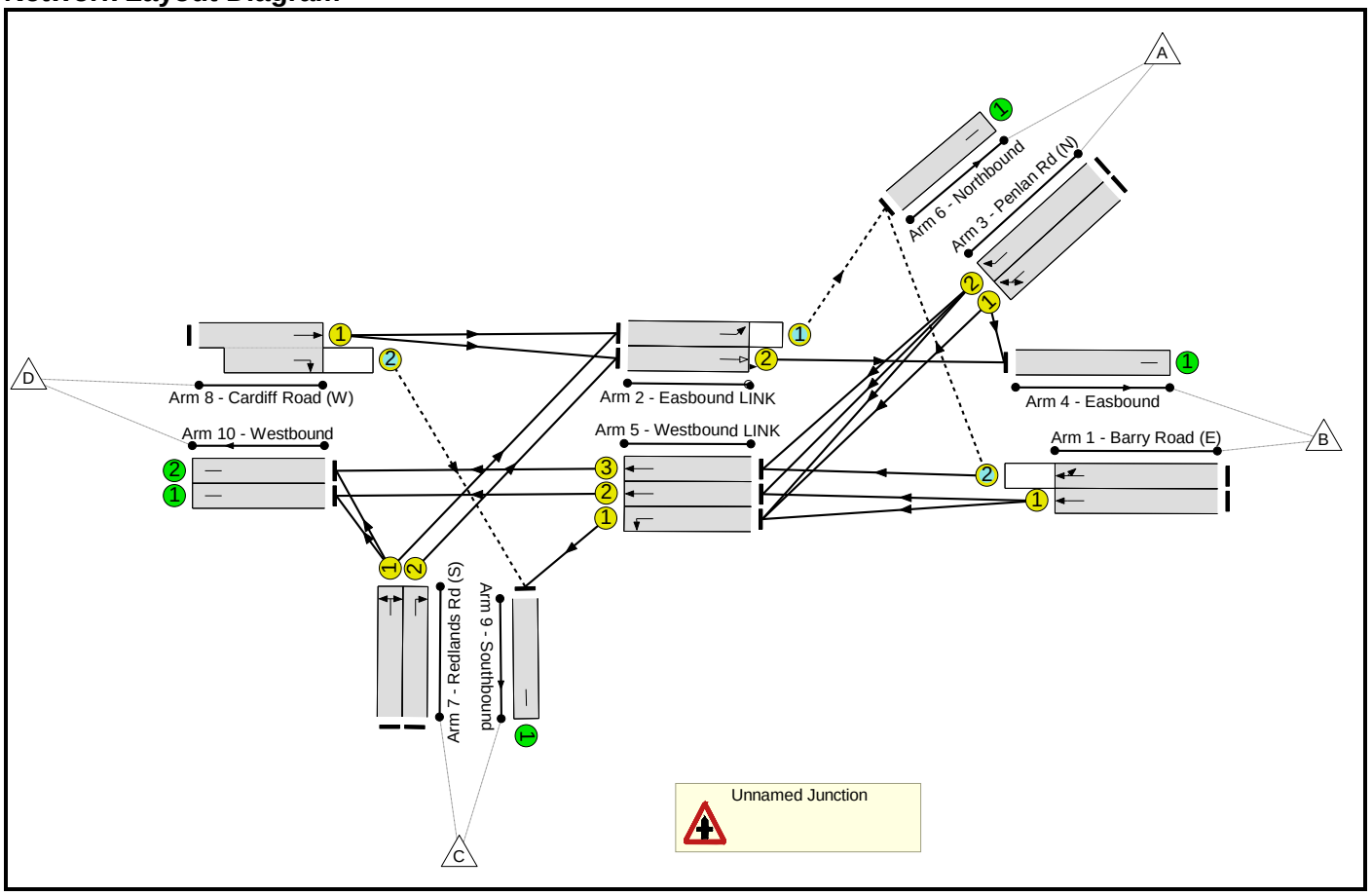
Full Input Data And Results

User and Project Details

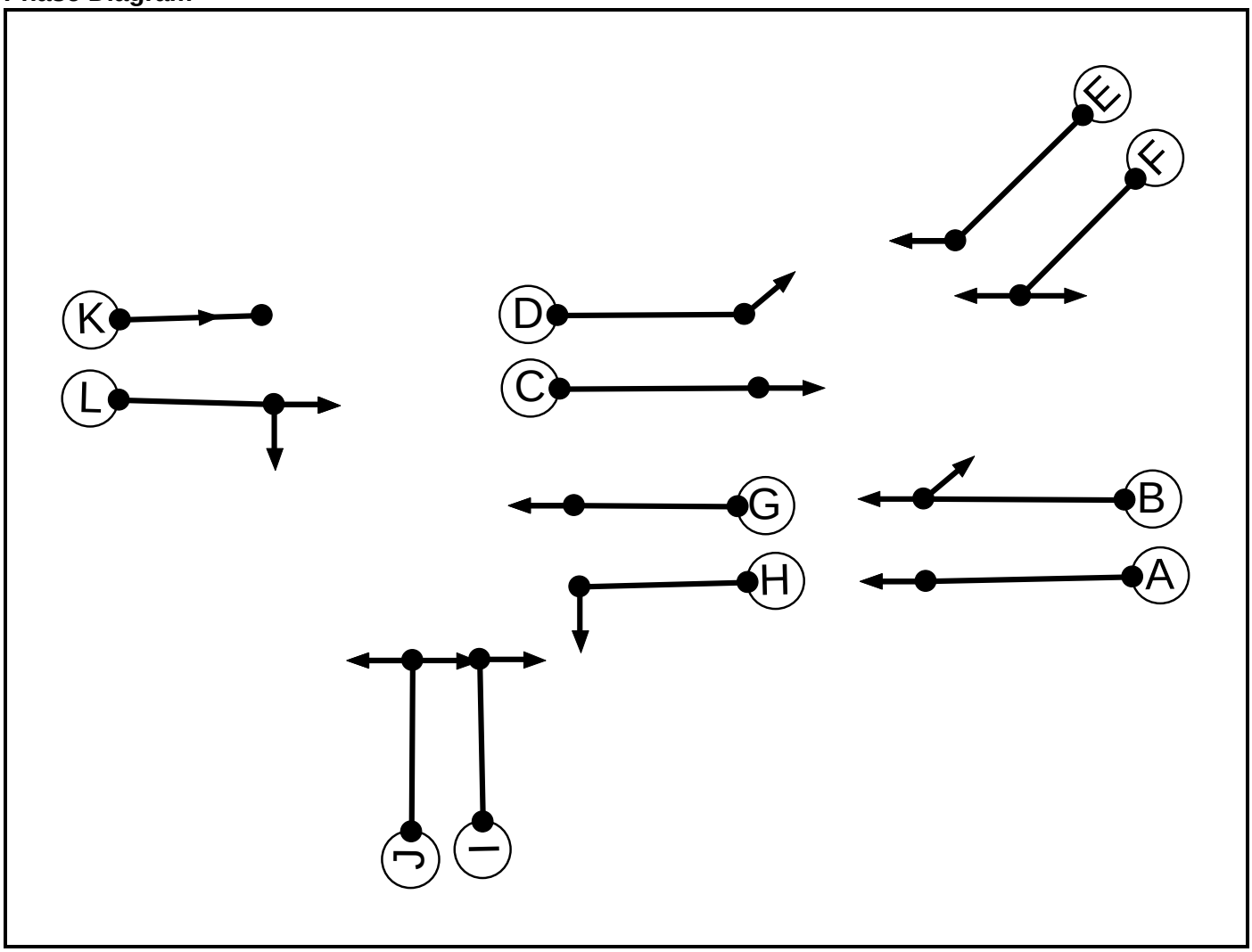
Project:	**Waterfront Barry**
Title:	
Location:	Merrie Harrier, Vale of Glamorgan
File name:	post2009_Merrie Harrier.lsg3x
Author:	Ryan Hopkins
Company:	Arup
Address:	
Notes:	

Network Layout Diagram



Full Input Data And Results

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	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Traffic		7	7
I	Traffic		7	7
J	Traffic		7	7
K	Traffic		7	7
L	Traffic		7	7

Full Input Data And Results

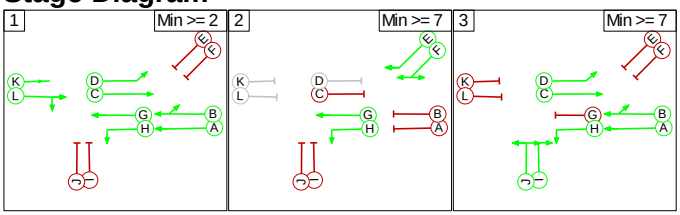
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L
A		-	-	-	7	7	-	-	-	-	-	-
B	-		-	-	7	7	-	-	-	-	-	-
C	-	-		-	8	8	-	-	-	-	-	-
D	-	-	-		-	-	-	-	-	-	-	-
E	7	7	7	-		-	-	-	-	-	-	-
F	7	7	7	-	-		-	-	-	-	-	-
G	-	-	-	-	-	-		-	6	7	-	-
H	-	-	-	-	-	-	-		-	-	-	-
I	-	-	-	-	-	-	7	-		-	8	6
J	-	-	-	-	-	-	7	-	-		-	-
K	-	-	-	-	-	-	-	-	8	-		-
L	-	-	-	-	-	-	-	-	8	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Changes

From Stage \ To Stage	1	2	3
1		8	8
2	7		7
3	8	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction

Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/2 (Barry Road (E))	6/1 (U-Turn)	1440	2/2	1.09	2/2	3.00	-	0.50	3	3.00
2/1 (Easbound LINK)	6/1 (Ahead)	1440	1/2	1.09	1/2	2.00	-	0.50	2	2.00
8/2 (Cardiff Road (W))	9/1 (Right)	1400	5/1	1.10	5/1	3.00	-	0.50	3	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction

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)
1/1 (Barry Road (E))	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
1/2 (Barry Road (E))	O	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
											Arm 6 U-Turn	12.00
2/1 (Easbound LINK)	O	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Ahead	Inf
2/2 (Easbound LINK)	U	C	2	3	60.0	Geom	-	3.40	0.00	N	Arm 4 Ahead	Inf
3/1 (Penlan Rd (N))	U	F	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 U-Turn	10.00
											Arm 5 Ahead	Inf
3/2 (Penlan Rd (N))	U	E	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
4/1 (Easbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Westbound LINK)	U	H	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 9 Left	13.00
5/2 (Westbound LINK)	U	G	2	3	60.0	Geom	-	3.30	0.00	N	Arm 10 Ahead	Inf
5/3 (Westbound LINK)	U	G	2	3	60.0	Geom	-	3.20	0.00	N	Arm 10 Ahead	Inf
6/1 (Northbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Redlands Rd (S))	U	J	2	3	60.0	Geom	-	2.50	0.00	Y	Arm 2 Right	17.00
											Arm 10 Left	14.00
7/2 (Redlands Rd (S))	U	I	2	3	60.0	Geom	-	2.80	0.00	N	Arm 2 Right	20.00
8/1 (Cardiff Road (W))	U	L	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Ahead	Inf
8/2 (Cardiff Road (W))	O	L	2	3	6.0	Geom	-	3.00	0.00	N	Arm 9 Right	20.00
9/1 (Southbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-

10/2 (Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2008 Base'	08:30	09:30	01:00	
2: 'PM 2008 Base'	16:30	17:30	01:00	
3: 'AM 2020 Base'	08:30	09:30	01:00	
4: 'PM 2020 Base'	16:30	17:30	01:00	
5: 'AM 2020 with Dev'	08:30	09:30	01:00	
6: 'PM 2020 with Dev'	16:30	17:30	01:00	
7: '2020 with Dev + Tourism'	16:30	17:30	01:00	

Traffic Lane Flows

Lane	Scenario 1: AM Base 2008
Junction: Unnamed Junction	
1/1	514
1/2	208
2/1	501
2/2	1033
3/1	164
3/2	196
4/1	1128
5/1	383
5/2	323
5/3	106
6/1	676
7/1	402
7/2	618
8/1 (with short)	726(In) 616(Out)
8/2 (short)	110
9/1	493
10/1	422
10/2	109

Full Input Data And Results

Scenario 1: 'AM Base 2008' (FG1: 'AM 2008 Base', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	15.9 %	1859
				Arm 6 U-Turn	12.00	84.1 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	57.9 %	1762
				Arm 5 Ahead	Inf	42.1 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	74.6 %	1706
				Arm 10 Left	14.00	25.4 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 2: PM Base 2008
Junction: Unnamed Junction	
1/1	756
1/2	331
2/1	289
2/2	739
3/1	303
3/2	369
4/1	878
5/1	739
5/2	412
5/3	376
6/1	382
7/1	236
7/2	311
8/1 (with short)	696(In) 595(Out)
8/2 (short)	101
9/1	840
10/1	516
10/2	386

Full Input Data And Results

Scenario 2: 'PM Base 2008' (FG2: 'PM 2008 Base', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	71.9 %	1985
				Arm 6 U-Turn	12.00	28.1 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	45.9 %	1792
				Arm 5 Ahead	Inf	54.1 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	51.7 %	1700
				Arm 10 Left	14.00	48.3 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 3: AM Base 2020
Junction: Unnamed Junction	
1/1	634
1/2	209
2/1	584
2/2	1205
3/1	193
3/2	227
4/1	1316
5/1	447
5/2	407
5/3	93
6/1	789
7/1	468
7/2	721
8/1 (with short)	847(In) 719(Out)
8/2 (short)	128
9/1	575
10/1	524
10/2	95

Full Input Data And Results

Scenario 3: 'AM Base 2020' (FG3: 'AM 2020 Base', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	1.9 %	1831
				Arm 6 U-Turn	12.00	98.1 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	57.5 %	1763
				Arm 5 Ahead	Inf	42.5 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	74.6 %	1706
				Arm 10 Left	14.00	25.4 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 4: PM Base 2020
Junction: Unnamed Junction	
1/1	1053
1/2	212
2/1	337
2/2	860
3/1	362
3/2	420
4/1	1022
5/1	859
5/2	646
5/3	271
6/1	446
7/1	274
7/2	362
8/1 (with short)	811(In) 693(Out)
8/2 (short)	118
9/1	977
10/1	772
10/2	277

Full Input Data And Results

Scenario 4: 'PM Base 2020' (FG4: 'PM 2020 Base', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	48.6 %	1931
				Arm 6 U-Turn	12.00	51.4 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	44.8 %	1795
				Arm 5 Ahead	Inf	55.2 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	51.8 %	1700
				Arm 10 Left	14.00	48.2 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 5: AM 2020 with Dev
Junction: Unnamed Junction	
1/1	658
1/2	209
2/1	597
2/2	1339
3/1	196
3/2	230
4/1	1450
5/1	447
5/2	435
5/3	95
6/1	802
7/1	452
7/2	740
8/1 (with short)	998(In) 866(Out)
8/2 (short)	132
9/1	579
10/1	556
10/2	96

Full Input Data And Results

Scenario 5: 'AM 2020 with Dev' (FG5: 'AM 2020 with Dev', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	1.9 %	1831
				Arm 6 U-Turn	12.00	98.1 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	56.6 %	1765
				Arm 5 Ahead	Inf	43.4 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	73.0 %	1706
				Arm 10 Left	14.00	27.0 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 6: PM 2020 with Dev
Junction: Unnamed Junction	
1/1	1178
1/2	226
2/1	344
2/2	891
3/1	369
3/2	424
4/1	1053
5/1	858
5/2	769
5/3	299
6/1	453
7/1	276
7/2	363
8/1 (with short)	854(In) 732(Out)
8/2 (short)	122
9/1	980
10/1	899
10/2	305

Full Input Data And Results

Scenario 6: 'PM 2020 with Dev' (FG6: 'PM 2020 with Dev', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	51.8 %	1938
				Arm 6 U-Turn	12.00	48.2 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	43.9 %	1797
				Arm 5 Ahead	Inf	56.1 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	50.7 %	1699
				Arm 10 Left	14.00	49.3 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 7: PM 2020 with Dev + tourism
Junction: Unnamed Junction	
1/1	1330
1/2	175
2/1	345
2/2	1004
3/1	369
3/2	424
4/1	1166
5/1	858
5/2	910
5/3	259
6/1	454
7/1	265
7/2	375
8/1 (with short)	967(In) 845(Out)
8/2 (short)	122
9/1	980
10/1	1040
10/2	265

Full Input Data And Results

Scenario 7: 'PM 2020 with Dev + tourism' (FG7: '2020 with Dev + Tourism', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	37.7 %	1907
				Arm 6 U-Turn	12.00	62.3 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	43.9 %	1797
				Arm 5 Ahead	Inf	56.1 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	48.7 %	1699
				Arm 10 Left	14.00	51.3 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 8: PM 2020 Base + tourism
Junction: Unnamed Junction	
1/1	1115
1/2	251
2/1	336
2/2	973
3/1	364
3/2	419
4/1	1135
5/1	859
5/2	707
5/3	312
6/1	445
7/1	261
7/2	374
8/1 (with short)	924(In) 806(Out)
8/2 (short)	118
9/1	977
10/1	824
10/2	327

Full Input Data And Results

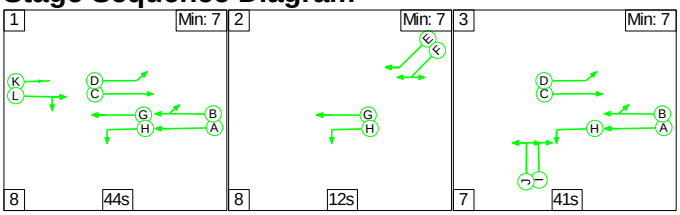
Scenario 8: 'PM 2020 Base + tourism' (FG10: 'PM 2020 Base + Tourism', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	56.6 %	1949
				Arm 6 U-Turn	12.00	43.4 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	44.5 %	1795
				Arm 5 Ahead	Inf	55.5 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	49.4 %	1699
				Arm 10 Left	14.00	50.6 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Scenario 1: 'AM Base 2008' (FG1: 'AM 2008 Base', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

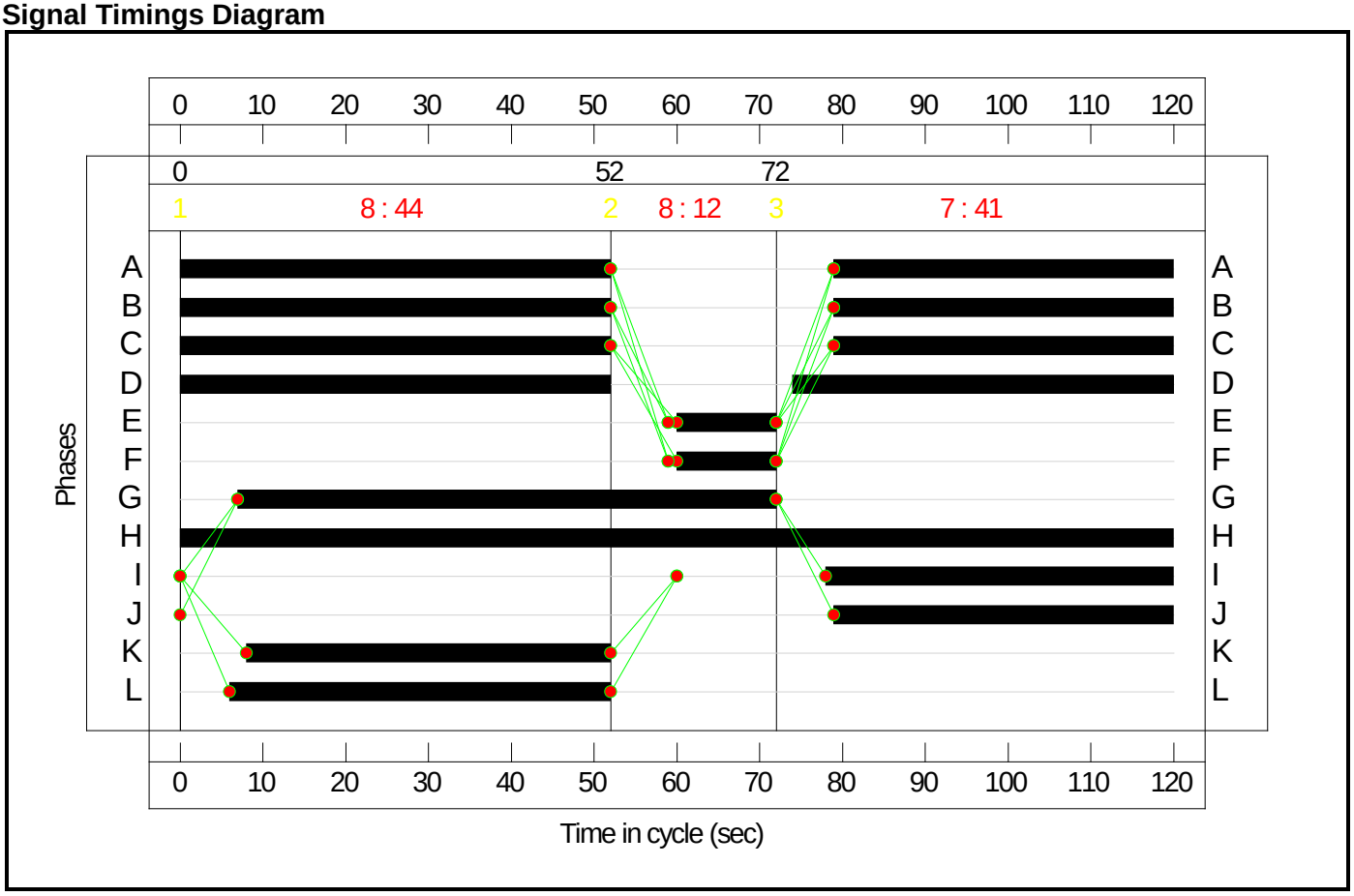


Full Input Data And Results

Stage Timings

Stage	1	2	3
Duration	44	12	41
Change Point	0	52	72

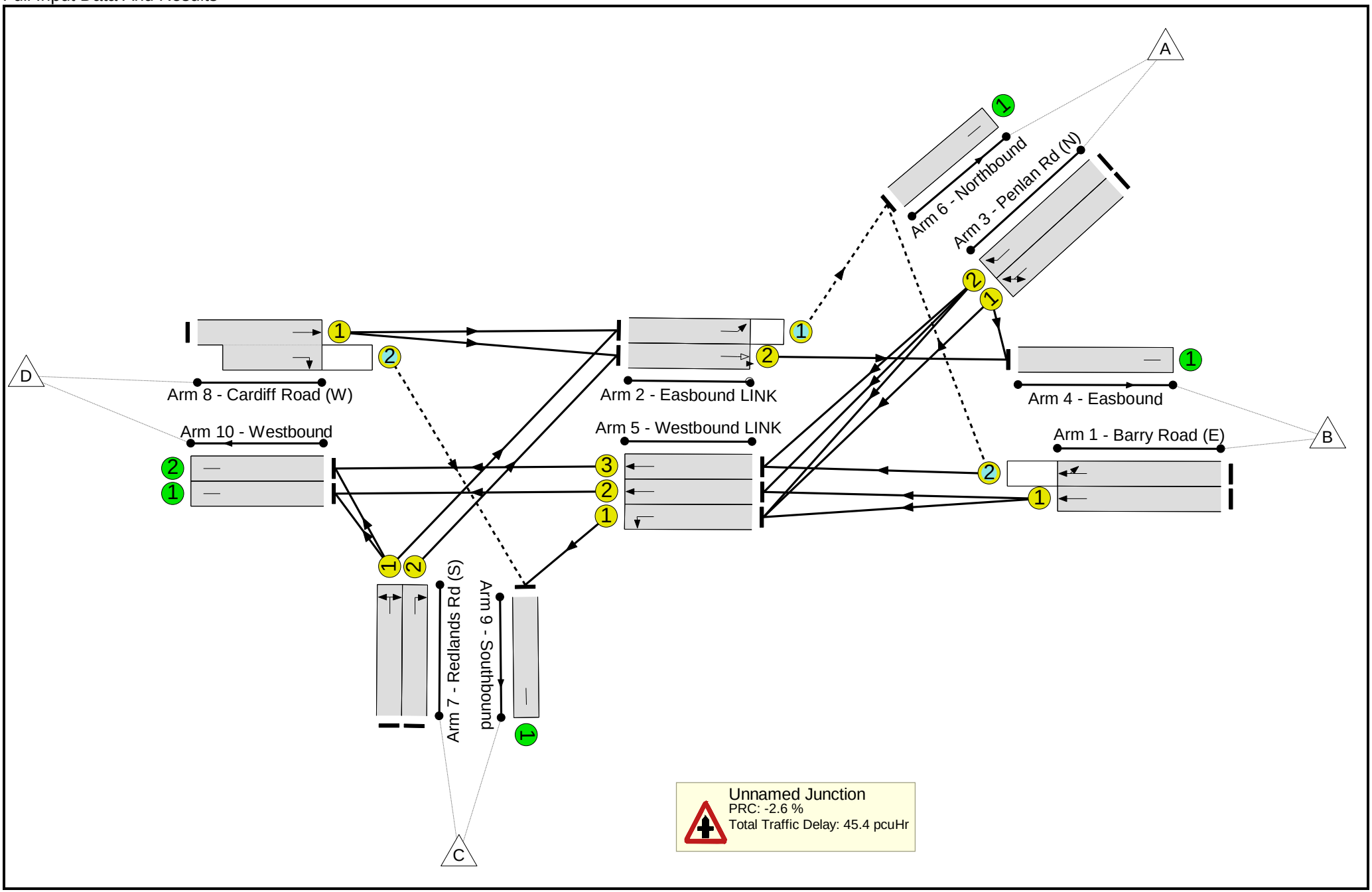
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**92.3%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**92.3%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	93	-	514	1915	1500	34.3%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	93	-	208	1859	279	74.4%
2/1	Easbound LINK Ahead	O	N/A	N/A	D		1	98	-	501	1935	1020	49.1%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	93	-	1033	2095	1641	62.9%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	12	-	164	1762	191	85.9%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	12	-	196	2055	223	88.0%
4/1	Easbound	U	N/A	N/A	-		-	-	-	1128	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	383	1780	1780	21.5%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	65	-	323	2085	1147	28.2%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	65	-	106	2075	1141	9.3%
6/1	Northbound	U	N/A	N/A	-		-	-	-	676	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	41	-	402	1706	597	67.3%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	42	-	618	1893	678	91.1%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	46		726	1915:1912	787	92.3%
9/1	Southbound	U	N/A	N/A	-		-	-	-	493	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	422	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	109	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**763**	**7**	**16**	**24.9**	**19.6**	**1.0**	**45.4**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**763**	**7**	**16**	**24.9**	**19.6**	**1.0**	**45.4**	**-**	**-**	**-**	**-**
1/1	514	514	-	-	-	0.6	0.3	-	0.8	5.7	5.0	0.3	5.3
1/2	208	208	159	0	16	0.2	1.4	1.0	2.6	44.7	1.7	1.4	3.1
2/1	501	501	494	7	0	0.0	0.5	0.0	0.5	3.8	0.2	0.5	0.7
2/2	1033	1033	-	-	-	0.1	0.8	-	0.9	3.3	0.5	0.8	1.3
3/1	164	164	-	-	-	2.4	2.6	-	5.0	108.8	5.3	2.6	7.9
3/2	196	196	-	-	-	2.9	3.0	-	5.9	107.9	6.4	3.0	9.4
4/1	1128	1128	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	383	383	-	-	-	0.0	0.1	-	0.1	1.3	0.0	0.1	0.1
5/2	323	323	-	-	-	1.6	0.2	-	1.8	20.4	6.2	0.2	6.4
5/3	106	106	-	-	-	0.3	0.1	-	0.3	10.7	0.7	0.1	0.7
6/1	676	676	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	402	402	-	-	-	3.7	1.0	-	4.7	42.3	11.4	1.0	12.4
7/2	618	618	-	-	-	6.3	4.5	-	10.8	62.7	19.6	4.5	24.0
8/1+8/2	726	726	110	0	0	6.8	5.1	0.0	11.9	59.2	21.7	5.1	26.8
9/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	422	422	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	109	109	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -2.6
PRC Over All Lanes (%): -2.6

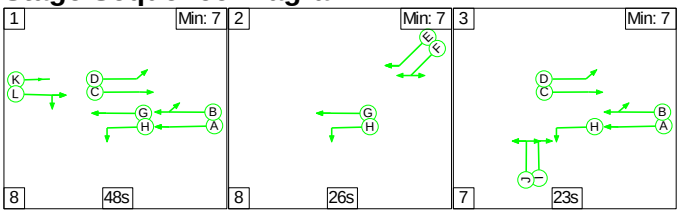
Total Delay for Signalled Lanes (pcuHr): 45.40
Total Delay Over All Lanes(pcuHr): 45.40

Cycle Time (s): 120

Full Input Data And Results

Scenario 2: 'PM Base 2008' (FG2: 'PM 2008 Base', Plan 1: 'Staging Plan No. 1')

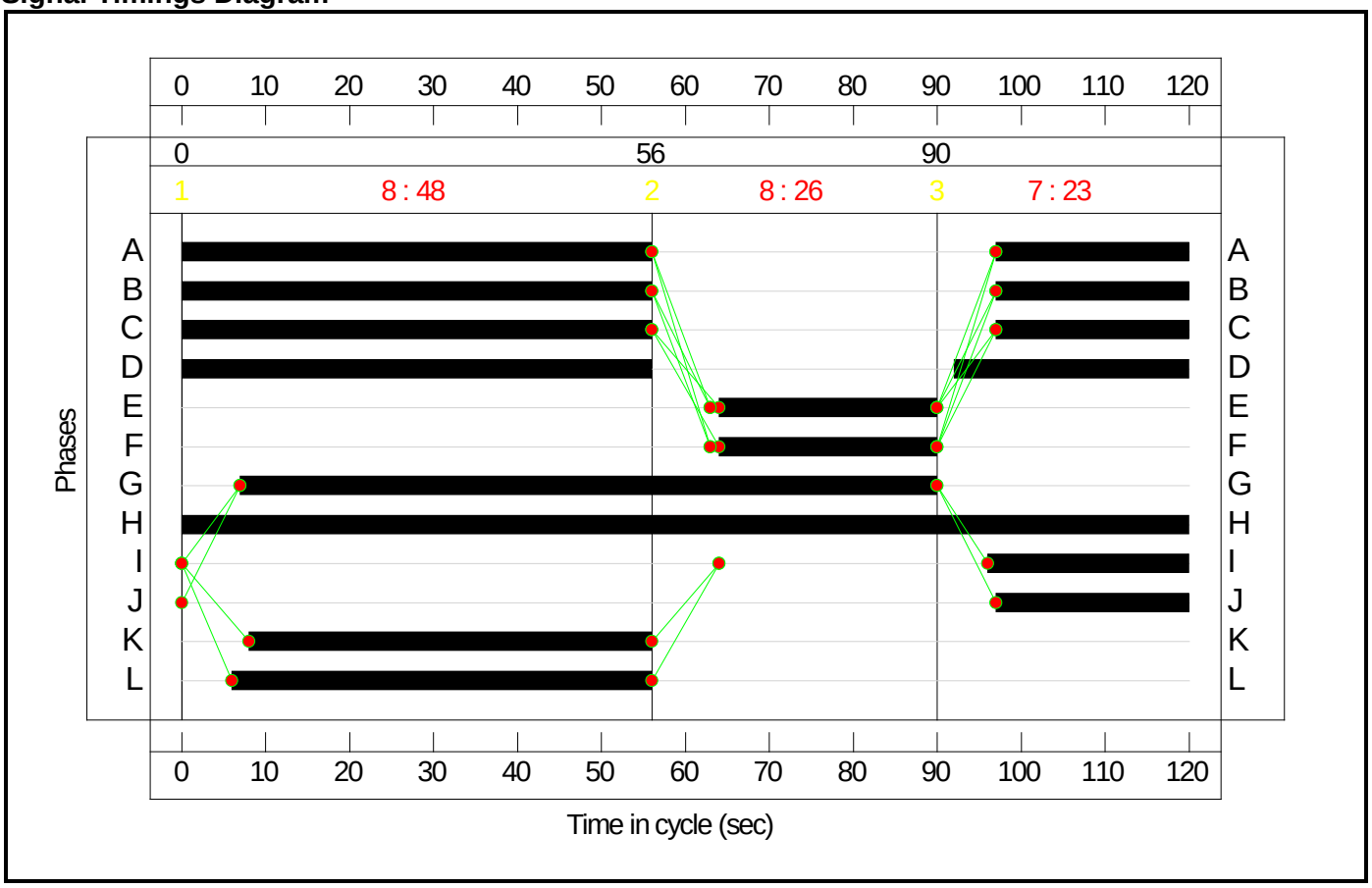
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	48	26	23
Change Point	0	56	90

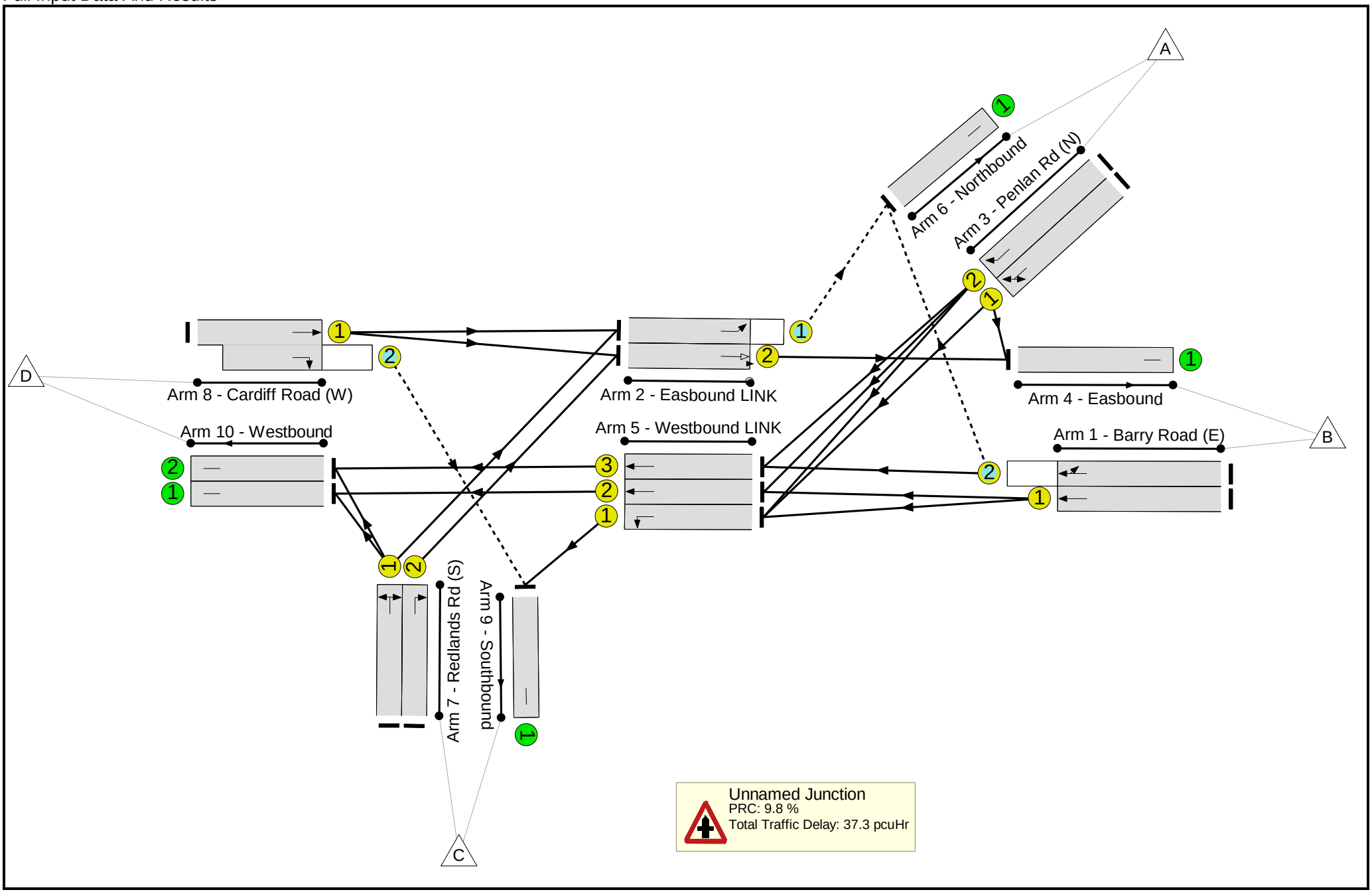
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**82.0%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**82.0%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	79	-	756	1915	1277	59.2%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	79	-	331	1985	486	68.1%
2/1	Easbound LINK Ahead	O	N/A	N/A	D		1	84	-	289	1935	732	39.5%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	79	-	739	2095	1397	52.9%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	26	-	303	1792	403	75.1%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	26	-	369	2055	462	79.8%
4/1	Easbound	U	N/A	N/A	-		-	-	-	878	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	739	1780	1780	41.5%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	83	-	412	2085	1460	28.2%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	83	-	376	2075	1452	25.9%
6/1	Northbound	U	N/A	N/A	-		-	-	-	382	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	23	-	236	1700	340	69.4%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	24	-	311	1893	394	78.9%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	50		696	1915:1912	849	82.0%
9/1	Southbound	U	N/A	N/A	-		-	-	-	840	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	516	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	386	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**475**	**6**	**2**	**25.2**	**11.9**	**0.3**	**37.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**475**	**6**	**2**	**25.2**	**11.9**	**0.3**	**37.3**	**-**	**-**	**-**	**-**
1/1	756	756	-	-	-	2.3	0.7	-	3.0	14.5	13.9	0.7	14.6
1/2	331	331	91	0	2	1.0	1.1	0.2	2.3	25.0	6.4	1.1	7.5
2/1	289	289	283	6	0	0.1	0.3	0.0	0.4	5.0	0.2	0.3	0.5
2/2	739	739	-	-	-	0.2	0.6	-	0.7	3.5	0.5	0.6	1.0
3/1	303	303	-	-	-	3.7	1.5	-	5.1	60.8	9.3	1.5	10.8
3/2	369	369	-	-	-	4.5	1.9	-	6.4	62.5	11.6	1.9	13.5
4/1	878	878	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	739	739	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4
5/2	412	412	-	-	-	0.8	0.2	-	1.0	8.9	6.0	0.2	6.2
5/3	376	376	-	-	-	0.2	0.2	-	0.4	3.6	3.1	0.2	3.3
6/1	382	382	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	236	236	-	-	-	2.9	1.1	-	4.0	61.5	7.3	1.1	8.4
7/2	311	311	-	-	-	3.9	1.8	-	5.7	65.7	9.8	1.8	11.6
8/1+8/2	696	696	101	0	0	5.7	2.2	0.0	7.9	40.9	19.1	2.2	21.3
9/1	840	840	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	516	516	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	386	386	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 9.8
PRC Over All Lanes (%): 9.8

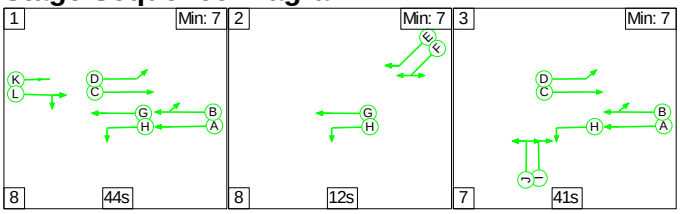
Total Delay for Signalled Lanes (pcuHr): 37.34
Total Delay Over All Lanes(pcuHr): 37.34

Cycle Time (s): 120

Full Input Data And Results

Scenario 3: 'AM Base 2020' (FG3: 'AM 2020 Base', Plan 1: 'Staging Plan No. 1')

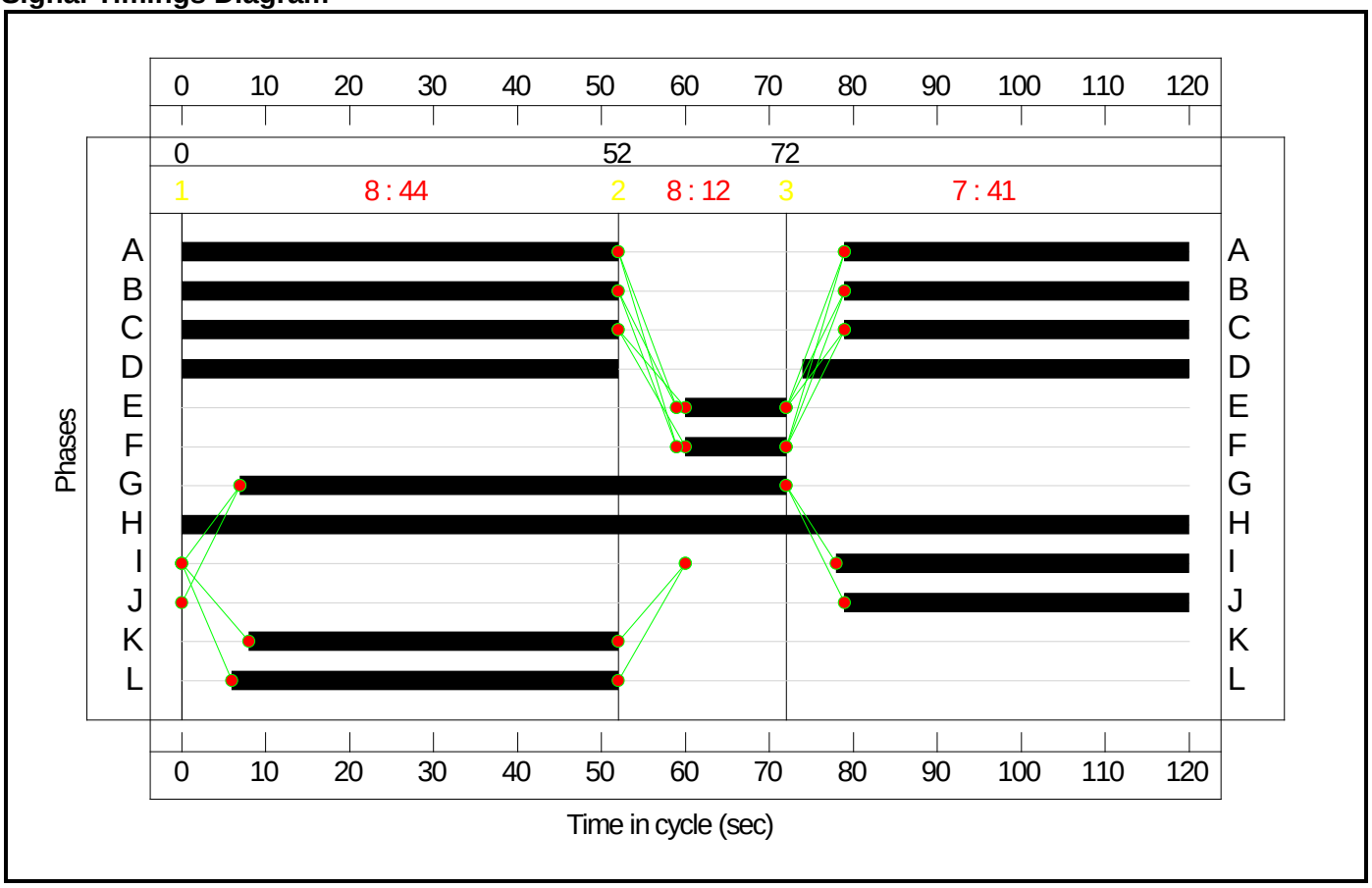
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	44	12	41
Change Point	0	52	72

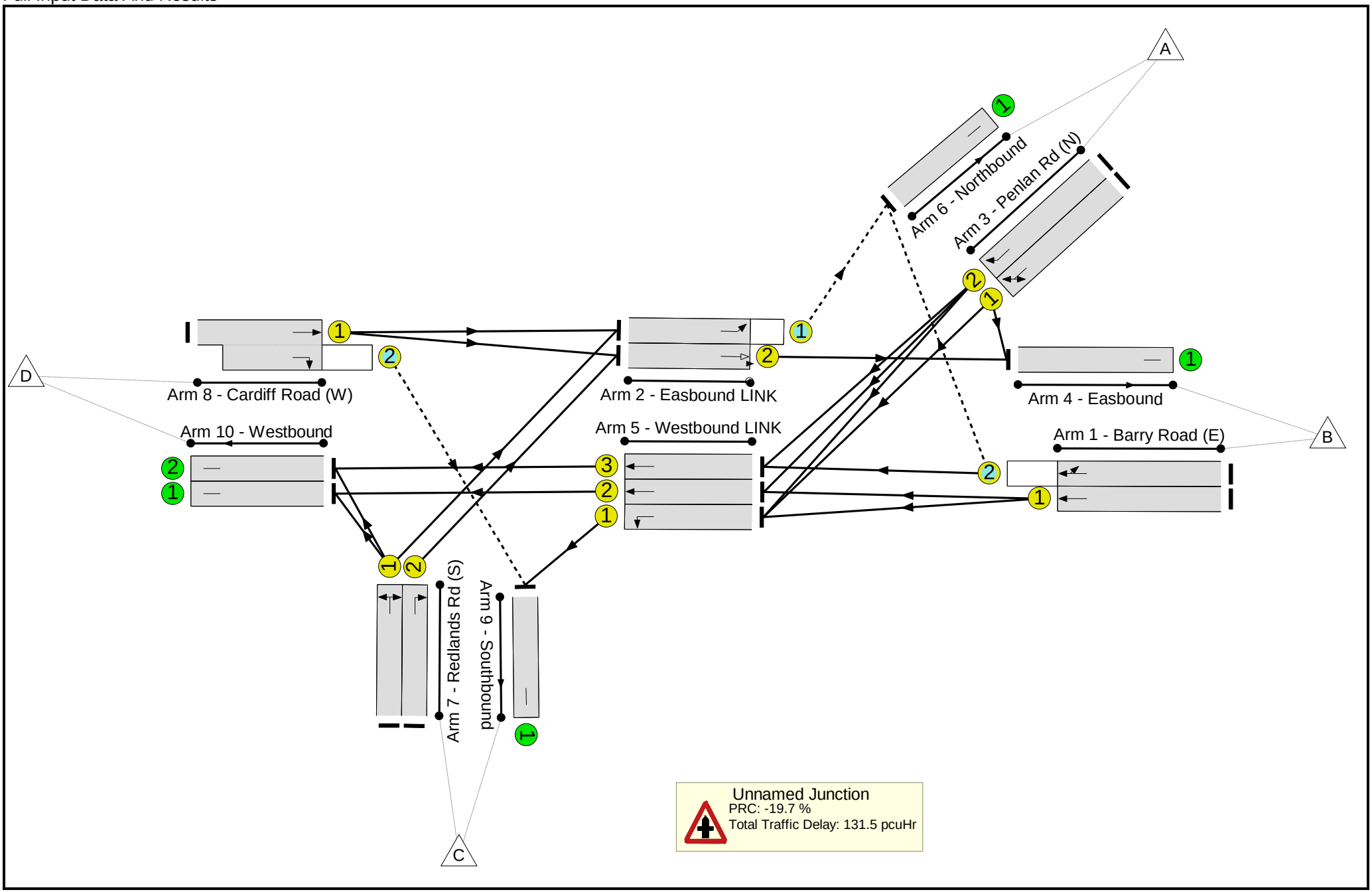
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**107.7%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**107.7%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	93	-	634	1915	1500	42.3%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	93	-	209	1831	209	99.9%
2/1	Easbound LINK Ahead	O	N/A	N/A	D		1	98	-	584	1935	1087	52.2%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	93	-	1205	2095	1641	68.7%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	12	-	193	1763	191	101.1%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	12	-	227	2055	223	102.0%
4/1	Easbound	U	N/A	N/A	-		-	-	-	1316	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	447	1780	1780	25.0%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	65	-	407	2085	1147	35.4%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	65	-	93	2075	1141	8.0%
6/1	Northbound	U	N/A	N/A	-		-	-	-	789	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	41	-	468	1706	597	78.4%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	42	-	721	1893	678	106.3%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	46		847	1915:1912	786	107.7%
9/1	Southbound	U	N/A	N/A	-		-	-	-	575	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	524	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	95	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**785**	**18**	**88**	**37.9**	**91.6**	**2.1**	**131.5**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**785**	**18**	**88**	**37.9**	**91.6**	**2.1**	**131.5**	**-**	**-**	**-**	**-**
1/1	634	634	-	-	-	0.7	0.4	-	1.1	6.3	6.7	0.4	7.1
1/2	209	209	117	0	88	0.4	7.2	2.0	9.6	165.4	2.0	7.2	9.1
2/1	567	567	549	18	0	0.1	0.5	0.0	0.6	4.0	0.6	0.5	1.1
2/2	1128	1128	-	-	-	0.3	1.1	-	1.3	4.0	1.2	1.1	2.3
3/1	193	191	-	-	-	3.0	7.5	-	10.4	194.6	6.5	7.5	14.0
3/2	227	223	-	-	-	3.6	8.7	-	12.3	194.9	7.7	8.7	16.4
4/1	1238	1238	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	445	445	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
5/2	406	406	-	-	-	2.3	0.3	-	2.5	22.5	8.5	0.3	8.8
5/3	91	91	-	-	-	0.4	0.0	-	0.4	17.1	0.9	0.0	1.0
6/1	772	772	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	468	468	-	-	-	4.5	1.8	-	6.3	48.5	13.9	1.8	15.7
7/2	721	678	-	-	-	10.8	27.8	-	38.6	192.7	26.3	27.8	54.1
8/1+8/2	847	786	119	0	0	11.9	36.2	0.0	48.1	204.2	30.4	36.2	66.5
9/1	564	564	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	523	523	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	93	93	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -19.7
PRC Over All Lanes (%): -19.7

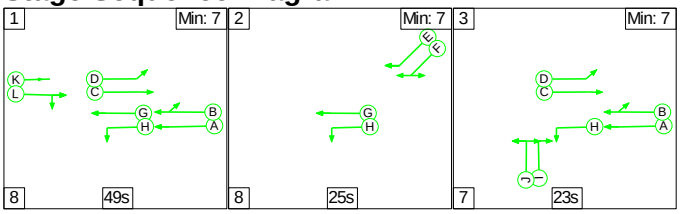
Total Delay for Signalled Lanes (pcuHr): 131.53
Total Delay Over All Lanes(pcuHr): 131.53

Cycle Time (s): 120

Full Input Data And Results

Scenario 4: 'PM Base 2020' (FG4: 'PM 2020 Base', Plan 1: 'Staging Plan No. 1')

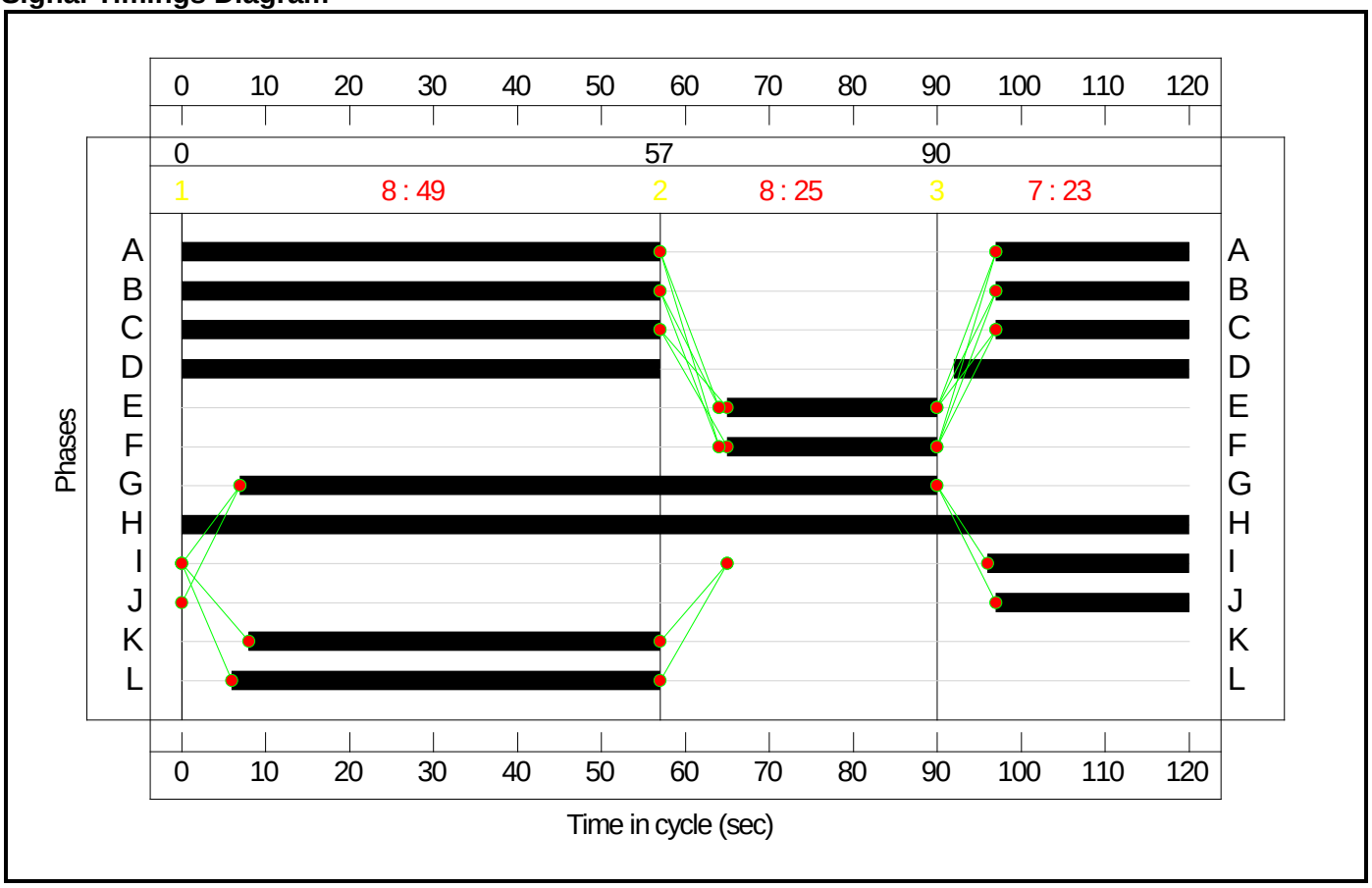
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	49	25	23
Change Point	0	57	90

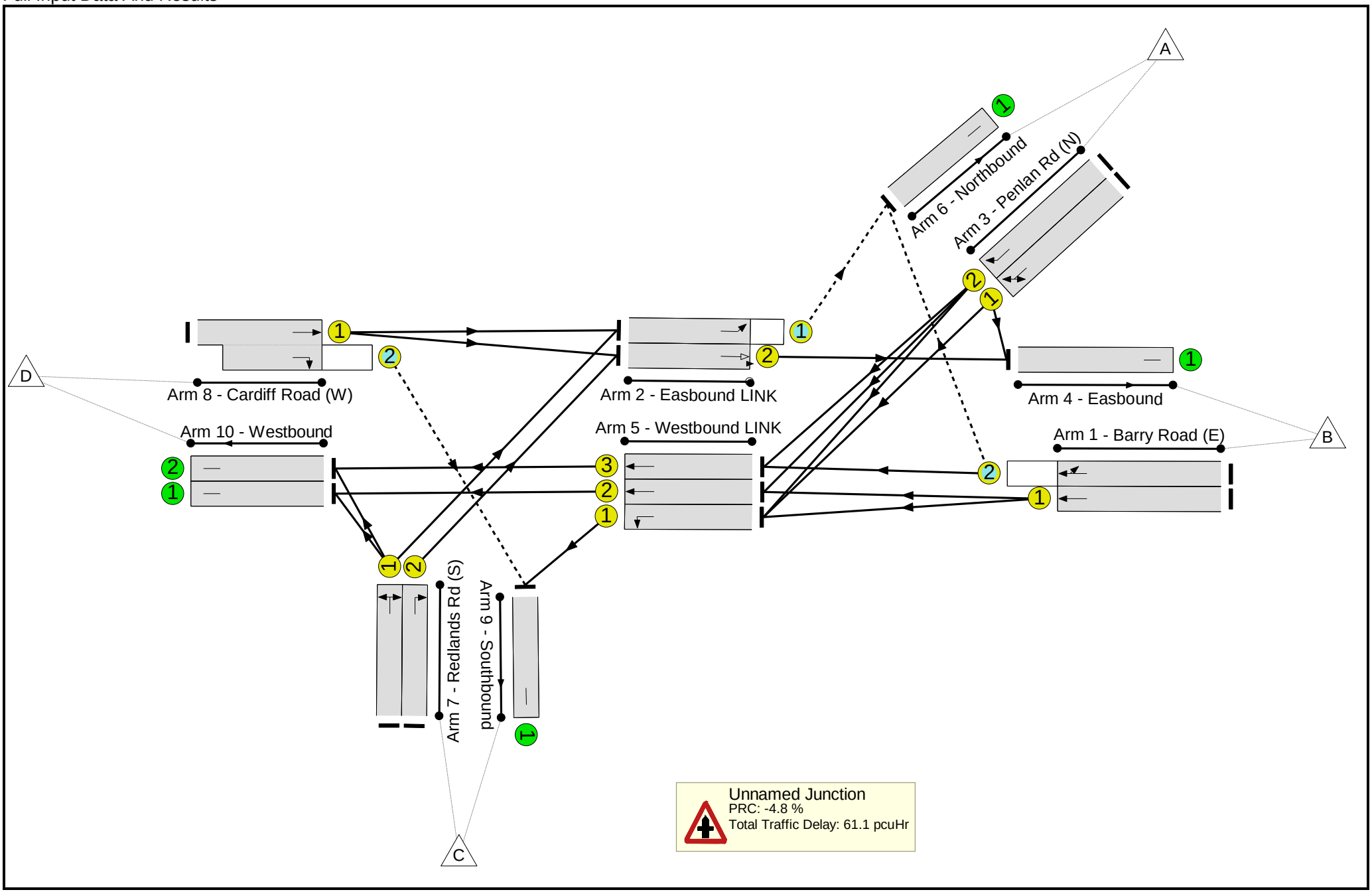
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**94.3%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**94.3%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	80	-	1053	1915	1293	81.5%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	80	-	212	1931	285	74.4%
2/1	Easbound LINK Ahead	O	N/A	N/A	D		1	85	-	337	1935	866	38.9%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	80	-	860	2095	1414	60.8%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	25	-	362	1795	389	93.1%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	25	-	420	2055	445	94.3%
4/1	Easbound	U	N/A	N/A	-		-	-	-	1022	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	859	1780	1780	48.3%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	83	-	646	2085	1460	44.3%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	83	-	271	2075	1452	18.7%
6/1	Northbound	U	N/A	N/A	-		-	-	-	446	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	23	-	274	1700	340	80.6%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	24	-	362	1893	394	91.8%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	51		811	1915:1912	865	93.8%
9/1	Southbound	U	N/A	N/A	-		-	-	-	977	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	772	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	277	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**548**	**7**	**9**	**31.8**	**28.8**	**0.5**	**61.1**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**548**	**7**	**9**	**31.8**	**28.8**	**0.5**	**61.1**	**-**	**-**	**-**	**-**
1/1	1053	1053	-	-	-	4.1	2.2	-	6.3	21.5	25.2	2.2	27.3
1/2	212	212	100	0	9	0.4	1.4	0.5	2.3	38.8	2.5	1.4	3.9
2/1	337	337	330	7	0	0.1	0.3	0.0	0.4	4.1	0.2	0.3	0.5
2/2	860	860	-	-	-	0.2	0.8	-	1.0	4.0	0.6	0.8	1.4
3/1	362	362	-	-	-	4.6	4.9	-	9.6	95.1	11.8	4.9	16.7
3/2	420	420	-	-	-	5.4	5.7	-	11.1	95.3	13.8	5.7	19.5
4/1	1022	1022	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	859	859	-	-	-	0.0	0.5	-	0.5	2.0	0.0	0.5	0.5
5/2	646	646	-	-	-	1.5	0.4	-	1.9	10.4	12.2	0.4	12.6
5/3	271	271	-	-	-	0.2	0.1	-	0.3	4.6	0.9	0.1	1.1
6/1	446	446	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	274	274	-	-	-	3.5	2.0	-	5.4	71.5	8.7	2.0	10.6
7/2	362	362	-	-	-	4.7	4.4	-	9.1	90.2	11.8	4.4	16.2
8/1+8/2	811	811	118	0	0	7.1	6.1	0.1	13.3	59.0	24.7	6.1	30.8
9/1	977	977	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	772	772	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	277	277	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -4.8
PRC Over All Lanes (%): -4.8

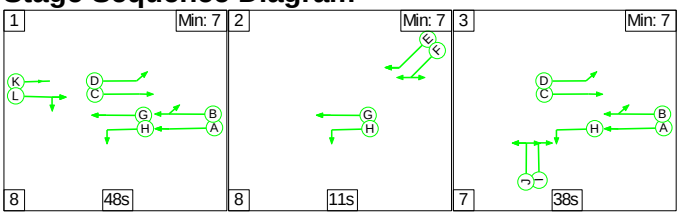
Total Delay for Signalled Lanes (pcuHr): 61.07
Total Delay Over All Lanes(pcuHr): 61.07

Cycle Time (s): 120

Full Input Data And Results

Scenario 5: 'AM 2020 with Dev' (FG5: 'AM 2020 with Dev', Plan 1: 'Staging Plan No. 1')

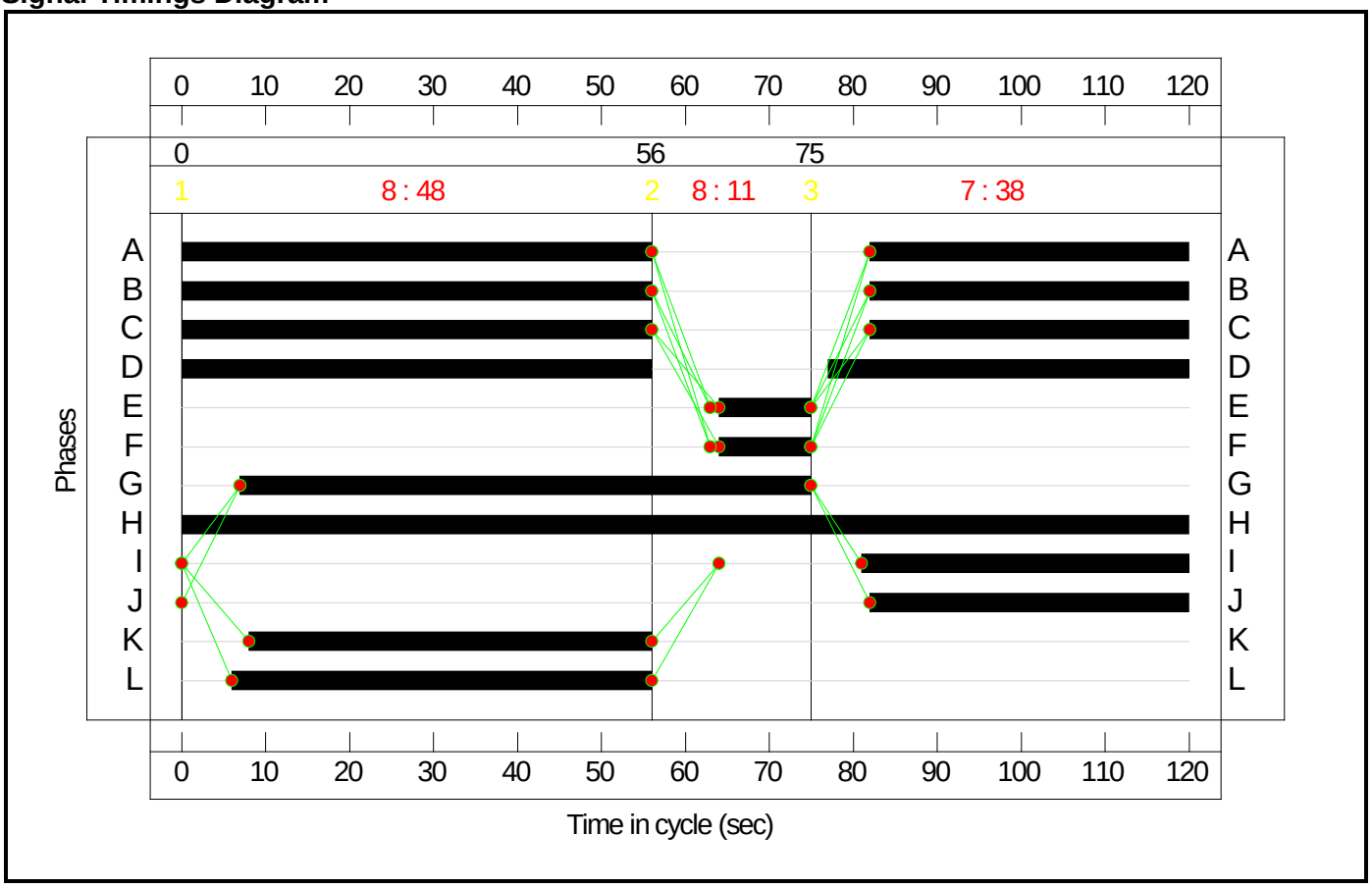
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	48	11	38
Change Point	0	56	75

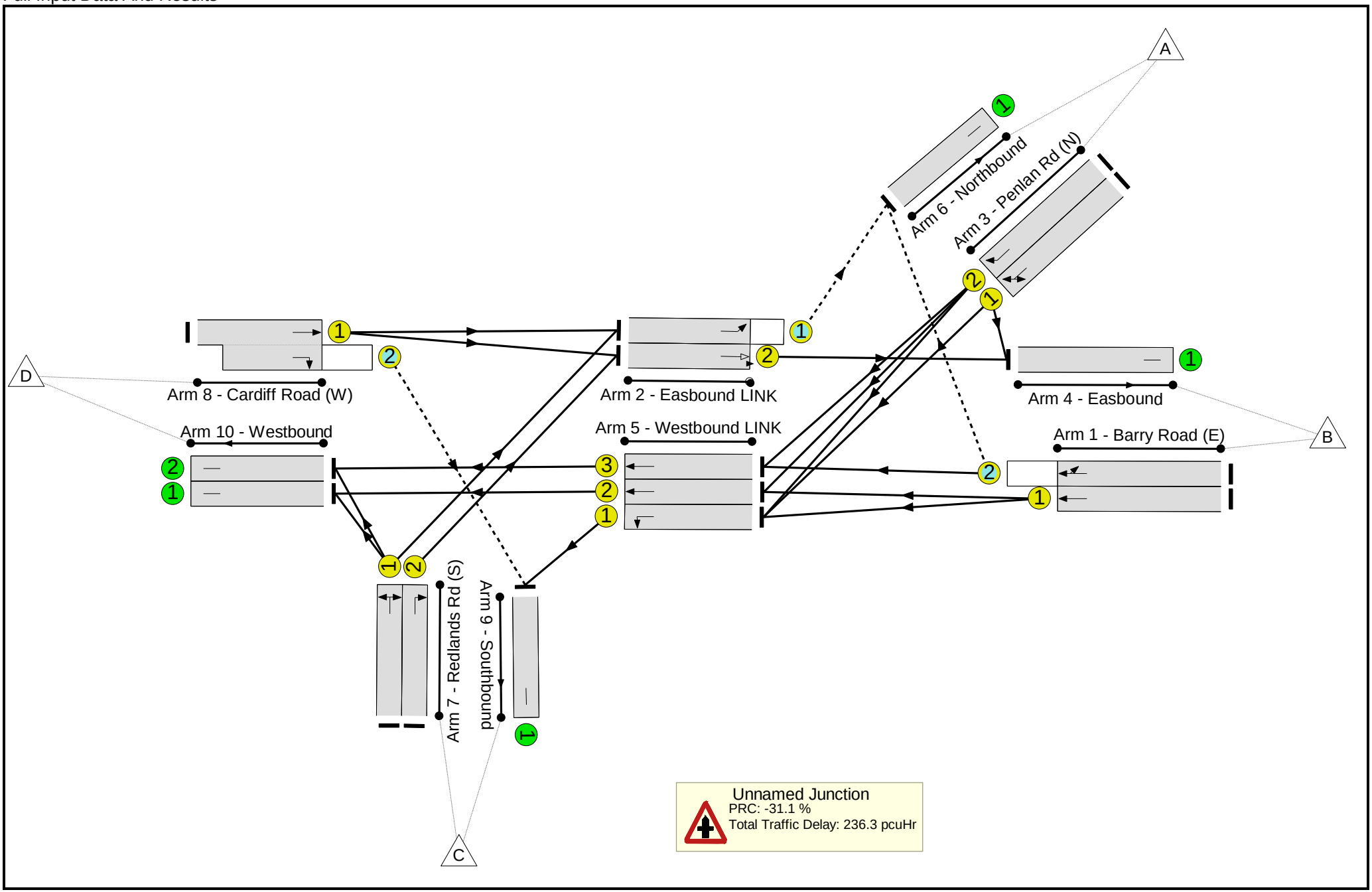
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**118.0%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**118.0%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	94	-	658	1915	1516	43.4%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	94	-	209	1831	195	107.0%
2/1	Easbound LINK Ahead	O	N/A	N/A	D		1	99	-	597	1935	1114	50.0%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	94	-	1339	2095	1659	68.6%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	11	-	196	1765	177	111.0%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	11	-	230	2055	205	111.9%
4/1	Easbound	U	N/A	N/A	-		-	-	-	1450	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	447	1780	1780	24.3%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	68	-	435	2085	1199	35.6%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	68	-	95	2075	1193	7.1%
6/1	Northbound	U	N/A	N/A	-		-	-	-	802	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	38	-	452	1706	554	81.5%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	39	-	740	1893	631	117.3%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	50		998	1915:1912	846	118.0%
9/1	Southbound	U	N/A	N/A	-		-	-	-	579	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	556	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	96	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**754**	**17**	**88**	**51.8**	**182.3**	**2.2**	**236.3**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**754**	**17**	**88**	**51.8**	**182.3**	**2.2**	**236.3**	**-**	**-**	**-**	**-**
1/1	658	658	-	-	-	0.7	0.4	-	1.1	6.1	6.9	0.4	7.3
1/2	209	195	103	0	88	1.0	11.4	2.2	14.6	250.9	4.5	11.4	15.9
2/1	556	556	539	17	0	0.1	0.5	0.0	0.6	3.6	0.6	0.5	1.1
2/2	1139	1139	-	-	-	0.3	1.1	-	1.3	3.6	1.3	1.1	2.4
3/1	196	177	-	-	-	3.9	13.4	-	17.3	317.0	7.2	13.4	20.6
3/2	230	205	-	-	-	4.6	15.9	-	20.5	320.4	8.5	15.9	24.4
4/1	1239	1239	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	432	432	-	-	-	0.0	0.2	-	0.2	1.3	0.0	0.2	0.2
5/2	426	426	-	-	-	2.2	0.3	-	2.5	20.4	8.8	0.3	9.1
5/3	85	85	-	-	-	0.4	0.0	-	0.4	15.8	0.9	0.0	1.0
6/1	748	748	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	452	452	-	-	-	4.7	2.1	-	6.8	54.1	13.8	2.1	15.9
7/2	740	631	-	-	-	16.0	57.7	-	73.7	358.7	31.3	57.7	89.0
8/1+8/2	998	846	112	0	0	18.1	79.3	0.0	97.5	351.5	38.8	79.3	118.1
9/1	544	544	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	547	547	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	86	86	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -31.1
PRC Over All Lanes (%): -31.1

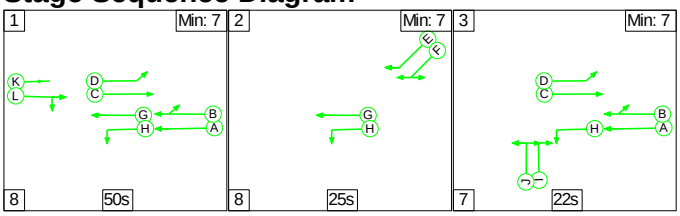
Total Delay for Signalled Lanes (pcuHr): 236.34
Total Delay Over All Lanes(pcuHr): 236.34

Cycle Time (s): 120

Full Input Data And Results

Scenario 6: 'PM 2020 with Dev' (FG6: 'PM 2020 with Dev', Plan 1: 'Staging Plan No. 1')

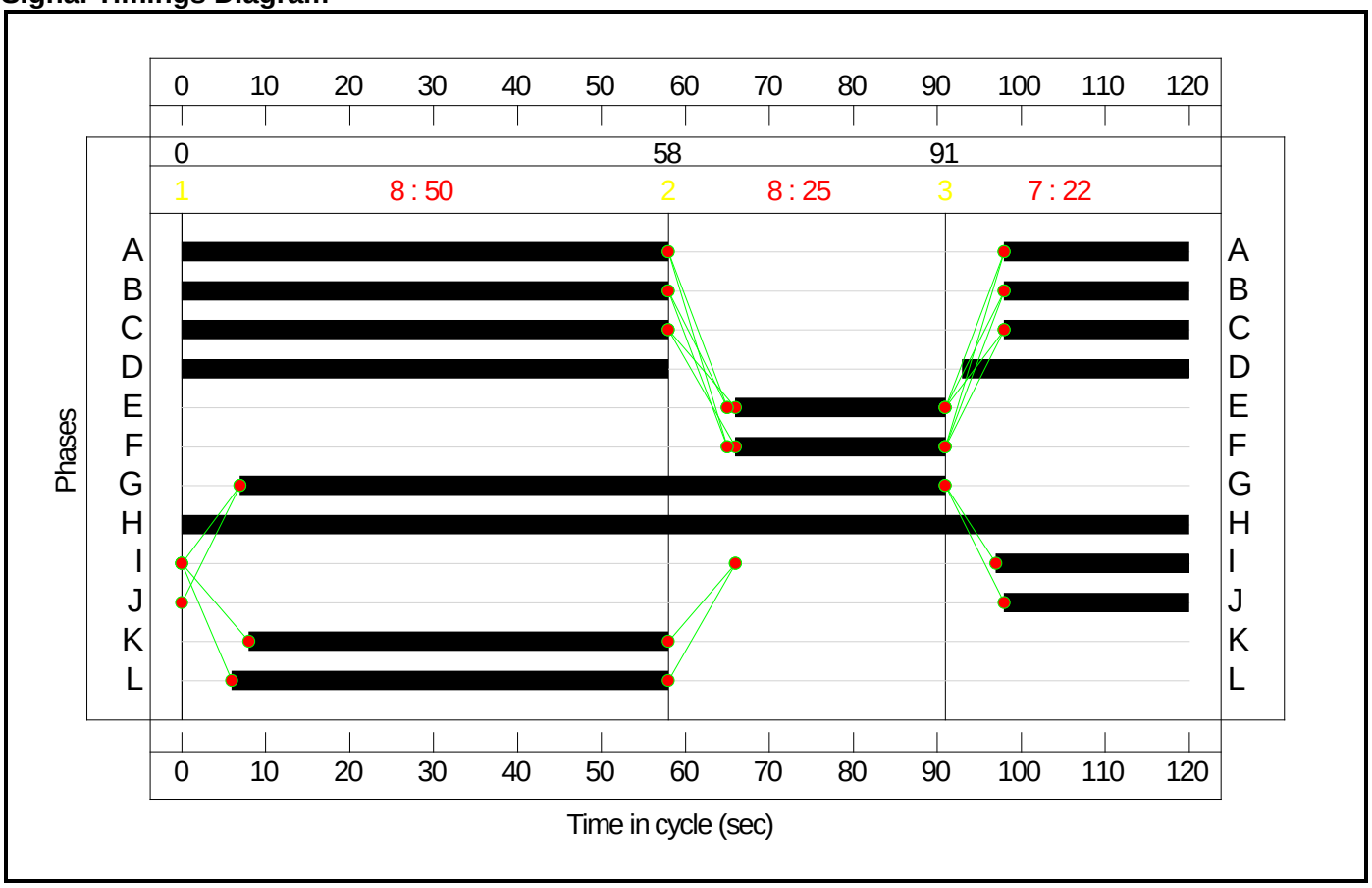
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	50	25	22
Change Point	0	58	91

