	8.90	17.60	39.20	54.80	17.50	
C	10.50	11.00	1.70	22.40	54.80	30.50	
D	3.40	9.30	34.80	38.00	54.80	14.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.760	2601.341
B		(calculated)	(calculated)	0.661	2013.089
C		(calculated)	(calculated)	0.872	3270.968
D		(calculated)	(calculated)	0.726	2357.592

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	2073.00	100.000
B	ONE HOUR	✓	496.00	100.000
C	ONE HOUR	✓	1307.00	100.000
D	ONE HOUR	✓	1177.00	100.000

Turning Proportions

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

		To			
		A	B	C	D
From	A	1.000	473.000	1210.000	389.000
	B	270.000	0.000	29.000	197.000
	C	850.000	55.000	0.000	402.000
	D	333.000	323.000	521.000	0.000

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

		To			
		A	B	C	D
From	A	0.00	0.23	0.58	0.19
	B	0.54	0.00	0.06	0.40
	C	0.65	0.04	0.00	0.31
	D	0.28	0.27	0.44	0.00

Vehicle Mix

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

		To			
		A	B	C	D
From	A	1.000	1.008	1.007	1.049
	B	1.004	1.000	1.000	1.025
	C	1.009	1.000	1.000	1.047
	D	1.075	1.022	1.050	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		A	B	C	D
From	A	0.0	0.8	0.7	4.9
	B	0.4	0.0	0.0	2.5
	C	0.9	0.0	0.0	4.7
	D	7.5	2.2	5.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	1.27	461.39	251.55	F	1902.21	2853.32	10646.79	223.88	118.30	10882.93	228.85
B	0.81	27.00	3.90	D	455.14	682.71	187.36	16.47	2.08	187.43	16.47
C	0.59	3.53	1.41	A	1199.32	1798.99	85.79	2.86	0.95	85.80	2.86
D	0.96	45.79	15.69	E	1080.03	1620.05	470.95	17.44	5.23	470.97	17.44

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1560.66	390.16	1548.07	1090.33	673.35	0.00	2039.95	2004.27	0.765	0.00	3.15	7.141	A
B	373.41	93.35	370.75	636.42	1585.00	0.00	927.75	697.02	0.402	0.00	0.67	6.432	A
C	983.98	245.99	981.61	1315.43	640.32	0.00	2642.36	2299.35	0.372	0.00	0.59	2.165	A
D	886.11	221.53	881.41	739.67	882.26	0.00	1631.42	870.95	0.543	0.00	1.18	4.771	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1863.58	465.89	1819.93	1303.37	805.00	0.00	1937.76	2004.27	0.962	3.15	14.06	24.542	C
B	445.89	111.47	442.61	753.82	1871.11	0.00	736.06	697.02	0.606	0.67	1.49	12.134	B
C	1174.97	293.74	1173.90	1554.60	759.12	0.00	2537.90	2299.35	0.463	0.59	0.86	2.635	A
D	1058.10	264.52	1053.72	878.37	1054.65	0.00	1511.21	870.95	0.700	1.18	2.27	7.794	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	2282.41	570.60	1813.47	1583.11	960.70	0.00	1816.94	2004.27	1.256	14.06	131.29	151.288	F
B	546.10	136.53	537.48	818.77	1955.39	0.00	678.15	697.02	0.805	1.49	3.64	24.218	C
C	1439.03	359.76	1436.89	1645.65	847.23	0.00	2461.64	2299.35	0.585	0.86	1.39	3.505	A
D	1295.90	323.98	1255.41	995.72	1288.38	0.00	1348.22	870.95	0.961	2.27	12.39	30.573	D

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	2282.41	570.60	1801.40	1596.34	980.35	0.00	1801.65	2004.27	1.267	131.29	251.55	380.610	F
B	546.10	136.53	545.09	823.59	1958.16	0.00	676.05	697.02	0.808	3.64	3.90	26.996	D
C	1439.03	359.76	1438.99	1651.14	852.13	0.00	2457.47	2299.35	0.586	1.39	1.41	3.533	A
D	1295.90	323.98	1282.71	997.13	1293.98	0.00	1344.33	870.95	0.964	12.39	15.69	45.787	E

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1863.58	465.89	1898.10	1327.61	846.27	0.00	1905.64	2004.27	0.978	251.55	242.92	461.390	F
B	445.89	111.47	453.46	787.54	1956.84	0.00	678.56	697.02	0.657	3.90	2.01	16.488	C
C	1174.97	293.74	1177.06	1626.26	784.05	0.00	2515.86	2299.35	0.467	1.41	0.88	2.692	A
D	1058.10	264.52	1111.09	898.32	1062.79	0.00	1505.55	870.95	0.703	15.69	2.44	10.329	B

Main results: (18:00-18:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1560.66	390.16	2026.13	1098.57	680.39	0.00	2034.47	2004.27	0.767	242.92	126.55	329.228	F
B	373.41	93.35	376.43	748.28	1958.25	0.00	679.72	697.02	0.549	2.01	1.25	11.987	B
C	983.98	245.99	984.99	1599.07	735.60	0.00	2557.07	2299.35	0.385	0.88	0.63	2.292	A
D	886.11	221.53	891.04	832.67	887.92	0.00	1627.49	870.95	0.544	2.44	1.21	4.919	A

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	43.61	2.91	7.141	A	A
B	9.59	0.64	6.432	A	A
C	8.72	0.58	2.165	A	A
D	16.96	1.13	4.771	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	158.33	10.56	24.542	C	C
B	20.83	1.39	12.134	B	B
C	12.65	0.84	2.635	A	A
D	32.13	2.14	7.794	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	1093.98	72.93	151.288	F	F
B	47.32	3.15	24.218	C	C
C	20.37	1.36	3.505	A	A
D	136.48	9.10	30.573	D	C

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	2871.41	191.43	380.610	F	F
B	56.95	3.80	26.996	D	C
C	21.02	1.40	3.533	A	A
D	213.35	14.22	45.787	E	D

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	3708.47	247.23	461.390	F	F
B	32.78	2.19	16.488	C	B
C	13.48	0.90	2.692	A	A
D	53.20	3.55	10.329	B	B

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	2770.98	184.73	329.228	F	F
B	19.90	1.33	11.987	B	B
C	9.56	0.64	2.292	A	A
D	18.83	1.26	4.919	A	A

Existing layout - 2026 with dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

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	Geometry measured from OS mapping	✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2026 with dev, AM	2026 with dev	AM		ONE HOUR	07:45	09:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	A,B,C,D				98.88	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A422 (W)	
B	B	B526 (N)	
C	C	A509 (E)	
D	D	A509 (S)	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.70	8.90	3.50	29.10	54.80	23.50	
B	3.50	8.90	17.60	39.20	54.80	17.50	
C	10.50	11.00	1.70	22.40	54.80	30.50	
D	3.40	9.30	34.80	38.00	54.80	14.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.760	2601.341
B		(calculated)	(calculated)	0.661	2013.089
C		(calculated)	(calculated)	0.872	3270.968
D		(calculated)	(calculated)	0.726	2357.592

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	1188.00	100.000
B	ONE HOUR	✓	838.00	100.000
C	ONE HOUR	✓	1940.00	100.000
D	ONE HOUR	✓	727.00	100.000

Turning Proportions

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

		To			
		A	B	C	D
From	A	1.000	345.000	698.000	144.000
	B	616.000	1.000	30.000	191.000
	C	1491.000	27.000	0.000	422.000
	D	246.000	236.000	244.000	1.000

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

		To			
		A	B	C	D
From	A	0.00	0.29	0.59	0.12
	B	0.74	0.00	0.04	0.23
	C	0.77	0.01	0.00	0.22
	D	0.34	0.32	0.34	0.00

Vehicle Mix

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

		To			
		A	B	C	D
From	A	1.000	1.012	1.052	1.236
	B	1.015	2.000	1.067	1.037
	C	1.025	1.037	1.000	1.090
	D	1.122	1.093	1.090	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		A	B	C	D
From	A	0.0	1.2	5.2	23.6
	B	1.5	100.0	6.7	3.7
	C	2.5	3.7	0.0	9.0
	D	12.2	9.3	9.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	0.62	4.37	1.58	A	1090.13	1635.20	102.32	3.75	1.14	102.33	3.75
B	0.78	13.66	3.41	B	768.96	1153.45	167.14	8.69	1.86	167.16	8.70
C	0.96	31.36	17.59	D	1780.17	2670.26	540.24	12.14	6.00	540.27	12.14
D	1.43	509.07	118.65	F	667.11	1000.66	3764.86	225.74	41.83	3764.90	225.74

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	894.39	223.60	891.56	1764.17	380.34	0.00	2151.47	2127.55	0.416	0.00	0.71	2.851	A
B	630.89	157.72	627.62	456.22	815.68	0.00	1396.07	775.03	0.452	0.00	0.82	4.665	A
C	1460.53	365.13	1455.04	728.58	714.72	0.00	2515.03	2236.83	0.581	0.00	1.37	3.378	A
D	547.32	136.83	543.12	568.38	1601.38	0.00	1060.20	573.28	0.516	0.00	1.05	6.908	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1067.99	267.00	1066.70	2107.85	452.11	0.00	2095.52	2127.56	0.510	0.71	1.03	3.494	A
B	753.35	188.34	751.04	544.38	974.42	0.00	1284.83	775.03	0.586	0.82	1.39	6.714	A
C	1744.01	436.00	1738.95	870.23	855.23	0.00	2390.74	2236.83	0.729	1.37	2.64	5.481	A
D	653.56	163.39	645.40	679.63	1914.57	0.00	849.03	573.28	0.770	1.05	3.09	17.043	C

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1308.02	327.00	1305.83	2474.78	412.31	0.00	2126.64	2127.56	0.615	1.03	1.58	4.374	A
B	922.66	230.66	914.88	596.88	1121.25	0.00	1182.15	775.03	0.780	1.39	3.34	13.102	B
C	2135.97	533.99	2089.26	993.83	1042.30	0.00	2225.14	2236.83	0.960	2.64	14.32	21.584	C
D	800.44	200.11	577.58	822.07	2309.50	0.00	582.77	573.28	1.374	3.09	58.80	208.929	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1308.02	327.00	1308.01	2500.51	401.86	0.00	2134.81	2127.56	0.613	1.58	1.58	4.353	A
B	922.66	230.66	922.35	592.63	1117.23	0.00	1184.98	775.03	0.779	3.34	3.41	13.658	B
C	2135.97	533.99	2122.87	989.84	1049.75	0.00	2218.70	2236.83	0.963	14.32	17.59	31.357	D
D	800.44	200.11	561.06	831.32	2341.31	0.00	561.30	573.28	1.426	58.80	118.65	509.069	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1067.99	267.00	1069.75	2217.85	557.62	0.00	2013.20	2127.56	0.530	1.58	1.14	3.821	A
B	753.35	188.34	760.76	597.50	1029.86	0.00	1245.80	775.03	0.605	3.41	1.56	7.533	A
C	1744.01	436.00	1803.17	925.43	865.20	0.00	2382.13	2236.83	0.732	17.59	2.80	6.847	A
D	653.56	163.39	803.50	696.40	1971.98	0.00	810.27	573.28	0.807	118.65	81.17	428.243	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	894.39	223.60	895.65	1886.69	595.09	0.00	1983.88	2127.55	0.451	1.14	0.83	3.313	A
B	630.89	157.72	633.41	562.85	927.88	0.00	1317.10	775.03	0.479	1.56	0.93	5.286	A
C	1460.53	365.13	1466.11	840.05	721.25	0.00	2509.35	2236.83	0.582	2.80	1.41	3.468	A
D	547.32	136.83	867.45	573.04	1614.32	0.00	1051.48	573.28	0.521	81.17	1.13	83.911	F

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	10.38	0.69	2.851	A	A
B	11.84	0.79	4.665	A	A
C	19.94	1.33	3.378	A	A
D	15.00	1.00	6.908	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	15.13	1.01	3.494	A	A
B	20.05	1.34	6.714	A	A
C	37.65	2.51	5.481	A	A
D	41.14	2.74	17.043	C	B

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	22.95	1.53	4.374	A	A
B	45.28	3.02	13.102	B	B
C	161.73	10.78	21.584	C	C
D	470.56	31.37	208.929	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	23.68	1.58	4.353	A	A
B	50.74	3.38	13.658	B	B
C	242.46	16.16	31.357	D	C
D	1331.02	88.73	509.069	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	17.52	1.17	3.821	A	A
B	24.82	1.65	7.533	A	A
C	56.74	3.78	6.847	A	A
D	1498.62	99.91	428.243	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	12.65	0.84	3.313	A	A
B	14.41	0.96	5.286	A	A
C	21.73	1.45	3.468	A	A
D	408.52	27.23	83.911	F	F

Existing layout - 2026 with dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	Arm D - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

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	Geometry measured from OS mapping	✓				100.000	100.000	

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	Relationship
2026 with dev, PM	2026 with dev	PM		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
1	(untitled)	Roundabout	A,B,C,D				229.31	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A422 (W)	
B	B	B526 (N)	
C	C	A509 (E)	
D	D	A509 (S)	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.70	8.90	3.50	29.10	54.80	23.50	
B	3.50	8.90	17.60	39.20	54.80	17.50	
C	10.50	11.00	1.70	22.40	54.80	30.50	
D	3.40	9.30	34.80	38.00	54.80	14.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.760	2601.341
B		(calculated)	(calculated)	0.661	2013.089
C		(calculated)	(calculated)	0.872	3270.968
D		(calculated)	(calculated)	0.726	2357.592

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	2108.00	100.000
B	ONE HOUR	✓	496.00	100.000
C	ONE HOUR	✓	1312.00	100.000
D	ONE HOUR	✓	1189.00	100.000

Turning Proportions

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

		To			
		A	B	C	D
From	A	1.000	475.000	1219.000	413.000
	B	270.000	0.000	29.000	197.000
	C	855.000	55.000	0.000	402.000
	D	345.000	323.000	521.000	0.000

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

		To			
		A	B	C	D
From	A	0.00	0.23	0.58	0.20
	B	0.54	0.00	0.06	0.40
	C	0.65	0.04	0.00	0.31
	D	0.29	0.27	0.44	0.00

Vehicle Mix

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

		To			
		A	B	C	D
From	A	1.000	1.008	1.008	1.063
	B	1.004	1.000	1.000	1.025
	C	1.012	1.000	1.000	1.047
	D	1.093	1.022	1.050	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		A	B	C	D
From	A	0.0	0.8	0.8	6.3
	B	0.4	0.0	0.0	2.5
	C	1.2	0.0	0.0	4.7
	D	9.3	2.2	5.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	1.29	518.27	277.01	F	1934.34	2901.51	12087.61	249.96	134.31	12509.63	258.69
B	0.81	27.85	4.02	D	455.14	682.71	193.50	17.01	2.15	193.57	17.01
C	0.59	3.63	1.45	A	1203.92	1805.87	88.11	2.93	0.98	88.12	2.93
D	0.98	56.49	20.04	F	1091.05	1636.57	559.91	20.53	6.22	559.94	20.53

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1587.02	396.75	1573.32	1102.95	673.25	0.00	2032.70	2001.88	0.781	0.00	3.42	7.626	A
B	373.41	93.35	370.66	637.67	1608.89	0.00	908.14	691.86	0.411	0.00	0.69	6.665	A
C	987.74	246.94	985.33	1321.57	657.98	0.00	2617.93	2280.16	0.377	0.00	0.60	2.202	A
D	895.14	223.79	890.26	757.36	885.93	0.00	1619.07	872.68	0.553	0.00	1.22	4.908	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1895.05	473.76	1838.43	1318.34	804.76	0.00	1930.98	2001.88	0.981	3.42	17.58	28.903	D
B	445.89	111.47	442.35	752.73	1890.46	0.00	718.84	691.86	0.620	0.69	1.58	12.858	B
C	1179.46	294.87	1178.36	1555.26	777.55	0.00	2512.35	2280.16	0.469	0.60	0.88	2.696	A
D	1068.89	267.22	1064.13	896.92	1058.97	0.00	1498.78	872.68	0.713	1.22	2.41	8.194	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	2320.96	580.24	1812.75	1598.74	954.41	0.00	1815.28	2001.88	1.279	17.58	144.63	167.860	F
B	546.10	136.53	537.39	811.05	1956.11	0.00	673.45	691.87	0.811	1.58	3.75	24.977	C
C	1444.54	361.14	1442.31	1631.52	861.99	0.00	2439.58	2280.16	0.592	0.88	1.44	3.602	A
D	1309.11	327.28	1259.37	1010.52	1293.78	0.00	1335.54	872.68	0.980	2.41	14.85	34.974	D

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	2320.96	580.24	1799.08	1612.72	975.07	0.00	1799.27	2001.88	1.290	144.63	275.10	417.634	F
B	546.10	136.53	545.05	815.93	1958.22	0.00	671.82	691.87	0.813	3.75	4.02	27.850	D
C	1444.54	361.14	1444.50	1636.75	866.51	0.00	2435.78	2280.16	0.593	1.44	1.45	3.630	A
D	1309.11	327.28	1288.34	1011.55	1299.45	0.00	1331.60	872.68	0.983	14.85	20.04	56.488	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1895.05	473.76	1887.41	1348.28	857.75	0.00	1889.90	2001.88	1.003	275.10	277.01	518.266	F
B	445.89	111.47	453.66	784.13	1961.03	0.00	671.14	691.86	0.664	4.02	2.08	17.092	C
C	1179.46	294.87	1181.65	1616.87	797.81	0.00	2494.43	2280.16	0.473	1.45	0.90	2.746	A
D	1068.89	267.22	1138.59	912.03	1067.44	0.00	1492.91	872.68	0.716	20.04	2.62	12.162	B

