

Capabilities on project:
Transportation

Appendix B - Base Model – ARCADY Inputs

Tyburn Roundabout



Project Name: Tyburn Roundabout
Project Number: 60316861
Subject: Base Model - ARCADY Parameters
Date: Feb-14

Geometric Input Data <\\ukbhm2fp001\ukbhm2fp001-v1tp\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\UA005051-01-CHESTER ROAD TOPO.dwg>

Approach		Chester Rd North	Kingsbury Rd East	Chester Rd South	Kingsbury Rd West
Approach road half width (m)	V	7.1	7.6	6.1	7.6
Entry width (m)	e	10.6	9.3	9.9	12.2
Effective length over which the flare is developed	l'	12.2	0.0	0.0	28.3
Entry radius (m)	r	23.8	16.3	29.8	23.8
Inscribed circle diameter (m)	D	71.2	74.1	70.3	74.1
Entry conflict angle (m)	Phi	37.0	33.0	24.0	52.0

Prepared by:	Tryfon Ampartzis	28.02.14
Checked by:	Sravani Vuppala	18.03.14

Tyburn Roundabout

Tyburn Roundabout
60316861
Base Model - ARCADY Parameters
Feb-14

Traffic Counts [\\ukbhm2fp001\ukbhm2fp001-v1tp\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\Base model\Chester Rd-Kingsbury Rd traffic counts.xlsx](#)

PCU values	
Ped Cyc	0.2
Mot Cyc	0.4
Cars LV	1
Goods<3T	1.5
Goods>3T	2.3
Bus&Coach	2

Arm A	Arm 1 (262) CHESTER ROAD N
Arm B	Arm 2 (930) KINGSBURY RD E
Arm C	Arm 3 (183) CHESTER ROAD S
Arm D	Arm 4 (3151) KINGSBURY RD W

From	To arm 1 (262) CHESTER ROAD N										To arm 2 (930) KINGSBURY RD E										To arm 3 (183) CHESTER ROAD S										To arm 4 (3151) KINGSBURY RD W									
	Tot Veh	Tot PCU	Ped Cyc	Mot Cyc	Cars LV	Goods <3T	Goods >3T	Bus & Coa	HGV	Tot Veh	Tot PCU	Ped Cyc	Mot Cyc	Cars LV	Goods <3T	Goods >3T	Bus & Coa	HGV	Tot Veh	Tot PCU	Ped Cyc	Mot Cyc	Cars LV	Goods <3T	Goods >3T	Bus & Coa	HGV	Tot Veh	Tot PCU	Ped Cyc	Mot Cyc	Cars LV	Goods <3T	Goods >3T	Bus & Coa	HGV				
1	0	2	3	0	1	0	0	0	394	201	0	0	185	5	1	9	1096	1129	0	4	1050	20	10	13	42	30	31	0	0	28	2	0	0	0	2					
2	105	107	0	1	100	3	1	0	4	0	2	0	0	0	0	0	332	362	0	1	291	25	9	6	40	749	801	0	2	679	43	22	3	68						
3	723	763	0	2	669	26	7	19	52	250	273	0	0	221	18	9	2	29	0	2	5	1	0	0	0	230	242	0	1	217	3	6	3	12						
4	61	64	0	0	56	4	1	0	5	544	586	0	4	487	29	20	4	53	193	206	0	1	172	14	3	3	20	0	0	1	0	0	0	0						

From	To arm 1 (262) CHESTER ROAD N										To arm 2 (930) KINGSBURY RD E										To arm 3 (183) CHESTER ROAD S										To arm 4 (3151) KINGSBURY RD W									
	Tot Veh	Tot PCU	Ped Cyc	Mot Cyc	Cars LV	Goods <3T	Goods >3T	Bus & Coa	HGV	Tot Veh	Tot PCU	Ped Cyc	Mot Cyc	Cars LV	Goods <3T	Goods >3T	Bus & Coa	HGV	Tot Veh	Tot PCU	Ped Cyc	Mot Cyc	Cars LV	Goods <3T	Goods >3T	Bus & Coa	HGV	Tot Veh	Tot PCU	Ped Cyc	Mot Cyc	Cars LV	Goods <3T	Goods >3T	Bus & Coa	HGV				
1	0	0	2	0	0	0	0	0	236	239	0	1	230	3	0	2	5	961	999	0	4	909	24	15	9	48	23	24	0	0	22	1	0	0	1					
2	185	187	0	0	182	3	0	0	3	0	1	4	1	0	0	0	0	476	494	0	1	457	5	9	4	18	378	402	0	2	349	11	12	4	27					
3	786	807	0	3	756	9	2	16	27	672	682	0	7	649	8	7	1	16	0	2	7	0	1	0	0	0	184	192	0	0	177	1	5	1	7					
4	46	48	0	0	44	1	1	0	2	597	611	0	1	582	5	9	0	14	78	81	0	0	74	3	0	1	4	0	2	9	0	0	0	0						

Total PCUs

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	2	201	1129	31	1362
2 - B	107	0	362	801	1270
3 - C	763	273	2	242	1280
4 - D	64	586	206	0	857
Total	936	1060	1699	1074	4769

Total vehicles

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	194	1096	30	1320
2 - B	105	0	332	749	1186
3 - C	723	250	0	230	1203
4 - D	61	544	193	0	798
Total	889	988	1621	1009	4507

HGV

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	9	42	2	53
2 - B	4	0	40	68	112
3 - C	52	29	0	12	93
4 - D	5	53	20	0	78
Total	61	91	102	82	336

OGV1

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	5	20	2	27
2 - B	3	0	25	43	71
3 - C	26	18	0	3	47
4 - D	4	29	14	0	47
Total	33	52	59	48	192

OGV2

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	1	10	0	11
2 - B	1	0	9	22	32
3 - C	7	9	0	6	22
4 - D	1	20	3	0	24
Total	9	30	22	28	89

Bus & Coach

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	3	12	0	15
2 - B	0	0	6	3	9
3 - C	19	2	0	3	24
4 - D	0	4	3	0	7
Total	19	9	21	6	55

Total PCUs

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	239	999	24	1262
2 - B	187	1	494	402	1083
3 - C	807	682	2	192	1684
4 - D	48	611	81	2	741
Total	1042	1533	1576	619	4769

Total vehicles

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	236	961	23	1220
2 - B	185	0	476	378	1039
3 - C	786	672	0	184	1642
4 - D	46	597	78	0	721
Total	1017	1505	1515	585	4622

HGV

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	5	48	1	54
2 - B	3	0	18	27	48
3 - C	27	16	0	7	50
4 - D	2	14	4	0	20
Total	32	35	70	35	172

OGV1

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	3	24	1	28
2 - B	3	0	5	11	19
3 - C	9	8	0	1	18
4 - D	1	5	3	0	9
Total	13	16	32	13	74

OGV2

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	0	15	0	15
2 - B	0	0	9	12	21
3 - C	16	1	0	5	22
4 - D	1	9	0	0	10
Total	17	16	24	17	60

Bus & Coach

From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	2	9	0	11
2 - B	0	0	4	4	8
3 - C	16	1	0	1	18
4 - D	0	0	1	0	1
Total	16	3	14	5	38

Prepared by:	Tryfon Ampartzis	28.02.14
Checked by:	Sravani Vuppala	11.03.14

Tyburn Roundabout



Project Name: Tyburn Roundabout
 Project Number: 603168861
 Subject: Queues
 Date: Feb-14

Observed Queues from survey data [Tyburn Roundabout Queue Results.xlsx](#)
 Note: Queues are in meters. Modeled queues were in vehicles and are multiplied with 5.75 to be transformed into meters.

Time	Chester Rd (N)		Kingsbury (E)		Chester Rd (S)		Kingsbury (W)	
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
07:30	100	100	0	0	0	20	0	5
07:32	50	90	145	60	10	20	0	0
07:34	120	140	20	0	0	50	0	0
07:36	150	150	110	45	0	0	15	15
07:38	100	150	280	260	0	0	0	0
07:40	120	170	340	320	0	15	45	30
07:42	160	190	60	100	10	10	0	0
07:44	200	250	100	140	0	0	25	25
07:46	180	260	400	420	15	10	5	0
07:48	190	220	520	500	70	70	0	0
07:50	120	160	440	440	50	70	0	0
07:52	130	180	280	260	30	50	60	55
07:54	140	185	420	400	40	80	110	60
07:56	100	200	380	320	60	80	0	0
07:58	160	220	440	400	0	0	0	0
08:00	70	100	480	480	20	5	0	0
08:02	100	140	300	260	20	40	10	0
08:04	150	150	260	260	60	40	0	0
08:06	100	120	440	480	0	0	20	45
08:08	50	70	290	200	0	0	15	5
08:10	30	50	340	320	5	5	0	0
08:12	0	0	420	460	5	15	0	0
08:14	0	0	480	480	0	25	10	0
08:16	50	60	390	400	0	20	60	20
08:18	25	0	140	25	0	35	35	5
08:20	20	20	260	200	40	40	0	0
08:22	0	0	330	300	5	5	15	10
08:24	0	0	100	60	5	0	0	0
08:26	50	50	280	220	10	10	5	0
08:28	55	60	150	100	5	15	15	15
Average Queues	91	116	287	264	15	25	15	10
Average Queues (PCU)	16	20	50	46	3	4	3	2
Average queues for arm	18		48		3			2
Modelled Queues	4		3		6			1
Validated Queues	18		42		4			1

16:30	120	120	20	10	270	270	135	350
16:32	260	260	10	10	270	270	460	460
16:34	270	270	20	20	270	270	460	460
16:36	270	270	15	20	150	150	460	460
16:38	270	270	15	0	170	220	460	460
16:40	270	270	20	10	100	200	460	460
16:42	270	220	30	30	170	200	460	460
16:44	250	250	10	20	130	130	460	460
16:46	250	250	20	20	150	180	460	460
16:48	270	270	10	20	100	100	460	460
16:50	270	270	110	40	100	100	460	460
16:52	270	270	30	30	20	80	460	460
16:54	200	160	15	15	0	0	460	460
16:56	250	200	10	10	10	50	460	460
16:58	260	260	10	30	20	50	460	460
17:00	100	60	10	10	40	50	460	460
17:02	150	50	30	20	40	70	460	460
17:04	220	150	30	40	50	25	460	460
17:06	200	180	10	10	30	30	460	460
17:08	250	220	20	20	20	60	460	460
17:10	200	200	15	10	100	270	460	460
17:12	50	50	15	20	15	15	460	460
17:14	120	80	15	20	40	40	460	460
17:16	100	60	10	10	270	270	460	460
17:18	75	50	5	10	50	50	460	460
17:20	150	100	10	10	270	270	460	460
17:22	60	40	20	20	0	0	460	460
17:24	0	0	10	5	270	270	460	460
17:26	0	0	0	5	0	0	460	460
17:28	25	35	10	10	0	70	460	460
Average Queues	182	163	19	17	104	125	449	456
Average Queues (PCU)	32	28	3	3	18	22	78	79
Average queues for arm	30		3		20			79
Modelled Queues	4		1		59			1
Validated Queues	34		1		21			77

These queues look dubious as the queues clears in 2 minutes and builds to same quantum in next 2 minutes

Prepared by: Tybun Ampartzis 28.02.14
 Checked by: Sravani Vuppala 11.03.14

Tyburn Roundabout



Project Name: Tyburn Roundabout
Project Number: 60316861
Subject: Base Model including Chester Rd Improvements- ARCADY Parameters
Date: Feb-14

Geometric Input Data For Chester Rd N, Kingsbury Rd E
[Geometric Input Data.dwg](#)
 For Kingsbury Rd W
[Chester Improvements measurments West.dwg](#)
 For Chester Rd S
[Chester Improvement Measurements South.dwg](#)

Approach		Chester Rd North	Kingsbury Rd East	Chester Rd South	Kingsbury Rd West
Approach road half width (m)	V	7.1	7.6	7.1	7.4
Entry width (m)	e	10.6	9.3	9.7	10.4
Effective length over which the flare is developed	l'	12.2	0.0	0.0	129.4
Entry radius (m)	r	23.8	16.3	53.3	29.3
Inscribed circle diameter (m)	D	71.2	74.1	70.3	74.1
Entry conflict angle (m)	Phi	37.0	33.0	24.0	21.0

Prepared by:	Tryfon Ampartzis		09.04.14
Checked by:	Sravani Vuppala		10.04.14

Capabilities on project:
Transportation

Appendix C – 2009 Base model outputs

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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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:-

```
"f:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\1. Base model\ARCADY\  
ARCADY - Without Chester Improvements\2. 2009 Validated\2009 AM peak validated without Chester.vai"  
(drive-on-the-left ) at 19:05:54 on Tuesday, 15 April 2014
```

FILE PROPERTIES

RUN TITLE: Tyburn Roundabout - Without Chester Rd Improvement

LOCATION: Birmingham

DATE: 03/03/14

CLIENT: Birmingham City Council

ENUMERATOR: ampartzist [UKBHMLPC24473]

JOB NUMBER: 60316861

STATUS: Preliminary

DESCRIPTION: 2009 Base Model in AM peak. All supporting calculations are:

```
F:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\Base  
model\ARCADY - Without Chester improvements. The model is not  
validating and due to lane usage and also gradient at the roundabout,  
the behaviour of traffic is not represented in the model. Therefore  
site intercept corrections are used in the model.
```

INPUT DATA

ARM A - A452 Chester Rd North

ARM B - A38 Kingsbury East

ARM C - A452 Chester Rd South

ARM D - A38 Kingsbury West

 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	7.10	I	10.60	I	12.20	I	23.80	I	71.20	I	37.0	I	0.646	I	38.327	*	I
I	ARM	B	7.60	I	9.30	I	0.10	I	16.30	I	74.10	I	33.0	I	0.570	I	29.706	*	I
I	ARM	C	6.10	I	9.90	I	0.10	I	29.80	I	70.30	I	24.0	I	0.549	I	32.104		I
I	ARM	D	7.60	I	12.20	I	28.30	I	23.80	I	74.10	I	52.0	I	0.671	I	49.984		I

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

WARNING One or more intercept values (flagged * in the table)
 have been adjusted according to local input values
 from a previous run and listed below -

				T6
I	ARM	I	ADJUSTMENT TO	I
I		I	INTERCEPT (PCU/MIN)	I
I	ARM	A	-6.000	I
I	ARM	B	-8.000	I

 TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

				T13
I	ARM	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(07.15)AND ENDS(08.45)

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 peak

										T15				
I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I				I				
I		I	FLOW STARTS	I	BEFORE	I	AT TOP	I	AFTER	I				
I		I	TOP OF PEAK	I	FLOW STOPS	I	PEAK	I	PEAK	I				
I		I	IS REACHED	I	FALLING	I	PEAK	I	PEAK	I				
I	ARM	A	15.00	I	45.00	I	75.00	I	17.01	I	25.52	I	17.01	I
I	ARM	B	15.00	I	45.00	I	75.00	I	11.35	I	17.03	I	11.35	I
I	ARM	C	15.00	I	45.00	I	75.00	I	12.95	I	19.42	I	12.95	I
I	ARM	D	15.00	I	45.00	I	75.00	I	10.70	I	16.05	I	10.70	I

DEMAND SET TITLE: AM peak

T33

		TURNING PROPORTIONS							
		TURNING COUNTS							
		(PERCENTAGE OF H.V.S)							
TIME	FROM/T	ARM A	ARM B	ARM C	ARM D				
07.15 - 08.45	ARM A	0.000	0.148	0.830	0.023				
		0.0	201.0	1129.0	31.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM B	0.118	0.000	0.000	0.882				
		107.0	0.0	0.0	801.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM C	0.736	0.264	0.000	0.000				
		763.0	273.0	0.0	0.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM D	0.075	0.685	0.241	0.000				
		64.0	586.0	206.0	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)
07.15-07.30									
ARM A	17.08	29.72	0.575	--	0.0	1.3	19.2	--	0.078
ARM B	11.39	19.98	0.570	--	0.0	1.3	18.5	--	0.114
ARM C	13.00	25.69	0.506	--	0.0	1.0	14.7	--	0.078
ARM D	10.74	40.41	0.266	--	0.0	0.4	5.3	--	0.034

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)
07.30-07.45									
ARM A	20.39	28.03	0.727	--	1.3	2.6	36.5	--	0.128
ARM B	13.60	18.08	0.752	--	1.3	2.9	39.4	--	0.213
ARM C	15.52	24.45	0.635	--	1.0	1.7	24.5	--	0.111
ARM D	12.83	38.53	0.333	--	0.4	0.5	7.4	--	0.039

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)
07.45-08.00									
ARM A	24.97	25.74	0.970	--	2.6	14.2	154.7	--	0.499
ARM B	16.66	15.80	1.055	--	2.9	23.5	217.7	--	1.095
ARM C	19.01	23.42	0.812	--	1.7	4.0	54.2	--	0.212
ARM D	15.71	36.12	0.435	--	0.5	0.8	11.3	--	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)
08.00-08.15									
ARM A	24.97	25.71	0.972	--	14.2	18.2	246.1	--	0.762
ARM B	16.66	15.55	1.072	--	23.5	42.0	493.4	--	2.293
ARM C	19.01	23.33	0.815	--	4.0	4.2	62.1	--	0.229
ARM D	15.71	36.01	0.436	--	0.8	0.8	11.5	--	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)
I 08.15-08.30									
I ARM A	20.39	27.99	0.729	--	18.2	2.8	63.2	-	0.176
I ARM B	13.60	17.54	0.776	--	42.0	4.0	266.6	-	1.145
I ARM C	15.52	22.99	0.675	--	4.2	2.1	34.0	-	0.139
I ARM D	12.83	38.20	0.336	--	0.8	0.5	7.7	-	0.039

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 08.30-08.45									
I ARM A	17.08	29.68	0.575	--	2.8	1.4	21.4	-	0.080
I ARM B	11.39	19.89	0.573	--	4.0	1.4	22.1	-	0.123
I ARM C	13.00	25.54	0.509	--	2.1	1.0	16.3	-	0.081
I ARM D	10.74	40.29	0.267	--	0.5	0.4	5.5	-	0.034

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.3	*
07.45	2.6	***
08.00	14.2	*****
08.15	18.2	*****
08.30	2.8	***
08.45	1.4	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.3	*
07.45	2.9	***
08.00	23.5	*****
08.15	42.0	*****
08.30	4.0	****
08.45	1.4	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.0	*
07.45	1.7	**
08.00	4.0	****
08.15	4.2	****
08.30	2.1	**
08.45	1.0	*

 QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.4
07.45	0.5
08.00	0.8 *
08.15	0.8 *
08.30	0.5 *
08.45	0.4

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

										T75	
I	ARM	I	TOTAL DEMAND		I	* QUEUEING * * DELAY *		I	* INCLUSIVE QUEUEING * * DELAY *		I
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	A	I	1873.3	I 1248.9	I	541.1	I 0.29	I	541.1	I 0.29	I
I	B	I	1249.8	I 833.2	I	1057.7	I 0.85	I	1057.8	I 0.85	I
I	C	I	1426.0	I 950.7	I	205.7	I 0.14	I	205.7	I 0.14	I
I	D	I	1178.2	I 785.5	I	48.8	I 0.04	I	48.8	I 0.04	I
I	ALL	I	5727.3	I 3818.2	I	1853.3	I 0.32	I	1853.4	I 0.32	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

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

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

```
"f:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\1. Base model\ARCADY\  
ARCADY - Without Chester Improvements\2. 2009 Validated\2009 PM peak validated without Chester.vai"  
(drive-on-the-left ) at 19:06:55 on Tuesday, 15 April 2014
```

FILE PROPERTIES

RUN TITLE: Tyburn Roundabout - Without Chester Rd Improvement

LOCATION: Birmingham

DATE: 03/03/14

CLIENT: Birmingham City Council

ENUMERATOR: ampartzist [UKBHMLPC24473]

JOB NUMBER: 60316861

STATUS: Preliminary

DESCRIPTION: 2009 Base Model in PM peak. All supporting calculations are:

```
F:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\Base  
model\ARCADY - Without Chester improvements. The model is not  
validating and due to lane usage and also gradient at the roundabout,  
the behaviour of traffic is not represented in the model. Therefore  
site intercept corrections are used in the model.
```

INPUT DATA

ARM A - A452 Chester Rd North

ARM B - A38 Kingsbury East

ARM C - A452 Chester Rd South

ARM D - A38 Kingsbury West

 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	7.10	I	10.60	I	12.20	I	23.80	I	71.20	I	37.0	I	0.646	I	37.327	*	I
I	ARM	B	7.60	I	9.30	I	0.10	I	16.30	I	74.10	I	33.0	I	0.570	I	37.706		I
I	ARM	C	6.10	I	9.90	I	0.10	I	29.80	I	70.30	I	24.0	I	0.549	I	34.104	*	I
I	ARM	D	7.60	I	12.20	I	28.30	I	23.80	I	74.10	I	52.0	I	0.671	I	31.484	*	I

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

WARNING One or more intercept values (flagged * in the table)
 have been adjusted according to local input values
 from a previous run and listed below -

----- T6

I	ARM	I	ADJUSTMENT TO	I
I		I	INTERCEPT (PCU/MIN)	I
I	ARM	A	-7.000	I
I	ARM	C	2.000	I
I	ARM	D	-18.500	I

 TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

----- T13

I	ARM	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 peak

----- T15

										T15				
I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)					I				
I		I	FLOW STARTS	I	BEFORE	I	AT TOP	I	AFTER	I				
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I				
I		I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I				
I		I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I				
I	ARM	A	15.00	I	45.00	I	75.00	I	15.77	I	23.66	I	15.77	I
I	ARM	B	15.00	I	45.00	I	75.00	I	7.36	I	11.04	I	7.36	I
I	ARM	C	15.00	I	45.00	I	75.00	I	18.61	I	27.92	I	18.61	I
I	ARM	D	15.00	I	45.00	I	75.00	I	9.25	I	13.88	I	9.25	I

DEMAND SET TITLE: PM peak

T33

		TURNING PROPORTIONS							
		TURNING COUNTS							
		(PERCENTAGE OF H.V.S)							
TIME	FROM/T	ARM A	ARM B	ARM C	ARM D				
16.15 - 17.45	ARM A	0.000	0.189	0.792	0.019	0.0	239.0	999.0	24.0
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM B	0.317	0.000	0.000	0.683	187.0	0.0	0.0	402.0
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM C	0.542	0.458	0.000	0.000	807.0	682.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM D	0.065	0.826	0.109	0.000	48.0	611.0	81.0	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	15.83	26.27	0.603	--	0.0	1.5	21.4	--	0.094
ARM B	7.39	29.86	0.247	--	0.0	0.3	4.8	--	0.044
ARM C	18.68	29.90	0.625	--	0.0	1.6	23.5	--	0.088
ARM D	9.29	17.44	0.532	--	0.0	1.1	15.9	--	0.120

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	18.91	24.13	0.783	--	1.5	3.4	47.0	--	0.182
ARM B	8.82	28.35	0.311	--	0.3	0.4	6.6	--	0.051
ARM C	22.31	29.07	0.767	--	1.6	3.2	44.3	--	0.143
ARM D	11.09	14.70	0.754	--	1.1	2.9	38.7	--	0.260

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	23.16	22.72	1.019	--	3.4	22.2	216.9	--	0.767
ARM B	10.81	26.88	0.402	--	0.4	0.7	9.8	--	0.062
ARM C	27.32	27.95	0.977	--	3.2	15.9	171.3	--	0.507
ARM D	13.58	11.41	1.190	--	2.9	38.3	320.0	--	2.094

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	23.16	22.67	1.021	--	22.2	34.1	425.2	--	1.417
ARM B	10.81	26.68	0.405	--	0.7	0.7	10.1	--	0.063
ARM C	27.32	27.94	0.978	--	15.9	20.6	276.5	--	0.782
ARM D	13.58	11.05	1.229	--	38.3	76.5	861.2	--	5.121

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	18.91	22.12	0.855	--	34.1	7.1	249.9	-	0.883
ARM B	8.82	27.29	0.323	--	0.7	0.5	7.3	-	0.054
ARM C	22.31	29.04	0.768	--	20.6	3.5	82.0	-	0.213
ARM D	11.09	13.86	0.800	--	76.5	37.6	855.8	-	4.156

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	15.83	24.69	0.641	--	7.1	1.8	31.0	-	0.122
ARM B	7.39	29.50	0.251	--	0.5	0.3	5.1	-	0.045
ARM C	18.68	29.88	0.625	--	3.5	1.7	26.6	-	0.091
ARM D	9.29	17.29	0.537	--	37.6	1.2	106.3	-	0.285

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.5	*
16.45	3.4	***
17.00	22.2	*****
17.15	34.1	*****
17.30	7.1	*****
17.45	1.8	**

QUEUE AT ARM B

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	0.5	
17.45	0.3	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.6	**
16.45	3.2	***
17.00	15.9	*****
17.15	20.6	*****
17.30	3.5	***
17.45	1.7	**

 QUEUE AT ARM D

TIME SEGMENT NO. OF
 ENDING VEHICLES
 IN QUEUE

16.30	1.1	*
16.45	2.9	***
17.00	38.3	*****
17.15	76.5	*****
17.30	37.6	*****
17.45	1.2	*

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

										T75
I	ARM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	I	
I		I		I	* DELAY *	I	* DELAY *	I	I	
I		I		I		I		I	I	
I		I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN/VEH)	I
I		I		I		I		I		I
I	A	I	1737.0	I	1158.0	I	991.3	I	0.57	I
I	B	I	810.7	I	540.5	I	43.9	I	0.05	I
I	C	I	2049.5	I	1366.3	I	624.2	I	0.30	I
I	D	I	1018.6	I	679.0	I	2198.0	I	2.16	I
I	ALL	I	5615.8	I	3743.9	I	3857.3	I	0.69	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

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

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA, UK

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

"f:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\1. Base model\ARCADY\
ARCADY - Including Chester improvements\2009 AM peak validated with Chester.vai"
(drive-on-the-left) at 14:37:28 on Wednesday, 16 April 2014

FILE PROPERTIES

RUN TITLE: Tyburn Roundabout - With Chester Rd Improvement

LOCATION: Birmingham

DATE: 03/03/14

CLIENT: Birmingham City Council

ENUMERATOR: ampartzist [UKBHMLPC24473]

JOB NUMBER: 60316861

STATUS: Preliminary

DESCRIPTION: 2009 Base Model in AM peak. All supporting calculations are:

F:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\Base
model\ARCADY - Without Chester improvements. The model is not
validating and due to lane usage and also gradient at the roundabout,
the behaviour of traffic is not represented in the model. Therefore
site intercept corrections are used in the model.

INPUT DATA

ARM A - A452 Chester Rd North

ARM B - A38 Kingsbury East

ARM C - A452 Chester Rd South

ARM D - A38 Kingsbury West

 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	7.10	I	10.60	I	12.20	I	23.80	I	71.20	I	37.0	I	0.646	I	39.327	*	I
I	ARM	B	7.60	I	9.30	I	0.10	I	16.30	I	74.10	I	33.0	I	0.570	I	29.706	*	I
I	ARM	C	7.10	I	9.70	I	0.10	I	53.30	I	70.30	I	24.0	I	0.606	I	37.861		I
I	ARM	D	7.40	I	10.40	I	129.40	I	29.30	I	74.10	I	21.0	I	0.733	I	53.880		I

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

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

WARNING One or more intercept values (flagged * in the table)
 have been adjusted according to local input values
 from a previous run and listed below -

				T6
I	ARM	I	ADJUSTMENT TO	I
I		I	INTERCEPT (PCU/MIN)	I
I	ARM	A	-5.000	I
I	ARM	B	-8.000	I

 TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

				T13
I	ARM	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(07.15)AND ENDS(08.45)

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 peak

										T15				
I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I				I				
I		I	FLOW STARTS	I	BEFORE	I	AT TOP	I	AFTER	I				
I		I	TO RISE	I	PEAK	I	OF PEAK	I	PEAK	I				
I		I	IS REACHED	I	FALLING	I	PEAK	I	PEAK	I				
I	ARM	A	15.00	I	45.00	I	75.00	I	17.01	I	25.52	I	17.01	I
I	ARM	B	15.00	I	45.00	I	75.00	I	11.35	I	17.03	I	11.35	I
I	ARM	C	15.00	I	45.00	I	75.00	I	12.95	I	19.42	I	12.95	I
I	ARM	D	15.00	I	45.00	I	75.00	I	10.70	I	16.05	I	10.70	I

DEMAND SET TITLE: AM peak

T33

		TURNING PROPORTIONS							
		TURNING COUNTS							
		(PERCENTAGE OF H.V.S)							
TIME	FROM/T	ARM A	ARM B	ARM C	ARM D				
07.15 - 08.45	ARM A	0.000	0.148	0.830	0.023	0.0	201.0	1129.0	31.0
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM B	0.118	0.000	0.000	0.882	107.0	0.0	0.0	801.0
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM C	0.736	0.264	0.000	0.000	763.0	273.0	0.0	0.0
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM D	0.075	0.685	0.241	0.000	64.0	586.0	206.0	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)
07.15-07.30									
ARM A	17.08	30.72	0.556	--	0.0	1.2	17.9	--	0.072
ARM B	11.39	19.98	0.570	--	0.0	1.3	18.6	--	0.114
ARM C	13.00	30.77	0.422	--	0.0	0.7	10.6	--	0.056
ARM D	10.74	43.40	0.247	--	0.0	0.3	4.9	--	0.031

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)
07.30-07.45									
ARM A	20.39	29.03	0.702	--	1.2	2.3	32.8	--	0.114
ARM B	13.60	18.08	0.753	--	1.3	2.9	39.5	--	0.214
ARM C	15.52	29.40	0.528	--	0.7	1.1	16.2	--	0.072
ARM D	12.83	41.35	0.310	--	0.3	0.4	6.6	--	0.035

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)
07.45-08.00									
ARM A	24.97	26.72	0.935	--	2.3	10.1	118.8	--	0.378
ARM B	16.66	15.67	1.063	--	2.9	24.8	227.4	--	1.142
ARM C	19.01	28.31	0.671	--	1.1	2.0	28.6	--	0.106
ARM D	15.71	38.67	0.406	--	0.4	0.7	10.0	--	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)
08.00-08.15									
ARM A	24.97	26.70	0.935	--	10.1	11.6	164.6	--	0.495
ARM B	16.66	15.47	1.077	--	24.8	44.3	520.6	--	2.406
ARM C	19.01	28.21	0.674	--	2.0	2.0	30.4	--	0.109
ARM D	15.71	38.61	0.407	--	0.7	0.7	10.2	--	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)
08.15-08.30									
ARM A	20.39	29.00	0.703	--	11.6	2.4	44.9	-	0.134
ARM B	13.60	17.74	0.767	--	44.3	3.8	277.9	-	1.168
ARM C	15.52	27.69	0.561	--	2.0	1.3	20.0	-	0.083
ARM D	12.83	41.05	0.312	--	0.7	0.5	6.9	-	0.035

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	17.08	30.68	0.557	--	2.4	1.3	19.7	-	0.074
ARM B	11.39	19.90	0.573	--	3.8	1.4	22.0	-	0.122
ARM C	13.00	30.62	0.425	--	1.3	0.7	11.4	-	0.057
ARM D	10.74	43.32	0.248	--	0.5	0.3	5.0	-	0.031

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	1.2 *
07.45	2.3 **
08.00	10.1 *****
08.15	11.6 *****
08.30	2.4 **
08.45	1.3 *

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	1.3 *
07.45	2.9 ***
08.00	24.8 *****
08.15	44.3 *****
08.30	3.8 ****
08.45	1.4 *

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.7 *
07.45	1.1 *
08.00	2.0 **
08.15	2.0 **
08.30	1.3 *
08.45	0.7 *

QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.3
07.45	0.4
08.00	0.7 *
08.15	0.7 *
08.30	0.5
08.45	0.3

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * (MIN)	* QUEUEING * (MIN/VEH)	* INCLUSIVE QUEUEING * (MIN)	* INCLUSIVE QUEUEING * (MIN/VEH)
A	1873.3	1248.9	398.7	0.21	398.7	0.21
B	1249.8	833.2	1105.8	0.88	1105.8	0.88
C	1426.0	950.7	117.3	0.08	117.3	0.08
D	1178.2	785.5	43.7	0.04	43.7	0.04
ALL	5727.3	3818.2	1665.4	0.29	1665.5	0.29

* 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 =====

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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Run with file:-

"f:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\1. Base model\ARCADY\
ARCADY - Including Chester improvements\2009 PM peak validated with Chester.vai"
(drive-on-the-left) at 14:43:29 on Wednesday, 16 April 2014

FILE PROPERTIES

RUN TITLE: Tyburn Roundabout - With Chester Rd Improvement
LOCATION: Birmingham
DATE: 03/03/14
CLIENT: Birmingham City Council
ENUMERATOR: ampartzist [UKBHMLPC24473]
JOB NUMBER: 60316861
STATUS: Preliminary
DESCRIPTION: 2009 Base Model in PM peak. All supporting calculations are:
F:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\Base
model\ARCADY - Without Chester improvements. The model is not
validating and due to lane usage and also gradient at the roundabout,
the behaviour of traffic is not represented in the model. Therefore
site intercept corrections are used in the model.

INPUT DATA

ARM A - A452 Chester Rd North
ARM B - A38 Kingsbury East
ARM C - A452 Chester Rd South
ARM D - A38 Kingsbury West

 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	7.10	I	10.60	I	12.20	I	23.80	I	71.20	I	37.0	I	0.646	I	37.327	*	I
I	ARM	B	7.60	I	9.30	I	0.10	I	16.30	I	74.10	I	33.0	I	0.570	I	37.706		I
I	ARM	C	7.10	I	9.70	I	0.10	I	53.30	I	70.30	I	24.0	I	0.606	I	39.861	*	I
I	ARM	D	7.40	I	10.40	I	129.40	I	29.30	I	74.10	I	21.0	I	0.733	I	35.380	*	I

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

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

WARNING One or more intercept values (flagged * in the table)
 have been adjusted according to local input values
 from a previous run and listed below -

				T6
I	ARM	I	ADJUSTMENT TO	I
I		I	INTERCEPT (PCU/MIN)	I
I	ARM	A	-7.000	I
I	ARM	C	2.000	I
I	ARM	D	-18.500	I

 TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

				T13
I	ARM	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 peak

										T15				
I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I				I				
I		I	FLOW STARTS	I	BEFORE	I	AT TOP	I	AFTER	I				
I		I	TOP OF PEAK	I	PEAK	I	OF PEAK	I	PEAK	I				
I		I	FLOW STOPS	I	PEAK	I	OF PEAK	I	PEAK	I				
I		I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I				
I	ARM	A	15.00	I	45.00	I	75.00	I	15.77	I	23.66	I	15.77	I
I	ARM	B	15.00	I	45.00	I	75.00	I	13.54	I	20.31	I	13.54	I
I	ARM	C	15.00	I	45.00	I	75.00	I	18.61	I	27.92	I	18.61	I
I	ARM	D	15.00	I	45.00	I	75.00	I	9.25	I	13.88	I	9.25	I

DEMAND SET TITLE: PM peak

T33

		TURNING PROPORTIONS							
		TURNING COUNTS							
		(PERCENTAGE OF H.V.S)							
TIME	FROM/T	ARM A	ARM B	ARM C	ARM D				
16.15 - 17.45	ARM A	0.000	0.189	0.792	0.019				
		0.0	239.0	999.0	24.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM B	0.173	0.000	0.456	0.371				
		187.0	0.0	494.0	402.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM C	0.542	0.458	0.000	0.000				
		807.0	682.0	0.0	0.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM D	0.065	0.826	0.109	0.000				
		48.0	611.0	81.0	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	15.83	26.25	0.603	--	0.0	1.5	21.4	--	0.094
ARM B	13.59	29.86	0.455	--	0.0	0.8	12.1	--	0.061
ARM C	18.68	35.22	0.531	--	0.0	1.1	16.3	--	0.060
ARM D	9.29	20.02	0.464	--	0.0	0.9	12.3	--	0.092

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	18.91	24.08	0.785	--	1.5	3.5	47.3	--	0.184
ARM B	16.23	28.34	0.572	--	0.8	1.3	19.2	--	0.082
ARM C	22.31	34.31	0.650	--	1.1	1.8	26.5	--	0.083
ARM D	11.09	17.00	0.652	--	0.9	1.8	25.6	--	0.166

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	23.16	21.80	1.062	--	3.5	31.6	285.2	--	1.012
ARM B	19.87	27.09	0.734	--	1.3	2.7	37.5	--	0.135
ARM C	27.32	33.09	0.826	--	1.8	4.5	60.7	--	0.164
ARM D	13.58	12.96	1.048	--	1.8	19.3	179.3	--	1.102

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	23.16	21.58	1.073	--	31.6	56.7	664.1	--	2.203
ARM B	19.87	26.99	0.736	--	2.7	2.7	40.7	--	0.140
ARM C	27.32	33.06	0.826	--	4.5	4.6	68.2	--	0.173
ARM D	13.58	12.83	1.058	--	19.3	32.7	392.0	--	2.217

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 17.15-17.30									
I ARM A	18.91	22.74	0.831	--	56.7	7.0	464.5	-	1.490
I ARM B	16.23	26.62	0.610	--	2.7	1.6	24.8	-	0.098
I ARM C	22.31	34.23	0.652	--	4.6	1.9	30.1	-	0.087
I ARM D	11.09	16.82	0.659	--	32.7	2.0	121.8	-	0.446

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 17.30-17.45									
I ARM A	15.83	26.13	0.606	--	7.0	1.6	26.5	-	0.104
I ARM B	13.59	29.64	0.459	--	1.6	0.9	13.1	-	0.063
I ARM C	18.68	35.18	0.531	--	1.9	1.1	17.6	-	0.061
I ARM D	9.29	19.91	0.466	--	2.0	0.9	13.8	-	0.095

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.5	*
16.45	3.5	***
17.00	31.6	*****
17.15	56.7	*****
17.30	7.0	*****
17.45	1.6	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.8	*
16.45	1.3	*
17.00	2.7	***
17.15	2.7	***
17.30	1.6	**
17.45	0.9	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.1	*
16.45	1.8	**
17.00	4.5	****
17.15	4.6	*****
17.30	1.9	**
17.45	1.1	*

 QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	0.9	*
16.45	1.8	**
17.00	19.3	*****
17.15	32.7	*****
17.30	2.0	**
17.45	0.9	*

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

ARM	TOTAL DEMAND (VEH)	TOTAL DEMAND (VEH/H)	* QUEUEING * (MIN)	* QUEUEING * (MIN/VEH)	* INCLUSIVE QUEUEING * (MIN)	* INCLUSIVE QUEUEING * (MIN/VEH)
A	1737.0	1158.0	1509.0	0.87	1509.1	0.87
B	1490.7	993.8	147.4	0.10	147.4	0.10
C	2049.5	1366.3	219.4	0.11	219.4	0.11
D	1018.6	679.0	744.8	0.73	744.8	0.73
ALL	6295.8	4197.2	2620.7	0.42	2620.8	0.42

* 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 =====

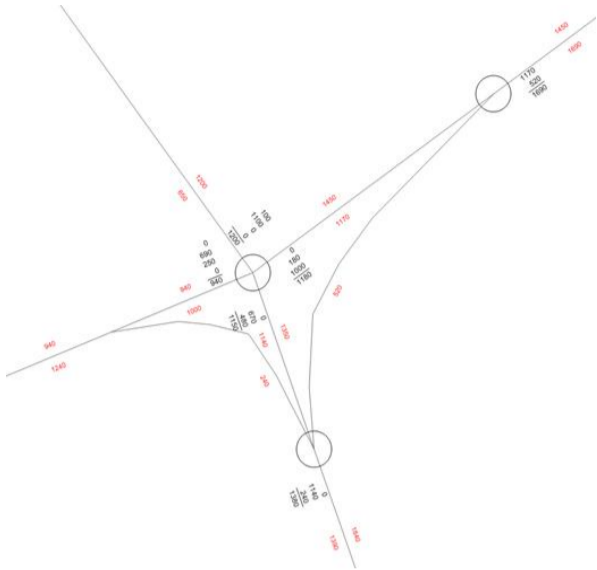
Capabilities on project:
Transportation

Appendix D – 2031 Future Year Flows

Project Name: BCC - Tyburn Roundabout
 Project Number: 60316861
 Subject: 2031 OD matrices
 Date: Mar-14

AIM:
 To understand 2031 flows from the PRISM model for Tyburn roundabout and preparing an adjustment matrix with all turning movements at the junction.

Source:
 Mott MacDonald have provided 2031 future year flows based on PRISM BDP Modelling for Tyburn Road Roundabout. We understand that these flows are based on earlier version of PRISM. The OD matrices for both AM and PM peak are calculated based on the diagrams below which are provided by Mott MacDonald.



1-A Chester Road North
 2-B A38 Kingsbury Road East
 3-C Chester Road South
 4-D A38 Kingsbury Road West

Initial AM matrix

From / to	1-A	2-B	3-C	4-D	Total
1-A	0	100	1100	0	1200
2-B	180	0	520	1000	1700
3-C	480	670	0	240	1390
4-D	0	690	250	0	940

Assumptions:

Due to strategic modelling, the turning from zone 1 to zone 4 and from zone 4 to zone 1 is not used by the vehicles as they are travelling through a shorter route that connects these zones. In order to estimate these movements for 2031 scenario, 2009 flows turning proportions for these movements are reviewed and applied to the 2031 flows.

Adjusted AM matrix

From / to	1-A	2-B	3-C	4-D	Total
1-A	1	177	924	23	1125
2-B	180	0	520	1000	1700
3-C	480	670	0	240	1390
4-D	71	643	226	0	940

Finally, the 2009 HGV percentages are applied to the matrix to convert vehicles into PCUs

AM Peak - Roundabout

From / to	1-A	2-B	3-C	4-D	Total
1-A	1	165	1032	23	1221
2-B	187	0	583	1091	1861
3-C	515	748	0	253	1516
4-D	76	706	250	0	1032

Turning proportions for non dedicated left movements

Turning left	Total traffic in lane from TRANSYT	Percentage
1 to 2	599	0.295492
4 to 1	297	0.239057

0	239	999	24
48	611	81	2

Initial PM matrix

From / to	1-A	2-B	3-C	4-D	Total
1-A	0	310	740	0	1050
2-B	500	0	860	670	1930
3-C	900	490	0	470	1860
4-D	0	1450	60	0	1510

Assumptions:

Due to strategic modelling, the turning from zone 1 to zone 4 and from zone 4 to zone 1 is not used by the vehicles as they are travelling through a shorter route that connects these zones. In order to estimate these movements for 2031 scenario, 2009 flows turning proportions for these movements are reviewed and applied to the 2031 flows.

Adjusted PM matrix

From / to	1-A	2-B	3-C	4-D	Total
1-A	0	199	831	20	1050
2-B	500	0	860	670	1930
3-C	800	490	0	470	1860
4-D	97	1245	164	0	1510

Finally, the 2009 HGV percentages are applied to the matrix to convert vehicles into PCUs

PM Peak - Roundabout

From / to	1-A	2-B	3-C	4-D	Total
1-A	0	203	873	20	1096
2-B	508	0	893	718	1919
3-C	627	491	0	485	1603
4-D	102	1274	173	0	1549

Turning proportions for non dedicated left movements

Turning left	Total traffic in lane from TRANSYT	Percentage
1 to 2	199	0.379048
4 to 1	97	0.202929

The 2009 OD entries are used to calculate the turning proportions based on [U:\Bays\2001\442m2001-v1\0\TRM\Prac\BCC - Tyburn Roundabout\3 - Execution\Modelling\Bases model\ARCADY routes and outputs.xls](#)

Total PCUs

From / to	1-A	2-B	3-C	4-D	Total
1-A	2	201	1129	31	1363
2-B	107	0	362	501	1270
3-C	763	273	2	242	1280
4-D	64	586	206	0	856
Total	936	1060	1699	1074	4769

Turning proportions

From / to	1-A	2-B	3-C	4-D	Total
1-A	0.12%	14.74%	82.86%	2.28%	100.00%
2-B	8.44%	0.00%	29.47%	63.09%	100.00%
3-C	59.62%	21.31%	0.19%	18.89%	100.00%
4-D	7.50%	68.40%	24.08%	0.02%	100.00%
Total	78.65%	104.48%	135.60%	84.24%	400.00%

2009 HGV percentage

From / to	1-A	2-B	3-C	4-D	Total
1-A	-	4.64%	3.83%	6.87%	-
2-B	3.81%	-	12.05%	9.93%	-
3-C	7.19%	11.60%	-	5.22%	-
4-D	8.20%	9.74%	10.36%	-	-

AM Peak - The trips originated from zone 1 are 1200 and from zone 4 are 940.
 PM Peak - The trips originated from zone 1 are 1050 and from zone 4 are 1510.
 Based on these values and the 2009 turning proportions, the following matrices are produced for zone 1 and 4.

2031 flows - based on 2009 turning proportions

From / to	1-A	2-B	3-C	4-D	Total
1-A	1	177	984	27	1200
4-D	71	643	226	0	940

2031 flows - PRISM model outputs

From / to	1-A	2-B	3-C	4-D	Total
1-A	0	100	1100	0	1200
4-D	0	690	250	0	940

The differences between the two matrices are illustrated below ("values of strategic modelling" - "values based on 2009 turning proportions")

AM Peak - Roundabout

From / to	1-A	2-B	3-C	4-D	Total
1-A	-1	-77	106	-27	0
4-D	-71	47	24	0	0

PM Peak - Roundabout

From / to	1-A	2-B	3-C	4-D	Total
1-A	0	111	-91	-20	0
4-D	-97	205	-104	-4	0

Prepared by: Tryfon Ampartzis 13.03.14
 Checked by: Sravani Vuppata 17.03.14

Project Name: BCC - Tyburn Roundabout
 Project Number: 60316861
 Subject: 2031 OD matrices - Sensitivity Test
 Date: Apr-14

AIM:
 To create the 2031 flows in order to be tested as a sensitivity test

2009 Flows

Total vehicles					
AM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	194	1096	30	1320
2 - B	105	0	332	749	1186
3 - C	723	250	0	230	1203
4 - D	61	544	193	0	798
Total	889	988	1621	1009	4507

Total vehicles					
PM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	236	961	23	1220
2 - B	185	0	476	378	1039
3 - C	786	672	0	184	1642
4 - D	46	597	78	0	721
Total	1017	1505	1515	585	4622

2031 flows

Total vehicles					
AM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	100	1100	0	1200
2 - B	180	0	520	1000	1700
3 - C	480	670	0	240	1390
4 - D	0	690	250	0	940

Total vehicles					
PM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	310	740	0	1050
2 - B	500	0	860	670	1930
3 - C	800	480	0	470	1750
4 - D	0	1450	60	0	1510

Difference from 2031 - 2009

Total vehicles					
AM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	-94	4	-30	-120
2 - B	75	0	188	251	514
3 - C	-243	420	0	10	187
4 - D	-61	146	57	0	142

Total vehicles					
PM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	74	-221	-23	-170
2 - B	315	0	364	292	971
3 - C	14	-192	0	286	108
4 - D	-46	853	-18	0	789

Uplift 2031 flows to 2009 which are highlighted in RED

Total vehicles					
AM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	194	1100	30	1320
2 - B	180	0	520	1000	1700
3 - C	723	670	0	240	1633
4 - D	61	690	250	0	1001

Total vehicles					
PM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	310	961	23	1294
2 - B	500	0	860	670	1930
3 - C	800	672	0	470	1942
4 - D	46	1450	78	0	1574

2009 HGVS percentage

2009 HGVS percentage					
AM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0.00%	4.64%	3.83%	6.67%	
2 - B	3.81%	0.00%	12.05%	9.08%	
3 - C	7.19%	11.60%	0.00%	5.22%	
4 - D	8.20%	9.74%	10.36%	0.00%	

2009 HGVS percentage					
PM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0.00%	2.12%	4.99%	4.35%	
2 - B	1.62%	0.00%	3.78%	7.14%	
3 - C	3.44%	2.38%	0.00%	3.80%	
4 - D	4.35%	2.35%	5.13%	0.00%	

2031 HGVS

2031 HGVS					
AM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	9	42	2	53
2 - B	7	0	63	91	161
3 - C	52	78	0	13	143
4 - D	5	67	28	0	100

2031 HGVS					
PM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	7	48	1	56
2 - B	8	0	33	48	89
3 - C	27	16	0	18	61
4 - D	2	34	4	0	40

2031 flows in PCUS - To be tested as Sensitivity Test

2031 flows in PCUS - To be tested as Sensitivity Test					
AM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	212	1184	34	1430
2 - B	194	0	645	1182	2021
3 - C	827	825	0	265	1917
4 - D	71	824	302	0	1397

2031 flows in PCUS - To be tested as Sensitivity Test					
PM Peak - Roundabout					
From / to	1 - A	2 - B	3 - C	4 - D	Total
1 - A	0	323	1057	25	1405
2 - B	516	0	925	766	2207
3 - C	855	704	0	506	2065
4 - D	50	1518	86	0	1654

Prepared by:	Sravani Vuppala	17.04.14
Checked by:	Tryfon Ampartzis	17.04.14

Capabilities on project:
Transportation

Appendix E – 2031 Future Year Modelling Results on Chester Road Committed Scheme

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA, UK	

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

"f:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\2. 2031 ARCADY model\
2031 AM peak validated with Chester.vai"
(drive-on-the-left) at 19:20:04 on Tuesday, 15 April 2014

FILE PROPERTIES

RUN TITLE: Tyburn Roundabout - With Chester Rd Improvement

LOCATION: Birmingham

DATE: 03/03/14

CLIENT: Birmingham City Council

ENUMERATOR: ampartzist [UKBHMLPC24473]

JOB NUMBER: 60316861

STATUS: Preliminary

DESCRIPTION: 2031 AM peak. Flows are in F:\TEM\Project\BCC - Tyburn Roundabout\3
- Execution\Modelling\2031 OD matrices

INPUT DATA

ARM A - A452 Chester Rd North

ARM B - A38 Kingsbury East

ARM C - A452 Chester Rd South

ARM D - A38 Kingsbury West

 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	7.10	I	10.60	I	12.20	I	23.80	I	71.20	I	37.0	I	0.646	I	38.327	*	I
I	ARM	B	7.60	I	9.30	I	0.10	I	16.30	I	74.10	I	33.0	I	0.570	I	29.706	*	I
I	ARM	C	7.10	I	9.70	I	0.10	I	53.30	I	70.30	I	24.0	I	0.606	I	37.861		I
I	ARM	D	7.40	I	10.40	I	129.40	I	29.30	I	74.10	I	21.0	I	0.733	I	53.880		I

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

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

WARNING One or more intercept values (flagged * in the table)
 have been adjusted according to local input values
 from a previous run and listed below -

				T6
I	ARM	I	ADJUSTMENT TO	I
I		I	INTERCEPT (PCU/MIN)	I
I	ARM	A	-6.000	I
I	ARM	B	-8.000	I

 TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

				T13
I	ARM	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(07.15)AND ENDS(08.45)

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 peak

										T15				
I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I				I				
I		I	FLOW STARTS	I	BEFORE	I	AT TOP	I	AFTER	I				
I		I	TO RISE	I	PEAK	I	OF PEAK	I	PEAK	I				
I		I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I				
I	ARM	A	15.00	I	45.00	I	75.00	I	15.57	I	23.36	I	15.57	I
I	ARM	B	15.00	I	45.00	I	75.00	I	15.98	I	23.96	I	15.98	I
I	ARM	C	15.00	I	45.00	I	75.00	I	15.79	I	23.68	I	15.79	I
I	ARM	D	15.00	I	45.00	I	75.00	I	12.90	I	19.35	I	12.90	I

DEMAND SET TITLE: AM peak

T33

		TURNING PROPORTIONS							
		TURNING COUNTS							
		(PERCENTAGE OF H.V.S)							
TIME	FROM/T	ARM A	ARM B	ARM C	ARM D				
07.15 - 08.45	ARM A	0.000	0.148	0.828	0.023				
		0.0	185.0	1032.0	29.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM B	0.146	0.000	0.000	0.854				
		187.0	0.0	0.0	1091.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM C	0.408	0.592	0.000	0.000				
		515.0	748.0	0.0	0.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM D	0.074	0.684	0.242	0.000				
		76.0	706.0	250.0	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)
07.15-07.30									
ARM A	15.63	24.57	0.636	--	0.0	1.7	24.3	--	0.109
ARM B	16.04	20.39	0.786	--	0.0	3.4	45.9	--	0.208
ARM C	15.85	28.06	0.565	--	0.0	1.3	18.5	--	0.081
ARM D	12.95	40.62	0.319	--	0.0	0.5	6.9	--	0.036

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)
07.30-07.45									
ARM A	18.67	21.87	0.854	--	1.7	5.2	67.1	--	0.275
ARM B	19.15	18.62	1.028	--	3.4	21.4	207.1	--	0.897
ARM C	18.92	26.72	0.708	--	1.3	2.4	33.5	--	0.126
ARM D	15.46	38.13	0.406	--	0.5	0.7	10.0	--	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)
07.45-08.00									
ARM A	22.86	18.25	1.253	--	5.2	76.2	617.9	--	2.411
ARM B	23.45	18.29	1.282	--	21.4	99.2	906.0	--	3.458
ARM C	23.18	26.54	0.873	--	2.4	6.1	78.8	--	0.260
ARM D	18.94	35.11	0.539	--	0.7	1.2	17.0	--	0.062

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)
08.00-08.15									
ARM A	22.86	18.14	1.260	--	76.2	147.1	1674.6	--	5.978
ARM B	23.45	18.29	1.282	--	99.2	176.7	2069.9	--	7.819
ARM C	23.18	26.52	0.874	--	6.1	6.4	94.5	--	0.292
ARM D	18.94	34.94	0.542	--	1.2	1.2	17.6	--	0.062

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	18.67	21.71	0.860	--	147.1	103.7	1880.8	-	5.730
ARM B	19.15	17.10	1.120	--	176.7	207.5	2882.1	-	11.346
ARM C	18.92	27.19	0.696	--	6.4	2.3	38.6	-	0.129
ARM D	15.46	37.96	0.407	--	1.2	0.7	10.6	-	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)
08.30-08.45									
ARM A	15.63	24.48	0.639	--	103.7	1.9	630.1	-	1.745
ARM B	16.04	17.04	0.941	--	207.5	193.8	3009.8	-	11.831
ARM C	15.85	27.27	0.581	--	2.3	1.4	21.9	-	0.088
ARM D	12.95	40.39	0.321	--	0.7	0.5	7.2	-	0.037

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.7	**
07.45	5.2	*****
08.00	76.2	*****
08.15	147.1	*****
08.30	103.7	*****
08.45	1.9	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	3.4	***
07.45	21.4	*****
08.00	99.2	*****
08.15	176.7	*****
08.30	207.5	*****
08.45	193.8	*****

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.30	1.3	*
07.45	2.4	**
08.00	6.1	*****
08.15	6.4	*****
08.30	2.3	**
08.45	1.4	*

 QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.30	0.5
07.45	0.7 *
08.00	1.2 *
08.15	1.2 *
08.30	0.7 *
08.45	0.5

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

										T75
I	ARM	I	TOTAL DEMAND	I	* QUEUEING * * DELAY *	I	* INCLUSIVE QUEUEING * * DELAY *	I		I
I		I		I		I		I		I
I		I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN/VEH)	I
I	A	I	1715.0	I	1143.4	I	4894.8	I	2.85	I
I	B	I	1759.1	I	1172.7	I	9120.9	I	5.19	I
I	C	I	1738.4	I	1159.0	I	285.7	I	0.16	I
I	D	I	1420.5	I	947.0	I	69.2	I	0.05	I
I	ALL	I	6633.0	I	4422.0	I	14370.6	I	2.17	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

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

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 7.0 (FEBRUARY 2010)

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RG40 3GA, UK	

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

"f:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\2. 2031 ARCADY model\
2031 PM peak validated with Chester.vai"
(drive-on-the-left) at 19:20:53 on Tuesday, 15 April 2014

FILE PROPERTIES

RUN TITLE: Tyburn Roundabout - With Chester Rd Improvement
LOCATION: Birmingham
DATE: 03/03/14
CLIENT: Birmingham City Council
ENUMERATOR: ampartzist [UKBHMLPC24473]
JOB NUMBER: 60316861
STATUS: Preliminary
DESCRIPTION: 2031 PM peak. All supporting calculations are: F:\TEM\Project\BCC
- Tyburn Roundabout\3 - Execution\Modelling\2031 PM peak validated
with chester

INPUT DATA

ARM A - A452 Chester Rd North
ARM B - A38 Kingsbury East
ARM C - A452 Chester Rd South
ARM D - A38 Kingsbury West

 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	7.10	I	10.60	I	12.20	I	23.80	I	71.20	I	37.0	I	0.646	I	37.327	*	I
I	ARM	B	7.60	I	9.30	I	0.10	I	16.30	I	74.10	I	33.0	I	0.570	I	37.706		I
I	ARM	C	7.10	I	9.70	I	0.10	I	53.30	I	70.30	I	24.0	I	0.606	I	39.861	*	I
I	ARM	D	7.40	I	10.40	I	129.40	I	29.30	I	74.10	I	21.0	I	0.733	I	35.380	*	I

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

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

WARNING One or more intercept values (flagged * in the table)
 have been adjusted according to local input values
 from a previous run and listed below -

				T6
I	ARM	I	ADJUSTMENT TO	I
I		I	INTERCEPT (PCU/MIN)	I
I	ARM	A	-7.000	I
I	ARM	C	2.000	I
I	ARM	D	-18.500	I

 TRAFFIC DEMAND DATA

Only sets included in the current run are shown

SCALING FACTORS

				T13
I	ARM	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 peak

										T15				
I	ARM	I	NUMBER OF MINUTES FROM START WHEN	I	RATE OF FLOW (VEH/MIN)	I				I				
I		I	FLOW STARTS	I	BEFORE	I	AT TOP	I	AFTER	I				
I		I	TO RISE	I	PEAK	I	OF PEAK	I	PEAK	I				
I		I	IS REACHED	I	FALLING	I		I		I				
I	ARM	A	15.00	I	45.00	I	75.00	I	13.70	I	20.55	I	13.70	I
I	ARM	B	15.00	I	45.00	I	75.00	I	15.32	I	22.99	I	15.32	I
I	ARM	C	15.00	I	45.00	I	75.00	I	16.48	I	24.71	I	16.48	I
I	ARM	D	15.00	I	45.00	I	75.00	I	19.36	I	29.04	I	19.36	I

DEMAND SET TITLE: PM peak

T33

		TURNING PROPORTIONS							
		TURNING COUNTS							
		(PERCENTAGE OF H.V.S)							
TIME	FROM/T	ARM A	ARM B	ARM C	ARM D				
16.15 - 17.45	ARM A	0.000	0.185	0.797	0.018				
		0.0	203.0	873.0	20.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM B	0.414	0.000	0.000	0.586				
		508.0	0.0	0.0	718.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM C	0.627	0.373	0.000	0.000				
		827.0	491.0	0.0	0.0				
		(0.0)	(0.0)	(0.0)	(0.0)				
	ARM D	0.066	0.822	0.112	0.000				
		102.0	1274.0	173.0	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	13.75	22.57	0.609	--	0.0	1.5	21.7	--	0.111
ARM B	15.38	30.23	0.509	--	0.0	1.0	14.9	--	0.067
ARM C	16.54	30.43	0.544	--	0.0	1.2	17.1	--	0.071
ARM D	19.44	18.65	1.042	--	0.0	23.3	211.7	--	0.856

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	16.42	23.32	0.704	--	1.5	2.3	32.9	--	0.143
ARM B	18.37	29.13	0.631	--	1.0	1.7	24.3	--	0.092
ARM C	19.75	28.57	0.691	--	1.2	2.2	31.1	--	0.112
ARM D	23.21	15.38	1.509	--	23.3	140.9	1232.2	--	6.195

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	20.11	24.86	0.809	--	2.3	4.0	54.6	--	0.201
ARM B	22.50	27.70	0.812	--	1.7	4.1	55.2	--	0.181
ARM C	24.19	26.10	0.927	--	2.2	9.3	111.2	--	0.364
ARM D	28.42	11.20	2.538	--	140.9	399.3	4051.6	--	23.098

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	20.11	24.97	0.806	--	4.0	4.0	60.1	--	0.206
ARM B	22.50	27.68	0.813	--	4.1	4.2	62.2	--	0.192
ARM C	24.19	26.01	0.930	--	9.3	10.8	153.0	--	0.476
ARM D	28.42	10.88	2.613	--	399.3	662.5	7963.2	--	37.897

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	16.42	23.48	0.699	--	4.0	2.4	38.2	-	0.146
ARM B	18.37	29.08	0.632	--	4.2	1.7	27.7	-	0.096
ARM C	19.75	28.44	0.694	--	10.8	2.3	42.3	-	0.131
ARM D	23.21	14.85	1.563	--	662.5	787.9	10877.6	-	42.209

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	13.75	22.16	0.621	--	2.4	1.7	26.1	-	0.120
ARM B	15.38	30.12	0.511	--	1.7	1.1	16.3	-	0.068
ARM C	16.54	30.36	0.545	--	2.3	1.2	18.8	-	0.073
ARM D	19.44	18.51	1.050	--	787.9	801.8	11922.7	-	43.005

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.5	**
16.45	2.3	**
17.00	4.0	****
17.15	4.0	****
17.30	2.4	**
17.45	1.7	**

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.0	*
16.45	1.7	**
17.00	4.1	****
17.15	4.2	****
17.30	1.7	**
17.45	1.1	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
16.30	1.2	*
16.45	2.2	**
17.00	9.3	*****
17.15	10.8	*****
17.30	2.3	**
17.45	1.2	*

 QUEUE AT ARM D

TIME SEGMENT NO. OF
 ENDING VEHICLES
 IN QUEUE

16.30	23.3	*****
16.45	140.9	*****
17.00	399.3	*****
17.15	662.5	*****
17.30	787.9	*****
17.45	801.8	*****

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

T75

I	ARM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I						
I	I	I	I	I	* DELAY *	I	* DELAY *	I						
I	I	I	I	I	I	I	I	I						
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I				
I	A	I	1508.6	I	1005.7	I	233.6	I	0.15	I	233.7	I	0.15	I
I	B	I	1687.5	I	1125.0	I	200.5	I	0.12	I	200.5	I	0.12	I
I	C	I	1814.1	I	1209.4	I	373.5	I	0.21	I	373.5	I	0.21	I
I	D	I	2132.1	I	1421.4	I	36259.0	I	17.01	I	53628.8	I	25.15	I
I	ALL	I	7142.3	I	4761.5	I	37066.6	I	5.19	I	54436.5	I	7.62	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

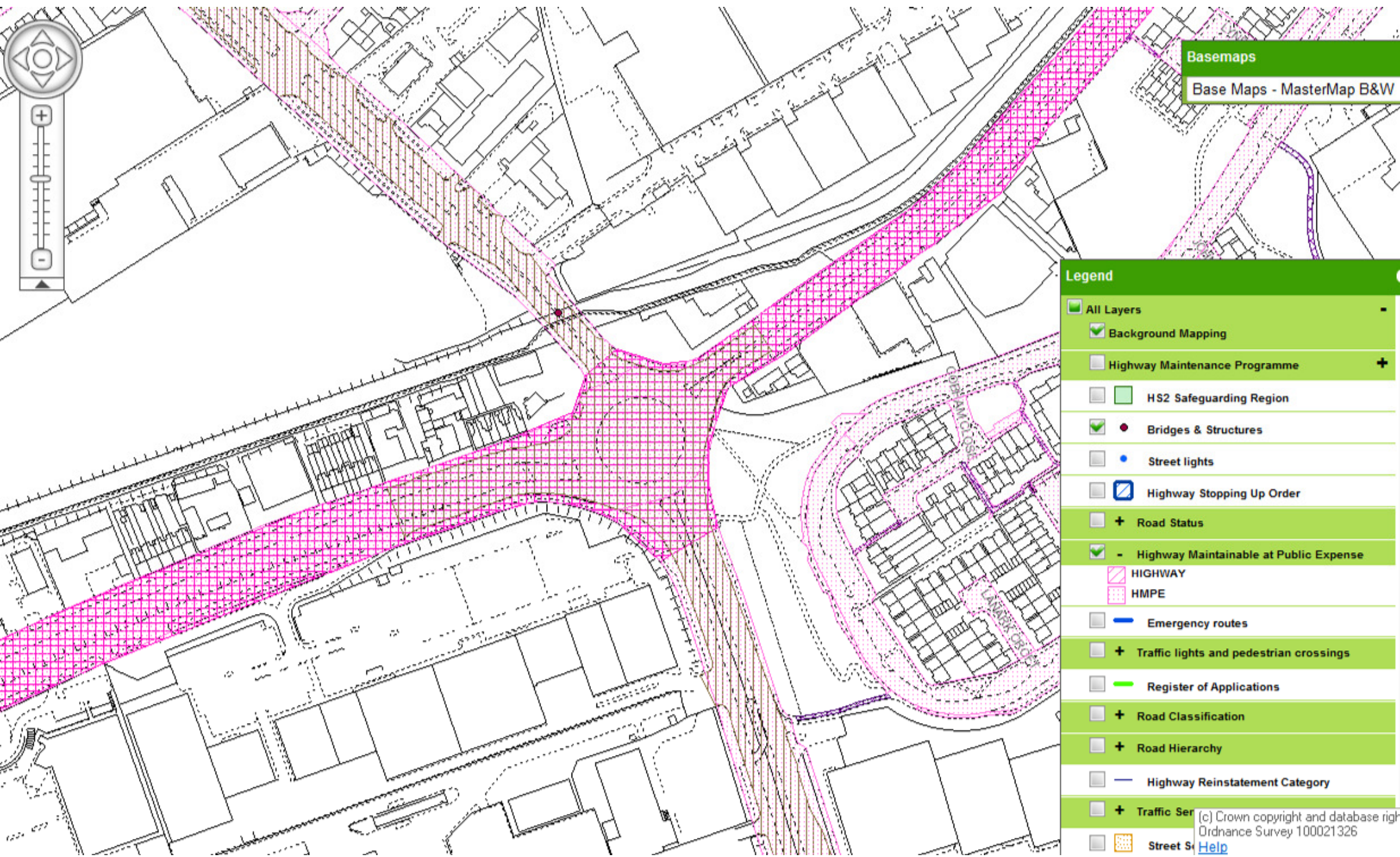
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Capabilities on project:
Transportation

Appendix F – Highway Boundary

Capabilities on project:
Transportation

Birmingham City Council has provided highway boundary information in an email dated 26th February 2014 at the Tyburn roundabout.



