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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	Aexit	1	707	707	0		Unrestricted	Unrestricted	0		Unrestricted	0.66	180
	Bexit	1	73	73	0		Unrestricted	Unrestricted	0		Unrestricted	1.06	180
	Cexit	1	735	735	0		Unrestricted	Unrestricted	0		Unrestricted	0.71	180
	Dexit	1	185	185	0		Unrestricted	Unrestricted	0		Unrestricted	1.15	180
	A1	1	20	20	0		1800	850	2		3725	0.00	84
		2	609	609	0		1800	850	72		26	0.00	84
		3	38	38	0		1800	80	48		89	0.00	7
	B1	1	153	153	0		1800	230	67		35	0.00	22
		2	98	98	0		1800	170	58		56	0.00	16
	C1	1	23	23	0		1800	850	3		3226	0.00	84
		2	559	559	0		1800	850	66		37	0.00	84
		3	37	37	0		1800	80	46		95	0.00	7
	D1	1	66	66	0		1800	230	29		214	0.00	22
		2	97	97	0		1800	170	57		58	0.00	16

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aexit	1	29.41	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	32.96	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	29.22	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	31.56	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	2.49	25.42	0.14	2.01	52.68	10.54	0.13
		2	6.20	43.17	7.30	103.70	81.31	495.17	6.21
		3	6.20	103.69	1.09	15.54	107.23	40.75	0.51
	B1	1	3.14	89.88	3.82	54.24	102.51	156.84	1.97
		2	3.14	92.10	2.51	35.60	102.53	100.48	1.26
	C1	1	3.03	25.49	0.16	2.31	52.71	12.12	0.15
		2	3.64	40.40	6.27	89.07	77.41	432.73	5.43
		3	3.64	102.72	1.06	14.99	106.74	39.49	0.50
	D1	1	3.01	74.21	1.36	19.32	91.08	60.11	0.75
		2	3.01	91.73	2.47	35.10	102.34	99.27	1.24

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	Aexit	1	0.00	0.00	42.62	0.00	0.00	14.00	
	Bexit	1	0.00	0.00	47.76	0.00	0.00	128.00	
	Cexit	1	0.00	0.00	42.35	0.00	0.00	14.00	
	Dexit	1	0.00	0.00	45.74	0.00	0.00	107.00	
	A1	1	0.00	0.53	3.00	17.79	0.00	83.00	
		2	0.00	25.08	8.00	313.55	0.00	0.00	
		3	0.00	2.06	8.00	25.69	0.00	4.00	
	B1	1	0.00	7.91	4.00	197.67	0.00	0.00	
		2	0.00	5.06	4.00	126.61	0.00	0.00	
	C1	1	0.00	0.61	4.00	15.34	0.00	83.00	
		2	0.00	21.90	5.00	437.98	0.00	0.00	
		3	0.00	1.99	5.00	39.83	0.00	4.00	
	D1	1	0.00	3.03	4.00	75.69	0.00	0.00	
		2	0.00	5.00	4.00	125.10	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
10	26/09/2022 14:48:14	26/09/2022 14:48:15	17:00	100	390.04	26.19	71.65	A1/2	0	0	A1/2	Bexit/1	A1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	72	0	3400	1146	27.73	371.89	18.15	390.04

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))
17:00-18:00	3400	3400	0		72		26	1198

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	17.09	27.73	26.19	371.89	42.57	1447.50	18.15

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
17:00-18:00	437.98	0.00	437.00

A11 - DM+Full SDZ 2039 AM
D11 - DM+Full SDZ 2039 AM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
11	26/09/2022 14:48:15	26/09/2022 14:48:17	08:00	100	2525.74	174.52	134.66	C1/2	1	5	C1/2	Bexit/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM+Full SDZ 2039 AM		D11	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM+Full SDZ 2039 AM				08:00	

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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	245.07						Normal	
Bexit	1			✓	274.64						Normal	
Cexit	1			✓	243.53						Normal	
Dexit	1			✓	263.00						Normal	
A1	1				20.78	✓	Sum of lanes	1800	✓		Normal	
	2				51.65	✓	Sum of lanes	1800	✓		Normal	
	3				51.65	✓	Sum of lanes	1800	✓		Normal	
B1	1				26.15	✓	Sum of lanes	1800	✓		Normal	
	2				26.15	✓	Sum of lanes	1800	✓		Normal	
C1	1				25.24	✓	Sum of lanes	1800	✓		Normal	
	2				30.30	✓	Sum of lanes	1800	✓		Normal	
	3				30.30	✓	Sum of lanes	1800	✓		Normal	
D1	1				25.11	✓	Sum of lanes	1800	✓		Normal	
	2				25.11	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
	2	1	(untitled)			1800
	3	1	(untitled)			1800
B1	1	1	(untitled)			1800
	2	1	(untitled)			1800
C1	1	1	(untitled)			1800
	2	1	(untitled)			1800
	3	1	(untitled)			1800
D1	1	1	(untitled)			1800
	2	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		3.00		
	2	NetworkDefault	100	100	100		8.00		
	3	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		4.00		
C1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		5.00		
	3	NetworkDefault	100	100	100		5.00		
D1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		4.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	180

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	1284	1284
Bexit	1	158	158
Cexit	1	900	900
Dexit	1	259	259
A1	1	55	55
	2	644	644
	3	41	41
B1	1	183	183
	2	186	186
C1	1	61	61
	2	983	983
	3	19	19
D1	1	199	199
	2	230	230

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	C	
	2	1	B	
	3	1	A	
B1	1	1	E	
	2	1	D	
C1	1	1	F	
	2	1	G	
	3	1	H	
D1	1	1	I	
	2	1	J	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	20.37	13.58	5.40
2	(untitled)				Farside	12.44	8.29	5.40
3	(untitled)				Farside	20.29	13.53	5.40
4	(untitled)				Farside	12.34	8.23	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	M	
2	1	L	
3	1	K	
4	1	N	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	84	230	115
	2	157	0	26	186
	3	61	19	0	983
	4	41	55	644	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	Colour
1	1	(untitled)	D1/1, D1/2	Dexit/1	#0000FF
	2	(untitled)	B1/1, B1/2	Bexit/1	#FF0000
	3	(untitled)	C1/1, C1/2, C1/3	Cexit/1	#00FF00
	4	(untitled)	A1/3, A1/2, A1/1	Aexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		3	1	C1/1, Dexit/1	Normal	61
	2		3	2	C1/3, Bexit/1	Normal	19
	3		3	4	C1/2, Aexit/1	Normal	983
	4		4	1	A1/3, Dexit/1	Normal	41
	5		4	3	A1/2, Cexit/1	Normal	644
	6		4	2	A1/1, Bexit/1	Normal	55
	7		1	2	D1/1, Bexit/1	Normal	84
	8		1	4	D1/1, Aexit/1	Normal	115
	9		2	1	B1/1, Dexit/1	Normal	157
	10		2	3	B1/1, Cexit/1	Normal	26
	11		1	3	D1/2, Cexit/1	Normal	230
	12		2	4	B1/2, Aexit/1	Normal	186

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	46	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Traffic	
	E	(untitled)	7	300	0	0	Traffic	
	F	(untitled)	7	300	0	0	Traffic	
	G	(untitled)	46	300	0	0	Traffic	
	H	(untitled)	7	300	0	0	Traffic	
	I	(untitled)	7	300	0	0	Traffic	
	J	(untitled)	7	300	0	0	Traffic	
	K	(untitled)	5	300	0	0	Pedestrian	0
	L	(untitled)	5	300	0	0	Pedestrian	0
	M	(untitled)	5	300	0	0	Pedestrian	0
	N	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	H, A	1
	2	E, I	1
	3	D, J	1
	4	K, M, N, L	1
	5	C, F, B, G	1

Losing / Gaining Phase Delays

Controller stream	Delay	Type	Phase	From stage	To stage	Relative delay
1	1	Losing	A	1	2	1
	2	Losing	I	2	3	2
	3	Losing	N	4	5	1
	4	Losing	L	4	5	1
	5	Losing	F	5	1	1
	6	Losing	B	5	1	1
	7	Losing	G	5	1	2

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4, 5	25, 55, 88, 101, 12

Intergreen Matrix for Controller Stream 1

From \ To	A	B	C	D	E	F	G	H	I	J	K	L	M	N
A				5	5	6	6		6	5	5			8
B				5	5			5	6		5		7	
C								6	7		5	6		
D	6	5						5	5		8	5		
E	5	5				7	6	5		5		5	7	8
F	6				7								5	6
G	5				6				5	5	7		5	
H		6	6	5	6				5	5		8	5	
I	5	6	7	5			5	5			7	8		5
J	5				5		5	5					8	5
K	21	21	21	21			21		21					
L			13	13	13			13	13					
M		21			21	21	21	21		21				
N	13				13	13			13	13				

Interstage Matrix for Controller Stream 1

From \ To	1	2	3	4	5
1	0	7	5	8	6
2	5	0	7	8	7
3	6	5	0	8	5
4	21	21	21	0	21
5	7	7	5	7	0

Resultant Stages

Controller stream	Resultant 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	H,A	19	25	6	1	6
	2	✓	2	E,I	32	55	23	1	6
	3	✓	3	D,J	62	88	26	1	7
	4	✓	4	K,M,N,L	96	101	5	1	5
	5	✓	5	C,F,B,G	122	12	70	1	45

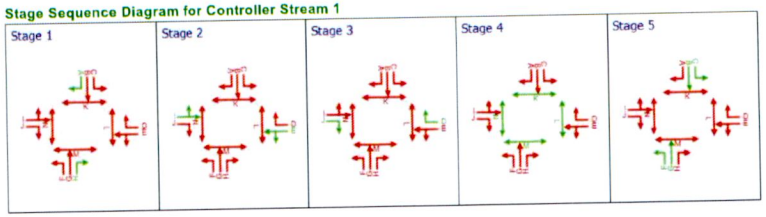
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	19	26	7
	B	1	✓	122	13	71
	C	1	✓	122	12	70
	D	1	✓	62	88	26
	E	1	✓	31	55	24
	F	1	✓	122	13	71
	G	1	✓	122	14	72
	H	1	✓	18	25	7
	I	1	✓	32	57	25
	J	1	✓	60	88	28
	K	1	✓	96	101	5
	L	1	✓	93	102	9
	M	1	✓	96	101	5
	N	1	✓	93	102	9

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	C	122	12	70
A1	2		1	B	122	13	71
A1	3		1	A	19	26	7
B1	1		1	E	31	55	24
B1	2		1	D	62	88	26
C1	1		1	F	122	13	71
C1	2		1	G	122	14	72
C1	3		1	H	18	25	7
D1	1		1	I	32	57	25
D1	2		1	J	60	88	28

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	1031	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	158	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	900	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	259	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	8	1062	55	1800	70	34.28	1.71	57.15	7.44	0.43	7.86
		2	89	1	644	1800	71	69.48	33.46	418.23	176.50	8.26	184.76
		3	51	76	41	1800	7	106.85	2.26	28.30	17.28	0.56	17.84
	B1	1	73	23	183	1800	24	93.02	9.70	242.38	67.15	2.41	69.56
		2	69	31	186	1800	26	86.80	9.52	238.03	63.68	2.37	66.05
	C1	1	8	962	61	1800	71	33.78	1.88	47.12	8.13	0.47	8.60
		2	135	-33	983	1800	72	508.19	164.21	3284.26	1970.45	27.09	1997.55
		3	24	279	19	1800	7	90.04	0.95	18.99	6.75	0.24	6.98
	D1	1	77	18	199	1800	25	95.31	10.74	268.43	74.81	2.66	77.47
		2	79	13	230	1800	28	94.78	12.47	311.72	85.99	3.09	89.08

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	Aexit	1	1031	1031	253	✓	Unrestricted	Unrestricted	0		Unrestricted	0.55	180
	Bexit	1	158	158	0		Unrestricted	Unrestricted	0		Unrestricted	0.88	180
	Cexit	1	900	900	0		Unrestricted	Unrestricted	0		Unrestricted	0.69	180
	Dexit	1	259	259	0		Unrestricted	Unrestricted	0		Unrestricted	1.01	180
	A1	1	55	55	0		1800	710	8		1062	0.00	70
		2	644	644	0		1800	720	89		1	0.00	71
		3	41	41	0		1800	80	51		76	0.00	7
	B1	1	183	183	0		1800	250	73		23	0.00	24
		2	186	186	0		1800	270	69		31	0.00	26
	C1	1	61	61	0		1800	720	8		962	0.00	71
		2	983	730	0		1800	730	135	✓	-33	0.00	72
		3	19	19	0		1800	80	24		279	0.00	7
	D1	1	199	199	0		1800	260	77		18	0.00	25
		2	230	230	0		1800	290	79		13	0.00	28

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	29.41	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	32.96	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	29.22	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	31.56	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	2.49	34.28	0.52	7.44	61.68	33.93	0.43
		2	6.20	69.48	12.43	176.50	102.25	658.50	8.26
		3	6.20	106.85	1.22	17.28	108.94	44.66	0.56
	B1	1	3.14	93.02	4.73	67.15	104.99	192.13	2.41
		2	3.14	86.80	4.48	63.68	101.53	188.85	2.37
	C1	1	3.03	33.78	0.57	8.13	61.14	37.29	0.47
		2	3.64	508.19	138.76	1970.45	296.01	2160.89	27.09
		3	3.64	90.04	0.48	6.75	99.28	18.86	0.24
	D1	1	3.01	95.31	5.27	74.81	106.67	212.28	2.66
		2	3.01	94.78	6.06	85.99	107.09	246.30	3.09

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	42.62	0.00	0.00	12.00	
	Bexit	1	0.00	0.00	47.76	0.00	0.00	76.00	
	Cexit	1	0.00	0.00	42.35	0.00	0.00	10.00	
	Dexit	1	0.00	0.00	45.74	0.00	0.00	49.00	
	A1	1	0.00	1.71	3.00	57.15	0.00	67.00	
		2	0.00	33.46	8.00	418.23	0.00	0.00	
		3	0.00	2.26	8.00	28.30	0.00	4.00	
	B1	1	0.00	9.70	4.00	242.38	0.00	0.00	
		2	0.00	9.52	4.00	238.03	0.00	0.00	
	C1	1	0.00	1.88	4.00	47.12	0.00	0.00	
		2	0.00	164.21	5.00	3284.26	0.00	0.00	
		3	0.00	0.95	5.00	18.99	0.00	6.00	
	D1	1	0.00	10.74	4.00	268.43	0.00	0.00	
		2	0.00	12.47	4.00	311.72	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
11	26/09/2022 14:48:15	26/09/2022 14:48:17	08:00	100	2525.74	174.52	134.66	C1/2	1	5	C1/2	Bexit/1	C1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	135	-33	4949	1121	126.95	2478.18	47.57	2525.74

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))
08:00-09:00	4949	4696	253	✓	135	✓	-33	1177

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	16.30	126.95	174.52	2478.18	91.79	3793.69	47.57

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
08:00-09:00	3284.26	0.00	224.00

A12 - DM+Full SDZ 2039 PM
D12 - DM+Full SDZ 2039 PM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
12	26/09/2022 14:48:17	26/09/2022 14:48:18	17:00	100	3431.62	237.67	148.33	B1/1	3	14	B1/1	Bexit/1	B1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM+Full SDZ 2039 PM		D12	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM+Full SDZ 2039 PM				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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	245.07						Normal	
Bexit	1			✓	274.64						Normal	
Cexit	1			✓	243.53						Normal	
Dexit	1			✓	263.00						Normal	
A1	1				20.78	✓	Sum of lanes	1800	✓		Normal	
	2				51.65	✓	Sum of lanes	1800	✓		Normal	
	3				51.65	✓	Sum of lanes	1800	✓		Normal	
B1	1				26.15	✓	Sum of lanes	1800	✓		Normal	
	2				26.15	✓	Sum of lanes	1800	✓		Normal	
C1	1				25.24	✓	Sum of lanes	1800	✓		Normal	
	2				30.30	✓	Sum of lanes	1800	✓		Normal	
	3				30.30	✓	Sum of lanes	1800	✓		Normal	
D1	1				25.11	✓	Sum of lanes	1800	✓		Normal	
	2				25.11	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
Dexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
	2	1	(untitled)			1800
	3	1	(untitled)			1800
B1	1	1	(untitled)			1800
	2	1	(untitled)			1800
C1	2	1	(untitled)			1800
	3	1	(untitled)			1800
D1	1	1	(untitled)			1800
	2	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
Dexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		3.00		
	2	NetworkDefault	100	100	100		8.00		
	3	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		4.00		
C1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		5.00		
	3	NetworkDefault	100	100	100		5.00		
D1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		4.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	(ALL)	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	180

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	(ALL)	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	(ALL)	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	1254	1254
Bexit	1	59	59
Cexit	1	874	874
Dexit	1	569	569
A1	1	24	24
	2	646	646
	3	44	44
B1	1	445	445
	2	308	308
C1	1	171	171
	2	878	878
	3	18	18
D1	1	85	85
	2	137	137

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	C	
	2	1	B	
	3	1	A	
B1	1	1	E	
	2	1	D	
C1	1	1	F	
	2	1	G	
	3	1	H	
D1	1	1	I	
	2	1	J	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	20.37	13.58	5.40
2	(untitled)				Farside	12.44	8.29	5.40
3	(untitled)				Farside	20.29	13.53	5.40
4	(untitled)				Farside	12.34	8.23	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	M	
2	1	L	
3	1	K	
4	1	N	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	17	137	68
	2	354	0	91	308
	3	171	18	0	878
	4	44	24	646	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	Colour
1	1	(untitled)	D1/1, D1/2	Dexit/1	#0000FF
	2	(untitled)	B1/1, B1/2	Bexit/1	#FF0000
	3	(untitled)	C1/1, C1/2, C1/3	Cexit/1	#00FF00
	4	(untitled)	A1/3, A1/2, A1/1	Aexit/1	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		3	1	C1/1, Dexit/1	Normal	171
	2		3	2	C1/3, Bexit/1	Normal	18
	3		3	4	C1/2, Aexit/1	Normal	878
	4		4	1	A1/3, Dexit/1	Normal	44
	5		4	3	A1/2, Cexit/1	Normal	646
	6		4	2	A1/1, Bexit/1	Normal	24
	7		1	2	D1/1, Bexit/1	Normal	17
	8		1	4	D1/1, Aexit/1	Normal	68
	9		2	1	B1/1, Dexit/1	Normal	354
	10		2	3	B1/1, Cexit/1	Normal	91
	11		1	3	D1/2, Cexit/1	Normal	137
	12		2	4	B1/2, Aexit/1	Normal	308

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	46	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	7	300	0	0	Traffic	
	E	(untitled)	7	300	0	0	Traffic	
	F	(untitled)	7	300	0	0	Traffic	
	G	(untitled)	46	300	0	0	Traffic	
	H	(untitled)	7	300	0	0	Traffic	
	I	(untitled)	7	300	0	0	Traffic	
	J	(untitled)	7	300	0	0	Traffic	
	K	(untitled)	5	300	0	0	Pedestrian	0
	L	(untitled)	5	300	0	0	Pedestrian	0
	M	(untitled)	5	300	0	0	Pedestrian	0
	N	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	H, A	1
	2	I, E	1
	3	D, J	1
	4	K, M, N, L	1
	5	C, F, B, G	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4, 5	25, 60, 86, 99, 12

Intergreen Matrix for Controller Stream 1

		To													
		A	B	C	D	E	F	G	H	I	J	K	L	M	N
From	A				5	5	6	6		6	5	5			8
	B				5	5			5	6		5		7	
	C								6	7		5	6		
	D	6	5						5	5		8	5		
	E	5	5				7	6	5		5		5	7	8
	F	6				7								5	6
	G	5				6				5	5	7		5	
	H		6	6	5	6				5	5		8	5	
	I	5	6	7	5			5	5			7	8		5
	J	5				5		5	5					8	5
	K	21	21	21	21			21		21					
	L			13	13	13			13	13					
	M		21			21	21	21	21		21				
	N	13				13	13			13	13				

Interstage Matrix for Controller Stream 1

		To				
		1	2	3	4	5
From	1	0	6	5	8	6
	2	5	0	5	8	7
	3	6	5	0	8	5
	4	21	21	21	0	21
	5	6	7	5	7	0

Resultant Stages

Controller stream	Resultant 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	H,A	18	25	7	1	7
	2	✓	2	I,E	31	60	29	1	7
	3	✓	3	D,J	65	86	21	1	7
	4	✓	4	K,M,N,L	94	99	5	1	5
	5	✓	5	C,F,B,G	120	12	72	1	46

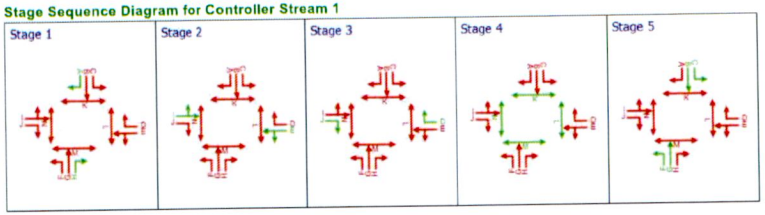
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	18	25	7
	B	1	✓	120	12	72
	C	1	✓	120	12	72
	D	1	✓	65	86	21
	E	1	✓	31	60	29
	F	1	✓	120	12	72
	G	1	✓	120	12	72
	H	1	✓	18	25	7
	I	1	✓	31	60	29
	J	1	✓	65	86	21
	K	1	✓	94	99	5
	L	1	✓	91	99	8
	M	1	✓	94	99	5
	N	1	✓	91	99	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	C	120	12	72
A1	2		1	B	120	12	72
A1	3		1	A	18	25	7
B1	1		1	E	31	60	29
B1	2		1	D	65	86	21
C1	1		1	F	120	12	72
C1	2		1	G	120	12	72
C1	3		1	H	18	25	7
D1	1		1	I	31	60	29
D1	2		1	J	65	86	21

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
17:00-18:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (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	Aexit	1	0	Unrestricted	1018	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	59	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	844	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	0	Unrestricted	454	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	3	2638	24	1800	72	32.37	0.72	24.02	3.06	0.18	3.24
		2	88	2	646	1800	72	66.92	32.90	411.19	170.53	8.15	178.68
		3	55	64	44	1800	7	110.50	2.47	30.90	19.18	0.61	19.79
	B1	1	148	-39	445	1800	29	645.22	88.42	2210.58	1132.54	12.78	1145.33
		2	140	-36	308	1800	21	584.63	56.13	1403.24	710.26	8.70	718.97
	C1	1	23	284	171	1800	72	35.90	5.64	141.02	24.21	1.40	25.61
		2	120	-25	878	1800	72	357.57	112.66	2253.13	1238.35	21.94	1260.29
		3	23	300	18	1800	7	89.54	0.90	17.95	6.36	0.22	6.58
	D1	1	28	218	85	1800	29	67.98	3.76	94.07	22.79	0.94	23.73
		2	62	45	137	1800	21	88.21	7.01	175.20	47.67	1.74	49.40

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	Aexit	1	1018	1018	236	✓	Unrestricted	Unrestricted	0		Unrestricted	0.59	180
	Bexit	1	59	59	0		Unrestricted	Unrestricted	0		Unrestricted	0.93	180
	Cexit	1	844	844	30	✓	Unrestricted	Unrestricted	0		Unrestricted	0.70	180
	Dexit	1	454	454	115	✓	Unrestricted	Unrestricted	0		Unrestricted	0.79	180
	A1	1	24	24	0		1800	730	3		2638	0.00	72
		2	646	646	0		1800	730	88		2	0.00	72
		3	44	44	0		1800	80	55		64	0.00	7
	B1	1	445	300	0		1800	300	148	✓	-39	0.00	29
		2	308	220	0		1800	220	140	✓	-36	0.00	21
	C1	1	171	171	0		1800	730	23		284	0.00	72
		2	878	730	0		1800	730	120	✓	-25	0.00	72
		3	18	18	0		1800	80	23		300	0.00	7
	D1	1	85	85	0		1800	300	28		218	0.00	29
		2	137	137	0		1800	220	62		45	0.00	21

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aexit	1	29.41	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	32.96	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	29.22	0.00	0.00	0.00	0.00	0.00	0.00
	Dexit	1	31.56	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	2.49	32.37	0.22	3.06	59.39	14.25	0.18
		2	6.20	66.92	12.01	170.53	100.62	650.04	8.15
		3	6.20	110.50	1.35	19.18	111.18	48.92	0.61
	B1	1	3.14	645.22	79.76	1132.54	339.80	1019.39	12.78
		2	3.14	584.63	50.02	710.26	315.44	693.97	8.70
	C1	1	3.03	35.90	1.71	24.21	65.17	111.44	1.40
		2	3.64	357.57	87.21	1238.35	239.74	1750.10	21.94
		3	3.64	89.54	0.45	6.36	99.02	17.82	0.22
	D1	1	3.01	67.98	1.60	22.79	87.87	74.69	0.94
		2	3.01	88.21	3.36	47.67	101.02	138.40	1.74

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	Aexit	1	0.00	0.00	42.62	0.00	0.00	5.00	
	Bexit	1	0.00	0.00	47.76	0.00	0.00	125.00	
	Cexit	1	0.00	0.00	42.35	0.00	0.00	13.00	
	Dexit	1	0.00	0.00	45.74	0.00	0.00	30.00	
	A1	1	0.00	0.72	3.00	24.02	0.00	71.00	
		2	0.00	32.90	8.00	411.19	0.00	0.00	
		3	0.00	2.47	8.00	30.90	0.00	3.00	
	B1	1	0.00	88.42	4.00	2210.58	0.00	0.00	
		2	0.00	56.13	4.00	1403.24	0.00	0.00	
	C1	1	0.00	5.64	4.00	141.02	0.00	0.00	
		2	0.00	112.66	5.00	2253.13	0.00	0.00	
		3	0.00	0.90	5.00	17.95	0.00	6.00	
	D1	1	0.00	3.76	4.00	94.07	0.00	0.00	
		2	0.00	7.01	4.00	175.20	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
12	26/09/2022 14:48:17	26/09/2022 14:48:18	17:00	100	3431.62	237.67	148.33	B1/1	3	14	B1/1	Bexit/1	B1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	148	-39	5131	1122	166.76	3374.96	56.66	3431.62

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))
17:00-18:00	5131	4750	381	✓	148	✓	-39	1174

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	15.98	166.76	237.67	3374.96	110.00	4519.02	56.66

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
17:00-18:00	2253.13	0.00	253.00

TRANSYT 15

Version: 15.5.3.7

For sales and distribution information, program advice and maintenance, contact TRL:
+44 (0)1344 379777 software@trl.co.uk 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

Filename: Junction 3.t15
Path: G:\2022\p220047\calcs\transyt
Report generation date: 26/09/2022 14:56:40

»A1 - DS+CSLS 2024 AM : D1 - DS+CSLS 2024 AM* :
»A2 - DS+CSLS 2024 PM : D2 - DS+CSLS 2024 PM* :
»A3 - DS+CSLS 2029 AM : D3 - DS+CSLS 2029 AM* :
»A4 - DS+CSLS 2029 PM : D4 - DS+CSLS 2029 PM* :
»A5 - DS+Full SDZ 2039 AM : D5 - DS+Full SDZ 2039 AM* :
»A6 - DS+Full SDZ 2039 PM : D6 - DS+Full SDZ 2039 PM* :
»A7 - DM+CSLS 2024 AM : D7 - DM+CSLS 2024 AM* :
»A8 - DM+CSLS 2024 PM : D8 - DM+CSLS 2024 PM* :
»A9 - DM+CSLS 2029 AM : D9 - DM+CSLS 2029 AM* :
»A10 - DM+CSLS 2029 PM : D10 - DM+CSLS 2029 PM* :
»A11 - DM+Full SDZ 2039 AM : D11 - DM+Full SDZ 2039 AM* :
»A12 - DM+Full SDZ 2039 PM : D12 - DM+Full SDZ 2039 PM* :

File summary

File description

File title	(untitled)
Location	
Site number	
UTCRegion	
Driving side	Left
Date	17/08/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	210124
Enumerator	HEADOFFICE\GarveyD
Description	

Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber

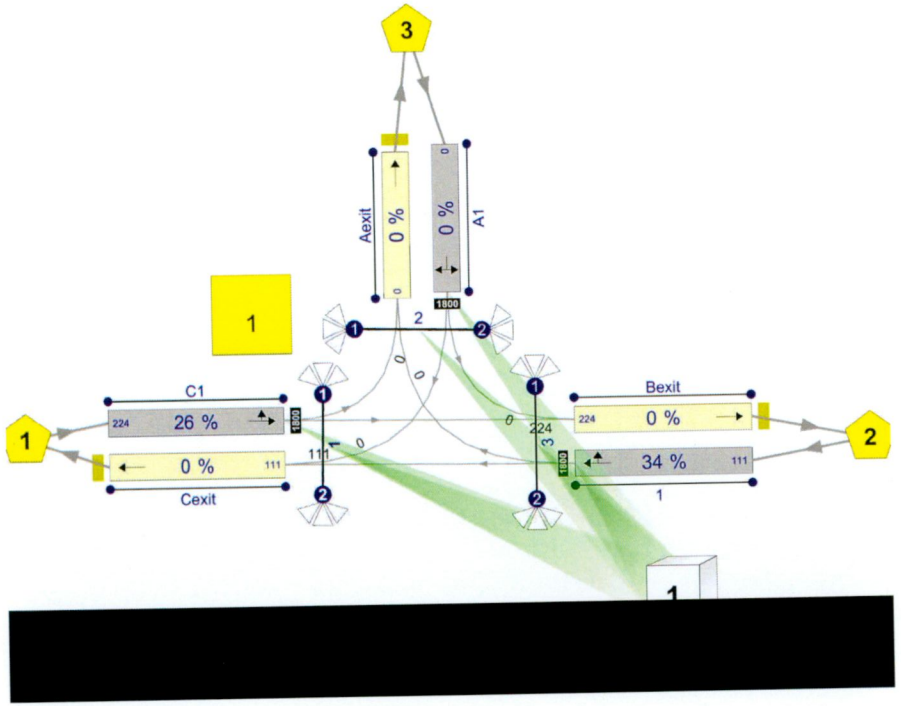
Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	PCU	PCU	perHour	s	-Hour	perHour

Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

Network Diagrams



[redacted]

A1 - DS+CSLS 2024 AM
D1 - DS+CSLS 2024 AM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
1	26/09/2022 14:56:20	26/09/2022 14:56:20	08:00	100	37.84	2.45	34.57	B1/1	0	0	B1/1	Bexit/1	B1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS+CSLS 2024 AM		D1	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS+CSLS 2024 AM				08:00	

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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	8	8
Bexit	1	225	225
Cexit	1	116	116
A1	1	23	23
B1	1	112	112
C1	1	214	214

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	211	3
	2	107	0	5
	3	9	14	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	211
	2		2	1	B1/1, Cexit/1	Normal	107
	3		1	3	C1/1, Aexit/1	Normal	3
	4		2	3	B1/1, Aexit/1	Normal	5
	5		3	2	A1/1, Bexit/1	Normal	14
	6		3	1	A1/1, Cexit/1	Normal	9

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	4, 26, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	4	7	1	7
	2	✓	2	B	9	26	17	1	7
	3	✓	3	C	26	73	47	1	7
	4	✓	4	D,E,F	81	86	5	1	5

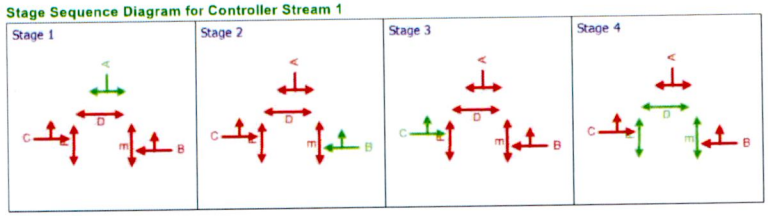
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	4	7
	B	1	✓	9	26	17
	C	1	✓	26	73	47
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	97	4	7
B1	1		1	B	9	26	17
C1	1		1	C	26	73	47

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	8	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	225	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	116	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	16	463	23	1800	7	45.30	0.61	7.62	4.11	0.27	4.38
	B1	1	35	160	112	1800	17	38.79	2.80	46.63	17.14	1.25	18.38
	C1	1	25	263	214	1800	47	16.03	3.55	39.42	13.53	1.54	15.08

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	Aexit	1	8	8	0		Unrestricted	Unrestricted	0		Unrestricted	0.94	100
	Bexit	1	225	225	0		Unrestricted	Unrestricted	0		Unrestricted	0.77	100
	Cexit	1	116	116	0		Unrestricted	Unrestricted	0		Unrestricted	1.19	100
	A1	1	23	23	0		1800	144	16		463	0.00	7
	B1	1	112	112	0		1800	324	35		160	0.00	17
	C1	1	214	214	0		1800	864	25		263	0.00	47

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	5.68	45.30	0.29	4.11	94.17	21.66	0.27
	B1	1	4.32	38.79	1.21	17.14	88.69	99.34	1.25
	C1	1	6.76	16.03	0.95	13.53	57.56	123.17	1.54

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	100.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	31.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	64.00	
	A1	1	0.00	0.61	8.00	7.62	0.00	6.00	
	B1	1	0.00	2.80	6.00	46.63	0.00	0.00	
	C1	1	0.00	3.55	9.00	39.42	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
1	26/09/2022 14:56:20	26/09/2022 14:56:20	08:00	100	37.84	2.45	34.57	B1/1	0	0	B1/1	Bexit/1	B1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	35	0	698	371	12.63	34.78	3.06	37.84

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))
08:00-09:00	698	698	0		35		160	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	17.81	12.63	2.45	34.78	34.98	244.17	3.06

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
08:00-09:00	46.63	0.00	201.00

A2 - DS+CSLS 2024 PM
D2 - DS+CSLS 2024 PM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
2	26/09/2022 14:56:21	26/09/2022 14:56:21	17:00	100	37.92	2.45	27.61	C1/1	0	0	C1/1	Bexit/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS+CSLS 2024 PM		D2	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS+CSLS 2024 PM				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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	18	18
Bexit	1	163	163
Cexit	1	154	154
A1	1	10	10
B1	1	161	161
C1	1	164	164

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	157	7
	2	150	0	11
	3	4	6	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	157
	2		2	1	B1/1, Cexit/1	Normal	150
	3		1	3	C1/1, Aexit/1	Normal	7
	4		2	3	B1/1, Aexit/1	Normal	11
	5		3	2	A1/1, Bexit/1	Normal	6
	6		3	1	A1/1, Cexit/1	Normal	4

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	4, 41, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	4	7	1	7
	2	✓	2	B	9	41	32	1	7
	3	✓	3	C	41	73	32	1	7
	4	✓	4	D,E,F	81	86	5	1	5

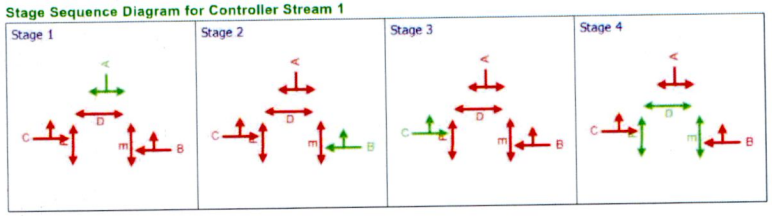
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	4	7
	B	1	✓	9	41	32
	C	1	✓	41	73	32
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	97	4	7
B1	1		1	B	9	41	32
C1	1		1	C	41	73	32

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
17:00-18:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (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	Aexit	1	0	Unrestricted	18	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	163	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	154	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	7	1196	10	1800	7	43.71	0.26	3.23	1.72	0.12	1.84
	B1	1	27	232	161	1800	32	25.79	3.32	55.25	16.38	1.47	17.85
	C1	1	28	226	164	1800	32	25.86	3.38	37.53	16.73	1.50	18.23

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	Aexit	1	18	18	0		Unrestricted	Unrestricted	0		Unrestricted	0.78	100
	Bexit	1	163	163	0		Unrestricted	Unrestricted	0		Unrestricted	1.07	100
	Cexit	1	154	154	0		Unrestricted	Unrestricted	0		Unrestricted	1.09	100
	A1	1	10	10	0		1800	144	7		1196	0.00	7
	B1	1	161	161	0		1800	594	27		232	0.00	32
	C1	1	164	164	0		1800	594	28		226	0.00	32

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aexit	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	5.68	43.71	0.12	1.72	91.75	9.17	0.12
	B1	1	4.32	25.79	1.15	16.38	72.90	117.36	1.47
	C1	1	6.76	25.86	1.18	16.73	72.95	119.64	1.50

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	97.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	55.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	57.00	
	A1	1	0.00	0.26	8.00	3.23	0.00	7.00	
	B1	1	0.00	3.32	6.00	55.25	0.00	0.00	
	C1	1	0.00	3.38	9.00	37.53	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
2	26/09/2022 14:56:21	26/09/2022 14:56:21	17:00	100	37.92	2.45	27.61	C1/1	0	0	C1/1	Bexit/1	C1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	28	0	670	371	13.18	34.83	3.09	37.92

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))
17:00-18:00	670	670	0		28		226	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	17.72	13.18	2.45	34.83	36.74	246.18	3.09

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
17:00-18:00	55.25	0.00	216.00

A3 - DS+CSLS 2029 AM
D3 - DS+CSLS 2029 AM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
3	26/09/2022 14:56:24	26/09/2022 14:56:24	08:00	100	39.72	2.57	35.80	B1/1	0	0	B1/1	Bexit/1	B1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS+CSLS 2029 AM		D3	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS+CSLS 2029 AM				08:00	

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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	8	8
Bexit	1	238	238
Cexit	1	120	120
A1	1	23	23
B1	1	116	116
C1	1	227	227

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	224	3
	2	111	0	5
	3	9	14	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	224
	2		2	1	B1/1, Cexit/1	Normal	111
	3		1	3	C1/1, Aexit/1	Normal	3
	4		2	3	B1/1, Aexit/1	Normal	5
	5		3	2	A1/1, Bexit/1	Normal	14
	6		3	1	A1/1, Cexit/1	Normal	9

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	4, 26, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	4	7	1	7
	2	✓	2	B	9	26	17	1	7
	3	✓	3	C	26	73	47	1	7
	4	✓	4	D,E,F	81	86	5	1	5

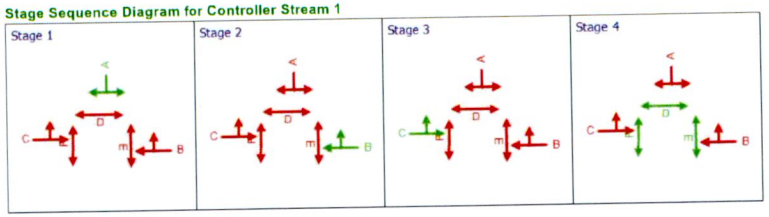
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	4	7
	B	1	✓	9	26	17
	C	1	✓	26	73	47
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	97	4	7
B1	1		1	B	9	26	17
C1	1		1	C	26	73	47

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	8	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	238	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	120	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	16	463	23	1800	7	45.30	0.61	7.62	4.11	0.27	4.38
	B1	1	36	151	116	1800	17	39.04	2.90	48.38	17.86	1.29	19.15
	C1	1	26	243	227	1800	47	16.22	3.77	41.86	14.52	1.66	16.19

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	Aexit	1	8	8	0		Unrestricted	Unrestricted	0		Unrestricted	0.94	100
	Bexit	1	238	238	0		Unrestricted	Unrestricted	0		Unrestricted	0.77	100
	Cexit	1	120	120	0		Unrestricted	Unrestricted	0		Unrestricted	1.19	100
	A1	1	23	23	0		1800	144	16		463	0.00	7
	B1	1	116	116	0		1800	324	36		151	0.00	17
	C1	1	227	227	0		1800	864	26		243	0.00	47

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	5.68	45.30	0.29	4.11	94.17	21.66	0.27
	B1	1	4.32	39.04	1.26	17.86	88.88	103.10	1.29
	C1	1	6.76	16.22	1.02	14.52	58.40	132.58	1.66

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	100.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	31.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	64.00	
	A1	1	0.00	0.61	8.00	7.62	0.00	6.00	
	B1	1	0.00	2.90	6.00	48.38	0.00	0.00	
	C1	1	0.00	3.77	9.00	41.86	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
3	26/09/2022 14:56:24	26/09/2022 14:56:24	08:00	100	39.72	2.57	35.80	B1/1	0	0	B1/1	Bexit/1	B1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	36	0	732	371	12.64	36.50	3.23	39.72

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))
08:00-09:00	732	732	0		36		151	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	17.81	12.64	2.57	36.50	35.16	257.33	3.23

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
08:00-09:00	48.38	0.00	201.00

A4 - DS+CSLS 2029 PM
D4 - DS+CSLS 2029 PM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
4	26/09/2022 14:56:24	26/09/2022 14:56:25	17:00	100	40.09	2.59	28.96	C1/1	0	0	C1/1	Bexit/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS+CSLS 2029 PM		D4	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS+CSLS 2029 PM				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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	18	18
Bexit	1	171	171
Cexit	1	163	163
A1	1	10	10
B1	1	170	170
C1	1	172	172

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	165	7
	2	159	0	11
	3	4	6	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	165
	2		2	1	B1/1, Cexit/1	Normal	159
	3		1	3	C1/1, Aexit/1	Normal	7
	4		2	3	B1/1, Aexit/1	Normal	11
	5		3	2	A1/1, Bexit/1	Normal	6
	6		3	1	A1/1, Cexit/1	Normal	4

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	4, 41, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	4	7	1	7
	2	✓	2	B	9	41	32	1	7
	3	✓	3	C	41	73	32	1	7
	4	✓	4	D,E,F	81	86	5	1	5

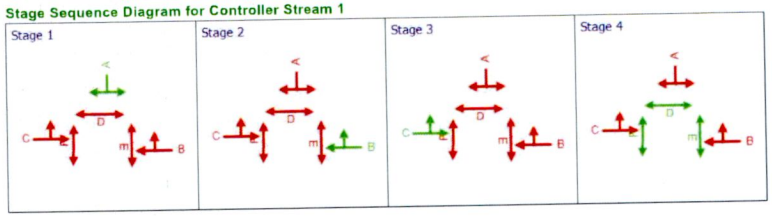
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	4	7
	B	1	✓	9	41	32
	C	1	✓	41	73	32
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	97	4	7
B1	1		1	B	9	41	32
C1	1		1	C	41	73	32

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
17:00-18:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (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	Aexit	1	0	Unrestricted	18	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	171	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	163	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	7	1196	10	1800	7	43.71	0.26	3.23	1.72	0.12	1.84
	B1	1	29	214	170	1800	32	26.00	3.50	58.41	17.43	1.56	18.99
	C1	1	29	211	172	1800	32	26.05	3.59	39.94	17.68	1.58	19.26

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	Aexit	1	18	18	0		Unrestricted	Unrestricted	0		Unrestricted	0.77	100
	Bexit	1	171	171	0		Unrestricted	Unrestricted	0		Unrestricted	1.08	100
	Cexit	1	163	163	0		Unrestricted	Unrestricted	0		Unrestricted	1.09	100
	A1	1	10	10	0		1800	144	7		1196	0.00	7
	B1	1	170	170	0		1800	594	29		214	0.00	32
	C1	1	172	172	0		1800	594	29		211	0.00	32

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aexit	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	5.68	43.71	0.12	1.72	91.75	9.17	0.12
	B1	1	4.32	26.00	1.23	17.43	73.03	124.15	1.56
	C1	1	6.76	26.05	1.24	17.68	73.45	126.34	1.58

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	97.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	55.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	56.00	
	A1	1	0.00	0.26	8.00	3.23	0.00	7.00	
	B1	1	0.00	3.50	6.00	58.41	0.00	0.00	
	C1	1	0.00	3.59	9.00	39.94	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
4	26/09/2022 14:56:24	26/09/2022 14:56:25	17:00	100	40.09	2.59	28.96	C1/1	0	0	C1/1	Bexit/1	C1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	29	0	704	371	13.26	36.83	3.26	40.09

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))
17:00-18:00	704	704	0		29		211	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	17.73	13.26	2.59	36.83	36.88	259.66	3.26

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
17:00-18:00	58.41	0.00	215.00

A5 - DS+Full SDZ 2039 AM
D5 - DS+Full SDZ 2039 AM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
5	26/09/2022 14:56:21	26/09/2022 14:56:21	08:00	100	193.03	12.70	76.30	C1/1	0	0	C1/1	Bexit/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS+Full SDZ 2039 AM		D5	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS+Full SDZ 2039 AM				08:00	

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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	296	296
Bexit	1	306	306
Cexit	1	394	394
A1	1	256	256
B1	1	328	328
C1	1	412	412

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	248	164
	2	196	0	132
	3	198	58	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	248
	2		2	1	B1/1, Cexit/1	Normal	196
	3		1	3	C1/1, Aexit/1	Normal	164
	4		2	3	B1/1, Aexit/1	Normal	132
	5		3	2	A1/1, Bexit/1	Normal	58
	6		3	1	A1/1, Cexit/1	Normal	198

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	16, 44, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	16	19	1	7
	2	✓	2	B	21	44	23	1	7
	3	✓	3	C	44	73	29	1	7
	4	✓	4	D,E,F	81	86	5	1	5

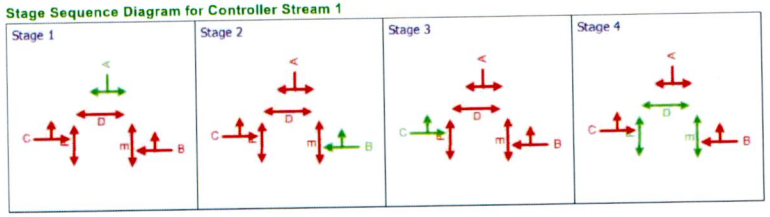
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	16	19
	B	1	✓	21	44	23
	C	1	✓	44	73	29
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
A1	1		1	A	97	16	19
B1	1		1	B	21	44	23
C1	1		1	C	44	73	29

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	296	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	306	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	394	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	71	27	256	1800	19	49.26	7.46	93.29	49.74	3.31	53.05
	B1	1	76	19	328	1800	23	47.99	9.54	158.95	62.09	4.24	66.33
	C1	1	76	18	412	1800	29	42.19	11.49	127.68	68.56	5.10	73.66

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	Aexit	1	296	296	0		Unrestricted	Unrestricted	0		Unrestricted	0.81	100
	Bexit	1	306	306	0		Unrestricted	Unrestricted	0		Unrestricted	0.80	100
	Cexit	1	394	394	0		Unrestricted	Unrestricted	0		Unrestricted	0.82	100
	A1	1	256	256	0		1800	360	71		27	0.00	19
	B1	1	328	328	0		1800	432	76		19	0.00	23
	C1	1	412	412	0		1800	540	76		18	0.00	29

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	5.68	49.26	3.50	49.74	103.05	263.81	3.31
	B1	1	4.32	47.99	4.37	62.09	102.99	337.80	4.24
	C1	1	6.76	42.19	4.83	68.56	98.70	406.63	5.10

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	34.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	23.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	32.00	
	A1	1	0.00	7.46	8.00	93.29	0.00	0.00	
	B1	1	0.00	9.54	6.00	158.95	0.00	0.00	
	C1	1	0.00	11.49	9.00	127.68	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
5	26/09/2022 14:56:21	26/09/2022 14:56:21	08:00	100	193.03	12.70	76.30	C1/1	0	0	C1/1	Bexit/1	C1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	76	0	1992	371	22.96	180.39	12.64	193.03

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))
08:00-09:00	1992	1992	0		76		18	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	17.37	22.96	12.70	180.39	50.61	1008.24	12.64

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
08:00-09:00	158.95	0.00	89.00

A6 - DS+Full SDZ 2039 PM
D6 - DS+Full SDZ 2039 PM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
6	26/09/2022 14:56:22	26/09/2022 14:56:22	17:00	100	75.83	4.83	61.11	A1/1	0	0	A1/1	Bexit/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DS+Full SDZ 2039 PM		D6	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DS+Full SDZ 2039 PM				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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	426	426
Bexit	1	179	179
Cexit	1	330	330
A1	1	143	143
B1	1	567	567
C1	1	225	225

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	129	96
	2	237	0	330
	3	93	50	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	129
	2		2	1	B1/1, Cexit/1	Normal	237
	3		1	3	C1/1, Aexit/1	Normal	96
	4		2	3	B1/1, Aexit/1	Normal	330
	5		3	2	A1/1, Bexit/1	Normal	50
	6		3	1	A1/1, Cexit/1	Normal	93

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B, C	1
	3	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3	4, 68, 81

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	5	8
	2	5	0	8
	3	11	11	0

Resultant Stages

Controller stream	Resultant 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	92	4	12	1	7
	2	✓	2	B,C	9	68	59	1	7
	3	✓	3	D,E,F	76	81	5	1	5

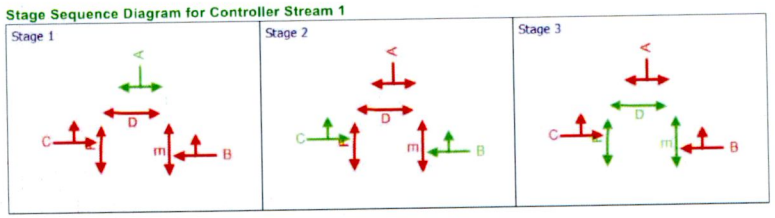
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	92	4	12
	B	1	✓	9	68	59
	C	1	✓	9	68	59
	D	1	✓	75	81	6
	E	1	✓	76	81	5
	F	1	✓	76	81	5

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	92	4	12
B1	1		1	B	9	68	59
C1	1		1	C	9	68	59

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
17:00-18:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (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	Aexit	1	0	Unrestricted	426	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	179	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	330	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	61	47	143	1800	12	52.93	4.20	52.54	29.86	1.87	31.73
	B1	1	53	71	567	1800	59	13.52	9.42	157.07	30.23	4.11	34.35
	C1	1	21	332	225	1800	59	9.59	2.84	31.55	8.51	1.25	9.76

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	Aexit	1	426	426	0		Unrestricted	Unrestricted	0		Unrestricted	0.66	100
	Bexit	1	179	179	0		Unrestricted	Unrestricted	0		Unrestricted	0.53	100
	Cexit	1	330	330	0		Unrestricted	Unrestricted	0		Unrestricted	0.47	100
	A1	1	143	143	0		1800	234	61		47	0.00	12
	B1	1	567	567	0		1800	1080	53		71	0.00	59
	C1	1	225	225	0		1800	1080	21		332	0.00	59

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aexit	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	5.68	52.93	2.10	29.86	104.24	149.06	1.87
	B1	1	4.32	13.52	2.13	30.23	57.85	328.01	4.11
	C1	1	6.76	9.59	0.60	8.51	44.18	99.41	1.25

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	25.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	17.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	11.00	
	A1	1	0.00	4.20	8.00	52.54	0.00	0.00	
	B1	1	0.00	9.42	6.00	157.07	0.00	0.00	
	C1	1	0.00	2.84	9.00	31.55	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
6	26/09/2022 14:56:22	26/09/2022 14:56:22	17:00	100	75.83	4.83	61.11	A1/1	0	0	A1/1	Bexit/1	A1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	61	0	1870	430	9.30	68.60	7.23	75.83

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))
17:00-18:00	1870	1870	0		61		47	462

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	16.81	9.30	4.83	68.60	30.83	576.49	7.23

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
17:00-18:00	157.07	0.00	53.00

A7 - DM+CSLS 2024 AM
D7 - DM+CSLS 2024 AM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
7	26/09/2022 14:56:25	26/09/2022 14:56:25	08:00	100	32.26	2.08	33.02	B1/1	0	0	B1/1	Bexit/1	B1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM+CSLS 2024 AM		D7	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM+CSLS 2024 AM				08:00	

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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	0	0
Bexit	1	211	211
Cexit	1	107	107
A1	1	0	0
B1	1	107	107
C1	1	211	211

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	211	0
	2	107	0	0
	3	0	0	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	211
	2		2	1	B1/1, Cexit/1	Normal	107
	3		1	3	C1/1, Aexit/1	Normal	0
	4		2	3	B1/1, Aexit/1	Normal	0
	5		3	2	A1/1, Bexit/1	Normal	0
	6		3	1	A1/1, Cexit/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	30, 52, 99, 12

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	23	30	7	1	7
	2	✓	2	B	35	52	17	1	7
	3	✓	3	C	52	99	47	1	7
	4	✓	4	D,E,F	7	12	5	1	5

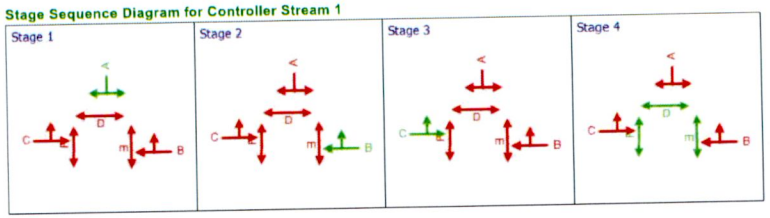
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	23	30	7
	B	1	✓	35	52	17
	C	1	✓	52	99	47
	D	1	✓	6	12	6
	E	1	✓	7	12	5
	F	1	✓	4	12	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	23	30	7
B1	1		1	B	35	52	17
C1	1		1	C	52	99	47

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	0	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	211	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	107	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	0	Unrestricted	0	1800	7	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	33	173	107	1800	17	38.49	2.67	44.45	16.24	1.19	17.43
	C1	1	24	269	211	1800	47	15.99	3.44	38.21	13.31	1.52	14.83

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	Aexit	1	0	0	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	100
	Bexit	1	211	211	0		Unrestricted	Unrestricted	0		Unrestricted	0.87	100
	Cexit	1	107	107	0		Unrestricted	Unrestricted	0		Unrestricted	1.29	100
	A1	1	0	0	0		1800	144	0		Unrestricted	0.00	7
	B1	1	107	107	0		1800	324	33		173	0.00	17
	C1	1	211	211	0		1800	864	24		269	0.00	47

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	4.32	38.49	1.14	16.24	88.33	94.51	1.19
	C1	1	6.76	15.99	0.94	13.31	57.47	121.26	1.52

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	100.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	41.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	68.00	
	A1	1	0.00	0.00	8.00	0.00	0.00	8.00	
	B1	1	0.00	2.67	6.00	44.45	0.00	0.00	
	C1	1	0.00	3.44	9.00	38.21	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
7	26/09/2022 14:56:25	26/09/2022 14:56:25	08:00	100	32.26	2.08	33.02	B1/1	0	0	B1/1	Bexit/1	B1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	33	0	636	371	11.78	29.55	2.71	32.26

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))
08:00-09:00	636	636	0		33		173	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	17.86	11.78	2.08	29.55	33.93	215.77	2.71

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
08:00-09:00	44.45	0.00	217.00

A8 - DM+CSLS 2024 PM
D8 - DM+CSLS 2024 PM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
8	26/09/2022 14:56:25	26/09/2022 14:56:26	17:00	100	33.78	2.18	26.04	B1/1	0	0	B1/1	Bexit/1	B1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM+CSLS 2024 PM		D8	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM+CSLS 2024 PM				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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	0	0
Bexit	1	157	157
Cexit	1	150	150
A1	1	0	0
B1	1	150	150
C1	1	157	157

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	157	0
	2	150	0	0
	3	0	0	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	157
	2		2	1	B1/1, Cexit/1	Normal	150
	3		1	3	C1/1, Aexit/1	Normal	0
	4		2	3	B1/1, Aexit/1	Normal	0
	5		3	2	A1/1, Bexit/1	Normal	0
	6		3	1	A1/1, Cexit/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	4, 40, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	4	7	1	7
	2	✓	2	B	9	40	31	1	7
	3	✓	3	C	40	73	33	1	7
	4	✓	4	D,E,F	81	86	5	1	5

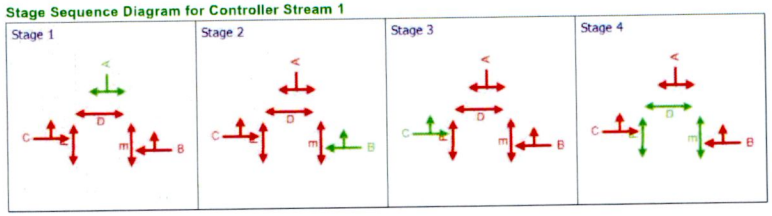
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	4	7
	B	1	✓	9	40	31
	C	1	✓	40	73	33
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	97	4	7
B1	1		1	B	9	40	31
C1	1		1	C	40	73	33

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
17:00-18:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (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	Aexit	1	0	Unrestricted	0	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	157	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	150	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	0	Unrestricted	0	1800	7	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	26	246	150	1800	31	26.33	3.13	52.15	15.58	1.38	16.96
	C1	1	26	251	157	1800	33	24.89	3.18	35.38	15.41	1.41	16.82

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	Aexit	1	0	0	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	100
	Bexit	1	157	157	0		Unrestricted	Unrestricted	0		Unrestricted	1.13	100
	Cexit	1	150	150	0		Unrestricted	Unrestricted	0		Unrestricted	1.14	100
	A1	1	0	0	0		1800	144	0		Unrestricted	0.00	7
	B1	1	150	150	0		1800	576	26		246	0.00	31
	C1	1	157	157	0		1800	612	26		251	0.00	33

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aexit	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	4.32	26.33	1.10	15.58	73.62	110.44	1.38
	C1	1	6.76	24.89	1.09	15.41	71.66	112.50	1.41

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	100.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	57.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	58.00	
	A1	1	0.00	0.00	8.00	0.00	0.00	8.00	
	B1	1	0.00	3.13	6.00	52.15	0.00	0.00	
	C1	1	0.00	3.18	9.00	35.38	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
8	26/09/2022 14:56:25	26/09/2022 14:56:26	17:00	100	33.78	2.18	26.04	B1/1	0	0	B1/1	Bexit/1	B1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	26	0	614	371	12.80	30.99	2.80	33.78

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))
17:00-18:00	614	614	0		26		246	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	17.84	12.80	2.18	30.99	36.31	222.94	2.80

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
17:00-18:00	52.15	0.00	223.00

A9 - DM+CSLS 2029 AM
D9 - DM+CSLS 2029 AM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
9	26/09/2022 14:56:29	26/09/2022 14:56:30	08:00	100	34.12	2.20	34.26	B1/1	0	0	B1/1	Bexit/1	B1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM+CSLS 2029 AM		D9	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM+CSLS 2029 AM				08:00	

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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	0	0
Bexit	1	224	224
Cexit	1	111	111
A1	1	0	0
B1	1	111	111
C1	1	224	224

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	224	0
	2	111	0	0
	3	0	0	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	224
	2		2	1	B1/1, Cexit/1	Normal	111
	3		1	3	C1/1, Aexit/1	Normal	0
	4		2	3	B1/1, Aexit/1	Normal	0
	5		3	2	A1/1, Bexit/1	Normal	0
	6		3	1	A1/1, Cexit/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	4, 26, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	4	7	1	7
	2	✓	2	B	9	26	17	1	7
	3	✓	3	C	26	73	47	1	7
	4	✓	4	D,E,F	81	86	5	1	5

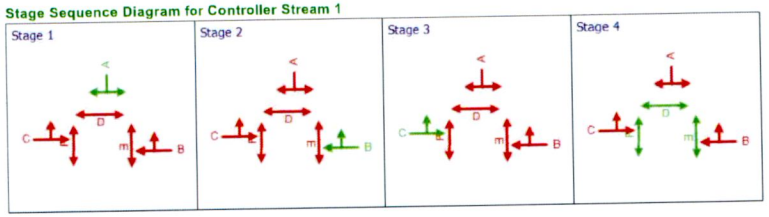
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	4	7
	B	1	✓	9	26	17
	C	1	✓	26	73	47
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	97	4	7
B1	1		1	B	9	26	17
C1	1		1	C	26	73	47

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	0	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	224	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	111	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	0	Unrestricted	0	1800	7	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	34	163	111	1800	17	38.73	2.77	46.19	16.96	1.23	18.19
	C1	1	26	247	224	1800	47	16.18	3.72	41.29	14.29	1.64	15.93

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	Aexit	1	0	0	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	100
	Bexit	1	224	224	0		Unrestricted	Unrestricted	0		Unrestricted	0.87	100
	Cexit	1	111	111	0		Unrestricted	Unrestricted	0		Unrestricted	1.29	100
	A1	1	0	0	0		1800	144	0		Unrestricted	0.00	7
	B1	1	111	111	0		1800	324	34		163	0.00	17
	C1	1	224	224	0		1800	864	26		247	0.00	47

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	4.32	38.73	1.19	16.96	88.64	98.39	1.23
	C1	1	6.76	16.18	1.01	14.29	58.33	130.66	1.64

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	100.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	41.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	68.00	
	A1	1	0.00	0.00	8.00	0.00	0.00	8.00	
	B1	1	0.00	2.77	6.00	46.19	0.00	0.00	
	C1	1	0.00	3.72	9.00	41.29	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
9	26/09/2022 14:56:29	26/09/2022 14:56:30	08:00	100	34.12	2.20	34.26	B1/1	0	0	B1/1	Bexit/1	B1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	34	0	670	371	11.83	31.25	2.87	34.12

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))
08:00-09:00	670	670	0		34		163	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	17.66	11.83	2.20	31.25	34.19	229.05	2.87

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
08:00-09:00	46.19	0.00	217.00

A10 - DM+CSLS 2029 PM
D10 - DM+CSLS 2029 PM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
10	26/09/2022 14:56:22	26/09/2022 14:56:23	17:00	100	35.94	2.32	27.60	B1/1	0	0	B1/1	Bexit/1	B1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM+CSLS 2029 PM		D10	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM+CSLS 2029 PM				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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	0	0
Bexit	1	165	165
Cexit	1	159	159
A1	1	0	0
B1	1	159	159
C1	1	165	165

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	165	0
	2	159	0	0
	3	0	0	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	165
	2		2	1	B1/1, Cexit/1	Normal	159
	3		1	3	C1/1, Aexit/1	Normal	0
	4		2	3	B1/1, Aexit/1	Normal	0
	5		3	2	A1/1, Bexit/1	Normal	0
	6		3	1	A1/1, Cexit/1	Normal	0

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	4, 40, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	4	7	1	7
	2	✓	2	B	9	40	31	1	7
	3	✓	3	C	40	73	33	1	7
	4	✓	4	D,E,F	81	86	5	1	5

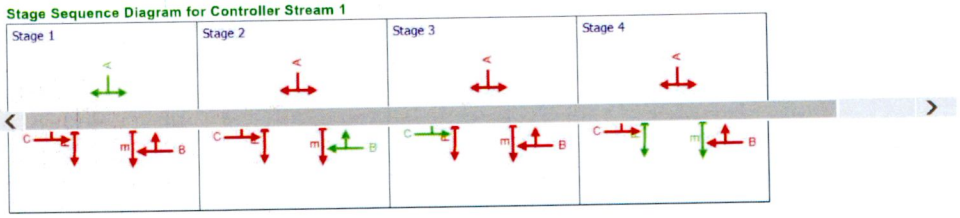
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	4	7
	B	1	✓	9	40	31
	C	1	✓	40	73	33
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	97	4	7
B1	1		1	B	9	40	31
C1	1		1	C	40	73	33

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
17:00-18:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (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	Aexit	1	0	Unrestricted	0	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	165	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	159	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	0	Unrestricted	0	1800	7	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	28	226	159	1800	31	26.56	3.32	55.35	16.66	1.47	18.13
	C1	1	27	234	165	1800	33	25.07	3.35	37.22	16.32	1.49	17.81

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	Aexit	1	0	0	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	100
	Bexit	1	165	165	0		Unrestricted	Unrestricted	0		Unrestricted	1.13	100
	Cexit	1	159	159	0		Unrestricted	Unrestricted	0		Unrestricted	1.14	100
	A1	1	0	0	0		1800	144	0		Unrestricted	0.00	7
	B1	1	159	159	0		1800	576	28		226	0.00	31
	C1	1	165	165	0		1800	612	27		234	0.00	33

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aexit	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B1	1	4.32	26.56	1.17	16.66	73.97	117.61	1.47
	C1	1	6.76	25.07	1.15	16.32	71.87	118.59	1.49

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	100.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	56.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	57.00	
	A1	1	0.00	0.00	8.00	0.00	0.00	8.00	
	B1	1	0.00	3.32	6.00	55.35	0.00	0.00	
	C1	1	0.00	3.35	9.00	37.22	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
10	26/09/2022 14:56:22	26/09/2022 14:56:23	17:00	100	35.94	2.32	27.60	B1/1	0	0	B1/1	Bexit/1	B1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	28	0	648	371	12.90	32.98	2.96	35.94

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))
17:00-18:00	648	648	0		28		226	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	17.84	12.90	2.32	32.98	36.45	236.19	2.96

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
17:00-18:00	55.35	0.00	221.00

A11 - DM+Full SDZ 2039 AM
D11 - DM+Full SDZ 2039 AM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
11	26/09/2022 14:56:23	26/09/2022 14:56:23	08:00	100	182.71	12.01	75.74	C1/1	0	0	C1/1	Bexit/1	C1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM+Full SDZ 2039 AM		D11	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM+Full SDZ 2039 AM				08:00	

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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	289	289
Bexit	1	293	293
Cexit	1	386	386
A1	1	235	235
B1	1	324	324
C1	1	409	409

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	248	161
	2	196	0	128
	3	190	45	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	248
	2		2	1	B1/1, Cexit/1	Normal	196
	3		1	3	C1/1, Aexit/1	Normal	161
	4		2	3	B1/1, Aexit/1	Normal	128
	5		3	2	A1/1, Bexit/1	Normal	45
	6		3	1	A1/1, Cexit/1	Normal	190

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3, 4	16, 44, 73, 86

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	5	5	8
	2	5	0	0	8
	3	5	0	0	8
	4	11	11	11	0

Resultant Stages

Controller stream	Resultant 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	97	16	19	1	7
	2	✓	2	B	21	44	23	1	7
	3	✓	3	C	44	73	29	1	7
	4	✓	4	D,E,F	81	86	5	1	5

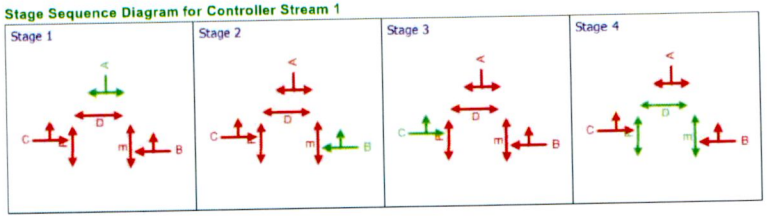
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	97	16	19
	B	1	✓	21	44	23
	C	1	✓	44	73	29
	D	1	✓	80	86	6
	E	1	✓	81	86	5
	F	1	✓	78	86	8

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	97	16	19
B1	1		1	B	21	44	23
C1	1		1	C	44	73	29

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Aexit	1	0	Unrestricted	289	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	293	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	386	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	65	38	235	1800	19	46.02	6.54	81.77	42.66	2.91	45.57
	B1	1	75	20	324	1800	23	47.31	9.37	156.13	60.47	4.16	64.63
	C1	1	76	19	409	1800	29	41.82	11.37	126.38	67.47	5.04	72.51

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
08:00-09:00	Aexit	1	289	289	0		Unrestricted	Unrestricted	0		Unrestricted	0.81	100
	Bexit	1	293	293	0		Unrestricted	Unrestricted	0		Unrestricted	0.86	100
	Cexit	1	386	386	0		Unrestricted	Unrestricted	0		Unrestricted	0.82	100
	A1	1	235	235	0		1800	360	65		38	0.00	19
	B1	1	324	324	0		1800	432	75		20	0.00	23
	C1	1	409	409	0		1800	540	76		19	0.00	29

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	Aexit	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	5.68	46.02	3.00	42.66	98.85	232.29	2.91
	B1	1	4.32	47.31	4.26	60.47	102.36	331.64	4.16
	C1	1	6.76	41.82	4.75	67.47	98.33	402.16	5.04

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	34.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	26.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	32.00	
	A1	1	0.00	6.54	8.00	81.77	0.00	0.00	
	B1	1	0.00	9.37	6.00	156.13	0.00	0.00	
	C1	1	0.00	11.37	9.00	126.38	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
11	26/09/2022 14:56:23	26/09/2022 14:56:23	08:00	100	182.71	12.01	75.74	C1/1	0	0	C1/1	Bexit/1	C1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	76	0	1936	371	22.34	170.59	12.11	182.71

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))
08:00-09:00	1936	1936	0		76		19	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	17.37	22.34	12.01	170.59	49.90	966.09	12.11

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
08:00-09:00	156.13	0.00	92.00

A12 - DM+Full SDZ 2039 PM
D12 - DM+Full SDZ 2039 PM*

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)	Performance Index (£ per hr)	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	Ite wit wor over PR
12	26/09/2022 14:56:23	26/09/2022 14:56:24	17:00	100	71.55	4.55	57.26	A1/1	0	0	A1/1	Bexit/1	A1/

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM+Full SDZ 2039 PM		D12	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
DM+Full SDZ 2039 PM				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)
100		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 (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

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 pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

Normal Traffic Types

Name	PCU Factor
Normal	1.00

Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms^[-2])	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

Pedestrian parameters

Dispersion type
Default

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	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

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

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic node
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Aexit	1			✓	218.21						Normal	
Bexit	1			✓	242.03						Normal	
Cexit	1			✓	260.22						Normal	
A1	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.96	✓	Sum of lanes	1800	✓		Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RR67	Saturation flow (PCU/hr)
Aexit	1	1	(untitled)			
Bexit	1	1	(untitled)			
Cexit	1	1	(untitled)			
A1	1	1	(untitled)			1800
B1	1	1	(untitled)			1800
C1	1	1	(untitled)			1800

Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
Aexit	1	NetworkDefault	100	100	100		0.00		
Bexit	1	NetworkDefault	100	100	100		0.00		
Cexit	1	NetworkDefault	100	100	100		0.00		
A1	1	NetworkDefault	100	100	100		8.00		
B1	1	NetworkDefault	100	100	100		6.00		
C1	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aexit	1	411	411
Bexit	1	173	173
Cexit	1	327	327
A1	1	134	134
B1	1	558	558
C1	1	219	219

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A1	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(untitled)				Farside	10.52	7.01	5.40
2	(untitled)				Farside	10.98	7.32	5.40
3	(untitled)				Farside	10.44	6.96	5.40

Pedestrian Crossings - Signals

Crossing	Controller stream	Phase	Second phase enabled
1	1	F	
2	1	D	
3	1	E	

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Ped)	Has queue limit	Has degree of saturation limit
(ALL)	(ALL)	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
		1	2	3
From	1	0	129	90
	2	237	0	321
	3	90	44	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	Colour
1	1	(untitled)	C1/1	Cexit/1	#0000FF
	2	(untitled)	B1/1	Bexit/1	#FF0000
	3	(untitled)	A1/1	Aexit/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	1		1	2	C1/1, Bexit/1	Normal	129
	2		2	1	B1/1, Cexit/1	Normal	237
	3		1	3	C1/1, Aexit/1	Normal	90
	4		2	3	B1/1, Aexit/1	Normal	321
	5		3	2	A1/1, Bexit/1	Normal	44
	6		3	1	A1/1, Cexit/1	Normal	90

Signal Timings

Network Default: 100s cycle time; 100 steps

Phases

Controller stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type	Blackout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Traffic	
	D	(untitled)	5	300	0	0	Pedestrian	0
	E	(untitled)	5	300	0	0	Pedestrian	0
	F	(untitled)	5	300	0	0	Pedestrian	0

Library Stages

Controller stream	Library stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B, C	1
	3	D, E, F	1

Stage Sequences

Controller stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 2, 3	4, 68, 81

Intergreen Matrix for Controller Stream 1

		To					
		A	B	C	D	E	F
From	A		5	5	5	8	7
	B	5			7	5	8
	C	5			7	8	5
	D	11	11	11			
	E	11	11	11			
	F	11	11	11			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	5	8
	2	5	0	8
	3	11	11	0

Resultant Stages

Controller stream	Resultant 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	92	4	12	1	7
	2	✓	2	B,C	9	68	59	1	7
	3	✓	3	D,E,F	76	81	5	1	5

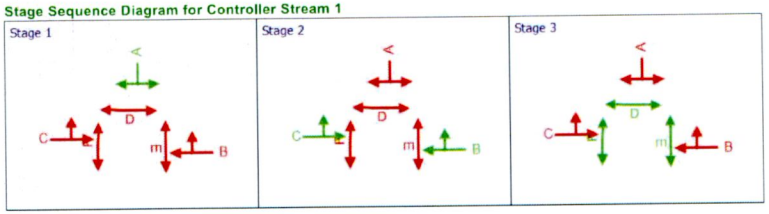
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	92	4	12
	B	1	✓	9	68	59
	C	1	✓	9	68	59
	D	1	✓	75	81	6
	E	1	✓	76	81	5
	F	1	✓	76	81	5

Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A1	1		1	A	92	4	12
B1	1		1	B	9	68	59
C1	1		1	C	9	68	59

Stage Sequence Diagram for Controller Stream 1



Resultant penalties

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
17:00-18:00	1	0.00	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	Actual green (s (per cycle))	Mean Delay per Veh (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	Aexit	1	0	Unrestricted	411	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	0	Unrestricted	173	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	0	Unrestricted	327	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	57	57	134	1800	12	51.01	3.84	47.98	26.96	1.71	28.67
	B1	1	52	74	558	1800	59	13.37	9.11	151.84	29.43	4.00	33.43
	C1	1	20	344	219	1800	59	9.54	2.76	30.70	8.24	1.21	9.45

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	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green (s (per cycle))
17:00-18:00	Aexit	1	411	411	0		Unrestricted	Unrestricted	0		Unrestricted	0.66	100
	Bexit	1	173	173	0		Unrestricted	Unrestricted	0		Unrestricted	0.51	100
	Cexit	1	327	327	0		Unrestricted	Unrestricted	0		Unrestricted	0.47	100
	A1	1	134	134	0		1800	234	57		57	0.00	12
	B1	1	558	558	0		1800	1080	52		74	0.00	59
	C1	1	219	219	0		1800	1080	20		344	0.00	59

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aexit	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bexit	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cexit	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	5.68	51.01	1.90	26.96	101.68	136.25	1.71
	B1	1	4.32	13.37	2.07	29.43	57.19	319.09	4.00
	C1	1	6.76	9.54	0.58	8.24	44.11	96.61	1.21

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))	Estimated blocking
17:00-18:00	Aexit	1	0.00	0.00	37.95	0.00	0.00	25.00	
	Bexit	1	0.00	0.00	42.09	0.00	0.00	17.00	
	Cexit	1	0.00	0.00	45.26	0.00	0.00	11.00	
	A1	1	0.00	3.84	8.00	47.98	0.00	0.00	
	B1	1	0.00	9.11	6.00	151.84	0.00	0.00	
	C1	1	0.00	2.76	9.00	30.70	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	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	Ite wit wor over PR
12	26/09/2022 14:56:23	26/09/2022 14:56:24	17:00	100	71.55	4.55	57.26	A1/1	0	0	A1/1	Bexit/1	A1/

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 Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	57	0	1822	430	8.99	64.63	6.92	71.55

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))
17:00-18:00	1822	1822	0		57		57	462

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	16.82	8.99	4.55	64.63	30.29	551.96	6.92

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s (per cycle))
17:00-18:00	151.84	0.00	53.00