Main results: (18:00-18:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1587.02	396.75	2019.62	1111.65	680.71	0.00	2026.91	2001.88	0.783	277.01	168.86	398.118	F
B	373.41	93.35	376.61	741.18	1959.16	0.00	674.31	691.86	0.554	2.08	1.28	12.221	B
C	987.74	246.94	988.79	1584.52	751.24	0.00	2533.57	2280.16	0.390	0.90	0.64	2.331	A
D	895.14	223.79	900.57	848.24	891.79	0.00	1615.01	872.68	0.554	2.62	1.26	5.077	A

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	47.13	3.14	7.626	A	A
B	9.92	0.66	6.665	A	A
C	8.90	0.59	2.202	A	A
D	17.60	1.17	4.908	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	188.27	12.55	28.903	D	C
B	21.97	1.46	12.858	B	B
C	12.97	0.86	2.696	A	A
D	33.99	2.27	8.194	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	1219.30	81.29	167.860	F	F
B	48.65	3.24	24.977	C	C
C	20.99	1.40	3.602	A	A
D	156.80	10.45	34.974	D	C

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	3148.07	209.87	417.634	F	F
B	58.66	3.91	27.850	D	C
C	21.67	1.44	3.630	A	A
D	264.84	17.66	56.488	F	E

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

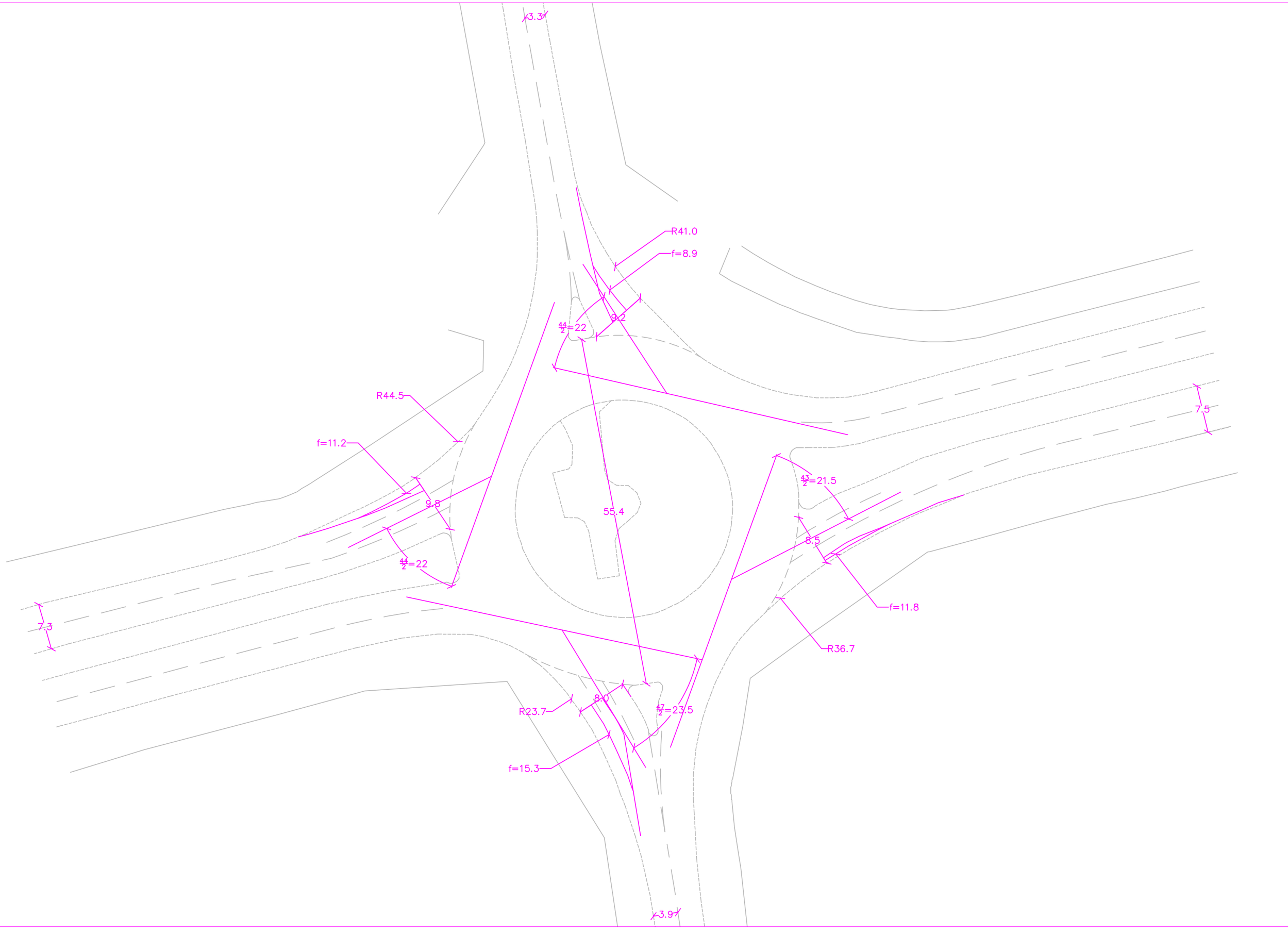
Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	4140.83	276.06	518.266	F	F
B	33.99	2.27	17.092	C	B
C	13.81	0.92	2.746	A	A
D	67.03	4.47	12.162	B	B

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	3344.01	222.93	398.118	F	F
B	20.30	1.35	12.221	B	B
C	9.77	0.65	2.331	A	A
D	19.65	1.31	5.077	A	A

APPENDIX L

JUNCTION 2: MARSH END ROUNDABOUT – ARCADY ASSESSMENT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9.8
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7.5
43/2=21.5
8.5
f=11.8
R36.7
7.3
R23.7
8.0
47/2=23.5
f=15.3
3.9

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

For sales and distribution information, program advice and maintenance, contact TRL:
Tel: +44 (0)1344 770758 email: software@trl.co.uk Web: http://www.trlsoftware.co.uk

Filename: App XX - Marsh End Roundabout ARCADY Model Jan 19.arc8
Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP\ADC1392 Jan 19 - B8 Use\Marsh End
Report generation date: 27/02/2019 11:25:30

» Existing layout - 2026 background, AM
» Existing layout - 2026 background, PM
» Existing layout - 2026 with dev, AM
» Existing layout - 2026 with dev, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
Existing layout - 2026 background								
Arm A	1.66	4.52	0.63	438.73	169.39	339.34	1.17	259.68
Arm B	181.57	653.66	1.42		94.20	617.15	1.28	
Arm C	348.13	695.33	1.27		2.59	5.89	0.72	
Arm D	2.01	11.14	0.67		81.38	245.19	1.16	
Existing layout - 2026 with dev								
Arm A	1.77	4.75	0.64	497.36	168.70	341.70	1.17	290.71
Arm B	202.68	744.28	1.47		105.70	692.69	1.31	
Arm C	389.70	791.50	1.30		2.76	6.19	0.74	
Arm D	2.16	11.69	0.69		120.66	353.17	1.25	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D3 - 2026 background, AM " model duration: 07:45 - 09:15
"D4 - 2026 background, PM" model duration: 16:45 - 18:15
"D5 - 2026 with dev, AM" model duration: 07:45 - 09:15
"D6 - 2026 with dev, PM" model duration: 16:45 - 18:15

Run using Junctions 8.0.4.487 at 27/02/2019 11:25:26

File summary

Title	Marsh End Roundabout
Location	
Site Number	
Date	20/06/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ADCteam
Description	

Analysis Options

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

Units

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

Existing layout - 2026 background, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing 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	Use Relationship	Re
2026 background, AM	2026 background	AM		ONE HOUR	07:45	09:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	A,B,C,D				438.73	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A422 (W)	
B	B	Willen Rd (N)	
C	C	A422 (E)	
D	D	Willen Rd (S)	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	9.80	11.20	44.50	55.40	22.00	
B	3.30	9.20	8.90	41.00	55.40	22.00	
C	7.50	8.50	11.80	36.70	55.40	21.50	
D	3.90	8.00	15.30	23.70	55.40	23.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.796	2798.890
B		(calculated)	(calculated)	0.589	1655.678
C		(calculated)	(calculated)	0.767	2640.788
D		(calculated)	(calculated)	0.628	1906.361

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	1207.00	100.000
B	ONE HOUR	✓	1045.00	100.000
C	ONE HOUR	✓	2218.00	100.000
D	ONE HOUR	✓	600.00	100.000

Turning Proportions

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

		To			
		A	B	C	D
From	A	16.000	301.000	838.000	52.000
	B	295.000	0.000	41.000	709.000
	C	1232.000	61.000	1.000	924.000
	D	14.000	285.000	301.000	0.000

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

		To			
		A	B	C	D
From	A	0.01	0.25	0.69	0.04
	B	0.28	0.00	0.04	0.68
	C	0.56	0.03	0.00	0.42
	D	0.02	0.48	0.50	0.00

Vehicle Mix

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

		To			
		A	B	C	D
From	A	1.063	1.007	1.060	1.038
	B	1.031	1.000	1.049	1.017
	C	1.037	1.016	1.000	1.013
	D	1.000	1.032	1.040	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		A	B	C	D
From	A	6.3	0.7	6.0	3.8
	B	3.1	0.0	4.9	1.7
	C	3.7	1.6	0.0	1.3
	D	0.0	3.2	4.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	0.63	4.52	1.66	A	1107.57	1661.35	96.97	3.50	1.08	96.98	3.50
B	1.42	653.66	181.57	F	958.91	1438.36	7941.27	331.26	88.24	8279.69	345.38
C	1.27	695.33	348.13	F	2035.27	3052.91	15702.90	308.62	174.48	17541.07	344.74
D	0.67	11.14	2.01	B	550.57	825.85	116.20	8.44	1.29	116.22	8.44

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	908.70	227.17	906.09	1157.48	484.54	0.00	2294.64	1893.57	0.396	0.00	0.65	2.588	A
B	786.73	196.68	776.15	484.55	906.08	0.00	1069.67	465.36	0.735	0.00	2.64	11.875	B
C	1669.82	417.46	1648.90	885.49	796.75	0.00	1964.17	2148.57	0.850	0.00	5.23	10.796	B
D	451.71	112.93	448.92	1252.55	1193.10	0.00	1092.23	955.49	0.414	0.00	0.70	5.573	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1085.07	271.27	1083.89	1301.46	576.40	0.00	2222.26	1893.57	0.488	0.65	0.95	3.160	A
B	939.43	234.86	899.50	576.18	1084.10	0.00	961.60	465.36	0.977	2.64	12.63	42.712	E
C	1993.93	498.48	1837.45	1058.33	925.27	0.00	1865.95	2148.57	1.069	5.23	44.35	57.765	F
D	539.39	134.85	537.58	1422.44	1340.28	0.00	999.82	955.49	0.539	0.70	1.15	7.757	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1328.94	332.23	1326.16	1327.62	695.58	0.00	2128.28	1893.51	0.624	0.95	1.64	4.473	A
B	1150.56	287.64	812.97	695.68	1326.06	0.00	814.71	465.36	1.412	12.63	97.02	253.765	F
C	2442.06	610.51	1917.71	1283.24	855.79	0.00	1918.72	2148.57	1.273	44.35	175.44	211.803	F
D	660.61	165.15	657.31	1407.62	1365.89	0.00	983.60	955.49	0.672	1.15	1.97	10.920	B

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1328.94	332.23	1328.88	1328.21	698.70	0.00	2125.82	1893.51	0.625	1.64	1.66	4.517	A
B	1150.56	287.64	812.37	697.89	1329.68	0.00	812.52	465.36	1.416	97.02	181.57	585.453	F
C	2442.06	610.51	1918.89	1286.69	855.37	0.00	1919.05	2148.57	1.273	175.44	306.23	462.862	F
D	660.61	165.15	660.47	1407.82	1366.45	0.00	983.25	955.49	0.672	1.97	2.01	11.139	B

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1085.07	271.27	1087.84	1310.57	580.99	0.00	2218.63	1893.57	0.489	1.66	0.96	3.190	A
B	939.43	234.86	953.04	579.25	1089.58	0.00	958.29	465.36	0.980	181.57	178.17	653.661	F
C	1993.93	498.48	1826.35	1065.68	976.94	0.00	1826.54	2148.57	1.092	306.23	348.13	657.922	F
D	539.39	134.85	542.60	1454.32	1348.97	0.00	994.40	955.49	0.542	2.01	1.21	8.025	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	908.70	227.17	909.91	1294.36	491.59	0.00	2289.12	1893.57	0.397	0.96	0.66	2.611	A
B	786.73	196.68	1060.65	490.34	911.15	0.00	1066.60	465.36	0.738	178.17	109.69	489.760	F
C	1669.82	417.46	1750.46	901.50	1070.30	0.00	1755.49	2148.57	0.951	348.13	327.97	695.327	F
D	451.71	112.93	453.23	1488.05	1332.71	0.00	1004.75	955.49	0.450	1.21	0.83	6.544	A

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	9.59	0.64	2.588	A	A
B	35.80	2.39	11.875	B	B
C	68.67	4.58	10.796	B	B
D	10.09	0.67	5.573	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	13.94	0.93	3.160	A	A
B	134.72	8.98	42.712	E	D
C	394.06	26.27	57.765	F	E
D	16.55	1.10	7.757	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	23.79	1.59	4.473	A	A
B	824.20	54.95	253.765	F	F
C	1649.19	109.95	211.803	F	F
D	27.81	1.85	10.920	B	B

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	24.75	1.65	4.517	A	A
B	2089.53	139.30	585.453	F	F
C	3612.57	240.84	462.862	F	F
D	29.94	2.00	11.139	B	B

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	14.81	0.99	3.190	A	A
B	2698.07	179.87	653.661	F	F
C	4907.70	327.18	657.922	F	F
D	18.97	1.26	8.025	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	10.09	0.67	2.611	A	A
B	2158.95	143.93	489.760	F	F
C	5070.71	338.05	695.327	F	F
D	12.83	0.86	6.544	A	A

Existing layout - 2026 background, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing 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	Use Relationship	Re
2026 background, PM	2026 background	PM		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
1	(untitled)	Roundabout	A,B,C,D				259.68	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A422 (W)	
B	B	Willen Rd (N)	
C	C	A422 (E)	
D	D	Willen Rd (S)	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	9.80	11.20	44.50	55.40	22.00	
B	3.30	9.20	8.90	41.00	55.40	22.00	
C	7.50	8.50	11.80	36.70	55.40	21.50	
D	3.90	8.00	15.30	23.70	55.40	23.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.796	2798.890
B		(calculated)	(calculated)	0.589	1655.678
C		(calculated)	(calculated)	0.767	2640.788
D		(calculated)	(calculated)	0.628	1906.361

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	1973.00	100.000
B	ONE HOUR	✓	643.00	100.000
C	ONE HOUR	✓	1455.00	100.000
D	ONE HOUR	✓	980.00	100.000

Turning Proportions

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

		To			
		A	B	C	D
From	A	13.000	499.000	1440.000	21.000
	B	223.000	0.000	125.000	295.000
	C	972.000	211.000	0.000	272.000
	D	15.000	490.000	475.000	0.000

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

		To			
		A	B	C	D
From	A	0.01	0.25	0.73	0.01
	B	0.35	0.00	0.19	0.46
	C	0.67	0.15	0.00	0.19
	D	0.02	0.50	0.48	0.00

Vehicle Mix

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

		To			
		A	B	C	D
From	A	1.077	1.008	1.017	1.000
	B	1.018	1.000	1.016	1.014
	C	1.032	1.000	1.000	1.022
	D	1.067	1.008	1.004	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		A	B	C	D
From	A	7.7	0.8	1.7	0.0
	B	1.8	0.0	1.6	1.4
	C	3.2	0.0	0.0	2.2
	D	6.7	0.8	0.4	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	1.17	339.34	169.39	F	1810.46	2715.68	7036.10	155.45	78.18	7081.17	156.45
B	1.28	617.15	94.20	F	590.03	885.04	4232.91	286.96	47.03	4640.44	314.59
C	0.72	5.89	2.59	A	1335.13	2002.70	147.16	4.41	1.64	147.17	4.41
D	1.16	245.19	81.38	F	899.27	1348.90	2353.64	104.69	26.15	2353.70	104.69

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1485.38	371.34	1475.36	915.86	878.84	0.00	2064.81	2030.08	0.719	0.00	2.50	6.010	A
B	484.08	121.02	477.63	897.31	1456.89	0.00	773.75	562.73	0.626	0.00	1.61	11.915	B
C	1095.40	273.85	1091.67	1524.32	410.21	0.00	2263.33	2203.91	0.484	0.00	0.93	3.062	A
D	737.80	184.45	731.72	438.91	1062.97	0.00	1213.50	613.60	0.608	0.00	1.52	7.383	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1773.68	443.42	1747.73	1088.84	1047.31	0.00	1931.99	2030.08	0.918	2.50	8.99	17.519	C
B	578.04	144.51	552.18	1067.05	1728.00	0.00	614.43	562.73	0.941	1.61	8.08	45.990	E
C	1308.02	327.00	1306.03	1805.22	474.96	0.00	2214.11	2203.91	0.591	0.93	1.43	3.955	A
D	881.00	220.25	871.25	516.09	1264.90	0.00	1084.35	613.60	0.812	1.52	3.96	16.199	C

