10-336-002.03 Transport Assessment

APPENDICES BGH 17-19

APPENDIX BGH 17

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.2.316 [14 Feb 2013]

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

Filename: Birdwell Roundabout - Committed Imp.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 12/03/2015 09:18:46

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Birdwell Roundabout - Predicted Fri			
A6135 Sheffield Road	2.49	15.39	0.72	C
A61 South	1.38	2.72	0.58	A
A61 Birdwell	10.08	33.99	0.93	D
A6195 Dearne Valley Parkway	4.11	10.91	0.81	B

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

"D4 - Committed Fri, AM" model duration: 07:45 - 09:15
"D5 - Committed Fri, PM" model duration: 16:45 - 18:15
"D6 - Committed Sat, Peak" model duration: 12:45 - 14:15
"D7 - Predicted Fri, AM " model duration: 07:45 - 09:15
"D8 - Predicted Fri, PM" model duration: 16:45 - 18:15
"D9 - Predicted Sat, Peak" model duration: 12:45 - 14:15

Run using Junctions 8.0.2.316 at 12/03/2015 09:18:46

File summary

File Description

Title	Birdwell Roundabout
Location	Birdwell
Site Number	10-336
Date	14/10/2014
Version	
Status	(new file)
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

Birdwell Roundabout - Predicted Fri, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A61 Birdwell - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Birdwell Roundabout			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)	Single Time Segment Only	Locked
Predicted Fri, AM	Predicted Fri	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Birdwell Roundabout	Roundabout	1,2,3,4			13.72	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
A6135 Sheffield Road	A6135 Sheffield Road	A6135 Sheffield Road
A61 South	A61 South	
A61 Birdwell	A61 Birdwell	
A6195 Dearne Valley Parkway	A6195 Dearne Valley Parkway	

Roundabout Geometry

Name	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
A6135 Sheffield Road	4.20	7.80	15.00	70.00	64.50	27.00	
A61 South	10.80	11.10	4.00	36.00	64.50	26.00	
A61 Birdwell	4.20	8.00	35.00	20.00	64.50	26.00	
A6195 Dearne Valley Parkway	7.60	9.10	7.00	19.00	64.50	34.00	

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

Pedestrian Crossings

Name	Crossing Type
A6135 Sheffield Road	None
A61 South	None
A61 Birdwell	None
A6195 Dearne Valley Parkway	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A6135 Sheffield Road		(calculated)	(calculated)	0.589	1975.239
A61 South		(calculated)	(calculated)	0.834	3464.858
A61 Birdwell		(calculated)	(calculated)	0.612	2156.641
A6195 Dearne Valley Parkway		(calculated)	(calculated)	0.666	2530.093

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6135 Sheffield Road	ONE HOUR	✓	545.00	100.000
A61 South	ONE HOUR	✓	1666.00	100.000
A61 Birdwell	ONE HOUR	✓	1036.00	100.000
A6195 Dearne Valley Parkway	ONE HOUR	✓	1271.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	325.000	187.000	33.000
	2	206.000	0.000	325.000	1135.000
	3	309.000	585.000	0.000	142.000
	4	91.000	1066.000	114.000	0.000

Turning Proportions (PCU) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.60	0.34	0.06
	2	0.12	0.00	0.20	0.68
	3	0.30	0.56	0.00	0.14
	4	0.07	0.84	0.09	0.00

Vehicle Mix

Average PCU Per Vehicle - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A6135 Sheffield Road	0.72	15.39	2.49	C

A61 South	0.58	2.72	1.38	A
A61 Birdwell	0.93	33.99	10.08	D
A6195 Dearne Valley Parkway	0.81	10.91	4.11	B

Main Results for each time segment

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	410.30	408.23	1323.00	0.00	1195.51	0.343	0.52	4.561	A
A61 South	1254.25	1251.75	250.28	0.00	3256.22	0.385	0.62	1.794	A
A61 Birdwell	779.96	775.82	1032.28	0.00	1525.40	0.511	1.03	4.777	A
A6195 Dearne Valley Parkway	956.88	953.17	824.26	0.00	1981.35	0.483	0.93	3.488	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	489.94	488.52	1582.39	0.00	1042.64	0.470	0.87	6.479	A
A61 South	1497.70	1496.72	299.46	0.00	3215.23	0.466	0.87	2.094	A
A61 Birdwell	931.34	927.75	1234.33	0.00	1401.85	0.664	1.93	7.536	A
A6195 Dearne Valley Parkway	1142.60	1140.15	985.66	0.00	1873.90	0.610	1.54	4.889	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	600.06	594.22	1919.15	0.00	844.17	0.711	2.33	14.086	B
A61 South	1834.30	1832.28	364.54	0.00	3160.98	0.580	1.37	2.706	A
A61 Birdwell	1140.66	1113.36	1510.82	0.00	1232.77	0.925	8.76	25.824	D
A6195 Dearne Valley Parkway	1399.40	1389.99	1187.31	0.00	1739.65	0.804	3.89	10.036	B

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	600.06	599.44	1939.50	0.00	832.18	0.721	2.49	15.390	C
A61 South	1834.30	1834.27	367.41	0.00	3158.58	0.581	1.38	2.717	A
A61 Birdwell	1140.66	1135.37	1512.74	0.00	1231.60	0.926	10.08	33.991	D
A6195 Dearne Valley Parkway	1399.40	1398.51	1206.56	0.00	1726.84	0.810	4.11	10.905	B

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	489.94	496.17	1614.08	0.00	1023.97	0.478	0.93	6.898	A
A61 South	1497.70	1499.71	303.66	0.00	3211.72	0.466	0.88	2.106	A
A61 Birdwell	931.34	963.50	1237.19	0.00	1400.10	0.665	2.04	8.833	A
A6195 Dearne Valley Parkway	1142.60	1152.53	1016.88	0.00	1853.12	0.617	1.63	5.208	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	410.30	411.90	1333.54	0.00	1189.30	0.345	0.53	4.641	A
A61 South	1254.25	1255.25	252.34	0.00	3254.50	0.385	0.63	1.803	A
A61 Birdwell	779.96	783.87	1035.32	0.00	1523.55	0.512	1.06	4.891	A
A6195 Dearne Valley Parkway	956.88	959.62	831.64	0.00	1976.44	0.484	0.95	3.551	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.2.316 [14 Feb 2013]

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

Filename: Birdwell Roundabout - Committed Imp.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 12/03/2015 09:20:17

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Birdwell Roundabout - Predicted Fri			
A6135 Sheffield Road	2.96	16.13	0.76	C
A61 South	12.47	17.63	0.93	C
A61 Birdwell	14.85	56.80	0.97	F
A6195 Dearne Valley Parkway	5.54	14.60	0.86	B

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

"D4 - Committed Fri, AM" model duration: 07:45 - 09:15
"D5 - Committed Fri, PM" model duration: 16:45 - 18:15
"D6 - Committed Sat, Peak" model duration: 12:45 - 14:15
"D7 - Predicted Fri, AM" model duration: 07:45 - 09:15
"D8 - Predicted Fri, PM " model duration: 16:45 - 18:15
"D9 - Predicted Sat, Peak" model duration: 12:45 - 14:15

Run using Junctions 8.0.2.316 at 12/03/2015 09:20:16

File summary

File Description

Title	Birdwell Roundabout
Location	Birdwell
Site Number	10-336
Date	14/10/2014
Version	
Status	(new file)
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

Birdwell Roundabout - Predicted Fri, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A61 Birdwell - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Birdwell Roundabout			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)	Single Time Segment Only	Locked
Predicted Fri, PM	Predicted Fri	PM		ONE HOUR	16:45	18:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Birdwell Roundabout	Roundabout	1,2,3,4			23.31	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
A6135 Sheffield Road	A6135 Sheffield Road	A6135 Sheffield Road
A61 South	A61 South	
A61 Birdwell	A61 Birdwell	
A6195 Dearne Valley Parkway	A6195 Dearne Valley Parkway	