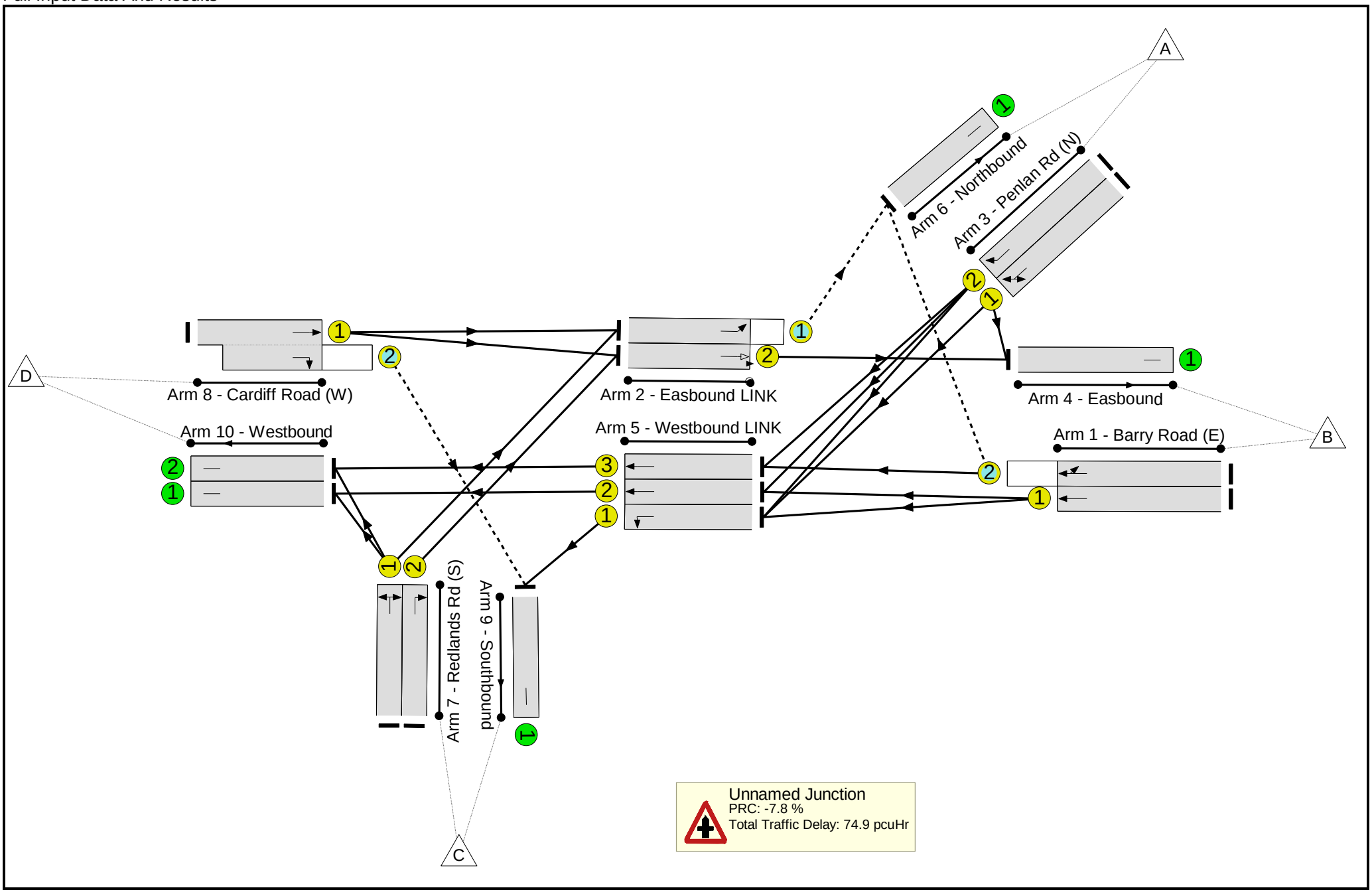
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**97.0%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**97.0%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	80	-	1178	1915	1293	91.1%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	80	-	226	1938	266	84.8%
2/1	Easbound LINK Ahead	O	N/A	N/A	D		1	85	-	344	1935	878	39.2%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	80	-	891	2095	1414	63.0%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	25	-	369	1797	389	94.8%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	25	-	424	2055	445	95.2%
4/1	Easbound	U	N/A	N/A	-		-	-	-	1053	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	858	1780	1780	48.2%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	84	-	769	2085	1477	52.1%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	84	-	299	2075	1470	20.3%
6/1	Northbound	U	N/A	N/A	-		-	-	-	453	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	22	-	276	1699	326	84.8%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	23	-	363	1893	379	95.9%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	52		854	1915:1912	880	97.0%
9/1	Southbound	U	N/A	N/A	-		-	-	-	980	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	899	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	305	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**542**	**9**	**24**	**34.2**	**40.0**	**0.7**	**74.9**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**542**	**9**	**24**	**34.2**	**40.0**	**0.7**	**74.9**	**-**	**-**	**-**	**-**
1/1	1178	1178	-	-	-	5.4	4.7	-	10.1	31.0	33.0	4.7	37.8
1/2	226	226	85	0	24	0.5	2.5	0.6	3.6	57.8	2.8	2.5	5.3
2/1	344	344	335	9	0	0.1	0.3	0.0	0.4	4.3	0.3	0.3	0.6
2/2	891	891	-	-	-	0.2	0.8	-	1.1	4.4	0.8	0.8	1.6
3/1	369	369	-	-	-	4.7	5.8	-	10.5	102.7	12.1	5.8	17.9
3/2	424	424	-	-	-	5.5	6.3	-	11.7	99.7	13.9	6.3	20.2
4/1	1053	1053	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	858	858	-	-	-	0.0	0.5	-	0.5	2.0	0.0	0.5	0.5
5/2	769	769	-	-	-	1.6	0.5	-	2.2	10.1	13.9	0.5	14.5
5/3	299	299	-	-	-	0.2	0.1	-	0.4	4.4	0.9	0.1	1.1
6/1	453	453	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	276	276	-	-	-	3.6	2.5	-	6.1	79.7	8.8	2.5	11.3
7/2	363	363	-	-	-	4.8	6.4	-	11.2	110.9	11.9	6.4	18.3
8/1+8/2	854	854	122	0	0	7.5	9.5	0.0	17.0	71.9	26.8	9.5	36.2
9/1	980	980	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	899	899	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	305	305	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -7.8
PRC Over All Lanes (%): -7.8

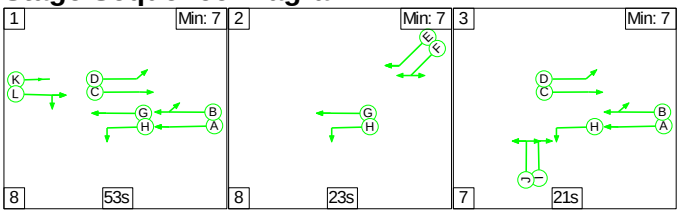
Total Delay for Signalled Lanes (pcuHr): 74.88
Total Delay Over All Lanes(pcuHr): 74.88

Cycle Time (s): 120

Full Input Data And Results

Scenario 7: 'PM 2020 with Dev + tourism' (FG7: '2020 with Dev + Tourism', Plan 1: 'Staging Plan No. 1')

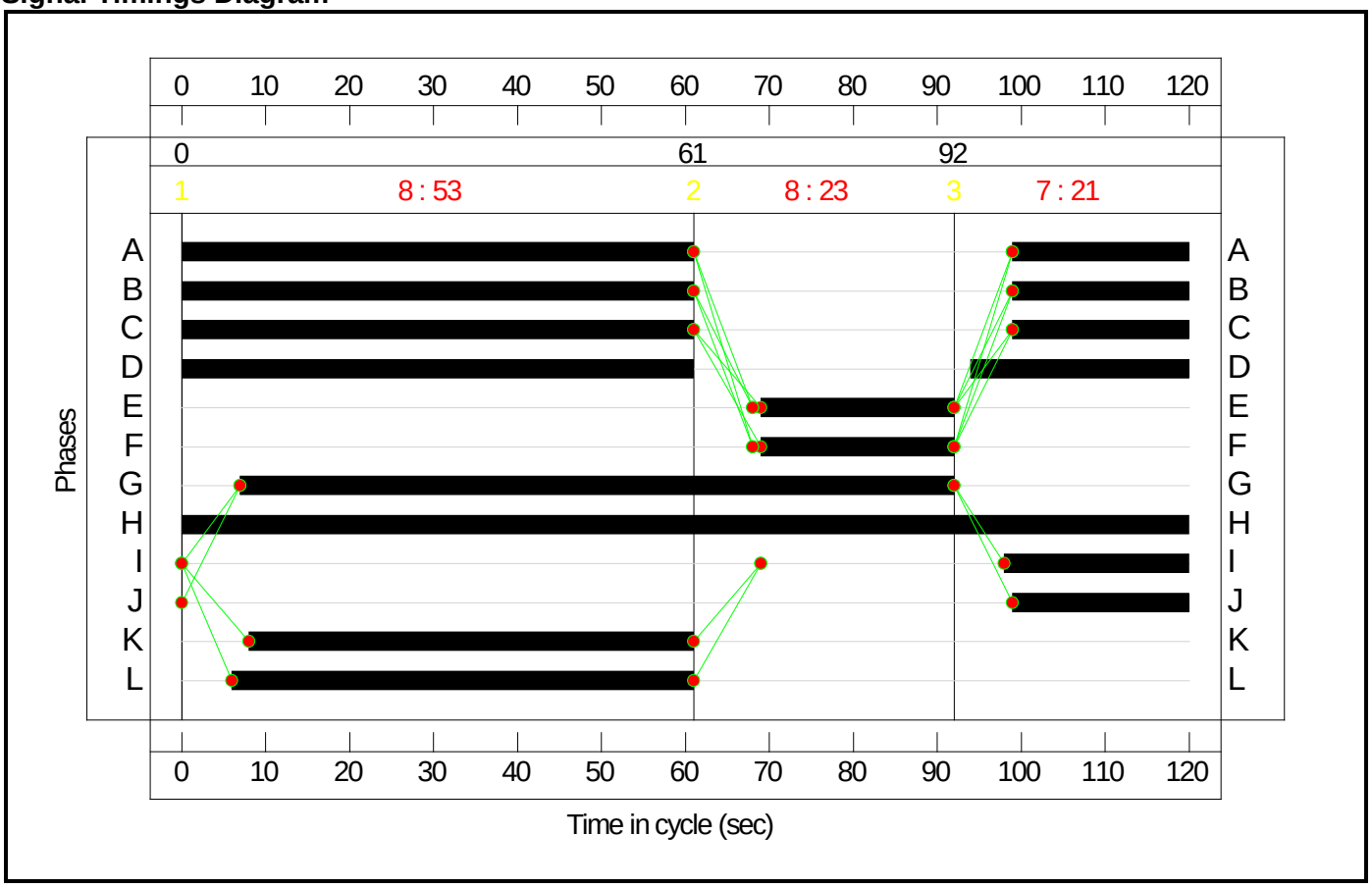
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	53	23	21
Change Point	0	61	92

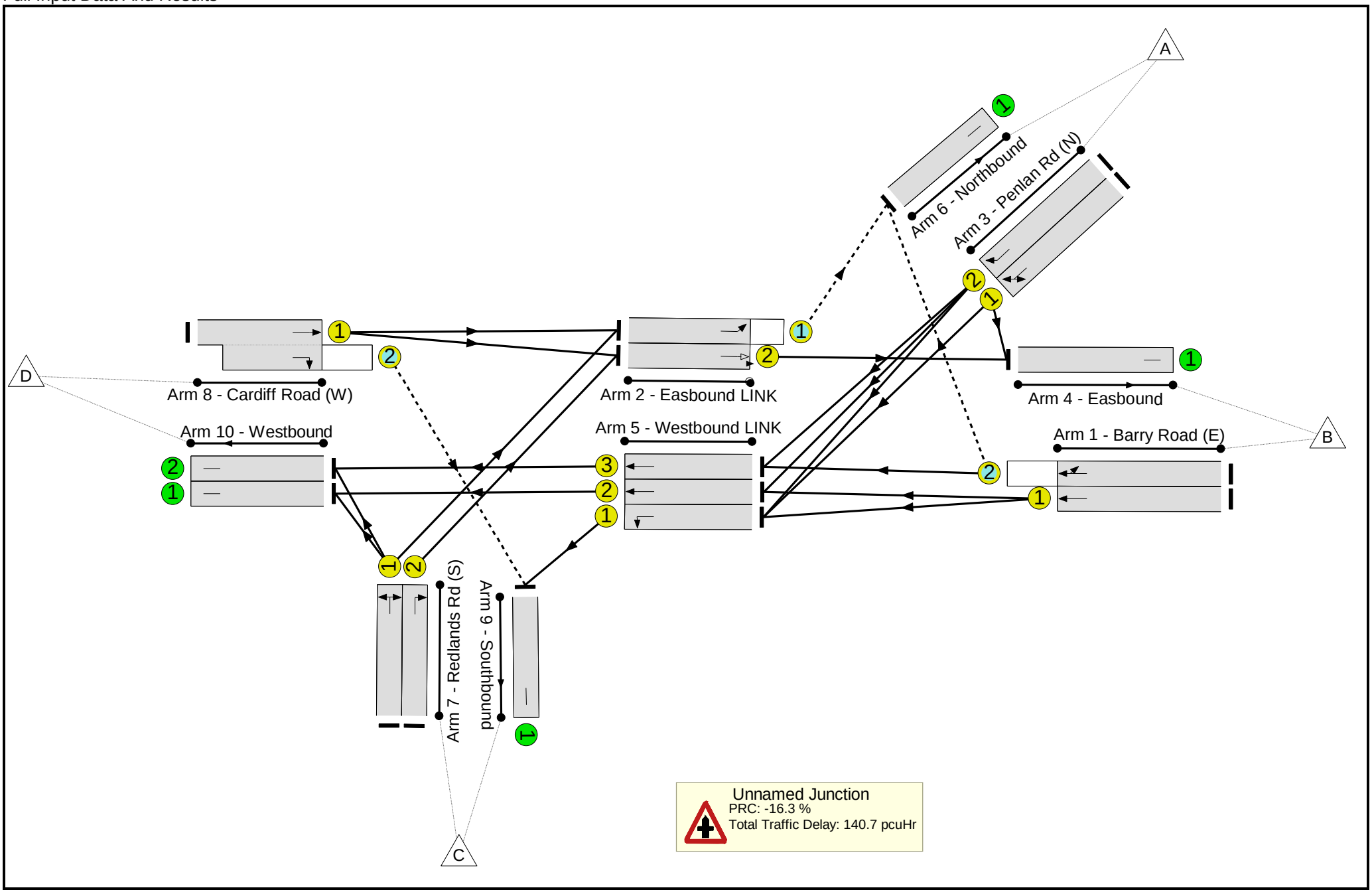
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**104.7%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**104.7%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	82	-	1330	1915	1325	100.4%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	82	-	175	1907	190	92.0%
2/1	Easbound LINK Ahead	O	N/A	N/A	D		1	87	-	345	1935	977	34.3%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	82	-	1004	2095	1449	66.5%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	23	-	369	1797	359	102.7%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	23	-	424	2055	411	103.2%
4/1	Easbound	U	N/A	N/A	-		-	-	-	1166	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	858	1780	1780	47.7%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	85	-	910	2085	1494	60.3%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	85	-	259	2075	1487	17.0%
6/1	Northbound	U	N/A	N/A	-		-	-	-	454	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	21	-	265	1699	311	85.1%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	22	-	375	1893	363	103.4%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	55		967	1915:1912	924	104.7%
9/1	Southbound	U	N/A	N/A	-		-	-	-	980	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	1040	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	265	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**500**	**14**	**47**	**42.0**	**97.8**	**0.9**	**140.7**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**500**	**14**	**47**	**42.0**	**97.8**	**0.9**	**140.7**	**-**	**-**	**-**	**-**
1/1	1330	1325	-	-	-	7.2	19.7	-	26.8	72.6	44.5	19.7	64.2
1/2	175	175	62	0	47	0.3	3.8	0.9	5.1	103.9	1.9	3.8	5.8
2/1	335	335	321	14	0	0.1	0.3	0.0	0.4	4.0	0.5	0.3	0.7
2/2	964	964	-	-	-	0.4	1.0	-	1.4	5.1	1.4	1.0	2.4
3/1	369	359	-	-	-	5.3	12.3	-	17.6	172.1	12.6	12.3	24.9
3/2	424	411	-	-	-	6.2	14.0	-	20.3	172.1	14.6	14.0	28.6
4/1	1122	1122	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	848	848	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5
5/2	902	902	-	-	-	1.9	0.8	-	2.7	10.5	16.3	0.8	17.0
5/3	253	253	-	-	-	0.3	0.1	-	0.4	5.4	1.1	0.1	1.2
6/1	444	444	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	265	265	-	-	-	3.5	2.6	-	6.1	82.3	8.5	2.6	11.1
7/2	375	363	-	-	-	5.9	13.2	-	19.1	183.2	13.0	13.2	26.2
8/1+8/2	967	924	117	0	0	10.8	29.7	0.0	40.5	150.8	34.1	29.7	63.8
9/1	965	965	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	1032	1032	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	259	259	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -16.3
PRC Over All Lanes (%): -16.3

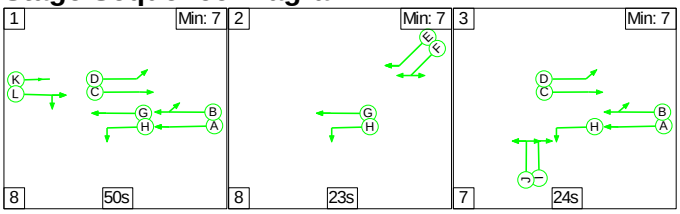
Total Delay for Signalled Lanes (pcuHr): 140.72
Total Delay Over All Lanes(pcuHr): 140.72

Cycle Time (s): 120

Full Input Data And Results

Scenario 8: 'PM 2020 Base + tourism' (FG10: 'PM 2020 Base + Tourism', Plan 1: 'Staging Plan No. 1')

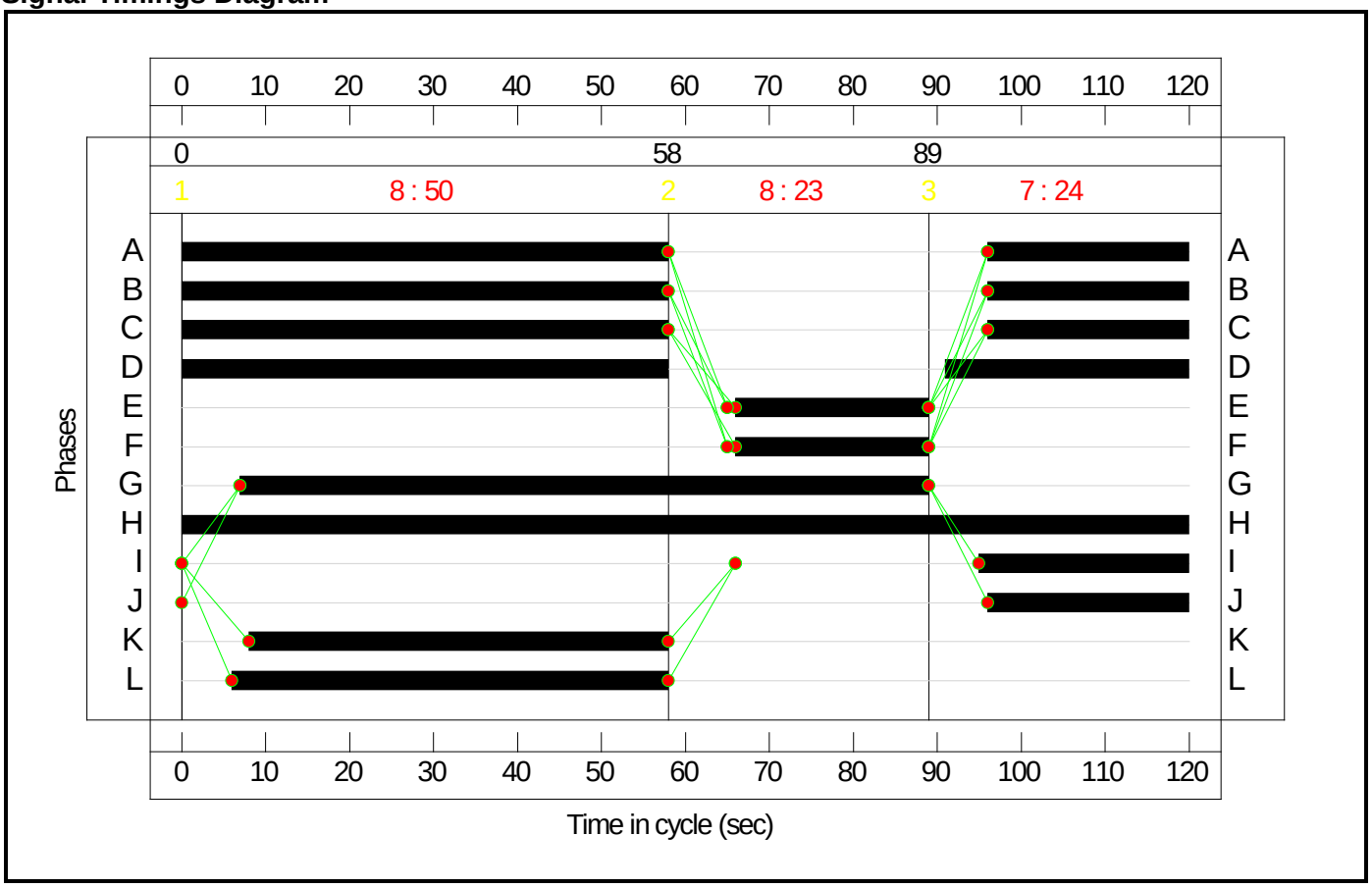
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	50	23	24
Change Point	0	58	89

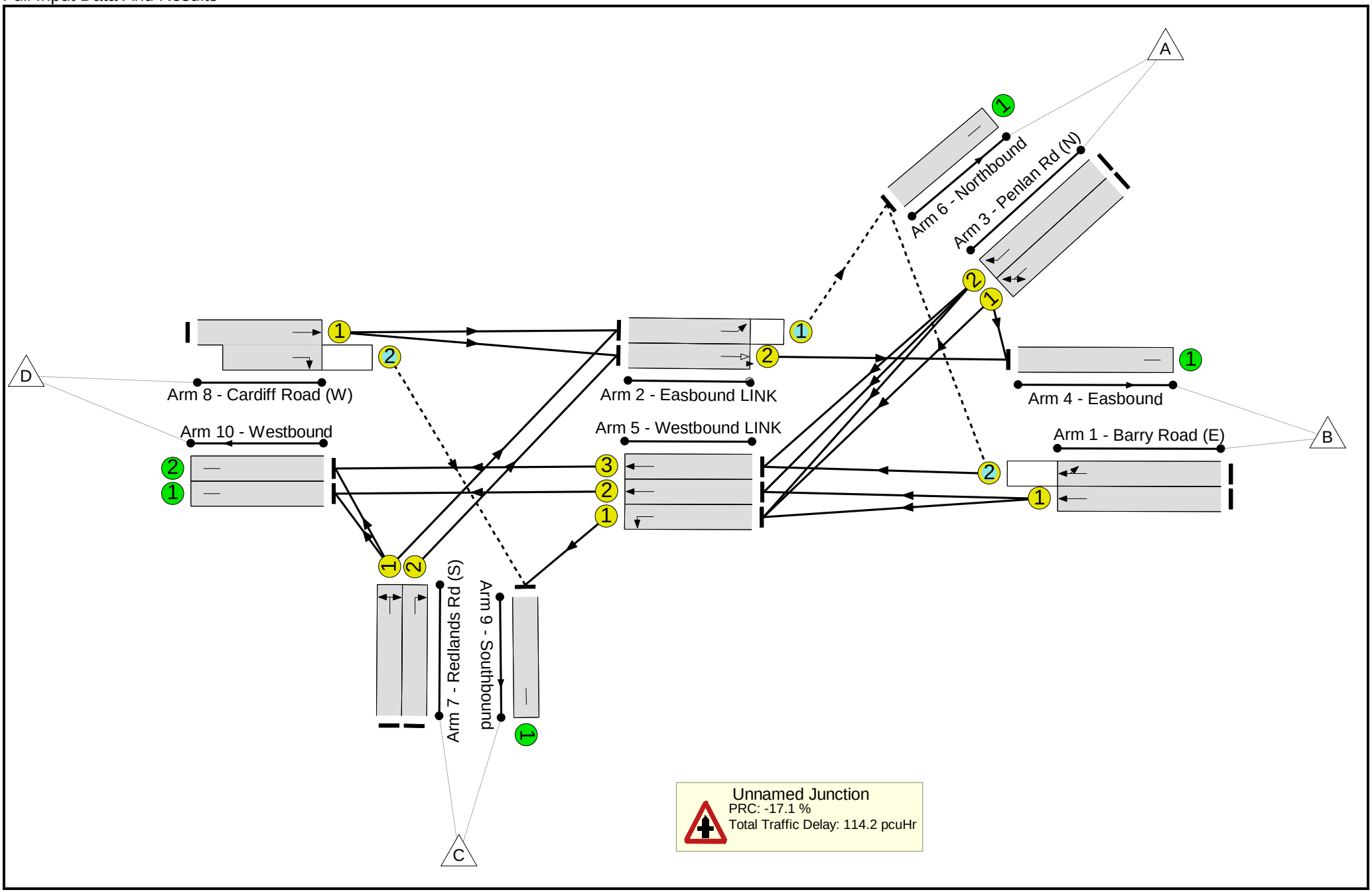
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**105.4%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**105.4%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	82	-	1115	1915	1325	84.2%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	82	-	251	1949	242	103.6%
2/1	Easbound LINK Ahead	O	N/A	N/A	D		1	87	-	336	1935	931	35.0%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	82	-	973	2095	1449	65.0%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	23	-	364	1795	359	101.4%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	23	-	419	2055	411	101.9%
4/1	Easbound	U	N/A	N/A	-		-	-	-	1135	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	859	1780	1780	48.0%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	82	-	707	2085	1442	48.8%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	82	-	312	2075	1435	21.2%
6/1	Northbound	U	N/A	N/A	-		-	-	-	445	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	24	-	261	1699	354	73.7%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	25	-	374	1893	410	91.2%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	52		924	1915:1912	876	105.4%
9/1	Southbound	U	N/A	N/A	-		-	-	-	977	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	824	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	327	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**489**	**14**	**39**	**38.1**	**75.3**	**0.8**	**114.2**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**489**	**14**	**39**	**38.1**	**75.3**	**0.8**	**114.2**	**-**	**-**	**-**	**-**
1/1	1115	1115	-	-	-	4.2	2.6	-	6.8	22.0	27.3	2.6	29.9
1/2	251	242	66	0	39	1.1	10.4	0.8	12.3	176.0	5.2	10.4	15.7
2/1	325	325	311	14	0	0.1	0.3	0.0	0.4	4.2	0.5	0.3	0.8
2/2	942	942	-	-	-	0.4	0.9	-	1.3	5.0	1.4	0.9	2.3
3/1	364	359	-	-	-	5.1	10.9	-	15.9	157.7	12.3	10.9	23.2
3/2	419	411	-	-	-	5.9	12.4	-	18.4	157.8	14.2	12.4	26.7
4/1	1102	1102	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	855	855	-	-	-	0.0	0.5	-	0.5	1.9	0.0	0.5	0.5
5/2	704	704	-	-	-	1.9	0.5	-	2.3	11.8	14.0	0.5	14.5
5/3	304	304	-	-	-	0.3	0.1	-	0.4	4.8	1.2	0.1	1.3
6/1	431	431	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	261	261	-	-	-	3.2	1.4	-	4.6	63.2	8.1	1.4	9.5
7/2	374	374	-	-	-	4.8	4.2	-	9.0	86.3	12.2	4.2	16.4
8/1+8/2	924	876	112	0	0	11.1	31.2	0.0	42.3	164.9	32.8	31.2	64.0
9/1	967	967	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	821	821	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	319	319	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -17.1
PRC Over All Lanes (%): -17.1

Total Delay for Signalled Lanes (pcuHr): 114.23
Total Delay Over All Lanes(pcuHr): 114.23

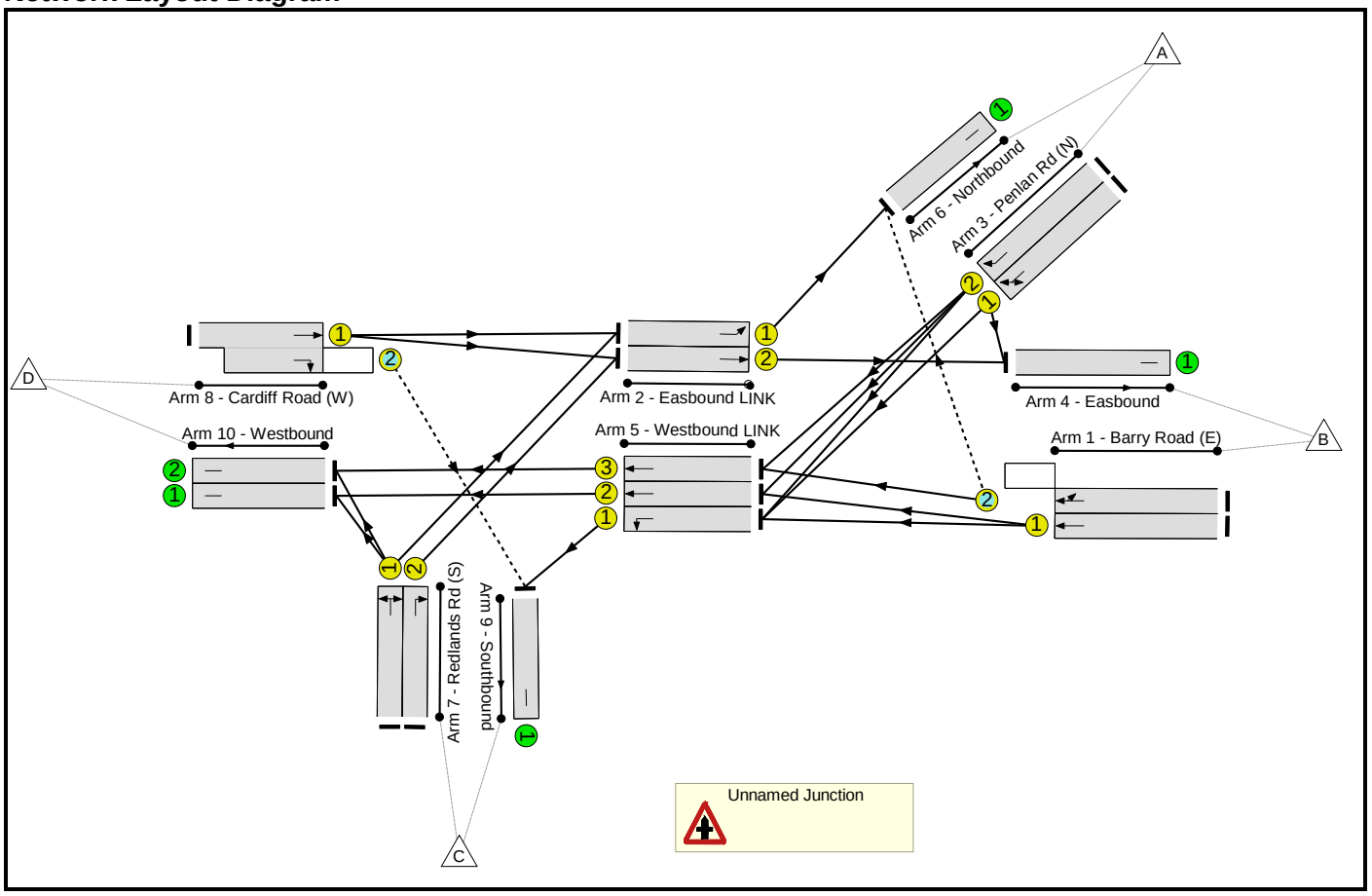
Cycle Time (s): 120

Full Input Data And Results

User and Project Details

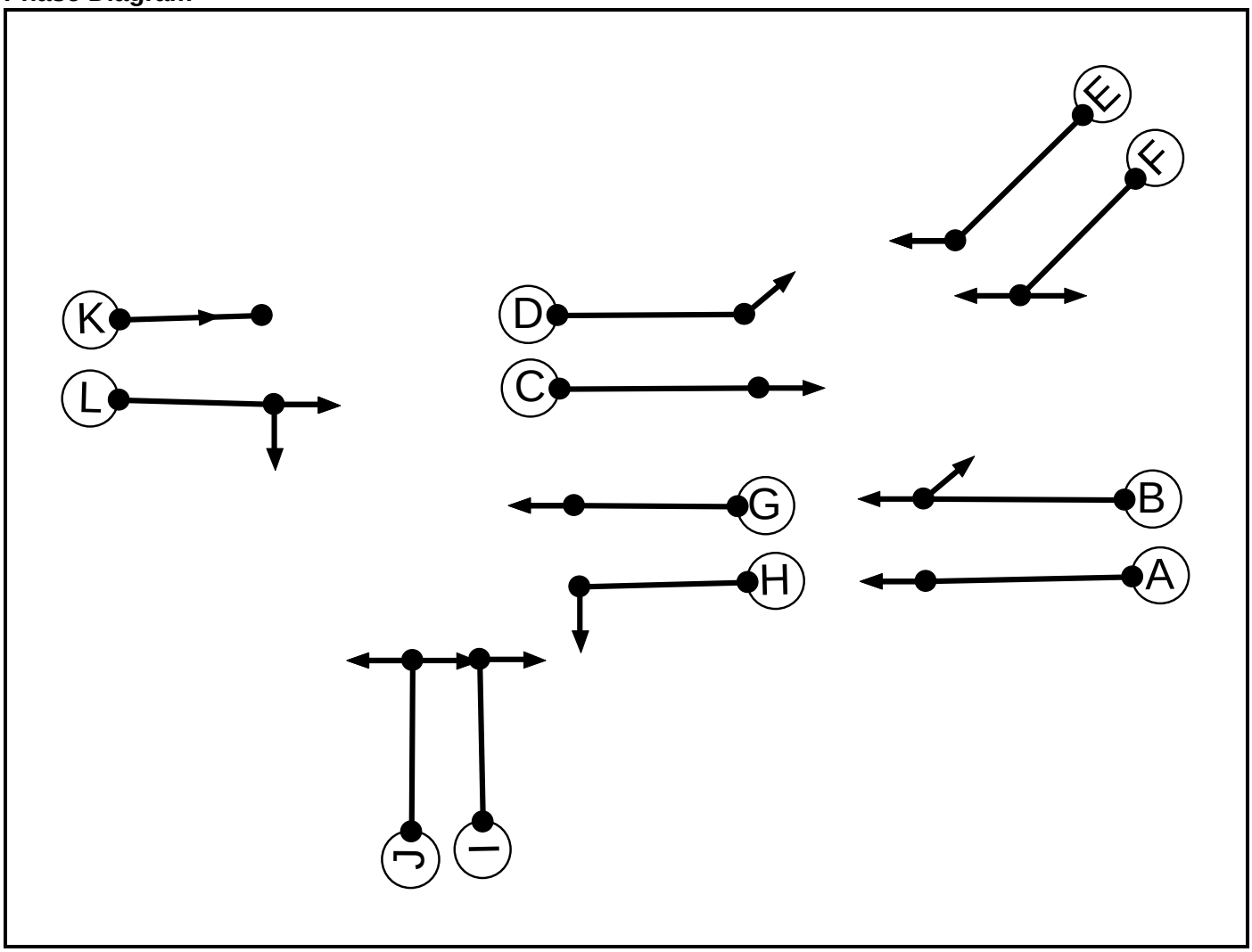
Project:	**Waterfront Barry**
Title:	
Location:	Merrie Harrier, Vale of Glamorgan
File name:	pre2009_Merrie Harrier.lsg3x
Author:	Ryan Hopkins
Company:	Arup
Address:	
Notes:	

Network Layout Diagram



Full Input Data And Results

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	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Traffic		7	7
I	Traffic		7	7
J	Traffic		7	7
K	Traffic		7	7
L	Traffic		7	7

Full Input Data And Results

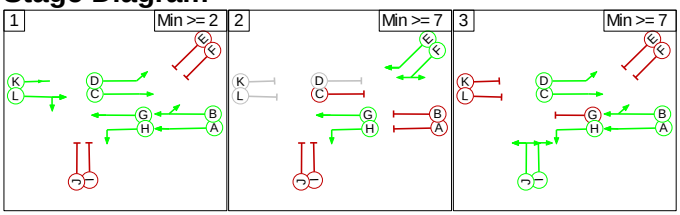
Phase Intergreens Matrix

Terminating Phase \ Starting Phase	A	B	C	D	E	F	G	H	I	J	K	L
A		-	-	-	7	7	-	-	-	-	-	-
B	-		-	-	7	7	-	-	-	-	-	-
C	-	-		-	8	8	-	-	-	-	-	-
D	-	-	-		-	-	-	-	-	-	-	-
E	7	7	7	-		-	-	-	-	-	-	-
F	7	7	7	-	-		-	-	-	-	-	-
G	-	-	-	-	-	-		-	6	7	-	-
H	-	-	-	-	-	-	-		-	-	-	-
I	-	-	-	-	-	-	7	-		-	8	6
J	-	-	-	-	-	-	7	-	-		-	-
K	-	-	-	-	-	-	-	-	8	-		-
L	-	-	-	-	-	-	-	-	8	-	-	

Phases in Stage

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

Stage Diagram



Phase Delays

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

Prohibited Stage Changes

From Stage \ To Stage	1	2	3
1		8	8
2	7		7
3	8	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction

Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/2 (Barry Road (E))	6/1 (U-Turn)	1440	2/2	1.09	2/2	3.00	3.00	0.50	3	3.00
8/2 (Cardiff Road (W))	9/1 (Right)	1400	5/1	1.10	5/1	3.00	-	0.50	3	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction

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)
1/1 (Barry Road (E))	U	A	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 5 Ahead	Inf
1/2 (Barry Road (E))	O	B	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
											Arm 6 U-Turn	12.00
2/1 (Easbound LINK)	U	D	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 6 Ahead	Inf
2/2 (Easbound LINK)	U	C	2	3	60.0	Geom	-	3.40	0.00	N	Arm 4 Ahead	Inf
3/1 (Penlan Rd (N))	U	F	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 U-Turn	10.00
											Arm 5 Ahead	Inf
3/2 (Penlan Rd (N))	U	E	2	3	60.0	Geom	-	3.00	0.00	N	Arm 5 Ahead	Inf
4/1 (Easbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Westbound LINK)	U	H	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 9 Left	13.00
5/2 (Westbound LINK)	U	G	2	3	60.0	Geom	-	3.30	0.00	N	Arm 10 Ahead	Inf
5/3 (Westbound LINK)	U	G	2	3	60.0	Geom	-	3.20	0.00	N	Arm 10 Ahead	Inf
6/1 (Northbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (Redlands Rd (S))	U	J	2	3	60.0	Geom	-	2.50	0.00	Y	Arm 2 Right	17.00
											Arm 10 Left	14.00
7/2 (Redlands Rd (S))	U	I	2	3	60.0	Geom	-	2.80	0.00	N	Arm 2 Right	20.00
8/1 (Cardiff Road (W))	U	L	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 2 Ahead	Inf
8/2 (Cardiff Road (W))	O	L	2	3	6.0	Geom	-	3.00	0.00	N	Arm 9 Right	20.00
9/1 (Southbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1 (Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-

10/2 (Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2008 Base'	08:30	09:30	01:00	
2: 'PM 2008 Base'	16:30	17:30	01:00	
3: 'AM 2020 Base'	08:30	09:30	01:00	
4: 'PM 2020 Base'	16:30	17:30	01:00	
5: 'AM 2020 with Dev'	08:30	09:30	01:00	
6: 'PM 2020 with Dev'	16:30	17:30	01:00	
7: '2020 with Dev + Toursim'	16:30	17:30	01:00	

Traffic Lane Flows

Lane	Scenario 1: AM Base 2008
Junction: Unnamed Junction	
1/1	535
1/2	187
2/1	501
2/2	1033
3/1	164
3/2	196
4/1	1128
5/1	383
5/2	340
5/3	89
6/1	676
7/1	402
7/2	618
8/1 (with short)	726(In) 616(Out)
8/2 (short)	110
9/1	493
10/1	441
10/2	90

Full Input Data And Results

Scenario 1: 'AM Base 2008' (FG1: 'AM 2008 Base', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction

Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	6.4 %	1840
				Arm 6 U-Turn	12.00	93.6 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	57.9 %	1762
				Arm 5 Ahead	Inf	42.1 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	74.6 %	1706
				Arm 10 Left	14.00	25.4 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM Base 2008
Junction: Unnamed Junction	
1/1	722
1/2	365
2/1	289
2/2	739
3/1	306
3/2	366
4/1	878
5/1	739
5/2	379
5/3	409
6/1	382
7/1	236
7/2	311
8/1 (with short)	696(In) 595(Out)
8/2 (short)	101
9/1	840
10/1	483
10/2	419

Full Input Data And Results

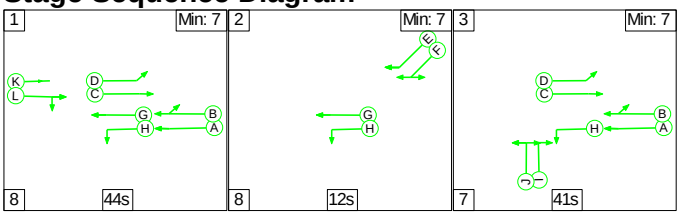
Scenario 2: 'PM Base 2008' (FG2: 'PM 2008 Base', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Barry Road (E))	3.00	0.00	Y	Arm 5 Ahead	Inf	100.0 %	1915
1/2 (Barry Road (E))	3.00	0.00	N	Arm 5 Ahead	Inf	74.5 %	1992
				Arm 6 U-Turn	12.00	25.5 %	
2/1 (Easbound LINK)	3.20	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1935
2/2 (Easbound LINK)	3.40	0.00	N	Arm 4 Ahead	Inf	100.0 %	2095
3/1 (Penlan Rd (N))	3.00	0.00	Y	Arm 4 U-Turn	10.00	45.4 %	1793
				Arm 5 Ahead	Inf	54.6 %	
3/2 (Penlan Rd (N))	3.00	0.00	N	Arm 5 Ahead	Inf	100.0 %	2055
4/1 (Easbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Westbound LINK)	3.70	0.00	Y	Arm 9 Left	13.00	100.0 %	1780
5/2 (Westbound LINK)	3.30	0.00	N	Arm 10 Ahead	Inf	100.0 %	2085
5/3 (Westbound LINK)	3.20	0.00	N	Arm 10 Ahead	Inf	100.0 %	2075
6/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
7/1 (Redlands Rd (S))	2.50	0.00	Y	Arm 2 Right	17.00	51.7 %	1700
				Arm 10 Left	14.00	48.3 %	
7/2 (Redlands Rd (S))	2.80	0.00	N	Arm 2 Right	20.00	100.0 %	1893
8/1 (Cardiff Road (W))	3.00	0.00	Y	Arm 2 Ahead	Inf	100.0 %	1915
8/2 (Cardiff Road (W))	3.00	0.00	N	Arm 9 Right	20.00	100.0 %	1912
9/1 (Southbound Lane 1)	Infinite Saturation Flow						Inf
10/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf
10/2 (Westbound Lane 2)	Infinite Saturation Flow						Inf

Scenario 1: 'AM Base 2008' (FG1: 'AM 2008 Base', Plan 1: 'Staging Plan No. 1')

Stage Sequence Diagram

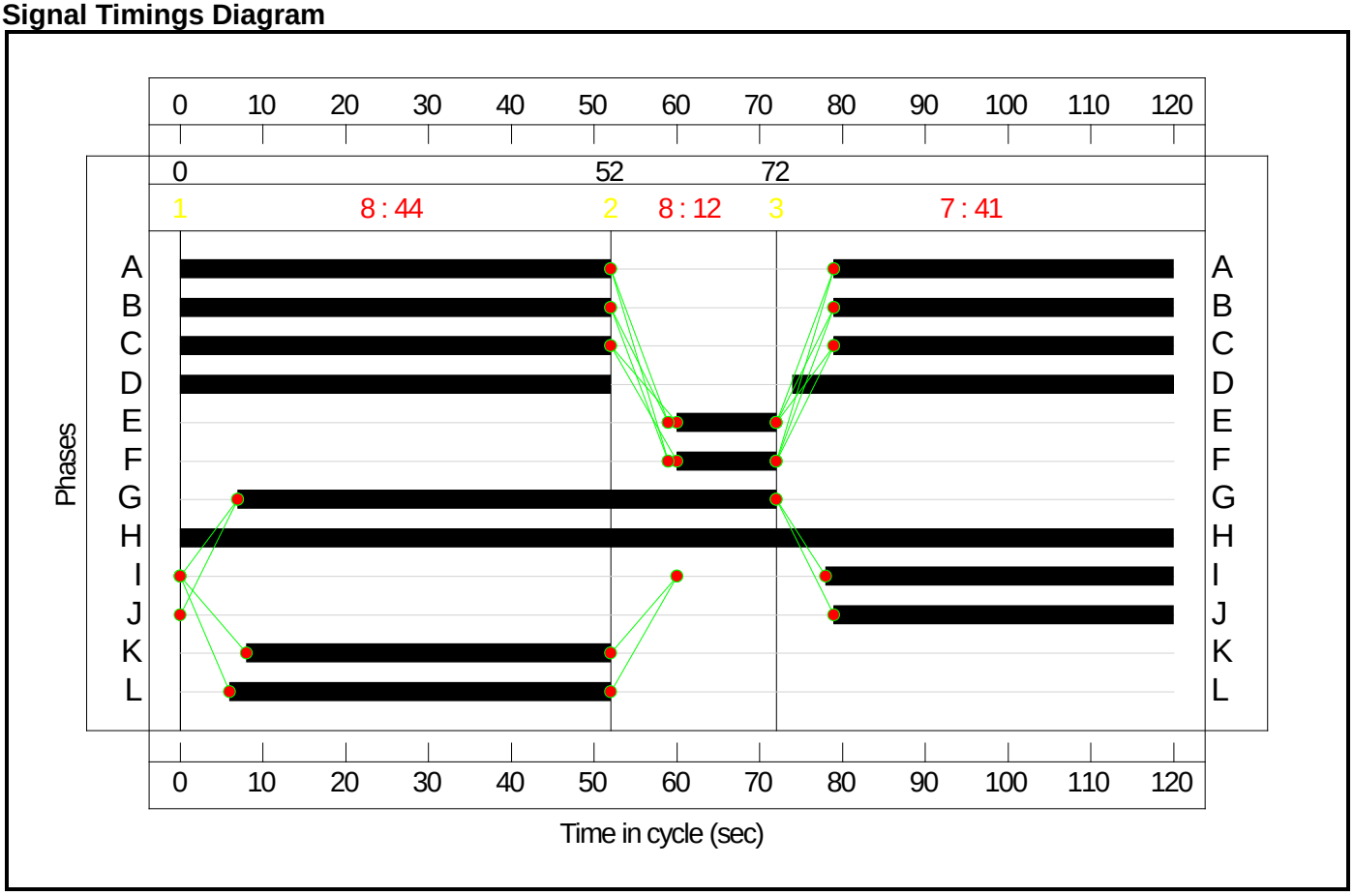


Full Input Data And Results

Stage Timings

Stage	1	2	3
Duration	44	12	41
Change Point	0	52	72

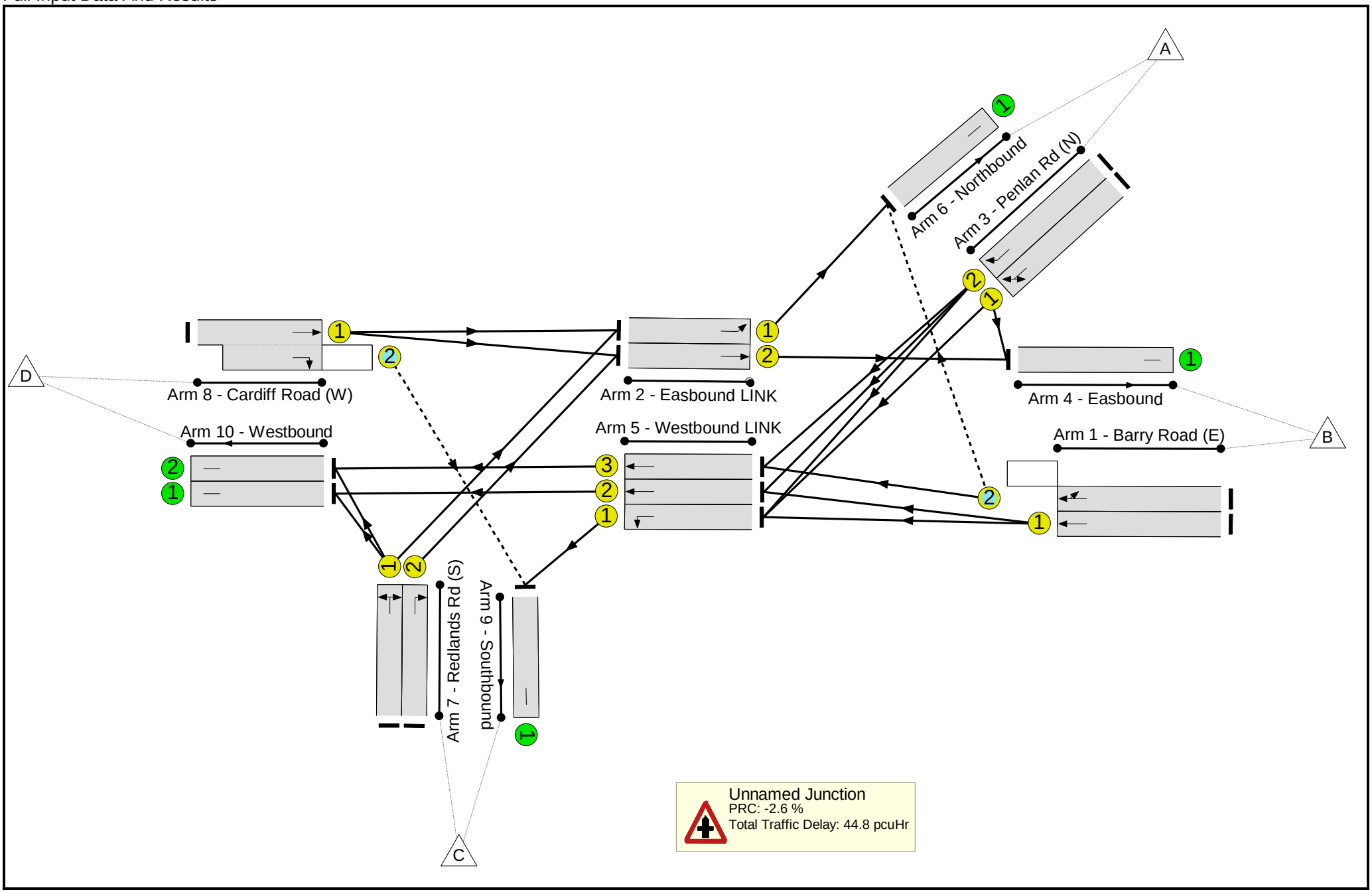
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**92.3%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**92.3%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	93	-	535	1915	1500	35.7%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	93	-	187	1840	279	67.1%
2/1	Easbound LINK Ahead	U	N/A	N/A	D		1	98	-	501	1935	1596	31.4%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	93	-	1033	2095	1641	62.9%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	12	-	164	1762	191	85.9%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	12	-	196	2055	223	88.0%
4/1	Easbound	U	N/A	N/A	-		-	-	-	1128	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	383	1780	1780	21.5%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	65	-	340	2085	1147	29.6%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	65	-	89	2075	1141	7.8%
6/1	Northbound	U	N/A	N/A	-		-	-	-	676	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	41	-	402	1706	597	67.3%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	42	-	618	1893	678	91.1%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	46		726	1915:1912	787	92.3%
9/1	Southbound	U	N/A	N/A	-		-	-	-	493	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	441	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	90	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**284**	**0**	**1**	**25.0**	**18.9**	**0.8**	**44.8**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**284**	**0**	**1**	**25.0**	**18.9**	**0.8**	**44.8**	**-**	**-**	**-**	**-**
1/1	535	535	-	-	-	0.6	0.3	-	0.9	5.8	5.3	0.3	5.6
1/2	187	187	174	0	1	0.2	1.0	0.8	2.0	38.3	1.5	1.0	2.5
2/1	501	501	-	-	-	0.0	0.2	-	0.3	1.9	0.2	0.2	0.5
2/2	1033	1033	-	-	-	0.1	0.8	-	0.9	3.3	0.5	0.8	1.3
3/1	164	164	-	-	-	2.4	2.6	-	5.0	108.8	5.3	2.6	7.9
3/2	196	196	-	-	-	2.9	3.0	-	5.9	107.9	6.4	3.0	9.4
4/1	1128	1128	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	383	383	-	-	-	0.0	0.1	-	0.1	1.3	0.0	0.1	0.1
5/2	340	340	-	-	-	1.8	0.2	-	2.0	20.8	6.7	0.2	6.9
5/3	89	89	-	-	-	0.3	0.0	-	0.3	14.1	0.8	0.0	0.8
6/1	676	676	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	402	402	-	-	-	3.7	1.0	-	4.7	42.3	11.4	1.0	12.4
7/2	618	618	-	-	-	6.3	4.5	-	10.8	62.7	19.6	4.5	24.0
8/1+8/2	726	726	110	0	0	6.8	5.1	0.0	11.9	59.2	21.7	5.1	26.8
9/1	493	493	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	441	441	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	90	90	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -2.6
PRC Over All Lanes (%): -2.6

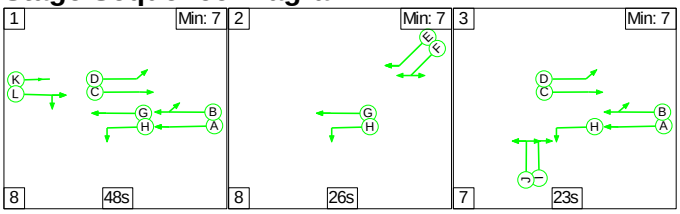
Total Delay for Signalled Lanes (pcuHr): 44.76
Total Delay Over All Lanes(pcuHr): 44.76

Cycle Time (s): 120

Full Input Data And Results

Scenario 2: 'PM Base 2008' (FG2: 'PM 2008 Base', Plan 1: 'Staging Plan No. 1')

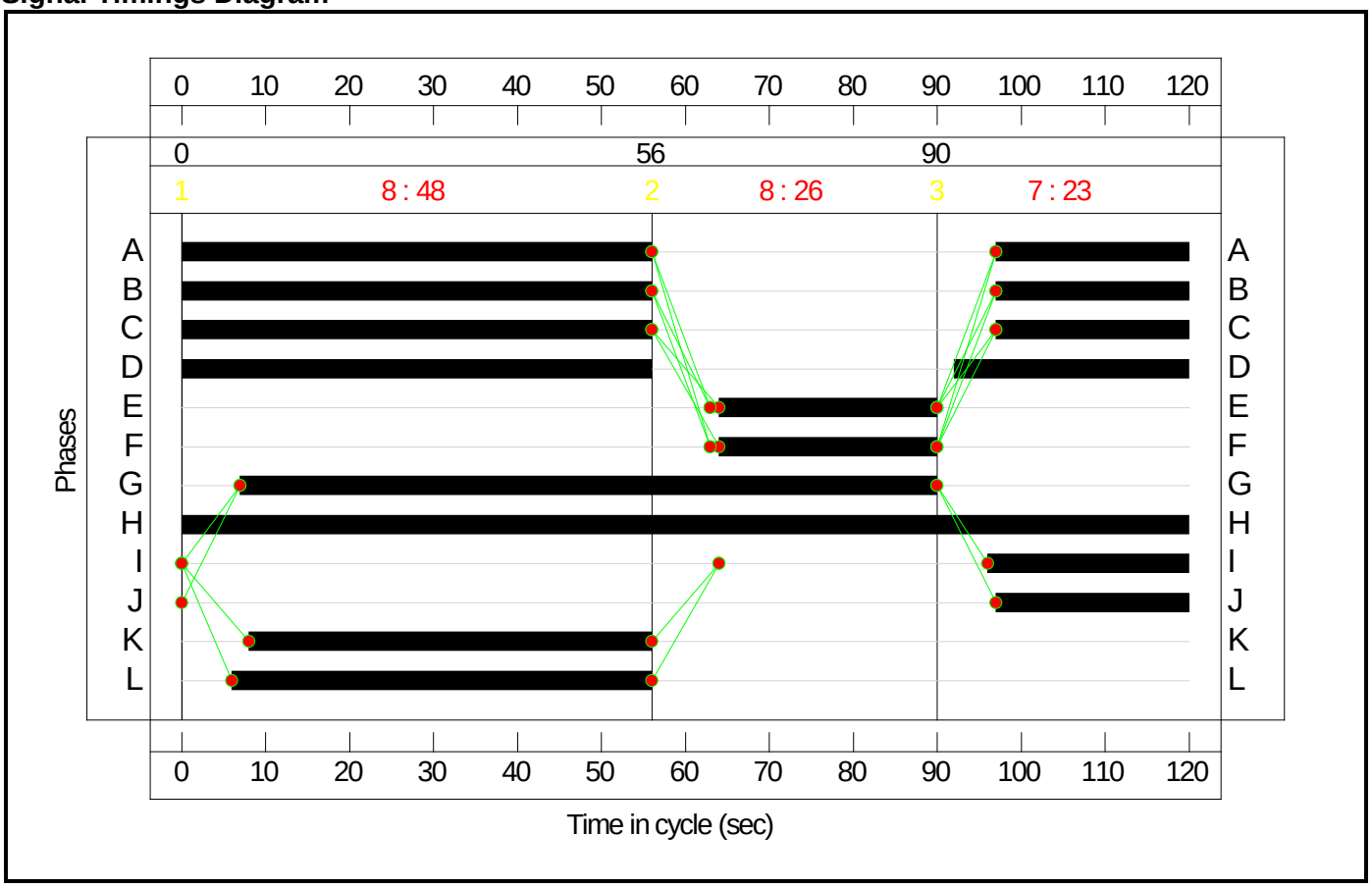
Stage Sequence Diagram



Stage Timings

Stage	1	2	3
Duration	48	26	23
Change Point	0	56	90

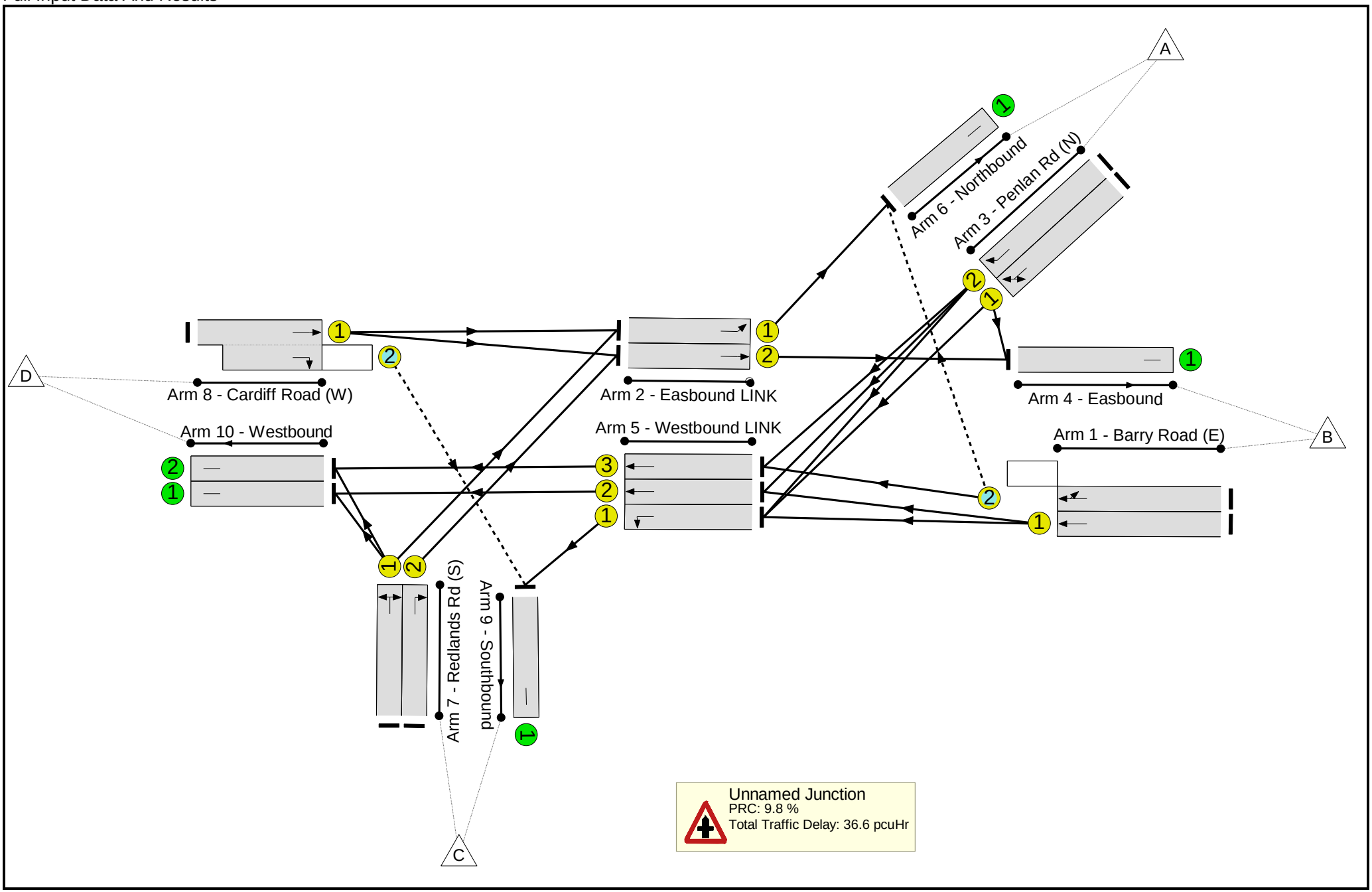
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**82.0%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**82.0%**
1/1	Barry Road (E) Ahead	U	N/A	N/A	A		1	79	-	722	1915	1277	56.6%
1/2	Barry Road (E) Ahead U-Turn	O	N/A	N/A	B		1	79	-	365	1992	1079	33.8%
2/1	Easbound LINK Ahead	U	N/A	N/A	D		1	84	-	289	1935	1371	21.1%
2/2	Easbound LINK Ahead	U	N/A	N/A	C		1	79	-	739	2095	1397	52.9%
3/1	Penlan Rd (N) U-Turn Ahead	U	N/A	N/A	F		1	26	-	306	1793	403	75.9%
3/2	Penlan Rd (N) Ahead	U	N/A	N/A	E		1	26	-	366	2055	462	79.2%
4/1	Easbound	U	N/A	N/A	-		-	-	-	878	1	Inf	0.0%
5/1	Westbound LINK Left	U	N/A	N/A	H		1	120	-	739	1780	1780	41.5%
5/2	Westbound LINK Ahead	U	N/A	N/A	G		1	83	-	379	2085	1460	26.0%
5/3	Westbound LINK Ahead	U	N/A	N/A	G		1	83	-	409	2075	1452	28.2%
6/1	Northbound	U	N/A	N/A	-		-	-	-	382	1	Inf	0.0%
7/1	Redlands Rd (S) Right Left	U	N/A	N/A	J		1	23	-	236	1700	340	69.4%
7/2	Redlands Rd (S) Right	U	N/A	N/A	I		1	24	-	311	1893	394	78.9%
8/1+8/2	Cardiff Road (W) Ahead Right	U+O	N/A	N/A	L		1	50		696	1915:1912	849	82.0%
9/1	Southbound	U	N/A	N/A	-		-	-	-	840	1	Inf	0.0%
10/1	Westbound	U	N/A	N/A	-		-	-	-	483	1	Inf	0.0%
10/2	Westbound	U	N/A	N/A	-		-	-	-	419	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**193**	**0**	**1**	**25.6**	**10.8**	**0.2**	**36.6**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**193**	**0**	**1**	**25.6**	**10.8**	**0.2**	**36.6**	**-**	**-**	**-**	**-**
1/1	722	722	-	-	-	2.1	0.6	-	2.8	13.9	12.8	0.6	13.5
1/2	365	365	92	0	1	0.8	0.3	0.2	1.3	12.7	4.9	0.3	5.1
2/1	289	289	-	-	-	0.1	0.1	-	0.2	2.3	0.2	0.1	0.3
2/2	739	739	-	-	-	0.2	0.6	-	0.7	3.5	0.5	0.6	1.0
3/1	306	306	-	-	-	3.7	1.5	-	5.2	61.4	9.5	1.5	11.0
3/2	366	366	-	-	-	4.5	1.8	-	6.3	61.8	11.5	1.8	13.3
4/1	878	878	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	739	739	-	-	-	0.0	0.4	-	0.4	1.7	0.0	0.4	0.4
5/2	379	379	-	-	-	0.7	0.2	-	0.9	8.5	5.1	0.2	5.3
5/3	409	409	-	-	-	1.0	0.2	-	1.2	10.7	5.9	0.2	6.1
6/1	382	382	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	236	236	-	-	-	2.9	1.1	-	4.0	61.5	7.3	1.1	8.4
7/2	311	311	-	-	-	3.9	1.8	-	5.7	65.7	9.8	1.8	11.6
8/1+8/2	696	696	101	0	0	5.7	2.2	0.0	7.9	40.9	19.1	2.2	21.3
9/1	840	840	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/1	483	483	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
10/2	419	419	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1 PRC for Signalled Lanes (%): 9.8 Total Delay for Signalled Lanes (pcuHr): 36.57
PRC Over All Lanes (%): 9.8 Total Delay Over All Lanes(pcuHr): 36.57 Cycle Time (s): 120

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA,UK

Tel: +44 (0) 1344 770018
Fax: +44 (0) 1344 770864
Email: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
20.Morrisons_Ffordd y Mileniwm\Retail_Morrissons_Ffordd Y Mileniwm.vai"
(drive-on-the-left) at 16:56:59 on Friday, 25 July 2008

.FILE PROPERTIES

RUN TITLE: Retail_Morrissons_Ffordd Y Mileniwm
LOCATION:
DATE: 12/03/08
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA

ARM A - Ffordd Y Mileniwm (E)
ARM B - Y Rhodfa
ARM C - Ffordd Y Mileniwm (W)
ARM D - Morrissons/Retail

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.71	6.27	9.60	41.30	44.70	22.2	0.629	27.055
ARM B	3.27	6.25	14.80	20.30	44.70	23.9	0.611	26.227
ARM C	3.63	6.14	11.00	34.80	44.70	16.6	0.638	27.384
ARM D	4.45	6.60	3.50	45.40	44.70	22.9	0.634	27.492

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2008 AM Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	5.90	8.85	5.90
ARM B	15.00	45.00	75.00	0.06	0.09	0.06
ARM C	15.00	45.00	75.00	11.09	16.63	11.09
ARM D	15.00	45.00	75.00	3.88	5.81	3.88

DEMAND SET TITLE: 2008 AM Base

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.004	0.758	0.237
		0.0	2.0	358.0	112.0
		(0.0)	(0.0)	(9.0)	(0.0)
	ARM B	0.800	0.000	0.200	0.000
		4.0	0.0	1.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.589	0.007	0.000	0.405
		522.0	6.0	0.0	359.0
		(6.0)	(0.0)	(0.0)	(1.0)
	ARM D	0.516	0.003	0.481	0.000
		160.0	1.0	149.0	0.0
		(1.0)	(0.0)	(1.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	5.90	24.17	0.244		0.0	0.3	4.7		0.05
ARM B	0.06	21.26	0.003		0.0	0.0	0.0		0.05
ARM C	11.09	25.46	0.435		0.0	0.8	11.1		0.07
ARM D	3.88	22.82	0.170		0.0	0.2	3.0		0.05
08.30-08.45									
ARM A	7.05	23.94	0.294		0.3	0.4	6.1		0.06
ARM B	0.07	20.28	0.004		0.0	0.0	0.1		0.05
ARM C	13.24	25.29	0.524		0.8	1.1	15.9		0.08
ARM D	4.63	21.95	0.211		0.2	0.3	3.9		0.06
08.45-09.00									
ARM A	8.63	23.63	0.365		0.4	0.6	8.4		0.07
ARM B	0.09	18.95	0.005		0.0	0.0	0.1		0.05
ARM C	16.22	25.05	0.647		1.1	1.8	25.8		0.11
ARM D	5.67	20.77	0.273		0.3	0.4	5.5		0.07
09.00-09.15									
ARM A	8.63	23.63	0.365		0.6	0.6	8.6		0.07
ARM B	0.09	18.94	0.005		0.0	0.0	0.1		0.05
ARM C	16.22	25.05	0.647		1.8	1.8	27.1		0.11
ARM D	5.67	20.75	0.273		0.4	0.4	5.6		0.07
09.15-09.30									
ARM A	7.05	23.94	0.294		0.6	0.4	6.4		0.06
ARM B	0.07	20.27	0.004		0.0	0.0	0.1		0.05
ARM C	13.24	25.28	0.524		1.8	1.1	17.2		0.08
ARM D	4.63	21.92	0.211		0.4	0.3	4.1		0.06
09.30-09.45									
ARM A	5.90	24.17	0.244		0.4	0.3	4.9		0.05
ARM B	0.06	21.24	0.003		0.0	0.0	0.0		0.05
ARM C	11.09	25.46	0.436		1.1	0.8	12.0		0.07
ARM D	3.88	22.79	0.170		0.3	0.2	3.1		0.05

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.4	
09.00	0.6	*
09.15	0.6	*
09.30	0.4	
09.45	0.3	

QUEUE AT ARM B

TIME SEGMENT NO. OF

ENDING	VEHICLES IN QUEUE	
08.30	0.0	
08.45	0.0	
09.00	0.0	
09.15	0.0	
09.30	0.0	
09.45	0.0	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.8	*
08.45	1.1	*
09.00	1.8	**
09.15	1.8	**
09.30	1.1	*
09.45	0.8	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.2
08.45	0.3
09.00	0.4
09.15	0.4
09.30	0.3
09.45	0.2

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	647.2	431.5	39.2	0.06	39.2	0.06
B	6.9	4.6	0.3	0.05	0.3	0.05
C	1216.3	810.8	109.1	0.09	109.1	0.09
D	425.1	283.4	25.3	0.06	25.3	0.06
ALL	2295.4	1530.3	173.9	0.08	173.9	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
20.Morrisons_Ffordd y Mileniwm\Retail_Morrissons_Ffordd Y Mileniwm.vai"
(drive-on-the-left) at 16:58:41 on Friday, 25 July 2008

.FILE PROPERTIES

RUN TITLE: Retail_Morrissons_Ffordd Y Mileniwm
LOCATION:
DATE: 12/03/08
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA

ARM A - Ffordd Y Mileniwm (E)
ARM B - Y Rhodfa
ARM C - Ffordd Y Mileniwm (W)
ARM D - Morrissons/Retail

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.71	6.27	9.60	41.30	44.70	22.2	0.629	27.055
ARM B	3.27	6.25	14.80	20.30	44.70	23.9	0.611	26.227
ARM C	3.63	6.14	11.00	34.80	44.70	16.6	0.638	27.384
ARM D	4.45	6.60	3.50	45.40	44.70	22.9	0.634	27.492

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 08.15 AND ENDS 09.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2020 AM Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	6.90	10.35	6.90
ARM B	15.00	45.00	75.00	0.08	0.11	0.08
ARM C	15.00	45.00	75.00	12.93	19.39	12.93
ARM D	15.00	45.00	75.00	4.53	6.79	4.53

DEMAND SET TITLE: 2020 AM Base

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.007	0.755	0.237
		0.0	4.0	417.0	131.0
		(0.0)	(0.0)	(9.0)	(0.0)
	ARM B	0.833	0.000	0.167	0.000
		5.0	0.0	1.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.589	0.007	0.000	0.404
		609.0	7.0	0.0	418.0
		(6.0)	(0.0)	(0.0)	(1.0)
	ARM D	0.517	0.003	0.481	0.000
		187.0	1.0	174.0	0.0
		(1.0)	(0.0)	(1.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	6.90	23.98	0.288		0.0	0.4	5.9		0.06
ARM B	0.08	20.44	0.004		0.0	0.0	0.1		0.05
ARM C	12.93	25.31	0.511		0.0	1.0	14.9		0.08
ARM D	4.53	22.09	0.205		0.0	0.3	3.8		0.06
08.30-08.45									
ARM A	8.24	23.72	0.347		0.4	0.5	7.8		0.06
ARM B	0.09	19.30	0.005		0.0	0.0	0.1		0.05
ARM C	15.43	25.10	0.615		1.0	1.6	22.7		0.10
ARM D	5.40	21.07	0.256		0.3	0.3	5.1		0.06
08.45-09.00									
ARM A	10.09	23.36	0.432		0.5	0.8	11.1		0.08
ARM B	0.11	17.74	0.006		0.0	0.0	0.1		0.06
ARM C	18.90	24.82	0.761		1.6	3.1	42.5		0.16
ARM D	6.62	19.71	0.336		0.3	0.5	7.4		0.08
09.00-09.15									
ARM A	10.09	23.35	0.432		0.8	0.8	11.3		0.08
ARM B	0.11	17.73	0.006		0.0	0.0	0.1		0.06
ARM C	18.90	24.82	0.762		3.1	3.1	46.4		0.17
ARM D	6.62	19.67	0.336		0.5	0.5	7.6		0.08
09.15-09.30									
ARM A	8.24	23.71	0.347		0.8	0.5	8.2		0.06
ARM B	0.09	19.28	0.005		0.0	0.0	0.1		0.05
ARM C	15.43	25.10	0.615		3.1	1.6	25.5		0.11
ARM D	5.40	21.02	0.257		0.5	0.3	5.3		0.06
09.30-09.45									
ARM A	6.90	23.98	0.288		0.5	0.4	6.2		0.06
ARM B	0.08	20.41	0.004		0.0	0.0	0.1		0.05
ARM C	12.93	25.30	0.511		1.6	1.1	16.3		0.08
ARM D	4.53	22.04	0.205		0.3	0.3	4.0		0.06

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.4	
08.45	0.5	*
09.00	0.8	*
09.15	0.8	*
09.30	0.5	*
09.45	0.4	

QUEUE AT ARM B

TIME SEGMENT NO. OF

ENDING	VEHICLES IN QUEUE	
08.30	0.0	
08.45	0.0	
09.00	0.0	
09.15	0.0	
09.30	0.0	
09.45	0.0	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	1.0	*
08.45	1.6	**
09.00	3.1	***
09.15	3.1	***
09.30	1.6	**
09.45	1.1	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.3	
09.00	0.5	*
09.15	0.5	*
09.30	0.3	
09.45	0.3	

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	756.9	504.6	50.5	0.07	50.5	0.07
B	8.2	5.5	0.4	0.05	0.4	0.05
C	1417.8	945.2	168.4	0.12	168.4	0.12
D	496.4	330.9	33.0	0.07	33.0	0.07
ALL	2679.3	1786.2	252.3	0.09	252.4	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
20.Morrisons_Ffordd y Mileniwm\Morrisons_Ffordd Y Mileniwm.vai"
(drive-on-the-left) at 14:08:59 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Morrisons_Ffordd Y Mileniwm
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA
****
ARM A - Ffordd Y Mileniwm (E)
ARM B - Y Rhodfa
ARM C - Ffordd Y Mileniwm (W)
ARM D - Morrisons/Retail

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.71	6.27	9.60	41.30	44.70	22.2	0.629	27.055
ARM B	3.27	6.25	14.80	20.30	44.70	23.9	0.611	26.227
ARM C	3.63	6.14	11.00	34.80	44.70	16.6	0.638	27.384
ARM D	4.45	6.60	3.50	45.40	44.70	22.9	0.634	27.492

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2020 AM With Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	9.98	14.96	9.98
ARM B	15.00	45.00	75.00	0.46	0.69	0.46
ARM C	15.00	45.00	75.00	17.06	25.59	17.06
ARM D	15.00	45.00	75.00	4.53	6.79	4.53

DEMAND SET TITLE: 2020 AM With Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)			
	ARM A	0.000	0.009	0.827	0.164
		0.0	7.0	660.0	131.0
		(0.0)	(0.0)	(9.0)	(0.0)
	ARM B	0.432	0.000	0.568	0.000
		16.0	0.0	21.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.684	0.010	0.000	0.306
		934.0	13.0	0.0	418.0
		(6.0)	(0.0)	(0.0)	(1.0)
	ARM D	0.517	0.003	0.481	0.000
		187.0	1.0	174.0	0.0
		(1.0)	(0.0)	(1.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	10.01	23.79	0.421	- - -	0.0	0.7	10.5	-	0.072
ARM B	0.46	18.40	0.025	- - -	0.0	0.0	0.4	-	0.056
ARM C	17.13	25.11	0.682	- - -	0.0	2.1	29.4	-	0.121
ARM D	4.54	19.25	0.236	- - -	0.0	0.3	4.5	-	0.068
08.30-08.45									
ARM A	11.96	23.52	0.508	- - -	0.7	1.0	14.9	-	0.086
ARM B	0.55	16.86	0.033	- - -	0.0	0.0	0.5	-	0.061
ARM C	20.45	24.88	0.822	- - -	2.1	4.3	58.0	-	0.212
ARM D	5.42	17.70	0.306	- - -	0.3	0.4	6.4	-	0.081
08.45-09.00									
ARM A	14.64	23.15	0.632	- - -	1.0	1.7	24.2	-	0.116
ARM B	0.68	14.76	0.046	- - -	0.0	0.0	0.7	-	0.071
ARM C	25.05	24.58	1.019	- - -	4.3	23.3	230.6	-	0.760
ARM D	6.64	16.06	0.414	- - -	0.4	0.7	10.1	-	0.106
09.00-09.15									
ARM A	14.64	23.15	0.633	- - -	1.7	1.7	25.5	-	0.118
ARM B	0.68	14.73	0.046	- - -	0.0	0.0	0.7	-	0.071
ARM C	25.05	24.58	1.019	- - -	23.3	35.3	442.6	-	1.355
ARM D	6.64	15.84	0.419	- - -	0.7	0.7	10.7	-	0.109
09.15-09.30									
ARM A	11.96	23.50	0.509	- - -	1.7	1.0	16.3	-	0.087
ARM B	0.55	16.81	0.033	- - -	0.0	0.0	0.5	-	0.062
ARM C	20.45	24.88	0.822	- - -	35.3	5.2	202.0	-	0.615
ARM D	5.42	16.71	0.325	- - -	0.7	0.5	7.5	-	0.089
09.30-09.45									
ARM A	10.01	23.78	0.421	- - -	1.0	0.7	11.3	-	0.073
ARM B	0.46	18.35	0.025	- - -	0.0	0.0	0.4	-	0.056
ARM C	17.13	25.10	0.682	- - -	5.2	2.2	35.6	-	0.132
ARM D	4.54	19.10	0.238	- - -	0.5	0.3	4.8	-	0.069

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.7	*

08.45	1.0	*
09.00	1.7	**
09.15	1.7	**
09.30	1.0	*
09.45	0.7	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.0	
08.45	0.0	
09.00	0.0	
09.15	0.0	
09.30	0.0	
09.45	0.0	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	2.1	**
08.45	4.3	****
09.00	23.3	**********
09.15	35.3	**********
09.30	5.2	*****
09.45	2.2	**

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.4	
09.00	0.7	*
09.15	0.7	*
09.30	0.5	
09.45	0.3	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *		T75
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
A	1098.4	732.3	102.6	0.09	102.6	0.09	
B	50.9	34.0	3.2	0.06	3.2	0.06	
C	1878.8	1252.5	998.2	0.53	998.3	0.53	
D	498.3	332.2	44.0	0.09	44.0	0.09	
ALL	3526.4	2350.9	1148.0	0.33	1148.1	0.33	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA,UK