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	2172.31	543.08	1852.48	1284.42	1137.26	0.00	1861.19	2030.05	1.167	8.99	88.95	103.059	F
B	707.95	176.99	550.66	1160.02	1829.72	0.00	554.64	562.73	1.276	8.08	47.40	198.287	F
C	1601.98	400.50	1597.46	1904.85	475.53	0.00	2213.65	2203.91	0.724	1.43	2.56	5.799	A
D	1079.00	269.75	919.68	570.98	1502.01	0.00	932.59	613.60	1.157	3.96	43.79	106.191	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	2172.31	543.08	1852.98	1287.76	1146.71	0.00	1853.74	2030.05	1.172	88.95	168.78	257.685	F
B	707.95	176.99	551.36	1165.25	1834.43	0.00	551.89	562.73	1.283	47.40	86.55	450.435	F
C	1601.98	400.50	1601.87	1909.69	476.11	0.00	2213.22	2203.91	0.724	2.56	2.59	5.886	A
D	1079.00	269.75	928.63	572.14	1505.84	0.00	930.13	613.60	1.160	43.79	81.38	245.188	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1773.68	443.42	1771.25	1094.74	1242.73	0.00	1777.75	2030.08	0.998	168.78	169.39	339.343	F
B	578.04	144.51	547.45	1172.70	1841.29	0.00	548.37	562.73	1.054	86.55	94.20	612.122	F
C	1308.02	327.00	1312.56	1917.20	471.55	0.00	2216.69	2203.91	0.590	2.59	1.45	4.002	A
D	881.00	220.25	1068.75	515.39	1268.72	0.00	1081.89	613.60	0.814	81.38	34.44	197.194	F

Main results: (18:00-18:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1485.38	371.34	1946.01	940.29	1014.80	0.00	1957.50	2030.08	0.759	169.39	54.23	208.788	F
B	484.08	121.02	522.19	1085.79	1875.03	0.00	527.74	562.73	0.917	94.20	84.67	617.152	F
C	1095.40	273.85	1097.33	1943.00	454.22	0.00	2229.82	2203.91	0.491	1.45	0.97	3.185	A
D	737.80	184.45	868.98	465.43	1086.12	0.00	1198.66	613.60	0.616	34.44	1.65	16.309	C

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	35.25	2.35	6.010	A	A
B	22.25	1.48	11.915	B	B
C	13.62	0.91	3.062	A	A
D	21.48	1.43	7.383	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	110.54	7.37	17.519	C	B
B	89.16	5.94	45.990	E	D
C	20.84	1.39	3.955	A	A
D	52.41	3.49	16.199	C	B

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	743.63	49.58	103.059	F	F
B	419.48	27.97	198.287	F	F
C	36.55	2.44	5.799	A	A
D	370.40	24.69	106.191	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	1933.26	128.88	257.685	F	F
B	1004.84	66.99	450.435	F	F
C	38.68	2.58	5.886	A	A
D	939.30	62.62	245.188	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	2536.28	169.09	339.343	F	F
B	1355.66	90.38	612.122	F	F
C	22.55	1.50	4.002	A	A
D	868.70	57.91	197.194	F	F

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	1677.14	111.81	208.788	F	F
B	1341.52	89.43	617.152	F	F
C	14.91	0.99	3.185	A	A
D	101.34	6.76	16.309	C	B

Existing layout - 2026 with dev, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing 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	Use Relationship	Relationship
2026 with dev, AM	2026 with dev	AM		ONE HOUR	07:45	09:15	90	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	A,B,C,D				497.36	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A422 (W)	
B	B	Willen Rd (N)	
C	C	A422 (E)	
D	D	Willen Rd (S)	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	9.80	11.20	44.50	55.40	22.00	
B	3.30	9.20	8.90	41.00	55.40	22.00	
C	7.50	8.50	11.80	36.70	55.40	21.50	
D	3.90	8.00	15.30	23.70	55.40	23.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.796	2798.890
B		(calculated)	(calculated)	0.589	1655.678
C		(calculated)	(calculated)	0.767	2640.788
D		(calculated)	(calculated)	0.628	1906.361

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	1228.00	100.000
B	ONE HOUR	✓	1050.00	100.000
C	ONE HOUR	✓	2251.00	100.000
D	ONE HOUR	✓	616.00	100.000

Turning Proportions

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

		To			
		A	B	C	D
From	A	16.000	301.000	838.000	73.000
	B	295.000	0.000	41.000	714.000
	C	1232.000	61.000	1.000	957.000
	D	18.000	286.000	312.000	0.000

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

		To			
		A	B	C	D
From	A	0.01	0.25	0.68	0.06
	B	0.28	0.00	0.04	0.68
	C	0.55	0.03	0.00	0.43
	D	0.03	0.46	0.51	0.00

Vehicle Mix

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

		To			
		A	B	C	D
From	A	1.063	1.007	1.060	1.041
	B	1.031	1.000	1.049	1.017
	C	1.037	1.016	1.000	1.023
	D	1.111	1.031	1.067	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		A	B	C	D
From	A	6.3	0.7	6.0	4.1
	B	3.1	0.0	4.9	1.7
	C	3.7	1.6	0.0	2.3
	D	11.1	3.1	6.7	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	0.64	4.75	1.77	A	1126.83	1690.25	102.38	3.63	1.14	102.39	3.63
B	1.47	744.28	202.68	F	963.50	1445.25	9029.12	374.85	100.32	9585.91	397.96
C	1.30	791.50	389.70	F	2065.56	3098.34	17664.25	342.07	196.27	20106.03	389.36
D	0.69	11.69	2.16	B	565.25	847.88	123.87	8.77	1.38	123.89	8.77

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	924.50	231.13	921.79	1158.41	493.30	0.00	2282.96	1883.60	0.405	0.00	0.68	2.639	A
B	790.50	197.62	779.07	485.13	929.96	0.00	1051.69	452.62	0.752	0.00	2.86	12.724	B
C	1694.67	423.67	1670.10	893.58	815.45	0.00	1941.93	2126.09	0.873	0.00	6.14	12.312	B
D	463.76	115.94	460.77	1294.59	1190.95	0.00	1076.63	962.99	0.431	0.00	0.75	5.818	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1103.95	275.99	1102.69	1282.07	586.12	0.00	2208.89	1883.60	0.500	0.68	0.99	3.252	A
B	943.93	235.98	892.48	576.07	1112.75	0.00	940.04	452.62	1.004	2.86	15.72	51.096	F
C	2023.61	505.90	1828.64	1067.67	937.54	0.00	1848.93	2126.09	1.094	6.14	54.89	68.890	F
D	553.77	138.44	551.89	1449.87	1316.31	0.00	999.14	962.99	0.554	0.75	1.22	8.015	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1352.05	338.01	1349.00	1304.48	707.55	0.00	2111.90	1883.56	0.640	0.99	1.75	4.700	A
B	1156.07	289.02	787.27	695.67	1360.88	0.00	788.46	452.62	1.466	15.72	107.92	293.467	F
C	2478.40	619.60	1911.16	1293.85	854.30	0.00	1911.86	2126.09	1.296	54.89	196.70	242.055	F
D	678.23	169.56	674.62	1428.05	1337.40	0.00	985.95	962.99	0.688	1.22	2.12	11.428	B

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1352.05	338.01	1351.98	1305.00	710.93	0.00	2109.20	1883.56	0.641	1.75	1.77	4.754	A
B	1156.07	289.02	785.90	698.04	1364.88	0.00	786.01	452.62	1.471	107.92	200.47	661.775	F
C	2478.40	619.60	1912.57	1297.59	853.20	0.00	1912.69	2126.09	1.296	196.70	338.15	516.044	F
D	678.23	169.56	678.07	1427.90	1337.86	0.00	985.66	962.99	0.688	2.12	2.16	11.686	B

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1103.95	275.99	1106.99	1288.13	591.08	0.00	2204.92	1883.60	0.501	1.77	1.01	3.287	A
B	943.93	235.98	935.09	579.34	1118.74	0.00	936.37	452.62	1.008	200.47	202.68	744.284	F
C	2023.61	505.90	1817.44	1075.02	978.80	0.00	1817.57	2126.09	1.113	338.15	389.70	735.766	F
D	553.77	138.44	557.31	1474.33	1321.90	0.00	995.72	962.99	0.556	2.16	1.28	8.277	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	924.50	231.13	925.80	1273.45	499.84	0.00	2277.79	1883.60	0.406	1.01	0.69	2.664	A
B	790.50	197.62	1043.24	490.27	935.36	0.00	1048.39	452.62	0.754	202.68	139.49	591.314	F
C	1694.67	423.67	1744.34	909.00	1069.60	0.00	1748.81	2126.09	0.969	389.70	377.28	791.503	F
D	463.76	115.94	465.39	1506.03	1307.91	0.00	1004.50	962.99	0.462	1.28	0.87	6.699	A

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	9.95	0.66	2.639	A	A
B	38.37	2.56	12.724	B	B
C	78.83	5.26	12.312	B	B
D	10.79	0.72	5.818	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	14.58	0.97	3.252	A	A
B	159.42	10.63	51.096	F	D
C	475.40	31.69	68.890	F	E
D	17.53	1.17	8.015	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	25.37	1.69	4.700	A	A
B	928.53	61.90	293.467	F	F
C	1887.38	125.83	242.055	F	F
D	29.75	1.98	11.428	B	B

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	26.48	1.77	4.754	A	A
B	2312.96	154.20	661.775	F	F
C	4011.42	267.43	516.044	F	F
D	32.19	2.15	11.686	B	B

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	15.54	1.04	3.287	A	A
B	3023.58	201.57	744.284	F	F
C	5458.89	363.93	735.766	F	F
D	20.12	1.34	8.277	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	10.48	0.70	2.664	A	A
B	2566.26	171.08	591.314	F	F
C	5752.32	383.49	791.503	F	F
D	13.49	0.90	6.699	A	A

Existing layout - 2026 with dev, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Roundabout Capacity Model	Description	Include In Report	Use Specific Demand Set(s)	Specific Demand Set (s)	Locked	Network Flow Scaling Factor (%)	Network Capacity Scaling Factor (%)	Reason For Scaling Factors
Existing 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	Use Relationship	Relationship
2026 with dev, PM	2026 with dev	PM		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
1	(untitled)	Roundabout	A,B,C,D				290.71	F

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	A422 (W)	
B	B	Willen Rd (N)	
C	C	A422 (E)	
D	D	Willen Rd (S)	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	7.30	9.80	11.20	44.50	55.40	22.00	
B	3.30	9.20	8.90	41.00	55.40	22.00	
C	7.50	8.50	11.80	36.70	55.40	21.50	
D	3.90	8.00	15.30	23.70	55.40	23.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.796	2798.890
B		(calculated)	(calculated)	0.589	1655.678
C		(calculated)	(calculated)	0.767	2640.788
D		(calculated)	(calculated)	0.628	1906.361

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	ONE HOUR	✓	1981.00	100.000
B	ONE HOUR	✓	644.00	100.000
C	ONE HOUR	✓	1472.00	100.000
D	ONE HOUR	✓	1046.00	100.000

Turning Proportions

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

		To			
		A	B	C	D
From	A	13.000	499.000	1440.000	29.000
	B	223.000	0.000	125.000	296.000
	C	972.000	211.000	0.000	289.000
	D	40.000	496.000	510.000	0.000

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

		To			
		A	B	C	D
From	A	0.01	0.25	0.73	0.01
	B	0.35	0.00	0.19	0.46
	C	0.66	0.14	0.00	0.20
	D	0.04	0.47	0.49	0.00

Vehicle Mix

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

		To			
		A	B	C	D
From	A	1.077	1.008	1.017	1.034
	B	1.018	1.000	1.016	1.014
	C	1.032	1.000	1.000	1.052
	D	1.075	1.008	1.020	1.000

Heavy Vehicle Percentages - Junction 1 (for whole period)

		To			
		A	B	C	D
From	A	7.7	0.8	1.7	3.4
	B	1.8	0.0	1.6	1.4
	C	3.2	0.0	0.0	5.2
	D	7.5	0.8	2.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	1.17	341.70	168.70	F	1817.79	2726.69	7442.47	163.77	82.69	7624.29	167.77
B	1.31	692.69	105.70	F	590.95	886.42	4730.09	320.17	52.56	5251.15	355.44
C	0.74	6.19	2.76	A	1350.73	2026.10	154.84	4.59	1.72	154.86	4.59
D	1.25	353.17	120.66	F	959.83	1439.75	4206.90	175.32	46.74	4207.04	175.32

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1491.39	372.85	1480.72	934.23	908.56	0.00	2035.73	2028.25	0.733	0.00	2.67	6.369	A
B	484.84	121.21	477.86	901.20	1488.09	0.00	751.66	553.21	0.645	0.00	1.75	12.845	B
C	1108.20	277.05	1104.33	1549.45	416.50	0.00	2245.27	2190.37	0.494	0.00	0.97	3.145	A
D	787.49	196.87	780.10	458.13	1062.70	0.00	1202.38	630.22	0.655	0.00	1.85	8.386	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1780.87	445.22	1748.57	1107.93	1078.56	0.00	1900.88	2028.28	0.937	2.67	10.74	20.372	C
B	578.94	144.74	544.88	1068.24	1758.89	0.00	591.82	553.21	0.978	1.75	10.26	55.887	F
C	1323.30	330.82	1321.20	1827.59	476.19	0.00	2200.05	2190.37	0.601	0.97	1.49	4.086	A
D	940.34	235.08	924.53	535.43	1261.96	0.00	1076.11	630.22	0.874	1.85	5.80	21.800	C

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	2181.11	545.28	1863.30	1301.20	1116.59	0.00	1871.11	2028.25	1.166	10.74	90.20	105.395	F
B	709.06	177.26	539.60	1137.30	1842.60	0.00	542.45	553.21	1.307	10.26	52.62	226.436	F
C	1620.70	405.18	1615.78	1907.83	474.37	0.00	2201.37	2190.37	0.736	1.49	2.72	6.097	A
D	1151.67	287.92	920.17	592.52	1497.63	0.00	926.67	630.22	1.243	5.80	63.67	147.603	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	2181.11	545.28	1867.08	1304.45	1120.70	0.00	1867.85	2028.25	1.168	90.20	168.70	256.832	F
B	709.06	177.26	539.35	1140.62	1847.17	0.00	539.75	553.21	1.314	52.62	95.05	505.689	F
C	1620.70	405.18	1620.57	1912.27	474.24	0.00	2201.46	2190.37	0.736	2.72	2.76	6.193	A
D	1151.67	287.92	923.72	593.40	1501.42	0.00	924.27	630.22	1.246	63.67	120.66	353.175	F

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1780.87	445.22	1780.96	1115.23	1215.06	0.00	1792.34	2028.28	0.994	168.70	168.68	341.696	F
B	578.94	144.74	536.35	1144.21	1851.81	0.00	536.92	553.21	1.078	95.05	105.70	687.555	F
C	1323.30	330.82	1328.25	1918.16	470.00	0.00	2204.71	2190.37	0.600	2.76	1.52	4.129	A
D	940.34	235.08	1065.41	533.37	1264.88	0.00	1074.24	630.22	0.875	120.66	89.39	350.358	F

Main results: (18:00-18:15)

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1491.39	372.85	1752.65	969.55	1251.48	0.00	1763.04	2028.25	0.846	168.68	103.37	280.422	F
B	484.84	121.21	524.18	1139.19	1864.95	0.00	529.14	553.21	0.916	105.70	95.87	692.693	F
C	1108.20	277.05	1110.23	1929.52	459.59	0.00	2212.59	2190.37	0.501	1.52	1.01	3.273	A
D	787.49	196.87	1135.77	484.56	1085.27	0.00	1188.10	630.22	0.663	89.39	2.32	132.452	F

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	37.40	2.49	6.369	A	A
B	23.91	1.59	12.845	B	B
C	14.14	0.94	3.145	A	A
D	25.85	1.72	8.386	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	127.44	8.50	20.372	C	C
B	107.05	7.14	55.887	F	E
C	21.75	1.45	4.086	A	A
D	72.79	4.85	21.800	C	C

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	764.81	50.99	105.395	F	F
B	473.97	31.60	226.436	F	F
C	38.74	2.58	6.097	A	A
D	527.96	35.20	147.603	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	1942.04	129.47	256.832	F	F
B	1107.71	73.85	505.689	F	F
C	41.14	2.74	6.193	A	A
D	1382.72	92.18	353.175	F	F

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	2530.40	168.69	341.696	F	F
B	1505.69	100.38	687.555	F	F
C	23.57	1.57	4.129	A	A
D	1575.40	105.03	350.358	F	F

Queueing Delay results: (18:00-18:15)

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	2040.39	136.03	280.422	F	F
B	1511.76	100.78	692.693	F	F
C	15.51	1.03	3.273	A	A
D	622.19	41.48	132.452	F	F