Basemaps
Base Maps - MasterMap B&W

Legend

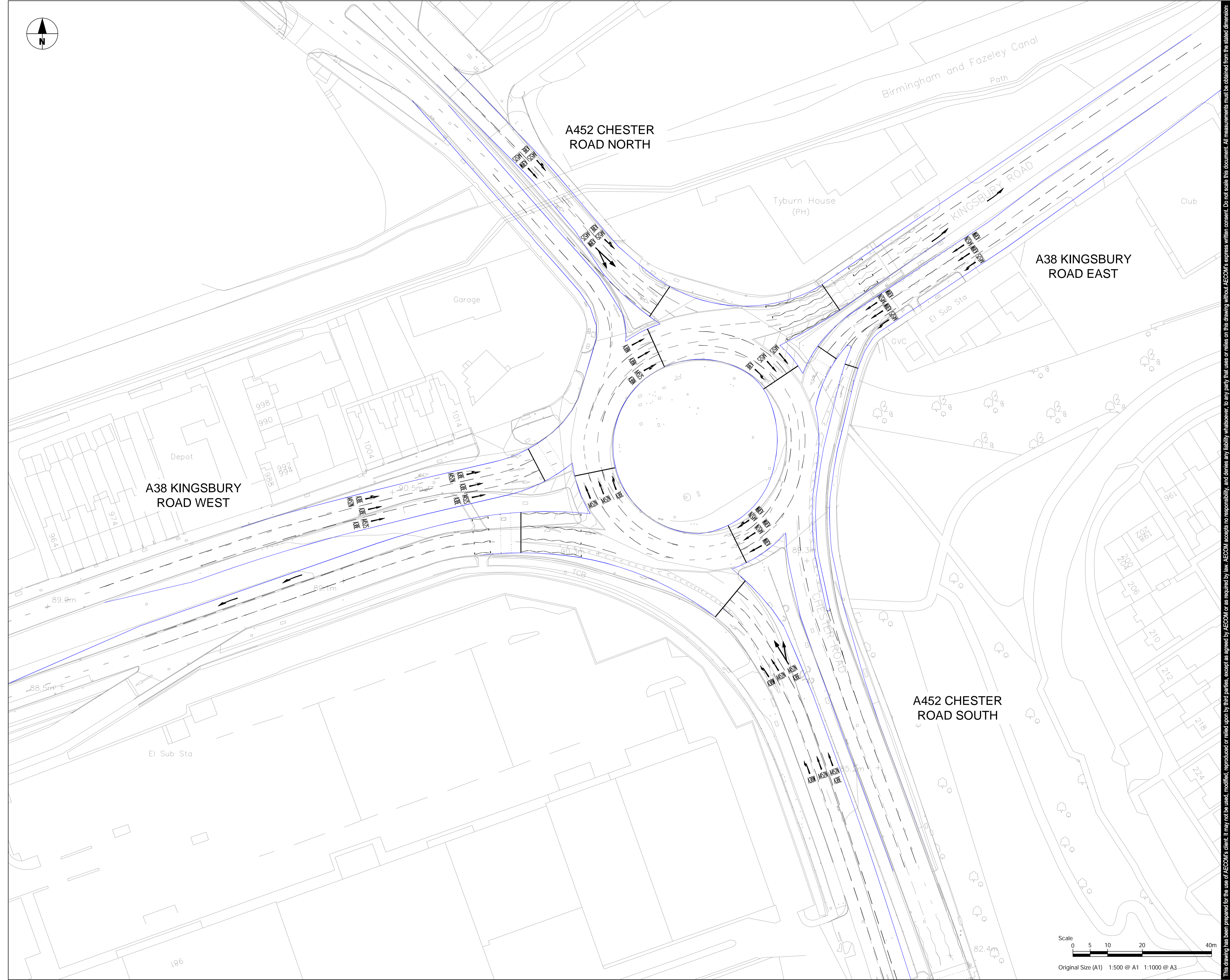
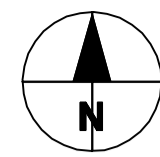
- All Layers
- Background Mapping
- Highway Maintenance Programme
- HS2 Safeguarding Region
- Bridges & Structures
- Street lights
- Highway Stopping Up Order
- + Road Status
- Highway Maintainable at Public Expense
- HIGHWAY
- HMPE
- Emergency routes
- + Traffic lights and pedestrian crossings
- Register of Applications
- + Road Classification
- + Road Hierarchy
- Highway Reinstatement Category
- + Traffic Ser
- Street S

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Ordnance Survey 100021326
[Help](#)

Capabilities on project:
Transportation

Appendix G – Preferred Option Drawing

ISO A1 594mm x 841mm
 Approved: AG
 Checked: SV
 Designer: AC
 Project Management Initials:
 Last saved by: CHILDA(2014-04-16) Last Plotted: 2014-04-16
 Filename: F:\TEMP\PROJECT\BCC - TYBURN ROUNDABOUT\13 - EXECUTION\CAD\06-MODELS\60316861-SKE-20-CT-003 SEG LEFT CHEST TO KINGS REMOVED.DWG
 Printed on: % Post-Consumer Recycled Content Paper



PROJECT
 TYBURN
 ROUNDABOUT
 OPTIONS



CONSULTANT
 AECOM
 Colmore Plaza
 Colmore Circus Queensway
 Birmingham
 0121 262 1900 tel 0121 262 1999 fax
 www.aecom.com

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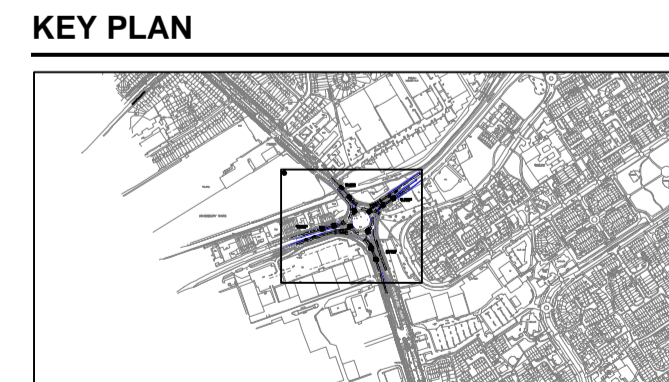
NOTES
 CDM NOTES
 1. THE CONTRACTOR SHALL DETERMINE THE LOCATION AND STATUS OF ANY STATUTORY UTILITY APPARATUS PRIOR TO THE COMMENCEMENT OF ANY WORKS.

KEY

— PROPOSED KERB LINES
 - - - PROPOSED ROAD MARKINGS

ISSUE/REVISION

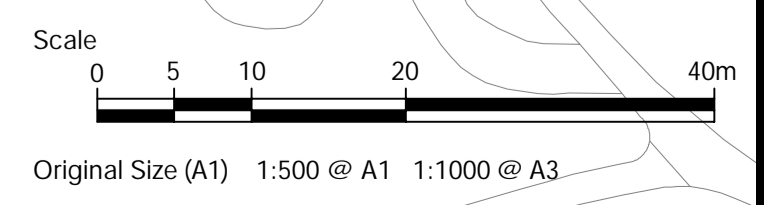
NO	DATE	DESCRIPTION
A	16/04/2014	Final Issue



PROJECT NUMBER
 60316861

SHEET TITLE
 OPTION 3
 PREFERRED OPTION

SHEET NUMBER
 60316861-SKE-20-CT-0003



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Capabilities on project:
Transportation

Appendix H – 2031 Option Model TRANSYT outputs

TRANSYT 15
Version: 15.0.1.2976 [] © Copyright TRL Limited, 2014
For sales and distribution information, program advice and maintenance, contact TRL: Tel: +44 (0)1344 770758 E-mail: software@trl.co.uk Web: http://www.trlsoftware.co.uk
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Last run: 16/04/2014 17:27:35

Analysis Set used for last run: A1 - 2031 AM peak

Filename: AM Rev 5.t15

Path: F:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\3. Option models\3. Full signalisation + Widening

Report generation date: 16/04/2014 17:30:53

- » Network Diagrams
- « A1 - 2031 AM peak *: D1 - 2031 AM peak*
- » Summary
- » Network Options
- » Traffic Nodes
- » Links
- » Arms and Traffic Streams
- » Local OD Matrix - Local Matrix: 1 - AM
- » Signal Timings
- » Final Prediction Table
- » Link Results
- » Traffic Stream Results
- » Network Results

File summary

File Description

Title	A38/A452 Tyburn Roundabout
Location	Birmingham
Site Number	
UTCRegion	
Driving Side	Left
Date	02/04/2014
Version	
Status	Option Model
Identifier	
Client	Birmingham City Council
Jobnumber	60316861
Enumerator	EU\vuppalas
Description	2031 future year preferred option Pm peak model.

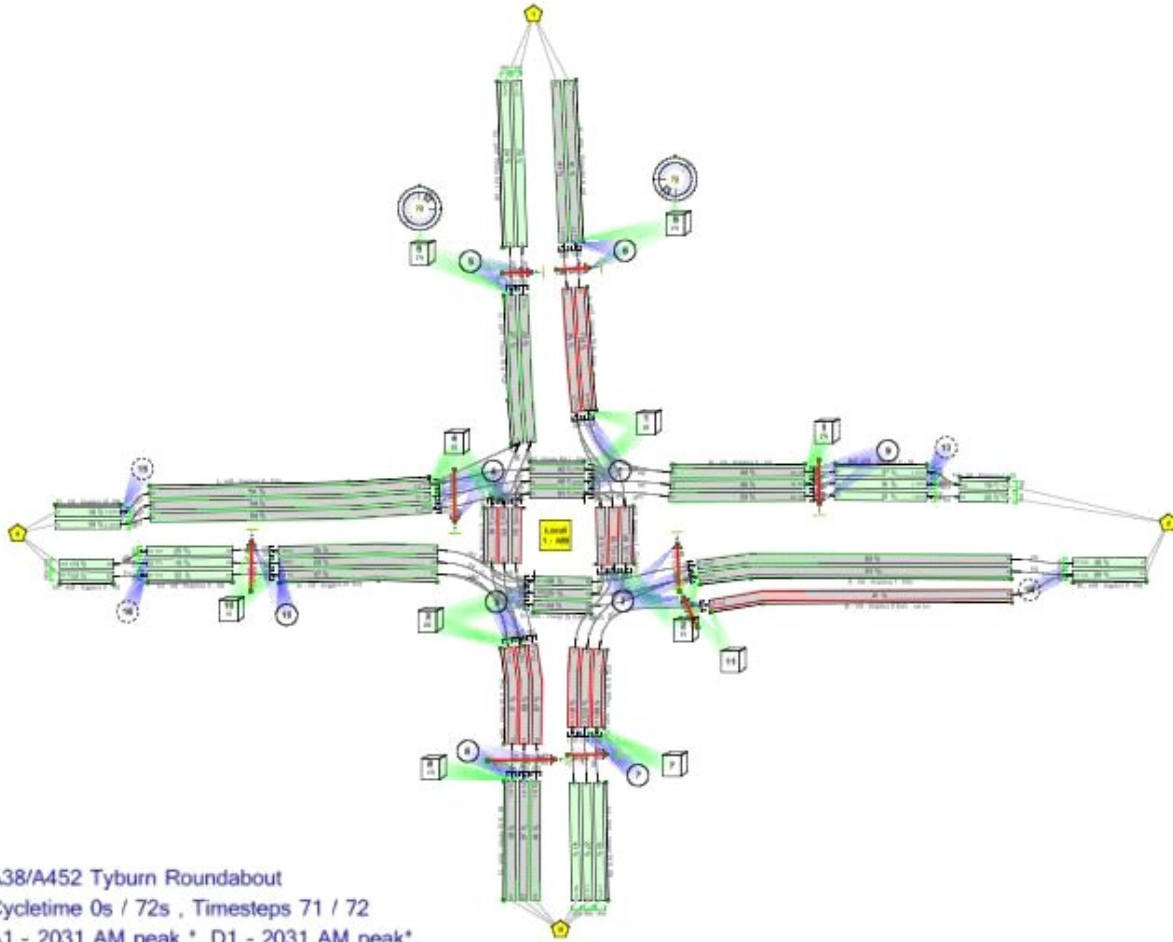
Units

Cost Units	Speed Units	Distance Units	Fuel Economy Units	Fuel Rate Units	Mass Units	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
£	kph	m	mpg	l/h	kg	perHour	s	-Hour	perHour

Sorting

Show Names Instead of IDs (For Aimsun)	Sorting Direction	Sorting Type	Ignore Prefixes When Sorting	Link Grouping	Source Grouping
	Ascending	Numerical		Normal	Normal

Network Diagrams



A38/A452 Tyburn Roundabout
 Cyclotime 0s / 72s , Timesteps 71 / 72
 A1 - 2031 AM peak *, D1 - 2031 AM peak*
 Diagram produced using TRANSYT 15.0.1.2976

A1 - 2031 AM peak *: D1 - 2031 AM peak*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Network Cycle Time (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Netwo Withi Capac
A1 - 2031 AM peak	16/04/2014 17:27:27	16/04/2014 17:27:35	07:30	72	109.29	113.57	A/1	4	6	A/1	Bx3/1	A/1	

Analysis Set Details

Name	Description	Demand Set	Include In Report	Locked
2031 AM peak		D1	✓	

Demand Set Details

Demand Set	Name	Description	Composite	Demand Sets	Start Time (HH:mm)	Locked
D1	2031 AM peak				07:30	

Network Options

Network Timings

Network Cycle Time (s)	Restrict To SCOOT Cycle Times	Time Segment Length (min)	Number Of Time Segments	Modelled Time Period (min)
72		60	1	60

Signals Options

Start Displacement (s)	End Displacement (s)
2	3

Advanced

Phase Minimum Broken Penalty (£)	Phase Maximum Broken Penalty (£)	Intergreen Broken Penalty (£)
10000.00	10000.00	10000.00

Traffic Options

Traffic Model	Vehicle Flow Scaling Factor (%)	Pedestrian Flow Scaling Factor (%)	Cruise Times Or Speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise Scaling Factor (%)	Use Link Stop Weightings	Use Link Delay Weightings	Exclude Pedestrian Links	Random Delay Mode	Type of Vehicle-in-Service	Type Of Random Parameter	PCU Length (m)	Calculate results for Path Segments
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75	

Normal Parameters

Dispersal Type	Dispersal Coefficient	Travel Time Coefficient
Default	35	80

Bus Parameters

Dispersion Coefficient1	Dispersion Coefficient2	Acceleration (ms ^[-2])	Travel Time Coefficient1	Travel Time Coefficient2
70	15	0.47	30	85

Tram Parameters

Dispersion Coefficient1	Dispersion Coefficient2	Acceleration (ms ^[-2])	Travel Time Coefficient1	Travel Time Coefficient2
70	15	0.47	30	85

Pedestrian Parameters

Dispersal Type	Dispersal Coefficient	Travel Time Coefficient
Default	35	80

Optimisation Options

Enable Optimisation	Auto Redistribute	Optimisation Level	Enable Out Profile Accuracy
✓		Offsets Only	✓

Advanced

Optimisation Type	Hill Climb Increments	OUTProfile Accuracy	Use Enhanced Optimisation	Auto Optimisation Order	Optimisation Order
Hill Climb (Fast)	15,40,15,40,15,1,1	50,50,5,5,0.5,0.05,0.05		✓	4,1,2,3,5,6,7,8,9,10,11

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian Monetary Value Of Delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

ID	Name	Description
1		
2		
3		
4		
5	(untitled)	
6	(untitled)	
7	(untitled)	
8	(untitled)	
9	(untitled)	
10	(untitled)	
13	(untitled)	
14	(untitled)	
15	(untitled)	
16	(untitled)	

Links

Links

Link	Name	Description	Traffic Node	Length (m)	Has Restricted Flow	Is Signal Controlled	Is Give Way	Traffic Type	Is Minor Shared
40	A452 N - NB		5	7.00		✓		Pedestrian	
41	A452 N - SB		6	7.50		✓		Pedestrian	
42	A452 S - SB		7	10.50		✓		Pedestrian	
43	A452 S - NB		8	9.75		✓		Pedestrian	
45	A38 W - WB		2	9.00		✓		Pedestrian	
46	A38 E - WB		10	9.75		✓		Pedestrian	
47	A38 W - EB		9	9.00		✓		Pedestrian	
49	A38 E - EB		4	9.75		✓		Pedestrian	
50	A38 W - WB		2	4.00		✓		Pedestrian	

Modelling

Link	Traffic Model	Stop Weighting (%)	Delay Weighting (%)	Exclude From Results Calculation	Max Queue Storage (PCU)	Has Queue Limit	Has Degree Of Saturation Limit
40	NetworkDefault	100	100	✓	0.00		
41	NetworkDefault	100	100	✓	0.00		
42	NetworkDefault	100	100	✓	0.00		
43	NetworkDefault	100	100	✓	0.00		
45	NetworkDefault	100	100	✓	0.00		
46	NetworkDefault	100	100	✓	0.00		
47	NetworkDefault	100	100	✓	0.00		
49	NetworkDefault	100	100	✓	0.00		
50	NetworkDefault	100	100	✓	0.00		

Modelling - Advanced

Link	Initial Queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type Of Random Parameter	Random Parameter	Auto Cycle Time	Cycle Time
40	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
41	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
42	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
43	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
45	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
46	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
47	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
49	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
50	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

Flows

Link	Flows	Total Flow (07:30-08:30) (PCU/hr)
40	1	100
41	1	100
42	1	100
43	1	100
45	1	100
46	1	100
47	1	100
49	1	100
50	1	100

Flows - Advanced

Link	Detectors	Link Sensitivity Multiplier (%)	Cruise Sensitivity Multiplier (%)
40		100	100
41		100	100
42		100	100
43		100	100
45		100	100
46		100	100
47		100	100
49		100	100
50		100	100

Signals

Link	Controller Stream	Phase	Phase2 Enabled
40	5	B	
41	6	B	
42	7	B	
43	8	B	
45	2	C	
46	10	B	
47	9	B	
49	4	C	
50	11	B	

Entry Sources

Link	Cruise Time (seconds)	Cruise Speed (kph)
40	1.00	30.00
41	1.00	30.00
42	1.26	30.00
43	1.17	30.00
45	1.08	30.00
46	1.17	30.00
47	1.08	30.00
49	1.17	30.00
50	1.00	30.00

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic Node
A	A452 - Chester Rd N - Entry		1
Ax2	A452 - Chester Rd N - NB		
B	A38 - Kingsbury E - Entry		2
C	A452 - Chester Rd S - Entry		3
D	A38 - Kingsbury W - Entry		4
A2	A452 - Chester Rd N - SB		6
Ac	A38 - Kingsbury E - Circulatory		2
Ax	A452 - Chester Rd N - Exit		5
B1	A38 - Kingsbury E Entry - Left turn		2
B3	A38 - Kingsbury E - WB		14
Bc	A452 - Chester Rd S - Circulatory		3
Bx	A38 - Kingsbury E - Exit		9
Bx2	A38 - Kingsbury E - EB		13
Bx3	A38 - Kingsbury E - EB		
C2	A452 - Chester Rd S - NB		8
Cc	A38 - Kingsbury W - Circulatory		4
Cx	A452 - Chester Rd S - Exit		7
Cx2	A452 - Chester Rd S - SB		
D3	A38 - Kingsbury W - EB		15
Dc	A452 - Chester Rd N - Circulatory		1
Dx	A38 - Kingsbury W - Exit		10
Dx2	A38 - Kingsbury W - WB		16
Dx3	A38 - Kingsbury W - WB		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto Length	Length (m)	Has Restricted Flow	Saturation Flow Source	Saturation Flow (PCU/hr)	Is Signal Controlled	Is Give Way	Traffic Type
A	1				173.00	✓	SumOfLanes	1905	✓		Normal
A	2				173.00	✓	SumOfLanes	2080	✓		Normal
B	2	(untitled)			100.00	✓	SumOfLanes	2070	✓		Normal
B	3	(untitled)			100.00	✓	SumOfLanes	2070	✓		Normal
C	1				154.00	✓	SumOfLanes	1762	✓		Normal
C	2				154.00	✓	SumOfLanes	1937	✓		Normal
C	3				154.00	✓	SumOfLanes	1952	✓		Normal

D	1			130.00	✓	SumOfLanes	1804	✓		Normal
D	2			130.00	✓	SumOfLanes	1979	✓		Normal
D	3			130.00	✓	SumOfLanes	1979	✓		Normal
A2	1	(untitled)		353.00	✓	SumOfLanes	1940	✓		Normal
A2	2	(untitled)		353.00	✓	SumOfLanes	2080	✓		Normal
Ac	1			40.84	✓	SumOfLanes	2015	✓		Normal
Ac	2			40.84	✓	SumOfLanes	2155	✓		Normal
Ac	3			40.84	✓	SumOfLanes	2033	✓		Normal
Ax	1			169.00	✓	SumOfLanes	2105	✓		Normal
Ax	2			169.00	✓	SumOfLanes	2055	✓		Normal
Ax2	1	(untitled)		360.00	✓	SumOfLanes	1800			Normal
Ax2	2	(untitled)		360.00	✓	SumOfLanes	1800			Normal
B1	1			100.00	✓	SumOfLanes	1754	✓		Normal
B3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
B3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Bc	1			53.74	✓	SumOfLanes	1973	✓		Normal
Bc	2			53.74	✓	SumOfLanes	2113	✓		Normal
Bc	3			53.74	✓	SumOfLanes	1993	✓		Normal
Bx	1			15.00	✓	SumOfLanes	2055	✓		Normal
Bx	2			15.00	✓	SumOfLanes	2055	✓		Normal
Bx	3			15.00	✓	SumOfLanes	2055	✓		Normal
Bx2	1	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx2	2	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx2	3	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Bx3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
C2	1	(untitled)		71.63	✓	SumOfLanes	1940	✓		Normal
C2	2	(untitled)		71.63	✓	SumOfLanes	2080	✓		Normal
C2	3	(untitled)		71.63	✓	SumOfLanes	2080	✓		Normal
Cc	1			51.49	✓	SumOfLanes	1847	✓		Normal
Cc	2			51.49	✓	SumOfLanes	1987	✓		Normal
Cc	3			51.49	✓	SumOfLanes	1875	✓		Normal
Cx	1			141.48	✓	SumOfLanes	2015	✓		Normal
Cx	2			141.48	✓	SumOfLanes	2105	✓		Normal
Cx	3			141.48	✓	SumOfLanes	2105	✓		Normal
Cx2	1	(untitled)		103.74	✓	SumOfLanes	1800			Normal
Cx2	2	(untitled)		103.74	✓	SumOfLanes	1800			Normal
Cx2	3	(untitled)		103.74	✓	SumOfLanes	1800			Normal
D3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
D3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Dc	1			44.34	✓	SumOfLanes	2015	✓		Normal
Dc	2			44.34	✓	SumOfLanes	2155	✓		Normal
Dc	3			44.34	✓	SumOfLanes	2033	✓		Normal
Dx	1			20.00	✓	SumOfLanes	2105	✓		Normal
Dx	2			20.00	✓	SumOfLanes	2105	✓		Normal
Dx	3			20.00	✓	SumOfLanes	2105	✓		Normal
Dx2	1	(untitled)		113.00	✓	SumOfLanes	1800			Normal
Dx2	2	(untitled)		113.00	✓	SumOfLanes	1800			Normal
Dx2	3	(untitled)		113.00	✓	SumOfLanes	1800			Normal

Dx3	1	(untitled)			30.00	✓	SumOfLanes	1800			Normal
Dx3	2	(untitled)			30.00	✓	SumOfLanes	1800			Normal

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface Condition	Site Quality Factor	Gradient (%)	Width (m)	Use Connector Turning Radius	Proportion That Turn (%)	Turning Radius (m)	Nearside Lane	Saturation Flow (PCU/hr)
A	1	1			✓	N/A	N/A	-5	3.25		29	23.83	✓	1905
A	2	1			✓	N/A	N/A	-5	3.25		0	10.00		2080
B	2	1	(untitled)		✓	N/A	N/A	-3	3.15		0	10.00		2070
B	3	1	(untitled)		✓	N/A	N/A	-3	3.15		0	10.00		2070
C	1	1			✓	N/A	N/A	4	3.65		100	53.30	✓	1762
C	2	1			✓	N/A	N/A	4	3.50		0	10.00		1937
C	3	1			✓	N/A	N/A	4	3.65		0	10.00		1952
D	1	1			✓	N/A	N/A	3	3.50		38	29.30	✓	1804
D	2	1			✓	N/A	N/A	3	3.50		0	10.00		1979
D	3	1			✓	N/A	N/A	3	3.50		0	10.00		1979
A2	1	2	(untitled)		✓	N/A	N/A	0	3.25		0	10.00	✓	1940
A2	2	1	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
Ac	1	2			✓	N/A	N/A	-4	4.00		0	10.00	✓	2015
Ac	2	1			✓	N/A	N/A	-4	4.00		0	10.00		2155
Ac	3	1			✓	N/A	N/A	-4	4.00		100	25.00		2033
Ax	1	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Ax	2	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Ax2	1	2	(untitled)											1800
Ax2	2	1	(untitled)											1800
B1	1	1			✓	N/A	N/A	-3	3.00		100	16.30	✓	1754
B3	1	2	(untitled)											1800
B3	2	1	(untitled)											1800
Bc	1	1			✓	N/A	N/A	1	4.00		0	10.00	✓	1973
Bc	2	2			✓	N/A	N/A	1	4.00		0	10.00		2113
Bc	3	2			✓	N/A	N/A	1	4.00		100	25.00		1993
Bx	1	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx	2	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx	3	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx2	1	3	(untitled)											1800
Bx2	2	1	(untitled)											1800
Bx2	3	2	(untitled)											1800
Bx3	1	2	(untitled)											1800
Bx3	2	1	(untitled)											1800
C2	1	3	(untitled)		✓	N/A	N/A	0	3.25		0	10.00	✓	1940
C2	2	1	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
C2	3	2	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
Cc	1	1			✓	N/A	N/A	4	4.00		0	10.00	✓	1847
Cc	2	2			✓	N/A	N/A	4	4.00		0	10.00		1987
Cc	3	2			✓	N/A	N/A	4	4.00		100	25.00		1875
Cx	1	1			✓	N/A	N/A	0	4.00		0	10.00	✓	2015
Cx	2	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Cx	3	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Cx2	1	3	(untitled)											1800

Cx2	2	1	(untitled)												1800
Cx2	3	2	(untitled)												1800
D3	1	2	(untitled)												1800
D3	2	1	(untitled)												1800
Dc	1	1			✓	N/A	N/A	-1	4.00		0	10.00	✓		2015
Dc	2	2			✓	N/A	N/A	-1	4.00		0	10.00			2155
Dc	3	2			✓	N/A	N/A	-1	4.00		100	25.00			2033
Dx	1	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx	2	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx	3	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx2	1	2	(untitled)												1800
Dx2	2	3	(untitled)												1800
Dx2	3	1	(untitled)												1800
Dx3	1	2	(untitled)												1800
Dx3	2	1	(untitled)												1800

Modelling

Arm	Traffic Stream	Traffic Model	Stop Weighting Multiplier (%)	Delay Weighting Multiplier (%)	Exclude From Results Calculation	Max Queue Storage (PCU)	Has Queue Limit	Queue Limit (PCU)	Excess Queue Penalty (£)	Has Degree Of Saturation Limit
A	1	NetworkDefault	0	20		0.00				
A	2	NetworkDefault	0	20		0.00				
B	2	NetworkDefault	0	20		0.00				
B	3	NetworkDefault	0	20		0.00				
C	1	NetworkDefault	0	20		0.00				
C	2	NetworkDefault	0	20		0.00				
C	3	NetworkDefault	0	20		0.00				
D	1	NetworkDefault	0	20		0.00				
D	2	NetworkDefault	0	20		0.00				
D	3	NetworkDefault	0	20		0.00				
A2	1	NetworkDefault	100	100		0.00				
A2	2	NetworkDefault	100	100		0.00				
Ac	1	NetworkDefault	100	100		0.00	✓	1	60.00	
Ac	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Ac	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Ax	1	NetworkDefault	100	100		0.00				
Ax	2	NetworkDefault	100	100		0.00				
Ax2	1	NetworkDefault	100	100		0.00				
Ax2	2	NetworkDefault	100	100		0.00				
B1	1	NetworkDefault	100	100		0.00				
B3	1	NetworkDefault	100	100		0.00				
B3	2	NetworkDefault	100	100		0.00				
Bc	1	NetworkDefault	100	100		0.00	✓	2	60.00	
Bc	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Bc	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Bx	1	NetworkDefault	100	100		0.00				
Bx	2	NetworkDefault	100	100		0.00				
Bx	3	NetworkDefault	100	100		0.00				
Bx2	1	NetworkDefault	100	100		0.00				
Bx2	2	NetworkDefault	100	100		0.00				
Bx2	3	NetworkDefault	100	100		0.00				
Bx3	1	NetworkDefault	100	100		0.00				

Bx3	2	NetworkDefault	100	100		0.00				
C2	1	NetworkDefault	100	100		0.00				
C2	2	NetworkDefault	100	100		0.00				
C2	3	NetworkDefault	100	100		0.00				
Cc	1	NetworkDefault	100	100		0.00	✓	2	60.00	
Cc	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Cc	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Cx	1	NetworkDefault	100	100		0.00				
Cx	2	NetworkDefault	100	100		0.00				
Cx	3	NetworkDefault	100	100		0.00				
Cx2	1	NetworkDefault	100	100		0.00				
Cx2	2	NetworkDefault	100	100		0.00				
Cx2	3	NetworkDefault	100	100		0.00				
D3	1	NetworkDefault	100	100		0.00				
D3	2	NetworkDefault	100	100		0.00				
Dc	1	NetworkDefault	100	100		0.00	✓	1	60.00	
Dc	2	NetworkDefault	100	100		0.00	✓	1	60.00	
Dc	3	NetworkDefault	100	100		0.00	✓	1	60.00	
Dx	1	NetworkDefault	100	100		0.00				
Dx	2	NetworkDefault	100	100		0.00				
Dx	3	NetworkDefault	100	100		0.00				
Dx2	1	NetworkDefault	100	100		0.00				
Dx2	2	NetworkDefault	100	100		0.00				
Dx2	3	NetworkDefault	100	100		0.00				
Dx3	1	NetworkDefault	100	100		0.00				
Dx3	2	NetworkDefault	100	100		0.00				

Modelling - Advanced

Arm	Traffic Stream	Cruise Sensitivity Multiplier (%)	Initial Queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type Of Random Parameter	Random Parameter	Auto Cycle Time	Cycle Time
A	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B1	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

B3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

Normal - Modelling

Arm	Traffic Stream	Stop Weighting (%)	Delay Weighting (%)
A	1	-9998	20
A	2	-9998	20
B	2	-9998	20
B	3	-9998	20
C	1	-9998	20
C	2	-9998	20
C	3	-9998	20
D	1	-9998	20
D	2	-9998	20
D	3	-9998	20

A2	1	100	100
A2	2	100	100
Ac	1	100	100
Ac	2	100	100
Ac	3	100	100
Ax	1	100	100
Ax	2	100	100
Ax2	1	100	100
Ax2	2	100	100
B1	1	100	100
B3	1	100	100
B3	2	100	100
Bc	1	100	100
Bc	2	100	100
Bc	3	100	100
Bx	1	100	100
Bx	2	100	100
Bx	3	100	100
Bx2	1	100	100
Bx2	2	100	100
Bx2	3	100	100
Bx3	1	100	100
Bx3	2	100	100
C2	1	100	100
C2	2	100	100
C2	3	100	100
Cc	1	100	100
Cc	2	100	100
Cc	3	100	100
Cx	1	100	100
Cx	2	100	100
Cx	3	100	100
Cx2	1	100	100
Cx2	2	100	100
Cx2	3	100	100
D3	1	100	100
D3	2	100	100
Dc	1	100	100
Dc	2	100	100
Dc	3	100	100
Dx	1	100	100
Dx	2	100	100
Dx	3	100	100
Dx2	1	100	100
Dx2	2	100	100
Dx2	3	100	100
Dx3	1	100	100
Dx3	2	100	100

Normal - Modelling per Path

Arm	Traffic Stream	Path ID	Stop Weighting (%)	Delay Weighting (%)
Ac	1	3	500	100
Ac	2	1	500	100
Ac	3	2	500	100
B3	2	9	500	100
Bc	1	8	500	100
Bc	2	9	500	100
Bc	3	5	500	100
Bc	3	6	500	100
Bc	3	7	500	100
Cc	1	16	500	100
Cc	2	17	500	100
Cc	3	11	500	100
Cc	3	12	500	100
Cc	3	13	500	100
Cc	3	14	500	100
Cc	3	15	500	100
Dc	1	19	500	100
Dc	2	21	500	100
Dc	3	25	500	100
Dc	3	22	500	100
Dc	3	23	500	100
Dc	3	24	500	100

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	601	601
A	2	645	645
B	2	639	639
B	3	639	639
C	1	253	253
C	2	515	515
C	3	748	748
D	1	323	323
D	2	354	354
D	3	354	354
A2	1	601	601
A2	2	645	645
Ac	1	541	541
Ac	2	741	741
Ac	3	29	29
Ax	1	427	427
Ax	2	351	351
Ax2	1	427	427
Ax2	2	351	351
B1	1	583	583
B3	1	1222	1222
B3	2	639	639
Bc	1	320	320
Bc	2	349	349

Bc	3	639	639
Bx	1	681	681
Bx	2	604	604
Bx	3	354	354
Bx2	1	681	681
Bx2	2	604	604
Bx2	3	354	354
Bx3	1	1285	1285
Bx3	2	354	354
C2	1	253	253
C2	2	515	515
C2	3	748	748
Cc	1	351	351
Cc	2	351	351
Cc	3	748	748
Cx	1	583	583
Cx	2	541	541
Cx	3	741	741
Cx2	1	583	583
Cx2	2	541	541
Cx2	3	741	741
D3	1	323	323
D3	2	709	709
Dc	1	496	496
Dc	2	604	604
Dc	3	604	604
Dx	1	573	573
Dx	2	349	349
Dx	3	452	452
Dx2	1	573	573
Dx2	2	349	349
Dx2	3	452	452
Dx3	1	573	573
Dx3	2	801	801

Signals

Arm	Traffic Stream	Controller Stream	Phase	Phase2 Enabled
A	1	1	A	
A	2	1	A	
B	2	2	A	
B	3	2	A	
C	1	3	A	
C	2	3	A	
C	3	3	A	
D	1	4	A	
D	2	4	A	
D	3	4	A	
A2	1	6	A	
A2	2	6	A	
Ac	1	2	B	
Ac	2	2	B	
Ac	3	2	B	
Ax	1	5	A	
Ax	2	5	A	
B1	1	11	A	
Bc	1	3	B	
Bc	2	3	B	
Bc	3	3	B	
Bx	1	9	A	
Bx	2	9	A	
Bx	3	9	A	
C2	1	8	A	
C2	2	8	A	
C2	3	8	A	
Cc	1	4	B	
Cc	2	4	B	
Cc	3	4	B	
Cx	1	7	A	
Cx	2	7	A	
Cx	3	7	A	
Dc	1	1	B	
Dc	2	1	B	
Dc	3	1	B	
Dx	1	10	A	
Dx	2	10	A	
Dx	3	10	A	

Entry Sources

Arm	Traffic Stream	Normal Cruise Time (seconds)	Normal Cruise Speed (kph)
A2	1	26.32	48.28
A2	2	26.32	48.28
B3	1	3.60	30.00
B3	2	2.24	48.28
C2	1	5.34	48.28
C2	2	5.34	48.28
C2	3	5.34	48.28
D3	1	2.24	48.28
D3	2	2.24	48.28

Sources

Arm	Traffic Stream	Source	Source Type	Source Traffic Stream	Destination Traffic Stream	Normal Cruise Time (seconds)	Normal Cruise Speed (kph)	Auto Turning Radius	Traffic Turn Style	Turning Radius (m)
A	1	1	TrafficStream	A2/1	A/1	12.90	48.28	✓	Straight	Straight Movement
A	2	1	TrafficStream	A2/2	A/2	12.90	48.28	✓	Straight	Straight Movement
Ax2	1	1	TrafficStream	Ax/1	Ax2/1	26.84	48.28	✓	Straight	Straight Movement
Ax2	2	1	TrafficStream	Ax/2	Ax2/2	26.84	48.28	✓	Straight	Straight Movement
B	2	1	TrafficStream	B3/1	B/2	7.46	48.28	✓	Straight	Straight Movement
B	3	1	TrafficStream	B3/2	B/3	7.46	48.28	✓	Straight	Straight Movement
C	1	1	TrafficStream	C2/1	C/1	11.48	48.28	✓	Straight	Straight Movement
C	2	1	TrafficStream	C2/2	C/2	11.48	48.28	✓	Straight	Straight Movement
C	3	1	TrafficStream	C2/3	C/3	11.48	48.28	✓	Straight	Straight Movement
D	1	1	TrafficStream	D3/1	D/1	9.69	48.28	✓	Straight	Straight Movement
D	2	1	TrafficStream	D3/2	D/2	9.69	48.28	✓	Straight	Straight Movement
D	3	1	TrafficStream	D3/2	D/3	9.69	48.28	✓	Straight	Straight Movement
Ac	1	1	TrafficStream	A/1	Ac/1	4.57	32.18	✓	Straight	Straight Movement
Ac	2	1	TrafficStream	A/2	Ac/2	4.57	32.18	✓	Straight	Straight Movement
Ac	3	1	TrafficStream	A/2	Ac/3	4.57	32.18	✓	Straight	Straight Movement
Ax	1	1	TrafficStream	Cc/1	Ax/1	12.60	48.28	✓	Straight	Straight Movement
Ax	2	1	TrafficStream	Cc/2	Ax/2	12.60	48.28	✓	Straight	Straight Movement
B1	1	1	TrafficStream	B3/1	B1/1	7.46	48.28	✓	Straight	Straight Movement
Bc	1	1	TrafficStream	B/2	Bc/1	6.01	32.18	✓	Straight	Straight Movement
Bc	2	1	TrafficStream	Ac/3	Bc/2	6.01	32.18	✓	Offside	16.57
Bc	3	1	TrafficStream	B/3	Bc/3	6.01	32.18	✓	Straight	Straight Movement

Bx	1	1	TrafficStream	Dc/1	Bx/1	1.12	48.28	✓	Straight	Straight Movement
Bx	2	1	TrafficStream	Dc/2	Bx/2	1.12	48.28	✓	Straight	Straight Movement
Bx	3	1	TrafficStream	Dc/3	Bx/3	1.12	48.28	✓	Straight	Straight Movement
Bx2	1	1	TrafficStream	Bx/1	Bx2/1	1.96	64.37	✓	Straight	Straight Movement
Bx2	2	1	TrafficStream	Bx/2	Bx2/2	2.61	48.28	✓	Straight	Straight Movement
Bx2	3	1	TrafficStream	Bx/3	Bx2/3	2.61	48.28	✓	Straight	Straight Movement
Bx3	1	1	TrafficStream	Bx2/1	Bx3/1	2.24	48.28	✓	Straight	Straight Movement
Bx3	2	1	TrafficStream	Bx2/3	Bx3/2	2.24	48.28	✓	Straight	Straight Movement
Cc	1	1	TrafficStream	C/2	Cc/1	5.76	32.18	✓	Straight	Straight Movement
Cc	2	1	TrafficStream	C/2	Cc/2	5.76	32.18	✓	Straight	Straight Movement
Cc	3	1	TrafficStream	C/3	Cc/3	5.76	32.18	✓	Straight	Straight Movement
Cx	1	1	TrafficStream	B1/1	Cx/1	10.55	48.28	✓	Nearside	89.74
Cx	2	1	TrafficStream	Ac/1	Cx/2	10.55	48.28	✓	Straight	Straight Movement
Cx	3	1	TrafficStream	Ac/2	Cx/3	10.55	48.28	✓	Straight	Straight Movement
Cx2	1	1	TrafficStream	Cx/1	Cx2/1	5.80	64.37	✓	Straight	Straight Movement
Cx2	2	1	TrafficStream	Cx/2	Cx2/2	7.74	48.28	✓	Straight	Straight Movement
Cx2	3	1	TrafficStream	Cx/3	Cx2/3	7.74	48.28	✓	Straight	Straight Movement
Dc	1	1	TrafficStream	Cc/3	Dc/1	4.96	32.18	✓	Offside	22.25
Dc	2	1	TrafficStream	Cc/3	Dc/2	4.96	32.18	✓	Offside	22.25
Dc	3	1	TrafficStream	Cc/3	Dc/3	4.96	32.18	✓	Offside	22.25
Dx	1	1	TrafficStream	C/1	Dx/1	1.49	48.28	✓	Straight	Straight Movement
Dx	2	1	TrafficStream	Bc/2	Dx/2	2.40	30.00	✓	Straight	Straight Movement
Dx	3	1	TrafficStream	Bc/3	Dx/3	2.40	30.00	✓	Straight	Straight Movement
Dx2	1	1	TrafficStream	Dx/1	Dx2/1	8.43	48.28	✓	Straight	Straight Movement
Dx2	2	1	TrafficStream	Dx/2	Dx2/2	8.43	48.28	✓	Straight	Straight Movement
Dx2	3	1	TrafficStream	Dx/3	Dx2/3	8.43	48.28	✓	Straight	Straight Movement
Dx3	1	1	TrafficStream	Dx2/1	Dx3/1	2.24	48.28	✓	Straight	Straight Movement
Dx3	2	1	TrafficStream	Dx2/3	Dx3/2	2.24	48.28	✓	Straight	Straight Movement
Ac	1	2	TrafficStream	Dc/3	Ac/1	4.57	32.18	✓	Offside	22.92
Ac	2	2	TrafficStream	Dc/3	Ac/2	4.48	32.80	✓	Offside	22.92
Ac	3	2	TrafficStream	Dc/3	Ac/3	4.57	32.18	✓	Offside	22.92
Ax	1	2	TrafficStream	D/1	Ax/1	12.60	48.28	✓	Nearside	55.90
Bc	2	2	TrafficStream	B/2	Bc/2	6.01	32.18	✓	Straight	Straight Movement

Bx	1	2	TrafficStream	A/1	Bx/1	1.12	48.28	✓	Straight	Straight Movement
Bx3	1	2	TrafficStream	Bx2/2	Bx3/1	2.24	48.28	✓	Straight	Straight Movement
Cc	1	2	TrafficStream	Bc/3	Cc/1	5.76	32.18	✓	Offside	29.51
Cc	2	2	TrafficStream	Bc/3	Cc/2	5.76	32.18	✓	Offside	29.51
Dc	1	2	TrafficStream	D/1	Dc/1	4.96	32.18	✓	Straight	Straight Movement
Dc	2	2	TrafficStream	D/2	Dc/2	4.96	32.18	✓	Straight	Straight Movement
Dc	3	2	TrafficStream	D/3	Dc/3	4.96	32.18	✓	Straight	Straight Movement
Dx	1	2	TrafficStream	Bc/1	Dx/1	2.40	30.00	✓	Straight	Straight Movement
Dx3	2	2	TrafficStream	Dx2/2	Dx3/2	2.24	48.28	✓	Straight	Straight Movement

Quick Flares

Arm	Traffic Stream	Description	Saturation Flow (PCU/hr)	Use Que Prob	Effective Storage (Vehs)
A	2		1800		2.00
C	3		1800		2.00

Local OD Matrix - Local Matrix: 1 - AM

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	185	1032	29
	2	187	0	583	1091
	3	515	748	0	253
	4	76	706	250	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits
1 - AM	1		A2/2,A2/1	Ax2/1,Ax2/2
1 - AM	2		B3/2,B3/1	Bx3/1,Bx3/2
1 - AM	3		C2/3,C2/2,C2/1	Cx2/3,Cx2/2,Cx2/1
1 - AM	4	(untitled)	D3/1,D3/2	Dx3/2,Dx3/1

Paths

OD Matrix	Path	Description	From Location	To Location	Path Items
1 - AM	1		1	3	A2/2,A/2,Ac/2,Cx/3,Cx2/3
1 - AM	2		1	4	A2/2,A/2,Ac/3,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - AM	3		1	3	A2/1,A/1,Ac/1,Cx/2,Cx2/2
1 - AM	4		1	2	A2/1,A/1,Bx/1,Bx2/1,Bx3/1
1 - AM	5		2	1	B3/2,B/3,Bc/3,Cc/1,Ax/1,Ax2/1
1 - AM	6		2	1	B3/2,B/3,Bc/3,Cc/2,Ax/2,Ax2/2
1 - AM	7		2	4	B3/2,B/3,Bc/3,Dx/3,Dx2/3,Dx3/2
1 - AM	8		2	4	B3/1,B/2,Bc/1,Dx/1,Dx2/1,Dx3/1
1 - AM	9		2	4	B3/1,B/2,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - AM	10		2	3	B3/1,B1/1,Cx/1,Cx2/1
1 - AM	11		3	2	C2/3,C/3,Cc/3,Dc/1,Bx/1,Bx2/1,Bx3/1
1 - AM	12		3	2	C2/3,C/3,Cc/3,Dc/2,Bx/2,Bx2/2,Bx3/1
1 - AM	13		3	3	C2/3,C/3,Cc/3,Dc/3,Ac/1,Cx/2,Cx2/2
1 - AM	14		3	3	C2/3,C/3,Cc/3,Dc/3,Ac/2,Cx/3,Cx2/3
1 - AM	15		3	2	C2/3,C/3,Cc/3,Dc/3,Bx/3,Bx2/3,Bx3/2
1 - AM	16		3	1	C2/2,C/2,Cc/1,Ax/1,Ax2/1
1 - AM	17		3	1	C2/2,C/2,Cc/2,Ax/2,Ax2/2
1 - AM	18		3	4	C2/1,C/1,Dx/1,Dx2/1,Dx3/1
1 - AM	19		4	2	D3/1,D/1,Dc/1,Bx/1,Bx2/1,Bx3/1
1 - AM	20		4	1	D3/1,D/1,Ax/1,Ax2/1
1 - AM	21		4	2	D3/2,D/2,Dc/2,Bx/2,Bx2/2,Bx3/1
1 - AM	22		4	3	D3/2,D/3,Dc/3,Ac/1,Cx/2,Cx2/2
1 - AM	23		4	3	D3/2,D/3,Dc/3,Ac/2,Cx/3,Cx2/3
1 - AM	24		4	4	D3/2,D/3,Dc/3,Ac/3,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - AM	25		4	2	D3/2,D/3,Dc/3,Bx/3,Bx2/3,Bx3/2

Normal Path Flows

OD Matrix	Path	Permitted Flow Type	Allocation Type
1 - AM	1	✓	Normal
1 - AM	2	✓	Normal
1 - AM	3	✓	Normal
1 - AM	4	✓	Normal
1 - AM	5	✓	Normal
1 - AM	6	✓	Normal
1 - AM	7	✓	Normal
1 - AM	8	✓	Normal
1 - AM	9	✓	Normal
1 - AM	10	✓	Normal
1 - AM	11	✓	Normal
1 - AM	12	✓	Normal
1 - AM	13	✓	Normal
1 - AM	14	✓	Normal
1 - AM	15	✓	Normal
1 - AM	16	✓	Normal
1 - AM	17	✓	Normal
1 - AM	18	✓	Normal
1 - AM	19	✓	Normal
1 - AM	20	✓	Normal
1 - AM	21	✓	Normal
1 - AM	22	✓	Normal
1 - AM	23	✓	Normal
1 - AM	24	✓	Normal
1 - AM	25	✓	Normal

Signal Timings

Network Default: 72s cycle time; 72 steps

Controller Stream 1

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
1			1	NetworkDefault	72

Controller Stream 1 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
1	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
1	A	(untitled)	7	300	0	0	Not Specified
1	B	(untitled)	7	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
1	1	A	1
1	2	B	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
1	1	Gaining	B	1	2	0	6

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
1	1	(untitled)	Single	1,2	43,19

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
1	1	✓	1	A	24	43	19	1	7
1	2	✓	2	B	50	19	41	1	7

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
1	A	1	✓	24	43	19
1	B	1	✓	50	19	41

Intergreen Matrix for Controller Stream 1

		To	
		A	B
From	A		7
	B	5	

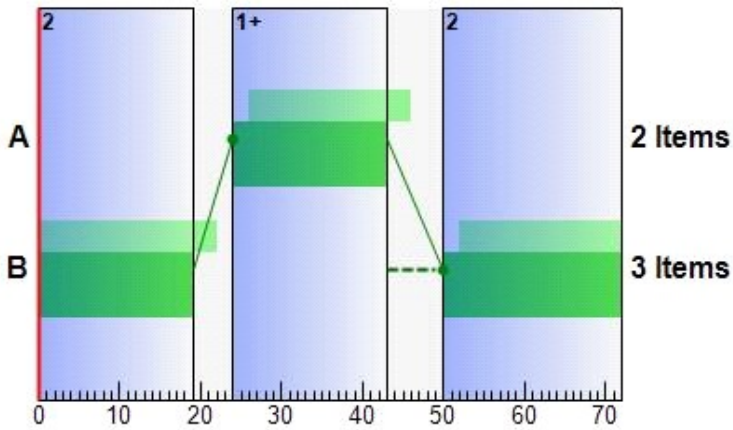
Interstage Matrix for Controller Stream 1

		To	
		1	2
From	1	0	7
	2	5	0

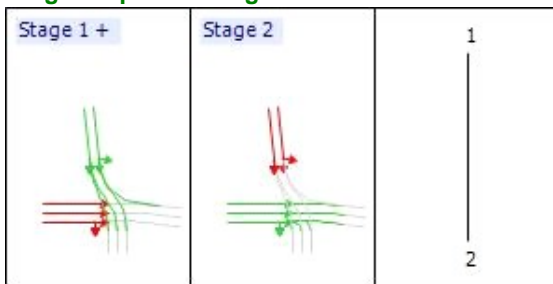
Banned Stage transitions for Controller Stream 1

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Controller Stream 2

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
2			1	NetworkDefault	72

Controller Stream 2 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
2	Unspecified						Absolute

Controller Stream 2 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
2	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
2	A	(untitled)	7	300	0	0	Not Specified
2	B	(untitled)	7	300	0	0	Not Specified
2	C	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
2	1	A	1
2	2	B,C	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay
2	1	Losing	B	2	1	2

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
2	1	(untitled)	Single	1,2	10,52

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
2	1	✓	1	A	59	10	23	1	7
2	2	✓	2	B,C	17	52	35	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
2	A	1	✓	59	10	23
2	B	1	✓	17	54	37
2	C	1	✓	15	52	37

Intergreen Matrix for Controller Stream 2

		To		
		A	B	C
From	A		7	5
	B	5		
	C	7		

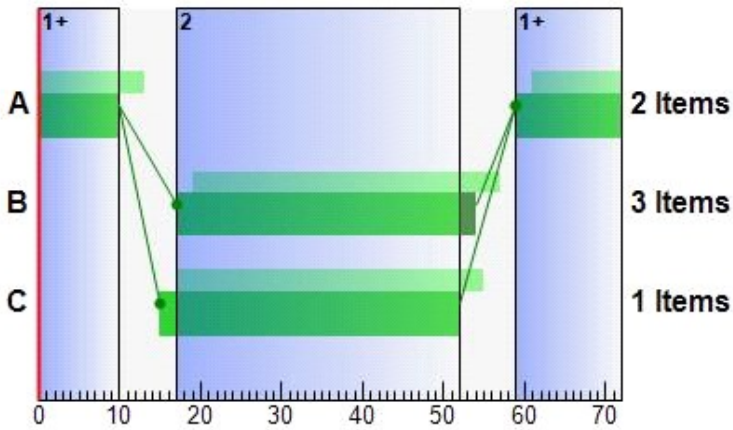
Interstage Matrix for Controller Stream 2

		To	
		1	2
From	1	0	7
	2	7	0

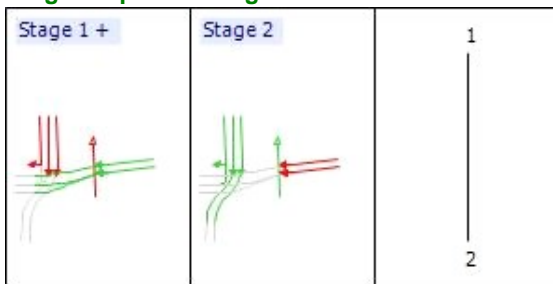
Banned Stage transitions for Controller Stream 2

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 2



Stage Sequence Diagram for Controller Stream 2



Controller Stream 3

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
3			1	NetworkDefault	72

Controller Stream 3 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
3	Unspecified						Absolute

Controller Stream 3 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
3	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
3	A	(untitled)	7	300	0	0	Not Specified
3	B	(untitled)	7	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
3	1	A	1
3	2	B	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
3	1	Gaining	A	2	1	0	3

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
3	1	(untitled)	Single	1,2	56,24

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
3	1	✓	1	A	29	56	27	1	7
3	2	✓	2	B	63	24	33	1	7

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
3	A	1	✓	29	56	27
3	B	1	✓	63	24	33

Intergreen Matrix for Controller Stream 3

		To	
		A	B
From	A		7
	B	5	

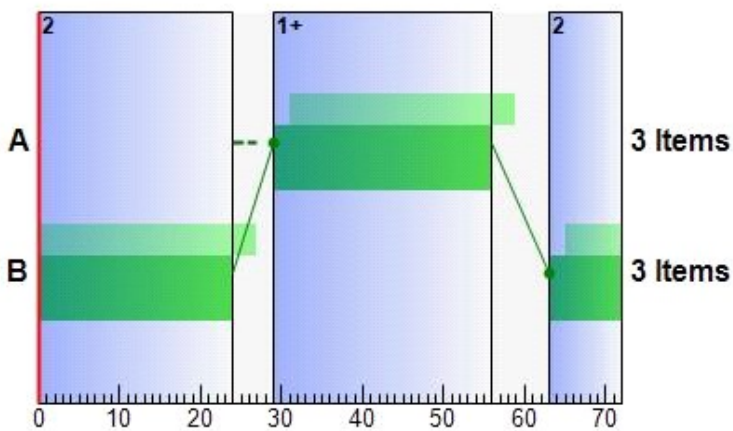
Interstage Matrix for Controller Stream 3

		To	
		1	2
From	1	0	7
	2	5	0

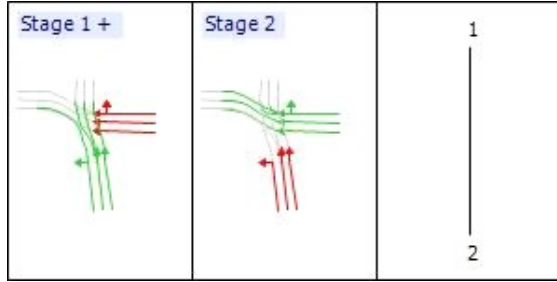
Banned Stage transitions for Controller Stream 3

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 3



Stage Sequence Diagram for Controller Stream 3



Controller Stream 4

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
4			1	NetworkDefault	72

Controller Stream 4 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
4	Unspecified						Absolute

Controller Stream 4 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
4	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
4	A	(untitled)	7	300	0	0	Not Specified
4	B	(untitled)	7	300	0	0	Not Specified
4	C	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
4	1	A	1
4	2	B,C	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay
4	1	Losing	B	2	1	5

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
4	1	(untitled)	Single	1,2	18,57

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
4	1	✓	1	A	67	18	23	1	7
4	2	✓	2	B,C	25	57	32	1	3

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
4	A	1	✓	67	18	23
4	B	1	✓	25	62	37
4	C	1	✓	23	57	34

Intergreen Matrix for Controller Stream 4

		To		
		A	B	C
From	A		7	5
	B	5		
	C	10		

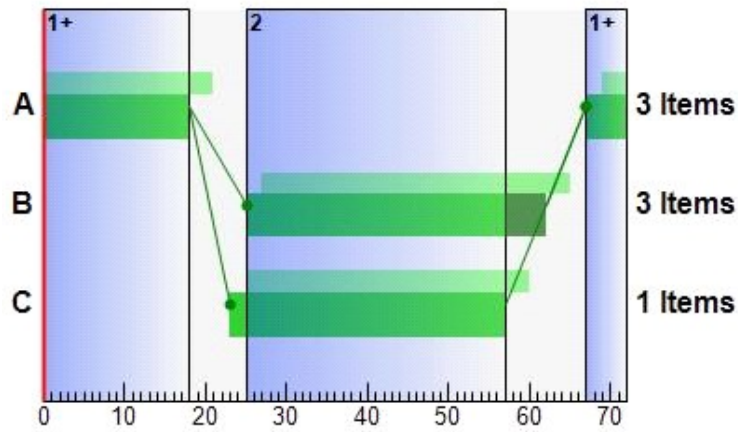
Interstage Matrix for Controller Stream 4

		To	
		1	2
From	1	0	7
	2	10	0

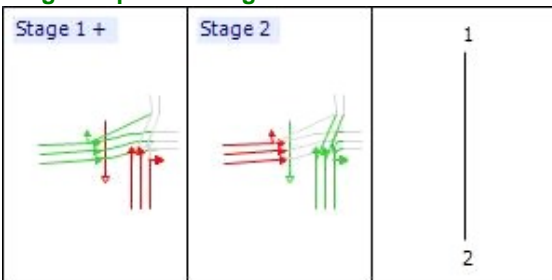
Banned Stage transitions for Controller Stream 4

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 4



Stage Sequence Diagram for Controller Stream 4



Controller Stream 5

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
5	(untitled)		1	NetworkDefault	72

Controller Stream 5 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
5	Unspecified						Absolute

Controller Stream 5 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
5	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
5	A	(untitled)	7	300	0	0	Not Specified
5	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
5	1	A	1
5	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
5	1	(untitled)	Single	1,2	0,10

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
5	1	✓	1	A	18	0	54	1	7
5	2	✓	2	B	5	10	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
5	A	1	✓	18	0	54
5	B	1	✓	5	10	5

Intergreen Matrix for Controller Stream 5

		To	
		A	B
From	A		5
	B	8	

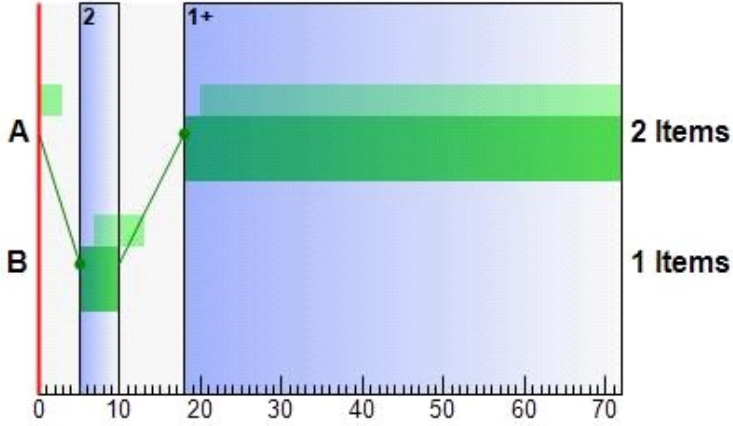
Interstage Matrix for Controller Stream 5

		To	
		1	2
From	1	0	5
	2	8	0

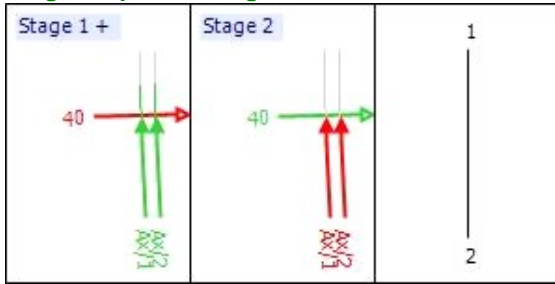
Banned Stage transitions for Controller Stream 5

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 5



Stage Sequence Diagram for Controller Stream 5



Controller Stream 6

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
6	(untitled)		1	NetworkDefault	72

Controller Stream 6 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
6	Unspecified						Absolute

Controller Stream 6 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
6	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
6	A	(untitled)	7	300	0	0	Not Specified
6	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
6	1	A	1
6	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
6	1	(untitled)	Single	1,2	36,46

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
6	1	✓	1	A	54	36	54	1	7
6	2	✓	2	B	41	46	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
6	A	1	✓	54	36	54
6	B	1	✓	41	46	5

Intergreen Matrix for Controller Stream 6

		To	
		A	B
From	A		5
	B	8	

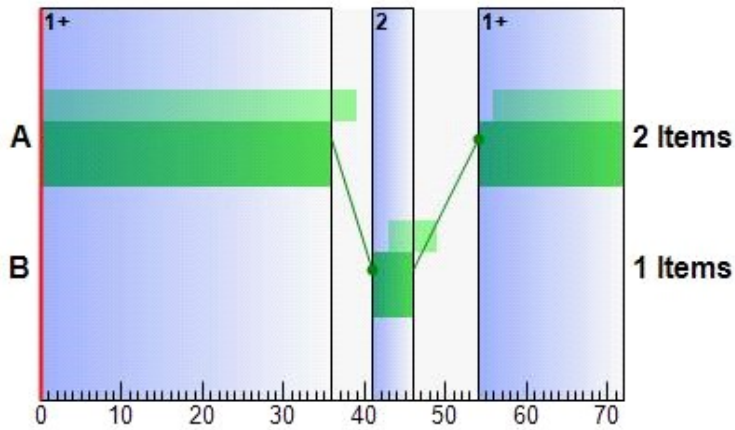
Interstage Matrix for Controller Stream 6

		To	
		1	2
From	1	0	5
	2	8	0

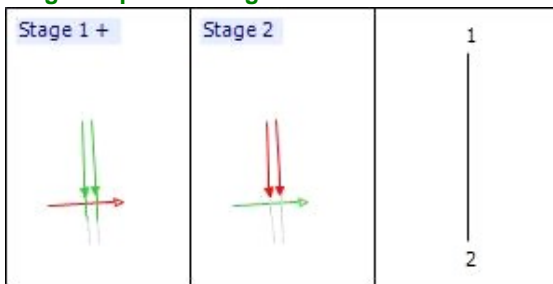
Banned Stage transitions for Controller Stream 6

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 6



Stage Sequence Diagram for Controller Stream 6



Controller Stream 7

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
7	(untitled)		1	NetworkDefault	72

Controller Stream 7 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
7	Unspecified						Absolute

Controller Stream 7 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
7	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
7	A	(untitled)	7	300	0	0	Not Specified
7	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
7	1	A	1
7	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
7	1	(untitled)	Single	1,2	70,8

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
7	1	✓	1	A	18	70	52	1	7
7	2	✓	2	B	3	8	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
7	A	1	✓	18	70	52
7	B	1	✓	3	8	5

Intergreen Matrix for Controller Stream 7

		To	
		A	B
From	A		5
	B	10	

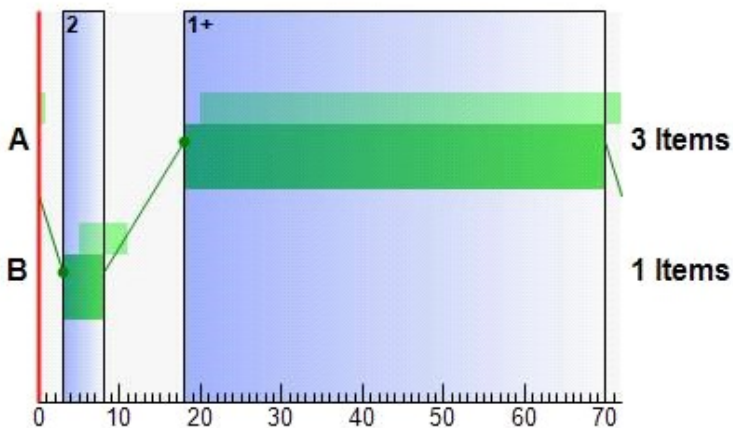
Interstage Matrix for Controller Stream 7

		To	
		1	2
From	1	0	5
	2	10	0

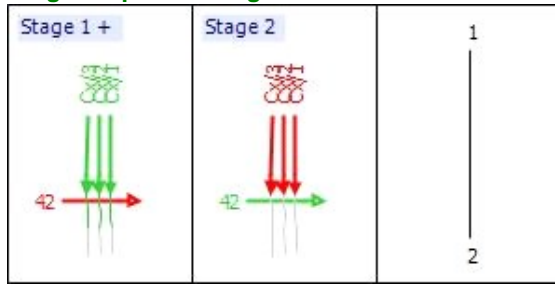
Banned Stage transitions for Controller Stream 7

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 7



Stage Sequence Diagram for Controller Stream 7



Controller Stream 8

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
8	(untitled)		1	NetworkDefault	72

Controller Stream 8 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
8	Unspecified						Absolute

Controller Stream 8 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
8	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
8	A	(untitled)	7	300	0	0	Not Specified
8	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
8	1	A	1
8	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
8	1	(untitled)	Single	1,2	30,40

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
8	1	✓	1	A	50	30	52	1	7
8	2	✓	2	B	35	40	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
8	A	1	✓	50	30	52
8	B	1	✓	35	40	5

Intergreen Matrix for Controller Stream 8

		To	
		A	B
From	A		5
	B	10	

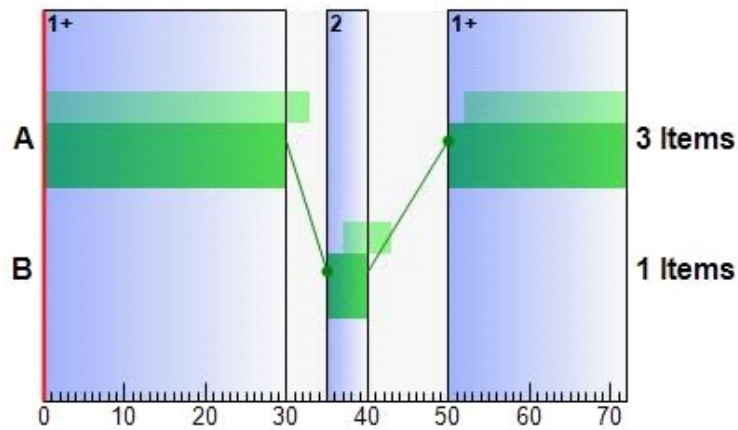
Interstage Matrix for Controller Stream 8

		To	
		1	2
From	1	0	5
	2	10	0

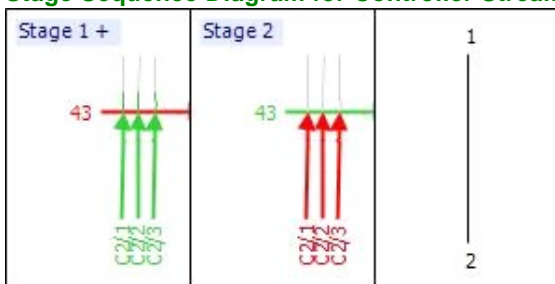
Banned Stage transitions for Controller Stream 8

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 8



Stage Sequence Diagram for Controller Stream 8



Controller Stream 9

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
9	(untitled)		1	NetworkDefault	72

Controller Stream 9 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
9	Unspecified						Absolute

Controller Stream 9 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
9	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
9	A	(untitled)	7	300	0	0	Not Specified
9	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
9	1	A	1
9	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
9	1	(untitled)	Single	1,2	20,30

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
9	1	✓	1	A	40	20	52	1	7
9	2	✓	2	B	25	30	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
9	A	1	✓	40	20	52
9	B	1	✓	25	30	5

Intergreen Matrix for Controller Stream 9

		To	
		A	B
From	A		5
	B	10	

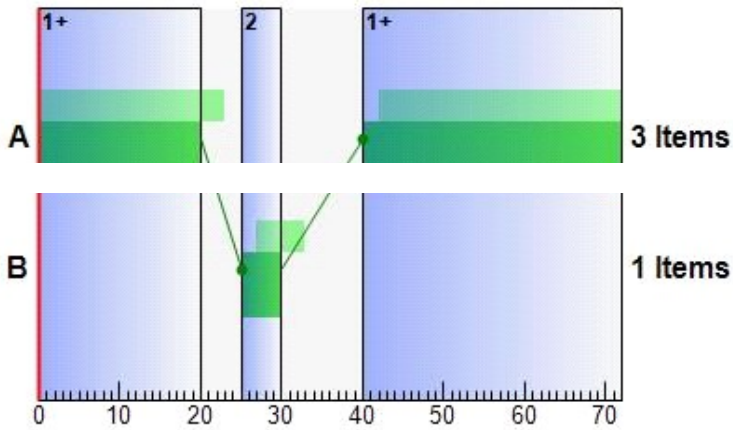
Interstage Matrix for Controller Stream 9

		To	
		1	2
From	1	0	5
	2	10	0

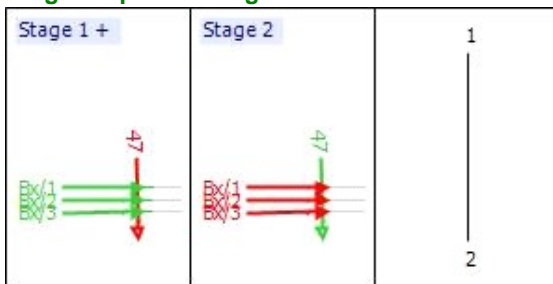
Banned Stage transitions for Controller Stream 9

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 9



Stage Sequence Diagram for Controller Stream 9



Controller Stream 10

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
10	(untitled)		1	NetworkDefault	72

Controller Stream 10 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
10	Unspecified						Absolute

Controller Stream 10 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
10	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
10	A	(untitled)	7	300	0	0	Not Specified
10	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
10	1	A	1
10	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
10	1	(untitled)	Single	1,2	44,54