Tel: +44 (0) 1344 770018
Fax: +44 (0) 1344 770864
Email: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
20.Morrisons_Ffordd y Mileniwm\Retail_Morrissons_Ffordd Y Mileniwm.vai"
(drive-on-the-left) at 16:57:48 on Friday, 25 July 2008

.FILE PROPERTIES

RUN TITLE: Retail_Morrissons_Ffordd Y Mileniwm
LOCATION:
DATE: 12/03/08
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA

ARM A - Ffordd Y Mileniwm (E)
ARM B - Y Rhodfa
ARM C - Ffordd Y Mileniwm (W)
ARM D - Morrissons/Retail

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.71	6.27	9.60	41.30	44.70	22.2	0.629	27.055
ARM B	3.27	6.25	14.80	20.30	44.70	23.9	0.611	26.227
ARM C	3.63	6.14	11.00	34.80	44.70	16.6	0.638	27.384
ARM D	4.45	6.60	3.50	45.40	44.70	22.9	0.634	27.492

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 08.15 AND ENDS 09.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2008 PM Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.21	13.82	9.21
ARM B	15.00	45.00	75.00	0.17	0.26	0.17
ARM C	15.00	45.00	75.00	9.24	13.86	9.24
ARM D	15.00	45.00	75.00	7.46	11.19	7.46

DEMAND SET TITLE: 2008 PM Base

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.015	0.699	0.286
		0.0	11.0	515.0	211.0
		(0.0)	(0.0)	(3.0)	(0.0)
	ARM B	0.214	0.000	0.571	0.214
		3.0	0.0	8.0	3.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.392	0.009	0.000	0.598
		290.0	7.0	0.0	442.0
		(9.0)	(0.0)	(0.0)	(1.0)
	ARM D	0.417	0.007	0.576	0.000
		249.0	4.0	344.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	9.21	23.78	0.387		0.0	0.6	9.2		0.07
ARM B	0.17	17.98	0.010		0.0	0.0	0.1		0.06
ARM C	9.24	24.64	0.375		0.0	0.6	8.7		0.06
ARM D	7.46	24.92	0.299		0.0	0.4	6.2		0.06
08.30-08.45									
ARM A	11.00	23.24	0.473		0.6	0.9	13.0		0.08
ARM B	0.21	16.35	0.013		0.0	0.0	0.2		0.06
ARM C	11.03	24.32	0.454		0.6	0.8	12.1		0.08
ARM D	8.91	24.41	0.365		0.4	0.6	8.4		0.06
08.45-09.00									
ARM A	13.47	22.51	0.599		0.9	1.5	21.1		0.11
ARM B	0.26	14.14	0.018		0.0	0.0	0.3		0.07
ARM C	13.51	23.88	0.566		0.8	1.3	18.6		0.10
ARM D	10.91	23.72	0.460		0.6	0.8	12.3		0.08
09.00-09.15									
ARM A	13.47	22.50	0.599		1.5	1.5	22.1		0.11
ARM B	0.26	14.11	0.018		0.0	0.0	0.3		0.07
ARM C	13.51	23.87	0.566		1.3	1.3	19.4		0.10
ARM D	10.91	23.71	0.460		0.8	0.8	12.7		0.08
09.15-09.30									
ARM A	11.00	23.23	0.474		1.5	0.9	14.1		0.08
ARM B	0.21	16.31	0.013		0.0	0.0	0.2		0.06
ARM C	11.03	24.31	0.454		1.3	0.8	12.9		0.08
ARM D	8.91	24.40	0.365		0.8	0.6	8.9		0.06
09.30-09.45									
ARM A	9.21	23.76	0.388		0.9	0.6	9.8		0.07
ARM B	0.17	17.93	0.010		0.0	0.0	0.2		0.06
ARM C	9.24	24.63	0.375		0.8	0.6	9.3		0.07
ARM D	7.46	24.90	0.300		0.6	0.4	6.6		0.06

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.6	*
08.45	0.9	*
09.00	1.5	*
09.15	1.5	*
09.30	0.9	*
09.45	0.6	*

QUEUE AT ARM B

TIME SEGMENT NO. OF

ENDING	VEHICLES IN QUEUE	
08.30	0.0	
08.45	0.0	
09.00	0.0	
09.15	0.0	
09.30	0.0	
09.45	0.0	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.6	*
08.45	0.8	*
09.00	1.3	*
09.15	1.3	*
09.30	0.8	*
09.45	0.6	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.4	
08.45	0.6	*
09.00	0.8	*
09.15	0.8	*
09.30	0.6	*
09.45	0.4	

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1010.6	673.7	89.2	0.09	89.2	0.09
B	19.2	12.8	1.2	0.06	1.2	0.06
C	1013.3	675.6	80.9	0.08	80.9	0.08
D	818.6	545.7	55.1	0.07	55.1	0.07
ALL	2861.7	1907.8	226.5	0.08	226.5	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
20.Morrisons_Ffordd y Mileniwm\Retail_Morrissons_Ffordd Y Mileniwm.vai"
(drive-on-the-left) at 16:59:50 on Friday, 25 July 2008

.FILE PROPERTIES
****

RUN TITLE: Retail_Morrissons_Ffordd Y Mileniwm
LOCATION:
DATE: 12/03/08
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA
****
ARM A - Ffordd Y Mileniwm (E)
ARM B - Y Rhodfa
ARM C - Ffordd Y Mileniwm (W)
ARM D - Morrissons/Retail

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.71	6.27	9.60	41.30	44.70	22.2	0.629	27.055
ARM B	3.27	6.25	14.80	20.30	44.70	23.9	0.611	26.227
ARM C	3.63	6.14	11.00	34.80	44.70	16.6	0.638	27.384
ARM D	4.45	6.60	3.50	45.40	44.70	22.9	0.634	27.492

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 08.15 AND ENDS 09.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: 2020 PM Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK FLOW STOPS IS REACHED	FALLING BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	10.71	16.07	10.71
ARM B	15.00	45.00	75.00	0.22	0.34	0.22
ARM C	15.00	45.00	75.00	10.74	16.11	10.74
ARM D	15.00	45.00	75.00	8.69	13.03	8.69

DEMAND SET TITLE: 2020 PM Base

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.015	0.699	0.286
		0.0	13.0	599.0	245.0
		(0.0)	(0.0)	(3.0)	(0.0)
	ARM B	0.222	0.000	0.556	0.222
		4.0	0.0	10.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.392	0.009	0.000	0.598
		337.0	8.0	0.0	514.0
		(9.0)	(0.0)	(0.0)	(1.0)
	ARM D	0.416	0.007	0.577	0.000
		289.0	5.0	401.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	10.71	23.32	0.459		0.0	0.8	12.2		0.08
ARM B	0.22	16.64	0.014		0.0	0.0	0.2		0.06
ARM C	10.74	24.37	0.441		0.0	0.8	11.3		0.07
ARM D	8.69	24.50	0.355		0.0	0.5	8.0		0.06

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	12.79	22.70	0.564		0.8	1.3	18.4		0.10
ARM B	0.27	14.74	0.018		0.0	0.0	0.3		0.07
ARM C	12.82	23.99	0.534		0.8	1.1	16.5		0.09
ARM D	10.37	23.91	0.434		0.5	0.8	11.1		0.07

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
ARM A	15.67	21.85	0.717		1.3	2.4	34.3		0.16
ARM B	0.33	12.19	0.027		0.0	0.0	0.4		0.08
ARM C	15.70	23.48	0.669		1.1	2.0	28.1		0.13
ARM D	12.71	23.11	0.550		0.8	1.2	17.5		0.10

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
ARM A	15.67	21.84	0.717		2.4	2.5	37.1		0.16
ARM B	0.33	12.13	0.027		0.0	0.0	0.4		0.08
ARM C	15.70	23.47	0.669		2.0	2.0	29.8		0.13
ARM D	12.71	23.09	0.550		1.2	1.2	18.2		0.10

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
ARM A	12.79	22.68	0.564		2.5	1.3	20.6		0.10
ARM B	0.27	14.66	0.018		0.0	0.0	0.3		0.07
ARM C	12.82	23.97	0.535		2.0	1.2	18.1		0.09
ARM D	10.37	23.89	0.434		1.2	0.8	11.9		0.07

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.30-09.45									
ARM A	10.71	23.30	0.460		1.3	0.9	13.3		0.08
ARM B	0.22	16.56	0.014		0.0	0.0	0.2		0.06
ARM C	10.74	24.36	0.441		1.2	0.8	12.2		0.07
ARM D	8.69	24.48	0.355		0.8	0.6	8.5		0.06

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.8	*
08.45	1.3	*
09.00	2.4	**
09.15	2.5	**
09.30	1.3	*
09.45	0.9	*

QUEUE AT ARM B

TIME SEGMENT NO. OF

ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.0	
08.45	0.0	
09.00	0.0	
09.15	0.0	
09.30	0.0	
09.45	0.0	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.8	*
08.45	1.1	*
09.00	2.0	**
09.15	2.0	**
09.30	1.2	*
09.45	0.8	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.5	*
08.45	0.8	*
09.00	1.2	*
09.15	1.2	*
09.30	0.8	*
09.45	0.6	*

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1175.1	783.4	135.9	0.12	135.9	0.12
B	24.7	16.5	1.8	0.07	1.8	0.07
C	1177.9	785.2	116.1	0.10	116.1	0.10
D	953.0	635.3	75.2	0.08	75.2	0.08
ALL	3330.7	2220.4	328.9	0.10	328.9	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
20.Morrisons_Ffordd y Mileniwm\Morrisons_Ffordd Y Mileniwm.vai"
(drive-on-the-left) at 14:10:21 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Morrisons_Ffordd Y Mileniwm
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA
****
ARM A - Ffordd Y Mileniwm (E)
ARM B - Y Rhodfa
ARM C - Ffordd Y Mileniwm (W)
ARM D - Morrisons/Retail

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.71	6.27	9.60	41.30	44.70	22.2	0.629	27.055
ARM B	3.27	6.25	14.80	20.30	44.70	23.9	0.611	26.227
ARM C	3.63	6.14	11.00	34.80	44.70	16.6	0.638	27.384
ARM D	4.45	6.60	3.50	45.40	44.70	22.9	0.634	27.492

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2020 PM Base +tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	FLOW STOPS TO RISE	RATE OF FLOW (VEH/MIN) BEFORE IS REACHED	AT TOP FALLING	AFTER OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.95	17.92	11.95	
ARM B	15.00	45.00	75.00	0.22	0.34	0.22	
ARM C	15.00	45.00	75.00	12.11	18.17	12.11	
ARM D	15.00	45.00	75.00	8.69	13.03	8.69	

DEMAND SET TITLE: 2020 PM Base +tourism

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)			
	ARM A	0.000	0.014	0.730	0.256
		0.0	13.0	698.0	245.0
		(0.0)	(0.0)	(3.0)	(0.0)
	ARM B	0.222	0.000	0.556	0.222
		4.0	0.0	10.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.461	0.008	0.000	0.530
		447.0	8.0	0.0	514.0
		(9.0)	(0.0)	(0.0)	(1.0)
	ARM D	0.416	0.007	0.577	0.000
		289.0	5.0	401.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	12.00	23.29	0.515	- -	-	0.0	1.0	15.1	-	0.087
ARM B	0.23	15.83	0.014	- -	-	0.0	0.0	0.2	-	0.064
ARM C	12.16	24.24	0.502	- -	-	0.0	1.0	14.4	-	0.082
ARM D	8.72	23.54	0.370	- -	-	0.0	0.6	8.5	-	0.067
16.30-16.45									
ARM A	14.32	22.66	0.632	- -	-	1.0	1.7	24.1	-	0.119
ARM B	0.27	13.77	0.020	- -	-	0.0	0.0	0.3	-	0.074
ARM C	14.52	23.86	0.609	- -	-	1.0	1.5	22.0	-	0.106
ARM D	10.41	22.76	0.458	- -	-	0.6	0.8	12.2	-	0.081
16.45-17.00									
ARM A	17.54	21.81	0.804	- -	-	1.7	3.8	51.7	-	0.220
ARM B	0.33	11.04	0.030	- -	-	0.0	0.0	0.5	-	0.093
ARM C	17.78	23.35	0.761	- -	-	1.5	3.0	42.2	-	0.173
ARM D	12.75	21.71	0.587	- -	-	0.8	1.4	20.1	-	0.111
17.00-17.15									
ARM A	17.54	21.80	0.805	- -	-	3.8	4.0	58.7	-	0.233
ARM B	0.33	10.94	0.030	- -	-	0.0	0.0	0.5	-	0.094
ARM C	17.78	23.33	0.762	- -	-	3.0	3.1	46.4	-	0.179
ARM D	12.75	21.68	0.588	- -	-	1.4	1.4	21.1	-	0.112
17.15-17.30									
ARM A	14.32	22.64	0.633	- -	-	4.0	1.8	28.1	-	0.125
ARM B	0.27	13.64	0.020	- -	-	0.0	0.0	0.3	-	0.075
ARM C	14.52	23.83	0.609	- -	-	3.1	1.6	25.0	-	0.110
ARM D	10.41	22.71	0.458	- -	-	1.4	0.9	13.2	-	0.082
17.30-17.45									
ARM A	12.00	23.27	0.515	- -	-	1.8	1.1	16.7	-	0.089
ARM B	0.23	15.74	0.014	- -	-	0.0	0.0	0.2	-	0.064
ARM C	12.16	24.22	0.502	- -	-	1.6	1.0	15.8	-	0.083
ARM D	8.72	23.51	0.371	- -	-	0.9	0.6	9.1	-	0.068

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.0	*

16.45	1.7	**
17.00	3.8	****
17.15	4.0	****
17.30	1.8	**
17.45	1.1	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.0	
16.45	0.0	
17.00	0.0	
17.15	0.0	
17.30	0.0	
17.45	0.0	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.0	*
16.45	1.5	**
17.00	3.0	***
17.15	3.1	***
17.30	1.6	**
17.45	1.0	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.6	*
16.45	0.8	*
17.00	1.4	*
17.15	1.4	*
17.30	0.9	*
17.45	0.6	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1315.9	877.2	194.5	0.15	194.5	0.15
B	24.8	16.5	2.0	0.08	2.0	0.08
C	1333.8	889.2	165.8	0.12	165.9	0.12
D	956.6	637.7	84.3	0.09	84.4	0.09
ALL	3631.0	2420.7	446.6	0.12	446.7	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
20.Morrisons_Ffordd y Mileniwm\Morrisons_Ffordd Y Mileniwm.vai"
(drive-on-the-left) at 14:09:31 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Morrisons_Ffordd Y Mileniwm
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA
****
ARM A - Ffordd Y Mileniwm (E)
ARM B - Y Rhodfa
ARM C - Ffordd Y Mileniwm (W)
ARM D - Morrisons/Retail

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.71	6.27	9.60	41.30	44.70	22.2	0.629	27.055
ARM B	3.27	6.25	14.80	20.30	44.70	23.9	0.611	26.227
ARM C	3.63	6.14	11.00	34.80	44.70	16.6	0.638	27.384
ARM D	4.45	6.60	3.50	45.40	44.70	22.9	0.634	27.492

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2020 PM With Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	TO RISE	IS REACHED	FALLING			
ARM A	15.00	45.00	75.00	15.34	23.01	15.34
ARM B	15.00	45.00	75.00	0.38	0.56	0.38
ARM C	15.00	45.00	75.00	14.70	22.05	14.70
ARM D	15.00	45.00	75.00	8.69	13.03	8.69

DEMAND SET TITLE: 2020 PM With Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.017	0.783	0.200
		0.0	21.0	961.0	245.0
		(0.0)	(0.0)	(3.0)	(0.0)
	ARM B	0.267	0.000	0.600	0.133
		8.0	0.0	18.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.543	0.020	0.000	0.437
		638.0	24.0	0.0	514.0
		(9.0)	(0.0)	(0.0)	(1.0)
	ARM D	0.416	0.007	0.577	0.000
		289.0	5.0	401.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	15.40	23.13	0.666	- - -	0.0	1.9	27.3	-	0.125
ARM B	0.38	13.79	0.027	- - -	0.0	0.0	0.4	-	0.075
ARM C	14.76	24.06	0.613	- - -	0.0	1.6	22.1	-	0.105
ARM D	8.72	21.74	0.401	- - -	0.0	0.7	9.7	-	0.076
16.30-16.45									
ARM A	18.38	22.48	0.818	- - -	1.9	4.2	55.9	-	0.228
ARM B	0.45	11.36	0.040	- - -	0.0	0.0	0.6	-	0.092
ARM C	17.62	23.69	0.744	- - -	1.6	2.8	39.1	-	0.161
ARM D	10.41	20.61	0.505	- - -	0.7	1.0	14.7	-	0.098
16.45-17.00									
ARM A	22.52	21.61	1.042	- - -	4.2	26.7	252.1	-	0.929
ARM B	0.55	8.83	0.062	- - -	0.0	0.1	1.0	-	0.121
ARM C	21.58	23.33	0.925	- - -	2.8	9.0	108.4	-	0.401
ARM D	12.75	19.19	0.665	- - -	1.0	1.9	27.2	-	0.153
17.00-17.15									
ARM A	22.52	21.59	1.043	- - -	26.7	43.3	527.1	-	1.793
ARM B	0.55	8.58	0.064	- - -	0.1	0.1	1.0	-	0.125
ARM C	21.58	23.28	0.927	- - -	9.0	10.4	147.0	-	0.512
ARM D	12.75	19.06	0.669	- - -	1.9	2.0	29.4	-	0.158
17.15-17.30									
ARM A	18.38	22.45	0.819	- - -	43.3	5.3	284.9	-	0.963
ARM B	0.45	9.69	0.046	- - -	0.1	0.0	0.8	-	0.108
ARM C	17.62	23.36	0.754	- - -	10.4	3.2	57.8	-	0.205
ARM D	10.41	20.39	0.511	- - -	2.0	1.1	16.5	-	0.102
17.30-17.45									
ARM A	15.40	23.11	0.666	- - -	5.3	2.0	33.4	-	0.137
ARM B	0.38	13.55	0.028	- - -	0.0	0.0	0.4	-	0.076
ARM C	14.76	24.02	0.614	- - -	3.2	1.6	25.5	-	0.110
ARM D	8.72	21.66	0.403	- - -	1.1	0.7	10.5	-	0.078

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.9	**

16.45	4.2	****
17.00	26.7	**************************
17.15	43.3	**
17.30	5.3	*****
17.45	2.0	**

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.0	
16.45	0.0	
17.00	0.1	
17.15	0.1	
17.30	0.0	
17.45	0.0	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.6	**
16.45	2.8	***
17.00	9.0	*********
17.15	10.4	**********
17.30	3.2	***
17.45	1.6	**

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.0	*
17.00	1.9	**
17.15	2.0	**
17.30	1.1	*
17.45	0.7	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *		T75
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
A	1688.9	1125.9	1180.7	0.70	1180.8	0.70	
B	41.3	27.5	4.2	0.10	4.2	0.10	
C	1618.7	1079.1	400.0	0.25	400.0	0.25	
D	956.6	637.7	107.9	0.11	107.9	0.11	
ALL	4305.5	2870.3	1692.7	0.39	1692.9	0.39	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
20.Morrisons_Ffordd y Mileniwm\Morrisons_Ffordd Y Mileniwm.vai"
(drive-on-the-left) at 14:09:58 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Morrisons_Ffordd Y Mileniwm
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Roddy.Beynon [WACPC145]
JOB NUMBER: 122374
STATUS: On-going
DESCRIPTION:

.INPUT DATA
****
ARM A - Ffordd Y Mileniwm (E)
ARM B - Y Rhodfa
ARM C - Ffordd Y Mileniwm (W)
ARM D - Morrisons/Retail

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.71	6.27	9.60	41.30	44.70	22.2	0.629	27.055
ARM B	3.27	6.25	14.80	20.30	44.70	23.9	0.611	26.227
ARM C	3.63	6.14	11.00	34.80	44.70	16.6	0.638	27.384
ARM D	4.45	6.60	3.50	45.40	44.70	22.9	0.634	27.492

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2020 PM With Development+Tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	16.58	24.86	16.58
ARM B	15.00	45.00	75.00	0.38	0.56	0.38
ARM C	15.00	45.00	75.00	16.08	24.11	16.08
ARM D	15.00	45.00	75.00	8.69	13.03	8.69

DEMAND SET TITLE: 2020 PM With Development+Tourism

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.016	0.799	0.185
		0.0	21.0	1060.0	245.0
		(0.0)	(0.0)	(3.0)	(0.0)
	ARM B	0.267	0.000	0.600	0.133
		8.0	0.0	18.0	4.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM C	0.582	0.019	0.000	0.400
		748.0	24.0	0.0	514.0
		(9.0)	(0.0)	(0.0)	(1.0)
	ARM D	0.416	0.007	0.577	0.000
		289.0	5.0	401.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	16.64	23.12	0.719	- -	0.0	2.5	34.2	-	0.147
ARM B	0.38	13.03	0.029	- -	0.0	0.0	0.4	-	0.079
ARM C	16.14	24.00	0.672	- -	0.0	2.0	28.1	-	0.123
ARM D	8.72	20.80	0.419	- -	0.0	0.7	10.4	-	0.082
16.30-16.45									
ARM A	19.87	22.47	0.884	- -	2.5	6.4	81.9	-	0.322
ARM B	0.45	10.50	0.043	- -	0.0	0.0	0.7	-	0.099
ARM C	19.27	23.63	0.815	- -	2.0	4.1	55.6	-	0.215
ARM D	10.41	19.50	0.534	- -	0.7	1.1	16.3	-	0.109
16.45-17.00									
ARM A	24.33	21.62	1.126	- -	6.4	50.6	439.8	-	1.516
ARM B	0.55	8.60	0.064	- -	0.0	0.1	1.0	-	0.124
ARM C	23.60	23.41	1.008	- -	4.1	20.4	206.7	-	0.722
ARM D	12.75	18.08	0.706	- -	1.1	2.3	32.1	-	0.183
17.00-17.15									
ARM A	24.33	21.58	1.127	- -	50.6	92.3	1072.7	-	3.423
ARM B	0.55	8.47	0.065	- -	0.1	0.1	1.0	-	0.126
ARM C	23.60	23.39	1.009	- -	20.4	29.8	379.5	-	1.241
ARM D	12.75	17.89	0.713	- -	2.3	2.4	35.6	-	0.194
17.15-17.30									
ARM A	19.87	22.42	0.886	- -	92.3	57.7	1125.1	-	3.397
ARM B	0.45	8.88	0.051	- -	0.1	0.1	0.8	-	0.119
ARM C	19.27	23.34	0.825	- -	29.8	5.3	173.4	-	0.570
ARM D	10.41	18.76	0.555	- -	2.4	1.3	20.0	-	0.122
17.30-17.45									
ARM A	16.64	23.09	0.721	- -	57.7	2.8	291.9	-	0.838
ARM B	0.38	10.65	0.035	- -	0.1	0.0	0.6	-	0.097
ARM C	16.14	23.57	0.685	- -	5.3	2.2	36.3	-	0.142
ARM D	8.72	20.66	0.422	- -	1.3	0.7	11.4	-	0.084

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	2.5	**

```
   16.45           6.4  ******
   17.00          50.6  **************************************************
   17.15          92.3  ********************************************************************************************
   17.30          57.7  *********************************************************
   17.45           2.8  ***


.QUEUE AT ARM   B
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   16.30           0.0
   16.45           0.0
   17.00           0.1
   17.15           0.1
   17.30           0.1
   17.45           0.0


.QUEUE AT ARM   C
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   16.30           2.0  **
   16.45           4.1  ****
   17.00          20.4  ********************
   17.15          29.8  ******************************
   17.30           5.3  *****
   17.45           2.2  **


.QUEUE AT ARM   D
 --------------

  TIME SEGMENT NO. OF
   ENDING      VEHICLES
               IN QUEUE

   16.30           0.7  *
   16.45           1.1  *
   17.00           2.3  **
   17.15           2.4  **
   17.30           1.3  *
   17.45           0.7  *


.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD
.-----------------------------------------

 ------------------------------------------------------------------------------ T75
 I  ARM  I   TOTAL DEMAND  I     * QUEUEING *    I  * INCLUSIVE QUEUEING *  I
 I       I                 I      * DELAY *      I         * DELAY *        I
 I       I-----------------------------------------------------------------I
 I       I  (VEH)  (VEH/H) I  (MIN)    (MIN/VEH) I    (MIN)      (MIN/VEH)  I
 ------------------------------------------------------------------------------
 I   A   I 1825.1 I 1216.8 I  3045.8 I    1.67   I    3045.9  I     1.67    I
 I   B   I   41.3 I   27.5 I     4.5 I    0.11   I       4.5  I     0.11    I
 I   C   I 1770.1 I 1180.1 I   879.6 I    0.50   I     879.7  I     0.50    I
 I   D   I  956.6 I  637.7 I   125.8 I    0.13   I     125.8  I     0.13    I
 ------------------------------------------------------------------------------
 I  ALL  I 4593.1 I 3062.1 I  4055.7 I    0.88   I    4056.0  I     0.88    I
 ------------------------------------------------------------------------------


 * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
 * INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

 END OF JOB
```

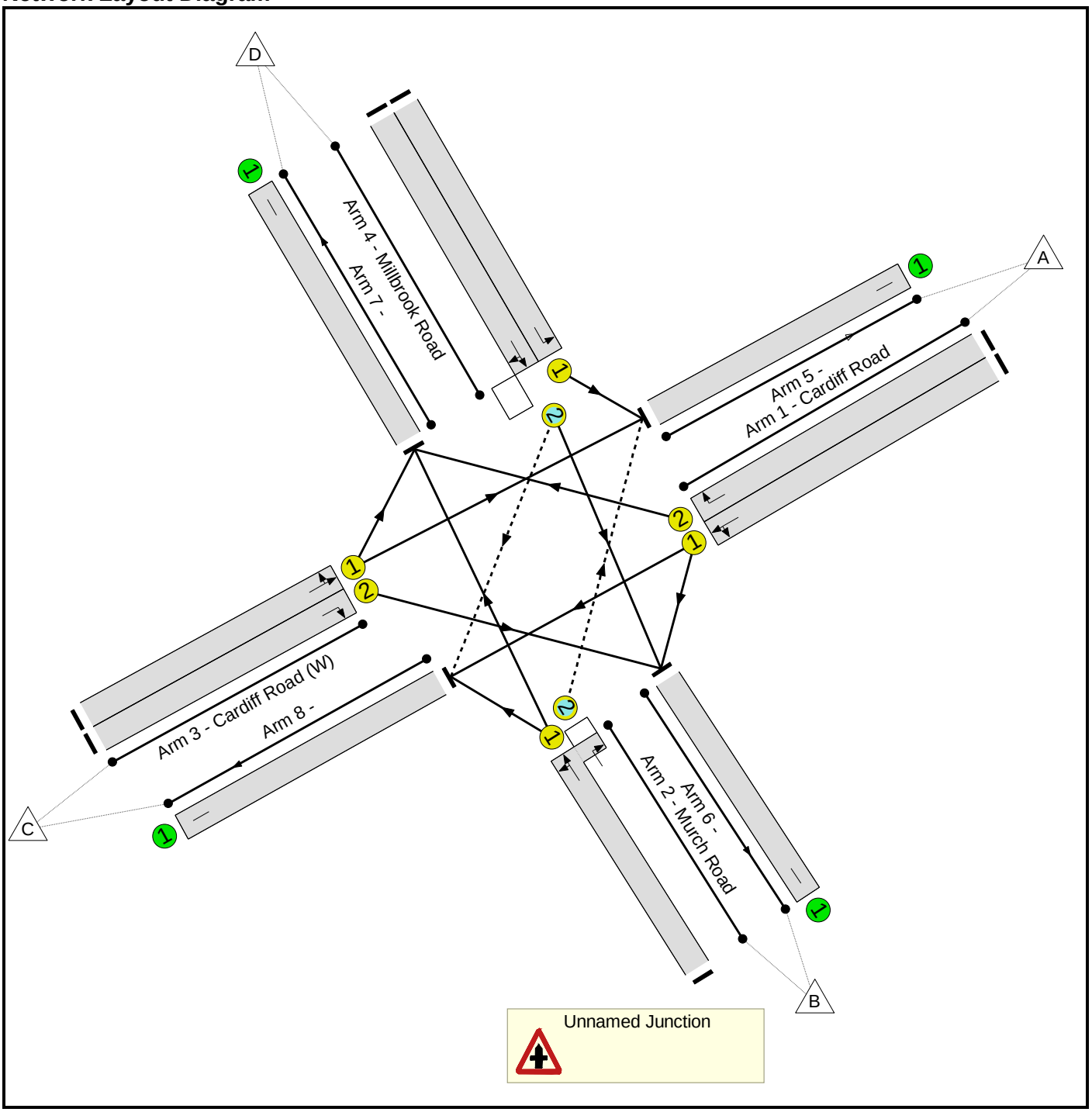
Full Input Data And Results

User and Project Details

Project:	**Waterfront Barry**
Title:	**Exisiting Situation**
Location:	Murch Crossroads, Dinas Powys
File name:	Base Murch Crossroads.lsg3x
Author:	Roddy Beynon
Company:	
Address:	
Notes:	

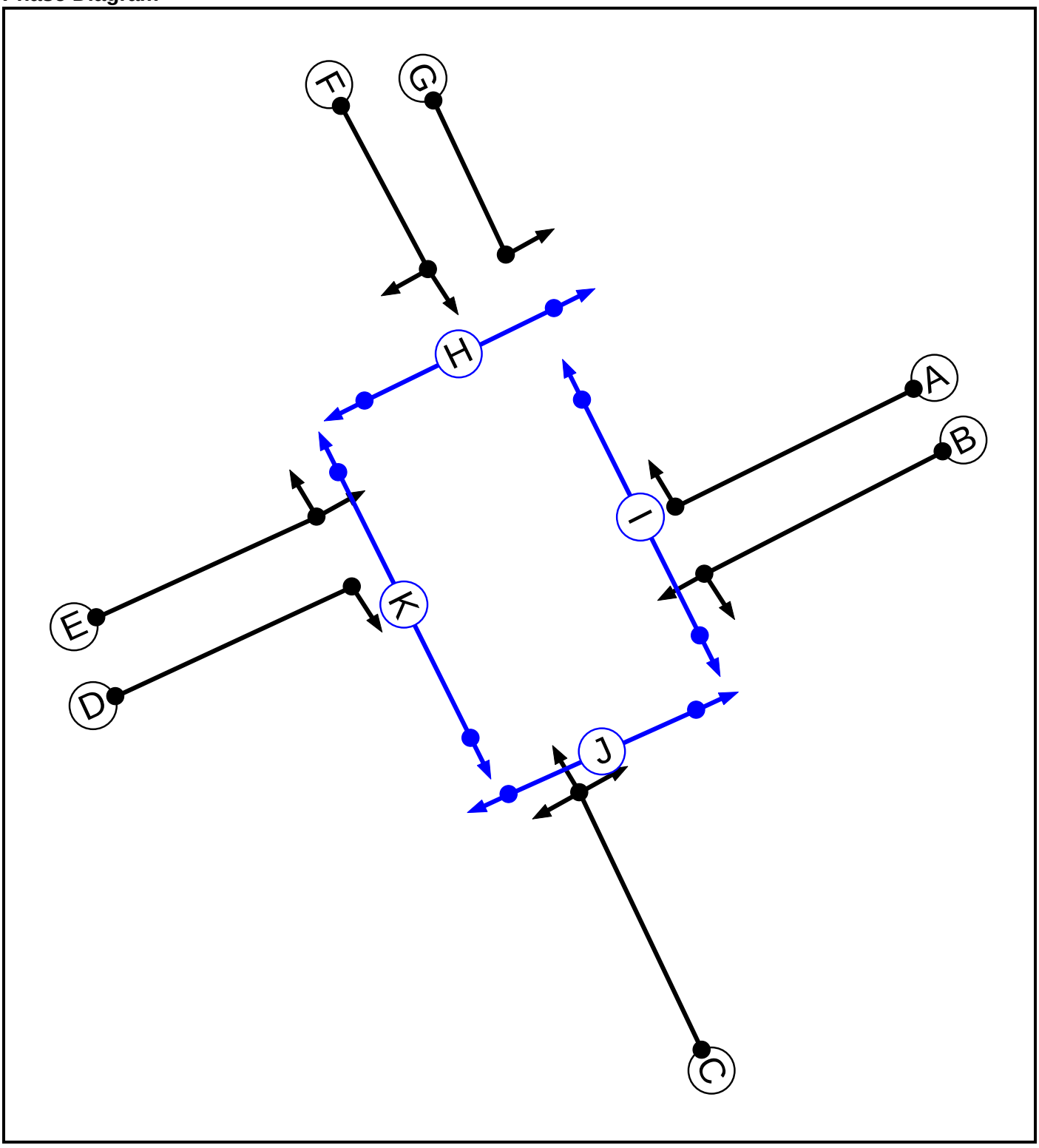
Full Input Data And Results

Network Layout Diagram



Full Input Data And Results

Phase Diagram



Full Input Data And Results

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	Traffic		7	7
F	Traffic		7	7
G	Traffic		7	7
H	Pedestrian		10	10
I	Pedestrian		11	11
J	Pedestrian		8	8
K	Pedestrian		11	11

Phase Intergreens Matrix

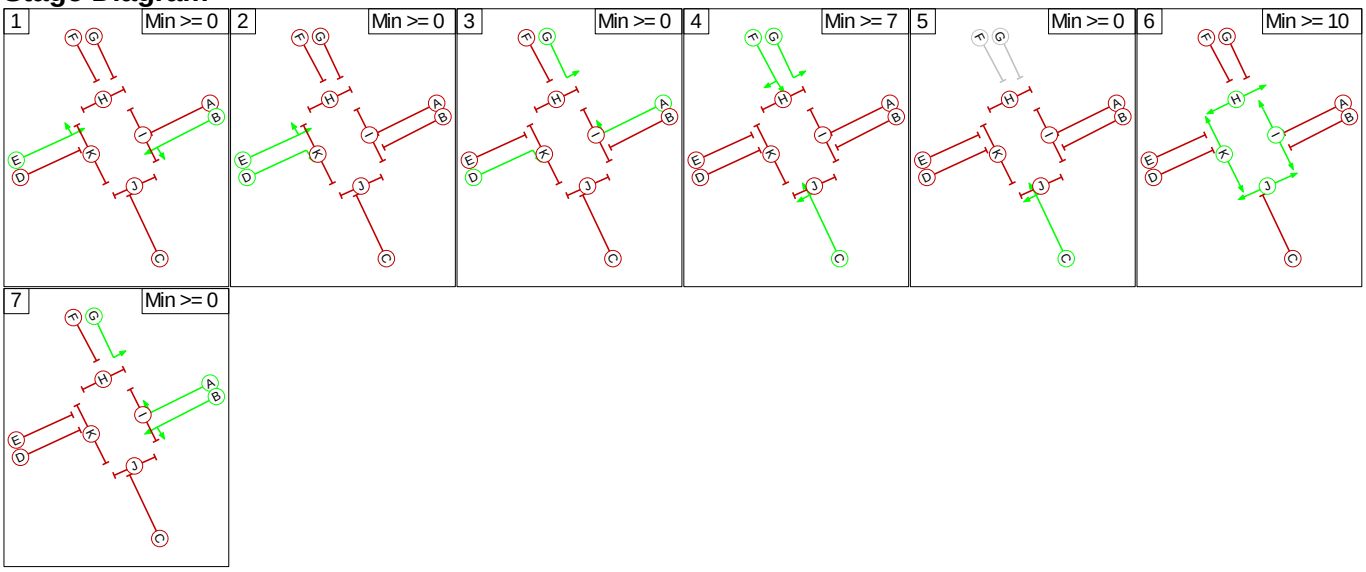
		Starting Phase										
		A	B	C	D	E	F	G	H	I	J	K
Terminating Phase	A		-	5	-	5	5	-	8	5	-	-
	B	-		5	5	-	5	-	-	5	7	8
	C	6	5		5	5	-	-	9	8	5	7
	D	-	5	5		-	5	-	-	-	7	5
	E	6	-	5	-		5	5	8	8	-	5
	F	5	6	-	7	5		-	5	-	8	9
	G	-	-	-	-	9	-		5	7	-	-
	H	10	-	10	-	10	10	10		-	-	-
	I	12	12	12	-	12	-	12	-		-	-
	J	-	7	7	7	-	7	-	-	-		-
	K	-	9	9	9	9	9	-	-	-	-	

Phases in Stage

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

Full Input Data And Results

Stage Diagram



Phase Delays

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

Prohibited Stage Changes

		To Stage						
		1	2	3	4	5	6	7
From Stage	1		5	6	X	X	X	6
	2	X		6	X	X	X	6
	3	X	X		5	X	X	5
	4	X	X	X		0	X	6
	5	5	X	X	X		9	6
	6	12	X	X	X	X		12
	7	9	9	5	5	5	8	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction

Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
2/2 (Murch Road)	5/1 (Right)	1400	4/2	1.10	4/2	1.00	-	0.50	1	2.00
			4/1	1.10	4/1					
4/2 (Millbrook Road)	8/1 (Right)	1440	2/1	1.09	2/1	2.00	2.00	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction

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)
1/1 (Cardiff Road)	U	B	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 6 Left	Inf
											Arm 8 Ahead	Inf
1/2 (Cardiff Road)	U	A	2	3	60.0	Geom	-	3.25	0.00	N	Arm 7 Right	20.00
2/1 (Murch Road)	U	C	2	3	60.0	Geom	-	3.70	0.00	Y	Arm 7 Ahead	Inf
											Arm 8 Left	13.50
2/2 (Murch Road)	O	C	2	3	1.0	Geom	-	3.70	0.00	Y	Arm 5 Right	19.00
3/1 (Cardiff Road (W))	U	E	2	3	60.0	Geom	-	3.30	0.00	Y	Arm 5 Ahead	Inf
											Arm 7 Left	6.20
3/2 (Cardiff Road (W))	U	D	2	3	60.0	Geom	-	3.00	0.00	N	Arm 6 Right	14.75
4/1 (Millbrook Road)	U	G	2	3	60.0	Geom	-	3.20	0.00	Y	Arm 5 Left	Inf
4/2 (Millbrook Road)	O	F	2	3	60.0	Geom	-	3.10	0.00	N	Arm 6 Ahead	Inf
											Arm 8 Right	16.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2008 AM Base'	08:30	09:30	01:00	
2: '2008 PM Base'	17:30	18:30	01:00	
3: '2020 AM Base'	08:30	09:30	01:00	
4: '2020 PM Base'	17:30	18:30	01:00	
5: '2020 AM Dev + BI'	08:30	09:30	01:00	
6: '2020 PM Dev + BI'	17:30	18:30	01:00	
7: '2020 PM Dev + BI + Tourism'	17:30	18:30	01:00	
8: '2020 PM Base + Tourism'	17:30	18:30	01:00	

Traffic Lane Flows

Lane	Scenario 1: 2008 AM Base
Junction: Unnamed Junction	
1/1	584
1/2	31
2/1 (with short)	288(In) 153(Out)
2/2 (short)	135
3/1	629
3/2	39
4/1	101
4/2	61
5/1	855
6/1	152
7/1	114
8/1	612

Full Input Data And Results

Scenario 1: '2008 AM Base' (FG1: '2008 AM Base', Plan 1: 'AM Staging')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Cardiff Road)	3.70	0.00	Y	Arm 6 Left	Inf	12.3 %	1985
				Arm 8 Ahead	Inf	87.7 %	
1/2 (Cardiff Road)	3.25	0.00	N	Arm 7 Right	20.00	100.0 %	1935
2/1 (Murch Road)	3.70	0.00	Y	Arm 7 Ahead	Inf	47.7 %	1876
				Arm 8 Left	13.50	52.3 %	
2/2 (Murch Road)	3.70	0.00	Y	Arm 5 Right	19.00	100.0 %	1840
3/1 (Cardiff Road (W))	3.30	0.00	Y	Arm 5 Ahead	Inf	98.4 %	1938
				Arm 7 Left	6.20	1.6 %	
3/2 (Cardiff Road (W))	3.00	0.00	N	Arm 6 Right	14.75	100.0 %	1865
4/1 (Millbrook Road)	3.20	0.00	Y	Arm 5 Left	Inf	100.0 %	1935
4/2 (Millbrook Road)	3.10	0.00	N	Arm 6 Ahead	Inf	67.2 %	2003
				Arm 8 Right	16.00	32.8 %	
5/1	Infinite Saturation Flow						Inf
6/1	Infinite Saturation Flow						Inf
7/1	Infinite Saturation Flow						Inf
8/1	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 2: 2008 PM Base
Junction: Unnamed Junction	
1/1	866
1/2	27
2/1 (with short)	165(In) 68(Out)
2/2 (short)	97
3/1	602
3/2	34
4/1	64
4/2	167
5/1	757
6/1	295
7/1	58
8/1	815

Full Input Data And Results

Scenario 2: '2008 PM Base' (FG2: '2008 PM Base', Plan 2: 'PM Staging')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Cardiff Road)	3.70	0.00	Y	Arm 6 Left	Inf	16.4 %	1985
				Arm 8 Ahead	Inf	83.6 %	
1/2 (Cardiff Road)	3.25	0.00	N	Arm 7 Right	20.00	100.0 %	1935
2/1 (Murch Road)	3.70	0.00	Y	Arm 7 Ahead	Inf	36.8 %	1855
				Arm 8 Left	13.50	63.2 %	
2/2 (Murch Road)	3.70	0.00	Y	Arm 5 Right	19.00	100.0 %	1840
3/1 (Cardiff Road (W))	3.30	0.00	Y	Arm 5 Ahead	Inf	99.0 %	1940
				Arm 7 Left	6.20	1.0 %	
3/2 (Cardiff Road (W))	3.00	0.00	N	Arm 6 Right	14.75	100.0 %	1865
4/1 (Millbrook Road)	3.20	0.00	Y	Arm 5 Left	Inf	100.0 %	1935
4/2 (Millbrook Road)	3.10	0.00	N	Arm 6 Ahead	Inf	71.3 %	2011
				Arm 8 Right	16.00	28.7 %	
5/1	Infinite Saturation Flow						Inf
6/1	Infinite Saturation Flow						Inf
7/1	Infinite Saturation Flow						Inf
8/1	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 3: 2020 AM Base
Junction: Unnamed Junction	
1/1	681
1/2	36
2/1 (with short)	335(In) 178(Out)
2/2 (short)	157
3/1	733
3/2	46
4/1	117
4/2	71
5/1	995
6/1	178
7/1	133
8/1	713

Full Input Data And Results

Scenario 3: '2020 AM Base' (FG3: '2020 AM Base', Plan 1: 'AM Staging')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Cardiff Road)	3.70	0.00	Y	Arm 6 Left	Inf	12.3 %	1985
				Arm 8 Ahead	Inf	87.7 %	
1/2 (Cardiff Road)	3.25	0.00	N	Arm 7 Right	20.00	100.0 %	1935
2/1 (Murch Road)	3.70	0.00	Y	Arm 7 Ahead	Inf	47.8 %	1876
				Arm 8 Left	13.50	52.2 %	
2/2 (Murch Road)	3.70	0.00	Y	Arm 5 Right	19.00	100.0 %	1840
3/1 (Cardiff Road (W))	3.30	0.00	Y	Arm 5 Ahead	Inf	98.4 %	1937
				Arm 7 Left	6.20	1.6 %	
3/2 (Cardiff Road (W))	3.00	0.00	N	Arm 6 Right	14.75	100.0 %	1865
4/1 (Millbrook Road)	3.20	0.00	Y	Arm 5 Left	Inf	100.0 %	1935
4/2 (Millbrook Road)	3.10	0.00	N	Arm 6 Ahead	Inf	67.6 %	2004
				Arm 8 Right	16.00	32.4 %	
5/1	Infinite Saturation Flow						Inf
6/1	Infinite Saturation Flow						Inf
7/1	Infinite Saturation Flow						Inf
8/1	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 4: 2020 PM Base
Junction: Unnamed Junction	
1/1	1007
1/2	31
2/1 (with short)	191(In) 79(Out)
2/2 (short)	112
3/1	700
3/2	39
4/1	74
4/2	195
5/1	879
6/1	343
7/1	67
8/1	948

Full Input Data And Results

Scenario 4: '2020 PM Base' (FG4: '2020 PM Base', Plan 2: 'PM Staging')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Cardiff Road)	3.70	0.00	Y	Arm 6 Left	Inf	16.4 %	1985
				Arm 8 Ahead	Inf	83.6 %	
1/2 (Cardiff Road)	3.25	0.00	N	Arm 7 Right	20.00	100.0 %	1935
2/1 (Murch Road)	3.70	0.00	Y	Arm 7 Ahead	Inf	36.7 %	1855
				Arm 8 Left	13.50	63.3 %	
2/2 (Murch Road)	3.70	0.00	Y	Arm 5 Right	19.00	100.0 %	1840
3/1 (Cardiff Road (W))	3.30	0.00	Y	Arm 5 Ahead	Inf	99.0 %	1940
				Arm 7 Left	6.20	1.0 %	
3/2 (Cardiff Road (W))	3.00	0.00	N	Arm 6 Right	14.75	100.0 %	1865
4/1 (Millbrook Road)	3.20	0.00	Y	Arm 5 Left	Inf	100.0 %	1935
4/2 (Millbrook Road)	3.10	0.00	N	Arm 6 Ahead	Inf	71.3 %	2011
				Arm 8 Right	16.00	28.7 %	
5/1	Infinite Saturation Flow						Inf
6/1	Infinite Saturation Flow						Inf
7/1	Infinite Saturation Flow						Inf
8/1	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 5: 2020 AM Dev + BI
Junction: Unnamed Junction	
1/1	713
1/2	36
2/1 (with short)	338(In) 181(Out)
2/2 (short)	157
3/1	887
3/2	48
4/1	117
4/2	73
5/1	1147
6/1	180
7/1	135
8/1	750

Full Input Data And Results

Scenario 5: '2020 AM Dev + BI' (FG5: '2020 AM Dev + BI', Plan 1: 'AM Staging')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Cardiff Road)	3.70	0.00	Y	Arm 6 Left	Inf	11.8 %	1985
				Arm 8 Ahead	Inf	88.2 %	
1/2 (Cardiff Road)	3.25	0.00	N	Arm 7 Right	20.00	100.0 %	1935
2/1 (Murch Road)	3.70	0.00	Y	Arm 7 Ahead	Inf	47.0 %	1875
				Arm 8 Left	13.50	53.0 %	
2/2 (Murch Road)	3.70	0.00	Y	Arm 5 Right	19.00	100.0 %	1840
3/1 (Cardiff Road (W))	3.30	0.00	Y	Arm 5 Ahead	Inf	98.4 %	1938
				Arm 7 Left	6.20	1.6 %	
3/2 (Cardiff Road (W))	3.00	0.00	N	Arm 6 Right	14.75	100.0 %	1865
4/1 (Millbrook Road)	3.20	0.00	Y	Arm 5 Left	Inf	100.0 %	1935
4/2 (Millbrook Road)	3.10	0.00	N	Arm 6 Ahead	Inf	65.8 %	2001
				Arm 8 Right	16.00	34.2 %	
5/1	Infinite Saturation Flow						Inf
6/1	Infinite Saturation Flow						Inf
7/1	Infinite Saturation Flow						Inf
8/1	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 6: 2020 PM Dev + BI
Junction: Unnamed Junction	
1/1	1162
1/2	31
2/1 (with short)	194(In) 82(Out)
2/2 (short)	112
3/1	746
3/2	43
4/1	74
4/2	198
5/1	922
6/1	347
7/1	70
8/1	1109

Full Input Data And Results

Scenario 6: '2020 PM Dev + BI' (FG6: '2020 PM Dev + BI', Plan 2: 'PM Staging')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Cardiff Road)	3.70	0.00	Y	Arm 6 Left	Inf	14.2 %	1985
				Arm 8 Ahead	Inf	85.8 %	
1/2 (Cardiff Road)	3.25	0.00	N	Arm 7 Right	20.00	100.0 %	1935
2/1 (Murch Road)	3.70	0.00	Y	Arm 7 Ahead	Inf	35.4 %	1852
				Arm 8 Left	13.50	64.6 %	
2/2 (Murch Road)	3.70	0.00	Y	Arm 5 Right	19.00	100.0 %	1840
3/1 (Cardiff Road (W))	3.30	0.00	Y	Arm 5 Ahead	Inf	98.7 %	1939
				Arm 7 Left	6.20	1.3 %	
3/2 (Cardiff Road (W))	3.00	0.00	N	Arm 6 Right	14.75	100.0 %	1865
4/1 (Millbrook Road)	3.20	0.00	Y	Arm 5 Left	Inf	100.0 %	1935
4/2 (Millbrook Road)	3.10	0.00	N	Arm 6 Ahead	Inf	70.2 %	2009
				Arm 8 Right	16.00	29.8 %	
5/1	Infinite Saturation Flow						Inf
6/1	Infinite Saturation Flow						Inf
7/1	Infinite Saturation Flow						Inf
8/1	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 7: 2020 PM Dev + BI + Tourism
Junction: Unnamed Junction	
1/1	1264
1/2	31
2/1 (with short)	194(In) 82(Out)
2/2 (short)	112
3/1	860
3/2	43
4/1	74
4/2	198
5/1	1036
6/1	347
7/1	70
8/1	1211

Full Input Data And Results

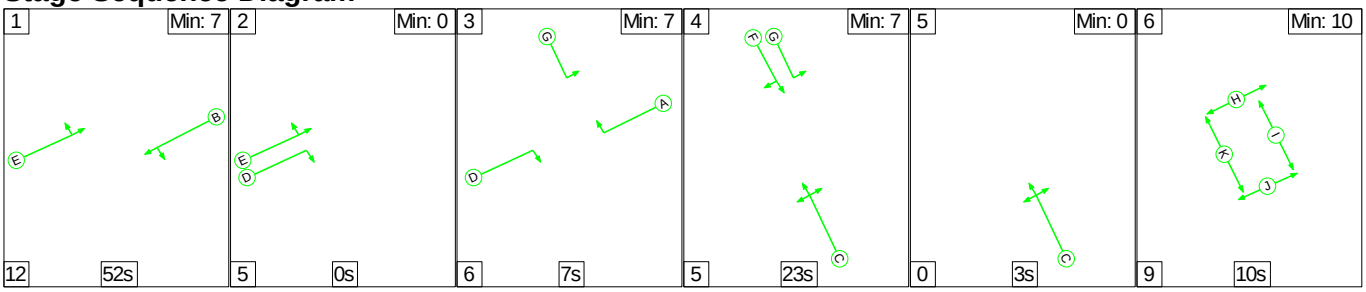
Scenario 7: '2020 PM Dev + BI + Tourism' (FG7: '2020 PM Dev + BI + Tourism', Plan 2: 'PM Staging')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Cardiff Road)	3.70	0.00	Y	Arm 6 Left	Inf	13.1 %	1985
				Arm 8 Ahead	Inf	86.9 %	
1/2 (Cardiff Road)	3.25	0.00	N	Arm 7 Right	20.00	100.0 %	1935
2/1 (Murch Road)	3.70	0.00	Y	Arm 7 Ahead	Inf	35.4 %	1852
				Arm 8 Left	13.50	64.6 %	
2/2 (Murch Road)	3.70	0.00	Y	Arm 5 Right	19.00	100.0 %	1840
3/1 (Cardiff Road (W))	3.30	0.00	Y	Arm 5 Ahead	Inf	98.8 %	1940
				Arm 7 Left	6.20	1.2 %	
3/2 (Cardiff Road (W))	3.00	0.00	N	Arm 6 Right	14.75	100.0 %	1865
4/1 (Millbrook Road)	3.20	0.00	Y	Arm 5 Left	Inf	100.0 %	1935
4/2 (Millbrook Road)	3.10	0.00	N	Arm 6 Ahead	Inf	70.2 %	2009
				Arm 8 Right	16.00	29.8 %	
5/1	Infinite Saturation Flow						Inf
6/1	Infinite Saturation Flow						Inf
7/1	Infinite Saturation Flow						Inf
8/1	Infinite Saturation Flow						Inf

Scenario 1: '2008 AM Base' (FG1: '2008 AM Base', Plan 1: 'AM Staging')

Stage Sequence Diagram

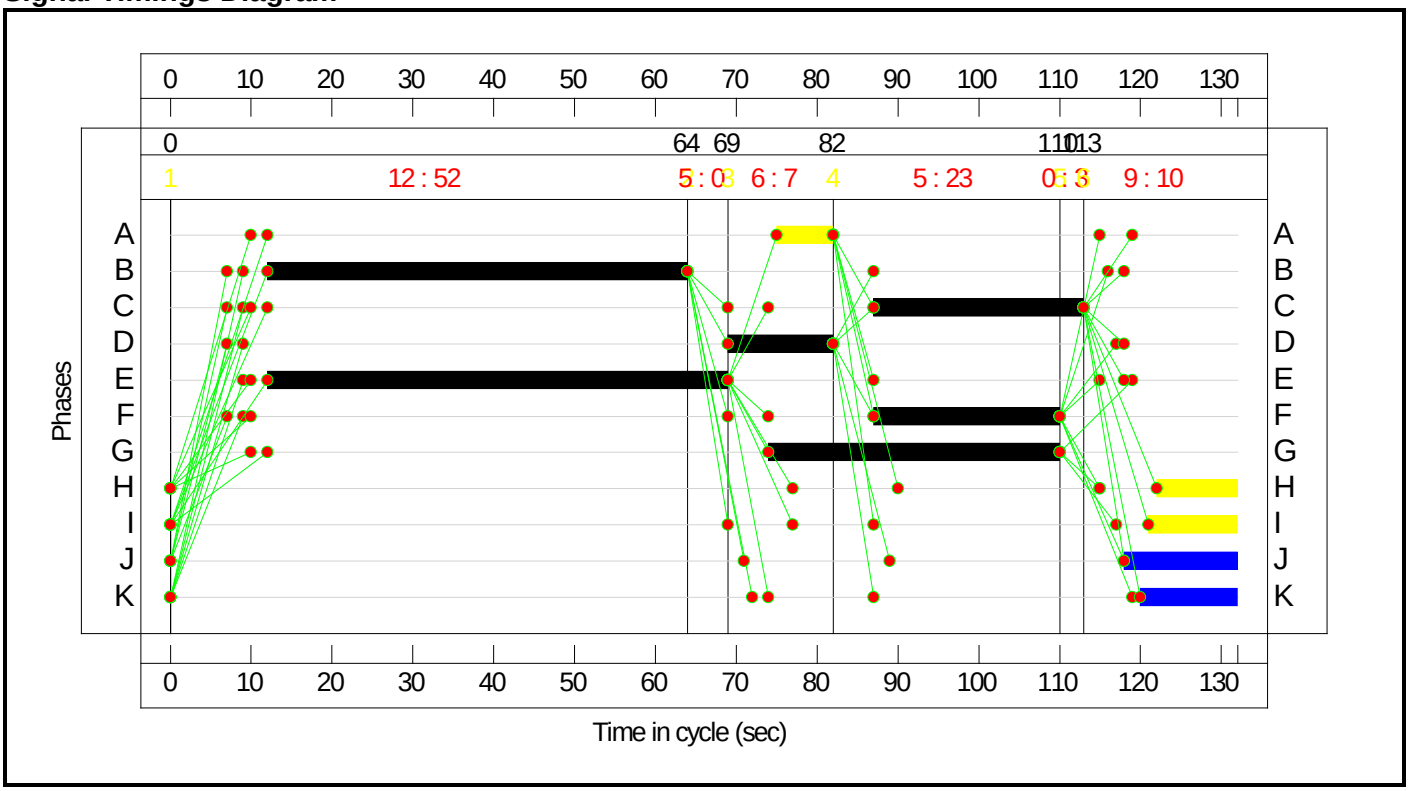


Stage Timings

Stage	1	2	3	4	5	6
Duration	52	0	7	23	3	10
Change Point	0	64	69	82	110	113

Full Input Data And Results

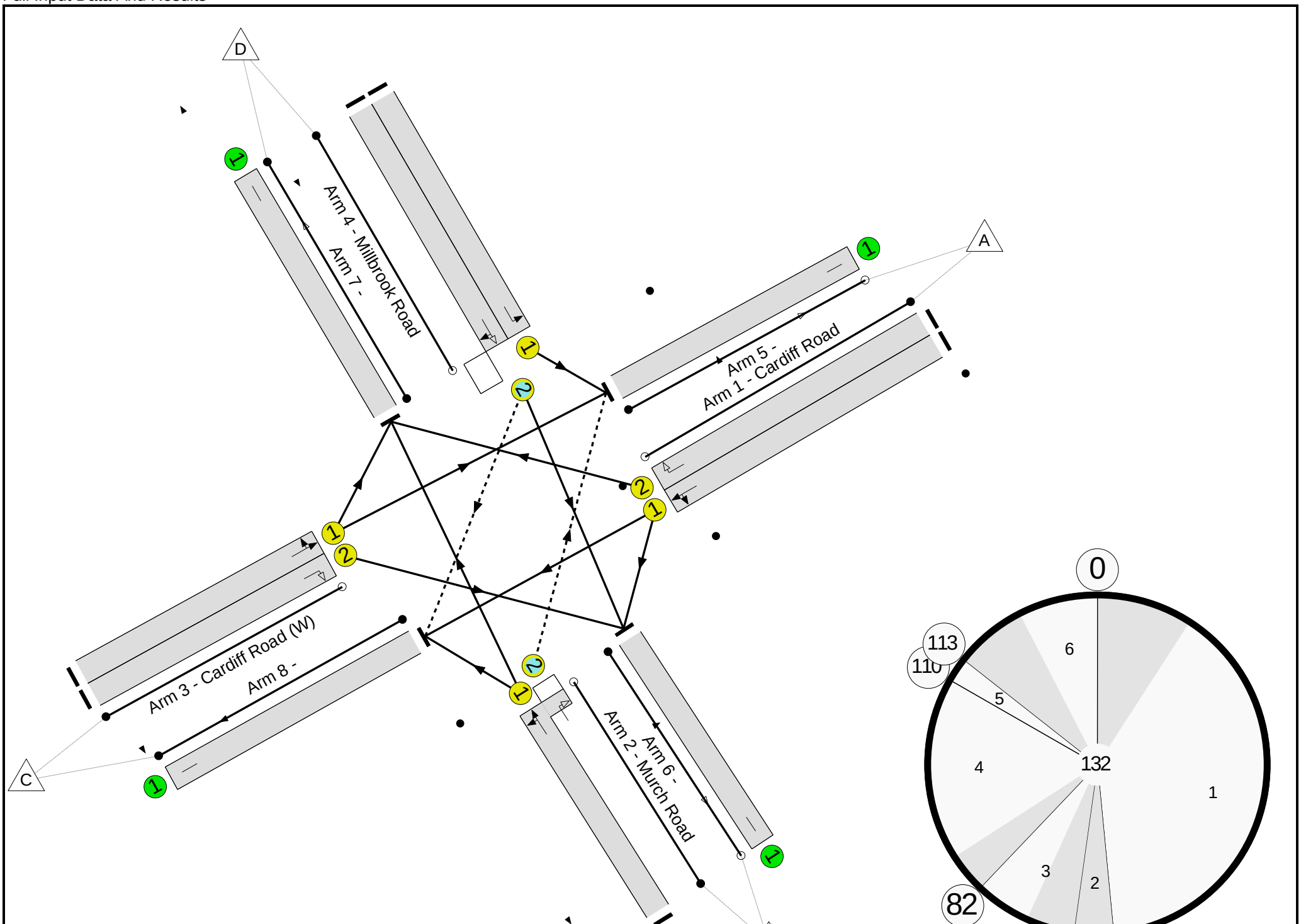
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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: Exisiting Situation	-	-	-	-	-	-	-	-	-	-	-	-	**73.9%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**73.9%**
1/1	Cardiff Road Left Ahead	U	N/A	N/A	B		1	52	-	584	1985	797	73.3%
1/2	Cardiff Road Right	U	N/A	N/A	A		1	7	-	31	1935	117	26.4%
2/1+2/2	Murch Road Right Ahead Left	U+O	N/A	N/A	C		1	26		288	1876:1840	402	71.7%
3/1	Cardiff Road (W) Ahead Left	U	N/A	N/A	E		1	57	-	629	1938	852	73.9%
3/2	Cardiff Road (W) Right	U	N/A	N/A	D		1	13	-	39	1865	198	19.7%
4/1	Millbrook Road Left	U	N/A	N/A	G		1	36	-	101	1935	542	18.6%
4/2	Millbrook Road Ahead Right	O	N/A	N/A	F		1	23	-	61	2003	355	17.2%
5/1		U	N/A	N/A	-		-	-	-	855	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	152	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	114	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	612	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Exisiting Situation	**-**	**-**	**153**	**1**	**1**	**17.5**	**4.5**	**0.1**	**22.1**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**153**	**1**	**1**	**17.5**	**4.5**	**0.1**	**22.1**	**-**	**-**	**-**	**-**
1/1	584	584	-	-	-	5.4	1.4	-	6.8	41.8	18.0	1.4	19.4
1/2	31	31	-	-	-	0.5	0.2	-	0.7	80.0	1.1	0.2	1.3
2/1+2/2	288	288	133	1	1	3.9	1.2	0.1	5.1	64.3	8.9	1.2	10.1
3/1	629	629	-	-	-	5.4	1.4	-	6.8	38.7	19.0	1.4	20.4
3/2	39	39	-	-	-	0.6	0.1	-	0.7	65.2	1.3	0.1	1.4
4/1	101	101	-	-	-	1.0	0.1	-	1.1	40.2	2.8	0.1	2.9
4/2	61	61	20	0	0	0.8	0.1	0.0	0.9	52.7	1.9	0.1	2.0
5/1	855	855	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	152	152	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	114	114	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	612	612	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 21.8
PRC Over All Lanes (%): 21.8

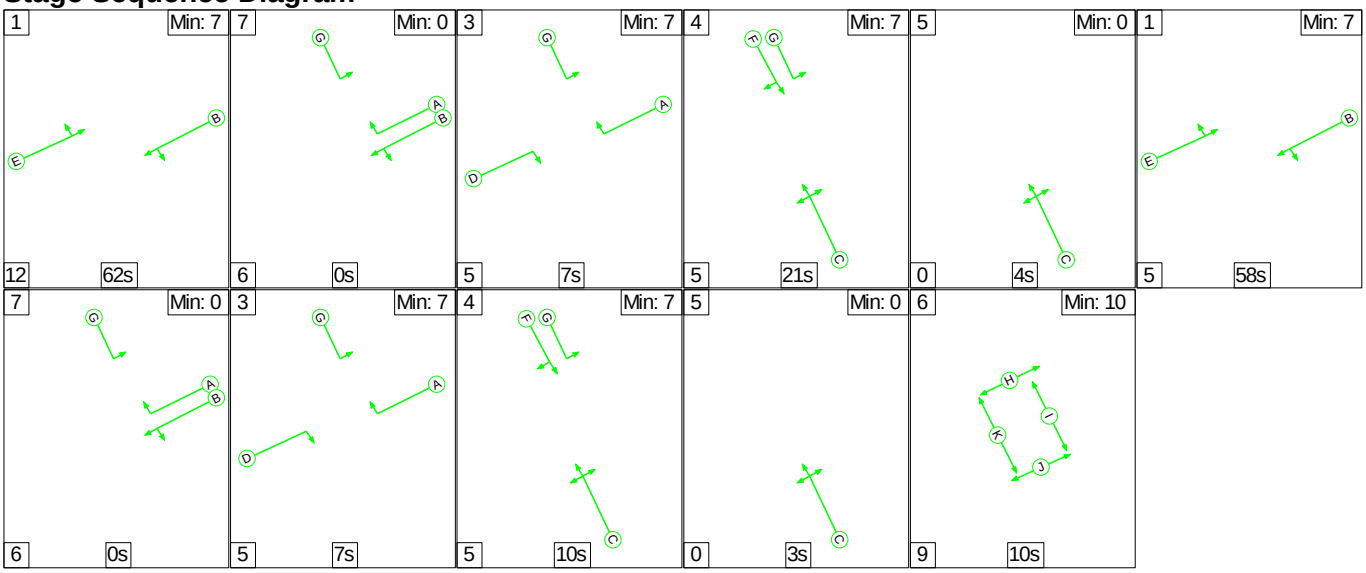
Total Delay for Signalled Lanes (pcuHr): 22.11
Total Delay Over All Lanes(pcuHr): 22.11

Cycle Time (s): 132

Full Input Data And Results

Scenario 2: '2008 PM Base' (FG2: '2008 PM Base', Plan 2: 'PM Staging')

Stage Sequence Diagram

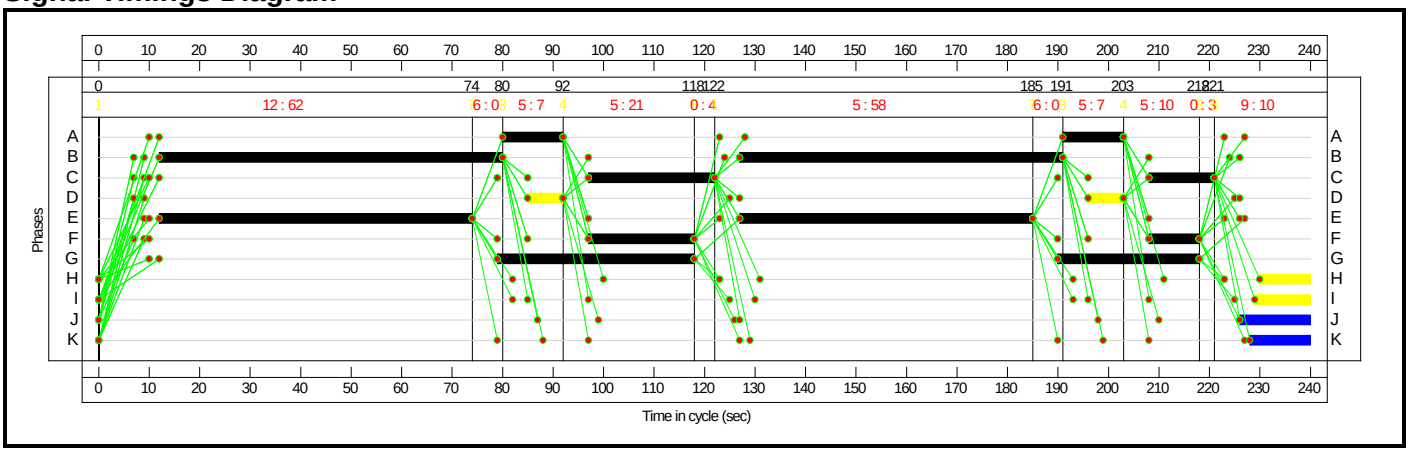


Stage Timings

Stage	1	7	3	4	5	1	7	3	4	5
Duration	62	0	7	21	4	58	0	7	10	3
Change Point	0	74	80	92	118	122	185	191	203	218

Stage	6									
Duration	10									
Change Point	221									

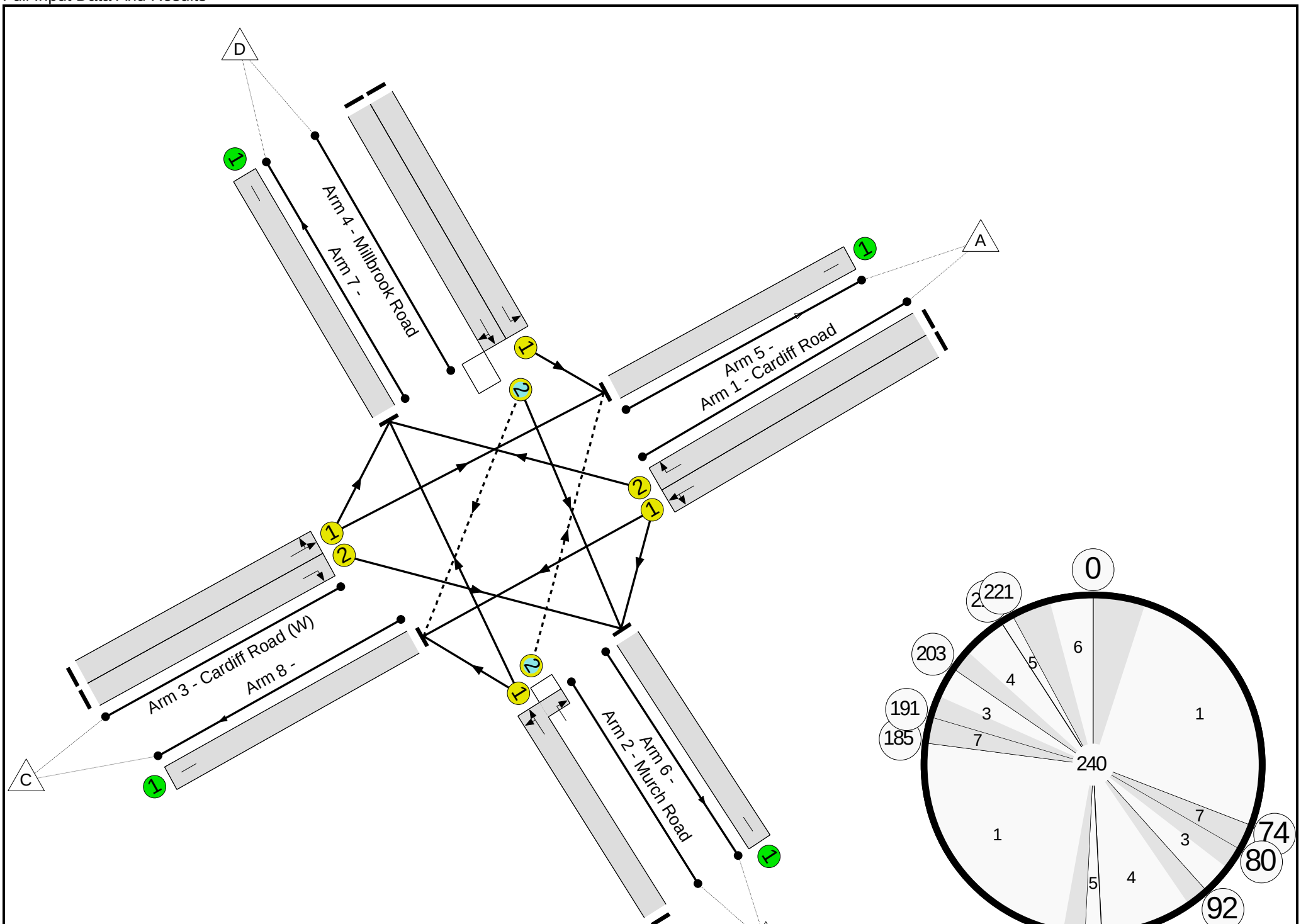
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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: Exisiting Situation	-	-	-	-	-	-	-	-	-	-	-	-	**78.1%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**78.1%**
1/1	Cardiff Road Left Ahead	U	N/A	N/A	B		2	132	-	866	1985	1108	78.1%
1/2	Cardiff Road Right	U	N/A	N/A	A		2	24	-	27	1935	210	12.9%
2/1+2/2	Murch Road Right Ahead Left	U+O	N/A	N/A	C		2	38		165	1855:1840	213	77.4%
3/1	Cardiff Road (W) Ahead Left	U	N/A	N/A	E		2	120	-	602	1940	986	61.0%
3/2	Cardiff Road (W) Right	U	N/A	N/A	D		2	14	-	34	1865	124	27.3%
4/1	Millbrook Road Left	U	N/A	N/A	G		2	67	-	64	1935	556	11.5%
4/2	Millbrook Road Ahead Right	O	N/A	N/A	F		2	31	-	167	2011	277	60.4%
5/1		U	N/A	N/A	-		-	-	-	757	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	295	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	58	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	815	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Exisiting Situation	**-**	**-**	**124**	**8**	**13**	**14.6**	**5.2**	**0.1**	**20.0**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**124**	**8**	**13**	**14.6**	**5.2**	**0.1**	**20.0**	**-**	**-**	**-**	**-**
1/1	866	866	-	-	-	5.1	1.8	-	6.8	28.4	25.5	1.8	27.3
1/2	27	27	-	-	-	0.4	0.1	-	0.4	58.6	0.9	0.1	1.0
2/1+2/2	165	165	76	8	13	2.2	1.6	0.1	4.0	86.4	5.4	1.6	7.0
3/1	602	602	-	-	-	3.6	0.8	-	4.3	26.0	15.9	0.8	16.7
3/2	34	34	-	-	-	0.5	0.2	-	0.7	73.5	1.2	0.2	1.3
4/1	64	64	-	-	-	0.6	0.1	-	0.6	36.1	1.8	0.1	1.9
4/2	167	167	48	0	0	2.3	0.8	0.0	3.1	66.0	5.9	0.8	6.7
5/1	757	757	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	295	295	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	58	58	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	815	815	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 15.2

PRC Over All Lanes (%): 15.2

Total Delay for Signalled Lanes (pcuHr): 19.99

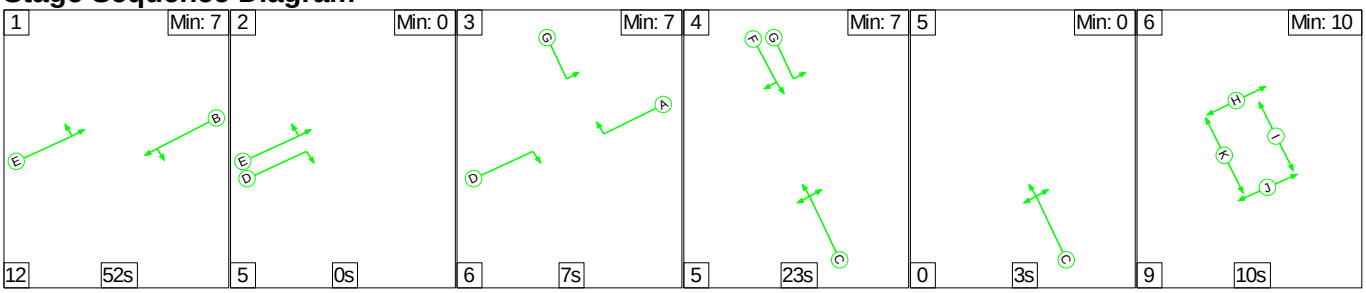
Total Delay Over All Lanes(pcuHr): 19.99

Cycle Time (s): 240

Full Input Data And Results

Scenario 3: '2020 AM Base' (FG3: '2020 AM Base', Plan 1: 'AM Staging')

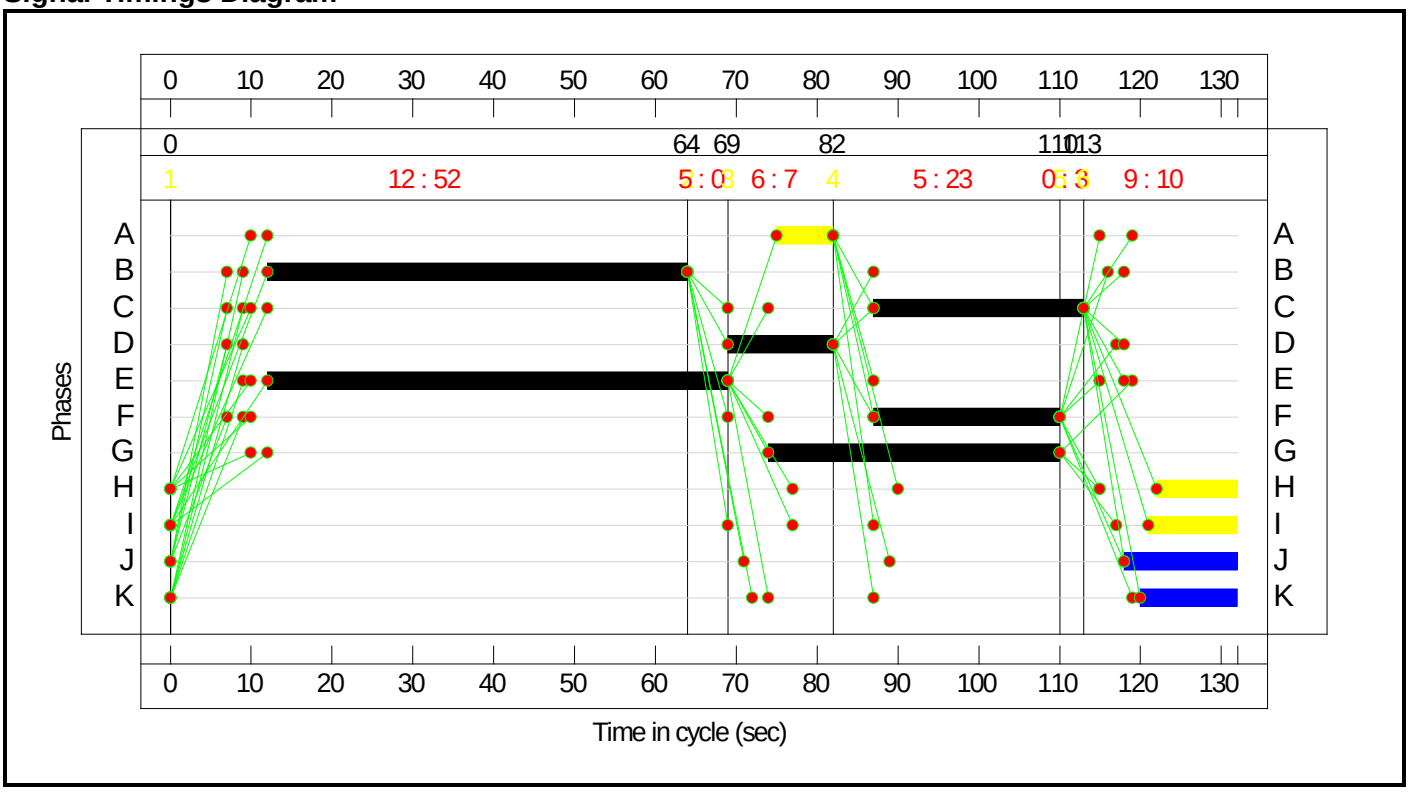
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	52	0	7	23	3	10
Change Point	0	64	69	82	110	113