APPENDIX M

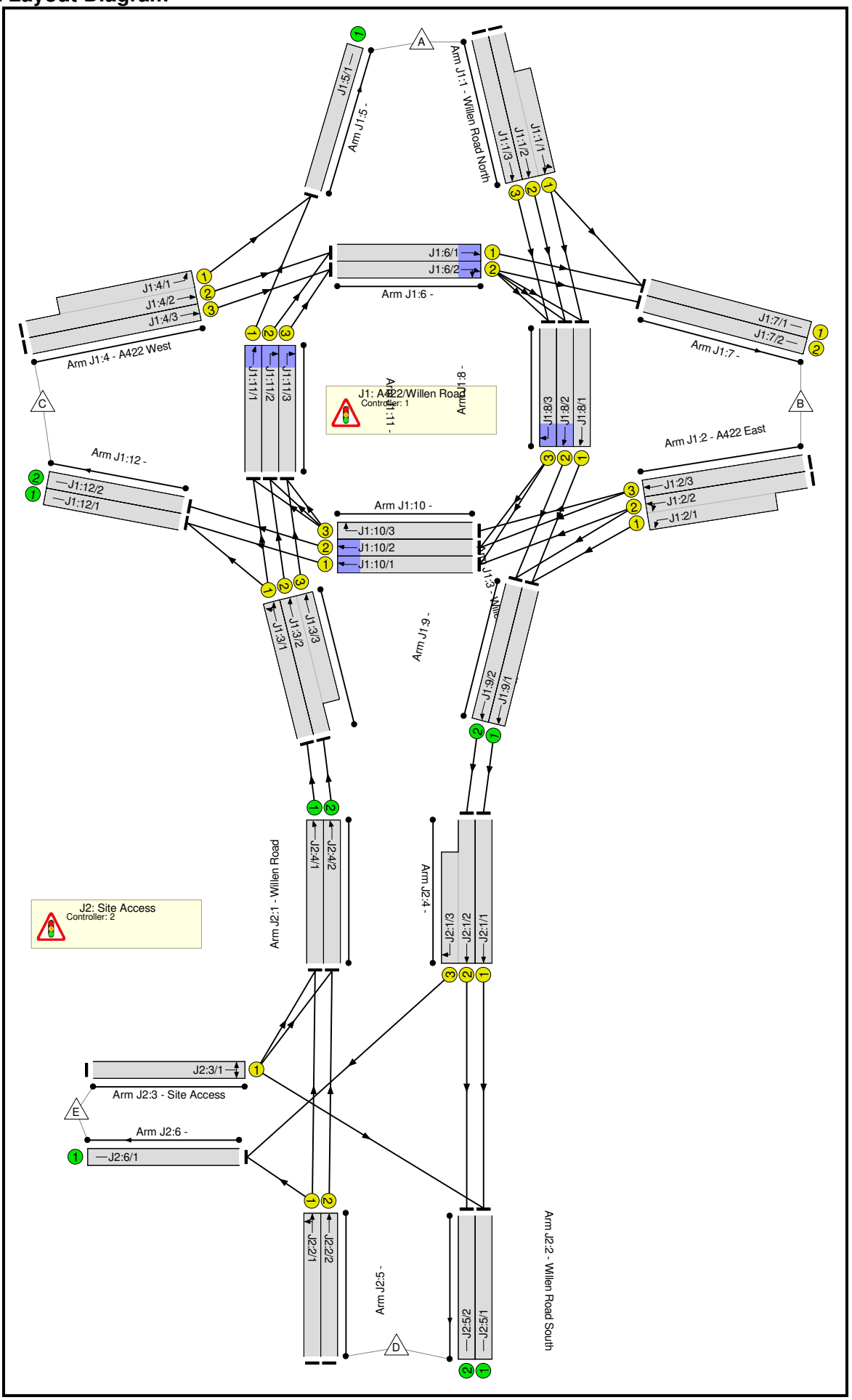
MARSH END ROUNDABOUT AND SITE ACCESS MITIGATION WORKS – LINSIG ASSESSMENT

Full Input Data And Results

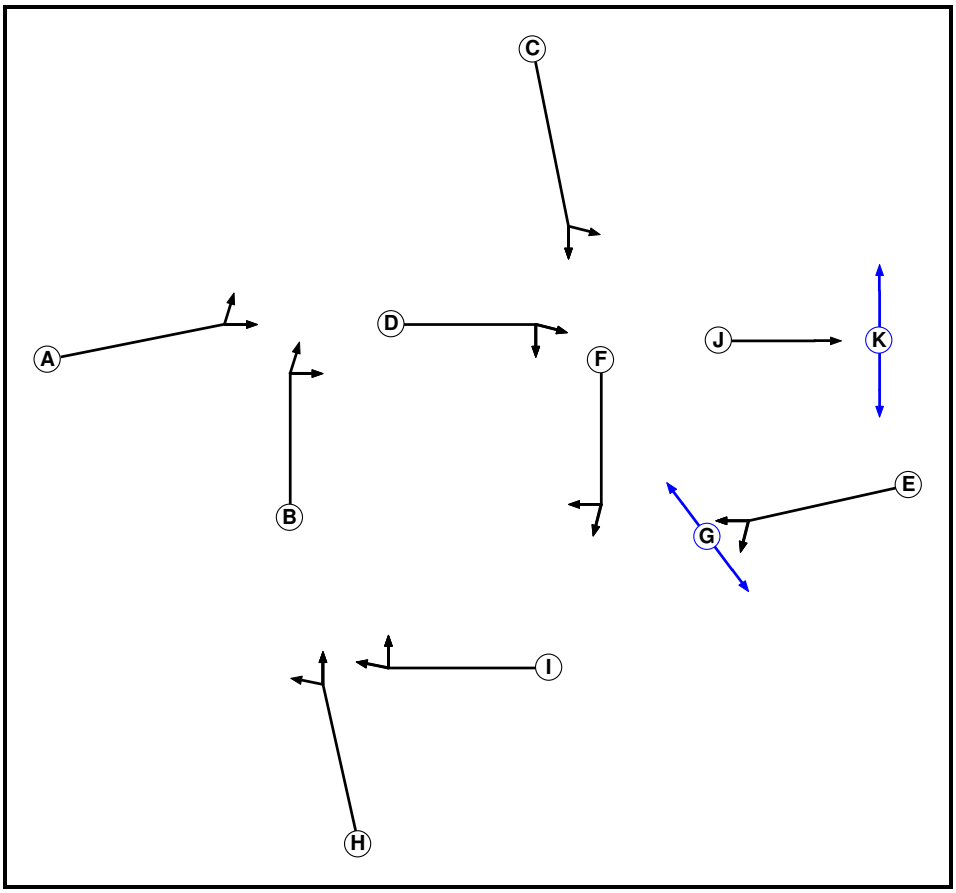
User and Project Details

Project:	**Land at Caldecote Farm, Willen Road, Newport Pagnell**
Title:	**A422 Marsh End / Willen Road / Site Access**
Location:	
Additional detail:	Site access junction changed to a T-junction and flows amended as per MKC comments.
File name:	App XX - Proposed Access and Marsh End Mitigation v5.lsg3x
Author:	Matt Tatler
Company:	ADC Infrastructure Limited
Address:	Western House, Western Street, Nottingham NG1 3AZ

Network Layout Diagram



C1
Phase Diagram



Phase Input Data

Phase Name	Phase Type	Stage Stream	Assoc. Phase	Street Min	Cont Min
A	Traffic	1		7	7
B	Traffic	1		7	7
C	Traffic	2		7	7
D	Traffic	2		7	7
E	Traffic	3		7	7
F	Traffic	3		7	4
G	Pedestrian	3		5	5
H	Traffic	4		7	7
I	Traffic	4		7	7
J	Traffic	5		7	7
K	Pedestrian	5		7	7

Phase Intergreens Matrix

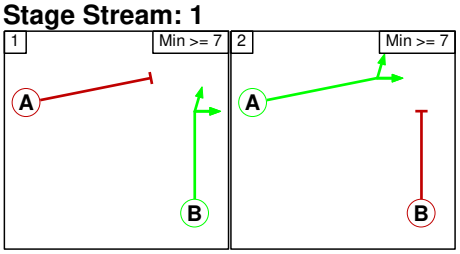
		Starting Phase										
		A	B	C	D	E	F	G	H	I	J	K
Terminating Phase	A		5	-	-	-	-	-	-	-	-	-
	B	5		-	-	-	-	-	-	-	-	-
	C	-	-		5	-	-	-	-	-	-	-
	D	-	-	5		-	-	-	-	-	-	-
	E	-	-	-	-		5	5	-	-	-	-
	F	-	-	-	-	5		-	-	-	-	-
	G	-	-	-	-	8	-		-	-	-	-
	H	-	-	-	-	-	-	-		5	-	-
	I	-	-	-	-	-	-	-	5		-	-
	J	-	-	-	-	-	-	-	-	-		5
	K	-	-	-	-	-	-	-	-	-	7	

Phases in Stage

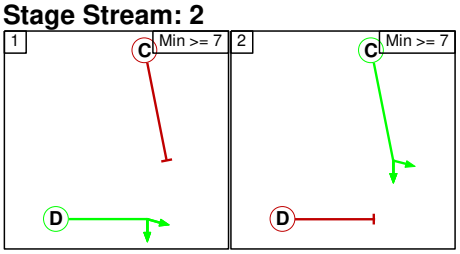
Stream	Stage No.	Phases in Stage
1	1	B
1	2	A
2	1	D
2	2	C
3	1	F G
3	2	E
4	1	I
4	2	H
5	1	J
5	2	K

Stage Diagram

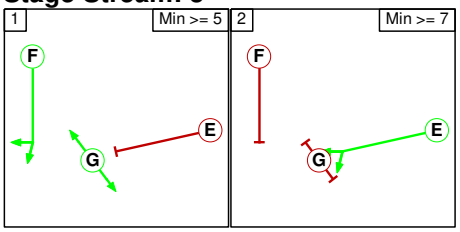
Stage Stream: 1



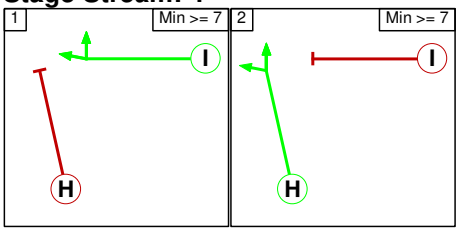
Stage Stream: 2



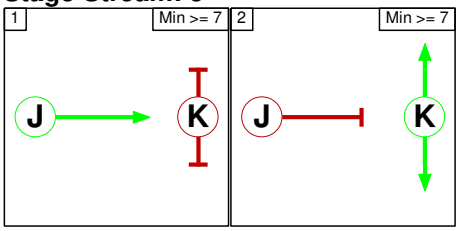
Stage Stream: 3



Stage Stream: 4



Stage Stream: 5



Phase Delays

Stage Stream: 1

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

Stage Stream: 2

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

Stage Stream: 3

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	2	F	Losing	3	3

Stage Stream: 4

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

Stage Stream: 5

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

Prohibited Stage Change

Stage Stream: 1

	To Stage		
		1	2
From Stage	1		5
	2	5	

Stage Stream: 2

	To Stage		
		1	2
From Stage	1		5
	2	5	

Stage Stream: 3

	To Stage		
		1	2
From Stage	1		8
	2	5	

Stage Stream: 4

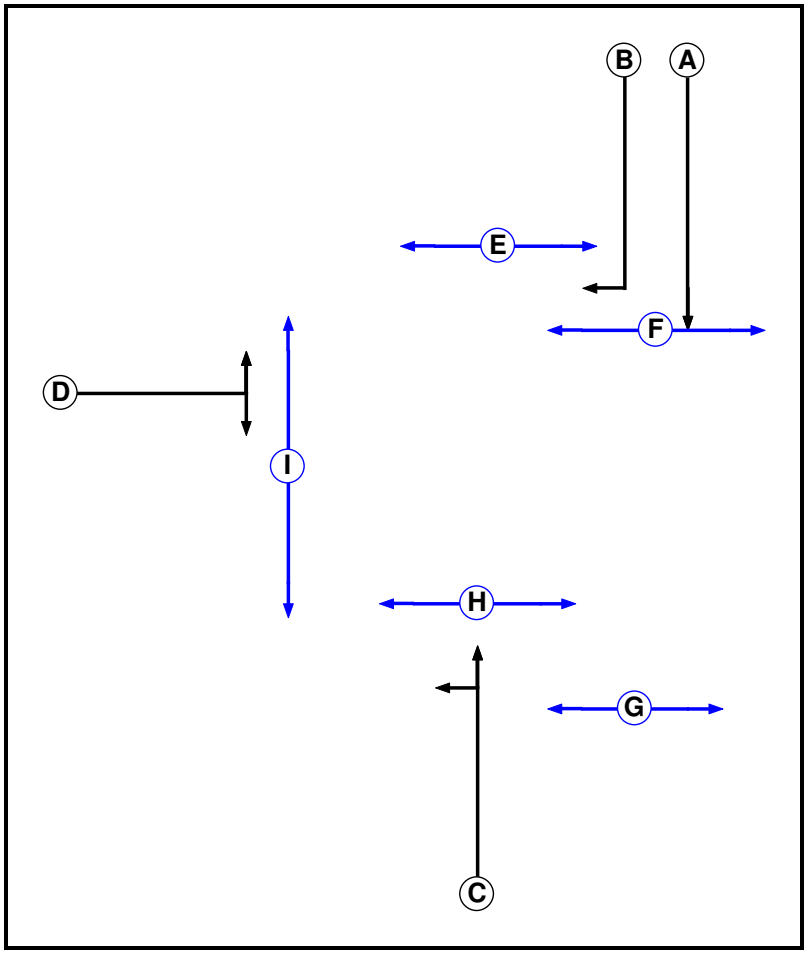
	To Stage		
		1	2
From Stage	1		5
	2	5	

Stage Stream: 5

	To Stage		
		1	2
From Stage	1		5
	2	7	

C2

Phase Diagram



Phase Input Data

Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Pedestrian		5	5
F	Pedestrian		5	5
G	Pedestrian		5	5
H	Pedestrian		5	5
I	Pedestrian		5	5

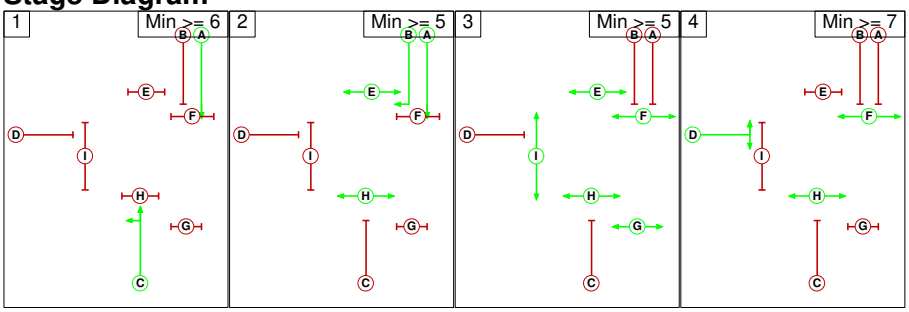
Phase Intergreens Matrix

		Starting Phase								
		A	B	C	D	E	F	G	H	I
Terminating Phase	A		-	-	6	-	5	8	-	-
	B	-		6	6	-	5	-	-	8
	C	-	6		7	8	-	-	5	8
	D	6	6	6		8	-	8	-	5
	E	-	-	6	6		-	-	-	-
	F	7	7	-	-	-		-	-	-
	G	6	-	-	6	-	-		-	-
	H	-	-	6	-	-	-	-		-
	I	-	9	9	9	-	-	-	-	

Phases in Stage

Stage No.	Phases in Stage
1	A C
2	A B E H
3	E F G H I
4	D F H

Stage Diagram



Phase Delays

Term. Stage	Start Stage	Phase	Type	Value	Cont value
1	4	A	Losing	1	1

Prohibited Stage Change

		To Stage			
		1	2	3	4
From Stage	1		8	8	7
	2	6		8	6
	3	9	9		9
	4	7	8	8	

Lane Input Data

Junction: J1: A422/Willen Road												
Lane	**Lane Type**	**Phases**	**Start Disp.**	**End Disp.**	**Physical Length (PCU)**	**Sat Flow Type**	**Def User Saturation Flow (PCU/Hr)**	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Turns**	**Turning Radius (m)**
J1:1/1 (Willen Road North)	U	C	2	3	9.5	Geom	-	3.40	0.00	Y	Arm J1:7 Left	23.00
											Arm J1:8 Ahead	Inf
J1:1/2 (Willen Road North)	U	C	2	3	2.3	Geom	-	3.40	0.00	Y	Arm J1:8 Ahead	Inf
J1:1/3 (Willen Road North)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm J1:8 Ahead	Inf
J1:2/1 (A422 East)	U	E	2	3	20.7	Geom	-	3.65	0.00	Y	Arm J1:9 Left	84.00
J1:2/2 (A422 East)	U	E	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J1:9 Left	84.00
											Arm J1:10 Ahead	Inf
J1:2/3 (A422 East)	U	E	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J1:10 Ahead	Inf
J1:3/1 (Willen Road South)	U	H	2	3	28.7	Geom	-	3.65	0.00	Y	Arm J1:11 Ahead	Inf
											Arm J1:12 Left	28.50
J1:3/2 (Willen Road South)	U	H	2	3	28.7	Geom	-	3.65	0.00	Y	Arm J1:11 Ahead	Inf
J1:3/3 (Willen Road South)	U	H	2	3	10.9	Geom	-	3.65	0.00	Y	Arm J1:11 Ahead	Inf
J1:4/1 (A422 West)	U	A	2	3	14.9	Geom	-	3.65	0.00	Y	Arm J1:5 Left	30.90
J1:4/2 (A422 West)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J1:6 Ahead	Inf
J1:4/3 (A422 West)	U	A	2	3	60.0	Geom	-	3.65	0.00	Y	Arm J1:6 Ahead	Inf
J1:5/1	U		2	3	5.0	Inf	-	-	-	-	-	-
J1:6/1	U	D	2	3	7.0	User	1900	-	-	-	-	-
J1:6/2	U	D	2	3	7.0	User	1900	-	-	-	-	-
J1:7/1	U	J	2	3	8.7	Geom	-	3.50	0.00	Y		
J1:7/2	U	J	2	3	8.7	Geom	-	3.50	0.00	Y		
J1:8/1	U	F	2	3	10.2	User	1900	-	-	-	-	-
J1:8/2	U	F	2	3	9.7	User	1900	-	-	-	-	-