Roundabout Geometry

Name	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
A6135 Sheffield Road	4.20	7.80	15.00	70.00	64.50	27.00	
A61 South	10.80	11.10	4.00	36.00	64.50	26.00	
A61 Birdwell	4.20	8.00	35.00	20.00	64.50	26.00	
A6195 Dearne Valley Parkway	7.60	9.10	7.00	19.00	64.50	34.00	

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

Pedestrian Crossings

Name	Crossing Type
A6135 Sheffield Road	None
A61 South	None
A61 Birdwell	None
A6195 Dearne Valley Parkway	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A6135 Sheffield Road		(calculated)	(calculated)	0.589	1975.239
A61 South		(calculated)	(calculated)	0.834	3464.858
A61 Birdwell		(calculated)	(calculated)	0.612	2156.641
A6195 Dearne Valley Parkway		(calculated)	(calculated)	0.666	2530.093

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6135 Sheffield Road	ONE HOUR	✓	622.00	100.000
A61 South	ONE HOUR	✓	2452.00	100.000
A61 Birdwell	ONE HOUR	✓	886.00	100.000
A6195 Dearne Valley Parkway	ONE HOUR	✓	1294.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	225.000	354.000	43.000
	2	441.000	0.000	783.000	1228.000
	3	310.000	441.000	0.000	135.000
	4	78.000	984.000	232.000	0.000

Turning Proportions (PCU) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.36	0.57	0.07
	2	0.18	0.00	0.32	0.50
	3	0.35	0.50	0.00	0.15
	4	0.06	0.76	0.18	0.00

Vehicle Mix

Average PCU Per Vehicle - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A6135 Sheffield Road	0.76	16.13	2.96	C

A61 South	0.93	17.63	12.47	C
A61 Birdwell	0.97	56.80	14.85	F
A6195 Dearne Valley Parkway	0.86	14.60	5.54	B

Main Results for each time segment

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	468.27	465.88	1241.83	0.00	1243.35	0.377	0.60	4.617	A
A61 South	1845.99	1840.02	471.29	0.00	3071.99	0.601	1.49	2.908	A
A61 Birdwell	667.03	663.28	1284.65	0.00	1371.08	0.487	0.94	5.060	A
A6195 Dearne Valley Parkway	974.19	970.17	893.15	0.00	1935.49	0.503	1.01	3.714	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	559.17	557.49	1485.03	0.00	1100.02	0.508	1.02	6.616	A
A61 South	2204.30	2199.32	563.86	0.00	2994.83	0.736	2.74	4.498	A
A61 Birdwell	796.50	792.87	1535.55	0.00	1217.65	0.654	1.84	8.403	A
A6195 Dearne Valley Parkway	1163.28	1160.32	1067.62	0.00	1819.34	0.639	1.74	5.439	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	684.83	677.86	1793.77	0.00	918.06	0.746	2.76	14.585	B
A61 South	2699.70	2665.92	685.70	0.00	2893.26	0.933	11.18	14.141	B
A61 Birdwell	975.50	939.23	1861.47	0.00	1018.35	0.958	10.91	35.687	E
A6195 Dearne Valley Parkway	1424.72	1411.35	1275.59	0.00	1680.88	0.848	5.09	12.771	B

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	684.83	684.02	1814.85	0.00	905.64	0.756	2.96	16.131	C
A61 South	2699.70	2694.58	691.70	0.00	2888.26	0.935	12.47	17.628	C
A61 Birdwell	975.50	959.73	1881.40	0.00	1006.16	0.970	14.85	56.803	F
A6195 Dearne Valley Parkway	1424.72	1422.92	1298.13	0.00	1665.88	0.855	5.54	14.603	B

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	559.17	566.61	1528.75	0.00	1074.25	0.521	1.10	7.191	A
A61 South	2204.30	2242.68	572.81	0.00	2987.36	0.738	2.87	5.078	A
A61 Birdwell	796.50	847.74	1565.69	0.00	1199.22	0.664	2.04	11.722	B
A6195 Dearne Valley Parkway	1163.28	1177.79	1121.92	0.00	1783.18	0.652	1.91	6.083	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	468.27	470.23	1252.94	0.00	1236.81	0.379	0.61	4.707	A
A61 South	1845.99	1851.39	475.42	0.00	3068.54	0.602	1.52	2.970	A
A61 Birdwell	667.03	671.34	1292.69	0.00	1366.16	0.488	0.96	5.214	A
A6195 Dearne Valley Parkway	974.19	977.72	902.02	0.00	1929.58	0.505	1.03	3.794	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.2.316 [14 Feb 2013]

Filename: Birdwell Roundabout - Committed Imp.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 12/03/2015 09:21:36

Summary of junction performance

	Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Birdwell Roundabout - Predicted Sat			
A6135 Sheffield Road	1.75	9.10	0.64	A
A61 South	1.29	2.83	0.56	A
A61 Birdwell	2.40	8.65	0.71	A
A6195 Dearne Valley Parkway	1.47	4.96	0.60	A

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

"D4 - Committed Fri, AM" model duration: 07:45 - 09:15
"D5 - Committed Fri, PM" model duration: 16:45 - 18:15
"D6 - Committed Sat, Peak" model duration: 12:45 - 14:15
"D7 - Predicted Fri, AM" model duration: 07:45 - 09:15
"D8 - Predicted Fri, PM" model duration: 16:45 - 18:15
"D9 - Predicted Sat, Peak " model duration: 12:45 - 14:15

Run using Junctions 8.0.2.316 at 12/03/2015 09:21:35

File summary

File Description

Title	Birdwell Roundabout
Location	Birdwell
Site Number	10-336
Date	14/10/2014
Version	
Status	(new file)
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

Birdwell Roundabout - Predicted Sat, Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A61 Birdwell - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Birdwell Roundabout			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)	Single Time Segment Only	Locked
Predicted Sat, Peak	Predicted Sat	Peak		ONE HOUR	12:45	14:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Birdwell Roundabout	Roundabout	1,2,3,4			5.67	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
A6135 Sheffield Road	A6135 Sheffield Road	A6135 Sheffield Road
A61 South	A61 South	
A61 Birdwell	A61 Birdwell	
A6195 Dearne Valley Parkway	A6195 Dearne Valley Parkway	

Roundabout Geometry

Name	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
A6135 Sheffield Road	4.20	7.80	15.00	70.00	64.50	27.00	
A61 South	10.80	11.10	4.00	36.00	64.50	26.00	
A61 Birdwell	4.20	8.00	35.00	20.00	64.50	26.00	
A6195 Dearne Valley Parkway	7.60	9.10	7.00	19.00	64.50	34.00	

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

Pedestrian Crossings

Name	Crossing Type
A6135 Sheffield Road	None
A61 South	None
A61 Birdwell	None
A6195 Dearne Valley Parkway	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A6135 Sheffield Road		(calculated)	(calculated)	0.589	1975.239
A61 South		(calculated)	(calculated)	0.834	3464.858
A61 Birdwell		(calculated)	(calculated)	0.612	2156.641
A6195 Dearne Valley Parkway		(calculated)	(calculated)	0.666	2530.093

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6135 Sheffield Road	ONE HOUR	✓	639.00	100.000
A61 South	ONE HOUR	✓	1494.00	100.000
A61 Birdwell	ONE HOUR	✓	921.00	100.000
A6195 Dearne Valley Parkway	ONE HOUR	✓	976.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	242.000	354.000	43.000
	2	244.000	0.000	457.000	793.000
	3	310.000	441.000	0.000	170.000
	4	66.000	709.000	201.000	0.000

Turning Proportions (PCU) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.38	0.55	0.07
	2	0.16	0.00	0.31	0.53
	3	0.34	0.48	0.00	0.18
	4	0.07	0.73	0.21	0.00

Vehicle Mix

Average PCU Per Vehicle - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A6135 Sheffield Road	0.64	9.10	1.75	A