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
10	1	✓	1	A	64	44	52	1	7
10	2	✓	2	B	49	54	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
10	A	1	✓	64	44	52
10	B	1	✓	49	54	5

Intergreen Matrix for Controller Stream 10

		To	
		A	B
From	A		5
	B	10	

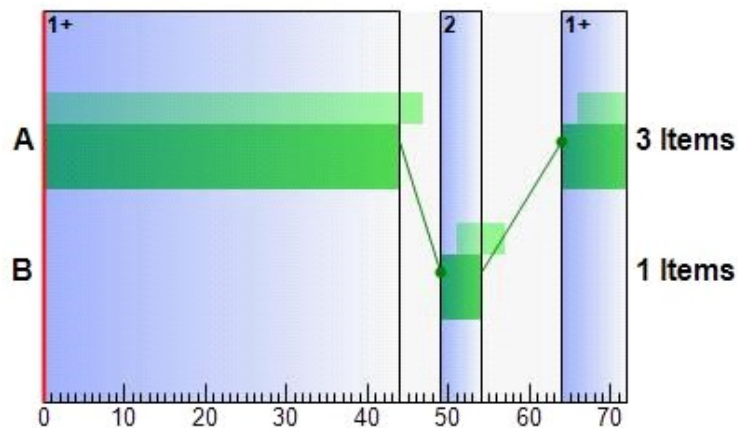
Interstage Matrix for Controller Stream 10

		To	
		1	2
From	1	0	5
	2	10	0

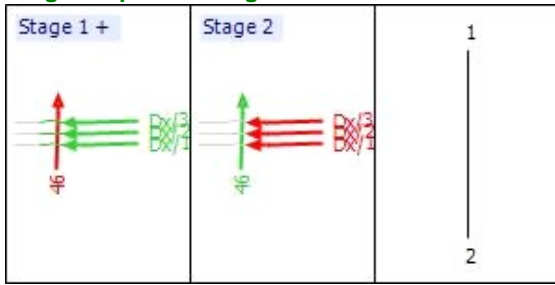
Banned Stage transitions for Controller Stream 10

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 10



Stage Sequence Diagram for Controller Stream 10



Controller Stream 11

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
11			1	NetworkDefault	72

Controller Stream 11 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
11	Unspecified						Absolute

Controller Stream 11 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
11	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
11	A	(untitled)	7	300	0	0	Not Specified
11	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
11	1	A	1
11	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
11	1	(untitled)	Single	1,2	67,5

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
11	1	✓	1	A	10	67	57	1	7
11	2	✓	2	B	0	5	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
11	A	1	✓	10	67	57
11	B	1	✓	0	5	5

Intergreen Matrix for Controller Stream 11

		To	
		A	B
From	A		5
	B	5	

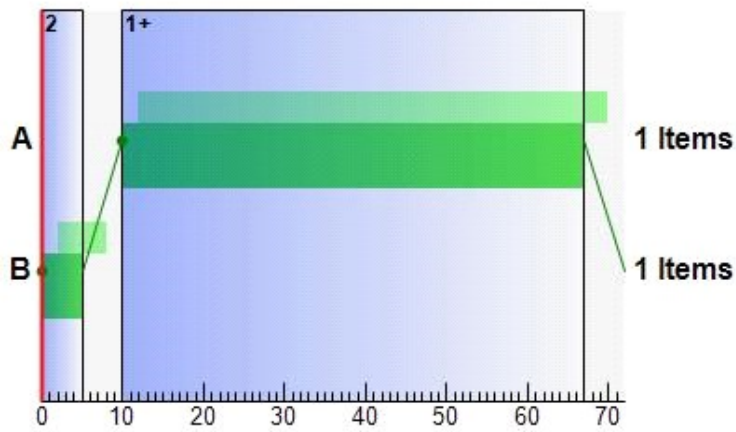
Interstage Matrix for Controller Stream 11

		To	
		1	2
From	1	0	5
	2	5	0

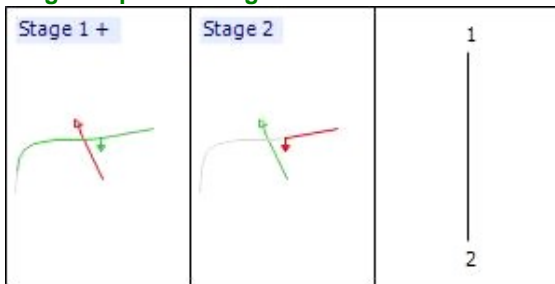
Banned Stage transitions for Controller Stream 11

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 11



Stage Sequence Diagram for Controller Stream 11



Final Prediction Table

Link Results

Link	Name	Traffic Node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES		WEIG
			Controller Stream	Phase	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Wasted Time Total (s per cycle)	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Journey Time Per PCU (s)	Mean Delay Per PCU (s)	Mean Stops Per PCU (%)	Mean Max Queue (PCU)	Max End Of Red Queue (PCU)	Delay Weighting (%)
40 P	A452 N - NB	5	5	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100
41 P	A452 N - SB	6	6	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100
42 P	A452 S - SB	7	7	B	0	0	0	0.00	0	0	31.97	30.71	0.00	1.83	1.83	100
43 P	A452 S - NB	8	8	B	0	0	0	0.00	0	0	31.88	30.71	0.00	1.83	1.83	100
45 P	A38 W - WB	2	2	C	0	0	0	0.00	0	0	9.34	8.26	0.00	0.94	0.94	100
46 P	A38 E - WB	10	10	B	0	0	0	0.00	0	0	31.88	30.71	0.00	1.83	1.83	100
47 P	A38 W - EB	9	9	B	0	0	0	0.00	0	0	31.79	30.71	0.00	1.83	1.83	100
49 P	A38 E - EB	4	4	C	0	0	0	0.00	0	0	10.93	9.76	0.00	1.03	1.03	100
50 P	A38 W - WB	2	11	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100

Traffic Stream Results

Arm	Traffic Stream	Name	Traffic Node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	
				Controller Stream	Phase	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Wasted Time Total (s per cycle)	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Journey Time Per PCU (s)	Mean Delay Per PCU (s)	Mean Stops Per PCU (%)	Mean Max Queue (PCU)	Max End Of Red Queue (PCU)
A	1		1	1	A	601 <	1905	19	4.00	114!	-21	268.08	255.18	282.46	49.64 +	46.8
A	2		1	1	A	645	2440 f	19	6.00	95!	-5	70.30	57.40	137.00	18.99	15.7
B	2	(untitled)	2	2	A	640	2070	23	0.00	93!	-3	57.77	50.31	125.95	17.09	13.3
B	3	(untitled)	2	2	A	640	2070	23	0.00	93!	-3	57.77	50.31	125.95	17.09	13.3
C	1		3	3	A	253	1762	27	12.00	37	144	37.33	25.85	91.80	4.80	4.17
C	2		3	3	A	516	1937	27	8.00	69	31	44.70	33.22	105.43	11.01	9.02
C	3		3	3	A	747	2209 f	27	10.00	87	4	53.11	41.63	116.98	17.64	14.7
D	1		4	4	A	323	1804	23	0.00	54	68	32.64	22.95	81.82	5.51	4.62
D	2		4	4	A	354	1979	23	0.00	54	68	32.33	22.64	81.39	6.01	5.03
D	3		4	4	A	354	1979	23	0.00	54	68	32.33	22.64	81.39	6.01	5.03
A2	1	(untitled)	6	6	A	601	1940	54	55.00	41	122	30.06	3.74	30.37	4.14	2.98
A2	2	(untitled)	6	6	A	645	2080	54	0.00	41	122	30.01	3.69	30.30	4.44	3.18
Ac	1		2	2	B	491	2015	37	4.00	46	95	8.05	3.48	23.88	2.47	2.25

Ac	2		2	2	B	741 <	2155	37	4.00	65	38	9.66	5.11	60.33	12.06 +	2.66
Ac	3		2	2	B	29	2033	37	19.00	3	3230	4.63	0.07	0.12	0.00	0.00
Ax	1		5	5	A	428	2105	54	5.00	27	238	14.10	1.50	13.56	1.35	1.24
Ax	2		5	5	A	352	2055	54	16.00	22	301	13.21	0.61	2.46	0.18	0.18
Ax2	1	(untitled)				428	1800	72	0.00	24	279	27.16	0.31	0.00	0.04	
Ax2	2	(untitled)				352	1800	72	11.00	20	360	27.09	0.24	0.00	0.02	
B1	1		2	11	A	583	1754	57	0.00	41	118	10.39	2.93	25.04	3.38	2.41
B3	1	(untitled)	14			1223	1800	72	0.00	68	32	5.71	2.11	0.00	0.72	
B3	2	(untitled)	14			640	1800	72	0.00	36	153	2.79	0.55	0.00	0.10	
Bc	1		3	3	B	320	1973	33	6.00	34	162	7.04	1.03	1.46	0.09	0.09
Bc	2		3	3	B	349	2113	33	5.00	35	157	8.60	2.59	9.67	0.68	0.68
Bc	3		3	3	B	640 <	1993	33	4.00	68	32	10.22	4.21	14.04	9.61 +	0.72
Bx	1		9	9	A	659 <	2055	52	5.00	44	107	3.94	2.83	22.47	3.40 +	2.58
Bx	2		9	9	A	603	2055	52	10.00	40	126	1.97	0.85	1.88	1.92	0.16
Bx	3		9	9	A	353	2055	52	11.00	23	286	1.50	0.39	0.63	0.04	0.04
Bx2	1	(untitled)	13			659	1800	72	48.00	37	146	2.59	0.63	3.81	2.25	
Bx2	2	(untitled)	13			603	1800	72	56.00	34	169	3.18	0.57	4.40	3.13	
Bx2	3	(untitled)	13			353	1800	72	30.00	20	359	2.87	0.26	1.27	1.60	
Bx3	1	(untitled)				1262 <	1800	72	17.00	70	28	7.15	4.92	59.20	11.17 +	
Bx3	2	(untitled)				353	1800	72	29.00	20	359	2.48	0.24	0.00	0.02	
C2	1	(untitled)	8	8	A	253	1940	52	0.00	18	408	8.50	3.16	26.55	1.49	1.35
C2	2	(untitled)	8	8	A	516	2080	52	0.00	34	167	9.28	3.94	31.39	3.67	2.81
C2	3	(untitled)	8	8	A	747	2080	52	0.00	49	84	10.37	5.03	37.36	6.25	4.17
Cc	1		4	4	B	352	1847	37	9.00	36	149	10.91	5.15	27.77	1.97	1.94
Cc	2		4	4	B	352	1987	37	9.00	34	168	10.70	4.94	27.52	1.96	1.93
Cc	3		4	4	B	747 <	1875	37	8.00	75	19	13.81	8.05	75.39	15.56 +	1.22
Cx	1		7	7	A	583	2015	52	0.00	39	129	13.11	2.56	14.42	2.37	1.41
Cx	2		7	7	A	491	2105	52	9.00	32	184	11.13	0.58	1.02	0.10	0.10
Cx	3		7	7	A	741	2105	52	8.00	48	88	11.67	1.12	2.40	4.38	0.25
Cx2	1	(untitled)				583	1800	72	15.00	32	178	6.28	0.48	0.00	0.08	
Cx2	2	(untitled)				491	1800	72	25.00	27	230	8.11	0.38	0.00	0.05	
Cx2	3	(untitled)				741	1800	72	25.00	41	119	8.94	1.20	20.99	8.92	
D3	1	(untitled)	15			323	1800	72	0.00	18	402	2.46	0.22	0.00	0.02	
D3	2	(untitled)	15			708	1800	72	0.00	39	129	2.88	0.65	0.00	0.13	
Dc	1		1	1	B	496	2015	41	0.00	42	113	8.53	3.57	28.31	3.15	2.28
Dc	2		1	1	B	603	2155	41	0.00	48	88	8.61	3.65	24.72	3.35	2.48
Dc	3		1	1	B	603	2033	41	0.00	51	77	8.90	3.94	25.51	3.39	2.52
Dx	1		10	10	A	573	2105	52	8.00	37	143	2.80	0.80	1.69	0.19	0.19
Dx	2		10	10	A	349	2105	52	23.00	23	300	2.74	0.34	0.00	0.03	0.03
Dx	3		10	10	A	452	2105	52	23.00	29	209	2.88	0.48	0.00	0.06	0.06
Dx2	1	(untitled)	16			573	1800	72	16.00	32	183	8.89	0.47	0.00	0.07	
Dx2	2	(untitled)	16			349	1800	72	55.00	19	364	8.67	0.24	0.00	0.02	
Dx2	3	(untitled)	16			452	1800	72	56.00	25	258	8.76	0.34	0.00	0.04	
Dx3	1	(untitled)				573	1800	72	15.00	32	183	2.70	0.47	0.00	0.07	
Dx3	2	(untitled)				801 <	1800	72	34.00	44	102	5.33	3.09	51.64	14.26 +	

Network Results

	Distance Travelled (PCU-km/hr)	Time Spent (PCU-hr/hr)	Mean Journey Speed (kph)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Excess Queue Penalty (£ per hr)	Performance Index (£ per hr)
TOTAL	2887.55	172.23	16.77	41.28	68.01	290.97	179.85	360.75	831.57
BUSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PEDESTRIANS									
OTHER (NORMAL)	2887.55	172.23	16.77	41.28	68.01	290.97	179.85	360.75	831.57

- 1 *B = at least one source for this link carries buses*
- 1 *T = at least one source for this link carries trams*
- 1 *P = this link is a pedestrian link*
- 1 *< = adjusted flow warning (upstream links are over-saturated)*
- 1 *! = DoS threshold exceeded*
- 1 *f = average saturation flow for flared link*
- 1 ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- 1 *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- 1 *+ = average link excess queue is greater than 0*
- 1 **P.I. = PERFORMANCE INDEX**

Link Results

Link Results: Flows And Signals

Time Segment	Link	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Calculated Sat Flow	Calculated Capacity	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity	Mean Modulus Of Error	Actual Green (s (per cycle))	Effectiv Green (per cycle)
07:30-08:30	40	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	41	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	42	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	43	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	45	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	37	38
07:30-08:30	46	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	47	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	49	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	34	35
07:30-08:30	50	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6

Link Results: Stops And Delays

Time Segment	Link	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	40	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	41	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	42	1.26	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	43	1.17	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	45	1.08	8.26	0.23	0.00	3.26	3.26	0.00	0.00	0.00	0.00	0.00
07:30-08:30	46	1.17	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	47	1.08	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	49	1.17	9.76	0.27	0.00	3.85	3.85	0.00	0.00	0.00	0.00	0.00
07:30-08:30	50	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00

Link Results: Queues And Blocking

Time Segment	Link	Initial Queue (PCU)	Mean Max Queue (PCU)	Max Queue Storage (PCU)	Utilised Storage (%)	Average Link Excess Queue (PCU)	Average Limit Excess Queue (PCU)	Excess Queue Penalty (£ per hr)	Max End Of Green Queue (PCU)	Max End Of Red Queue (PCU)	Wasted Time Starvation (s (per cycle))	Wasted Time Blocking Back (s (per cycle))	Wasted Time Total (s (per cycle))	Estimated Blocking
07:30-08:30	40	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	41	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	42	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	43	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	45	0.00	0.94	10.00	9.44	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	
07:30-08:30	46	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	47	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	49	0.00	1.03	10.00	10.28	0.00	0.00	0.00	0.00	1.03	0.00	0.00	0.00	
07:30-08:30	50	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	

Link Results: Advanced

Time Segment	Link	Degree Of Saturation Penalty (£ per hr)	Phase Min Max Penalty (£ per hr)	Intergreen Broken Penalty (£ per hr)	Stage Constraint Broken Penalty (£ per hr)	Ped Gap Accepting Penalty (£ per hr)	Warmed Up	Warmed Up Error	Mean Max Queue EoTS (PCU)	Max End Of Green Queue Eo TS (PCU)	Max End Of Red Queue Eo TS (PCU)	Cost Of Penalties (£ per hr)	Unweighted Performance Index (£ per hr)	Performance Index (£ per hr)
07:30-08:30	40	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	41	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	42	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	43	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	45	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.94	0.00	0.94	0.00	0.00	0.00
07:30-08:30	46	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	47	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	49	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.03	0.00	1.03	0.00	0.00	0.00
07:30-08:30	50	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle Summary

Time Segment	Arm	Traffic Stream	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Mean Delay Per PCU (s)	Mean Max Queue (PCU)	Utilised Storage (%)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Performance Index (£ per hr)
07:30-08:30	A	1	114!	-21	601	1905	19	255.18	49.64	165.00	24.20	0.00	24.20
07:30-08:30	A	2	95!	-5	645	2440	19	57.40	18.99	63.13	5.84	0.00	5.84
07:30-08:30	B	2	93!	-3	640	2070	23	50.31	17.09	98.29	5.08	0.00	5.08
07:30-08:30	B	3	93!	-3	640	2070	23	50.31	17.09	98.29	5.08	0.00	5.08
07:30-08:30	C	1	37	144	253	1762	27	25.85	4.80	17.94	1.03	0.00	1.03
07:30-08:30	C	2	69	31	516	1937	27	33.22	11.01	41.10	2.70	0.00	2.70
07:30-08:30	C	3	87	4	747	2209	27	41.63	17.64	65.88	4.91	0.00	4.91
07:30-08:30	D	1	54	68	323	1804	23	22.95	5.51	24.39	1.17	0.00	1.17
07:30-08:30	D	2	54	68	354	1979	23	22.64	6.01	26.59	1.26	0.00	1.26
07:30-08:30	D	3	54	68	354	1979	23	22.64	6.01	26.59	1.26	0.00	1.26
07:30-08:30	A2	1	41	122	601	1940	54	3.74	4.14	6.75	8.86	5.93	14.79
07:30-08:30	A2	2	41	122	645	2080	54	3.69	4.44	7.23	9.38	6.35	15.72
07:30-08:30	Ac	1	46	95	491	2015	37	3.48	2.47	34.84	6.75	2.14	18.64

07:30-08:30	Ac	2	65	38	741	2155	37	5.11	12.06	169.81	14.93	25.63	127.87
07:30-08:30	Ac	3	3	3230	29	2033	37	0.07	0.00	0.01	0.01	0.00	0.01
07:30-08:30	Ax	1	27	238	428	2105	54	1.50	1.35	4.58	2.53	1.89	4.42
07:30-08:30	Ax	2	22	301	352	2055	54	0.61	0.18	0.60	0.85	0.28	1.13
07:30-08:30	Ax2	1	24	279	428	1800	72	0.31	0.04	0.06	0.53	0.00	0.53
07:30-08:30	Ax2	2	20	360	352	1800	72	0.24	0.02	0.04	0.34	0.00	0.34
07:30-08:30	B1	1	41	118	583	1754	57	2.93	3.38	19.46	6.74	4.74	11.48
07:30-08:30	B3	1	68	32	1223	1800	72	2.11	0.72	13.73	10.18	0.00	10.18
07:30-08:30	B3	2	36	153	640	1800	72	0.55	0.10	1.88	1.39	0.00	1.39
07:30-08:30	Bc	1	34	162	320	1973	33	1.03	0.09	1.00	1.30	0.34	1.64
07:30-08:30	Bc	2	35	157	349	2113	33	2.59	0.68	7.24	3.56	0.75	4.31
07:30-08:30	Bc	3	68	32	640	1993	33	4.21	9.61	102.78	10.62	6.48	65.15
07:30-08:30	Bx	1	44	107	659	2055	52	2.83	3.40	130.20	7.35	4.81	12.15
07:30-08:30	Bx	2	40	126	603	2055	52	0.85	1.92	73.50	2.02	0.37	2.38
07:30-08:30	Bx	3	23	286	353	2055	52	0.39	0.04	1.71	0.54	0.07	0.61
07:30-08:30	Bx2	1	37	146	659	1800	72	0.63	2.25	36.94	1.64	1.45	3.09
07:30-08:30	Bx2	2	34	169	603	1800	72	0.57	3.13	51.39	1.35	0.86	2.22
07:30-08:30	Bx2	3	20	359	353	1800	72	0.26	1.60	26.24	0.37	0.15	0.51
07:30-08:30	Bx3	1	70	28	1262	1800	72	4.92	11.17	214.02	24.48	24.26	48.74
07:30-08:30	Bx3	2	20	359	353	1800	72	0.24	0.02	0.46	0.34	0.00	0.34
07:30-08:30	C2	1	18	408	253	1940	52	3.16	1.49	12.00	3.15	2.18	5.34
07:30-08:30	C2	2	34	167	516	2080	52	3.94	3.67	29.45	8.01	5.26	13.27
07:30-08:30	C2	3	49	84	747	2080	52	5.03	6.25	50.17	14.83	9.06	23.89
07:30-08:30	Cc	1	36	149	352	1847	37	5.15	1.97	22.05	7.14	1.64	8.78
07:30-08:30	Cc	2	34	168	352	1987	37	4.94	1.96	21.85	6.85	1.59	8.44
07:30-08:30	Cc	3	75	19	747	1875	37	8.05	15.56	173.79	23.71	40.62	238.81
07:30-08:30	Cx	1	39	129	583	2015	52	2.56	2.37	9.64	5.88	2.73	8.61
07:30-08:30	Cx	2	32	184	491	2105	52	0.58	0.10	0.41	1.13	0.16	1.29
07:30-08:30	Cx	3	48	88	741	2105	52	1.12	4.38	17.78	3.26	0.58	3.84
07:30-08:30	Cx2	1	32	178	583	1800	72	0.48	0.08	0.43	1.10	0.00	1.10

07:30-08:30	Cx2	2	27	230	491	1800	72	0.38	0.05	0.28	0.73	0.00	0.73
07:30-08:30	Cx2	3	41	119	741	1800	72	1.20	8.92	49.43	3.52	5.05	8.57
07:30-08:30	D3	1	18	402	323	1800	72	0.22	0.02	0.38	0.28	0.00	0.28
07:30-08:30	D3	2	39	129	708	1800	72	0.65	0.13	2.44	1.81	0.00	1.81
07:30-08:30	Dc	1	42	113	496	2015	41	3.57	3.15	40.87	6.99	3.12	22.16
07:30-08:30	Dc	2	48	88	603	2155	41	3.65	3.35	43.43	8.67	3.77	26.75
07:30-08:30	Dc	3	51	77	603	2033	41	3.94	3.39	43.97	9.36	3.91	28.08
07:30-08:30	Dx	1	37	143	573	2105	52	0.80	0.19	5.59	1.81	0.25	2.07
07:30-08:30	Dx	2	23	300	349	2105	52	0.34	0.03	0.94	0.46	0.00	0.46
07:30-08:30	Dx	3	29	209	452	2105	52	0.48	0.06	1.73	0.85	0.00	0.85
07:30-08:30	Dx2	1	32	183	573	1800	72	0.47	0.07	0.38	1.05	0.00	1.05
07:30-08:30	Dx2	2	19	364	349	1800	72	0.24	0.02	0.12	0.33	0.00	0.33
07:30-08:30	Dx2	3	25	258	452	1800	72	0.34	0.04	0.21	0.60	0.00	0.60
07:30-08:30	Dx3	1	32	183	573	1800	72	0.47	0.07	1.42	1.05	0.00	1.05
07:30-08:30	Dx3	2	44	102	801	1800	72	3.09	14.26	273.30	9.77	13.43	23.21

Traffic Stream Results: Flows And Signals

Time Segment	Arm	Traffic Stream	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Calculated Sat Flow (PCU/hr)	Calculated Capacity (PCU/hr)	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity (%)	Mean Modulus Of Error	Actual Green (s per cycle)	Effective Green (s per cycle)
07:30-08:30	A	1	601	529	0		1905	529	114!	✓	-21	0.38	19	20
07:30-08:30	A	2	645	645	0		2440	678	95!	✓	-5	0.38	19	20
07:30-08:30	B	2	640	640	-1		2070	690	93!	✓	-3	0.00	23	24
07:30-08:30	B	3	640	640	-1		2070	690	93!	✓	-3	0.00	23	24
07:30-08:30	C	1	253	253	0		1762	685	37		144	0.44	27	28
07:30-08:30	C	2	516	516	-1		1937	753	69		31	0.44	27	28
07:30-08:30	C	3	747	747	1		2209	859	87		4	0.45	27	28
07:30-08:30	D	1	323	323	0		1804	601	54		68	0.00	23	24
07:30-08:30	D	2	354	354	0		1979	660	54		68	0.00	23	24
07:30-08:30	D	3	354	354	0		1979	660	54		68	0.00	23	24
07:30-08:30	A2	1	601	601	0		1940	1482	41		122	0.00	54	55
07:30-08:30	A2	2	645	645	0		2080	1589	41		122	0.00	54	55

07:30-08:30	Ac	1	491	491	50	✓	2015	1063	46		95	0.92	37	38
07:30-08:30	Ac	2	741	741	0		2155	1137	65		38	1.05	37	38
07:30-08:30	Ac	3	29	29	0		2033	1073	3		3230	1.38	37	38
07:30-08:30	Ax	1	428	428	-1		2105	1608	27		238	0.64	54	55
07:30-08:30	Ax	2	352	352	-1		2055	1570	22		301	0.95	54	55
07:30-08:30	Ax2	1	428	428	-1		1800	1800	24		279	0.44	72	72
07:30-08:30	Ax2	2	352	352	-1		1800	1800	20		360	0.67	72	72
07:30-08:30	B1	1	583	583	0		1754	1413	41		118	0.00	57	58
07:30-08:30	B3	1	1223	1223	-1		1800	1800	68		32	0.00	72	72
07:30-08:30	B3	2	640	640	-1		1800	1800	36		153	0.00	72	72
07:30-08:30	Bc	1	320	320	-1		1973	932	34		162	1.26	33	34
07:30-08:30	Bc	2	349	349	-1		2113	998	35		157	1.09	33	34
07:30-08:30	Bc	3	640	640	-1		1993	941	68		32	1.26	33	34
07:30-08:30	Bx	1	659	659	23	✓	2055	1513	44		107	0.55	52	53
07:30-08:30	Bx	2	603	603	1		2055	1513	40		126	0.96	52	53
07:30-08:30	Bx	3	353	353	1		2055	1513	23		286	1.03	52	53
07:30-08:30	Bx2	1	659	659	23	✓	1800	1800	37		146	0.81	72	72
07:30-08:30	Bx2	2	603	603	1		1800	1800	34		169	0.93	72	72
07:30-08:30	Bx2	3	353	353	1		1800	1800	20		359	1.00	72	72
07:30-08:30	Bx3	1	1262	1262	23	✓	1800	1800	70		28	0.73	72	72
07:30-08:30	Bx3	2	353	353	1		1800	1800	20		359	0.98	72	72
07:30-08:30	C2	1	253	253	0		1940	1428	18		408	0.00	52	53
07:30-08:30	C2	2	516	516	-1		2080	1531	34		167	0.00	52	53
07:30-08:30	C2	3	747	747	1		2080	1531	49		84	0.00	52	53
07:30-08:30	Cc	1	352	352	-1		1847	975	36		149	0.83	37	38
07:30-08:30	Cc	2	352	352	-1		1987	1049	34		168	0.83	37	38
07:30-08:30	Cc	3	747	747	1		1875	990	75		19	1.24	37	38
07:30-08:30	Cx	1	583	583	0		2015	1483	39		129	0.31	52	53
07:30-08:30	Cx	2	491	491	50	✓	2105	1550	32		184	0.94	52	53
07:30-08:30	Cx	3	741	741	0		2105	1550	48		88	0.99	52	53

07:30-08:30	Cx2	1	583	583	0		1800	1800	32		178	0.48	72	72
07:30-08:30	Cx2	2	491	491	50	✓	1800	1800	27		230	0.86	72	72
07:30-08:30	Cx2	3	741	741	0		1800	1800	41		119	0.90	72	72
07:30-08:30	D3	1	323	323	0		1800	1800	18		402	0.00	72	72
07:30-08:30	D3	2	708	708	1		1800	1800	39		129	0.00	72	72
07:30-08:30	Dc	1	496	496	0		2015	1175	42		113	0.62	41	42
07:30-08:30	Dc	2	603	603	1		2155	1257	48		88	0.61	41	42
07:30-08:30	Dc	3	603	603	1		2033	1186	51		77	0.61	41	42
07:30-08:30	Dx	1	573	573	-1		2105	1550	37		143	0.93	52	53
07:30-08:30	Dx	2	349	349	-1		2105	1550	23		300	1.21	52	53
07:30-08:30	Dx	3	452	452	0		2105	1550	29		209	1.23	52	53
07:30-08:30	Dx2	1	573	573	-1		1800	1800	32		183	0.78	72	72
07:30-08:30	Dx2	2	349	349	-1		1800	1800	19		364	1.10	72	72
07:30-08:30	Dx2	3	452	452	0		1800	1800	25		258	1.15	72	72
07:30-08:30	Dx3	1	573	573	-1		1800	1800	32		183	0.76	72	72
07:30-08:30	Dx3	2	801	801	-1		1800	1800	44		102	1.11	72	72

Traffic Stream Results: Stops And Delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	A	1	12.90	255.18	3.39	39.21	604.94	24.20	282.46	527.95	966.71	48.54	0.00
07:30-08:30	A	2	12.90	57.40	3.83	6.45	146.03	5.84	137.00	598.25	285.43	28.70	0.00
07:30-08:30	B	2	7.46	50.31	4.12	4.83	127.02	5.08	125.95	586.13	219.95	26.18	0.00
07:30-08:30	B	3	7.46	50.31	4.12	4.83	127.02	5.08	125.95	586.13	219.95	26.18	0.00
07:30-08:30	C	1	11.48	25.85	1.71	0.11	25.79	1.03	91.80	226.89	5.36	7.54	0.00
07:30-08:30	C	2	11.48	33.22	4.03	0.74	67.61	2.70	105.43	507.85	36.15	17.67	0.00
07:30-08:30	C	3	11.48	41.63	5.92	2.72	122.66	4.91	116.98	743.77	130.11	28.38	0.00
07:30-08:30	D	1	9.69	22.95	1.75	0.31	29.24	1.17	81.82	248.98	15.31	8.58	0.00
07:30-08:30	D	2	9.69	22.64	1.92	0.31	31.61	1.26	81.39	272.85	15.28	9.36	0.00
07:30-08:30	D	3	9.69	22.64	1.92	0.31	31.61	1.26	81.39	272.85	15.28	9.36	0.00

07:30-08:30	A2	1	26.32	3.74	0.49	0.14	8.86	8.86	30.37	175.61	6.89	5.93	5.93
07:30-08:30	A2	2	26.32	3.69	0.52	0.14	9.38	9.38	30.30	188.51	6.91	6.35	6.35
07:30-08:30	Ac	1	4.57	3.48	0.28	0.20	6.75	6.75	23.88	107.46	9.84	1.69	2.14
07:30-08:30	Ac	2	4.55	5.11	0.45	0.61	14.93	14.93	60.33	387.74	59.30	6.51	25.63
07:30-08:30	Ac	3	4.57	0.07	0.00	0.00	0.01	0.01	0.12	0.02	0.02	0.00	0.00
07:30-08:30	Ax	1	12.60	1.50	0.13	0.05	2.53	2.53	13.56	55.64	2.41	1.89	1.89
07:30-08:30	Ax	2	12.60	0.61	0.03	0.03	0.85	0.85	2.46	7.04	1.62	0.28	0.28
07:30-08:30	Ax2	1	26.84	0.31	0.00	0.04	0.53	0.53	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Ax2	2	26.84	0.24	0.00	0.02	0.34	0.34	0.00	0.00	0.00	0.00	0.00
07:30-08:30	B1	1	7.46	2.93	0.33	0.14	6.74	6.74	25.04	138.76	7.21	4.74	4.74
07:30-08:30	B3	1	3.60	2.11	0.00	0.72	10.18	10.18	0.00	0.00	0.00	0.00	0.00
07:30-08:30	B3	2	2.24	0.55	0.00	0.10	1.39	1.39	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Bc	1	6.01	1.03	0.00	0.09	1.30	1.30	1.46	0.19	4.47	0.07	0.34
07:30-08:30	Bc	2	6.01	2.59	0.16	0.09	3.56	3.56	9.67	29.06	4.68	0.49	0.75
07:30-08:30	Bc	3	6.01	4.21	0.03	0.72	10.62	10.62	14.04	54.56	35.30	1.30	6.48
07:30-08:30	Bx	1	1.12	2.83	0.35	0.17	7.35	7.35	22.47	139.69	8.36	4.81	4.81
07:30-08:30	Bx	2	1.12	0.85	0.01	0.13	2.02	2.02	1.88	4.73	6.58	0.37	0.37
07:30-08:30	Bx	3	1.12	0.39	0.00	0.04	0.54	0.54	0.63	0.46	1.77	0.07	0.07
07:30-08:30	Bx2	1	1.96	0.63	0.01	0.11	1.64	1.64	3.81	14.57	10.52	1.45	1.45
07:30-08:30	Bx2	2	2.61	0.57	0.01	0.08	1.35	1.35	4.40	18.14	8.40	0.86	0.86
07:30-08:30	Bx2	3	2.61	0.26	0.00	0.02	0.37	0.37	1.27	3.28	1.19	0.15	0.15
07:30-08:30	Bx3	1	2.24	4.92	0.91	0.82	24.48	24.48	59.20	666.56	80.43	24.26	24.26
07:30-08:30	Bx3	2	2.24	0.24	0.00	0.02	0.34	0.34	0.00	0.00	0.00	0.00	0.00
07:30-08:30	C2	1	5.34	3.16	0.20	0.02	3.15	3.15	26.55	66.23	0.95	2.18	2.18
07:30-08:30	C2	2	5.34	3.94	0.48	0.09	8.01	8.01	31.39	157.69	4.27	5.26	5.26
07:30-08:30	C2	3	5.34	5.03	0.81	0.23	14.83	14.83	37.36	267.52	11.55	9.06	9.06
07:30-08:30	Cc	1	5.76	5.15	0.40	0.10	7.14	7.14	27.77	92.69	5.08	1.41	1.64
07:30-08:30	Cc	2	5.76	4.94	0.40	0.08	6.85	6.85	27.52	92.63	4.22	1.40	1.59
07:30-08:30	Cc	3	5.76	8.05	0.53	1.14	23.71	23.71	75.39	507.04	56.14	8.12	40.62
07:30-08:30	Cx	1	10.55	2.56	0.29	0.13	5.88	5.88	14.42	77.72	6.34	2.73	2.73

07:30-08:30	Cx	2	10.55	0.58	0.01	0.07	1.13	1.13	1.02	1.36	3.67	0.16	0.16
07:30-08:30	Cx	3	10.55	1.12	0.01	0.22	3.26	3.26	2.40	6.85	10.90	0.58	0.58
07:30-08:30	Cx2	1	5.80	0.48	0.00	0.08	1.10	1.10	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Cx2	2	7.74	0.38	0.00	0.05	0.73	0.73	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Cx2	3	7.74	1.20	0.10	0.14	3.52	3.52	20.99	148.34	7.18	5.05	5.05
07:30-08:30	D3	1	2.24	0.22	0.00	0.02	0.28	0.28	0.00	0.00	0.00	0.00	0.00
07:30-08:30	D3	2	2.24	0.65	0.00	0.13	1.81	1.81	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dc	1	4.96	3.57	0.34	0.15	6.99	6.99	28.31	132.76	7.66	2.03	3.12
07:30-08:30	Dc	2	4.96	3.65	0.39	0.22	8.67	8.67	24.72	138.06	10.98	2.15	3.77
07:30-08:30	Dc	3	4.96	3.94	0.40	0.26	9.36	9.36	25.51	140.79	13.04	2.22	3.91
07:30-08:30	Dx	1	2.00	0.80	0.02	0.11	1.81	1.81	1.69	4.28	5.41	0.25	0.25
07:30-08:30	Dx	2	2.40	0.34	0.00	0.03	0.46	0.46	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx	3	2.40	0.48	0.00	0.06	0.85	0.85	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx2	1	8.43	0.47	0.00	0.07	1.05	1.05	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx2	2	8.43	0.24	0.00	0.02	0.33	0.33	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx2	3	8.43	0.34	0.00	0.04	0.60	0.60	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx3	1	2.24	0.47	0.00	0.07	1.05	1.05	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx3	2	2.24	3.09	0.51	0.18	9.77	9.77	51.64	404.76	8.88	13.43	13.43

Traffic Stream Results: Queues And Blocking

Time Segment	Arm	Traffic Stream	Initial Queue (PCU)	Mean Max Queue (PCU)	Max Queue Storage (PCU)	Utilised Storage (%)	Average Link Excess Queue (PCU)	Average Limit Excess Queue (PCU)	Excess Queue Penalty (£ per hr)	Max End Of Green Queue (PCU)	Max End Of Red Queue (PCU)	Wasted Time Starvation (s per cycle)	Wasted Time Blocking Back (s per cycle)	Wasted Time Total (s per cycle)	Estimated Blocking
07:30-08:30	A	1	0.00	49.64	30.09	165.00	13.91	0.00	0.00	39.21	46.85	0.00	4.00	4.00	
07:30-08:30	A	2	0.00	18.99	30.09	63.13	0.00	0.00	0.00	6.45	15.77	0.00	6.00	6.00	
07:30-08:30	B	2	0.00	17.09	17.39	98.29	0.00	0.00	0.00	4.83	13.36	0.00	0.00	0.00	
07:30-08:30	B	3	0.00	17.09	17.39	98.29	0.00	0.00	0.00	4.83	13.36	0.00	0.00	0.00	
07:30-08:30	C	1	0.00	4.80	26.78	17.94	0.00	0.00	0.00	0.11	4.17	12.00	0.00	12.00	
07:30-08:30	C	2	0.00	11.01	26.78	41.10	0.00	0.00	0.00	0.74	9.02	8.00	0.00	8.00	
07:30-08:30	C	3	0.00	17.64	26.78	65.88	0.00	0.00	0.00	2.72	14.72	4.00	6.00	10.00	
07:30-08:30	D	1	0.00	5.51	22.61	24.39	0.00	0.00	0.00	0.31	4.62	0.00	0.00	0.00	

07:30-08:30	D	2	0.00	6.01	22.61	26.59	0.00	0.00	0.00	0.31	5.03	0.00	0.00	0.00	
07:30-08:30	D	3	0.00	6.01	22.61	26.59	0.00	0.00	0.00	0.31	5.03	0.00	0.00	0.00	
07:30-08:30	A2	1	0.00	4.14	61.39	6.75	0.00	0.00	0.00	0.14	2.98	0.00	55.00	55.00	
07:30-08:30	A2	2	0.00	4.44	61.39	7.23	0.00	0.00	0.00	0.14	3.18	0.00	0.00	0.00	
07:30-08:30	Ac	1	0.00	2.47	7.10	34.84	0.00	0.16	9.75	0.20	2.25	4.00	0.00	4.00	
07:30-08:30	Ac	2	0.00	12.06	7.10	169.81	0.38	1.46	87.31	0.61	2.66	4.00	0.00	4.00	
07:30-08:30	Ac	3	0.00	0.00	7.10	0.01	0.00	0.00	0.00	0.00	0.00	19.00	0.00	19.00	
07:30-08:30	Ax	1	0.00	1.35	29.39	4.58	0.00	0.00	0.00	0.05	1.24	5.00	0.00	5.00	
07:30-08:30	Ax	2	0.00	0.18	29.39	0.60	0.00	0.00	0.00	0.03	0.18	16.00	0.00	16.00	
07:30-08:30	Ax2	1	0.00	0.04	62.61	0.06	0.00	0.00	0.00			0.00	0.00	0.00	
07:30-08:30	Ax2	2	0.00	0.02	62.61	0.04	0.00	0.00	0.00			11.00	0.00	11.00	
07:30-08:30	B1	1	0.00	3.38	17.39	19.46	0.00	0.00	0.00	0.14	2.41	0.00	0.00	0.00	
07:30-08:30	B3	1	0.00	0.72	5.22	13.73	0.00	0.00	0.00			0.00	0.00	0.00	
07:30-08:30	B3	2	0.00	0.10	5.22	1.88	0.00	0.00	0.00			0.00	0.00	0.00	
07:30-08:30	Bc	1	0.00	0.09	9.35	1.00	0.00	0.00	0.00	0.09	0.09	6.00	0.00	6.00	
07:30-08:30	Bc	2	0.00	0.68	9.35	7.24	0.00	0.00	0.00	0.09	0.68	5.00	0.00	5.00	
07:30-08:30	Bc	3	0.00	9.61	9.35	102.78	0.00	0.80	48.05	0.72	0.72	4.00	0.00	4.00	
07:30-08:30	Bx	1	0.00	3.40	2.61	130.20	0.03	0.00	0.00	0.17	2.58	5.00	0.00	5.00	
07:30-08:30	Bx	2	0.00	1.92	2.61	73.50	0.00	0.00	0.00	0.13	0.16	10.00	0.00	10.00	
07:30-08:30	Bx	3	0.00	0.04	2.61	1.71	0.00	0.00	0.00	0.04	0.04	11.00	0.00	11.00	
07:30-08:30	Bx2	1	0.00	2.25	6.09	36.94	0.00	0.00	0.00			20.00	28.00	48.00	
07:30-08:30	Bx2	2	0.00	3.13	6.09	51.39	0.00	0.00	0.00			27.00	29.00	56.00	
07:30-08:30	Bx2	3	0.00	1.60	6.09	26.24	0.00	0.00	0.00			30.00	0.00	30.00	
07:30-08:30	Bx3	1	0.00	11.17	5.22	214.02	1.66	0.00	0.00			17.00	0.00	17.00	
07:30-08:30	Bx3	2	0.00	0.02	5.22	0.46	0.00	0.00	0.00			29.00	0.00	29.00	
07:30-08:30	C2	1	0.00	1.49	12.46	12.00	0.00	0.00	0.00	0.02	1.35	0.00	0.00	0.00	
07:30-08:30	C2	2	0.00	3.67	12.46	29.45	0.00	0.00	0.00	0.09	2.81	0.00	0.00	0.00	
07:30-08:30	C2	3	0.00	6.25	12.46	50.17	0.00	0.00	0.00	0.23	4.17	0.00	0.00	0.00	
07:30-08:30	Cc	1	0.00	1.97	8.95	22.05	0.00	0.00	0.00	0.10	1.94	9.00	0.00	9.00	
07:30-08:30	Cc	2	0.00	1.96	8.95	21.85	0.00	0.00	0.00	0.08	1.93	9.00	0.00	9.00	

07:30-08:30	Cc	3	0.00	15.56	8.95	173.79	0.85	2.91	174.47	1.14	1.22	8.00	0.00	8.00	
07:30-08:30	Cx	1	0.00	2.37	24.61	9.64	0.00	0.00	0.00	0.13	1.41	0.00	0.00	0.00	
07:30-08:30	Cx	2	0.00	0.10	24.61	0.41	0.00	0.00	0.00	0.07	0.10	9.00	0.00	9.00	
07:30-08:30	Cx	3	0.00	4.38	24.61	17.78	0.00	0.00	0.00	0.22	0.25	8.00	0.00	8.00	
07:30-08:30	Cx2	1	0.00	0.08	18.04	0.43	0.00	0.00	0.00			15.00	0.00	15.00	
07:30-08:30	Cx2	2	0.00	0.05	18.04	0.28	0.00	0.00	0.00			25.00	0.00	25.00	
07:30-08:30	Cx2	3	0.00	8.92	18.04	49.43	0.00	0.00	0.00			25.00	0.00	25.00	
07:30-08:30	D3	1	0.00	0.02	5.22	0.38	0.00	0.00	0.00			0.00	0.00	0.00	
07:30-08:30	D3	2	0.00	0.13	5.22	2.44	0.00	0.00	0.00			0.00	0.00	0.00	
07:30-08:30	Dc	1	0.00	3.15	7.71	40.87	0.00	0.20	12.06	0.15	2.28	0.00	0.00	0.00	
07:30-08:30	Dc	2	0.00	3.35	7.71	43.43	0.00	0.24	14.31	0.22	2.48	0.00	0.00	0.00	
07:30-08:30	Dc	3	0.00	3.39	7.71	43.97	0.00	0.25	14.81	0.26	2.52	0.00	0.00	0.00	
07:30-08:30	Dx	1	0.00	0.19	3.48	5.59	0.00	0.00	0.00	0.11	0.19	8.00	0.00	8.00	
07:30-08:30	Dx	2	0.00	0.03	3.48	0.94	0.00	0.00	0.00	0.03	0.03	23.00	0.00	23.00	
07:30-08:30	Dx	3	0.00	0.06	3.48	1.73	0.00	0.00	0.00	0.06	0.06	23.00	0.00	23.00	
07:30-08:30	Dx2	1	0.00	0.07	19.65	0.38	0.00	0.00	0.00			16.00	0.00	16.00	
07:30-08:30	Dx2	2	0.00	0.02	19.65	0.12	0.00	0.00	0.00			37.00	18.00	55.00	
07:30-08:30	Dx2	3	0.00	0.04	19.65	0.21	0.00	0.00	0.00			37.00	19.00	56.00	
07:30-08:30	Dx3	1	0.00	0.07	5.22	1.42	0.00	0.00	0.00			15.00	0.00	15.00	
07:30-08:30	Dx3	2	0.00	14.26	5.22	273.30	1.64	0.00	0.00			34.00	0.00	34.00	

Traffic Stream Results: Flare

Time Segment	Arm	Traffic Stream	Flare Present	Flare Components	Degree Of Saturation (%)	Mean Max Queue (PCU)	Calculated Capacity (PCU/hr)	Practical Reserve Capacity (%)
07:30-08:30	A	2	✓	Quick Flare	95	18.99	678	-5
07:30-08:30	C	3	✓	Quick Flare	87	17.64	859	4

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree Of Saturation Penalty (£ per hr)	Phase Min Max Penalty (£ per hr)	Intergreen Broken Penalty (£ per hr)	Stage Constraint Broken Penalty (£ per hr)	Ped Gap Accepting Penalty (£ per hr)	Warmed Up	Warmed Up Error	Mean Max Queue EoTS (PCU)	Max End Of Green Queue Eo TS (PCU)	Max End Of Red Queue Eo TS (PCU)	Cost Of Penalties (£ per hr)	Unweighted Performance Index (£ per hr)	Perform Index (£ hr)
07:30-08:30	A	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	85.74	75.30	82.94	0.00	653.48	24.2
07:30-08:30	A	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	19.99	7.45	16.77	0.00	174.72	5.8

07:30-08:30	B	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	17.55	5.28	13.81	0.00	153.19	5.0
07:30-08:30	B	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	17.55	5.28	13.81	0.00	153.19	5.0
07:30-08:30	C	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.80	0.11	4.17	0.00	33.34	1.0
07:30-08:30	C	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	11.01	0.74	9.03	0.00	85.28	2.7
07:30-08:30	C	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	17.73	2.80	14.80	0.00	151.04	4.9
07:30-08:30	D	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	5.51	0.31	4.62	0.00	37.82	1.1
07:30-08:30	D	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.01	0.31	5.03	0.00	40.96	1.2
07:30-08:30	D	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.01	0.31	5.03	0.00	40.96	1.2
07:30-08:30	A2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.14	0.14	2.98	0.00	14.79	14.7
07:30-08:30	A2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.44	0.14	3.18	0.00	15.72	15.7
07:30-08:30	Ac	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.47	0.20	2.25	9.75	8.45	18.6
07:30-08:30	Ac	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	12.06	0.61	2.66	87.31	21.44	127.
07:30-08:30	Ac	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.00	0.00	0.00	0.00	0.01	0.0
07:30-08:30	Ax	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.35	0.05	1.24	0.00	4.42	4.4
07:30-08:30	Ax	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.18	0.03	0.18	0.00	1.13	1.1
07:30-08:30	Ax2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.04			0.00	0.53	0.5
07:30-08:30	Ax2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.34	0.3
07:30-08:30	B1	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.38	0.14	2.41	0.00	11.48	11.4
07:30-08:30	B3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.72			0.00	10.18	10.1
07:30-08:30	B3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.10			0.00	1.39	1.3
07:30-08:30	Bc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.09	0.09	0.09	0.00	1.37	1.6
07:30-08:30	Bc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.68	0.09	0.68	0.00	4.05	4.3
07:30-08:30	Bc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	9.61	0.72	0.73	48.05	11.92	65.1
07:30-08:30	Bx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.40	0.17	2.58	0.00	12.15	12.1
07:30-08:30	Bx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.92	0.13	0.16	0.00	2.38	2.3
07:30-08:30	Bx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.04	0.04	0.04	0.00	0.61	0.6
07:30-08:30	Bx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.25			0.00	3.09	3.0
07:30-08:30	Bx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.13			0.00	2.22	2.2
07:30-08:30	Bx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.60			0.00	0.51	0.5
07:30-08:30	Bx3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	11.17			0.00	48.74	48.7

07:30-08:30	Bx3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.34	0.3
07:30-08:30	C2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.49	0.02	1.35	0.00	5.34	5.3
07:30-08:30	C2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.67	0.09	2.81	0.00	13.27	13.2
07:30-08:30	C2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.25	0.23	4.17	0.00	23.89	23.8
07:30-08:30	Cc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.97	0.10	1.94	0.00	8.56	8.7
07:30-08:30	Cc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.96	0.08	1.93	0.00	8.25	8.4
07:30-08:30	Cc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	15.57	1.15	1.23	174.47	31.84	238.
07:30-08:30	Cx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.37	0.13	1.41	0.00	8.61	8.6
07:30-08:30	Cx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.10	0.07	0.10	0.00	1.29	1.2
07:30-08:30	Cx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.38	0.22	0.25	0.00	3.84	3.8
07:30-08:30	Cx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.08			0.00	1.10	1.1
07:30-08:30	Cx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.05			0.00	0.73	0.7
07:30-08:30	Cx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	8.92			0.00	8.57	8.5
07:30-08:30	D3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.28	0.2
07:30-08:30	D3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.13			0.00	1.81	1.8
07:30-08:30	Dc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.15	0.15	2.28	12.06	9.01	22.1
07:30-08:30	Dc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.35	0.22	2.48	14.31	10.82	26.7
07:30-08:30	Dc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.39	0.26	2.52	14.81	11.58	28.0
07:30-08:30	Dx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.19	0.11	0.19	0.00	2.07	2.0
07:30-08:30	Dx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.03	0.03	0.03	0.00	0.46	0.4
07:30-08:30	Dx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.06	0.06	0.06	0.00	0.85	0.8
07:30-08:30	Dx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.07			0.00	1.05	1.0
07:30-08:30	Dx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.33	0.3
07:30-08:30	Dx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.04			0.00	0.60	0.6
07:30-08:30	Dx3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.07			0.00	1.05	1.0
07:30-08:30	Dx3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	14.26			0.00	23.21	23.2

Network Results

Run Summary

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Network Cycle Time (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Netwo Withi Capac
A1 - 2031 AM peak	16/04/2014 17:27:27	16/04/2014 17:27:35	07:30	72	109.29	113.57	A/1	4	6	A/1	Bx3/1	A/1	

Network Results: Vehicle Summary

Time Segment	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Calculated Flow Entering (PCU/hr)	Actual Green (s per cycle)	Mean Delay Per PCU (s)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Performance Index (£ per hr)
07:30-08:30	114!	-21	31193	2943	12.61	290.97	179.85	831.57

Network Results: Pedestrian Summary

Time Segment	Degree Of Saturation (%)	Calculated Flow Entering (Ped/hr)	Actual Green (s per cycle)	Mean Delay Per Ped (s)	Weighted Cost Of Delay (£ per hr)	Performance Index (£ per hr)
07:30-08:30	114!	0	0	0.00	0.00	0.00

Network Results: Flows And Signals

Time Segment	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity (%)	Actual Green (s per cycle)	Effective Green (s per cycle)
07:30-08:30	31193	31121	212	✓	114!	✓	-21	2943	2982

Network Results: Stops And Delays

Time Segment	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	7.26	12.61	41.28	68.01	1551.94	290.97	36.31	8802.37	2321.71	327.71	179.85

Network Results: Queues And Blocking

Time Segment	Max Queue Storage (PCU)	Excess Queue Penalty (£ per hr)	Wasted Time Starvation (s per cycle)	Wasted Time Blocking Back (s per cycle)	Wasted Time Total (s per cycle)
07:30-08:30	969.18	360.75	548.00	165.00	713.00

TRANSYT 15
Version: 15.0.1.2976 [] © Copyright TRL Limited, 2014
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Last run: 16/04/2014 17:27:31

Analysis Set used for last run: A1 - 2031 AM peak

Filename: PM Rev 5.t15

Path: F:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\3. Option models\3. Full signalisation + Widening

Report generation date: 16/04/2014 17:31:14

- » Network Diagrams
- « A1 - 2031 AM peak *: D1 - 2031 AM peak*
- » Summary
- » Network Options
- » Traffic Nodes
- » Links
- » Arms and Traffic Streams
- » Local OD Matrix - Local Matrix: 1 - PM
- » Signal Timings
- » Final Prediction Table
- » Link Results
- » Traffic Stream Results
- » Network Results

File summary

File Description

Title	A38/A452 Tyburn Roundabout
Location	Birmingham
Site Number	
UTCRegion	
Driving Side	Left
Date	02/04/2014
Version	
Status	Option Model
Identifier	
Client	Birmingham City Council
Jobnumber	60316861
Enumerator	EU\vuppalas
Description	2031 future year preferred option Pm peak model.

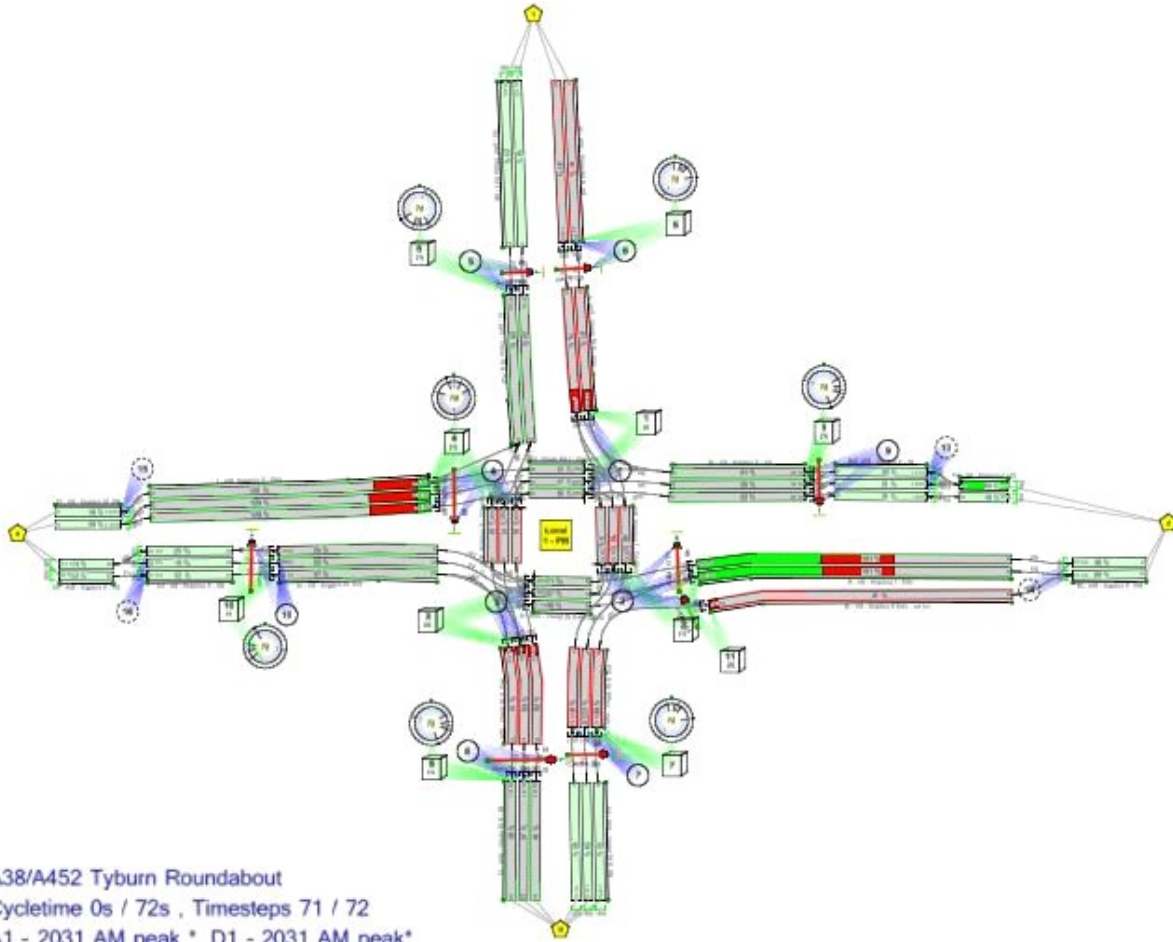
Units

Cost Units	Speed Units	Distance Units	Fuel Economy Units	Fuel Rate Units	Mass Units	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
£	kph	m	mpg	l/h	kg	perHour	s	-Hour	perHour

Sorting

Show Names Instead of IDs (For Aimsun)	Sorting Direction	Sorting Type	Ignore Prefixes When Sorting	Link Grouping	Source Grouping
	Ascending	Numerical		Normal	Normal

Network Diagrams



A38/A452 Tyburn Roundabout
 Cyclotime 0s / 72s , Timesteps 71 / 72
 A1 - 2031 AM peak *, D1 - 2031 AM peak*
 Diagram produced using TRANSYT 15.0.1.2976

A1 - 2031 AM peak *: D1 - 2031 AM peak*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Network Cycle Time (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Netwo Withi Capac
A1 - 2031 AM peak	16/04/2014 17:27:23	16/04/2014 17:27:31	07:30	72	199.50	128.91	D/1	6	9	D/1	B3/1	D/1	

Analysis Set Details

Name	Description	Demand Set	Include In Report	Locked
2031 AM peak		D1	✓	

Demand Set Details

Demand Set	Name	Description	Composite	Demand Sets	Start Time (HH:mm)	Locked
D1	2031 AM peak				07:30	

Network Options

Network Timings

Network Cycle Time (s)	Restrict To SCOOT Cycle Times	Time Segment Length (min)	Number Of Time Segments	Modelled Time Period (min)
72		60	1	60

Signals Options

Start Displacement (s)	End Displacement (s)
2	3

Advanced

Phase Minimum Broken Penalty (£)	Phase Maximum Broken Penalty (£)	Intergreen Broken Penalty (£)
10000.00	10000.00	10000.00

Traffic Options

Traffic Model	Vehicle Flow Scaling Factor (%)	Pedestrian Flow Scaling Factor (%)	Cruise Times Or Speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise Scaling Factor (%)	Use Link Stop Weightings	Use Link Delay Weightings	Exclude Pedestrian Links	Random Delay Mode	Type of Vehicle-in-Service	Type Of Random Parameter	PCU Length (m)	Calculate results for Path Segments
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75	

Normal Parameters

Dispersal Type	Dispersal Coefficient	Travel Time Coefficient
Default	35	80

Bus Parameters

Dispersion Coefficient1	Dispersion Coefficient2	Acceleration (ms ^{^-2})	Travel Time Coefficient1	Travel Time Coefficient2
70	15	0.47	30	85

Tram Parameters

Dispersion Coefficient1	Dispersion Coefficient2	Acceleration (ms ^{^-2})	Travel Time Coefficient1	Travel Time Coefficient2
70	15	0.47	30	85

Pedestrian Parameters

Dispersal Type	Dispersal Coefficient	Travel Time Coefficient
Default	35	80

Optimisation Options

Enable Optimisation	Auto Redistribute	Optimisation Level	Enable Out Profile Accuracy
✓		Offsets Only	✓

Advanced

Optimisation Type	Hill Climb Increments	OUTProfile Accuracy	Use Enhanced Optimisation	Auto Optimisation Order	Optimisation Order
Hill Climb (Fast)	15,40,15,40,15,1,1	50,50,5,5,0,5,0,05,0,05		✓	4,1,2,3,5,6,7,8,9,10,11

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian Monetary Value Of Delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

ID	Name	Description
1		
2		
3		
4		
5	(untitled)	
6	(untitled)	
7	(untitled)	
8	(untitled)	
9	(untitled)	
10	(untitled)	
13	(untitled)	
14	(untitled)	
15	(untitled)	
16	(untitled)	

Links

Links

Link	Name	Description	Traffic Node	Length (m)	Has Restricted Flow	Is Signal Controlled	Is Give Way	Traffic Type	Is Minor Shared
40	A452 N - NB		5	7.00		✓		Pedestrian	
41	A452 N - SB		6	7.50		✓		Pedestrian	
42	A452 S - SB		7	10.50		✓		Pedestrian	
43	A452 S - NB		8	9.75		✓		Pedestrian	
45	A38 W - WB		2	9.00		✓		Pedestrian	
46	A38 E - WB		10	9.75		✓		Pedestrian	
47	A38 W - EB		9	9.00		✓		Pedestrian	
49	A38 E - EB		4	9.75		✓		Pedestrian	
50	A38 W - WB		2	4.00		✓		Pedestrian	

Modelling

Link	Traffic Model	Stop Weighting (%)	Delay Weighting (%)	Exclude From Results Calculation	Max Queue Storage (PCU)	Has Queue Limit	Has Degree Of Saturation Limit
40	NetworkDefault	100	100	✓	0.00		
41	NetworkDefault	100	100	✓	0.00		
42	NetworkDefault	100	100	✓	0.00		
43	NetworkDefault	100	100	✓	0.00		
45	NetworkDefault	100	100	✓	0.00		
46	NetworkDefault	100	100	✓	0.00		
47	NetworkDefault	100	100	✓	0.00		
49	NetworkDefault	100	100	✓	0.00		
50	NetworkDefault	100	100	✓	0.00		

Modelling - Advanced

Link	Initial Queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type Of Random Parameter	Random Parameter	Auto Cycle Time	Cycle Time
40	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
41	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
42	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
43	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
45	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
46	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
47	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
49	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
50	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

Flows

Link	Flows	Total Flow (07:30-08:30) (PCU/hr)
40	1	100
41	1	100
42	1	100
43	1	100
45	1	100
46	1	100
47	1	100
49	1	100
50	1	100

Flows - Advanced

Link	Detectors	Link Sensitivity Multiplier (%)	Cruise Sensitivity Multiplier (%)
40		100	100
41		100	100
42		100	100
43		100	100
45		100	100
46		100	100
47		100	100
49		100	100
50		100	100

Signals

Link	Controller Stream	Phase	Phase2 Enabled
40	5	B	
41	6	B	
42	7	B	
43	8	B	
45	2	C	
46	10	B	
47	9	B	
49	4	C	
50	11	B	

Entry Sources

Link	Cruise Time (seconds)	Cruise Speed (kph)
40	1.00	30.00
41	1.00	30.00
42	1.26	30.00
43	1.17	30.00
45	1.08	30.00
46	1.17	30.00
47	1.08	30.00
49	1.17	30.00
50	1.00	30.00

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic Node
A	A452 - Chester Rd N - Entry		1
Ax2	A452 - Chester Rd N - NB		
B	A38 - Kingsbury E - Entry		2
C	A452 - Chester Rd S - Entry		3
D	A38 - Kingsbury W - Entry		4
A2	A452 - Chester Rd N - SB		6
Ac	A38 - Kingsbury E - Circulatory		2
Ax	A452 - Chester Rd N - Exit		5
B1	A38 - Kingsbury E Entry - Left turn		2
B3	A38 - Kingsbury E - WB		14
Bc	A452 - Chester Rd S - Circulatory		3
Bx	A38 - Kingsbury E - Exit		9
Bx2	A38 - Kingsbury E - EB		13
Bx3	A38 - Kingsbury E - EB		
C2	A452 - Chester Rd S - NB		8
Cc	A38 - Kingsbury W - Circulatory		4
Cx	A452 - Chester Rd S - Exit		7
Cx2	A452 - Chester Rd S - SB		
D3	A38 - Kingsbury W - EB		15
Dc	A452 - Chester Rd N - Circulatory		1
Dx	A38 - Kingsbury W - Exit		10
Dx2	A38 - Kingsbury W - WB		16
Dx3	A38 - Kingsbury W - WB		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto Length	Length (m)	Has Restricted Flow	Saturation Flow Source	Saturation Flow (PCU/hr)	Is Signal Controlled	Is Give Way	Traffic Type
A	1				173.00	✓	SumOfLanes	1905	✓		Normal
A	2				173.00	✓	SumOfLanes	2080	✓		Normal
B	2	(untitled)			100.00	✓	SumOfLanes	2070	✓		Normal
B	3	(untitled)			100.00	✓	SumOfLanes	2070	✓		Normal
C	1				154.00	✓	SumOfLanes	1762	✓		Normal
C	2				154.00	✓	SumOfLanes	1937	✓		Normal
C	3				154.00	✓	SumOfLanes	1952	✓		Normal

D	1			130.00	✓	SumOfLanes	1804	✓		Normal
D	2			130.00	✓	SumOfLanes	1979	✓		Normal
D	3			130.00	✓	SumOfLanes	1979	✓		Normal
A2	1	(untitled)		353.00	✓	SumOfLanes	1940	✓		Normal
A2	2	(untitled)		353.00	✓	SumOfLanes	2080	✓		Normal
Ac	1			40.84	✓	SumOfLanes	2015	✓		Normal
Ac	2			40.84	✓	SumOfLanes	2155	✓		Normal
Ac	3			40.84	✓	SumOfLanes	2033	✓		Normal
Ax	1			169.00	✓	SumOfLanes	2105	✓		Normal
Ax	2			169.00	✓	SumOfLanes	2055	✓		Normal
Ax2	1	(untitled)		360.00	✓	SumOfLanes	1800			Normal
Ax2	2	(untitled)		360.00	✓	SumOfLanes	1800			Normal
B1	1			100.00	✓	SumOfLanes	1754	✓		Normal
B3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
B3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Bc	1			53.74	✓	SumOfLanes	1973	✓		Normal
Bc	2			53.74	✓	SumOfLanes	2113	✓		Normal
Bc	3			53.74	✓	SumOfLanes	1993	✓		Normal
Bx	1			15.00	✓	SumOfLanes	2055	✓		Normal
Bx	2			15.00	✓	SumOfLanes	2055	✓		Normal
Bx	3			15.00	✓	SumOfLanes	2055	✓		Normal
Bx2	1	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx2	2	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx2	3	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Bx3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
C2	1	(untitled)		71.63	✓	SumOfLanes	1940	✓		Normal
C2	2	(untitled)		71.63	✓	SumOfLanes	2080	✓		Normal
C2	3	(untitled)		71.63	✓	SumOfLanes	2080	✓		Normal
Cc	1			51.49	✓	SumOfLanes	1847	✓		Normal
Cc	2			51.49	✓	SumOfLanes	1987	✓		Normal
Cc	3			51.49	✓	SumOfLanes	1875	✓		Normal
Cx	1			141.48	✓	SumOfLanes	2015	✓		Normal
Cx	2			141.48	✓	SumOfLanes	2105	✓		Normal
Cx	3			141.48	✓	SumOfLanes	2105	✓		Normal
Cx2	1	(untitled)		103.74	✓	SumOfLanes	1800			Normal
Cx2	2	(untitled)		103.74	✓	SumOfLanes	1800			Normal
Cx2	3	(untitled)		103.74	✓	SumOfLanes	1800			Normal
D3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
D3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Dc	1			44.34	✓	SumOfLanes	2015	✓		Normal
Dc	2			44.34	✓	SumOfLanes	2155	✓		Normal
Dc	3			44.34	✓	SumOfLanes	2033	✓		Normal
Dx	1			20.00	✓	SumOfLanes	2105	✓		Normal
Dx	2			20.00	✓	SumOfLanes	2105	✓		Normal
Dx	3			20.00	✓	SumOfLanes	2105	✓		Normal
Dx2	1	(untitled)		113.00	✓	SumOfLanes	1800			Normal
Dx2	2	(untitled)		113.00	✓	SumOfLanes	1800			Normal
Dx2	3	(untitled)		113.00	✓	SumOfLanes	1800			Normal

Dx3	1	(untitled)			30.00	✓	SumOfLanes	1800			Normal
Dx3	2	(untitled)			30.00	✓	SumOfLanes	1800			Normal