J1:8/3	U	F	2	3	9.0	User	1900	-	-	-	-	-
J1:9/1	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:9/2	U		2	3	7.0	Inf	-	-	-	-	-	-
J1:10/1	U	I	2	3	10.4	User	1900	-	-	-	-	-
J1:10/2	U	I	2	3	9.7	User	1900	-	-	-	-	-
J1:10/3	U	I	2	3	92.2	User	1900	-	-	-	-	-
J1:11/1	U	B	2	3	8.3	User	1900	-	-	-	-	-
J1:11/2	U	B	2	3	8.0	User	1900	-	-	-	-	-
J1:11/3	U	B	2	3	7.6	User	1900	-	-	-	-	-
J1:12/1	U		2	3	5.0	Inf	-	-	-	-	-	-
J1:12/2	U		2	3	5.0	Inf	-	-	-	-	-	-

Junction: J2: Site Access

Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
J2:1/1 (Willen Road)	U	A	2	3	27.8	Geom	-	3.65	0.00	Y	Arm J2:5 Ahead	Inf
J2:1/2 (Willen Road)	U	A	2	3	27.8	Geom	-	3.65	0.00	Y	Arm J2:5 Ahead	Inf
J2:1/3 (Willen Road)	U	B	2	3	9.9	Geom	-	3.65	0.00	N	Arm J2:6 Right	20.00
J2:2/1 (Willen Road South)	U	C	2	3	30.4	Geom	-	3.65	0.00	Y	Arm J2:4 Ahead	Inf
											Arm J2:6 Left	15.00
J2:2/2 (Willen Road South)	U	C	2	3	15.0	Geom	-	3.65	0.00	Y	Arm J2:4 Ahead	Inf
J2:3/1 (Site Access)	U	D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm J2:4 Left	12.00
											Arm J2:5 Right	20.00
J2:4/1	U		2	3	8.7	Inf	-	-	-	-	-	-
J2:4/2	U		2	3	8.7	Inf	-	-	-	-	-	-
J2:5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:5/2	U		2	3	60.0	Inf	-	-	-	-	-	-
J2:6/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2026 AMWD'	08:00	09:00	01:00	
2: '2026 PMWD'	17:00	18:00	01:00	

Scenario 1: '2026 AMWD' (FG1: '2026 AMWD', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	43	304	721	5	1073
	B	62	1	1277	936	43	2319
	C	303	888	17	54	22	1284
	D	294	313	14	0	66	687
	E	1	20	6	19	0	46
	Tot.	660	1265	1618	1730	136	5409

Traffic Lane Flows

Lane	Scenario 1: 2026 AMWD
Junction: J1: A422/Willen Road	
J1:1/1 (short)	380
J1:1/2 (with short)	769(In) 389(Out)
J1:1/3	304
J1:2/1 (short)	591
J1:2/2 (with short)	1450(In) 859(Out)
J1:2/3	869
J1:3/1	315
J1:3/2 (with short)	333(In) 164(Out)
J1:3/3 (short)	169
J1:4/1 (short)	303
J1:4/2 (with short)	818(In) 515(Out)
J1:4/3	466
J1:5/1	660
J1:6/1	680
J1:6/2	635
J1:7/1	723
J1:7/2	542
J1:8/1	351
J1:8/2	451
J1:8/3	321
J1:9/1	942
J1:9/2	839
J1:10/1	718
J1:10/2	880
J1:10/3	63
J1:11/1	357
J1:11/2	165
J1:11/3	169
J1:12/1	738
J1:12/2	880
Junction: J2: Site Access	
J2:1/1	942
J2:1/2 (with short)	839(In) 769(Out)
J2:1/3 (short)	70
J2:2/1	374

J2:2/2	313
J2:3/1	46
J2:4/1	315
J2:4/2	333
J2:5/1	961
J2:5/2	769
J2:6/1	136

Lane Saturation Flows

Junction: J1: A422/Willen Road

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Willen Road North)	3.40	0.00	Y	Arm J1:7 Left	23.00	11.3 %	1941	1941
				Arm J1:8 Ahead	Inf	88.7 %		
J1:1/2 (Willen Road North)	3.40	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1955	1955
J1:1/3 (Willen Road North)	3.40	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1955	1955
J1:2/1 (A422 East)	3.65	0.00	Y	Arm J1:9 Left	84.00	100.0 %	1945	1945
J1:2/2 (A422 East)	3.65	0.00	Y	Arm J1:9 Left	84.00	45.2 %	1964	1964
				Arm J1:10 Ahead	Inf	54.8 %		
J1:2/3 (A422 East)	3.65	0.00	Y	Arm J1:10 Ahead	Inf	100.0 %	1980	1980
J1:3/1 (Willen Road South)	3.65	0.00	Y	Arm J1:11 Ahead	Inf	93.7 %	1973	1973
				Arm J1:12 Left	28.50	6.3 %		
J1:3/2 (Willen Road South)	3.65	0.00	Y	Arm J1:11 Ahead	Inf	100.0 %	1980	1980
J1:3/3 (Willen Road South)	3.65	0.00	Y	Arm J1:11 Ahead	Inf	100.0 %	1980	1980
J1:4/1 (A422 West)	3.65	0.00	Y	Arm J1:5 Left	30.90	100.0 %	1888	1888
J1:4/2 (A422 West)	3.65	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1980	1980
J1:4/3 (A422 West)	3.65	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1980	1980
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:6/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/1	3.50	0.00	Y				1965	1965
J1:7/2	3.50	0.00	Y				1965	1965
J1:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:9/2	Infinite Saturation Flow						Inf	Inf
J1:10/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:10/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:10/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:11/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:11/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:11/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:12/1	Infinite Saturation Flow						Inf	Inf

J1:12/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Site Access								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (Willen Road)	3.65	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	1980	1980
J2:1/2 (Willen Road)	3.65	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	1980	1980
J2:1/3 (Willen Road)	3.65	0.00	N	Arm J2:6 Right	20.00	100.0 %	1972	1972
J2:2/1 (Willen Road South)	3.65	0.00	Y	Arm J2:4 Ahead	Inf	82.4 %	1946	1946
				Arm J2:6 Left	15.00	17.6 %		
J2:2/2 (Willen Road South)	3.65	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1980	1980
J2:3/1 (Site Access)	3.50	0.00	Y	Arm J2:4 Left	12.00	58.7 %	1779	1779
				Arm J2:5 Right	20.00	41.3 %		
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: '2026 PMWD' (FG2: '2026 PMWD', Plan 1: 'Network Control Plan 1')

Traffic Flows, Desired

Desired Flow :

		Destination					
		A	B	C	D	E	Tot.
Origin	A	0	127	227	299	1	654
	B	211	0	1003	278	26	1518
	C	503	1465	14	21	9	2012
	D	494	477	16	0	31	1018
	E	6	43	27	71	0	147
	Tot.	1214	2112	1287	669	67	5349

Traffic Lane Flows

Lane	Scenario 2: 2026 PMWD
Junction: J1: A422/Willen Road	
J1:1/1 (short)	259
J1:1/2 (with short)	427(In) 168(Out)
J1:1/3	227
J1:2/1 (short)	270
J1:2/2 (with short)	905(In) 635(Out)
J1:2/3	613
J1:3/1	543
J1:3/2 (with short)	520(In) 241(Out)
J1:3/3 (short)	279
J1:4/1 (short)	503
J1:4/2 (with short)	1229(In) 726(Out)
J1:4/3	783
J1:5/1	1214
J1:6/1	967
J1:6/2	1062
J1:7/1	1094
J1:7/2	1018
J1:8/1	138
J1:8/2	192
J1:8/3	241
J1:9/1	408
J1:9/2	226
J1:10/1	714
J1:10/2	530
J1:10/3	211
J1:11/1	711
J1:11/2	241
J1:11/3	279
J1:12/1	757
J1:12/2	530
Junction: J2: Site Access	
J2:1/1	408
J2:1/2 (with short)	226(In) 190(Out)
J2:1/3 (short)	36
J2:2/1	541

J2:2/2	477
J2:3/1	147
J2:4/1	543
J2:4/2	520
J2:5/1	479
J2:5/2	190
J2:6/1	67

Lane Saturation Flows

Junction: J1: A422/Willen Road

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
J1:1/1 (Willen Road North)	3.40	0.00	Y	Arm J1:7 Left	23.00	49.0 %	1894	1894
				Arm J1:8 Ahead	Inf	51.0 %		
J1:1/2 (Willen Road North)	3.40	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1955	1955
J1:1/3 (Willen Road North)	3.40	0.00	Y	Arm J1:8 Ahead	Inf	100.0 %	1955	1955
J1:2/1 (A422 East)	3.65	0.00	Y	Arm J1:9 Left	84.00	100.0 %	1945	1945
J1:2/2 (A422 East)	3.65	0.00	Y	Arm J1:9 Left	84.00	5.4 %	1978	1978
				Arm J1:10 Ahead	Inf	94.6 %		
J1:2/3 (A422 East)	3.65	0.00	Y	Arm J1:10 Ahead	Inf	100.0 %	1980	1980
J1:3/1 (Willen Road South)	3.65	0.00	Y	Arm J1:11 Ahead	Inf	92.1 %	1972	1972
				Arm J1:12 Left	28.50	7.9 %		
J1:3/2 (Willen Road South)	3.65	0.00	Y	Arm J1:11 Ahead	Inf	100.0 %	1980	1980
J1:3/3 (Willen Road South)	3.65	0.00	Y	Arm J1:11 Ahead	Inf	100.0 %	1980	1980
J1:4/1 (A422 West)	3.65	0.00	Y	Arm J1:5 Left	30.90	100.0 %	1888	1888
J1:4/2 (A422 West)	3.65	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1980	1980
J1:4/3 (A422 West)	3.65	0.00	Y	Arm J1:6 Ahead	Inf	100.0 %	1980	1980
J1:5/1	Infinite Saturation Flow						Inf	Inf
J1:6/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:6/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:7/1	3.50	0.00	Y				1965	1965
J1:7/2	3.50	0.00	Y				1965	1965
J1:8/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:8/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:9/1	Infinite Saturation Flow						Inf	Inf
J1:9/2	Infinite Saturation Flow						Inf	Inf
J1:10/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:10/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:10/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:11/1	This lane uses a directly entered Saturation Flow						1900	1900
J1:11/2	This lane uses a directly entered Saturation Flow						1900	1900
J1:11/3	This lane uses a directly entered Saturation Flow						1900	1900
J1:12/1	Infinite Saturation Flow						Inf	Inf

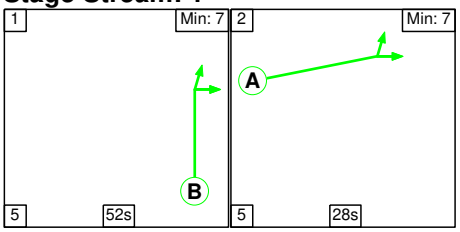
J1:12/2	Infinite Saturation Flow	Inf	Inf

Junction: J2: Site Access								
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat Flow (PCU/Hr)**	**Flared Sat Flow (PCU/Hr)**
J2:1/1 (Willen Road)	3.65	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	1980	1980
J2:1/2 (Willen Road)	3.65	0.00	Y	Arm J2:5 Ahead	Inf	100.0 %	1980	1980
J2:1/3 (Willen Road)	3.65	0.00	N	Arm J2:6 Right	20.00	100.0 %	1972	1972
J2:2/1 (Willen Road South)	3.65	0.00	Y	Arm J2:4 Ahead	Inf	94.3 %	1969	1969
				Arm J2:6 Left	15.00	5.7 %		
J2:2/2 (Willen Road South)	3.65	0.00	Y	Arm J2:4 Ahead	Inf	100.0 %	1980	1980
J2:3/1 (Site Access)	3.50	0.00	Y	Arm J2:4 Left	12.00	51.7 %	1785	1785
				Arm J2:5 Right	20.00	48.3 %		
J2:4/1	Infinite Saturation Flow						Inf	Inf
J2:4/2	Infinite Saturation Flow						Inf	Inf
J2:5/1	Infinite Saturation Flow						Inf	Inf
J2:5/2	Infinite Saturation Flow						Inf	Inf
J2:6/1	Infinite Saturation Flow						Inf	Inf

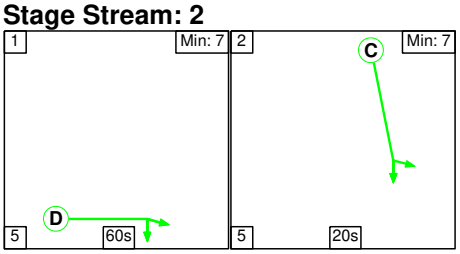
Scenario 1: '2026 AMWD' (FG1: '2026 AMWD', Plan 1: 'Network Control Plan 1')
C1