A61 South	0.56	2.83	1.29	A
A61 Birdwell	0.71	8.65	2.40	A
A6195 Dearne Valley Parkway	0.60	4.96	1.47	A

Main Results for each time segment

Main results: (12:45-13:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	481.07	478.94	1013.64	0.00	1377.84	0.349	0.53	3.992	A
A61 South	1124.76	1122.48	448.42	0.00	3091.06	0.364	0.57	1.827	A
A61 Birdwell	693.38	690.53	811.35	0.00	1660.50	0.418	0.71	3.701	A
A6195 Dearne Valley Parkway	734.78	732.53	746.39	0.00	2033.19	0.361	0.56	2.763	A

Main results: (13:00-13:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	574.45	573.26	1212.78	0.00	1260.47	0.456	0.83	5.230	A
A61 South	1343.08	1342.16	536.64	0.00	3017.52	0.445	0.80	2.147	A
A61 Birdwell	827.96	826.35	970.18	0.00	1563.37	0.530	1.11	4.873	A
A6195 Dearne Valley Parkway	877.40	876.36	893.03	0.00	1935.57	0.453	0.82	3.395	A

Main results: (13:15-13:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	703.55	699.98	1482.74	0.00	1101.37	0.639	1.72	8.889	A
A61 South	1644.92	1642.99	655.67	0.00	2918.29	0.564	1.28	2.819	A
A61 Birdwell	1014.04	1009.05	1187.52	0.00	1430.47	0.709	2.36	8.443	A
A6195 Dearne Valley Parkway	1074.60	1072.07	1091.13	0.00	1803.68	0.596	1.45	4.904	A

Main results: (13:30-13:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	703.55	703.43	1487.35	0.00	1098.65	0.640	1.75	9.102	A
A61 South	1644.92	1644.90	658.32	0.00	2916.08	0.564	1.29	2.831	A
A61 Birdwell	1014.04	1013.88	1189.08	0.00	1429.52	0.709	2.40	8.652	A
A6195 Dearne Valley Parkway	1074.60	1074.54	1095.38	0.00	1800.85	0.597	1.47	4.956	A

Main results: (13:45-14:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	574.45	578.06	1219.28	0.00	1256.64	0.457	0.85	5.334	A
A61 South	1343.08	1345.00	540.35	0.00	3014.42	0.446	0.81	2.160	A
A61 Birdwell	827.96	833.00	972.48	0.00	1561.97	0.530	1.14	4.973	A
A6195 Dearne Valley Parkway	877.40	879.93	898.91	0.00	1931.65	0.454	0.84	3.432	A

Main results: (14:00-14:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	481.07	482.31	1018.90	0.00	1374.74	0.350	0.54	4.039	A
A61 South	1124.76	1125.69	451.19	0.00	3088.74	0.364	0.57	1.836	A
A61 Birdwell	693.38	695.05	813.81	0.00	1659.00	0.418	0.72	3.740	A
A6195 Dearne Valley Parkway	734.78	735.86	750.60	0.00	2030.39	0.362	0.57	2.784	A

Junctions 8

ARCADY 8 - Roundabout Module

Filename: Rockingham Roundabout.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 26/02/2015 16:09:05

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - Predicted Weekday			
Unused East	0.00	0.00	0.00	A
Dearne Valley Parkway South	0.80	2.03	0.45	A
Site Access	0.27	3.49	0.21	A
Dearne Valley Parkway North	0.62	1.65	0.38	A

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

"D1 - Base Weekday, AM" model duration: 07:45 - 09:15
"D2 - Base Weekday, PM" model duration: 16:45 - 18:15
"D3 - Base Saturday, Peak" model duration: 11:45 - 13:15
"D4 - Growthed Weekday, AM" model duration: 07:45 - 09:15
"D5 - Growthed Weekday, PM" model duration: 16:45 - 18:15
"D6 - Growthed Saturday, Peak" model duration: 11:45 - 13:15
"D7 - Predicted Weekday, AM " model duration: 07:45 - 09:15
"D8 - Predicted Weekday, PM" model duration: 16:45 - 18:15
"D9 - Predicted Saturday, Peak" model duration: 11:45 - 13:15

Run using Junctions 8.0.2.316 at 26/02/2015 16:09:05

File summary

File Description

Title	Rockingham Roundabout
Location	Birdwell
Site Number	
Date	21/10/2014
Version	
Status	
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - Predicted Weekday, AM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			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)	Single Time Segment Only	Locked
Predicted Weekday, AM	Predicted Weekday	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Rockingham Roundabout	Roundabout	1,2,3,4			2.00	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
Unused East	Unused East	
Dearne Valley Parkway South	Dearne Valley Parkway South	
Site Access	Site Access	
Dearne Valley Parkway North	Dearne Valley Parkway North	

Roundabout Geometry

Name	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
Unused East	5.00	8.00	30.00	20.00	59.00	35.00	
Dearne Valley Parkway South	9.64	11.61	7.05	30.00	59.00	29.00	
Site Access	5.00	7.50	30.00	20.00	59.00	35.00	
Dearne Valley Parkway North	10.99	13.09	9.07	24.00	59.00	34.00	

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

Pedestrian Crossings

Name	Crossing Type
Unused East	None
Dearne Valley Parkway South	None
Site Access	None
Dearne Valley Parkway North	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused East		(calculated)	(calculated)	0.639	2165.403
Dearne Valley Parkway South		(calculated)	(calculated)	0.848	3299.133
Site Access		(calculated)	(calculated)	0.624	2076.365
Dearne Valley Parkway North		(calculated)	(calculated)	0.907	3674.698

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused East	ONE HOUR	✓	0.00	100.000
Dearne Valley Parkway South	ONE HOUR	✓	1293.00	100.000
Site Access	ONE HOUR	✓	250.00	100.000
Dearne Valley Parkway North	ONE HOUR	✓	1226.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	172.000	1121.000
	3	0.000	148.000	0.000	102.000
	4	0.000	1112.000	114.000	0.000

Turning Proportions (PCU) - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.25	0.25	0.25	0.25
	2	0.00	0.00	0.13	0.87
	3	0.00	0.59	0.00	0.41
	4	0.00	0.91	0.09	0.00

Vehicle Mix

Average PCU Per Vehicle - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused East	0.00	0.00	0.00	A
Dearne Valley Parkway South	0.45	2.03	0.80	A
Site Access	0.21	3.49	0.27	A
Dearne Valley Parkway North	0.38	1.65	0.62	A

Main Results for each time segment

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1032.70	0.00	1505.02	0.000	0.00	0.000	A
Dearne Valley Parkway South	973.44	971.71	85.70	0.00	3226.49	0.302	0.43	1.597	A
Site Access	188.21	187.66	842.45	0.00	1550.78	0.121	0.14	2.639	A
Dearne Valley Parkway North	923.00	921.61	111.10	0.00	3573.97	0.258	0.35	1.357	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1234.69	0.00	1375.86	0.000	0.00	0.000	A
Dearne Valley Parkway South	1162.38	1161.84	102.45	0.00	3212.29	0.362	0.57	1.755	A
Site Access	224.74	224.56	1007.29	0.00	1447.94	0.155	0.18	2.942	A
Dearne Valley Parkway North	1102.15	1101.74	132.94	0.00	3554.16	0.310	0.45	1.467	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1511.93	0.00	1198.57	0.000	0.00	0.000	A
Dearne Valley Parkway South	1423.62	1422.68	125.45	0.00	3192.78	0.446	0.80	2.032	A
Site Access	275.26	274.93	1233.43	0.00	1306.86	0.211	0.27	3.488	A
Dearne Valley Parkway North	1349.85	1349.17	162.76	0.00	3527.13	0.383	0.62	1.652	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1512.80	0.00	1198.02	0.000	0.00	0.000	A
Dearne Valley Parkway South	1423.62	1423.61	125.52	0.00	3192.73	0.446	0.80	2.034	A
Site Access	275.26	275.25	1234.24	0.00	1306.35	0.211	0.27	3.490	A
Dearne Valley Parkway North	1349.85	1349.85	162.95	0.00	3526.96	0.383	0.62	1.652	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1236.07	0.00	1374.98	0.000	0.00	0.000	A
Dearne Valley Parkway South	1162.38	1163.32	102.55	0.00	3212.20	0.362	0.57	1.759	A
Site Access	224.74	225.07	1008.57	0.00	1447.14	0.155	0.18	2.948	A
Dearne Valley Parkway North	1102.15	1102.82	133.24	0.00	3553.89	0.310	0.45	1.468	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1034.93	0.00	1503.59	0.000	0.00	0.000	A
Dearne Valley Parkway South	973.44	973.98	85.86	0.00	3226.35	0.302	0.43	1.600	A
Site Access	188.21	188.40	844.42	0.00	1549.55	0.121	0.14	2.644	A
Dearne Valley Parkway North	923.00	923.40	111.53	0.00	3573.58	0.258	0.35	1.358	A