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface Condition	Site Quality Factor	Gradient (%)	Width (m)	Use Connector Turning Radius	Proportion That Turn (%)	Turning Radius (m)	Nearside Lane	Saturation Flow (PCU/hr)
A	1	1			✓	N/A	N/A	-5	3.25		29	23.83	✓	1905
A	2	1			✓	N/A	N/A	-5	3.25		0	10.00		2080
B	2	1	(untitled)		✓	N/A	N/A	-3	3.15		0	16.30		2070
B	3	1	(untitled)		✓	N/A	N/A	-3	3.15		0	16.30		2070
C	1	1			✓	N/A	N/A	4	3.65		100	53.30	✓	1762
C	2	1			✓	N/A	N/A	4	3.50		0	10.00		1937
C	3	1			✓	N/A	N/A	4	3.65		0	10.00		1952
D	1	1			✓	N/A	N/A	3	3.50		38	29.30	✓	1804
D	2	1			✓	N/A	N/A	3	3.50		0	10.00		1979
D	3	1			✓	N/A	N/A	3	3.50		0	10.00		1979
A2	1	2	(untitled)		✓	N/A	N/A	0	3.25		0	10.00	✓	1940
A2	2	1	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
Ac	1	2			✓	N/A	N/A	-4	4.00		0	10.00	✓	2015
Ac	2	1			✓	N/A	N/A	-4	4.00		0	10.00		2155
Ac	3	1			✓	N/A	N/A	-4	4.00		100	25.00		2033
Ax	1	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Ax	2	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Ax2	1	2	(untitled)											1800
Ax2	2	1	(untitled)											1800
B1	1	1			✓	N/A	N/A	-3	3.00		100	16.30	✓	1754
B3	1	2	(untitled)											1800
B3	2	1	(untitled)											1800
Bc	1	1			✓	N/A	N/A	1	4.00		0	10.00	✓	1973
Bc	2	2			✓	N/A	N/A	1	4.00		0	10.00		2113
Bc	3	2			✓	N/A	N/A	1	4.00		100	25.00		1993
Bx	1	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx	2	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx	3	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx2	1	3	(untitled)											1800
Bx2	2	1	(untitled)											1800
Bx2	3	2	(untitled)											1800
Bx3	1	2	(untitled)											1800
Bx3	2	1	(untitled)											1800
C2	1	3	(untitled)		✓	N/A	N/A	0	3.25		0	10.00	✓	1940
C2	2	1	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
C2	3	2	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
Cc	1	1			✓	N/A	N/A	4	4.00		0	10.00	✓	1847
Cc	2	2			✓	N/A	N/A	4	4.00		0	10.00		1987
Cc	3	2			✓	N/A	N/A	4	4.00		100	25.00		1875
Cx	1	1			✓	N/A	N/A	0	4.00		0	10.00	✓	2015
Cx	2	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Cx	3	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Cx2	1	3	(untitled)											1800

Cx2	2	1	(untitled)												1800
Cx2	3	2	(untitled)												1800
D3	1	2	(untitled)												1800
D3	2	1	(untitled)												1800
Dc	1	1			✓	N/A	N/A	-1	4.00		0	10.00	✓		2015
Dc	2	2			✓	N/A	N/A	-1	4.00		0	10.00			2155
Dc	3	2			✓	N/A	N/A	-1	4.00		100	25.00			2033
Dx	1	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx	2	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx	3	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx2	1	2	(untitled)												1800
Dx2	2	3	(untitled)												1800
Dx2	3	1	(untitled)												1800
Dx3	1	2	(untitled)												1800
Dx3	2	1	(untitled)												1800

Modelling

Arm	Traffic Stream	Traffic Model	Stop Weighting Multiplier (%)	Delay Weighting Multiplier (%)	Exclude From Results Calculation	Max Queue Storage (PCU)	Has Queue Limit	Queue Limit (PCU)	Excess Queue Penalty (£)	Has Degree Of Saturation Limit
A	1	NetworkDefault	0	20		0.00				
A	2	NetworkDefault	0	20		0.00				
B	2	NetworkDefault	0	20		0.00				
B	3	NetworkDefault	0	20		0.00				
C	1	NetworkDefault	0	20		0.00				
C	2	NetworkDefault	0	20		0.00				
C	3	NetworkDefault	0	20		0.00				
D	1	NetworkDefault	0	20		0.00				
D	2	NetworkDefault	0	20		0.00				
D	3	NetworkDefault	0	20		0.00				
A2	1	NetworkDefault	100	100		0.00				
A2	2	NetworkDefault	100	100		0.00				
Ac	1	NetworkDefault	100	100		0.00	✓	1	60.00	
Ac	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Ac	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Ax	1	NetworkDefault	100	100		0.00				
Ax	2	NetworkDefault	100	100		0.00				
Ax2	1	NetworkDefault	100	100		0.00				
Ax2	2	NetworkDefault	100	100		0.00				
B1	1	NetworkDefault	100	100		0.00				
B3	1	NetworkDefault	100	100		0.00				
B3	2	NetworkDefault	100	100		0.00				
Bc	1	NetworkDefault	100	100		0.00	✓	2	60.00	
Bc	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Bc	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Bx	1	NetworkDefault	100	100		0.00				
Bx	2	NetworkDefault	100	100		0.00				
Bx	3	NetworkDefault	100	100		0.00				
Bx2	1	NetworkDefault	100	100		0.00				
Bx2	2	NetworkDefault	100	100		0.00				
Bx2	3	NetworkDefault	100	100		0.00				
Bx3	1	NetworkDefault	100	100		0.00				

Bx3	2	NetworkDefault	100	100		0.00				
C2	1	NetworkDefault	100	100		0.00				
C2	2	NetworkDefault	100	100		0.00				
C2	3	NetworkDefault	100	100		0.00				
Cc	1	NetworkDefault	100	100		0.00	✓	2	60.00	
Cc	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Cc	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Cx	1	NetworkDefault	100	100		0.00				
Cx	2	NetworkDefault	100	100		0.00				
Cx	3	NetworkDefault	100	100		0.00				
Cx2	1	NetworkDefault	100	100		0.00				
Cx2	2	NetworkDefault	100	100		0.00				
Cx2	3	NetworkDefault	100	100		0.00				
D3	1	NetworkDefault	100	100		0.00				
D3	2	NetworkDefault	100	100		0.00				
Dc	1	NetworkDefault	100	100		0.00	✓	1	60.00	
Dc	2	NetworkDefault	100	100		0.00	✓	1	60.00	
Dc	3	NetworkDefault	100	100		0.00	✓	1	60.00	
Dx	1	NetworkDefault	100	100		0.00				
Dx	2	NetworkDefault	100	100		0.00				
Dx	3	NetworkDefault	100	100		0.00				
Dx2	1	NetworkDefault	100	100		0.00				
Dx2	2	NetworkDefault	100	100		0.00				
Dx2	3	NetworkDefault	100	100		0.00				
Dx3	1	NetworkDefault	100	100		0.00				
Dx3	2	NetworkDefault	100	100		0.00				

Modelling - Advanced

Arm	Traffic Stream	Cruise Sensitivity Multiplier (%)	Initial Queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type Of Random Parameter	Random Parameter	Auto Cycle Time	Cycle Time
A	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B1	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

B3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

Normal - Modelling

Arm	Traffic Stream	Stop Weighting (%)	Delay Weighting (%)
A	1	-9998	20
A	2	-9998	20
B	2	-9998	20
B	3	-9998	20
C	1	-9998	20
C	2	-9998	20
C	3	-9998	20
D	1	-9998	20
D	2	-9998	20
D	3	-9998	20

A2	1	100	100
A2	2	100	100
Ac	1	100	100
Ac	2	100	100
Ac	3	100	100
Ax	1	100	100
Ax	2	100	100
Ax2	1	100	100
Ax2	2	100	100
B1	1	100	100
B3	1	100	100
B3	2	100	100
Bc	1	100	100
Bc	2	100	100
Bc	3	100	100
Bx	1	100	100
Bx	2	100	100
Bx	3	100	100
Bx2	1	100	100
Bx2	2	100	100
Bx2	3	100	100
Bx3	1	100	100
Bx3	2	100	100
C2	1	100	100
C2	2	100	100
C2	3	100	100
Cc	1	100	100
Cc	2	100	100
Cc	3	100	100
Cx	1	100	100
Cx	2	100	100
Cx	3	100	100
Cx2	1	100	100
Cx2	2	100	100
Cx2	3	100	100
D3	1	100	100
D3	2	100	100
Dc	1	100	100
Dc	2	100	100
Dc	3	100	100
Dx	1	100	100
Dx	2	100	100
Dx	3	100	100
Dx2	1	100	100
Dx2	2	100	100
Dx2	3	100	100
Dx3	1	100	100
Dx3	2	100	100

Normal - Modelling per Path

Arm	Traffic Stream	Path ID	Stop Weighting (%)	Delay Weighting (%)
Ac	1	3	500	100
Ac	2	1	500	100
Ac	3	2	500	100
B3	2	9	500	100
Bc	1	8	500	100
Bc	2	9	500	100
Bc	3	5	500	100
Bc	3	6	500	100
Bc	3	7	500	100
Cc	1	16	500	100
Cc	2	17	500	100
Cc	3	11	500	100
Cc	3	12	500	100
Cc	3	13	500	100
Cc	3	14	500	100
Cc	3	15	500	100
Dc	1	19	500	100
Dc	2	21	500	100
Dc	3	25	500	100
Dc	3	22	500	100
Dc	3	23	500	100
Dc	3	24	500	100

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	601	601
A	2	645	645
B	2	639	639
B	3	639	639
C	1	253	253
C	2	515	515
C	3	748	748
D	1	323	323
D	2	354	354
D	3	354	354
A2	1	601	601
A2	2	645	645
Ac	1	541	541
Ac	2	741	741
Ac	3	29	29
Ax	1	427	427
Ax	2	351	351
Ax2	1	427	427
Ax2	2	351	351
B1	1	583	583
B3	1	1222	1222
B3	2	639	639
Bc	1	320	320
Bc	2	349	349

Bc	3	639	639
Bx	1	681	681
Bx	2	604	604
Bx	3	354	354
Bx2	1	681	681
Bx2	2	604	604
Bx2	3	354	354
Bx3	1	1285	1285
Bx3	2	354	354
C2	1	253	253
C2	2	515	515
C2	3	748	748
Cc	1	351	351
Cc	2	351	351
Cc	3	748	748
Cx	1	583	583
Cx	2	541	541
Cx	3	741	741
Cx2	1	583	583
Cx2	2	541	541
Cx2	3	741	741
D3	1	323	323
D3	2	709	709
Dc	1	496	496
Dc	2	604	604
Dc	3	604	604
Dx	1	573	573
Dx	2	349	349
Dx	3	452	452
Dx2	1	573	573
Dx2	2	349	349
Dx2	3	452	452
Dx3	1	573	573
Dx3	2	801	801

Signals

Arm	Traffic Stream	Controller Stream	Phase	Phase2 Enabled
A	1	1	A	
A	2	1	A	
B	2	2	A	
B	3	2	A	
C	1	3	A	
C	2	3	A	
C	3	3	A	
D	1	4	A	
D	2	4	A	
D	3	4	A	
A2	1	6	A	
A2	2	6	A	
Ac	1	2	B	
Ac	2	2	B	
Ac	3	2	B	
Ax	1	5	A	
Ax	2	5	A	
B1	1	11	A	
Bc	1	3	B	
Bc	2	3	B	
Bc	3	3	B	
Bx	1	9	A	
Bx	2	9	A	
Bx	3	9	A	
C2	1	8	A	
C2	2	8	A	
C2	3	8	A	
Cc	1	4	B	
Cc	2	4	B	
Cc	3	4	B	
Cx	1	7	A	
Cx	2	7	A	
Cx	3	7	A	
Dc	1	1	B	
Dc	2	1	B	
Dc	3	1	B	
Dx	1	10	A	
Dx	2	10	A	
Dx	3	10	A	

Entry Sources

Arm	Traffic Stream	Normal Cruise Time (seconds)	Normal Cruise Speed (kph)
A2	1	26.32	48.28
A2	2	26.32	48.28
B3	1	3.60	30.00
B3	2	2.24	48.28
C2	1	5.34	48.28
C2	2	5.34	48.28
C2	3	5.34	48.28
D3	1	2.24	48.28
D3	2	2.24	48.28

Sources

Arm	Traffic Stream	Source	Source Type	Source Traffic Stream	Destination Traffic Stream	Normal Cruise Time (seconds)	Normal Cruise Speed (kph)	Auto Turning Radius	Traffic Turn Style	Turning Radius (m)
A	1	1	TrafficStream	A2/1	A/1	12.90	48.28	✓	Straight	Straight Movement
A	2	1	TrafficStream	A2/2	A/2	12.90	48.28	✓	Straight	Straight Movement
Ax2	1	1	TrafficStream	Ax/1	Ax2/1	26.84	48.28	✓	Straight	Straight Movement
Ax2	2	1	TrafficStream	Ax/2	Ax2/2	26.84	48.28	✓	Straight	Straight Movement
B	2	1	TrafficStream	B3/1	B/2	7.46	48.28	✓	Straight	Straight Movement
B	3	1	TrafficStream	B3/2	B/3	7.46	48.28	✓	Straight	Straight Movement
C	1	1	TrafficStream	C2/1	C/1	11.48	48.28	✓	Straight	Straight Movement
C	2	1	TrafficStream	C2/2	C/2	11.48	48.28	✓	Straight	Straight Movement
C	3	1	TrafficStream	C2/3	C/3	11.48	48.28	✓	Straight	Straight Movement
D	1	1	TrafficStream	D3/1	D/1	9.69	48.28	✓	Straight	Straight Movement
D	2	1	TrafficStream	D3/2	D/2	9.69	48.28	✓	Straight	Straight Movement
D	3	1	TrafficStream	D3/2	D/3	9.69	48.28	✓	Straight	Straight Movement
Ac	1	1	TrafficStream	A/1	Ac/1	4.57	32.18	✓	Straight	Straight Movement
Ac	2	1	TrafficStream	A/2	Ac/2	4.57	32.18	✓	Straight	Straight Movement
Ac	3	1	TrafficStream	A/2	Ac/3	4.57	32.18	✓	Straight	Straight Movement
Ax	1	1	TrafficStream	Cc/1	Ax/1	12.60	48.28	✓	Straight	Straight Movement
Ax	2	1	TrafficStream	Cc/2	Ax/2	12.60	48.28	✓	Straight	Straight Movement
Bf	1	1	TrafficStream	B3/1	B1/1	7.46	48.28	✓	Straight	Straight Movement
Bc	1	1	TrafficStream	B/2	Bc/1	6.01	32.18	✓	Straight	Straight Movement
Bc	2	1	TrafficStream	Ac/3	Bc/2	6.01	32.18	✓	Offside	17.07
Bc	3	1	TrafficStream	B/3	Bc/3	6.01	32.18	✓	Straight	Straight Movement

Bx	1	1	TrafficStream	Dc/1	Bx/1	1.12	48.28	✓	Straight	Straight Movement
Bx	2	1	TrafficStream	Dc/2	Bx/2	1.12	48.28	✓	Straight	Straight Movement
Bx	3	1	TrafficStream	Dc/3	Bx/3	1.12	48.28	✓	Straight	Straight Movement
Bx2	1	1	TrafficStream	Bx/1	Bx2/1	1.96	64.37	✓	Straight	Straight Movement
Bx2	2	1	TrafficStream	Bx/2	Bx2/2	2.61	48.28	✓	Straight	Straight Movement
Bx2	3	1	TrafficStream	Bx/3	Bx2/3	2.61	48.28	✓	Straight	Straight Movement
Bx3	1	1	TrafficStream	Bx2/1	Bx3/1	2.24	48.28	✓	Straight	Straight Movement
Bx3	2	1	TrafficStream	Bx2/3	Bx3/2	2.24	48.28	✓	Straight	Straight Movement
Cc	1	1	TrafficStream	C/2	Cc/1	5.76	32.18	✓	Straight	Straight Movement
Cc	2	1	TrafficStream	C/2	Cc/2	5.76	32.18	✓	Straight	Straight Movement
Cc	3	1	TrafficStream	C/3	Cc/3	5.76	32.18	✓	Straight	Straight Movement
Cx	1	1	TrafficStream	B1/1	Cx/1	10.55	48.28	✓	Nearside	88.92
Cx	2	1	TrafficStream	Ac/1	Cx/2	10.55	48.28	✓	Straight	Straight Movement
Cx	3	1	TrafficStream	Ac/2	Cx/3	10.55	48.28	✓	Straight	Straight Movement
Cx2	1	1	TrafficStream	Cx/1	Cx2/1	5.80	64.37	✓	Straight	Straight Movement
Cx2	2	1	TrafficStream	Cx/2	Cx2/2	7.74	48.28	✓	Straight	Straight Movement
Cx2	3	1	TrafficStream	Cx/3	Cx2/3	7.74	48.28	✓	Straight	Straight Movement
Dc	1	1	TrafficStream	Cc/3	Dc/1	4.96	32.18	✓	Offside	21.59
Dc	2	1	TrafficStream	Cc/3	Dc/2	4.96	32.18	✓	Offside	21.59
Dc	3	1	TrafficStream	Cc/3	Dc/3	4.96	32.18	✓	Offside	21.59
Dx	1	1	TrafficStream	C/1	Dx/1	1.49	48.28	✓	Straight	Straight Movement
Dx	2	1	TrafficStream	Bc/2	Dx/2	2.40	30.00	✓	Straight	Straight Movement
Dx	3	1	TrafficStream	Bc/3	Dx/3	2.40	30.00	✓	Straight	Straight Movement
Dx2	1	1	TrafficStream	Dx/1	Dx2/1	8.43	48.28	✓	Straight	Straight Movement
Dx2	2	1	TrafficStream	Dx/2	Dx2/2	8.43	48.28	✓	Straight	Straight Movement
Dx2	3	1	TrafficStream	Dx/3	Dx2/3	8.43	48.28	✓	Straight	Straight Movement
Dx3	1	1	TrafficStream	Dx2/1	Dx3/1	2.24	48.28	✓	Straight	Straight Movement
Dx3	2	1	TrafficStream	Dx2/3	Dx3/2	2.24	48.28	✓	Straight	Straight Movement
Ac	1	2	TrafficStream	Dc/3	Ac/1	4.57	32.18	✓	Offside	22.50
Ac	2	2	TrafficStream	Dc/3	Ac/2	4.48	32.80	✓	Offside	22.50
Ac	3	2	TrafficStream	Dc/3	Ac/3	4.57	32.18	✓	Offside	22.50
Ax	1	2	TrafficStream	D/1	Ax/1	12.60	48.28	✓	Nearside	53.31
Bc	2	2	TrafficStream	B/2	Bc/2	6.01	32.18	✓	Straight	Straight Movement

Bx	1	2	TrafficStream	A/1	Bx/1	1.12	48.28	✓	Straight	Straight Movement
Bx3	1	2	TrafficStream	Bx2/2	Bx3/1	2.24	48.28	✓	Straight	Straight Movement
Cc	1	2	TrafficStream	Bc/3	Cc/1	5.76	32.18	✓	Offside	29.81
Cc	2	2	TrafficStream	Bc/3	Cc/2	5.76	32.18	✓	Offside	29.81
Dc	1	2	TrafficStream	D/1	Dc/1	4.96	32.18	✓	Straight	Straight Movement
Dc	2	2	TrafficStream	D/2	Dc/2	4.96	32.18	✓	Straight	Straight Movement
Dc	3	2	TrafficStream	D/3	Dc/3	4.96	32.18	✓	Straight	Straight Movement
Dx	1	2	TrafficStream	Bc/1	Dx/1	2.40	30.00	✓	Straight	Straight Movement
Dx3	2	2	TrafficStream	Dx2/2	Dx3/2	2.24	48.28	✓	Straight	Straight Movement

Quick Flares

Arm	Traffic Stream	Description	Saturation Flow (PCU/hr)	Use Que Prob	Effective Storage (Vehs)
A	2		1800		2.00
C	3		1800		2.00

Local OD Matrix - Local Matrix: 1 - PM

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	185	1032	29
	2	187	0	583	1091
	3	515	748	0	253
	4	76	706	250	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits
1 - PM	1		A2/2,A2/1	Ax2/1,Ax2/2
1 - PM	2		B3/2,B3/1	Bx3/1,Bx3/2
1 - PM	3		C2/3,C2/2,C2/1	Cx2/3,Cx2/2,Cx2/1
1 - PM	4	(untitled)	D3/1,D3/2	Dx3/2,Dx3/1

Paths

OD Matrix	Path	Description	From Location	To Location	Path Items
1 - PM	1		1	3	A2/2,A/2,Ac/2,Cx/3,Cx2/3
1 - PM	2		1	4	A2/2,A/2,Ac/3,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - PM	3		1	3	A2/1,A/1,Ac/1,Cx/2,Cx2/2
1 - PM	4		1	2	A2/1,A/1,Bx/1,Bx2/1,Bx3/1
1 - PM	5		2	1	B3/2,B/3,Bc/3,Cc/1,Ax/1,Ax2/1
1 - PM	6		2	1	B3/2,B/3,Bc/3,Cc/2,Ax/2,Ax2/2
1 - PM	7		2	4	B3/2,B/3,Bc/3,Dx/3,Dx2/3,Dx3/2
1 - PM	8		2	4	B3/1,B/2,Bc/1,Dx/1,Dx2/1,Dx3/1
1 - PM	9		2	4	B3/1,B/2,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - PM	10		2	3	B3/1,B1/1,Cx/1,Cx2/1
1 - PM	11		3	2	C2/3,C/3,Cc/3,Dc/1,Bx/1,Bx2/1,Bx3/1
1 - PM	12		3	2	C2/3,C/3,Cc/3,Dc/2,Bx/2,Bx2/2,Bx3/1
1 - PM	13		3	3	C2/3,C/3,Cc/3,Dc/3,Ac/1,Cx/2,Cx2/2
1 - PM	14		3	3	C2/3,C/3,Cc/3,Dc/3,Ac/2,Cx/3,Cx2/3
1 - PM	15		3	2	C2/3,C/3,Cc/3,Dc/3,Bx/3,Bx2/3,Bx3/2
1 - PM	16		3	1	C2/2,C/2,Cc/1,Ax/1,Ax2/1
1 - PM	17		3	1	C2/2,C/2,Cc/2,Ax/2,Ax2/2
1 - PM	18		3	4	C2/1,C/1,Dx/1,Dx2/1,Dx3/1
1 - PM	19		4	2	D3/1,D/1,Dc/1,Bx/1,Bx2/1,Bx3/1
1 - PM	20		4	1	D3/1,D/1,Ax/1,Ax2/1
1 - PM	21		4	2	D3/2,D/2,Dc/2,Bx/2,Bx2/2,Bx3/1
1 - PM	22		4	3	D3/2,D/3,Dc/3,Ac/1,Cx/2,Cx2/2
1 - PM	23		4	3	D3/2,D/3,Dc/3,Ac/2,Cx/3,Cx2/3
1 - PM	24		4	4	D3/2,D/3,Dc/3,Ac/3,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - PM	25		4	2	D3/2,D/3,Dc/3,Bx/3,Bx2/3,Bx3/2

Normal Path Flows

OD Matrix	Path	Permitted Flow Type	Allocation Type
1 - PM	1	✓	Normal
1 - PM	2	✓	Normal
1 - PM	3	✓	Normal
1 - PM	4	✓	Normal
1 - PM	5	✓	Normal
1 - PM	6	✓	Normal
1 - PM	7	✓	Normal
1 - PM	8	✓	Normal
1 - PM	9	✓	Normal
1 - PM	10	✓	Normal
1 - PM	11	✓	Normal
1 - PM	12	✓	Normal
1 - PM	13	✓	Normal
1 - PM	14	✓	Normal
1 - PM	15	✓	Normal
1 - PM	16	✓	Normal
1 - PM	17	✓	Normal
1 - PM	18	✓	Normal
1 - PM	19	✓	Normal
1 - PM	20	✓	Normal
1 - PM	21	✓	Normal
1 - PM	22	✓	Normal
1 - PM	23	✓	Normal
1 - PM	24	✓	Normal
1 - PM	25	✓	Normal

Signal Timings

Network Default: 72s cycle time; 72 steps

Controller Stream 1

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
1			1	NetworkDefault	72

Controller Stream 1 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
1	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
1	A	(untitled)	7	300	0	0	Not Specified
1	B	(untitled)	7	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
1	1	A	1
1	2	B	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
1	1	Gaining	B	1	2	0	6

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
1	1	(untitled)	Single	1,2	40,11

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
1	1	✓	1	A	16	40	24	1	7
1	2	✓	2	B	47	11	36	1	7

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
1	A	1	✓	16	40	24
1	B	1	✓	47	11	36

Intergreen Matrix for Controller Stream 1

		To	
		A	B
From	A		7
	B	5	

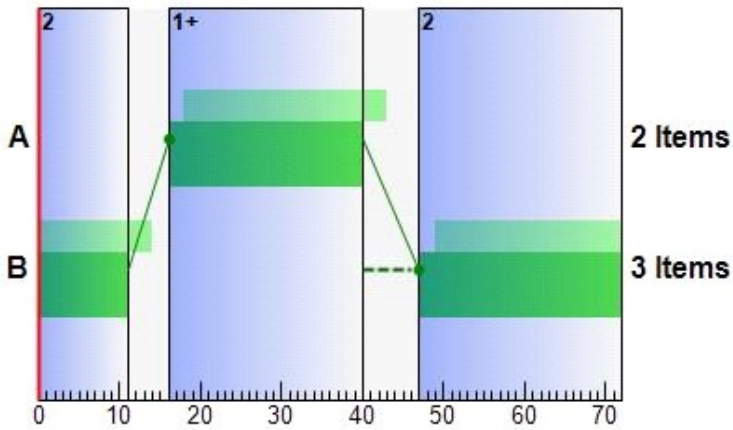
Interstage Matrix for Controller Stream 1

		To	
		1	2
From	1	0	7
	2	5	0

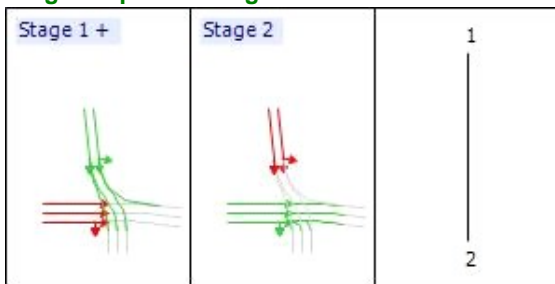
Banned Stage transitions for Controller Stream 1

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Controller Stream 2

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
2			1	NetworkDefault	72

Controller Stream 2 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
2	Unspecified						Absolute

Controller Stream 2 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
2	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
2	A	(untitled)	7	300	0	0	Not Specified
2	B	(untitled)	7	300	0	0	Not Specified
2	C	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
2	1	A	1
2	2	B,C	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay
2	1	Losing	B	2	1	2

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
2	1	(untitled)	Single	1,2	7,51

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
2	1	✓	1	A	58	7	21	1	7
2	2	✓	2	B,C	14	51	37	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
2	A	1	✓	58	7	21
2	B	1	✓	14	53	39
2	C	1	✓	12	51	39

Intergreen Matrix for Controller Stream 2

		To		
		A	B	C
From	A		7	5
	B	5		
	C	7		

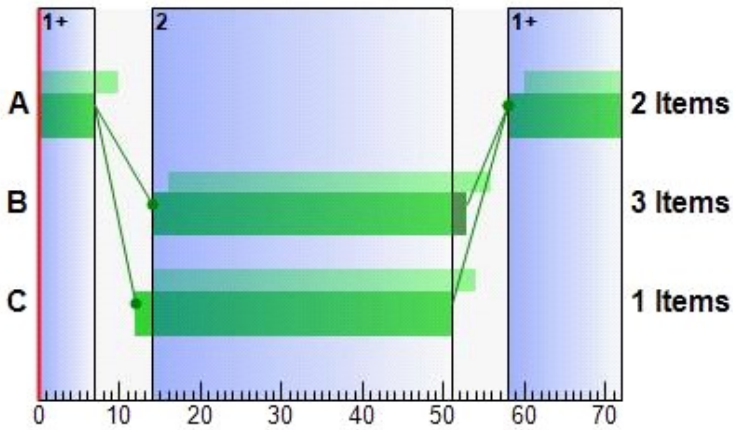
Interstage Matrix for Controller Stream 2

		To	
		1	2
From	1	0	7
	2	7	0

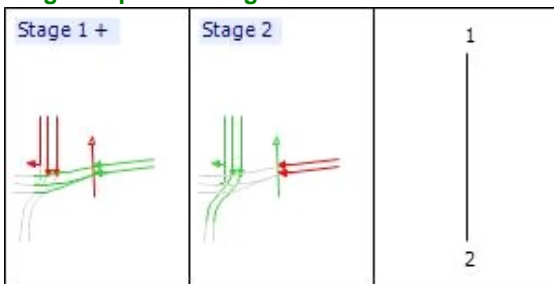
Banned Stage transitions for Controller Stream 2

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 2



Stage Sequence Diagram for Controller Stream 2



Controller Stream 3

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
3			1	NetworkDefault	72

Controller Stream 3 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
3	Unspecified						Absolute

Controller Stream 3 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
3	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
3	A	(untitled)	7	300	0	0	Not Specified
3	B	(untitled)	7	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
3	1	A	1
3	2	B	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
3	1	Gaining	A	2	1	0	3

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
3	1	(untitled)	Single	1,2	56,22

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
3	1	✓	1	A	27	56	29	1	7
3	2	✓	2	B	63	22	31	1	7

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
3	A	1	✓	27	56	29
3	B	1	✓	63	22	31

Intergreen Matrix for Controller Stream 3

		To	
		A	B
From	A		7
	B	5	

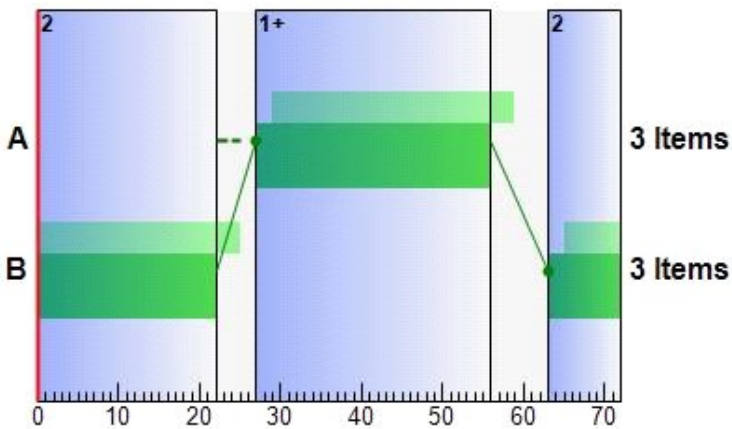
Interstage Matrix for Controller Stream 3

		To	
		1	2
From	1	0	7
	2	5	0

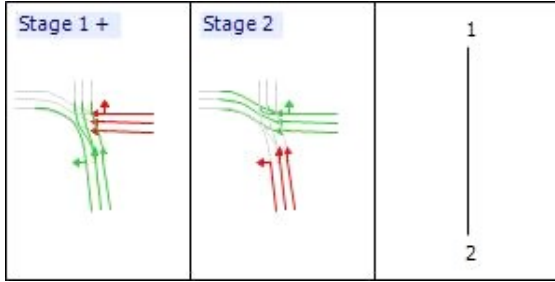
Banned Stage transitions for Controller Stream 3

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 3



Stage Sequence Diagram for Controller Stream 3



Controller Stream 4

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
4			1	NetworkDefault	72

Controller Stream 4 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
4	Unspecified						Absolute

Controller Stream 4 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
4	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
4	A	(untitled)	7	300	0	0	Not Specified
4	B	(untitled)	7	300	0	0	Not Specified
4	C	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
4	1	A	1
4	2	B,C	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay
4	1	Losing	B	2	1	5

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
4	1	(untitled)	Single	1,2	5,58

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
4	1	✓	1	A	68	5	9	1	7
4	2	✓	2	B,C	12	58	46	1	3

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
4	A	1	✓	68	5	9
4	B	1	✓	12	63	51
4	C	1	✓	10	58	48

Intergreen Matrix for Controller Stream 4

		To		
		A	B	C
From	A		7	5
	B	5		
	C	10		

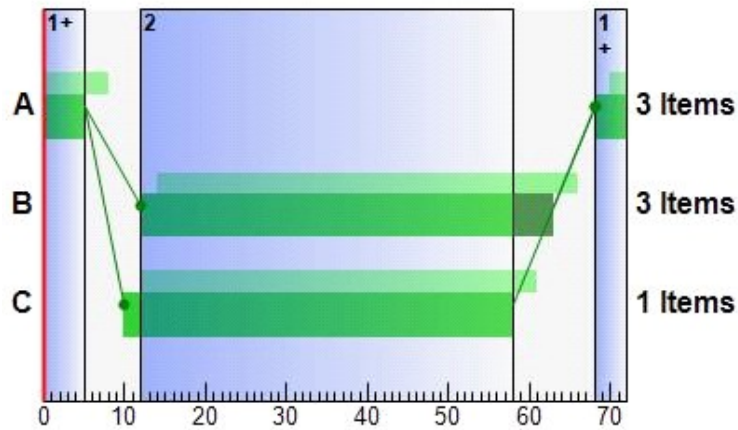
Interstage Matrix for Controller Stream 4

		To	
		1	2
From	1	0	7
	2	10	0

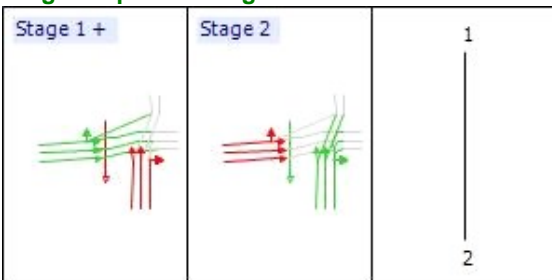
Banned Stage transitions for Controller Stream 4

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 4



Stage Sequence Diagram for Controller Stream 4



Controller Stream 5

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
5	(untitled)		1	NetworkDefault	72

Controller Stream 5 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
5	Unspecified						Absolute

Controller Stream 5 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
5	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
5	A	(untitled)	7	300	0	0	Not Specified
5	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
5	1	A	1
5	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
5	1	(untitled)	Single	1,2	30,40

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
5	1	✓	1	A	48	30	54	1	7
5	2	✓	2	B	35	40	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
5	A	1	✓	48	30	54
5	B	1	✓	35	40	5

Intergreen Matrix for Controller Stream 5

		To	
		A	B
From	A		5
	B	8	

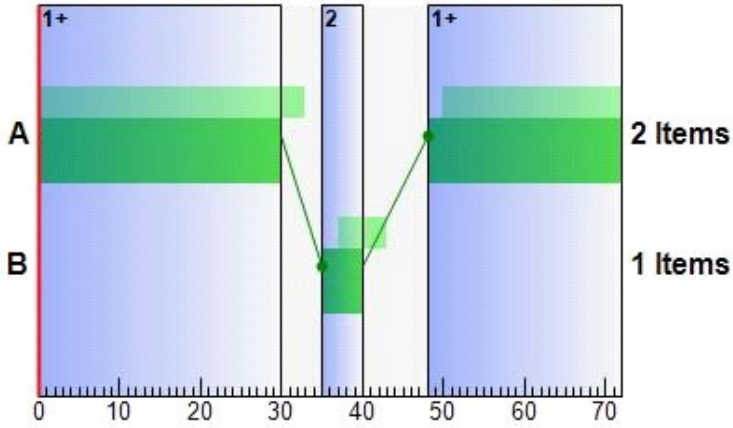
Interstage Matrix for Controller Stream 5

		To	
		1	2
From	1	0	5
	2	8	0

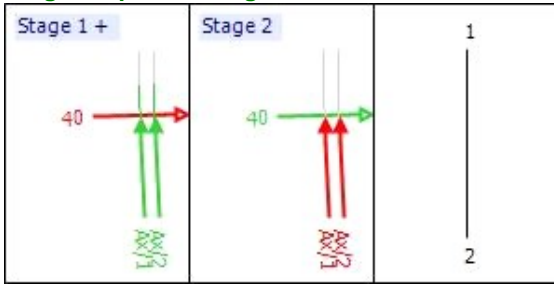
Banned Stage transitions for Controller Stream 5

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 5



Stage Sequence Diagram for Controller Stream 5



Controller Stream 6

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
6	(untitled)		1	NetworkDefault	72

Controller Stream 6 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
6	Unspecified						Absolute

Controller Stream 6 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
6	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
6	A	(untitled)	7	300	0	0	Not Specified
6	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
6	1	A	1
6	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
6	1	(untitled)	Single	1,2	71,9

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
6	1	✓	1	A	17	71	54	1	7
6	2	✓	2	B	4	9	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
6	A	1	✓	17	71	54
6	B	1	✓	4	9	5

Intergreen Matrix for Controller Stream 6

		To	
		A	B
From	A		5
	B	8	

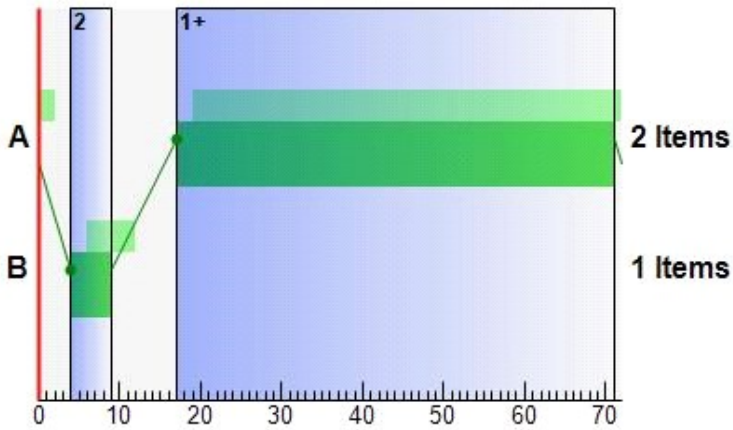
Interstage Matrix for Controller Stream 6

		To	
		1	2
From	1	0	5
	2	8	0

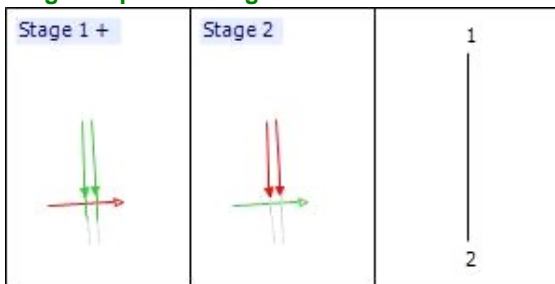
Banned Stage transitions for Controller Stream 6

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 6



Stage Sequence Diagram for Controller Stream 6



Controller Stream 7

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
7	(untitled)		1	NetworkDefault	72

Controller Stream 7 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
7	Unspecified						Absolute

Controller Stream 7 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
7	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
7	A	(untitled)	7	300	0	0	Not Specified
7	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
7	1	A	1
7	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
7	1	(untitled)	Single	1,2	69,7

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
7	1	✓	1	A	17	69	52	1	7
7	2	✓	2	B	2	7	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
7	A	1	✓	17	69	52
7	B	1	✓	2	7	5

Intergreen Matrix for Controller Stream 7

		To	
		A	B
From	A		5
	B	10	

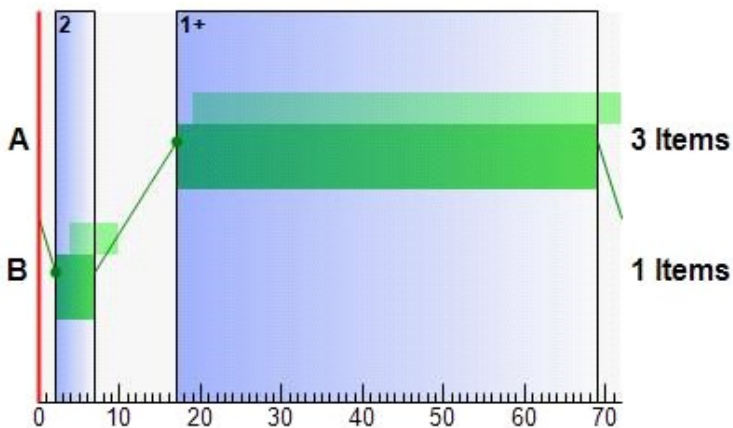
Interstage Matrix for Controller Stream 7

		To	
		1	2
From	1	0	5
	2	10	0

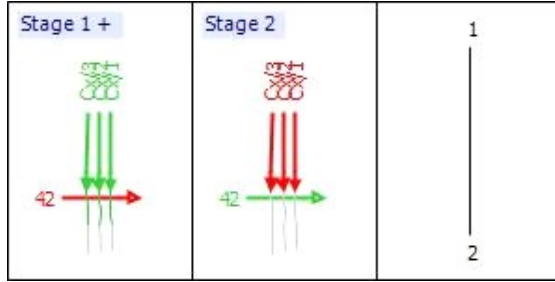
Banned Stage transitions for Controller Stream 7

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 7



Stage Sequence Diagram for Controller Stream 7



Controller Stream 8

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
8	(untitled)		1	NetworkDefault	72

Controller Stream 8 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
8	Unspecified						Absolute

Controller Stream 8 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
8	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
8	A	(untitled)	7	300	0	0	Not Specified
8	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
8	1	A	1
8	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
8	1	(untitled)	Single	1,2	12,22

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
8	1	✓	1	A	32	12	52	1	7
8	2	✓	2	B	17	22	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
8	A	1	✓	32	12	52
8	B	1	✓	17	22	5

Intergreen Matrix for Controller Stream 8

		To	
		A	B
From	A		5
	B	10	

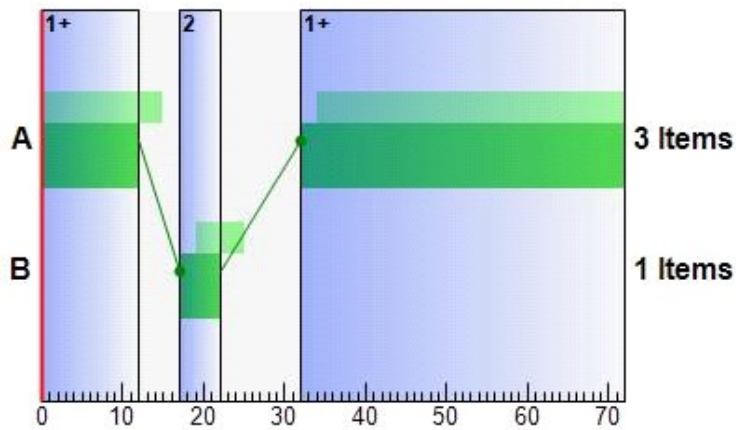
Interstage Matrix for Controller Stream 8

		To	
		1	2
From	1	0	5
	2	10	0

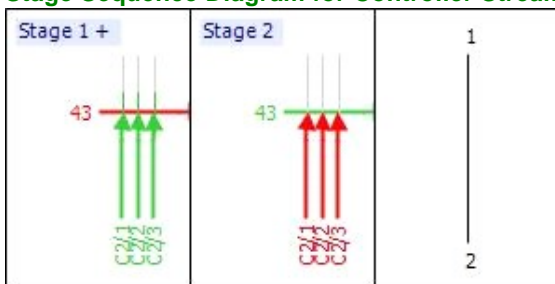
Banned Stage transitions for Controller Stream 8

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 8



Stage Sequence Diagram for Controller Stream 8



Controller Stream 9

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
9	(untitled)		1	NetworkDefault	72

Controller Stream 9 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
9	Unspecified						Absolute

Controller Stream 9 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
9	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
9	A	(untitled)	7	300	0	0	Not Specified
9	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
9	1	A	1
9	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
9	1	(untitled)	Single	1,2	12,22

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
9	1	✓	1	A	32	12	52	1	7
9	2	✓	2	B	17	22	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
9	A	1	✓	32	12	52
9	B	1	✓	17	22	5

Intergreen Matrix for Controller Stream 9

		To	
		A	B
From	A		5
	B	10	

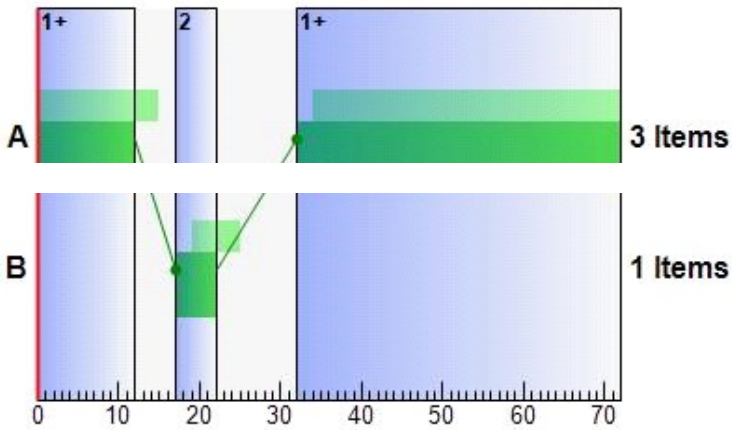
Interstage Matrix for Controller Stream 9

		To	
		1	2
From	1	0	5
	2	10	0

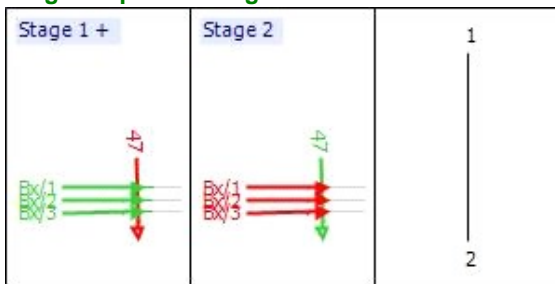
Banned Stage transitions for Controller Stream 9

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 9



Stage Sequence Diagram for Controller Stream 9



Controller Stream 10

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
10	(untitled)		1	NetworkDefault	72

Controller Stream 10 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
10	Unspecified						Absolute

Controller Stream 10 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
10	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
10	A	(untitled)	7	300	0	0	Not Specified
10	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
10	1	A	1
10	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
10	1	(untitled)	Single	1,2	46,56

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
10	1	✓	1	A	66	46	52	1	7
10	2	✓	2	B	51	56	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
10	A	1	✓	66	46	52
10	B	1	✓	51	56	5

Intergreen Matrix for Controller Stream 10

		To	
		A	B
From	A		5
	B	10	

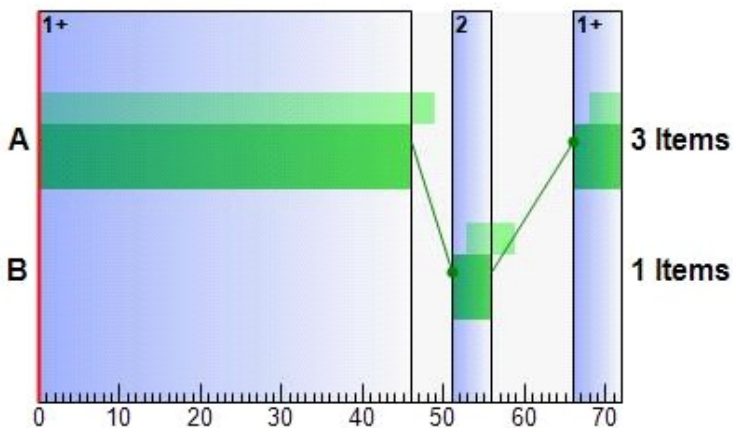
Interstage Matrix for Controller Stream 10

		To	
		1	2
From	1	0	5
	2	10	0

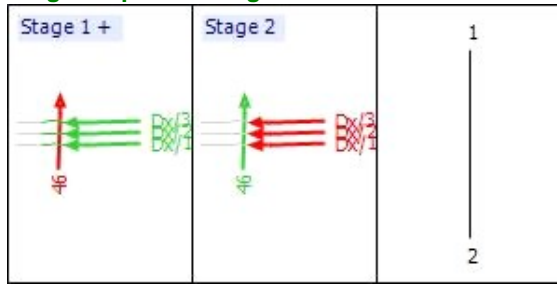
Banned Stage transitions for Controller Stream 10

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 10



Stage Sequence Diagram for Controller Stream 10



Controller Stream 11

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
11			1	NetworkDefault	72

Controller Stream 11 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
11	Unspecified						Absolute

Controller Stream 11 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
11	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
11	A	(untitled)	7	300	0	0	Not Specified
11	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
11	1	A	1
11	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
11	1	(untitled)	Single	1,2	66,4

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
11	1	✓	1	A	9	66	57	1	7
11	2	✓	2	B	71	4	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
11	A	1	✓	9	66	57
11	B	1	✓	71	4	5

Intergreen Matrix for Controller Stream 11

		To	
		A	B
From	A		5
	B	5	

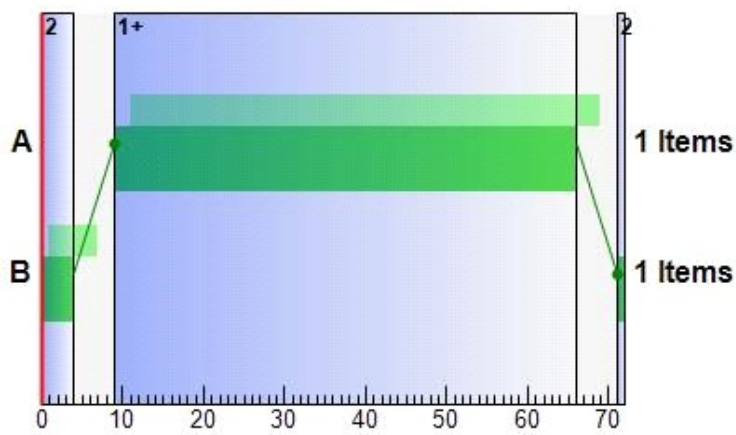
Interstage Matrix for Controller Stream 11

		To	
		1	2
From	1	0	5
	2	5	0

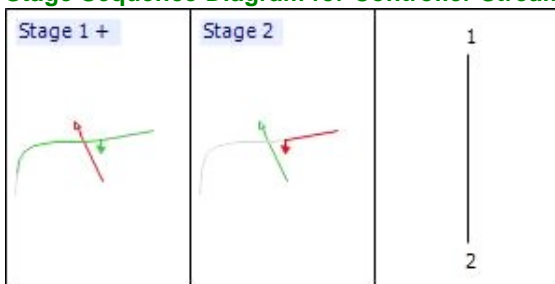
Banned Stage transitions for Controller Stream 11

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 11



Stage Sequence Diagram for Controller Stream 11



Final Prediction Table

Link Results

Link	Name	Traffic Node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES		WEIG
			Controller Stream	Phase	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Wasted Time Total (s per cycle)	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Journey Time Per PCU (s)	Mean Delay Per PCU (s)	Mean Stops Per PCU (%)	Mean Max Queue (PCU)	Max End Of Red Queue (PCU)	Delay Weighting (%)
40 P	A452 N - NB	5	5	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100
41 P	A452 N - SB	6	6	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100
42 P	A452 S - SB	7	7	B	0	0	0	0.00	0	0	31.97	30.71	0.00	1.83	1.83	100
43 P	A452 S - NB	8	8	B	0	0	0	0.00	0	0	31.88	30.71	0.00	1.83	1.83	100
45 P	A38 W - WB	2	2	C	0	0	0	0.00	0	0	8.41	7.33	0.00	0.89	0.89	100
46 P	A38 E - WB	10	10	B	0	0	0	0.00	0	0	31.88	30.71	0.00	1.83	1.83	100
47 P	A38 W - EB	9	9	B	0	0	0	0.00	0	0	31.79	30.71	0.00	1.83	1.83	100
49 P	A38 E - EB	4	4	C	0	0	0	0.00	0	0	5.00	3.83	0.00	0.64	0.64	100
50 P	A38 W - WB	2	11	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100

Traffic Stream Results

Arm	Traffic Stream	Name	Traffic Node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	
				Controller Stream	Phase	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Wasted Time Total (s per cycle)	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Journey Time Per PCU (s)	Mean Delay Per PCU (s)	Mean Stops Per PCU (%)	Mean Max Queue (PCU)	Max End Of Red Queue (PCU)
A	1		1	1	A	601	1905	24	5.00	91!	-1	57.12	44.22	103.65	14.55	11.4
A	2		1	1	A	645	2368 f	24	3.00	78	15	39.58	26.68	74.10	9.61	9.48
B	2	(untitled)	2	2	A	640 <	2070	21	0.00	101!	-11	111.92	104.46	182.24	26.65 +	22.9
B	3	(untitled)	2	2	A	640 <	2070	21	0.00	101!	-11	111.92	104.46	182.24	26.65 +	22.9
C	1		3	3	A	253	1762	29	8.00	34	161	26.71	15.23	57.26	2.92	2.88
C	2		3	3	A	516	1937	29	3.00	64	41	30.90	19.42	61.77	6.39	6.28
C	3		3	3	A	747	2192 f	29	1.00	82	10	35.82	24.34	69.03	10.38	10.2
D	1		4	4	A	323 <	1804	9	0.00	129!	-30	455.44	445.74	344.04	42.78 +	42.1
D	2		4	4	A	354 <	1979	9	0.00	129!	-30	452.73	443.03	343.55	46.62 +	45.9
D	3		4	4	A	354 <	1979	9	0.00	129!	-30	452.73	443.03	343.55	46.62 +	45.9

A2	1	(untitled)	6	6	A	601	1940	54	0.00	41	122	30.06	3.74	30.37	4.14	2.98
A2	2	(untitled)	6	6	A	645	2080	54	0.00	41	122	30.01	3.69	30.30	4.44	3.18
Ac	1		2	2	B	513	2015	39	4.00	46	96	6.78	2.22	16.78	1.98	1.64
Ac	2		2	2	B	713 <	2155	39	4.00	60	51	7.94	3.38	41.20	7.82 +	1.89
Ac	3		2	2	B	29	2033	39	24.00	3	3405	4.62	0.05	0.07	0.00	0.00
Ax	1		5	5	A	410	2105	54	0.00	25	253	14.09	1.49	14.10	1.53	1.13
Ax	2		5	5	A	351	2055	54	14.00	22	303	14.20	1.60	16.15	1.51	1.11
Ax2	1	(untitled)				410	1800	72	1.00	23	295	27.14	0.29	0.00	0.03	
Ax2	2	(untitled)				351	1800	72	3.00	19	362	27.09	0.24	0.00	0.02	
B1	1		2	11	A	583	1754	57	0.00	41	118	10.39	2.93	25.04	3.38	2.41
B3	1	(untitled)	14			1223	1800	72	53.00	68	32	5.71	2.11	0.00	0.72	
B3	2	(untitled)	14			640	1800	72	53.00	36	153	2.79	0.55	0.00	0.10	
Bc	1		3	3	B	316	1973	31	4.00	36	150	7.20	1.18	1.67	0.11	0.11
Bc	2		3	3	B	345	2113	31	4.00	37	145	9.35	3.34	10.81	0.80	0.69
Bc	3		3	3	B	633 <	1993	31	3.00	71	26	11.22	5.21	16.05	9.83 +	0.89
Bx	1		9	9	A	626 <	2055	52	6.00	41	118	4.02	2.90	23.76	3.40 +	2.59
Bx	2		9	9	A	524	2055	52	16.00	35	160	1.88	0.76	1.84	1.28	0.16
Bx	3		9	9	A	330	2055	52	16.00	22	313	1.51	0.39	0.78	0.05	0.05
Bx2	1	(untitled)	13			626	1800	72	38.00	35	159	2.55	0.59	3.74	2.31	
Bx2	2	(untitled)	13			524	1800	72	48.00	29	209	3.07	0.46	3.48	2.64	
Bx2	3	(untitled)	13			330	1800	72	33.00	18	391	2.85	0.24	0.94	1.09	
Bx3	1	(untitled)				1149 <	1800	72	15.00	64	41	5.83	3.59	47.55	9.61 +	
Bx3	2	(untitled)				330	1800	72	32.00	18	391	2.46	0.22	0.00	0.02	
C2	1	(untitled)	8	8	A	253	1940	52	0.00	18	408	8.50	3.16	26.55	1.49	1.35
C2	2	(untitled)	8	8	A	516	2080	52	0.00	34	167	9.28	3.94	31.39	3.67	2.81
C2	3	(untitled)	8	8	A	747	2080	52	0.00	49	84	10.37	5.03	37.36	6.25	4.17
Cc	1		4	4	B	351	1847	51	8.00	26	242	7.62	1.86	17.14	1.32	1.16
Cc	2		4	4	B	351	1987	51	8.00	24	268	7.53	1.77	16.93	1.32	1.15
Cc	3		4	4	B	747	1875	51	19.00	55	63	8.69	2.93	37.77	8.83	0.55
Cx	1		7	7	A	583	2015	52	0.00	39	129	13.11	2.56	14.42	2.37	1.41
Cx	2		7	7	A	513	2105	52	10.00	33	172	11.14	0.59	0.91	0.09	0.09
Cx	3		7	7	A	713	2105	52	10.00	46	96	11.55	1.01	1.48	0.78	0.21
Cx2	1	(untitled)				583	1800	72	15.00	32	178	6.28	0.48	0.00	0.08	
Cx2	2	(untitled)				513	1800	72	26.00	29	216	8.13	0.40	0.00	0.06	
Cx2	3	(untitled)				713	1800	72	25.00	40	127	8.59	0.85	10.00	7.21	
D3	1	(untitled)	15			323	1800	72	72.00	18	402	2.46	0.22	0.00	0.02	
D3	2	(untitled)	15			708	1800	72	72.00	39	129	2.88	0.65	0.00	0.13	
Dc	1		1	1	B	441	2015	36	2.00	43	112	8.57	3.61	27.49	2.73	2.03
Dc	2		1	1	B	524	2155	36	2.00	47	90	8.61	3.65	24.24	2.86	2.17
Dc	3		1	1	B	524	2033	36	2.00	50	79	8.92	3.96	24.86	2.90	2.21
Dx	1		10	10	A	569	2105	52	12.00	37	145	4.39	2.39	14.33	1.94	1.41
Dx	2		10	10	A	345	2105	52	25.00	22	304	2.79	0.39	3.83	0.69	0.38
Dx	3		10	10	A	447	2105	52	25.00	29	212	2.88	0.48	1.23	0.15	0.15
Dx2	1	(untitled)	16			569	1800	72	15.00	32	185	8.89	0.46	0.00	0.07	
Dx2	2	(untitled)	16			345	1800	72	57.00	19	369	8.66	0.24	0.00	0.02	
Dx2	3	(untitled)	16			447	1800	72	57.00	25	263	8.76	0.33	0.00	0.04	
Dx3	1	(untitled)				569	1800	72	13.00	32	185	2.70	0.46	0.00	0.07	
Dx3	2	(untitled)				792 <	1800	72	36.00	44	105	5.42	3.18	53.09	14.13 +	

Network Results

	Distance Travelled (PCU-km/hr)	Time Spent (PCU-hr/hr)	Mean Journey Speed (kph)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Excess Queue Penalty (£ per hr)	Performance Index (£ per hr)
TOTAL	2852.27	261.60	10.90	36.30	163.20	306.43	141.95	161.87	610.25
BUSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PEDESTRIANS									
OTHER (NORMAL)	2852.27	261.60	10.90	36.30	163.20	306.43	141.95	161.87	610.25

- 1 *B = at least one source for this link carries buses*
- 1 *T = at least one source for this link carries trams*
- 1 *P = this link is a pedestrian link*
- 1 *< = adjusted flow warning (upstream links are over-saturated)*
- 1 *! = DoS threshold exceeded*
- 1 *f = average saturation flow for flared link*
- 1 ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- 1 *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- 1 *+ = average link excess queue is greater than 0*
- 1 *P.I. = PERFORMANCE INDEX*

Link Results

Link Results: Flows And Signals

Time Segment	Link	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Calculated Sat Flow	Calculated Capacity	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity	Mean Modulus Of Error	Actual Green (s (per cycle))	Effectiv Green (per cycle)
07:30-08:30	40	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	41	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	42	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	43	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	45	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	39	40
07:30-08:30	46	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	47	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	49	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	48	49
07:30-08:30	50	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6

Link Results: Stops And Delays

Time Segment	Link	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	40	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	41	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	42	1.26	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	43	1.17	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	45	1.08	7.33	0.20	0.00	2.89	2.89	0.00	0.00	0.00	0.00	0.00
07:30-08:30	46	1.17	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	47	1.08	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	49	1.17	3.83	0.11	0.00	1.51	1.51	0.00	0.00	0.00	0.00	0.00
07:30-08:30	50	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00

Link Results: Queues And Blocking

Time Segment	Link	Initial Queue (PCU)	Mean Max Queue (PCU)	Max Queue Storage (PCU)	Utilised Storage (%)	Average Link Excess Queue (PCU)	Average Limit Excess Queue (PCU)	Excess Queue Penalty (£ per hr)	Max End Of Green Queue (PCU)	Max End Of Red Queue (PCU)	Wasted Time Starvation (s (per cycle))	Wasted Time Blocking Back (s (per cycle))	Wasted Time Total (s (per cycle))	Estimated Blocking
07:30-08:30	40	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	41	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	42	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	43	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	45	0.00	0.89	10.00	8.89	0.00	0.00	0.00	0.00	0.89	0.00	0.00	0.00	
07:30-08:30	46	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	47	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	49	0.00	0.64	10.00	6.39	0.00	0.00	0.00	0.00	0.64	0.00	0.00	0.00	
07:30-08:30	50	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	

Link Results: Advanced

Time Segment	Link	Degree Of Saturation Penalty (£ per hr)	Phase Min Max Penalty (£ per hr)	Intergreen Broken Penalty (£ per hr)	Stage Constraint Broken Penalty (£ per hr)	Ped Gap Accepting Penalty (£ per hr)	Warmed Up	Warmed Up Error	Mean Max Queue EoTS (PCU)	Max End Of Green Queue Eo TS (PCU)	Max End Of Red Queue Eo TS (PCU)	Cost Of Penalties (£ per hr)	Unweighted Performance Index (£ per hr)	Performance Index (£ per hr)
07:30-08:30	40	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	41	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	42	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	43	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	45	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.89	0.00	0.89	0.00	0.00	0.00
07:30-08:30	46	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	47	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	49	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.64	0.00	0.64	0.00	0.00	0.00
07:30-08:30	50	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle Summary

Time Segment	Arm	Traffic Stream	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Mean Delay Per PCU (s)	Mean Max Queue (PCU)	Utilised Storage (%)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Performance Index (£ per hr)
07:30-08:30	A	1	91!	-1	601	1905	24	44.22	14.55	48.36	4.19	0.00	4.19
07:30-08:30	A	2	78	15	645	2368	24	26.68	9.61	31.95	2.71	0.00	2.71
07:30-08:30	B	2	101!	-11	640	2070	21	104.46	26.65	153.26	10.55	0.00	10.55
07:30-08:30	B	3	101!	-11	640	2070	21	104.46	26.65	153.26	10.55	0.00	10.55
07:30-08:30	C	1	34	161	253	1762	29	15.23	2.92	10.91	0.61	0.00	0.61
07:30-08:30	C	2	64	41	516	1937	29	19.42	6.39	23.88	1.58	0.00	1.58
07:30-08:30	C	3	82	10	747	2192	29	24.34	10.38	38.74	2.87	0.00	2.87
07:30-08:30	D	1	129!	-30	323	1804	9	445.74	42.78	189.21	22.72	0.00	22.72
07:30-08:30	D	2	129!	-30	354	1979	9	443.03	46.62	206.20	24.74	0.00	24.74
07:30-08:30	D	3	129!	-30	354	1979	9	443.03	46.62	206.20	24.74	0.00	24.74
07:30-08:30	A2	1	41	122	601	1940	54	3.74	4.14	6.75	8.86	5.93	14.79
07:30-08:30	A2	2	41	122	645	2080	54	3.69	4.44	7.23	9.38	6.35	15.72
07:30-08:30	Ac	1	46	96	513	2015	39	2.22	1.98	27.84	4.48	1.70	9.61

07:30-08:30	Ac	2	60	51	713	2155	39	3.38	7.82	110.10	9.50	16.63	57.05
07:30-08:30	Ac	3	3	3405	29	2033	39	0.05	0.00	0.01	0.01	0.00	0.01
07:30-08:30	Ax	1	25	253	410	2105	54	1.49	1.53	5.21	2.41	1.88	4.29
07:30-08:30	Ax	2	22	303	351	2055	54	1.60	1.51	5.13	2.21	1.84	4.06
07:30-08:30	Ax2	1	23	295	410	1800	72	0.29	0.03	0.05	0.48	0.00	0.48
07:30-08:30	Ax2	2	19	362	351	1800	72	0.24	0.02	0.04	0.34	0.00	0.34
07:30-08:30	B1	1	41	118	583	1754	57	2.93	3.38	19.46	6.74	4.74	11.48
07:30-08:30	B3	1	68	32	1223	1800	72	2.11	0.72	13.73	10.18	0.00	10.18
07:30-08:30	B3	2	36	153	640	1800	72	0.55	0.10	1.88	1.39	0.00	1.39
07:30-08:30	Bc	1	36	150	316	1973	31	1.18	0.11	1.14	1.48	0.38	1.86
07:30-08:30	Bc	2	37	145	345	2113	31	3.34	0.80	8.54	4.55	0.99	5.54
07:30-08:30	Bc	3	71	26	633	1993	31	5.21	9.83	105.17	13.00	7.32	70.41
07:30-08:30	Bx	1	41	118	626	2055	52	2.90	3.40	130.43	7.16	4.83	11.99
07:30-08:30	Bx	2	35	160	524	2055	52	0.76	1.28	49.02	1.58	0.31	1.89
07:30-08:30	Bx	3	22	313	330	2055	52	0.39	0.05	1.97	0.51	0.08	0.59
07:30-08:30	Bx2	1	35	159	626	1800	72	0.59	2.31	38.02	1.45	1.35	2.80
07:30-08:30	Bx2	2	29	209	524	1800	72	0.46	2.64	43.33	0.95	0.59	1.55
07:30-08:30	Bx2	3	18	391	330	1800	72	0.24	1.09	17.89	0.31	0.10	0.41
07:30-08:30	Bx3	1	64	41	1149	1800	72	3.59	9.61	184.21	16.29	17.75	34.04
07:30-08:30	Bx3	2	18	391	330	1800	72	0.22	0.02	0.39	0.29	0.00	0.29
07:30-08:30	C2	1	18	408	253	1940	52	3.16	1.49	12.00	3.15	2.18	5.34
07:30-08:30	C2	2	34	167	516	2080	52	3.94	3.67	29.45	8.01	5.26	13.27
07:30-08:30	C2	3	49	84	747	2080	52	5.03	6.25	50.17	14.83	9.06	23.89
07:30-08:30	Cc	1	26	242	351	1847	51	1.86	1.32	14.78	2.57	1.13	3.70
07:30-08:30	Cc	2	24	268	351	1987	51	1.77	1.32	14.70	2.44	1.11	3.55
07:30-08:30	Cc	3	55	63	747	1875	51	2.93	8.83	98.59	8.63	20.35	79.84
07:30-08:30	Cx	1	39	129	583	2015	52	2.56	2.37	9.64	5.88	2.73	8.61
07:30-08:30	Cx	2	33	172	513	2105	52	0.59	0.09	0.38	1.20	0.15	1.35
07:30-08:30	Cx	3	46	96	713	2105	52	1.01	0.78	3.18	2.83	0.34	3.17
07:30-08:30	Cx2	1	32	178	583	1800	72	0.48	0.08	0.43	1.10	0.00	1.10