Stage Sequence Diagram

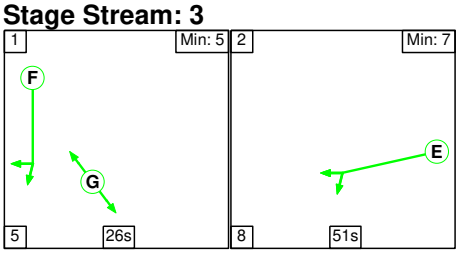
Stage Stream: 1



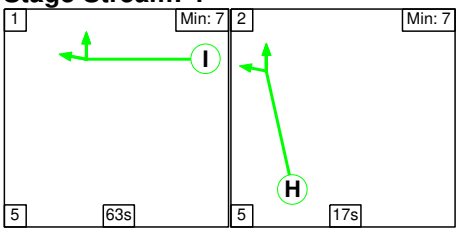
Stage Stream: 2



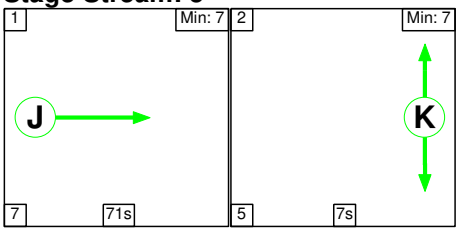
Stage Stream: 3



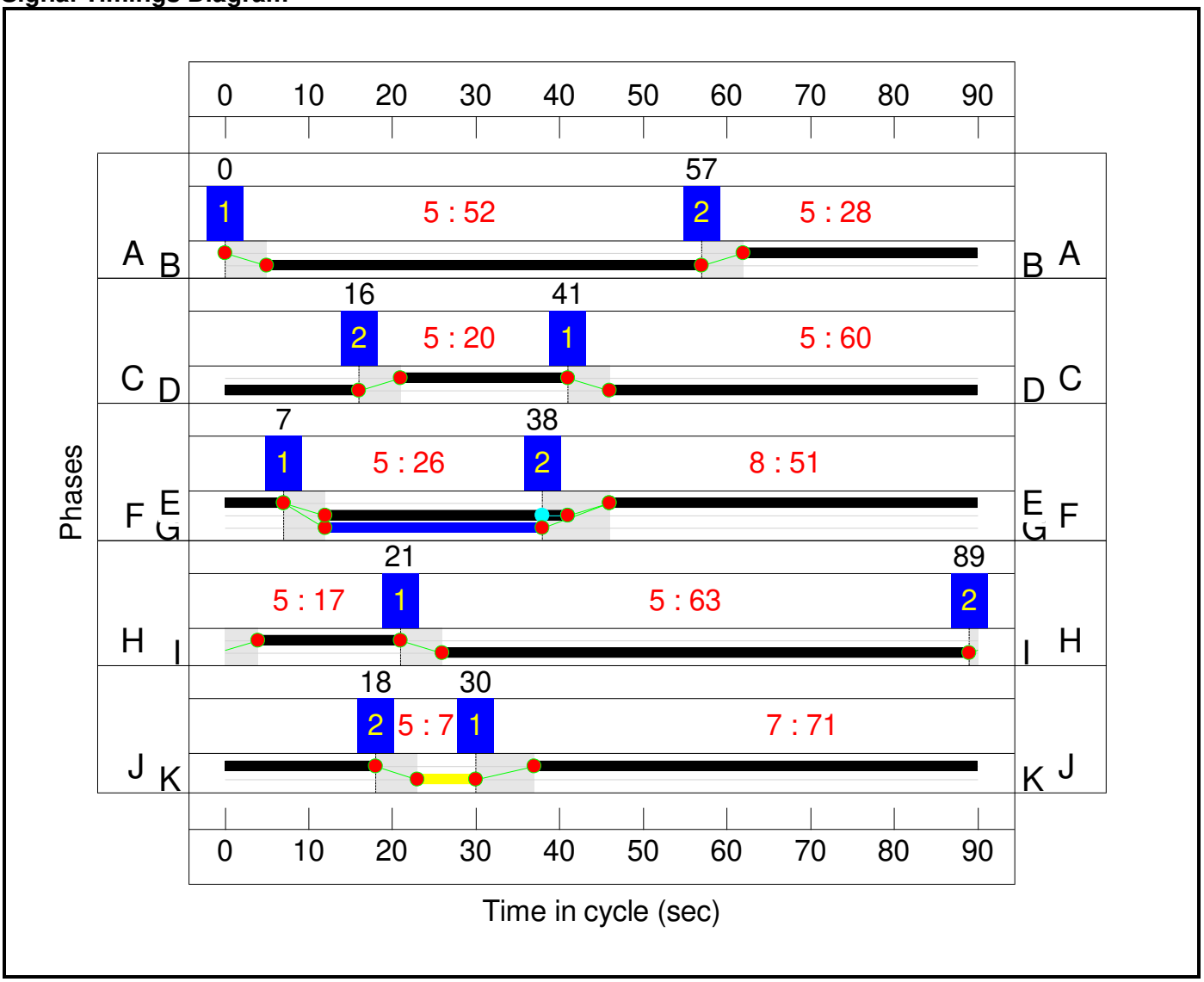
Stage Stream: 4



Stage Stream: 5

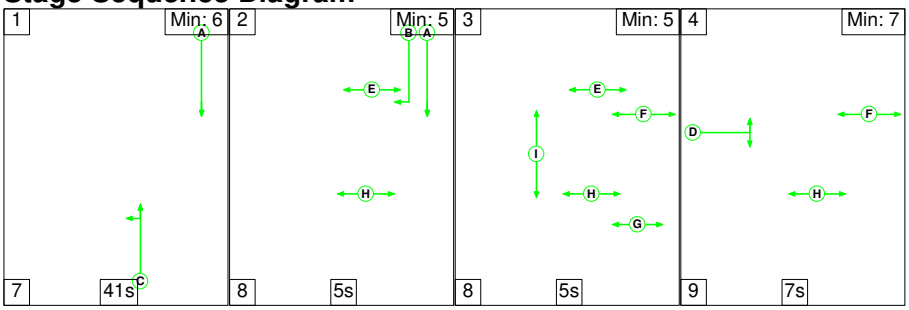


Signal Timings Diagram

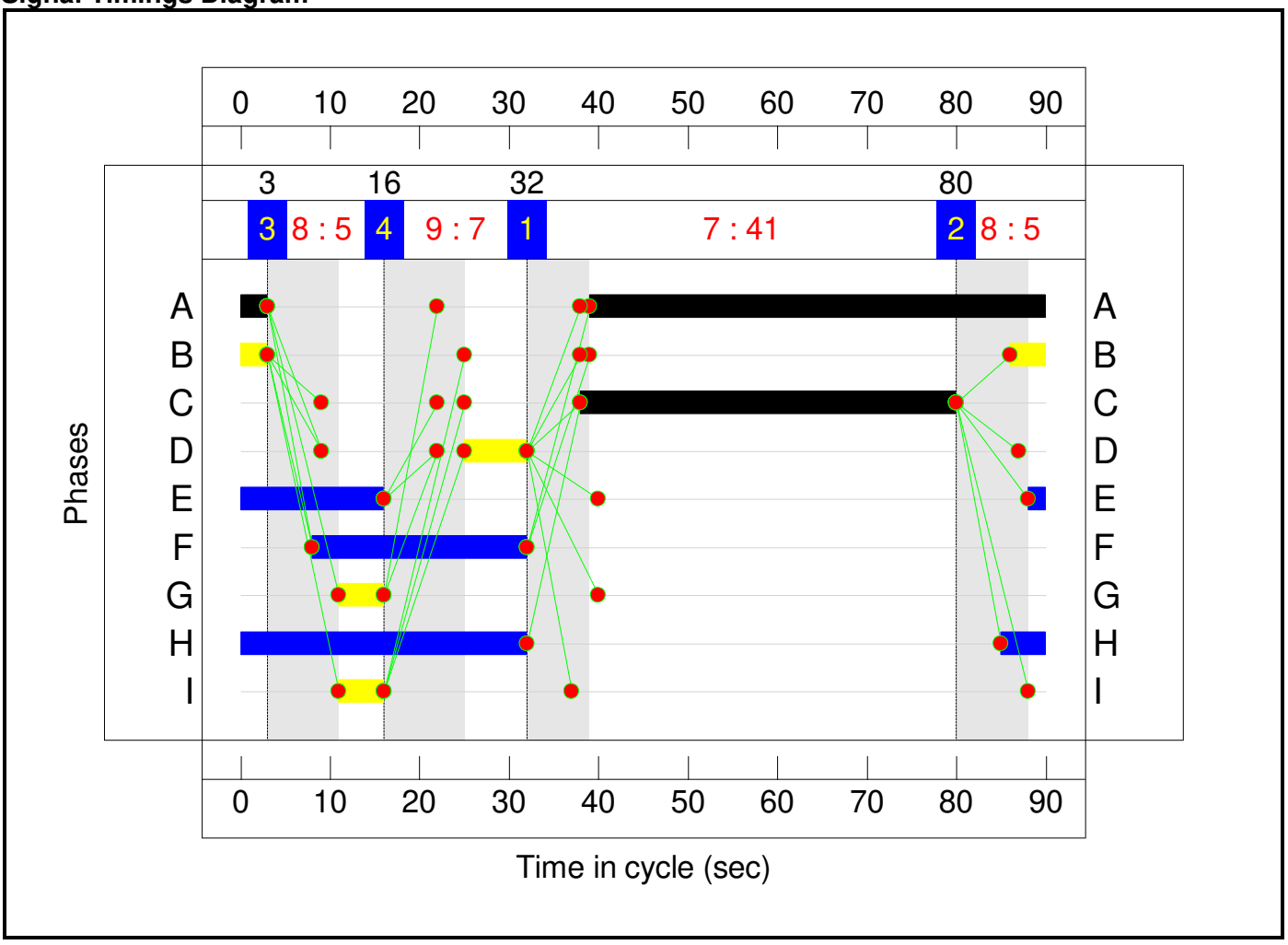


C2

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A422 Marsh End / Willen Road / Site Access	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.6%**
J1: A422/Willen Road	-	-	**N/A**	-	-		-	-	-	-	-	-	**92.6%**
1/2+1/1	Willen Road North Left Ahead	U	1:2	N/A	C1:C		1	20	-	769	1955:1941	420+410	92.6 : 92.6%
1/3	Willen Road North Ahead	U	1:2	N/A	C1:C		1	20	-	304	1955	456	66.6%
2/2+2/1	A422 East Left Ahead	U	1:3	N/A	C1:E		1	51	-	1450	1964:1945	1014+697	84.7 : 84.7%
2/3	A422 East Ahead	U	1:3	N/A	C1:E		1	51	-	869	1980	1144	76.0%
3/1	Willen Road South Ahead Left	U	1:4	N/A	C1:H		1	17	-	315	1973	395	79.8%
3/2+3/3	Willen Road South Ahead	U	1:4	N/A	C1:H		1	17	-	333	1980:1980	396+396	41.4 : 42.7%
4/2+4/1	A422 West Left Ahead	U	1:1	N/A	C1:A		1	28	-	818	1980:1888	638+375	80.7 : 80.7%
4/3	A422 West Ahead	U	1:1	N/A	C1:A		1	28	-	466	1980	638	73.0%
5/1		U	N/A	N/A	-		-	-	-	660	Inf	Inf	0.0%
6/1	Ahead	U	1:2	N/A	C1:D		1	60	-	680	1900	1288	52.8%
6/2	Ahead Right	U	1:2	N/A	C1:D		1	60	-	635	1900	1288	49.3%
7/1		U	1:5	N/A	C1:J		1	71	-	723	1965	1572	46.0%
7/2		U	1:5	N/A	C1:J		1	71	-	542	1965	1572	34.5%
8/1	Ahead	U	1:3	N/A	C1:F		1	29	-	351	1900	633	55.4%
8/2	Ahead	U	1:3	N/A	C1:F		1	29	-	451	1900	633	71.2%
8/3	Right	U	1:3	N/A	C1:F		1	29	-	321	1900	633	50.7%
9/1	Ahead	U	N/A	N/A	-		-	-	-	942	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	839	Inf	Inf	0.0%

10/1	Ahead	U	1:4	N/A	C1:I		1	63	-	718	1900	1351	53.1%
10/2	Ahead	U	1:4	N/A	C1:I		1	63	-	880	1900	1351	65.1%
10/3	Right	U	1:4	N/A	C1:I		1	63	-	63	1900	1351	4.7%
11/1	Ahead	U	1:1	N/A	C1:B		1	52	-	357	1900	1119	31.9%
11/2	Right	U	1:1	N/A	C1:B		1	52	-	165	1900	1119	14.7%
11/3	Right	U	1:1	N/A	C1:B		1	52	-	169	1900	1119	15.1%
12/1		U	N/A	N/A	-		-	-	-	738	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	880	Inf	Inf	0.0%
J2: Site Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**77.9%**
1/1	Willen Road Ahead	U	N/A	N/A	C2:A		1	54	-	942	1980	1210	77.9%
1/2+1/3	Willen Road Ahead Right	U	N/A	N/A	C2:A C2:B		1	54:7	-	839	1980:1972	1164+106	66.1 : 66.1%
2/1	Willen Road South Ahead Left	U	N/A	N/A	C2:C		1	42	-	374	1946	930	40.2%
2/2	Willen Road South Ahead	U	N/A	N/A	C2:C		1	42	-	313	1980	946	33.1%
3/1	Site Access Left Right	U	N/A	N/A	C2:D		1	7	-	46	1779	158	29.1%
4/1	Ahead	U	N/A	N/A	-		-	-	-	315	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	333	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	961	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	769	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	136	Inf	Inf	0.0%

Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A422 Marsh End / Willen Road / Site Access	**-**	**-**	**0**	**0**	**0**	**44.3**	**20.4**	**0.0**	**64.7**	**-**	**-**	**-**	**-**
J1: A422/Willen Road	**-**	**-**	**0**	**0**	**0**	**37.5**	**16.9**	**0.0**	**54.4**	**-**	**-**	**-**	**-**
1/2+1/1	769	769	-	-	-	7.0	5.3	-	12.4 (6.3+6.1)	57.9 (58.0:57.8)	9.3	5.3	14.6
1/3	304	304	-	-	-	2.6	1.0	-	3.6	43.0	6.8	1.0	7.8
2/2+2/1	1450	1450	-	-	-	5.3	2.7	-	8.0 (5.0+3.0)	19.9 (21.0:18.3)	16.0	2.7	18.7
2/3	869	869	-	-	-	3.5	1.6	-	5.0	20.8	16.2	1.6	17.7
3/1	315	315	-	-	-	2.9	1.9	-	4.8	54.7	7.9	1.9	9.8
3/2+3/3	333	333	-	-	-	2.9	0.4	-	3.3 (1.6+1.6)	35.2 (35.8:34.7)	4.2	0.4	4.6
4/2+4/1	818	818	-	-	-	6.1	2.1	-	8.1 (5.3+2.8)	35.7 (37.0:33.7)	11.7	2.1	13.8
4/3	466	466	-	-	-	3.5	1.3	-	4.8	37.3	10.2	1.3	11.6
5/1	660	660	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	680	680	-	-	-	0.2	0.0	-	0.2	1.0	0.5	0.0	0.5
6/2	635	635	-	-	-	0.2	0.0	-	0.2	1.2	0.5	0.0	0.5
7/1	723	723	-	-	-	0.1	0.4	-	0.5	2.5	0.9	0.4	1.3
7/2	542	542	-	-	-	0.0	0.3	-	0.3	1.7	0.0	0.3	0.3
8/1	351	351	-	-	-	0.3	0.0	-	0.3	3.4	0.7	0.0	0.7
8/2	451	451	-	-	-	0.9	0.0	-	0.9	7.5	2.3	0.0	2.3
8/3	321	321	-	-	-	0.3	0.0	-	0.3	3.8	0.8	0.0	0.8
9/1	942	942	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	839	839	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	718	718	-	-	-	0.5	0.0	-	0.5	2.6	3.4	0.0	3.4
10/2	880	880	-	-	-	0.7	0.0	-	0.7	2.9	3.2	0.0	3.2
10/3	63	63	-	-	-	0.0	0.0	-	0.0	2.7	0.2	0.0	0.2

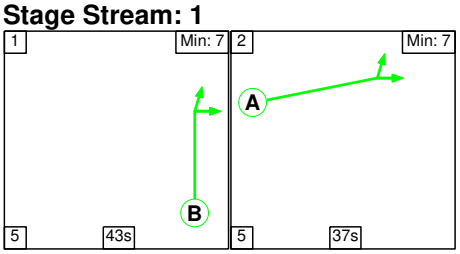
11/1	357	357	-	-	-	0.3	0.0	-	0.3	3.0	1.1	0.0	1.1
11/2	165	165	-	-	-	0.0	0.0	-	0.0	0.3	0.2	0.0	0.2
11/3	169	169	-	-	-	0.0	0.0	-	0.0	0.1	0.2	0.0	0.2
12/1	738	738	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	880	880	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Site Access	**-**	**-**	**0**	**0**	**0**	**6.8**	**3.5**	**0.0**	**10.3**	**-**	**-**	**-**	**-**
1/1	942	942	-	-	-	1.5	1.7	-	3.3	12.5	12.1	1.7	13.9
1/2+1/3	839	839	-	-	-	1.9	1.0	-	2.9 (2.1+0.8)	12.4 (9.9:39.9)	12.7	1.0	13.7
2/1	374	374	-	-	-	1.6	0.3	-	1.9	18.4	6.0	0.3	6.4
2/2	313	313	-	-	-	1.3	0.2	-	1.5	17.4	4.8	0.2	5.0
3/1	46	46	-	-	-	0.5	0.2	-	0.7	54.4	1.1	0.2	1.3
4/1	315	315	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	333	333	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	961	961	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	769	769	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	136	136	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1 PRC for Signalled Lanes (%):	11.5	Total Delay for Signalled Lanes (pcuHr):	13.27	Cycle Time (s):	90
C1	Stream: 2 PRC for Signalled Lanes (%):	-2.9	Total Delay for Signalled Lanes (pcuHr):	16.41	Cycle Time (s):	90
C1	Stream: 3 PRC for Signalled Lanes (%):	6.2	Total Delay for Signalled Lanes (pcuHr):	14.65	Cycle Time (s):	90
C1	Stream: 4 PRC for Signalled Lanes (%):	12.7	Total Delay for Signalled Lanes (pcuHr):	9.31	Cycle Time (s):	90
C1	Stream: 5 PRC for Signalled Lanes (%):	95.7	Total Delay for Signalled Lanes (pcuHr):	0.76	Cycle Time (s):	90
C2	PRC for Signalled Lanes (%):	15.6	Total Delay for Signalled Lanes (pcuHr):	10.28	Cycle Time (s):	90
	PRC Over All Lanes (%):	-2.9	Total Delay Over All Lanes(pcuHr):	64.67		

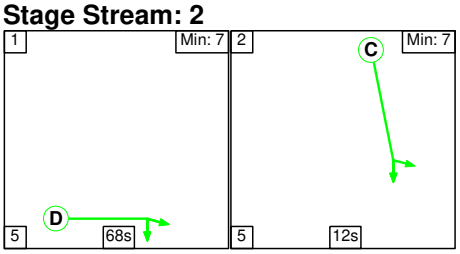
Scenario 2: '2026 PMWD' (FG2: '2026 PMWD', Plan 1: 'Network Control Plan 1')
C1