Junctions 8

ARCADY 8 - Roundabout Module

Filename: Rockingham Roundabout.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 26/02/2015 16:09:34

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - Predicted Weekday			
Unused East	0.00	0.00	0.00	A
Dearne Valley Parkway South	0.91	2.14	0.48	A
Site Access	0.37	3.96	0.27	A
Dearne Valley Parkway North	0.62	1.67	0.38	A

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

"D1 - Base Weekday, AM" model duration: 07:45 - 09:15
"D2 - Base Weekday, PM" model duration: 16:45 - 18:15
"D3 - Base Saturday, Peak" model duration: 11:45 - 13:15
"D4 - Growthed Weekday, AM" model duration: 07:45 - 09:15
"D5 - Growthed Weekday, PM" model duration: 16:45 - 18:15
"D6 - Growthed Saturday, Peak" model duration: 11:45 - 13:15
"D7 - Predicted Weekday, AM" model duration: 07:45 - 09:15
"D8 - Predicted Weekday, PM " model duration: 16:45 - 18:15
"D9 - Predicted Saturday, Peak" model duration: 11:45 - 13:15

Run using Junctions 8.0.2.316 at 26/02/2015 16:09:34

File summary

File Description

Title	Rockingham Roundabout
Location	Birdwell
Site Number	
Date	21/10/2014
Version	
Status	
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - Predicted Weekday, PM

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			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)	Single Time Segment Only	Locked
Predicted Weekday, PM	Predicted Weekday	PM		ONE HOUR	16:45	18:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Rockingham Roundabout	Roundabout	1,2,3,4			2.14	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
Unused East	Unused East	
Dearne Valley Parkway South	Dearne Valley Parkway South	
Site Access	Site Access	
Dearne Valley Parkway North	Dearne Valley Parkway North	

Roundabout Geometry

Name	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
Unused East	5.00	8.00	30.00	20.00	59.00	35.00	
Dearne Valley Parkway South	9.64	11.61	7.05	30.00	59.00	29.00	
Site Access	5.00	7.50	30.00	20.00	59.00	35.00	
Dearne Valley Parkway North	10.99	13.09	9.07	24.00	59.00	34.00	

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

Pedestrian Crossings

Name	Crossing Type
Unused East	None
Dearne Valley Parkway South	None
Site Access	None
Dearne Valley Parkway North	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused East		(calculated)	(calculated)	0.639	2165.403
Dearne Valley Parkway South		(calculated)	(calculated)	0.848	3299.133
Site Access		(calculated)	(calculated)	0.624	2076.365
Dearne Valley Parkway North		(calculated)	(calculated)	0.907	3674.698

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused East	ONE HOUR	✓	0.00	100.000
Dearne Valley Parkway South	ONE HOUR	✓	1386.00	100.000
Site Access	ONE HOUR	✓	304.00	100.000
Dearne Valley Parkway North	ONE HOUR	✓	1206.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	175.000	1211.000
	3	0.000	194.000	0.000	110.000
	4	0.000	1105.000	101.000	0.000

Turning Proportions (PCU) - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.25	0.25	0.25	0.25
	2	0.00	0.00	0.13	0.87
	3	0.00	0.64	0.00	0.36
	4	0.00	0.92	0.08	0.00

Vehicle Mix

Average PCU Per Vehicle - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused East	0.00	0.00	0.00	A
Dearne Valley Parkway South	0.48	2.14	0.91	A
Site Access	0.27	3.96	0.37	A
Dearne Valley Parkway North	0.38	1.67	0.62	A

Main Results for each time segment

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1052.16	0.00	1492.58	0.000	0.00	0.000	A
Dearne Valley Parkway South	1043.45	1041.55	75.92	0.00	3234.77	0.323	0.47	1.639	A
Site Access	228.87	228.15	910.04	0.00	1508.61	0.152	0.18	2.810	A
Dearne Valley Parkway North	907.94	906.56	145.60	0.00	3542.69	0.256	0.34	1.365	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1258.01	0.00	1360.95	0.000	0.00	0.000	A
Dearne Valley Parkway South	1245.99	1245.37	90.76	0.00	3222.19	0.387	0.63	1.820	A
Site Access	273.29	273.03	1088.13	0.00	1397.50	0.196	0.24	3.201	A
Dearne Valley Parkway North	1084.17	1083.77	174.24	0.00	3516.72	0.308	0.44	1.479	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1540.43	0.00	1180.34	0.000	0.00	0.000	A
Dearne Valley Parkway South	1526.01	1524.91	111.15	0.00	3204.91	0.476	0.90	2.142	A
Site Access	334.71	334.22	1332.37	0.00	1245.13	0.269	0.37	3.950	A
Dearne Valley Parkway North	1327.83	1327.15	213.28	0.00	3481.32	0.381	0.61	1.670	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1541.42	0.00	1179.71	0.000	0.00	0.000	A
Dearne Valley Parkway South	1526.01	1526.01	111.20	0.00	3204.86	0.476	0.91	2.143	A
Site Access	334.71	334.71	1333.33	0.00	1244.53	0.269	0.37	3.956	A
Dearne Valley Parkway North	1327.83	1327.83	213.59	0.00	3481.04	0.381	0.62	1.671	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1259.56	0.00	1359.95	0.000	0.00	0.000	A
Dearne Valley Parkway South	1245.99	1247.08	90.85	0.00	3222.12	0.387	0.63	1.825	A
Site Access	273.29	273.78	1089.62	0.00	1396.57	0.196	0.24	3.209	A
Dearne Valley Parkway North	1084.17	1084.84	174.71	0.00	3516.29	0.308	0.45	1.480	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1054.56	0.00	1491.04	0.000	0.00	0.000	A
Dearne Valley Parkway South	1043.45	1044.07	76.07	0.00	3234.65	0.323	0.48	1.643	A
Site Access	228.87	229.13	912.25	0.00	1507.23	0.152	0.18	2.818	A
Dearne Valley Parkway North	907.94	908.35	146.22	0.00	3542.13	0.256	0.35	1.368	A

Junctions 8

ARCADY 8 - Roundabout Module

Filename: Rockingham Roundabout.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 26/02/2015 16:10:01

Summary of junction performance

	Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - Predicted Saturday			
Unused East	0.00	0.00	0.00	A
Dearne Valley Parkway South	0.45	1.63	0.31	A
Site Access	0.28	2.88	0.22	A
Dearne Valley Parkway North	0.35	1.41	0.26	A

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

"D1 - Base Weekday, AM" model duration: 07:45 - 09:15
"D2 - Base Weekday, PM" model duration: 16:45 - 18:15
"D3 - Base Saturday, Peak" model duration: 11:45 - 13:15
"D4 - Growthed Weekday, AM" model duration: 07:45 - 09:15
"D5 - Growthed Weekday, PM" model duration: 16:45 - 18:15
"D6 - Growthed Saturday, Peak" model duration: 11:45 - 13:15
"D7 - Predicted Weekday, AM" model duration: 07:45 - 09:15
"D8 - Predicted Weekday, PM" model duration: 16:45 - 18:15
"D9 - Predicted Saturday, Peak " model duration: 11:45 - 13:15