07:30-08:30	Cx2	2	29	216	513	1800	72	0.40	0.06	0.31	0.81	0.00	0.81
07:30-08:30	Cx2	3	40	127	713	1800	72	0.85	7.21	39.98	2.40	2.32	4.72
07:30-08:30	D3	1	18	402	323	1800	72	0.22	0.02	0.38	0.28	0.00	0.28
07:30-08:30	D3	2	39	129	708	1800	72	0.65	0.13	2.44	1.81	0.00	1.81
07:30-08:30	Dc	1	43	112	441	2015	36	3.61	2.73	35.38	6.27	2.46	16.66
07:30-08:30	Dc	2	47	90	524	2155	36	3.65	2.86	37.10	7.55	2.89	19.58
07:30-08:30	Dc	3	50	79	524	2033	36	3.96	2.90	37.61	8.18	3.00	20.69
07:30-08:30	Dx	1	37	145	569	2105	52	2.39	1.94	55.86	5.38	2.30	7.68
07:30-08:30	Dx	2	22	304	345	2105	52	0.39	0.69	19.86	0.54	0.17	0.70
07:30-08:30	Dx	3	29	212	447	2105	52	0.48	0.15	4.39	0.85	0.07	0.92
07:30-08:30	Dx2	1	32	185	569	1800	72	0.46	0.07	0.37	1.04	0.00	1.04
07:30-08:30	Dx2	2	19	369	345	1800	72	0.24	0.02	0.12	0.32	0.00	0.32
07:30-08:30	Dx2	3	25	263	447	1800	72	0.33	0.04	0.21	0.58	0.00	0.58
07:30-08:30	Dx3	1	32	185	569	1800	72	0.46	0.07	1.40	1.04	0.00	1.04
07:30-08:30	Dx3	2	44	105	792	1800	72	3.18	14.13	270.76	9.94	13.66	23.59

Traffic Stream Results: Flows And Signals

Time Segment	Arm	Traffic Stream	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Calculated Sat Flow (PCU/hr)	Calculated Capacity (PCU/hr)	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity (%)	Mean Modulus Of Error	Actual Green (s (per cycle))	Effective Green (s (per cycle))
07:30-08:30	A	1	601	601	0		1905	661	91!	✓	-1	0.38	24	25
07:30-08:30	A	2	645	645	0		2368	822	78		15	0.38	24	25
07:30-08:30	B	2	640	633	-1		2070	633	101!	✓	-11	0.00	21	22
07:30-08:30	B	3	640	633	-1		2070	633	101!	✓	-11	0.00	21	22
07:30-08:30	C	1	253	253	0		1762	734	34		161	0.44	29	30
07:30-08:30	C	2	516	516	-1		1937	807	64		41	0.44	29	30
07:30-08:30	C	3	747	747	1		2192	913	82		10	0.45	29	30
07:30-08:30	D	1	323	251	0		1804	251	129!	✓	-30	0.00	9	10
07:30-08:30	D	2	354	275	0		1979	275	129!	✓	-30	0.00	9	10
07:30-08:30	D	3	354	275	0		1979	275	129!	✓	-30	0.00	9	10
07:30-08:30	A2	1	601	601	0		1940	1482	41		122	0.00	54	55
07:30-08:30	A2	2	645	645	0		2080	1589	41		122	0.00	54	55

07:30-08:30	Ac	1	513	513	28	✓	2015	1119	46		96	0.93	39	40
07:30-08:30	Ac	2	713	713	28	✓	2155	1197	60		51	0.99	39	40
07:30-08:30	Ac	3	29	29	0		2033	1129	3		3405	1.25	39	40
07:30-08:30	Ax	1	410	410	17	✓	2105	1608	25		253	0.45	54	55
07:30-08:30	Ax	2	351	351	0	✓	2055	1570	22		303	0.68	54	55
07:30-08:30	Ax2	1	410	410	17	✓	1800	1800	23		295	0.38	72	72
07:30-08:30	Ax2	2	351	351	0	✓	1800	1800	19		362	0.54	72	72
07:30-08:30	B1	1	583	583	0		1754	1413	41		118	0.00	57	58
07:30-08:30	B3	1	1223	1223	-1		1800	1800	68		32	0.00	72	72
07:30-08:30	B3	2	640	640	-1		1800	1800	36		153	0.00	72	72
07:30-08:30	Bc	1	316	316	3	✓	1973	877	36		150	1.27	31	32
07:30-08:30	Bc	2	345	345	3	✓	2113	939	37		145	1.11	31	32
07:30-08:30	Bc	3	633	633	7	✓	1993	886	71		26	1.27	31	32
07:30-08:30	Bx	1	626	626	56	✓	2055	1513	41		118	0.54	52	53
07:30-08:30	Bx	2	524	524	80	✓	2055	1513	35		160	1.07	52	53
07:30-08:30	Bx	3	330	330	24	✓	2055	1513	22		313	1.06	52	53
07:30-08:30	Bx2	1	626	626	56	✓	1800	1800	35		159	0.85	72	72
07:30-08:30	Bx2	2	524	524	80	✓	1800	1800	29		209	1.01	72	72
07:30-08:30	Bx2	3	330	330	24	✓	1800	1800	18		391	1.02	72	72
07:30-08:30	Bx3	1	1149	1149	136	✓	1800	1800	64		41	0.77	72	72
07:30-08:30	Bx3	2	330	330	24	✓	1800	1800	18		391	0.99	72	72
07:30-08:30	C2	1	253	253	0		1940	1428	18		408	0.00	52	53
07:30-08:30	C2	2	516	516	-1		2080	1531	34		167	0.00	52	53
07:30-08:30	C2	3	747	747	1		2080	1531	49		84	0.00	52	53
07:30-08:30	Cc	1	351	351	0	✓	1847	1334	26		242	0.62	51	52
07:30-08:30	Cc	2	351	351	0	✓	1987	1435	24		268	0.62	51	52
07:30-08:30	Cc	3	747	747	1		1875	1354	55		63	1.10	51	52
07:30-08:30	Cx	1	583	583	0		2015	1483	39		129	0.31	52	53
07:30-08:30	Cx	2	513	513	28	✓	2105	1550	33		172	0.95	52	53
07:30-08:30	Cx	3	713	713	28	✓	2105	1550	46		96	0.97	52	53

07:30-08:30	Cx2	1	583	583	0		1800	1800	32		178	0.48	72	72
07:30-08:30	Cx2	2	513	513	28	✓	1800	1800	29		216	0.90	72	72
07:30-08:30	Cx2	3	713	713	28	✓	1800	1800	40		127	0.92	72	72
07:30-08:30	D3	1	323	323	0		1800	1800	18		402	0.00	72	72
07:30-08:30	D3	2	708	708	1		1800	1800	39		129	0.00	72	72
07:30-08:30	Dc	1	441	441	56	✓	2015	1035	43		112	0.73	36	37
07:30-08:30	Dc	2	524	524	80	✓	2155	1107	47		90	0.75	36	37
07:30-08:30	Dc	3	524	524	80	✓	2033	1045	50		79	0.75	36	37
07:30-08:30	Dx	1	569	569	3	✓	2105	1550	37		145	0.76	52	53
07:30-08:30	Dx	2	345	345	3	✓	2105	1550	22		304	1.25	52	53
07:30-08:30	Dx	3	447	447	5	✓	2105	1550	29		212	1.25	52	53
07:30-08:30	Dx2	1	569	569	3	✓	1800	1800	32		185	0.74	72	72
07:30-08:30	Dx2	2	345	345	3	✓	1800	1800	19		369	1.17	72	72
07:30-08:30	Dx2	3	447	447	5	✓	1800	1800	25		263	1.17	72	72
07:30-08:30	Dx3	1	569	569	3	✓	1800	1800	32		185	0.72	72	72
07:30-08:30	Dx3	2	792	792	9	✓	1800	1800	44		105	1.15	72	72

Traffic Stream Results: Stops And Delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	A	1	12.90	44.22	3.49	3.90	104.84	4.19	103.65	443.02	179.89	20.23	0.00
07:30-08:30	A	2	12.90	26.68	3.39	1.39	67.87	2.71	74.10	410.11	67.82	15.52	0.00
07:30-08:30	B	2	7.46	104.46	4.39	14.18	263.71	10.55	182.24	608.29	544.35	37.43	0.00
07:30-08:30	B	3	7.46	104.46	4.39	14.18	263.71	10.55	182.24	608.29	544.35	37.43	0.00
07:30-08:30	C	1	11.48	15.23	0.98	0.09	15.20	0.61	57.26	140.37	4.50	4.70	0.00
07:30-08:30	C	2	11.48	19.42	2.22	0.56	39.52	1.58	61.77	291.01	27.72	10.35	0.00
07:30-08:30	C	3	11.48	24.34	3.27	1.78	71.71	2.87	69.03	429.17	86.45	16.74	0.00
07:30-08:30	D	1	9.69	445.74	2.16	37.84	567.90	22.72	344.04	250.56	611.45	27.99	0.00
07:30-08:30	D	2	9.69	443.03	2.37	41.20	618.62	24.74	343.55	274.86	669.41	30.66	0.00
07:30-08:30	D	3	9.69	443.03	2.37	41.20	618.62	24.74	343.55	274.86	669.41	30.66	0.00

07:30-08:30	A2	1	26.32	3.74	0.49	0.14	8.86	8.86	30.37	175.61	6.89	5.93	5.93
07:30-08:30	A2	2	26.32	3.69	0.52	0.14	9.38	9.38	30.30	188.51	6.91	6.35	6.35
07:30-08:30	Ac	1	4.57	2.22	0.12	0.19	4.48	4.48	16.78	76.48	9.63	1.24	1.70
07:30-08:30	Ac	2	4.56	3.38	0.23	0.44	9.50	9.50	41.20	250.76	43.01	4.28	16.63
07:30-08:30	Ac	3	4.57	0.05	0.00	0.00	0.01	0.01	0.07	0.00	0.02	0.00	0.00
07:30-08:30	Ax	1	12.60	1.49	0.13	0.04	2.41	2.41	14.10	55.61	2.18	1.88	1.88
07:30-08:30	Ax	2	12.60	1.60	0.12	0.03	2.21	2.21	16.15	55.08	1.61	1.84	1.84
07:30-08:30	Ax2	1	26.84	0.29	0.00	0.03	0.48	0.48	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Ax2	2	26.84	0.24	0.00	0.02	0.34	0.34	0.00	0.00	0.00	0.00	0.00
07:30-08:30	B1	1	7.46	2.93	0.33	0.14	6.74	6.74	25.04	138.76	7.21	4.74	4.74
07:30-08:30	B3	1	3.60	2.11	0.00	0.72	10.18	10.18	0.00	0.00	0.00	0.00	0.00
07:30-08:30	B3	2	2.24	0.55	0.00	0.10	1.39	1.39	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Bc	1	6.01	1.18	0.00	0.10	1.48	1.48	1.67	0.23	5.06	0.08	0.38
07:30-08:30	Bc	2	6.01	3.34	0.21	0.11	4.55	4.55	10.81	31.99	5.31	0.54	0.99
07:30-08:30	Bc	3	6.01	5.21	0.03	0.88	13.00	13.00	16.05	58.23	43.27	1.46	7.32
07:30-08:30	Bx	1	1.12	2.90	0.36	0.15	7.16	7.16	23.76	141.38	7.26	4.83	4.83
07:30-08:30	Bx	2	1.12	0.76	0.02	0.09	1.58	1.58	1.84	5.09	4.57	0.31	0.31
07:30-08:30	Bx	3	1.12	0.39	0.01	0.03	0.51	0.51	0.78	1.06	1.52	0.08	0.08
07:30-08:30	Bx2	1	1.96	0.59	0.01	0.09	1.45	1.45	3.74	14.16	9.22	1.35	1.35
07:30-08:30	Bx2	2	2.61	0.46	0.01	0.06	0.95	0.95	3.48	12.26	5.95	0.59	0.59
07:30-08:30	Bx2	3	2.61	0.24	0.00	0.02	0.31	0.31	0.94	2.07	1.03	0.10	0.10
07:30-08:30	Bx3	1	2.24	3.59	0.58	0.56	16.29	16.29	47.55	491.09	55.53	17.75	17.75
07:30-08:30	Bx3	2	2.24	0.22	0.00	0.02	0.29	0.29	0.00	0.00	0.00	0.00	0.00
07:30-08:30	C2	1	5.34	3.16	0.20	0.02	3.15	3.15	26.55	66.23	0.95	2.18	2.18
07:30-08:30	C2	2	5.34	3.94	0.48	0.09	8.01	8.01	31.39	157.69	4.27	5.26	5.26
07:30-08:30	C2	3	5.34	5.03	0.81	0.23	14.83	14.83	37.36	267.52	11.55	9.06	9.06
07:30-08:30	Cc	1	5.76	1.86	0.13	0.05	2.57	2.57	17.14	57.82	2.34	0.87	1.13
07:30-08:30	Cc	2	5.76	1.77	0.13	0.04	2.44	2.44	16.93	57.42	1.97	0.86	1.11
07:30-08:30	Cc	3	5.76	2.93	0.27	0.34	8.63	8.63	37.77	265.34	16.82	4.07	20.35
07:30-08:30	Cx	1	10.55	2.56	0.29	0.13	5.88	5.88	14.42	77.72	6.34	2.73	2.73

07:30-08:30	Cx	2	10.55	0.59	0.00	0.08	1.20	1.20	0.91	0.58	4.09	0.15	0.15
07:30-08:30	Cx	3	10.55	1.01	0.00	0.20	2.83	2.83	1.48	0.78	9.76	0.34	0.34
07:30-08:30	Cx2	1	5.80	0.48	0.00	0.08	1.10	1.10	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Cx2	2	7.74	0.40	0.00	0.06	0.81	0.81	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Cx2	3	7.74	0.85	0.04	0.13	2.40	2.40	10.00	64.82	6.48	2.32	2.32
07:30-08:30	D3	1	2.24	0.22	0.00	0.02	0.28	0.28	0.00	0.00	0.00	0.00	0.00
07:30-08:30	D3	2	2.24	0.65	0.00	0.13	1.81	1.81	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dc	1	4.96	3.61	0.28	0.16	6.27	6.27	27.49	113.28	7.83	1.75	2.46
07:30-08:30	Dc	2	4.96	3.65	0.32	0.21	7.55	7.55	24.24	116.44	10.54	1.83	2.89
07:30-08:30	Dc	3	4.96	3.96	0.32	0.25	8.18	8.18	24.86	117.76	12.50	1.88	3.00
07:30-08:30	Dx	1	2.00	2.39	0.27	0.11	5.38	5.38	14.33	76.25	5.32	2.30	2.30
07:30-08:30	Dx	2	2.40	0.39	0.01	0.03	0.54	0.54	3.83	11.64	1.59	0.17	0.17
07:30-08:30	Dx	3	2.40	0.48	0.00	0.06	0.85	0.85	1.23	2.58	2.91	0.07	0.07
07:30-08:30	Dx2	1	8.43	0.46	0.00	0.07	1.04	1.04	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx2	2	8.43	0.24	0.00	0.02	0.32	0.32	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx2	3	8.43	0.33	0.00	0.04	0.58	0.58	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx3	1	2.24	0.46	0.00	0.07	1.04	1.04	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx3	2	2.24	3.18	0.53	0.17	9.94	9.94	53.09	411.88	8.61	13.66	13.66

Traffic Stream Results: Queues And Blocking

Time Segment	Arm	Traffic Stream	Initial Queue (PCU)	Mean Max Queue (PCU)	Max Queue Storage (PCU)	Utilised Storage (%)	Average Link Excess Queue (PCU)	Average Limit Excess Queue (PCU)	Excess Queue Penalty (£ per hr)	Max End Of Green Queue (PCU)	Max End Of Red Queue (PCU)	Wasted Time Starvation (s per cycle)	Wasted Time Blocking Back (s per cycle)	Wasted Time Total (s per cycle)	Estimated Blocking
07:30-08:30	A	1	0.00	14.55	30.09	48.36	0.00	0.00	0.00	3.90	11.43	0.00	5.00	5.00	
07:30-08:30	A	2	0.00	9.61	30.09	31.95	0.00	0.00	0.00	1.39	9.48	0.00	3.00	3.00	
07:30-08:30	B	2	0.00	26.65	17.39	153.26	3.46	0.00	0.00	14.18	22.96	0.00	0.00	0.00	
07:30-08:30	B	3	0.00	26.65	17.39	153.26	3.46	0.00	0.00	14.18	22.96	0.00	0.00	0.00	
07:30-08:30	C	1	0.00	2.92	26.78	10.91	0.00	0.00	0.00	0.09	2.88	8.00	0.00	8.00	
07:30-08:30	C	2	0.00	6.39	26.78	23.88	0.00	0.00	0.00	0.56	6.28	3.00	0.00	3.00	
07:30-08:30	C	3	0.00	10.38	26.78	38.74	0.00	0.00	0.00	1.78	10.21	1.00	0.00	1.00	
07:30-08:30	D	1	0.00	42.78	22.61	189.21	17.70	0.00	0.00	37.84	42.15	0.00	0.00	0.00	

07:30-08:30	D	2	0.00	46.62	22.61	206.20	21.30	0.00	0.00	41.20	45.93	0.00	0.00	0.00	
07:30-08:30	D	3	0.00	46.62	22.61	206.20	21.30	0.00	0.00	41.20	45.93	0.00	0.00	0.00	
07:30-08:30	A2	1	0.00	4.14	61.39	6.75	0.00	0.00	0.00	0.14	2.98	0.00	0.00	0.00	
07:30-08:30	A2	2	0.00	4.44	61.39	7.23	0.00	0.00	0.00	0.14	3.18	0.00	0.00	0.00	
07:30-08:30	Ac	1	0.00	1.98	7.10	27.84	0.00	0.06	3.43	0.19	1.64	4.00	0.00	4.00	
07:30-08:30	Ac	2	0.00	7.82	7.10	110.10	0.02	0.52	30.92	0.44	1.89	4.00	0.00	4.00	
07:30-08:30	Ac	3	0.00	0.00	7.10	0.01	0.00	0.00	0.00	0.00	0.00	24.00	0.00	24.00	
07:30-08:30	Ax	1	0.00	1.53	29.39	5.21	0.00	0.00	0.00	0.04	1.13	0.00	0.00	0.00	
07:30-08:30	Ax	2	0.00	1.51	29.39	5.13	0.00	0.00	0.00	0.03	1.11	14.00	0.00	14.00	
07:30-08:30	Ax2	1	0.00	0.03	62.61	0.05	0.00	0.00	0.00			1.00	0.00	1.00	
07:30-08:30	Ax2	2	0.00	0.02	62.61	0.04	0.00	0.00	0.00			3.00	0.00	3.00	
07:30-08:30	B1	1	0.00	3.38	17.39	19.46	0.00	0.00	0.00	0.14	2.41	0.00	0.00	0.00	
07:30-08:30	B3	1	0.00	0.72	5.22	13.73	0.00	0.00	0.00			0.00	53.00	53.00	
07:30-08:30	B3	2	0.00	0.10	5.22	1.88	0.00	0.00	0.00			0.00	53.00	53.00	
07:30-08:30	Bc	1	0.00	0.11	9.35	1.14	0.00	0.00	0.00	0.10	0.11	4.00	0.00	4.00	
07:30-08:30	Bc	2	0.00	0.80	9.35	8.54	0.00	0.00	0.00	0.11	0.69	4.00	0.00	4.00	
07:30-08:30	Bc	3	0.00	9.83	9.35	105.17	0.01	0.83	50.09	0.88	0.89	3.00	0.00	3.00	
07:30-08:30	Bx	1	0.00	3.40	2.61	130.43	0.03	0.00	0.00	0.15	2.59	6.00	0.00	6.00	
07:30-08:30	Bx	2	0.00	1.28	2.61	49.02	0.00	0.00	0.00	0.09	0.16	16.00	0.00	16.00	
07:30-08:30	Bx	3	0.00	0.05	2.61	1.97	0.00	0.00	0.00	0.03	0.05	16.00	0.00	16.00	
07:30-08:30	Bx2	1	0.00	2.31	6.09	38.02	0.00	0.00	0.00			21.00	17.00	38.00	
07:30-08:30	Bx2	2	0.00	2.64	6.09	43.33	0.00	0.00	0.00			30.00	18.00	48.00	
07:30-08:30	Bx2	3	0.00	1.09	6.09	17.89	0.00	0.00	0.00			33.00	0.00	33.00	
07:30-08:30	Bx3	1	0.00	9.61	5.22	184.21	0.79	0.00	0.00			15.00	0.00	15.00	
07:30-08:30	Bx3	2	0.00	0.02	5.22	0.39	0.00	0.00	0.00			32.00	0.00	32.00	
07:30-08:30	C2	1	0.00	1.49	12.46	12.00	0.00	0.00	0.00	0.02	1.35	0.00	0.00	0.00	
07:30-08:30	C2	2	0.00	3.67	12.46	29.45	0.00	0.00	0.00	0.09	2.81	0.00	0.00	0.00	
07:30-08:30	C2	3	0.00	6.25	12.46	50.17	0.00	0.00	0.00	0.23	4.17	0.00	0.00	0.00	
07:30-08:30	Cc	1	0.00	1.32	8.95	14.78	0.00	0.00	0.00	0.05	1.16	8.00	0.00	8.00	
07:30-08:30	Cc	2	0.00	1.32	8.95	14.70	0.00	0.00	0.00	0.04	1.15	8.00	0.00	8.00	

07:30-08:30	Cc	3	0.00	8.83	8.95	98.59	0.00	0.85	50.86	0.34	0.55	19.00	0.00	19.00	
07:30-08:30	Cx	1	0.00	2.37	24.61	9.64	0.00	0.00	0.00	0.13	1.41	0.00	0.00	0.00	
07:30-08:30	Cx	2	0.00	0.09	24.61	0.38	0.00	0.00	0.00	0.08	0.09	10.00	0.00	10.00	
07:30-08:30	Cx	3	0.00	0.78	24.61	3.18	0.00	0.00	0.00	0.20	0.21	10.00	0.00	10.00	
07:30-08:30	Cx2	1	0.00	0.08	18.04	0.43	0.00	0.00	0.00			15.00	0.00	15.00	
07:30-08:30	Cx2	2	0.00	0.06	18.04	0.31	0.00	0.00	0.00			26.00	0.00	26.00	
07:30-08:30	Cx2	3	0.00	7.21	18.04	39.98	0.00	0.00	0.00			25.00	0.00	25.00	
07:30-08:30	D3	1	0.00	0.02	5.22	0.38	0.00	0.00	0.00			0.00	72.00	72.00	
07:30-08:30	D3	2	0.00	0.13	5.22	2.44	0.00	0.00	0.00			0.00	72.00	72.00	
07:30-08:30	Dc	1	0.00	2.73	7.71	35.38	0.00	0.13	7.92	0.16	2.03	2.00	0.00	2.00	
07:30-08:30	Dc	2	0.00	2.86	7.71	37.10	0.00	0.15	9.14	0.21	2.17	2.00	0.00	2.00	
07:30-08:30	Dc	3	0.00	2.90	7.71	37.61	0.00	0.16	9.52	0.25	2.21	2.00	0.00	2.00	
07:30-08:30	Dx	1	0.00	1.94	3.48	55.86	0.00	0.00	0.00	0.11	1.41	12.00	0.00	12.00	
07:30-08:30	Dx	2	0.00	0.69	3.48	19.86	0.00	0.00	0.00	0.03	0.38	25.00	0.00	25.00	
07:30-08:30	Dx	3	0.00	0.15	3.48	4.39	0.00	0.00	0.00	0.06	0.15	25.00	0.00	25.00	
07:30-08:30	Dx2	1	0.00	0.07	19.65	0.37	0.00	0.00	0.00			15.00	0.00	15.00	
07:30-08:30	Dx2	2	0.00	0.02	19.65	0.12	0.00	0.00	0.00			40.00	17.00	57.00	
07:30-08:30	Dx2	3	0.00	0.04	19.65	0.21	0.00	0.00	0.00			39.00	18.00	57.00	
07:30-08:30	Dx3	1	0.00	0.07	5.22	1.40	0.00	0.00	0.00			13.00	0.00	13.00	
07:30-08:30	Dx3	2	0.00	14.13	5.22	270.76	1.53	0.00	0.00			36.00	0.00	36.00	

Traffic Stream Results: Flare

Time Segment	Arm	Traffic Stream	Flare Present	Flare Components	Degree Of Saturation (%)	Mean Max Queue (PCU)	Calculated Capacity (PCU/hr)	Practical Reserve Capacity (%)
07:30-08:30	A	2	✓	Quick Flare	78	9.61	822	15
07:30-08:30	C	3	✓	Quick Flare	82	10.38	913	10

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree Of Saturation Penalty (£ per hr)	Phase Min Max Penalty (£ per hr)	Intergreen Broken Penalty (£ per hr)	Stage Constraint Broken Penalty (£ per hr)	Ped Gap Accepting Penalty (£ per hr)	Warmed Up	Warmed Up Error	Mean Max Queue EoTS (PCU)	Max End Of Green Queue Eo TS (PCU)	Max End Of Red Queue Eo TS (PCU)	Cost Of Penalties (£ per hr)	Unweighted Performance Index (£ per hr)	Perform Index (£ hr)
07:30-08:30	A	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	14.82	4.17	11.70	0.00	125.07	4.1
07:30-08:30	A	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	9.63	1.41	9.49	0.00	83.39	2.7

07:30-08:30	B	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	34.01	21.54	30.32	0.00	301.14	10.5
07:30-08:30	B	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	34.01	21.54	30.32	0.00	301.14	10.5
07:30-08:30	C	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.92	0.09	2.88	0.00	19.90	0.6
07:30-08:30	C	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.40	0.56	6.29	0.00	49.87	1.5
07:30-08:30	C	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	10.40	1.81	10.24	0.00	88.46	2.8
07:30-08:30	D	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	79.05	74.11	78.43	0.00	595.89	22.7
07:30-08:30	D	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	86.24	80.82	85.55	0.00	649.29	24.7
07:30-08:30	D	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	86.24	80.82	85.55	0.00	649.29	24.7
07:30-08:30	A2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.14	0.14	2.98	0.00	14.79	14.7
07:30-08:30	A2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.44	0.14	3.18	0.00	15.72	15.7
07:30-08:30	Ac	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.98	0.19	1.64	3.43	5.73	9.6
07:30-08:30	Ac	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	7.82	0.44	1.89	30.92	13.78	57.0
07:30-08:30	Ac	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.00	0.00	0.00	0.00	0.01	0.0
07:30-08:30	Ax	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.53	0.04	1.13	0.00	4.29	4.2
07:30-08:30	Ax	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.51	0.03	1.11	0.00	4.06	4.0
07:30-08:30	Ax2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.03			0.00	0.48	0.4
07:30-08:30	Ax2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.34	0.3
07:30-08:30	B1	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.38	0.14	2.41	0.00	11.48	11.4
07:30-08:30	B3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.72			0.00	10.18	10.1
07:30-08:30	B3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.10			0.00	1.39	1.3
07:30-08:30	Bc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.11	0.10	0.11	0.00	1.55	1.8
07:30-08:30	Bc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.80	0.11	0.69	0.00	5.09	5.5
07:30-08:30	Bc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	9.83	0.89	0.90	50.09	14.46	70.4
07:30-08:30	Bx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.40	0.15	2.59	0.00	11.99	11.9
07:30-08:30	Bx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.28	0.09	0.16	0.00	1.89	1.8
07:30-08:30	Bx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.05	0.03	0.05	0.00	0.59	0.5
07:30-08:30	Bx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.31			0.00	2.80	2.8
07:30-08:30	Bx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.64			0.00	1.55	1.5
07:30-08:30	Bx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.09			0.00	0.41	0.4
07:30-08:30	Bx3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	9.61			0.00	34.04	34.0

07:30-08:30	Bx3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.29	0.2
07:30-08:30	C2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.49	0.02	1.35	0.00	5.34	5.3
07:30-08:30	C2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.67	0.09	2.81	0.00	13.27	13.2
07:30-08:30	C2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.25	0.23	4.17	0.00	23.89	23.8
07:30-08:30	Cc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.32	0.05	1.16	0.00	3.44	3.7
07:30-08:30	Cc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.32	0.04	1.15	0.00	3.30	3.5
07:30-08:30	Cc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	8.83	0.34	0.55	50.86	12.70	79.8
07:30-08:30	Cx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.37	0.13	1.41	0.00	8.61	8.6
07:30-08:30	Cx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.09	0.08	0.09	0.00	1.35	1.3
07:30-08:30	Cx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.78	0.20	0.21	0.00	3.17	3.1
07:30-08:30	Cx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.08			0.00	1.10	1.1
07:30-08:30	Cx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.06			0.00	0.81	0.8
07:30-08:30	Cx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	7.21			0.00	4.72	4.7
07:30-08:30	D3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.28	0.2
07:30-08:30	D3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.13			0.00	1.81	1.8
07:30-08:30	Dc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.73	0.16	2.03	7.92	8.02	16.6
07:30-08:30	Dc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.86	0.21	2.17	9.14	9.38	19.5
07:30-08:30	Dc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.90	0.25	2.21	9.52	10.06	20.6
07:30-08:30	Dx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.94	0.11	1.41	0.00	7.68	7.6
07:30-08:30	Dx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.69	0.03	0.38	0.00	0.70	0.7
07:30-08:30	Dx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.15	0.06	0.15	0.00	0.92	0.9
07:30-08:30	Dx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.07			0.00	1.04	1.0
07:30-08:30	Dx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.32	0.3
07:30-08:30	Dx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.04			0.00	0.58	0.5
07:30-08:30	Dx3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.07			0.00	1.04	1.0
07:30-08:30	Dx3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	14.13			0.00	23.59	23.5

Network Results

Run Summary

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Network Cycle Time (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network With Capacity
A1 - 2031 AM peak	16/04/2014 17:27:23	16/04/2014 17:27:31	07:30	72	199.50	128.91	D/1	6	9	D/1	B3/1	D/1	

Network Results: Vehicle Summary

Time Segment	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Calculated Flow Entering (PCU/hr)	Actual Green (s per cycle)	Mean Delay Per PCU (s)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Performance Index (£ per hr)
07:30-08:30	129!	-30	30459	2940	23.58	306.43	141.95	610.25

Network Results: Pedestrian Summary

Time Segment	Degree Of Saturation (%)	Calculated Flow Entering (Ped/hr)	Actual Green (s per cycle)	Mean Delay Per Ped (s)	Weighted Cost Of Delay (£ per hr)	Performance Index (£ per hr)
07:30-08:30	129!	0	0	0.00	0.00	0.00

Network Results: Flows And Signals

Time Segment	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity (%)	Actual Green (s per cycle)	Effective Green (s per cycle)
07:30-08:30	30459	30213	945	✓	129!	✓	-30	2940	2979

Network Results: Stops And Delays

Time Segment	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	7.34	23.58	36.30	163.20	2832.86	306.43	38.91	7294.68	3735.37	334.57	141.95

Network Results: Queues And Blocking

Time Segment	Max Queue Storage (PCU)	Excess Queue Penalty (£ per hr)	Wasted Time Starvation (s per cycle)	Wasted Time Blocking Back (s per cycle)	Wasted Time Total (s per cycle)
07:30-08:30	969.18	161.87	574.00	328.00	902.00



TRANSYT 15
Version: 15.0.1.2976 [] © Copyright TRL Limited, 2014
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Last run: 22/04/2014 10:06:48

Analysis Set used for last run: A1 - 2031 AM peak

Filename: AM Rev 5.t15

Path: F:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\3. Option models\4. Sensitivity Test

Report generation date: 22/04/2014 10:12:04

- » Network Diagrams
- « A1 - 2031 AM peak *: D1 - 2031 AM peak*
- » Summary
- » Network Options
- » Traffic Nodes
- » Links
- » Arms and Traffic Streams
- » Local OD Matrix - Local Matrix: 1 - AM
- » Signal Timings
- » Final Prediction Table
- » Link Results
- » Traffic Stream Results
- » Network Results

File summary

File Description

Title	A38/A452 Tyburn Roundabout
Location	Birmingham
Site Number	
UTCRegion	
Driving Side	Left
Date	02/04/2014
Version	
Status	Option Model
Identifier	
Client	Birmingham City Council
Jobnumber	60316861
Enumerator	EU\vuppalas
Description	2031 future year preferred option Pm peak model.

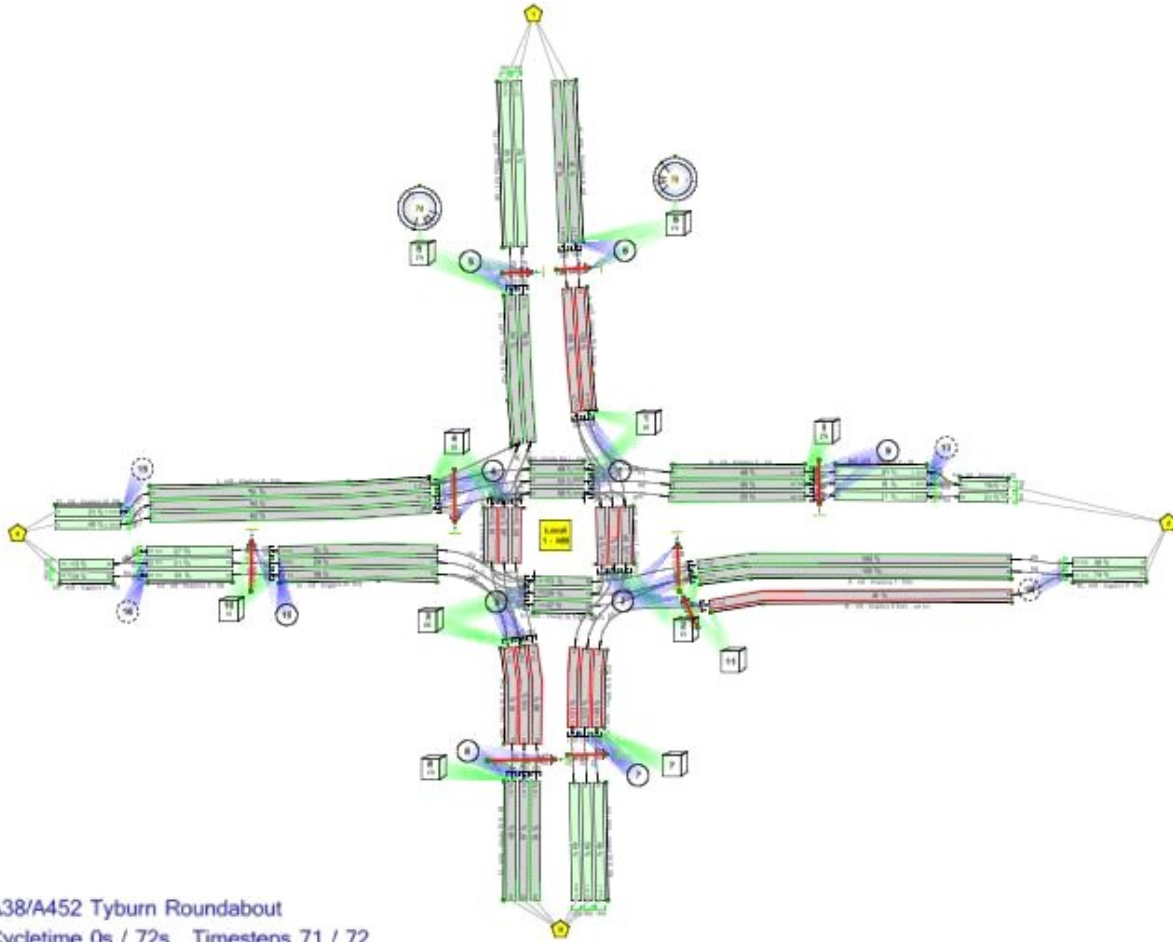
Units

Cost Units	Speed Units	Distance Units	Fuel Economy Units	Fuel Rate Units	Mass Units	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
£	kph	m	mpg	l/h	kg	perHour	s	-Hour	perHour

Sorting

Show Names Instead of IDs (For Aimsun)	Sorting Direction	Sorting Type	Ignore Prefixes When Sorting	Link Grouping	Source Grouping
	Ascending	Numerical		Normal	Normal

Network Diagrams



A38/A452 Tyburn Roundabout
 Cyclotime 0s / 72s , Timesteps 71 / 72
 Diagram produced using TRANSYT 15.0.1.2976

A1 - 2031 AM peak *: D1 - 2031 AM peak*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Network Cycle Time (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Netwo Withi Capac
A1 - 2031 AM peak	22/04/2014 10:06:39	22/04/2014 10:06:48	07:30	72	252.16	130.39	A/1	6	9	A/1	Bx3/1	A/1	

Analysis Set Details

Name	Description	Demand Set	Include In Report	Locked
2031 AM peak		D1	✓	

Demand Set Details

Demand Set	Name	Description	Composite	Demand Sets	Start Time (HH:mm)	Locked
D1	2031 AM peak				07:30	

Network Options

Network Timings

Network Cycle Time (s)	Restrict To SCOOT Cycle Times	Time Segment Length (min)	Number Of Time Segments	Modelled Time Period (min)
72		60	1	60

Signals Options

Start Displacement (s)	End Displacement (s)
2	3

Advanced

Phase Minimum Broken Penalty (£)	Phase Maximum Broken Penalty (£)	Intergreen Broken Penalty (£)
10000.00	10000.00	10000.00

Traffic Options

Traffic Model	Vehicle Flow Scaling Factor (%)	Pedestrian Flow Scaling Factor (%)	Cruise Times Or Speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise Scaling Factor (%)	Use Link Stop Weightings	Use Link Delay Weightings	Exclude Pedestrian Links	Random Delay Mode	Type of Vehicle-in-Service	Type Of Random Parameter	PCU Length (m)	Calculate results for Path Segments
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75	

Normal Parameters

Dispersal Type	Dispersal Coefficient	Travel Time Coefficient
Default	35	80

Bus Parameters

Dispersion Coefficient1	Dispersion Coefficient2	Acceleration (ms ^[-2])	Travel Time Coefficient1	Travel Time Coefficient2
70	15	0.47	30	85

Tram Parameters

Dispersion Coefficient1	Dispersion Coefficient2	Acceleration (ms ^[-2])	Travel Time Coefficient1	Travel Time Coefficient2
70	15	0.47	30	85

Pedestrian Parameters

Dispersal Type	Dispersal Coefficient	Travel Time Coefficient
Default	35	80

Optimisation Options

Enable Optimisation	Auto Redistribute	Optimisation Level	Enable Out Profile Accuracy
✓		Offsets Only	✓

Advanced

Optimisation Type	Hill Climb Increments	OUTProfile Accuracy	Use Enhanced Optimisation	Auto Optimisation Order	Optimisation Order
Hill Climb (Fast)	15,40,15,40,15,1,1	50,50,5,5,0,5,0,05,0,05		✓	4,1,2,3,5,6,7,8,9,10,11

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian Monetary Value Of Delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

ID	Name	Description
1		
2		
3		
4		
5	(untitled)	
6	(untitled)	
7	(untitled)	
8	(untitled)	
9	(untitled)	
10	(untitled)	
13	(untitled)	
14	(untitled)	
15	(untitled)	
16	(untitled)	

Links

Links

Link	Name	Description	Traffic Node	Length (m)	Has Restricted Flow	Is Signal Controlled	Is Give Way	Traffic Type	Is Minor Shared
40	A452 N - NB		5	7.00		✓		Pedestrian	
41	A452 N - SB		6	7.50		✓		Pedestrian	
42	A452 S - SB		7	10.50		✓		Pedestrian	
43	A452 S - NB		8	9.75		✓		Pedestrian	
45	A38 W - WB		2	9.00		✓		Pedestrian	
46	A38 E - WB		10	9.75		✓		Pedestrian	
47	A38 W - EB		9	9.00		✓		Pedestrian	
49	A38 E - EB		4	9.75		✓		Pedestrian	
50	A38 W - WB		2	4.00		✓		Pedestrian	

Modelling

Link	Traffic Model	Stop Weighting (%)	Delay Weighting (%)	Exclude From Results Calculation	Max Queue Storage (PCU)	Has Queue Limit	Has Degree Of Saturation Limit
40	NetworkDefault	100	100	✓	0.00		
41	NetworkDefault	100	100	✓	0.00		
42	NetworkDefault	100	100	✓	0.00		
43	NetworkDefault	100	100	✓	0.00		
45	NetworkDefault	100	100	✓	0.00		
46	NetworkDefault	100	100	✓	0.00		
47	NetworkDefault	100	100	✓	0.00		
49	NetworkDefault	100	100	✓	0.00		
50	NetworkDefault	100	100	✓	0.00		

Modelling - Advanced

Link	Initial Queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type Of Random Parameter	Random Parameter	Auto Cycle Time	Cycle Time
40	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
41	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
42	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
43	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
45	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
46	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
47	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
49	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
50	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

Flows

Link	Flows	Total Flow (07:30-08:30) (PCU/hr)
40	1	100
41	1	100
42	1	100
43	1	100
45	1	100
46	1	100
47	1	100
49	1	100
50	1	100

Flows - Advanced

Link	Detectors	Link Sensitivity Multiplier (%)	Cruise Sensitivity Multiplier (%)
40		100	100
41		100	100
42		100	100
43		100	100
45		100	100
46		100	100
47		100	100
49		100	100
50		100	100

Signals

Link	Controller Stream	Phase	Phase2 Enabled
40	5	B	
41	6	B	
42	7	B	
43	8	B	
45	2	C	
46	10	B	
47	9	B	
49	4	C	
50	11	B	

Entry Sources

Link	Cruise Time (seconds)	Cruise Speed (kph)
40	1.00	30.00
41	1.00	30.00
42	1.26	30.00
43	1.17	30.00
45	1.08	30.00
46	1.17	30.00
47	1.08	30.00
49	1.17	30.00
50	1.00	30.00

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic Node
A	A452 - Chester Rd N - Entry		1
Ax2	A452 - Chester Rd N - NB		
B	A38 - Kingsbury E - Entry		2
C	A452 - Chester Rd S - Entry		3
D	A38 - Kingsbury W - Entry		4
A2	A452 - Chester Rd N - SB		6
Ac	A38 - Kingsbury E - Circulatory		2
Ax	A452 - Chester Rd N - Exit		5
B1	A38 - Kingsbury E Entry - Left turn		2
B3	A38 - Kingsbury E - WB		14
Bc	A452 - Chester Rd S - Circulatory		3
Bx	A38 - Kingsbury E - Exit		9
Bx2	A38 - Kingsbury E - EB		13
Bx3	A38 - Kingsbury E - EB		
C2	A452 - Chester Rd S - NB		8
Cc	A38 - Kingsbury W - Circulatory		4
Cx	A452 - Chester Rd S - Exit		7
Cx2	A452 - Chester Rd S - SB		
D3	A38 - Kingsbury W - EB		15
Dc	A452 - Chester Rd N - Circulatory		1
Dx	A38 - Kingsbury W - Exit		10
Dx2	A38 - Kingsbury W - WB		16
Dx3	A38 - Kingsbury W - WB		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto Length	Length (m)	Has Restricted Flow	Saturation Flow Source	Saturation Flow (PCU/hr)	Is Signal Controlled	Is Give Way	Traffic Type
A	1				173.00	✓	SumOfLanes	1905	✓		Normal
A	2				173.00	✓	SumOfLanes	2080	✓		Normal
B	2	(untitled)			100.00	✓	SumOfLanes	2070	✓		Normal
B	3	(untitled)			100.00	✓	SumOfLanes	2070	✓		Normal
C	1				154.00	✓	SumOfLanes	1762	✓		Normal
C	2				154.00	✓	SumOfLanes	1937	✓		Normal
C	3				154.00	✓	SumOfLanes	1952	✓		Normal

D	1			130.00	✓	SumOfLanes	1804	✓		Normal
D	2			130.00	✓	SumOfLanes	1979	✓		Normal
D	3			130.00	✓	SumOfLanes	1979	✓		Normal
A2	1	(untitled)		353.00	✓	SumOfLanes	1940	✓		Normal
A2	2	(untitled)		353.00	✓	SumOfLanes	2080	✓		Normal
Ac	1			40.84	✓	SumOfLanes	2015	✓		Normal
Ac	2			40.84	✓	SumOfLanes	2155	✓		Normal
Ac	3			40.84	✓	SumOfLanes	2033	✓		Normal
Ax	1			169.00	✓	SumOfLanes	2105	✓		Normal
Ax	2			169.00	✓	SumOfLanes	2055	✓		Normal
Ax2	1	(untitled)		360.00	✓	SumOfLanes	1800			Normal
Ax2	2	(untitled)		360.00	✓	SumOfLanes	1800			Normal
B1	1			100.00	✓	SumOfLanes	1754	✓		Normal
B3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
B3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Bc	1			53.74	✓	SumOfLanes	1973	✓		Normal
Bc	2			53.74	✓	SumOfLanes	2113	✓		Normal
Bc	3			53.74	✓	SumOfLanes	1993	✓		Normal
Bx	1			15.00	✓	SumOfLanes	2055	✓		Normal
Bx	2			15.00	✓	SumOfLanes	2055	✓		Normal
Bx	3			15.00	✓	SumOfLanes	2055	✓		Normal
Bx2	1	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx2	2	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx2	3	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Bx3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
C2	1	(untitled)		71.63	✓	SumOfLanes	1940	✓		Normal
C2	2	(untitled)		71.63	✓	SumOfLanes	2080	✓		Normal
C2	3	(untitled)		71.63	✓	SumOfLanes	2080	✓		Normal
Cc	1			51.49	✓	SumOfLanes	1847	✓		Normal
Cc	2			51.49	✓	SumOfLanes	1987	✓		Normal
Cc	3			51.49	✓	SumOfLanes	1875	✓		Normal
Cx	1			141.48	✓	SumOfLanes	2015	✓		Normal
Cx	2			141.48	✓	SumOfLanes	2105	✓		Normal
Cx	3			141.48	✓	SumOfLanes	2105	✓		Normal
Cx2	1	(untitled)		103.74	✓	SumOfLanes	1800			Normal
Cx2	2	(untitled)		103.74	✓	SumOfLanes	1800			Normal
Cx2	3	(untitled)		103.74	✓	SumOfLanes	1800			Normal
D3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
D3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Dc	1			44.34	✓	SumOfLanes	2015	✓		Normal
Dc	2			44.34	✓	SumOfLanes	2155	✓		Normal
Dc	3			44.34	✓	SumOfLanes	2033	✓		Normal
Dx	1			20.00	✓	SumOfLanes	2105	✓		Normal
Dx	2			20.00	✓	SumOfLanes	2105	✓		Normal
Dx	3			20.00	✓	SumOfLanes	2105	✓		Normal
Dx2	1	(untitled)		113.00	✓	SumOfLanes	1800			Normal
Dx2	2	(untitled)		113.00	✓	SumOfLanes	1800			Normal
Dx2	3	(untitled)		113.00	✓	SumOfLanes	1800			Normal

Dx3	1	(untitled)			30.00	✓	SumOfLanes	1800			Normal
Dx3	2	(untitled)			30.00	✓	SumOfLanes	1800			Normal

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface Condition	Site Quality Factor	Gradient (%)	Width (m)	Use Connector Turning Radius	Proportion That Turn (%)	Turning Radius (m)	Nearside Lane	Saturation Flow (PCU/hr)
A	1	1			✓	N/A	N/A	-5	3.25		29	23.83	✓	1905
A	2	1			✓	N/A	N/A	-5	3.25		0	10.00		2080
B	2	1	(untitled)		✓	N/A	N/A	-3	3.15		0	10.00		2070
B	3	1	(untitled)		✓	N/A	N/A	-3	3.15		0	10.00		2070
C	1	1			✓	N/A	N/A	4	3.65		100	53.30	✓	1762
C	2	1			✓	N/A	N/A	4	3.50		0	10.00		1937
C	3	1			✓	N/A	N/A	4	3.65		0	10.00		1952
D	1	1			✓	N/A	N/A	3	3.50		38	29.30	✓	1804
D	2	1			✓	N/A	N/A	3	3.50		0	10.00		1979
D	3	1			✓	N/A	N/A	3	3.50		0	10.00		1979
A2	1	2	(untitled)		✓	N/A	N/A	0	3.25		0	10.00	✓	1940
A2	2	1	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
Ac	1	2			✓	N/A	N/A	-4	4.00		0	10.00	✓	2015
Ac	2	1			✓	N/A	N/A	-4	4.00		0	10.00		2155
Ac	3	1			✓	N/A	N/A	-4	4.00		100	25.00		2033
Ax	1	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Ax	2	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Ax2	1	2	(untitled)											1800
Ax2	2	1	(untitled)											1800
B1	1	1			✓	N/A	N/A	-3	3.00		100	16.30	✓	1754
B3	1	2	(untitled)											1800
B3	2	1	(untitled)											1800
Bc	1	1			✓	N/A	N/A	1	4.00		0	10.00	✓	1973
Bc	2	2			✓	N/A	N/A	1	4.00		0	10.00		2113
Bc	3	2			✓	N/A	N/A	1	4.00		100	25.00		1993
Bx	1	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx	2	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx	3	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx2	1	3	(untitled)											1800
Bx2	2	1	(untitled)											1800
Bx2	3	2	(untitled)											1800
Bx3	1	2	(untitled)											1800
Bx3	2	1	(untitled)											1800
C2	1	3	(untitled)		✓	N/A	N/A	0	3.25		0	10.00	✓	1940
C2	2	1	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
C2	3	2	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
Cc	1	1			✓	N/A	N/A	4	4.00		0	10.00	✓	1847
Cc	2	2			✓	N/A	N/A	4	4.00		0	10.00		1987
Cc	3	2			✓	N/A	N/A	4	4.00		100	25.00		1875
Cx	1	1			✓	N/A	N/A	0	4.00		0	10.00	✓	2015
Cx	2	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Cx	3	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Cx2	1	3	(untitled)											1800

Cx2	2	1	(untitled)												1800
Cx2	3	2	(untitled)												1800
D3	1	2	(untitled)												1800
D3	2	1	(untitled)												1800
Dc	1	1			✓	N/A	N/A	-1	4.00		0	10.00	✓		2015
Dc	2	2			✓	N/A	N/A	-1	4.00		0	10.00			2155
Dc	3	2			✓	N/A	N/A	-1	4.00		100	25.00			2033
Dx	1	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx	2	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx	3	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx2	1	2	(untitled)												1800
Dx2	2	3	(untitled)												1800
Dx2	3	1	(untitled)												1800
Dx3	1	2	(untitled)												1800
Dx3	2	1	(untitled)												1800

Modelling

Arm	Traffic Stream	Traffic Model	Stop Weighting Multiplier (%)	Delay Weighting Multiplier (%)	Exclude From Results Calculation	Max Queue Storage (PCU)	Has Queue Limit	Queue Limit (PCU)	Excess Queue Penalty (£)	Has Degree Of Saturation Limit
A	1	NetworkDefault	0	20		0.00				
A	2	NetworkDefault	0	20		0.00				
B	2	NetworkDefault	0	20		0.00				
B	3	NetworkDefault	0	20		0.00				
C	1	NetworkDefault	0	20		0.00				
C	2	NetworkDefault	0	20		0.00				
C	3	NetworkDefault	0	20		0.00				
D	1	NetworkDefault	0	20		0.00				
D	2	NetworkDefault	0	20		0.00				
D	3	NetworkDefault	0	20		0.00				
A2	1	NetworkDefault	100	100		0.00				
A2	2	NetworkDefault	100	100		0.00				
Ac	1	NetworkDefault	100	100		0.00	✓	1	60.00	
Ac	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Ac	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Ax	1	NetworkDefault	100	100		0.00				
Ax	2	NetworkDefault	100	100		0.00				
Ax2	1	NetworkDefault	100	100		0.00				
Ax2	2	NetworkDefault	100	100		0.00				
B1	1	NetworkDefault	100	100		0.00				
B3	1	NetworkDefault	100	100		0.00				
B3	2	NetworkDefault	100	100		0.00				
Bc	1	NetworkDefault	100	100		0.00	✓	2	60.00	
Bc	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Bc	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Bx	1	NetworkDefault	100	100		0.00				
Bx	2	NetworkDefault	100	100		0.00				
Bx	3	NetworkDefault	100	100		0.00				
Bx2	1	NetworkDefault	100	100		0.00				
Bx2	2	NetworkDefault	100	100		0.00				
Bx2	3	NetworkDefault	100	100		0.00				
Bx3	1	NetworkDefault	100	100		0.00				

Bx3	2	NetworkDefault	100	100		0.00			
C2	1	NetworkDefault	100	100		0.00			
C2	2	NetworkDefault	100	100		0.00			
C2	3	NetworkDefault	100	100		0.00			
Cc	1	NetworkDefault	100	100		0.00	✓	2	60.00
Cc	2	NetworkDefault	100	100		0.00	✓	2	60.00
Cc	3	NetworkDefault	100	100		0.00	✓	2	60.00
Cx	1	NetworkDefault	100	100		0.00			
Cx	2	NetworkDefault	100	100		0.00			
Cx	3	NetworkDefault	100	100		0.00			
Cx2	1	NetworkDefault	100	100		0.00			
Cx2	2	NetworkDefault	100	100		0.00			
Cx2	3	NetworkDefault	100	100		0.00			
D3	1	NetworkDefault	100	100		0.00			
D3	2	NetworkDefault	100	100		0.00			
Dc	1	NetworkDefault	100	100		0.00	✓	1	60.00
Dc	2	NetworkDefault	100	100		0.00	✓	1	60.00
Dc	3	NetworkDefault	100	100		0.00	✓	1	60.00
Dx	1	NetworkDefault	100	100		0.00			
Dx	2	NetworkDefault	100	100		0.00			
Dx	3	NetworkDefault	100	100		0.00			
Dx2	1	NetworkDefault	100	100		0.00			
Dx2	2	NetworkDefault	100	100		0.00			
Dx2	3	NetworkDefault	100	100		0.00			
Dx3	1	NetworkDefault	100	100		0.00			
Dx3	2	NetworkDefault	100	100		0.00			

Modelling - Advanced

Arm	Traffic Stream	Cruise Sensitivity Multiplier (%)	Initial Queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type Of Random Parameter	Random Parameter	Auto Cycle Time	Cycle Time
A	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B1	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

B3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

Normal - Modelling

Arm	Traffic Stream	Stop Weighting (%)	Delay Weighting (%)
A	1	-9998	20
A	2	-9998	20
B	2	-9998	20
B	3	-9998	20
C	1	-9998	20
C	2	-9998	20
C	3	-9998	20
D	1	-9998	20
D	2	-9998	20
D	3	-9998	20

A2	1	100	100
A2	2	100	100
Ac	1	100	100
Ac	2	100	100
Ac	3	100	100
Ax	1	100	100
Ax	2	100	100
Ax2	1	100	100
Ax2	2	100	100
B1	1	100	100
B3	1	100	100
B3	2	100	100
Bc	1	100	100
Bc	2	100	100
Bc	3	100	100
Bx	1	100	100
Bx	2	100	100
Bx	3	100	100
Bx2	1	100	100
Bx2	2	100	100
Bx2	3	100	100
Bx3	1	100	100
Bx3	2	100	100
C2	1	100	100
C2	2	100	100
C2	3	100	100
Cc	1	100	100
Cc	2	100	100
Cc	3	100	100
Cx	1	100	100
Cx	2	100	100
Cx	3	100	100
Cx2	1	100	100
Cx2	2	100	100
Cx2	3	100	100
D3	1	100	100
D3	2	100	100
Dc	1	100	100
Dc	2	100	100
Dc	3	100	100
Dx	1	100	100
Dx	2	100	100
Dx	3	100	100
Dx2	1	100	100
Dx2	2	100	100
Dx2	3	100	100
Dx3	1	100	100
Dx3	2	100	100

Normal - Modelling per Path

Arm	Traffic Stream	Path ID	Stop Weighting (%)	Delay Weighting (%)
Ac	1	3	500	100
Ac	2	1	500	100
Ac	3	2	500	100
B3	2	9	500	100
Bc	1	8	500	100
Bc	2	9	500	100
Bc	3	5	500	100
Bc	3	6	500	100
Bc	3	7	500	100
Cc	1	16	500	100
Cc	2	17	500	100
Cc	3	11	500	100
Cc	3	12	500	100
Cc	3	13	500	100
Cc	3	14	500	100
Cc	3	15	500	100
Dc	1	19	500	100
Dc	2	21	500	100
Dc	3	25	500	100
Dc	3	22	500	100
Dc	3	23	500	100
Dc	3	24	500	100

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	690	690
A	2	740	740
B	2	688	688
B	3	688	688
C	1	265	265
C	2	827	827
C	3	825	825
D	1	375	375
D	2	411	411
D	3	411	411
A2	1	690	690
A2	2	740	740
Ac	1	629	629
Ac	2	857	857
Ac	3	34	34
Ax	1	582	582
Ax	2	511	511
Ax2	1	582	582
Ax2	2	511	511
B1	1	645	645
B3	1	1333	1333
B3	2	688	688
Bc	1	344	344
Bc	2	378	378

Bc	3	688	688
Bx	1	791	791
Bx	2	686	686
Bx	3	384	384
Bx2	1	791	791
Bx2	2	686	686
Bx2	3	384	384
Bx3	1	1477	1477
Bx3	2	384	384
C2	1	265	265
C2	2	827	827
C2	3	825	825
Cc	1	511	511
Cc	2	511	511
Cc	3	825	825
Cx	1	645	645
Cx	2	629	629
Cx	3	857	857
Cx2	1	645	645
Cx2	2	629	629
Cx2	3	857	857
D3	1	375	375
D3	2	822	822
Dc	1	579	579
Dc	2	686	686
Dc	3	686	686
Dx	1	609	609
Dx	2	378	378
Dx	3	494	494
Dx2	1	609	609
Dx2	2	378	378
Dx2	3	494	494
Dx3	1	609	609
Dx3	2	872	872

Signals

Arm	Traffic Stream	Controller Stream	Phase	Phase2 Enabled
A	1	1	A	
A	2	1	A	
B	2	2	A	
B	3	2	A	
C	1	3	A	
C	2	3	A	
C	3	3	A	
D	1	4	A	
D	2	4	A	
D	3	4	A	
A2	1	6	A	
A2	2	6	A	
Ac	1	2	B	
Ac	2	2	B	
Ac	3	2	B	
Ax	1	5	A	
Ax	2	5	A	
B1	1	11	A	
Bc	1	3	B	
Bc	2	3	B	
Bc	3	3	B	
Bx	1	9	A	
Bx	2	9	A	
Bx	3	9	A	
C2	1	8	A	
C2	2	8	A	
C2	3	8	A	
Cc	1	4	B	
Cc	2	4	B	
Cc	3	4	B	
Cx	1	7	A	
Cx	2	7	A	
Cx	3	7	A	
Dc	1	1	B	
Dc	2	1	B	
Dc	3	1	B	
Dx	1	10	A	
Dx	2	10	A	
Dx	3	10	A	

Entry Sources

Arm	Traffic Stream	Normal Cruise Time (seconds)	Normal Cruise Speed (kph)
A2	1	26.32	48.28
A2	2	26.32	48.28
B3	1	3.60	30.00
B3	2	2.24	48.28
C2	1	5.34	48.28
C2	2	5.34	48.28
C2	3	5.34	48.28
D3	1	2.24	48.28
D3	2	2.24	48.28

Sources

Arm	Traffic Stream	Source	Source Type	Source Traffic Stream	Destination Traffic Stream	Normal Cruise Time (seconds)	Normal Cruise Speed (kph)	Auto Turning Radius	Traffic Turn Style	Turning Radius (m)
A	1	1	TrafficStream	A2/1	A/1	12.90	48.28	✓	Straight	Straight Movement
A	2	1	TrafficStream	A2/2	A/2	12.90	48.28	✓	Straight	Straight Movement
Ax2	1	1	TrafficStream	Ax/1	Ax2/1	26.84	48.28	✓	Straight	Straight Movement
Ax2	2	1	TrafficStream	Ax/2	Ax2/2	26.84	48.28	✓	Straight	Straight Movement
B	2	1	TrafficStream	B3/1	B/2	7.46	48.28	✓	Straight	Straight Movement
B	3	1	TrafficStream	B3/2	B/3	7.46	48.28	✓	Straight	Straight Movement
C	1	1	TrafficStream	C2/1	C/1	11.48	48.28	✓	Straight	Straight Movement
C	2	1	TrafficStream	C2/2	C/2	11.48	48.28	✓	Straight	Straight Movement
C	3	1	TrafficStream	C2/3	C/3	11.48	48.28	✓	Straight	Straight Movement
D	1	1	TrafficStream	D3/1	D/1	9.69	48.28	✓	Straight	Straight Movement
D	2	1	TrafficStream	D3/2	D/2	9.69	48.28	✓	Straight	Straight Movement
D	3	1	TrafficStream	D3/2	D/3	9.69	48.28	✓	Straight	Straight Movement
Ac	1	1	TrafficStream	A/1	Ac/1	4.57	32.18	✓	Straight	Straight Movement
Ac	2	1	TrafficStream	A/2	Ac/2	4.57	32.18	✓	Straight	Straight Movement
Ac	3	1	TrafficStream	A/2	Ac/3	4.57	32.18	✓	Straight	Straight Movement
Ax	1	1	TrafficStream	Cc/1	Ax/1	12.60	48.28	✓	Straight	Straight Movement
Ax	2	1	TrafficStream	Cc/2	Ax/2	12.60	48.28	✓	Straight	Straight Movement
B1	1	1	TrafficStream	B3/1	B1/1	7.46	48.28	✓	Straight	Straight Movement
Bc	1	1	TrafficStream	B/2	Bc/1	6.01	32.18	✓	Straight	Straight Movement
Bc	2	1	TrafficStream	Ac/3	Bc/2	6.01	32.18	✓	Offside	16.57
Bc	3	1	TrafficStream	B/3	Bc/3	6.01	32.18	✓	Straight	Straight Movement

Bx	1	1	TrafficStream	Dc/1	Bx/1	1.12	48.28	✓	Straight	Straight Movement
Bx	2	1	TrafficStream	Dc/2	Bx/2	1.12	48.28	✓	Straight	Straight Movement
Bx	3	1	TrafficStream	Dc/3	Bx/3	1.12	48.28	✓	Straight	Straight Movement
Bx2	1	1	TrafficStream	Bx/1	Bx2/1	1.96	64.37	✓	Straight	Straight Movement
Bx2	2	1	TrafficStream	Bx/2	Bx2/2	2.61	48.28	✓	Straight	Straight Movement
Bx2	3	1	TrafficStream	Bx/3	Bx2/3	2.61	48.28	✓	Straight	Straight Movement
Bx3	1	1	TrafficStream	Bx2/1	Bx3/1	2.24	48.28	✓	Straight	Straight Movement
Bx3	2	1	TrafficStream	Bx2/3	Bx3/2	2.24	48.28	✓	Straight	Straight Movement
Cc	1	1	TrafficStream	C/2	Cc/1	5.76	32.18	✓	Straight	Straight Movement
Cc	2	1	TrafficStream	C/2	Cc/2	5.76	32.18	✓	Straight	Straight Movement
Cc	3	1	TrafficStream	C/3	Cc/3	5.76	32.18	✓	Straight	Straight Movement
Cx	1	1	TrafficStream	B1/1	Cx/1	10.55	48.28	✓	Nearside	89.74
Cx	2	1	TrafficStream	Ac/1	Cx/2	10.55	48.28	✓	Straight	Straight Movement
Cx	3	1	TrafficStream	Ac/2	Cx/3	10.55	48.28	✓	Straight	Straight Movement
Cx2	1	1	TrafficStream	Cx/1	Cx2/1	5.80	64.37	✓	Straight	Straight Movement
Cx2	2	1	TrafficStream	Cx/2	Cx2/2	7.74	48.28	✓	Straight	Straight Movement
Cx2	3	1	TrafficStream	Cx/3	Cx2/3	7.74	48.28	✓	Straight	Straight Movement
Dc	1	1	TrafficStream	Cc/3	Dc/1	4.96	32.18	✓	Offside	22.25
Dc	2	1	TrafficStream	Cc/3	Dc/2	4.96	32.18	✓	Offside	22.25
Dc	3	1	TrafficStream	Cc/3	Dc/3	4.96	32.18	✓	Offside	22.25
Dx	1	1	TrafficStream	C/1	Dx/1	1.49	48.28	✓	Straight	Straight Movement
Dx	2	1	TrafficStream	Bc/2	Dx/2	2.40	30.00	✓	Straight	Straight Movement
Dx	3	1	TrafficStream	Bc/3	Dx/3	2.40	30.00	✓	Straight	Straight Movement
Dx2	1	1	TrafficStream	Dx/1	Dx2/1	8.43	48.28	✓	Straight	Straight Movement
Dx2	2	1	TrafficStream	Dx/2	Dx2/2	8.43	48.28	✓	Straight	Straight Movement
Dx2	3	1	TrafficStream	Dx/3	Dx2/3	8.43	48.28	✓	Straight	Straight Movement
Dx3	1	1	TrafficStream	Dx2/1	Dx3/1	2.24	48.28	✓	Straight	Straight Movement
Dx3	2	1	TrafficStream	Dx2/3	Dx3/2	2.24	48.28	✓	Straight	Straight Movement
Ac	1	2	TrafficStream	Dc/3	Ac/1	4.57	32.18	✓	Offside	23.37
Ac	2	2	TrafficStream	Dc/3	Ac/2	4.48	32.80	✓	Offside	23.37
Ac	3	2	TrafficStream	Dc/3	Ac/3	4.57	32.18	✓	Offside	23.37
Ax	1	2	TrafficStream	D/1	Ax/1	12.60	48.28	✓	Nearside	55.90
Bc	2	2	TrafficStream	B/2	Bc/2	6.01	32.18	✓	Straight	Straight Movement

Bx	1	2	TrafficStream	A/1	Bx/1	1.12	48.28	✓	Straight	Straight Movement
Bx3	1	2	TrafficStream	Bx2/2	Bx3/1	2.24	48.28	✓	Straight	Straight Movement
Cc	1	2	TrafficStream	Bc/3	Cc/1	5.76	32.18	✓	Offside	29.51
Cc	2	2	TrafficStream	Bc/3	Cc/2	5.76	32.18	✓	Offside	29.51
Dc	1	2	TrafficStream	D/1	Dc/1	4.96	32.18	✓	Straight	Straight Movement
Dc	2	2	TrafficStream	D/2	Dc/2	4.96	32.18	✓	Straight	Straight Movement
Dc	3	2	TrafficStream	D/3	Dc/3	4.96	32.18	✓	Straight	Straight Movement
Dx	1	2	TrafficStream	Bc/1	Dx/1	2.40	30.00	✓	Straight	Straight Movement
Dx3	2	2	TrafficStream	Dx2/2	Dx3/2	2.24	48.28	✓	Straight	Straight Movement

Quick Flares

Arm	Traffic Stream	Description	Saturation Flow (PCU/hr)	Use Que Prob	Effective Storage (Vehs)
A	2		1800		2.00
C	3		1800		2.00

Local OD Matrix - Local Matrix: 1 - AM

Normal Input Flows (PCU/hr)

	To				
	1	2	3	4	
From	1	0	212	1184	34
	2	194	0	645	1182
	3	827	825	0	265
	4	71	824	302	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits
1 - AM	1		A2/2,A2/1	Ax2/1,Ax2/2
1 - AM	2		B3/2,B3/1	Bx3/1,Bx3/2
1 - AM	3		C2/3,C2/2,C2/1	Cx2/3,Cx2/2,Cx2/1
1 - AM	4	(untitled)	D3/1,D3/2	Dx3/2,Dx3/1