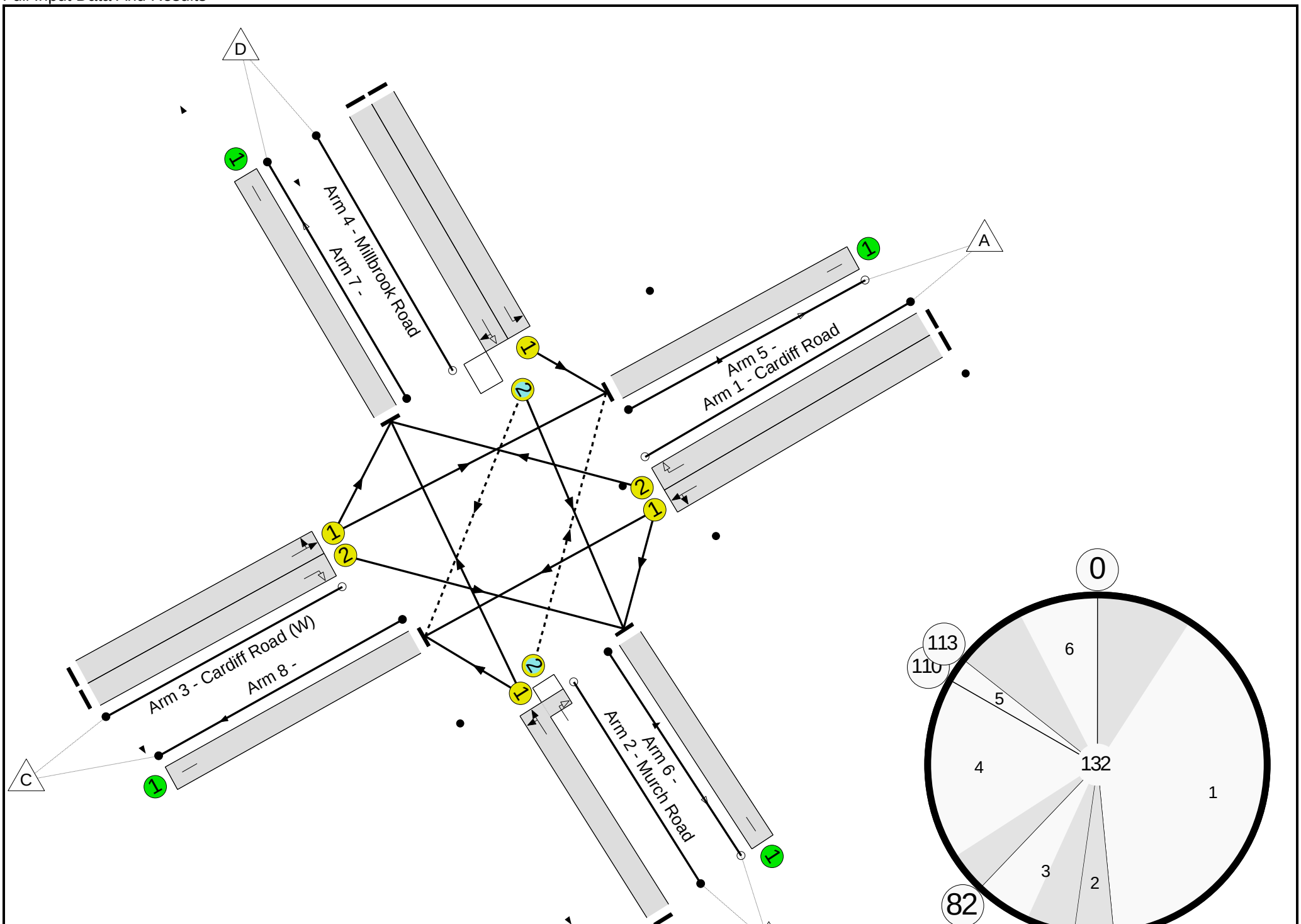
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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: Exisiting Situation	-	-	-	-	-	-	-	-	-	-	-	-	**86.1%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**86.1%**
1/1	Cardiff Road Left Ahead	U	N/A	N/A	B		1	52	-	681	1985	797	85.4%
1/2	Cardiff Road Right	U	N/A	N/A	A		1	7	-	36	1935	117	30.7%
2/1+2/2	Murch Road Right Ahead Left	U+O	N/A	N/A	C		1	26		335	1876:1840	391	85.6%
3/1	Cardiff Road (W) Ahead Left	U	N/A	N/A	E		1	57	-	733	1937	851	86.1%
3/2	Cardiff Road (W) Right	U	N/A	N/A	D		1	13	-	46	1865	198	23.3%
4/1	Millbrook Road Left	U	N/A	N/A	G		1	36	-	117	1935	542	21.6%
4/2	Millbrook Road Ahead Right	O	N/A	N/A	F		1	23	-	71	2004	347	20.4%
5/1		U	N/A	N/A	-		-	-	-	995	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	178	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	133	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	713	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Exisiting Situation	**-**	**-**	**178**	**1**	**1**	**21.6**	**9.1**	**0.1**	**30.8**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**178**	**1**	**1**	**21.6**	**9.1**	**0.1**	**30.8**	**-**	**-**	**-**	**-**
1/1	681	681	-	-	-	6.8	2.8	-	9.6	50.8	22.7	2.8	25.5
1/2	36	36	-	-	-	0.6	0.2	-	0.8	81.4	1.3	0.2	1.5
2/1+2/2	335	335	155	1	1	4.7	2.7	0.1	7.4	79.8	10.8	2.7	13.6
3/1	733	733	-	-	-	6.8	3.0	-	9.7	47.9	24.2	3.0	27.2
3/2	46	46	-	-	-	0.7	0.2	-	0.8	65.9	1.5	0.2	1.7
4/1	117	117	-	-	-	1.2	0.1	-	1.3	40.6	3.3	0.1	3.4
4/2	71	71	23	0	0	0.9	0.1	0.0	1.1	53.3	2.2	0.1	2.3
5/1	995	995	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	178	178	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	133	133	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	713	713	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 4.5
PRC Over All Lanes (%): 4.5

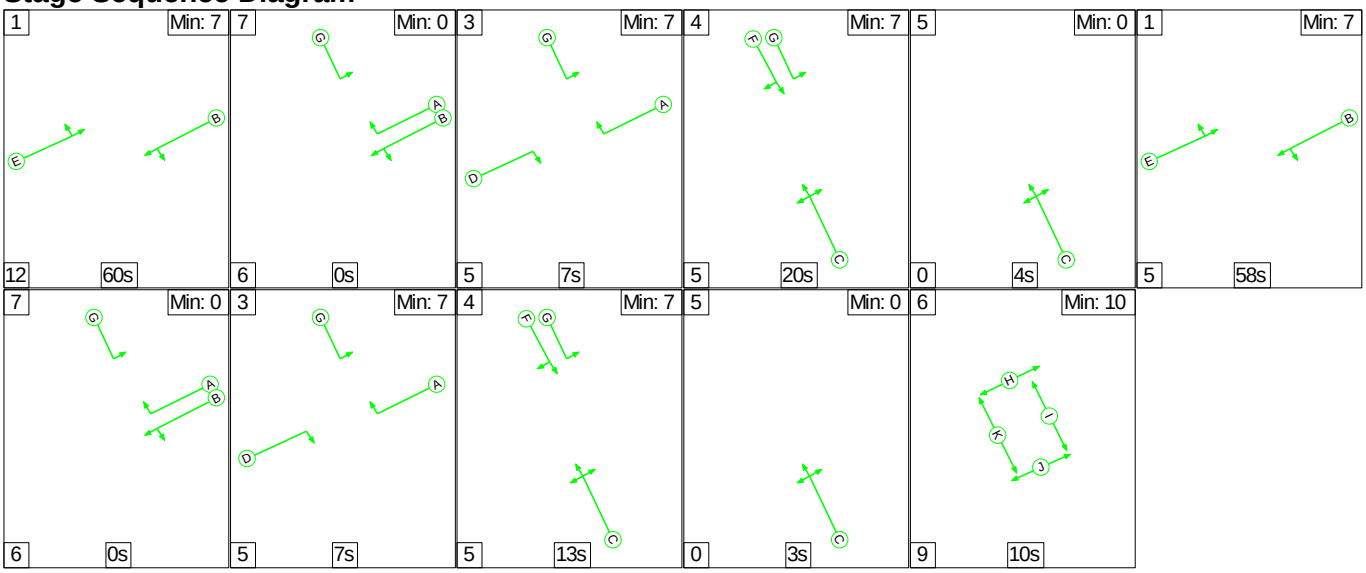
Total Delay for Signalled Lanes (pcuHr): 30.81
Total Delay Over All Lanes(pcuHr): 30.81

Cycle Time (s): 132

Full Input Data And Results

Scenario 4: '2020 PM Base' (FG4: '2020 PM Base', Plan 2: 'PM Staging')

Stage Sequence Diagram

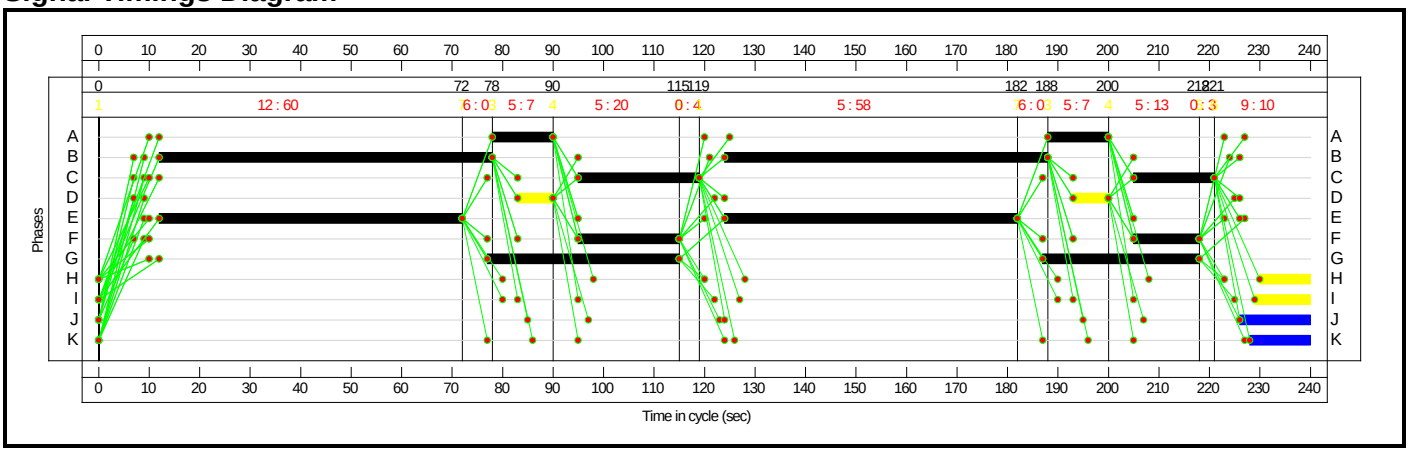


Stage Timings

Stage	1	7	3	4	5	1	7	3	4	5
Duration	60	0	7	20	4	58	0	7	13	3
Change Point	0	72	78	90	115	119	182	188	200	218

Stage	6									
Duration	10									
Change Point	221									

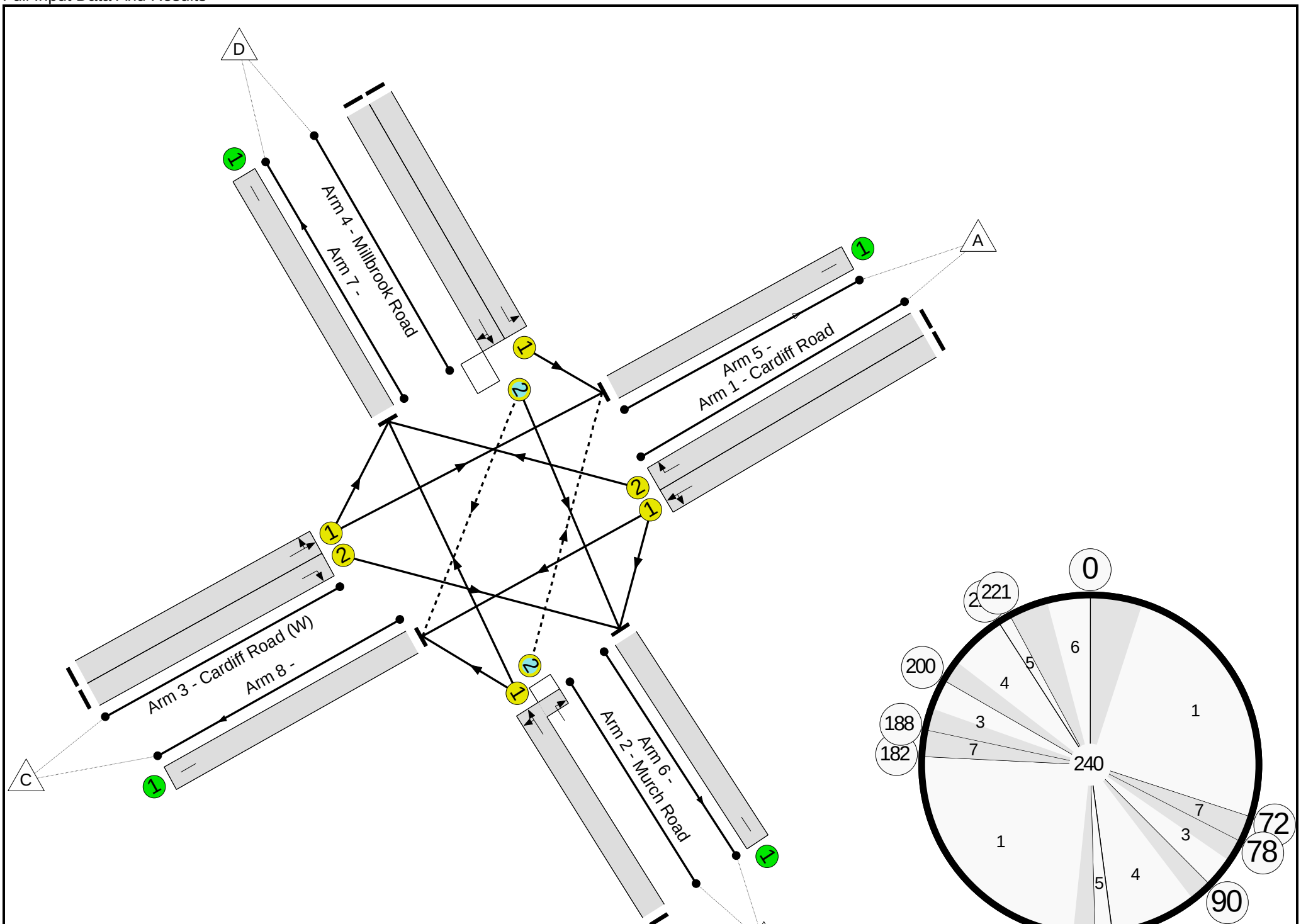
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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: Exisiting Situation	-	-	-	-	-	-	-	-	-	-	-	-	**92.9%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**92.9%**
1/1	Cardiff Road Left Ahead	U	N/A	N/A	B		2	130	-	1007	1985	1092	92.2%
1/2	Cardiff Road Right	U	N/A	N/A	A		2	24	-	31	1935	210	14.8%
2/1+2/2	Murch Road Right Ahead Left	U+O	N/A	N/A	C		2	40		191	1855:1840	206	92.9%
3/1	Cardiff Road (W) Ahead Left	U	N/A	N/A	E		2	118	-	700	1940	970	72.2%
3/2	Cardiff Road (W) Right	U	N/A	N/A	D		2	14	-	39	1865	124	31.4%
4/1	Millbrook Road Left	U	N/A	N/A	G		2	69	-	74	1935	572	12.9%
4/2	Millbrook Road Ahead Right	O	N/A	N/A	F		2	33	-	195	2011	293	66.5%
5/1		U	N/A	N/A	-		-	-	-	879	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	343	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	67	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	948	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Exisiting Situation	**-**	**-**	**129**	**23**	**16**	**18.7**	**12.1**	**0.1**	**31.0**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**129**	**23**	**16**	**18.7**	**12.1**	**0.1**	**31.0**	**-**	**-**	**-**	**-**
1/1	1007	1007	-	-	-	7.1	5.3	-	12.4	44.2	35.5	5.3	40.8
1/2	31	31	-	-	-	0.4	0.1	-	0.5	59.0	1.0	0.1	1.1
2/1+2/2	191	191	73	23	16	2.7	4.2	0.1	6.9	130.9	6.5	4.2	10.7
3/1	700	700	-	-	-	4.7	1.3	-	6.0	30.6	20.8	1.3	22.1
3/2	39	39	-	-	-	0.6	0.2	-	0.8	74.8	1.3	0.2	1.6
4/1	74	74	-	-	-	0.7	0.1	-	0.7	35.3	2.1	0.1	2.2
4/2	195	195	56	0	0	2.7	1.0	0.0	3.7	67.4	6.9	1.0	7.9
5/1	879	879	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	343	343	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	948	948	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -3.2
PRC Over All Lanes (%): -3.2

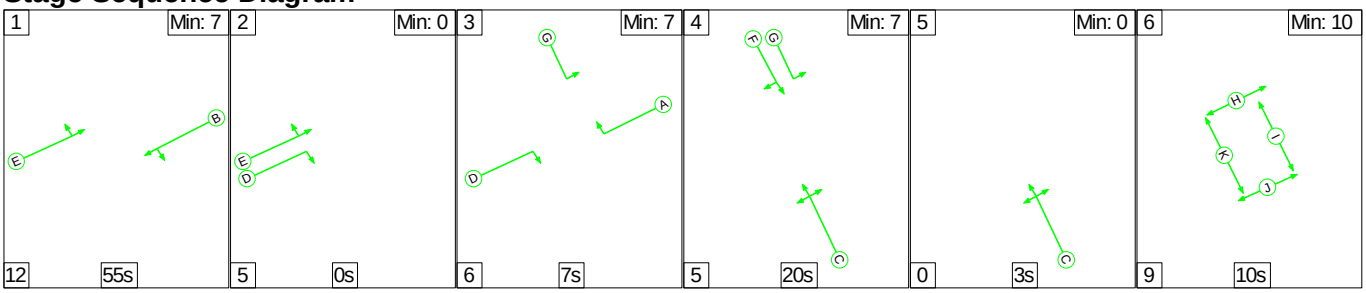
Total Delay for Signalled Lanes (pcuHr): 30.96
Total Delay Over All Lanes(pcuHr): 30.96

Cycle Time (s): 240

Full Input Data And Results

Scenario 5: '2020 AM Dev + BI' (FG5: '2020 AM Dev + BI', Plan 1: 'AM Staging')

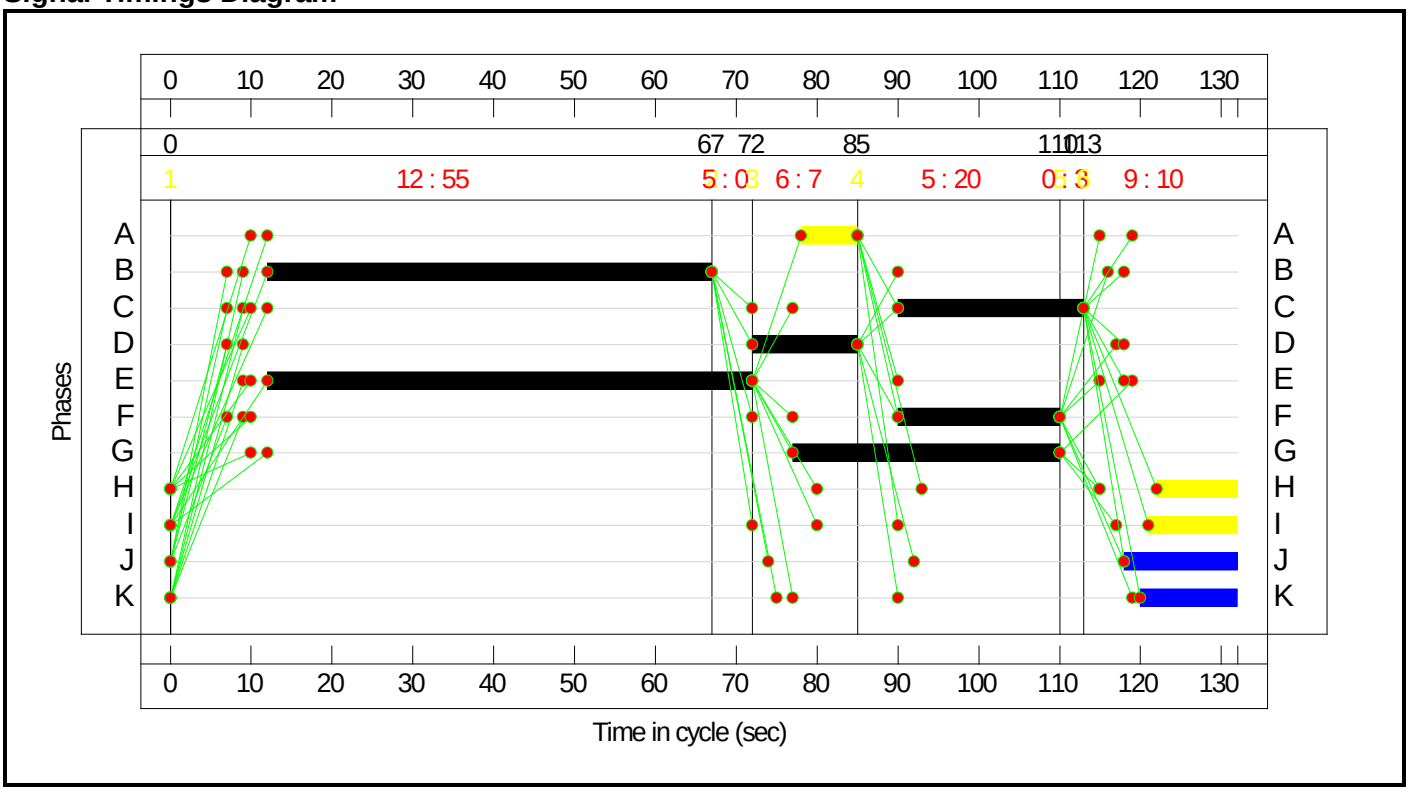
Stage Sequence Diagram



Stage Timings

Stage	1	2	3	4	5	6
Duration	55	0	7	20	3	10
Change Point	0	67	72	85	110	113

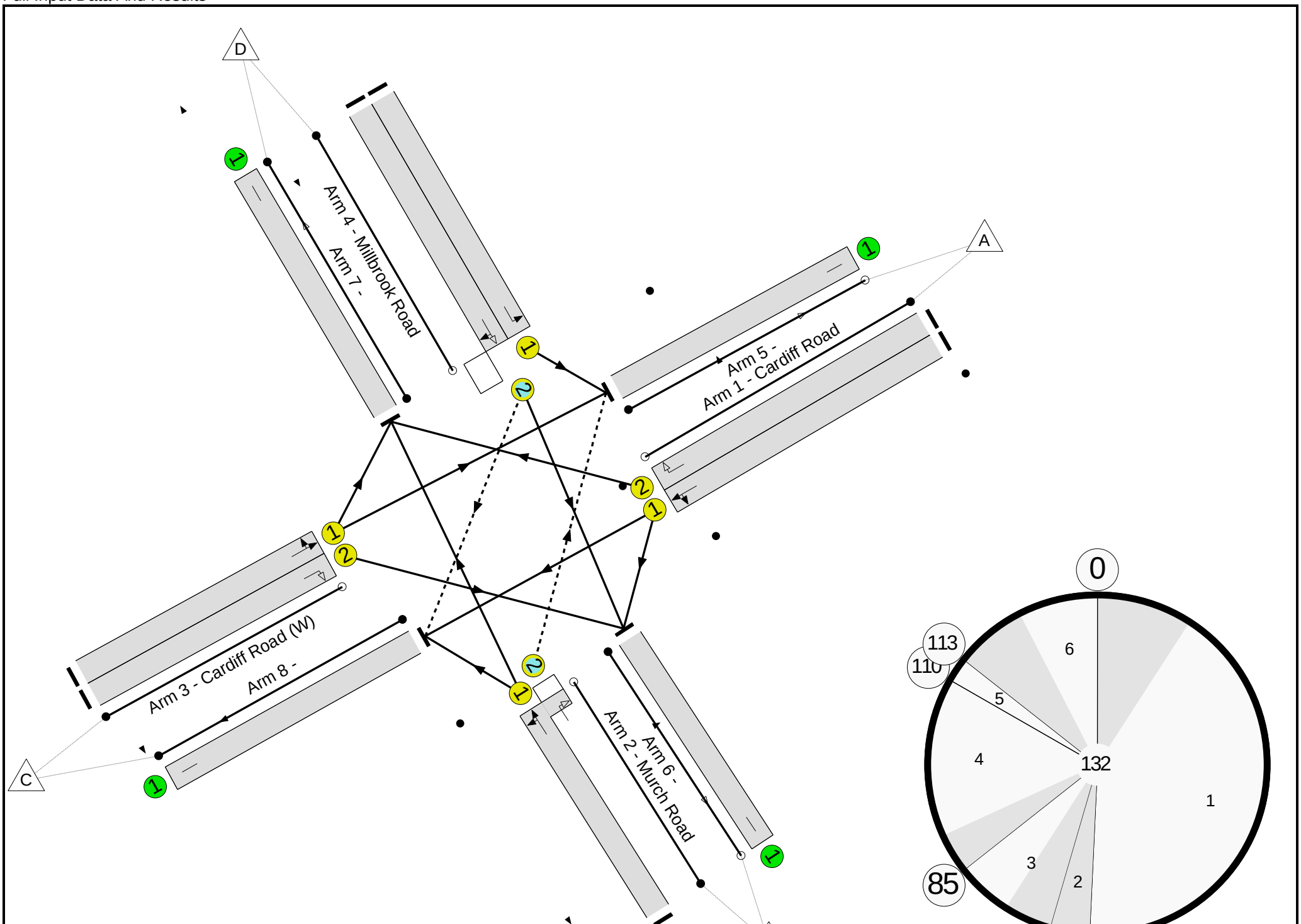
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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: Exisiting Situation	-	-	-	-	-	-	-	-	-	-	-	-	**99.0%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**99.0%**
1/1	Cardiff Road Left Ahead	U	N/A	N/A	B		1	55	-	713	1985	842	84.7%
1/2	Cardiff Road Right	U	N/A	N/A	A		1	7	-	36	1935	117	30.7%
2/1+2/2	Murch Road Right Ahead Left	U+O	N/A	N/A	C		1	23		338	1875:1840	350	96.6%
3/1	Cardiff Road (W) Ahead Left	U	N/A	N/A	E		1	60	-	887	1938	896	99.0%
3/2	Cardiff Road (W) Right	U	N/A	N/A	D		1	13	-	48	1865	198	24.3%
4/1	Millbrook Road Left	U	N/A	N/A	G		1	33	-	117	1935	498	23.5%
4/2	Millbrook Road Ahead Right	O	N/A	N/A	F		1	20	-	73	2001	300	24.4%
5/1		U	N/A	N/A	-		-	-	-	1147	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	180	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	135	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	750	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Exisiting Situation	**-**	**-**	**176**	**5**	**1**	**24.0**	**22.9**	**0.1**	**47.0**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**176**	**5**	**1**	**24.0**	**22.9**	**0.1**	**47.0**	**-**	**-**	**-**	**-**
1/1	713	713	-	-	-	6.8	2.7	-	9.4	47.5	23.4	2.7	26.0
1/2	36	36	-	-	-	0.6	0.2	-	0.8	81.4	1.3	0.2	1.5
2/1+2/2	338	338	151	5	1	5.0	6.7	0.1	11.7	124.7	11.3	6.7	18.0
3/1	887	887	-	-	-	8.7	12.9	-	21.6	87.6	32.0	12.9	44.9
3/2	48	48	-	-	-	0.7	0.2	-	0.9	66.1	1.6	0.2	1.8
4/1	117	117	-	-	-	1.3	0.2	-	1.4	43.4	3.4	0.2	3.5
4/2	73	73	25	0	0	1.0	0.2	0.0	1.2	57.5	2.3	0.2	2.5
5/1	1147	1147	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	180	180	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	135	135	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	750	750	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -10.0
PRC Over All Lanes (%): -10.0

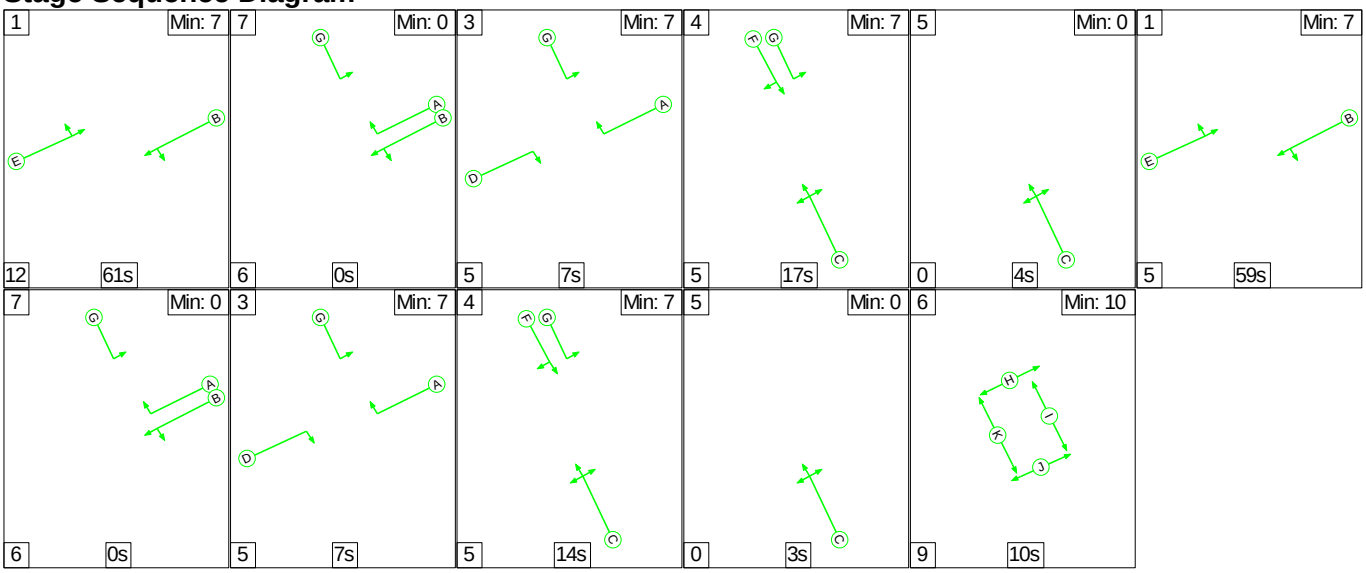
Total Delay for Signalled Lanes (pcuHr): 46.97
Total Delay Over All Lanes(pcuHr): 46.97

Cycle Time (s): 132

Full Input Data And Results

Scenario 6: '2020 PM Dev + BI' (FG6: '2020 PM Dev + BI', Plan 2: 'PM Staging')

Stage Sequence Diagram

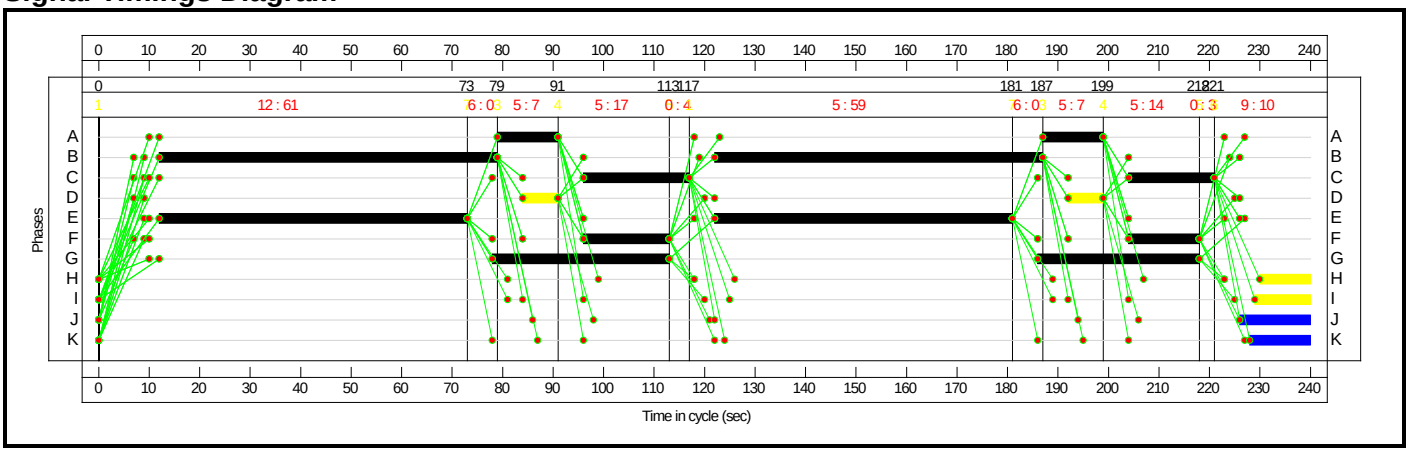


Stage Timings

Stage	1	7	3	4	5	1	7	3	4	5
Duration	61	0	7	17	4	59	0	7	14	3
Change Point	0	73	79	91	113	117	181	187	199	218

Stage	6									
Duration	10									
Change Point	221									

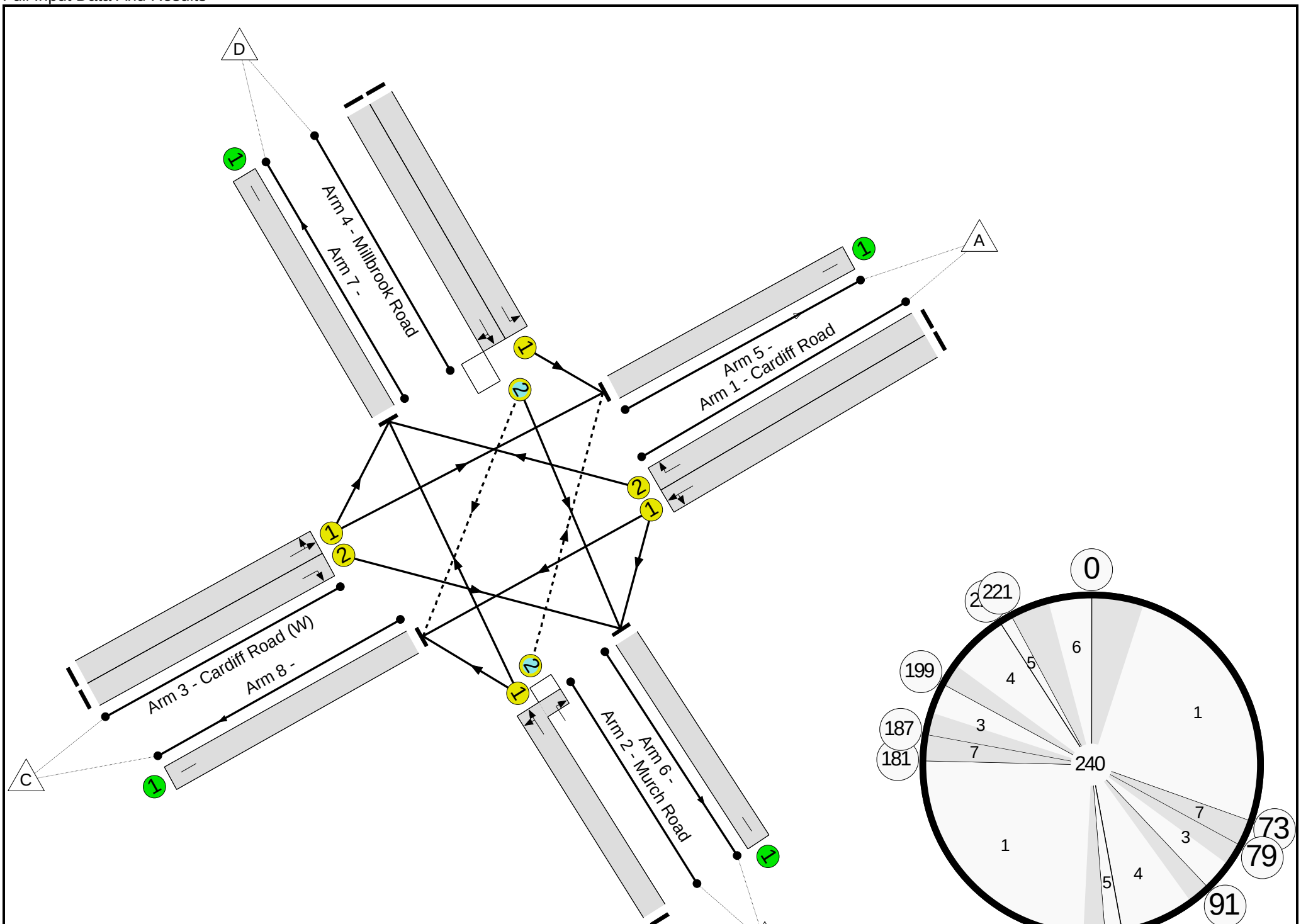
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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: Exisiting Situation	-	-	-	-	-	-	-	-	-	-	-	-	**105.2%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**105.2%**
1/1	Cardiff Road Left Ahead	U	N/A	N/A	B		2	132	-	1162	1985	1108	104.8%
1/2	Cardiff Road Right	U	N/A	N/A	A		2	24	-	31	1935	210	14.8%
2/1+2/2	Murch Road Right Ahead Left	U+O	N/A	N/A	C		2	38		194	1852:1840	184	105.2%
3/1	Cardiff Road (W) Ahead Left	U	N/A	N/A	E		2	120	-	746	1939	986	75.7%
3/2	Cardiff Road (W) Right	U	N/A	N/A	D		2	14	-	43	1865	124	34.6%
4/1	Millbrook Road Left	U	N/A	N/A	G		2	67	-	74	1935	556	13.3%
4/2	Millbrook Road Ahead Right	O	N/A	N/A	F		2	31	-	198	2009	276	71.7%
5/1		U	N/A	N/A	-		-	-	-	922	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	347	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	70	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	1109	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Exisiting Situation	**-**	**-**	**119**	**23**	**24**	**29.2**	**48.1**	**0.1**	**77.4**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**119**	**23**	**24**	**29.2**	**48.1**	**0.1**	**77.4**	**-**	**-**	**-**	**-**
1/1	1162	1108	-	-	-	15.9	35.1	-	51.0	158.0	46.2	35.1	81.3
1/2	31	31	-	-	-	0.4	0.1	-	0.5	59.2	1.0	0.1	1.1
2/1+2/2	194	184	60	23	24	3.7	9.7	0.1	13.6	252.4	7.3	9.7	17.0
3/1	746	746	-	-	-	5.1	1.5	-	6.6	31.8	23.4	1.5	25.0
3/2	43	43	-	-	-	0.6	0.3	-	0.9	76.1	1.5	0.3	1.8
4/1	74	74	-	-	-	0.7	0.1	-	0.7	36.2	2.1	0.1	2.2
4/2	198	198	59	0	0	2.8	1.2	0.0	4.0	72.8	7.1	1.2	8.3
5/1	916	916	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	339	339	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	69	69	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1060	1060	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -16.9
PRC Over All Lanes (%): -16.9

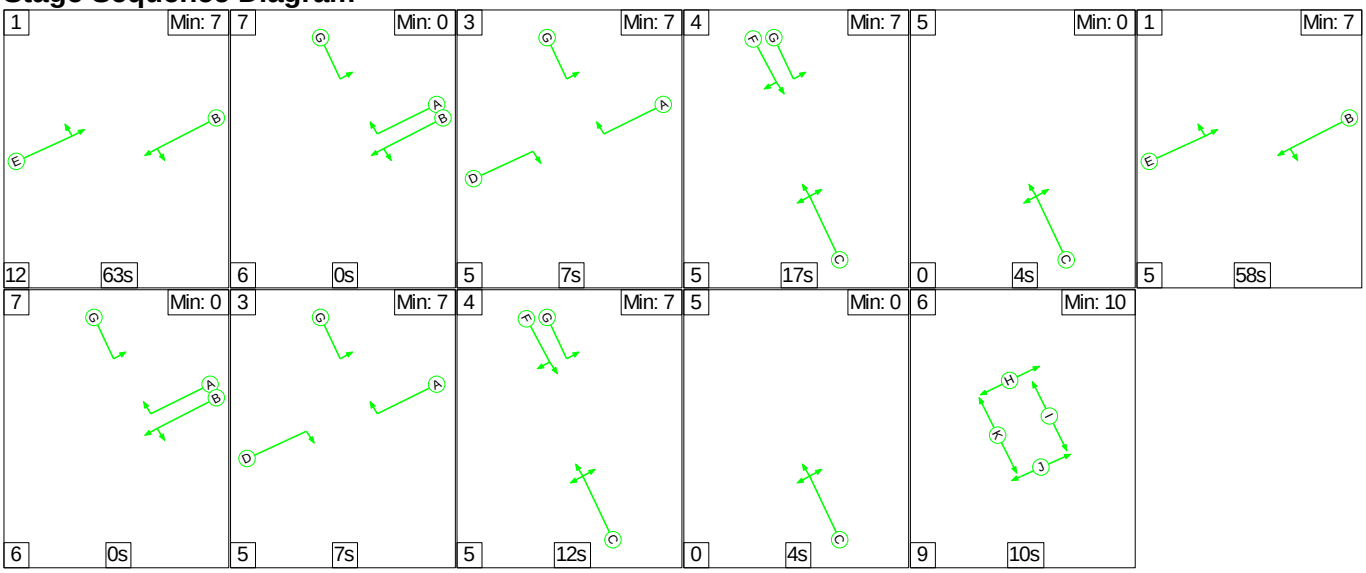
Total Delay for Signalled Lanes (pcuHr): 77.37
Total Delay Over All Lanes(pcuHr): 77.37

Cycle Time (s): 240

Full Input Data And Results

Scenario 7: '2020 PM Dev + BI + Tourism' (FG7: '2020 PM Dev + BI + Tourism', Plan 2: 'PM Staging')

Stage Sequence Diagram

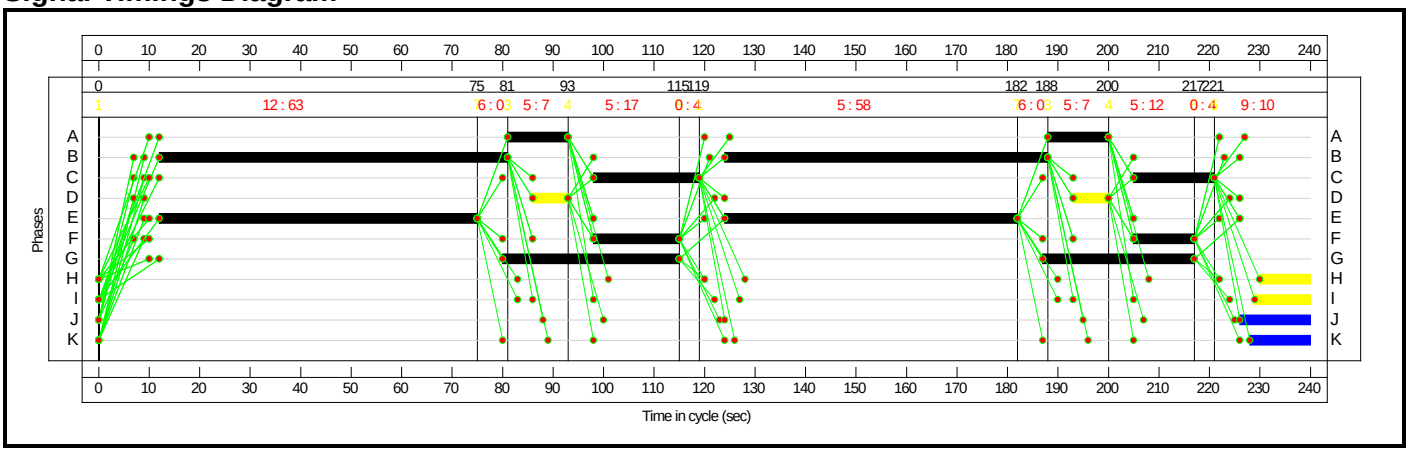


Stage Timings

Stage	1	7	3	4	5	1	7	3	4	5
Duration	63	0	7	17	4	58	0	7	12	4
Change Point	0	75	81	93	115	119	182	188	200	217

Stage	6									
Duration	10									
Change Point	221									

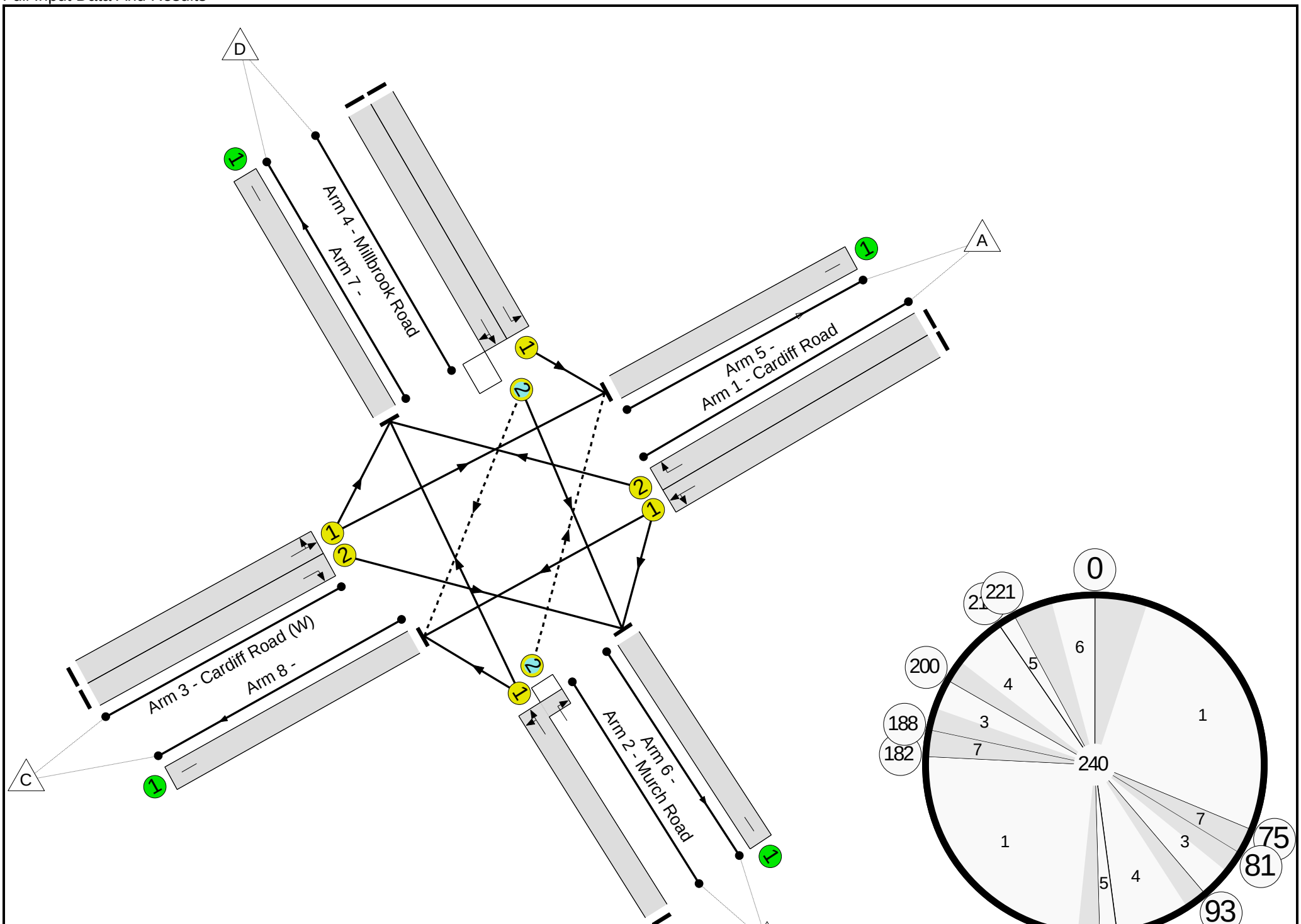
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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: Exisiting Situation	-	-	-	-	-	-	-	-	-	-	-	-	**113.2%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**113.2%**
1/1	Cardiff Road Left Ahead	U	N/A	N/A	B		2	133	-	1264	1985	1117	113.2%
1/2	Cardiff Road Right	U	N/A	N/A	A		2	24	-	31	1935	210	14.8%
2/1+2/2	Murch Road Right Ahead Left	U+O	N/A	N/A	C		2	37		194	1852:1840	177	109.7%
3/1	Cardiff Road (W) Ahead Left	U	N/A	N/A	E		2	121	-	860	1940	994	86.5%
3/2	Cardiff Road (W) Right	U	N/A	N/A	D		2	14	-	43	1865	124	34.6%
4/1	Millbrook Road Left	U	N/A	N/A	G		2	65	-	74	1935	540	13.7%
4/2	Millbrook Road Ahead Right	O	N/A	N/A	F		2	29	-	198	2009	259	76.3%
5/1		U	N/A	N/A	-		-	-	-	1036	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	347	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	70	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	1211	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Exisiting Situation	**-**	**-**	**109**	**31**	**22**	**43.7**	**95.3**	**0.1**	**139.2**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**109**	**31**	**22**	**43.7**	**95.3**	**0.1**	**139.2**	**-**	**-**	**-**	**-**
1/1	1264	1117	-	-	-	28.0	77.8	-	105.8	301.4	58.3	77.8	136.0
1/2	31	31	-	-	-	0.4	0.1	-	0.5	59.3	1.0	0.1	1.1
2/1+2/2	194	177	50	31	22	4.8	12.5	0.1	17.4	323.4	8.1	12.5	20.6
3/1	860	860	-	-	-	6.3	3.1	-	9.4	39.3	29.4	3.1	32.4
3/2	43	43	-	-	-	0.6	0.3	-	0.9	76.2	1.5	0.3	1.8
4/1	74	74	-	-	-	0.7	0.1	-	0.8	37.3	2.2	0.1	2.3
4/2	198	198	59	0	0	2.8	1.5	0.0	4.4	79.6	7.3	1.5	8.8
5/1	1026	1026	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	328	328	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1078	1078	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -25.8
PRC Over All Lanes (%): -25.8

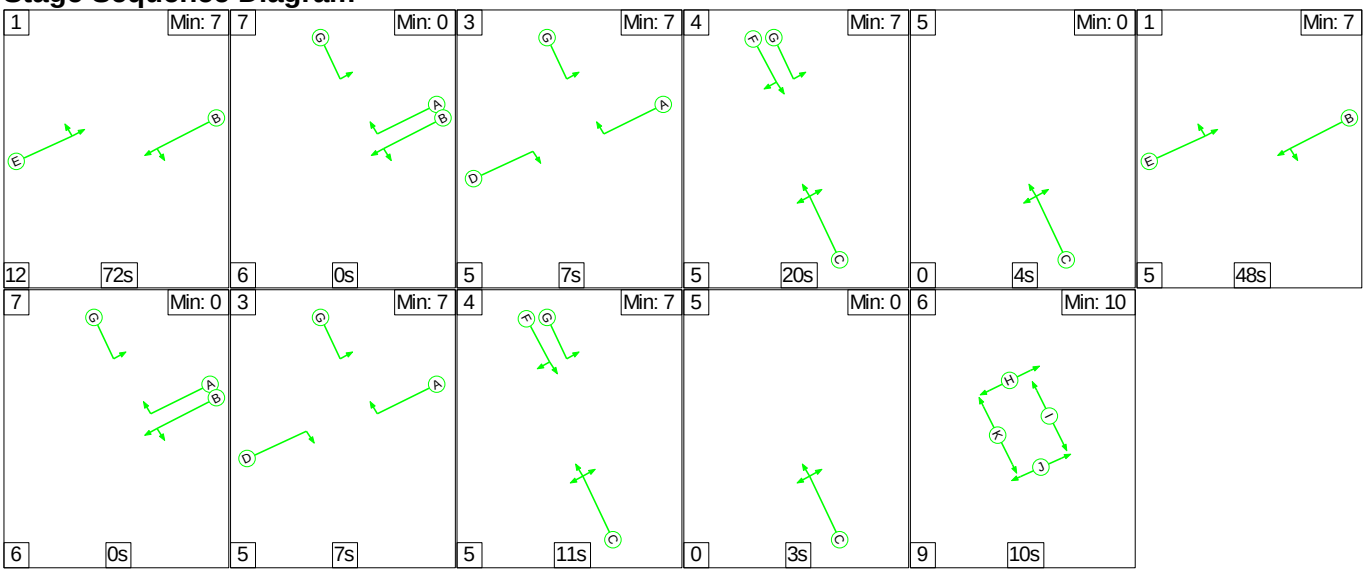
Total Delay for Signalled Lanes (pcuHr): 139.18
Total Delay Over All Lanes(pcuHr): 139.18

Cycle Time (s): 240

Full Input Data And Results

Scenario 8: '2020 PM Base + Tourism' (FG8: '2020 PM Base + Tourism', Plan 2: 'PM Staging')

Stage Sequence Diagram

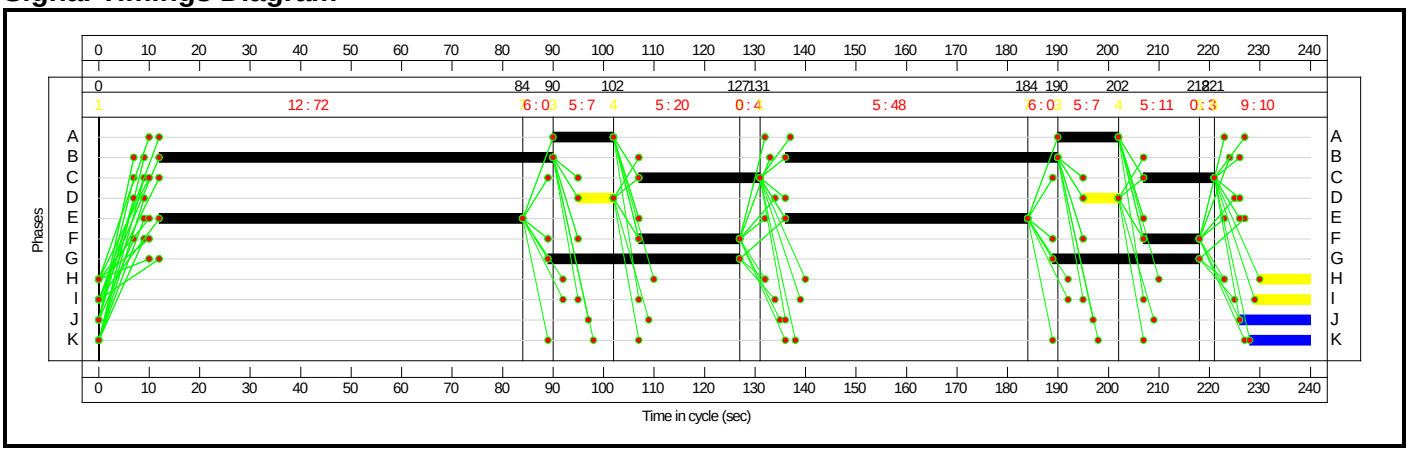


Stage Timings

Stage	1	7	3	4	5	1	7	3	4	5
Duration	72	0	7	20	4	48	0	7	11	3
Change Point	0	84	90	102	127	131	184	190	202	218

Stage	6									
Duration	10									
Change Point	221									

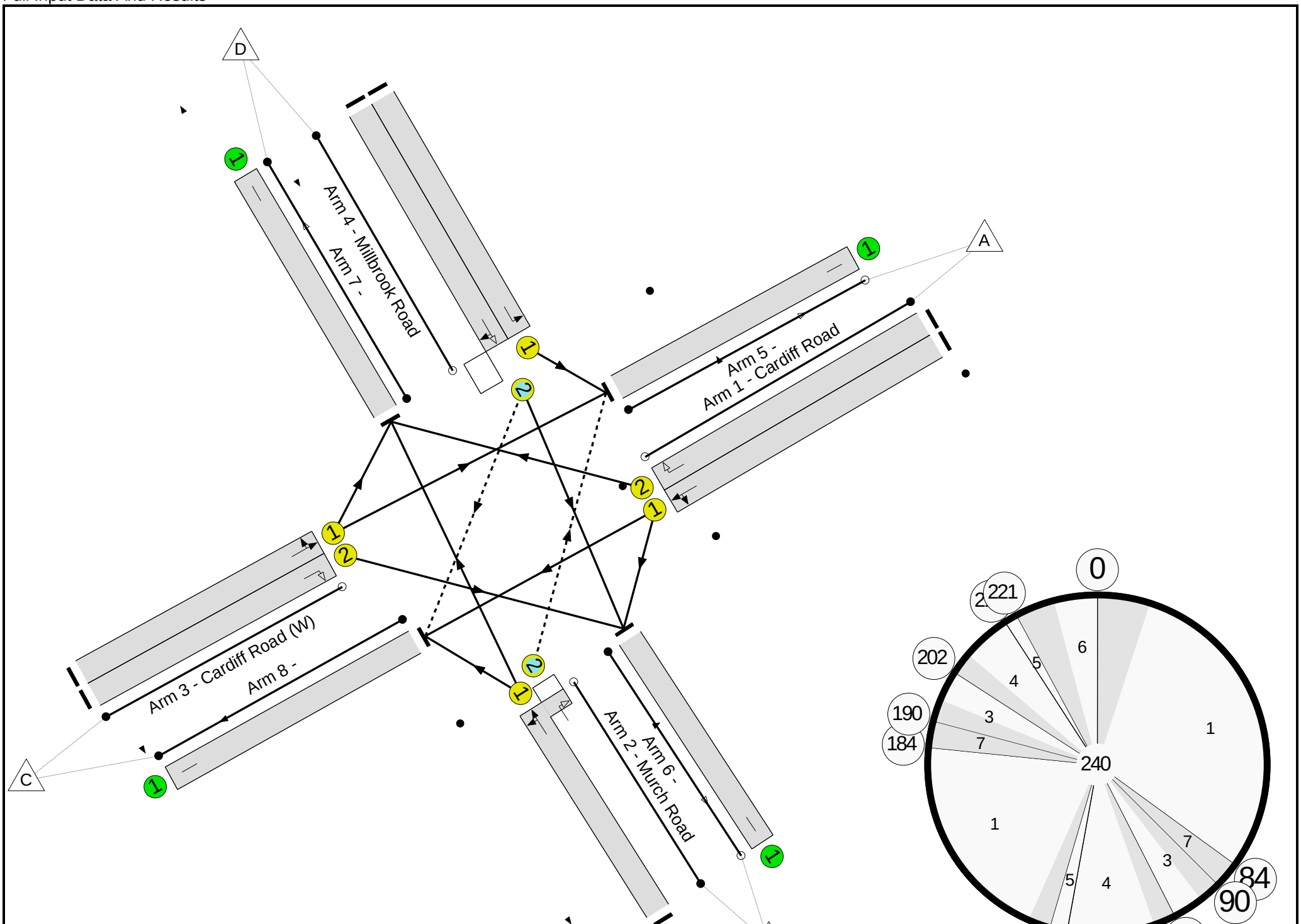
Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram

Full Input Data And Results



Full Input Data And Results

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: Exisiting Situation	-	-	-	-	-	-	-	-	-	-	-	-	**100.4%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**100.4%**
1/1	Cardiff Road Left Ahead	U	N/A	N/A	B		2	132	-	1109	1985	1108	100.1%
1/2	Cardiff Road Right	U	N/A	N/A	A		2	24	-	31	1935	210	14.8%
2/1+2/2	Murch Road Right Ahead Left	U+O	N/A	N/A	C		2	38		191	1855:1840	190	100.4%
3/1	Cardiff Road (W) Ahead Left	U	N/A	N/A	E		2	120	-	814	1941	987	82.5%
3/2	Cardiff Road (W) Right	U	N/A	N/A	D		2	14	-	39	1865	124	31.4%
4/1	Millbrook Road Left	U	N/A	N/A	G		2	67	-	74	1935	556	13.3%
4/2	Millbrook Road Ahead Right	O	N/A	N/A	F		2	31	-	195	2011	277	70.5%
5/1		U	N/A	N/A	-		-	-	-	993	1	Inf	0.0%
6/1		U	N/A	N/A	-		-	-	-	343	1	Inf	0.0%
7/1		U	N/A	N/A	-		-	-	-	67	1	Inf	0.0%
8/1		U	N/A	N/A	-		-	-	-	1050	1	Inf	0.0%

Full Input Data And Results

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Exisiting Situation	**-**	**-**	**118**	**23**	**27**	**22.0**	**27.8**	**0.1**	**49.9**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**118**	**23**	**27**	**22.0**	**27.8**	**0.1**	**49.9**	**-**	**-**	**-**	**-**
1/1	1109	1108	-	-	-	8.7	16.8	-	25.5	82.9	43.7	16.8	60.5
1/2	31	31	-	-	-	0.4	0.1	-	0.5	60.3	1.1	0.1	1.2
2/1+2/2	191	190	62	23	27	3.0	7.1	0.1	10.2	192.9	7.3	7.1	14.4
3/1	814	814	-	-	-	5.8	2.3	-	8.0	35.6	26.0	2.3	28.3
3/2	39	39	-	-	-	0.6	0.2	-	0.8	76.1	1.5	0.2	1.7
4/1	74	74	-	-	-	0.7	0.1	-	0.8	38.0	2.3	0.1	2.4
4/2	195	195	56	0	0	2.8	1.2	0.0	4.0	73.8	7.6	1.2	8.8
5/1	993	993	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	343	343	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
7/1	67	67	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
8/1	1049	1049	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -11.5
PRC Over All Lanes (%): -11.5

Total Delay for Signalled Lanes (pcuHr): 49.94
Total Delay Over All Lanes(pcuHr): 49.94

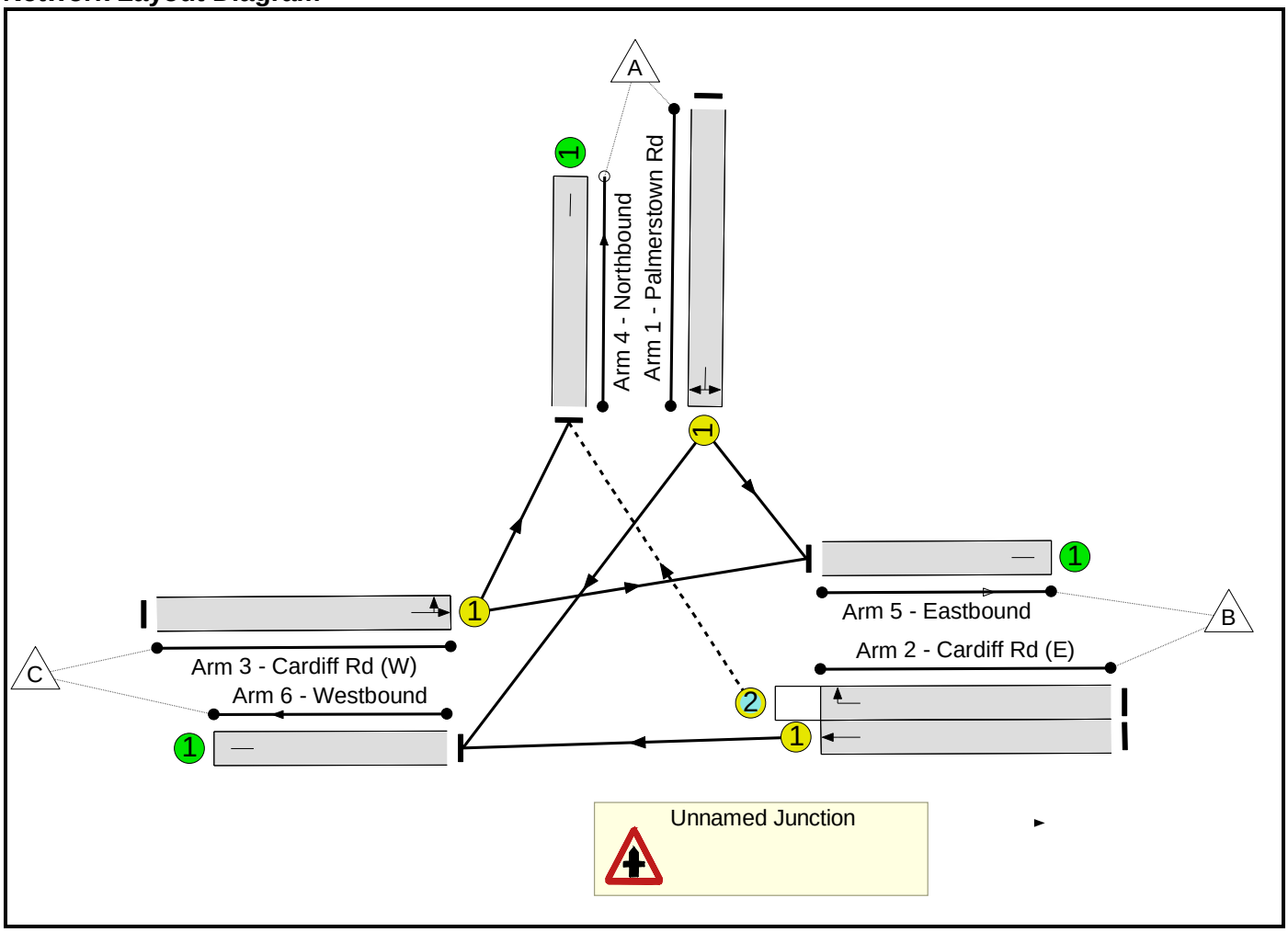
Cycle Time (s): 240

Full Input Data And Results

User and Project Details

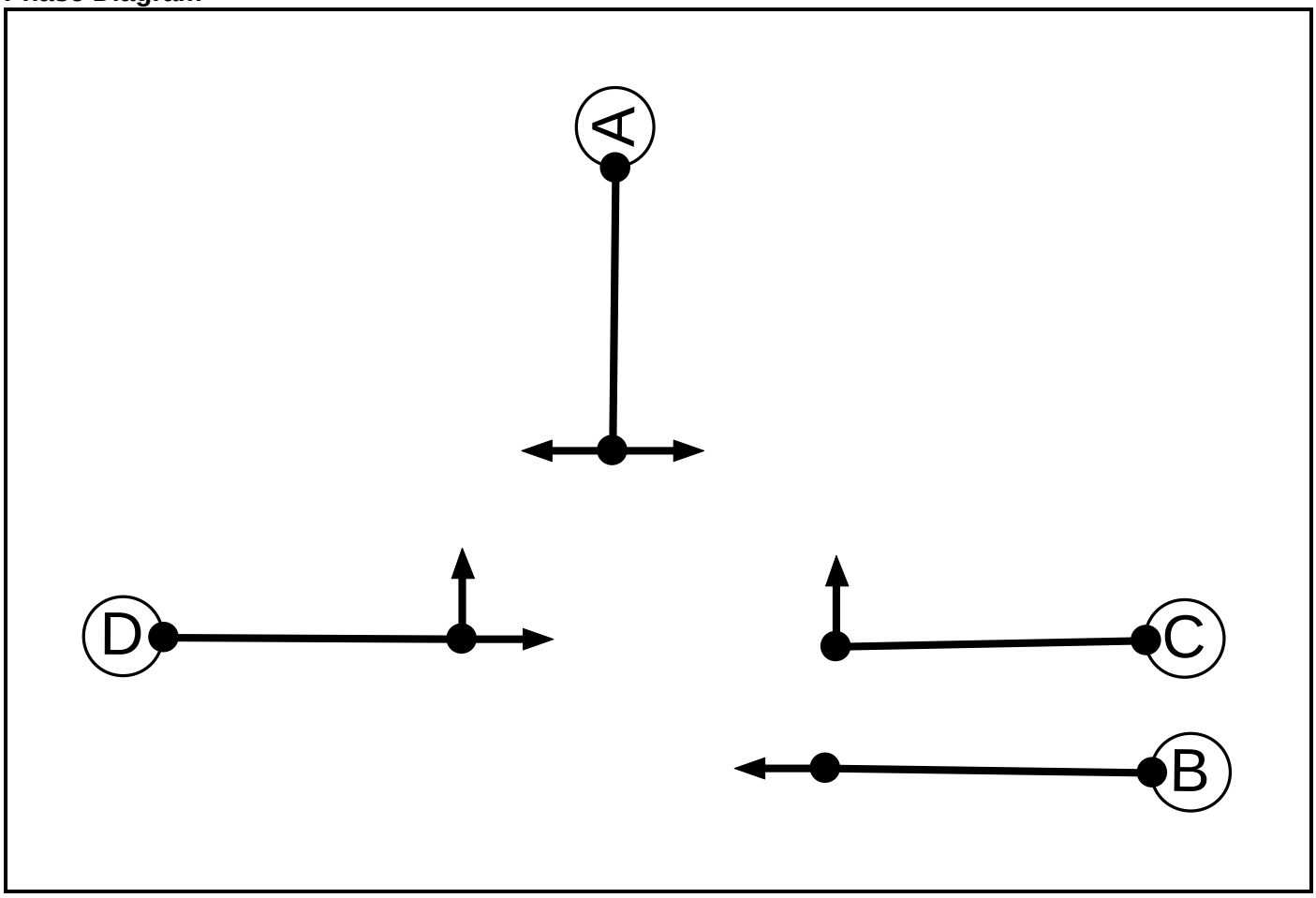
Project:	**Waterfront Barry**
Title:	
Location:	Palmerston Road, Barry
File name:	Palmerston Rd_Cardiff Rd Signals.lsg3x
Author:	Ryan Hopkins
Company:	Arup
Address:	
Notes:	

Network Layout Diagram



Full Input Data And Results

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

Phase Intergreens Matrix

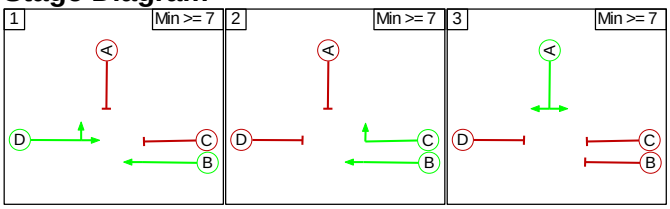
		Starting Phase			
		A	B	C	D
Terminating Phase	A		6	6	6
	B	6		-	-
	C	6	-		6
	D	6	-	6	

Phases in Stage

Stage No.	Phases in Stage
1	B D
2	B C
3	A

Full Input Data And Results

Stage Diagram



Phase Delays

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

Prohibited Stage Changes

	To Stage			
		1	2	3
From Stage	1		6	6
	2	6		6
	3	6	6	

Full Input Data And Results

Give-Way Lane Input Data

Junction: Unnamed Junction

Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
2/2 (Cardiff Rd (E))	4/1 (Right)	1400	3/1	1.10	3/1	2.00	-	0.50	2	2.00

Full Input Data And Results

Lane Input Data

Junction: Unnamed Junction

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)
1/1 (Palmerstown Rd)	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	19.00
											Arm 6 Right	8.00
2/1 (Cardiff Rd (E))	U	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Ahead	Inf
2/2 (Cardiff Rd (E))	O	C	2	3	60.0	Geom	-	3.50	0.00	N	Arm 4 Right	11.00
3/1 (Cardiff Rd (W))	U	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 4 Left	5.70
											Arm 5 Ahead	Inf
4/1 (Northbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Eastbound)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Westbound)	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM 2008 Base'	08:30	09:30	01:00	
2: 'PM 2008 Base'	16:30	17:30	01:00	
3: 'AM 2020 Base+Dev'	08:30	09:30	01:00	
4: 'PM 2020 Base+Dev'	16:30	17:30	01:00	
5: 'AM Base 2020'	08:30	09:30	01:00	
6: 'PM Base 2020'	16:30	17:30	01:00	
7: 'PM 2020 Base+Dev+tour'	16:30	17:30	01:00	

Traffic Lane Flows

Lane	Scenario 1: AM 2008 Base
Junction: Unnamed Junction	
1/1	332
2/1	916
2/2	91
3/1	963
4/1	110
5/1	1089
6/1	1103

Scenario 1: 'AM 2008 Base' (FG1: 'AM 2008 Base', Plan 2: 'Staging Plan No. 2')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Palmerstown Rd)	3.50	0.00	Y	Arm 5 Left	19.00	43.7 %	1724
				Arm 6 Right	8.00	56.3 %	
2/1 (Cardiff Rd (E))	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965
2/2 (Cardiff Rd (E))	3.50	0.00	N	Arm 4 Right	11.00	100.0 %	1852
3/1 (Cardiff Rd (W))	3.00	0.00	Y	Arm 4 Left	5.70	2.0 %	1905
				Arm 5 Ahead	Inf	98.0 %	
4/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Eastbound Lane 1)	Infinite Saturation Flow						Inf
6/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf

Full Input Data And Results

Traffic Lane Flows

Lane	Scenario 2: PM 2008 Base
Junction: Unnamed Junction	
1/1	298
2/1	1125
2/2	121
3/1	868
4/1	149
5/1	992
6/1	1271

Scenario 2: 'PM 2008 Base' (FG2: 'PM 2008 Base', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Palmerstown Rd)	3.50	0.00	Y	Arm 5 Left	19.00	51.0 %	1736
				Arm 6 Right	8.00	49.0 %	
2/1 (Cardiff Rd (E))	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965
2/2 (Cardiff Rd (E))	3.50	0.00	N	Arm 4 Right	11.00	100.0 %	1852
3/1 (Cardiff Rd (W))	3.00	0.00	Y	Arm 4 Left	5.70	3.2 %	1899
				Arm 5 Ahead	Inf	96.8 %	
4/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Eastbound Lane 1)	Infinite Saturation Flow						Inf
6/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 3: AM 2020 Base+Dev
Junction: Unnamed Junction	
1/1	391
2/1	1213
2/2	106
3/1	1451
4/1	132
5/1	1594
6/1	1435

Full Input Data And Results

Scenario 3: 'AM 2020 Base+Dev' (FG3: 'AM 2020 Base+Dev', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Palmerstown Rd)	3.50	0.00	Y	Arm 5 Left	19.00	43.2 %	1723
				Arm 6 Right	8.00	56.8 %	
2/1 (Cardiff Rd (E))	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965
2/2 (Cardiff Rd (E))	3.50	0.00	N	Arm 4 Right	11.00	100.0 %	1852
3/1 (Cardiff Rd (W))	3.00	0.00	Y	Arm 4 Left	5.70	1.8 %	1906
				Arm 5 Ahead	Inf	98.2 %	
4/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Eastbound Lane 1)	Infinite Saturation Flow						Inf
6/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 4: PM 2020 Base+Dev
Junction: Unnamed Junction	
1/1	350
2/1	1637
2/2	140
3/1	1206
4/1	180
5/1	1343
6/1	1810

Full Input Data And Results

Scenario 4: 'PM 2020 Base+Dev' (FG4: 'PM 2020 Base+Dev', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Palmerstown Rd)	3.50	0.00	Y	Arm 5 Left	19.00	50.6 %	1735
				Arm 6 Right	8.00	49.4 %	
2/1 (Cardiff Rd (E))	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965
2/2 (Cardiff Rd (E))	3.50	0.00	N	Arm 4 Right	11.00	100.0 %	1852
3/1 (Cardiff Rd (W))	3.00	0.00	Y	Arm 4 Left	5.70	3.3 %	1898
				Arm 5 Ahead	Inf	96.7 %	
4/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Eastbound Lane 1)	Infinite Saturation Flow						Inf
6/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 5: AM 2020 Base
Junction: Unnamed Junction	
1/1	387
2/1	1068
2/2	106
3/1	1123
4/1	128
5/1	1270
6/1	1286

Full Input Data And Results

Scenario 5: 'AM 2020 Base' (FG5: 'AM Base 2020', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Palmerstown Rd)	3.50	0.00	Y	Arm 5 Left	19.00	43.7 %	1724
				Arm 6 Right	8.00	56.3 %	
2/1 (Cardiff Rd (E))	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965
2/2 (Cardiff Rd (E))	3.50	0.00	N	Arm 4 Right	11.00	100.0 %	1852
3/1 (Cardiff Rd (W))	3.00	0.00	Y	Arm 4 Left	5.70	2.0 %	1905
				Arm 5 Ahead	Inf	98.0 %	
4/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Eastbound Lane 1)	Infinite Saturation Flow						Inf
6/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 6: PM 2020 Base
Junction: Unnamed Junction	
1/1	347
2/1	1308
2/2	140
3/1	1010
4/1	173
5/1	1154
6/1	1478

Full Input Data And Results

Scenario 6: 'PM 2020 Base' (FG6: 'PM Base 2020', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Palmerstown Rd)	3.50	0.00	Y	Arm 5 Left	19.00	51.0 %	1736
				Arm 6 Right	8.00	49.0 %	
2/1 (Cardiff Rd (E))	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965
2/2 (Cardiff Rd (E))	3.50	0.00	N	Arm 4 Right	11.00	100.0 %	1852
3/1 (Cardiff Rd (W))	3.00	0.00	Y	Arm 4 Left	5.70	3.3 %	1899
				Arm 5 Ahead	Inf	96.7 %	
4/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Eastbound Lane 1)	Infinite Saturation Flow						Inf
6/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 7: PM 2020 Base+Dev+tour
Junction: Unnamed Junction	
1/1	350
2/1	1739
2/2	140
3/1	1319
4/1	180
5/1	1456
6/1	1912

Full Input Data And Results

Scenario 7: 'PM 2020 Base+Dev+tour' (FG7: 'PM 2020 Base+Dev+tour', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Palmerstown Rd)	3.50	0.00	Y	Arm 5 Left	19.00	50.6 %	1735
				Arm 6 Right	8.00	49.4 %	
2/1 (Cardiff Rd (E))	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965
2/2 (Cardiff Rd (E))	3.50	0.00	N	Arm 4 Right	11.00	100.0 %	1852
3/1 (Cardiff Rd (W))	3.00	0.00	Y	Arm 4 Left	5.70	3.0 %	1900
				Arm 5 Ahead	Inf	97.0 %	
4/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Eastbound Lane 1)	Infinite Saturation Flow						Inf
6/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf

Traffic Lane Flows

Lane	Scenario 8: PM 2020 Base+tourism
Junction: Unnamed Junction	
1/1	347
2/1	1410
2/2	140
3/1	1122
4/1	173
5/1	1266
6/1	1580

Full Input Data And Results

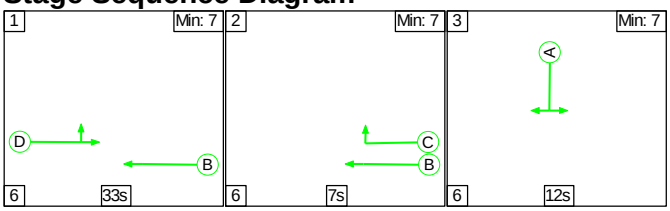
Scenario 8: 'PM 2020 Base+tourism' (FG8: 'PM 2020 Base+tourism', Plan 1: 'Staging Plan No. 1')

Traffic Lane Flows

Junction: Unnamed Junction							
Lane	**Lane Width (m)**	**Gradient**	**Nearside Lane**	**Allowed Turns**	**Turning Radius (m)**	**Turning Prop.**	**Sat flow (PCU/Hr)**
1/1 (Palmerstown Rd)	3.50	0.00	Y	Arm 5 Left	19.00	51.0 %	1736
				Arm 6 Right	8.00	49.0 %	
2/1 (Cardiff Rd (E))	3.50	0.00	Y	Arm 6 Ahead	Inf	100.0 %	1965
2/2 (Cardiff Rd (E))	3.50	0.00	N	Arm 4 Right	11.00	100.0 %	1852
3/1 (Cardiff Rd (W))	3.00	0.00	Y	Arm 4 Left	5.70	2.9 %	1900
				Arm 5 Ahead	Inf	97.1 %	
4/1 (Northbound Lane 1)	Infinite Saturation Flow						Inf
5/1 (Eastbound Lane 1)	Infinite Saturation Flow						Inf
6/1 (Westbound Lane 1)	Infinite Saturation Flow						Inf

Scenario 1: 'AM 2008 Base' (FG1: 'AM 2008 Base', Plan 2: 'Staging Plan No. 2')

Stage Sequence Diagram

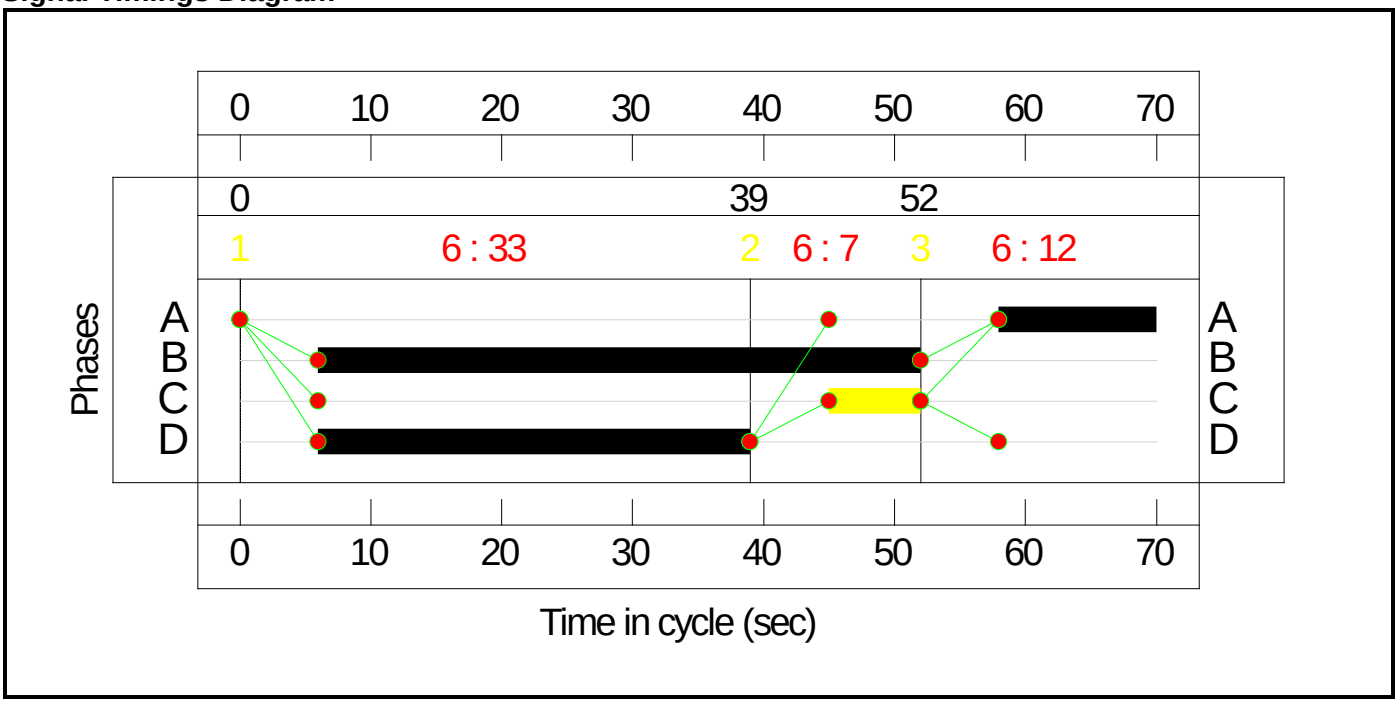


Stage Timings

Stage	1	2	3
Duration	33	7	12
Change Point	0	39	52

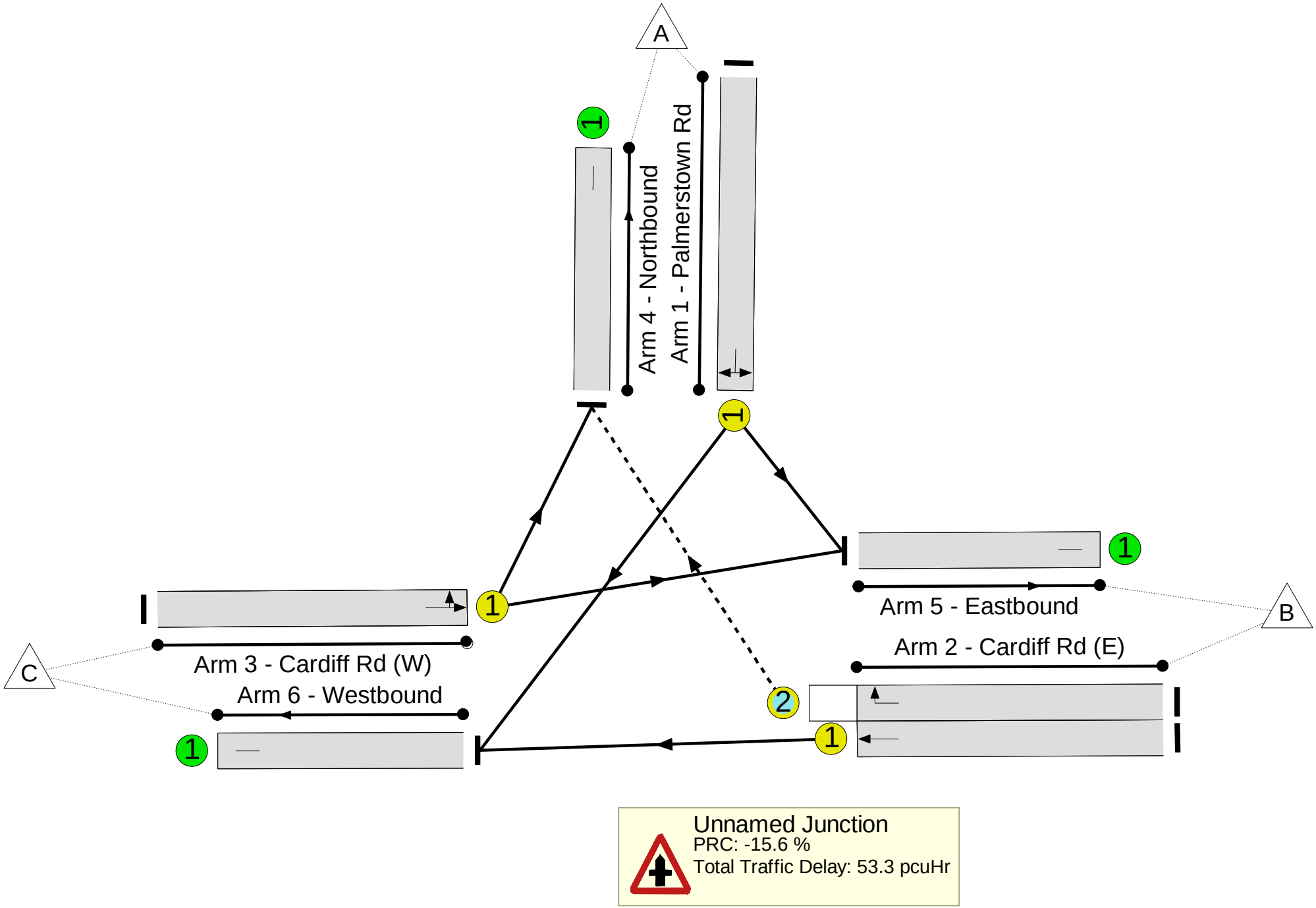
Full Input Data And Results

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A
B
C
Arm 4 - Northbound
Arm 1 - Palmerstown Rd
Arm 5 - Eastbound
Arm 2 - Cardiff Rd (E)
Arm 3 - Cardiff Rd (W)
Arm 6 - Westbound
1
2
Unnamed Junction
PRC: -15.6 %
Total Traffic Delay: 53.3 pcuHr

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**104.1%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**104.1%**
1/1	Palmerstown Rd Left Right	U	N/A	N/A	A		1	12	-	332	1724	320	103.7%
2/1	Cardiff Rd (E) Ahead	U	N/A	N/A	B		1	46	-	916	1965	1319	69.4%
2/2	Cardiff Rd (E) Right	O	N/A	N/A	C		1	7	-	91	1852	212	43.0%
3/1	Cardiff Rd (W) Left Ahead	U	N/A	N/A	D		1	33	-	963	1905	925	104.1%
4/1	Northbound	U	N/A	N/A	-		-	-	-	110	1	Inf	0.0%
5/1	Eastbound	U	N/A	N/A	-		-	-	-	1089	1	Inf	0.0%
6/1	Westbound	U	N/A	N/A	-		-	-	-	1103	1	Inf	0.0%

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**88**	**3**	**11.7**	**41.6**	**0.0**	**53.3**	-	-	-	-
Unnamed Junction	-	-	**0**	**88**	**3**	**11.7**	**41.6**	**0.0**	**53.3**	-	-	-	-
1/1	332	320	-	-	-	3.1	12.5	-	15.6	169.6	6.7	12.5	19.2
2/1	916	916	-	-	-	1.8	1.1	-	2.9	11.5	10.9	1.1	12.1
2/2	91	91	0	88	3	0.7	0.4	0.0	1.1	43.7	1.6	0.4	2.0
3/1	963	925	-	-	-	6.0	27.6	-	33.6	125.6	19.5	27.6	47.0
4/1	109	109	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1047	1047	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1096	1096	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -15.6
PRC Over All Lanes (%): -15.6

Total Delay for Signalled Lanes (pcuHr): 53.28
Total Delay Over All Lanes(pcuHr): 53.28

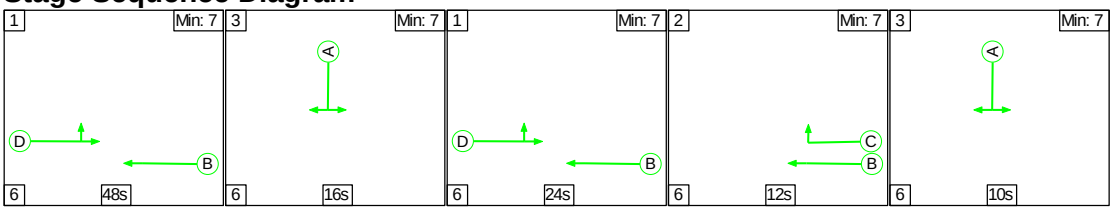
Cycle Time (s): 70

Full Input Data And Results

Full Input Data And Results

Scenario 2: 'PM 2008 Base' (FG2: 'PM 2008 Base', Plan 1: 'Staging Plan No. 1')

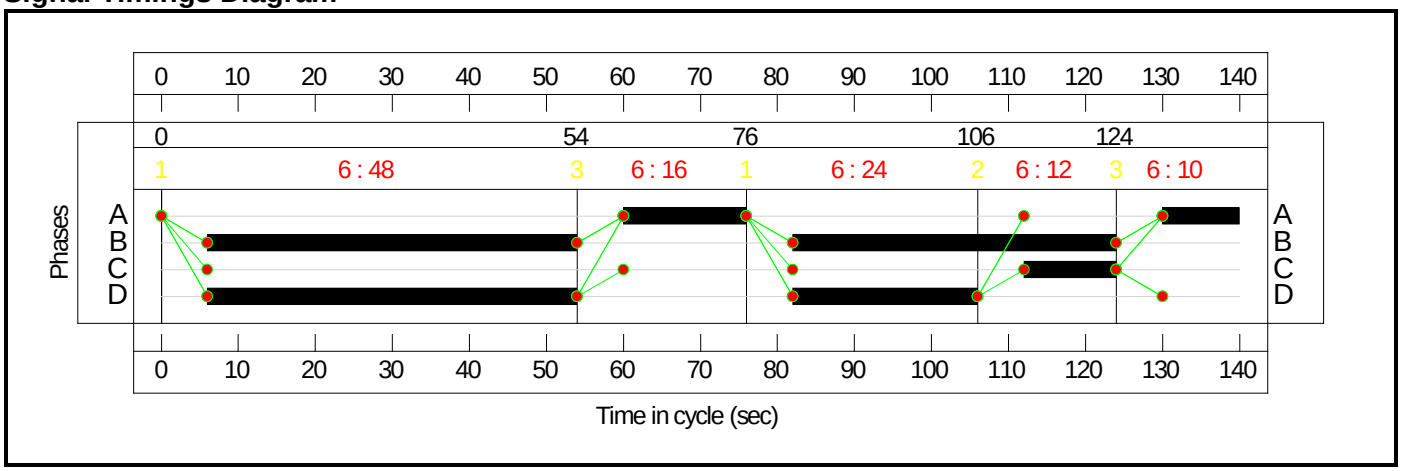
Stage Sequence Diagram



Stage Timings

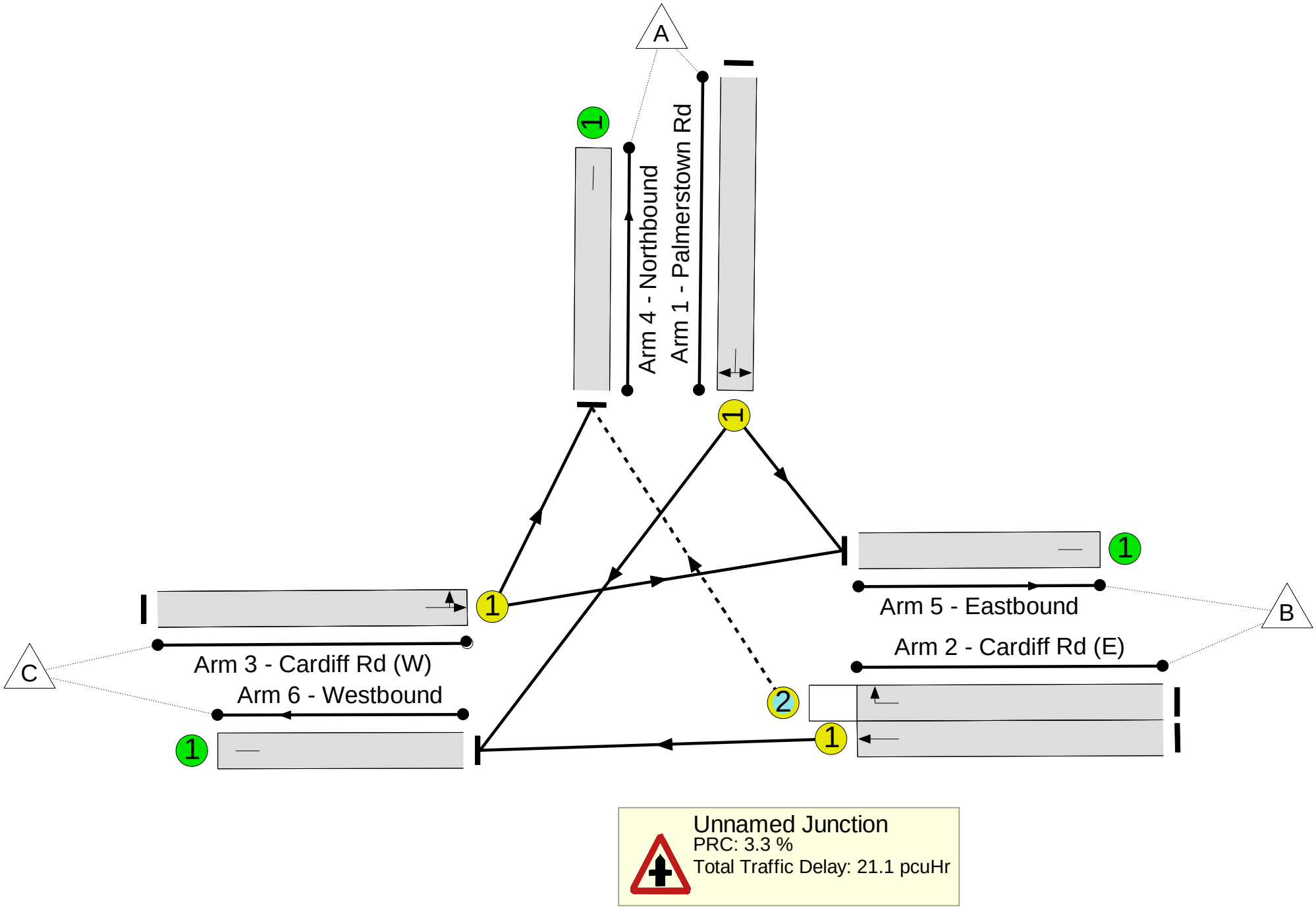
Stage	1	3	1	2	3
Duration	48	16	24	12	10
Change Point	0	54	76	106	124

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A
B
C
Arm 4 - Northbound
Arm 1 - Palmerstown Rd
Arm 5 - Eastbound
Arm 2 - Cardiff Rd (E)
Arm 3 - Cardiff Rd (W)
Arm 6 - Westbound
1
2
Unnamed Junction
PRC: 3.3 %
Total Traffic Delay: 21.1 pcuHr

Full Input Data And Results

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	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**87.1%**
Unnamed Junction	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**87.1%**
1/1	Palmerstown Rd Left Right	U	N/A	N/A	A		2	26	-	298	1736	347	85.8%
2/1	Cardiff Rd (E) Ahead	U	N/A	N/A	B		2	90	-	1125	1965	1291	87.1%
2/2	Cardiff Rd (E) Right	O	N/A	N/A	C		1	12	-	121	1852	172	70.4%
3/1	Cardiff Rd (W) Left Ahead	U	N/A	N/A	D		2	72	-	868	1899	1004	86.5%
4/1	Northbound	U	N/A	N/A	-		-	-	-	149	1	Inf	0.0%
5/1	Eastbound	U	N/A	N/A	-		-	-	-	992	1	Inf	0.0%
6/1	Westbound	U	N/A	N/A	-		-	-	-	1271	1	Inf	0.0%

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	**-**	**-**	**0**	**119**	**2**	**10.9**	**10.2**	**0.0**	**21.1**	**-**	**-**	**-**	**-**
Unnamed Junction	**-**	**-**	**0**	**119**	**2**	**10.9**	**10.2**	**0.0**	**21.1**	**-**	**-**	**-**	**-**
1/1	298	298	-	-	-	2.2	2.7	-	5.0	60.1	5.9	2.7	8.6
2/1	1125	1125	-	-	-	3.1	3.3	-	6.3	20.2	19.7	3.3	22.9
2/2	121	121	0	119	2	2.1	1.1	0.0	3.2	95.4	4.5	1.1	5.7
3/1	868	868	-	-	-	3.6	3.1	-	6.6	27.5	17.1	3.1	20.2
4/1	149	149	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	992	992	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1271	1271	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): 3.3
PRC Over All Lanes (%): 3.3

Total Delay for Signalled Lanes (pcuHr): 21.12
Total Delay Over All Lanes(pcuHr): 21.12

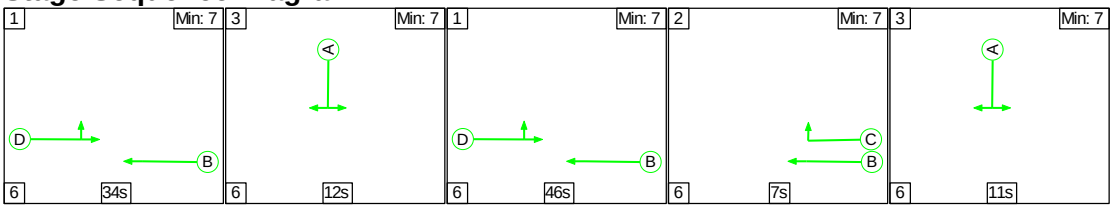
Cycle Time (s): 140

Full Input Data And Results

Full Input Data And Results

Scenario 3: 'AM 2020 Base+Dev' (FG3: 'AM 2020 Base+Dev', Plan 1: 'Staging Plan No. 1')

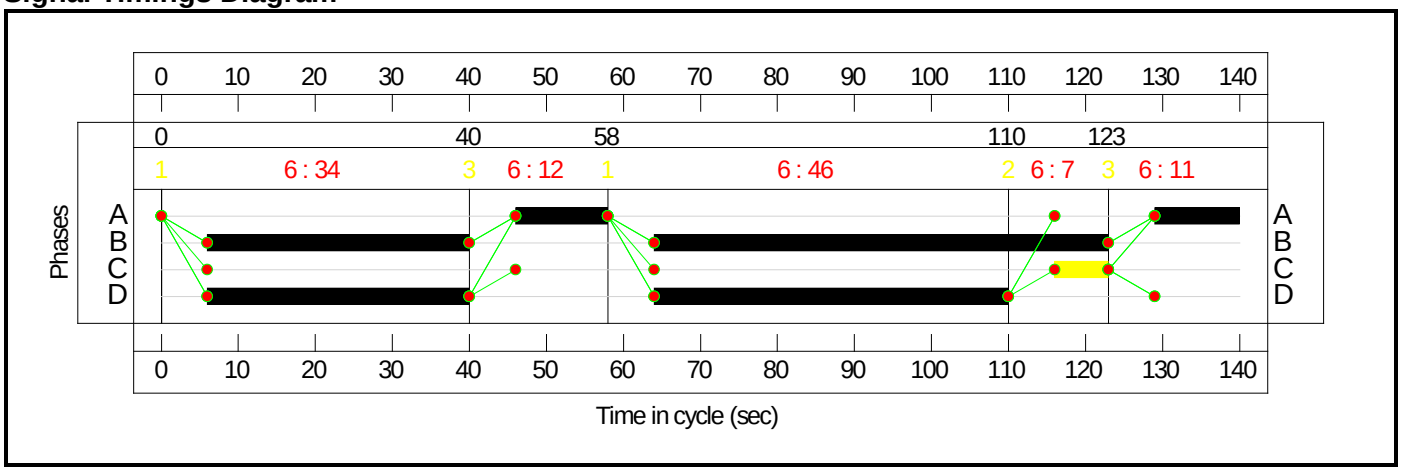
Stage Sequence Diagram



Stage Timings

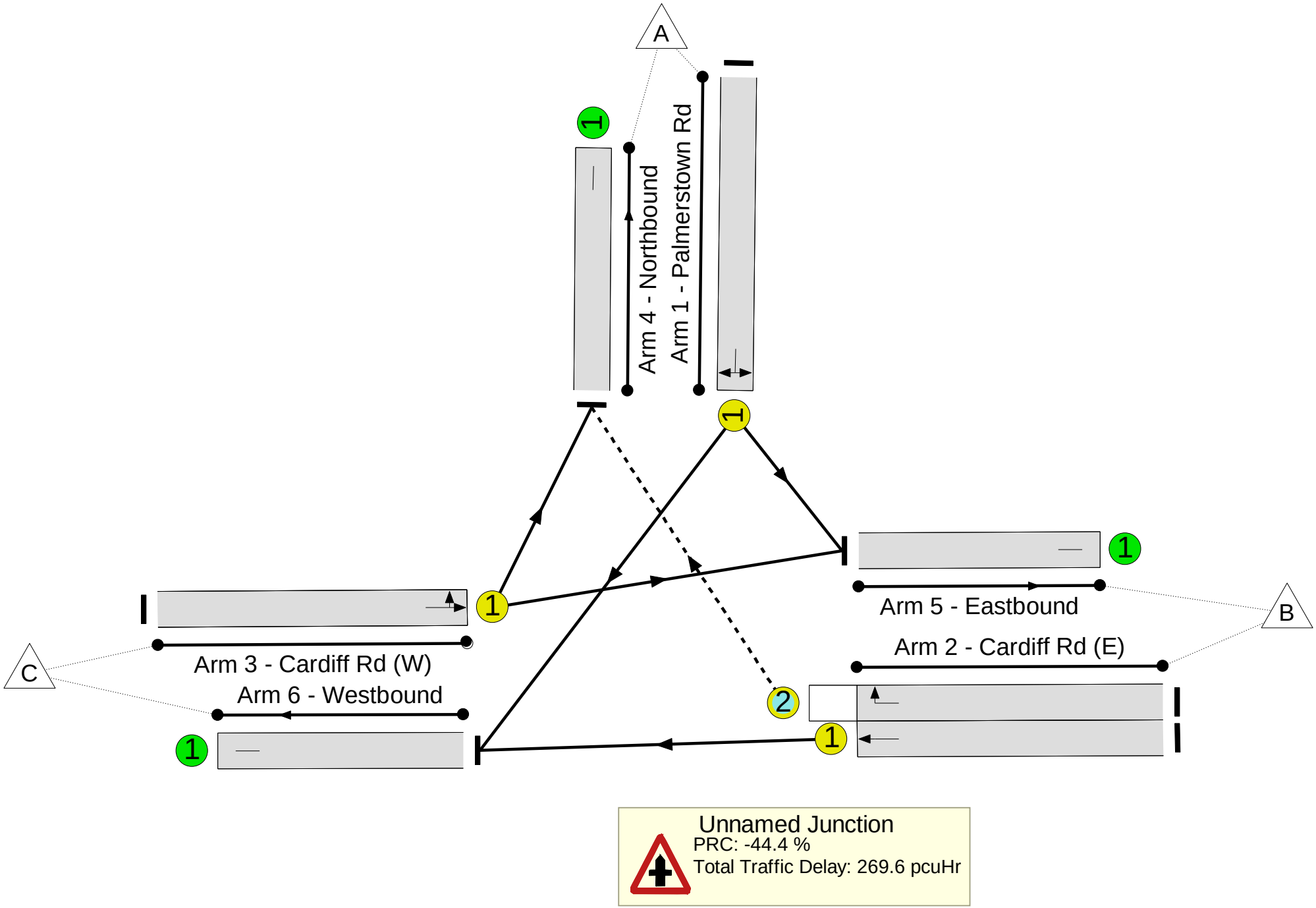
Stage	1	3	1	2	3
Duration	34	12	46	7	11
Change Point	0	40	58	110	123

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A
B
C
1
Arm 4 - Northbound
Arm 1 - Palmerstown Rd
Arm 5 - Eastbound
Arm 2 - Cardiff Rd (E)
Arm 3 - Cardiff Rd (W)
Arm 6 - Westbound
2
Unnamed Junction
PRC: -44.4 %
Total Traffic Delay: 269.6 pcuHr

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**130.0%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**130.0%**
1/1	Palmerstown Rd Left Right	U	N/A	N/A	A		2	23	-	391	1723	308	127.1%
2/1	Cardiff Rd (E) Ahead	U	N/A	N/A	B		2	93	-	1213	1965	1333	91.0%
2/2	Cardiff Rd (E) Right	O	N/A	N/A	C		1	7	-	106	1852	106	100.2%
3/1	Cardiff Rd (W) Left Ahead	U	N/A	N/A	D		2	80	-	1451	1906	1116	130.0%
4/1	Northbound	U	N/A	N/A	-		-	-	-	132	1	Inf	0.0%
5/1	Eastbound	U	N/A	N/A	-		-	-	-	1594	1	Inf	0.0%
6/1	Westbound	U	N/A	N/A	-		-	-	-	1435	1	Inf	0.0%

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**79**	**26**	**46.4**	**223.2**	**0.0**	**269.6**	-	-	-	-
Unnamed Junction	-	-	**0**	**79**	**26**	**46.4**	**223.2**	**0.0**	**269.6**	-	-	-	-
1/1	391	308	-	-	-	9.8	43.9	-	53.7	494.7	15.1	43.9	59.0
2/1	1213	1213	-	-	-	3.2	4.7	-	7.9	23.5	20.3	4.7	25.0
2/2	106	106	0	79	26	2.0	5.2	0.0	7.1	242.5	4.1	5.2	9.3
3/1	1451	1116	-	-	-	31.4	169.5	-	200.8	498.2	54.2	169.5	223.7
4/1	126	126	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1229	1229	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1388	1388	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -44.4
PRC Over All Lanes (%): -44.4

Total Delay for Signalled Lanes (pcuHr): 269.59
Total Delay Over All Lanes(pcuHr): 269.59

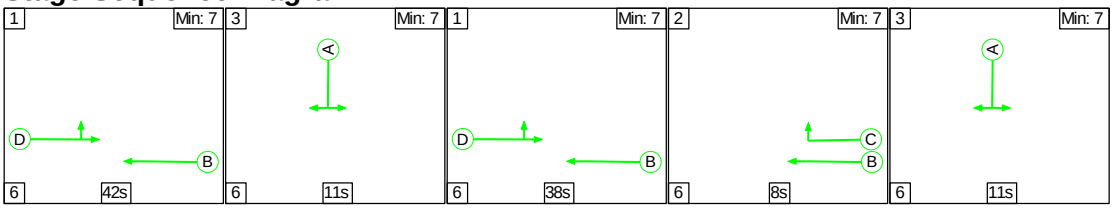
Cycle Time (s): 140

Full Input Data And Results

Full Input Data And Results

Scenario 4: 'PM 2020 Base+Dev' (FG4: 'PM 2020 Base+Dev', Plan 1: 'Staging Plan No. 1')

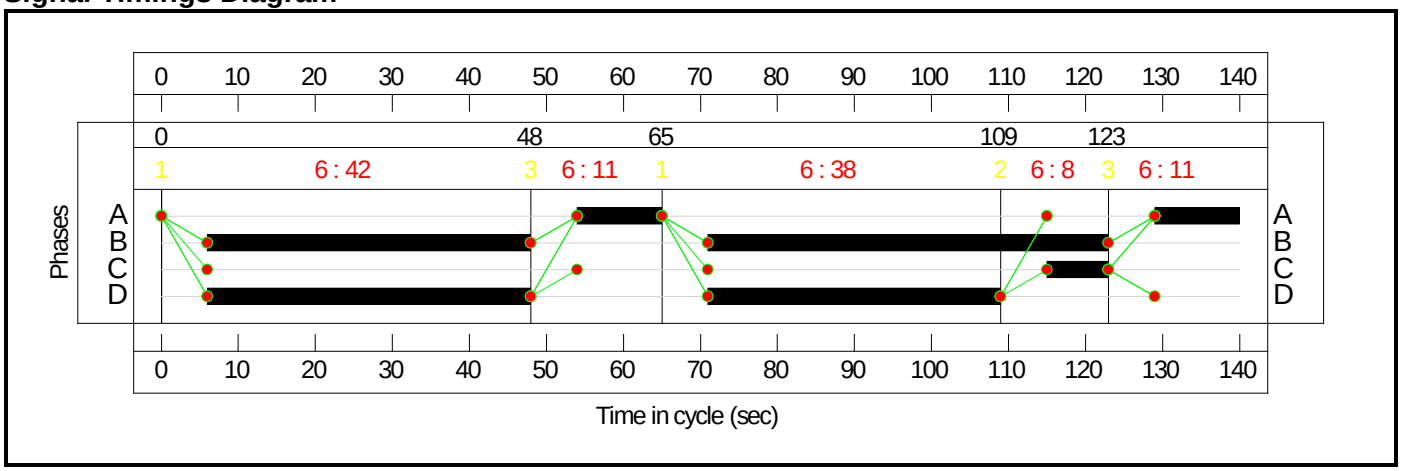
Stage Sequence Diagram



Stage Timings

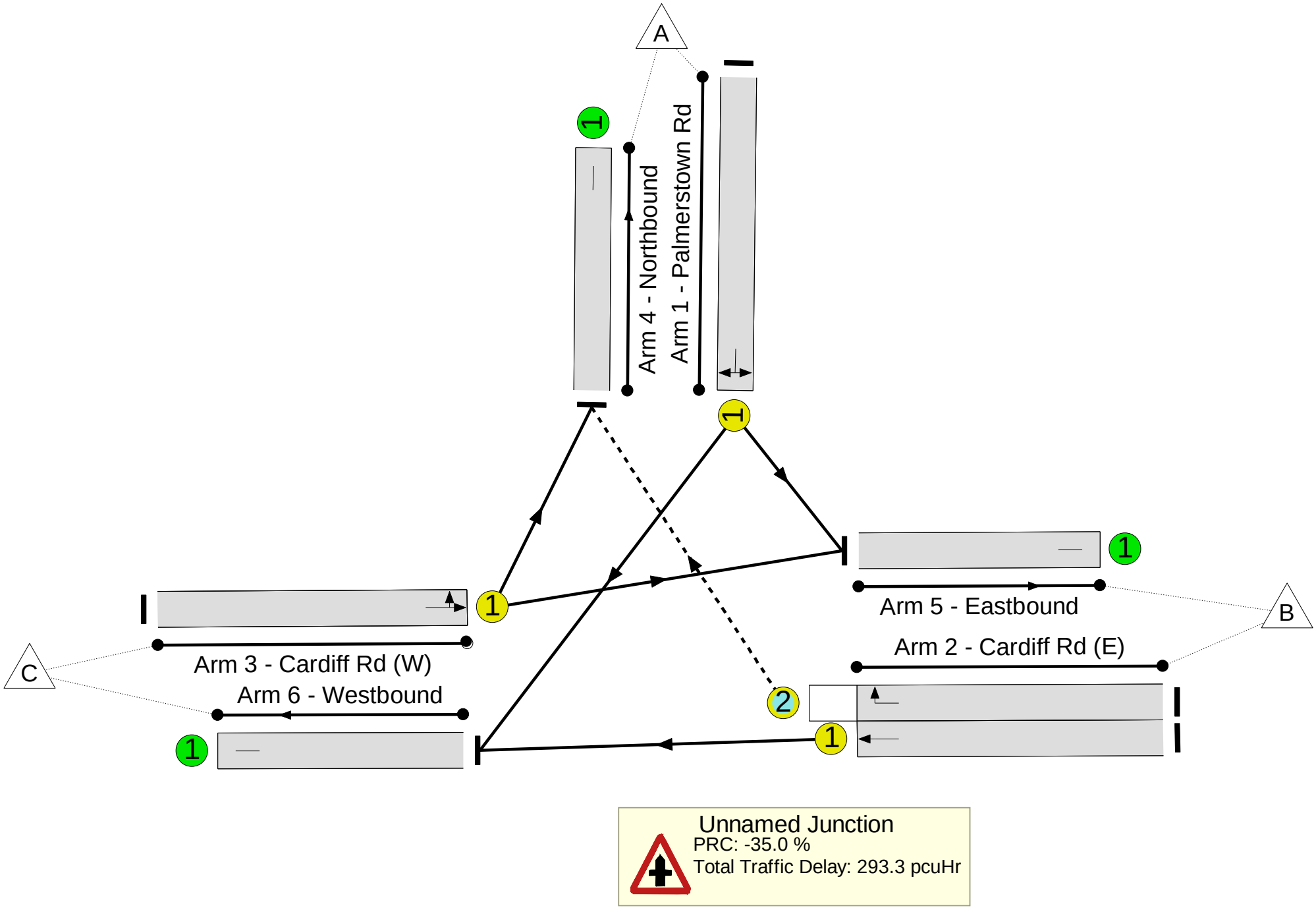
Stage	1	3	1	2	3
Duration	42	11	38	8	11
Change Point	0	48	65	109	123

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A
B
C
1
Arm 4 - Northbound
Arm 1 - Palmerstown Rd
Arm 5 - Eastbound
Arm 2 - Cardiff Rd (E)
Arm 3 - Cardiff Rd (W)
Arm 6 - Westbound
2
Unnamed Junction
PRC: -35.0 %
Total Traffic Delay: 293.3 pcuHr

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**121.5%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**121.5%**
1/1	Palmerstown Rd Left Right	U	N/A	N/A	A		2	22	-	350	1735	297	117.7%
2/1	Cardiff Rd (E) Ahead	U	N/A	N/A	B		2	94	-	1637	1965	1347	121.5%
2/2	Cardiff Rd (E) Right	O	N/A	N/A	C		1	8	-	140	1852	119	117.6%
3/1	Cardiff Rd (W) Left Ahead	U	N/A	N/A	D		2	80	-	1206	1898	1112	108.5%
4/1	Northbound	U	N/A	N/A	-		-	-	-	180	1	Inf	0.0%
5/1	Eastbound	U	N/A	N/A	-		-	-	-	1343	1	Inf	0.0%
6/1	Westbound	U	N/A	N/A	-		-	-	-	1810	1	Inf	0.0%

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**93**	**26**	**50.4**	**242.8**	**0.0**	**293.3**	-	-	-	-
Unnamed Junction	-	-	**0**	**93**	**26**	**50.4**	**242.8**	**0.0**	**293.3**	-	-	-	-
1/1	350	297	-	-	-	7.3	29.3	-	36.5	375.8	11.6	29.3	40.9
2/1	1637	1347	-	-	-	27.8	147.6	-	175.3	385.6	56.6	147.6	204.2
2/2	140	119	0	93	26	3.7	13.1	0.0	16.9	434.0	6.5	13.1	19.7
3/1	1206	1112	-	-	-	11.6	52.9	-	64.5	192.5	30.1	52.9	83.0
4/1	156	156	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1225	1225	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1494	1494	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -35.0
PRC Over All Lanes (%): -35.0

Total Delay for Signalled Lanes (pcuHr): 293.26
Total Delay Over All Lanes(pcuHr): 293.26

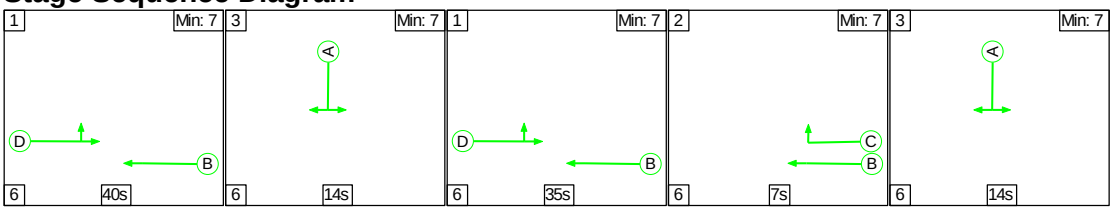
Cycle Time (s): 140

Full Input Data And Results

Full Input Data And Results

Scenario 5: 'AM 2020 Base' (FG5: 'AM Base 2020', Plan 1: 'Staging Plan No. 1')

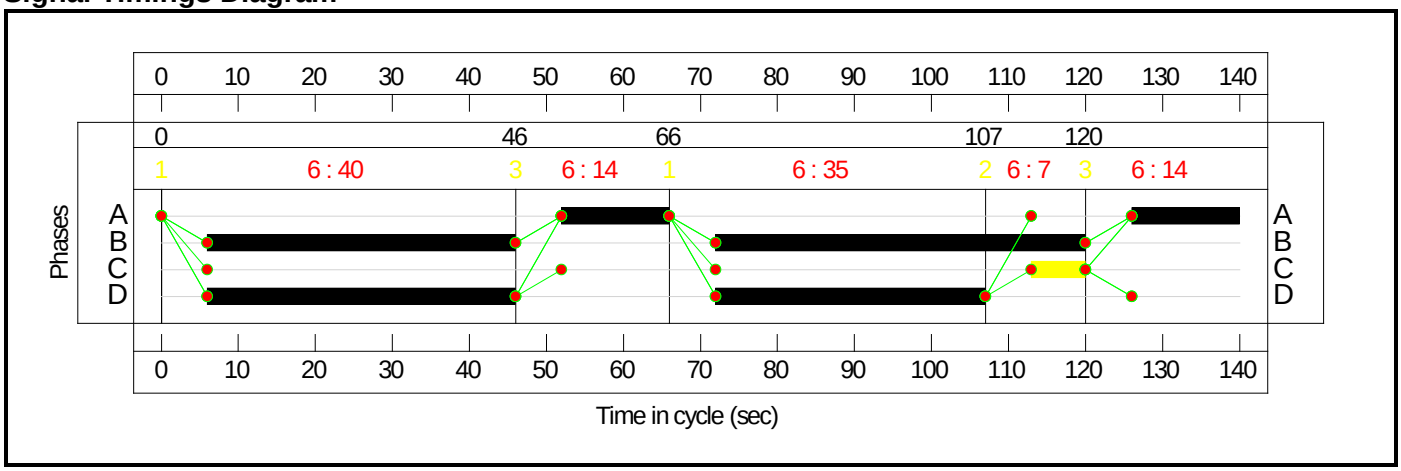
Stage Sequence Diagram



Stage Timings

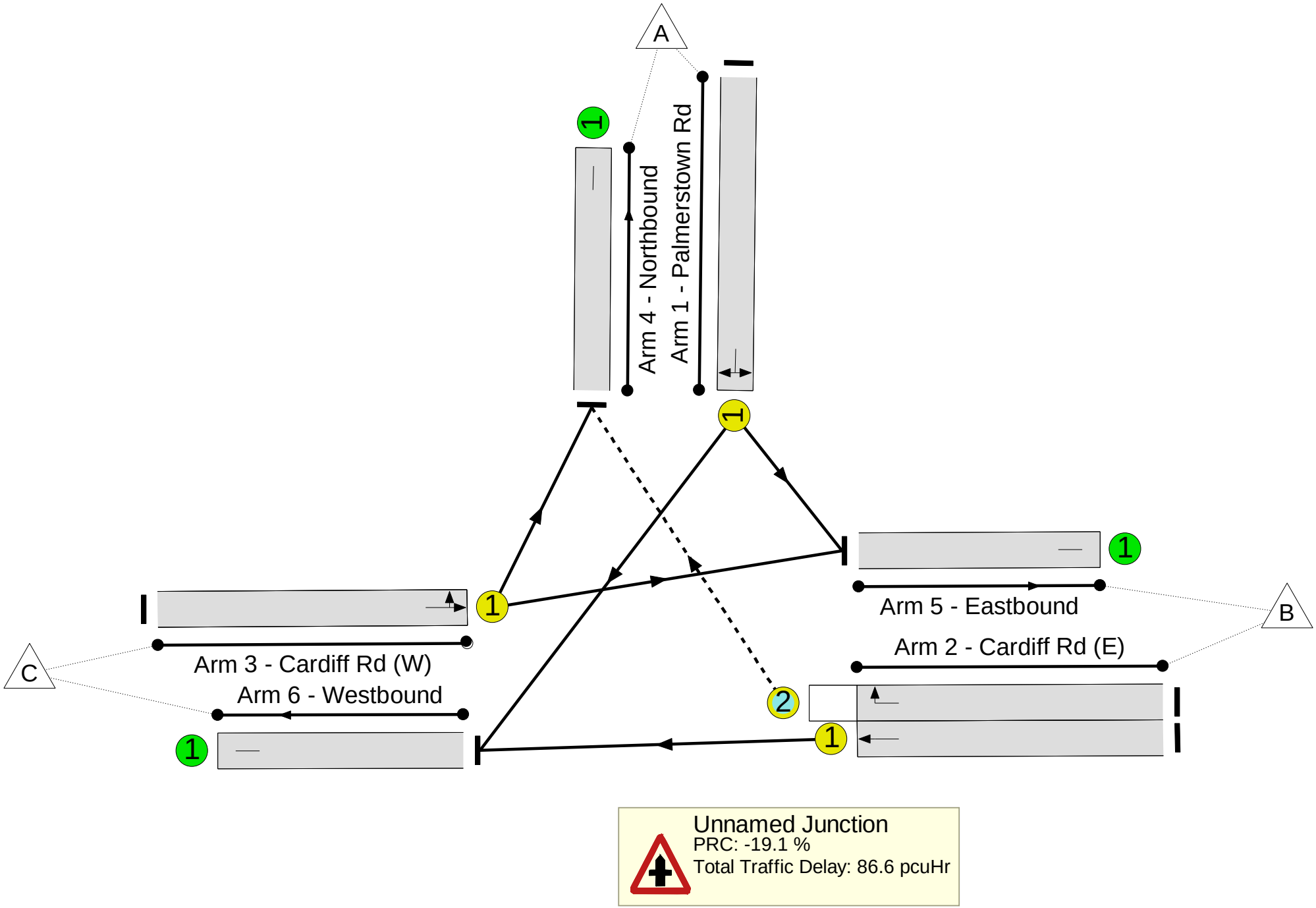
Stage	1	3	1	2	3
Duration	40	14	35	7	14
Change Point	0	46	66	107	120

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A
B
C
Arm 4 - Northbound
Arm 1 - Palmerstown Rd
Arm 5 - Eastbound
Arm 2 - Cardiff Rd (E)
Arm 3 - Cardiff Rd (W)
Arm 6 - Westbound
1
2
Unnamed Junction
PRC: -19.1 %
Total Traffic Delay: 86.6 pcuHr

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**107.2%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**107.2%**
1/1	Palmerstown Rd Left Right	U	N/A	N/A	A		2	28	-	387	1724	369	104.8%
2/1	Cardiff Rd (E) Ahead	U	N/A	N/A	B		2	88	-	1068	1965	1263	84.5%
2/2	Cardiff Rd (E) Right	O	N/A	N/A	C		1	7	-	106	1852	106	100.2%
3/1	Cardiff Rd (W) Left Ahead	U	N/A	N/A	D		2	75	-	1123	1905	1048	107.2%
4/1	Northbound	U	N/A	N/A	-		-	-	-	128	1	Inf	0.0%
5/1	Eastbound	U	N/A	N/A	-		-	-	-	1270	1	Inf	0.0%
6/1	Westbound	U	N/A	N/A	-		-	-	-	1286	1	Inf	0.0%

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**79**	**26**	**19.6**	**67.0**	**0.0**	**86.6**	-	-	-	-
Unnamed Junction	-	-	**0**	**79**	**26**	**19.6**	**67.0**	**0.0**	**86.6**	-	-	-	-
1/1	387	369	-	-	-	4.4	15.2	-	19.6	182.0	9.0	15.2	24.2
2/1	1068	1068	-	-	-	2.9	2.7	-	5.6	18.8	16.0	2.7	18.7
2/2	106	106	0	79	26	2.0	5.2	0.0	7.1	242.6	4.1	5.2	9.3
3/1	1123	1048	-	-	-	10.3	44.0	-	54.3	174.2	27.6	44.0	71.6
4/1	126	126	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1189	1189	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1276	1276	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -19.1
PRC Over All Lanes (%): -19.1

Total Delay for Signalled Lanes (pcuHr): 86.60
Total Delay Over All Lanes(pcuHr): 86.60

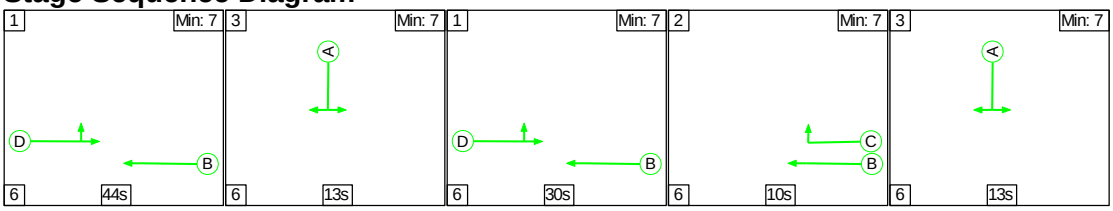
Cycle Time (s): 140

Full Input Data And Results

Full Input Data And Results

Scenario 6: 'PM 2020 Base' (FG6: 'PM Base 2020', Plan 1: 'Staging Plan No. 1')

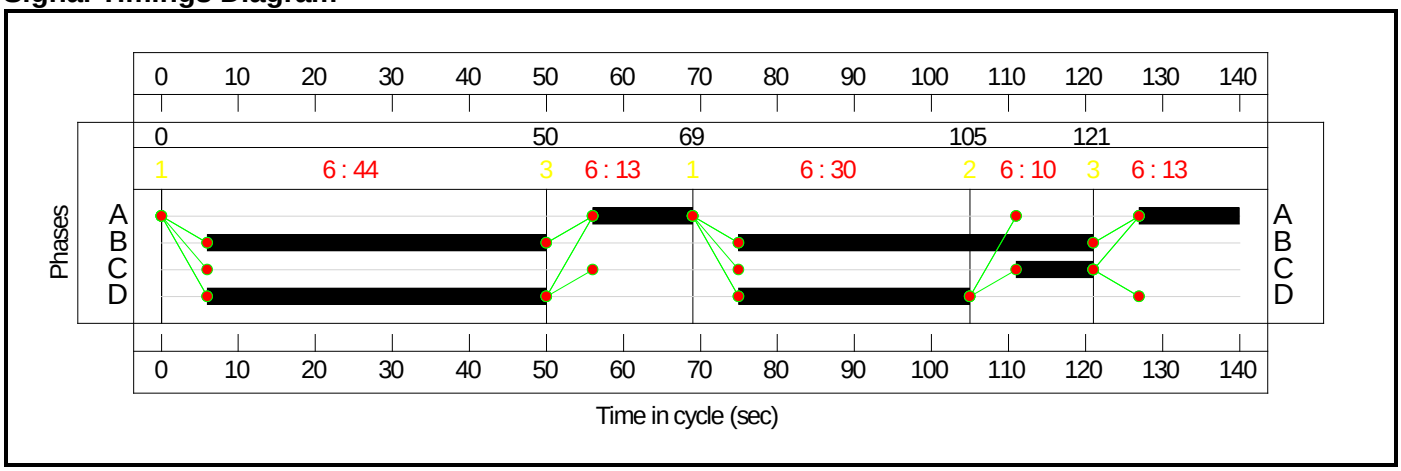
Stage Sequence Diagram



Stage Timings

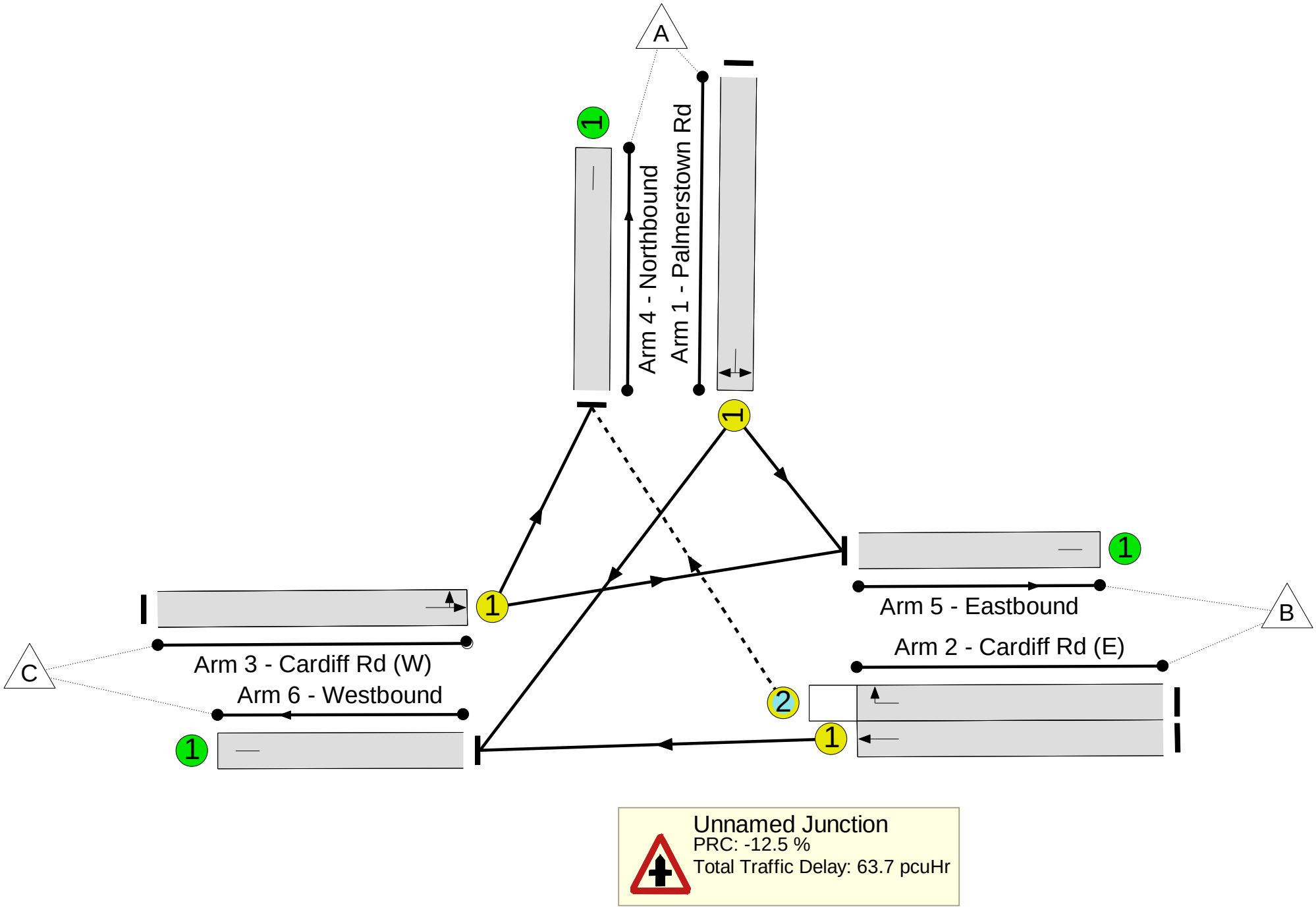
Stage	1	3	1	2	3
Duration	44	13	30	10	13
Change Point	0	50	69	105	121

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A
B
C
1
Arm 4 - Northbound
Arm 1 - Palmerstown Rd
Arm 5 - Eastbound
Arm 2 - Cardiff Rd (E)
Arm 3 - Cardiff Rd (W)
Arm 6 - Westbound
2
Unnamed Junction
PRC: -12.5 %
Total Traffic Delay: 63.7 pcuHr

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**101.3%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**101.3%**
1/1	Palmerstown Rd Left Right	U	N/A	N/A	A		2	26	-	347	1736	347	99.9%
2/1	Cardiff Rd (E) Ahead	U	N/A	N/A	B		2	90	-	1308	1965	1291	101.3%
2/2	Cardiff Rd (E) Right	O	N/A	N/A	C		1	10	-	140	1852	146	96.2%
3/1	Cardiff Rd (W) Left Ahead	U	N/A	N/A	D		2	74	-	1010	1899	1031	98.0%
4/1	Northbound	U	N/A	N/A	-		-	-	-	173	1	Inf	0.0%
5/1	Eastbound	U	N/A	N/A	-		-	-	-	1154	1	Inf	0.0%
6/1	Westbound	U	N/A	N/A	-		-	-	-	1478	1	Inf	0.0%

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**119**	**21**	**15.5**	**48.2**	**0.0**	**63.7**	-	-	-	-
Unnamed Junction	-	-	**0**	**119**	**21**	**15.5**	**48.2**	**0.0**	**63.7**	-	-	-	-
1/1	347	347	-	-	-	2.7	9.3	-	12.0	124.6	6.8	9.3	16.1
2/1	1308	1291	-	-	-	5.6	22.7	-	28.3	78.0	27.1	22.7	49.8
2/2	140	140	0	119	21	2.5	4.7	0.0	7.2	185.1	5.4	4.7	10.1
3/1	1010	1010	-	-	-	4.7	11.5	-	16.2	57.8	23.8	11.5	35.4
4/1	173	173	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1154	1154	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1461	1461	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -12.5
PRC Over All Lanes (%): -12.5

Total Delay for Signalled Lanes (pcuHr): 63.74
Total Delay Over All Lanes(pcuHr): 63.74

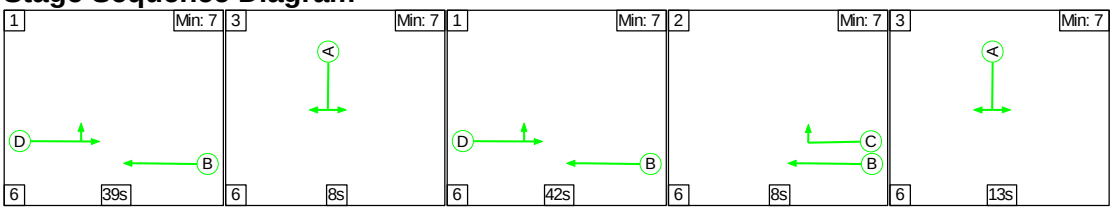
Cycle Time (s): 140

Full Input Data And Results

Full Input Data And Results

Scenario 7: 'PM 2020 Base+Dev+tour' (FG7: 'PM 2020 Base+Dev+tour', Plan 1: 'Staging Plan No. 1')

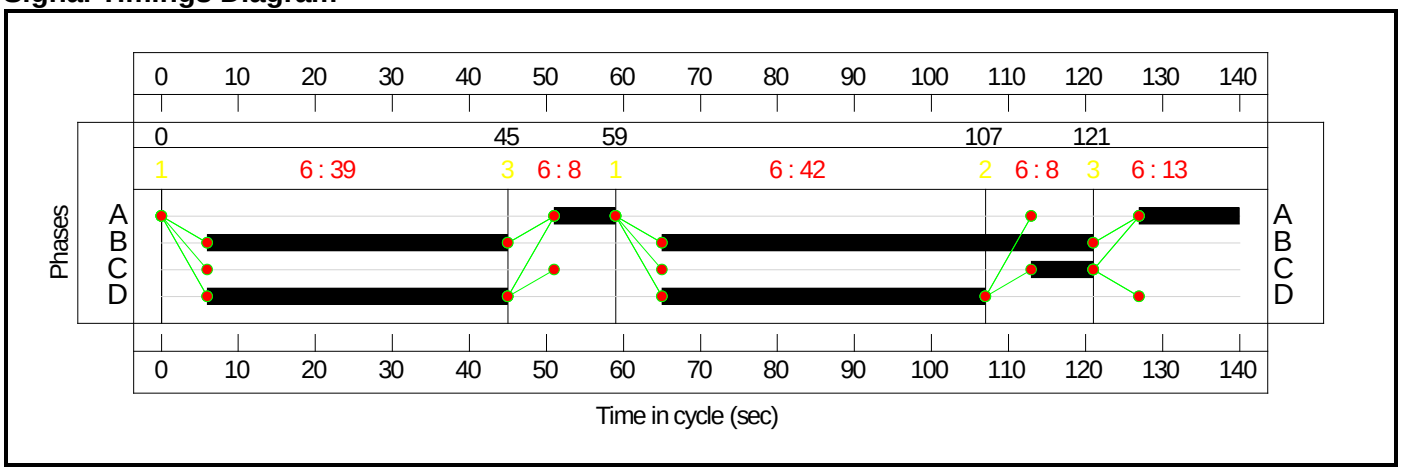
Stage Sequence Diagram



Stage Timings

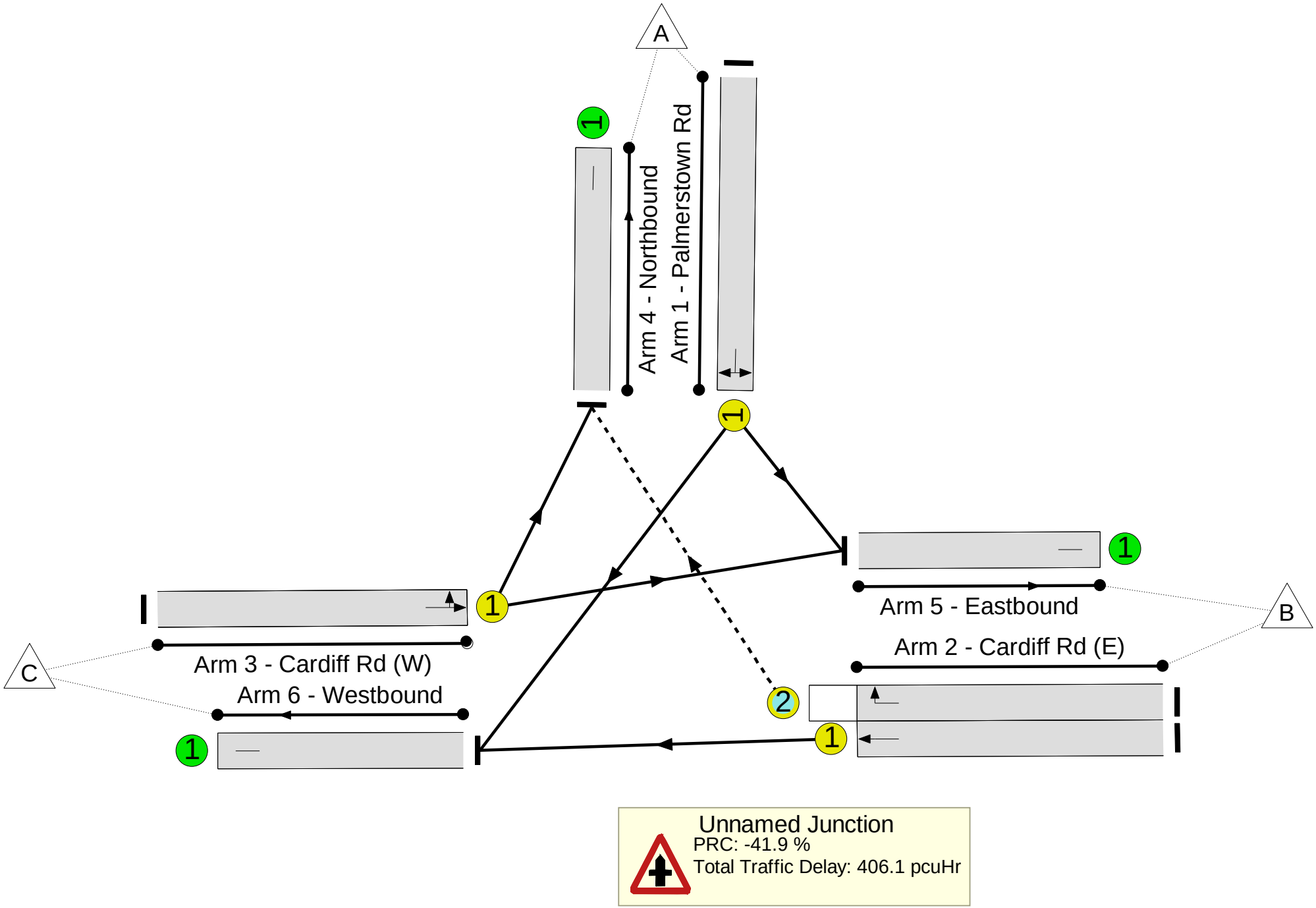
Stage	1	3	1	2	3
Duration	39	8	42	8	13
Change Point	0	45	59	107	121

Signal Timings Diagram



Full Input Data And Results

Network Layout Diagram


A
1
Arm 4 - Northbound
Arm 1 - Palmerstown Rd
1
1
1
Arm 5 - Eastbound
B
Arm 2 - Cardiff Rd (E)
C
Arm 3 - Cardiff Rd (W)
Arm 6 - Westbound
2
1
1
Unnamed Junction
PRC: -41.9 %
Total Traffic Delay: 406.1 pcuHr

Full Input Data And Results

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	-	-	-	-	-	-	-	-	-	-	-	-	**127.7%**
Unnamed Junction	-	-	-	-	-	-	-	-	-	-	-	-	**127.7%**
1/1	Palmerstown Rd Left Right	U	N/A	N/A	A		2	21	-	350	1735	285	122.8%
2/1	Cardiff Rd (E) Ahead	U	N/A	N/A	B		2	95	-	1739	1965	1361	127.7%
2/2	Cardiff Rd (E) Right	O	N/A	N/A	C		1	8	-	140	1852	119	117.6%
3/1	Cardiff Rd (W) Left Ahead	U	N/A	N/A	D		2	81	-	1319	1900	1126	117.1%
4/1	Northbound	U	N/A	N/A	-		-	-	-	180	1	Inf	0.0%
5/1	Eastbound	U	N/A	N/A	-		-	-	-	1456	1	Inf	0.0%
6/1	Westbound	U	N/A	N/A	-		-	-	-	1912	1	Inf	0.0%

Item	Entering (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 Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network	-	-	**0**	**93**	**26**	**67.3**	**338.8**	**0.0**	**406.1**	-	-	-	-
Unnamed Junction	-	-	**0**	**93**	**26**	**67.3**	**338.8**	**0.0**	**406.1**	-	-	-	-
1/1	350	285	-	-	-	8.8	35.0	-	43.8	450.6	14.0	35.0	49.0
2/1	1739	1361	-	-	-	35.9	191.0	-	226.9	469.8	67.4	191.0	258.5
2/2	140	119	0	93	26	3.7	13.1	0.0	16.8	432.3	6.5	13.1	19.6
3/1	1319	1126	-	-	-	18.9	99.6	-	118.5	323.5	37.7	99.6	137.3
4/1	153	153	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	1236	1236	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	1502	1502	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0

C1

PRC for Signalled Lanes (%): -41.9
PRC Over All Lanes (%): -41.9

Total Delay for Signalled Lanes (pcuHr): 406.08
Total Delay Over All Lanes(pcuHr): 406.08

Cycle Time (s): 140

Full Input Data And Results

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
9.Ship Gyratory\The Parade Mini Roundabout\Parade Mini Roundabout.vai"
(drive-on-the-left) at 10:16:40 on Wednesday, 7 April 2010

.FILE PROPERTIES
****

RUN TITLE: Romilly Park Rd_Harbour Rd
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR:
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Harbour Rd (N)
ARM B - Harbour Rd (E)
ARM C - The Parade (sw)
ARM D - St Nicholas Rd (nw)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL
ROAD SURFACE CONDITION: NORMAL

T5

ARM	V (M)	E (M)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.00	8.00	0.00	8.00	10.00	12.00	0.00	0.765	21.306
ARM B	4.90	5.90	15.30	4.90	17.00	16.00	0.00	0.718	22.782
ARM C	3.80	10.00	6.50	3.80	5.00	2.00	0.00	0.621	21.422
ARM D	3.00	3.00	0.00	3.00	5.00	2.00	0.00	0.504	12.488

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM Base 2008

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	3.95	5.93	3.95
ARM B	15.00	45.00	75.00	3.31	4.97	3.31
ARM C	15.00	45.00	75.00	0.93	1.39	0.93
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: AM Base 2008

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.649	0.171	0.180
		0.0	205.0	54.0	57.0
		(0.0)	(5.0)	(0.0)	(15.0)
	ARM B	0.000	0.000	0.045	0.955
		0.0	0.0	12.0	253.0
		(0.0)	(0.0)	(0.0)	(4.0)
	ARM C	0.000	0.149	0.000	0.851
		0.0	11.0	0.0	63.0
		(0.0)	(9.0)	(0.0)	(2.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30								
ARM A	3.97	20.00	0.198	- -	0.0	0.2	3.6	0.062
ARM B	3.33	20.91	0.159	- -	0.0	0.2	2.8	0.057
ARM C	0.93	18.31	0.051	- -	0.0	0.1	0.8	0.058
ARM D	0.00	12.41	0.000	- -	0.0	0.0	0.0	0.000
08.30-08.45								
ARM A	4.73	19.98	0.237	- -	0.2	0.3	4.6	0.066
ARM B	3.97	20.71	0.192	- -	0.2	0.2	3.5	0.060
ARM C	1.11	17.83	0.062	- -	0.1	0.1	1.0	0.060
ARM D	0.00	12.40	0.000	- -	0.0	0.0	0.0	0.000
08.45-09.00								
ARM A	5.80	19.95	0.291	- -	0.3	0.4	6.0	0.071
ARM B	4.86	20.43	0.238	- -	0.2	0.3	4.6	0.064
ARM C	1.36	17.16	0.079	- -	0.1	0.1	1.3	0.063
ARM D	0.00	12.38	0.000	- -	0.0	0.0	0.0	0.000
09.00-09.15								
ARM A	5.80	19.95	0.291	- -	0.4	0.4	6.1	0.071
ARM B	4.86	20.43	0.238	- -	0.3	0.3	4.7	0.064
ARM C	1.36	17.16	0.079	- -	0.1	0.1	1.3	0.063
ARM D	0.00	12.38	0.000	- -	0.0	0.0	0.0	0.000
09.15-09.30								
ARM A	4.73	19.98	0.237	- -	0.4	0.3	4.8	0.066
ARM B	3.97	20.70	0.192	- -	0.3	0.2	3.6	0.060
ARM C	1.11	17.82	0.062	- -	0.1	0.1	1.0	0.060
ARM D	0.00	12.40	0.000	- -	0.0	0.0	0.0	0.000
09.30-09.45								
ARM A	3.97	20.00	0.198	- -	0.3	0.2	3.8	0.062
ARM B	3.33	20.90	0.159	- -	0.2	0.2	2.9	0.057
ARM C	0.93	18.29	0.051	- -	0.1	0.1	0.8	0.058
ARM D	0.00	12.41	0.000	- -	0.0	0.0	0.0	0.000

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

08.30	0.2
08.45	0.3
09.00	0.4
09.15	0.4
09.30	0.3
09.45	0.2

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.2
08.45	0.2
09.00	0.3
09.15	0.3
09.30	0.2
09.45	0.2

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1
09.45	0.1

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	435.0	290.0	28.8	0.07	28.8	0.07
B	364.8	243.2	22.0	0.06	22.0	0.06
C	101.9	67.9	6.1	0.06	6.1	0.06
D	0.0	0.0	0.0	0.00	0.0	0.00
ALL	901.6	601.0	57.0	0.06	57.0	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
9.Ship Gyratory\The Parade Mini Roundabout\Parade Mini Roundabout.vai"
(drive-on-the-left) at 10:17:08 on Wednesday, 7 April 2010

.FILE PROPERTIES
****

RUN TITLE: Romilly Park Rd_Harbour Rd
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR:
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Harbour Rd (N)
ARM B - Harbour Rd (E)
ARM C - The Parade (sw)
ARM D - St Nicholas Rd (nw)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL
ROAD SURFACE CONDITION: NORMAL

T5

ARM	V (M)	E (M)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.00	8.00	0.00	8.00	10.00	12.00	0.00	0.765	21.306
ARM B	4.90	5.90	15.30	4.90	17.00	16.00	0.00	0.718	22.782
ARM C	3.80	10.00	6.50	3.80	5.00	2.00	0.00	0.621	21.422
ARM D	3.00	3.00	0.00	3.00	5.00	2.00	0.00	0.504	12.488

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM Base 2020

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	4.60	6.90	4.60
ARM B	15.00	45.00	75.00	3.86	5.79	3.86
ARM C	15.00	45.00	75.00	1.08	1.61	1.08
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: AM Base 2020

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.647	0.174	0.179
		0.0	238.0	64.0	66.0
		(0.0)	(5.0)	(0.0)	(15.0)
	ARM B	0.000	0.000	0.045	0.955
		0.0	0.0	14.0	295.0
		(0.0)	(0.0)	(0.0)	(4.0)
	ARM C	0.000	0.151	0.000	0.849
		0.0	13.0	0.0	73.0
		(0.0)	(9.0)	(0.0)	(2.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30								
ARM A	4.62	19.99	0.231	- -	0.0	0.3	4.4	0.065
ARM B	3.88	20.73	0.187	- -	0.0	0.2	3.4	0.059
ARM C	1.08	17.89	0.060	- -	0.0	0.1	0.9	0.059
ARM D	0.00	12.40	0.000	- -	0.0	0.0	0.0	0.000
08.30-08.45								
ARM A	5.51	19.96	0.276	- -	0.3	0.4	5.6	0.069
ARM B	4.63	20.49	0.226	- -	0.2	0.3	4.3	0.063
ARM C	1.29	17.34	0.074	- -	0.1	0.1	1.2	0.062
ARM D	0.00	12.38	0.000	- -	0.0	0.0	0.0	0.000
08.45-09.00								
ARM A	6.75	19.93	0.339	- -	0.4	0.5	7.5	0.076
ARM B	5.67	20.17	0.281	- -	0.3	0.4	5.7	0.069
ARM C	1.58	16.56	0.095	- -	0.1	0.1	1.5	0.067
ARM D	0.00	12.36	0.000	- -	0.0	0.0	0.0	0.000
09.00-09.15								
ARM A	6.75	19.93	0.339	- -	0.5	0.5	7.6	0.076
ARM B	5.67	20.17	0.281	- -	0.4	0.4	5.8	0.069
ARM C	1.58	16.56	0.095	- -	0.1	0.1	1.6	0.067
ARM D	0.00	12.36	0.000	- -	0.0	0.0	0.0	0.000
09.15-09.30								
ARM A	5.51	19.96	0.276	- -	0.5	0.4	5.9	0.069
ARM B	4.63	20.49	0.226	- -	0.4	0.3	4.5	0.063
ARM C	1.29	17.33	0.074	- -	0.1	0.1	1.2	0.062
ARM D	0.00	12.38	0.000	- -	0.0	0.0	0.0	0.000
09.30-09.45								
ARM A	4.62	19.99	0.231	- -	0.4	0.3	4.6	0.065
ARM B	3.88	20.73	0.187	- -	0.3	0.2	3.5	0.059
ARM C	1.08	17.89	0.060	- -	0.1	0.1	1.0	0.059
ARM D	0.00	12.40	0.000	- -	0.0	0.0	0.0	0.000

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

08.30	0.3
08.45	0.4
09.00	0.5 *
09.15	0.5 *
09.30	0.4
09.45	0.3

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.2
08.45	0.3
09.00	0.4
09.15	0.4
09.30	0.3
09.45	0.2

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1
09.45	0.1

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	506.5	337.7	35.6	0.07	35.6	0.07
B	425.3	283.5	27.2	0.06	27.2	0.06
C	118.4	78.9	7.5	0.06	7.5	0.06
D	0.0	0.0	0.0	0.00	0.0	0.00
ALL	1050.2	700.1	70.3	0.07	70.3	0.07

T75

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
9.Ship Gyratory\The Parade Mini Roundabout\Parade Mini Roundabout.vai"
(drive-on-the-left) at 14:52:28 on Monday, 12 April 2010

.FILE PROPERTIES
****

RUN TITLE: Romilly Park Rd_Harbour Rd
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR:
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Harbour Rd (N)
ARM B - Harbour Rd (E)
ARM C - The Parade (sw)
ARM D - St Nicholas Rd (nw)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL
ROAD SURFACE CONDITION: NORMAL

T5

ARM	V (M)	E (M)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.00	8.00	0.00	8.00	10.00	12.00	0.00	0.765	21.306
ARM B	4.90	5.90	15.30	4.90	17.00	16.00	0.00	0.718	22.782
ARM C	3.80	10.00	6.50	3.80	5.00	2.00	0.00	0.621	21.422
ARM D	3.00	3.00	0.00	3.00	5.00	2.00	0.00	0.504	12.488

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2020 With Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	6.41	9.62	6.41
ARM B	15.00	45.00	75.00	5.59	8.38	5.59
ARM C	15.00	45.00	75.00	1.40	2.10	1.40
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: AM 2020 With Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.626	0.131	0.244
		0.0	321.0	67.0	125.0
		(0.0)	(5.0)	(0.0)	(15.0)
	ARM B	0.000	0.000	0.058	0.942
		0.0	0.0	26.0	421.0
		(0.0)	(0.0)	(0.0)	(4.0)
	ARM C	0.000	0.313	0.000	0.688
		0.0	35.0	0.0	77.0
		(0.0)	(9.0)	(0.0)	(2.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	6.44	19.61	0.328	- -	0.0	0.5	7.1	-	0.076
ARM B	5.61	20.13	0.279	- -	0.0	0.4	5.6	-	0.069
ARM C	1.41	16.23	0.087	- -	0.0	0.1	1.4	-	0.067
ARM D	0.00	12.25	0.000	- -	0.0	0.0	0.0	-	0.000
08.30-08.45									
ARM A	7.69	19.54	0.393	- -	0.5	0.6	9.4	-	0.084
ARM B	6.70	19.77	0.339	- -	0.4	0.5	7.5	-	0.076
ARM C	1.68	15.38	0.109	- -	0.1	0.1	1.8	-	0.073
ARM D	0.00	12.20	0.000	- -	0.0	0.0	0.0	-	0.000
08.45-09.00									
ARM A	9.41	19.45	0.484	- -	0.6	0.9	13.5	-	0.099
ARM B	8.20	19.28	0.425	- -	0.5	0.7	10.7	-	0.090
ARM C	2.06	14.22	0.145	- -	0.1	0.2	2.5	-	0.082
ARM D	0.00	12.14	0.000	- -	0.0	0.0	0.0	-	0.000
09.00-09.15									
ARM A	9.41	19.45	0.484	- -	0.9	0.9	13.9	-	0.100
ARM B	8.20	19.28	0.426	- -	0.7	0.7	11.0	-	0.090
ARM C	2.06	14.20	0.145	- -	0.2	0.2	2.5	-	0.082
ARM D	0.00	12.14	0.000	- -	0.0	0.0	0.0	-	0.000
09.15-09.30									
ARM A	7.69	19.54	0.393	- -	0.9	0.7	10.1	-	0.085
ARM B	6.70	19.76	0.339	- -	0.7	0.5	7.9	-	0.077
ARM C	1.68	15.36	0.109	- -	0.2	0.1	1.9	-	0.073
ARM D	0.00	12.20	0.000	- -	0.0	0.0	0.0	-	0.000
09.30-09.45									
ARM A	6.44	19.61	0.328	- -	0.7	0.5	7.5	-	0.076
ARM B	5.61	20.12	0.279	- -	0.5	0.4	5.9	-	0.069
ARM C	1.41	16.21	0.087	- -	0.1	0.1	1.5	-	0.068
ARM D	0.00	12.25	0.000	- -	0.0	0.0	0.0	-	0.000