Run using Junctions 8.0.2.316 at 26/02/2015 16:10:01

File summary

File Description

Title	Rockingham Roundabout
Location	Birdwell
Site Number	
Date	21/10/2014
Version	
Status	
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

(Default Analysis Set) - Predicted Saturday, Peak

Data Errors and Warnings

No errors or warnings

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
(Default Analysis Set)			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)	Single Time Segment Only	Locked
Predicted Saturday, Peak	Predicted Saturday	Peak		ONE HOUR	11:45	13:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Rockingham Roundabout	Roundabout	1,2,3,4			1.74	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
Unused East	Unused East	
Dearne Valley Parkway South	Dearne Valley Parkway South	
Site Access	Site Access	
Dearne Valley Parkway North	Dearne Valley Parkway North	

Roundabout Geometry

Name	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
Unused East	5.00	8.00	30.00	20.00	59.00	35.00	
Dearne Valley Parkway South	9.64	11.61	7.05	30.00	59.00	29.00	
Site Access	5.00	7.50	30.00	20.00	59.00	35.00	
Dearne Valley Parkway North	10.99	13.09	9.07	24.00	59.00	34.00	

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

Pedestrian Crossings

Name	Crossing Type
Unused East	None
Dearne Valley Parkway South	None
Site Access	None
Dearne Valley Parkway North	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
Unused East		(calculated)	(calculated)	0.639	2165.403
Dearne Valley Parkway South		(calculated)	(calculated)	0.848	3299.133
Site Access		(calculated)	(calculated)	0.624	2076.365
Dearne Valley Parkway North		(calculated)	(calculated)	0.907	3674.698

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
Unused East	ONE HOUR	✓	0.00	100.000
Dearne Valley Parkway South	ONE HOUR	✓	913.00	100.000
Site Access	ONE HOUR	✓	318.00	100.000
Dearne Valley Parkway North	ONE HOUR	✓	815.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	216.000	697.000
	3	0.000	225.000	0.000	93.000
	4	0.000	726.000	89.000	0.000

Turning Proportions (PCU) - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.25	0.25	0.25	0.25
	2	0.00	0.00	0.24	0.76
	3	0.00	0.71	0.00	0.29
	4	0.00	0.89	0.11	0.00

Vehicle Mix

Average PCU Per Vehicle - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Rockingham Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
Unused East	0.00	0.00	0.00	A
Dearne Valley Parkway South	0.31	1.63	0.45	A
Site Access	0.22	2.88	0.28	A
Dearne Valley Parkway North	0.26	1.41	0.35	A

Main Results for each time segment

Main results: (11:45-12:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	781.68	0.00	1665.54	0.000	0.00	0.000	A
Dearne Valley Parkway South	687.35	686.28	66.91	0.00	3242.41	0.212	0.27	1.408	A
Site Access	239.41	238.77	523.92	0.00	1749.50	0.137	0.16	2.381	A
Dearne Valley Parkway North	613.57	612.73	168.94	0.00	3521.52	0.174	0.21	1.237	A

Main results: (12:00-12:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	934.59	0.00	1567.76	0.000	0.00	0.000	A
Dearne Valley Parkway South	820.77	820.48	79.99	0.00	3231.33	0.254	0.34	1.492	A
Site Access	285.88	285.69	626.37	0.00	1685.58	0.170	0.20	2.571	A
Dearne Valley Parkway North	732.67	732.45	202.14	0.00	3491.42	0.210	0.27	1.304	A

Main results: (12:15-12:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1144.50	0.00	1433.53	0.000	0.00	0.000	A
Dearne Valley Parkway South	1005.23	1004.78	97.95	0.00	3216.10	0.313	0.45	1.627	A
Site Access	350.12	349.82	767.06	0.00	1597.81	0.219	0.28	2.884	A
Dearne Valley Parkway North	897.33	896.99	247.51	0.00	3450.28	0.260	0.35	1.409	A

Main results: (12:30-12:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	1145.06	0.00	1433.17	0.000	0.00	0.000	A
Dearne Valley Parkway South	1005.23	1005.23	97.99	0.00	3216.06	0.313	0.45	1.627	A
Site Access	350.12	350.12	767.41	0.00	1597.59	0.219	0.28	2.885	A
Dearne Valley Parkway North	897.33	897.33	247.73	0.00	3450.09	0.260	0.35	1.409	A

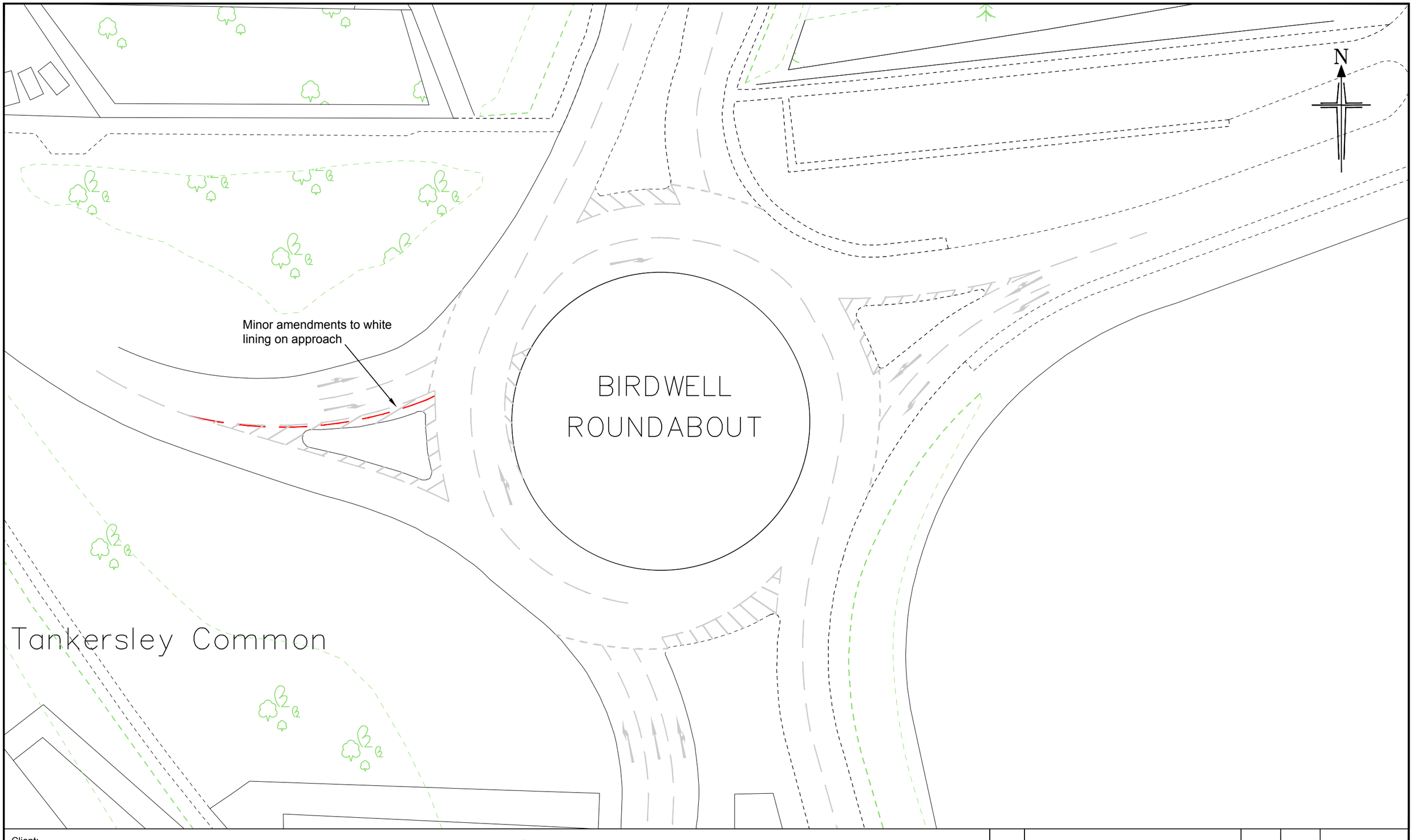
Main results: (12:45-13:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	935.49	0.00	1567.18	0.000	0.00	0.000	A
Dearne Valley Parkway South	820.77	821.22	80.05	0.00	3231.28	0.254	0.34	1.493	A
Site Access	285.88	286.18	626.93	0.00	1685.23	0.170	0.20	2.575	A
Dearne Valley Parkway North	732.67	733.01	202.48	0.00	3491.11	0.210	0.27	1.306	A