Paths

OD Matrix	Path	Description	From Location	To Location	Path Items
1 - AM	1		1	3	A2/2,A/2,Ac/2,Cx/3,Cx2/3
1 - AM	2		1	4	A2/2,A/2,Ac/3,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - AM	3		1	3	A2/1,A/1,Ac/1,Cx/2,Cx2/2
1 - AM	4		1	2	A2/1,A/1,Bx/1,Bx2/1,Bx3/1
1 - AM	5		2	1	B3/2,B/3,Bc/3,Cc/1,Ax/1,Ax2/1
1 - AM	6		2	1	B3/2,B/3,Bc/3,Cc/2,Ax/2,Ax2/2
1 - AM	7		2	4	B3/2,B/3,Bc/3,Dx/3,Dx2/3,Dx3/2
1 - AM	8		2	4	B3/1,B/2,Bc/1,Dx/1,Dx2/1,Dx3/1
1 - AM	9		2	4	B3/1,B/2,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - AM	10		2	3	B3/1,B1/1,Cx/1,Cx2/1
1 - AM	11		3	2	C2/3,C/3,Cc/3,Dc/1,Bx/1,Bx2/1,Bx3/1
1 - AM	12		3	2	C2/3,C/3,Cc/3,Dc/2,Bx/2,Bx2/2,Bx3/1
1 - AM	13		3	3	C2/3,C/3,Cc/3,Dc/3,Ac/1,Cx/2,Cx2/2
1 - AM	14		3	3	C2/3,C/3,Cc/3,Dc/3,Ac/2,Cx/3,Cx2/3
1 - AM	15		3	2	C2/3,C/3,Cc/3,Dc/3,Bx/3,Bx2/3,Bx3/2
1 - AM	16		3	1	C2/2,C/2,Cc/1,Ax/1,Ax2/1
1 - AM	17		3	1	C2/2,C/2,Cc/2,Ax/2,Ax2/2
1 - AM	18		3	4	C2/1,C/1,Dx/1,Dx2/1,Dx3/1
1 - AM	19		4	2	D3/1,D/1,Dc/1,Bx/1,Bx2/1,Bx3/1
1 - AM	20		4	1	D3/1,D/1,Ax/1,Ax2/1
1 - AM	21		4	2	D3/2,D/2,Dc/2,Bx/2,Bx2/2,Bx3/1
1 - AM	22		4	3	D3/2,D/3,Dc/3,Ac/1,Cx/2,Cx2/2
1 - AM	23		4	3	D3/2,D/3,Dc/3,Ac/2,Cx/3,Cx2/3
1 - AM	24		4	4	D3/2,D/3,Dc/3,Ac/3,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - AM	25		4	2	D3/2,D/3,Dc/3,Bx/3,Bx2/3,Bx3/2

Normal Path Flows

OD Matrix	Path	Permitted Flow Type	Allocation Type
1 - AM	1	✓	Normal
1 - AM	2	✓	Normal
1 - AM	3	✓	Normal
1 - AM	4	✓	Normal
1 - AM	5	✓	Normal
1 - AM	6	✓	Normal
1 - AM	7	✓	Normal
1 - AM	8	✓	Normal
1 - AM	9	✓	Normal
1 - AM	10	✓	Normal
1 - AM	11	✓	Normal
1 - AM	12	✓	Normal
1 - AM	13	✓	Normal
1 - AM	14	✓	Normal
1 - AM	15	✓	Normal
1 - AM	16	✓	Normal
1 - AM	17	✓	Normal
1 - AM	18	✓	Normal
1 - AM	19	✓	Normal
1 - AM	20	✓	Normal
1 - AM	21	✓	Normal
1 - AM	22	✓	Normal
1 - AM	23	✓	Normal
1 - AM	24	✓	Normal
1 - AM	25	✓	Normal

Signal Timings

Network Default: 72s cycle time; 72 steps

Controller Stream 1

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
1			1	NetworkDefault	72

Controller Stream 1 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
1	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
1	A	(untitled)	7	300	0	0	Not Specified
1	B	(untitled)	7	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
1	1	A	1
1	2	B	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
1	1	Gaining	B	1	2	0	6

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
1	1	(untitled)	Single	1,2	41,17

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
1	1	✓	1	A	22	41	19	1	7
1	2	✓	2	B	48	17	41	1	7

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
1	A	1	✓	22	41	19
1	B	1	✓	48	17	41

Intergreen Matrix for Controller Stream 1

		To	
		A	B
From	A		7
	B	5	

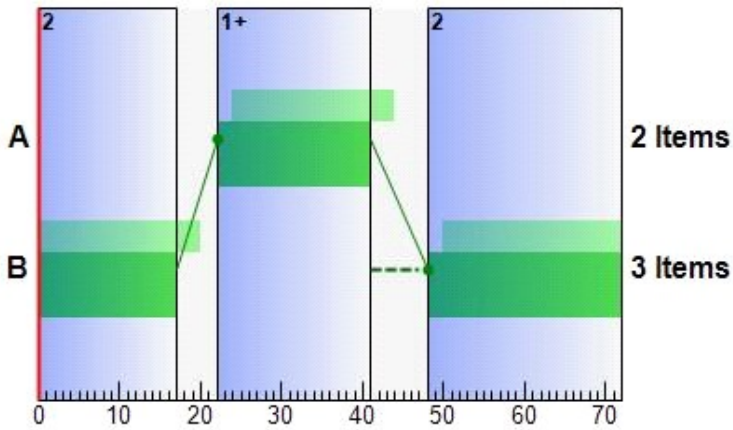
Interstage Matrix for Controller Stream 1

		To	
		1	2
From	1	0	7
	2	5	0

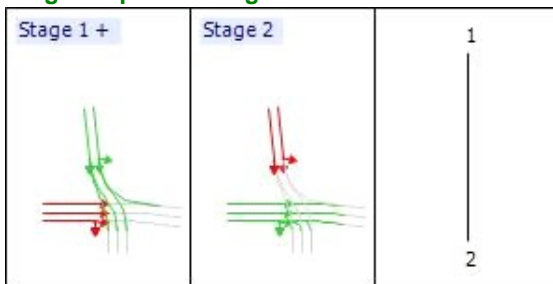
Banned Stage transitions for Controller Stream 1

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Controller Stream 2

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
2			1	NetworkDefault	72

Controller Stream 2 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
2	Unspecified						Absolute

Controller Stream 2 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
2	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
2	A	(untitled)	7	300	0	0	Not Specified
2	B	(untitled)	7	300	0	0	Not Specified
2	C	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
2	1	A	1
2	2	B,C	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay
2	1	Losing	B	2	1	2

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
2	1	(untitled)	Single	1,2	9,51

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
2	1	✓	1	A	58	9	23	1	7
2	2	✓	2	B,C	16	51	35	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
2	A	1	✓	58	9	23
2	B	1	✓	16	53	37
2	C	1	✓	14	51	37

Intergreen Matrix for Controller Stream 2

		To		
		A	B	C
From	A		7	5
	B	5		
	C	7		

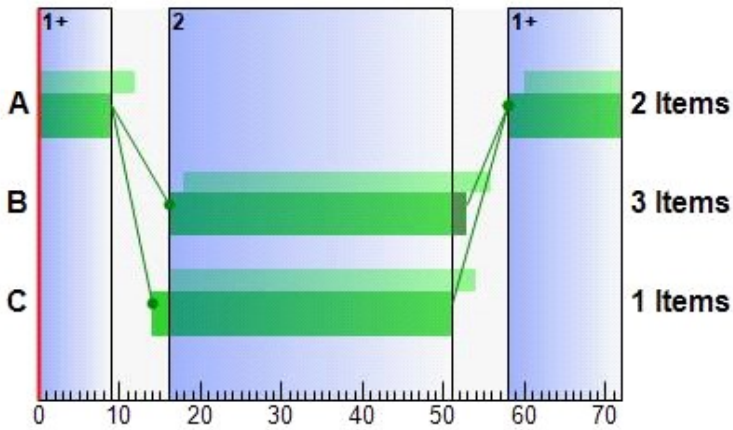
Interstage Matrix for Controller Stream 2

		To	
		1	2
From	1	0	7
	2	7	0

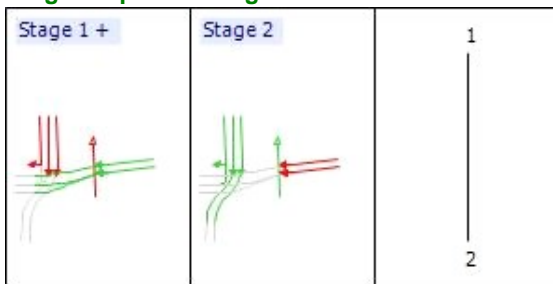
Banned Stage transitions for Controller Stream 2

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 2



Stage Sequence Diagram for Controller Stream 2



Controller Stream 3

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
3			1	NetworkDefault	72

Controller Stream 3 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
3	Unspecified						Absolute

Controller Stream 3 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
3	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
3	A	(untitled)	7	300	0	0	Not Specified
3	B	(untitled)	7	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
3	1	A	1
3	2	B	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
3	1	Gaining	A	2	1	0	3

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
3	1	(untitled)	Single	1,2	54,22

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
3	1	✓	1	A	27	54	27	1	7
3	2	✓	2	B	61	22	33	1	7

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
3	A	1	✓	27	54	27
3	B	1	✓	61	22	33

Intergreen Matrix for Controller Stream 3

		To	
		A	B
From	A		7
	B	5	

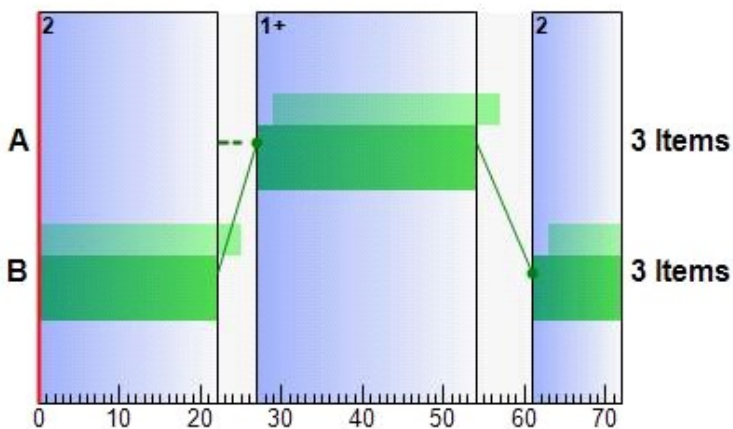
Interstage Matrix for Controller Stream 3

		To	
		1	2
From	1	0	7
	2	5	0

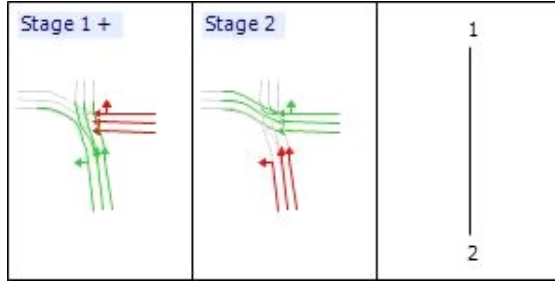
Banned Stage transitions for Controller Stream 3

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 3



Stage Sequence Diagram for Controller Stream 3



Controller Stream 4

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
4			1	NetworkDefault	72

Controller Stream 4 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
4	Unspecified						Absolute

Controller Stream 4 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
4	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
4	A	(untitled)	7	300	0	0	Not Specified
4	B	(untitled)	7	300	0	0	Not Specified
4	C	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
4	1	A	1
4	2	B,C	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay
4	1	Losing	B	2	1	5

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
4	1	(untitled)	Single	1,2	19,58

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
4	1	✓	1	A	68	19	23	1	7
4	2	✓	2	B,C	26	58	32	1	3

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
4	A	1	✓	68	19	23
4	B	1	✓	26	63	37
4	C	1	✓	24	58	34

Intergreen Matrix for Controller Stream 4

		To		
		A	B	C
From	A		7	5
	B	5		
	C	10		

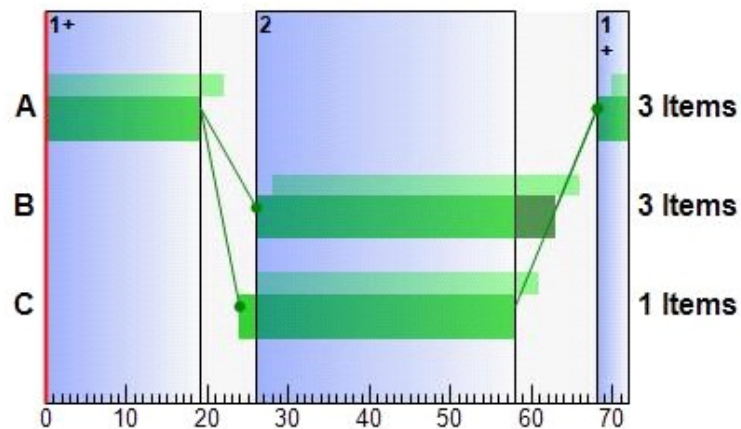
Interstage Matrix for Controller Stream 4

		To	
		1	2
From	1	0	7
	2	10	0

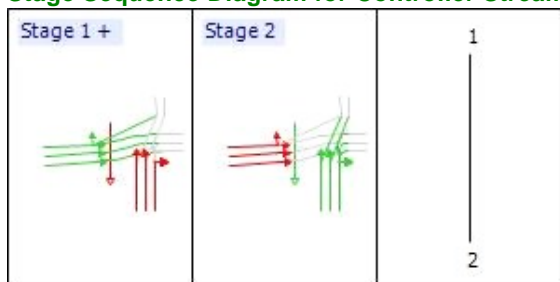
Banned Stage transitions for Controller Stream 4

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 4



Stage Sequence Diagram for Controller Stream 4



Controller Stream 5

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
5	(untitled)		1	NetworkDefault	72

Controller Stream 5 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
5	Unspecified						Absolute

Controller Stream 5 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
5	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
5	A	(untitled)	7	300	0	0	Not Specified
5	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
5	1	A	1
5	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
5	1	(untitled)	Single	1,2	21,31

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
5	1	✓	1	A	39	21	54	1	7
5	2	✓	2	B	26	31	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
5	A	1	✓	39	21	54
5	B	1	✓	26	31	5

Intergreen Matrix for Controller Stream 5

		To	
		A	B
From	A		5
	B	8	

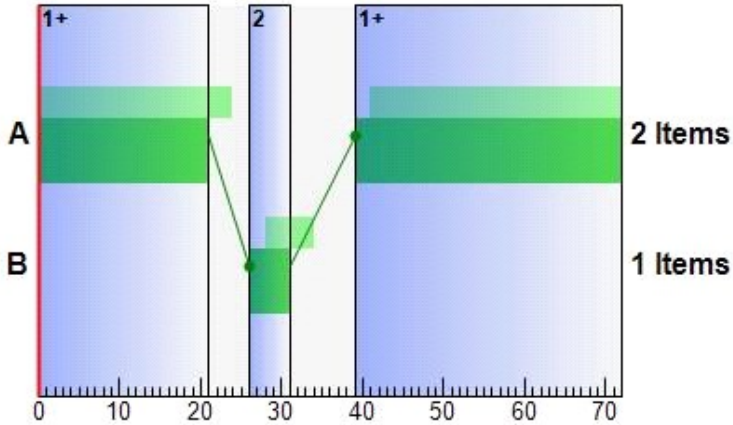
Interstage Matrix for Controller Stream 5

		To	
		1	2
From	1	0	5
	2	8	0

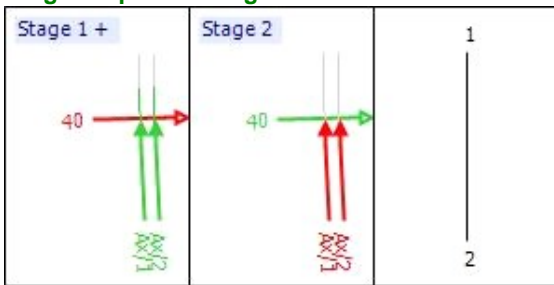
Banned Stage transitions for Controller Stream 5

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 5



Stage Sequence Diagram for Controller Stream 5



Controller Stream 6

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
6	(untitled)		1	NetworkDefault	72

Controller Stream 6 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
6	Unspecified						Absolute

Controller Stream 6 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
6	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
6	A	(untitled)	7	300	0	0	Not Specified
6	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
6	1	A	1
6	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
6	1	(untitled)	Single	1,2	46,56

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
6	1	✓	1	A	64	46	54	1	7
6	2	✓	2	B	51	56	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
6	A	1	✓	64	46	54
6	B	1	✓	51	56	5

Intergreen Matrix for Controller Stream 6

		To	
		A	B
From	A		5
	B	8	

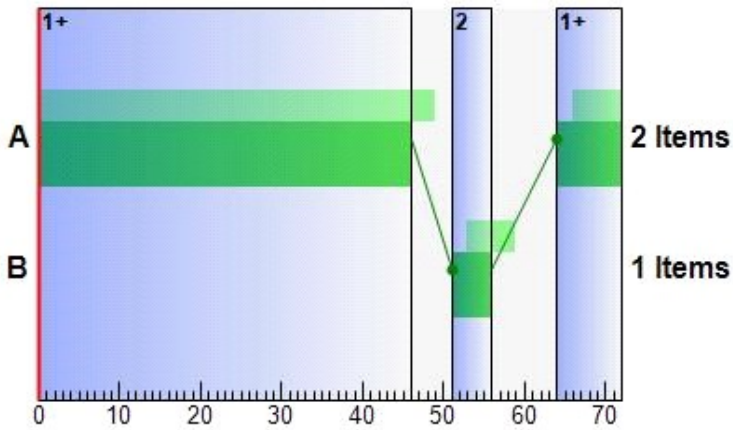
Interstage Matrix for Controller Stream 6

		To	
		1	2
From	1	0	5
	2	8	0

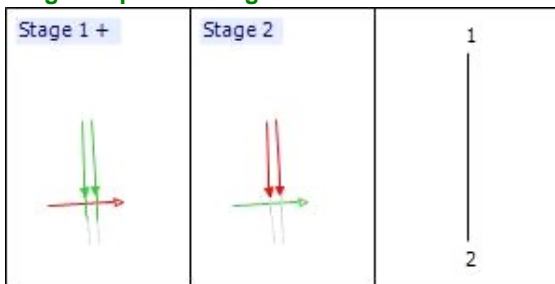
Banned Stage transitions for Controller Stream 6

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 6



Stage Sequence Diagram for Controller Stream 6



Controller Stream 7

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
7	(untitled)		1	NetworkDefault	72

Controller Stream 7 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
7	Unspecified						Absolute

Controller Stream 7 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
7	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
7	A	(untitled)	7	300	0	0	Not Specified
7	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
7	1	A	1
7	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
7	1	(untitled)	Single	1,2	70,8

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
7	1	✓	1	A	18	70	52	1	7
7	2	✓	2	B	3	8	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
7	A	1	✓	18	70	52
7	B	1	✓	3	8	5

Intergreen Matrix for Controller Stream 7

		To	
		A	B
From	A		5
	B	10	

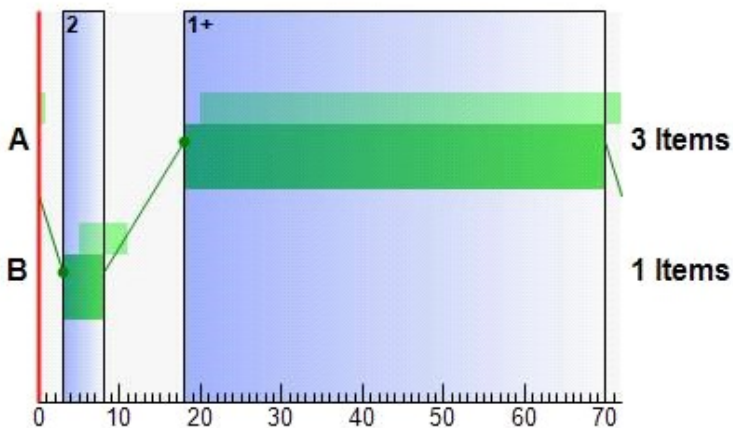
Interstage Matrix for Controller Stream 7

		To	
		1	2
From	1	0	5
	2	10	0

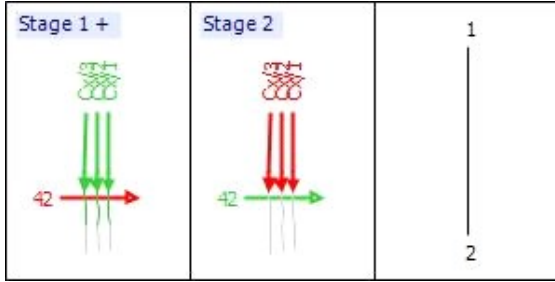
Banned Stage transitions for Controller Stream 7

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 7



Stage Sequence Diagram for Controller Stream 7



Controller Stream 8

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
8	(untitled)		1	NetworkDefault	72

Controller Stream 8 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
8	Unspecified						Absolute

Controller Stream 8 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
8	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
8	A	(untitled)	7	300	0	0	Not Specified
8	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
8	1	A	1
8	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
8	1	(untitled)	Single	1,2	16,26

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
8	1	✓	1	A	36	16	52	1	7
8	2	✓	2	B	21	26	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
8	A	1	✓	36	16	52
8	B	1	✓	21	26	5

Intergreen Matrix for Controller Stream 8

		To	
		A	B
From	A		5
	B	10	

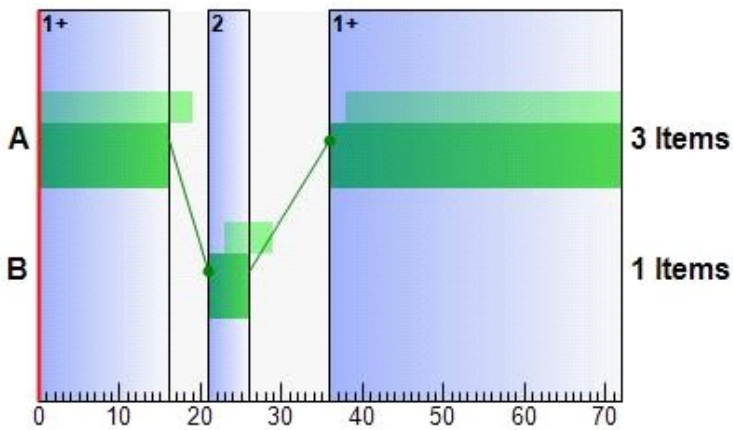
Interstage Matrix for Controller Stream 8

		To	
		1	2
From	1	0	5
	2	10	0

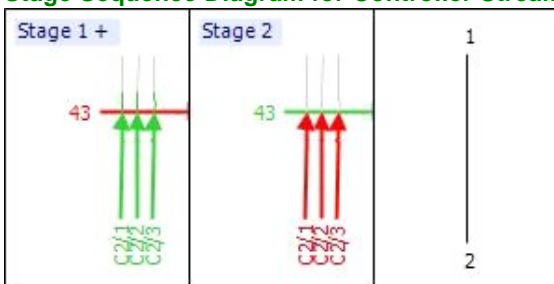
Banned Stage transitions for Controller Stream 8

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 8



Stage Sequence Diagram for Controller Stream 8



Controller Stream 9

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
9	(untitled)		1	NetworkDefault	72

Controller Stream 9 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
9	Unspecified						Absolute

Controller Stream 9 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
9	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
9	A	(untitled)	7	300	0	0	Not Specified
9	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
9	1	A	1
9	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
9	1	(untitled)	Single	1,2	18,28

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
9	1	✓	1	A	38	18	52	1	7
9	2	✓	2	B	23	28	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
9	A	1	✓	38	18	52
9	B	1	✓	23	28	5

Intergreen Matrix for Controller Stream 9

		To	
		A	B
From	A		5
	B	10	

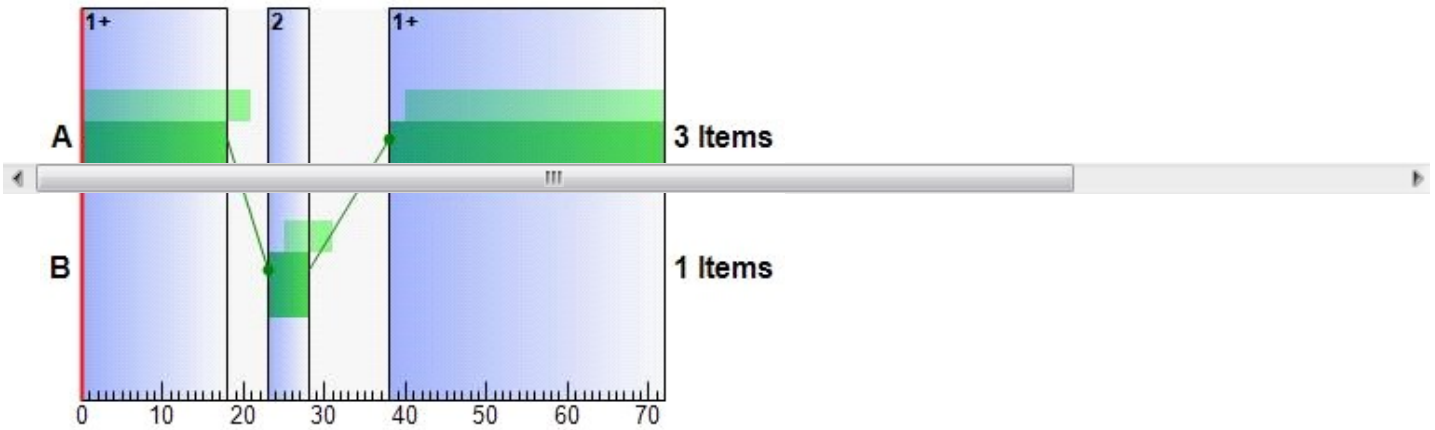
Interstage Matrix for Controller Stream 9

		To	
		1	2
From	1	0	5
	2	10	0

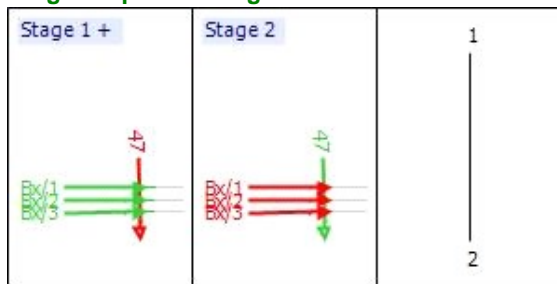
Banned Stage transitions for Controller Stream 9

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 9



Stage Sequence Diagram for Controller Stream 9



Controller Stream 10

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
10	(untitled)		1	NetworkDefault	72

Controller Stream 10 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
10	Unspecified						Absolute

Controller Stream 10 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
10	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
10	A	(untitled)	7	300	0	0	Not Specified
10	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
10	1	A	1
10	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
10	1	(untitled)	Single	1,2	35,45

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
10	1	✓	1	A	55	35	52	1	7
10	2	✓	2	B	40	45	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
10	A	1	✓	55	35	52
10	B	1	✓	40	45	5

Intergreen Matrix for Controller Stream 10

		To	
		A	B
From	A		5
	B	10	

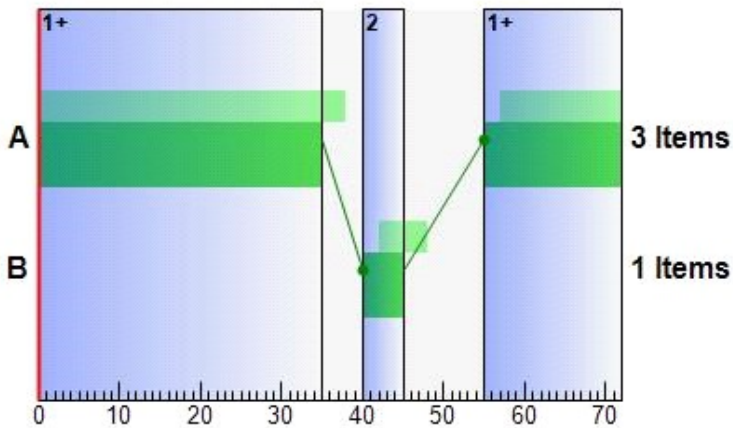
Interstage Matrix for Controller Stream 10

		To	
		1	2
From	1	0	5
	2	10	0

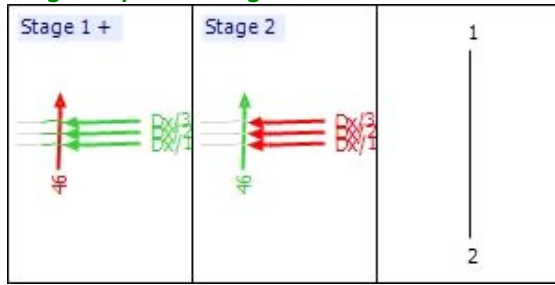
Banned Stage transitions for Controller Stream 10

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 10



Stage Sequence Diagram for Controller Stream 10



Controller Stream 11

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
11			1	NetworkDefault	72

Controller Stream 11 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
11	Unspecified						Absolute

Controller Stream 11 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
11	✓	✓	Offsets Only		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
11	A	(untitled)	7	300	0	0	Not Specified
11	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
11	1	A	1
11	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
11	1	(untitled)	Single	1,2	67,5

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
11	1	✓	1	A	10	67	57	1	7
11	2	✓	2	B	0	5	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
11	A	1	✓	10	67	57
11	B	1	✓	0	5	5

Intergreen Matrix for Controller Stream 11

		To	
		A	B
From	A		5
	B	5	

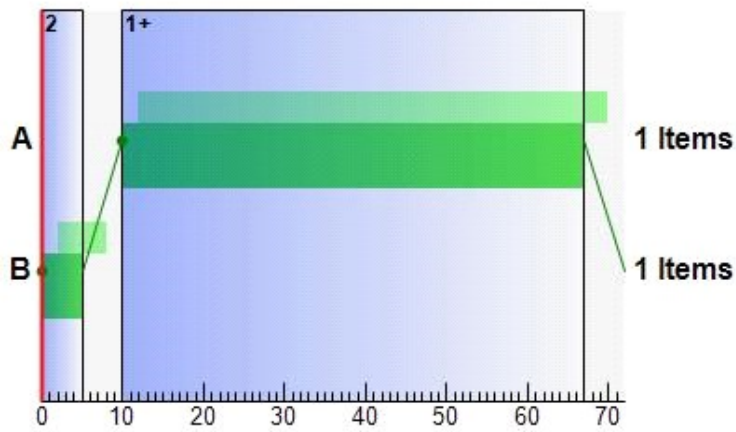
Interstage Matrix for Controller Stream 11

		To	
		1	2
From	1	0	5
	2	5	0

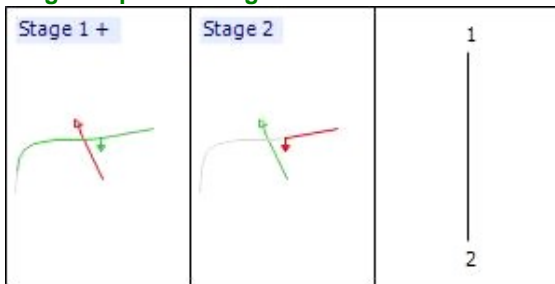
Banned Stage transitions for Controller Stream 11

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 11



Stage Sequence Diagram for Controller Stream 11



Final Prediction Table

Link Results

Link	Name	Traffic Node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES		WEIG
			Controller Stream	Phase	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Wasted Time Total (s per cycle)	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Journey Time Per PCU (s)	Mean Delay Per PCU (s)	Mean Stops Per PCU (%)	Mean Max Queue (PCU)	Max End Of Red Queue (PCU)	Delay Weighting (%)
40 P	A452 N-NB	5	5	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100
41 P	A452 N-SB	6	6	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100
42 P	A452 S-SB	7	7	B	0	0	0	0.00	0	0	31.97	30.71	0.00	1.83	1.83	100
43 P	A452 S-NB	8	8	B	0	0	0	0.00	0	0	31.88	30.71	0.00	1.83	1.83	100
45 P	A38 W-WB	2	2	C	0	0	0	0.00	0	0	9.34	8.26	0.00	0.94	0.94	100
46 P	A38 E-WB	10	10	B	0	0	0	0.00	0	0	31.88	30.71	0.00	1.83	1.83	100
47 P	A38 W-EB	9	9	B	0	0	0	0.00	0	0	31.79	30.71	0.00	1.83	1.83	100
49 P	A38 E-EB	4	4	C	0	0	0	0.00	0	0	10.93	9.76	0.00	1.03	1.03	100
50 P	A38 W-WB	2	11	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100

Traffic Stream Results

Arm	Traffic Stream	Name	Traffic Node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	
				Controller Stream	Phase	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Wasted Time Total (s per cycle)	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Journey Time Per PCU (s)	Mean Delay Per PCU (s)	Mean Stops Per PCU (%)	Mean Max Queue (PCU)	Max End Of Red Queue (PCU)
A	1		1	1	A	690 <	1905	19	5.00	130!	-31	458.33	445.43	347.43	92.45 +	89.5
A	2		1	1	A	740 <	2440 f	19	6.00	109!	-18	206.58	193.68	252.29	49.09 +	45.4
B	2	(untitled)	2	2	A	688 <	2070	23	0.00	100!	-10	94.96	87.51	165.92	25.71 +	21.3
B	3	(untitled)	2	2	A	688 <	2070	23	0.00	100!	-10	94.96	87.51	165.92	25.71 +	21.3
C	1		3	3	A	265	1762	27	10.00	39	133	29.69	18.20	67.05	3.61	3.45
C	2		3	3	A	828 <	1937	27	0.00	110!	-18	216.76	205.27	252.91	56.34 +	52.6
C	3		3	3	A	825	2209 f	27	12.00	96!	-6	69.29	57.81	117.46	20.29	19.6
D	1		4	4	A	375	1804	23	0.00	62	44	34.81	25.12	86.53	6.76	5.51
D	2		4	4	A	411	1979	23	0.00	62	44	34.36	24.67	85.93	7.36	5.99
D	3		4	4	A	411	1979	23	0.00	62	44	34.36	24.67	85.93	7.36	5.99

A2	1	(untitled)	6	6	A	690	1940	54	55.00	47	93	30.50	4.17	32.75	5.19	3.46
A2	2	(untitled)	6	6	A	740	2080	54	55.00	47	93	30.43	4.10	32.66	5.55	3.70
Ac	1		2	2	B	518	2015	37	3.00	49	85	7.99	3.42	24.90	2.83	2.25
Ac	2		2	2	B	798 <	2155	37	2.00	70	28	10.20	5.65	61.54	12.91 +	2.84
Ac	3		2	2	B	31	2033	37	18.00	3	3001	4.64	0.07	0.12	0.00	0.00
Ax	1		5	5	A	545	2105	54	0.00	34	166	13.73	1.12	9.56	1.56	1.00
Ax	2		5	5	A	474	2055	54	12.00	30	198	13.26	0.66	6.12	1.24	0.70
Ax2	1	(untitled)				545	1800	72	4.00	30	197	27.28	0.43	0.00	0.07	
Ax2	2	(untitled)				474	1800	72	13.00	26	242	27.20	0.36	0.00	0.05	
B1	1		2	11	A	645	1754	57	0.00	46	97	10.68	3.22	26.68	4.13	2.70
B3	1	(untitled)	14			1333	1800	72	44.00	74	22	6.43	2.83	0.00	1.05	
B3	2	(untitled)	14			688	1800	72	44.00	38	135	2.86	0.62	0.00	0.12	
Bc	1		3	3	B	344	1973	33	4.00	37	144	7.20	1.19	1.73	0.12	0.12
Bc	2		3	3	B	375	2113	33	2.00	38	139	8.71	2.70	9.92	0.75	0.75
Bc	3		3	3	B	688 <	1993	33	2.00	73	23	11.40	5.39	18.02	11.05 +	1.00
Bx	1		9	9	A	742 <	2055	52	5.00	49	84	3.97	2.85	20.47	3.47 +	2.66
Bx	2		9	9	A	686	2055	52	10.00	45	98	2.18	1.07	2.49	2.57	0.23
Bx	3		9	9	A	384	2055	52	11.00	25	255	1.55	0.43	0.72	0.06	0.06
Bx2	1	(untitled)	13			742	1800	72	56.00	41	118	2.72	0.76	4.49	2.76	
Bx2	2	(untitled)	13			686	1800	72	64.00	38	136	3.36	0.75	7.71	4.29	
Bx2	3	(untitled)	13			384	1800	72	29.00	21	322	2.91	0.30	1.66	2.03	
Bx3	1	(untitled)				1428 <	1800	72	11.00	79	13	9.55	7.31	65.29	26.40 +	
Bx3	2	(untitled)				384	1800	72	28.00	21	322	2.51	0.27	0.00	0.03	
C2	1	(untitled)	8	8	A	265	1940	52	0.00	19	385	8.53	3.19	26.64	1.64	1.42
C2	2	(untitled)	8	8	A	828	2080	52	53.00	54	66	10.89	5.55	40.03	7.45	4.69
C2	3	(untitled)	8	8	A	825	2080	52	0.00	54	67	10.87	5.53	39.91	7.42	4.67
Cc	1		4	4	B	474	1847	37	2.00	49	85	11.12	5.36	23.31	2.22	2.20
Cc	2		4	4	B	474	1987	37	2.00	45	99	10.76	5.00	22.85	2.18	2.16
Cc	3		4	4	B	825 <	1875	37	5.00	83	8	17.08	11.32	79.38	17.93 +	2.14
Cx	1		7	7	A	645	2015	52	0.00	43	107	13.28	2.73	15.17	2.55	1.58
Cx	2		7	7	A	518	2105	52	8.00	33	169	11.17	0.62	1.02	0.11	0.11
Cx	3		7	7	A	798	2105	52	7.00	51	75	11.83	1.28	2.87	6.14	0.31
Cx2	1	(untitled)				645	1800	72	15.00	36	151	6.36	0.56	0.00	0.10	
Cx2	2	(untitled)				518	1800	72	25.00	29	213	8.14	0.40	0.00	0.06	
Cx2	3	(untitled)				798	1800	72	24.00	44	103	9.12	1.39	23.47	10.34	
D3	1	(untitled)	15			375	1800	72	0.00	21	332	2.50	0.26	0.00	0.03	
D3	2	(untitled)	15			822	1800	72	0.00	46	97	3.08	0.84	0.00	0.19	
Dc	1		1	1	B	579	2015	41	0.00	49	83	9.50	4.53	29.53	3.77	2.73
Dc	2		1	1	B	686	2155	41	0.00	55	65	9.73	4.77	27.25	4.09	3.05
Dc	3		1	1	B	686	2033	41	0.00	58	56	10.15	5.19	28.09	4.16	3.11
Dx	1		10	10	A	609	2105	52	10.00	39	129	3.77	1.76	14.33	2.01	1.86
Dx	2		10	10	A	375	2105	52	20.00	24	272	2.77	0.37	0.00	0.04	0.04
Dx	3		10	10	A	494	2105	52	22.00	32	182	2.94	0.54	0.00	0.07	0.07
Dx2	1	(untitled)	16			609	1800	72	11.00	34	166	8.94	0.51	0.00	0.09	
Dx2	2	(untitled)	16			375	1800	72	54.00	21	332	8.69	0.26	0.00	0.03	
Dx2	3	(untitled)	16			494	1800	72	56.00	27	228	8.80	0.38	0.00	0.05	
Dx3	1	(untitled)				609	1800	72	10.00	34	166	2.75	0.51	0.00	0.09	
Dx3	2	(untitled)				869 <	1800	72	31.00	48	86	5.88	3.64	55.38	15.61 +	

Network Results

	Distance Travelled (PCU-km/hr)	Time Spent (PCU-hr/hr)	Mean Journey Speed (kph)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Excess Queue Penalty (£ per hr)	Performance Index (£ per hr)
TOTAL	3352.77	325.13	10.31	46.61	205.55	463.25	224.10	491.82	1179.16
BUSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PEDESTRIANS									
OTHER (NORMAL)	3352.77	325.13	10.31	46.61	205.55	463.25	224.10	491.82	1179.16

- 1 *B = at least one source for this link carries buses*
- 1 *T = at least one source for this link carries trams*
- 1 *P = this link is a pedestrian link*
- 1 *< = adjusted flow warning (upstream links are over-saturated)*
- 1 *! = DoS threshold exceeded*
- 1 *f = average saturation flow for flared link*
- 1 ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- 1 *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- 1 *+ = average link excess queue is greater than 0*
- 1 **P.I. = PERFORMANCE INDEX**

Link Results

Link Results: Flows And Signals

Time Segment	Link	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Calculated Sat Flow	Calculated Capacity	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity	Mean Modulus Of Error	Actual Green (s (per cycle))	Effectiv Green (per cycle)
07:30-08:30	40	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	41	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	42	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	43	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	45	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	37	38
07:30-08:30	46	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	47	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
07:30-08:30	49	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	34	35
07:30-08:30	50	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6

Link Results: Stops And Delays

Time Segment	Link	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	40	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	41	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	42	1.26	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	43	1.17	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	45	1.08	8.26	0.23	0.00	3.26	3.26	0.00	0.00	0.00	0.00	0.00
07:30-08:30	46	1.17	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	47	1.08	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
07:30-08:30	49	1.17	9.76	0.27	0.00	3.85	3.85	0.00	0.00	0.00	0.00	0.00
07:30-08:30	50	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00

Link Results: Queues And Blocking

Time Segment	Link	Initial Queue (PCU)	Mean Max Queue (PCU)	Max Queue Storage (PCU)	Utilised Storage (%)	Average Link Excess Queue (PCU)	Average Limit Excess Queue (PCU)	Excess Queue Penalty (£ per hr)	Max End Of Green Queue (PCU)	Max End Of Red Queue (PCU)	Wasted Time Starvation (s (per cycle))	Wasted Time Blocking Back (s (per cycle))	Wasted Time Total (s (per cycle))	Estimated Blocking
07:30-08:30	40	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	41	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	42	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	43	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	45	0.00	0.94	10.00	9.44	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	
07:30-08:30	46	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	47	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
07:30-08:30	49	0.00	1.03	10.00	10.28	0.00	0.00	0.00	0.00	1.03	0.00	0.00	0.00	
07:30-08:30	50	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	

Link Results: Advanced

Time Segment	Link	Degree Of Saturation Penalty (£ per hr)	Phase Min Max Penalty (£ per hr)	Intergreen Broken Penalty (£ per hr)	Stage Constraint Broken Penalty (£ per hr)	Ped Gap Accepting Penalty (£ per hr)	Warmed Up	Warmed Up Error	Mean Max Queue EoTS (PCU)	Max End Of Green Queue Eo TS (PCU)	Max End Of Red Queue Eo TS (PCU)	Cost Of Penalties (£ per hr)	Unweighted Performance Index (£ per hr)	Performance Index (£ per hr)
07:30-08:30	40	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	41	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	42	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	43	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	45	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.94	0.00	0.94	0.00	0.00	0.00
07:30-08:30	46	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	47	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
07:30-08:30	49	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.03	0.00	1.03	0.00	0.00	0.00
07:30-08:30	50	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle Summary

Time Segment	Arm	Traffic Stream	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Mean Delay Per PCU (s)	Mean Max Queue (PCU)	Utilised Storage (%)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Performance Index (£ per hr)
07:30-08:30	A	1	130!	-31	690	1905	19	445.43	92.45	307.26	48.49	0.00	48.49
07:30-08:30	A	2	109!	-18	740	2440	19	193.68	49.09	163.17	22.61	0.00	22.61
07:30-08:30	B	2	100!	-10	688	2070	23	87.51	25.71	147.85	9.50	0.00	9.50
07:30-08:30	B	3	100!	-10	688	2070	23	87.51	25.71	147.85	9.50	0.00	9.50
07:30-08:30	C	1	39	133	265	1762	27	18.20	3.61	13.46	0.76	0.00	0.76
07:30-08:30	C	2	110!	-18	828	1937	27	205.27	56.34	210.36	26.82	0.00	26.82
07:30-08:30	C	3	96!	-6	825	2209	27	57.81	20.29	75.77	7.52	0.00	7.52
07:30-08:30	D	1	62	44	375	1804	23	25.12	6.76	29.91	1.49	0.00	1.49
07:30-08:30	D	2	62	44	411	1979	23	24.67	7.36	32.55	1.60	0.00	1.60
07:30-08:30	D	3	62	44	411	1979	23	24.67	7.36	32.55	1.60	0.00	1.60
07:30-08:30	A2	1	47	93	690	1940	54	4.17	5.19	8.45	11.36	7.34	18.70
07:30-08:30	A2	2	47	93	740	2080	54	4.10	5.55	9.04	11.98	7.85	19.83
07:30-08:30	Ac	1	49	85	518	2015	37	3.42	2.83	39.78	6.98	2.34	18.66

07:30-08:30	Ac	2	70	28	798	2155	37	5.65	12.91	181.71	17.78	27.93	147.81
07:30-08:30	Ac	3	3	3001	31	2033	37	0.07	0.00	0.01	0.01	0.00	0.01
07:30-08:30	Ax	1	34	166	545	2105	54	1.12	1.56	5.31	2.42	1.69	4.11
07:30-08:30	Ax	2	30	198	474	2055	54	0.66	1.24	4.21	1.23	0.94	2.17
07:30-08:30	Ax2	1	30	197	545	1800	72	0.43	0.07	0.10	0.93	0.00	0.93
07:30-08:30	Ax2	2	26	242	474	1800	72	0.36	0.05	0.08	0.67	0.00	0.67
07:30-08:30	B1	1	46	97	645	1754	57	3.22	4.13	23.77	8.20	5.59	13.79
07:30-08:30	B3	1	74	22	1333	1800	72	2.83	1.05	20.10	14.89	0.00	14.89
07:30-08:30	B3	2	38	135	688	1800	72	0.62	0.12	2.26	1.68	0.00	1.68
07:30-08:30	Bc	1	37	144	344	1973	33	1.19	0.12	1.28	1.61	0.43	2.04
07:30-08:30	Bc	2	38	139	375	2113	33	2.70	0.75	7.98	4.00	0.87	4.86
07:30-08:30	Bc	3	73	23	688	1993	33	5.39	11.05	118.28	14.63	8.95	89.89
07:30-08:30	Bx	1	49	84	742	2055	52	2.85	3.47	133.00	8.35	4.93	13.28
07:30-08:30	Bx	2	45	98	686	2055	52	1.07	2.57	98.58	2.88	0.55	3.44
07:30-08:30	Bx	3	25	255	384	2055	52	0.43	0.06	2.12	0.66	0.09	0.75
07:30-08:30	Bx2	1	41	118	742	1800	72	0.76	2.76	45.38	2.23	1.92	4.15
07:30-08:30	Bx2	2	38	136	686	1800	72	0.75	4.29	70.43	2.02	1.72	3.74
07:30-08:30	Bx2	3	21	322	384	1800	72	0.30	2.03	33.37	0.45	0.21	0.66
07:30-08:30	Bx3	1	79	13	1428	1800	72	7.31	26.40	505.91	41.19	30.27	71.45
07:30-08:30	Bx3	2	21	322	384	1800	72	0.27	0.03	0.55	0.41	0.00	0.41
07:30-08:30	C2	1	19	385	265	1940	52	3.19	1.64	13.17	3.34	2.29	5.63
07:30-08:30	C2	2	54	66	828	2080	52	5.55	7.45	59.78	18.12	10.76	28.89
07:30-08:30	C2	3	54	67	825	2080	52	5.53	7.42	59.55	17.99	10.69	28.68
07:30-08:30	Cc	1	49	85	474	1847	37	5.36	2.22	24.84	10.01	2.30	13.48
07:30-08:30	Cc	2	45	99	474	1987	37	5.00	2.18	24.35	9.35	2.17	12.39
07:30-08:30	Cc	3	83	8	825	1875	37	11.32	17.93	200.18	36.82	47.24	321.48
07:30-08:30	Cx	1	43	107	645	2015	52	2.73	2.55	10.35	6.95	3.18	10.13
07:30-08:30	Cx	2	33	169	518	2105	52	0.62	0.11	0.43	1.26	0.17	1.43
07:30-08:30	Cx	3	51	75	798	2105	52	1.28	6.14	24.93	4.04	0.74	4.78
07:30-08:30	Cx2	1	36	151	645	1800	72	0.56	0.10	0.55	1.42	0.00	1.42

07:30-08:30	Cx2	2	29	213	518	1800	72	0.40	0.06	0.32	0.82	0.00	0.82
07:30-08:30	Cx2	3	44	103	798	1800	72	1.39	10.34	57.30	4.37	6.08	10.45
07:30-08:30	D3	1	21	332	375	1800	72	0.26	0.03	0.53	0.39	0.00	0.39
07:30-08:30	D3	2	46	97	822	1800	72	0.84	0.19	3.67	2.72	0.00	2.72
07:30-08:30	Dc	1	49	83	579	2015	41	4.53	3.77	48.90	10.36	4.70	34.82
07:30-08:30	Dc	2	55	65	686	2155	41	4.77	4.09	53.00	12.92	5.79	45.24
07:30-08:30	Dc	3	58	56	686	2033	41	5.19	4.16	53.89	14.03	5.99	48.32
07:30-08:30	Dx	1	39	129	609	2105	52	1.76	2.01	57.83	4.23	2.76	6.99
07:30-08:30	Dx	2	24	272	375	2105	52	0.37	0.04	1.11	0.55	0.00	0.55
07:30-08:30	Dx	3	32	182	494	2105	52	0.54	0.07	2.14	1.06	0.00	1.06
07:30-08:30	Dx2	1	34	166	609	1800	72	0.51	0.09	0.44	1.23	0.00	1.23
07:30-08:30	Dx2	2	21	332	375	1800	72	0.26	0.03	0.14	0.39	0.00	0.39
07:30-08:30	Dx2	3	27	228	494	1800	72	0.38	0.05	0.26	0.74	0.00	0.74
07:30-08:30	Dx3	1	34	166	609	1800	72	0.51	0.09	1.66	1.23	0.00	1.23
07:30-08:30	Dx3	2	48	86	869	1800	72	3.64	15.61	299.16	12.48	15.63	28.12

Traffic Stream Results: Flows And Signals

Time Segment	Arm	Traffic Stream	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Calculated Sat Flow (PCU/hr)	Calculated Capacity (PCU/hr)	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity (%)	Mean Modulus Of Error	Actual Green (s (per cycle))	Effective Green (s (per cycle))
07:30-08:30	A	1	690	529	0		1905	529	130!	✓	-31	0.38	19	20
07:30-08:30	A	2	740	678	0		2440	678	109!	✓	-18	0.38	19	20
07:30-08:30	B	2	688	688	0		2070	690	100!	✓	-10	0.00	23	24
07:30-08:30	B	3	688	688	0		2070	690	100!	✓	-10	0.00	23	24
07:30-08:30	C	1	265	265	0		1762	685	39		133	0.44	27	28
07:30-08:30	C	2	828	753	-1		1937	753	110!	✓	-18	0.45	27	28
07:30-08:30	C	3	825	825	0		2209	859	96!	✓	-6	0.45	27	28
07:30-08:30	D	1	375	375	0		1804	601	62		44	0.00	23	24
07:30-08:30	D	2	411	411	0		1979	660	62		44	0.00	23	24
07:30-08:30	D	3	411	411	0		1979	660	62		44	0.00	23	24
07:30-08:30	A2	1	690	690	0		1940	1482	47		93	0.00	54	55
07:30-08:30	A2	2	740	740	0		2080	1589	47		93	0.00	54	55

07:30-08:30	Ac	1	518	518	112	✓	2015	1063	49		85	0.87	37	38
07:30-08:30	Ac	2	798	798	59	✓	2155	1137	70		28	0.99	37	38
07:30-08:30	Ac	3	31	31	3	✓	2033	1073	3		3001	1.36	37	38
07:30-08:30	Ax	1	545	545	37	✓	2105	1608	34		166	0.60	54	55
07:30-08:30	Ax	2	474	474	37	✓	2055	1570	30		198	0.84	54	55
07:30-08:30	Ax2	1	545	545	37	✓	1800	1800	30		197	0.48	72	72
07:30-08:30	Ax2	2	474	474	37	✓	1800	1800	26		242	0.63	72	72
07:30-08:30	B1	1	645	645	0		1754	1413	46		97	0.00	57	58
07:30-08:30	B3	1	1333	1333	0		1800	1800	74		22	0.00	72	72
07:30-08:30	B3	2	688	688	0		1800	1800	38		135	0.00	72	72
07:30-08:30	Bc	1	344	344	0		1973	932	37		144	1.22	33	34
07:30-08:30	Bc	2	375	375	3	✓	2113	998	38		139	1.06	33	34
07:30-08:30	Bc	3	688	688	0		1993	941	73		23	1.22	33	34
07:30-08:30	Bx	1	742	742	49	✓	2055	1513	49		84	0.56	52	53
07:30-08:30	Bx	2	686	686	0		2055	1513	45		98	0.94	52	53
07:30-08:30	Bx	3	384	384	0		2055	1513	25		255	0.96	52	53
07:30-08:30	Bx2	1	742	742	49	✓	1800	1800	41		118	0.78	72	72
07:30-08:30	Bx2	2	686	686	0		1800	1800	38		136	0.91	72	72
07:30-08:30	Bx2	3	384	384	0		1800	1800	21		322	0.94	72	72
07:30-08:30	Bx3	1	1428	1428	49	✓	1800	1800	79		13	0.71	72	72
07:30-08:30	Bx3	2	384	384	0		1800	1800	21		322	0.91	72	72
07:30-08:30	C2	1	265	265	0		1940	1428	19		385	0.00	52	53
07:30-08:30	C2	2	828	828	-1		2080	1531	54		66	0.00	52	53
07:30-08:30	C2	3	825	825	0		2080	1531	54		67	0.00	52	53
07:30-08:30	Cc	1	474	474	37	✓	1847	975	49		85	0.73	37	38
07:30-08:30	Cc	2	474	474	37	✓	1987	1049	45		99	0.73	37	38
07:30-08:30	Cc	3	825	825	0		1875	990	83		8	1.13	37	38
07:30-08:30	Cx	1	645	645	0		2015	1483	43		107	0.32	52	53
07:30-08:30	Cx	2	518	518	112	✓	2105	1550	33		169	0.92	52	53
07:30-08:30	Cx	3	798	798	59	✓	2105	1550	51		75	0.95	52	53

07:30-08:30	Cx2	1	645	645	0		1800	1800	36		151	0.48	72	72
07:30-08:30	Cx2	2	518	518	112	✓	1800	1800	29		213	0.85	72	72
07:30-08:30	Cx2	3	798	798	59	✓	1800	1800	44		103	0.87	72	72
07:30-08:30	D3	1	375	375	0		1800	1800	21		332	0.00	72	72
07:30-08:30	D3	2	822	822	0		1800	1800	46		97	0.00	72	72
07:30-08:30	Dc	1	579	579	0		2015	1175	49		83	0.52	41	42
07:30-08:30	Dc	2	686	686	0		2155	1257	55		65	0.59	41	42
07:30-08:30	Dc	3	686	686	0		2033	1186	58		56	0.59	41	42
07:30-08:30	Dx	1	609	609	0		2105	1550	39		129	0.77	52	53
07:30-08:30	Dx	2	375	375	3	✓	2105	1550	24		272	1.15	52	53
07:30-08:30	Dx	3	494	494	0		2105	1550	32		182	1.20	52	53
07:30-08:30	Dx2	1	609	609	0		1800	1800	34		166	0.66	72	72
07:30-08:30	Dx2	2	375	375	3	✓	1800	1800	21		332	1.04	72	72
07:30-08:30	Dx2	3	494	494	0		1800	1800	27		228	1.12	72	72
07:30-08:30	Dx3	1	609	609	0		1800	1800	34		166	0.63	72	72
07:30-08:30	Dx3	2	869	869	3	✓	1800	1800	48		86	1.07	72	72

Traffic Stream Results: Stops And Delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	A	1	12.90	445.43	3.36	82.01	1212.32	48.49	347.43	529.17	1309.30	59.70	0.00
07:30-08:30	A	2	12.90	193.68	4.09	35.73	565.33	22.61	252.29	672.66	1037.32	55.53	0.00
07:30-08:30	B	2	7.46	87.51	4.58	12.14	237.48	9.50	165.92	650.64	490.92	37.07	0.00
07:30-08:30	B	3	7.46	87.51	4.58	12.14	237.48	9.50	165.92	650.64	490.92	37.07	0.00
07:30-08:30	C	1	11.48	18.20	1.22	0.12	19.03	0.76	67.05	171.65	6.05	5.77	0.00
07:30-08:30	C	2	11.48	205.27	5.45	41.77	670.43	26.82	252.91	718.37	1186.75	61.87	0.00
07:30-08:30	C	3	11.48	57.81	5.54	7.70	188.12	7.52	117.46	625.53	343.52	31.47	0.00
07:30-08:30	D	1	9.69	25.12	2.10	0.51	37.15	1.49	86.53	299.34	25.14	10.54	0.00
07:30-08:30	D	2	9.69	24.67	2.31	0.51	39.99	1.60	85.93	328.04	25.12	11.47	0.00
07:30-08:30	D	3	9.69	24.67	2.31	0.51	39.99	1.60	85.93	328.04	25.12	11.47	0.00

07:30-08:30	A2	1	26.32	4.17	0.60	0.20	11.36	11.36	32.75	215.91	10.09	7.34	7.34
07:30-08:30	A2	2	26.32	4.10	0.64	0.20	11.98	11.98	32.66	231.60	10.10	7.85	7.85
07:30-08:30	Ac	1	4.57	3.42	0.26	0.23	6.98	6.98	24.90	117.45	11.44	1.86	2.34
07:30-08:30	Ac	2	4.55	5.65	0.44	0.82	17.78	17.78	61.54	411.29	79.55	7.15	27.93
07:30-08:30	Ac	3	4.57	0.07	0.00	0.00	0.01	0.01	0.12	0.02	0.02	0.00	0.00
07:30-08:30	Ax	1	12.60	1.12	0.08	0.09	2.42	2.42	9.56	47.76	4.33	1.69	1.69
07:30-08:30	Ax	2	12.60	0.66	0.02	0.07	1.23	1.23	6.12	25.75	3.25	0.94	0.94
07:30-08:30	Ax2	1	26.84	0.43	0.00	0.07	0.93	0.93	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Ax2	2	26.84	0.36	0.00	0.05	0.67	0.67	0.00	0.00	0.00	0.00	0.00
07:30-08:30	B1	1	7.46	3.22	0.39	0.19	8.20	8.20	26.68	162.56	9.53	5.59	5.59
07:30-08:30	B3	1	3.60	2.83	0.00	1.05	14.89	14.89	0.00	0.00	0.00	0.00	0.00
07:30-08:30	B3	2	2.24	0.62	0.00	0.12	1.68	1.68	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Bc	1	6.01	1.19	0.01	0.11	1.61	1.61	1.73	0.57	5.37	0.09	0.43
07:30-08:30	Bc	2	6.01	2.70	0.17	0.11	4.00	4.00	9.92	31.58	5.63	0.54	0.87
07:30-08:30	Bc	3	6.01	5.39	0.05	0.98	14.63	14.63	18.02	75.86	48.15	1.79	8.95
07:30-08:30	Bx	1	1.12	2.85	0.35	0.24	8.35	8.35	20.47	140.09	11.72	4.93	4.93
07:30-08:30	Bx	2	1.12	1.07	0.02	0.19	2.88	2.88	2.49	7.72	9.36	0.55	0.55
07:30-08:30	Bx	3	1.12	0.43	0.00	0.04	0.66	0.66	0.72	0.60	2.15	0.09	0.09
07:30-08:30	Bx2	1	1.96	0.76	0.01	0.14	2.23	2.23	4.49	18.93	14.35	1.92	1.92
07:30-08:30	Bx2	2	2.61	0.75	0.03	0.12	2.02	2.02	7.71	41.22	11.67	1.72	1.72
07:30-08:30	Bx2	3	2.61	0.30	0.00	0.03	0.45	0.45	1.66	4.92	1.44	0.21	0.21
07:30-08:30	Bx3	1	2.24	7.31	1.40	1.50	41.19	41.19	65.29	857.92	74.10	30.27	30.27
07:30-08:30	Bx3	2	2.24	0.27	0.00	0.03	0.41	0.41	0.00	0.00	0.00	0.00	0.00
07:30-08:30	C2	1	5.34	3.19	0.21	0.02	3.34	3.34	26.64	69.54	1.06	2.29	2.29
07:30-08:30	C2	2	5.34	5.55	0.96	0.32	18.12	18.12	40.03	315.65	15.81	10.76	10.76
07:30-08:30	C2	3	5.34	5.53	0.95	0.31	17.99	17.99	39.91	313.64	15.63	10.69	10.69
07:30-08:30	Cc	1	5.76	5.36	0.48	0.23	10.01	10.01	23.31	99.01	11.38	1.59	2.30
07:30-08:30	Cc	2	5.76	5.00	0.47	0.19	9.35	9.35	22.85	99.00	9.23	1.56	2.17
07:30-08:30	Cc	3	5.76	11.32	0.57	2.02	36.82	36.82	79.38	556.92	97.95	9.45	47.24
07:30-08:30	Cx	1	10.55	2.73	0.32	0.17	6.95	6.95	15.17	89.54	8.33	3.18	3.18

07:30-08:30	Cx	2	10.55	0.62	0.00	0.08	1.26	1.26	1.02	1.09	4.18	0.17	0.17
07:30-08:30	Cx	3	10.55	1.28	0.01	0.27	4.04	4.04	2.87	9.32	13.57	0.74	0.74
07:30-08:30	Cx2	1	5.80	0.56	0.00	0.10	1.42	1.42	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Cx2	2	7.74	0.40	0.00	0.06	0.82	0.82	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Cx2	3	7.74	1.39	0.13	0.18	4.37	4.37	23.47	178.46	8.78	6.08	6.08
07:30-08:30	D3	1	2.24	0.26	0.00	0.03	0.39	0.39	0.00	0.00	0.00	0.00	0.00
07:30-08:30	D3	2	2.24	0.84	0.00	0.19	2.72	2.72	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dc	1	4.96	4.53	0.49	0.24	10.36	10.36	29.53	159.10	11.86	2.47	4.70
07:30-08:30	Dc	2	4.96	4.77	0.58	0.33	12.92	12.92	27.25	170.67	16.24	2.70	5.79
07:30-08:30	Dc	3	4.96	5.19	0.59	0.40	14.03	14.03	28.09	173.08	19.63	2.78	5.99
07:30-08:30	Dx	1	2.00	1.76	0.17	0.13	4.23	4.23	14.33	80.91	6.34	2.76	2.76
07:30-08:30	Dx	2	2.40	0.37	0.00	0.04	0.55	0.55	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx	3	2.40	0.54	0.00	0.07	1.06	1.06	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx2	1	8.43	0.51	0.00	0.09	1.23	1.23	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx2	2	8.43	0.26	0.00	0.03	0.39	0.39	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx2	3	8.43	0.38	0.00	0.05	0.74	0.74	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx3	1	2.24	0.51	0.00	0.09	1.23	1.23	0.00	0.00	0.00	0.00	0.00
07:30-08:30	Dx3	2	2.24	3.64	0.65	0.23	12.48	12.48	55.38	470.12	11.22	15.63	15.63

Traffic Stream Results: Queues And Blocking

Time Segment	Arm	Traffic Stream	Initial Queue (PCU)	Mean Max Queue (PCU)	Max Queue Storage (PCU)	Utilised Storage (%)	Average Link Excess Queue (PCU)	Average Limit Excess Queue (PCU)	Excess Queue Penalty (£ per hr)	Max End Of Green Queue (PCU)	Max End Of Red Queue (PCU)	Wasted Time Starvation (s per cycle)	Wasted Time Blocking Back (s per cycle)	Wasted Time Total (s per cycle)	Estimated Blocking
07:30-08:30	A	1	0.00	92.45	30.09	307.26	56.68	0.00	0.00	82.01	89.59	0.00	5.00	5.00	
07:30-08:30	A	2	0.00	49.09	30.09	163.17	11.74	0.00	0.00	35.73	45.44	0.00	6.00	6.00	
07:30-08:30	B	2	0.00	25.71	17.39	147.85	2.57	0.00	0.00	12.14	21.32	0.00	0.00	0.00	
07:30-08:30	B	3	0.00	25.71	17.39	147.85	2.57	0.00	0.00	12.14	21.32	0.00	0.00	0.00	
07:30-08:30	C	1	0.00	3.61	26.78	13.46	0.00	0.00	0.00	0.12	3.45	10.00	0.00	10.00	
07:30-08:30	C	2	0.00	56.34	26.78	210.36	23.26	0.00	0.00	41.77	52.64	0.00	0.00	0.00	
07:30-08:30	C	3	0.00	20.29	26.78	75.77	0.00	0.00	0.00	7.70	19.60	0.00	12.00	12.00	
07:30-08:30	D	1	0.00	6.76	22.61	29.91	0.00	0.00	0.00	0.51	5.51	0.00	0.00	0.00	

07:30-08:30	D	2	0.00	7.36	22.61	32.55	0.00	0.00	0.00	0.51	5.99	0.00	0.00	0.00	
07:30-08:30	D	3	0.00	7.36	22.61	32.55	0.00	0.00	0.00	0.51	5.99	0.00	0.00	0.00	
07:30-08:30	A2	1	0.00	5.19	61.39	8.45	0.00	0.00	0.00	0.20	3.46	0.00	55.00	55.00	
07:30-08:30	A2	2	0.00	5.55	61.39	9.04	0.00	0.00	0.00	0.20	3.70	0.00	55.00	55.00	
07:30-08:30	Ac	1	0.00	2.83	7.10	39.78	0.00	0.16	9.33	0.23	2.25	3.00	0.00	3.00	
07:30-08:30	Ac	2	0.00	12.91	7.10	181.71	0.50	1.70	102.11	0.82	2.84	2.00	0.00	2.00	
07:30-08:30	Ac	3	0.00	0.00	7.10	0.01	0.00	0.00	0.00	0.00	0.00	18.00	0.00	18.00	
07:30-08:30	Ax	1	0.00	1.56	29.39	5.31	0.00	0.00	0.00	0.09	1.00	0.00	0.00	0.00	
07:30-08:30	Ax	2	0.00	1.24	29.39	4.21	0.00	0.00	0.00	0.07	0.70	12.00	0.00	12.00	
07:30-08:30	Ax2	1	0.00	0.07	62.61	0.10	0.00	0.00	0.00			4.00	0.00	4.00	
07:30-08:30	Ax2	2	0.00	0.05	62.61	0.08	0.00	0.00	0.00			13.00	0.00	13.00	
07:30-08:30	B1	1	0.00	4.13	17.39	23.77	0.00	0.00	0.00	0.19	2.70	0.00	0.00	0.00	
07:30-08:30	B3	1	0.00	1.05	5.22	20.10	0.00	0.00	0.00			0.00	44.00	44.00	
07:30-08:30	B3	2	0.00	0.12	5.22	2.26	0.00	0.00	0.00			0.00	44.00	44.00	
07:30-08:30	Bc	1	0.00	0.12	9.35	1.28	0.00	0.00	0.00	0.11	0.12	4.00	0.00	4.00	
07:30-08:30	Bc	2	0.00	0.75	9.35	7.98	0.00	0.00	0.00	0.11	0.75	2.00	0.00	2.00	
07:30-08:30	Bc	3	0.00	11.05	9.35	118.28	0.06	1.11	66.31	0.98	1.00	2.00	0.00	2.00	
07:30-08:30	Bx	1	0.00	3.47	2.61	133.00	0.04	0.00	0.00	0.24	2.66	5.00	0.00	5.00	
07:30-08:30	Bx	2	0.00	2.57	2.61	98.58	0.00	0.00	0.00	0.19	0.23	10.00	0.00	10.00	
07:30-08:30	Bx	3	0.00	0.06	2.61	2.12	0.00	0.00	0.00	0.04	0.06	11.00	0.00	11.00	
07:30-08:30	Bx2	1	0.00	2.76	6.09	45.38	0.00	0.00	0.00			20.00	36.00	56.00	
07:30-08:30	Bx2	2	0.00	4.29	6.09	70.43	0.00	0.00	0.00			27.00	37.00	64.00	
07:30-08:30	Bx2	3	0.00	2.03	6.09	33.37	0.00	0.00	0.00			29.00	0.00	29.00	
07:30-08:30	Bx3	1	0.00	26.40	5.22	505.91	7.47	0.00	0.00			11.00	0.00	11.00	
07:30-08:30	Bx3	2	0.00	0.03	5.22	0.55	0.00	0.00	0.00			28.00	0.00	28.00	
07:30-08:30	C2	1	0.00	1.64	12.46	13.17	0.00	0.00	0.00	0.02	1.42	0.00	0.00	0.00	
07:30-08:30	C2	2	0.00	7.45	12.46	59.78	0.00	0.00	0.00	0.32	4.69	0.00	53.00	53.00	
07:30-08:30	C2	3	0.00	7.42	12.46	59.55	0.00	0.00	0.00	0.31	4.67	0.00	0.00	0.00	
07:30-08:30	Cc	1	0.00	2.22	8.95	24.84	0.00	0.02	1.17	0.23	2.20	2.00	0.00	2.00	
07:30-08:30	Cc	2	0.00	2.18	8.95	24.35	0.00	0.01	0.88	0.19	2.16	2.00	0.00	2.00	