Stage Sequence Diagram

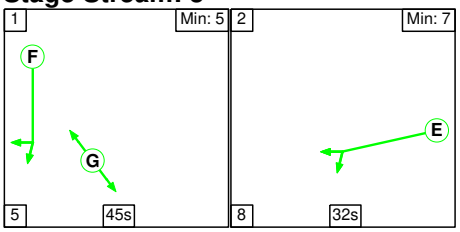
Stage Stream: 1



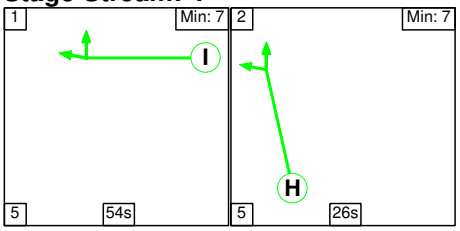
Stage Stream: 2



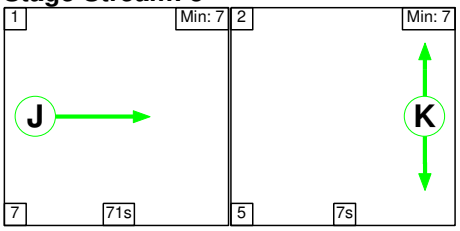
Stage Stream: 3



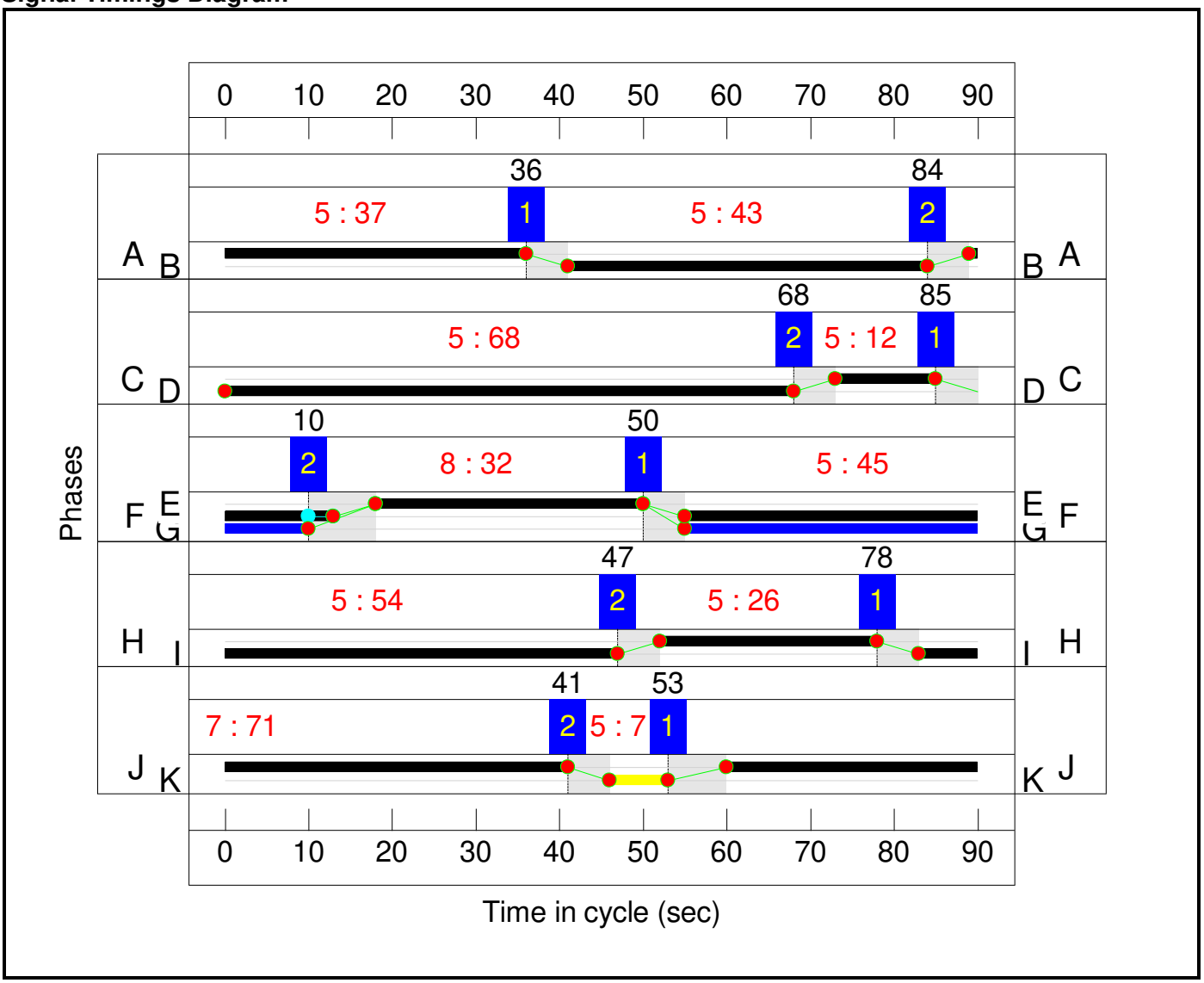
Stage Stream: 4



Stage Stream: 5

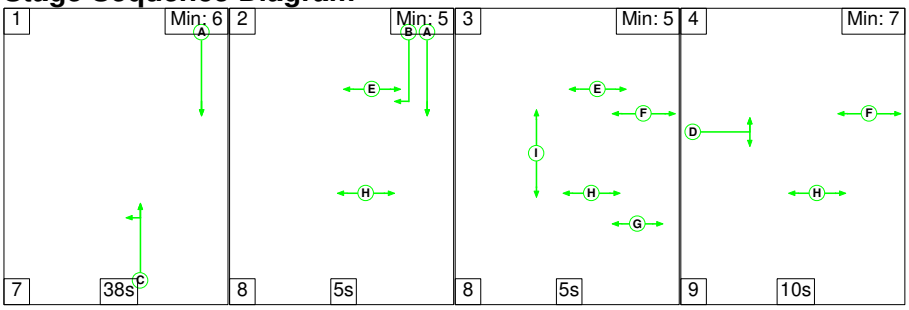


Signal Timings Diagram

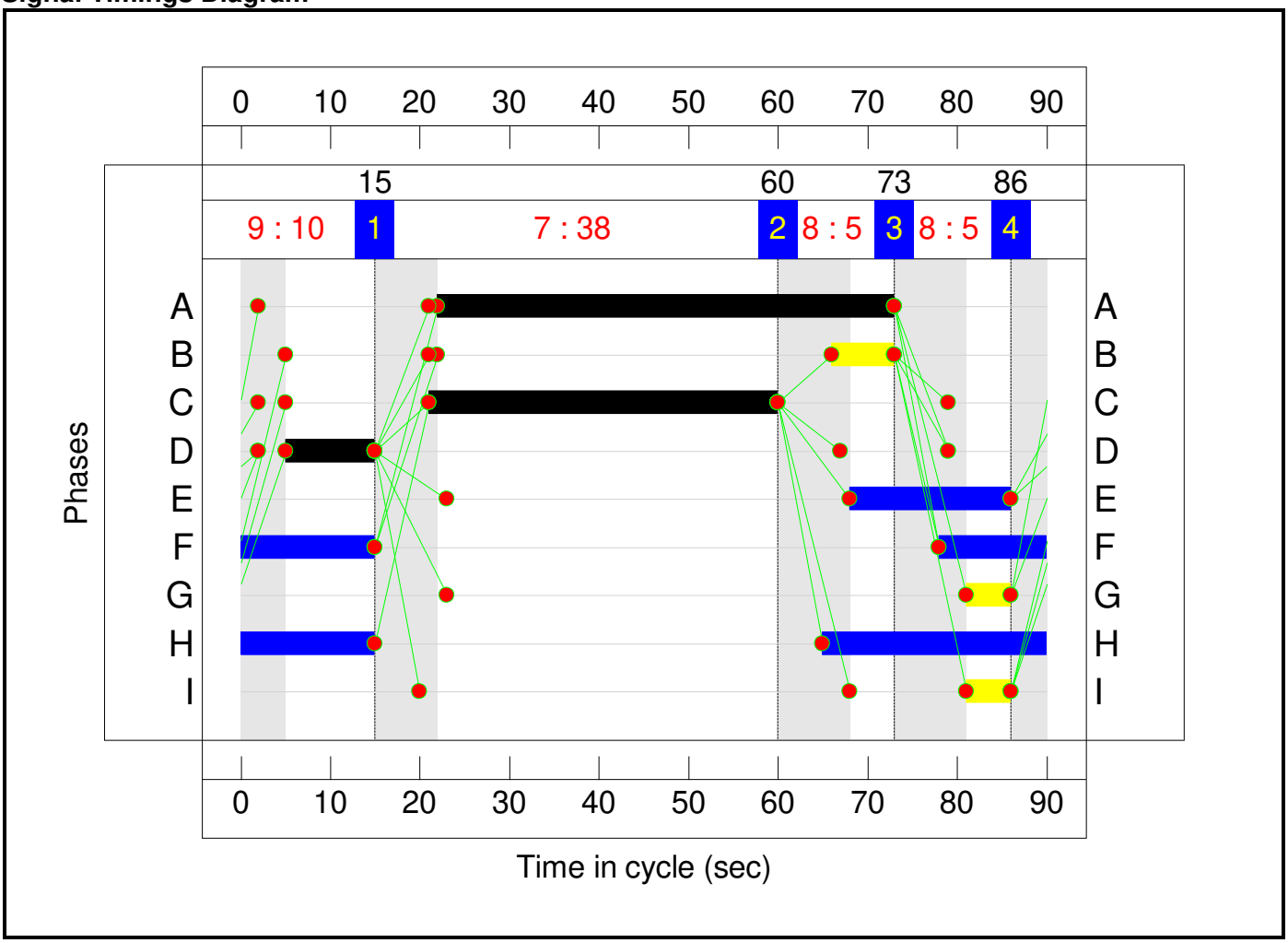


C2

Stage Sequence Diagram



Signal Timings Diagram



Network Results

Item	Lane Description	Lane Type	Controller Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
Network: A422 Marsh End / Willen Road / Site Access	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.7%**
J1: A422/Willen Road	-	-	**N/A**	-	-		-	-	-	-	-	-	**96.7%**
1/2+1/1	Willen Road North Left Ahead	U	1:2	N/A	C1:C		1	12	-	427	1955:1894	177+274	94.7 : 94.7%
1/3	Willen Road North Ahead	U	1:2	N/A	C1:C		1	12	-	227	1955	282	80.4%
2/2+2/1	A422 East Left Ahead	U	1:3	N/A	C1:E		1	32	-	905	1978:1945	725+308	87.6 : 87.6%
2/3	A422 East Ahead	U	1:3	N/A	C1:E		1	32	-	613	1980	726	84.4%
3/1	Willen Road South Ahead Left	U	1:4	N/A	C1:H		1	26	-	543	1972	592	91.8%
3/2+3/3	Willen Road South Ahead	U	1:4	N/A	C1:H		1	26	-	520	1980:1980	460+532	52.4 : 52.4%
4/2+4/1	A422 West Left Ahead	U	1:1	N/A	C1:A		1	37	-	1229	1980:1888	751+520	96.7 : 96.7%
4/3	A422 West Ahead	U	1:1	N/A	C1:A		1	37	-	783	1980	836	93.7%
5/1		U	N/A	N/A	-		-	-	-	1214	Inf	Inf	0.0%
6/1	Ahead	U	1:2	N/A	C1:D		1	68	-	967	1900	1457	66.4%
6/2	Ahead Right	U	1:2	N/A	C1:D		1	68	-	1062	1900	1457	72.9%
7/1		U	1:5	N/A	C1:J		1	71	-	1094	1965	1572	69.6%
7/2		U	1:5	N/A	C1:J		1	71	-	1018	1965	1572	64.8%
8/1	Ahead	U	1:3	N/A	C1:F		1	48	-	138	1900	1034	13.3%
8/2	Ahead	U	1:3	N/A	C1:F		1	48	-	192	1900	1034	18.6%
8/3	Right	U	1:3	N/A	C1:F		1	48	-	241	1900	1034	23.3%
9/1	Ahead	U	N/A	N/A	-		-	-	-	408	Inf	Inf	0.0%
9/2	Ahead	U	N/A	N/A	-		-	-	-	226	Inf	Inf	0.0%

10/1	Ahead	U	1:4	N/A	C1:I		1	54	-	714	1900	1161	61.5%
10/2	Ahead	U	1:4	N/A	C1:I		1	54	-	530	1900	1161	45.6%
10/3	Right	U	1:4	N/A	C1:I		1	54	-	211	1900	1161	18.2%
11/1	Ahead	U	1:1	N/A	C1:B		1	43	-	711	1900	929	76.5%
11/2	Right	U	1:1	N/A	C1:B		1	43	-	241	1900	929	25.9%
11/3	Right	U	1:1	N/A	C1:B		1	43	-	279	1900	929	30.0%
12/1		U	N/A	N/A	-		-	-	-	757	Inf	Inf	0.0%
12/2		U	N/A	N/A	-		-	-	-	530	Inf	Inf	0.0%
J2: Site Access	**-**	**-**	**N/A**	**-**	**-**		**-**	**-**	**-**	**-**	**-**	**-**	**67.4%**
1/1	Willen Road Ahead	U	N/A	N/A	C2:A		1	51	-	408	1980	1144	35.7%
1/2+1/3	Willen Road Ahead Right	U	N/A	N/A	C2:A C2:B		1	51:7	-	226	1980:1972	1045+175	18.2 : 20.5%
2/1	Willen Road South Ahead Left	U	N/A	N/A	C2:C		1	39	-	541	1969	875	61.8%
2/2	Willen Road South Ahead	U	N/A	N/A	C2:C		1	39	-	477	1980	880	54.2%
3/1	Site Access Left Right	U	N/A	N/A	C2:D		1	10	-	147	1785	218	67.4%
4/1	Ahead	U	N/A	N/A	-		-	-	-	543	Inf	Inf	0.0%
4/2	Ahead	U	N/A	N/A	-		-	-	-	520	Inf	Inf	0.0%
5/1		U	N/A	N/A	-		-	-	-	479	Inf	Inf	0.0%
5/2		U	N/A	N/A	-		-	-	-	190	Inf	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	67	Inf	Inf	0.0%

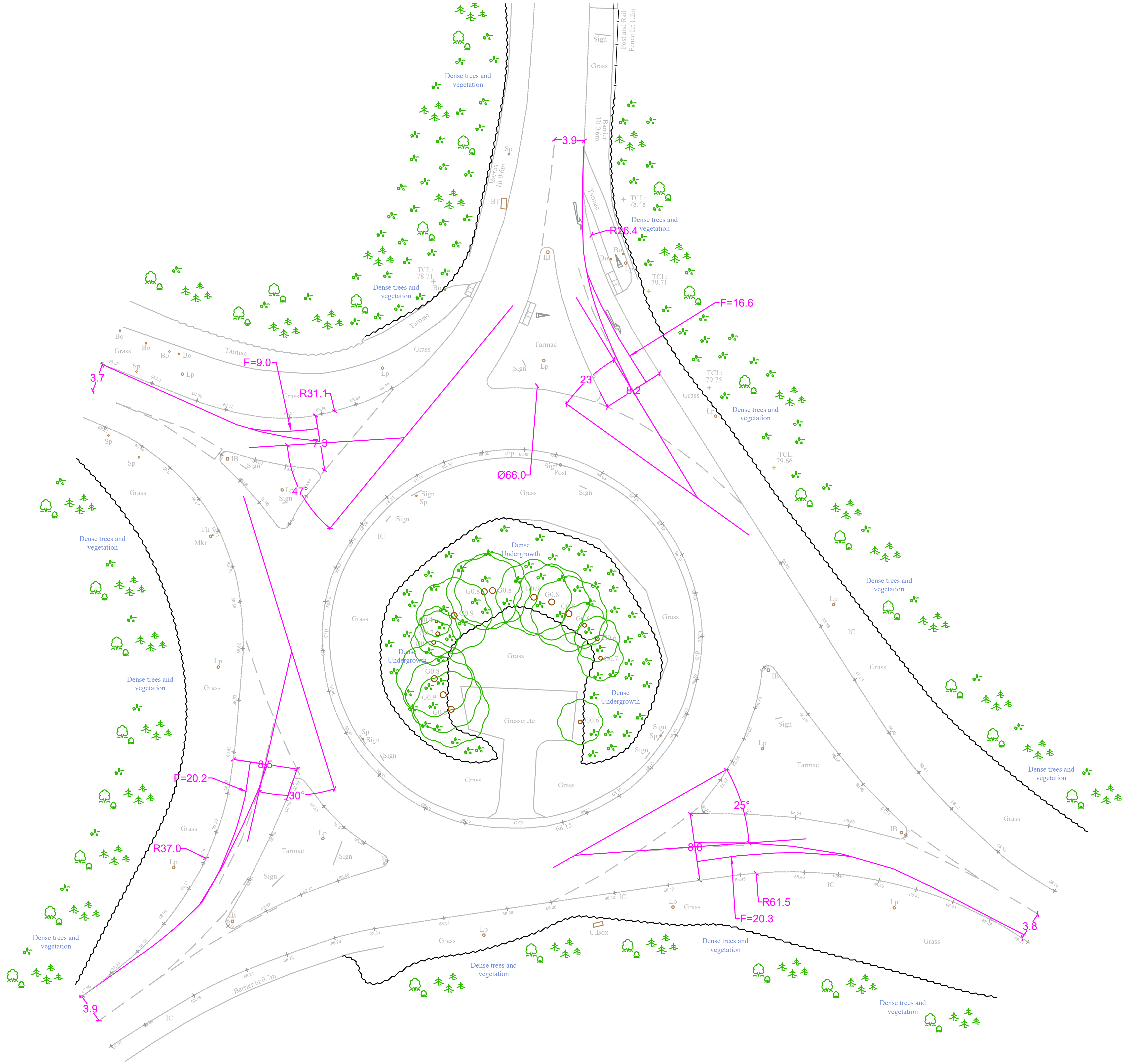
Item	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: A422 Marsh End / Willen Road / Site Access	**-**	**-**	**0**	**0**	**0**	**45.6**	**39.8**	**0.0**	**85.4**	**-**	**-**	**-**	**-**
J1: A422/Willen Road	**-**	**-**	**0**	**0**	**0**	**37.1**	**37.0**	**0.0**	**74.1**	**-**	**-**	**-**	**-**
1/2+1/1	427	427	-	-	-	4.4	5.9	-	10.4 (4.0+6.4)	87.4 (86.2:88.3)	6.4	5.9	12.3
1/3	227	227	-	-	-	2.4	1.9	-	4.3	67.7	5.5	1.9	7.4
2/2+2/1	905	905	-	-	-	6.3	3.3	-	9.6 (7.0+2.6)	38.2 (39.9:34.3)	14.6	3.3	18.0
2/3	613	613	-	-	-	4.5	2.6	-	7.0	41.4	14.0	2.6	16.6
3/1	543	543	-	-	-	2.2	4.7	-	6.9	45.8	13.4	4.7	18.0
3/2+3/3	520	520	-	-	-	1.5	0.5	-	2.0 (0.9+1.1)	14.0 (14.1:13.9)	5.8	0.5	6.4
4/2+4/1	1229	1229	-	-	-	7.7	9.9	-	17.6 (10.6+6.9)	51.5 (52.8:49.7)	18.7	9.9	28.6
4/3	783	783	-	-	-	5.4	6.0	-	11.4	52.5	18.7	6.0	24.7
5/1	1214	1214	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	967	967	-	-	-	0.3	0.0	-	0.3	1.0	0.9	0.0	0.9
6/2	1062	1062	-	-	-	0.4	0.0	-	0.4	1.3	1.2	0.0	1.2
7/1	1094	1094	-	-	-	0.0	1.1	-	1.1	3.7	0.0	1.1	1.1
7/2	1018	1018	-	-	-	0.0	0.9	-	0.9	3.2	0.0	0.9	0.9
8/1	138	138	-	-	-	0.0	0.0	-	0.0	0.9	0.1	0.0	0.1
8/2	192	192	-	-	-	0.1	0.0	-	0.1	2.7	0.5	0.0	0.5
8/3	241	241	-	-	-	0.1	0.0	-	0.1	1.4	0.3	0.0	0.3
9/1	408	408	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
9/2	226	226	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	714	714	-	-	-	0.7	0.0	-	0.7	3.5	3.9	0.0	3.9
10/2	530	530	-	-	-	0.4	0.0	-	0.4	2.7	3.2	0.0	3.2
10/3	211	211	-	-	-	0.1	0.0	-	0.1	2.5	0.4	0.0	0.4