Main results: (13:00-13:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
Unused East	0.00	0.00	783.32	0.00	1664.50	0.000	0.00	0.000	A
Dearne Valley Parkway South	687.35	687.64	67.03	0.00	3242.31	0.212	0.27	1.410	A
Site Access	239.41	239.59	524.96	0.00	1748.86	0.137	0.16	2.386	A
Dearne Valley Parkway North	613.57	613.79	169.52	0.00	3521.00	0.174	0.21	1.239	A

APPENDIX BGH 18



Client:

HARTWOOD ESTATES LIMITED

Project:

LAND TO EAST OF HIGHWAYS DEPOT

BRYAN G HALL

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Title

PROPOSED BIRDWELL ROUNDABOUT IMPROVEMENTS

Rev:	Amendment:	Drn:	Chk:	Date:
A	Removed reference to puffin crossing, increased improvements	NC	MC	16.02.15

Job No: 10-336 Drawn: NC Checked: MC Date: 24.10.14

Scale: 1:500
A3 - 420 x 297

Drawing No: 10-336-TR-006

Revision: A

APPENDIX BGH 19

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.2.316 [14 Feb 2013]

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

Filename: Birdwell Roundabout - Imp.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 12/03/2015 09:29:46

Summary of junction performance

	AM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Birdwell Roundabout - Predicted Fri			
A6135 Sheffield Road	2.50	15.48	0.72	C
A61 South	1.38	2.72	0.58	A
A61 Birdwell	6.57	21.88	0.88	C
A6195 Dearne Valley Parkway	4.14	10.98	0.81	B

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

"D1 - Base Fri, AM" model duration: 07:45 - 09:15
"D2 - Base Fri, PM" model duration: 16:45 - 18:15
"D3 - Base Sat, Peak" model duration: 12:45 - 14:15
"D4 - Growthed Fri, AM" model duration: 07:45 - 09:15
"D5 - Growthed Fri, PM" model duration: 16:45 - 18:15
"D6 - Growthed Sat, Peak" model duration: 12:45 - 14:15
"D7 - Predicted Fri, AM " model duration: 07:45 - 09:15
"D8 - Predicted Fri, PM" model duration: 16:45 - 18:15
"D9 - Predicted Sat, Peak" model duration: 12:45 - 14:15

Run using Junctions 8.0.2.316 at 12/03/2015 09:29:46

File summary

File Description

Title	Birdwell Roundabout
Location	Birdwell
Site Number	10-336
Date	14/10/2014
Version	
Status	(new file)
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

Birdwell Roundabout - Predicted Fri, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A61 Birdwell - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Birdwell Roundabout			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)	Single Time Segment Only	Locked
Predicted Fri, AM	Predicted Fri	AM		ONE HOUR	07:45	09:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Birdwell Roundabout	Roundabout	1,2,3,4			10.97	B

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
A6135 Sheffield Road	A6135 Sheffield Road	A6135 Sheffield Road
A61 South	A61 South	
A61 Birdwell	A61 Birdwell	
A6195 Dearne Valley Parkway	A6195 Dearne Valley Parkway	

Roundabout Geometry

Name	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
A6135 Sheffield Road	4.20	7.80	15.00	70.00	64.50	27.00	
A61 South	10.80	11.10	4.00	36.00	64.50	26.00	
A61 Birdwell	4.20	8.55	35.00	20.00	64.50	26.00	
A6195 Dearne Valley Parkway	7.60	9.10	7.00	19.00	64.50	34.00	

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

Pedestrian Crossings

Name	Crossing Type
A6135 Sheffield Road	None
A61 South	None
A61 Birdwell	None
A6195 Dearne Valley Parkway	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A6135 Sheffield Road		(calculated)	(calculated)	0.589	1975.239
A61 South		(calculated)	(calculated)	0.834	3464.858
A61 Birdwell		(calculated)	(calculated)	0.626	2246.356
A6195 Dearne Valley Parkway		(calculated)	(calculated)	0.666	2530.093

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6135 Sheffield Road	ONE HOUR	✓	545.00	100.000
A61 South	ONE HOUR	✓	1666.00	100.000
A61 Birdwell	ONE HOUR	✓	1036.00	100.000
A6195 Dearne Valley Parkway	ONE HOUR	✓	1271.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	325.000	187.000	33.000
	2	206.000	0.000	325.000	1135.000
	3	309.000	585.000	0.000	142.000
	4	91.000	1066.000	114.000	0.000

Turning Proportions (PCU) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.60	0.34	0.06
	2	0.12	0.00	0.20	0.68
	3	0.30	0.56	0.00	0.14
	4	0.07	0.84	0.09	0.00

Vehicle Mix

Average PCU Per Vehicle - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A6135 Sheffield Road	0.72	15.48	2.50	C
A61 South	0.58	2.72	1.38	A
A61 Birdwell	0.88	21.88	6.57	C
A6195 Dearne Valley Parkway	0.81	10.98	4.14	B

Main Results for each time segment

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	410.30	408.23	1323.21	0.00	1195.39	0.343	0.52	4.561	A
A61 South	1254.25	1251.75	250.28	0.00	3256.22	0.385	0.62	1.794	A
A61 Birdwell	779.96	776.19	1032.28	0.00	1599.78	0.488	0.94	4.351	A
A6195 Dearne Valley Parkway	956.88	953.17	824.58	0.00	1981.14	0.483	0.93	3.489	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	489.94	488.52	1582.74	0.00	1042.44	0.470	0.88	6.482	A
A61 South	1497.70	1496.72	299.46	0.00	3215.23	0.466	0.87	2.094	A
A61 Birdwell	931.34	928.37	1234.33	0.00	1473.22	0.632	1.69	6.572	A
A6195 Dearne Valley Parkway	1142.60	1140.14	986.19	0.00	1873.55	0.610	1.54	4.891	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	600.06	594.12	1924.40	0.00	841.08	0.713	2.36	14.250	B
A61 South	1834.30	1832.28	364.48	0.00	3161.03	0.580	1.37	2.706	A
A61 Birdwell	1140.66	1123.03	1510.82	0.00	1300.04	0.877	6.09	18.746	C
A6195 Dearne Valley Parkway	1399.40	1389.76	1195.66	0.00	1734.10	0.807	3.95	10.181	B

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	600.06	599.49	1941.50	0.00	831.00	0.722	2.50	15.475	C
A61 South	1834.30	1834.27	367.44	0.00	3158.56	0.581	1.38	2.717	A
A61 Birdwell	1140.66	1138.73	1512.75	0.00	1298.83	0.878	6.57	21.876	C
A6195 Dearne Valley Parkway	1399.40	1398.63	1209.46	0.00	1724.91	0.811	4.14	10.976	B

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	489.94	496.26	1606.97	0.00	1028.15	0.477	0.92	6.845	A
A61 South	1497.70	1499.71	303.72	0.00	3211.68	0.466	0.88	2.106	A
A61 Birdwell	931.34	950.60	1237.20	0.00	1471.43	0.633	1.76	7.160	A
A6195 Dearne Valley Parkway	1142.60	1152.72	1005.75	0.00	1860.53	0.614	1.61	5.156	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	410.30	411.87	1333.07	0.00	1189.58	0.345	0.53	4.639	A
A61 South	1254.25	1255.25	252.33	0.00	3254.52	0.385	0.63	1.800	A
A61 Birdwell	779.96	783.14	1035.31	0.00	1597.88	0.488	0.96	4.435	A