07:30-08:30	Cc	3	0.00	17.93	8.95	200.18	1.42	3.96	237.42	2.02	2.14	5.00	0.00	5.00	
07:30-08:30	Cx	1	0.00	2.55	24.61	10.35	0.00	0.00	0.00	0.17	1.58	0.00	0.00	0.00	
07:30-08:30	Cx	2	0.00	0.11	24.61	0.43	0.00	0.00	0.00	0.08	0.11	8.00	0.00	8.00	
07:30-08:30	Cx	3	0.00	6.14	24.61	24.93	0.00	0.00	0.00	0.27	0.31	7.00	0.00	7.00	
07:30-08:30	Cx2	1	0.00	0.10	18.04	0.55	0.00	0.00	0.00			15.00	0.00	15.00	
07:30-08:30	Cx2	2	0.00	0.06	18.04	0.32	0.00	0.00	0.00			25.00	0.00	25.00	
07:30-08:30	Cx2	3	0.00	10.34	18.04	57.30	0.00	0.00	0.00			24.00	0.00	24.00	
07:30-08:30	D3	1	0.00	0.03	5.22	0.53	0.00	0.00	0.00			0.00	0.00	0.00	
07:30-08:30	D3	2	0.00	0.19	5.22	3.67	0.00	0.00	0.00			0.00	0.00	0.00	
07:30-08:30	Dc	1	0.00	3.77	7.71	48.90	0.00	0.33	19.76	0.24	2.73	0.00	0.00	0.00	
07:30-08:30	Dc	2	0.00	4.09	7.71	53.00	0.00	0.44	26.53	0.33	3.05	0.00	0.00	0.00	
07:30-08:30	Dc	3	0.00	4.16	7.71	53.89	0.00	0.47	28.30	0.40	3.11	0.00	0.00	0.00	
07:30-08:30	Dx	1	0.00	2.01	3.48	57.83	0.00	0.00	0.00	0.13	1.86	10.00	0.00	10.00	
07:30-08:30	Dx	2	0.00	0.04	3.48	1.11	0.00	0.00	0.00	0.04	0.04	20.00	0.00	20.00	
07:30-08:30	Dx	3	0.00	0.07	3.48	2.14	0.00	0.00	0.00	0.07	0.07	22.00	0.00	22.00	
07:30-08:30	Dx2	1	0.00	0.09	19.65	0.44	0.00	0.00	0.00			11.00	0.00	11.00	
07:30-08:30	Dx2	2	0.00	0.03	19.65	0.14	0.00	0.00	0.00			35.00	19.00	54.00	
07:30-08:30	Dx2	3	0.00	0.05	19.65	0.26	0.00	0.00	0.00			36.00	20.00	56.00	
07:30-08:30	Dx3	1	0.00	0.09	5.22	1.66	0.00	0.00	0.00			10.00	0.00	10.00	
07:30-08:30	Dx3	2	0.00	15.61	5.22	299.16	2.07	0.00	0.00			31.00	0.00	31.00	

Traffic Stream Results: Flare

Time Segment	Arm	Traffic Stream	Flare Present	Flare Components	Degree Of Saturation (%)	Mean Max Queue (PCU)	Calculated Capacity (PCU/hr)	Practical Reserve Capacity (%)
07:30-08:30	A	2	✓	Quick Flare	109	49.09	678	-18
07:30-08:30	C	3	✓	Quick Flare	96	20.29	859	-6

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree Of Saturation Penalty (£ per hr)	Phase Min Max Penalty (£ per hr)	Intergreen Broken Penalty (£ per hr)	Stage Constraint Broken Penalty (£ per hr)	Ped Gap Accepting Penalty (£ per hr)	Warmed Up	Warmed Up Error	Mean Max Queue EoTS (PCU)	Max End Of Green Queue Eo TS (PCU)	Max End Of Red Queue Eo TS (PCU)	Cost Of Penalties (£ per hr)	Unweighted Performance Index (£ per hr)	Perfo Inde
07:30-08:30	A	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	172.89	162.45	170.03	0.00	1272.02	4
07:30-08:30	A	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	80.56	67.19	76.90	0.00	620.86	2

07:30-08:30	B	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	30.66	17.09	26.26	0.00	274.55	9
07:30-08:30	B	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	30.66	17.09	26.26	0.00	274.55	9
07:30-08:30	C	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.61	0.12	3.45	0.00	24.80	0
07:30-08:30	C	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	93.98	79.41	90.28	0.00	732.29	2
07:30-08:30	C	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	21.58	8.99	20.89	0.00	219.59	7
07:30-08:30	D	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.76	0.51	5.51	0.00	47.69	1
07:30-08:30	D	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	7.36	0.51	5.99	0.00	51.46	1
07:30-08:30	D	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	7.36	0.51	5.99	0.00	51.46	1
07:30-08:30	A2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	5.19	0.20	3.46	0.00	18.70	1
07:30-08:30	A2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	5.55	0.20	3.70	0.00	19.83	1
07:30-08:30	Ac	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.83	0.23	2.25	9.33	8.84	1
07:30-08:30	Ac	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	12.91	0.82	2.85	102.11	24.93	14
07:30-08:30	Ac	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.00	0.00	0.00	0.00	0.01	0
07:30-08:30	Ax	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.56	0.09	1.00	0.00	4.11	4
07:30-08:30	Ax	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.24	0.07	0.70	0.00	2.17	2
07:30-08:30	Ax2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.07			0.00	0.93	0
07:30-08:30	Ax2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.05			0.00	0.67	0
07:30-08:30	B1	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.13	0.19	2.70	0.00	13.79	1
07:30-08:30	B3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.05			0.00	14.89	1
07:30-08:30	B3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.12			0.00	1.68	1
07:30-08:30	Bc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.12	0.11	0.12	0.00	1.70	2
07:30-08:30	Bc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.75	0.11	0.75	0.00	4.53	4
07:30-08:30	Bc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	11.06	0.99	1.01	66.31	16.42	8
07:30-08:30	Bx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.47	0.24	2.66	0.00	13.28	1
07:30-08:30	Bx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.57	0.19	0.23	0.00	3.44	3
07:30-08:30	Bx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.06	0.04	0.06	0.00	0.75	0
07:30-08:30	Bx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.76			0.00	4.15	4
07:30-08:30	Bx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.29			0.00	3.74	3
07:30-08:30	Bx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.03			0.00	0.66	0
07:30-08:30	Bx3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	26.40			0.00	71.45	7

07:30-08:30	Bx3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.03			0.00	0.41	0
07:30-08:30	C2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.64	0.02	1.42	0.00	5.63	5
07:30-08:30	C2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	7.45	0.32	4.69	0.00	28.89	2
07:30-08:30	C2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	7.42	0.31	4.67	0.00	28.68	2
07:30-08:30	Cc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.22	0.23	2.20	1.17	11.60	1
07:30-08:30	Cc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.18	0.19	2.16	0.88	10.91	1
07:30-08:30	Cc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	17.96	2.05	2.17	237.42	46.27	32
07:30-08:30	Cx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.55	0.17	1.58	0.00	10.13	1
07:30-08:30	Cx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.11	0.08	0.11	0.00	1.43	1
07:30-08:30	Cx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.14	0.27	0.31	0.00	4.78	4
07:30-08:30	Cx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.10			0.00	1.42	1
07:30-08:30	Cx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.06			0.00	0.82	0
07:30-08:30	Cx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	10.34			0.00	10.45	1
07:30-08:30	D3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.03			0.00	0.39	0
07:30-08:30	D3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.19			0.00	2.72	2
07:30-08:30	Dc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.77	0.24	2.73	19.76	12.82	3
07:30-08:30	Dc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.09	0.33	3.05	26.53	15.61	4
07:30-08:30	Dc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.16	0.40	3.11	28.30	16.81	4
07:30-08:30	Dx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.01	0.13	1.86	0.00	6.99	6
07:30-08:30	Dx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.04	0.04	0.04	0.00	0.55	0
07:30-08:30	Dx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.07	0.07	0.07	0.00	1.06	1
07:30-08:30	Dx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.09			0.00	1.23	1
07:30-08:30	Dx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.03			0.00	0.39	0
07:30-08:30	Dx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.05			0.00	0.74	0
07:30-08:30	Dx3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.09			0.00	1.23	1
07:30-08:30	Dx3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	15.61			0.00	28.12	2

Network Results

Run Summary

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Network Cycle Time (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network With Capacity
A1 - 2031 AM peak	22/04/2014 10:06:39	22/04/2014 10:06:48	07:30	72	252.16	130.39	A/1	6	9	A/1	Bx3/1	A/1	

Network Results: Vehicle Summary

Time Segment	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Calculated Flow Entering (PCU/hr)	Actual Green (s per cycle)	Mean Delay Per PCU (s)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Performance Index (£ per hr)
07:30-08:30	130!	-31	35435	2943	25.62	463.25	224.10	1179.16

Network Results: Pedestrian Summary

Time Segment	Degree Of Saturation (%)	Calculated Flow Entering (Ped/hr)	Actual Green (s per cycle)	Mean Delay Per Ped (s)	Weighted Cost Of Delay (£ per hr)	Performance Index (£ per hr)
07:30-08:30	130!	0	0	0.00	0.00	0.00

Network Results: Flows And Signals

Time Segment	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity (%)	Actual Green (s per cycle)	Effective Green (s per cycle)
07:30-08:30	35435	35137	894	✓	130!	✓	-31	2943	2982

Network Results: Stops And Delays

Time Segment	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
07:30-08:30	7.41	25.62	46.61	205.55	3580.67	463.25	46.73	10151.83	5503.62	469.34	224.10

Network Results: Queues And Blocking

Time Segment	Max Queue Storage (PCU)	Excess Queue Penalty (£ per hr)	Wasted Time Starvation (s per cycle)	Wasted Time Blocking Back (s per cycle)	Wasted Time Total (s per cycle)
07:30-08:30	969.18	491.82	474.00	386.00	860.00



TRANSYT 15
Version: 15.0.1.2976 [] © Copyright TRL Limited, 2014
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Last run: 22/04/2014 10:07:16

Analysis Set used for last run: A2 - 2031 PM Peak

Filename: PM Rev 5.t15

Path: F:\TEM\Project\BCC - Tyburn Roundabout\3 - Execution\Modelling\3. Option models\4. Sensitivity Test

Report generation date: 22/04/2014 10:12:33

- » Network Diagrams
- « **A2 - 2031 PM Peak *: D2 - 2031 PM peak***
- » Summary
- » Network Options
- » Traffic Nodes
- » Links
- » Arms and Traffic Streams
- » Local OD Matrix - Local Matrix: 1 - PM
- » Signal Timings
- » Final Prediction Table
- » Link Results
- » Traffic Stream Results
- » Network Results

File summary

File Description

Title	A38/A452 Tyburn Roundabout
Location	Birmingham
Site Number	
UTCRegion	
Driving Side	Left
Date	02/04/2014
Version	
Status	Option Model
Identifier	
Client	Birmingham City Council
Jobnumber	60316861
Enumerator	EU\vuppalas
Description	2031 future year preferred option Pm peak model.

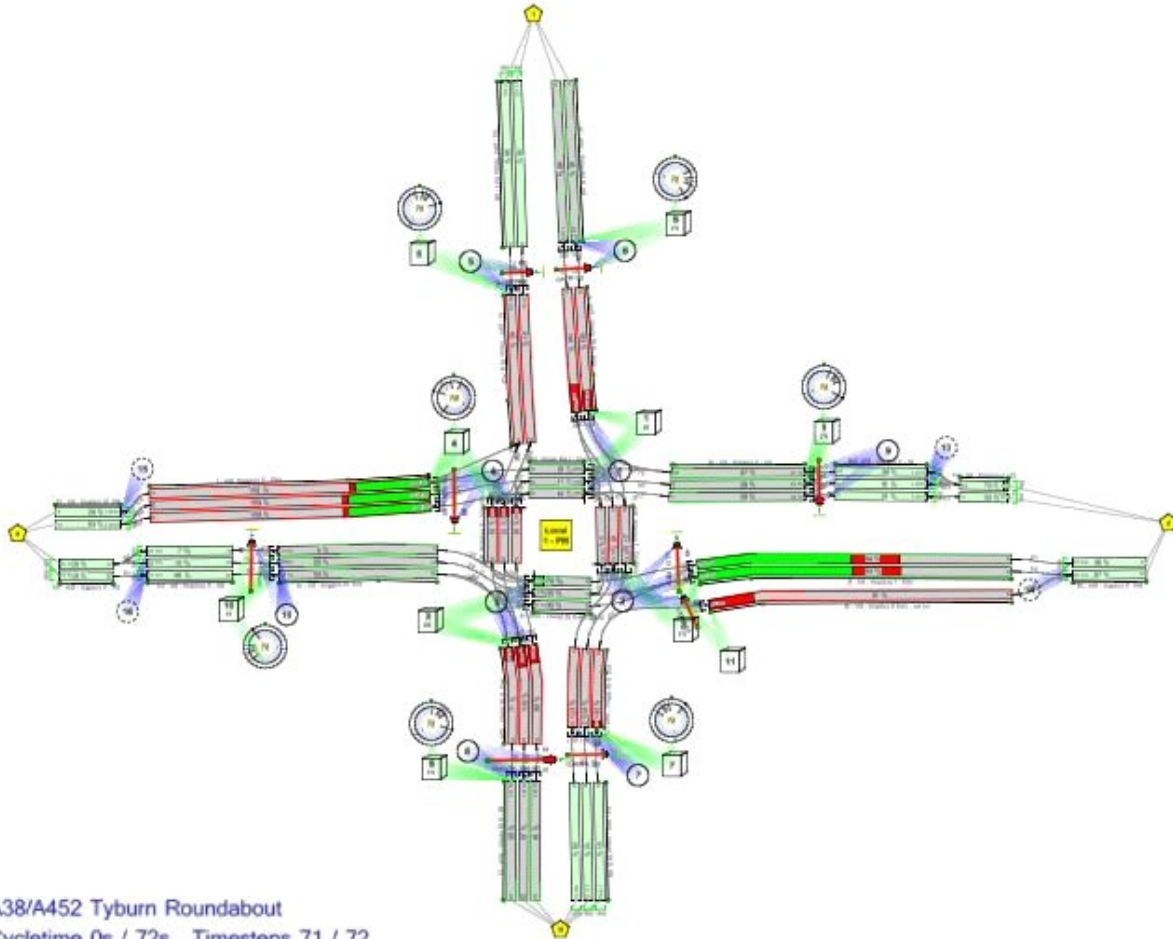
Units

Cost Units	Speed Units	Distance Units	Fuel Economy Units	Fuel Rate Units	Mass Units	Flow Units	Average Delay Units	Total Delay Units	Rate Of Delay Units
£	kph	m	mpg	l/h	kg	perHour	s	-Hour	perHour

Sorting

Show Names Instead of IDs (For Aimsun)	Sorting Direction	Sorting Type	Ignore Prefixes When Sorting	Link Grouping	Source Grouping
	Ascending	Numerical		Normal	Normal

Network Diagrams



A38/A452 Tyburn Roundabout
 Cyclotime 0s / 72s , Timesteps 71 / 72
 Diagram produced using TRANSYT 15.0.1.2976

A2 - 2031 PM Peak *: D2 - 2031 PM peak*

Summary

Data Errors and Warnings

No errors or warnings

Run Summary

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Network Cycle Time (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Netwo Withi Capac
A2 - 2031 PM Peak	22/04/2014 10:07:05	22/04/2014 10:07:16	17:00	72	685.80	183.04	A/1	8	12	A/1	B3/1	A/1	

Analysis Set Details

Name	Description	Demand Set	Include In Report	Locked
2031 PM Peak		D2	✓	

Demand Set Details

Demand Set	Name	Description	Composite	Demand Sets	Start Time (HH:mm)	Locked
D2	2031 PM peak				17:00	

Network Options

Network Timings

Network Cycle Time (s)	Restrict To SCOOT Cycle Times	Time Segment Length (min)	Number Of Time Segments	Modelled Time Period (min)
72		60	1	60

Signals Options

Start Displacement (s)	End Displacement (s)
2	3

Advanced

Phase Minimum Broken Penalty (£)	Phase Maximum Broken Penalty (£)	Intergreen Broken Penalty (£)
10000.00	10000.00	10000.00

Traffic Options

Traffic Model	Vehicle Flow Scaling Factor (%)	Pedestrian Flow Scaling Factor (%)	Cruise Times Or Speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise Scaling Factor (%)	Use Link Stop Weightings	Use Link Delay Weightings	Exclude Pedestrian Links	Random Delay Mode	Type of Vehicle-in-Service	Type Of Random Parameter	PCU Length (m)	Calculate results for Path Segments
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75	

Normal Parameters

Dispersal Type	Dispersal Coefficient	Travel Time Coefficient
Default	35	80

Bus Parameters

Dispersion Coefficient1	Dispersion Coefficient2	Acceleration (ms ^{^-2})	Travel Time Coefficient1	Travel Time Coefficient2
70	15	0.47	30	85

Tram Parameters

Dispersion Coefficient1	Dispersion Coefficient2	Acceleration (ms ^{^-2})	Travel Time Coefficient1	Travel Time Coefficient2
70	15	0.47	30	85

Pedestrian Parameters

Dispersal Type	Dispersal Coefficient	Travel Time Coefficient
Default	35	80

Optimisation Options

Enable Optimisation	Auto Redistribute	Optimisation Level	Enable Out Profile Accuracy
✓		Offsets And Green Splits	✓

Advanced

Optimisation Type	Hill Climb Increments	OUTProfile Accuracy	Use Enhanced Optimisation	Auto Optimisation Order	Optimisation Order
Hill Climb (Fast)	15,40,-1,15,40,1,-1,1	50,50,5,5,0.5,0.5,0.05,0.05		✓	4,1,2,3,5,6,7,8,9,10,11

Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian Monetary Value Of Delay (£ per Ped-hr)
14.20	2.60	14.20

Traffic Nodes

Traffic Nodes

ID	Name	Description
1		
2		
3		
4		
5	(untitled)	
6	(untitled)	
7	(untitled)	
8	(untitled)	
9	(untitled)	
10	(untitled)	
13	(untitled)	
14	(untitled)	
15	(untitled)	
16	(untitled)	

Links

Links

Link	Name	Description	Traffic Node	Length (m)	Has Restricted Flow	Is Signal Controlled	Is Give Way	Traffic Type	Is Minor Shared
40	A452 N - NB		5	7.00		✓		Pedestrian	
41	A452 N - SB		6	7.50		✓		Pedestrian	
42	A452 S - SB		7	10.50		✓		Pedestrian	
43	A452 S - NB		8	9.75		✓		Pedestrian	
45	A38 W - WB		2	9.00		✓		Pedestrian	
46	A38 E - WB		10	9.75		✓		Pedestrian	
47	A38 W - EB		9	9.00		✓		Pedestrian	
49	A38 E - EB		4	9.75		✓		Pedestrian	
50	A38 W - WB		2	4.00		✓		Pedestrian	

Modelling

Link	Traffic Model	Stop Weighting (%)	Delay Weighting (%)	Exclude From Results Calculation	Max Queue Storage (PCU)	Has Queue Limit	Has Degree Of Saturation Limit
40	NetworkDefault	100	100	✓	0.00		
41	NetworkDefault	100	100	✓	0.00		
42	NetworkDefault	100	100	✓	0.00		
43	NetworkDefault	100	100	✓	0.00		
45	NetworkDefault	100	100	✓	0.00		
46	NetworkDefault	100	100	✓	0.00		
47	NetworkDefault	100	100	✓	0.00		
49	NetworkDefault	100	100	✓	0.00		
50	NetworkDefault	100	100	✓	0.00		

Modelling - Advanced

Link	Initial Queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type Of Random Parameter	Random Parameter	Auto Cycle Time	Cycle Time
40	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
41	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
42	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
43	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
45	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
46	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
47	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
49	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
50	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

Flows

Link	Flows	Total Flow (17:00-18:00) (PCU/hr)
40	1	100
41	1	100
42	1	100
43	1	100
45	1	100
46	1	100
47	1	100
49	1	100
50	1	100

Flows - Advanced

Link	Detectors	Link Sensitivity Multiplier (%)	Cruise Sensitivity Multiplier (%)
40		100	100
41		100	100
42		100	100
43		100	100
45		100	100
46		100	100
47		100	100
49		100	100
50		100	100

Signals

Link	Controller Stream	Phase	Phase2 Enabled
40	5	B	
41	6	B	
42	7	B	
43	8	B	
45	2	C	
46	10	B	
47	9	B	
49	4	C	
50	11	B	

Entry Sources

Link	Cruise Time (seconds)	Cruise Speed (kph)
40	1.00	30.00
41	1.00	30.00
42	1.26	30.00
43	1.17	30.00
45	1.08	30.00
46	1.17	30.00
47	1.08	30.00
49	1.17	30.00
50	1.00	30.00

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic Node
A	A452 - Chester Rd N - Entry		1
Ax2	A452 - Chester Rd N - NB		
B	A38 - Kingsbury E - Entry		2
C	A452 - Chester Rd S - Entry		3
D	A38 - Kingsbury W - Entry		4
A2	A452 - Chester Rd N - SB		6
Ac	A38 - Kingsbury E - Circulatory		2
Ax	A452 - Chester Rd N - Exit		5
B1	A38 - Kingsbury E Entry - Left turn		2
B3	A38 - Kingsbury E - WB		14
Bc	A452 - Chester Rd S - Circulatory		3
Bx	A38 - Kingsbury E - Exit		9
Bx2	A38 - Kingsbury E - EB		13
Bx3	A38 - Kingsbury E - EB		
C2	A452 - Chester Rd S - NB		8
Cc	A38 - Kingsbury W - Circulatory		4
Cx	A452 - Chester Rd S - Exit		7
Cx2	A452 - Chester Rd S - SB		
D3	A38 - Kingsbury W - EB		15
Dc	A452 - Chester Rd N - Circulatory		1
Dx	A38 - Kingsbury W - Exit		10
Dx2	A38 - Kingsbury W - WB		16
Dx3	A38 - Kingsbury W - WB		

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto Length	Length (m)	Has Restricted Flow	Saturation Flow Source	Saturation Flow (PCU/hr)	Is Signal Controlled	Is Give Way	Traffic Type
A	1				173.00	✓	SumOfLanes	1905	✓		Normal
A	2				173.00	✓	SumOfLanes	2080	✓		Normal
B	2	(untitled)			100.00	✓	SumOfLanes	2055	✓		Normal
B	3	(untitled)			100.00	✓	SumOfLanes	2055	✓		Normal
C	1				154.00	✓	SumOfLanes	1762	✓		Normal
C	2				154.00	✓	SumOfLanes	1937	✓		Normal
C	3				154.00	✓	SumOfLanes	1952	✓		Normal

D	1			130.00	✓	SumOfLanes	1804	✓		Normal
D	2			130.00	✓	SumOfLanes	1979	✓		Normal
D	3			130.00	✓	SumOfLanes	1979	✓		Normal
A2	1	(untitled)		353.00	✓	SumOfLanes	1940	✓		Normal
A2	2	(untitled)		353.00	✓	SumOfLanes	2080	✓		Normal
Ac	1			40.84	✓	SumOfLanes	2015	✓		Normal
Ac	2			40.84	✓	SumOfLanes	2155	✓		Normal
Ac	3			40.84	✓	SumOfLanes	2033	✓		Normal
Ax	1			169.00	✓	SumOfLanes	2105	✓		Normal
Ax	2			169.00	✓	SumOfLanes	2055	✓		Normal
Ax2	1	(untitled)		360.00	✓	SumOfLanes	1800			Normal
Ax2	2	(untitled)		360.00	✓	SumOfLanes	1800			Normal
B1	1			100.00	✓	SumOfLanes	1754	✓		Normal
B3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
B3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Bc	1			53.74	✓	SumOfLanes	1973	✓		Normal
Bc	2			53.74	✓	SumOfLanes	2113	✓		Normal
Bc	3			53.74	✓	SumOfLanes	1993	✓		Normal
Bx	1			15.00	✓	SumOfLanes	2055	✓		Normal
Bx	2			15.00	✓	SumOfLanes	2055	✓		Normal
Bx	3			15.00	✓	SumOfLanes	2055	✓		Normal
Bx2	1	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx2	2	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx2	3	(untitled)		35.00	✓	SumOfLanes	1800			Normal
Bx3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Bx3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
C2	1	(untitled)		71.63	✓	SumOfLanes	1940	✓		Normal
C2	2	(untitled)		71.63	✓	SumOfLanes	2080	✓		Normal
C2	3	(untitled)		71.63	✓	SumOfLanes	2080	✓		Normal
Cc	1			51.49	✓	SumOfLanes	1847	✓		Normal
Cc	2			51.49	✓	SumOfLanes	1987	✓		Normal
Cc	3			51.49	✓	SumOfLanes	1875	✓		Normal
Cx	1			141.48	✓	SumOfLanes	2015	✓		Normal
Cx	2			141.48	✓	SumOfLanes	2105	✓		Normal
Cx	3			141.48	✓	SumOfLanes	2105	✓		Normal
Cx2	1	(untitled)		103.74	✓	SumOfLanes	1800			Normal
Cx2	2	(untitled)		103.74	✓	SumOfLanes	1800			Normal
Cx2	3	(untitled)		103.74	✓	SumOfLanes	1800			Normal
D3	1	(untitled)		30.00	✓	SumOfLanes	1800			Normal
D3	2	(untitled)		30.00	✓	SumOfLanes	1800			Normal
Dc	1			44.34	✓	SumOfLanes	2015	✓		Normal
Dc	2			44.34	✓	SumOfLanes	2155	✓		Normal
Dc	3			44.34	✓	SumOfLanes	2033	✓		Normal
Dx	1			20.00	✓	SumOfLanes	2105	✓		Normal
Dx	2			20.00	✓	SumOfLanes	2105	✓		Normal
Dx	3			20.00	✓	SumOfLanes	2105	✓		Normal
Dx2	1	(untitled)		113.00	✓	SumOfLanes	1800			Normal
Dx2	2	(untitled)		113.00	✓	SumOfLanes	1800			Normal
Dx2	3	(untitled)		113.00	✓	SumOfLanes	1800			Normal

Dx3	1	(untitled)			30.00	✓	SumOfLanes	1800			Normal
Dx3	2	(untitled)			30.00	✓	SumOfLanes	1800			Normal

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Surface Condition	Site Quality Factor	Gradient (%)	Width (m)	Use Connector Turning Radius	Proportion That Turn (%)	Turning Radius (m)	Nearside Lane	Saturation Flow (PCU/hr)
A	1	1			✓	N/A	N/A	-5	3.25		29	23.83	✓	1905
A	2	1			✓	N/A	N/A	-5	3.25		0	10.00		2080
B	2	1	(untitled)		✓	N/A	N/A	-3	3.00		0	10.00		2055
B	3	1	(untitled)											2055
C	1	1			✓	N/A	N/A	4	3.65		100	53.30	✓	1762
C	2	1			✓	N/A	N/A	4	3.50		0	10.00		1937
C	3	1			✓	N/A	N/A	4	3.65		0	10.00		1952
D	1	1			✓	N/A	N/A	3	3.50		38	29.30	✓	1804
D	2	1			✓	N/A	N/A	3	3.50		0	10.00		1979
D	3	1			✓	N/A	N/A	3	3.50		0	10.00		1979
A2	1	2	(untitled)		✓	N/A	N/A	0	3.25		0	10.00	✓	1940
A2	2	1	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
Ac	1	2			✓	N/A	N/A	-4	4.00		0	10.00	✓	2015
Ac	2	1			✓	N/A	N/A	-4	4.00		0	10.00		2155
Ac	3	1			✓	N/A	N/A	-4	4.00		100	25.00		2033
Ax	1	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Ax	2	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Ax2	1	2	(untitled)											1800
Ax2	2	1	(untitled)											1800
B1	1	1			✓	N/A	N/A	-3	3.00		100	16.30	✓	1754
B3	1	2	(untitled)											1800
B3	2	1	(untitled)											1800
Bc	1	1			✓	N/A	N/A	1	4.00		0	10.00	✓	1973
Bc	2	2			✓	N/A	N/A	1	4.00		0	10.00		2113
Bc	3	2			✓	N/A	N/A	1	4.00		100	25.00		1993
Bx	1	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx	2	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx	3	1			✓	N/A	N/A	0	3.00		0	10.00		2055
Bx2	1	3	(untitled)											1800
Bx2	2	1	(untitled)											1800
Bx2	3	2	(untitled)											1800
Bx3	1	2	(untitled)											1800
Bx3	2	1	(untitled)											1800
C2	1	3	(untitled)		✓	N/A	N/A	0	3.25		0	10.00	✓	1940
C2	2	1	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
C2	3	2	(untitled)		✓	N/A	N/A	0	3.25		0	10.00		2080
Cc	1	1			✓	N/A	N/A	4	4.00		0	10.00	✓	1847
Cc	2	2			✓	N/A	N/A	4	4.00		0	10.00		1987
Cc	3	2			✓	N/A	N/A	4	4.00		100	25.00		1875
Cx	1	1			✓	N/A	N/A	0	4.00		0	10.00	✓	2015
Cx	2	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Cx	3	1			✓	N/A	N/A	0	3.50		0	10.00		2105
Cx2	1	3	(untitled)											1800

Cx2	2	1	(untitled)												1800
Cx2	3	2	(untitled)												1800
D3	1	2	(untitled)												1800
D3	2	1	(untitled)												1800
Dc	1	1			✓	N/A	N/A	-1	4.00		0	10.00	✓		2015
Dc	2	2			✓	N/A	N/A	-1	4.00		0	10.00			2155
Dc	3	2			✓	N/A	N/A	-1	4.00		100	25.00			2033
Dx	1	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx	2	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx	3	1			✓	N/A	N/A	0	3.50		0	10.00			2105
Dx2	1	2	(untitled)												1800
Dx2	2	3	(untitled)												1800
Dx2	3	1	(untitled)												1800
Dx3	1	2	(untitled)												1800
Dx3	2	1	(untitled)												1800

Modelling

Arm	Traffic Stream	Traffic Model	Stop Weighting Multiplier (%)	Delay Weighting Multiplier (%)	Exclude From Results Calculation	Max Queue Storage (PCU)	Has Queue Limit	Queue Limit (PCU)	Excess Queue Penalty (£)	Has Degree Of Saturation Limit
A	1	NetworkDefault	0	100		0.00				
A	2	NetworkDefault	0	100		0.00				
B	2	NetworkDefault	0	100		0.00				
B	3	NetworkDefault	0	100		0.00				
C	1	NetworkDefault	0	100		0.00				
C	2	NetworkDefault	0	100		0.00				
C	3	NetworkDefault	0	100		0.00				
D	1	NetworkDefault	0	100		0.00				
D	2	NetworkDefault	0	100		0.00				
D	3	NetworkDefault	0	100		0.00				
A2	1	NetworkDefault	100	100		0.00				
A2	2	NetworkDefault	100	100		0.00				
Ac	1	NetworkDefault	100	100		0.00	✓	1	60.00	
Ac	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Ac	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Ax	1	NetworkDefault	100	100		0.00				
Ax	2	NetworkDefault	100	100		0.00				
Ax2	1	NetworkDefault	100	100		0.00				
Ax2	2	NetworkDefault	100	100		0.00				
B1	1	NetworkDefault	100	100		0.00				
B3	1	NetworkDefault	100	100		0.00				
B3	2	NetworkDefault	100	100		0.00				
Bc	1	NetworkDefault	100	100		0.00	✓	2	60.00	
Bc	2	NetworkDefault	100	100		0.00	✓	2	60.00	
Bc	3	NetworkDefault	100	100		0.00	✓	2	60.00	
Bx	1	NetworkDefault	100	100		0.00				
Bx	2	NetworkDefault	100	100		0.00				
Bx	3	NetworkDefault	100	100		0.00				
Bx2	1	NetworkDefault	100	100		0.00				
Bx2	2	NetworkDefault	100	100		0.00				
Bx2	3	NetworkDefault	100	100		0.00				
Bx3	1	NetworkDefault	100	100		0.00				

Bx3	2	NetworkDefault	100	100		0.00				
C2	1	NetworkDefault	100	100		0.00				
C2	2	NetworkDefault	100	100		0.00				
C2	3	NetworkDefault	100	100		0.00				
Cc	1	NetworkDefault	100	100		0.00	✓	2	200.00	
Cc	2	NetworkDefault	100	100		0.00	✓	2	200.00	
Cc	3	NetworkDefault	100	100		0.00	✓	2	200.00	
Cx	1	NetworkDefault	100	100		0.00				
Cx	2	NetworkDefault	100	100		0.00				
Cx	3	NetworkDefault	100	100		0.00				
Cx2	1	NetworkDefault	100	100		0.00				
Cx2	2	NetworkDefault	100	100		0.00				
Cx2	3	NetworkDefault	100	100		0.00				
D3	1	NetworkDefault	100	100		0.00				
D3	2	NetworkDefault	100	100		0.00				
Dc	1	NetworkDefault	100	100		0.00	✓	1	3000.00	
Dc	2	NetworkDefault	100	100		0.00	✓	1	3000.00	
Dc	3	NetworkDefault	100	100		0.00	✓	1	3000.00	
Dx	1	NetworkDefault	100	100		0.00				
Dx	2	NetworkDefault	100	100		0.00				
Dx	3	NetworkDefault	100	100		0.00				
Dx2	1	NetworkDefault	100	100		0.00				
Dx2	2	NetworkDefault	100	100		0.00				
Dx2	3	NetworkDefault	100	100		0.00				
Dx3	1	NetworkDefault	100	100		0.00				
Dx3	2	NetworkDefault	100	100		0.00				

Modelling - Advanced

Arm	Traffic Stream	Cruise Sensitivity Multiplier (%)	Initial Queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type Of Random Parameter	Random Parameter	Auto Cycle Time	Cycle Time
A	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
A2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ac	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Ax2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B1	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
B3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

B3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Bx3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
C2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Cx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
D3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dc	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx2	3	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx3	1	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72
Dx3	2	100	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	72

Normal - Modelling

Arm	Traffic Stream	Stop Weighting (%)	Delay Weighting (%)
A	1	-9998	20
A	2	-9998	20
B	2	-9998	20
B	3	-9998	20
C	1	-9998	20
C	2	-9998	20
C	3	-9998	20
D	1	-9998	20
D	2	-9998	20
D	3	-9998	20

A2	1	100	100
A2	2	100	100
Ac	1	100	100
Ac	2	100	100
Ac	3	100	100
Ax	1	100	100
Ax	2	100	100
Ax2	1	100	100
Ax2	2	100	100
B1	1	100	100
B3	1	100	100
B3	2	100	100
Bc	1	100	100
Bc	2	100	100
Bc	3	100	100
Bx	1	100	100
Bx	2	100	100
Bx	3	100	100
Bx2	1	100	100
Bx2	2	100	100
Bx2	3	100	100
Bx3	1	100	100
Bx3	2	100	100
C2	1	100	100
C2	2	100	100
C2	3	100	100
Cc	1	100	100
Cc	2	100	100
Cc	3	100	100
Cx	1	100	100
Cx	2	100	100
Cx	3	100	100
Cx2	1	100	100
Cx2	2	100	100
Cx2	3	100	100
D3	1	100	100
D3	2	100	100
Dc	1	100	100
Dc	2	100	100
Dc	3	100	100
Dx	1	100	100
Dx	2	100	100
Dx	3	100	100
Dx2	1	100	100
Dx2	2	100	100
Dx2	3	100	100
Dx3	1	100	100
Dx3	2	100	100

Normal - Modelling per Path

Arm	Traffic Stream	Path ID	Stop Weighting (%)	Delay Weighting (%)
Ac	1	3	500	100
Ac	2	1	500	100
Ac	3	2	500	100
B3	2	9	500	100
Bc	1	8	500	100
Bc	2	9	500	100
Bc	3	5	500	100
Bc	3	6	500	100
Bc	3	7	500	100
Cc	1	16	500	100
Cc	2	17	500	100
Cc	3	11	500	100
Cc	3	12	500	100
Cc	3	13	500	100
Cc	3	14	500	100
Cc	3	15	500	100
Dc	1	19	500	100
Dc	2	21	500	100
Dc	3	25	500	100
Dc	3	22	500	100
Dc	3	23	500	100
Dc	3	24	500	100

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	678	678
A	2	727	727
B	2	641	641
B	3	641	641
C	1	506	506
C	2	855	855
C	3	704	704
D	1	518	518
D	2	568	568
D	3	568	568
A2	1	678	678
A2	2	727	727
Ac	1	398	398
Ac	2	745	745
Ac	3	25	25
Ax	1	736	736
Ax	2	686	686
Ax2	1	736	736
Ax2	2	686	686
B1	1	925	925
B3	1	1566	1566
B3	2	641	641
Bc	1	321	321
Bc	2	346	346

Bc	3	641	641
Bx	1	1026	1026
Bx	2	803	803
Bx	3	717	717
Bx2	1	1026	1026
Bx2	2	803	803
Bx2	3	717	717
Bx3	1	1828	1828
Bx3	2	717	717
C2	1	506	506
C2	2	855	855
C2	3	704	704
Cc	1	686	686
Cc	2	686	686
Cc	3	704	704
Cx	1	925	925
Cx	2	398	398
Cx	3	745	745
Cx2	1	925	925
Cx2	2	398	398
Cx2	3	745	745
D3	1	518	518
D3	2	1136	1136
Dc	1	703	703
Dc	2	803	803
Dc	3	803	803
Dx	1	827	827
Dx	2	346	346
Dx	3	125	125
Dx2	1	827	827
Dx2	2	346	346
Dx2	3	125	125
Dx3	1	827	827
Dx3	2	471	471

Signals

Arm	Traffic Stream	Controller Stream	Phase	Phase2 Enabled
A	1	1	A	
A	2	1	A	
B	2	2	A	
B	3	2	A	
C	1	3	A	
C	2	3	A	
C	3	3	A	
D	1	4	A	
D	2	4	A	
D	3	4	A	
A2	1	6	A	
A2	2	6	A	
Ac	1	2	B	
Ac	2	2	B	
Ac	3	2	B	
Ax	1	5	A	
Ax	2	5	A	
B1	1	11	A	
Bc	1	3	B	
Bc	2	3	B	
Bc	3	3	B	
Bx	1	9	A	
Bx	2	9	A	
Bx	3	9	A	
C2	1	8	A	
C2	2	8	A	
C2	3	8	A	
Cc	1	4	B	
Cc	2	4	B	
Cc	3	4	B	
Cx	1	7	A	
Cx	2	7	A	
Cx	3	7	A	
Dc	1	1	B	
Dc	2	1	B	
Dc	3	1	B	
Dx	1	10	A	
Dx	2	10	A	
Dx	3	10	A	

Entry Sources

Arm	Traffic Stream	Normal Cruise Time (seconds)	Normal Cruise Speed (kph)
A2	1	26.32	48.28
A2	2	26.32	48.28
B3	1	3.60	30.00
B3	2	2.24	48.28
C2	1	5.34	48.28
C2	2	5.34	48.28
C2	3	5.34	48.28
D3	1	2.24	48.28
D3	2	2.24	48.28

Sources

Arm	Traffic Stream	Source	Source Type	Source Traffic Stream	Destination Traffic Stream	Normal Cruise Time (seconds)	Normal Cruise Speed (kph)	Auto Turning Radius	Traffic Turn Style	Turning Radius (m)
A	1	1	TrafficStream	A2/1	A/1	12.90	48.28	✓	Straight	Straight Movement
A	2	1	TrafficStream	A2/2	A/2	12.90	48.28	✓	Straight	Straight Movement
Ax2	1	1	TrafficStream	Ax/1	Ax2/1	26.84	48.28	✓	Straight	Straight Movement
Ax2	2	1	TrafficStream	Ax/2	Ax2/2	26.84	48.28	✓	Straight	Straight Movement
B	2	1	TrafficStream	B3/1	B/2	7.46	48.28	✓	Straight	Straight Movement
B	3	1	TrafficStream	B3/2	B/3	7.46	48.28	✓	Straight	Straight Movement
C	1	1	TrafficStream	C2/1	C/1	11.48	48.28	✓	Straight	Straight Movement
C	2	1	TrafficStream	C2/2	C/2	11.48	48.28	✓	Straight	Straight Movement
C	3	1	TrafficStream	C2/3	C/3	11.48	48.28	✓	Straight	Straight Movement
D	1	1	TrafficStream	D3/1	D/1	9.69	48.28	✓	Straight	Straight Movement
D	2	1	TrafficStream	D3/2	D/2	9.69	48.28	✓	Straight	Straight Movement
D	3	1	TrafficStream	D3/2	D/3	9.69	48.28	✓	Straight	Straight Movement
Ac	1	1	TrafficStream	A/1	Ac/1	4.57	32.18	✓	Straight	Straight Movement
Ac	2	1	TrafficStream	A/2	Ac/2	4.57	32.18	✓	Straight	Straight Movement
Ac	3	1	TrafficStream	A/2	Ac/3	4.57	32.18	✓	Straight	Straight Movement
Ax	1	1	TrafficStream	Cc/1	Ax/1	12.60	48.28	✓	Straight	Straight Movement
Ax	2	1	TrafficStream	Cc/2	Ax/2	12.60	48.28	✓	Straight	Straight Movement
Bf	1	1	TrafficStream	B3/1	B1/1	7.46	48.28	✓	Straight	Straight Movement
Bc	1	1	TrafficStream	B/2	Bc/1	6.01	32.18	✓	Straight	Straight Movement
Bc	2	1	TrafficStream	Ac/3	Bc/2	6.01	32.18	✓	Offside	17.07
Bc	3	1	TrafficStream	B/3	Bc/3	6.01	32.18	✓	Straight	Straight Movement

Bx	1	1	TrafficStream	Dc/1	Bx/1	1.12	48.28	✓	Straight	Straight Movement
Bx	2	1	TrafficStream	Dc/2	Bx/2	1.12	48.28	✓	Straight	Straight Movement
Bx	3	1	TrafficStream	Dc/3	Bx/3	1.12	48.28	✓	Straight	Straight Movement
Bx2	1	1	TrafficStream	Bx/1	Bx2/1	1.96	64.37	✓	Straight	Straight Movement
Bx2	2	1	TrafficStream	Bx/2	Bx2/2	2.61	48.28	✓	Straight	Straight Movement
Bx2	3	1	TrafficStream	Bx/3	Bx2/3	2.61	48.28	✓	Straight	Straight Movement
Bx3	1	1	TrafficStream	Bx2/1	Bx3/1	2.24	48.28	✓	Straight	Straight Movement
Bx3	2	1	TrafficStream	Bx2/3	Bx3/2	2.24	48.28	✓	Straight	Straight Movement
Cc	1	1	TrafficStream	C/2	Cc/1	5.76	32.18	✓	Straight	Straight Movement
Cc	2	1	TrafficStream	C/2	Cc/2	5.76	32.18	✓	Straight	Straight Movement
Cc	3	1	TrafficStream	C/3	Cc/3	5.76	32.18	✓	Straight	Straight Movement
Cx	1	1	TrafficStream	B1/1	Cx/1	10.55	48.28	✓	Nearside	88.92
Cx	2	1	TrafficStream	Ac/1	Cx/2	10.55	48.28	✓	Straight	Straight Movement
Cx	3	1	TrafficStream	Ac/2	Cx/3	10.55	48.28	✓	Straight	Straight Movement
Cx2	1	1	TrafficStream	Cx/1	Cx2/1	5.80	64.37	✓	Straight	Straight Movement
Cx2	2	1	TrafficStream	Cx/2	Cx2/2	7.74	48.28	✓	Straight	Straight Movement
Cx2	3	1	TrafficStream	Cx/3	Cx2/3	7.74	48.28	✓	Straight	Straight Movement
Dc	1	1	TrafficStream	Cc/3	Dc/1	4.96	32.18	✓	Offside	21.59
Dc	2	1	TrafficStream	Cc/3	Dc/2	4.96	32.18	✓	Offside	21.59
Dc	3	1	TrafficStream	Cc/3	Dc/3	4.96	32.18	✓	Offside	21.59
Dx	1	1	TrafficStream	C/1	Dx/1	1.49	48.28	✓	Straight	Straight Movement
Dx	2	1	TrafficStream	Bc/2	Dx/2	2.40	30.00	✓	Straight	Straight Movement
Dx	3	1	TrafficStream	Bc/3	Dx/3	2.40	30.00	✓	Straight	Straight Movement
Dx2	1	1	TrafficStream	Dx/1	Dx2/1	8.43	48.28	✓	Straight	Straight Movement
Dx2	2	1	TrafficStream	Dx/2	Dx2/2	8.43	48.28	✓	Straight	Straight Movement
Dx2	3	1	TrafficStream	Dx/3	Dx2/3	8.43	48.28	✓	Straight	Straight Movement
Dx3	1	1	TrafficStream	Dx2/1	Dx3/1	2.24	48.28	✓	Straight	Straight Movement
Dx3	2	1	TrafficStream	Dx2/3	Dx3/2	2.24	48.28	✓	Straight	Straight Movement
Ac	1	2	TrafficStream	Dc/3	Ac/1	4.57	32.18	✓	Offside	22.50
Ac	2	2	TrafficStream	Dc/3	Ac/2	4.48	32.80	✓	Offside	22.50
Ac	3	2	TrafficStream	Dc/3	Ac/3	4.57	32.18	✓	Offside	22.50
Ax	1	2	TrafficStream	D/1	Ax/1	12.60	48.28	✓	Nearside	53.31
Bc	2	2	TrafficStream	B/2	Bc/2	6.01	32.18	✓	Straight	Straight Movement

Bx	1	2	TrafficStream	A/1	Bx/1	1.12	48.28	✓	Straight	Straight Movement
Bx3	1	2	TrafficStream	Bx2/2	Bx3/1	2.24	48.28	✓	Straight	Straight Movement
Cc	1	2	TrafficStream	Bc/3	Cc/1	5.76	32.18	✓	Offside	29.81
Cc	2	2	TrafficStream	Bc/3	Cc/2	5.76	32.18	✓	Offside	29.81
Dc	1	2	TrafficStream	D/1	Dc/1	4.96	32.18	✓	Straight	Straight Movement
Dc	2	2	TrafficStream	D/2	Dc/2	4.96	32.18	✓	Straight	Straight Movement
Dc	3	2	TrafficStream	D/3	Dc/3	4.96	32.18	✓	Straight	Straight Movement
Dx	1	2	TrafficStream	Bc/1	Dx/1	2.40	30.00	✓	Straight	Straight Movement
Dx3	2	2	TrafficStream	Dx2/2	Dx3/2	2.24	48.28	✓	Straight	Straight Movement

Quick Flares

Arm	Traffic Stream	Description	Saturation Flow (PCU/hr)	Use Que Prob	Effective Storage (Vehs)
A	2		1800		2.00
C	3		1800		2.00

Local OD Matrix - Local Matrix: 1 - PM

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	323	1057	25
	2	516	0	925	766
	3	855	704	0	506
	4	50	1518	86	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exits
1 - PM	1		A2/2,A2/1	Ax2/1,Ax2/2
1 - PM	2		B3/2,B3/1	Bx3/1,Bx3/2
1 - PM	3		C2/3,C2/2,C2/1	Cx2/3,Cx2/2,Cx2/1
1 - PM	4	(untitled)	D3/1,D3/2	Dx3/2,Dx3/1

Paths

OD Matrix	Path	Description	From Location	To Location	Path Items
1 - PM	1		1	3	A2/2,A/2,Ac/2,Cx/3,Cx2/3
1 - PM	2		1	4	A2/2,A/2,Ac/3,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - PM	3		1	3	A2/1,A/1,Ac/1,Cx/2,Cx2/2
1 - PM	4		1	2	A2/1,A/1,Bx/1,Bx2/1,Bx3/1
1 - PM	5		2	1	B3/2,B/3,Bc/3,Cc/1,Ax/1,Ax2/1
1 - PM	6		2	1	B3/2,B/3,Bc/3,Cc/2,Ax/2,Ax2/2
1 - PM	7		2	4	B3/2,B/3,Bc/3,Dx/3,Dx2/3,Dx3/2
1 - PM	8		2	4	B3/1,B/2,Bc/1,Dx/1,Dx2/1,Dx3/1
1 - PM	9		2	4	B3/1,B/2,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - PM	10		2	3	B3/1,B1/1,Cx/1,Cx2/1
1 - PM	11		3	2	C2/3,C/3,Cc/3,Dc/1,Bx/1,Bx2/1,Bx3/1
1 - PM	12		3	2	C2/3,C/3,Cc/3,Dc/2,Bx/2,Bx2/2,Bx3/1
1 - PM	13		3	3	C2/3,C/3,Cc/3,Dc/3,Ac/1,Cx/2,Cx2/2
1 - PM	14		3	3	C2/3,C/3,Cc/3,Dc/3,Ac/2,Cx/3,Cx2/3
1 - PM	15		3	2	C2/3,C/3,Cc/3,Dc/3,Bx/3,Bx2/3,Bx3/2
1 - PM	16		3	1	C2/2,C/2,Cc/1,Ax/1,Ax2/1
1 - PM	17		3	1	C2/2,C/2,Cc/2,Ax/2,Ax2/2
1 - PM	18		3	4	C2/1,C/1,Dx/1,Dx2/1,Dx3/1
1 - PM	19		4	2	D3/1,D/1,Dc/1,Bx/1,Bx2/1,Bx3/1
1 - PM	20		4	1	D3/1,D/1,Ax/1,Ax2/1
1 - PM	21		4	2	D3/2,D/2,Dc/2,Bx/2,Bx2/2,Bx3/1
1 - PM	22		4	3	D3/2,D/3,Dc/3,Ac/1,Cx/2,Cx2/2
1 - PM	23		4	3	D3/2,D/3,Dc/3,Ac/2,Cx/3,Cx2/3
1 - PM	24		4	4	D3/2,D/3,Dc/3,Ac/3,Bc/2,Dx/2,Dx2/2,Dx3/2
1 - PM	25		4	2	D3/2,D/3,Dc/3,Bx/3,Bx2/3,Bx3/2

Normal Path Flows

OD Matrix	Path	Permitted Flow Type	Allocation Type
1 - PM	1	✓	Normal
1 - PM	2	✓	Normal
1 - PM	3	✓	Normal
1 - PM	4	✓	Normal
1 - PM	5	✓	Normal
1 - PM	6	✓	Normal
1 - PM	7	✓	Normal
1 - PM	8	✓	Normal
1 - PM	9	✓	Normal
1 - PM	10	✓	Normal
1 - PM	11	✓	Normal
1 - PM	12	✓	Normal
1 - PM	13	✓	Normal
1 - PM	14	✓	Normal
1 - PM	15	✓	Normal
1 - PM	16	✓	Normal
1 - PM	17	✓	Normal
1 - PM	18	✓	Normal
1 - PM	19	✓	Normal
1 - PM	20	✓	Normal
1 - PM	21	✓	Normal
1 - PM	22	✓	Normal
1 - PM	23	✓	Normal
1 - PM	24	✓	Normal
1 - PM	25	✓	Normal

Signal Timings

Network Default: 72s cycle time; 72 steps

Controller Stream 1

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
1			1	NetworkDefault	72

Controller Stream 1 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
1	Unspecified						Absolute

Controller Stream 1 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
1	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
1	A	(untitled)	7	300	0	0	Not Specified
1	B	(untitled)	7	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
1	1	A	1
1	2	B	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
1	1	Gaining	B	1	2	0	6

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
1	1	(untitled)	Single	1,2	22,4

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
1	1	✓	1	A	9	22	13	1	7
1	2	✓	2	B	29	4	47	1	7

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
1	A	1	✓	9	22	13
1	B	1	✓	29	4	47

Intergreen Matrix for Controller Stream 1

		To	
		A	B
From	A		7
	B	5	

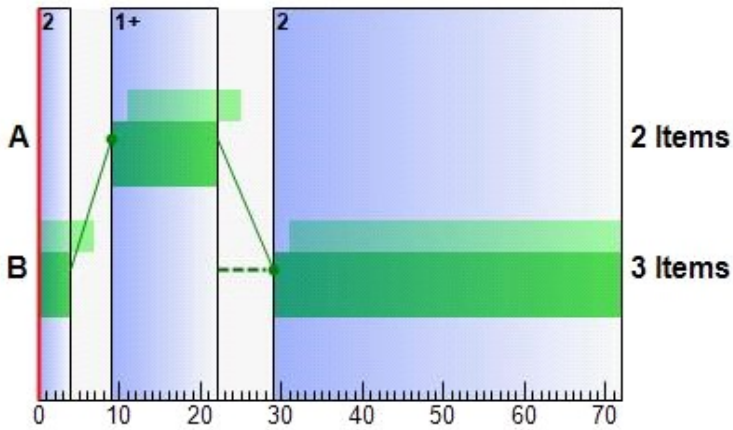
Interstage Matrix for Controller Stream 1

		To	
		1	2
From	1	0	7
	2	5	0

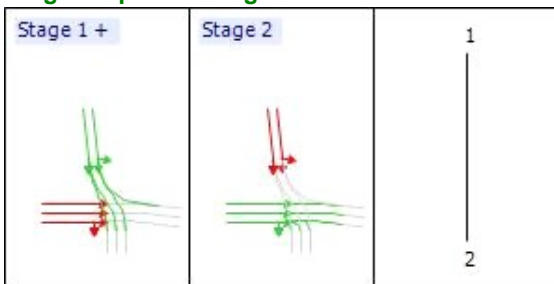
Banned Stage transitions for Controller Stream 1

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Controller Stream 2

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
2			1	NetworkDefault	72

Controller Stream 2 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
2	Unspecified						Absolute

Controller Stream 2 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
2	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
2	A	(untitled)	7	300	0	0	Not Specified
2	B	(untitled)	7	300	0	0	Not Specified
2	C	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
2	1	A	1
2	2	B,C	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay
2	1	Losing	B	2	1	2

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
2	1	(untitled)	Single	1,2	6,48

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
2	1	✓	1	A	55	6	23	1	7
2	2	✓	2	B,C	13	48	35	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
2	A	1	✓	55	6	23
2	B	1	✓	13	50	37
2	C	1	✓	11	48	37

Intergreen Matrix for Controller Stream 2

		To		
		A	B	C
From	A		7	5
	B	5		
	C	7		

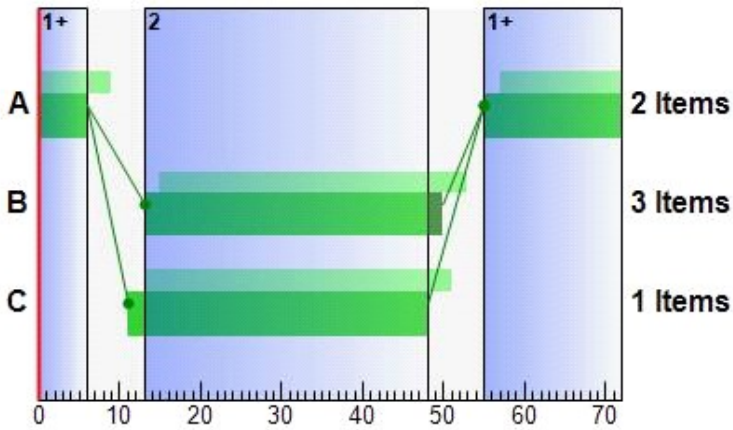
Interstage Matrix for Controller Stream 2

		To	
		1	2
From	1	0	7
	2	7	0

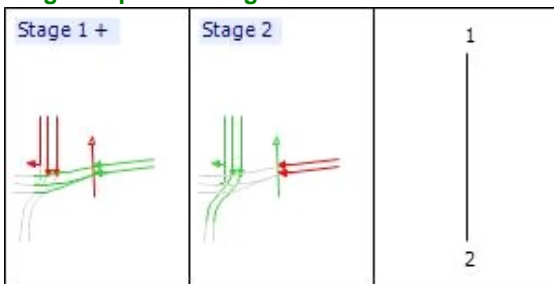
Banned Stage transitions for Controller Stream 2

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 2



Stage Sequence Diagram for Controller Stream 2



Controller Stream 3

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
3			1	NetworkDefault	72

Controller Stream 3 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
3	Unspecified						Absolute

Controller Stream 3 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
3	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
3	A	(untitled)	7	300	0	0	Not Specified
3	B	(untitled)	7	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
3	1	A	1
3	2	B	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
3	1	Gaining	A	2	1	0	3

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
3	1	(untitled)	Single	1,2	45,12

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
3	1	✓	1	A	17	45	28	1	7
3	2	✓	2	B	52	12	32	1	7

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
3	A	1	✓	17	45	28
3	B	1	✓	52	12	32

Intergreen Matrix for Controller Stream 3

		To	
		A	B
From	A		7
	B	5	

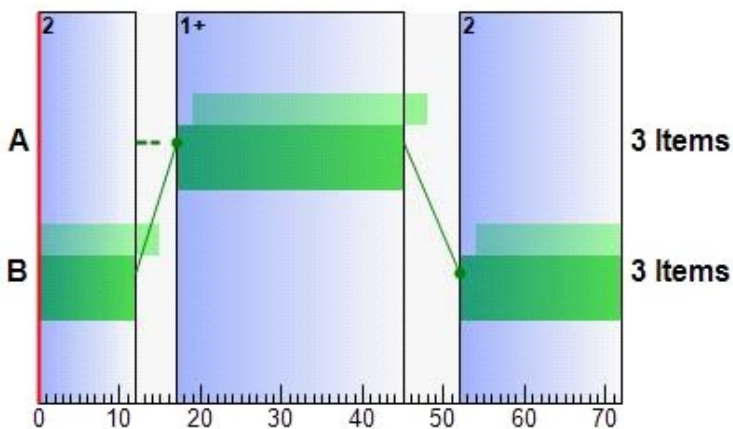
Interstage Matrix for Controller Stream 3

		To	
		1	2
From	1	0	7
	2	5	0

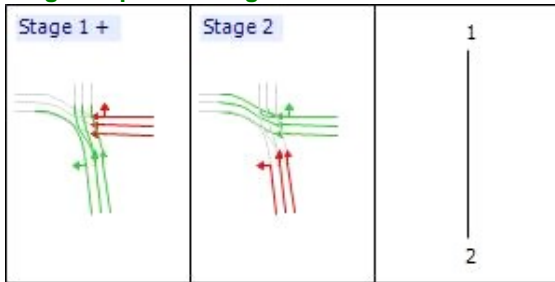
Banned Stage transitions for Controller Stream 3

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 3



Stage Sequence Diagram for Controller Stream 3



Controller Stream 4

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
4			1	NetworkDefault	72

Controller Stream 4 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
4	Unspecified						Absolute

Controller Stream 4 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
4	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
4	A	(untitled)	7	300	0	0	Not Specified
4	B	(untitled)	7	300	0	0	Not Specified
4	C	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
4	1	A	1
4	2	B,C	1

Losing/ Gaining delays at each Controller Stream

Controller Stream	Delay	Type	Phase	From Stage	To Stage	Relative Delay	Absolute Delay
4	1	Losing	B	2	1	5	
4	2	Gaining	A	2	1	4	14

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
4	1	(untitled)	Single	1,2	70,44

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
4	1	✓	1	A	58	70	12	1	7
4	2	✓	2	B,C	5	44	39	1	3

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
4	A	1	✓	58	70	12
4	B	1	✓	5	49	44
4	C	1	✓	3	44	41

Intergreen Matrix for Controller Stream 4

		To		
		A	B	C
From	A		7	5
	B	5		
	C	10		

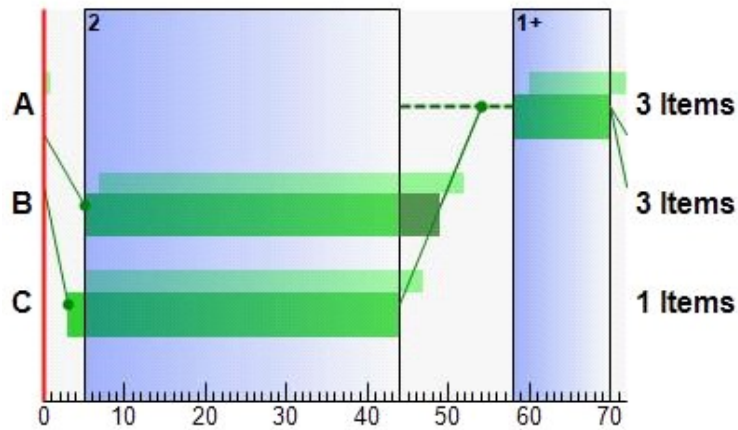
Interstage Matrix for Controller Stream 4

		To	
		1	2
From	1	0	7
	2	14	0

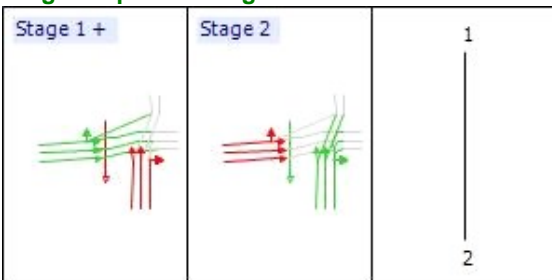
Banned Stage transitions for Controller Stream 4

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 4



Stage Sequence Diagram for Controller Stream 4



Controller Stream 5

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
5	(untitled)		1	NetworkDefault	72

Controller Stream 5 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
5	Unspecified						Absolute

Controller Stream 5 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
5	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
5	A	(untitled)	7	300	0	0	Not Specified
5	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
5	1	A	1
5	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
5	1	(untitled)	Single	1,2	69,7

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
5	1	✓	1	A	15	69	54	1	7
5	2	✓	2	B	2	7	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
5	A	1	✓	15	69	54
5	B	1	✓	2	7	5

Intergreen Matrix for Controller Stream 5

		To	
		A	B
From	A		5
	B	8	

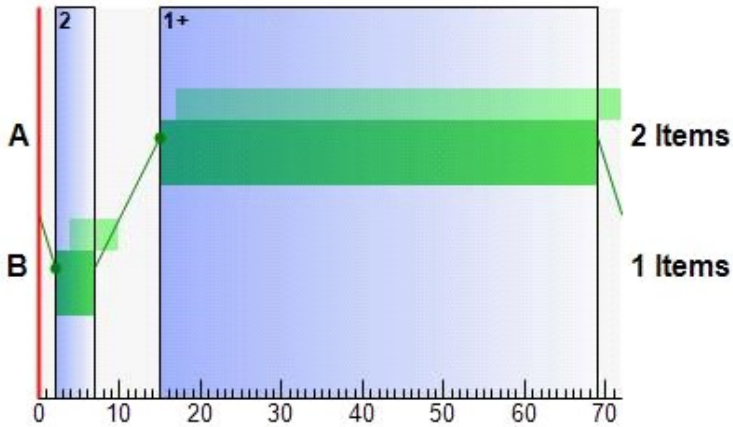
Interstage Matrix for Controller Stream 5

		To	
		1	2
From	1	0	5
	2	8	0

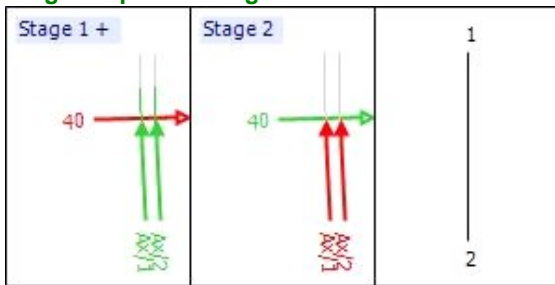
Banned Stage transitions for Controller Stream 5

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 5



Stage Sequence Diagram for Controller Stream 5



Controller Stream 6

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
6	(untitled)		1	NetworkDefault	72

Controller Stream 6 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
6	Unspecified						Absolute

Controller Stream 6 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
6	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
6	A	(untitled)	7	300	0	0	Not Specified
6	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
6	1	A	1
6	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
6	1	(untitled)	Single	1,2	12,22

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
6	1	✓	1	A	30	12	54	1	7
6	2	✓	2	B	17	22	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
6	A	1	✓	30	12	54
6	B	1	✓	17	22	5

Intergreen Matrix for Controller Stream 6

		To	
		A	B
From	A		5
	B	8	

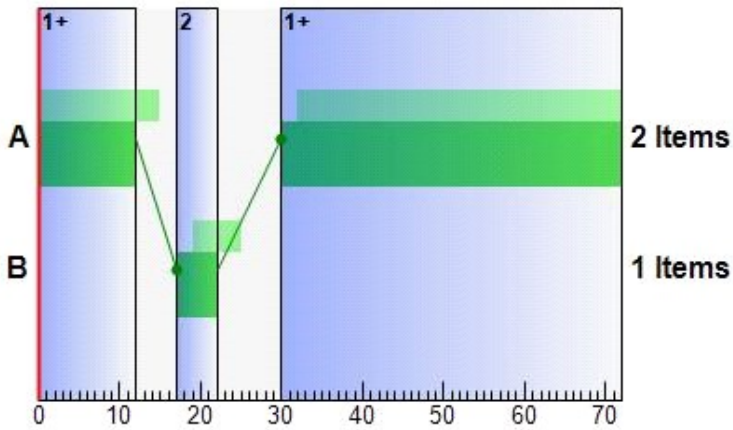
Interstage Matrix for Controller Stream 6

		To	
		1	2
From	1	0	5
	2	8	0

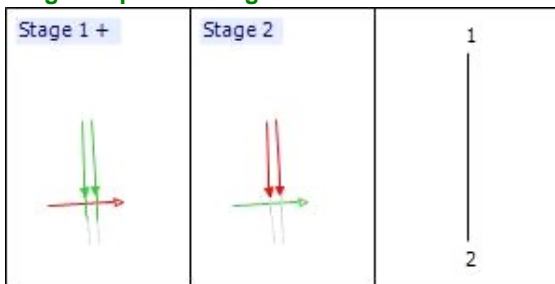
Banned Stage transitions for Controller Stream 6

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 6



Stage Sequence Diagram for Controller Stream 6



Controller Stream 7

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
7	(untitled)		1	NetworkDefault	72

Controller Stream 7 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
7	Unspecified						Absolute

Controller Stream 7 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
7	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
7	A	(untitled)	7	300	0	0	Not Specified
7	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
7	1	A	1
7	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
7	1	(untitled)	Single	1,2	60,70

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
7	1	✓	1	A	8	60	52	1	7
7	2	✓	2	B	65	70	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
7	A	1	✓	8	60	52
7	B	1	✓	65	70	5

Intergreen Matrix for Controller Stream 7

		To	
		A	B
From	A		5
	B	10	

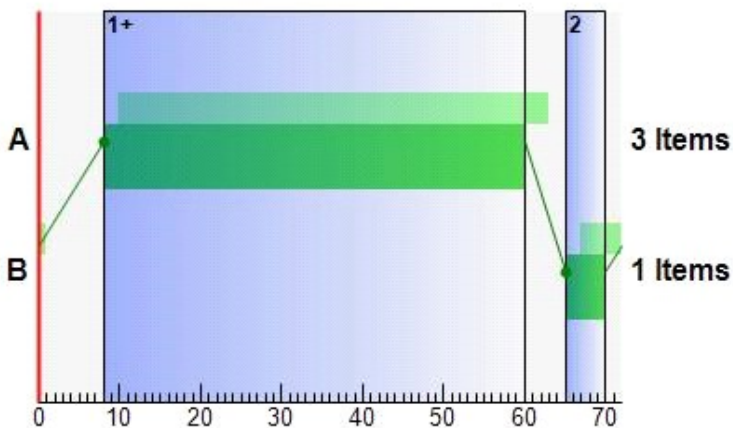
Interstage Matrix for Controller Stream 7

		To	
		1	2
From	1	0	5
	2	10	0

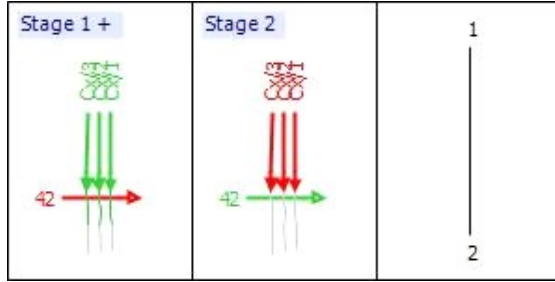
Banned Stage transitions for Controller Stream 7

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 7



Stage Sequence Diagram for Controller Stream 7



Controller Stream 8

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
8	(untitled)		1	NetworkDefault	72

Controller Stream 8 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
8	Unspecified						Absolute

Controller Stream 8 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
8	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
8	A	(untitled)	7	300	0	0	Not Specified
8	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
8	1	A	1
8	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
8	1	(untitled)	Single	1,2	1,11

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
8	1	✓	1	A	21	1	52	1	7
8	2	✓	2	B	6	11	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
8	A	1	✓	21	1	52
8	B	1	✓	6	11	5

Intergreen Matrix for Controller Stream 8

		To	
		A	B
From	A		5
	B	10	

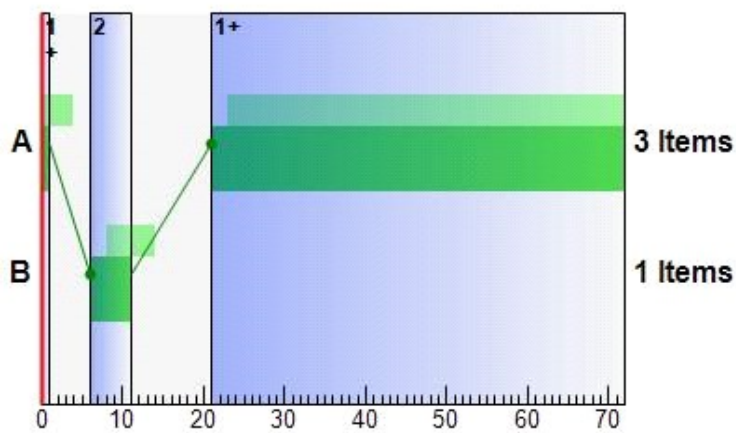
Interstage Matrix for Controller Stream 8

		To	
		1	2
From	1	0	5
	2	10	0

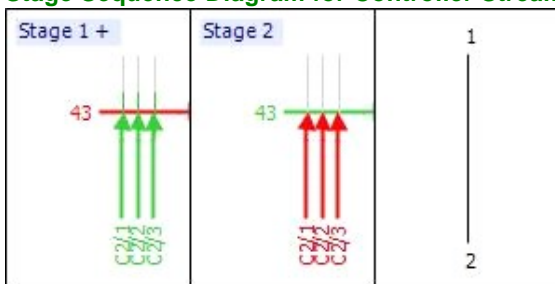
Banned Stage transitions for Controller Stream 8

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 8



Stage Sequence Diagram for Controller Stream 8



Controller Stream 9

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
9	(untitled)		1	NetworkDefault	72

Controller Stream 9 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
9	Unspecified						Absolute

Controller Stream 9 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
9	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
9	A	(untitled)	7	300	0	0	Not Specified
9	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
9	1	A	1
9	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
9	1	(untitled)	Single	1,2	4,14

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
9	1	✓	1	A	24	4	52	1	7
9	2	✓	2	B	9	14	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
9	A	1	✓	24	4	52
9	B	1	✓	9	14	5

Intergreen Matrix for Controller Stream 9

		To	
		A	B
From	A		5
	B	10	

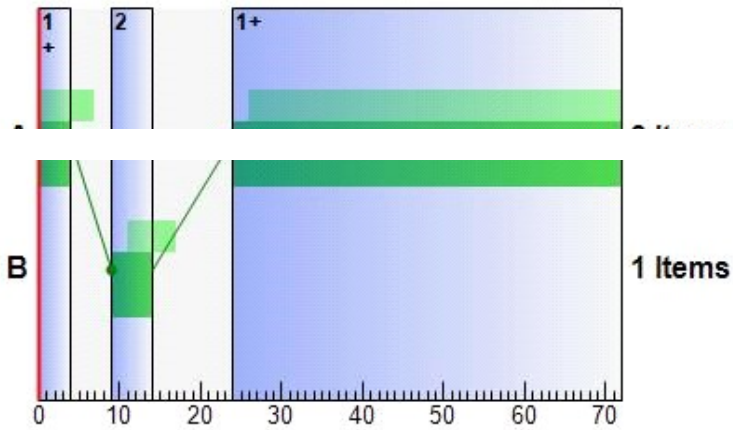
Interstage Matrix for Controller Stream 9

		To	
		1	2
From	1	0	5
	2	10	0

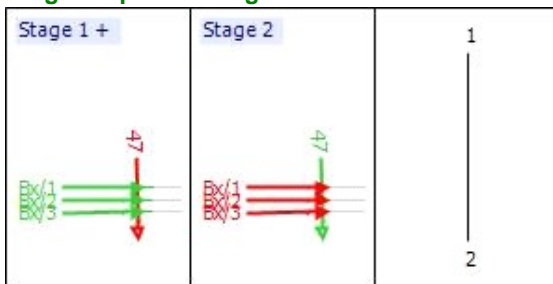
Banned Stage transitions for Controller Stream 9

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 9



Stage Sequence Diagram for Controller Stream 9



Controller Stream 10

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
10	(untitled)		1	NetworkDefault	72

Controller Stream 10 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
10	Unspecified						Absolute

Controller Stream 10 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
10	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
10	A	(untitled)	7	300	0	0	Not Specified
10	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
10	1	A	1
10	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
10	1	(untitled)	Single	1,2	45,55

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
10	1	✓	1	A	65	45	52	1	7
10	2	✓	2	B	50	55	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
10	A	1	✓	65	45	52
10	B	1	✓	50	55	5

Intergreen Matrix for Controller Stream 10

		To	
		A	B
From	A		5
	B	10	

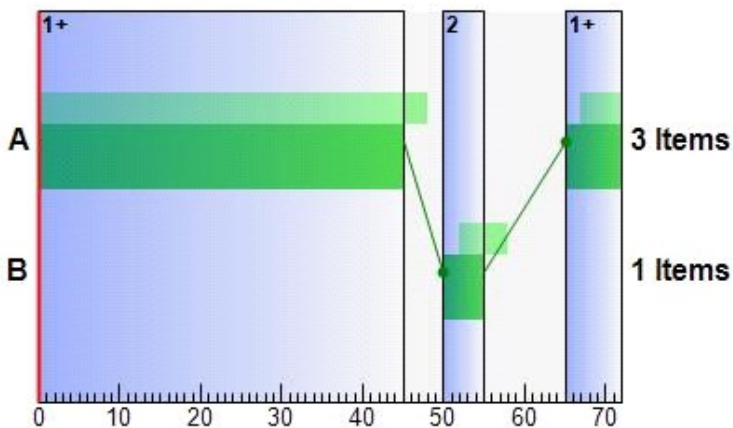
Interstage Matrix for Controller Stream 10

		To	
		1	2
From	1	0	5
	2	10	0

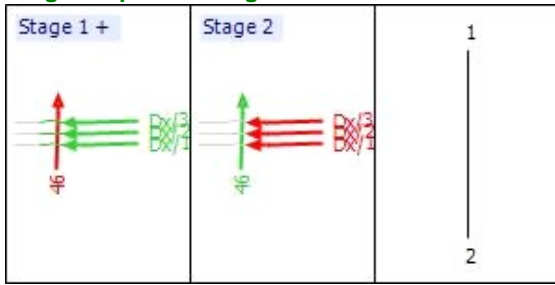
Banned Stage transitions for Controller Stream 10

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 10



Stage Sequence Diagram for Controller Stream 10



Controller Stream 11

Controller Stream	Name	Description	Use Sequence	Cycle Time Source	Cycle Time (s)
11			1	NetworkDefault	72

Controller Stream 11 - Properties

Controller Stream	Manufacturer Name	Type	Model Number	(Telephone) Line Number	Site Number	Grid Reference	Gaining Delay Type
11	Unspecified						Absolute

Controller Stream 11 - Optimisation

Controller Stream	Allow Offset Optimisation	Allow Green Split Optimisation	Optimisation Level	Auto Redistribute	Enable Stage Constraint
11	✓	✓	Offsets And Green Splits		

Phases

Controller Stream	Phase	Name	Minimum Green (s)	Maximum Green (s)	Relative Start Displacement (s)	Relative End Displacement (s)	Type
11	A	(untitled)	7	300	0	0	Not Specified
11	B	(untitled)	5	300	0	0	Not Specified

Library Stages

Controller Stream	Library Stage	Phases In Stage	User Stage Minimum (s)
11	1	A	1
11	2	B	1

Stage Sequences

Controller Stream	Sequence	Name	Multiple Cycling	Stage IDs	Stage Ends
11	1	(untitled)	Single	1,2	59,69

Resultant Stages

Controller Stream	Stage	Is Base Stage	Library Stage ID	Phases In This Stage	Stage Start (s)	Stage End (s)	Stage Duration (s)	User Stage Minimum (s)	Stage Minimum (s)
11	1	✓	1	A	2	59	57	1	7
11	2	✓	2	B	64	69	5	1	5

Resultant Phase Green Periods

Controller Stream	Phase	Green Period	Is Base Green Period	Start Time (s)	End Time (s)	Duration (s)
11	A	1	✓	2	59	57
11	B	1	✓	64	69	5

Intergreen Matrix for Controller Stream 11

		To	
		A	B
From	A		5
	B	5	

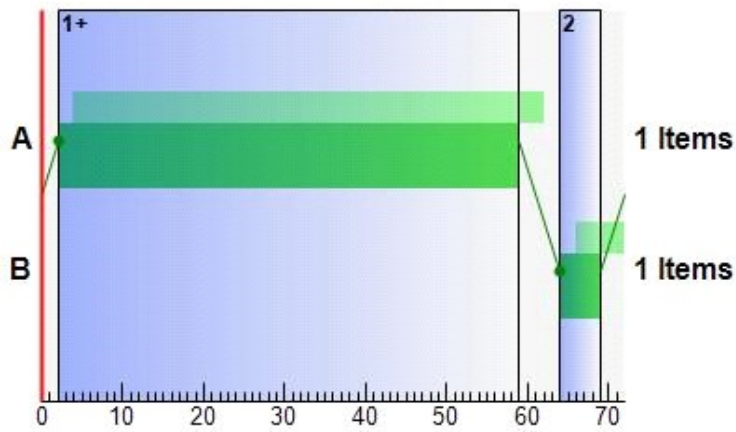
Interstage Matrix for Controller Stream 11

		To	
		1	2
From	1	0	5
	2	5	0

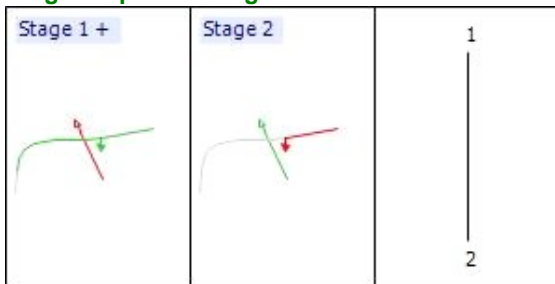
Banned Stage transitions for Controller Stream 11

		To	
		1	2
From	1		
	2		

Phase Timings Diagram for Controller Stream 11



Stage Sequence Diagram for Controller Stream 11



Final Prediction Table

Link Results

Link	Name	Traffic Node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES		WEIG
			Controller Stream	Phase	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Wasted Time Total (s per cycle)	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Journey Time Per PCU (s)	Mean Delay Per PCU (s)	Mean Stops Per PCU (%)	Mean Max Queue (PCU)	Max End Of Red Queue (PCU)	Delay Weighting (%)
40 P	A452 N-NB	5	5	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100
41 P	A452 N-SB	6	6	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100
42 P	A452 S-SB	7	7	B	0	0	0	0.00	0	0	31.97	30.71	0.00	1.83	1.83	100
43 P	A452 S-NB	8	8	B	0	0	0	0.00	0	0	31.88	30.71	0.00	1.83	1.83	100
45 P	A38 W-WB	2	2	C	0	0	0	0.00	0	0	9.34	8.26	0.00	0.94	0.94	100
46 P	A38 E-WB	10	10	B	0	0	0	0.00	0	0	31.88	30.71	0.00	1.83	1.83	100
47 P	A38 W-EB	9	9	B	0	0	0	0.00	0	0	31.79	30.71	0.00	1.83	1.83	100
49 P	A38 E-EB	4	4	C	0	0	0	0.00	0	0	7.63	6.46	0.00	0.83	0.83	100
50 P	A38 W-WB	2	11	B	0	0	0	0.00	0	0	31.71	30.71	0.00	1.83	1.83	100

Traffic Stream Results

Arm	Traffic Stream	Name	Traffic Node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	
				Controller Stream	Phase	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s per cycle)	Wasted Time Total (s per cycle)	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Journey Time Per PCU (s)	Mean Delay Per PCU (s)	Mean Stops Per PCU (%)	Mean Max Queue (PCU)	Ma End Re Que (PC)
A	1		1	1	A	678 <	1905	13	5.00	183!	-51	846.81	833.91	464.84	161.69 +	160.
A	2		1	1	A	727 <	2594 f	13	1.00	144!	-38	586.73	573.83	382.19	122.34 +	120.
B	2	(untitled)	2	2	A	642 <	2055	23	0.00	94!	-4	61.03	53.58	129.82	17.71 +	13.
B	3	(untitled)	2	2	A	641 <	2055	23	0.00	94!	-4	60.54	53.08	129.24	17.60 +	13.
C	1		3	3	A	506	1762	28	1.00	71	26	34.02	22.54	64.98	6.60	6.5
C	2		3	3	A	856 <	1937	28	0.00	110!	-18	207.46	195.98	246.55	57.65 +	51.
C	3		3	3	A	705	2200 f	28	1.00	80	13	35.15	23.67	67.59	9.58	9.4
D	1		4	4	A	518 <	1804	12	0.00	159!	-43	702.17	692.47	415.11	103.39 +	102.
D	2		4	4	A	568 <	1979	12	0.00	159!	-43	701.18	691.49	414.95	113.22 +	112.

D	3		4	4	A	568 <	1979	12	0.00	159!	-43	701.18	691.49	414.95	113.22 +	112.
A2	1	(untitled)	6	6	A	678	1940	54	55.00	46	97	30.43	4.11	32.31	5.09	3.3
A2	2	(untitled)	6	6	A	727	2080	54	55.00	46	97	30.36	4.04	32.22	5.44	3.6
Ac	1		2	2	B	221	2015	37	20.00	21	333	6.29	1.72	13.07	0.67	0.5
Ac	2		2	2	B	514 <	2155	37	17.00	45	99	8.06	3.49	65.84	10.22 +	0.7
Ac	3		2	2	B	17	2033	37	25.00	2	5467	4.60	0.03	0.00	0.00	0.0
Ax	1		5	5	A	680	2105	54	0.00	42	113	13.92	1.32	5.97	0.92	0.7
Ax	2		5	5	A	648	2055	54	0.00	41	118	13.49	0.89	1.70	0.22	0.2
Ax2	1	(untitled)				680	1800	72	1.00	38	138	27.45	0.61	0.00	0.11	
Ax2	2	(untitled)				648	1800	72	1.00	36	150	27.41	0.56	0.00	0.10	
B1	1		2	11	A	925	1754	57	0.00	65	37	12.74	5.28	37.09	8.07	4.2
B3	1	(untitled)	14			1567	1800	72	2.00	87	3	10.12	6.52	0.00	2.84	
B3	2	(untitled)	14			641	1800	72	2.00	36	153	2.79	0.55	0.00	0.10	
Bc	1		3	3	B	321	1973	32	7.00	35	154	8.09	2.08	4.16	0.27	0.2
Bc	2		3	3	B	338	2113	32	7.00	35	158	9.25	3.24	9.02	0.61	0.6
Bc	3		3	3	B	641 <	1993	32	7.00	70	28	11.70	5.69	15.46	9.71 +	1.1
Bx	1		9	9	A	706 <	2055	52	4.00	47	93	5.07	3.95	28.43	4.91 +	3.9
Bx	2		9	9	A	592	2055	52	9.00	39	130	2.36	1.24	3.62	0.43	0.4
Bx	3		9	9	A	538	2055	52	9.00	36	153	2.22	1.10	3.30	0.36	0.3
Bx2	1	(untitled)	13			706	1800	72	39.00	39	130	2.72	0.77	5.87	4.24	
Bx2	2	(untitled)	13			592	1800	72	42.00	33	174	3.20	0.59	5.27	4.30	
Bx2	3	(untitled)	13			538	1800	72	22.00	30	201	3.04	0.43	0.00	0.06	
Bx3	1	(untitled)				1298 <	1800	72	8.00	72	25	7.14	4.91	50.26	12.51 +	
Bx3	2	(untitled)				538	1800	72	19.00	30	201	2.66	0.43	0.00	0.06	
C2	1	(untitled)	8	8	A	506	1940	52	0.00	35	154	9.43	4.09	31.96	3.61	2.7
C2	2	(untitled)	8	8	A	856	2080	52	53.00	56	61	11.09	5.75	40.98	7.96	4.8
C2	3	(untitled)	8	8	A	705	2080	52	0.00	46	95	10.14	4.80	36.05	5.68	3.9
Cc	1		4	4	B	648	1847	44	0.00	56	60	11.10	5.34	36.01	5.19	3.1
Cc	2		4	4	B	648	1987	44	0.00	52	72	10.56	4.80	33.77	4.90	3.1
Cc	3		4	4	B	705	1875	44	15.00	60	50	10.51	4.75	45.12	8.42	1.2
Cx	1		7	7	A	925	2015	52	0.00	62	44	14.78	4.23	18.57	4.03	3.0
Cx	2		7	7	A	221	2105	52	28.00	14	531	10.75	0.20	0.29	0.01	0.0
Cx	3		7	7	A	514	2105	52	24.00	33	171	11.13	0.59	1.06	2.44	0.0
Cx2	1	(untitled)				925	1800	72	14.00	51	75	6.87	1.06	1.82	2.78	
Cx2	2	(untitled)				221	1800	72	43.00	12	633	7.88	0.14	0.00	0.01	
Cx2	3	(untitled)				514	1800	72	39.00	29	215	8.45	0.72	15.09	6.58	
D3	1	(untitled)	15			518	1800	72	72.00	29	213	2.64	0.40	0.00	0.06	
D3	2	(untitled)	15			1136	1800	72	72.00	63	43	3.94	1.70	0.00	0.54	
Dc	1		1	1	B	529	2015	47	8.00	39	128	6.82	1.86	8.53	1.05	0.9
Dc	2		1	1	B	592	2155	47	5.00	41	118	6.81	1.85	8.15	1.11	0.9
Dc	3		1	1	B	592	2033	47	5.00	44	106	6.97	2.01	8.38	1.14	0.9
Dx	1		10	10	A	827	2105	52	1.00	53	69	3.61	1.77	6.93	1.55	1.0
Dx	2		10	10	A	338	2105	52	29.00	22	312	3.71	1.31	15.48	1.38	0.9
Dx	3		10	10	A	125	2105	52	30.00	8	1016	2.87	0.47	6.54	0.21	0.2
Dx2	1	(untitled)	16			827	1800	72	12.00	46	96	9.27	0.85	0.00	0.19	
Dx2	2	(untitled)	16			338	1800	72	43.00	19	379	8.66	0.23	0.00	0.02	
Dx2	3	(untitled)	16			125	1800	72	45.00	7	1196	8.50	0.07	0.00	0.00	
Dx3	1	(untitled)				827	1800	72	11.00	46	96	3.09	0.85	0.00	0.19	
Dx3	2	(untitled)				463	1800	72	41.00	26	250	2.58	0.35	0.00	0.04	

Network Results

	Distance Travelled (PCU-km/hr)	Time Spent (PCU-hr/hr)	Mean Journey Speed (kph)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Excess Queue Penalty (£ per hr)	Performance Index (£ per hr)
TOTAL	3503.38	761.43	4.60	42.32	643.48	2193.24	168.37	395.56	2757.17
BUSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
PEDESTRIANS									
OTHER (NORMAL)	3503.38	761.43	4.60	42.32	643.48	2193.24	168.37	395.56	2757.17

- 1 *B = at least one source for this link carries buses*
- 1 *T = at least one source for this link carries trams*
- 1 *P = this link is a pedestrian link*
- 1 *< = adjusted flow warning (upstream links are over-saturated)*
- 1 *! = DoS threshold exceeded*
- 1 *f = average saturation flow for flared link*
- 1 ** = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%*
- 1 *^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%*
- 1 *+ = average link excess queue is greater than 0*
- 1 **P.I. = PERFORMANCE INDEX**

Link Results

Link Results: Flows And Signals

Time Segment	Link	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Calculated Sat Flow	Calculated Capacity	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity	Mean Modulus Of Error	Actual Green (s (per cycle))	Effectiv Green (per cycle)
17:00-18:00	40	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
17:00-18:00	41	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
17:00-18:00	42	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
17:00-18:00	43	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
17:00-18:00	45	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	37	38
17:00-18:00	46	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
17:00-18:00	47	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6
17:00-18:00	49	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	41	42
17:00-18:00	50	100	100	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	5	6

Link Results: Stops And Delays

Time Segment	Link	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
17:00-18:00	40	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
17:00-18:00	41	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
17:00-18:00	42	1.26	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
17:00-18:00	43	1.17	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
17:00-18:00	45	1.08	8.26	0.23	0.00	3.26	3.26	0.00	0.00	0.00	0.00	0.00
17:00-18:00	46	1.17	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
17:00-18:00	47	1.08	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00
17:00-18:00	49	1.17	6.46	0.18	0.00	2.55	2.55	0.00	0.00	0.00	0.00	0.00
17:00-18:00	50	1.00	30.71	0.85	0.00	12.11	12.11	0.00	0.00	0.00	0.00	0.00

Link Results: Queues And Blocking

Time Segment	Link	Initial Queue (PCU)	Mean Max Queue (PCU)	Max Queue Storage (PCU)	Utilised Storage (%)	Average Link Excess Queue (PCU)	Average Limit Excess Queue (PCU)	Excess Queue Penalty (£ per hr)	Max End Of Green Queue (PCU)	Max End Of Red Queue (PCU)	Wasted Time Starvation (s (per cycle))	Wasted Time Blocking Back (s (per cycle))	Wasted Time Total (s (per cycle))	Estimated Blocking
17:00-18:00	40	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
17:00-18:00	41	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
17:00-18:00	42	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
17:00-18:00	43	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
17:00-18:00	45	0.00	0.94	10.00	9.44	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	
17:00-18:00	46	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
17:00-18:00	47	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	
17:00-18:00	49	0.00	0.83	10.00	8.33	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	
17:00-18:00	50	0.00	1.83	10.00	18.33	0.00	0.00	0.00	0.00	1.83	0.00	0.00	0.00	

Link Results: Advanced

Time Segment	Link	Degree Of Saturation Penalty (£ per hr)	Phase Min Max Penalty (£ per hr)	Intergreen Broken Penalty (£ per hr)	Stage Constraint Broken Penalty (£ per hr)	Ped Gap Accepting Penalty (£ per hr)	Warmed Up	Warmed Up Error	Mean Max Queue EoTS (PCU)	Max End Of Green Queue Eo TS (PCU)	Max End Of Red Queue Eo TS (PCU)	Cost Of Penalties (£ per hr)	Unweighted Performance Index (£ per hr)	Performance Index (£ per hr)
17:00-18:00	40	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
17:00-18:00	41	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
17:00-18:00	42	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
17:00-18:00	43	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
17:00-18:00	45	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.94	0.00	0.94	0.00	0.00	0.00
17:00-18:00	46	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
17:00-18:00	47	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00
17:00-18:00	49	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.83	0.00	0.83	0.00	0.00	0.00
17:00-18:00	50	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.83	0.00	1.83	0.00	0.00	0.00

Traffic Stream Results

Traffic Stream Results: Vehicle Summary

Time Segment	Arm	Traffic Stream	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Calculated Flow Entering (PCU/hr)	Calculated Sat Flow (PCU/hr)	Actual Green (s (per cycle))	Mean Delay Per PCU (s)	Mean Max Queue (PCU)	Utilised Storage (%)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	183!	-51	678	1905	13	833.91	161.69	537.42	446.03	0.00	446.03
17:00-18:00	A	2	144!	-38	727	2594	13	573.83	122.34	406.62	329.11	0.00	329.11
17:00-18:00	B	2	94!	-4	642	2055	23	53.58	17.71	101.83	27.14	0.00	27.14
17:00-18:00	B	3	94!	-4	641	2055	23	53.08	17.60	101.18	26.84	0.00	26.84
17:00-18:00	C	1	71	26	506	1762	28	22.54	6.60	24.65	9.00	0.00	9.00
17:00-18:00	C	2	110!	-18	856	1937	28	195.98	57.65	215.24	132.34	0.00	132.34
17:00-18:00	C	3	80	13	705	2200	28	23.67	9.58	35.77	13.16	0.00	13.16
17:00-18:00	D	1	159!	-43	518	1804	12	692.47	103.39	457.32	282.98	0.00	282.98
17:00-18:00	D	2	159!	-43	568	1979	12	691.49	113.22	500.78	309.85	0.00	309.85
17:00-18:00	D	3	159!	-43	568	1979	12	691.49	113.22	500.78	309.85	0.00	309.85
17:00-18:00	A2	1	46	97	678	1940	54	4.11	5.09	8.29	10.99	7.11	18.10
17:00-18:00	A2	2	46	97	727	2080	54	4.04	5.44	8.87	11.59	7.61	19.19
17:00-18:00	Ac	1	21	333	221	2015	37	1.72	0.67	9.41	1.50	0.61	2.11

17:00-18:00	Ac	2	45	99	514	2155	37	3.49	10.22	143.95	7.09	22.94	88.62
17:00-18:00	Ac	3	2	5467	17	2033	37	0.03	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Ax	1	42	113	680	2105	54	1.32	0.92	3.12	3.53	1.32	4.85
17:00-18:00	Ax	2	41	118	648	2055	54	0.89	0.22	0.76	2.27	0.36	2.62
17:00-18:00	Ax2	1	38	138	680	1800	72	0.61	0.11	0.18	1.62	0.00	1.62
17:00-18:00	Ax2	2	36	150	648	1800	72	0.56	0.10	0.16	1.44	0.00	1.44
17:00-18:00	B1	1	65	37	925	1754	57	5.28	8.07	46.39	19.28	11.14	30.42
17:00-18:00	B3	1	87	3	1567	1800	72	6.52	2.84	54.38	40.29	0.00	40.29
17:00-18:00	B3	2	36	153	641	1800	72	0.55	0.10	1.89	1.40	0.00	1.40
17:00-18:00	Bc	1	35	154	321	1973	32	2.08	0.27	2.86	2.64	0.96	3.60
17:00-18:00	Bc	2	35	158	338	2113	32	3.24	0.61	6.53	4.33	1.19	5.51
17:00-18:00	Bc	3	70	28	641	1993	32	5.69	9.71	103.89	14.38	7.15	70.38
17:00-18:00	Bx	1	47	93	706	2055	52	3.95	4.91	188.13	10.99	6.52	17.51
17:00-18:00	Bx	2	39	130	592	2055	52	1.24	0.43	16.43	2.90	0.70	3.60
17:00-18:00	Bx	3	36	153	538	2055	52	1.10	0.36	13.61	2.34	0.58	2.92
17:00-18:00	Bx2	1	39	130	706	1800	72	0.77	4.24	69.68	2.13	2.39	4.52
17:00-18:00	Bx2	2	33	174	592	1800	72	0.59	4.30	70.68	1.38	1.01	2.39
17:00-18:00	Bx2	3	30	201	538	1800	72	0.43	0.06	1.05	0.91	0.00	0.91
17:00-18:00	Bx3	1	72	25	1298	1800	72	4.91	12.51	239.82	25.12	21.19	46.31
17:00-18:00	Bx3	2	30	201	538	1800	72	0.43	0.06	1.22	0.91	0.00	0.91
17:00-18:00	C2	1	35	154	506	1940	52	4.09	3.61	28.99	8.16	5.25	13.41
17:00-18:00	C2	2	56	61	856	2080	52	5.75	7.96	63.92	19.41	11.39	30.80
17:00-18:00	C2	3	46	95	705	2080	52	4.80	5.68	45.59	13.34	8.25	21.59
17:00-18:00	Cc	1	56	60	648	1847	44	5.34	5.19	57.99	13.64	6.01	87.98
17:00-18:00	Cc	2	52	72	648	1987	44	4.80	4.90	54.68	12.27	5.68	74.53
17:00-18:00	Cc	3	60	50	705	1875	44	4.75	8.42	93.99	13.21	22.95	186.99
17:00-18:00	Cx	1	62	44	925	2015	52	4.23	4.03	16.36	15.45	5.58	21.03
17:00-18:00	Cx	2	14	531	221	2105	52	0.20	0.01	0.05	0.17	0.02	0.19
17:00-18:00	Cx	3	33	171	514	2105	52	0.59	2.44	9.92	1.19	0.18	1.36
17:00-18:00	Cx2	1	51	75	925	1800	72	1.06	2.78	15.39	3.88	0.97	4.85

17:00-18:00	Cx2	2	12	633	221	1800	72	0.14	0.01	0.05	0.12	0.00	0.12
17:00-18:00	Cx2	3	29	215	514	1800	72	0.72	6.58	36.45	1.45	2.52	3.97
17:00-18:00	D3	1	29	213	518	1800	72	0.40	0.06	1.11	0.83	0.00	0.83
17:00-18:00	D3	2	63	43	1136	1800	72	1.70	0.54	10.31	7.64	0.00	7.64
17:00-18:00	Dc	1	39	128	529	2015	47	1.86	1.05	13.61	3.89	1.47	7.42
17:00-18:00	Dc	2	41	118	592	2155	47	1.85	1.11	14.41	4.33	1.69	10.66
17:00-18:00	Dc	3	44	106	592	2033	47	2.01	1.14	14.74	4.69	1.75	12.13
17:00-18:00	Dx	1	53	69	827	2105	52	1.77	1.55	44.46	5.78	1.14	6.92
17:00-18:00	Dx	2	22	312	338	2105	52	1.31	1.38	39.63	1.75	0.66	2.40
17:00-18:00	Dx	3	8	1016	125	2105	52	0.47	0.21	6.17	0.23	0.10	0.33
17:00-18:00	Dx2	1	46	96	827	1800	72	0.85	0.19	0.99	2.77	0.00	2.77
17:00-18:00	Dx2	2	19	379	338	1800	72	0.23	0.02	0.11	0.31	0.00	0.31
17:00-18:00	Dx2	3	7	1196	125	1800	72	0.07	0.00	0.01	0.04	0.00	0.04
17:00-18:00	Dx3	1	46	96	827	1800	72	0.85	0.19	3.74	2.77	0.00	2.77
17:00-18:00	Dx3	2	26	250	463	1800	72	0.35	0.04	0.85	0.63	0.00	0.63

Traffic Stream Results: Flows And Signals

Time Segment	Arm	Traffic Stream	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Calculated Sat Flow (PCU/hr)	Calculated Capacity (PCU/hr)	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity (%)	Mean Modulus Of Error	Actual Green (s per cycle)	Effective Green (s per cycle)
17:00-18:00	A	1	678	370	0		1905	370	183!	✓	-51	0.38	13	14
17:00-18:00	A	2	727	504	0		2594	504	144!	✓	-38	0.38	13	14
17:00-18:00	B	2	642	642	-1	✓	2055	685	94!	✓	-4	0.00	23	24
17:00-18:00	B	3	641	641	0		2055	685	94!	✓	-4	0.00	23	24
17:00-18:00	C	1	506	506	0		1762	710	71		26	0.44	28	29
17:00-18:00	C	2	856	780	-1		1937	780	110!	✓	-18	0.45	28	29
17:00-18:00	C	3	705	705	-1		2200	886	80		13	0.45	28	29
17:00-18:00	D	1	518	326	0		1804	326	159!	✓	-43	0.00	12	13
17:00-18:00	D	2	568	357	0		1979	357	159!	✓	-43	0.00	12	13
17:00-18:00	D	3	568	357	0		1979	357	159!	✓	-43	0.00	12	13
17:00-18:00	A2	1	678	678	0		1940	1482	46		97	0.00	54	55
17:00-18:00	A2	2	727	727	0		2080	1589	46		97	0.00	54	55

17:00-18:00	Ac	1	221	221	177	✓	2015	1063	21		333	1.26	37	38
17:00-18:00	Ac	2	514	514	231	✓	2155	1137	45		99	1.41	37	38
17:00-18:00	Ac	3	17	17	8	✓	2033	1073	2		5467	1.51	37	38
17:00-18:00	Ax	1	680	680	56	✓	2105	1608	42		113	0.56	54	55
17:00-18:00	Ax	2	648	648	37	✓	2055	1570	41		118	0.64	54	55
17:00-18:00	Ax2	1	680	680	56	✓	1800	1800	38		138	0.41	72	72
17:00-18:00	Ax2	2	648	648	37	✓	1800	1800	36		150	0.44	72	72
17:00-18:00	B1	1	925	925	0		1754	1413	65		37	0.00	57	58
17:00-18:00	B3	1	1567	1567	-1	✓	1800	1800	87		3	0.00	72	72
17:00-18:00	B3	2	641	641	0		1800	1800	36		153	0.00	72	72
17:00-18:00	Bc	1	321	321	-1	✓	1973	904	35		154	1.25	32	33
17:00-18:00	Bc	2	338	338	7	✓	2113	968	35		158	1.15	32	33
17:00-18:00	Bc	3	641	641	0		1993	913	70		28	1.25	32	33
17:00-18:00	Bx	1	706	706	320	✓	2055	1513	47		93	0.57	52	53
17:00-18:00	Bx	2	592	592	210	✓	2055	1513	39		130	0.87	52	53
17:00-18:00	Bx	3	538	538	179	✓	2055	1513	36		153	0.85	52	53
17:00-18:00	Bx2	1	706	706	320	✓	1800	1800	39		130	0.80	72	72
17:00-18:00	Bx2	2	592	592	210	✓	1800	1800	33		174	0.80	72	72
17:00-18:00	Bx2	3	538	538	179	✓	1800	1800	30		201	0.78	72	72
17:00-18:00	Bx3	1	1298	1298	530	✓	1800	1800	72		25	0.69	72	72
17:00-18:00	Bx3	2	538	538	179	✓	1800	1800	30		201	0.74	72	72
17:00-18:00	C2	1	506	506	0		1940	1428	35		154	0.00	52	53
17:00-18:00	C2	2	856	856	-1		2080	1531	56		61	0.00	52	53
17:00-18:00	C2	3	705	705	-1		2080	1531	46		95	0.00	52	53
17:00-18:00	Cc	1	648	648	37	✓	1847	1154	56		60	0.45	44	45
17:00-18:00	Cc	2	648	648	37	✓	1987	1242	52		72	0.45	44	45
17:00-18:00	Cc	3	705	705	-1		1875	1172	60		50	1.13	44	45
17:00-18:00	Cx	1	925	925	0		2015	1483	62		44	0.33	52	53
17:00-18:00	Cx	2	221	221	177	✓	2105	1550	14		531	1.33	52	53
17:00-18:00	Cx	3	514	514	231	✓	2105	1550	33		171	1.30	52	53

17:00-18:00	Cx2	1	925	925	0		1800	1800	51		75	0.49	72	72
17:00-18:00	Cx2	2	221	221	177	✓	1800	1800	12		633	1.24	72	72
17:00-18:00	Cx2	3	514	514	231	✓	1800	1800	29		215	1.23	72	72
17:00-18:00	D3	1	518	518	0		1800	1800	29		213	0.00	72	72
17:00-18:00	D3	2	1136	1136	0		1800	1800	63		43	0.00	72	72
17:00-18:00	Dc	1	529	529	173	✓	2015	1343	39		128	0.72	47	48
17:00-18:00	Dc	2	592	592	210	✓	2155	1437	41		118	0.76	47	48
17:00-18:00	Dc	3	592	592	210	✓	2033	1355	44		106	0.76	47	48
17:00-18:00	Dx	1	827	827	-1	✓	2105	1550	53		69	0.57	52	53
17:00-18:00	Dx	2	338	338	7	✓	2105	1550	22		312	1.21	52	53
17:00-18:00	Dx	3	125	125	0		2105	1550	8		1016	1.23	52	53
17:00-18:00	Dx2	1	827	827	-1	✓	1800	1800	46		96	0.52	72	72
17:00-18:00	Dx2	2	338	338	7	✓	1800	1800	19		379	1.24	72	72
17:00-18:00	Dx2	3	125	125	0		1800	1800	7		1196	1.23	72	72
17:00-18:00	Dx3	1	827	827	-1	✓	1800	1800	46		96	0.50	72	72
17:00-18:00	Dx3	2	463	463	7	✓	1800	1800	26		250	1.22	72	72

Traffic Stream Results: Stops And Delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
17:00-18:00	A	1	12.90	833.91	2.67	154.39	2230.17	446.03	464.84	370.42	1351.43	55.92	0.00
17:00-18:00	A	2	12.90	573.83	3.49	112.39	1645.53	329.11	382.19	504.44	1423.52	62.61	0.00
17:00-18:00	B	2	7.46	53.58	4.15	5.40	135.68	27.14	129.82	589.76	243.68	27.07	0.00
17:00-18:00	B	3	7.46	53.08	4.14	5.31	134.21	26.84	129.24	588.58	239.83	26.90	0.00
17:00-18:00	C	1	11.48	22.54	2.30	0.87	44.98	9.00	64.98	286.11	42.67	10.68	0.00
17:00-18:00	C	2	11.48	195.98	4.20	42.40	661.71	132.34	246.55	707.72	1215.80	62.46	0.00
17:00-18:00	C	3	11.48	23.67	3.13	1.51	65.81	13.16	67.59	403.05	73.47	15.47	0.00
17:00-18:00	D	1	9.69	692.47	2.67	96.97	1414.88	282.98	415.11	325.72	1026.39	43.91	0.00
17:00-18:00	D	2	9.69	691.49	2.93	106.17	1549.25	309.85	414.95	357.32	1125.39	48.15	0.00
17:00-18:00	D	3	9.69	691.49	2.93	106.17	1549.25	309.85	414.95	357.32	1125.39	48.15	0.00

17:00-18:00	A2	1	26.32	4.11	0.58	0.19	10.99	10.99	32.31	209.45	9.60	7.11	7.11
17:00-18:00	A2	2	26.32	4.04	0.62	0.19	11.59	11.59	32.22	224.61	9.60	7.61	7.61
17:00-18:00	Ac	1	4.57	1.72	0.08	0.03	1.50	1.50	13.07	27.52	1.36	0.42	0.61
17:00-18:00	Ac	2	4.56	3.49	0.31	0.19	7.09	7.09	65.84	329.23	9.26	4.90	22.94
17:00-18:00	Ac	3	4.57	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Ax	1	12.60	1.32	0.09	0.15	3.53	3.53	5.97	32.84	7.70	1.32	1.32
17:00-18:00	Ax	2	12.60	0.89	0.01	0.14	2.27	2.27	1.70	3.78	7.23	0.36	0.36
17:00-18:00	Ax2	1	26.84	0.61	0.00	0.11	1.62	1.62	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Ax2	2	26.84	0.56	0.00	0.10	1.44	1.44	0.00	0.00	0.00	0.00	0.00
17:00-18:00	B1	1	7.46	5.28	0.74	0.62	19.28	19.28	37.09	312.47	30.61	11.14	11.14
17:00-18:00	B3	1	3.60	6.52	0.00	2.84	40.29	40.29	0.00	0.00	0.00	0.00	0.00
17:00-18:00	B3	2	2.24	0.55	0.00	0.10	1.40	1.40	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Bc	1	6.01	2.08	0.09	0.10	2.64	2.64	4.16	8.50	4.86	0.19	0.96
17:00-18:00	Bc	2	6.01	3.24	0.21	0.09	4.33	4.33	9.02	25.84	4.67	0.44	1.19
17:00-18:00	Bc	3	6.01	5.69	0.20	0.82	14.38	14.38	15.46	58.93	40.18	1.43	7.15
17:00-18:00	Bx	1	1.12	3.95	0.57	0.20	10.99	10.99	28.43	190.49	10.15	6.52	6.52
17:00-18:00	Bx	2	1.12	1.24	0.08	0.13	2.90	2.90	3.62	15.14	6.28	0.70	0.70
17:00-18:00	Bx	3	1.12	1.10	0.07	0.10	2.34	2.34	3.30	12.85	4.90	0.58	0.58
17:00-18:00	Bx2	1	1.96	0.77	0.02	0.13	2.13	2.13	5.87	35.11	6.30	2.39	2.39
17:00-18:00	Bx2	2	2.61	0.59	0.02	0.08	1.38	1.38	5.27	27.21	4.03	1.01	1.01
17:00-18:00	Bx2	3	2.61	0.43	0.00	0.06	0.91	0.91	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Bx3	1	2.24	4.91	0.84	0.93	25.12	25.12	50.26	561.40	91.01	21.19	21.19
17:00-18:00	Bx3	2	2.24	0.43	0.00	0.06	0.91	0.91	0.00	0.00	0.00	0.00	0.00
17:00-18:00	C2	1	5.34	4.09	0.48	0.10	8.16	8.16	31.96	156.89	4.84	5.25	5.25
17:00-18:00	C2	2	5.34	5.75	1.01	0.35	19.41	19.41	40.98	333.22	17.58	11.39	11.39
17:00-18:00	C2	3	5.34	4.80	0.74	0.20	13.34	13.34	36.05	244.37	9.77	8.25	8.25
17:00-18:00	Cc	1	5.76	5.34	0.60	0.36	13.64	13.64	36.01	215.62	17.78	3.37	6.01
17:00-18:00	Cc	2	5.76	4.80	0.58	0.28	12.27	12.27	33.77	204.73	14.12	3.16	5.68
17:00-18:00	Cc	3	5.76	4.75	0.48	0.45	13.21	13.21	45.12	273.62	44.50	4.59	22.95
17:00-18:00	Cx	1	10.55	4.23	0.57	0.51	15.45	15.45	18.57	146.20	25.55	5.58	5.58

17:00-18:00	Cx	2	10.55	0.20	0.00	0.01	0.17	0.17	0.29	0.04	0.59	0.02	0.02
17:00-18:00	Cx	3	10.55	0.59	0.00	0.08	1.19	1.19	1.06	1.32	4.11	0.18	0.18
17:00-18:00	Cx2	1	5.80	1.06	0.00	0.27	3.88	3.88	1.82	3.31	13.51	0.97	0.97
17:00-18:00	Cx2	2	7.74	0.14	0.00	0.01	0.12	0.12	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Cx2	3	7.74	0.72	0.05	0.06	1.45	1.45	15.09	74.72	2.85	2.52	2.52
17:00-18:00	D3	1	2.24	0.40	0.00	0.06	0.83	0.83	0.00	0.00	0.00	0.00	0.00
17:00-18:00	D3	2	2.24	1.70	0.00	0.54	7.64	7.64	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Dc	1	4.96	1.86	0.15	0.13	3.89	3.89	8.53	38.77	6.38	0.65	1.47
17:00-18:00	Dc	2	4.96	1.85	0.16	0.14	4.33	4.33	8.15	41.08	7.20	0.70	1.69
17:00-18:00	Dc	3	4.96	2.01	0.16	0.17	4.69	4.69	8.38	41.23	8.44	0.72	1.75
17:00-18:00	Dx	1	1.84	1.77	0.10	0.30	5.78	5.78	6.93	42.11	15.17	1.14	1.14
17:00-18:00	Dx	2	2.40	1.31	0.09	0.03	1.75	1.75	15.48	50.86	1.52	0.66	0.66
17:00-18:00	Dx	3	2.40	0.47	0.01	0.00	0.23	0.23	6.54	8.00	0.18	0.10	0.10
17:00-18:00	Dx2	1	8.43	0.85	0.00	0.19	2.77	2.77	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Dx2	2	8.43	0.23	0.00	0.02	0.31	0.31	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Dx2	3	8.43	0.07	0.00	0.00	0.04	0.04	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Dx3	1	2.24	0.85	0.00	0.19	2.77	2.77	0.00	0.00	0.00	0.00	0.00
17:00-18:00	Dx3	2	2.24	0.35	0.00	0.04	0.63	0.63	0.00	0.00	0.00	0.00	0.00

Traffic Stream Results: Queues And Blocking

Time Segment	Arm	Traffic Stream	Initial Queue (PCU)	Mean Max Queue (PCU)	Max Queue Storage (PCU)	Utilised Storage (%)	Average Link Excess Queue (PCU)	Average Limit Excess Queue (PCU)	Excess Queue Penalty (£ per hr)	Max End Of Green Queue (PCU)	Max End Of Red Queue (PCU)	Wasted Time Starvation (s (per cycle))	Wasted Time Blocking Back (s (per cycle))	Wasted Time Total (s (per cycle))	Estimated Blocking
17:00-18:00	A	1	0.00	161.69	30.09	537.42	127.64	0.00	0.00	154.39	160.36	0.00	5.00	5.00	
17:00-18:00	A	2	0.00	122.34	30.09	406.62	86.84	0.00	0.00	112.39	120.52	0.00	1.00	1.00	
17:00-18:00	B	2	0.00	17.71	17.39	101.83	0.01	0.00	0.00	5.40	13.96	0.00	0.00	0.00	
17:00-18:00	B	3	0.00	17.60	17.39	101.18	0.00	0.00	0.00	5.31	13.86	0.00	0.00	0.00	
17:00-18:00	C	1	0.00	6.60	26.78	24.65	0.00	0.00	0.00	0.87	6.52	1.00	0.00	1.00	
17:00-18:00	C	2	0.00	57.65	26.78	215.24	22.85	0.00	0.00	42.40	51.44	0.00	0.00	0.00	
17:00-18:00	C	3	0.00	9.58	26.78	35.77	0.00	0.00	0.00	1.51	9.46	1.00	0.00	1.00	
17:00-18:00	D	1	0.00	103.39	22.61	457.32	77.57	0.00	0.00	96.97	102.31	0.00	0.00	0.00	

17:00-18:00	D	2	0.00	113.22	22.61	500.78	87.09	0.00	0.00	106.17	112.03	0.00	0.00	0.00	
17:00-18:00	D	3	0.00	113.22	22.61	500.78	87.09	0.00	0.00	106.17	112.03	0.00	0.00	0.00	
17:00-18:00	A2	1	0.00	5.09	61.39	8.29	0.00	0.00	0.00	0.19	3.39	0.00	55.00	55.00	
17:00-18:00	A2	2	0.00	5.44	61.39	8.87	0.00	0.00	0.00	0.19	3.63	0.00	55.00	55.00	
17:00-18:00	Ac	1	0.00	0.67	7.10	9.41	0.00	0.00	0.00	0.03	0.55	20.00	0.00	20.00	
17:00-18:00	Ac	2	0.00	10.22	7.10	143.95	0.19	0.98	58.59	0.19	0.70	17.00	0.00	17.00	
17:00-18:00	Ac	3	0.00	0.00	7.10	0.00	0.00	0.00	0.00	0.00	0.00	25.00	0.00	25.00	
17:00-18:00	Ax	1	0.00	0.92	29.39	3.12	0.00	0.00	0.00	0.15	0.79	0.00	0.00	0.00	
17:00-18:00	Ax	2	0.00	0.22	29.39	0.76	0.00	0.00	0.00	0.14	0.22	0.00	0.00	0.00	
17:00-18:00	Ax2	1	0.00	0.11	62.61	0.18	0.00	0.00	0.00			1.00	0.00	1.00	
17:00-18:00	Ax2	2	0.00	0.10	62.61	0.16	0.00	0.00	0.00			1.00	0.00	1.00	
17:00-18:00	B1	1	0.00	8.07	17.39	46.39	0.00	0.00	0.00	0.62	4.21	0.00	0.00	0.00	
17:00-18:00	B3	1	0.00	2.84	5.22	54.38	0.00	0.00	0.00			0.00	2.00	2.00	
17:00-18:00	B3	2	0.00	0.10	5.22	1.89	0.00	0.00	0.00			0.00	2.00	2.00	
17:00-18:00	Bc	1	0.00	0.27	9.35	2.86	0.00	0.00	0.00	0.10	0.27	7.00	0.00	7.00	
17:00-18:00	Bc	2	0.00	0.61	9.35	6.53	0.00	0.00	0.00	0.09	0.61	7.00	0.00	7.00	
17:00-18:00	Bc	3	0.00	9.71	9.35	103.89	0.01	0.81	48.85	0.82	1.15	7.00	0.00	7.00	
17:00-18:00	Bx	1	0.00	4.91	2.61	188.13	0.23	0.00	0.00	0.20	3.90	4.00	0.00	4.00	
17:00-18:00	Bx	2	0.00	0.43	2.61	16.43	0.00	0.00	0.00	0.13	0.43	9.00	0.00	9.00	
17:00-18:00	Bx	3	0.00	0.36	2.61	13.61	0.00	0.00	0.00	0.10	0.36	9.00	0.00	9.00	
17:00-18:00	Bx2	1	0.00	4.24	6.09	69.68	0.00	0.00	0.00			20.00	19.00	39.00	
17:00-18:00	Bx2	2	0.00	4.30	6.09	70.68	0.00	0.00	0.00			22.00	20.00	42.00	
17:00-18:00	Bx2	3	0.00	0.06	6.09	1.05	0.00	0.00	0.00			22.00	0.00	22.00	
17:00-18:00	Bx3	1	0.00	12.51	5.22	239.82	1.86	0.00	0.00			8.00	0.00	8.00	
17:00-18:00	Bx3	2	0.00	0.06	5.22	1.22	0.00	0.00	0.00			19.00	0.00	19.00	
17:00-18:00	C2	1	0.00	3.61	12.46	28.99	0.00	0.00	0.00	0.10	2.77	0.00	0.00	0.00	
17:00-18:00	C2	2	0.00	7.96	12.46	63.92	0.00	0.00	0.00	0.35	4.87	0.00	53.00	53.00	
17:00-18:00	C2	3	0.00	5.68	12.46	45.59	0.00	0.00	0.00	0.20	3.92	0.00	0.00	0.00	
17:00-18:00	Cc	1	0.00	5.19	8.95	57.99	0.00	0.34	68.32	0.36	3.19	0.00	0.00	0.00	
17:00-18:00	Cc	2	0.00	4.90	8.95	54.68	0.00	0.28	56.57	0.28	3.12	0.00	0.00	0.00	

17:00-18:00	Cc	3	0.00	8.42	8.95	93.99	0.00	0.75	150.83	0.45	1.25	15.00	0.00	15.00	
17:00-18:00	Cx	1	0.00	4.03	24.61	16.36	0.00	0.00	0.00	0.51	3.05	0.00	0.00	0.00	
17:00-18:00	Cx	2	0.00	0.01	24.61	0.05	0.00	0.00	0.00	0.01	0.01	28.00	0.00	28.00	
17:00-18:00	Cx	3	0.00	2.44	24.61	9.92	0.00	0.00	0.00	0.08	0.08	24.00	0.00	24.00	
17:00-18:00	Cx2	1	0.00	2.78	18.04	15.39	0.00	0.00	0.00			14.00	0.00	14.00	
17:00-18:00	Cx2	2	0.00	0.01	18.04	0.05	0.00	0.00	0.00			43.00	0.00	43.00	
17:00-18:00	Cx2	3	0.00	6.58	18.04	36.45	0.00	0.00	0.00			39.00	0.00	39.00	
17:00-18:00	D3	1	0.00	0.06	5.22	1.11	0.00	0.00	0.00			0.00	72.00	72.00	
17:00-18:00	D3	2	0.00	0.54	5.22	10.31	0.00	0.00	0.00			0.00	72.00	72.00	
17:00-18:00	Dc	1	0.00	1.05	7.71	13.61	0.00	0.00	2.06	0.13	0.90	5.00	3.00	8.00	
17:00-18:00	Dc	2	0.00	1.11	7.71	14.41	0.00	0.00	4.65	0.14	0.96	5.00	0.00	5.00	
17:00-18:00	Dc	3	0.00	1.14	7.71	14.74	0.00	0.00	5.68	0.17	0.99	5.00	0.00	5.00	
17:00-18:00	Dx	1	0.00	1.55	3.48	44.46	0.00	0.00	0.00	0.30	1.09	1.00	0.00	1.00	
17:00-18:00	Dx	2	0.00	1.38	3.48	39.63	0.00	0.00	0.00	0.03	0.92	29.00	0.00	29.00	
17:00-18:00	Dx	3	0.00	0.21	3.48	6.17	0.00	0.00	0.00	0.00	0.21	30.00	0.00	30.00	
17:00-18:00	Dx2	1	0.00	0.19	19.65	0.99	0.00	0.00	0.00			12.00	0.00	12.00	
17:00-18:00	Dx2	2	0.00	0.02	19.65	0.11	0.00	0.00	0.00			43.00	0.00	43.00	
17:00-18:00	Dx2	3	0.00	0.00	19.65	0.01	0.00	0.00	0.00			45.00	0.00	45.00	
17:00-18:00	Dx3	1	0.00	0.19	5.22	3.74	0.00	0.00	0.00			11.00	0.00	11.00	
17:00-18:00	Dx3	2	0.00	0.04	5.22	0.85	0.00	0.00	0.00			41.00	0.00	41.00	

Traffic Stream Results: Flare

Time Segment	Arm	Traffic Stream	Flare Present	Flare Components	Degree Of Saturation (%)	Mean Max Queue (PCU)	Calculated Capacity (PCU/hr)	Practical Reserve Capacity (%)
17:00-18:00	A	2	✓	Quick Flare	144	122.34	504	-38
17:00-18:00	C	3	✓	Quick Flare	80	9.58	886	13

Traffic Stream Results: Advanced

Time Segment	Arm	Traffic Stream	Degree Of Saturation Penalty (£ per hr)	Phase Min Max Penalty (£ per hr)	Intergreen Broken Penalty (£ per hr)	Stage Constraint Broken Penalty (£ per hr)	Ped Gap Accepting Penalty (£ per hr)	Warmed Up	Warmed Up Error	Mean Max Queue EoTS (PCU)	Max End Of Green Queue Eo TS (PCU)	Max End Of Red Queue Eo TS (PCU)	Cost Of Penalties (£ per hr)	Unweighted Performance Index (£ per hr)	Perfo Inde
17:00-18:00	A	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	315.49	308.18	314.15	0.00	2286.08	44
17:00-18:00	A	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	233.63	223.68	231.80	0.00	1708.14	32

17:00-18:00	B	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	18.33	6.02	14.58	0.00	162.74	2
17:00-18:00	B	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	18.19	5.90	14.45	0.00	161.11	2
17:00-18:00	C	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.61	0.88	6.52	0.00	55.66	9
17:00-18:00	C	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	95.84	80.60	89.64	0.00	724.17	13
17:00-18:00	C	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	9.60	1.53	9.48	0.00	81.29	1
17:00-18:00	D	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	199.54	193.12	198.45	0.00	1458.79	28
17:00-18:00	D	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	218.57	211.52	217.38	0.00	1597.40	30
17:00-18:00	D	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	218.57	211.52	217.38	0.00	1597.40	30
17:00-18:00	A2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	5.09	0.19	3.39	0.00	18.10	1
17:00-18:00	A2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	5.44	0.19	3.63	0.00	19.19	1
17:00-18:00	Ac	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.67	0.03	0.55	0.00	1.92	2
17:00-18:00	Ac	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	10.22	0.19	0.70	58.59	11.99	8
17:00-18:00	Ac	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.00	0.00	0.00	0.00	0.00	0
17:00-18:00	Ax	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.92	0.15	0.79	0.00	4.85	4
17:00-18:00	Ax	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.22	0.15	0.22	0.00	2.62	2
17:00-18:00	Ax2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.11			0.00	1.62	1
17:00-18:00	Ax2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.10			0.00	1.44	1
17:00-18:00	B1	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	8.07	0.62	4.22	0.00	30.42	3
17:00-18:00	B3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.88			0.00	40.29	4
17:00-18:00	B3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.10			0.00	1.40	1
17:00-18:00	Bc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.27	0.10	0.27	0.00	2.83	3
17:00-18:00	Bc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.61	0.09	0.61	0.00	4.77	5
17:00-18:00	Bc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	9.71	0.82	1.16	48.85	15.81	7
17:00-18:00	Bx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.91	0.20	3.90	0.00	17.51	1
17:00-18:00	Bx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.43	0.13	0.43	0.00	3.60	3
17:00-18:00	Bx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.36	0.10	0.36	0.00	2.92	2
17:00-18:00	Bx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.24			0.00	4.52	4
17:00-18:00	Bx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.30			0.00	2.39	2
17:00-18:00	Bx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.06			0.00	0.91	0
17:00-18:00	Bx3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	12.52			0.00	46.31	4

17:00-18:00	Bx3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.06			0.00	0.91	0
17:00-18:00	C2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	3.61	0.10	2.77	0.00	13.41	1
17:00-18:00	C2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	7.96	0.35	4.87	0.00	30.80	3
17:00-18:00	C2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	5.68	0.20	3.92	0.00	21.59	2
17:00-18:00	Cc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	5.19	0.36	3.19	68.32	17.01	8
17:00-18:00	Cc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.90	0.28	3.12	56.57	15.43	7
17:00-18:00	Cc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	8.42	0.45	1.25	150.83	17.80	18
17:00-18:00	Cx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	4.03	0.52	3.05	0.00	21.03	2
17:00-18:00	Cx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.01	0.01	0.01	0.00	0.19	0
17:00-18:00	Cx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.44	0.08	0.08	0.00	1.36	1
17:00-18:00	Cx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	2.78			0.00	4.85	4
17:00-18:00	Cx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.01			0.00	0.12	0
17:00-18:00	Cx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	6.58			0.00	3.97	3
17:00-18:00	D3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.06			0.00	0.83	0
17:00-18:00	D3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.54			0.00	7.64	7
17:00-18:00	Dc	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.05	0.13	0.90	2.06	4.54	7
17:00-18:00	Dc	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.11	0.14	0.96	4.65	5.02	1
17:00-18:00	Dc	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.14	0.17	0.99	5.68	5.40	1
17:00-18:00	Dx	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.55	0.31	1.09	0.00	6.92	6
17:00-18:00	Dx	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	1.38	0.03	0.92	0.00	2.40	2
17:00-18:00	Dx	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.21	0.00	0.21	0.00	0.33	0
17:00-18:00	Dx2	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.20			0.00	2.77	2
17:00-18:00	Dx2	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.02			0.00	0.31	0
17:00-18:00	Dx2	3	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.00			0.00	0.04	0
17:00-18:00	Dx3	1	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.20			0.00	2.77	2
17:00-18:00	Dx3	2	0.00	0.00	0.00	0.00	0.00	✓	0.00	0.04			0.00	0.63	0

Network Results

Run Summary

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Network Cycle Time (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC	Network With Capacity
A2 - 2031 PM Peak	22/04/2014 10:07:05	22/04/2014 10:07:16	17:00	72	685.80	183.04	A/1	8	12	A/1	B3/1	A/1	

Network Results: Vehicle Summary

Time Segment	Degree Of Saturation (%)	Practical Reserve Capacity (%)	Calculated Flow Entering (PCU/hr)	Actual Green (s per cycle)	Mean Delay Per PCU (s)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	183!	-51	35791	2937	68.98	2193.24	168.37	2757.17

Network Results: Pedestrian Summary

Time Segment	Degree Of Saturation (%)	Calculated Flow Entering (Ped/hr)	Actual Green (s per cycle)	Mean Delay Per Ped (s)	Weighted Cost Of Delay (£ per hr)	Performance Index (£ per hr)
17:00-18:00	183!	0	0	0.00	0.00	0.00

Network Results: Flows And Signals

Time Segment	Calculated Flow Entering (PCU/hr)	Calculated Flow Out (PCU/hr)	Flow Discrepancy (PCU/hr)	Adjusted Flow Warning	Degree Of Saturation (%)	DOS Threshold Exceeded	Practical Reserve Capacity (%)	Actual Green (s per cycle)	Effective Green (s per cycle)
17:00-18:00	35791	34572	4233	✓	183!	✓	-51	2937	2976

Network Results: Stops And Delays

Time Segment	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU-hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Unweighted Cost Of Delay (£ per hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Uniform Stops (Stops per hr)	Random Stops (Stops per hr)	Unweighted Cost Of Stops (£ per hr)	Weighted Cost Of Stops (£ per hr)
17:00-18:00	7.61	68.98	42.32	643.48	9738.40	2193.24	60.81	8441.89	8309.36	517.85	168.37

Network Results: Queues And Blocking

Time Segment	Max Queue Storage (PCU)	Excess Queue Penalty (£ per hr)	Wasted Time Starvation (s per cycle)	Wasted Time Blocking Back (s per cycle)	Wasted Time Total (s per cycle)
17:00-18:00	969.18	395.56	590.00	359.00	949.00



Capabilities on project:
Transportation

Appendix I – Cost Estimate for Preferred Option

Title	PRELIMINARY COST ESTIMATE		Client	BIRMINGHAM CITY COUNCIL
			Project Name	Tyburn Roundabout
			Project Number	60316861
			Calculation number	60316861/COST/AC/001
			Location	60316861/03/Cost Estimate/Tyburn
			Prepared by	AC
			Date	31/03/2014
			Checked by	PSE
	SUMMARY SHEET			
Series	Description	COST (£)		
200	Site Clearance	7968.97		
300	Fencing	0.00		
400	Safety Fencing, Barriers and Guard Rails	5074.16		
500	Drainage and Service Ducts	113697.81		
600	Earthworks	68185.16		
700	Pavement	125508.25		
1100	Footways and Paved Areas	73405.19		
1200	Traffic signs and Road Markings	35000.56		
1300	Lighting Columns and CCTV Masts	3515.15		
1400	Electrical Works for Lighting Columns and Traffic Signs	10748.01		
1700	Structural Concrete	0.00		
2400	Brickwork, Blockwork and Stonework	0.00		
2600	Miscellaneous	0.00		
3000	Landscaping and Ecology	98.80		
TSE	Traffic Signal Equipment	242801.00		
		Subtotal	686003.06	
	PRELIMINARIES @	20%	137200.61	
	TRAFFIC MANAGEMENT	45%	308701.38	
		Subtotal	1131905.05	
	SCHEME DEVELOPMENT FEES @	10%	113190.50	
		Subtotal	1245095.55	
	OPTIMISM BIAS	44%	547842.04	
		TOTAL	1792937.59	

Notes

Based on Drg 60316861-SKE-20-CT-002

Standard Caveats and exclusions:

- * - Land 3rd Party Land acquisition costs and accommodation works costs
- * - Dedication of Land, Land to be passed over to the council as highway.
- * - Legal costs
- * - Landscaping design
- * - Statutory Undertakers design fee
- * - Statutory Undertakers diversion and or protection costs
- * - Third Party Ground Investigation costs. Trial Pits and Geotechnical surveying will be supplied by third parties
- * - Traffic Regulation Orders & any associated TRO consultation
- * - Contract documentation for appointment of the preferred contractor, as this is being progressed by others.
- * - Tendering of the works

Capabilities on project:
Transportation

Appendix J – Risk Register

Project Risk Register

Project Name: BCC - Tyburn Roundabout Options
 Project Number: 60316861

RISK REGISTER

Category	Risk Factor	Before Mitigation			Mitigation Measure	After Mitigation		
		Likelihood	Consequence	Risk Level		Likelihood	Consequence	Risk Level
Statutory Undertakers								
1.01	BskyB, Main Birmingham to Leeds cable, runs along the A38 central reserve, but crosses the junction to the north and likely to be impacted by widening on Kingsbury Road (E)	H	H	H	Contact Bsky B, no works to be carried out within 600mm without contacting.	H	M	M
1.02	BT Openreach have equipment on all arms of the junction, which will be impacted by the widening works.	H	H	H	Contact BT, to establish risks and how to carry out works.	H	M	M
1.03	Geo Networks Limited, Fibre Optic cable runs in central reserve of Chester Road, likely to be affected by widening into central reserve on Chester Road S	H	H	H	Contact Geo Networks to establish risks and how to carry out works.	H	M	M
1.04	Instalcom, Fibre Optic cable runs in central reserve of Chester Road, likely to be affected by widening into central reserve on Chester Road S	H	H	H	Contact Instalcom to establish risks and how to carry out works.	H	M	M
1.05	National Grid Gas Distribution and Electricity, a gas sub-station existing on the Kingsbury Road north arm, several Medium and Low pressure mains feed into this sub-station, this will be impacted by the widening works and is likely to require protection.	H	H	H	Contact National Grid gas to establish risks and how to carry out works.	H	M	M
1.06	Severn Trent Water, water mains on all arms of junction. Likely to be affected by widening works	H	H	H	Contact Severn Trent water to establish risks and how to carry out works.	H	M	M
1.07	Sever Trent Sewers, the sewers and highway drainage run through the junction, they are unlikely to be impacted by the widening works.	M	M	M	Contact Severn Trent sewers to establish risks and how to carry out works.	M	L	L
1.08	Virgin Media, have equipment on all arms of the junction, they will be affected by the widening works.	H	M	H	Contact Virgin to establish risks and how to carry out works.	H	M	M
1.09	Vodafone, have several cables in the area of the junction, some of which will be affected by the widening works.	H	H	H	Contact Vodafone to establish risks and how to carry out works.	H	M	M
1.10	Western Power Distribution, 33kV, 11kV, under ground and overhead services affect every arm of the junction, there are several decommissioned cables that run to an abandoned sub-station. There will be impacts due to the widening required.	H	H	H	Contact Western Power to establish risks and how to carry out works.	H	M	M
Health and Safety								
1.11	Pedestrian provision during construction.	M	M	M	Ensure pedestrian walkways are maintained and barriers are implemented to protect pedestrians.	L	L	L
Cost								
1.12	Protection and mitigation of numerous statutory undertakers equipment, impacted by the scheme	H	H	M	Undertake C3 enquiries to establish cost estimates.	M	M	M
Capacity								
1.13	Uncertainty over demand forecasts. Best estimate has currently been used and also a sensitivity test has been undertaken.	M	M	M	A best estimate has been used, some caution should be taken when using the forecast.	L	M	L
1.14	Strategic model may be underestimating flows on Chester Road north, best estimate has been used	M	M	M	A best estimate has been used, some caution should be taken when using the forecast. Further review of the strategic model may be required.	L	M	L
1.15	Vertical alignment may require revision to the design which impacts on capacity, particularly on the circulatory carriageway due to steep gradients.	H	M	H	Carry out 3D design of junction at earliest opportunity and reassess capacity if required.	H	M	M
1.16	Capacity of proposed junction exceeds capacity of downstream junction towards Birmingham. Additional works are likely to be required at these junctions.	H	H	H	Capacity assessments should be completed and future plans should start to be produced.	L	M	L
Programme Risks								
1.17	Increase in impermeable area, meaning there is a possibility of an increase in flooding in the area. Therefore will require permission from Severn Trent Water.	M	M	M	This should be investigated and should contact Severn Trent to check this.	L	M	M
1.18	Junction is congested in base year. Off peak working will be needed.	H	M	M	Plans should be made that involve working to be carried out off peak only.	M	M	M
1.19	Co-ordination with statutory undertakers.	H	H	M	Undertake C3 enquiries to establish cost estimates of equipment changes.	M	M	M

LIKELIHOOD

Description	Scenario	Code Letter
High	More likely to occur than not	H
Medium	Fairly likely to happen	M
Low	Low but not impossible	L

CONSEQUENCE

Description	Scenario	Code Letter
High	Major impact on costs, objectives. Serious impact on output and/or quality and reputation. Medium to long-term effect and expensive to recover.	H
Medium	Reduces viability significant waste of time and resources and impact on operational efficiency, output, and quality. Medium term effect, which may be expensive to recover.	M
Low	Minor loss, delay, inconvenience or interruption. Short to medium term effect.	L