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

08.30	0.5	
08.45	0.6	*
09.00	0.9	*
09.15	0.9	*
09.30	0.7	*
09.45	0.5	

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.4	
08.45	0.5	*
09.00	0.7	*
09.15	0.7	*
09.30	0.5	*
09.45	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.1
09.00	0.2
09.15	0.2
09.30	0.1
09.45	0.1

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	706.1	470.7	61.5	0.09	61.5	0.09
B	615.3	410.2	48.7	0.08	48.7	0.08
C	154.2	102.8	11.5	0.07	11.5	0.07
D	0.0	0.0	0.0	0.00	0.0	0.00
ALL	1475.5	983.7	121.7	0.08	121.8	0.08

T75

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
9.Ship Gyratory\The Parade Mini Roundabout\Parade Mini Roundabout.vai"
(drive-on-the-left) at 14:54:14 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Romilly Park Rd_Harbour Rd
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR:
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Harbour Rd (N)
ARM B - Harbour Rd (E)
ARM C - The Parade (sw)
ARM D - St Nicholas Rd (nw)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL
ROAD SURFACE CONDITION: NORMAL

T5

ARM	V (M)	E (M)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.00	8.00	0.00	8.00	10.00	12.00	0.00	0.765	21.306
ARM B	4.90	5.90	15.30	4.90	17.00	16.00	0.00	0.718	22.782
ARM C	3.80	10.00	6.50	3.80	5.00	2.00	0.00	0.621	21.422
ARM D	3.00	3.00	0.00	3.00	5.00	2.00	0.00	0.504	12.488

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM Base 2008

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	TO RISE					
ARM A	15.00	45.00	75.00	6.66	9.99	6.66
ARM B	15.00	45.00	75.00	5.05	7.58	5.05
ARM C	15.00	45.00	75.00	0.55	0.83	0.55
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: PM Base 2008

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.604	0.227	0.169
		0.0	322.0	121.0	90.0
		(0.0)	(2.0)	(1.0)	(5.0)
	ARM B	0.000	0.000	0.067	0.933
		0.0	0.0	27.0	377.0
		(0.0)	(0.0)	(0.0)	(2.0)
	ARM C	0.000	0.227	0.000	0.773
		0.0	10.0	0.0	34.0
		(0.0)	(0.0)	(0.0)	(6.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30								
ARM A	6.69	20.74	0.322	- -	0.0	0.5	6.9	0.071
ARM B	5.07	20.46	0.248	- -	0.0	0.3	4.8	0.065
ARM C	0.55	16.92	0.033	- -	0.0	0.0	0.5	0.061
ARM D	0.00	12.42	0.000	- -	0.0	0.0	0.0	0.000
16.30-16.45								
ARM A	7.99	20.72	0.385	- -	0.5	0.6	9.1	0.078
ARM B	6.05	20.08	0.301	- -	0.3	0.4	6.3	0.071
ARM C	0.66	16.22	0.041	- -	0.0	0.0	0.6	0.064
ARM D	0.00	12.41	0.000	- -	0.0	0.0	0.0	0.000
16.45-17.00								
ARM A	9.78	20.69	0.473	- -	0.6	0.9	12.9	0.091
ARM B	7.41	19.56	0.379	- -	0.4	0.6	8.9	0.082
ARM C	0.81	15.27	0.053	- -	0.0	0.1	0.8	0.069
ARM D	0.00	12.40	0.000	- -	0.0	0.0	0.0	0.000
17.00-17.15								
ARM A	9.78	20.69	0.473	- -	0.9	0.9	13.3	0.092
ARM B	7.41	19.56	0.379	- -	0.6	0.6	9.1	0.082
ARM C	0.81	15.26	0.053	- -	0.1	0.1	0.8	0.069
ARM D	0.00	12.40	0.000	- -	0.0	0.0	0.0	0.000
17.15-17.30								
ARM A	7.99	20.72	0.385	- -	0.9	0.6	9.7	0.079
ARM B	6.05	20.07	0.302	- -	0.6	0.4	6.7	0.071
ARM C	0.66	16.21	0.041	- -	0.1	0.0	0.6	0.064
ARM D	0.00	12.41	0.000	- -	0.0	0.0	0.0	0.000
17.30-17.45								
ARM A	6.69	20.74	0.323	- -	0.6	0.5	7.3	0.071
ARM B	5.07	20.44	0.248	- -	0.4	0.3	5.1	0.065
ARM C	0.55	16.90	0.033	- -	0.0	0.0	0.5	0.061
ARM D	0.00	12.42	0.000	- -	0.0	0.0	0.0	0.000

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.6	*
17.00	0.9	*
17.15	0.9	*
17.30	0.6	*
17.45	0.5	

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.4	
17.00	0.6	*
17.15	0.6	*
17.30	0.4	
17.45	0.3	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.1
17.15	0.1
17.30	0.0
17.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	733.6	489.1	59.4	0.08	59.4	0.08
B	556.1	370.7	40.8	0.07	40.8	0.07
C	60.6	40.4	3.9	0.07	3.9	0.07
D	0.0	0.0	0.0	0.00	0.0	0.00
ALL	1350.3	900.2	104.1	0.08	104.1	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
9.Ship Gyratory\The Parade Mini Roundabout\Parade Mini Roundabout.vai"
(drive-on-the-left) at 14:54:38 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Romilly Park Rd_Harbour Rd
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR:
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Harbour Rd (N)
ARM B - Harbour Rd (E)
ARM C - The Parade (sw)
ARM D - St Nicholas Rd (nw)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL
ROAD SURFACE CONDITION: NORMAL

T5

ARM	V (M)	E (M)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.00	8.00	0.00	8.00	10.00	12.00	0.00	0.765	21.306
ARM B	4.90	5.90	15.30	4.90	17.00	16.00	0.00	0.718	22.782
ARM C	3.80	10.00	6.50	3.80	5.00	2.00	0.00	0.621	21.422
ARM D	3.00	3.00	0.00	3.00	5.00	2.00	0.00	0.504	12.488

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM Base 2020

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO PEAK TO RISE	FROM START WHEN IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00		7.75	11.63	7.75
ARM B	15.00	45.00	75.00		5.88	8.81	5.88
ARM C	15.00	45.00	75.00		0.64	0.96	0.64
ARM D	15.00	45.00	75.00		0.00	0.00	0.00

DEMAND SET TITLE: PM Base 2020

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.603	0.227	0.169
		0.0	374.0	141.0	105.0
		(0.0)	(2.0)	(1.0)	(5.0)
	ARM B	0.000	0.000	0.066	0.934
		0.0	0.0	31.0	439.0
		(0.0)	(0.0)	(0.0)	(2.0)
	ARM C	0.000	0.235	0.000	0.765
		0.0	12.0	0.0	39.0
		(0.0)	(0.0)	(0.0)	(6.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	7.78	20.72	0.375	- -	-	0.0	0.6	8.7	- 0.077
ARM B	5.90	20.14	0.293	- -	-	0.0	0.4	6.0	- 0.070
ARM C	0.64	16.35	0.039	- -	-	0.0	0.0	0.6	- 0.064
ARM D	0.00	12.41	0.000	- -	-	0.0	0.0	0.0	- 0.000
16.30-16.45									
ARM A	9.29	20.70	0.449	- -	-	0.6	0.8	11.8	- 0.087
ARM B	7.04	19.70	0.357	- -	-	0.4	0.6	8.1	- 0.079
ARM C	0.76	15.53	0.049	- -	-	0.0	0.1	0.8	- 0.068
ARM D	0.00	12.40	0.000	- -	-	0.0	0.0	0.0	- 0.000
16.45-17.00									
ARM A	11.38	20.67	0.551	- -	-	0.8	1.2	17.5	- 0.107
ARM B	8.62	19.10	0.452	- -	-	0.6	0.8	11.9	- 0.095
ARM C	0.94	14.42	0.065	- -	-	0.1	0.1	1.0	- 0.074
ARM D	0.00	12.38	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.00-17.15									
ARM A	11.38	20.67	0.551	- -	-	1.2	1.2	18.2	- 0.108
ARM B	8.62	19.09	0.452	- -	-	0.8	0.8	12.3	- 0.096
ARM C	0.94	14.41	0.065	- -	-	0.1	0.1	1.0	- 0.074
ARM D	0.00	12.38	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.15-17.30									
ARM A	9.29	20.70	0.449	- -	-	1.2	0.8	12.7	- 0.088
ARM B	7.04	19.69	0.358	- -	-	0.8	0.6	8.6	- 0.079
ARM C	0.76	15.51	0.049	- -	-	0.1	0.1	0.8	- 0.068
ARM D	0.00	12.40	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.30-17.45									
ARM A	7.78	20.72	0.375	- -	-	0.8	0.6	9.3	- 0.077
ARM B	5.90	20.12	0.293	- -	-	0.6	0.4	6.4	- 0.070
ARM C	0.64	16.32	0.039	- -	-	0.1	0.0	0.6	- 0.064
ARM D	0.00	12.41	0.000	- -	-	0.0	0.0	0.0	- 0.000

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

16.30	0.6	*
16.45	0.8	*
17.00	1.2	*
17.15	1.2	*
17.30	0.8	*
17.45	0.6	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.6	*
17.00	0.8	*
17.15	0.8	*
17.30	0.6	*
17.45	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	853.4	568.9	78.1	0.09	78.1	0.09
B	646.9	431.3	53.3	0.08	53.3	0.08
C	70.2	46.8	4.8	0.07	4.8	0.07
D	0.0	0.0	0.0	0.00	0.0	0.00
ALL	1570.5	1047.0	136.2	0.09	136.2	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
9.Ship Gyratory\The Parade Mini Roundabout\Parade Mini Roundabout.vai"
(drive-on-the-left) at 15:03:09 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Romilly Park Rd_Harbour Rd
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR:
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Harbour Rd (N)
ARM B - Harbour Rd (E)
ARM C - The Parade (sw)
ARM D - St Nicholas Rd (nw)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL
ROAD SURFACE CONDITION: NORMAL

T5

ARM	V (M)	E (M)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.00	8.00	0.00	8.00	10.00	12.00	0.00	0.765	21.306
ARM B	4.90	5.90	15.30	4.90	17.00	16.00	0.00	0.718	22.782
ARM C	3.80	10.00	6.50	3.80	5.00	2.00	0.00	0.621	21.422
ARM D	3.00	3.00	0.00	3.00	5.00	2.00	0.00	0.504	12.488

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM Base 2020+tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	10.31	15.47	10.31
ARM B	15.00	45.00	75.00	8.81	13.22	8.81
ARM C	15.00	45.00	75.00	0.64	0.96	0.64

ARM	D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: PM Base 2020+tourism

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.702	0.171	0.127
		0.0	579.0	141.0	105.0
		(0.0)	(2.0)	(1.0)	(5.0)
	ARM B	0.000	0.000	0.044	0.956
		0.0	0.0	31.0	674.0
		(0.0)	(0.0)	(0.0)	(2.0)
	ARM C	0.000	0.235	0.000	0.765
		0.0	12.0	0.0	39.0
		(0.0)	(0.0)	(0.0)	(6.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	10.35	20.73	0.499	- -	-	0.0	1.0	14.2	- 0.095
ARM B	8.85	20.13	0.439	- -	-	0.0	0.8	11.2	- 0.088
ARM C	0.64	14.58	0.044	- -	-	0.0	0.0	0.7	- 0.072
ARM D	0.00	12.41	0.000	- -	-	0.0	0.0	0.0	- 0.000
16.30-16.45									
ARM A	12.36	20.71	0.597	- -	-	1.0	1.5	20.9	- 0.119
ARM B	10.56	19.69	0.536	- -	-	0.8	1.1	16.5	- 0.109
ARM C	0.76	13.41	0.057	- -	-	0.0	0.1	0.9	- 0.079
ARM D	0.00	12.40	0.000	- -	-	0.0	0.0	0.0	- 0.000
16.45-17.00									
ARM A	15.14	20.68	0.732	- -	-	1.5	2.6	36.6	- 0.176
ARM B	12.94	19.10	0.677	- -	-	1.1	2.0	28.7	- 0.159
ARM C	0.94	11.84	0.079	- -	-	0.1	0.1	1.3	- 0.092
ARM D	0.00	12.38	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.00-17.15									
ARM A	15.14	20.68	0.732	- -	-	2.6	2.7	39.8	- 0.180
ARM B	12.94	19.09	0.678	- -	-	2.0	2.1	30.8	- 0.162
ARM C	0.94	11.80	0.079	- -	-	0.1	0.1	1.3	- 0.092
ARM D	0.00	12.38	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.15-17.30									
ARM A	12.36	20.71	0.597	- -	-	2.7	1.5	23.8	- 0.122
ARM B	10.56	19.67	0.537	- -	-	2.1	1.2	18.4	- 0.111
ARM C	0.76	13.35	0.057	- -	-	0.1	0.1	0.9	- 0.079
ARM D	0.00	12.40	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.30-17.45									
ARM A	10.35	20.73	0.499	- -	-	1.5	1.0	15.7	- 0.097
ARM B	8.85	20.11	0.440	- -	-	1.2	0.8	12.3	- 0.089
ARM C	0.64	14.53	0.044	- -	-	0.1	0.0	0.7	- 0.072
ARM D	0.00	12.41	0.000	- -	-	0.0	0.0	0.0	- 0.000

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

16.30	1.0	*
16.45	1.5	*
17.00	2.6	***
17.15	2.7	***
17.30	1.5	**
17.45	1.0	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.8	*
16.45	1.1	*
17.00	2.0	**
17.15	2.1	**
17.30	1.2	*
17.45	0.8	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1135.6	757.0	151.0	0.13	151.0	0.13
B	970.4	646.9	118.0	0.12	118.0	0.12
C	70.2	46.8	5.7	0.08	5.7	0.08
D	0.0	0.0	0.0	0.00	0.0	0.00
ALL	2176.1	1450.8	274.7	0.13	274.7	0.13

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
9.Ship Gyratory\The Parade Mini Roundabout\Parade Mini Roundabout.vai"
(drive-on-the-left) at 14:55:12 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Romilly Park Rd_Harbour Rd
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR:
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Harbour Rd (N)
ARM B - Harbour Rd (E)
ARM C - The Parade (sw)
ARM D - St Nicholas Rd (nw)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL
ROAD SURFACE CONDITION: NORMAL

T5

ARM	V (M)	E (M)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.00	8.00	0.00	8.00	10.00	12.00	0.00	0.765	21.306
ARM B	4.90	5.90	15.30	4.90	17.00	16.00	0.00	0.718	22.782
ARM C	3.80	10.00	6.50	3.80	5.00	2.00	0.00	0.621	21.422
ARM D	3.00	3.00	0.00	3.00	5.00	2.00	0.00	0.504	12.488

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 With Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE TO RISE	AT TOP IS REACHED	AFTER FALLING
ARM A	15.00	45.00	75.00	9.76	14.64	9.76
ARM B	15.00	45.00	75.00	7.76	11.64	7.76
ARM C	15.00	45.00	75.00	0.82	1.24	0.82
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: PM 2020 With Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.621	0.188	0.191
		0.0	485.0	147.0	149.0
		(0.0)	(2.0)	(1.0)	(5.0)
	ARM B	0.000	0.000	0.098	0.902
		0.0	0.0	61.0	560.0
		(0.0)	(0.0)	(0.0)	(2.0)
	ARM C	0.000	0.364	0.000	0.636
		0.0	24.0	0.0	42.0
		(0.0)	(0.0)	(0.0)	(6.0)
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30								
ARM A	9.80	20.59	0.476	- -	0.0	0.9	12.9	0.092
ARM B	7.79	19.69	0.396	- -	0.0	0.6	9.4	0.083
ARM C	0.83	15.21	0.054	- -	0.0	0.1	0.8	0.069
ARM D	0.00	12.34	0.000	- -	0.0	0.0	0.0	0.000
16.30-16.45								
ARM A	11.70	20.54	0.570	- -	0.9	1.3	18.8	0.113
ARM B	9.30	19.16	0.486	- -	0.6	0.9	13.6	0.101
ARM C	0.99	14.13	0.070	- -	0.1	0.1	1.1	0.076
ARM D	0.00	12.31	0.000	- -	0.0	0.0	0.0	0.000
16.45-17.00								
ARM A	14.33	20.48	0.700	- -	1.3	2.3	31.8	0.159
ARM B	11.40	18.45	0.618	- -	0.9	1.6	22.5	0.140
ARM C	1.21	12.68	0.095	- -	0.1	0.1	1.5	0.087
ARM D	0.00	12.27	0.000	- -	0.0	0.0	0.0	0.000
17.00-17.15								
ARM A	14.33	20.48	0.700	- -	2.3	2.3	34.1	0.163
ARM B	11.40	18.43	0.618	- -	1.6	1.6	23.9	0.142
ARM C	1.21	12.65	0.096	- -	0.1	0.1	1.6	0.087
ARM D	0.00	12.27	0.000	- -	0.0	0.0	0.0	0.000
17.15-17.30								
ARM A	11.70	20.54	0.570	- -	2.3	1.3	21.1	0.115
ARM B	9.30	19.14	0.486	- -	1.6	1.0	14.9	0.103
ARM C	0.99	14.09	0.070	- -	0.1	0.1	1.2	0.076
ARM D	0.00	12.31	0.000	- -	0.0	0.0	0.0	0.000
17.30-17.45								
ARM A	9.80	20.58	0.476	- -	1.3	0.9	14.2	0.093
ARM B	7.79	19.67	0.396	- -	1.0	0.7	10.2	0.084
ARM C	0.83	15.16	0.055	- -	0.1	0.1	0.9	0.070
ARM D	0.00	12.34	0.000	- -	0.0	0.0	0.0	0.000

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

16.30	0.9 *
16.45	1.3 *
17.00	2.3 **
17.15	2.3 **
17.30	1.3 *
17.45	0.9 *

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.6 *
16.45	0.9 *
17.00	1.6 **
17.15	1.6 **
17.30	1.0 *
17.45	0.7 *

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1075.0	716.7	133.0	0.12	133.0	0.12
B	854.8	569.8	94.5	0.11	94.5	0.11
C	90.8	60.6	7.1	0.08	7.1	0.08
D	0.0	0.0	0.0	0.00	0.0	0.00
ALL	2020.6	1347.1	234.6	0.12	234.7	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
9.Ship Gyratory\The Parade Mini Roundabout\Parade Mini Roundabout.vai"
(drive-on-the-left) at 14:55:35 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Romilly Park Rd_Harbour Rd
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR:
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Harbour Rd (N)
ARM B - Harbour Rd (E)
ARM C - The Parade (sw)
ARM D - St Nicholas Rd (nw)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL
ROAD SURFACE CONDITION: NORMAL

T5

ARM	V (M)	E (M)	Lm(M)	Vm(M)	A (M)	K (M)	G (%)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.00	8.00	0.00	8.00	10.00	12.00	0.00	0.765	21.306
ARM B	4.90	5.90	15.30	4.90	17.00	16.00	0.00	0.718	22.782
ARM C	3.80	10.00	6.50	3.80	5.00	2.00	0.00	0.621	21.422
ARM D	3.00	3.00	0.00	3.00	5.00	2.00	0.00	0.504	12.488

V = approach half-width Lm = effective flare length A = distance between arms
E = entry width Vm = minimum approach half-width K= entry corner kerb line G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 With Development+Tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.09	16.63	11.09
ARM B	15.00	45.00	75.00	9.32	13.99	9.32
ARM C	15.00	45.00	75.00	0.82	1.24	0.82
ARM D	15.00	45.00	75.00	0.00	0.00	0.00

DEMAND SET TITLE: PM 2020 With Development+Tourism

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45		TURNING PROPORTIONS			
		TURNING COUNTS			
		(PERCENTAGE OF H.V.S)			
	ARM A	0.000	0.666	0.166	0.168
		0.0	591.0	147.0	149.0
		(0.0)%	(2.0)%	(1.0)%	(5.0)%
	ARM B	0.000	0.000	0.082	0.918
		0.0	0.0	61.0	685.0
		(0.0)%	(0.0)%	(0.0)%	(2.0)%
	ARM C	0.000	0.364	0.000	0.636
		0.0	24.0	0.0	42.0
		(0.0)%	(0.0)%	(0.0)%	(6.0)%
	ARM D	0.000	0.000	0.000	0.000
		0.0	0.0	0.0	0.0
		(0.0)%	(0.0)%	(0.0)%	(0.0)%

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	11.13	20.60	0.540	- -	-	0.0	1.2	16.6	- 0.104
ARM B	9.36	19.69	0.475	- -	-	0.0	0.9	12.9	- 0.096
ARM C	0.83	14.26	0.058	- -	-	0.0	0.1	0.9	- 0.074
ARM D	0.00	12.34	0.000	- -	-	0.0	0.0	0.0	- 0.000
16.30-16.45									
ARM A	13.29	20.55	0.647	- -	-	1.2	1.8	25.5	- 0.136
ARM B	11.18	19.16	0.583	- -	-	0.9	1.4	19.8	- 0.124
ARM C	0.99	13.00	0.076	- -	-	0.1	0.1	1.2	- 0.083
ARM D	0.00	12.31	0.000	- -	-	0.0	0.0	0.0	- 0.000
16.45-17.00									
ARM A	16.28	20.49	0.794	- -	-	1.8	3.6	49.1	- 0.224
ARM B	13.69	18.45	0.742	- -	-	1.4	2.7	37.8	- 0.203
ARM C	1.21	11.32	0.107	- -	-	0.1	0.1	1.7	- 0.099
ARM D	0.00	12.27	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.00-17.15									
ARM A	16.28	20.49	0.794	- -	-	3.6	3.7	55.2	- 0.235
ARM B	13.69	18.43	0.743	- -	-	2.7	2.8	41.7	- 0.210
ARM C	1.21	11.26	0.108	- -	-	0.1	0.1	1.8	- 0.100
ARM D	0.00	12.27	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.15-17.30									
ARM A	13.29	20.55	0.647	- -	-	3.7	1.9	29.9	- 0.142
ARM B	11.18	19.12	0.585	- -	-	2.8	1.4	22.7	- 0.129
ARM C	0.99	12.91	0.077	- -	-	0.1	0.1	1.3	- 0.084
ARM D	0.00	12.31	0.000	- -	-	0.0	0.0	0.0	- 0.000
17.30-17.45									
ARM A	11.13	20.59	0.540	- -	-	1.9	1.2	18.6	- 0.107
ARM B	9.36	19.66	0.476	- -	-	1.4	0.9	14.3	- 0.098
ARM C	0.83	14.20	0.058	- -	-	0.1	0.1	0.9	- 0.075
ARM D	0.00	12.34	0.000	- -	-	0.0	0.0	0.0	- 0.000

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE

16.30	1.2	*
16.45	1.8	**
17.00	3.6	****
17.15	3.7	****
17.30	1.9	**
17.45	1.2	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.9	*
16.45	1.4	*
17.00	2.7	***
17.15	2.8	***
17.30	1.4	*
17.45	0.9	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1220.9	813.9	194.9	0.16	194.9	0.16
B	1026.8	684.5	149.1	0.15	149.1	0.15
C	90.8	60.6	7.9	0.09	7.9	0.09
D	0.0	0.0	0.0	0.00	0.0	0.00
ALL	2338.5	1559.0	351.9	0.15	351.9	0.15

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\22.Plymouth Road_Earl Crescent\Plymouth Rd_Earl Crescent Roundabout.vai"
(drive-on-the-left) at 12:19:55 on Tuesday, 6 April 2010

FILE PROPERTIES

RUN TITLE: Plymouth Rd / Earl Crescent Roundabout
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Plymouth Road (E)
ARM B - Padget Road (S)
ARM C - Clive Road (N)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.89	4.80	12.30	20.00	27.00	13.0	0.635	24.738
ARM B	4.74	8.75	20.00	83.30	27.00	8.7	0.843	40.302
ARM C	3.55	4.80	7.70	15.20	27.00	0.0	0.635	24.040

T5

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM 2008 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK	NUMBER OF MINUTES FROM START WHEN FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
	TO RISE	IS REACHED	FALLING			
ARM A	15.00	45.00	75.00	1.29	1.93	1.29
ARM B	15.00	45.00	75.00	1.09	1.63	1.09
ARM C	15.00	45.00	75.00	0.38	0.56	0.38

DEMAND SET TITLE: AM 2008 Base

T33

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
08.15 - 09.45	ARM A	0.000	0.971	0.029
		0.0	100.0	3.0
		(0.0)	(2.0)	(0.0)
	ARM B	0.828	0.000	0.172
		72.0	0.0	15.0
		(10.0)	(0.0)	(0.0)
	ARM C	0.100	0.900	0.000
		3.0	27.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	1.29	24.06	0.054	- - -	0.0	0.1	0.8	-	0.044
ARM B	1.09	37.19	0.029	- - -	0.0	0.0	0.4	-	0.028
ARM C	0.38	23.41	0.016	- - -	0.0	0.0	0.2	-	0.043

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	1.54	24.01	0.064	- -	-	0.1	0.1	1.0	-	0.045
ARM B	1.30	37.19	0.035	- -	-	0.0	0.0	0.5	-	0.028
ARM C	0.45	23.28	0.019	- -	-	0.0	0.0	0.3	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
ARM A	1.89	23.96	0.079	- -	-	0.1	0.1	1.3	-	0.045
ARM B	1.60	37.18	0.043	- -	-	0.0	0.0	0.7	-	0.028
ARM C	0.55	23.12	0.024	- -	-	0.0	0.0	0.4	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
ARM A	1.89	23.96	0.079	- -	-	0.1	0.1	1.3	-	0.045
ARM B	1.60	37.18	0.043	- -	-	0.0	0.0	0.7	-	0.028
ARM C	0.55	23.11	0.024	- -	-	0.0	0.0	0.4	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
ARM A	1.54	24.01	0.064	- -	-	0.1	0.1	1.0	-	0.045
ARM B	1.30	37.19	0.035	- -	-	0.0	0.0	0.5	-	0.028
ARM C	0.45	23.28	0.019	- -	-	0.0	0.0	0.3	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.30-09.45									
ARM A	1.29	24.06	0.054	- -	-	0.1	0.1	0.9	-	0.044
ARM B	1.09	37.19	0.029	- -	-	0.0	0.0	0.5	-	0.028
ARM C	0.38	23.41	0.016	- -	-	0.0	0.0	0.2	-	0.043

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1
09.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	141.8	94.5	6.3	0.04	6.3	0.04
B	119.7	79.8	3.3	0.03	3.3	0.03
C	41.3	27.5	1.8	0.04	1.8	0.04
ALL	302.8	201.9	11.5	0.04	11.5	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

Printed at 15:07:21 on 14/04/2010]

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\22.Plymouth Road_Earl Crescent\Plymouth Rd_Earl Crescent Roundabout.vai"
(drive-on-the-left) at 12:20:58 on Tuesday, 6 April 2010

FILE PROPERTIES

RUN TITLE: Plymouth Rd / Earl Crescent Roundabout
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Plymouth Road (E)
ARM B - Padget Road (S)
ARM C - Clive Road (N)

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.89	4.80	12.30	20.00	27.00	13.0	0.635	24.738
ARM B	4.74	8.75	20.00	83.30	27.00	8.7	0.843	40.302
ARM C	3.55	4.80	7.70	15.20	27.00	0.0	0.635	24.040

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM 2020 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	1.51	2.27	1.51
ARM B	15.00	45.00	75.00	1.26	1.89	1.26
ARM C	15.00	45.00	75.00	0.44	0.66	0.44

DEMAND SET TITLE: AM 2020 Base

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 09.45	ARM A	0.000	0.967	0.033
		0.0	117.0	4.0
		(0.0)	(2.0)	(0.0)
	ARM B	0.832	0.000	0.168
		84.0	0.0	17.0
		(10.0)	(0.0)	(0.0)
	ARM C	0.114	0.886	0.000
		4.0	31.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	1.52	24.03	0.063	- - -	0.0	0.1	1.0	-	0.044
ARM B	1.27	37.17	0.034	- - -	0.0	0.0	0.5	-	0.028
ARM C	0.44	23.30	0.019	- - -	0.0	0.0	0.3	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
ARM A	1.81	23.98	0.076	- - -	0.1	0.1	1.2	-	0.045
ARM B	1.51	37.16	0.041	- - -	0.0	0.0	0.6	-	0.028
ARM C	0.52	23.16	0.023	- - -	0.0	0.0	0.3	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
ARM A	2.22	23.91	0.093	- - -	0.1	0.1	1.5	-	0.046
ARM B	1.85	37.15	0.050	- - -	0.0	0.1	0.8	-	0.028
ARM C	0.64	22.96	0.028	- - -	0.0	0.0	0.4	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
ARM A	2.22	23.91	0.093	- - -	0.1	0.1	1.5	-	0.046
ARM B	1.85	37.15	0.050	- - -	0.1	0.1	0.8	-	0.028
ARM C	0.64	22.96	0.028	- - -	0.0	0.0	0.4	-	0.045

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
ARM A	1.81	23.98	0.076	- - -	0.1	0.1	1.2	-	0.045
ARM B	1.51	37.16	0.041	- - -	0.1	0.0	0.6	-	0.028
ARM C	0.52	23.16	0.023	- - -	0.0	0.0	0.4	-	0.044

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.30-09.45									
ARM A	1.52	24.03	0.063	- - -	0.1	0.1	1.0	-	0.044
ARM B	1.27	37.17	0.034	- - -	0.0	0.0	0.5	-	0.028
ARM C	0.44	23.30	0.019	- - -	0.0	0.0	0.3	-	0.044

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1
09.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.1
09.15	0.1
09.30	0.0
09.45	0.0

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	166.5	111.0	7.5	0.05	7.5	0.05
B	139.0	92.7	3.9	0.03	3.9	0.03
C	48.2	32.1	2.1	0.04	2.1	0.04
ALL	353.7	235.8	13.5	0.04	13.5	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

Printed at 15:07:34 on 14/04/2010]

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
22.Plymouth Road_Earl Crescent\Plymouth Rd_Earl Crescent Roundabout.vai"
(drive-on-the-left) at 12:03:58 on Tuesday, 13 April 2010

FILE PROPERTIES

RUN TITLE: Plymouth Rd / Earl Crescent Roundabout
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Plymouth Road (E)
ARM B - Padget Road (S)
ARM C - Clive Road (N)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.89	4.80	12.30	20.00	27.00	13.0	0.635	24.738
ARM B	4.74	8.75	20.00	83.30	27.00	8.7	0.843	40.302
ARM C	3.55	4.80	7.70	15.20	27.00	0.0	0.635	24.040

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: AM 2020 with Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	1.51	2.27	1.51
ARM B	15.00	45.00	75.00	4.57	6.86	4.57
ARM C	15.00	45.00	75.00	5.78	8.66	5.78

DEMAND SET TITLE: AM 2020 with Development

T33

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
16.15 - 17.45	ARM A	0.000	0.298	0.702
		0.0	36.0	85.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.112	0.000	0.888
		41.0	0.0	325.0
		(3.0)	(0.0)	(2.0)
	ARM C	0.102	0.898	0.000
		47.0	415.0	0.0
		(0.0)	(2.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	1.52	21.38	0.071	- - -	0.0	0.1	1.1	-	0.050
ARM B	4.59	38.59	0.119	- - -	0.0	0.1	2.0	-	0.029
ARM C	5.80	23.29	0.249	- - -	0.0	0.3	4.8	-	0.057

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
ARM A	1.81	20.72	0.088	- - -	0.1	0.1	1.4	-	0.053
ARM B	5.48	38.42	0.143	- - -	0.1	0.2	2.5	-	0.030
ARM C	6.92	23.22	0.298	- - -	0.3	0.4	6.2	-	0.061

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	2.22	19.81	0.112	- - -	0.1	0.1	1.9	-	0.057
ARM B	6.72	38.18	0.176	- - -	0.2	0.2	3.2	-	0.032
ARM C	8.48	23.13	0.366	- - -	0.4	0.6	8.5	-	0.068

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	2.22	19.81	0.112	- - -	0.1	0.1	1.9	-	0.057
ARM B	6.72	38.18	0.176	- - -	0.2	0.2	3.2	-	0.032
ARM C	8.48	23.13	0.367	- - -	0.6	0.6	8.6	-	0.068

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	1.81	20.71	0.088	- - -	0.1	0.1	1.5	-	0.053
ARM B	5.48	38.42	0.143	- - -	0.2	0.2	2.5	-	0.030
ARM C	6.92	23.22	0.298	- - -	0.6	0.4	6.5	-	0.061

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	1.52	21.36	0.071	- - -	0.1	0.1	1.2	-	0.050
ARM B	4.59	38.59	0.119	- - -	0.2	0.1	2.0	-	0.029
ARM C	5.80	23.28	0.249	- - -	0.4	0.3	5.1	-	0.057

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.1	
16.45	0.2	
17.00	0.2	
17.15	0.2	
17.30	0.2	
17.45	0.1	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.4	
17.00	0.6	*
17.15	0.6	*
17.30	0.4	
17.45	0.3	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	166.5	111.0	8.9	0.05	8.9	0.05
B	503.8	335.8	15.4	0.03	15.4	0.03
C	635.9	423.9	39.8	0.06	39.8	0.06
ALL	1306.2	870.8	64.1	0.05	64.1	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

Printed at 13:49:42 on 14/04/2010]

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\22.Plymouth Road_Earl Crescent\Plymouth Rd_Earl Crescent Roundabout.vai"
(drive-on-the-left) at 12:24:33 on Tuesday, 6 April 2010

FILE PROPERTIES

RUN TITLE: Plymouth Rd / Earl Crescent Roundabout
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Plymouth Road (E)
ARM B - Padget Road (S)
ARM C - Clive Road (N)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.89	4.80	12.30	20.00	27.00	13.0	0.635	24.738
ARM B	4.74	8.75	20.00	83.30	27.00	8.7	0.843	40.302
ARM C	3.55	4.80	7.70	15.20	27.00	0.0	0.635	24.040

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: PM 2008 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
	TO RISE					
ARM A	15.00	45.00	75.00	1.45	2.18	1.45
ARM B	15.00	45.00	75.00	2.15	3.23	2.15
ARM C	15.00	45.00	75.00	0.66	0.99	0.66

DEMAND SET TITLE: PM 2008 Base

T33

TIME	FROM/TO	TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
16.15 - 17.45	ARM A	0.000	0.983	0.017
		0.0	114.0	2.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.727	0.000	0.273
		125.0	0.0	47.0
		(3.0)	(0.0)	(2.0)
	ARM C	0.075	0.925	0.000
		4.0	49.0	0.0
		(0.0)	(2.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	1.46	24.34	0.060	- -	-	0.0	0.1	0.9	- 0.044
ARM B	2.16	39.21	0.055	- -	-	0.0	0.1	0.9	- 0.027
ARM C	0.67	22.60	0.029	- -	-	0.0	0.0	0.4	- 0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
ARM A	1.74	24.26	0.072	- -	-	0.1	0.1	1.1	-	0.044
ARM B	2.58	39.21	0.066	- -	-	0.1	0.1	1.0	-	0.027
ARM C	0.79	22.40	0.035	- -	-	0.0	0.0	0.5	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	2.13	24.15	0.088	- -	-	0.1	0.1	1.4	-	0.045
ARM B	3.16	39.20	0.081	- -	-	0.1	0.1	1.3	-	0.028
ARM C	0.97	22.13	0.044	- -	-	0.0	0.0	0.7	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	2.13	24.15	0.088	- -	-	0.1	0.1	1.4	-	0.045
ARM B	3.16	39.20	0.081	- -	-	0.1	0.1	1.3	-	0.028
ARM C	0.97	22.13	0.044	- -	-	0.0	0.0	0.7	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	1.74	24.26	0.072	- -	-	0.1	0.1	1.2	-	0.044
ARM B	2.58	39.21	0.066	- -	-	0.1	0.1	1.1	-	0.027
ARM C	0.79	22.40	0.035	- -	-	0.0	0.0	0.6	-	0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	1.46	24.34	0.060	- -	-	0.1	0.1	1.0	-	0.044
ARM B	2.16	39.21	0.055	- -	-	0.1	0.1	0.9	-	0.027
ARM C	0.67	22.59	0.029	- -	-	0.0	0.0	0.5	-	0.046

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	159.7	106.4	7.1	0.04	7.1	0.04
B	236.7	157.8	6.5	0.03	6.5	0.03
C	73.0	48.6	3.4	0.05	3.4	0.05
ALL	469.4	312.9	16.9	0.04	16.9	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

Printed at 15:07:47 on 14/04/2010]

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\22.Plymouth Road_Earl Crescent\Plymouth Rd_Earl Crescent Roundabout.vai"
(drive-on-the-left) at 12:25:48 on Tuesday, 6 April 2010

FILE PROPERTIES

RUN TITLE: Plymouth Rd / Earl Crescent Roundabout
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Plymouth Road (E)
ARM B - Padget Road (S)
ARM C - Clive Road (N)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.89	4.80	12.30	20.00	27.00	13.0	0.635	24.738
ARM B	4.74	8.75	20.00	83.30	27.00	8.7	0.843	40.302
ARM C	3.55	4.80	7.70	15.20	27.00	0.0	0.635	24.040

T5

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: PM 2020 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	1.69	2.53	1.69
ARM B	15.00	45.00	75.00	2.50	3.75	2.50
ARM C	15.00	45.00	75.00	0.77	1.16	0.77

DEMAND SET TITLE: PM 2020 Base

T33

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
16.15 - 17.45	ARM A	0.000	0.985	0.015
		0.0	133.0	2.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.725	0.000	0.275
		145.0	0.0	55.0
		(3.0)	(0.0)	(2.0)
	ARM C	0.081	0.919	0.000
		5.0	57.0	0.0
		(0.0)	(2.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME		DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30										
	ARM A	1.69	24.28	0.070	- -	-	0.0	0.1	1.1	- 0.044
	ARM B	2.51	39.21	0.064	- -	-	0.0	0.1	1.0	- 0.027
	ARM C	0.78	22.44	0.035	- -	-	0.0	0.0	0.5	- 0.046

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
ARM A	2.02	24.18	0.084	- -	-	0.1	0.1	1.4	-	0.045
ARM B	3.00	39.21	0.076	- -	-	0.1	0.1	1.2	-	0.028
ARM C	0.93	22.21	0.042	- -	-	0.0	0.0	0.6	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	2.48	24.06	0.103	- -	-	0.1	0.1	1.7	-	0.046
ARM B	3.67	39.20	0.094	- -	-	0.1	0.1	1.5	-	0.028
ARM C	1.14	21.89	0.052	- -	-	0.0	0.1	0.8	-	0.048

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	2.48	24.06	0.103	- -	-	0.1	0.1	1.7	-	0.046
ARM B	3.67	39.20	0.094	- -	-	0.1	0.1	1.5	-	0.028
ARM C	1.14	21.89	0.052	- -	-	0.1	0.1	0.8	-	0.048

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	2.02	24.18	0.084	- -	-	0.1	0.1	1.4	-	0.045
ARM B	3.00	39.21	0.076	- -	-	0.1	0.1	1.3	-	0.028
ARM C	0.93	22.21	0.042	- -	-	0.1	0.0	0.7	-	0.047

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	1.69	24.27	0.070	- -	-	0.1	0.1	1.1	-	0.044
ARM B	2.51	39.21	0.064	- -	-	0.1	0.1	1.0	-	0.027
ARM C	0.78	22.43	0.035	- -	-	0.0	0.0	0.5	-	0.046

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.1
17.15	0.1
17.30	0.0
17.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	185.8	123.9	8.4	0.05	8.4	0.05
B	275.3	183.5	7.6	0.03	7.6	0.03
C	85.3	56.9	4.0	0.05	4.0	0.05
ALL	546.4	364.3	20.0	0.04	20.0	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

Printed at 15:08:03 on 14/04/2010]

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
22.Plymouth Road_Earl Crescent\Plymouth Rd_Earl Crescent Roundabout.vai"
(drive-on-the-left) at 12:01:45 on Tuesday, 13 April 2010

FILE PROPERTIES
****

RUN TITLE: Plymouth Rd / Earl Crescent Roundabout
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA
****
ARM A - Plymouth Road (E)
ARM B - Padget Road (S)
ARM C - Clive Road (N)

GEOMETRIC DATA

I ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)	T5
I ARM A	3.89	4.80	12.30	20.00	27.00	13.0	0.635	24.738	I
I ARM B	4.74	8.75	20.00	83.30	27.00	8.7	0.843	40.302	I
I ARM C	3.55	4.80	7.70	15.20	27.00	0.0	0.635	24.040	I

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: PM 2020 Base + tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	2.51	3.77	2.51
ARM B	15.00	45.00	75.00	3.59	5.38	3.59
ARM C	15.00	45.00	75.00	1.13	1.69	1.13

DEMAND SET TITLE: PM 2020 Base + tourism

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45	ARM A	0.000	0.990	0.010
		0.0	199.0	2.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.721	0.000	0.279
		207.0	0.0	80.0
		(3.0)	(0.0)	(2.0)
	ARM C	0.056	0.944	0.000
		5.0	85.0	0.0
		(0.0)	(2.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME		DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30										
	ARM A	2.52	24.05	0.105	- - -	0.0	0.1	1.7	-	0.046
	ARM B	3.60	39.21	0.092	- - -	0.0	0.1	1.5	-	0.028
	ARM C	1.13	21.93	0.052	- - -	0.0	0.1	0.8	-	0.048

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
ARM A	3.01	23.91	0.126	- -	0.1	0.1	2.1	-	0.048
ARM B	4.30	39.21	0.110	- -	0.1	0.1	1.8	-	0.029
ARM C	1.35	21.60	0.062	- -	0.1	0.1	1.0	-	0.049

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	3.69	23.73	0.155	- -	0.1	0.2	2.7	-	0.050
ARM B	5.27	39.20	0.134	- -	0.1	0.2	2.3	-	0.029
ARM C	1.65	21.15	0.078	- -	0.1	0.1	1.3	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	3.69	23.73	0.155	- -	0.2	0.2	2.8	-	0.050
ARM B	5.27	39.20	0.134	- -	0.2	0.2	2.3	-	0.029
ARM C	1.65	21.15	0.078	- -	0.1	0.1	1.3	-	0.051

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	3.01	23.91	0.126	- -	0.2	0.1	2.2	-	0.048
ARM B	4.30	39.21	0.110	- -	0.2	0.1	1.9	-	0.029
ARM C	1.35	21.60	0.062	- -	0.1	0.1	1.0	-	0.049

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	2.52	24.05	0.105	- -	0.1	0.1	1.8	-	0.046
ARM B	3.60	39.21	0.092	- -	0.1	0.1	1.5	-	0.028
ARM C	1.13	21.92	0.052	- -	0.1	0.1	0.8	-	0.048

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.2
17.15	0.2
17.30	0.1
17.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.2
17.15	0.2
17.30	0.1
17.45	0.1

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	276.7	184.4	13.3	0.05	13.3	0.05
B	395.0	263.4	11.4	0.03	11.4	0.03
C	123.9	82.6	6.1	0.05	6.1	0.05
ALL	795.6	530.4	30.8	0.04	30.8	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

Printed at 13:51:01 on 14/04/2010]

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
22.Plymouth Road_Earl Crescent\Plymouth Rd_Earl Crescent Roundabout.vai"
(drive-on-the-left) at 12:03:35 on Tuesday, 13 April 2010

FILE PROPERTIES

RUN TITLE: Plymouth Rd / Earl Crescent Roundabout
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Plymouth Road (E)
ARM B - Padget Road (S)
ARM C - Clive Road (N)

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.89	4.80	12.30	20.00	27.00	13.0	0.635	24.738
ARM B	4.74	8.75	20.00	83.30	27.00	8.7	0.843	40.302
ARM C	3.55	4.80	7.70	15.20	27.00	0.0	0.635	24.040

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: PM 2020 with Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	2.08	3.11	2.08
ARM B	15.00	45.00	75.00	6.97	10.46	6.97
ARM C	15.00	45.00	75.00	7.01	10.52	7.01

DEMAND SET TITLE: PM 2020 with Development

T33

TIME	FROM/TO	TURNING PROPORTIONS (PERCENTAGE OF H.V.S) TURNING COUNTS ARM A	ARM B	ARM C
16.15 - 17.45	ARM A	0.000	0.566	0.434
		0.0	94.0	72.0
		(0.0)	(2.0)	(0.0)
	ARM B	0.125	0.000	0.875
		70.0	0.0	488.0
		(10.0)	(0.0)	(0.0)
	ARM C	0.143	0.857	0.000
		80.0	481.0	0.0
		(0.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	2.08	20.69	0.101	- - -	0.0	0.1	1.6	-	0.054
ARM B	7.00	39.05	0.179	- - -	0.0	0.2	3.2	-	0.031
ARM C	7.04	23.43	0.300	- - -	0.0	0.4	6.3	-	0.061

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
ARM A	2.49	19.94	0.125	- -	-	0.1	0.1	2.1	-	0.057
ARM B	8.36	38.91	0.215	- -	-	0.2	0.3	4.1	-	0.033
ARM C	8.41	23.31	0.361	- -	-	0.4	0.6	8.2	-	0.067

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	3.05	18.93	0.161	- -	-	0.1	0.2	2.8	-	0.063
ARM B	10.24	38.70	0.265	- -	-	0.3	0.4	5.3	-	0.035
ARM C	10.29	23.14	0.445	- -	-	0.6	0.8	11.6	-	0.078

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	3.05	18.92	0.161	- -	-	0.2	0.2	2.9	-	0.063
ARM B	10.24	38.70	0.265	- -	-	0.4	0.4	5.4	-	0.035
ARM C	10.29	23.14	0.445	- -	-	0.8	0.8	11.9	-	0.078

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	2.49	19.93	0.125	- -	-	0.2	0.1	2.2	-	0.057
ARM B	8.36	38.90	0.215	- -	-	0.4	0.3	4.2	-	0.033
ARM C	8.41	23.31	0.361	- -	-	0.8	0.6	8.7	-	0.067

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	2.08	20.67	0.101	- -	-	0.1	0.1	1.7	-	0.054
ARM B	7.00	39.05	0.179	- -	-	0.3	0.2	3.3	-	0.031
ARM C	7.04	23.43	0.300	- -	-	0.6	0.4	6.6	-	0.061

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.2
17.15	0.2
17.30	0.1
17.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.2	
16.45	0.3	
17.00	0.4	
17.15	0.4	
17.30	0.3	
17.45	0.2	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.6	*
17.00	0.8	*
17.15	0.8	*
17.30	0.6	*
17.45	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	228.5	152.3	13.3	0.06	13.3	0.06
B	768.0	512.0	25.5	0.03	25.5	0.03
C	772.2	514.8	53.4	0.07	53.4	0.07
ALL	1768.7	1179.1	92.2	0.05	92.2	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

Printed at 13:50:36 on 14/04/2010]

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
22.Plymouth Road_Earl Crescent\Plymouth Rd_Earl Crescent Roundabout.vai"
(drive-on-the-left) at 12:03:05 on Tuesday, 13 April 2010

FILE PROPERTIES

RUN TITLE: Plymouth Rd / Earl Crescent Roundabout
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

INPUT DATA

ARM A - Plymouth Road (E)
ARM B - Padget Road (S)
ARM C - Clive Road (N)

GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.89	4.80	12.30	20.00	27.00	13.0	0.635	24.738
ARM B	4.74	8.75	20.00	83.30	27.00	8.7	0.843	40.302
ARM C	3.55	4.80	7.70	15.20	27.00	0.0	0.635	24.040

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)

LENGTH OF TIME PERIOD -(90) MINUTES

LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: PM 2020 with Development + tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK	NUMBER OF MINUTES FROM START WHEN FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
	TO RISE	IS REACHED	FALLING			
ARM A	15.00	45.00	75.00	2.51	3.77	2.51
ARM B	15.00	45.00	75.00	8.32	12.49	8.32
ARM C	15.00	45.00	75.00	8.29	12.43	8.29

DEMAND SET TITLE: PM 2020 with Development + tourism

T33

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C
16.15 - 17.45	ARM A	0.000	0.642	0.358
		0.0	129.0	72.0
		(0.0)	(0.0)	(0.0)
	ARM B	0.150	0.000	0.850
		100.0	0.0	566.0
		(3.0)	(0.0)	(2.0)
	ARM C	0.169	0.831	0.000
		112.0	551.0	0.0
		(0.0)	(2.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	2.52	20.28	0.124	- - -	0.0	0.1	2.1	-	0.056
ARM B	8.36	38.71	0.216	- - -	0.0	0.3	4.1	-	0.033
ARM C	8.32	22.84	0.364	- - -	0.0	0.6	8.3	-	0.068

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
ARM A	3.01	19.40	0.155	- - -	0.1	0.2	2.7	-	0.061
ARM B	9.98	38.56	0.259	- - -	0.3	0.3	5.2	-	0.035
ARM C	9.93	22.68	0.438	- - -	0.6	0.8	11.3	-	0.078

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	3.69	18.21	0.203	- - -	0.2	0.3	3.7	-	0.069
ARM B	12.22	38.36	0.319	- - -	0.3	0.5	6.9	-	0.038
ARM C	12.17	22.47	0.542	- - -	0.8	1.2	16.9	-	0.097

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	3.69	18.19	0.203	- - -	0.3	0.3	3.8	-	0.069
ARM B	12.22	38.36	0.319	- - -	0.5	0.5	7.0	-	0.038
ARM C	12.17	22.47	0.542	- - -	1.2	1.2	17.6	-	0.097

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	3.01	19.38	0.155	- - -	0.3	0.2	2.8	-	0.061
ARM B	9.98	38.56	0.259	- - -	0.5	0.4	5.3	-	0.035
ARM C	9.93	22.68	0.438	- - -	1.2	0.8	12.1	-	0.079

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	2.52	20.26	0.125	- - -	0.2	0.1	2.2	-	0.056
ARM B	8.36	38.71	0.216	- - -	0.4	0.3	4.2	-	0.033
ARM C	8.32	22.84	0.364	- - -	0.8	0.6	8.8	-	0.069

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.2
17.00	0.3
17.15	0.3
17.30	0.2
17.45	0.1

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.3	
17.00	0.5	
17.15	0.5	
17.30	0.4	
17.45	0.3	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.6	*
16.45	0.8	*
17.00	1.2	*
17.15	1.2	*
17.30	0.8	*
17.45	0.6	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	276.7	184.4	17.3	0.06	17.3	0.06
B	916.7	611.1	32.6	0.04	32.6	0.04
C	912.6	608.4	75.0	0.08	75.0	0.08
ALL	2105.9	1404.0	125.0	0.06	125.0	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

========== end of file ==========

Printed at 13:51:22 on 14/04/2010]

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
6.Port Rd_Barry Docks\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 11:45:34 on Monday, 12 April 2010

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.71	9.64	13.00	51.90	33.00	18.9	0.787	37.435
ARM B	6.71	7.32	32.80	91.60	33.00	22.7	0.806	39.131
ARM C	5.03	7.52	31.70	21.30	33.00	19.6	0.770	36.835

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 with Development + Tourism

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	26.38	39.56	26.38
ARM B	15.00	45.00	75.00	13.25	19.88	13.25
ARM C	15.00	45.00	75.00	15.27	22.91	15.27

DEMAND SET TITLE: PM 2020 with Development + Tourism

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45				
	ARM A	0.000	0.402	0.598
		0.0	848.0	1262.0
		(0.0)	(5.0)	(3.0)
	ARM B	0.697	0.000	0.303
		739.0	0.0	321.0
		(6.0)	(0.0)	(1.0)
	ARM C	0.751	0.249	0.000
		918.0	304.0	0.0
		(3.0)	(2.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	26.48	33.13	0.799	- -	0.0	3.8	51.7	-	0.140
ARM B	13.30	24.99	0.532	- -	0.0	1.1	16.2	-	0.084
ARM C	15.33	28.52	0.538	- -	0.0	1.2	16.6	-	0.075
16.30-16.45									
ARM A	31.61	32.55	0.971	- -	3.8	15.7	174.4	-	0.446
ARM B	15.88	22.81	0.696	- -	1.1	2.2	31.4	-	0.141
ARM C	18.31	27.10	0.676	- -	1.2	2.0	29.1	-	0.112
16.45-17.00									
ARM A	38.72	31.81	1.217	- -	15.7	120.3	1024.7	-	2.258
ARM B	19.45	22.37	0.870	- -	2.2	5.8	74.7	-	0.297
ARM C	22.42	25.20	0.890	- -	2.0	6.8	85.8	-	0.297
17.00-17.15									
ARM A	38.72	31.76	1.219	- -	120.3	224.8	2588.9	-	5.474
ARM B	19.45	22.36	0.870	- -	5.8	6.2	90.4	-	0.334
ARM C	22.42	25.09	0.894	- -	6.8	7.5	108.8	-	0.356
17.15-17.30									
ARM A	31.61	32.47	0.974	- -	224.8	214.1	3291.8	-	6.765
ARM B	15.88	22.09	0.719	- -	6.2	2.7	43.8	-	0.174
ARM C	18.31	26.92	0.680	- -	7.5	2.2	36.8	-	0.126
17.30-17.45									
ARM A	26.48	33.10	0.800	- -	214.1	117.0	2483.1	-	5.043
ARM B	13.30	21.80	0.610	- -	2.7	1.6	25.1	-	0.120
ARM C	15.33	28.44	0.539	- -	2.2	1.2	18.4	-	0.077

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	3.8	****
16.45	15.7	****************
17.00	120.3	**
17.15	224.8	**
17.30	214.1	**
17.45	117.0	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.1	*
16.45	2.2	**
17.00	5.8	******
17.15	6.2	******
17.30	2.7	***
17.45	1.6	**

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.2	*
16.45	2.0	**
17.00	6.8	*******
17.15	7.5	********
17.30	2.2	**
17.45	1.2	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2904.3	1936.2	9614.6	3.31	9821.4	3.38
B	1459.0	972.7	281.5	0.19	281.6	0.19
C	1682.0	1121.3	295.4	0.18	295.5	0.18
ALL	6045.3	4030.2	10191.6	1.69	10398.4	1.72

T75

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
6.Port Rd_Barry Docks\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 11:45:04 on Monday, 12 April 2010

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.71	9.64	13.00	51.90	33.00	18.9	0.787	37.435
ARM B	6.71	7.32	32.80	91.60	33.00	22.7	0.806	39.131
ARM C	5.03	7.52	31.70	21.30	33.00	19.6	0.770	36.835

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 with Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	25.33	37.99	25.33
ARM B	15.00	45.00	75.00	13.25	19.88	13.25
ARM C	15.00	45.00	75.00	14.10	21.15	14.10

DEMAND SET TITLE: PM 2020 with Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45		TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S)		
	ARM A	0.000 0.0 (0.0)	0.419 848.0 (5.0)	0.581 1178.0 (3.0)
	ARM B	0.697 739.0 (6.0)	0.000 0.0 (0.0)	0.303 321.0 (1.0)
	ARM C	0.730 824.0 (3.0)	0.270 304.0 (2.0)	0.000 0.0 (0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	25.42	33.12	0.768	- -	-	0.0	3.2	44.1	-	0.124
ARM B	13.30	25.81	0.515	- -	-	0.0	1.1	15.2	-	0.079
ARM C	14.15	28.53	0.496	- -	-	0.0	1.0	14.2	-	0.069
16.30-16.45									
ARM A	30.36	32.54	0.933	- -	-	3.2	10.4	125.6	-	0.328
ARM B	15.88	23.65	0.671	- -	-	1.1	2.0	28.3	-	0.127
ARM C	16.90	27.09	0.624	- -	-	1.0	1.6	23.5	-	0.097
16.45-17.00									
ARM A	37.18	31.78	1.170	- -	-	10.4	93.3	785.8	-	1.768
ARM B	19.45	22.83	0.852	- -	-	2.0	5.2	67.4	-	0.264
ARM C	20.70	25.20	0.822	- -	-	1.6	4.3	57.4	-	0.207
17.00-17.15									
ARM A	37.18	31.75	1.171	- -	-	93.3	175.0	2012.4	-	4.287
ARM B	19.45	22.79	0.853	- -	-	5.2	5.5	80.1	-	0.293
ARM C	20.70	25.09	0.825	- -	-	4.3	4.5	66.3	-	0.225
17.15-17.30									
ARM A	30.36	32.49	0.934	- -	-	175.0	145.7	2404.8	-	4.955
ARM B	15.88	22.53	0.705	- -	-	5.5	2.5	40.2	-	0.160
ARM C	16.90	26.95	0.627	- -	-	4.5	1.7	27.4	-	0.103
17.30-17.45									
ARM A	25.42	33.09	0.768	- -	-	145.7	34.0	1347.3	-	2.775
ARM B	13.30	22.27	0.597	- -	-	2.5	1.5	23.7	-	0.113
ARM C	14.15	28.45	0.497	- -	-	1.7	1.0	15.4	-	0.070

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	3.2	***
16.45	10.4	**********
17.00	93.3	**********
17.15	175.0	**********
17.30	145.7	**********
17.45	34.0	**********

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.1	*
16.45	2.0	**
17.00	5.2	*****
17.15	5.5	*****
17.30	2.5	**
17.45	1.5	**

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.0	*
16.45	1.6	**
17.00	4.3	****
17.15	4.5	*****
17.30	1.7	**
17.45	1.0	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2788.6	1859.1	6720.1	2.41	6737.5	2.42
B	1459.0	972.7	254.8	0.17	254.9	0.17
C	1552.6	1035.1	204.2	0.13	204.2	0.13
ALL	5800.3	3866.8	7179.1	1.24	7196.6	1.24

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
6.Port Rd_Barry Docks\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 10:51:49 on Tuesday, 13 April 2010

.FILE PROPERTIES

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA

ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.71	9.64	13.00	51.90	33.00	18.9	0.787	37.435
ARM B	6.71	7.32	32.80	91.60	33.00	22.7	0.806	39.131
ARM C	5.03	7.52	31.70	21.30	33.00	19.6	0.770	36.835

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 Base+tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	FLOW STOPS IS REACHED	BEFORE FALLING	RATE OF FLOW (VEH/MIN) AT TOP PEAK	AFTER OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	12.60	33.39	22.26	22.26
ARM B	15.00	45.00	75.00	12.60	18.90	12.60	12.60

I ARM C I	15.00 I	45.00 I	75.00 I	13.95 I	20.92 I	13.95 I

DEMAND SET TITLE: PM 2020 Base+tourism

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45				
	ARM A	0.000	0.414	0.586
		0.0	738.0	1043.0
		(0.0)	(5.0)	(3.0)
	ARM B	0.682	0.000	0.318
		687.0	0.0	321.0
		(6.0)	(0.0)	(1.0)
	ARM C	0.728	0.272	0.000
		812.0	304.0	0.0
		(3.0)	(2.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	22.35	33.12	0.675	- -	0.0	2.0	29.0	-	0.091
ARM B	12.65	27.14	0.466	- -	0.0	0.9	12.6	-	0.068
ARM C	14.00	29.04	0.482	- -	0.0	0.9	13.4	-	0.066
16.30-16.45									
ARM A	26.68	32.54	0.820	- -	2.0	4.3	58.9	-	0.162
ARM B	15.10	25.13	0.601	- -	0.9	1.5	21.4	-	0.099
ARM C	16.72	27.70	0.604	- -	0.9	1.5	21.7	-	0.090
16.45-17.00									
ARM A	32.68	31.77	1.029	- -	4.3	30.1	286.7	-	0.715
ARM B	18.50	23.06	0.802	- -	1.5	3.8	51.3	-	0.206
ARM C	20.48	25.93	0.790	- -	1.5	3.6	48.8	-	0.175
17.00-17.15									
ARM A	32.68	31.75	1.029	- -	30.1	48.1	590.0	-	1.368
ARM B	18.50	22.82	0.811	- -	3.8	4.1	59.7	-	0.229
ARM C	20.48	25.85	0.792	- -	3.6	3.7	54.7	-	0.185
17.15-17.30									
ARM A	26.68	32.50	0.821	- -	48.1	5.1	258.5	-	0.572
ARM B	15.10	23.72	0.637	- -	4.1	1.8	28.6	-	0.120
ARM C	16.72	27.59	0.606	- -	3.7	1.6	24.7	-	0.094
17.30-17.45									
ARM A	22.35	33.10	0.675	- -	5.1	2.1	33.8	-	0.096
ARM B	12.65	26.98	0.469	- -	1.8	0.9	13.8	-	0.070
ARM C	14.00	28.97	0.483	- -	1.6	0.9	14.5	-	0.067

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	2.0	**
16.45	4.3	****
17.00	30.1	******************************
17.15	48.1	**
17.30	5.1	*****
17.45	2.1	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.9	*
16.45	1.5	*
17.00	3.8	****
17.15	4.1	****
17.30	1.8	**
17.45	0.9	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.9	*
16.45	1.5	**
17.00	3.6	****
17.15	3.7	****
17.30	1.6	**
17.45	0.9	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

.---

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2451.4	1634.3	1256.9	0.51	1257.0	0.51
B	1387.4	925.0	187.3	0.13	187.3	0.13
C	1536.1	1024.1	177.8	0.12	177.8	0.12
ALL	5374.9	3583.3	1622.0	0.30	1622.1	0.30

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
6.Port Rd_Barry Docks\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 15:57:29 on Wednesday, 24 June 2009

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 25/03/08
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.71	9.64	13.00	51.90	33.00	18.9	0.787	37.435
ARM B	6.71	7.32	32.80	91.60	33.00	22.7	0.806	39.131
ARM C	5.03	7.52	31.70	21.30	33.00	19.6	0.770	36.835

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	21.21	31.82	21.21
ARM B	15.00	45.00	75.00	12.60	18.90	12.60
ARM C	15.00	45.00	75.00	12.77	19.16	12.77

DEMAND SET TITLE: PM 2020 Base

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45				
	ARM A	0.000	0.435	0.565
		0.0	738.0	959.0
		(0.0)	(5.0)	(3.0)
	ARM B	0.682	0.000	0.318
		687.0	0.0	321.0
		(6.0)	(0.0)	(1.0)
	ARM C	0.703	0.297	0.000
		718.0	304.0	0.0
		(3.0)	(2.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	21.29	33.11	0.643	- -	0.0	1.8	25.4	-	0.083
ARM B	12.65	27.97	0.452	- -	0.0	0.8	11.9	-	0.065
ARM C	12.82	29.04	0.442	- -	0.0	0.8	11.4	-	0.061
16.30-16.45									
ARM A	25.43	32.53	0.782	- -	1.8	3.4	48.0	-	0.137
ARM B	15.10	26.11	0.579	- -	0.8	1.4	19.6	-	0.090
ARM C	15.31	27.70	0.553	- -	0.8	1.2	17.8	-	0.080
16.45-17.00									
ARM A	31.14	31.75	0.981	- -	3.4	17.4	186.3	-	0.484
ARM B	18.50	23.91	0.774	- -	1.4	3.3	44.7	-	0.177
ARM C	18.75	25.91	0.724	- -	1.2	2.5	35.7	-	0.136
17.00-17.15									
ARM A	31.14	31.73	0.981	- -	17.4	22.7	303.8	-	0.751
ARM B	18.50	23.65	0.782	- -	3.3	3.5	50.8	-	0.193
ARM C	18.75	25.85	0.725	- -	2.5	2.6	38.6	-	0.140
17.15-17.30									
ARM A	25.43	32.50	0.782	- -	22.7	3.8	90.9	-	0.207
ARM B	15.10	25.49	0.593	- -	3.5	1.5	23.3	-	0.099
ARM C	15.31	27.61	0.555	- -	2.6	1.3	19.6	-	0.083
17.30-17.45									
ARM A	21.29	33.09	0.644	- -	3.8	1.8	28.8	-	0.087
ARM B	12.65	27.85	0.454	- -	1.5	0.8	12.9	-	0.066
ARM C	12.82	28.99	0.442	- -	1.3	0.8	12.3	-	0.062

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.8	**
16.45	3.4	***
17.00	17.4	*****************
17.15	22.7	**********************
17.30	3.8	****
17.45	1.8	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.8	*
16.45	1.4	*
17.00	3.3	***
17.15	3.5	***
17.30	1.5	*
17.45	0.8	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.8	*
16.45	1.2	*
17.00	2.5	***
17.15	2.6	***
17.30	1.3	*
17.45	0.8	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2335.8	1557.2	683.2	0.29	683.3	0.29
B	1387.4	925.0	163.3	0.12	163.3	0.12
C	1406.7	937.8	135.4	0.10	135.4	0.10
ALL	5129.9	3420.0	981.9	0.19	982.0	0.19

T75

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
6.Port Rd_Barry Docks\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 12:35:44 on Tuesday, 25 March 2008

.FILE PROPERTIES

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 25/03/08
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA

ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.71	9.64	13.00	51.90	33.00	18.9	0.787	37.435
ARM B	6.71	7.32	32.80	91.60	33.00	22.7	0.806	39.131
ARM C	5.03	7.52	31.70	21.30	33.00	19.6	0.770	36.835

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B: Effective flare length is outside normal range.
Treat capacities with increasing caution.
WARNING ARM C: Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.TIME PERIOD BEGINS 08.15 AND ENDS 09.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: PM 2008 Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS IFALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	18.25	27.38	18.25
ARM B	15.00	45.00	75.00	10.82	16.24	10.82

ARM C	15.00	45.00	75.00	11.00	16.50	11.00

DEMAND SET TITLE: PM 2008 Base

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 09.45				
	ARM A	0.000	0.435	0.565
		0.0	635.0	825.0
		(0.0)	(5.0)	(3.0)
	ARM B	0.681	0.000	0.319
		590.0	0.0	276.0
		(6.0)	(0.0)	(1.0)
	ARM C	0.702	0.298	0.000
		618.0	262.0	0.0
		(3.0)	(2.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	18.25	33.52	0.544		0.0	1.2	17.2		0.06
ARM B	10.82	29.32	0.369		0.0	0.6	8.5		0.05
ARM C	11.00	30.02	0.366		0.0	0.6	8.4		0.05
08.30-08.45									
ARM A	21.79	33.02	0.660		1.2	1.9	27.5		0.09
ARM B	12.93	27.71	0.466		0.6	0.9	12.7		0.07
ARM C	13.14	28.87	0.455		0.6	0.8	12.2		0.06
08.45-09.00									
ARM A	26.69	32.35	0.825		1.9	4.4	60.4		0.17
ARM B	15.83	25.57	0.619		0.9	1.6	23.0		0.10
ARM C	16.09	27.32	0.589		0.8	1.4	20.4		0.09
09.00-09.15									
ARM A	26.69	32.34	0.825		4.4	4.6	67.8		0.18
ARM B	15.83	25.49	0.621		1.6	1.6	24.2		0.10
ARM C	16.09	27.29	0.589		1.4	1.4	21.3		0.09
09.15-09.30									
ARM A	21.79	33.01	0.660		4.6	2.0	31.3		0.09
ARM B	12.93	27.61	0.468		1.6	0.9	13.7		0.07
ARM C	13.14	28.84	0.455		1.4	0.8	13.0		0.06
09.30-09.45									
ARM A	18.25	33.51	0.545		2.0	1.2	18.7		0.07
ARM B	10.82	29.26	0.370		0.9	0.6	9.0		0.05
ARM C	11.00	29.99	0.367		0.8	0.6	8.9		0.05

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	1.2	*
08.45	1.9	**
09.00	4.4	****
09.15	4.6	*****

09.30	2.0	**
09.45	1.2	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.6	*
08.45	0.9	*
09.00	1.6	**
09.15	1.6	**
09.30	0.9	*
09.45	0.6	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.6	*
08.45	0.8	*
09.00	1.4	*
09.15	1.4	*
09.30	0.8	*
09.45	0.6	*

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	2002.0	1334.6	222.9	0.11	222.9	0.11
B	1187.5	791.6	91.1	0.08	91.2	0.08
C	1206.7	804.4	84.2	0.07	84.2	0.07
ALL	4396.1	2930.7	398.3	0.09	398.3	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
6.Port Rd_Barry Docks\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 11:44:12 on Monday, 12 April 2010

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.71	9.64	13.00	51.90	33.00	18.9	0.787	37.435
ARM B	6.71	7.32	32.80	91.60	33.00	22.7	0.806	39.131
ARM C	5.03	7.52	31.70	21.30	33.00	19.6	0.770	36.835

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2020 with Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.77	22.16	14.77
ARM B	15.00	45.00	75.00	11.81	17.72	11.81
ARM C	15.00	45.00	75.00	16.80	25.20	16.80

DEMAND SET TITLE: AM 2020 with Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 09.45				
	ARM A	0.000	0.458	0.542
		0.0	541.0	641.0
		(0.0)	(10.0)	(8.0)
	ARM B	0.746	0.000	0.254
		705.0	0.0	240.0
		(10.0)	(0.0)	(6.0)
	ARM C	0.722	0.278	0.000
		970.0	374.0	0.0
		(6.0)	(3.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	14.83	30.90	0.480	- -	0.0	0.9	13.3	-	0.062
ARM B	11.86	29.51	0.402	- -	0.0	0.7	9.8	-	0.056
ARM C	16.86	27.93	0.604	- -	0.0	1.5	21.5	-	0.089
08.30-08.45									
ARM A	17.71	30.22	0.586	- -	0.9	1.4	20.3	-	0.080
ARM B	14.16	28.25	0.501	- -	0.7	1.0	14.6	-	0.071
ARM C	20.14	26.53	0.759	- -	1.5	3.0	42.2	-	0.152
08.45-09.00									
ARM A	21.69	29.49	0.736	- -	1.4	2.7	38.1	-	0.126
ARM B	17.34	26.55	0.653	- -	1.0	1.8	26.4	-	0.107
ARM C	24.66	24.64	1.001	- -	3.0	19.3	194.9	-	0.643
09.00-09.15									
ARM A	21.69	29.38	0.738	- -	2.7	2.8	41.1	-	0.130
ARM B	17.34	26.51	0.654	- -	1.8	1.9	27.9	-	0.109
ARM C	24.66	24.60	1.002	- -	19.3	27.6	355.2	-	1.110
09.15-09.30									
ARM A	17.71	29.87	0.593	- -	2.8	1.5	23.0	-	0.083
ARM B	14.16	28.20	0.502	- -	1.9	1.0	15.8	-	0.072
ARM C	20.14	26.48	0.760	- -	27.6	3.3	107.3	-	0.283
09.30-09.45									
ARM A	14.83	30.85	0.481	- -	1.5	0.9	14.4	-	0.063
ARM B	11.86	29.47	0.402	- -	1.0	0.7	10.4	-	0.057
ARM C	16.86	27.89	0.605	- -	3.3	1.6	24.4	-	0.093

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.9	*
08.45	1.4	*
09.00	2.7	***
09.15	2.8	***
09.30	1.5	*
09.45	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.7	*
08.45	1.0	*
09.00	1.8	**
09.15	1.9	**
09.30	1.0	*
09.45	0.7	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	1.5	**
08.45	3.0	***
09.00	19.3	*******************
09.15	27.6	****************************
09.30	3.3	***
09.45	1.6	**

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1626.9	1084.6	150.2	0.09	150.2	0.09
B	1300.7	867.1	104.8	0.08	104.8	0.08
C	1849.9	1233.3	745.5	0.40	745.5	0.40
ALL	4777.6	3185.1	1000.5	0.21	1000.6	0.21

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
6.Port Rd_Barry Docks\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 15:56:35 on Wednesday, 24 June 2009

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 25/03/08
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.71	9.64	13.00	51.90	33.00	18.9	0.787	37.435
ARM B	6.71	7.32	32.80	91.60	33.00	22.7	0.806	39.131
ARM C	5.03	7.52	31.70	21.30	33.00	19.6	0.770	36.835

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2020 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE TO RISE	AT TOP IS REACHED	AFTER FALLING
ARM A	15.00	45.00	75.00	13.32	19.99	13.32
ARM B	15.00	45.00	75.00	10.51	15.77	10.51
ARM C	15.00	45.00	75.00	14.19	21.28	14.19

DEMAND SET TITLE: AM 2020 Base

T33

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 09.45				
	ARM A	0.000	0.471	0.529
		0.0	502.0	564.0
		(0.0)	(10.0)	(8.0)
	ARM B	0.715	0.000	0.285
		601.0	0.0	240.0
		(10.0)	(0.0)	(6.0)
	ARM C	0.670	0.330	0.000
		761.0	374.0	0.0
		(6.0)	(3.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	13.38	30.89	0.433	- -	0.0	0.8	11.1	-	0.057
ARM B	10.55	30.31	0.348	- -	0.0	0.5	7.8	-	0.050
ARM C	14.24	29.01	0.491	- -	0.0	1.0	13.9	-	0.067
08.30-08.45									
ARM A	15.97	30.20	0.529	- -	0.8	1.1	16.2	-	0.070
ARM B	12.60	29.20	0.432	- -	0.5	0.8	11.1	-	0.060
ARM C	17.01	27.82	0.611	- -	1.0	1.5	22.4	-	0.092
08.45-09.00									
ARM A	19.56	29.29	0.668	- -	1.1	2.0	28.2	-	0.102
ARM B	15.43	27.70	0.557	- -	0.8	1.2	18.1	-	0.081
ARM C	20.83	26.20	0.795	- -	1.5	3.7	50.2	-	0.177
09.00-09.15									
ARM A	19.56	29.26	0.669	- -	2.0	2.0	29.8	-	0.103
ARM B	15.43	27.67	0.558	- -	1.2	1.3	18.7	-	0.082
ARM C	20.83	26.18	0.796	- -	3.7	3.8	56.0	-	0.186
09.15-09.30									
ARM A	15.97	30.16	0.530	- -	2.0	1.1	17.6	-	0.071
ARM B	12.60	29.17	0.432	- -	1.3	0.8	11.8	-	0.061
ARM C	17.01	27.79	0.612	- -	3.8	1.6	25.3	-	0.095
09.30-09.45									
ARM A	13.38	30.86	0.433	- -	1.1	0.8	11.8	-	0.057
ARM B	10.55	30.28	0.349	- -	0.8	0.5	8.2	-	0.051
ARM C	14.24	28.98	0.491	- -	1.6	1.0	15.0	-	0.068

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.8	*
08.45	1.1	*
09.00	2.0	**
09.15	2.0	**
09.30	1.1	*
09.45	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.5	*
08.45	0.8	*
09.00	1.2	*
09.15	1.3	*
09.30	0.8	*
09.45	0.5	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	1.0	*
08.45	1.5	**
09.00	3.7	****
09.15	3.8	****
09.30	1.6	**
09.45	1.0	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1467.3	978.2	114.8	0.08	114.8	0.08
B	1157.6	771.7	75.7	0.07	75.7	0.07
C	1562.2	1041.5	182.9	0.12	182.9	0.12
ALL	4187.1	2791.4	373.3	0.09	373.3	0.09

T75

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited   Tel: +44 (0) 1344 770018
Crowthorne House   Fax: +44 (0) 1344 770864
Nine Mile Ride   Email: softwarebureau@trl.co.uk
Wokingham, Berks.   Web: www.trlsoftware.co.uk
RG40 3GA,UK

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"j:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\
6.Port Rd_Barry Docks\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 12:35:15 on Tuesday, 25 March 2008

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 25/03/08
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.71	9.64	13.00	51.90	33.00	18.9	0.787	37.435
ARM B	6.71	7.32	32.80	91.60	33.00	22.7	0.806	39.131
ARM C	5.03	7.52	31.70	21.30	33.00	19.6	0.770	36.835

V = approach half-width   L = effective flare length   D = inscribed circle diameter
E = entry width   R = entry radius   PHI = entry angle

WARNING ARM B: Effective flare length is outside normal range.
Treat capacities with increasing caution.
WARNING ARM C: Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.TIME PERIOD BEGINS 08.15 AND ENDS 09.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: AM 2008 Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.44	17.16	11.44
ARM B	15.00	45.00	75.00	9.01	13.52	9.01
ARM C	15.00	45.00	75.00	12.18	18.26	12.18

DEMAND SET TITLE: AM 2008 Base

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 09.45		TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S)		
	ARM A	0.000 0.0 (0.0)	0.471 431.0 (10.0)	0.529 484.0 (8.0)
	ARM B	0.714 515.0 (10.0)	0.000 0.0 (0.0)	0.286 206.0 (6.0)
	ARM C	0.670 653.0 (6.0)	0.330 321.0 (3.0)	0.000 0.0 (0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	11.44	31.39	0.364		0.0	0.6	8.4		0.05
ARM B	9.01	31.13	0.290		0.0	0.4	6.0		0.05
ARM C	12.18	29.90	0.407		0.0	0.7	10.0		0.06
08.30-08.45									
ARM A	13.66	30.80	0.443		0.6	0.8	11.6		0.06
ARM B	10.76	30.18	0.357		0.4	0.6	8.1		0.05
ARM C	14.54	28.88	0.503		0.7	1.0	14.7		0.07
08.45-09.00									
ARM A	16.73	30.01	0.557		0.8	1.2	18.1		0.07
ARM B	13.18	28.89	0.456		0.6	0.8	12.2		0.06
ARM C	17.81	27.49	0.648		1.0	1.8	25.9		0.10
09.00-09.15									
ARM A	16.73	30.00	0.558		1.2	1.3	18.8		0.08
ARM B	13.18	28.87	0.456		0.8	0.8	12.5		0.06
ARM C	17.81	27.48	0.648		1.8	1.8	27.2		0.10
09.15-09.30									
ARM A	13.66	30.79	0.444		1.3	0.8	12.3		0.06
ARM B	10.76	30.16	0.357		0.8	0.6	8.5		0.05
ARM C	14.54	28.86	0.504		1.8	1.0	15.8		0.07
09.30-09.45									
ARM A	11.44	31.37	0.365		0.8	0.6	8.8		0.05
ARM B	9.01	31.10	0.290		0.6	0.4	6.2		0.05
ARM C	12.18	29.88	0.407		1.0	0.7	10.6		0.06