11/1	711	711	-	-	-	0.7	0.0	-	0.7	3.4	5.1	0.0	5.1
11/2	241	241	-	-	-	0.0	0.0	-	0.0	0.2	0.2	0.0	0.2
11/3	279	279	-	-	-	0.0	0.0	-	0.0	0.2	0.2	0.0	0.2
12/1	757	757	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
12/2	530	530	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
J2: Site Access	**-**	**-**	**0**	**0**	**0**	**8.5**	**2.8**	**0.0**	**11.3**	**-**	**-**	**-**	**-**
1/1	408	408	-	-	-	0.6	0.3	-	0.9	7.6	3.4	0.3	3.6
1/2+1/3	226	226	-	-	-	1.0	0.1	-	1.2 (1.0+0.2)	18.5 (18.0:20.8)	4.3	0.1	4.4
2/1	541	541	-	-	-	2.9	0.8	-	3.7	24.5	10.2	0.8	11.0
2/2	477	477	-	-	-	2.4	0.6	-	3.0	22.8	8.6	0.6	9.2
3/1	147	147	-	-	-	1.5	1.0	-	2.5	62.4	3.5	1.0	4.5
4/1	543	543	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
4/2	520	520	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	479	479	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/2	190	190	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1	Stream: 1 PRC for Signalled Lanes (%):	-7.4	Total Delay for Signalled Lanes (pcuHr):	29.71	Cycle Time (s):	90
C1	Stream: 2 PRC for Signalled Lanes (%):	-5.2	Total Delay for Signalled Lanes (pcuHr):	15.29	Cycle Time (s):	90
C1	Stream: 3 PRC for Signalled Lanes (%):	2.8	Total Delay for Signalled Lanes (pcuHr):	16.92	Cycle Time (s):	90
C1	Stream: 4 PRC for Signalled Lanes (%):	-2.0	Total Delay for Signalled Lanes (pcuHr):	10.16	Cycle Time (s):	90
C1	Stream: 5 PRC for Signalled Lanes (%):	29.3	Total Delay for Signalled Lanes (pcuHr):	2.05	Cycle Time (s):	90
C2	PRC for Signalled Lanes (%):	33.6	Total Delay for Signalled Lanes (pcuHr):	11.27	Cycle Time (s):	90
	PRC Over All Lanes (%):	-7.4	Total Delay Over All Lanes(pcuHr):	85.42		

APPENDIX N

JUNCTION 3: TONGWELL ROUNDABOUT – ARCADY ASSESSMENT


Dense trees and vegetation
Post and Rail Fence Ht 1.2m
Barrier Ht 0.6m
Sign
Grass
Tarmac
TCL: 78.48
TCL: 78.71
TCL: 79.71
TCL: 79.75
TCL: 79.66
3.9
R26.4
F=16.6
23°
8.2
F=9.0
R31.1
3.7
7.3
47°
Ø66.0
Dense Undergrowth
Grasscrete
F=20.2
8.5
30°
R37.0
3.9
25°
8.8
R61.5
F=20.3
3.8
C.Box
Barrier ht 0.7m

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.4.487 [15039,24/03/2014]

Filename: App XX - Tongwell Roundabout ARCADY Model - Direct Flows hr - Jan19TA.arc8
Path: C:\Users\ADCteam\Dropbox\~ JN8 TEMP\ADC1392 Jan 19 - B8 Use\Tongwell
Report generation date: 27/02/2019 11:48:24

» Existing layout - 2026 background, AM
» Existing layout - 2026 background, PM
» Existing layout - 2026 with dev, AM
» Existing layout - 2026 with dev, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)	Queue (Veh)	Delay (s)	RFC	Junction Delay (s)
Existing layout - 2026 background								
Arm A	27.13	57.17	1.00	38.43	0.83	4.73	0.46	8.15
Arm B	9.50	29.43	0.93		0.94	4.02	0.48	
Arm C	0.74	3.85	0.42		0.99	4.26	0.50	
Arm D	0.08	3.73	0.08		5.39	20.80	0.87	
Existing layout - 2026 with dev								
Arm A	44.32	87.03	1.03	57.39	1.11	5.50	0.53	8.71
Arm B	15.24	43.62	0.97		1.03	4.31	0.51	
Arm C	0.83	4.12	0.45		1.04	4.40	0.51	
Arm D	0.09	3.89	0.08		5.98	22.77	0.88	

Values shown are the maximum values over all time segments. Delay is the maximum value of average delay per arriving vehicle. Junction LOS and Junction Delay are demand-weighted averages.

"D3 - 2026 background, AM " model duration: 07:45 - 08:45
"D4 - 2026 background, PM" model duration: 17:00 - 18:00
"D5 - 2026 with dev, AM" model duration: 07:45 - 08:45
"D6 - 2026 with dev, PM" model duration: 17:00 - 18:00

Run using Junctions 8.0.4.487 at 27/02/2019 11:48:18

File summary

Title	Tongwell Roundabout
Location	
Site Number	
Date	20/06/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	ADCteam
Description	

Analysis Options

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

Units

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

Existing layout - 2026 background, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	R
2026 background, AM	2026 background	AM		DIRECT	07:45	08:45	60	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	A,B,C,D				38.43	E

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	Willen Rd (N)	
B	B	Tongwell Street	
C	C	Dansteed Way	
D	D	Michigan Drive	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	3.90	8.20	16.60	26.40	66.00	23.00	
B	3.80	8.80	20.30	61.50	66.00	25.00	
C	3.90	8.50	20.20	37.00	66.00	30.00	
D	3.70	7.30	9.00	31.10	66.00	23.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.576	1962.550
B		(calculated)	(calculated)	0.602	2099.258
C		(calculated)	(calculated)	0.584	2032.629
D		(calculated)	(calculated)	0.529	1663.515

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	DIRECT		N/A	100.000
B	DIRECT		N/A	100.000
C	DIRECT		N/A	100.000
D	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (Veh/hr) - Junction 1 - (07:45-08:00)

		To			
		A	B	C	D
From	A	0.000	159.000	245.000	9.000
	B	66.000	1.000	115.000	34.000
	C	88.000	31.000	1.000	12.000
	D	7.000	12.000	5.000	0.000

Turning Proportions (Veh) - Junction 1 - (07:45-08:00)

		To			
		A	B	C	D
From	A	0.00	0.38	0.59	0.02
	B	0.31	0.00	0.53	0.16
	C	0.67	0.23	0.01	0.09
	D	0.29	0.50	0.21	0.00

Turning Counts / Proportions (Veh/hr) - Junction 1 - (08:00-08:15)

		To			
		A	B	C	D
From	A	1.000	168.000	259.000	2.000
	B	53.000	1.000	162.000	46.000
	C	82.000	20.000	1.000	8.000
	D	7.000	9.000	5.000	0.000

Turning Proportions (Veh) - Junction 1 - (08:00-08:15)

		To			
		A	B	C	D
From	A	0.00	0.39	0.60	0.00
	B	0.20	0.00	0.62	0.18
	C	0.74	0.18	0.01	0.07
	D	0.33	0.43	0.24	0.00

Turning Counts / Proportions (Veh/hr) - Junction 1 - (08:15-08:30)

		To			
		A	B	C	D
From	A	0.000	143.000	265.000	14.000
	B	87.000	4.000	183.000	27.000
	C	86.000	70.000	2.000	11.000
	D	1.000	8.000	5.000	0.000

Turning Proportions (Veh) - Junction 1 - (08:15-08:30)

		To			
		A	B	C	D
From	A	0.00	0.34	0.63	0.03
	B	0.29	0.01	0.61	0.09
	C	0.51	0.41	0.01	0.07
	D	0.07	0.57	0.36	0.00

Turning Counts / Proportions (Veh/hr) - Junction 1 - (08:30-08:45)

		To			
		A	B	C	D
From	A	0.000	138.000	287.000	14.000
	B	69.000	2.000	182.000	47.000
	C	74.000	38.000	5.000	12.000
	D	5.000	4.000	9.000	1.000

Turning Proportions (Veh) - Junction 1 - (08:30-08:45)

		To			
		A	B	C	D
From	A	0.00	0.31	0.65	0.03
	B	0.23	0.01	0.61	0.16
	C	0.57	0.29	0.04	0.09
	D	0.26	0.21	0.47	0.05

Vehicle Mix

Average PCU Per Vehicle - Junction 1 - (07:45-08:00)

		To			
		A	B	C	D
From	A	1.000	1.015	1.014	1.000
	B	1.018	1.000	1.041	1.034
	C	1.067	1.038	1.000	1.100
	D	1.000	1.100	1.000	1.000

Heavy Vehicle Percentages - Junction 1 - (07:45-08:00)

		To			
		A	B	C	D
From	A	0.0	1.5	1.4	0.0
	B	1.8	0.0	4.1	3.4
	C	6.7	3.8	0.0	10.0
	D	0.0	10.0	0.0	0.0

Average PCU Per Vehicle - Junction 1 - (08:00-08:15)

		To			
		A	B	C	D
From	A	1.000	1.014	1.023	1.000
	B	1.000	1.000	1.029	1.051
	C	1.043	1.059	2.000	1.000
	D	1.000	1.000	1.500	1.000

Heavy Vehicle Percentages - Junction 1 - (08:00-08:15)

		To			
		A	B	C	D
From	A	0.0	1.4	2.3	0.0
	B	0.0	0.0	2.9	5.1
	C	4.3	5.9	100.0	0.0
	D	0.0	0.0	50.0	0.0

Average PCU Per Vehicle - Junction 1 - (08:15-08:30)

		To			
		A	B	C	D
From	A	1.000	1.008	1.022	1.000
	B	1.027	1.000	1.026	1.000
	C	1.041	1.117	1.000	1.000
	D	1.000	1.143	1.000	1.000

Heavy Vehicle Percentages - Junction 1 - (08:15-08:30)

		To			
		A	B	C	D
From	A	0.0	0.8	2.2	0.0
	B	2.7	0.0	2.6	0.0
	C	4.1	11.7	0.0	0.0
	D	0.0	14.3	0.0	0.0

Average PCU Per Vehicle - Junction 1 - (08:30-08:45)

		To			
		A	B	C	D
From	A	1.000	1.042	1.004	1.000
	B	1.034	1.000	1.019	1.050
	C	1.016	1.031	1.000	1.000
	D	1.250	1.000	1.000	1.000

Heavy Vehicle Percentages - Junction 1 - (08:30-08:45)

		To			
		A	B	C	D
From	A	0.0	4.2	0.4	0.0
	B	3.4	0.0	1.9	5.0
	C	1.6	3.1	0.0	0.0
	D	25.0	0.0	0.0	0.0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/hr)	Total Junction Arrivals (Veh)	Total Queueing Delay (Veh-min)	Average Queueing Delay (s)	Rate Of Queueing Delay (Veh-min/min)	Inclusive Total Queueing Delay (Veh-min)	Inclusive Average Queueing Delay (s)
A	1.00	57.17	27.13	F	1716.71	1716.71	919.06	32.12	15.32	931.37	32.55
B	0.93	29.43	9.50	D	1084.04	1084.04	266.22	14.74	4.44	268.30	14.85
C	0.42	3.85	0.74	A	542.75	542.75	29.73	3.29	0.50	29.74	3.29
D	0.08	3.73	0.08	A	78.00	78.00	4.33	3.33	0.07	4.33	3.33

Main Results for each time segment

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1666.00	416.50	1630.99	642.11	198.13	0.00	1817.36	1446.64	0.917	0.00	8.75	16.985	C
B	868.00	217.00	861.89	802.54	1026.59	0.00	1426.29	1424.84	0.609	0.00	1.53	6.314	A
C	529.00	132.25	527.15	1449.92	438.56	0.00	1666.41	1520.49	0.317	0.00	0.46	3.154	A
D	94.00	23.50	93.66	219.13	746.57	0.00	1191.89	621.08	0.079	0.00	0.09	3.278	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1732.01	433.00	1717.15	575.67	145.64	0.00	1832.51	1464.33	0.945	8.75	12.46	27.099	D
B	1052.00	263.00	1046.35	792.05	1070.75	0.00	1394.25	1366.79	0.755	1.53	2.94	10.181	B
C	448.00	112.00	448.41	1704.68	412.40	0.00	1698.73	1630.78	0.264	0.46	0.36	2.881	A
D	85.00	21.25	85.03	224.54	636.27	0.00	1175.49	597.56	0.072	0.09	0.08	3.303	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1698.99	424.75	1657.79	694.35	357.43	0.00	1706.58	1183.77	0.995	12.46	22.77	46.642	E
B	1208.00	302.00	1195.22	893.43	1121.77	0.00	1377.42	1454.10	0.877	2.94	6.15	18.507	C
C	680.00	170.00	678.55	1794.84	522.18	0.00	1610.48	1561.63	0.422	0.36	0.73	3.851	A
D	57.00	14.25	57.06	206.02	994.71	0.00	1023.91	551.24	0.056	0.08	0.06	3.725	A

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

Arm	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Entry Flow (Veh/hr)	Exit Flow (Veh/hr)	Circulating Flow (Veh/hr)	Pedestrian Demand (Ped/hr)	Capacity (Veh/hr)	Saturation Capacity (Veh/hr)	RFC	Start Queue (Veh)	End Queue (Veh)	Delay (s)	LOS
A	1770.00	442.50	1752.39	591.47	236.16	0.00	1795.09	1334.80	0.986	22.77	27.14	57.167	F
B	1208.00	302.00	1194.69	729.40	1259.16	0.00	1302.38	1267.60	0.928	6.15	9.50	29.430	D
C	514.00	128.50	515.15	1923.93	529.91	0.00	1680.96	1654.54	0.306	0.73	0.44	3.092	A
D	76.00	19.00	75.98	293.41	751.65	0.00	1178.97	647.93	0.064	0.06	0.07	3.263	A

Queueing Delay Results for each time segment

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	105.06	7.00	16.985	C	B
B	21.73	1.45	6.314	A	A
C	6.79	0.45	3.154	A	A
D	1.26	0.08	3.278	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	165.18	11.01	27.099	D	C
B	40.91	2.73	10.181	B	B
C	5.47	0.36	2.881	A	A
D	1.18	0.08	3.303	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	272.53	18.17	46.642	E	D
B	79.98	5.33	18.507	C	B
C	10.62	0.71	3.851	A	A
D	0.90	0.06	3.725	A	A

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

Arm	Queueing Total Delay (Veh-min)	Queueing Rate Of Delay (Veh-min/min)	Average Delay Per Arriving Vehicle (s)	Unsignalised Level Of Service	Signalised Level Of Service
A	376.14	25.08	57.167	F	E
B	123.98	8.27	29.430	D	C
C	6.76	0.45	3.092	A	A
D	1.02	0.07	3.263	A	A

Existing layout - 2026 background, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

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

Demand Set Details

Name	Scenario Name	Time Period Name	Description	Traffic Profile Type	Model Start Time (HH:mm)	Model Finish Time (HH:mm)	Model Time Period Length (min)	Time Segment Length (min)	Results For Central Hour Only	Single Time Segment Only	Locked	Run Automatically	Use Relationship	R
2026 background, PM	2026 background	PM		DIRECT	17:00	18:00	60	15				✓		

Junction Network

Junctions

Junction	Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Do Geometric Delay	Junction Delay (s)	Junction LOS
1	(untitled)	Roundabout	A,B,C,D				8.15	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Arm	Name	Description
A	A	Willen Rd (N)	
B	B	Tongwell Street	
C	C	Dansteed Way	
D	D	Michigan Drive	

Capacity Options

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

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit Only
A	3.90	8.20	16.60	26.40	66.00	23.00	
B	3.80	8.80	20.30	61.50	66.00	25.00	
C	3.90	8.50	20.20	37.00	66.00	30.00	
D	3.70	7.30	9.00	31.10	66.00	23.50	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A		(calculated)	(calculated)	0.576	1962.550
B		(calculated)	(calculated)	0.602	2099.258
C		(calculated)	(calculated)	0.584	2032.629
D		(calculated)	(calculated)	0.529	1663.515

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Arm	Profile Type	Use Turning Counts	Average Demand Flow (Veh/hr)	Flow Scaling Factor (%)
A	DIRECT		N/A	100.000
B	DIRECT		N/A	100.000
C	DIRECT		N/A	100.000
D	DIRECT		N/A	100.000

Turning Proportions

Turning Counts / Proportions (Veh/hr) - Junction 1 - (17:00-17:15)

		To			
		A	B	C	D
From	A	0.000	59.000	94.000	7.000
	B	101.000	4.000	66.000	29.000
	C	116.000	78.000	9.000	6.000
	D	61.000	106.000	50.000	0.000

Turning Proportions (Veh) - Junction 1 - (17:00-17:15)

		To			
		A	B	C	D
From	A	0.00	0.37	0.59	0.04
	B	0.51	0.02	0.33	0.15
	C	0.56	0.37	0.04	0.03
	D	0.28	0.49	0.23	0.00