A6195 Dearne Valley Parkway	956.88	959.55	831.01	0.00	1976.86	0.484	0.95	3.549	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.2.316 [14 Feb 2013]

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

Filename: Birdwell Roundabout - Imp.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 12/03/2015 09:30:30

Summary of junction performance

	PM			
	Queue (PCU)	Delay (s)	RFC	LOS
	Birdwell Roundabout - Predicted Fri			
A6135 Sheffield Road	3.00	16.35	0.76	C
A61 South	12.46	17.63	0.93	C
A61 Birdwell	8.53	33.61	0.91	D
A6195 Dearne Valley Parkway	5.67	14.95	0.86	B

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

"D1 - Base Fri, AM" model duration: 07:45 - 09:15
"D2 - Base Fri, PM" model duration: 16:45 - 18:15
"D3 - Base Sat, Peak" model duration: 12:45 - 14:15
"D4 - Growthed Fri, AM" model duration: 07:45 - 09:15
"D5 - Growthed Fri, PM" model duration: 16:45 - 18:15
"D6 - Growthed Sat, Peak" model duration: 12:45 - 14:15
"D7 - Predicted Fri, AM" model duration: 07:45 - 09:15
"D8 - Predicted Fri, PM " model duration: 16:45 - 18:15
"D9 - Predicted Sat, Peak" model duration: 12:45 - 14:15

Run using Junctions 8.0.2.316 at 12/03/2015 09:30:30

File summary

File Description

Title	Birdwell Roundabout
Location	Birdwell
Site Number	10-336
Date	14/10/2014
Version	
Status	(new file)
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

Birdwell Roundabout - Predicted Fri, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A61 Birdwell - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Birdwell Roundabout			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)	Single Time Segment Only	Locked
Predicted Fri, PM	Predicted Fri	PM		ONE HOUR	16:45	18:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Birdwell Roundabout	Roundabout	1,2,3,4			19.51	C

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
A6135 Sheffield Road	A6135 Sheffield Road	A6135 Sheffield Road
A61 South	A61 South	
A61 Birdwell	A61 Birdwell	
A6195 Dearne Valley Parkway	A6195 Dearne Valley Parkway	

Roundabout Geometry

Name	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
A6135 Sheffield Road	4.20	7.80	15.00	70.00	64.50	27.00	
A61 South	10.80	11.10	4.00	36.00	64.50	26.00	
A61 Birdwell	4.20	8.55	35.00	20.00	64.50	26.00	
A6195 Dearne Valley Parkway	7.60	9.10	7.00	19.00	64.50	34.00	

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

Pedestrian Crossings

Name	Crossing Type
A6135 Sheffield Road	None
A61 South	None
A61 Birdwell	None
A6195 Dearne Valley Parkway	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A6135 Sheffield Road		(calculated)	(calculated)	0.589	1975.239
A61 South		(calculated)	(calculated)	0.834	3464.858
A61 Birdwell		(calculated)	(calculated)	0.626	2246.356
A6195 Dearne Valley Parkway		(calculated)	(calculated)	0.666	2530.093

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6135 Sheffield Road	ONE HOUR	✓	622.00	100.000
A61 South	ONE HOUR	✓	2452.00	100.000
A61 Birdwell	ONE HOUR	✓	886.00	100.000
A6195 Dearne Valley Parkway	ONE HOUR	✓	1294.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	225.000	354.000	43.000
	2	441.000	0.000	783.000	1228.000
	3	310.000	441.000	0.000	135.000
	4	78.000	984.000	232.000	0.000

Turning Proportions (PCU) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.36	0.57	0.07
	2	0.18	0.00	0.32	0.50
	3	0.35	0.50	0.00	0.15
	4	0.06	0.76	0.18	0.00

Vehicle Mix

Average PCU Per Vehicle - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A6135 Sheffield Road	0.76	16.35	3.00	C
A61 South	0.93	17.63	12.46	C
A61 Birdwell	0.91	33.61	8.53	D
A6195 Dearne Valley Parkway	0.86	14.95	5.67	B

Main Results for each time segment

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	468.27	465.88	1242.00	0.00	1243.25	0.377	0.60	4.617	A
A61 South	1845.99	1840.02	471.29	0.00	3071.99	0.601	1.49	2.908	A
A61 Birdwell	667.03	663.62	1284.65	0.00	1441.70	0.463	0.85	4.606	A
A6195 Dearne Valley Parkway	974.19	970.17	893.43	0.00	1935.30	0.503	1.01	3.715	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	559.17	557.49	1485.34	0.00	1099.84	0.508	1.02	6.618	A
A61 South	2204.30	2199.32	563.86	0.00	2994.83	0.736	2.74	4.498	A
A61 Birdwell	796.50	793.51	1535.55	0.00	1284.55	0.620	1.60	7.288	A
A6195 Dearne Valley Parkway	1163.28	1160.32	1068.16	0.00	1818.98	0.640	1.75	5.440	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	684.83	677.70	1800.29	0.00	914.22	0.749	2.80	14.797	B
A61 South	2699.70	2665.94	685.49	0.00	2893.43	0.933	11.18	14.134	B
A61 Birdwell	975.50	953.37	1861.47	0.00	1080.40	0.903	7.13	24.984	C
A6195 Dearne Valley Parkway	1424.72	1410.80	1287.58	0.00	1672.90	0.852	5.23	13.096	B

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	684.83	684.03	1819.96	0.00	902.63	0.759	3.00	16.351	C
A61 South	2699.70	2694.56	691.71	0.00	2888.25	0.935	12.46	17.625	C
A61 Birdwell	975.50	969.93	1881.39	0.00	1067.93	0.913	8.53	33.607	D
A6195 Dearne Valley Parkway	1424.72	1422.96	1306.76	0.00	1660.13	0.858	5.67	14.954	B

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	559.17	566.83	1517.40	0.00	1080.94	0.517	1.09	7.105	A
A61 South	2204.30	2242.67	573.07	0.00	2987.14	0.738	2.87	5.078	A
A61 Birdwell	796.50	823.65	1565.70	0.00	1265.67	0.629	1.74	8.629	A
A6195 Dearne Valley Parkway	1163.28	1178.47	1101.50	0.00	1796.78	0.647	1.87	5.960	A

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

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	468.27	470.17	1252.36	0.00	1237.15	0.379	0.61	4.704	A
A61 South	1845.99	1851.39	475.36	0.00	3068.60	0.602	1.52	2.972	A
A61 Birdwell	667.03	670.48	1292.69	0.00	1436.67	0.464	0.87	4.718	A

A6195 Dearne Valley Parkway	974.19	977.56	901.30	0.00	1930.06	0.505	1.03	3.794	A

Junctions 8

ARCADY 8 - Roundabout Module

Version: 8.0.2.316 [14 Feb 2013]

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

Filename: Birdwell Roundabout - Imp.arc8
Path: Y:\2010\10-326 to 10-350\10-336 Land to East of Highways Depot\Technical\Junctions8
Report generation date: 12/03/2015 09:31:03

Summary of junction performance

	Peak			
	Queue (PCU)	Delay (s)	RFC	LOS
	Birdwell Roundabout - Predicted Sat			
A6135 Sheffield Road	1.79	9.28	0.64	A
A61 South	1.29	2.83	0.56	A
A61 Birdwell	2.17	7.67	0.69	A
A6195 Dearne Valley Parkway	1.49	5.04	0.60	A

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

"D1 - Base Fri, AM" model duration: 07:45 - 09:15
"D2 - Base Fri, PM" model duration: 16:45 - 18:15
"D3 - Base Sat, Peak" model duration: 12:45 - 14:15
"D4 - Growthed Fri, AM" model duration: 07:45 - 09:15
"D5 - Growthed Fri, PM" model duration: 16:45 - 18:15
"D6 - Growthed Sat, Peak" model duration: 12:45 - 14:15
"D7 - Predicted Fri, AM" model duration: 07:45 - 09:15
"D8 - Predicted Fri, PM" model duration: 16:45 - 18:15
"D9 - Predicted Sat, Peak " model duration: 12:45 - 14:15

Run using Junctions 8.0.2.316 at 12/03/2015 09:31:02

File summary

File Description

Title	Birdwell Roundabout
Location	Birdwell
Site Number	10-336
Date	14/10/2014
Version	
Status	(new file)
Identifier	10-336
Client	
Jobnumber	10-336
Enumerator	NC
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	PCU	PCU	perHour	s	-Min	perMin

Birdwell Roundabout - Predicted Sat, Peak

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Geometry	A61 Birdwell - Roundabout Geometry	Effective flare length is over 30m, which is outside the normal range. Treat capacities with increasing caution.

Analysis Set Details

Name	Description	Locked	Network Flow Scaling Factor (%)	Reason For Scaling Factors
Birdwell Roundabout			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)	Single Time Segment Only	Locked
Predicted Sat, Peak	Predicted Sat	Peak		ONE HOUR	12:45	14:15	90	15		

Junction Network

Junctions

Name	Junction Type	Arm Order	Grade Separated	Large Roundabout	Junction Delay (s)	Junction LOS
Birdwell Roundabout	Roundabout	1,2,3,4			5.51	A

Junction Network Options

Driving Side	Lighting
Left	Normal/unknown

Arms

Arms

Name	Name	Description
A6135 Sheffield Road	A6135 Sheffield Road	A6135 Sheffield Road
A61 South	A61 South	
A61 Birdwell	A61 Birdwell	
A6195 Dearne Valley Parkway	A6195 Dearne Valley Parkway	

Roundabout Geometry

Name	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
A6135 Sheffield Road	4.20	7.80	15.00	70.00	64.50	27.00	
A61 South	10.80	11.10	4.00	36.00	64.50	26.00	
A61 Birdwell	4.20	8.55	35.00	20.00	64.50	26.00	
A6195 Dearne Valley Parkway	7.60	9.10	7.00	19.00	64.50	34.00	

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

Pedestrian Crossings

Name	Crossing Type
A6135 Sheffield Road	None
A61 South	None
A61 Birdwell	None
A6195 Dearne Valley Parkway	None

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Name	Enter slope and intercept directly	Entered slope	Entered intercept (PCU/hr)	Final Slope	Final Intercept (PCU/hr)
A6135 Sheffield Road		(calculated)	(calculated)	0.589	1975.239
A61 South		(calculated)	(calculated)	0.834	3464.858
A61 Birdwell		(calculated)	(calculated)	0.626	2246.356
A6195 Dearne Valley Parkway		(calculated)	(calculated)	0.666	2530.093

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

Traffic Flows

Demand Set Data Options

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

Entry Flows

General Flows Data

Name	Profile Type	Use Turning Counts	Average Demand Flow (PCU/hr)	Flow Scaling Factor (%)
A6135 Sheffield Road	ONE HOUR	✓	639.00	100.000
A61 South	ONE HOUR	✓	1494.00	100.000
A61 Birdwell	ONE HOUR	✓	938.00	100.000
A6195 Dearne Valley Parkway	ONE HOUR	✓	976.00	100.000

Turning Proportions

Turning Counts or Proportions (PCU/hr) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	242.000	354.000	43.000
	2	244.000	0.000	457.000	793.000
	3	315.000	453.000	0.000	170.000
	4	66.000	709.000	201.000	0.000

Turning Proportions (PCU) - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.00	0.38	0.55	0.07
	2	0.16	0.00	0.31	0.53
	3	0.34	0.48	0.00	0.18
	4	0.07	0.73	0.21	0.00

Vehicle Mix

Average PCU Per Vehicle - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	1.000	1.000	1.000	1.000
	2	1.000	1.000	1.000	1.000
	3	1.000	1.000	1.000	1.000
	4	1.000	1.000	1.000	1.000

Heavy Vehicle Percentages - Birdwell Roundabout (for whole period)

		To			
		1	2	3	4
From	1	0.000	0.000	0.000	0.000
	2	0.000	0.000	0.000	0.000
	3	0.000	0.000	0.000	0.000
	4	0.000	0.000	0.000	0.000

Results

Results Summary for whole modelled period

Name	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
A6135 Sheffield Road	0.64	9.28	1.79	A
A61 South	0.56	2.83	1.29	A
A61 Birdwell	0.69	7.67	2.17	A
A6195 Dearne Valley Parkway	0.60	5.04	1.49	A

Main Results for each time segment

Main results: (12:45-13:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	481.07	478.93	1022.71	0.00	1372.49	0.351	0.54	4.019	A
A61 South	1124.76	1122.48	448.41	0.00	3091.07	0.364	0.57	1.827	A
A61 Birdwell	706.18	703.46	811.35	0.00	1738.16	0.406	0.68	3.471	A
A6195 Dearne Valley Parkway	734.78	732.52	759.29	0.00	2024.60	0.363	0.57	2.781	A

Main results: (13:00-13:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	574.45	573.25	1223.61	0.00	1254.09	0.458	0.84	5.277	A
A61 South	1343.08	1342.16	536.63	0.00	3017.53	0.445	0.80	2.147	A
A61 Birdwell	843.24	841.76	970.18	0.00	1638.67	0.515	1.05	4.509	A
A6195 Dearne Valley Parkway	877.40	876.35	908.41	0.00	1925.33	0.456	0.83	3.429	A

Main results: (13:15-13:30)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	703.55	699.88	1496.16	0.00	1093.46	0.643	1.76	9.063	A
A61 South	1644.92	1642.99	655.59	0.00	2918.36	0.564	1.28	2.819	A
A61 Birdwell	1032.76	1028.39	1187.51	0.00	1502.55	0.687	2.14	7.524	A
A6195 Dearne Valley Parkway	1074.60	1072.00	1110.34	0.00	1790.90	0.600	1.48	4.990	A

Main results: (13:30-13:45)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	703.55	703.42	1500.58	0.00	1090.86	0.645	1.79	9.283	A
A61 South	1644.92	1644.90	658.32	0.00	2916.08	0.564	1.29	2.831	A
A61 Birdwell	1032.76	1032.63	1189.08	0.00	1501.57	0.688	2.17	7.672	A
A6195 Dearne Valley Parkway	1074.60	1074.54	1114.13	0.00	1788.37	0.601	1.49	5.043	A

Main results: (13:45-14:00)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	574.45	578.16	1229.85	0.00	1250.41	0.459	0.86	5.385	A
A61 South	1343.08	1345.00	540.43	0.00	3014.35	0.446	0.81	2.158	A
A61 Birdwell	843.24	847.64	972.49	0.00	1637.23	0.515	1.07	4.583	A
A6195 Dearne Valley Parkway	877.40	880.00	913.68	0.00	1921.82	0.457	0.85	3.465	A

Main results: (14:00-14:15)

Name	Total Demand (PCU/hr)	Entry Flow (PCU/hr)	Circulating Flow (PCU/hr)	Pedestrian Demand (Ped/hr)	Capacity (PCU/hr)	RFC	End Queue (PCU)	Delay (s)	LOS
A6135 Sheffield Road	481.07	482.33	1027.89	0.00	1369.44	0.351	0.55	4.063	A
A61 South	1124.76	1125.69	451.21	0.00	3088.73	0.364	0.57	1.833	A
A61 Birdwell	706.18	707.71	813.81	0.00	1736.62	0.407	0.69	3.505	A

A6195 Dearne Valley Parkway	734.78	735.87	763.29	0.00	2021.94	0.363	0.57	2.803	A