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.6	*
08.45	0.8	*
09.00	1.2	*
09.15	1.3	*

09.30	0.8	*
09.45	0.6	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.4	
08.45	0.6	*
09.00	0.8	*
09.15	0.8	*
09.30	0.6	*
09.45	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.7	*
08.45	1.0	*
09.00	1.8	**
09.15	1.8	**
09.30	1.0	*
09.45	0.7	*

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1254.7	836.4	78.0	0.06	78.0	0.06
B	988.6	659.1	53.6	0.05	53.6	0.05
C	1335.6	890.4	104.2	0.08	104.2	0.08
ALL	3578.9	2385.9	235.9	0.07	235.9	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
6.Port Rd_Barry Docks\With Improvements\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 16:53:09 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.30	8.10	37.50	70.00	35.00	14.2	0.814	39.456
ARM B	4.59	7.41	30.00	35.00	35.00	22.5	0.756	35.731
ARM C	3.65	3.65	0.00	100.00	35.00	4.0	0.600	20.817

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2020 With Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.01	12.02	8.01	
ARM B	15.00	45.00	75.00	8.81	13.22	8.81	
ARM C	15.00	45.00	75.00	4.68	7.01	4.68	

DEMAND SET TITLE: AM 2020 With Development

T33

TURNING PROPORTIONS
TURNING COUNTS

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 09.45				
	ARM A	0.000	0.000	1.000
		0.0	0.0	641.0
		(0.0)	(10.0)	(8.0)
	ARM B	1.000	0.000	0.000
		705.0	0.0	0.0
		(10.0)	(0.0)	(6.0)
	ARM C	0.000	1.000	0.000
		0.0	374.0	0.0
		(6.0)	(3.0)	(0.0)

(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	8.04	32.91	0.244	- -	0.0	0.3	4.8	-	0.040
ARM B	8.85	26.53	0.333	- -	0.0	0.5	7.3	-	0.056
ARM C	4.69	14.56	0.322	- -	0.0	0.5	6.8	-	0.101
08.30-08.45									
ARM A	9.60	32.19	0.298	- -	0.3	0.4	6.3	-	0.044
ARM B	10.56	25.36	0.417	- -	0.5	0.7	10.4	-	0.068
ARM C	5.60	13.45	0.417	- -	0.5	0.7	10.2	-	0.127
08.45-09.00									
ARM A	11.76	31.23	0.377	- -	0.4	0.6	8.9	-	0.051
ARM B	12.94	23.76	0.544	- -	0.7	1.2	17.1	-	0.092
ARM C	6.86	11.94	0.575	- -	0.7	1.3	18.5	-	0.194
09.00-09.15									
ARM A	11.76	31.20	0.377	- -	0.6	0.6	9.0	-	0.051
ARM B	12.94	23.75	0.545	- -	1.2	1.2	17.8	-	0.093
ARM C	6.86	11.92	0.576	- -	1.3	1.3	19.9	-	0.198
09.15-09.30									
ARM A	9.60	32.15	0.299	- -	0.6	0.4	6.5	-	0.044
ARM B	10.56	25.35	0.417	- -	1.2	0.7	11.1	-	0.068
ARM C	5.60	13.42	0.417	- -	1.3	0.7	11.4	-	0.129
09.30-09.45									
ARM A	8.04	32.88	0.245	- -	0.4	0.3	4.9	-	0.040
ARM B	8.85	26.51	0.334	- -	0.7	0.5	7.7	-	0.057
ARM C	4.69	14.53	0.323	- -	0.7	0.5	7.4	-	0.102

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.4	
09.00	0.6	*
09.15	0.6	*
09.30	0.4	
09.45	0.3	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.5	
08.45	0.7	*

09.00	1.2	*
09.15	1.2	*
09.30	0.7	*
09.45	0.5	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.5	
08.45	0.7	*
09.00	1.3	*
09.15	1.3	*
09.30	0.7	*
09.45	0.5	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	882.3	588.2	40.4	0.05	40.4	0.05
B	970.4	646.9	71.3	0.07	71.4	0.07
C	514.8	343.2	74.3	0.14	74.3	0.14
ALL	2367.5	1578.3	186.0	0.08	186.0	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
6.Port Rd_Barry Docks\With Improvements\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 16:52:36 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A	I	4.30	I	8.10	I	37.50	I	70.00	I	35.00	I	14.2	I	0.814	I	39.456	I
I ARM B	I	4.59	I	7.41	I	30.00	I	35.00	I	35.00	I	22.5	I	0.756	I	35.731	I
I ARM C	I	3.65	I	3.65	I	0.00	I	100.00	I	35.00	I	4.0	I	0.600	I	20.817	I

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM	I	FLOW SCALE(%)	I
I A	I	100	I
I B	I	100	I
I C	I	100	I

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 With Development

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I
I ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE I	AT TOP	I	AFTER	I
I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I ARM A	I	15.00	I	45.00	I	75.00	I	14.73	I	22.09	I	14.73	I
I ARM B	I	15.00	I	45.00	I	75.00	I	9.24	I	13.86	I	9.24	I
I ARM C	I	15.00	I	45.00	I	75.00	I	3.80	I	5.70	I	3.80	I

DEMAND SET TITLE: PM 2020 With Development

I	I	TURNING PROPORTIONS	I
I	I	TURNING COUNTS	I

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45				
	ARM A	0.000	0.000	1.000
		0.0	0.0	1178.0
		(0.0)	(5.0)	(3.0)
	ARM B	1.000	0.000	0.000
		739.0	0.0	0.0
		(6.0)	(0.0)	(1.0)
	ARM C	0.000	1.000	0.000
		0.0	304.0	0.0
		(3.0)	(2.0)	(0.0)

(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	14.78	35.25	0.419	- -	0.0	0.7	10.5	-	0.049
ARM B	9.27	22.89	0.405	- -	0.0	0.7	9.8	-	0.073
ARM C	3.81	14.66	0.260	- -	0.0	0.3	5.1	-	0.092
16.30-16.45									
ARM A	17.65	34.64	0.510	- -	0.7	1.0	15.1	-	0.059
ARM B	11.07	20.76	0.533	- -	0.7	1.1	16.3	-	0.103
ARM C	4.55	13.52	0.337	- -	0.3	0.5	7.3	-	0.111
16.45-17.00									
ARM A	21.62	33.83	0.639	- -	1.0	1.7	25.2	-	0.081
ARM B	13.56	17.87	0.759	- -	1.1	3.0	40.4	-	0.220
ARM C	5.58	12.03	0.464	- -	0.5	0.8	12.2	-	0.154
17.00-17.15									
ARM A	21.62	33.81	0.639	- -	1.7	1.8	26.3	-	0.082
ARM B	13.56	17.83	0.761	- -	3.0	3.1	45.5	-	0.233
ARM C	5.58	11.96	0.466	- -	0.8	0.9	12.9	-	0.156
17.15-17.30									
ARM A	17.65	34.61	0.510	- -	1.8	1.0	16.1	-	0.059
ARM B	11.07	20.71	0.535	- -	3.1	1.2	18.5	-	0.107
ARM C	4.55	13.43	0.339	- -	0.9	0.5	8.1	-	0.113
17.30-17.45									
ARM A	14.78	35.22	0.420	- -	1.0	0.7	11.1	-	0.049
ARM B	9.27	22.84	0.406	- -	1.2	0.7	10.6	-	0.074
ARM C	3.81	14.61	0.261	- -	0.5	0.4	5.5	-	0.093

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.0	*
17.00	1.7	**
17.15	1.8	**
17.30	1.0	*
17.45	0.7	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.1	*

17.00	3.0	***
17.15	3.1	***
17.30	1.2	*
17.45	0.7	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.5	*
17.00	0.8	*
17.15	0.9	*
17.30	0.5	*
17.45	0.4	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1621.4	1081.0	104.4	0.06	104.5	0.06
B	1017.2	678.1	141.1	0.14	141.2	0.14
C	418.4	279.0	51.0	0.12	51.0	0.12
ALL	3057.0	2038.0	296.6	0.10	296.6	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
6.Port Rd_Barry Docks\With Improvements\Port Rd_Barry Dock Link Rd Rndbt.vai"
(drive-on-the-left) at 16:52:02 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Port Rd_Barry Dock Link Rd Roundabout
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Arm A4050 (N)
ARM B - Barry Docks Link Rd (S)
ARM C - Port Rd (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	4.30	8.10	37.50	70.00	35.00	14.2	0.814	39.456
ARM B	4.59	7.41	30.00	35.00	35.00	22.5	0.756	35.731
ARM C	3.65	3.65	0.00	100.00	35.00	4.0	0.600	20.817

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 With Development + Tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	15.77	23.66	15.77
ARM B	15.00	45.00	75.00	9.24	13.86	9.24
ARM C	15.00	45.00	75.00	3.80	5.70	3.80

DEMAND SET TITLE: PM 2020 With Development + Tourism

T33

TURNING PROPORTIONS
TURNING COUNTS

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45				
	ARM A	0.000	0.000	1.000
		0.0	0.0	1262.0
		(0.0)	(5.0)	(3.0)
	ARM B	1.000	0.000	0.000
		739.0	0.0	0.0
		(6.0)	(0.0)	(1.0)
	ARM C	0.000	1.000	0.000
		0.0	304.0	0.0
		(3.0)	(2.0)	(0.0)

(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	15.83	35.25	0.449	- -	0.0	0.8	11.9	-	0.051
ARM B	9.27	22.12	0.419	- -	0.0	0.7	10.4	-	0.077
ARM C	3.81	14.66	0.260	- -	0.0	0.3	5.1	-	0.092
16.30-16.45									
ARM A	18.91	34.64	0.546	- -	0.8	1.2	17.4	-	0.063
ARM B	11.07	19.84	0.558	- -	0.7	1.2	17.9	-	0.113
ARM C	4.55	13.53	0.337	- -	0.3	0.5	7.3	-	0.111
16.45-17.00									
ARM A	23.16	33.83	0.685	- -	1.2	2.1	30.6	-	0.093
ARM B	13.56	16.74	0.810	- -	1.2	3.9	50.9	-	0.284
ARM C	5.58	12.07	0.462	- -	0.5	0.8	12.1	-	0.153
17.00-17.15									
ARM A	23.16	33.81	0.685	- -	2.1	2.2	32.2	-	0.094
ARM B	13.56	16.70	0.812	- -	3.9	4.1	60.1	-	0.314
ARM C	5.58	11.97	0.466	- -	0.8	0.9	12.8	-	0.156
17.15-17.30									
ARM A	18.91	34.62	0.546	- -	2.2	1.2	18.8	-	0.064
ARM B	11.07	19.77	0.560	- -	4.1	1.3	21.0	-	0.120
ARM C	4.55	13.39	0.340	- -	0.9	0.5	8.1	-	0.114
17.30-17.45									
ARM A	15.83	35.22	0.450	- -	1.2	0.8	12.6	-	0.052
ARM B	9.27	22.06	0.420	- -	1.3	0.7	11.3	-	0.079
ARM C	3.81	14.60	0.261	- -	0.5	0.4	5.5	-	0.093

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.8	*
16.45	1.2	*
17.00	2.1	**
17.15	2.2	**
17.30	1.2	*
17.45	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.2	*

17.00	3.9	****
17.15	4.1	****
17.30	1.3	*
17.45	0.7	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.5	*
17.00	0.8	*
17.15	0.9	*
17.30	0.5	*
17.45	0.4	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1737.0	1158.0	123.4	0.07	123.4	0.07
B	1017.2	678.1	171.5	0.17	171.5	0.17
C	418.4	279.0	50.9	0.12	50.9	0.12
ALL	3172.7	2115.1	345.8	0.11	345.8	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

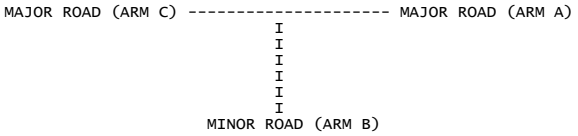
Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\18.Subway Rd_Ffordd y Mileniwm\Subway Rd_Ffordd y Mileniwm.vpi"
(drive-on-the-left) at 14:18:37 on Tuesday, 6 April 2010

.RUN INFORMATION

RUN TITLE : Subway Road / Ffordd y Mileniwm Priority
LOCATION :
DATE : 06/04/10
CLIENT :
ENUMERATOR : Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Ffordd y Mileniwm (W)
ARM B IS Subway Road
ARM C IS Ffordd y Mileniwm (E)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.00 M.
CENTRAL RESERVE WIDTH	(WCR) 1.50 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)154.00 M.
- BLOCKS TRAFFIC	NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 43.0 M.
- VISIBILITY TO RIGHT	(VB-A) 42.0 M.
- LANE 1 WIDTH	(WB-C) 4.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
715.49	0.27	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.38	0.25	0.10	0.16	0.35

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
663.15	0.25	0.25

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: AM 2008 Base

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	9.04	13.56	9.04
ARM B	15.00	45.00	75.00	1.15	1.72	1.15
ARM C	15.00	45.00	75.00	5.91	8.87	5.91

.Demand set: AM 2008 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 08.30				
	ARM A	0.000	0.084	0.916
		0.0	61.0	662.0
		(0.0)	(4.0)	(4.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	92.0
		(0.0)	(0.0)	(8.0)
	ARM C	1.000	0.000	0.000
		473.0	0.0	0.0
		(4.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET AM 2008 Base
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	1.15	8.84	0.131		0.00	0.15	2.1		0.13
C-A	5.93								
C-B	0.00	7.94	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	8.31								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	1.38	8.42	0.164		0.15	0.19	2.8		0.14
C-A	7.09								
C-B	0.00	7.53	0.000		0.00	0.00	0.0		0.00
A-B	0.91								
A-C	9.92								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	1.69	7.83	0.216		0.19	0.27	3.9		0.16
C-A	8.68								
C-B	0.00	6.96	0.000		0.00	0.00	0.0		0.00
A-B	1.12								
A-C	12.15								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	1.69	7.83	0.216		0.27	0.27	4.1		0.16
C-A	8.68								
C-B	0.00	6.96	0.000		0.00	0.00	0.0		0.00
A-B	1.12								
A-C	12.15								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	1.38	8.42	0.164		0.27	0.20	3.1		0.14
C-A	7.09								
C-B	0.00	7.53	0.000		0.00	0.00	0.0		0.00
A-B	0.91								
A-C	9.92								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.30-09.45									
B-AC	1.15	8.84	0.131		0.20	0.15	2.3		0.13
C-A	5.93								
C-B	0.00	7.94	0.000		0.00	0.00	0.0		0.00
A-B	0.77								
A-C	8.31								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.2
09.00	0.3
09.15	0.3
09.30	0.2
09.45	0.2

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	126.6	84.4	18.4	0.15	18.4	0.15		
C-A	651.0	434.0						
C-B	0.0	0.0	0.0	0.00	0.0	0.00		
A-B	84.0	56.0						
A-C	911.2	607.5						
ALL	1772.8	1181.9	18.4	0.01	18.4	0.01		

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
715.49	0.27	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.38	0.25	0.10	0.16	0.35

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
663.15	0.25	0.25

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2008 Base

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	8.79	13.18	8.79
ARM B	15.00	45.00	75.00	1.50	2.25	1.50
ARM C	15.00	45.00	75.00	11.01	16.52	11.01

.Demand set: PM 2008 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.155	0.845
		0.0	109.0	594.0
		(0.0)	(3.0)	(3.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	120.0
		(0.0)	(0.0)	(3.0)
	ARM C	1.000	0.000	0.000
		881.0	0.0	0.0
		(1.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2008 Base
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-AC	1.51	9.46	0.159		0.00	0.19	2.7		0.13
C-A	11.05								
C-B	0.00	8.02	0.000		0.00	0.00	0.0		0.00
A-B	1.37								
A-C	7.45								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-AC	1.80	9.05	0.199		0.19	0.25	3.6		0.14
C-A	13.20								
C-B	0.00	7.62	0.000		0.00	0.00	0.0		0.00
A-B	1.63								
A-C	8.90								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-AC	2.20	8.48	0.260		0.25	0.35	5.0		0.16
C-A	16.17								
C-B	0.00	7.08	0.000		0.00	0.00	0.0		0.00
A-B	2.00								
A-C	10.90								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	2.20	8.48	0.260		0.35	0.35	5.2		0.16
C-A	16.17								
C-B	0.00	7.08	0.000		0.00	0.00	0.0		0.00
A-B	2.00								
A-C	10.90								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	1.80	9.05	0.199		0.35	0.25	3.9		0.14
C-A	13.20								
C-B	0.00	7.62	0.000		0.00	0.00	0.0		0.00
A-B	1.63								
A-C	8.90								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.51	9.46	0.159		0.25	0.19	2.9		0.13
C-A	11.05								
C-B	0.00	8.02	0.000		0.00	0.00	0.0		0.00
A-B	1.37								
A-C	7.45								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.2
16.45	0.2
17.00	0.3
17.15	0.3
17.30	0.3
17.45	0.2

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	165.2	110.1	23.4	0.14	23.4	0.14
C-A	1212.6	808.4				
C-B	0.0	0.0	0.0	0.00	0.0	0.00
A-B	150.0	100.0				
A-C	817.6	545.1				
ALL	2345.4	1563.6	23.4	0.01	23.4	0.01

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

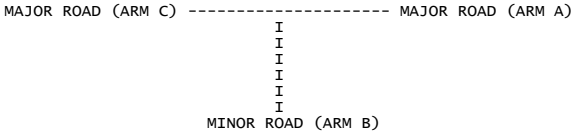
Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
18.Subway Rd_Ffordd y Mileniwm\Subway Rd_Ffordd y Mileniwm.vpi"
(drive-on-the-left) at 10:19:25 on Tuesday, 13 April 2010

.RUN INFORMATION

RUN TITLE : Subway Road / Ffordd y Mileniwm Priority
LOCATION :
DATE : 06/04/10
CLIENT :
ENUMERATOR : Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Ffordd y Mileniwm (W)
ARM B IS Subway Road
ARM C IS Ffordd y Mileniwm (E)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.00 M.
CENTRAL RESERVE WIDTH	(WCR) 1.50 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)154.00 M.
- BLOCKS TRAFFIC	NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 43.0 M.
- VISIBILITY TO RIGHT	(VB-A) 42.0 M.
- LANE 1 WIDTH	(WB-C) 4.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
715.49	0.27	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.38	0.25	0.10	0.16	0.35

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
663.15	0.25	0.25

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: AM 2020 Base

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	10.52	15.79	10.52
ARM B	15.00	45.00	75.00	1.35	2.03	1.35
ARM C	15.00	45.00	75.00	6.89	10.33	6.89

.Demand set: AM 2020 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 08.30				
	ARM A	0.000	0.084	0.916
		0.0	71.0	771.0
		(0.0)	(4.0)	(4.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	108.0
		(0.0)	(0.0)	(8.0)
	ARM C	1.000	0.000	0.000
		551.0	0.0	0.0
		(4.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET AM 2020 Base
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	1.36	8.48	0.160		0.00	0.19	2.7		0.14
C-A	6.91								
C-B	0.00	7.59	0.000		0.00	0.00	0.0		0.00
A-B	0.89								
A-C	9.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	1.62	7.98	0.203		0.19	0.25	3.7		0.16
C-A	8.26								
C-B	0.00	7.12	0.000		0.00	0.00	0.0		0.00
A-B	1.06								
A-C	11.55								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	1.98	7.30	0.272		0.25	0.37	5.3		0.19
C-A	10.11								
C-B	0.00	6.46	0.000		0.00	0.00	0.0		0.00
A-B	1.30								
A-C	14.15								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	1.98	7.30	0.272		0.37	0.37	5.5		0.19
C-A	10.11								
C-B	0.00	6.46	0.000		0.00	0.00	0.0		0.00
A-B	1.30								
A-C	14.15								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	1.62	7.98	0.203		0.37	0.26	4.0		0.16
C-A	8.26								
C-B	0.00	7.12	0.000		0.00	0.00	0.0		0.00
A-B	1.06								
A-C	11.55								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.30-09.45									
B-AC	1.36	8.48	0.160		0.26	0.19	3.0		0.14
C-A	6.91								
C-B	0.00	7.59	0.000		0.00	0.00	0.0		0.00
A-B	0.89								
A-C	9.67								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.2
08.45	0.3
09.00	0.4
09.15	0.4
09.30	0.3
09.45	0.2

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND	* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	148.7	99.1	24.2	0.16	24.2	0.16		
C-A	758.4	505.6						
C-B	0.0	0.0	0.0	0.00	0.0	0.00		
A-B	97.7	65.2						
A-C	1061.2	707.5						
ALL	2066.0	1377.3	24.2	0.01	24.2	0.01		

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
715.49	0.27	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.38	0.25	0.10	0.16	0.35

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
663.15	0.25	0.25

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2020 Base

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	FLOW STOPS TO RISE	FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP	AFTER PEAK
ARM A	15.00	45.00	75.00		10.21	15.32	10.21
ARM B	15.00	45.00	75.00		1.74	2.61	1.74
ARM C	15.00	45.00	75.00		12.80	19.20	12.80

.Demand set: PM 2020 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.154	0.846
		0.0	126.0	691.0
		(0.0)	(3.0)	(3.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	139.0
		(0.0)	(0.0)	(3.0)
	ARM C	1.000	0.000	0.000
		1024.0	0.0	0.0
		(1.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2020 Base
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-AC	1.74	9.11	0.191		0.00	0.23	3.4		0.14
C-A	12.85								
C-B	0.00	7.69	0.000		0.00	0.00	0.0		0.00
A-B	1.58								
A-C	8.67								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-AC	2.08	8.63	0.241		0.23	0.31	4.6		0.15
C-A	15.34								
C-B	0.00	7.23	0.000		0.00	0.00	0.0		0.00
A-B	1.89								
A-C	10.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-AC	2.55	7.97	0.320		0.31	0.46	6.7		0.18
C-A	18.79								
C-B	0.00	6.60	0.000		0.00	0.00	0.0		0.00
A-B	2.31								
A-C	12.68								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	2.55	7.97	0.320		0.46	0.47	7.0		0.18
C-A	18.79								
C-B	0.00	6.60	0.000		0.00	0.00	0.0		0.00
A-B	2.31								
A-C	12.68								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	2.08	8.63	0.241		0.47	0.32	5.0		0.15
C-A	15.34								
C-B	0.00	7.23	0.000		0.00	0.00	0.0		0.00
A-B	1.89								
A-C	10.35								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.74	9.11	0.191		0.32	0.24	3.7		0.14
C-A	12.85								
C-B	0.00	7.69	0.000		0.00	0.00	0.0		0.00
A-B	1.58								
A-C	8.67								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.2
16.45	0.3
17.00	0.5
17.15	0.5
17.30	0.3
17.45	0.2

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	191.3	127.5	30.3	0.16	30.3	0.16
C-A	1409.5	939.6				
C-B	0.0	0.0	0.0	0.00	0.0	0.00
A-B	173.4	115.6				
A-C	951.1	634.1				
ALL	2725.3	1816.9	30.3	0.01	30.3	0.01

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
715.49	0.27	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.38	0.25	0.10	0.16	0.35

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
663.15	0.25	0.25

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2020 Base+tourism

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

	NUMBER OF MINUTES FROM START WHEN	RATE OF FLOW (VEH/MIN)

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	11.59	17.38	11.59
ARM B	15.00	45.00	75.00	1.74	2.61	1.74
ARM C	15.00	45.00	75.00	14.04	21.06	14.04

Demand set: PM 2020 Base+tourism

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.136	0.864
		0.0	126.0	801.0
		(0.0)	(3.0)	(3.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	139.0
		(0.0)	(0.0)	(3.0)
	ARM C	1.000	0.000	0.000
		1123.0	0.0	0.0
		(1.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2020 Base+tourism
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-AC	1.74	8.75	0.199		0.00	0.25	3.5		0.14
C-A	14.09								
C-B	0.00	7.37	0.000		0.00	0.00	0.0		0.00
A-B	1.58								
A-C	10.05								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-AC	2.08	8.20	0.254		0.25	0.34	4.9		0.16
C-A	16.83								
C-B	0.00	6.85	0.000		0.00	0.00	0.0		0.00
A-B	1.89								
A-C	12.00								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-AC	2.55	7.44	0.343		0.34	0.51	7.4		0.20
C-A	20.61								
C-B	0.00	6.13	0.000		0.00	0.00	0.0		0.00
A-B	2.31								
A-C	14.70								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	2.55	7.44	0.343		0.51	0.52	7.7		0.20
C-A	20.61								
C-B	0.00	6.13	0.000		0.00	0.00	0.0		0.00
A-B	2.31								
A-C	14.70								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	2.08	8.20	0.254		0.52	0.35	5.4		0.16
C-A	16.83								
C-B	0.00	6.85	0.000		0.00	0.00	0.0		0.00
A-B	1.89								
A-C	12.00								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.74	8.75	0.199		0.35	0.25	3.9		0.14
C-A	14.09								
C-B	0.00	7.37	0.000		0.00	0.00	0.0		0.00
A-B	1.58								
A-C	10.05								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.2	
16.45	0.3	
17.00	0.5	*
17.15	0.5	*
17.30	0.3	
17.45	0.3	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	191.3	127.5	32.8	0.17	32.8	0.17
C-A	1545.7	1030.5				
C-B	0.0	0.0	0.0	0.00	0.0	0.00
A-B	173.4	115.6				
A-C	1102.5	735.0				
ALL	3013.0	2008.7	32.8	0.01	32.8	0.01

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

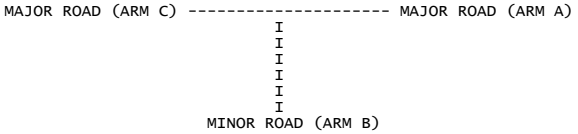
Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
18.Subway Rd_Ffordd y Mileniwm\Subway Rd_Ffordd y Mileniwm.vpi"
(drive-on-the-left) at 10:19:52 on Tuesday, 13 April 2010

.RUN INFORMATION

RUN TITLE : Subway Road / Ffordd y Mileniwm Priority
LOCATION :
DATE : 06/04/10
CLIENT :
ENUMERATOR : Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Ffordd y Mileniwm (W)
ARM B IS Subway Road
ARM C IS Ffordd y Mileniwm (E)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 7.00 M.
CENTRAL RESERVE WIDTH	(WCR) 1.50 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B)154.00 M.
- BLOCKS TRAFFIC	NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 43.0 M.
- VISIBILITY TO RIGHT	(VB-A) 42.0 M.
- LANE 1 WIDTH	(WB-C) 4.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
715.49	0.27	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.38	0.25	0.10	0.16	0.35

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
663.15	0.25	0.25

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: AM 2020 With Development

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	14.74	22.11	14.74
ARM B	15.00	45.00	75.00	1.35	2.03	1.35
ARM C	15.00	45.00	75.00	9.96	14.94	9.96

.Demand set: AM 2020 With Development

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 08.30				
	ARM A	0.000	0.060	0.940
		0.0	71.0	1108.0
		(0.0)	(4.0)	(4.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	108.0
		(0.0)	(0.0)	(8.0)
	ARM C	1.000	0.000	0.000
		797.0	0.0	0.0
		(4.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET AM 2020 With Development
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-AC	1.36	7.40	0.183		0.00	0.22	3.2		0.16
C-A	10.00								
C-B	0.00	6.61	0.000		0.00	0.00	0.0		0.00
A-B	0.89								
A-C	13.90								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-AC	1.62	6.70	0.242		0.22	0.31	4.5		0.20
C-A	11.94								
C-B	0.00	5.94	0.000		0.00	0.00	0.0		0.00
A-B	1.06								
A-C	16.60								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-AC	1.98	5.72	0.347		0.31	0.52	7.4		0.27
C-A	14.63								
C-B	0.00	5.02	0.000		0.00	0.00	0.0		0.00
A-B	1.30								
A-C	20.33								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-AC	1.98	5.72	0.347		0.52	0.52	7.8		0.27
C-A	14.63								
C-B	0.00	5.02	0.000		0.00	0.00	0.0		0.00
A-B	1.30								
A-C	20.33								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-AC	1.62	6.70	0.242		0.52	0.32	5.1		0.20
C-A	11.94								
C-B	0.00	5.94	0.000		0.00	0.00	0.0		0.00
A-B	1.06								
A-C	16.60								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.30-09.45									
B-AC	1.36	7.40	0.183		0.32	0.23	3.5		0.17
C-A	10.00								
C-B	0.00	6.61	0.000		0.00	0.00	0.0		0.00
A-B	0.89								
A-C	13.90								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.2	
08.45	0.3	
09.00	0.5	*
09.15	0.5	*
09.30	0.3	
09.45	0.2	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0
09.30	0.0
09.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *			
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)		(MIN)	(MIN/VEH)
B-AC	148.7	99.1	31.5	0.21	31.5		0.21	
C-A	1097.0	731.3						
C-B	0.0	0.0	0.0	0.00	0.0		0.00	
A-B	97.7	65.2						
A-C	1525.1	1016.7						
ALL	2868.5	1912.3	31.5	0.01	31.5		0.01	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
715.49	0.27	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.38	0.25	0.10	0.16	0.35

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
663.15	0.25	0.25

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2020 with Development

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.02	21.04	14.02
ARM B	15.00	45.00	75.00	1.74	2.61	1.74
ARM C	15.00	45.00	75.00	17.44	26.16	17.44

.Demand set: PM 2020 with Development

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.112	0.888
		0.0	126.0	996.0
		(0.0)%	(3.0)%	(3.0)%
	ARM B	0.000	0.000	1.000
		0.0	0.0	139.0
		(0.0)%	(0.0)%	(3.0)%
	ARM C	1.000	0.000	0.000
		1395.0	0.0	0.0
		(1.0)%	(0.0)%	(0.0)%

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2020 with Development
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-AC	1.74	8.10	0.215		0.00	0.27	3.9		0.16
C-A	17.50								
C-B	0.00	6.81	0.000		0.00	0.00	0.0		0.00
A-B	1.58								
A-C	12.50								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-AC	2.08	7.42	0.281		0.27	0.38	5.6		0.19
C-A	20.90								
C-B	0.00	6.18	0.000		0.00	0.00	0.0		0.00
A-B	1.89								
A-C	14.92								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-AC	2.55	6.49	0.393		0.38	0.63	9.0		0.25
C-A	25.60								
C-B	0.00	5.31	0.000		0.00	0.00	0.0		0.00
A-B	2.31								
A-C	18.28								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	2.55	6.49	0.393		0.63	0.64	9.5		0.25
C-A	25.60								
C-B	0.00	5.31	0.000		0.00	0.00	0.0		0.00
A-B	2.31								
A-C	18.28								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	2.08	7.42	0.281		0.64	0.40	6.2		0.19
C-A	20.90								
C-B	0.00	6.18	0.000		0.00	0.00	0.0		0.00
A-B	1.89								
A-C	14.92								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.74	8.10	0.215		0.40	0.28	4.3		0.16
C-A	17.50								
C-B	0.00	6.81	0.000		0.00	0.00	0.0		0.00
A-B	1.58								
A-C	12.50								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.4	
17.00	0.6	*
17.15	0.6	*
17.30	0.4	
17.45	0.3	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	191.3	127.5	38.5	0.20	38.5	0.20
C-A	1920.1	1280.1				
C-B	0.0	0.0	0.0	0.00	0.0	0.00
A-B	173.4	115.6				
A-C	1370.9	913.9				
ALL	3655.8	2437.2	38.5	0.01	38.5	0.01

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
715.49	0.27	0.10

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
582.38	0.25	0.10	0.16	0.35

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
663.15	0.25	0.25

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2020 with Development + tourism

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

	NUMBER OF MINUTES FROM START WHEN	RATE OF FLOW (VEH/MIN)

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	15.40	23.10	15.40
ARM B	15.00	45.00	75.00	1.74	2.61	1.74
ARM C	15.00	45.00	75.00	18.67	28.01	18.67

Demand set: PM 2020 with Development + tourism

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.102	0.898
		0.0	126.0	1106.0
		(0.0)	(3.0)	(3.0)
	ARM B	0.000	0.000	1.000
		0.0	0.0	139.0
		(0.0)	(0.0)	(3.0)
	ARM C	1.000	0.000	0.000
		1494.0	0.0	0.0
		(1.0)	(0.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2020 with Development + tourism
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-AC	1.74	7.73	0.226		0.00	0.29	4.1		0.17
C-A	18.75								
C-B	0.00	6.49	0.000		0.00	0.00	0.0		0.00
A-B	1.58								
A-C	13.88								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-AC	2.08	6.99	0.298		0.29	0.42	6.0		0.20
C-A	22.38								
C-B	0.00	5.80	0.000		0.00	0.00	0.0		0.00
A-B	1.89								
A-C	16.57								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-AC	2.55	5.95	0.428		0.42	0.73	10.2		0.29
C-A	27.42								
C-B	0.00	4.85	0.000		0.00	0.00	0.0		0.00
A-B	2.31								
A-C	20.30								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-AC	2.55	5.95	0.428		0.73	0.74	11.0		0.29
C-A	27.42								
C-B	0.00	4.85	0.000		0.00	0.00	0.0		0.00
A-B	2.31								
A-C	20.30								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-AC	2.08	6.99	0.298		0.74	0.43	6.8		0.21
C-A	22.38								
C-B	0.00	5.80	0.000		0.00	0.00	0.0		0.00
A-B	1.89								
A-C	16.57								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-AC	1.74	7.73	0.226		0.43	0.30	4.6		0.17
C-A	18.75								
C-B	0.00	6.49	0.000		0.00	0.00	0.0		0.00
A-B	1.58								
A-C	13.88								

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.4	
17.00	0.7	*
17.15	0.7	*
17.30	0.4	
17.45	0.3	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-AC	191.3	127.5	42.8	0.22	42.8	0.22
C-A	2056.4	1370.9				
C-B	0.0	0.0	0.0	0.00	0.0	0.00
A-B	173.4	115.6				
A-C	1522.3	1014.9				
ALL	3943.5	2629.0	42.8	0.01	42.8	0.01

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
7.Waycock Cross\Waycock Cross Roundabout.vai"
(drive-on-the-left) at 11:56:44 on Wednesday, 7 April 2010

.FILE PROPERTIES
****

RUN TITLE: Waycock Cross
LOCATION:
DATE: 14/07/09
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Waycock Rd (N)
ARM B - Port Rd (E)
ARM C - Pontypridd Rd
ARM D - Port Road (W)

.GEOMETRIC DATA

---- T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.99	5.27	25.00	12.90	48.00	38.3	0.536	22.675
ARM B	4.59	7.85	26.60	17.70	50.60	49.8	0.630	32.377
ARM C	3.00	7.14	66.50	20.80	50.60	50.4	0.609	30.339
ARM D	3.71	6.53	14.20	7.10	48.00	50.0	0.511	23.100

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

.---------- T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2008 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	3.60	5.40	3.60
ARM B	15.00	45.00	75.00	8.60	12.90	8.60
ARM C	15.00	45.00	75.00	7.20	10.80	7.20
ARM D	15.00	45.00	75.00	10.40	15.60	10.40

DEMAND SET TITLE: AM 2008 Base

T33

TIME	FROM/TO	TURNING PROPORTIONS (PERCENTAGE OF H.V.S) TURNING COUNTS ARM A	ARM B	ARM C	ARM D
16.15 - 17.45	ARM A	0.000	0.240	0.517	0.243
		0.0	69.0	149.0	70.0
		(0.0)	(6.0)	(1.0)	(3.0)
	ARM B	0.158	0.000	0.321	0.520
		109.0	0.0	221.0	358.0
		(8.0)	(0.0)	(7.0)	(11.0)
	ARM C	0.238	0.365	0.000	0.398
		137.0	210.0	0.0	229.0
		(4.0)	(1.0)	(0.0)	(4.0)
	ARM D	0.115	0.427	0.458	0.000
		96.0	355.0	381.0	0.0
		(5.0)	(7.0)	(6.0)	(0.0)

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	3.61	15.61	0.231	- -	0.0	0.3	4.4	-	0.083
ARM B	8.63	25.14	0.343	- -	0.0	0.5	7.6	-	0.060
ARM C	7.23	25.14	0.287	- -	0.0	0.4	5.9	-	0.056
ARM D	10.44	18.89	0.553	- -	0.0	1.2	17.3	-	0.116
16.30-16.45									
ARM A	4.32	14.33	0.301	- -	0.3	0.4	6.2	-	0.100
ARM B	10.31	24.24	0.425	- -	0.5	0.7	10.8	-	0.072
ARM C	8.63	24.28	0.355	- -	0.4	0.5	8.1	-	0.064
ARM D	12.47	18.33	0.680	- -	1.2	2.1	29.0	-	0.167
16.45-17.00									
ARM A	5.28	12.67	0.417	- -	0.4	0.7	10.2	-	0.135
ARM B	12.63	23.08	0.547	- -	0.7	1.2	17.3	-	0.095
ARM C	10.57	23.12	0.457	- -	0.5	0.8	12.2	-	0.079
ARM D	15.27	17.57	0.869	- -	2.1	5.6	70.9	-	0.365
17.00-17.15									
ARM A	5.28	12.57	0.421	- -	0.7	0.7	10.7	-	0.137
ARM B	12.63	23.02	0.549	- -	1.2	1.2	18.0	-	0.096
ARM C	10.57	23.11	0.457	- -	0.8	0.8	12.6	-	0.080
ARM D	15.27	17.57	0.869	- -	5.6	6.0	87.8	-	0.417
17.15-17.30									
ARM A	4.32	14.17	0.304	- -	0.7	0.4	6.8	-	0.102

I ARM B	10.31	24.14	0.427	- -	-	1.2	0.8	11.6	-	0.073	I
I ARM C	8.63	24.26	0.356	- -	-	0.8	0.6	8.5	-	0.064	I
I ARM D	12.47	18.32	0.680	- -	-	6.0	2.2	37.0	-	0.186	I
I											I

I TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 17.30-17.45										I
I ARM A	3.61	15.53	0.233	- -	-	0.4	0.3	4.7	-	0.084	I
I ARM B	8.63	25.08	0.344	- -	-	0.8	0.5	8.1	-	0.061	I
I ARM C	7.23	25.11	0.288	- -	-	0.6	0.4	6.2	-	0.056	I
I ARM D	10.44	18.88	0.553	- -	-	2.2	1.3	19.8	-	0.120	I
I										I

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.3	
16.45	0.4	
17.00	0.7	*
17.15	0.7	*
17.30	0.4	
17.45	0.3	

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	*
16.45	0.7	*
17.00	1.2	*
17.15	1.2	*
17.30	0.8	*
17.45	0.5	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.5	*
17.00	0.8	*
17.15	0.8	*
17.30	0.6	*
17.45	0.4	

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.2	*
16.45	2.1	**
17.00	5.6	******
17.15	6.0	******
17.30	2.2	**
17.45	1.3	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	396.4	264.3	43.0	0.11	43.0	0.11
B	947.0	631.3	73.3	0.08	73.3	0.08
C	792.8	528.5	53.4	0.07	53.4	0.07
D	1145.2	763.5	261.8	0.23	261.8	0.23
ALL	3281.4	2187.6	431.5	0.13	431.6	0.13

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
7.Waycock Cross\Waycock Cross - Proposed.vai"
(drive-on-the-left) at 14:19:12 on Thursday, 8 April 2010

.FILE PROPERTIES
****

RUN TITLE: Waycock Cross - Capita Proposal
LOCATION:
DATE: 08/04/10
CLIENT:
ENUMERATOR: phillip.hardwick [WACDKTDS3J]
JOB NUMBER: 122153
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Waycock Rd (N)
ARM B - Port Rd (E)
ARM C - Pontypridd Rd
ARM D - Port Road (W)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.50	7.00	50.00	5.00	50.00	20.0	0.579	28.518
ARM B	4.00	7.75	55.00	5.00	50.00	30.0	0.591	30.502
ARM C	4.00	7.50	50.00	5.00	50.00	35.0	0.569	28.958
ARM D	5.00	11.00	100.00	5.00	50.00	25.0	0.751	44.115

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A: Effective flare length is outside normal range.
Treat capacities with increasing caution.
WARNING ARM B: Effective flare length is outside normal range.
Treat capacities with increasing caution.
WARNING ARM C: Effective flare length is outside normal range.
Treat capacities with increasing caution.
WARNING ARM D: Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 07.15 AND ENDS 08.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: AM 2020 Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS IFALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.20	6.30	4.20
ARM B	15.00	45.00	75.00	10.01	15.02	10.01
ARM C	15.00	45.00	75.00	8.40	12.60	8.40
ARM D	15.00	45.00	75.00	12.14	18.21	12.14

DEMAND SET TITLE: AM 2020 Base

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
07.15 - 08.45					
	ARM A	0.000	0.238	0.518	0.244
		0.0	80.0	174.0	82.0
		(0.0)	(6.0)	(1.0)	(3.0)
	ARM B	0.157	0.000	0.322	0.521
		126.0	0.0	258.0	417.0
		(8.0)	(0.0)	(7.0)	(11.0)
	ARM C	0.238	0.365	0.000	0.397
		160.0	245.0	0.0	267.0
		(4.0)	(1.0)	(0.0)	(4.0)
	ARM D	0.115	0.426	0.458	0.000
		112.0	414.0	445.0	0.0
		(5.0)	(7.0)	(6.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
07.15-07.30									
ARM A	4.20	19.61	0.214		0.0	0.3	4.0		0.06
ARM B	10.01	22.99	0.436		0.0	0.8	11.1		0.08
ARM C	8.40	23.44	0.358		0.0	0.6	8.1		0.07
ARM D	12.14	36.66	0.331		0.0	0.5	7.3		0.04
07.30-07.45									
ARM A	5.02	18.01	0.278		0.3	0.4	5.6		0.08
ARM B	11.96	22.02	0.543		0.8	1.2	17.0		0.10
ARM C	10.03	22.52	0.445		0.6	0.8	11.6		0.08
ARM D	14.49	35.71	0.406		0.5	0.7	10.0		0.05
07.45-08.00									
ARM A	6.14	15.83	0.388		0.4	0.6	9.1		0.10
ARM B	14.64	20.70	0.708		1.2	2.3	32.7		0.16
ARM C	12.28	21.27	0.578		0.8	1.3	19.4		0.11
ARM D	17.75	34.42	0.516		0.7	1.1	15.5		0.06
08.00-08.15									
ARM A	6.14	15.81	0.389		0.6	0.6	9.5		0.10
ARM B	14.64	20.68	0.708		2.3	2.4	35.4		0.17
ARM C	12.28	21.24	0.578		1.3	1.4	20.3		0.11
ARM D	17.75	34.40	0.516		1.1	1.1	15.9		0.06
08.15-08.30									
ARM A	5.02	17.98	0.279		0.6	0.4	6.0		0.08
ARM B	11.96	22.00	0.544		2.4	1.2	18.9		0.10
ARM C	10.03	22.47	0.446		1.4	0.8	12.6		0.08
ARM D	14.49	35.68	0.406		1.1	0.7	10.5		0.05
08.30-08.45									
ARM A	4.20	19.58	0.215		0.4	0.3	4.2		0.07
ARM B	10.01	22.96	0.436		1.2	0.8	12.0		0.08
ARM C	8.40	23.41	0.359		0.8	0.6	8.6		0.07
ARM D	12.14	36.63	0.331		0.7	0.5	7.6		0.04

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.3	
07.45	0.4	
08.00	0.6	*
08.15	0.6	*
08.30	0.4	

08.45	0.3

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.8	*
07.45	1.2	*
08.00	2.3	**
08.15	2.4	**
08.30	1.2	*
08.45	0.8	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.6	*
07.45	0.8	*
08.00	1.3	*
08.15	1.4	*
08.30	0.8	*
08.45	0.6	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	0.5	
07.45	0.7	*
08.00	1.1	*
08.15	1.1	*
08.30	0.7	*
08.45	0.5	

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	460.7	307.2	38.4	0.08	38.4	0.08
B	1098.3	732.2	127.2	0.12	127.2	0.12
C	921.5	614.3	80.6	0.09	80.6	0.09
D	1331.4	887.6	66.7	0.05	66.7	0.05
ALL	3812.0	2541.3	312.9	0.08	313.0	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
7.Waycock Cross\Waycock Cross - Proposed.vai"
(drive-on-the-left) at 12:10:26 on Monday, 12 April 2010

.FILE PROPERTIES
****

RUN TITLE: Waycock Cross - Capita Proposal
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: phillip.hardwick [WACDKTDS3J]
JOB NUMBER: 122153
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Waycock Rd (N)
ARM B - Port Rd (E)
ARM C - Pontypridd Rd
ARM D - Port Road (W)

.GEOMETRIC DATA

T5

I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A	I	3.50	I	7.00	I	50.00	I	5.00	I	50.00	I	20.0	I	0.579	I	28.518	I
I ARM B	I	4.00	I	7.75	I	55.00	I	5.00	I	50.00	I	30.0	I	0.591	I	30.502	I
I ARM C	I	4.00	I	7.50	I	50.00	I	5.00	I	50.00	I	35.0	I	0.569	I	28.958	I
I ARM D	I	5.00	I	11.00	I	100.00	I	5.00	I	50.00	I	25.0	I	0.751	I	44.115	I

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM D Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	I	FLOW SCALE(%)	I
I A	I	100	I
I B	I	100	I
I C	I	100	I
I D	I	100	I

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2020 with Development

T15

I	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I

ARM	FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.60	6.90	4.60
ARM B	15.00	45.00	75.00	10.64	15.96	10.64
ARM C	15.00	45.00	75.00	11.69	17.53	11.69
ARM D	15.00	45.00	75.00	12.30	18.45	12.30

DEMAND SET TITLE: AM 2020 with Development

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45	ARM A	0.000	0.217	0.560	0.223
		0.0	80.0	206.0	82.0
		(0.0)	(6.0)	(1.0)	(3.0)
	ARM B	0.148	0.000	0.362	0.490
		126.0	0.0	308.0	417.0
		(8.0)	(0.0)	(7.0)	(11.0)
	ARM C	0.263	0.399	0.000	0.338
		246.0	373.0	0.0	316.0
		(4.0)	(1.0)	(0.0)	(4.0)
	ARM D	0.114	0.421	0.465	0.000
		112.0	414.0	458.0	0.0
		(5.0)	(7.0)	(6.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	4.62	18.61	0.248	- - -	0.0	0.3	4.8	-	0.071
ARM B	10.68	22.69	0.471	- - -	0.0	0.9	12.7	-	0.083
ARM C	11.73	23.45	0.500	- - -	0.0	1.0	14.3	-	0.084
ARM D	12.35	34.73	0.356	- - -	0.0	0.5	8.1	-	0.045
08.30-08.45									
ARM A	5.51	16.80	0.328	- - -	0.3	0.5	7.1	-	0.088
ARM B	12.75	21.65	0.589	- - -	0.9	1.4	20.3	-	0.112
ARM C	14.01	22.52	0.622	- - -	1.0	1.6	23.2	-	0.116
ARM D	14.74	33.39	0.442	- - -	0.5	0.8	11.6	-	0.054
08.45-09.00									
ARM A	6.75	14.35	0.470	- - -	0.5	0.9	12.6	-	0.131
ARM B	15.62	20.24	0.771	- - -	1.4	3.2	43.5	-	0.205
ARM C	17.16	21.28	0.806	- - -	1.6	3.9	52.0	-	0.226
ARM D	18.06	31.63	0.571	- - -	0.8	1.3	19.1	-	0.073
09.00-09.15									
ARM A	6.75	14.30	0.472	- - -	0.9	0.9	13.2	-	0.132
ARM B	15.62	20.22	0.772	- - -	3.2	3.3	48.7	-	0.216
ARM C	17.16	21.24	0.808	- - -	3.9	4.0	59.5	-	0.243
ARM D	18.06	31.55	0.572	- - -	1.3	1.3	19.9	-	0.074
09.15-09.30									
ARM A	5.51	16.73	0.330	- - -	0.9	0.5	7.7	-	0.090
ARM B	12.75	21.62	0.590	- - -	3.3	1.5	23.2	-	0.116
ARM C	14.01	22.45	0.624	- - -	4.0	1.7	27.1	-	0.123
ARM D	14.74	33.28	0.443	- - -	1.3	0.8	12.3	-	0.054
09.30-09.45									
ARM A	4.62	18.55	0.249	- - -	0.5	0.3	5.1	-	0.072
ARM B	10.68	22.66	0.471	- - -	1.5	0.9	13.9	-	0.084
ARM C	11.73	23.41	0.501	- - -	1.7	1.0	15.8	-	0.086
ARM D	12.35	34.66	0.356	- - -	0.8	0.6	8.5	-	0.045

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.5	
09.00	0.9	*
09.15	0.9	*
09.30	0.5	
09.45	0.3	

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.9	*
08.45	1.4	*
09.00	3.2	***
09.15	3.3	***
09.30	1.5	*
09.45	0.9	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	1.0	*
08.45	1.6	**
09.00	3.9	****
09.15	4.0	****
09.30	1.7	**
09.45	1.0	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.5	*
08.45	0.8	*
09.00	1.3	*
09.15	1.3	*
09.30	0.8	*
09.45	0.6	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	506.5	337.7	50.5	0.10	50.5	0.10
B	1171.3	780.9	162.4	0.14	162.5	0.14
C	1287.0	858.0	191.8	0.15	191.8	0.15
D	1354.4	902.9	79.4	0.06	79.4	0.06
ALL	4319.2	2879.5	484.1	0.11	484.2	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

```
                    _____________________ A R C A D Y  6 _____________________

                        ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY


                        Analysis Program: Release 5.0 (JANUARY 2009)

                               (c) Copyright TRL Limited, 2004

                        Adapted from ARCADY/3 which is Crown Copyright
                           by permission of the controller of HMSO
                    _____________________________________________________

                          For sales and distribution information,
                          program advice and maintenance, contact:

                    TRL Limited            Tel:   +44 (0) 1344 770758
                    Crowthorne House       Fax:   +44 (0) 1344 770356
                    Nine Mile Ride         Email: software@trl.co.uk
                    Wokingham, Berks.      Web:   www.trlsoftware.co.uk
                    RG40 3GA,UK

 -------------------------------------------------------------------------------
  THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
  IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  OF THE SOLUTION
 -------------------------------------------------------------------------------

 Run with file:-
 "J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
  7.Waycock Cross\Waycock Cross Roundabout.vai"
(drive-on-the-left ) at 12:00:24 on Wednesday, 7 April 2010


.FILE PROPERTIES
 ***************

   RUN TITLE: Waycock Cross
    LOCATION:
        DATE: 14/07/09
      CLIENT:
  ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
  JOB NUMBER:
      STATUS:
 DESCRIPTION:

.INPUT DATA
 **********
 ARM A - Waycock Rd (N)
 ARM B - Port Rd (E)
 ARM C - Pontypridd Rd
 ARM D - Port Road (W)

.GEOMETRIC DATA
 --------------



-------------------------------------------------------------------------------------------------------------------------
---- T5
 I ARM    I   V (M)   I    E (M)   I    L (M)   I    R (M)   I     D (M) I   PHI (DEG)  I  SLOPE  I INTERCEPT
(PCU/MIN) I

-------------------------------------------------------------------------------------------------------------------------
-----
 I ARM  A I    2.99   I     5.27   I    25.00   I    12.90   I   48.00   I     38.3     I  0.536  I       22.675
I
 I ARM  B I    4.59   I     7.85   I    26.60   I    17.70   I   50.60   I     49.8     I  0.630  I       32.377
I
 I ARM  C I    3.00   I     7.14   I    66.50   I    20.80   I   50.60   I     50.4     I  0.609  I       30.339
I
 I ARM  D I    3.71   I     6.53   I    14.20   I     7.10   I   48.00   I     50.0     I  0.511  I       23.100
I

-------------------------------------------------------------------------------------------------------------------------
-----

 V = approach half-width       L = effective flare length           D = inscribed circle diameter
 E = entry width               R = entry radius                     PHI = entry angle

 **WARNING** ARM C Effective flare length is outside normal range.
  Treat capacities with increasing caution.


.TRAFFIC DEMAND DATA
 -------------------

 Only sets included in the current run are shown

.SCALING FACTORS

.----------------------- T13
 IARM  I FLOW SCALE(%) I
 -----------------------
 I A   I      100      I
 I B   I      100      I
 I C   I      100      I
 I D   I      100      I
 -----------------------



 TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(  90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA
```

.DEMAND SET TITLE: PM 2008 Base

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	5.32	7.99	5.32
ARM B	15.00	45.00	75.00	11.44	17.16	11.44
ARM C	15.00	45.00	75.00	8.63	12.94	8.63
ARM D	15.00	45.00	75.00	9.38	14.06	9.38

DEMAND SET TITLE: PM 2008 Base

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.235	0.493	0.272
		0.0	100.0	210.0	116.0
		(0.0)	(6.0)	(2.0)	(2.0)
	ARM B	0.073	0.000	0.637	0.290
		67.0	0.0	583.0	265.0
		(5.0)	(2.0)	(2.0)	(1.0)
	ARM C	0.251	0.314	0.000	0.435
		173.0	217.0	0.0	300.0
		(2.0)	(1.0)	(0.0)	(2.0)
	ARM D	0.087	0.561	0.352	0.000
		65.0	421.0	264.0	0.0
		(2.0)	(2.0)	(5.0)	(0.0)

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	5.35	16.02	0.334	- -	0.0	0.5	7.2	-	0.093
ARM B	11.48	27.06	0.424	- -	0.0	0.7	10.7	-	0.064
ARM C	8.66	26.42	0.328	- -	0.0	0.5	7.1	-	0.056
ARM D	9.41	19.53	0.482	- -	0.0	0.9	13.2	-	0.098
16.30-16.45									
ARM A	6.38	14.83	0.430	- -	0.5	0.7	10.8	-	0.118
ARM B	13.71	26.13	0.525	- -	0.7	1.1	15.9	-	0.080
ARM C	10.34	25.75	0.401	- -	0.5	0.7	9.8	-	0.065
ARM D	11.24	18.96	0.593	- -	0.9	1.4	20.5	-	0.128
16.45-17.00									
ARM A	7.82	13.24	0.590	- -	0.7	1.4	19.8	-	0.181
ARM B	16.79	24.89	0.675	- -	1.1	2.0	28.8	-	0.122
ARM C	12.66	24.84	0.510	- -	0.7	1.0	15.0	-	0.082
ARM D	13.76	18.19	0.757	- -	1.4	2.9	40.3	-	0.216
17.00-17.15									
ARM A	7.82	13.19	0.593	- -	1.4	1.4	21.3	-	0.186
ARM B	16.79	24.85	0.676	- -	2.0	2.1	30.6	-	0.124
ARM C	12.66	24.82	0.510	- -	1.0	1.0	15.5	-	0.082
ARM D	13.76	18.18	0.757	- -	2.9	3.0	44.9	-	0.225
17.15-17.30									
ARM A	6.38	14.76	0.433	- -	1.4	0.8	12.1	-	0.121

ARM B	13.71	26.07	0.526	- -	-	2.1	1.1	17.4	-	0.082
ARM C	10.34	25.72	0.402	- -	-	1.0	0.7	10.4	-	0.065
ARM D	11.24	18.95	0.593	- -	-	3.0	1.5	23.6	-	0.133

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	5.35	15.96	0.335	- -	-	0.8	0.5	7.8	-	0.095
ARM B	11.48	27.02	0.425	- -	-	1.1	0.7	11.4	-	0.065
ARM C	8.66	26.40	0.328	- -	-	0.7	0.5	7.5	-	0.056
ARM D	9.41	19.51	0.482	- -	-	1.5	0.9	14.6	-	0.100

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.7	*
17.00	1.4	*
17.15	1.4	*
17.30	0.8	*
17.45	0.5	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.1	*
17.00	2.0	**
17.15	2.1	**
17.30	1.1	*
17.45	0.7	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.7	*
17.00	1.0	*
17.15	1.0	*
17.30	0.7	*
17.45	0.5	

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.9	*
16.45	1.4	*
17.00	2.9	***
17.15	3.0	***
17.30	1.5	*
17.45	0.9	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	586.4	390.9	79.0	0.13	79.0	0.13
B	1259.4	839.6	114.9	0.09	114.9	0.09
C	949.7	633.2	65.3	0.07	65.3	0.07
D	1032.3	688.2	157.2	0.15	157.2	0.15
ALL	3827.8	2551.9	416.3	0.11	416.4	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
7.Waycock Cross\Waycock Cross - Proposed.vai"
(drive-on-the-left) at 14:21:04 on Thursday, 8 April 2010

.FILE PROPERTIES
****

RUN TITLE: Waycock Cross - Capita Proposal
LOCATION:
DATE: 08/04/10
CLIENT:
ENUMERATOR: phillip.hardwick [WACDKTDS3J]
JOB NUMBER: 122153
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Waycock Rd (N)
ARM B - Port Rd (E)
ARM C - Pontypridd Rd
ARM D - Port Road (W)

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.50	7.00	50.00	5.00	50.00	20.0	0.579	28.518
ARM B	4.00	7.75	55.00	5.00	50.00	30.0	0.591	30.502
ARM C	4.00	7.50	50.00	5.00	50.00	35.0	0.569	28.958
ARM D	5.00	11.00	100.00	5.00	50.00	25.0	0.751	44.115

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A: Effective flare length is outside normal range.
Treat capacities with increasing caution.
WARNING ARM B: Effective flare length is outside normal range.
Treat capacities with increasing caution.
WARNING ARM C: Effective flare length is outside normal range.
Treat capacities with increasing caution.
WARNING ARM D: Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 16.15 AND ENDS 17.45
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: PM 2020 Base

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	TO RISE	IS REACHED IFALLING	FLOW STOPS	BEFORE	AT TOP	AFTER	RATE OF FLOW (VEH/MIN) PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00		6.19	9.28	6.19				
ARM B	15.00	45.00	75.00		13.30	19.95	13.30				
ARM C	15.00	45.00	75.00		10.04	15.06	10.04				
ARM D	15.00	45.00	75.00		10.90	16.35	10.90				

DEMAND SET TITLE: PM 2020 Base

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45		TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S)			
	ARM A	0.000 0.0 (0.0)	0.236 117.0 (6.0)	0.493 244.0 (2.0)	0.271 134.0 (2.0)
	ARM B	0.073 78.0 (5.0)	0.000 0.0 (2.0)	0.289 308.0 (2.0)	0.637 678.0 (1.0)
	ARM C	0.252 202.0 (2.0)	0.314 252.0 (1.0)	0.000 0.0 (0.0)	0.435 349.0 (2.0)
	ARM D	0.086 75.0 (2.0)	0.562 490.0 (2.0)	0.352 307.0 (5.0)	0.000 0.0 (0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	6.19	20.16	0.307		0.0	0.4	6.4		0.07
ARM B	13.30	24.90	0.534		0.0	1.1	16.3		0.09
ARM C	10.04	22.20	0.452		0.0	0.8	11.8		0.08
ARM D	10.90	37.89	0.288		0.0	0.4	5.9		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
ARM A	7.39	18.68	0.395		0.4	0.6	9.5		0.09
ARM B	15.88	23.89	0.665		1.1	1.9	27.7		0.12
ARM C	11.99	20.96	0.572		0.8	1.3	18.9		0.11
ARM D	13.02	36.93	0.352		0.4	0.5	8.0		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.05	16.67	0.543		0.6	1.2	16.7		0.13
ARM B	19.45	22.52	0.864		1.9	5.6	71.8		0.28
ARM C	14.68	19.35	0.759		1.3	3.0	40.8		0.20
ARM D	15.94	35.65	0.447		0.5	0.8	11.8		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	9.05	16.64	0.544		1.2	1.2	17.6		0.13
ARM B	19.45	22.50	0.865		5.6	5.9	86.8		0.32
ARM C	14.68	19.25	0.762		3.0	3.1	45.8		0.22
ARM D	15.94	35.59	0.448		0.8	0.8	12.1		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	7.39	18.64	0.396		1.2	0.7	10.3		0.09
ARM B	15.88	23.86	0.666		5.9	2.0	33.7		0.13
ARM C	11.99	20.83	0.575		3.1	1.4	21.9		0.12
ARM D	13.02	36.85	0.353		0.8	0.5	8.4		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	6.19	20.13	0.307		0.7	0.4	6.9		0.07
ARM B	13.30	24.87	0.535		2.0	1.2	18.1		0.09
ARM C	10.04	22.14	0.453		1.4	0.8	13.0		0.08
ARM D	10.90	37.85	0.288		0.5	0.4	6.2		0.04

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.6	*
17.00	1.2	*
17.15	1.2	*
17.30	0.7	*

17.45	0.4

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.1	*
16.45	1.9	**
17.00	5.6	******
17.15	5.9	******
17.30	2.0	**
17.45	1.2	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.8	*
16.45	1.3	*
17.00	3.0	***
17.15	3.1	***
17.30	1.4	*
17.45	0.8	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.5	*
17.00	0.8	*
17.15	0.8	*
17.30	0.5	*
17.45	0.4	

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	678.7	452.5	67.4	0.10	67.4	0.10
B	1459.0	972.6	254.3	0.17	254.4	0.17
C	1101.1	734.1	152.2	0.14	152.3	0.14
D	1195.7	797.1	52.4	0.04	52.4	0.04
ALL	4434.5	2956.3	526.4	0.12	526.4	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
7.Waycock Cross\Waycock Cross - Proposed.vaj"
(drive-on-the-left) at 11:00:19 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Waycock Cross - Capita Proposal
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: phillip.hardwick [WACDKTDS3J]
JOB NUMBER: 122153
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Waycock Rd (N)
ARM B - Port Rd (E)
ARM C - Pontypridd Rd
ARM D - Port Road (W)

.GEOMETRIC DATA

I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A	I	3.50	I	7.00	I	50.00	I	5.00	I	50.00	I	20.0	I	0.579	I	28.518	I
I ARM B	I	4.00	I	7.75	I	55.00	I	5.00	I	50.00	I	30.0	I	0.591	I	30.502	I
I ARM C	I	4.00	I	7.50	I	50.00	I	5.00	I	50.00	I	35.0	I	0.569	I	28.958	I
I ARM D	I	5.00	I	11.00	I	100.00	I	5.00	I	50.00	I	25.0	I	0.751	I	44.115	I

T5

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM D Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM	I	FLOW SCALE(%)	I
I A	I	100	I
I B	I	100	I
I C	I	100	I
I D	I	100	I

T13

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

DEMAND SET TITLE: PM 2020 Base +tourism

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	6.46	9.69	6.46
ARM B	15.00	45.00	75.00	14.35	21.53	14.35
ARM C	15.00	45.00	75.00	11.60	17.40	11.60
ARM D	15.00	45.00	75.00	10.90	16.35	10.90

DEMAND SET TITLE: PM 2020 Base +tourism

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
16.15 - 17.45	ARM A	0.000 0.0 (0.0)	0.226 117.0 (6.0)	0.515 266.0 (2.0)	0.259 134.0 (2.0)
	ARM B	0.068 78.0 (5.0)	0.000 0.0 (2.0)	0.341 392.0 (2.0)	0.591 678.0 (1.0)
	ARM C	0.251 233.0 (2.0)	0.373 346.0 (1.0)	0.000 0.0 (0.0)	0.376 349.0 (2.0)
	ARM D	0.086 75.0 (2.0)	0.562 490.0 (2.0)	0.352 307.0 (5.0)	0.000 0.0 (0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	6.49	19.48	0.333	- -	-	0.0	0.5	7.2	-	0.077
ARM B	14.40	24.71	0.583	- -	-	0.0	1.4	19.7	-	0.095
ARM C	11.64	22.19	0.525	- -	-	0.0	1.1	15.7	-	0.094
ARM D	10.94	36.73	0.298	- -	-	0.0	0.4	6.2	-	0.039
16.30-16.45									
ARM A	7.75	17.86	0.434	- -	-	0.5	0.8	11.0	-	0.099
ARM B	17.20	23.66	0.727	- -	-	1.4	2.6	36.1	-	0.151
ARM C	13.90	20.95	0.664	- -	-	1.1	1.9	27.3	-	0.140
ARM D	13.07	35.54	0.368	- -	-	0.4	0.6	8.6	-	0.044
16.45-17.00									
ARM A	9.49	15.69	0.605	- -	-	0.8	1.5	21.1	-	0.159
ARM B	21.07	22.25	0.947	- -	-	2.6	10.8	123.7	-	0.475
ARM C	17.03	19.43	0.876	- -	-	1.9	6.0	75.1	-	0.343
ARM D	16.00	34.02	0.470	- -	-	0.6	0.9	13.0	-	0.055
17.00-17.15									
ARM A	9.49	15.64	0.607	- -	-	1.5	1.5	22.6	-	0.163
ARM B	21.07	22.22	0.948	- -	-	10.8	13.0	180.7	-	0.656
ARM C	17.03	19.27	0.884	- -	-	6.0	6.7	96.3	-	0.420
ARM D	16.00	33.89	0.472	- -	-	0.9	0.9	13.3	-	0.056
17.15-17.30									
ARM A	7.75	17.77	0.436	- -	-	1.5	0.8	12.2	-	0.101
ARM B	17.20	23.63	0.728	- -	-	13.0	2.8	55.0	-	0.193
ARM C	13.90	20.66	0.673	- -	-	6.7	2.1	36.0	-	0.162
ARM D	13.07	35.33	0.370	- -	-	0.9	0.6	9.0	-	0.045
17.30-17.45									
ARM A	6.49	19.43	0.334	- -	-	0.8	0.5	7.8	-	0.078
ARM B	14.40	24.68	0.584	- -	-	2.8	1.4	22.3	-	0.099
ARM C	11.64	22.12	0.527	- -	-	2.1	1.1	17.6	-	0.097

I ARM	D	10.94	36.66	0.298	- -	-	0.6	0.4	6.5	-	0.039	I
I												I

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.8	*
17.00	1.5	*
17.15	1.5	**
17.30	0.8	*
17.45	0.5	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.4	*
16.45	2.6	***
17.00	10.8	***********
17.15	13.0	*************
17.30	2.8	***
17.45	1.4	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.1	*
16.45	1.9	**
17.00	6.0	******
17.15	6.7	*******
17.30	2.1	**
17.45	1.1	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.6	*
17.00	0.9	*
17.15	0.9	*
17.30	0.6	*
17.45	0.4	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	711.6	474.4	81.9	0.12	81.9	0.12
B	1580.1	1053.4	437.5	0.28	437.5	0.28
C	1277.3	851.5	267.9	0.21	267.9	0.21
D	1200.2	800.2	56.6	0.05	56.6	0.05
ALL	4769.3	3179.5	843.8	0.18	843.9	0.18

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
7.Waycock Cross\Waycock Cross - Proposed.vaj"
(drive-on-the-left) at 12:13:06 on Monday, 12 April 2010

.FILE PROPERTIES
****

RUN TITLE: Waycock Cross - Capita Proposal
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: phillip.hardwick [WACDKTDS3J]
JOB NUMBER: 122153
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Waycock Rd (N)
ARM B - Port Rd (E)
ARM C - Pontypridd Rd
ARM D - Port Road (W)

.GEOMETRIC DATA

I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A	I	3.50	I	7.00	I	50.00	I	5.00	I	50.00	I	20.0	I	0.579	I	28.518	I
I ARM B	I	4.00	I	7.75	I	55.00	I	5.00	I	50.00	I	30.0	I	0.591	I	30.502	I
I ARM C	I	4.00	I	7.50	I	50.00	I	5.00	I	50.00	I	35.0	I	0.569	I	28.958	I
I ARM D	I	5.00	I	11.00	I	100.00	I	5.00	I	50.00	I	25.0	I	0.751	I	44.115	I

T5

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM D Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM	I	FLOW SCALE(%)	I
I A	I	100	I
I B	I	100	I
I C	I	100	I
I D	I	100	I

T13

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 with Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	7.32	10.99	7.32
ARM B	15.00	45.00	75.00	15.04	22.56	15.04
ARM C	15.00	45.00	75.00	11.69	17.53	11.69
ARM D	15.00	45.00	75.00	11.54	17.31	11.54

DEMAND SET TITLE: PM 2020 with Development

T33

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45	ARM A	0.000	0.200	0.572	0.229
		0.0	117.0	335.0	134.0
		(0.0)	(6.0)	(2.0)	(2.0)
	ARM B	0.065	0.000	0.372	0.564
		78.0	0.0	447.0	678.0
		(5.0)	(2.0)	(2.0)	(1.0)
	ARM C	0.263	0.343	0.000	0.394
		246.0	321.0	0.0	368.0
		(2.0)	(1.0)	(0.0)	(2.0)
	ARM D	0.081	0.531	0.388	0.000
		75.0	490.0	358.0	0.0
		(2.0)	(2.0)	(5.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	7.35	19.30	0.381	- -	0.0	0.6	8.9	-	0.083
ARM B	15.09	23.80	0.634	- -	0.0	1.7	24.0	-	0.112
ARM C	11.73	22.19	0.529	- -	0.0	1.1	15.9	-	0.094
ARM D	11.58	36.80	0.315	- -	0.0	0.5	6.7	-	0.040
16.30-16.45									
ARM A	8.78	17.64	0.498	- -	0.6	1.0	14.1	-	0.112
ARM B	18.02	22.58	0.798	- -	1.7	3.7	50.4	-	0.207
ARM C	14.01	20.97	0.668	- -	1.1	2.0	27.8	-	0.141
ARM D	13.83	35.63	0.388	- -	0.5	0.6	9.3	-	0.046
16.45-17.00									
ARM A	10.75	15.41	0.698	- -	1.0	2.2	30.6	-	0.208
ARM B	22.08	20.94	1.054	- -	3.7	28.8	265.2	-	0.991
ARM C	17.16	19.82	0.866	- -	2.0	5.6	71.0	-	0.322
ARM D	16.94	34.18	0.496	- -	0.6	1.0	14.3	-	0.058
17.00-17.15									
ARM A	10.75	15.36	0.700	- -	2.2	2.3	33.8	-	0.216
ARM B	22.08	20.90	1.056	- -	28.8	48.5	581.8	-	2.009
ARM C	17.16	19.68	0.872	- -	5.6	6.1	88.7	-	0.380
ARM D	16.94	34.07	0.497	- -	1.0	1.0	14.7	-	0.058
17.15-17.30									
ARM A	8.78	17.57	0.500	- -	2.3	1.0	16.0	-	0.116
ARM B	18.02	22.52	0.800	- -	48.5	4.7	309.4	-	1.023
ARM C	14.01	19.86	0.705	- -	6.1	2.5	41.3	-	0.185
ARM D	13.83	35.35	0.391	- -	1.0	0.6	9.9	-	0.047
17.30-17.45									
ARM A	7.35	19.25	0.382	- -	1.0	0.6	9.6	-	0.084
ARM B	15.09	23.76	0.635	- -	4.7	1.8	28.7	-	0.121
ARM C	11.73	22.07	0.531	- -	2.5	1.1	18.0	-	0.098
ARM D	11.58	36.71	0.315	- -	0.6	0.5	7.0	-	0.040

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.6	*
16.45	1.0	*
17.00	2.2	**
17.15	2.3	**
17.30	1.0	*
17.45	0.6	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.7	**
16.45	3.7	****
17.00	28.8	*****************************
17.15	48.5	**
17.30	4.7	*****
17.45	1.8	**

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.1	*
16.45	2.0	**
17.00	5.6	******
17.15	6.1	******
17.30	2.5	**
17.45	1.1	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.6	*
17.00	1.0	*
17.15	1.0	*
17.30	0.6	*
17.45	0.5	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	806.6	537.7	112.9	0.14	112.9	0.14
B	1655.8	1103.9	1259.5	0.76	1259.6	0.76
C	1287.0	858.0	262.8	0.20	262.8	0.20
D	1270.4	847.0	62.0	0.05	62.0	0.05
ALL	5019.8	3346.6	1697.2	0.34	1697.3	0.34

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
7.Waycock Cross\Waycock Cross - Proposed.vaj"
(drive-on-the-left) at 12:13:32 on Monday, 12 April 2010

.FILE PROPERTIES
****

RUN TITLE: Waycock Cross - Capita Proposal
LOCATION:
DATE: 12/04/10
CLIENT:
ENUMERATOR: phillip.hardwick [WACDKTDS3J]
JOB NUMBER: 122153
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Waycock Rd (N)
ARM B - Port Rd (E)
ARM C - Pontypridd Rd
ARM D - Port Road (W)

.GEOMETRIC DATA

I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A	I	3.50	I	7.00	I	50.00	I	5.00	I	50.00	I	20.0	I	0.579	I	28.518	I
I ARM B	I	4.00	I	7.75	I	55.00	I	5.00	I	50.00	I	30.0	I	0.591	I	30.502	I
I ARM C	I	4.00	I	7.50	I	50.00	I	5.00	I	50.00	I	35.0	I	0.569	I	28.958	I
I ARM D	I	5.00	I	11.00	I	100.00	I	5.00	I	50.00	I	25.0	I	0.751	I	44.115	I

T5

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM A Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM B Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

WARNING ARM D Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	I	FLOW SCALE(%)	I
I A	I	100	I
I B	I	100	I
I C	I	100	I
I D	I	100	I

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 with Development + Tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
	TO RISE					
ARM A	15.00	45.00	75.00	7.60	11.40	7.60
ARM B	15.00	45.00	75.00	16.08	24.11	16.08
ARM C	15.00	45.00	75.00	13.26	19.89	13.26
ARM D	15.00	45.00	75.00	11.54	17.31	11.54

DEMAND SET TITLE: PM 2020 with Development + Tourism

T33

TIME	FROM/TO	TURNING PROPORTIONS / TURNING COUNTS (PERCENTAGE OF H.V.S) ARM A	ARM B	ARM C	ARM D
16.15 - 17.45	ARM A	0.000	0.192	0.587	0.220
		0.0	117.0	357.0	134.0
		(0.0)	(6.0)	(2.0)	(2.0)
	ARM B	0.061	0.000	0.412	0.527
		78.0	0.0	530.0	678.0
		(5.0)	(2.0)	(2.0)	(1.0)
	ARM C	0.262	0.391	0.000	0.347
		278.0	415.0	0.0	368.0
		(2.0)	(1.0)	(0.0)	(2.0)
	ARM D	0.081	0.531	0.388	0.000
		75.0	490.0	358.0	0.0
		(2.0)	(2.0)	(5.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	7.63	18.64	0.409	- -	0.0	0.7	9.9	-	0.090
ARM B	16.14	23.64	0.683	- -	0.0	2.1	29.3	-	0.129
ARM C	13.31	22.21	0.599	- -	0.0	1.5	20.9	-	0.110
ARM D	11.58	35.65	0.325	- -	0.0	0.5	7.1	-	0.041
16.30-16.45									
ARM A	9.11	16.86	0.540	- -	0.7	1.2	16.6	-	0.128
ARM B	19.27	22.39	0.861	- -	2.1	5.5	70.7	-	0.282
ARM C	15.90	21.01	0.757	- -	1.5	3.0	40.9	-	0.189
ARM D	13.83	34.27	0.404	- -	0.5	0.7	9.9	-	0.049
16.45-17.00									
ARM A	11.16	14.53	0.768	- -	1.2	3.1	41.1	-	0.277
ARM B	23.60	20.72	1.139	- -	5.5	51.9	442.7	-	1.585
ARM C	19.47	20.27	0.961	- -	3.0	12.0	133.3	-	0.563
ARM D	16.94	32.73	0.518	- -	0.7	1.1	15.6	-	0.063
17.00-17.15									
ARM A	11.16	14.42	0.774	- -	3.1	3.3	47.8	-	0.303
ARM B	23.60	20.66	1.142	- -	51.9	96.3	1112.5	-	3.674
ARM C	19.47	20.21	0.963	- -	12.0	15.1	205.7	-	0.819
ARM D	16.94	32.53	0.521	- -	1.1	1.1	16.1	-	0.064
17.15-17.30									
ARM A	9.11	16.65	0.547	- -	3.3	1.2	19.8	-	0.137
ARM B	19.27	22.30	0.864	- -	96.3	54.3	1130.1	-	3.428
ARM C	15.90	19.97	0.796	- -	15.1	4.2	87.8	-	0.350
ARM D	13.83	33.73	0.410	- -	1.1	0.7	10.7	-	0.050
17.30-17.45									
ARM A	7.63	18.56	0.411	- -	1.2	0.7	10.9	-	0.092
ARM B	16.14	23.59	0.684	- -	54.3	2.3	228.3	-	0.551
ARM C	13.31	20.99	0.634	- -	4.2	1.8	28.6	-	0.136
ARM D	11.58	35.36	0.328	- -	0.7	0.5	7.4	-	0.042

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.2	*
17.00	3.1	***
17.15	3.3	***
17.30	1.2	*
17.45	0.7	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	2.1	**
16.45	5.5	*****
17.00	51.9	**
17.15	96.3	**********
17.30	54.3	**
17.45	2.3	**

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.5	*
16.45	3.0	***
17.00	12.0	************
17.15	15.1	***************
17.30	4.2	****
17.45	1.8	**

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.7	*
17.00	1.1	*
17.15	1.1	*
17.30	0.7	*
17.45	0.5	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	836.9	557.9	146.1	0.17	146.1	0.17
B	1770.1	1180.1	3013.7	1.70	3013.8	1.70
C	1460.4	973.6	517.2	0.35	517.3	0.35
D	1270.4	847.0	66.8	0.05	66.8	0.05
ALL	5337.8	3558.5	3743.8	0.70	3744.0	0.70

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

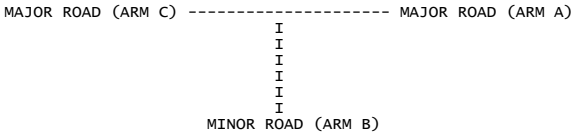
Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\16.Wimbourne Rd_Ffordd y Mileniwm\Ffordd y Mileniwm_Wimbourne Rd Priority.vpi"
(drive-on-the-left) at 15:25:02 on Tuesday, 6 April 2010

.RUN INFORMATION

RUN TITLE : Ffordd y Mileniwm / Wimbourne Road Priority
LOCATION :
DATE : 06/08/10
CLIENT :
ENUMERATOR : Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Ffordd y Mileniwm (E)
ARM B IS Wimbourne Rd (S)
ARM C IS Ffordd y Mileniwm (W)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 8.00 M.
CENTRAL RESERVE WIDTH	(WCR) 3.60 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 4.00 M.
- VISIBILITY	(VC-B)175.00 M.
- BLOCKS TRAFFIC	NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 150.0 M.
- VISIBILITY TO RIGHT	(VB-A) 170.0 M.
- LANE 1 WIDTH	(WB-C) -
- LANE 2 WIDTH	(WB-A) -
WIDTH AT 0 M FROM JUNCTION	10.00 M.
WIDTH AT 5 M FROM JUNCTION	10.00 M.
WIDTH AT 10 M FROM JUNCTION	8.00 M.
WIDTH AT 15 M FROM JUNCTION	7.00 M.
WIDTH AT 20 M FROM JUNCTION	6.00 M.
- LENGTH OF FLARED SECTION	3 VEHS

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
807.60	0.29	0.29

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: AM 2008 Base

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	8.44	12.66	8.44
ARM B	15.00	45.00	75.00	2.13	3.19	2.13
ARM C	15.00	45.00	75.00	8.77	13.16	8.77

.Demand set: AM 2008 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 08.30				
	ARM A	0.000	0.197	0.803
		0.0	133.0	542.0
		(0.0)	(13.0)	(7.0)
	ARM B	0.453	0.000	0.547
		77.0	0.0	93.0
		(30.0)	(0.0)	(11.0)
	ARM C	0.755	0.245	0.000
		530.0	172.0	0.0
		(2.0)	(4.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET AM 2008 Base
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	1.17	9.87	0.118		0.00	0.13	1.9		0.11
B-A	0.97	5.93	0.163		0.00	0.19	2.7		0.20
C-A	6.65								
C-B	2.16	10.43	0.207		0.00	0.26	3.7		0.12
A-B	1.67								
A-C	6.80								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	1.39	9.33	0.149		0.13	0.17	2.5		0.13
B-A	1.15	5.27	0.219		0.19	0.27	4.0		0.24
C-A	7.94								
C-B	2.58	9.94	0.259		0.26	0.35	5.1		0.14
A-B	1.99								
A-C	8.12								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	1.71	8.53	0.200		0.17	0.25	3.6		0.15
B-A	1.41	4.37	0.324		0.27	0.46	6.6		0.34
C-A	9.73								
C-B	3.16	9.26	0.341		0.35	0.51	7.4		0.16
A-B	2.44								
A-C	9.95								

TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY

	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	1.71	8.52	0.200		0.25	0.25	3.7		0.15
B-A	1.41	4.36	0.324		0.46	0.47	7.0		0.34
C-A	9.73								
C-B	3.16	9.26	0.341		0.51	0.51	7.7		0.16
A-B	2.44								
A-C	9.95								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	1.39	9.32	0.149		0.25	0.18	2.7		0.13
B-A	1.15	5.27	0.219		0.47	0.29	4.5		0.24
C-A	7.94								
C-B	2.58	9.94	0.259		0.51	0.35	5.5		0.14
A-B	1.99								
A-C	8.12								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.30-09.45									
B-C	1.17	9.86	0.118		0.18	0.14	2.1		0.12
B-A	0.97	5.92	0.163		0.29	0.20	3.1		0.20
C-A	6.65								
C-B	2.16	10.43	0.207		0.35	0.26	4.1		0.12
A-B	1.67								
A-C	6.80								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.1	
08.45	0.2	
09.00	0.2	
09.15	0.2	
09.30	0.2	
09.45	0.1	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.2	
08.45	0.3	
09.00	0.5	
09.15	0.5	
09.30	0.3	
09.45	0.2	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.3	
09.00	0.5	*
09.15	0.5	*
09.30	0.4	
09.45	0.3	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	128.0	85.3	16.6	0.13	16.6	0.13
B-A	106.0	70.7	27.9	0.26	27.9	0.26
C-A	729.5	486.3				
C-B	236.7	157.8	33.4	0.14	33.4	0.14
A-B	183.1	122.0				
A-C	746.0	497.3				
ALL	2129.3	1419.6	77.8	0.04	77.8	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
807.60	0.29	0.29

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2008 Base

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	9.57	14.36	9.57
ARM B	15.00	45.00	75.00	4.69	7.03	4.69
ARM C	15.00	45.00	75.00	7.76	11.64	7.76

.Demand set: PM 2008 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.082	0.918
		0.0	63.0	703.0
		(0.0)	(27.0)	(2.0)
	ARM B	0.429	0.000	0.571
		161.0	0.0	214.0
		(6.0)	(0.0)	(3.0)
	ARM C	0.870	0.130	0.000
		540.0	81.0	0.0
		(2.0)	(9.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2008 Base
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-C	2.69	10.04	0.267		0.00	0.36	5.2		0.14
B-A	2.02	7.25	0.279		0.00	0.38	5.4		0.19
C-A	6.78								
C-B	1.02	9.73	0.104		0.00	0.12	1.7		0.11
A-B	0.79								
A-C	8.82								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	3.21	9.29	0.345		0.36	0.52	7.5		0.16
B-A	2.41	6.44	0.374		0.38	0.58	8.3		0.25
C-A	8.09								
C-B	1.21	9.22	0.132		0.12	0.15	2.2		0.12
A-B	0.94								
A-C	10.53								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	3.93	8.08	0.486		0.52	0.92	13.0		0.24
B-A	2.95	5.29	0.559		0.58	1.19	16.3		0.41

C-A	9.91								
C-B	1.49	8.52	0.175		0.15	0.21	3.1		0.14
A-B	1.16								
A-C	12.90								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	3.93	8.05	0.488		0.92	0.94	14.0		0.24
B-A	2.95	5.28	0.560		1.19	1.23	18.2		0.43
C-A	9.91								
C-B	1.49	8.52	0.175		0.21	0.21	3.1		0.14
A-B	1.16								
A-C	12.90								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.21	9.26	0.346		0.94	0.54	8.4		0.17
B-A	2.41	6.44	0.375		1.23	0.61	9.8		0.25
C-A	8.09								
C-B	1.21	9.22	0.132		0.21	0.15	2.4		0.13
A-B	0.94								
A-C	10.53								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	2.69	10.02	0.268		0.54	0.37	5.7		0.14
B-A	2.02	7.24	0.279		0.61	0.39	6.2		0.19
C-A	6.78								
C-B	1.02	9.73	0.104		0.15	0.12	1.8		0.11
A-B	0.79								
A-C	8.82								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.5	*
17.00	0.9	*
17.15	0.9	*
17.30	0.5	*
17.45	0.4	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.6	*
17.00	1.2	*
17.15	1.2	*
17.30	0.6	*
17.45	0.4	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.2
17.00	0.2
17.15	0.2
17.30	0.2
17.45	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	294.6	196.4	53.8	0.18	53.8	0.18
B-A	221.6	147.7	64.3	0.29	64.3	0.29
C-A	743.3	495.5				
C-B	111.5	74.3	14.2	0.13	14.2	0.13
A-B	86.7	57.8				
A-C	967.6	645.1				
ALL	2425.3	1616.8	132.4	0.05	132.4	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

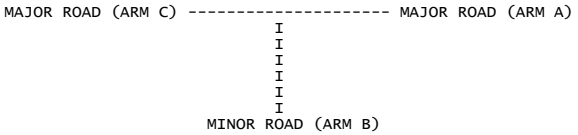
Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
16.Wimbourne Rd_Ffordd y Mileniwm\Ffordd y Mileniwm_Wimbourne Rd Priority.vpi"
(drive-on-the-left) at 09:34:12 on Tuesday, 13 April 2010

.RUN INFORMATION

RUN TITLE : Ffordd y Mileniwm / Wimbourne Road Priority
LOCATION :
DATE : 06/04/10
CLIENT :
ENUMERATOR : Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER :
STATUS :
DESCRIPTION :

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Ffordd y Mileniwm (E)
ARM B IS Wimbourne Rd (S)
ARM C IS Ffordd y Mileniwm (W)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 8.00 M.
CENTRAL RESERVE WIDTH	(WCR) 3.60 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 4.00 M.
- VISIBILITY	(VC-B)175.00 M.
- BLOCKS TRAFFIC	NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 150.0 M.
- VISIBILITY TO RIGHT	(VB-A) 170.0 M.
- LANE 1 WIDTH	(WB-C) -
- LANE 2 WIDTH	(WB-A) -
WIDTH AT 0 M FROM JUNCTION	10.00 M.
WIDTH AT 5 M FROM JUNCTION	10.00 M.
WIDTH AT 10 M FROM JUNCTION	8.00 M.
WIDTH AT 15 M FROM JUNCTION	7.00 M.
WIDTH AT 20 M FROM JUNCTION	6.00 M.
- LENGTH OF FLARED SECTION	3 VEHS

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
807.60	0.29	0.29

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: AM 2020 Base

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.82	14.74	9.82
ARM B	15.00	45.00	75.00	2.49	3.73	2.49
ARM C	15.00	45.00	75.00	10.23	15.34	10.23

.Demand set: AM 2020 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 08.30	ARM A	0.000	0.197	0.803
		0.0	155.0	631.0
		(0.0)	(13.0)	(7.0)
	ARM B	0.452	0.000	0.548
		90.0	0.0	109.0
		(30.0)	(0.0)	(11.0)
	ARM C	0.754	0.246	0.000
		617.0	201.0	0.0
		(2.0)	(4.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET AM 2020 Base
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	1.37	9.42	0.145		0.00	0.17	2.4		0.12
B-A	1.13	5.37	0.210		0.00	0.26	3.7		0.23
C-A	7.74								
C-B	2.52	10.01	0.252		0.00	0.33	4.8		0.13
A-B	1.94								
A-C	7.92								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	1.63	8.76	0.187		0.17	0.23	3.3		0.14
B-A	1.35	4.61	0.293		0.26	0.40	5.7		0.30
C-A	9.24								
C-B	3.01	9.44	0.319		0.33	0.46	6.7		0.16
A-B	2.32								
A-C	9.45								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	2.00	7.66	0.261		0.23	0.35	5.0		0.18
B-A	1.65	3.55	0.465		0.40	0.82	11.2		0.51
C-A	11.32								
C-B	3.69	8.66	0.426		0.46	0.73	10.4		0.20
A-B	2.84								
A-C	11.58								

TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY

	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)
09.00-09.15									
B-C	2.00	7.64	0.262		0.35	0.35	5.3		0.18
B-A	1.65	3.54	0.466		0.82	0.85	12.5		0.53
C-A	11.32								
C-B	3.69	8.66	0.426		0.73	0.73	11.0		0.20
A-B	2.84								
A-C	11.58								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.15-09.30									
B-C	1.63	8.73	0.187		0.35	0.23	3.6		0.14
B-A	1.35	4.60	0.293		0.85	0.43	6.9		0.31
C-A	9.24								
C-B	3.01	9.44	0.319		0.73	0.48	7.4		0.16
A-B	2.32								
A-C	9.45								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.30-09.45									
B-C	1.37	9.41	0.145		0.23	0.17	2.6		0.12
B-A	1.13	5.36	0.211		0.43	0.27	4.3		0.24
C-A	7.74								
C-B	2.52	10.01	0.252		0.48	0.34	5.3		0.13
A-B	1.94								
A-C	7.92								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.2	
08.45	0.2	
09.00	0.3	
09.15	0.4	
09.30	0.2	
09.45	0.2	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.4	
09.00	0.8	*
09.15	0.8	*
09.30	0.4	
09.45	0.3	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.5	
09.00	0.7	*
09.15	0.7	*
09.30	0.5	
09.45	0.3	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	150.0	100.0	22.3	0.15	22.3	0.15
B-A	123.9	82.6	44.3	0.36	44.3	0.36
C-A	849.3	566.2				
C-B	276.7	184.4	45.5	0.16	45.5	0.16
A-B	213.3	142.2				
A-C	868.5	579.0				
ALL	2481.7	1654.5	112.1	0.05	112.1	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
807.60	0.29	0.29

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2020 Base

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	11.13	16.69	11.13
ARM B	15.00	45.00	75.00	5.46	8.19	5.46
ARM C	15.00	45.00	75.00	9.02	13.54	9.02

.Demand set: PM 2020 Base

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.082	0.918
		0.0	73.0	817.0
		(0.0)	(27.0)	(2.0)
	ARM B	0.430	0.000	0.570
		188.0	0.0	249.0
		(6.0)	(0.0)	(3.0)
	ARM C	0.870	0.130	0.000
		628.0	94.0	0.0
		(2.0)	(9.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2020 Base
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-C	3.12	9.42	0.332		0.00	0.49	7.0		0.16
B-A	2.36	6.58	0.358		0.00	0.55	7.6		0.23
C-A	7.88								
C-B	1.18	9.30	0.127		0.00	0.14	2.1		0.12
A-B	0.92								
A-C	10.25								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	3.73	8.44	0.442		0.49	0.77	11.0		0.21
B-A	2.82	5.62	0.501		0.55	0.96	13.4		0.35
C-A	9.41								
C-B	1.41	8.71	0.162		0.14	0.19	2.8		0.14
A-B	1.09								
A-C	12.24								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	4.57	6.02	0.759		0.77	2.70	34.0		0.59
B-A	3.45	4.07	0.848		0.96	3.74	43.3		1.07

C-A	11.52							
C-B	1.72	7.89	0.218	0.19	0.28	4.0	0.16	
A-B	1.34							
A-C	14.99							

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	4.57	5.51	0.829		2.70	3.85	51.5		0.90
B-A	3.45	3.98	0.866		3.74	4.65	63.9		1.47
C-A	11.52								
C-B	1.72	7.89	0.218		0.28	0.28	4.2		0.16
A-B	1.34								
A-C	14.99								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.73	8.27	0.451		3.85	0.85	15.0		0.24
B-A	2.82	5.59	0.504		4.65	1.07	20.7		0.43
C-A	9.41								
C-B	1.41	8.71	0.162		0.28	0.19	3.0		0.14
A-B	1.09								
A-C	12.24								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	3.12	9.39	0.333		0.85	0.51	7.9		0.16
B-A	2.36	6.57	0.359		1.07	0.57	9.1		0.24
C-A	7.88								
C-B	1.18	9.30	0.127		0.19	0.15	2.3		0.12
A-B	0.92								
A-C	10.25								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	
16.45	0.8	*
17.00	2.7	***
17.15	3.9	****
17.30	0.8	*
17.45	0.5	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	*
16.45	1.0	*
17.00	3.7	****
17.15	4.6	*****
17.30	1.1	*
17.45	0.6	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.2
17.00	0.3
17.15	0.3
17.30	0.2
17.45	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-C	342.7	228.5	126.4	0.37	126.5	0.37
B-A	258.8	172.5	158.1	0.61	158.1	0.61
C-A	864.4	576.3				
C-B	129.4	86.3	18.3	0.14	18.3	0.14
A-B	100.5	67.0				
A-C	1124.5	749.7				
ALL	2820.3	1880.2	302.8	0.11	302.9	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
807.60	0.29	0.29

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2020 Base+tourism

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	12.38	18.56	12.38
ARM B	15.00	45.00	75.00	5.46	8.19	5.46
ARM C	15.00	45.00	75.00	10.39	15.58	10.39

.Demand set: PM 2020 Base+tourism

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.074	0.926
		0.0	73.0	917.0
		(0.0)	(27.0)	(2.0)
	ARM B	0.430	0.000	0.570
		188.0	0.0	249.0
		(6.0)	(0.0)	(3.0)
	ARM C	0.887	0.113	0.000
		737.0	94.0	0.0
		(2.0)	(9.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2020 Base+tourism
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-C	3.12	8.99	0.348		0.00	0.52	7.4		0.17
B-A	2.36	6.01	0.392		0.00	0.63	8.7		0.27
C-A	9.25								
C-B	1.18	8.97	0.132		0.00	0.15	2.2		0.13
A-B	0.92								
A-C	11.51								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	3.73	7.80	0.478		0.52	0.89	12.6		0.24
B-A	2.82	4.92	0.572		0.63	1.25	17.0		0.46
C-A	11.04								
C-B	1.41	8.31	0.169		0.15	0.20	2.9		0.14
A-B	1.09								
A-C	13.74								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	4.57	4.22	1.082		0.89	10.79	99.5		1.97
B-A	3.45	3.22	1.070		1.25	8.76	83.6		2.26
C-A	13.52								
C-B	1.72	7.40	0.233		0.20	0.30	4.3		0.18
A-B	1.34								
A-C	16.83								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	4.57	4.22	1.083		10.79	17.51	213.4		3.63
B-A	3.45	3.22	1.072		8.76	13.77	170.0		3.92
C-A	13.52								
C-B	1.72	7.40	0.233		0.30	0.30	4.5		0.18
A-B	1.34								
A-C	16.83								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.73	6.79	0.549		17.51	1.30	69.3		0.77
B-A	2.82	4.62	0.609		13.77	1.78	76.2		1.41
C-A	11.04								
C-B	1.41	8.31	0.169		0.30	0.21	3.2		0.15
A-B	1.09								
A-C	13.74								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	3.12	8.93	0.350		1.30	0.55	8.7		0.18
B-A	2.36	6.00	0.393		1.78	0.67	11.0		0.29
C-A	9.25								
C-B	1.18	8.97	0.132		0.21	0.15	2.4		0.13
A-B	0.92								
A-C	11.51								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	*
16.45	0.9	*
17.00	10.8	**********
17.15	17.5	*****************
17.30	1.3	*
17.45	0.5	*

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.6	*
16.45	1.3	*
17.00	8.8	*********
17.15	13.8	**************
17.30	1.8	**
17.45	0.7	*

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.2
17.00	0.3
17.15	0.3
17.30	0.2
17.45	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * DELAY * (MIN)	* QUEUEING * DELAY * (MIN/VEH)	* INCLUSIVE QUEUEING * DELAY * (MIN)	* INCLUSIVE QUEUEING * DELAY * (MIN/VEH)
B-C	342.7	228.5	411.0	1.20	411.0	1.20
B-A	258.8	172.5	366.6	1.42	366.6	1.42
C-A	1014.4	676.3				
C-B	129.4	86.3	19.5	0.15	19.5	0.15
A-B	100.5	67.0				
A-C	1262.2	841.5				
ALL	3108.0	2072.0	797.1	0.26	797.1	0.26

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM
RELEASE 4.0 (SEPT 2008)

FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356
EMAIL: Software@trl.co.uk

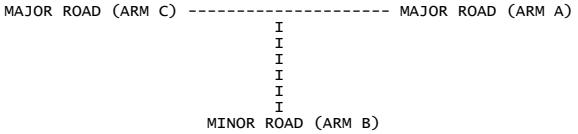
Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
16.Wimbourne Rd_Ffordd y Mileniwm\Ffordd y Mileniwm_Wimbourne Rd Priority.vpi"
(drive-on-the-left) at 09:34:44 on Tuesday, 13 April 2010

.RUN INFORMATION

RUN TITLE	: Ffordd y Mileniwm / Wimbourne Road Priority
LOCATION	:
DATE	: 06/04/10
CLIENT	:
ENUMERATOR	: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER	:
STATUS	:
DESCRIPTION	:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA



ARM A IS Ffordd y Mileniwm (E)
ARM B IS Wimbourne Rd (S)
ARM C IS Ffordd y Mileniwm (W)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

.GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 8.00 M.
CENTRAL RESERVE WIDTH	(WCR) 3.60 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 4.00 M.
- VISIBILITY	(VC-B)175.00 M.
- BLOCKS TRAFFIC	NO
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 150.0 M.
- VISIBILITY TO RIGHT	(VB-A) 170.0 M.
- LANE 1 WIDTH	(WB-C) -
- LANE 2 WIDTH	(WB-A) -
WIDTH AT 0 M FROM JUNCTION	10.00 M.
WIDTH AT 5 M FROM JUNCTION	10.00 M.
WIDTH AT 10 M FROM JUNCTION	8.00 M.
WIDTH AT 15 M FROM JUNCTION	7.00 M.
WIDTH AT 20 M FROM JUNCTION	6.00 M.
- LENGTH OF FLARED SECTION	3 VEHS

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
807.60	0.29	0.29

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: AM 2020 with Dev

TIME PERIOD BEGINS 08.15 AND ENDS 09.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	12.29	18.43	12.29
ARM B	15.00	45.00	75.00	2.49	3.73	2.49
ARM C	15.00	45.00	75.00	14.59	21.88	14.59

.Demand set: AM 2020 with Dev

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 08.30				
	ARM A	0.000	0.158	0.842
		0.0	155.0	828.0
		(0.0)	(13.0)	(7.0)
	ARM B	0.452	0.000	0.548
		90.0	0.0	109.0
		(30.0)	(0.0)	(11.0)
	ARM C	0.828	0.172	0.000
		966.0	201.0	0.0
		(2.0)	(4.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET AM 2020 with Dev
AND FOR TIME PERIOD 1

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
B-C	1.37	8.62	0.159		0.00	0.19	2.7		0.14
B-A	1.13	4.19	0.269		0.00	0.36	5.0		0.32
C-A	12.12								
C-B	2.52	9.28	0.272		0.00	0.37	5.3		0.15
A-B	1.94								
A-C	10.39								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.30-08.45									
B-C	1.63	7.64	0.214		0.19	0.27	3.9		0.17
B-A	1.35	3.19	0.422		0.36	0.69	9.5		0.53
C-A	14.47								
C-B	3.01	8.58	0.351		0.37	0.53	7.7		0.18
A-B	2.32								
A-C	12.41								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.45-09.00									
B-C	2.00	3.13	0.638		0.27	1.54	19.3		0.78
B-A	1.65	1.81	0.914		0.69	3.66	38.6		2.19
C-A	17.73								
C-B	3.69	7.59	0.486		0.53	0.92	12.9		0.25
A-B	2.84								
A-C	15.19								

TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY

I	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)	I
I 09.00-09.15										I
I B-C	2.00	1.99	1.003		1.54	5.40	56.6		2.45	I
I B-A	1.65	1.80	0.919		3.66	4.87	64.7		3.11	I
I C-A	17.73									I
I C-B	3.69	7.59	0.486		0.92	0.93	13.9		0.26	I
I A-B	2.84									I
I A-C	15.19									I
I										I

I TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 09.15-09.30										I
I B-C	1.63	7.32	0.223		5.40	0.29	7.4		0.20	I
I B-A	1.35	3.18	0.425		4.87	0.79	19.2		0.74	I
I C-A	14.47									I
I C-B	3.01	8.58	0.351		0.93	0.55	8.7		0.18	I
I A-B	2.32									I
I A-C	12.41									I
I										I

I TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 09.30-09.45										I
I B-C	1.37	8.59	0.159		0.29	0.19	3.0		0.14	I
I B-A	1.13	4.18	0.270		0.79	0.38	6.1		0.33	I
I C-A	12.12									I
I C-B	2.52	9.28	0.272		0.55	0.38	5.9		0.15	I
I A-B	1.94									I
I A-C	10.39									I
I										I

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.2	
08.45	0.3	
09.00	1.5	**
09.15	5.4	*****
09.30	0.3	
09.45	0.2	

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.4	
08.45	0.7	*
09.00	3.7	****
09.15	4.9	*****
09.30	0.8	*
09.45	0.4	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.4	
08.45	0.5	*
09.00	0.9	*
09.15	0.9	*
09.30	0.6	*
09.45	0.4	

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I STREAM	I TOTAL DEMAND		I * QUEUEING * DELAY *		I * INCLUSIVE QUEUEING * DELAY *		I
	I (VEH)	(VEH/H)	I (MIN)	(MIN/VEH)	I (MIN)	(MIN/VEH)	I
I B-C	I 150.0	I 100.0	I 92.9	I 0.62	I 92.9	I 0.62	I
I B-A	I 123.9	I 82.6	I 143.1	I 1.16	I 143.2	I 1.16	I
I C-A	I 1329.6	I 886.4	I	I	I	I	I
I C-B	I 276.7	I 184.4	I 54.3	I 0.20	I 54.3	I 0.20	I
I A-B	I 213.3	I 142.2	I	I	I	I	I
I A-C	I 1139.7	I 759.8	I	I	I	I	I
I ALL	I 3233.2	I 2155.5	I 290.3	I 0.09	I 290.4	I 0.09	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	I
I 0.00	0.00	0.00	I

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
807.60	0.29	0.29

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2020 with Dev

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	15.71	23.57	15.71
ARM B	15.00	45.00	75.00	5.46	8.19	5.46
ARM C	15.00	45.00	75.00	12.40	18.60	12.40

.Demand set: PM 2020 with Dev

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.058	0.942
		0.0	73.0	1184.0
		(0.0)	(27.0)	(2.0)
	ARM B	0.430	0.000	0.570
		188.0	0.0	249.0
		(6.0)	(0.0)	(3.0)
	ARM C	0.905	0.095	0.000
		898.0	94.0	0.0
		(2.0)	(9.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2020 with Dev
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-C	3.12	7.81	0.400		0.00	0.65	9.2		0.21
B-A	2.36	4.75	0.496		0.00	0.93	12.5		0.40
C-A	11.27								
C-B	1.18	8.07	0.146		0.00	0.17	2.4		0.14
A-B	0.92								
A-C	14.86								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	3.73	5.24	0.712		0.65	2.18	27.9		0.59
B-A	2.82	3.33	0.845		0.93	3.51	40.4		1.24
C-A	13.45								
C-B	1.41	7.24	0.194		0.17	0.24	3.5		0.17
A-B	1.09								
A-C	17.74								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	4.57	2.22	2.057		2.18	37.81	301.8		9.57
B-A	3.45	1.74	1.988		3.51	29.53	249.1		10.37

I C-A	16.48								I
I C-B	1.72	6.09	0.283		0.24	0.39	5.5	0.23	I
I A-B	1.34								I
I A-C	21.73								I
I									I

I TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 17.00-17.15										I
I B-C	4.57	2.26	2.020		37.81	72.44	826.9		24.96	I
I B-A	3.45	1.73	1.995		29.53	55.38	636.9		25.28	I
I C-A	16.48									I
I C-B	1.72	6.09	0.283		0.39	0.39	5.8		0.23	I
I A-B	1.34									I
I A-C	21.73									I
I										I

I TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 17.15-17.30										I
I B-C	3.73	4.13	0.903		72.44	67.27	1047.8		16.71	I
I B-A	2.82	3.14	0.897		55.38	51.35	800.4		16.84	I
I C-A	13.45									I
I C-B	1.41	7.24	0.194		0.39	0.24	3.8		0.17	I
I A-B	1.09									I
I A-C	17.74									I
I										I

I TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 17.30-17.45										I
I B-C	3.12	5.21	0.600		67.27	37.18	783.4		10.24	I
I B-A	2.36	3.96	0.596		51.35	28.52	599.0		10.37	I
I C-A	11.27									I
I C-B	1.18	8.07	0.146		0.24	0.17	2.7		0.15	I
I A-B	0.92									I
I A-C	14.86									I
I										I

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	2.2	**
17.00	37.8	************************************
17.15	72.4	**
17.30	67.3	***
17.45	37.2	************************************

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.9	*
16.45	3.5	****
17.00	29.5	****************************
17.15	55.4	***
17.30	51.3	**
17.45	28.5	****************************

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.2
16.45	0.2
17.00	0.4
17.15	0.4
17.30	0.2
17.45	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I STREAM I	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *		I
I	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	I
I B-C	342.7	228.5	2996.9	8.74	3129.7	9.13	I
I B-A	258.8	172.5	2338.3	9.04	2441.1	9.43	I
I C-A	1236.0	824.0					I
I C-B	129.4	86.3	23.8	0.18	23.8	0.18	I
I A-B	100.5	67.0					I
I A-C	1629.7	1086.5					I
I ALL	3697.1	2464.7	5359.1	1.45	5594.6	1.51	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM B-A	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B
0.00	0.00	0.00	0.00	0.00

* Due to the presence of a flare, data is not available

Intercept For STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B
807.60	0.29	0.29

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.Demand set: PM 2020 with Dev+Tourism

TIME PERIOD BEGINS 16.15 AND ENDS 17.45

LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	16.95	25.43	16.95
ARM B	15.00	45.00	75.00	5.46	8.19	5.46
ARM C	15.00	45.00	75.00	13.76	20.64	13.76

.Demand set: PM 2020 with Dev+Tourism

TIME	TURNING PROPORTIONS / TURNING COUNTS / (PERCENTAGE OF H.V.S) FROM/TO	ARM A	ARM B	ARM C
16.15 - 16.30	ARM A	0.000	0.054	0.946
		0.0	73.0	1283.0
		(0.0)	(27.0)	(2.0)
	ARM B	0.430	0.000	0.570
		188.0	0.0	249.0
		(6.0)	(0.0)	(3.0)
	ARM C	0.915	0.085	0.000
		1007.0	94.0	0.0
		(2.0)	(9.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET PM 2020 with Dev+Tourism
AND FOR TIME PERIOD 2

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
B-C	3.12	7.26	0.430		0.00	0.73	10.2		0.24
B-A	2.36	4.18	0.564		0.00	1.20	15.6		0.51
C-A	12.64								
C-B	1.18	7.74	0.152		0.00	0.18	2.6		0.15
A-B	0.92								
A-C	16.10								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.30-16.45									
B-C	3.73	3.46	1.079		0.73	9.31	86.3		2.53
B-A	2.82	2.65	1.063		1.20	7.56	73.0		2.95
C-A	15.09								
C-B	1.41	6.85	0.206		0.18	0.26	3.7		0.18
A-B	1.09								
A-C	19.22								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
B-C	4.57	1.24	3.697		9.31	59.35	515.1		22.05
B-A	3.45	0.94	3.664		7.56	45.23	396.1		22.45
C-A	18.48								
C-B	1.72	5.61	0.308		0.26	0.43	6.2		0.26
A-B	1.34								
A-C	23.54								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
B-C	4.57	1.24	3.699		59.35	109.37	1265.4		69.00
B-A	3.45	0.94	3.683		45.23	82.93	961.2		69.42
C-A	18.48								
C-B	1.72	5.61	0.308		0.43	0.44	6.6		0.26
A-B	1.34								
A-C	23.54								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
B-C	3.73	3.48	1.071		109.37	113.11	1668.5		27.64
B-A	2.82	2.64	1.067		82.93	85.67	1264.5		27.72
C-A	15.09								
C-B	1.41	6.85	0.206		0.44	0.26	4.1		0.18
A-B	1.09								
A-C	19.22								

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
B-C	3.12	4.77	0.655		113.11	89.09	1516.4		21.41
B-A	2.36	3.61	0.654		85.67	67.56	1149.2		21.51
C-A	12.64								
C-B	1.18	7.74	0.152		0.26	0.18	2.8		0.15
A-B	0.92								
A-C	16.10								

QUEUE FOR STREAM B-C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	9.3	*********
17.00	59.4	**********
17.15	109.4	**********
17.30	113.1	**********
17.45	89.1	**********

QUEUE FOR STREAM B-A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.2	*
16.45	7.6	********
17.00	45.2	**********
17.15	82.9	**********
17.30	85.7	**********
17.45	67.6	**********

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.2
16.45	0.3
17.00	0.4
17.15	0.4
17.30	0.3
17.45	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-C	342.7	228.5	5062.0	14.77	5894.3	17.20
B-A	258.8	172.5	3859.7	14.92	4492.4	17.36
C-A	1386.1	924.0				
C-B	129.4	86.3	25.9	0.20	25.9	0.20
A-B	100.5	67.0				
A-C	1766.0	1177.3				
ALL	3983.4	2655.6	8947.6	2.25	10412.7	2.61

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
 A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

*******END OF RUN*******

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
16.Wimbourne Rd_Ffordd y Mileniwm\With Improvements\Ffordd y Mileniwm_Wimbourne Rd RBT.vai"
(drive-on-the-left) at 16:34:02 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Wimbourne Road / Ffordd y Mileniwm
LOCATION:
DATE: 16/07/09
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Ffordd y Mileniwm (E)
ARM B - Wimbourne Road
ARM C - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

I ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
I ARM A	3.50	7.00	22.30	20.00	40.00	20.0	0.678	30.462
I ARM B	4.45	6.76	15.10	20.00	40.00	25.5	0.676	30.777
I ARM C	3.60	7.19	100.00	30.00	40.00	28.0	0.732	35.242

V = approach half-width E = entry width L = effective flare length R = entry radius D = inscribed circle diameter PHI = entry angle

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM	FLOW SCALE(%)
I A	100
I B	100
I C	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2020 With Development

I ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
I ARM A	15.00	45.00	75.00	12.29	18.43	12.29
I ARM B	15.00	45.00	75.00	2.49	3.73	2.49
I ARM C	15.00	45.00	75.00	14.59	21.88	14.59

DEMAND SET TITLE: AM 2020 With Development

I TURNING PROPORTIONS
I TURNING COUNTS

TIME	FROM/TO	ARM A	ARM B	ARM C
08.15 - 09.45				
	ARM A	0.000	0.158	0.842
		0.0	155.0	828.0
		(0.0)	(13.0)	(7.0)
	ARM B	0.452	0.000	0.548
		90.0	0.0	109.0
		(30.0)	(0.0)	(11.0)
	ARM C	0.828	0.172	0.000
		966.0	201.0	0.0
		(2.0)	(4.0)	(0.0)

(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	12.33	26.58	0.464	- -	0.0	0.9	12.5	-	0.070
ARM B	2.50	19.48	0.128	- -	0.0	0.1	2.2	-	0.059
ARM C	14.64	33.39	0.439	- -	0.0	0.8	11.4	-	0.053
08.30-08.45									
ARM A	14.73	26.26	0.561	- -	0.9	1.3	18.4	-	0.086
ARM B	2.98	18.25	0.163	- -	0.1	0.2	2.9	-	0.065
ARM C	17.49	33.18	0.527	- -	0.8	1.1	16.2	-	0.064
08.45-09.00									
ARM A	18.04	25.82	0.699	- -	1.3	2.3	32.0	-	0.127
ARM B	3.65	16.58	0.220	- -	0.2	0.3	4.1	-	0.077
ARM C	21.41	32.90	0.651	- -	1.1	1.8	26.5	-	0.086
09.00-09.15									
ARM A	18.04	25.81	0.699	- -	2.3	2.3	34.1	-	0.129
ARM B	3.65	16.55	0.221	- -	0.3	0.3	4.2	-	0.078
ARM C	21.41	32.90	0.651	- -	1.8	1.8	27.7	-	0.087
09.15-09.30									
ARM A	14.73	26.25	0.561	- -	2.3	1.3	20.2	-	0.088
ARM B	2.98	18.20	0.164	- -	0.3	0.2	3.0	-	0.066
ARM C	17.49	33.18	0.527	- -	1.8	1.1	17.3	-	0.064
09.30-09.45									
ARM A	12.33	26.57	0.464	- -	1.3	0.9	13.5	-	0.070
ARM B	2.50	19.44	0.128	- -	0.2	0.1	2.3	-	0.059
ARM C	14.64	33.38	0.439	- -	1.1	0.8	12.0	-	0.054

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.9	*
08.45	1.3	*
09.00	2.3	**
09.15	2.3	**
09.30	1.3	*
09.45	0.9	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.2

09.00	0.3
09.15	0.3
09.30	0.2
09.45	0.1

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.8	*
08.45	1.1	*
09.00	1.8	**
09.15	1.8	**
09.30	1.1	*
09.45	0.8	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1353.0	902.0	130.6	0.10	130.7	0.10
B	273.9	182.6	18.6	0.07	18.6	0.07
C	1606.3	1070.9	111.0	0.07	111.1	0.07
ALL	3233.2	2155.5	260.3	0.08	260.3	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
16.Wimbourne Rd_Ffordd y Mileniwm\With Improvements\Ffordd y Mileniwm_Wimbourne Rd RBT.vai"
(drive-on-the-left) at 16:32:52 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Wimbourne Road / Ffordd y Mileniwm
LOCATION:
DATE: 16/07/09
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Ffordd y Mileniwm (E)
ARM B - Wimbourne Road
ARM C - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.50	7.00	22.30	20.00	40.00	20.0	0.678	30.462
ARM B	4.45	6.76	15.10	20.00	40.00	25.5	0.676	30.777
ARM C	3.60	7.19	100.00	30.00	40.00	28.0	0.732	35.242

V = approach half-width E = entry width L = effective flare length R = entry radius D = inscribed circle diameter PHI = entry angle

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

ARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 With Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00		15.71	23.57	15.71
ARM B	15.00	45.00	75.00		5.46	8.19	5.46
ARM C	15.00	45.00	75.00		12.40	18.60	12.40

DEMAND SET TITLE: PM 2020 With Development

T33

TURNING PROPORTIONS
TURNING COUNTS

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45		(PERCENTAGE OF H.V.S)		
	ARM A	0.000	0.058	0.942
		0.0	73.0	1184.0
		(0.0)	(27.0)	(2.0)
	ARM B	0.430	0.000	0.570
		188.0	0.0	249.0
		(6.0)	(0.0)	(3.0)
	ARM C	0.905	0.095	0.000
		898.0	94.0	0.0
		(2.0)	(9.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	15.77	28.61	0.551	- -	-	0.0	1.2	17.5	-	0.077
ARM B	5.48	19.74	0.278	- -	-	0.0	0.4	5.6	-	0.070
ARM C	12.45	32.55	0.382	- -	-	0.0	0.6	9.0	-	0.050
16.30-16.45									
ARM A	18.83	28.44	0.662	- -	-	1.2	1.9	27.6	-	0.103
ARM B	6.55	17.81	0.368	- -	-	0.4	0.6	8.4	-	0.089
ARM C	14.86	32.20	0.462	- -	-	0.6	0.9	12.5	-	0.058
16.45-17.00									
ARM A	23.07	28.22	0.817	- -	-	1.9	4.2	57.2	-	0.183
ARM B	8.02	15.24	0.526	- -	-	0.6	1.1	15.6	-	0.137
ARM C	18.20	31.73	0.574	- -	-	0.9	1.3	19.4	-	0.074
17.00-17.15									
ARM A	23.07	28.21	0.818	- -	-	4.2	4.3	64.2	-	0.193
ARM B	8.02	15.15	0.529	- -	-	1.1	1.1	16.5	-	0.140
ARM C	18.20	31.72	0.574	- -	-	1.3	1.3	20.0	-	0.074
17.15-17.30									
ARM A	18.83	28.44	0.662	- -	-	4.3	2.0	31.8	-	0.107
ARM B	6.55	17.69	0.370	- -	-	1.1	0.6	9.2	-	0.090
ARM C	14.86	32.19	0.462	- -	-	1.3	0.9	13.3	-	0.058
17.30-17.45									
ARM A	15.77	28.60	0.551	- -	-	2.0	1.2	19.3	-	0.078
ARM B	5.48	19.66	0.279	- -	-	0.6	0.4	6.0	-	0.071
ARM C	12.45	32.54	0.383	- -	-	0.9	0.6	9.5	-	0.050

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.2	*
16.45	1.9	**
17.00	4.2	****
17.15	4.3	****
17.30	2.0	**
17.45	1.2	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.6	*

17.00	1.1	*
17.15	1.1	*
17.30	0.6	*
17.45	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.6	*
16.45	0.9	*
17.00	1.3	*
17.15	1.3	*
17.30	0.9	*
17.45	0.6	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1730.2	1153.4	217.7	0.13	217.7	0.13
B	601.5	401.0	61.3	0.10	61.3	0.10
C	1365.4	910.3	83.7	0.06	83.7	0.06
ALL	3697.1	2464.7	362.7	0.10	362.8	0.10

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
16.Wimbourne Rd_Ffordd y Mileniwm\With Improvements\Ffordd y Mileniwm_Wimbourne Rd RBT.vai"
(drive-on-the-left) at 16:33:23 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Wimbourne Road / Ffordd y Mileniwm
LOCATION:
DATE: 16/07/09
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Ffordd y Mileniwm (E)
ARM B - Wimbourne Road
ARM C - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.50	7.00	22.30	20.00	40.00	20.0	0.678	30.462
ARM B	4.45	6.76	15.10	20.00	40.00	25.5	0.676	30.777
ARM C	3.60	7.19	100.00	30.00	40.00	28.0	0.732	35.242

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

WARNING ARM C Effective flare length is outside normal range.
Treat capacities with increasing caution.

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 With Development+ tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	16.95	25.43	16.95
ARM B	15.00	45.00	75.00	5.46	8.19	5.46
ARM C	15.00	45.00	75.00	13.76	20.64	13.76

DEMAND SET TITLE: PM 2020 With Development+ tourism

T33

TURNING PROPORTIONS
TURNING COUNTS

TIME	FROM/TO	ARM A	ARM B	ARM C
16.15 - 17.45				
	ARM A	0.000	0.054	0.946
		0.0	73.0	1283.0
		(0.0)	(27.0)	(2.0)
	ARM B	0.430	0.000	0.570
		188.0	0.0	249.0
		(6.0)	(0.0)	(3.0)
	ARM C	0.915	0.085	0.000
		1007.0	94.0	0.0
		(2.0)	(9.0)	(0.0)

(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	17.01	28.64	0.594	- -	0.0	1.4	20.7	-	0.085
ARM B	5.48	18.93	0.290	- -	0.0	0.4	5.9	-	0.074
ARM C	13.81	32.58	0.424	- -	0.0	0.7	10.7	-	0.053
16.30-16.45									
ARM A	20.32	28.47	0.714	- -	1.4	2.4	34.5	-	0.121
ARM B	6.55	16.84	0.389	- -	0.4	0.6	9.2	-	0.097
ARM C	16.50	32.23	0.512	- -	0.7	1.0	15.2	-	0.063
16.45-17.00									
ARM A	24.88	28.25	0.881	- -	2.4	6.5	83.5	-	0.258
ARM B	8.02	14.12	0.568	- -	0.6	1.3	18.2	-	0.162
ARM C	20.20	31.76	0.636	- -	1.0	1.7	24.9	-	0.086
17.00-17.15									
ARM A	24.88	28.24	0.881	- -	6.5	6.9	100.7	-	0.290
ARM B	8.02	13.96	0.574	- -	1.3	1.3	19.7	-	0.168
ARM C	20.20	31.74	0.636	- -	1.7	1.7	26.0	-	0.087
17.15-17.30									
ARM A	20.32	28.47	0.714	- -	6.9	2.6	42.3	-	0.132
ARM B	6.55	16.62	0.394	- -	1.3	0.7	10.2	-	0.100
ARM C	16.50	32.21	0.512	- -	1.7	1.1	16.3	-	0.064
17.30-17.45									
ARM A	17.01	28.63	0.594	- -	2.6	1.5	23.2	-	0.087
ARM B	5.48	18.82	0.291	- -	0.7	0.4	6.4	-	0.075
ARM C	13.81	32.56	0.424	- -	1.1	0.7	11.3	-	0.053

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.4	*
16.45	2.4	**
17.00	6.5	******
17.15	6.9	*******
17.30	2.6	***
17.45	1.5	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.6	*

17.00	1.3	*
17.15	1.3	*
17.30	0.7	*
17.45	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	1.0	*
17.00	1.7	**
17.15	1.7	**
17.30	1.1	*
17.45	0.7	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1866.4	1244.3	304.8	0.16	304.9	0.16
B	601.5	401.0	69.6	0.12	69.6	0.12
C	1515.4	1010.3	104.5	0.07	104.5	0.07
ALL	3983.4	2655.6	478.9	0.12	478.9	0.12

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\19.Y Rhodfa_Fford y Mileniwm\Ffordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 13:57:46 on Tuesday, 6 April 2010

.FILE PROPERTIES
****

RUN TITLE: Ffordd y Mileniwm/Y Rhodfa
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	6.00	3.60	33.70	45.00	22.6	0.593	24.181
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM Base 2008

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK	NUMBER OF MINUTES FROM START WHEN FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
	TO RISE	IS REACHED	FALLING			
ARM A	15.00	45.00	75.00	0.81	1.22	0.81
ARM B	15.00	45.00	75.00	5.61	8.42	5.61
ARM C	15.00	45.00	75.00	0.55	0.83	0.55
ARM D	15.00	45.00	75.00	7.38	11.06	7.38

DEMAND SET TITLE: AM Base 2008

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.385	0.000	0.615
		0.0	25.0	0.0	40.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.049	0.049	0.040	0.862
		22.0	22.0	18.0	387.0
		(0.0)	(0.0)	(6.0)	(4.0)
	ARM C	0.023	0.568	0.000	0.409
		1.0	25.0	0.0	18.0
		(0.0)	(0.0)	(0.0)	(6.0)
	ARM D	0.088	0.905	0.007	0.000
		52.0	534.0	4.0	0.0
		(0.0)	(4.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	0.82	16.60	0.049	- -	0.0	0.1	0.8	-	0.063
ARM B	5.63	23.01	0.245	- -	0.0	0.3	4.7	-	0.057
ARM C	0.55	17.94	0.031	- -	0.0	0.0	0.5	-	0.058
ARM D	7.40	22.58	0.328	- -	0.0	0.5	7.1	-	0.066
08.30-08.45									
ARM A	0.97	15.79	0.062	- -	0.1	0.1	1.0	-	0.068
ARM B	6.73	22.94	0.293	- -	0.3	0.4	6.1	-	0.062
ARM C	0.66	17.28	0.038	- -	0.0	0.0	0.6	-	0.060
ARM D	8.84	22.48	0.393	- -	0.5	0.6	9.5	-	0.073
08.45-09.00									
ARM A	1.19	14.69	0.081	- -	0.1	0.1	1.3	-	0.074
ARM B	8.24	22.86	0.360	- -	0.4	0.6	8.2	-	0.068
ARM C	0.81	16.37	0.049	- -	0.0	0.1	0.8	-	0.064
ARM D	10.83	22.35	0.484	- -	0.6	0.9	13.6	-	0.086
09.00-09.15									
ARM A	1.19	14.68	0.081	- -	0.1	0.1	1.3	-	0.074
ARM B	8.24	22.86	0.360	- -	0.6	0.6	8.4	-	0.068
ARM C	0.81	16.37	0.049	- -	0.1	0.1	0.8	-	0.064
ARM D	10.83	22.35	0.485	- -	0.9	0.9	14.0	-	0.087
09.15-09.30									
ARM A	0.97	15.77	0.062	- -	0.1	0.1	1.0	-	0.068
ARM B	6.73	22.94	0.293	- -	0.6	0.4	6.4	-	0.062
ARM C	0.66	17.27	0.038	- -	0.1	0.0	0.6	-	0.060
ARM D	8.84	22.48	0.393	- -	0.9	0.7	10.0	-	0.073
09.30-09.45									
ARM A	0.82	16.57	0.049	- -	0.1	0.1	0.8	-	0.063
ARM B	5.63	23.01	0.245	- -	0.4	0.3	5.0	-	0.058
ARM C	0.55	17.92	0.031	- -	0.0	0.0	0.5	-	0.058
ARM D	7.40	22.58	0.328	- -	0.7	0.5	7.5	-	0.066

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.1

09.00	0.1
09.15	0.1
09.30	0.1
09.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.3	
08.45	0.4	
09.00	0.6	*
09.15	0.6	*
09.30	0.4	
09.45	0.3	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.1
09.15	0.1
09.30	0.0
09.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.5	
08.45	0.6	*
09.00	0.9	*
09.15	0.9	*
09.30	0.7	*
09.45	0.5	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *		T75
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
A	89.5	59.6	6.1	0.07	6.1	0.07	
B	618.0	412.0	38.8	0.06	38.8	0.06	
C	60.6	40.4	3.7	0.06	3.7	0.06	
D	812.1	541.4	61.6	0.08	61.6	0.08	
ALL	1580.1	1053.4	110.3	0.07	110.3	0.07	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\19.Y Rhodfa_Fford y Mileniwm\Ffordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 14:02:40 on Tuesday, 6 April 2010

.FILE PROPERTIES
****

RUN TITLE: Ffordd y Mileniwm/Y Rhodfa
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	6.00	3.60	33.70	45.00	22.6	0.593	24.181
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM Base 2020

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK	NUMBER OF MINUTES FROM START WHEN FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
	TO RISE	IS REACHED	FALLING			
ARM A	15.00	45.00	75.00	0.95	1.42	0.95
ARM B	15.00	45.00	75.00	6.55	9.83	6.55
ARM C	15.00	45.00	75.00	0.64	0.96	0.64
ARM D	15.00	45.00	75.00	8.60	12.90	8.60

DEMAND SET TITLE: AM Base 2020

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.382	0.000	0.618
		0.0	29.0	0.0	47.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.050	0.050	0.040	0.861
		26.0	26.0	21.0	451.0
		(0.0)	(0.0)	(6.0)	(4.0)
	ARM C	0.020	0.569	0.000	0.412
		1.0	29.0	0.0	21.0
		(0.0)	(0.0)	(0.0)	(6.0)
	ARM D	0.089	0.904	0.007	0.000
		61.0	622.0	5.0	0.0
		(0.0)	(4.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	0.95	15.92	0.060	- -	0.0	0.1	0.9	-	0.067
ARM B	6.57	22.95	0.286	- -	0.0	0.4	5.8	-	0.061
ARM C	0.64	17.37	0.037	- -	0.0	0.0	0.6	-	0.060
ARM D	8.63	22.49	0.384	- -	0.0	0.6	9.0	-	0.072
08.30-08.45									
ARM A	1.14	14.98	0.076	- -	0.1	0.1	1.2	-	0.072
ARM B	7.85	22.88	0.343	- -	0.4	0.5	7.6	-	0.066
ARM C	0.76	16.60	0.046	- -	0.0	0.0	0.7	-	0.063
ARM D	10.31	22.38	0.461	- -	0.6	0.8	12.4	-	0.083
08.45-09.00									
ARM A	1.39	13.70	0.102	- -	0.1	0.1	1.7	-	0.081
ARM B	9.62	22.78	0.422	- -	0.5	0.7	10.6	-	0.076
ARM C	0.94	15.54	0.060	- -	0.0	0.1	0.9	-	0.068
ARM D	12.63	22.22	0.568	- -	0.8	1.3	18.7	-	0.103
09.00-09.15									
ARM A	1.39	13.69	0.102	- -	0.1	0.1	1.7	-	0.081
ARM B	9.62	22.78	0.422	- -	0.7	0.7	10.9	-	0.076
ARM C	0.94	15.53	0.060	- -	0.1	0.1	1.0	-	0.069
ARM D	12.63	22.22	0.568	- -	1.3	1.3	19.5	-	0.104
09.15-09.30									
ARM A	1.14	14.95	0.076	- -	0.1	0.1	1.3	-	0.072
ARM B	7.85	22.88	0.343	- -	0.7	0.5	8.1	-	0.067
ARM C	0.76	16.58	0.046	- -	0.1	0.0	0.7	-	0.063
ARM D	10.31	22.38	0.461	- -	1.3	0.9	13.3	-	0.083
09.30-09.45									
ARM A	0.95	15.89	0.060	- -	0.1	0.1	1.0	-	0.067
ARM B	6.57	22.95	0.287	- -	0.5	0.4	6.2	-	0.061
ARM C	0.64	17.35	0.037	- -	0.0	0.0	0.6	-	0.060
ARM D	8.63	22.49	0.384	- -	0.9	0.6	9.6	-	0.072

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1
08.45	0.1

09.00	0.1
09.15	0.1
09.30	0.1
09.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.4	
08.45	0.5	*
09.00	0.7	*
09.15	0.7	*
09.30	0.5	*
09.45	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.0
09.00	0.1
09.15	0.1
09.30	0.0
09.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.6	*
08.45	0.8	*
09.00	1.3	*
09.15	1.3	*
09.30	0.9	*
09.45	0.6	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	104.6	69.7	7.7	0.07	7.7	0.07
B	721.2	480.8	49.2	0.07	49.2	0.07
C	70.2	46.8	4.5	0.06	4.5	0.06
D	947.0	631.3	82.6	0.09	82.6	0.09
ALL	1843.0	1228.7	144.0	0.08	144.1	0.08

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\19.Y Rhodfa_Fford y Mileniwm\Fordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 12:18:46 on Tuesday, 13 April 2010

.FILE PROPERTIES

RUN TITLE: Ffordd y Mileniwm/Y Rhodfa
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA

ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	6.00	3.60	33.70	45.00	22.6	0.593	24.181
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

V = approach half-width E = entry width L = effective flare length R = entry radius D = inscribed circle diameter PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(08.15)AND ENDS(09.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: AM 2020 With Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	0.95	1.42	0.95
ARM B	15.00	45.00	75.00	9.63	14.44	9.63
ARM C	15.00	45.00	75.00	0.64	0.96	0.64
ARM D	15.00	45.00	75.00	12.81	19.22	12.81

DEMAND SET TITLE: AM 2020 With Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
08.15 - 09.45					
	ARM A	0.000	0.382	0.000	0.618
		0.0	29.0	0.0	47.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.034	0.034	0.027	0.905
		26.0	26.0	21.0	697.0
		(0.0)	(0.0)	(6.0)	(4.0)
	ARM C	0.020	0.569	0.000	0.412
		1.0	29.0	0.0	21.0
		(0.0)	(0.0)	(0.0)	(6.0)
	ARM D	0.060	0.936	0.005	0.000
		61.0	959.0	5.0	0.0
		(0.0)	(4.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-08.30									
ARM A	0.95	13.57	0.070	- - -	0.0	0.1	1.1	-	0.079
ARM B	9.66	22.93	0.421	- - -	0.0	0.7	10.5	-	0.075
ARM C	0.64	15.61	0.041	- - -	0.0	0.0	0.6	-	0.067
ARM D	12.86	22.47	0.572	- - -	0.0	1.3	18.8	-	0.102
08.30-08.45									
ARM A	1.14	12.16	0.094	- - -	0.1	0.1	1.5	-	0.091
ARM B	11.54	22.86	0.505	- - -	0.7	1.0	14.7	-	0.088
ARM C	0.76	14.48	0.053	- - -	0.0	0.1	0.8	-	0.073
ARM D	15.36	22.35	0.687	- - -	1.3	2.1	30.3	-	0.141
08.45-09.00									
ARM A	1.39	10.32	0.135	- - -	0.1	0.2	2.3	-	0.112
ARM B	14.13	22.76	0.621	- - -	1.0	1.6	23.1	-	0.115
ARM C	0.94	12.96	0.072	- - -	0.1	0.1	1.1	-	0.083
ARM D	18.81	22.20	0.847	- - -	2.1	5.0	65.6	-	0.265
09.00-09.15									
ARM A	1.39	10.22	0.136	- - -	0.2	0.2	2.3	-	0.113
ARM B	14.13	22.75	0.621	- - -	1.6	1.6	24.2	-	0.116
ARM C	0.94	12.94	0.072	- - -	0.1	0.1	1.2	-	0.083
ARM D	18.81	22.20	0.847	- - -	5.0	5.2	77.0	-	0.290
09.15-09.30									
ARM A	1.14	12.03	0.095	- - -	0.2	0.1	1.6	-	0.092
ARM B	11.54	22.85	0.505	- - -	1.6	1.0	16.0	-	0.089
ARM C	0.76	14.45	0.053	- - -	0.1	0.1	0.9	-	0.073
ARM D	15.36	22.35	0.687	- - -	5.2	2.3	36.8	-	0.151
09.30-09.45									
ARM A	0.95	13.49	0.071	- - -	0.1	0.1	1.2	-	0.080
ARM B	9.66	22.93	0.421	- - -	1.0	0.7	11.3	-	0.076
ARM C	0.64	15.57	0.041	- - -	0.1	0.0	0.7	-	0.067
ARM D	12.86	22.46	0.573	- - -	2.3	1.4	21.3	-	0.106

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.1

08.45	0.1
09.00	0.2
09.15	0.2
09.30	0.1
09.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	0.7	*
08.45	1.0	*
09.00	1.6	**
09.15	1.6	**
09.30	1.0	*
09.45	0.7	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.30	0.0
08.45	0.1
09.00	0.1
09.15	0.1
09.30	0.1
09.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.30	1.3	*
08.45	2.1	**
09.00	5.0	*****
09.15	5.2	*****
09.30	2.3	**
09.45	1.4	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	104.6	69.7	10.0	0.10	10.0	0.10
B	1059.8	706.6	99.8	0.09	99.8	0.09
C	70.2	46.8	5.3	0.07	5.3	0.07
D	1410.8	940.6	249.9	0.18	249.9	0.18
ALL	2645.5	1763.7	365.0	0.14	365.0	0.14

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\19.Y Rhodfa_Fford y Mileniwm\Ffordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 14:04:27 on Tuesday, 6 April 2010

.FILE PROPERTIES
****

RUN TITLE: Ffordd y Mileniwm/Y Rhodfa
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	6.00	3.60	33.70	45.00	22.6	0.593	24.181
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

V = approach half-width E = entry width L = effective flare length R = entry radius D = inscribed circle diameter PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM Base 2008

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	0.74	1.11	0.74
ARM B	15.00	45.00	75.00	10.86	16.29	10.86
ARM C	15.00	45.00	75.00	0.35	0.52	0.35
ARM D	15.00	45.00	75.00	6.75	10.13	6.75

DEMAND SET TITLE: PM Base 2008

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.492	0.000	0.508
		0.0	29.0	0.0	30.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.043	0.032	0.040	0.885
		37.0	28.0	35.0	769.0
		(0.0)	(0.0)	(0.0)	(1.0)
	ARM C	0.000	0.000	0.000	1.000
		0.0	0.0	0.0	28.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.074	0.889	0.037	0.000
		40.0	480.0	20.0	0.0
		(0.0)	(2.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	0.74	17.06	0.043	- -	0.0	0.0	0.7	-	0.061
ARM B	10.90	23.60	0.462	- -	0.0	0.9	12.3	-	0.078
ARM C	0.35	15.66	0.022	- -	0.0	0.0	0.3	-	0.065
ARM D	6.78	23.02	0.294	- -	0.0	0.4	6.1	-	0.061
16.30-16.45									
ARM A	0.88	16.34	0.054	- -	0.0	0.1	0.8	-	0.065
ARM B	13.02	23.53	0.553	- -	0.9	1.2	17.8	-	0.095
ARM C	0.42	14.44	0.029	- -	0.0	0.0	0.4	-	0.071
ARM D	8.09	22.93	0.353	- -	0.4	0.5	8.0	-	0.067
16.45-17.00									
ARM A	1.08	15.37	0.070	- -	0.1	0.1	1.1	-	0.070
ARM B	15.95	23.43	0.681	- -	1.2	2.1	29.5	-	0.132
ARM C	0.51	12.79	0.040	- -	0.0	0.0	0.6	-	0.081
ARM D	9.91	22.81	0.435	- -	0.5	0.8	11.2	-	0.077
17.00-17.15									
ARM A	1.08	15.36	0.070	- -	0.1	0.1	1.1	-	0.070
ARM B	15.95	23.43	0.681	- -	2.1	2.1	31.4	-	0.134
ARM C	0.51	12.76	0.040	- -	0.0	0.0	0.6	-	0.082
ARM D	9.91	22.80	0.435	- -	0.8	0.8	11.5	-	0.078
17.15-17.30									
ARM A	0.88	16.33	0.054	- -	0.1	0.1	0.9	-	0.065
ARM B	13.02	23.53	0.553	- -	2.1	1.3	19.6	-	0.096
ARM C	0.42	14.39	0.029	- -	0.0	0.0	0.5	-	0.072
ARM D	8.09	22.93	0.353	- -	0.8	0.5	8.4	-	0.068
17.30-17.45									
ARM A	0.74	17.04	0.043	- -	0.1	0.0	0.7	-	0.061
ARM B	10.90	23.60	0.462	- -	1.3	0.9	13.4	-	0.079
ARM C	0.35	15.61	0.023	- -	0.0	0.0	0.4	-	0.066
ARM D	6.78	23.02	0.294	- -	0.5	0.4	6.4	-	0.062

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.1

17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.0

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.9	*
16.45	1.2	*
17.00	2.1	**
17.15	2.1	**
17.30	1.3	*
17.45	0.9	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.0
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.4	
16.45	0.5	*
17.00	0.8	*
17.15	0.8	*
17.30	0.5	*
17.45	0.4	

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	81.2	54.1	5.3	0.07	5.3	0.07
B	1196.1	797.4	123.9	0.10	123.9	0.10
C	38.5	25.7	2.8	0.07	2.8	0.07
D	743.3	495.5	51.5	0.07	51.5	0.07
ALL	2059.1	1372.8	183.6	0.09	183.6	0.09

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"\\Global\Europe\Cardiff\Jobs\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\
Junction Assessments\IssueRevA\19.Y Rhodfa_Fford y Mileniwm\Ffordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 14:05:40 on Tuesday, 6 April 2010

.FILE PROPERTIES
****

RUN TITLE: Ffordd y Mileniwm/Y Rhodfa
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	6.00	3.60	33.70	45.00	22.6	0.593	24.181
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM Base 2020

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO TOP OF PEAK	TO RISE	IS REACHED	FLOW STOPS	FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00		0.86	1.29	0.86		
ARM B	15.00	45.00	75.00		12.64	18.96	12.64		
ARM C	15.00	45.00	75.00		0.63	0.94	0.63		
ARM D	15.00	45.00	75.00		7.85	11.77	7.85		

DEMAND SET TITLE: PM Base 2020

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.493	0.000	0.507
		0.0	34.0	0.0	35.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.043	0.033	0.041	0.884
		43.0	33.0	41.0	894.0
		(0.0)	(0.0)	(0.0)	(1.0)
	ARM C	0.000	0.340	0.000	0.660
		0.0	17.0	0.0	33.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.075	0.889	0.037	0.000
		47.0	558.0	23.0	0.0
		(0.0)	(2.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	0.87	16.36	0.053	- - -	0.0	0.1	0.8	-	0.065
ARM B	12.69	23.54	0.539	- - -	0.0	1.2	16.6	-	0.091
ARM C	0.63	14.66	0.043	- - -	0.0	0.0	0.7	-	0.071
ARM D	7.88	22.82	0.345	- - -	0.0	0.5	7.7	-	0.067
16.30-16.45									
ARM A	1.03	15.50	0.067	- - -	0.1	0.1	1.1	-	0.069
ARM B	15.15	23.46	0.646	- - -	1.2	1.8	25.6	-	0.119
ARM C	0.75	13.24	0.057	- - -	0.0	0.1	0.9	-	0.080
ARM D	9.41	22.69	0.415	- - -	0.5	0.7	10.3	-	0.075
16.45-17.00									
ARM A	1.27	14.34	0.088	- - -	0.1	0.1	1.4	-	0.076
ARM B	18.55	23.35	0.795	- - -	1.8	3.6	49.8	-	0.199
ARM C	0.92	11.35	0.081	- - -	0.1	0.1	1.3	-	0.096
ARM D	11.52	22.51	0.512	- - -	0.7	1.0	15.1	-	0.091
17.00-17.15									
ARM A	1.27	14.33	0.088	- - -	0.1	0.1	1.4	-	0.077
ARM B	18.55	23.34	0.795	- - -	3.6	3.7	55.6	-	0.208
ARM C	0.92	11.28	0.081	- - -	0.1	0.1	1.3	-	0.096
ARM D	11.52	22.51	0.512	- - -	1.0	1.0	15.6	-	0.091
17.15-17.30									
ARM A	1.03	15.48	0.067	- - -	0.1	0.1	1.1	-	0.069
ARM B	15.15	23.46	0.646	- - -	3.7	1.9	29.6	-	0.124
ARM C	0.75	13.15	0.057	- - -	0.1	0.1	0.9	-	0.081
ARM D	9.41	22.68	0.415	- - -	1.0	0.7	11.0	-	0.076
17.30-17.45									
ARM A	0.87	16.33	0.053	- - -	0.1	0.1	0.9	-	0.065
ARM B	12.69	23.54	0.539	- - -	1.9	1.2	18.4	-	0.093
ARM C	0.63	14.59	0.043	- - -	0.1	0.0	0.7	-	0.072
ARM D	7.88	22.82	0.345	- - -	0.7	0.5	8.1	-	0.067

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1

17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.2	*
16.45	1.8	**
17.00	3.6	****
17.15	3.7	****
17.30	1.9	**
17.45	1.2	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.5	*
16.45	0.7	*
17.00	1.0	*
17.15	1.0	*
17.30	0.7	*
17.45	0.5	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	95.0	63.3	6.7	0.07	6.7	0.07
B	1391.6	927.7	195.5	0.14	195.6	0.14
C	68.8	45.9	5.8	0.08	5.8	0.08
D	864.4	576.3	67.8	0.08	67.8	0.08
ALL	2419.8	1613.2	275.8	0.11	275.8	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
19.Y Rhodfa_Fford y Mileniwm\Ffordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 12:20:11 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Ffordd y Mileniwm/Y Rhodfa
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	6.00	3.60	33.70	45.00	22.6	0.593	24.181
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM Base 2020 +tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	0.86	1.29	0.86
ARM B	15.00	45.00	75.00	13.88	20.81	13.88
ARM C	15.00	45.00	75.00	0.63	0.94	0.63
ARM D	15.00	45.00	75.00	9.23	13.84	9.23

DEMAND SET TITLE: PM Base 2020 +tourism

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.493	0.000	0.507
		0.0	34.0	0.0	35.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.039	0.030	0.037	0.895
		43.0	33.0	41.0	993.0
		(0.0)	(0.0)	(0.0)	(1.0)
	ARM C	0.000	0.340	0.000	0.660
		0.0	17.0	0.0	33.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.064	0.905	0.031	0.000
		47.0	668.0	23.0	0.0
		(0.0)	(2.0)	(0.0)	(0.0)

TURNING PROPORTIONS
TURNING COUNTS
(PERCENTAGE OF H.V.S)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	0.87	15.60	0.055	- - -	0.0	0.1	0.9	-	0.068
ARM B	13.93	23.54	0.592	- - -	0.0	1.4	20.3	-	0.102
ARM C	0.63	13.96	0.045	- - -	0.0	0.0	0.7	-	0.075
ARM D	9.26	22.82	0.406	- - -	0.0	0.7	9.9	-	0.073
16.30-16.45									
ARM A	1.03	14.60	0.071	- - -	0.1	0.1	1.1	-	0.074
ARM B	16.63	23.46	0.709	- - -	1.4	2.4	33.4	-	0.144
ARM C	0.75	12.40	0.060	- - -	0.0	0.1	0.9	-	0.086
ARM D	11.06	22.68	0.487	- - -	0.7	0.9	13.7	-	0.086
16.45-17.00									
ARM A	1.27	13.24	0.096	- - -	0.1	0.1	1.5	-	0.084
ARM B	20.37	23.34	0.873	- - -	2.4	6.0	76.8	-	0.292
ARM C	0.92	10.37	0.088	- - -	0.1	0.1	1.4	-	0.106
ARM D	13.54	22.51	0.602	- - -	0.9	1.5	21.4	-	0.111
17.00-17.15									
ARM A	1.27	13.22	0.096	- - -	0.1	0.1	1.6	-	0.084
ARM B	20.37	23.34	0.873	- - -	6.0	6.3	92.7	-	0.328
ARM C	0.92	10.25	0.089	- - -	0.1	0.1	1.5	-	0.107
ARM D	13.54	22.50	0.602	- - -	1.5	1.5	22.4	-	0.112
17.15-17.30									
ARM A	1.03	14.56	0.071	- - -	0.1	0.1	1.2	-	0.074
ARM B	16.63	23.46	0.709	- - -	6.3	2.5	41.6	-	0.158
ARM C	0.75	12.23	0.061	- - -	0.1	0.1	1.0	-	0.087
ARM D	11.06	22.67	0.488	- - -	1.5	1.0	14.9	-	0.087
17.30-17.45									
ARM A	0.87	15.57	0.056	- - -	0.1	0.1	0.9	-	0.068
ARM B	13.93	23.54	0.592	- - -	2.5	1.5	23.1	-	0.106
ARM C	0.63	13.87	0.045	- - -	0.1	0.0	0.7	-	0.076
ARM D	9.26	22.81	0.406	- - -	1.0	0.7	10.6	-	0.074

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1

16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.4	*
16.45	2.4	**
17.00	6.0	******
17.15	6.3	******
17.30	2.5	***
17.45	1.5	*

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.0
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.0

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.7	*
16.45	0.9	*
17.00	1.5	*
17.15	1.5	*
17.30	1.0	*
17.45	0.7	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *		T75
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
A	95.0	63.3	7.2	0.08	7.2	0.08	
B	1527.8	1018.6	288.0	0.19	288.0	0.19	
C	68.8	45.9	6.2	0.09	6.2	0.09	
D	1015.8	677.2	92.8	0.09	92.9	0.09	
ALL	2707.4	1805.0	394.3	0.15	394.3	0.15	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
19.Y Rhodfa_Fford y Mileniwm\Ffordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 12:19:19 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Ffordd y Mileniwm/Y Rhodfa
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	6.00	3.60	33.70	45.00	22.6	0.593	24.181
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 With Development

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	TO RISE	IS REACHED	FALLING			
ARM A	15.00	45.00	75.00	0.86	1.29	0.86
ARM B	15.00	45.00	75.00	17.27	25.91	17.27
ARM C	15.00	45.00	75.00	0.63	0.94	0.63
ARM D	15.00	45.00	75.00	11.66	17.49	11.66

DEMAND SET TITLE: PM 2020 With Development

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.493	0.000	0.507
		0.0	34.0	0.0	35.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.031	0.024	0.030	0.915
		43.0	33.0	41.0	1265.0
		(0.0)	(0.0)	(0.0)	(1.0)
	ARM C	0.000	0.340	0.000	0.660
		0.0	17.0	0.0	33.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.050	0.925	0.025	0.000
		47.0	863.0	23.0	0.0
		(0.0)	(2.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	0.87	14.27	0.061	- - -	0.0	0.1	0.9	-	0.075
ARM B	17.34	23.54	0.737	- - -	0.0	2.7	37.0	-	0.153
ARM C	0.63	12.05	0.052	- - -	0.0	0.1	0.8	-	0.087
ARM D	11.71	22.81	0.513	- - -	0.0	1.0	15.0	-	0.089
16.30-16.45									
ARM A	1.03	13.00	0.080	- - -	0.1	0.1	1.3	-	0.084
ARM B	20.71	23.45	0.883	- - -	2.7	6.4	82.5	-	0.310
ARM C	0.75	10.17	0.074	- - -	0.1	0.1	1.2	-	0.106
ARM D	13.98	22.68	0.616	- - -	1.0	1.6	22.7	-	0.114
16.45-17.00									
ARM A	1.27	11.33	0.112	- - -	0.1	0.1	1.8	-	0.099
ARM B	25.36	23.34	1.087	- - -	6.4	41.7	375.7	-	1.231
ARM C	0.92	8.69	0.106	- - -	0.1	0.1	1.7	-	0.129
ARM D	17.12	22.57	0.759	- - -	1.6	3.0	41.6	-	0.178
17.00-17.15									
ARM A	1.27	11.27	0.112	- - -	0.1	0.1	1.9	-	0.100
ARM B	25.36	23.34	1.087	- - -	41.7	73.0	861.8	-	2.604
ARM C	0.92	8.54	0.107	- - -	0.1	0.1	1.8	-	0.131
ARM D	17.12	22.56	0.759	- - -	3.0	3.1	45.7	-	0.183
17.15-17.30									
ARM A	1.03	12.90	0.080	- - -	0.1	0.1	1.3	-	0.084
ARM B	20.71	23.45	0.883	- - -	73.0	36.6	822.6	-	2.410
ARM C	0.75	8.68	0.086	- - -	0.1	0.1	1.5	-	0.126
ARM D	13.98	22.59	0.619	- - -	3.1	1.7	26.1	-	0.119
17.30-17.45									
ARM A	0.87	14.18	0.061	- - -	0.1	0.1	1.0	-	0.075
ARM B	17.34	23.53	0.737	- - -	36.6	3.0	148.4	-	0.408
ARM C	0.63	10.70	0.059	- - -	0.1	0.1	1.0	-	0.099
ARM D	11.71	22.73	0.515	- - -	1.7	1.1	16.7	-	0.091

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1

16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	2.7	***
16.45	6.4	******
17.00	41.7	***
17.15	73.0	**
17.30	36.6	************************************
17.45	3.0	***

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.0	*
16.45	1.6	**
17.00	3.0	***
17.15	3.1	***
17.30	1.7	**
17.45	1.1	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *		T75
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
A	95.0	63.3	8.3	0.09	8.3	0.09	
B	1902.2	1268.1	2328.1	1.22	2328.2	1.22	
C	68.8	45.9	7.9	0.11	7.9	0.11	
D	1284.2	856.1	167.8	0.13	167.8	0.13	
ALL	3350.2	2233.5	2512.0	0.75	2512.2	0.75	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770758
Crowthorne House Fax: +44 (0) 1344 770356
Nine Mile Ride Email: software@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"J:\122000\122374-00\4 Internal Project Data\4-40 Calculations\Transport\Junction Assessments\IssueRevA\
19.Y Rhodfa_Fford y Mileniwm\Ffordd y Mileniwm_Y Rhodfa.vai"
(drive-on-the-left) at 12:19:44 on Tuesday, 13 April 2010

.FILE PROPERTIES
****

RUN TITLE: Ffordd y Mileniwm/Y Rhodfa
LOCATION:
DATE: 06/04/10
CLIENT:
ENUMERATOR: Ryan.Hopkins [WACCMSJQ2J]
JOB NUMBER:
STATUS:
DESCRIPTION:

.INPUT DATA
****
ARM A - Brummel Gardens (N)
ARM B - Ffordd y Mileniwm (E)
ARM C - Y Rhodfa (S)
ARM D - Ffordd y Mileniwm (W)

.GEOMETRIC DATA

T5

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	2.96	6.04	5.60	34.50	45.00	34.5	0.540	20.685
ARM B	3.84	6.00	3.60	33.70	45.00	22.6	0.593	24.181
ARM C	3.39	5.62	3.40	26.90	45.00	18.7	0.567	21.828
ARM D	3.76	6.51	3.70	23.90	45.00	22.2	0.586	23.908

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

T13

IARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS(16.15)AND ENDS(17.45)
.LENGTH OF TIME PERIOD -(90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: PM 2020 With Development+Tourism

T15

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TOP OF PEAK	FLOW STOPS	RATE OF FLOW (VEH/MIN) BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	FALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	0.86	1.29	0.86
ARM B	15.00	45.00	75.00	18.51	27.77	18.51
ARM C	15.00	45.00	75.00	0.63	0.94	0.63
ARM D	15.00	45.00	75.00	13.04	19.56	13.04

DEMAND SET TITLE: PM 2020 With Development+Tourism

T33

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.15 - 17.45					
	ARM A	0.000	0.493	0.000	0.507
		0.0	34.0	0.0	35.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM B	0.029	0.022	0.028	0.921
		43.0	33.0	41.0	1364.0
		(0.0)	(0.0)	(0.0)	(1.0)
	ARM C	0.000	0.340	0.000	0.660
		0.0	17.0	0.0	33.0
		(0.0)	(0.0)	(0.0)	(0.0)
	ARM D	0.045	0.933	0.022	0.000
		47.0	973.0	23.0	0.0
		(0.0)	(2.0)	(0.0)	(0.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

T70

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.15-16.30									
ARM A	0.87	13.52	0.064	- - -	0.0	0.1	1.0	-	0.079
ARM B	18.58	23.54	0.790	- - -	0.0	3.5	47.4	-	0.185
ARM C	0.63	11.37	0.055	- - -	0.0	0.1	0.8	-	0.093
ARM D	13.09	22.81	0.574	- - -	0.0	1.3	18.9	-	0.101
16.30-16.45									
ARM A	1.03	12.11	0.085	- - -	0.1	0.1	1.4	-	0.090
ARM B	22.19	23.45	0.946	- - -	3.5	11.0	128.4	-	0.469
ARM C	0.75	9.46	0.079	- - -	0.1	0.1	1.3	-	0.115
ARM D	15.63	22.68	0.689	- - -	1.3	2.2	30.6	-	0.139
16.45-17.00									
ARM A	1.27	10.28	0.123	- - -	0.1	0.1	2.0	-	0.111
ARM B	27.18	23.34	1.164	- - -	11.0	70.4	616.9	-	1.912
ARM C	0.92	8.55	0.107	- - -	0.1	0.1	1.7	-	0.131
ARM D	19.14	22.61	0.847	- - -	2.2	5.0	65.6	-	0.262
17.00-17.15									
ARM A	1.27	10.19	0.124	- - -	0.1	0.1	2.1	-	0.112
ARM B	27.18	23.34	1.165	- - -	70.4	128.3	1490.2	-	4.366
ARM C	0.92	8.49	0.108	- - -	0.1	0.1	1.8	-	0.132
ARM D	19.14	22.60	0.847	- - -	5.0	5.2	76.8	-	0.284
17.15-17.30									
ARM A	1.03	11.95	0.086	- - -	0.1	0.1	1.5	-	0.092
ARM B	22.19	23.45	0.946	- - -	128.3	112.1	1802.7	-	5.168
ARM C	0.75	8.58	0.087	- - -	0.1	0.1	1.5	-	0.128
ARM D	15.63	22.64	0.690	- - -	5.2	2.3	37.3	-	0.150
17.30-17.45									
ARM A	0.87	13.38	0.065	- - -	0.1	0.1	1.1	-	0.080
ARM B	18.58	23.53	0.790	- - -	112.1	41.0	1148.4	-	3.327
ARM C	0.63	8.60	0.073	- - -	0.1	0.1	1.2	-	0.125
ARM D	13.09	22.66	0.578	- - -	2.3	1.4	21.7	-	0.106

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1

16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	3.5	****
16.45	11.0	**********
17.00	70.4	**********
17.15	128.3	**********
17.30	112.1	**********
17.45	41.0	**********

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
16.30	0.1
16.45	0.1
17.00	0.1
17.15	0.1
17.30	0.1
17.45	0.1

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.3	*
16.45	2.2	**
17.00	5.0	*****
17.15	5.2	*****
17.30	2.3	**
17.45	1.4	*

.QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *		T75
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
A	95.0	63.3	9.0	0.10	9.0	0.10	
B	2038.5	1359.0	5234.1	2.57	5269.8	2.59	
C	68.8	45.9	8.3	0.12	8.3	0.12	
D	1435.6	957.1	250.9	0.17	251.0	0.17	
ALL	3637.9	2425.3	5502.4	1.51	5538.2	1.52	

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB