

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 saturation	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean reserve module (s per cycle)	Actual reserve module (s per cycle)
17:00-18:00	A	1	707	73	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	Unrestricted	0.65	180
		2	73	73	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	Unrestricted	1.05	180
		3	735	735	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	Unrestricted	0.71	180
		4	185	185	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	Unrestricted	1.15	180
	B	1	20	20	0	Unrestricted	Unrestricted	Unrestricted	2	Unrestricted	Unrestricted	3.75	0.00
		2	609	609	0	Unrestricted	Unrestricted	Unrestricted	72	Unrestricted	Unrestricted	25	0.00
		3	38	38	0	Unrestricted	Unrestricted	Unrestricted	48	Unrestricted	Unrestricted	89	0.00
		4	153	153	0	Unrestricted	Unrestricted	Unrestricted	67	Unrestricted	Unrestricted	35	0.00
	C	1	98	98	0	Unrestricted	Unrestricted	Unrestricted	58	Unrestricted	Unrestricted	56	0.00
		2	23	23	0	Unrestricted	Unrestricted	Unrestricted	3	Unrestricted	Unrestricted	3.7	0.00
17:00-18:00	D	1	559	559	0	Unrestricted	Unrestricted	Unrestricted	66	Unrestricted	Unrestricted	37	0.00
		2	37	37	0	Unrestricted	Unrestricted	Unrestricted	48	Unrestricted	Unrestricted	95	0.00
		3	66	66	0	Unrestricted	Unrestricted	Unrestricted	29	Unrestricted	Unrestricted	214	0.00
		4	97	97	0	Unrestricted	Unrestricted	Unrestricted	57	Unrestricted	Unrestricted	58	0.00
	E	1	1800	1800	0	Unrestricted	Unrestricted	Unrestricted	80	Unrestricted	Unrestricted	89	0.00
		2	1800	1800	0	Unrestricted	Unrestricted	Unrestricted	230	Unrestricted	Unrestricted	35	0.00
		3	1800	1800	0	Unrestricted	Unrestricted	Unrestricted	67	Unrestricted	Unrestricted	56	0.00
		4	1800	1800	0	Unrestricted	Unrestricted	Unrestricted	58	Unrestricted	Unrestricted	3.7	0.00
	F	1	1800	1800	0	Unrestricted	Unrestricted	Unrestricted	66	Unrestricted	Unrestricted	37	0.00
		2	1800	1800	0	Unrestricted	Unrestricted	Unrestricted	48	Unrestricted	Unrestricted	95	0.00

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay (s)	Total delay (PCU-hr)	Weighted cost of delay (s per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (s per hr)
17:00-18:00	A	1	29.41	0.00	0.00	0.00	0.00	0.00	0.00
		2	32.96	0.00	0.00	0.00	0.00	0.00	0.00
		3	29.22	0.00	0.00	0.00	0.00	0.00	0.00
		4	31.56	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	2.49	25.42	0.14	2.01	52.88	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
		4	3.14	89.88	3.82	54.24	102.51	156.84	1.97
	C	1	3.03	25.49	0.16	2.31	52.71	12.12	0.15
		2	3.64	102.72	1.08	14.99	106.74	39.49	0.50
17:00-18:00	D	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
	E	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
	F	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
	G	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
	H	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 (s per hr)	Wasted time total (s per cycle)	Estimated blocking
17:00-18:00	A	1	0.00	0.00	42.62	0.00	0.00	14.00	
		2	0.00	0.00	47.76	0.00	0.00	14.00	
		3	0.00	0.00	42.35	0.00	0.00	14.00	
		4	0.00	0.00	46.74	0.00	0.00	107.00	
	B	1	0.00	0.00	0.00	0.00	0.00	83.00	
		2	0.00	0.00	0.00	0.00	0.00	4.00	
		3	0.00	2.06	8.00	25.69	0.00	0.00	
		4	0.00	7.91	4.00	197.67	0.00	0.00	
	C	1	0.00	5.06	4.00	126.61	0.00	83.00	
		2	0.00	0.61	4.00	15.34	0.00	0.00	
17:00-18:00	D	1	0.00	21.90	5.00	437.98	0.00	4.00	
		2	0.00	1.98	5.00	39.83	0.00	4.00	
		3	0.00	3.03	4.00	75.69	0.00	0.00	
		4	0.00	5.00	4.00	125.10	0.00	0.00	
	E	1	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	0.00	0.00	0.00	0.00	0.00	
		3	0.00	0.00	0.00	0.00	0.00	0.00	
		4	0.00	0.00	0.00	0.00	0.00	0.00	
	F	1	0.00	0.00	0.00	0.00	0.00	0.00	
		2	0.00	0.00	0.00	0.00	0.00	0.00	

Network Results

Run Summary

Analysis used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (s per hr)	Total network delay (PCU-hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsaturated PSC	Item with worst oversaturated PSC	Item with worst PR
10	14:48:14	14:48:15	17:00	100	390.04	26.19	71.65	A1/2	0	0	A1/2	Beal/1	A1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green time (s per cycle)	Mean Delay (s)	Weighted cost of delay (s per hr)	Weighted cost of stops (s per hr)	Performance Index
17:00-18:00	72	0	3400	1146	27.73	371.69	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 time (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)	Weighted cost of delay (s per hr)	Mean stops per Veh (%)	Total stops (Stops per hr)	Weighted cost of stops (s per hr)
17:00-18:00	17.09	27.73	26.19	371.69	42.57	1447.50	16.15

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (s 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 (H:M)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (hr/h)	Highest DOS (%)	Item with highest DOS	Number of over-sat items	Percentage of over-saturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PRC
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	Bea1/1	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 (H:M)	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 (s)	Phase maximum broken penalty (s)	Intergreen broken penalty (s)	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
Pipeline 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 vehicle mode	Type of Service	Type of random parameter	PCU Length (m)	Calculate results for Segments	Generate PDM results for Date
1	90	100	✓	✓		Complex	Uniform (TRANSTYT)	Uniform (TRANSTYT)	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 ⁻¹ /2)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ⁻¹ /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 Spills	✓

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 (ft/s)	15, 40, -1, 15	50, 50, 5, 5, 0.5, 0.5, 1, -1, 1	0.5, 0.05, 0.05	✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU/h)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped/h)
14.20	2.60	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(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
Aeast	1		✓	245.07							Normal	
				274.64							Normal	
	1		✓	243.83							Normal	
	1		✓	263.00							Normal	
Deast	1			20.78		✓	Sum of lanes	1800			Normal	
	1			51.85		✓	Sum of lanes	1800			Normal	
	2			51.85		✓	Sum of lanes	1800			Normal	
	3			26.15		✓	Sum of lanes	1800			Normal	
B1	1			26.15		✓	Sum of lanes	1800			Normal	
	2			25.24		✓	Sum of lanes	1800			Normal	
	1			30.30		✓	Sum of lanes	1800			Normal	
	2			30.30		✓	Sum of lanes	1800			Normal	
C1	1			25.11		✓	Sum of lanes	1800			Normal	
	2			25.11		✓	Sum of lanes	1800			Normal	
	1						Sum of lanes	1800			Normal	
	2						Sum of lanes	1800			Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use Ref	Saturation flow (PCU/hr)
Aeast	1	1	(unfilled)			
	1	1	(unfilled)			
	1	1	(unfilled)			
	1	1	(unfilled)			
Deast	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
A1	2	1	(unfilled)			1800
	3	1	(unfilled)			1800
	1	1	(unfilled)			1800
	2	1	(unfilled)			1800
B1	2	1	(unfilled)			1800
	1	1	(unfilled)			1800
	2	1	(unfilled)			1800
	1	1	(unfilled)			1800
C1	2	1	(unfilled)			1800
	3	1	(unfilled)			1800
	1	1	(unfilled)			1800
	2	1	(unfilled)			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
Aeast	1	NetworkDefault	100	100	100		0.00		
		NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
Deast	1	NetworkDefault	100	100	100		3.00		
		NetworkDefault	100	100	100		8.00		
	1	NetworkDefault	100	100	100		8.00		
	2	NetworkDefault	100	100	100		4.00		
A1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		5.00		
	3	NetworkDefault	100	100	100		5.00		
	1	NetworkDefault	100	100	100		4.00		
B1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		5.00		
	3	NetworkDefault	100	100	100		5.00		
	1	NetworkDefault	100	100	100		4.00		
C1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		4.00		
	3	NetworkDefault	100	100	100		4.00		
	1	NetworkDefault	100	100	100		4.00		

Modelling - Advanced

Arm	Traffic Stream	Initial queue (VSS)	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-Indicated	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)
Aeast	1	1284	1284
		158	158
	1	900	900
	1	259	259
Deast	1	55	55
	1	644	644
	2	41	41
	3	183	183
B1	1	186	186
	2	61	61
	1	983	983
	2	19	19
C1	1	199	199
	2	220	220

Signals

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

Pedestrian Crossings

Crossing	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Fariside	20.37	13.56	5.40
2	(unfilled)				Fariside	12.44	8.29	5.40
3	(unfilled)				Fariside	20.29	13.53	5.40
4	(unfilled)				Fariside	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 (Peds/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling						
Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Peds)	Has queue 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 from	Matrix to flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path			✓			✓	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	Exit	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	#FFFFFF

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	95
	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	26, 55, 84, 101, 12

Intergreen Matrix for Controller Stream 1

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

Interstage Matrix for Controller Stream 1

	To				
	1	2	3	4	5
1	0	7	5	6	6
2	5	0	7	6	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 ID	Stages 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	7
	3	✓	3	D.J	62	88	26	1	5
	4	✓	4	K,M,N,L	96	101	5	1	45
	5	✓	5	C,F,R,G	122	12	70	1	

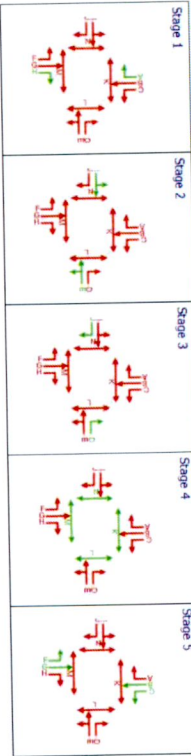
Resultant Phase Green Periods

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
N	M	1	✓	96	101	5
	N	1	✓	93	102	9

Traffic Stream Green Times

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
Am	1		1	C	122 12 70
Am	2		1	B	122 13 71
Am	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	Am	Traffic Stream	Degree of saturation (%)	Practical capacity	Calculated flow entering (PCU/h)	Calculated sat flow (veh/h)	Actual green (s)	Mean Delay (s)	Mean max queue (veh)	Utilised storage (%)	Weighted delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance index (£ per hr)
08:00-09:00	Axle	1	0	Unrestricted	1031	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Bxle	1	0	Unrestricted	159	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Cxle	1	0	Unrestricted	800	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	Dxle	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
	A1	2	89	1	644	1800	71	69.48	33.46	418.23	176.50	8.26	184.76
	A1	3	51	76	41	1800	7	106.55	2.26	28.30	17.28	0.56	17.84
	A1	3	73	23	183	1800	24	93.02	9.70	242.38	67.15	2.41	63.56
	B1	1	69	31	168	1800	25	86.80	9.52	238.03	63.68	2.37	66.05
	B1	2	8	962	61	1800	71	33.78	1.88	47.12	8.13	0.47	8.60
	B1	2	135	-33	983	1800	72	508.19	164.21	3284.26	1970.45	27.08	1597.55
D1	C1	1	77	18	19	1800	7	90.04	18.99	6.75	0.24	6.98	77.47
	D1	2	79	13	230	1800	28	94.78	12.47	311.72	85.99	3.09	88.08

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow diversion (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean reserve module (s per cycle)	Actual reserve (s per cycle)
08:00-09:00	Aexit	1	1031	253	✓	Unrestricted	Unrestricted	0		Unrestricted	0.55	180
	Bexit	1	158	158	0		Unrestricted	0		Unrestricted	0.88	180
	Cexit	1	300	259	0		Unrestricted	0		Unrestricted	0.69	180
	Dexit	1	259	259	0		Unrestricted	0		Unrestricted	1.01	180
		1	55	55	0		1800	8		1062	1.00	70
	A1	2	644	644	0		1800	720	89	1	0.00	71
		3	41	41	0		1800	80	51	76	0.00	7
		1	183	183	0		1800	250	73	23	0.00	24
	B1	2	186	186	0		1800	270	69	31	0.00	26
		1	61	61	0		1800	720	8	962	0.00	71
C1		1	983	720	0		1800	730	135	-33	0.00	72
	3	3	19	19	0		1800	80	24	279	0.00	7
	2	1	199	199	0		1800	280	77	18	0.00	25
	1	2	230	230	0		1800	290	79	13	0.00	28
	D1	2										

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic Time per Veh (s)	Mean Delay (s)	Total delay (PCU/min)	Weighted cost of delay (s per hr)	Mean stops (per hr)	Total stops (per hr)	Weighted cost of stops (s per hr)
08:00-09:00	Aexit	1	29.41	0.00	0.00	0.00	0.00	0.00
	Bexit	1	32.96	0.00	0.00	0.00	0.00	0.00
	Cexit	1	29.22	0.00	0.00	0.00	0.00	0.00
	Dexit	1	31.56	0.00	0.00	0.00	0.00	0.00
		1	2.49	34.28	0.52	7.44	33.93	0.43
	A1	2	6.20	69.48	12.43	176.50	102.25	8.26
		3	6.20	106.55	1.22	17.28	108.94	0.56
	B1	2	3.14	59.02	4.73	67.15	104.99	192.13
		1	3.03	33.78	0.57	8.13	101.53	188.85
	C1	2	3.64	508.19	138.76	1970.45	2760.89	27.08
D1		3	3.64	90.24	0.48	6.75	99.28	18.86
	1	1	3.01	5.27	108.67	212.28		2.66
	2	2	3.01	94.78	6.08	85.99	246.30	3.09

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic Initial queue (PCU)	Mean max queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (s per hr)	Wasted time total (s)	Estimated blocking
08:00-09:00	Aexit	1	0.00	0.00	42.62	0.00	12.00	
	Bexit	1	0.00	0.00	47.76	0.00	78.00	
	Cexit	1	0.00	0.00	42.35	0.00	10.00	
	Dexit	1	0.00	0.00	45.74	0.00	49.00	
		1	0.00	1.71	57.15	0.00	67.00	
	A1	2	0.00	33.46	8.00	418.23	0.00	
		3	0.00	2.26	28.50	0.00	4.00	
	B1	2	0.00	9.70	4.00	242.38	0.00	
		1	0.00	9.52	4.00	238.03	0.00	
	C1	2	0.00	154.21	5.00	3284.26	0.00	
D1		3	0.00	0.95	5.00	18.99	6.00	
	1	1	0.00	10.74	4.00	268.43	0.00	

Network Results

Run Summary

Analysis used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance index (s per hr)	Total network delay (PCU-hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of items with worst PRC	Item with worst PRC	Item with worst PRC
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

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green time (s per cycle)	Mean Delay (s per Veh)	Weighted cost of delay (s per hr)	Weighted cost of stops (s per hr)	Performance index (s per hr)
08:00-09:00	135	-33	4949	1121	128.95	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 time (s per cycle)
08:00-09:00	4949	4698	253	✓	135	✓	-33	1177

Network Results: Stops and delays

Time Segment	Mean Cruise Time (s)	Mean Delay per Veh (s)	Total delay (PCU-hr)	Weighted cost of delay (s per hr)	Mean stops per Veh (%)	Total stops (stops per hr)	Weighted cost of stops (s per hr)
08:00-09:00	16.30	126.95	174.52	2478.18	81.79	3793.69	47.57

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (s 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 (c per hr)	Total network (PCU, h/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst 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	Beak1/1	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)	Restricted 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)
Z	3

Advanced

Phase minimum broken penalty (f)	Phase maximum broken penalty (f)	Intergreen broken penalty (f)	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
Polygon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link pedestrian weightings	Use link weighting	Exclude pedestrians from results calculation	Random delay mode	Type of Service (TRANSYT)	Type of random parameter	PCU Length (m)	Calculate reflow for Path Segments	Generate 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 ⁻¹ 2)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.54	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ⁻¹ 2)	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.54	100	100

Pedestrian parameters

Dispersion type
Default

Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
☒	☒	Offsets And Green Spills	☒

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 per each link
Hill Climb (Feet)	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/h)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped/h)
14.20	2.60	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(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
Asat	1			✓	245.07						Normal	
Boat	1			✓	274.64						Normal	
Ceat	1			✓	243.53						Normal	
Deat	1			✓	263.00						Normal	
	1				20.78	✓	Sum of lanes	1800			Normal	
At	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				25.24	✓	Sum of lanes	1800			Normal	
C1	1				30.30	✓	Sum of lanes	1800			Normal	
	2				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 RRef	Saturation flow (PCU/hr)
Asat	1	1	(unfilled)			
Boat	1	1	(unfilled)			
Ceat	1	1	(unfilled)			
Deat	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
At	2	1	(unfilled)			1800
	3	1	(unfilled)			1800
B1	1	1	(unfilled)			1800
	2	1	(unfilled)			1800

C1	2	1	(unfilled)			1800
	3	1	(unfilled)			1800
D1	1	1	(unfilled)			1800
	2	1	(unfilled)			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
Asat	1	NetworkDefault	100	100	100		0.00		
Boat	1	NetworkDefault	100	100	100		0.00		
Ceat	1	NetworkDefault	100	100	100		0.00		
Deat	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		3.00		
At	2	NetworkDefault	100	100	100		8.00		
	3	NetworkDefault	100	100	100		4.00		
B1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100		5.00		
C1	2	NetworkDefault	100	100	100		5.00		
	3	NetworkDefault	100	100	100		4.00		
D1	1	NetworkDefault	100	100	100		4.00		
	2	NetworkDefault	100	100	100				

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	NotHatched	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)
Asat	1	1254	1254
Boat	1	59	59
Ceat	1	874	874
Deat	1	569	569
	1	24	24
At	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
	1	1	C	
At	2	1	B	
	3	1	A	
B1	1	1	E	
	2	1	D	
	1	1	F	
C1	2	1	G	
	3	1	H	
D1	1	1	I	
	2	1	J	

Pedestrian Crossings

Crossing	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Fariside	20.37	13.56	5.40
2	(unfilled)				Fariside	12.44	8.28	5.40
3	(unfilled)				Fariside	20.29	13.53	5.40
4	(unfilled)				Fariside	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 table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped traffic on nodes	Copy flows from	Matrix to copy 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/m)

	To			
	1	2	3	4
From	1	0	17	137
	2	354	0	91
	3	171	18	0
	4	44	24	646

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	(untitled)	D1/1, D1/2	Deat/1	#8000FF	
2	(untitled)	B1/1, B1/2	Beat/1	#FF0000	
3	(untitled)	C1/1, C1/2, C1/3	Ceat/1	#00FF00	
4	(untitled)	A1/3, A1/2, A1/1	Aeat/1	#FFFFFF	

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/m)
1	1		3	1	C1/1, Deat/1	Normal	171
	2		3	2	C1/3, Beatt/1	Normal	18
	3		3	4	C1/2, Aeat/1	Normal	878
	4		4	1	A1/3, Deat/1	Normal	44
	5		4	3	A1/2, Ceat/1	Normal	646
	6		4	2	A1/1, Beatt/1	Normal	24
	7		1	2	D1/1, Beatt/1	Normal	17
	8		1	4	D1/1, Aeat/1	Normal	68
	9		2	1	B1/1, Deat/1	Normal	364
	10		2	3	B1/1, Ceat/1	Normal	91
	11		1	3	D1/2, Ceat/1	Normal	137
	12		2	4	B1/2, Aeat/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	Blockout 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	Pedestrian	0
	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, 59, 12

Intergreen Matrix for Controller Stream 1

	To												
	A	B	C	D	E	F	G	H	I	J	K	L	M
From	A			5	5	6	6		6	5	5		8
	B			5	5			5	6	7	5	6	7
	C							5	5	5	8	5	
	D	6	5						5	5	8	5	7
	E	5	5			7	6	5		5	5	7	8
	F	6											5
	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
	K	21	21	21	21			21					5
	L			13	13				13	13			
	M	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 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	66	21	1	7
	4	✓	4	K.A.M.L	94	99	5	1	5
	5	✓	5	C.F.B.G	120	12	72	1	46

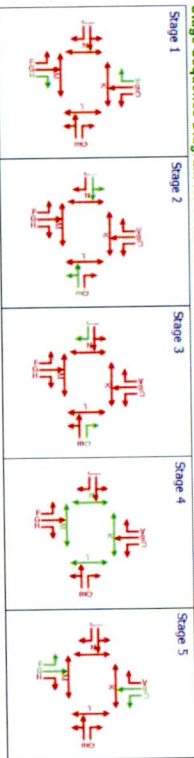
Resultant Phase Green Periods

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	96	21
	E	1	✓	31	90	29
	F	1	✓	120	12	72
	G	1	✓	120	12	72
	H	1	✓	18	25	7
	I	1	✓	31	90	29
	J	1	✓	65	96	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 Mode	Controller Stream	Phase	Green Period 1	
					Start	End Duration
17:00-18:00	AI	1		1	C	120 12 72
	AI	2		1	B	120 12 72
	AI	3		1	A	18 25 7
	BI	1		1	E	31 90 29
	BI	2		1	D	65 96 21
	CI	1		1	F	120 12 72
	CI	2		1	G	120 12 72
	CI	3		1	H	18 25 7
	DI	1		1	I	31 60 29
	DI	2		1	J	65 96 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 stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	A	1	0	Unrestricted	59	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
		2	0	Unrestricted	844	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
		3	0	Unrestricted	454	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
		4	0	Unrestricted	24	Unrestricted	180	0.00	0.00	0.00	0.00	0.00	0.00
	B	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	32.80	411.19	170.53	8.15	178.88
		3	55	64	44	1800	29	110.50	2.47	30.90	19.18	0.61	19.79
		4	140	-39	445	1800	29	64.22	88.42	2210.58	1132.54	12.78	1145.33
	C	1	23	284	171	1800	72	35.90	5.64	141.02	24.21	1.40	25.61
		2	140	-36	308	1800	21	584.63	96.13	1403.24	710.26	8.70	718.97
		3	23	284	171	1800	72	35.90	5.64	141.02	24.21	1.40	25.61
		4	140	-36	308	1800	21	584.63	96.13	1403.24	710.26	8.70	718.97
	D	1	23	284	171	1800	72	35.90	5.64	141.02	24.21	1.40	25.61
		2	140	-36	308	1800	21	584.63	96.13	1403.24	710.26	8.70	718.97
		3	23	284	171	1800	72	35.90	5.64	141.02	24.21	1.40	25.61
		4	140	-36	308	1800	21	584.63	96.13	1403.24	710.26	8.70	718.97

Traffic Stream Results: Flows and signals

Time Segment	Am Stream	Traffic flow entering (PCU/h)	Calculated flow (PCU/h)	Calculated flow out (PCU/h)	Flow discrepancy (PCU/h)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean green 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	644	644	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	Unrestricted	730	3	2638	0.00	72	
		2	646	646	0		1800	720	88	2	0.00	72		
		3	44	44	0		1800	80	56	64	0.00	7		
	B1	1	445	300	0		1800	1800	300	146	✓	-39	0.00	29
		2	308	220	0		1800	1800	220	140	✓	-36	0.00	21
		3	171	171	0		1800	1800	730	23	254	0.00	72	
C1	1	878	720	0		1800	1800	730	120	✓	-25	0.00	7	
	2	18	18	0		1800	1800	80	23	300	0.00	72		
	3	85	85	0		1800	1800	300	28	216	0.00	29		
D1	2	137	137	0		1800	220	62		45	0.00	21		

Traffic Stream Results: Stops and delays

Time Segment	Am Stream	Traffic flow entering (PCU/h)	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU*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	28.41	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	56.39	14.26	0.18
	A1	2	6.20	66.92	12.01	170.53	100.62	650.04	8.15
	A1	3	6.20	110.50	1.36	19.18	111.18	48.92	0.61
	B1	1	3.14	645.22	79.76	1132.44	339.80	1016.39	12.78
	B1	2	3.14	584.63	50.02	710.26	315.44	693.97	8.70
	B1	3	3.03	35.50	1.71	24.21	65.17	111.44	1.40
17:00-18:00	C1	1	3.64	367.57	87.21	1238.35	238.74	7150.10	21.84
	C1	2	3.64	89.54	0.45	6.36	99.02	17.82	0.22
	C1	3	3.01	67.98	1.60	22.78	87.87	74.69	0.94
	D1	2	3.01	88.21	3.36	47.67	101.02	138.40	1.74

Traffic Stream Results: Queues and blocking

Time Segment	Am Stream	Traffic flow entering (PCU/h)	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	42.82	0.00	0.00	125.00	
	Bexit	1	0.00	0.00	47.76	0.00	0.00	13.00	
	Cexit	1	0.00	0.00	42.35	0.00	0.00	30.00	
	Dexit	1	0.00	0.00	45.74	0.00	0.00	71.00	
	A1	1	0.00	0.72	3.00	24.02	0.00	3.00	
	A1	2	0.00	32.80	8.00	411.19	0.00	3.00	
	A1	3	0.00	2.47	8.00	30.90	0.00	0.00	
	B1	1	0.00	88.42	4.00	2210.58	0.00	0.00	
	B1	2	0.00	56.13	4.00	1403.24	0.00	0.00	
	B1	3	0.00	5.64	4.00	141.02	0.00	0.00	
17:00-18:00	C1	2	0.00	112.66	5.00	2253.13	0.00	6.00	
	C1	3	0.00	0.90	5.00	17.95	0.00	6.00	
	D1	1	0.00	3.78	4.00	94.07	0.00	0.00	
	D1	2	0.00	7.01	4.00	175.20	0.00	0.00	

Network Results

Run Summary

Analysis used	Run start time	Run finish time	Modelling start time (H:Mm)	Network Cycle Time (s)	Performance index (s per hr)	Total network delay (PCU*hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of worst signalised PRC	Item with worst PRC	Item with worst PR
26/09/2022	14:48:17	14:48:18	17:00	100	3431.62	237.67	148.33	B1/1	3	14	B1/1	B1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance index (s per hr)
17:00-18:00	148	-39	5131	1122	185.76	3374.96	56.66	3431.62

Network Results: Flows and signals

Time Segment	Calculated flow entering (PCU/h)	Calculated flow out (PCU/h)	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)	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	156.75	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	255.00

TRANSYT 15	
Version: 15.5.3.7	
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Filename: Junction 3.115
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	
UTRegion	
Driving side	Left
Date	17/08/2022
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	210124
Enumerator	HEADOFFICE\Garvey/D
Description	

Model and Results

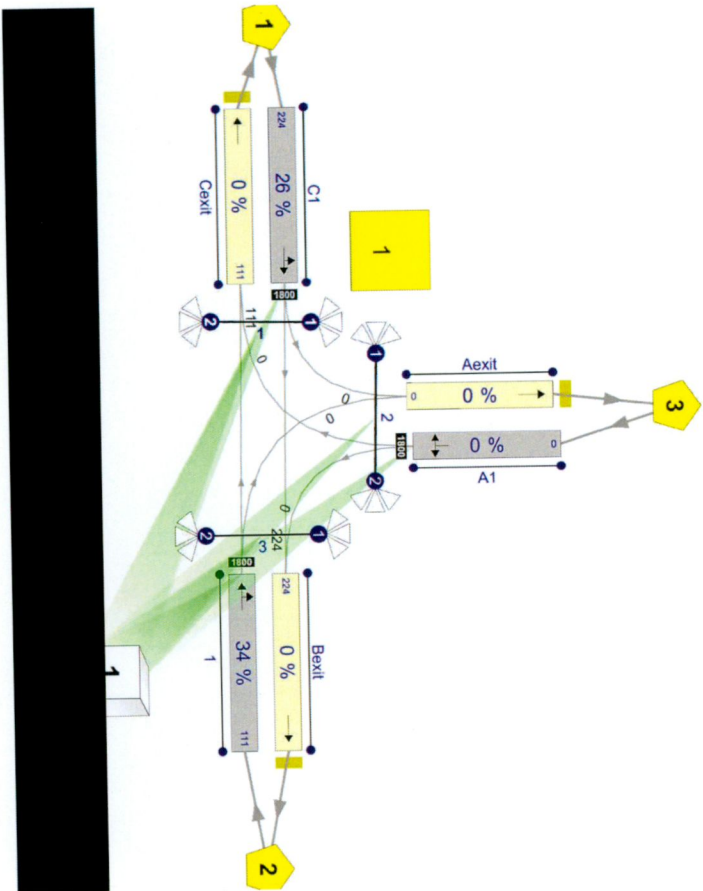
Enable controller effects	Enable fuel consumption	Enable quick time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and non-uniform results	Display unweighted results	Display T24 cycle timings	Display effective greens in	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	Traffic units	Traffic units	Flow units	Average delay units	Total delay units	Rate of delay units
£	km/h	m	mpg	l/h	kg	PCU	PCU	PCU	per-hour	s	-hour	per-hour

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

Network Diagrams



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 (H:M:S)	Network Cycle Time (s)	Performance Index (E per h)	Total network delay (h/hv)	Highest DOS (h/hv)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PRC
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	Boxill/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 (H:M:S)	Locked
DS-CSLS 2024 AM				08:00	

Network Options

Network timings

Network cycle time (s)	Restricted 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 (E)	Phase maximum broken penalty (E)	Intergreen broken penalty (E)	Starting Red-with-a-number (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Polygon Dispersion (PCDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link weightings	Exclude pedestrians from results calculation	Random mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Segments	Generate Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSTYT)	Uniform (TRANSTYT)	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 ⁻¹ /2)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.54	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ⁻¹ /2)	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.54	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 for each run
Hill Climb (F=Max)	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 (E per PCU/h)	Vehicle Monetary Value Of Stops (E per 100 stops)	Pedestrian monetary value of delay (E per Ped-h)
14.20	2.80	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation flow	Saturation flow source	Saturation flow (PCU/h)	Is signal controlled	Is signal give way	Traffic type	Allow Nearside Turn On Red
	Axst	1		✓	218.21						Normal	
	Bxst	1		✓	242.03						Normal	
	Cxst	1		✓	260.22						Normal	
	At	1		✓	47.34	✓	Sum of lanes	1500	✓		Normal	
	B1	1		✓	35.96	✓	Sum of lanes	1800	✓		Normal	
	C1	1		✓	56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Am	Traffic Stream	Lane	Name	Description	Use Ref	Saturation flow (PCU/hr)
Asat	1	1	(unfilled)			
Bsat	1	1	(unfilled)			
Csat	1	1	(unfilled)			1800
At	1	1	(unfilled)			1800
B1	1	1	(unfilled)			1800
C1	1	1	(unfilled)			1800

Modelling

Am	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
Asat	1	NetworkDefault	100	100	100		0.00		
Bsat	1	NetworkDefault	100	100	100		0.00		
Csat	1	NetworkDefault	100	100	100		0.00		
At	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

Am	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	NotIncluded	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

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

Normal traffic - Advanced

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

Flows

Am	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Asat	1	8	8
Bsat	1	225	225
Csat	1	116	116
At	1	23	23
B1	1	112	112
C1	1	214	214

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled
At	1	1	A	
B1	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Farside	10.52	7.01	5.40
2	(unfilled)				Farside	10.98	7.32	5.40
3	(unfilled)				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 point exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Limit length multiplier	Limit paths by number	Path number limit
1	(unfilled)	✓	✓	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.

Train 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	(unfilled)	C1/T	Csat/U1	#D000FF
	2	(unfilled)	B1/T	Bsat/U1	
	3	(unfilled)	A1/T	Asat/U1	#D0FF00

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/T, Bsat/U1	Normal	211
2	2		2	1	B1/T, Csat/U1	Normal	107
3	3		1	3	C1/T, Asat/U1	Normal	3
4	4		2	3	B1/T, Asat/U1	Normal	5
5	5		3	2	A1/T, Bsat/U1	Normal	14
6	6		3	1	A1/T, Csat/U1	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	Blockout Time (s)
1	A	(unfilled)	7	300	0	0	Traffic	
	B	(unfilled)	7	300	0	0	Traffic	
	C	(unfilled)	7	300	0	0	Traffic	
	D	(unfilled)	5	300	0	0	Pedestrian	0
	E	(unfilled)	5	300	0	0	Pedestrian	0
	F	(unfilled)	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	(unfilled)	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	57	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

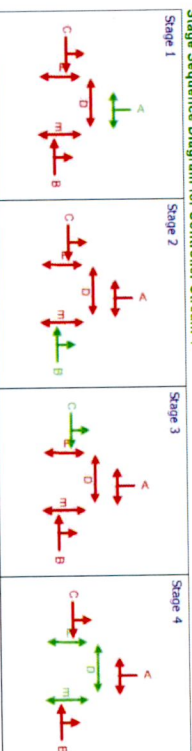
Resultant Phase Green Periods

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

Am Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1 Start	Green Period 1 End	Duration
A1	1		A	97	4	7
B1	1		B	9	26	17
C1	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	Am Traffic Stream	Degree of saturation (%)	Practical reserve capacity (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated flow leaving (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual delay (s per cycle)	Mean delay per vehicle (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	Axxt	1	0	Unrestricted	8	Unrestricted	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bxxt	1	0	Unrestricted	225	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Cxxt	1	0	Unrestricted	116	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	16	483	23	1800	7	45.30	0.61	7.62	4.11	0.27	4.38	
09:00	B1	1	35	180	112	1800	17	38.79	2.80	46.63	17.14	1.25	18.38	
	C1	1	25	263	214	1800	47	18.03	3.66	39.42	13.53	1.54	15.08	

Traffic Stream Results: Flows and signals

Time Segment	Am Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow leaving (PCU/hr)	Flow discrepancy	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean module of error	Actual module of error
08:00-09:00	Axxt	1	8	225	0	Unrestricted	Unrestricted	0	Unrestricted	Unrestricted	0.94	100
	Bxxt	1	116	116	0	Unrestricted	Unrestricted	0	Unrestricted	Unrestricted	0.77	100
	Cxxt	1	23	23	0	Unrestricted	Unrestricted	0	Unrestricted	Unrestricted	1.19	100
	A1	1	112	112	0	1800	144	16	1800	324	0.00	7
09:00	B1	1	214	214	0	1800	864	25	1800	160	0.00	17
	C1	1	214	214	0	1800	864	25	1800	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/h/veh)	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	Axft	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bxft	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cxft	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	Ax	1	5.68	45.30	0.29	4.11	94.17	21.66	0.27
C1	B1	1	4.32	38.79	1.21	17.14	88.69	99.34	1.25
	C1	1	6.76	18.03	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	Axft	1	0.00	0.00	37.95	0.00	0.00	100.00	
	Bxft	1	0.00	0.00	42.09	0.00	0.00	31.00	
	Cxft	1	0.00	0.00	45.26	0.00	0.00	64.00	
	Ax	1	0.00	0.61	8.00	7.62	0.00	6.00	
C1	B1	1	0.00	2.80	6.00	46.63	0.00	0.00	
	C1	1	0.00	3.55	9.00	38.42	0.00	0.00	

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (H:MM)	Network Cycle Time (s)	Performance Index (¢ per hr)	Total network delay (s (per cycle))	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalised PRC	Item with worst over PRC
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	Bxft/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index
08:00-09:00	35	0	698	371	12.63	34.78	3.06

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/h/veh)	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	17.61	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 (H:MM)	Network Cycle Time (s)	Performance Index (¢ per hr)	Total network delay (s (per cycle))	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalised PRC	Item with worst over PRC
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	Bxft/1

Analysis Set Details

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

Demand Set Details

Name	Description	Composite	Demand set	Start time (H:MM)	Locked
DS+CSLS 2024 PM				17:00	☐

Network Options

Network timings

Network cycle time (s)	Restricted 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-Archer (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 scaling factor (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from inside 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 (m/s ²)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (m/s ²)	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	130

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 (Feet)	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/h)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped/h)
14.20	2.60	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/h)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Asat	1			✓	218.21						Normal	
Basit	1			✓	242.03						Normal	
Casit	1			✓	280.22						Normal	
As	1				47.34	✓	Sum of lanes	1800	✓		Normal	
BS	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 Rest	Saturation flow (PCU/h)
Asat	1	1	(unfilled)			
Basit	1	1	(unfilled)			
Casit	1	1	(unfilled)			1800
As	1	1	(unfilled)			1800
BS	1	1	(unfilled)			1800
C1	1	1	(unfilled)			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	Max degree of saturation limit
Asat	1	NetworkDefault	100	100	100		0.00		
Basit	1	NetworkDefault	100	100	100		0.00		
Casit	1	NetworkDefault	100	100	100		8.00		
As	1	NetworkDefault	100	100	100		6.00		
BS	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100				

Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle+/- Service	Vehicle+/- Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	NotIncluded	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/h)	Normal Flow (PCU/h)
Asat	1	18	18
Basit	1	163	163
Casit	1	194	194
As	1	10	10
BS	1	161	161
C1	1	164	164

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
As	1	1	A	
BS	1	1	B	
C1	1	1	C	

Pedestrian Crossings

Pedestrian Crossings	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Farside	10.52	7.01	5.40
2	(unfilled)				Farside	10.88	7.32	5.40
3	(unfilled)				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 (Peds/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Peds)	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 path by length	Path length 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/T	Ceal/T	#0000FF
	2	(untitled)	B1/T	Beal/T	#FF0000
	3	(untitled)	A1/T	Aeal/T	#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/T, Beal/T	Normal	157
	2		2	1	B1/T, Ceal/T	Normal	150
	3		1	3	C1/T, Aeal/T	Normal	7
	4		2	3	B1/T, Aeal/T	Normal	11
	5		3	2	A1/T, Beal/T	Normal	6
	6		3	1	A1/T, Ceal/T	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	Blockout 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
From	A	5	5
	B	5	7
	C	5	7
	D	11	11
	E	11	11
	F	11	11

Interstage Matrix for Controller Stream 1

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

Resultant Stages

Controller stream	Resultant Stage	In 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

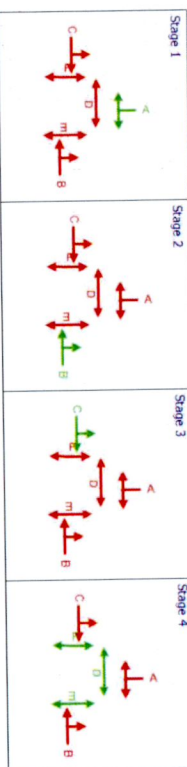
Resultant Phase Green Periods

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 Mode	Controller Stream	Phase	Start	End	Duration
A1	1		1	A	97	4	7
	1		1	B	9	41	32
	1		1	C	41	73	32
	1		1	D	80	86	6

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 (PCU/hr)	Calculated reserve capacity (PCU/hr)	Actual green (s per cycle)	Mean delay per queue (s)	Mean per queue max (s)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	Ax1	1	0	Unrestricted	18	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Bx1	1	0	Unrestricted	163	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Cx1	1	0	Unrestricted	154	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	17:00-18:00	1	7	1196	10	1800	7	43.71	0.28	3.23	1.72	1.84
18:00	B1	1	27	232	161	1800	32	25.79	55.25	16.38	1.47	17.85
	C1	1	28	226	164	1800	32	25.86	3.38	37.53	16.73	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 (PCU/hr)	Mean green (s per cycle)
17:00-18:00	Ax1	1	18	18	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.78	100
	Bx1	1	163	163	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	1.07	100
	Cx1	1	154	154	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	1.09	100
	17:00-18:00	1	10	10	0	Unrestricted	Unrestricted	Unrestricted	7	Unrestricted	1.98	7
18:00	B1	1	161	161	0	Unrestricted	Unrestricted	Unrestricted	27	Unrestricted	2.32	32
	C1	1	164	164	0	Unrestricted	Unrestricted	Unrestricted	28	Unrestricted	2.26	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	Ax1	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Bx1	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Cx1	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	17:00-18:00	1	5.88	43.71	0.12	1.72	91.75	9.17	1.47
18:00	B1	1	4.32	25.79	1.15	16.38	72.90	117.36	1.47
	C1	1	6.76	25.86	1.16	16.73	72.96	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	Ax1	1	0.00	0.00	37.95	0.00	0.00	97.00	0.00
	Bx1	1	0.00	0.00	42.09	0.00	0.00	57.00	0.00
	Cx1	1	0.00	0.00	45.26	0.00	0.00	57.00	0.00
	17:00-18:00	1	0.00	0.28	8.00	3.23	0.00	0.00	0.00
18:00	B1	1	0.00	3.32	6.00	55.25	0.00	0.00	0.00
	C1	1	0.00	3.38	9.00	37.53	0.00	0.00	0.00

Network Results

Run Summary

Analysis used	Run start time	Run finish time	Modelling start time (H:MM:SS)	Network Cycle Time (s)	Performance Index (£ per hr)	Total model delay (hr/hr)	Highest DOS	Item with highest DOS	Number of oversaturated items (%)	Percentage of oversaturated items (%)	Item with worst unsaturated PRC	Item with worst over PRC
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	Bx1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index
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 (H:MM)	Network Cycle time (s)	Performance Index (E per hr)	Total network delay (hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PRC
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	Bx1/1	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 (H:MM)	Locked
DS-CSLS 2029 AM				08:00	

Network Options

Network timings

Network cycle time (s)	Restricted 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 (f)	Phase maximum broken penalty (f)	Intergreen broken penalty (f)	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	Threshold (%)	Cruise scaling factor (%)	Use link weighting	Use link weighting	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-Services	Type of random parameter	PCU Length (m)	Calculate results for Profile Segments	Generate 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 ⁻¹ 2)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ⁻¹ 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 turn
Hill Climb (F=Full)	15, 40, -1, 15	50, 50, 5, 5, 0.5		✓	1			Do nothing
	40, 1, -1, 1	0.5, 0.05, 0.05						

Economics

Vehicle Monetary Value Of Delay (f per PCU-hr)	Vehicle Monetary Value Of Stops (f per 100 stops)	Pedestrian monetary value of delay (f 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 (m)	Has Saturation flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
	Asx1	1		218.21						Normal	
	Bx1	1		242.03						Normal	
	Cx1	1		260.22						Normal	
	A1	1		47.34	✓	Sum of lanes	1800	✓		Normal	
	B1	1		35.66	✓	Sum of lanes	1900	✓		Normal	
	C1	1		56.37	✓	Sum of lanes	1400	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RRS?	Saturation flow (PCU/hr)
Aeast	1	1	(unfilled)			
	1	1	(unfilled)			
	1	1	(unfilled)			
Ceast	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
B1	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
	1	1	(unfilled)			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
Aeast	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
Ceast	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
B1	1	NetworkDefault	100	100	100		6.00		
	1	NetworkDefault	100	100	100		6.00		
	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	NotIncluded	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)
Aeast	1	8	8
	1	238	238
	1	120	120
Ceast	1	23	23
	1	116	116
	1	227	227

Signals

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

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				FarSIDE	10.52	7.01	5.40
2	(unfilled)				FarSIDE	10.98	7.32	5.40
3	(unfilled)				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 from	Matrix to copy paths by length	Limit path length by multiplier	Limit paths by number	Path number limit
1	(unfilled)	✓	✓	Path			✓		✓	1.25		

Normal Input Flows (PCU/hr)

To			
	1	2	3
From	1	0	224
	2	111	0
	3	9	14

Bus Input Flows not shown as they are blank.

Train Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

Locations

OD Matrix	Location	Name	Entries	Exit	Colour
1	1	(unfilled)	C111	Ceast1	#D0D0FF
	2	(unfilled)	B11	Beast1	#FFD0D0
	3	(unfilled)	A11	Aeast1	#D0FFD0

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	C111, Beast1	Normal	224
	2		2	1	B11, Ceast1	Normal	111
	3		1	3	C111, Aeast1	Normal	3
	4		2	3	B11, Aeast1	Normal	5
	5		3	2	A11, Beast1	Normal	14
	6		3	1	A11, Ceast1	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	Blockout Time (s)
1	A	(unfilled)	7	300	0	0	Traffic	
	B	(unfilled)	7	300	0	0	Traffic	
	C	(unfilled)	7	300	0	0	Traffic	
	D	(unfilled)	5	300	0	0	Pedestrian	0
	E	(unfilled)	5	300	0	0	Pedestrian	0
	F	(unfilled)	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	(unfilled)	Simple	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
	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	8
	2	5	0	8
	3	5	0	8
	4	11	11	11

Resultant Stages

Controller stream	Resultant stage	In base stage	Library stage	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	57	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

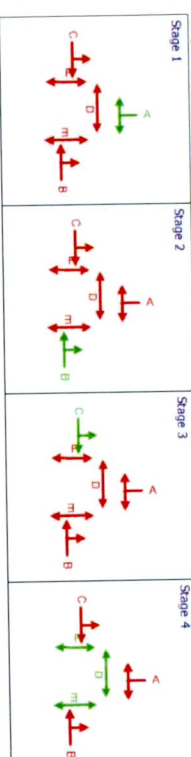
Resultant Phase Green Periods

Controller stream	Phase	Green period	In 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

A/m	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
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	A/m	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (pccu/h)	Calculated flow (pccu/h)	Calculated flow sat flow (pccu/h)	Actual delay (s per veh)	Mean delay per queue (pccu)	Mean queue length (veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance index (£ per hr)
08:00-09:00	Ax1	1	0	Unrestricted	8	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bx1	1	0	Unrestricted	238	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cx1	1	0	Unrestricted	120	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	A1	1	16	483	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	19.16
	C1	1	26	243	227	1800	47	18.22	3.77	41.86	14.52	1.66	16.19

Traffic Stream Results: Flows and signals

Time Segment	A/m	Traffic Stream	Calculated flow entering (pccu/h)	Calculated flow leaving (pccu/h)	Flow discrepancy (pccu/h)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean modulus of error	Actual green cycle
08:00-09:00	Ax1	1	8	8	0		Unrestricted	Unrestricted	0		Unrestricted	0.84	100
	Bx1	1	238	238	0		Unrestricted	Unrestricted	0		Unrestricted	0.77	100
	Cx1	1	120	120	0		Unrestricted	Unrestricted	0		Unrestricted	1.19	100
	A1	1	23	23	0		1800	144	16		Unrestricted	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 (PCU/h/veh)	Total delay (PCU/h/veh)	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	AxHt	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	BxHt	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	CxHt	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	AxHt	1	5.88	45.30	0.29	4.11	94.17	21.66	0.27
08:00-09:00	AI	1	4.32	39.04	1.26	17.86	88.88	103.10	1.29
	BI	1	6.76	16.22	1.02	14.52	98.40	132.58	1.66
	CI	1							

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	AxHt	1	0.00	0.00	37.95	0.00	0.00	100.00	
	BxHt	1	0.00	0.00	42.08	0.00	0.00	31.00	
	CxHt	1	0.00	0.00	45.28	0.00	0.00	64.00	
	AI	1	0.00	0.61	8.00	7.62	0.00	6.00	
08:00-09:00	BI	1	0.00	2.90	6.00	48.38	0.00	0.00	
	CI	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 Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
3	26/09/2022 14:56:24	26/09/2022 14:56:24	08:00	100	38.72	2.87	35.80	81/1	0	0	81/1	8xH/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/h)	Actual green per Veh (s)	Mean Delay (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/h)	Calculated flow out (PCU/h)	Flow discrepancy (PCU/h)	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/veh)	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	17.61	12.64	2.87	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 Cycle Time (s)	Performance Index (€ per hr)	Total network delay (PCU-hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
4	26/09/2022 14:56:25	26/09/2022 14:56:25	17:00	100	40.09	2.59	28.96	C1/1	0	0	C1/1	8xH/1

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)	Restricted to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
100	Restricted to SCOOT cycle times	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 pedestrian calculations	Random delay mode	Type of Vehicle-Services (TRANSYT)	Type of random parameter (TRANSYT)	PCU results for Path Segments	Calculate 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 (m/s ²)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	65

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (m/s 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 OUF Profile accuracy
✓	✓	Offsets And Green Spills	✓

Advanced

Optimisation type	Hill climb increments	OUF profile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller turn
Hill Climb (Feet)	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 Peash)
14.20	2.60	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Asxlt	1			✓	218.21					Normal	
Bxalt	1			✓	242.03					Normal	
Cxalt	1			✓	260.22			✓		Normal	
At	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 RFB?	Saturation flow (PCU/hr)
Asxlt	1	1	(unfilled)			
Bxalt	1	1	(unfilled)			
Cxalt	1	1	(unfilled)			1800
At	1	1	(unfilled)			1800
B1	1	1	(unfilled)			1800
C1	1	1	(unfilled)			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	Max degree of saturation limit
Asxlt	1	NetworkDefault	100	100	100		0.00		
Bxalt	1	NetworkDefault	100	100	100		0.00		
Cxalt	1	NetworkDefault	100	100	100		8.00		
At	1	NetworkDefault	100	100	100		6.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100				

Modelling - Advanced

Arm	Traffic Stream	Initial queue	Type of Vehicle-In-Services	Vehicle-In-Services	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)
Asxlt	1	18	18
Bxalt	1	171	171
Cxalt	1	163	163
At	1	10	10
B1	1	170	170
C1	1	172	172

Signals

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

Pedestrian Crossings

Pedestrian Crossings	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Fariside	10.52	7.01	5.40
2	(unfilled)				Fariside	10.86	7.32	5.40
3	(unfilled)				Fariside	10.44	6.95	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 (V-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 table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows from	Matrix to copy from	Limit by path length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

		To		
From		1	2	3
	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	Cex1/1	#0000FF
	2	(untitled)	B1/1	Bex1/1	#FF0000
	3	(untitled)	A1/1	Aex1/1	#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, Bex1/1	Normal	165
	2		2	1	B1/1, Cex1/1	Normal	159
	3		1	3	C1/1, Aex1/1	Normal	7
	4		2	3	B1/1, Aex1/1	Normal	11
	5		3	2	A1/1, Bex1/1	Normal	6
	6		3	1	A1/1, Cex1/1	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	Pedestrian	0
	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	
	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					
From	A	B	C	D	E	F	
	A	5	5	5	8	7	
	B	5		7	5	8	
From	C	5		7	8	5	
	D	11	11	11			
	E	11	11	11			
		F	11	11	11		

Interstage Matrix for Controller Stream 1

		To			
From	1	2	3	4	
	1	0	5	8	
	2	5	0	8	
From	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		41	32	1	7
	3	✓	3	C	41	73	32	1	7
	4	✓	4	D, E, F	81	86	5	1	5

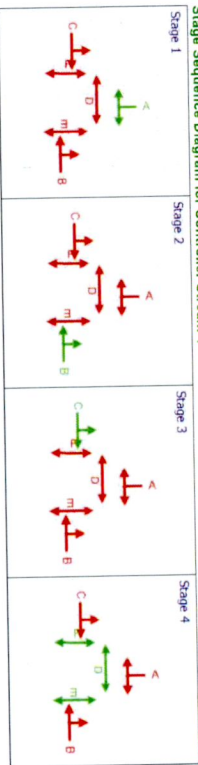
Resultant Phase Green Periods

Controller stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	57	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 (PCU/hr)	Calculated reserve capacity (PCU/hr)	Calculated sat flow	Actual green cycle (s)	Mean Delay per veh (s)	Mean queue max (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	AxHt	1	0	Unrestricted	18	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	BxHt	1	0	Unrestricted	171	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	CxHt	1	0	Unrestricted	163	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
18:00	A1	1	7	1196	10	1800	7	43.71	0.26	3.23	1.72	0.12	1.64
	B1	1	29	214	170	1800	32	26.00	56.41	17.43	1.56	18.99	18.99
	C1	1	29	214	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 green cycle (s)	Actual green cycle (s)
17:00-18:00	AxHt	1	18	18	0	Unrestricted	Unrestricted	Unrestricted	0		Unrestricted	1.08	100
	BxHt	1	171	171	0	Unrestricted	Unrestricted	Unrestricted	0		Unrestricted	1.09	100
	CxHt	1	163	163	0	Unrestricted	Unrestricted	Unrestricted	0		Unrestricted	1.09	100
18:00	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)	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	AxHt	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	BxHt	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	CxHt	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
18:00	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 (PCU)	Utilised storage (%)	Excess queue (per cycle)	Wasted time total (s)	Estimated blocking
17:00-18:00	AxHt	1	0.00	0.00	37.95	0.00	0.00	97.00	
	BxHt	1	0.00	0.00	42.09	0.00	0.00	55.00	
	CxHt	1	0.00	0.00	45.26	0.00	0.00	56.00	
18:00	A1	1	0.00	0.26	8.00	3.23	0.00	7.00	
	B1	1	0.00	3.60	6.00	56.41	0.00	0.00	
	C1	1	0.00	3.59	9.00	38.94	0.00	0.00	

Network Results

Run Summary

Analysis used	Run start time	Run finish time	Modelling (HH:MM)	Network Time (s)	Performance Index (per hr)	Total network (PCU-hr)	Highest DOS	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsaturated PRC	Item with worst PRC
4	26/09/2022 14:56:24	26/09/2022 14:56:25	17:00	100	40.09	2.59	28.96	C111	0	0	C111	BoxH1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (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	Arm	Traffic Stream	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 cycle (s)
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)	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 storage (%)	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 (H:M)	Network Cycle Time (s)	Performance Index (s per hr)	Total network delay (H:M)	Highest DOS (%)	Item with highest DOS	Number of over-sat items	Percentage of oversaturated items (%)	Item with worst unsignalised PRC	Item with worst signalised PRC	Item with worst over PRC
5	26/09/2022 14:56:21	26/09/2022 14:56:21	06:00	100	193.03	12:70	76.30	C1/1	0	0	C1/1	C1/1	C1/1

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 (H:M)	Locked
DS-Full SDZ 2039 AM				06:00	

Network Options

Network timings

Network cycle time (s)	Restricted 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 (s)	Phase maximum broken penalty (s)	Intergreen broken penalty (s)	Starting Red-with-Arrow (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Pitton Dependent (PDM)	100	100	Cruise Speeds

Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Service	Type of random parameter	PCU Length (m)	Calculate results for Segments	Generate 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 ⁻¹ 2)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ⁻¹ 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 per each run
Hill Climb (Feet)	15, 40, -1, 15	50, 50, 5, 5, 0.5		✓	1			Do nothing
	40, 1, -1, 1	0.5, 0.05, 0.05						

Economics

Vehicle Monetary Value Of Delay (£ per PCU/h)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped/h)
14.20	2.60	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation flow	Saturation flow source	Saturation flow (PCU/h)	Is signal controlled	Is one way	Traffic type	Allow Nearside Turn On Red
	Axelt	1		✓	218.21						Normal	
	Baxelt	1		✓	242.03						Normal	
	Caxelt	1		✓	260.22						Normal	
	At	1		✓	47.34	✓	Sum of lanes	1800	✓		Normal	
	B1	1		✓	35.95	✓	Sum of lanes	1300	✓		Normal	
	C1	1		✓	55.37	✓	Sum of lanes	1300	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RRef	Saturation flow (PCU/hr)
Aest	1	1	(unfilled)			
	1	1	(unfilled)			
	1	1	(unfilled)			
Caxit	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
	1	1	(unfilled)			1800
B1	1	1	1	(unfilled)		1800
	1	1	1	(unfilled)		1800
	1	1	1	(unfilled)		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
Aest	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
	1	NetworkDefault	100	100	100		0.00		
Caxit	1	NetworkDefault	100	100	100		8.00		
	1	NetworkDefault	100	100	100		8.00		
	1	NetworkDefault	100	100	100		6.00		
B1	1	NetworkDefault	100	100	100		9.00		
	1	NetworkDefault	100	100	100		9.00		
	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
	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100
	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

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

Normal traffic - Advanced

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

Flows

Arm	Traffic Stream	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
Aest	1	296	296
	1	306	306
	1	384	384
Caxit	1	384	384
	1	256	256
	1	328	328
B1	1	412	412
	1	412	412
	1	412	412

Signals

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

Pedestrian Crossings

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

Pedestrian Crossings - Signals

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

Pedestrian Crossings - Sides

Crossing	Side	Saturation flow (Ped/hr)
ALL	ALL	11000
	ALL	11000
	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		
	ALL	100	100		0.00		
	ALL	100	100		0.00		

Local OD Matrix - Local Matrix: 1

Local Matrix Options

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

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	Exit	Colour
1	1	(unfilled)	C1/I	Caxit/I	#0000FF
	2	(unfilled)	B1/I	Baxit/I	#FF0000
	3	(unfilled)	A1/I	Aaxit/I	#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/I, Baxit/I	Normal	248
	2		2	1	B1/I, Caxit/I	Normal	196
	3		1	3	C1/I, Aaxit/I	Normal	164
	4		2	3	B1/I, Aaxit/I	Normal	132
	5		3	2	A1/I, Baxit/I	Normal	58
	6		3	1	A1/I, Caxit/I	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	Blockout Time (s)
1	A	(unfilled)	7	300	0	0	Traffic	
	B	(unfilled)	7	300	0	0	Traffic	
	C	(unfilled)	7	300	0	0	Peds/Stran	0
	D	(unfilled)	5	300	0	0	Peds/Stran	0
	E	(unfilled)	5	300	0	0	Peds/Stran	0
	F	(unfilled)	5	300	0	0	Peds/Stran	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	(unfilled)	Simple	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				
	E	11	11				
	F	11	11				

Interstage Matrix for Controller Stream 1

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

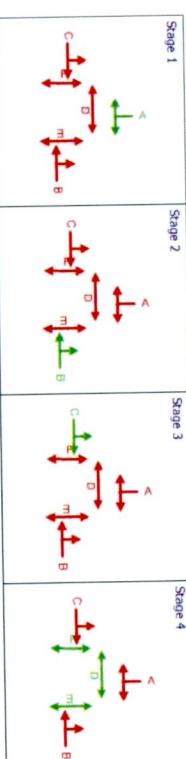
Resultant Phase Green Periods

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

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green period 1
A1	1			A	97 16 19
B1	1			B	21 44 23
C1	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	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay max queue (PCU)	Utilised saturation (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance index (£ per hr)
08:00-09:00	Axlt	1	0	Unrestricted	286	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Bxlt	1	0	Unrestricted	306	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Cxlt	1	0	Unrestricted	384	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Axlt	1	71	27	286	1800	19	48.26	7.46	93.29	48.74	53.06
	B1	1	76	19	328	1800	23	47.99	5.54	158.95	82.09	68.33
	C1	1	78	18	412	1800	29	42.19	11.49	127.66	58.56	73.66

Traffic Stream Results: Flows and signals

Time Segment	Am	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 green modulus (s per cycle)	Actual
08:00-09:00	Axlt	1	296	296	0		Unrestricted	Unrestricted	0		Unrestricted	0.81	100
	Bxlt	1	306	306	0		Unrestricted	Unrestricted	0		Unrestricted	0.82	100
	Cxlt	1	384	384	0		Unrestricted	Unrestricted	0		Unrestricted	0.82	100
	A1	1	256	256	0		1800	380	71		27	0.00	19
	B1	1	328	328	0		1800	432	76		19	0.00	23
	C1	1	412	412	0		1800	540	78		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/h/ln)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stop per cycle)	Weighted cost of stops (£ per hr)
08:00-09:00	AxHt	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	BxHt	1	23.04	0.00	0.00	0.00	0.00	0.00	0.00
	CxHt	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	Ax	1	6.68	48.26	3.50	48.74	103.05	293.61	3.31
C1	B1	1	4.32	47.99	4.37	62.09	102.99	337.80	4.24
	C1	1	6.76	42.19	4.83	66.56	98.70	406.63	5.10

Traffic Stream Results: Queues and blocking

Time Segment	Arm	Traffic Stream	Initial queue (PCU)	Mean queue (PCU)	Max queue storage (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s)	Estimated blocking
08:00-09:00	AxHt	1	0.00	0.00	37.95	0.00	0.00	34.00	
	BxHt	1	0.00	0.00	42.09	0.00	0.00	23.00	
	CxHt	1	0.00	0.00	45.26	0.00	0.00	32.00	
	Ax	1	0.00	7.48	8.00	93.25	0.00	0.00	
C1	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-h/ln)	Highest DOS (%)	Item with worst DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalised PRC	Item with worst signalised PRC	Item with worst 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	BxHt/1	C1/

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/h)	Actual green per Veh (s)	Mean Delay delay (£ per hr)	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/h)	Calculated flow out (PCU/h)	Flow discrepancy (PCU/h)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s)
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/h/ln)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Total stops (Stops per cycle)	Weighted cost of stops (£ per hr)
08:00-09:00	17.37	22.86	12.70	180.39	60.61	1008.24	12.64

Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s)
08:00-09:00	158.95	0.00	83.00

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-h/ln)	Highest DOS (%)	Item with worst DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsignalised PRC	Item with worst signalised PRC	Item with worst 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	BxHt/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 set	Start time (HH:mm)	Locked
DS+Full SDZ 2039 PM				17:00	

Network Options

Network timings

Network cycle time (s)	Restricted to SCOOT cycle times	Time segment length (min)	Number of time segments	Modified time period (min)
100		60	1	60

Signalis options

Start displacement (s)	End displacement (s)
2	3

Advanced

Phase minimum broken penalty (s)	Phase maximum broken penalty (s)	Intergreen broken penalty (s)	Starting Red-with-Archer (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 scaling factor (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random Vehicle-in-Service mode	Type of random parameter	PCU Length (m)	Calculate results for Profile Segments	Generate Profile Data
1	90	100	✓	✓		Complex	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 (m/s ²)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (m/s 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 OUF 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 (Fpass)	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/h)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-h)
14.20	2.60	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto Length (m)	Has Saturation flow	Saturation flow source	Saturation flow (PCU/h)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Axelt	1			✓ 218.21						Normal	
Baxelt	1			✓ 242.03						Normal	
Caxelt	1			✓ 260.22	✓					Normal	
At	1			✓ 47.34		Sum of lanes	1800	✓		Normal	
Bt	1				✓ 35.96	Sum of lanes	1800			Normal	
Ct	1				✓ 56.37	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RRB?	Saturation flow (PCU/h)
Axelt	1	1	(unfilled)			
Baxelt	1	1	(unfilled)			
Caxelt	1	1	(unfilled)			1800
At	1	1	(unfilled)			1800
Bt	1	1	(unfilled)			1800
Ct	1	1	(unfilled)			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
Axelt	1	NetworkDefault	100	100	100		0.00		
Baxelt	1	NetworkDefault	100	100	100		0.00		
Caxelt	1	NetworkDefault	100	100	100		0.00		
At	1	NetworkDefault	100	100	100		8.00		
Bt	1	NetworkDefault	100	100	100		6.00		
Ct	1	NetworkDefault	100	100	100		5.00		

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	NotIncluded	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/h)	Normal Flow (PCU/h)
Axelt	1	426	426
Baxelt	1	179	179
Caxelt	1	330	330
At	1	143	143
Bt	1	567	567
Ct	1	225	225

Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
At	1	1	A	
Bt	1	1	B	
Ct	1	1	C	

Pedestrian Crossings

Pedestrian Crossings	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Fariside	10.52	7.01	5.40
2	(unfilled)				Fariside	10.38	7.32	5.40
3	(unfilled)				Fariside	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 (Peds/hr)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (Peds)	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 to calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on nodes	Copy flows from	Matrix to copy paths by length	Limit path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Equation		✓		✓	1.25		

Normal Input Flows (PCU/hr)

To			
	1	2	3
From	1	0	129
	2	237	0
	3	93	50

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/T	Ce4/T	40000FF
	2	(untitled)	B1/T	Be4/T	40FF000
	3	(untitled)	A1/T	Ae4/T	400FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/h)
1	1		1	2	C1/T, Be4/T	Normal	129
	2		2	1	B1/T, Ce4/T	Normal	237
	3		1	3	C1/T, Ae4/T	Normal	96
	4		2	3	B1/T, Ae4/T	Normal	330
	5		3	2	A1/T, Be4/T	Normal	50
	6		3	1	A1/T, Ce4/T	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	Blockout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Pedestrian	0
	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, 6, 8

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			
	E		11	11			
	F		11	11			

Interstage Matrix for Controller Stream 1

		To		
		1	2	3
From	1	0	5	8
	2	5	0	6
	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		
	3	✓	3	D, E, F	76	81	5	1	5

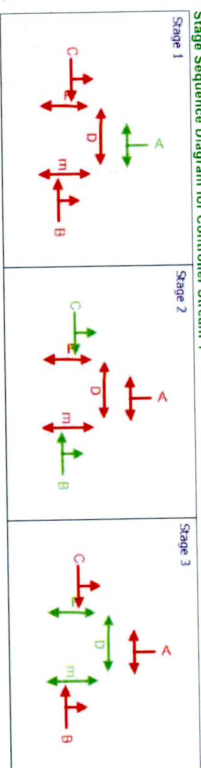
Resultant Phase Green Periods

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	Start	End	Duration
AI	1		1	A	92	4	12
BI	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 (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Actual green cycle (s)	Mean delay per vehicle (s)	Mean queue (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	AI	1	0	Unrestricted	426	0	Unrestricted	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	BI	1	0	Unrestricted	179	0	Unrestricted	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	CI	1	0	Unrestricted	330	0	Unrestricted	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	AI	1	61	47	143	1800	1800	12	52.83	4.20	52.84	29.86	1.87	31.73	34.35
	BI	1	53	71	567	1800	1800	59	13.52	9.42	157.07	30.23	4.11	9.76	8.76
	CI	1	21	332	225	1800	1800	59	9.59	2.54	31.55	8.51	1.25	9.76	8.76

Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated reserve capacity (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity (PCU/hr)	Degree of saturation (%)	DOS Threshold	Practical reserve capacity (PCU/hr)	Mean delay per vehicle (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	AI	1	426	426	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.66	100	0.00	0.00	0.00
	BI	1	179	179	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.47	100	0.00	0.00	0.00
	CI	1	330	330	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.47	100	0.00	0.00	0.00
17:00-18:00	AI	1	143	143	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.47	100	0.00	0.00	0.00
	BI	1	567	567	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.47	100	0.00	0.00	0.00
	CI	1	225	225	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.47	100	0.00	0.00	0.00

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay Time per Veh (s)	Total delay (PCU/hr)	Weighted cost of delay (£ per hr)	Mean stops (stops per hr)	Total stops (stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	AI	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	BI	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	CI	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	AI	1	5.86	52.93	2.10	29.86	104.24	149.08	1.87
	BI	1	4.32	2.13	30.23	57.95	328.01	4.11	9.76
	CI	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)	Max queue (PCU)	Utilised storage (%)	Excess queue (per cycle)	Wasted time total (s)	Estimated blocking
17:00-18:00	AI	1	0.00	0.00	0.00	0.00	25.00	0.00
	BI	1	0.00	42.09	0.00	0.00	11.00	0.00
	CI	1	0.00	4.20	0.00	0.00	0.00	0.00
17:00-18:00	AI	1	0.00	4.20	0.00	0.00	0.00	0.00
	BI	1	0.00	9.42	0.00	0.00	0.00	0.00
	CI	1	0.00	2.84	0.00	0.00	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 cycle)	Total network delay (h/hr)	Highest DOS	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC
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	Box1/1	A1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
17:00-18:00	61	0	1670	430	9.30	68.60	7.23	75.83

Network 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	Degree of saturation (%)	DOS Threshold	Practical reserve capacity (%)	Actual green (s per cycle)
17:00-18:00			1670	1670	0	Unrestricted	61	47	462	462

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Total delay (PCU/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 storage (%)	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 time (HH:mm)	Network Time (s)	Performance Index (s per hr)	Total network delay (PCU-hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signal PRC	Item with worst unsignalled PRC	Item with worst over PRC
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	Beck11	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)	Restricted 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 (t)	Phase maximum broken penalty (t)	Intergreen broken penalty (t)	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
Pedestrian Dispersion (PDM)	100	100	Cruise Speeds

Advanced

DOS Resolution	Threshhold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random 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 ⁻¹ 2)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ⁻¹ 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 Spills	✓

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 (Feet)	15, 40, -1, 15	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (t per PCU-hr)	Vehicle Monetary Value Of Stops (t per 100 stops)	Pedestrian monetary value of delay (t per Ped-hr)
14.20	2.80	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
		Asx1t	1	✓	218.21						Normal	
		Beax1t	1		242.03						Normal	
		Cox1t	1	✓	260.22						Normal	
		Al	1		47.34		Sum of lanes	1800	✓		Normal	
		B1	1		35.86		Sum of lanes	1800	✓		Normal	
		C1	1		56.37		Sum of lanes	1800			Normal	

Lanes

Am	Traffic Stream	Lane	Name	Description	Use RRT	Saturation flow (PCU/h)
Asat	1	1	(unfilled)			
Bsat	1	1	(unfilled)			
Csat	1	1	(unfilled)			
At	1	1	(unfilled)			1800
Bt	1	1	(unfilled)			1800
Ct	1	1	(unfilled)			1800

Modelling

Am	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
Asat	1	NetworkDefault	100	100	100		0.00		
Bsat	1	NetworkDefault	100	100	100		0.00		
Csat	1	NetworkDefault	100	100	100		0.00		
At	1	NetworkDefault	100	100	100		8.00		
Bt	1	NetworkDefault	100	100	100		6.00		
Ct	1	NetworkDefault	100	100	100		9.00		

Modelling - Advanced

Am	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

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

Normal traffic - Advanced

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

Flows

Am	Traffic Stream	Total Flow (PCU/h)	Normal Flow (PCU/h)
Asat	1	0	0
Bsat	1	211	211
Csat	1	107	107
At	1	0	0
Bt	1	107	107
Ct	1	211	211

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled
At	1	1	A	
Bt	1	1	B	
Ct	1	1	C	

Pedestrian Crossings

Crossing	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Fariside	10.52	7.01	5.40
2	(unfilled)				Fariside	10.98	7.32	5.40
3	(unfilled)				Fariside	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/h)
(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 table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows from	Matrix to primary path length	Limit path length multiplier	Limit path number	Path number limit
1	(unfilled)	✓	✓	Path			✓		✓	1.25		

Normal Input Flows (PCU/h)

	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	(unfilled)	C1/1	Csat/1	#0000FF
	2	(unfilled)	B1/1	Bsat/1	#FF0000
	3	(unfilled)	A1/1	Asat/1	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/h)
1	1		1	2	C1/1, Bsat/1	Normal	211
	2		2	1	B1/1, Csat/1	Normal	107
	3		3	1	C1/1, Asat/1	Normal	0
	4		2	3	B1/1, Asat/1	Normal	0
	5		3	2	A1/1, Bsat/1	Normal	0
	6		3	1	A1/1, Csat/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	Blockout Time (s)
1	A	(unfilled)	7	300	0	0	Traffic	
	B	(unfilled)	7	300	0	0	Traffic	
	C	(unfilled)	7	300	0	0	Traffic	
	D	(unfilled)	5	300	0	0	Pedestrian	0
	E	(unfilled)	5	300	0	0	Pedestrian	0
	F	(unfilled)	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	(unfilled)	Simple	1, 2, 3, 4	30, 52, 90, 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
	D	11	11			
	E	11	11			
	F	11	11			

Interstage Matrix for Controller Stream 1

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

Resultant Stages

Controller stream	Resultant stage	In 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

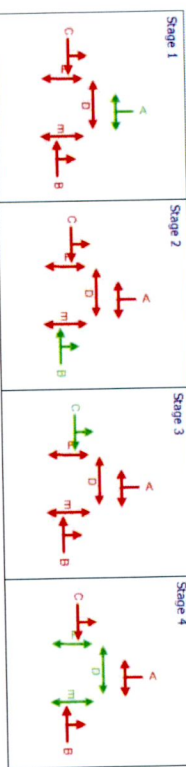
Resultant Phase Green Periods

Controller stream	Phase	Green period	In 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

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
AI	1		1	A	23 30 7
BI	1		1	B	35 52 17
CI	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	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (PCU/hr)	Calculated saturation (PCU/hr)	Actual green (s per cycle)	Mean Delay per Ven (s)	Mean Delay 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	Ax1	1	0	Unrestricted	0	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Bx1	1	0	Unrestricted	211	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Cx1	1	0	Unrestricted	107	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	AI	1	0	Unrestricted	0	Unrestricted	1800	7	0.00	0.00	0.00	0.00
	BI	1	33	173	107	1800	17	38.49	2.67	44.45	16.24	1.19
	CI	1	24	269	211	1800	47	15.99	3.44	38.21	13.31	1.52

Traffic Stream Results: Flows and signals

Time Segment	Am	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 green modulus (s per cycle)	Actual green (s per cycle)
08:00-09:00	Ax1	1	0	0	0		Unrestricted	Unrestricted	0		Unrestricted	0.87	100
	Bx1	1	211	211	0		Unrestricted	Unrestricted	0		Unrestricted	1.29	100
	Cx1	1	107	107	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	7
	AI	1	0	0	0		1800	144	0		Unrestricted	0.00	17
	BI	1	107	107	0		1800	324	33		173	0.00	17
	CI	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 (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	A&Bt	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		Be&t	1	23.04	0.00	0.00	0.00	0.00	0.00
	C&Bt	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
		At	1	0.00	0.00	0.00	0.00	0.00	0.00
	Bt	1	4.32	38.49	1.14	16.24	88.33	94.51	1.19
Ct	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)	Estimated blocking
08:00-09:00	A&Bt	1	0.00	0.00	37.25	0.00	0.00	100.00	
		Be&t	1	0.00	42.09	0.00	0.00	41.00	
	C&Bt	1	0.00	0.00	45.26	0.00	0.00	66.00	
		At	1	0.00	8.00	0.00	0.00	8.00	
	Bt	1	0.00	2.87	6.00	44.45	0.00	0.00	
Ct	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)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC
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	Be&t	B1/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green time per Veh (s)	Mean Delay (£ per cycle)	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	216.77	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 (Hr:min)	Network Cycle Time (s)	Performance Index (per hr/m)	Total network delay (PCU-hr/m)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst overall PRC
6	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	Box&t	B1/1

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
DM-CSLS 2024 PM		D8	☒	☐

Demand Set Details

Name	Description	Composite	Demand rate	Start time (Hr:min)	Locked
DM-CSLS 2024 PM			17:00		☐

Network Options

Network timings

Network cycle time (s)	Referred 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 (s)	Phase maximum broken penalty (s)	Intergreen broken penalty (s)	Starting Red-with-Armer (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 factor (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from random calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Profile 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 (m/s ²)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (m/s 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 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/h)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped/h)
14.20	2.60	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation flow	Saturation flow source	Saturation flow (PCU/h)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Axail	1			✓	218.21						Normal	
Baxit	1			✓	242.03						Normal	
Caxit	1			✓	260.22						Normal	
At	1				47.34		Sum of lanes	1400	✓		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 Rest	Saturation flow (PCU/h)
Axail	1	1	(unfilled)			
Baxit	1	1	(unfilled)			
Caxit	1	1	(unfilled)			1800
At	1	1	(unfilled)			1800
B1	1	1	(unfilled)			1800
C1	1	1	(unfilled)			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
Axail	1	NetworkDefault	100	100	100		0.00		
Baxit	1	NetworkDefault	100	100	100		0.00		
Caxit	1	NetworkDefault	100	100	100		8.00		
At	1	NetworkDefault	100	100	100		6.00		
B1	1	NetworkDefault	100	100	100		5.00		
C1	1	NetworkDefault	100	100	100				

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/h)	Normal Flow (PCU/h)
Axail	1	0	0
Baxit	1	157	157
Caxit	1	190	190
At	1	0	0
B1	1	150	150
C1	1	157	157

Signals

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

Pedestrian Crossings

Pedestrian Crossings	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruises speed (kph)
1	(unfilled)				FarSide	10.52	7.01	5.40
2	(unfilled)				FarSide	10.98	7.32	5.40
3	(unfilled)				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/h)
(ALL)	(ALL)	1.000

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 table	Auto calculate	Allocation mode	Allow paths looped paths on arms	Allow looped paths on nodes	Copy flows from	Matrix to copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equivassion			✓		✓	1.25		

Normal Input Flows (PCU/h)

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/I	Ceal/I	#0000FF
	2	(untitled)	B1/I	Bcal/I	#FF0000
	3	(untitled)	A1/I	Acal/I	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal calculated Flow (PCU/h)
1	1		1	2	C1/I, Bcal/I	Normal	157
	2		2	1	B1/I, Ceal/I	Normal	150
	3		1	3	C1/I, Acal/I	Normal	0
	4		2	3	B1/I, Acal/I	Normal	0
	5		3	2	A1/I, Bcal/I	Normal	0
	6		3	1	A1/I, Ceal/I	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	Blockout Time (s)
1	A	(untitled)	7	300	0	0	Traffic	
	B	(untitled)	7	300	0	0	Traffic	
	C	(untitled)	7	300	0	0	Pedestrian	0
	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				
From	1	2	3	4
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

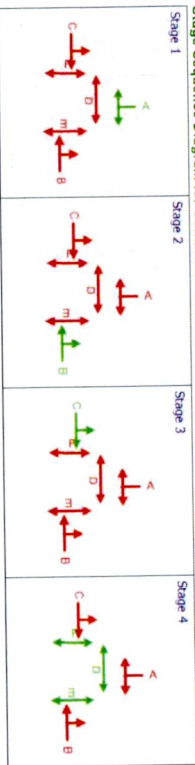
Resultant Phase Green Periods

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

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1	
					Start	End Duration
AI	1		1	A	97	4 7
BI	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	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity	Calculated flow (pcu/hr)	Calculated sat flow	Actual green (s per cycle)	Mean Delay per veh (s)	Mean queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per cycle)
17:00-18:00	Asat	1	0	Unrestricted	0	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bsat	1	0	Unrestricted	157	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Csat	1	0	Unrestricted	150	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	AI	1	0	Unrestricted	0	1800	7	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	BI	1	25	246	150	1800	31	26.33	3.13	52.15	16.56	1.38	16.96
	C1	1	25	251	157	1800	33	24.89	3.18	35.38	15.41	1.41	16.82

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow leaving (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean module of error	Actual module of error
17:00-18:00	Asat	1	0	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	100
	Bsat	1	157	157	0	Unrestricted	Unrestricted	0		Unrestricted	1.13	100
	Csat	1	150	150	0	Unrestricted	Unrestricted	0		Unrestricted	1.14	100
	AI	1	0	0		1800	144	0		Unrestricted	0.00	7
17:00-18:00	BI	1	150	150	0	1800	576	25		246	0.00	31
	C1	1	157	157	0	1800	612	25		251	0.00	33

Traffic Stream Results: Stops and delays

Time Segment	Am	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay (s per Veh)	Total delay (PCU/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	Asat	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Bsat	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Csat	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	AI	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	BI	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	Am	Traffic Stream	Initial queue (PCU)	Mean new 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	Asat	1	0.00	0.00	37.95	0.00	0.00	100.00	
	Bsat	1	0.00	0.00	42.09	0.00	0.00	57.00	
	Csat	1	0.00	0.00	45.26	0.00	0.00	58.00	
	AI	1	0.00	0.00	8.00	0.00	0.00	8.00	
17:00-18:00	BI	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 (s per hr)	Total network delay (hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsaturated PRC	Item with worst over PRC
8	26/09/2022 14:56:25	26/09/2022 14:56:26	17:00	100	33.78	2.18	26.04	8111	0	0	8111	Bsat1

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 (s per cycle)
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)	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	17.64	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 (s per h)	Total network delay (PCU-hr/h)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signal PRC	Item with worst unsignalled PRC	Item with worst over PR
9	26/09/2022 14:56:29	26/09/2022 14:56:30	08:00	100	34.12	2.20	34.28	B1/1	0	0	B1/1	Bok1/1	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)	Restricted 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 (E)	Phase maximum broken penalty (E)	Intergreen broken penalty (E)	Starting Red-with-Armer (s)
10000.00	10000.00	10000.00	2

Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Pipeline Dispersion (PDM)	100	100	Cruise Speeds

Advanced

DOS scaling factor (%)	Cruise scaling factor (%)	Use link delay weightings	Use link delay weightings	Exclude pedestrians from reals 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)	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 (m/s ²)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (m/s 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 Spills	☒

Advanced

Optimisation type	Hill climb increments	OUT profile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fas)	15, 40, -1, -15	50, 50, 5, 5, 0.5, 40, 1, -1, -1	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 mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Station Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Narrative Turn On Red
		Aexit	1	☒	218.21						Normal	
		Bexit	1	☒	242.03						Normal	
		Cexit	1	☒	260.22						Normal	
		A1	1	☒	47.24	☒	Sum of lanes	1360	☒		Normal	
		B1	1	☒	35.96	☒	Sum of lanes	1360	☒		Normal	
		C1	1	☒	36.37	☒	Sum of lanes	1360	☒		Normal	

Lanes

Lane	Stream	Name	Description	Use RRT	Saturation flow (PCU/hr)
A	1	1	(unfilled)		
B	1	1	(unfilled)		
C	1	1	(unfilled)		
A	1	1	(unfilled)		1800
B	1	1	(unfilled)		1800
C	1	1	(unfilled)		1800

Modelling

Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost results calculation	Exclude from storage (PCU)	Max queue limit	Has queue saturation limit
A	1	NetworkDefault	100	100	100	0.00	
B	1	NetworkDefault	100	100	100	0.00	
C	1	NetworkDefault	100	100	100	0.00	
A	1	NetworkDefault	100	100	100	8.00	
B	1	NetworkDefault	100	100	100	8.00	
C	1	NetworkDefault	100	100	100	9.00	

Modelling - Advanced

Stream	Traffic model	Initial queue (PCU)	Types of vehicle-in-service	Vehicle-in-service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
A	1	0.00	NetworkDefault	Not included	NetworkDefault	0.50	✓	100

Normal traffic - Modelling

Stream	Traffic model	Stop weighting (%)	Delay weighting (%)
A	1	100	100

Normal traffic - Advanced

Stream	Traffic model	Dispersion type for Normal Traffic
A	1	NetworkDefault

Flows

Stream	Traffic model	Total Flow (PCU/hr)	Normal Flow (PCU/hr)
A	1	0	0
B	1	224	224
C	1	111	111
A	1	0	0
B	1	111	111
C	1	224	224

Signals

Stream	Traffic model	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C	1	1	C	

Pedestrian Crossings

Crossing	Name	Description	Traffic node	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Farside	10.52	7.01	5.40
2	(unfilled)				Farside	10.98	7.32	5.40
3	(unfilled)				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)
A	(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
A	(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 nodes	Copy flows from	Matrix to copy paths by length	Limit path length by multiplier	Limit path number by number
1	(unfilled)	✓	✓	Path			✓		✓	1.25	

Normal Input Flows (PCU/hr)

To	1	2	3
From	1	0	224
	2	111	0
	3	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

Location	Name	Entries	Exit	Colour
1	(unfilled)	C1/I	Cox/I	#0000FF
2	(unfilled)	B1/I	Bex/I	#FF0000
3	(unfilled)	A1/I	Aex/I	#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/I, Bex/I	Normal	224
2	2		2	1	B1/I, Cox/I	Normal	111
3	3		3	1	C1/I, Aex/I	Normal	0
4	4		2	3	B1/I, Aex/I	Normal	0
5	5		3	2	A1/I, Bex/I	Normal	0
6	6		3	1	A1/I, Cox/I	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	Blockout Time (s)
1	A	(unfilled)	7	300	0	0	Traffic	
	B	(unfilled)	7	300	0	0	Traffic	
	C	(unfilled)	7	300	0	0	Pedestrian	0
	D	(unfilled)	5	300	0	0	Pedestrian	0
	E	(unfilled)	5	300	0	0	Pedestrian	0
	F	(unfilled)	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	(unfilled)	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	In base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	9	26	17	1	7
	2	✓	2	B	26	73	47	1	7
	3	✓	3	C	81	86	5	1	5
	4	✓	4	D, E, F					

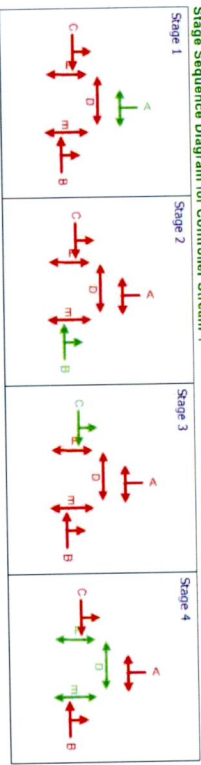
Resultant Phase Green Periods

Controller stream	Phase	Green period	In 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

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1 Start	Green Period 1 End	Duration
AI	1		1	A	97	4	7
BI	1		1	B	9	26	17
CI	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	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual flow (s per cycle)	Mean Delay per veh (s)	Mean queue (veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of steps (£ per hr)	Performance index (£ per hr)
08:00-09:00	Ax1	1	0	Unrestricted	0	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Bx1	1	0	Unrestricted	224	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Cx1	1	0	Unrestricted	111	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	AI	1	0	Unrestricted	0	1800	7	0.00	0.00	0.00	0.00	0.00	0.00
	BI	1	34	163	111	1800	17	38.73	2.77	46.19	16.96	1.23	18.19
	CI	1	26	247	224	1800	47	18.18	3.72	41.29	14.29	1.84	15.93

Traffic Stream Results: Flows and signals

Time Segment	Am	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
08:00-09:00	Ax1	1	0	0	0		Unrestricted	Unrestricted	0		Unrestricted	0.87	100
	Bx1	1	224	224	0		Unrestricted	Unrestricted	0		Unrestricted	1.29	100
	Cx1	1	111	111	0		Unrestricted	Unrestricted	0		Unrestricted	0.00	7
	AI	1	0	0	0		1800	144	0		Unrestricted	0.00	7
	BI	1	111	111	0		1800	324	34		103	0.00	17
	CI	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 (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops (Stops per hr)	Total stops	Weighted cost of stops (£ per hr)
08:00-09:00	A&Bt	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B&Ait	1	20.04	0.00	0.00	0.00	0.00	0.00	0.00
	C&Ait	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	Ai	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
08:00-09:00	B1	1	4.32	38.73	1.19	16.86	88.64	98.39	1.23
	C1	1	6.76	16.18	1.01	14.29	96.33	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)	Estimated blocking
08:00-09:00	A&Bt	1	0.00	0.00	37.95	0.00	0.00	100.00	
	B&Ait	1	0.00	0.00	42.09	0.00	0.00	41.00	
	C&Ait	1	0.00	0.00	45.26	0.00	0.00	68.00	
	Ai	1	0.00	0.00	8.00	0.00	0.00	6.00	
08:00-09:00	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 (hh:mm)	Modelling start time (hh:mm)	Network cycle time (s)	Performance index (s per PCU-hr)	Total analysis delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signal PRC	Item with worst unmet PRC	Item with worst unmet 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	B&Ait1	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 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

Network Results: Flows and signals

Time Segment	Calculated flow entering (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	0		34		163	408

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	11.83	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 (hh:mm)	Modelling start time (hh:mm)	Network cycle time (s)	Performance index (s per PCU-hr)	Total analysis delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signal PRC	Item with worst unmet PRC	Item with worst unmet 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	B&Ait1	B1/

Analysis Set Details

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

Demand Set Details

Name	Description	Composite	Demand set	Start time (hh:mm)	Locked
DM+CSLS 2029 PM			17:00		☐

Network Options

Network timings

Network cycle time (s)	Restricted 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 (s)	Phase maximum broken penalty (s)	Intergreen broken penalty (s)	Starting Red-with-Arrow (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 reaction 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 ^{-1/2})	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms ^{-1/2})	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 OUI Profile accuracy
✓	✓	Offsets And Green Splits	✓

Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Uses enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller Do nothing
Hill Climb (Fast)	15, 40, -1, -15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			

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 mode
(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
Asat	1			✓	218.21						Normal	
				✓	242.03						Normal	
Bsat	1			✓	260.22						Normal	
Csat	1			✓	47.34						Normal	
A1	1						Sum of lanes	1400	✓		Normal	
B1	1						Sum of lanes	1800	✓		Normal	
C1	1						Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RRS?	Saturation flow (PCU/hr)
Asat	1	1	(unfilled)			
Bsat	1	1	(unfilled)			
Csat	1	1	(unfilled)			
A1	1	1	(unfilled)			1800
B1	1	1	(unfilled)			1800
C1	1	1	(unfilled)			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
Asat	1	NetworkDefault	100	100	100		0.00		
Bsat	1	NetworkDefault	100	100	100		0.00		
Csat	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		5.00		

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	NotIncluded	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)
Asat	1	0	0
		165	165
Bsat	1	159	159
Csat	1	0	0
A1	1	159	159
B1	1	185	185
C1	1	185	185

Signals

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

Pedestrian Crossings

Crossing	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Farside	10.52	7.01	5.40
2	(unfilled)				Farside	10.98	7.32	5.40
3	(unfilled)				Farside	10.44	6.95	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/h)
(ALL)	(ALL)	11000

Pedestrian Crossings - Modelling

Crossing	Side	Delay weighting (%)	Assignment Cost	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 table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows from	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Estimation			✓			✓	1.25		

Normal Input Flows (PCU/h)

To			
	1	2	3
From	1	0	165
	2	159	0
	3	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/T	Cex1/T	#0000FF
	2	(untitled)	B1/T	Bex1/T	#FF0000
	3	(untitled)	A1/T	Aex1/T	#00FF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/h)
1	1		1	2	C1/T, Bex1/T	Normal	165
	2		2	1	B1/T, Cex1/T	Normal	159
	3		1	3	C1/T, Aex1/T	Normal	0
	4		2	3	B1/T, Aex1/T	Normal	0
	5		3	2	A1/T, Bex1/T	Normal	0
	6		3	1	A1/T, Cex1/T	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	Blockout 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
From	A	5	5
	B	5	7
	C	5	7
	D	11	11
	E	11	11
	F	11	11

Interstage Matrix for Controller Stream 1

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

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

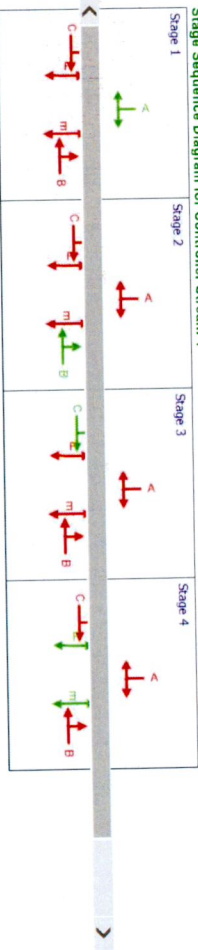
Resultant Phase Green Periods

Controller/ stream	Phase	Green period	In base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	57	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

Am	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1
					Start End Duration
Am	1		1	A	97 4 7
Al	1			B	9 40 31
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)	Intra-green 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	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (PCU/hr)	Calculated flow (PCU/hr)	Calculated sat flow (s per cycle)	Actual delay (s per cycle)	Mean Delay per queue (s per Vch)	Mean queue storage (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per cycle)
17:00-18:00	Am	1	0	Unrestricted	0	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	BxH	1	0	Unrestricted	165	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	CxH	1	0	Unrestricted	159	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Al	1	0	Unrestricted	0	1800	7	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	B1	1	28	228	159	1800	31	28.56	3.32	55.35	16.86	1.47	18.13
	C1	1	27	234	165	1800	33	25.07	3.36	37.22	16.32	1.49	17.81

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated discrepancy (PCU/hr)	Adjusted flow warning	Calculated sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean green cycle (s)	Actual green cycle (s)
17:00-18:00	Am	1	0	0		Unrestricted	Unrestricted	0		Unrestricted	1.13	100
	BxH	1	165	165	0	Unrestricted	Unrestricted	0		Unrestricted	1.14	100
	CxH	1	159	159	0	Unrestricted	Unrestricted	0		Unrestricted	0.00	7
	Al	1	0	0		1800	144	0		Unrestricted	0.00	31
17:00-18:00	B1	1	159	159	0	1800	576	28		228	0.00	31
	C1	1	165	165	0	1800	612	27		234	0.00	33

Traffic Stream Results: Stops and delays

Time Segment	Am	Traffic Stream	Mean Cruise Time per Vch (s)	Mean Delay per Vch (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Vch (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Am	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	BxH	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	CxH	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
	Al	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17:00-18:00	B1	1	4.32	26.56	1.17	16.86	73.97	117.61	1.47
	C1	1	6.76	25.07	1.15	16.32	71.67	118.59	1.49

Traffic Stream Results: Queues and blocking

Time Segment	Am	Traffic Stream	Initial queue (PCU)	Mean max queue (PCU)	Max queue (PCU)	Utilised storage (%)	Excess queue per Vch (%)	Wasted time total (s)	Estimated blocking
17:00-18:00	Am	1	0.00	0.00	37.95	0.00	0.00	100.00	
	BxH	1	0.00	0.00	42.08	0.00	0.00	57.00	
	CxH	1	0.00	0.00	45.26	0.00	0.00	8.00	
	Al	1	0.00	0.00	8.00	0.00	0.00	0.00	
17:00-18:00	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	Run start time	Run finish time	Modelling start time (hr:min)	Network Cycle Time (s)	Performance Index (s per Vch)	Total network delay (PCU-hr/hr)	Highest DOS	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst PRC	Item with worst PRC
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	BxH/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green (s per cycle)	Mean Delay per Vch (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (s per cycle)
17:00-18:00	28	0	648	371	12.90	32.98	2.96	35.54

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		228	409

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Vch (s)	Mean Delay per Vch (s)	Total delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Mean stops per Vch (%)	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 (IC per hr)	Total network PCU-hr/hr	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)
11	28/09/2022 14:56:23	28/09/2022 14:56:23	08:00	100	182.71	12.01	75.74	C1/1	0	0

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)	Restricted 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 (s)	Phase maximum broken penalty (s)	Intergreen broken penalty (s)	Starting Redwith 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
Polygon Dispersion (PDM)	100	100	Cruise Speeds

Advanced

DOS Resolution	Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from realistic calculation	Random mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate 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 (m/s ²)	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (m/s 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 Spills	☒

Advanced

Optimisation type	Hill climb increments	OUT-profile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Feet)	15, 40, -1, 15	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	2.80	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 Merging Turn On Red
	A001	1		☒	218.21						Normal	
	B001	1		☒	242.03						Normal	
	C001	1		☒	260.22						Normal	
	A1	1		☒	47.24		Sum of lanes	1300	☒		Normal	
	B1	1		☒	35.95		Sum of lanes	1300	☒		Normal	
	C1	1		☒	96.37		Sum of lanes	1300	☒		Normal	

Lanes

Am	Traffic Stream	Lane	Name	Description	Use RRT	Saturation flow (PCU/h)
A	1	1	(unfilled)			
		1	(unfilled)			
		1	(unfilled)			
B	1	1	(unfilled)			1800
		1	(unfilled)			
		1	(unfilled)			
C	1	1	(unfilled)			1800
		1	(unfilled)			
		1	(unfilled)			1800

Modelling

Am	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
A	1	NetworkDefault	100	100	100		0.00		
		NetworkDefault	100	100	100		0.00		
		NetworkDefault	100	100	100		0.00		
B	1	NetworkDefault	100	100	100		0.00		
		NetworkDefault	100	100	100		0.00		
		NetworkDefault	100	100	100		0.00		
C	1	NetworkDefault	100	100	100		9.00		
		NetworkDefault	100	100	100				
		NetworkDefault	100	100	100				

Modelling - Advanced

Am	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	NotIncluded	NetworkDefault	0.50	✓	100

Normal Traffic - Modelling

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

Normal traffic - Advanced

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

Flows

Am	Traffic Stream	Total Flow (PCU/h)	Normal Flow (PCU/h)
A	1	289	289
		293	293
		386	386
B	1	235	235
		234	234
		409	409

Signals

Am	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
		1	B	
		1	C	

Pedestrian Crossings

Crossing	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Fariside	10.52	7.01	5.40
2	(unfilled)				Fariside	10.98	7.32	5.40
3	(unfilled)				Fariside	10.44	6.90	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/h)
(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 from	Limit paths by length	Limit length multiplier	Limit paths by number	Path number limit
1	(unfilled)	✓	✓	Path Estimation			✓		✓	1.25		

Normal Input Flows (PCU/h)

To			
1	0	246	161
From			
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	(unfilled)	C1/I	Cex/I	#D0D0FF
		(unfilled)	B/I	Bex/I	#FFD0D0
		(unfilled)	A/I	Aex/I	#D0D0FF

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/h)
1	1		1	2	C1/I, Bex/I	Normal	246
	2		2	1	B1/I, Cex/I	Normal	196
	3		1	3	C1/I, Aex/I	Normal	161
	4		2	3	B1/I, Aex/I	Normal	128
	5		3	2	A1/I, Bex/I	Normal	45
	6		3	1	A1/I, Cex/I	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	Blockout Time (s)
1	A	(unfilled)	7	300	0	0	Traffic	
	B	(unfilled)	7	300	0	0	Traffic	
	C	(unfilled)	7	300	0	0	Traffic	
	D	(unfilled)	5	300	0	0	Pedestrian	0
	E	(unfilled)	5	300	0	0	Pedestrian	0
	F	(unfilled)	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	(unfilled)	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
	2	5	0	0
	3	5	0	0
	4	11	11	11

Resultant Stages

Controller stream	Resultant stage	In 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

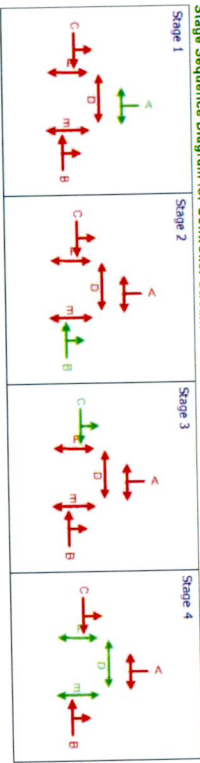
Resultant Phase Green Periods

Controller stream	Phase	Green period	In 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

Am	Traffic Stream	Traffic Mode	Controller Stream	Phase	Green Period 1 Start	Green Period 1 End	Duration
Am	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	Am	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated sat flow	Actual green cycle (s)	Mean Delay max queue (PCU)	Utilized storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	Axlt	1	0	Unrestricted	289	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Bxlt	1	0	Unrestricted	293	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	Cxlt	1	0	Unrestricted	386	Unrestricted	100	0.00	0.00	0.00	0.00	0.00
	At	1	65	38	235	1600	19	48.02	6.54	81.77	42.96	45.57
	B1	1	75	20	324	1600	23	47.31	9.37	166.13	60.47	64.63
	C1	1	76	19	409	1600	29	41.82	11.37	126.38	67.47	72.51

Traffic Stream Results: Flows and signals

Time Segment	Am	Traffic Stream	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Flow discrepancy (PCU/hr)	Adjusted flow	Calculated sat flow	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean green time (s per cycle)	Actual
08:00-09:00	Axlt	1	289	289	0		Unrestricted	Unrestricted	0	Unrestricted	0.81	100
	Bxlt	1	293	293	0		Unrestricted	Unrestricted	0	Unrestricted	0.82	100
	Cxlt	1	386	386	0		Unrestricted	Unrestricted	0	Unrestricted	0.80	19
	At	1	235	235	0		1600	19	48.02	36	0.00	23
	B1	1	324	324	0		1600	23	47.31	75	0.00	29
	C1	1	409	409	0		1600	29	41.82	76	0.00	29

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay (s)	Total delay (PCU-hr/veh)	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	A&E	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
		Be&I	23.04	0.00	0.00	0.00	0.00	0.00	0.00
	C&E	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
		AI	5.66	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
		B1	1	47.32	41.02	4.75	67.47	90.33	402.16
	C1	1							

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)	Estimated blocking
08:00-09:00	A&E	1	0.00	0.00	37.65	0.00	0.00	34.00	
		Be&I	1	0.00	42.09	0.00	0.00	26.00	
	C&E	1	0.00	0.00	45.26	0.00	0.00	32.00	
		AI	1	0.00	6.54	8.00	81.77	0.00	
	B1	1	0.00	9.37	6.00	156.13	0.00	0.00	
		B1	1	0.00	11.37	9.00	726.38	0.00	
	C1	1							

Network Results

Run Summary

Analysis set used	Run start time	Run finish time	Modelling Cycle Time (s)	Network Performance Index (£ per hr)	Total network delay (PCU-hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unignalsed PRC	Item with worst PRC
11	28/09/2022 14:56:23	28/09/2022 14:56:23	08:00	100	182.71	12.01	75/74	C1/I1	0	0	C1/I1	Be&I1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green time per cycle (s)	Mean Delay per Veh (s)	Weighted 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 time per cycle (s)
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/veh)	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	49.30	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 Cycle Time (s)	Network Performance Index (£ per hr)	Total network delay (PCU-hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unignalsed PRC	Item with worst PRC
12	28/09/2022 14:56:23	28/09/2022 14:56:24	17:00	100	71.55	4.55	57/26	A1/I1	0	0	A1/I1	Be&I1

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)	Restricted 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 scaling factor (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrian flows 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 OUF 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 turn
Hill Climb (Feet)	15, 40, 1, 15, 40, 1, -1, 1	50, 50, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

Economics

Vehicle Monetary Value Of Delay (£ per PCU/h)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped/h)
14.20	2.60	14.20

Arms and Traffic Streams

Arms

Arm	Name	Description	Traffic mode
(ALL)			

Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation flow	Saturation flow source	Saturation flow (PCU/h)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
Axelt	1			✓	219.21						Normal	
Baxelt	1			✓	242.03						Normal	
Caxelt	1			✓	260.22						Normal	
Al	1				47.34	✓	Sum of lanes	1800	✓		Normal	
B1	1				35.86	✓	Sum of lanes	1800			Normal	
C1	1				56.37	✓	Sum of lanes	1800	✓		Normal	

Lanes

Arm	Traffic Stream	Lane	Name	Description	Use RRS?	Saturation flow (PCU/h)
Axelt	1	1	(unfilled)			
Baxelt	1	1	(unfilled)			
Caxelt	1	1	(unfilled)			
Al	1	1	(unfilled)			1800
B1	1	1	(unfilled)			1800
C1	1	1	(unfilled)			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 saturation limit	Has degree of saturation limit
Axelt	1	NetworkDefault	100	100	100		0.00		
Baxelt	1	NetworkDefault	100	100	100		0.00		
Caxelt	1	NetworkDefault	100	100	100		8.00		
Al	1	NetworkDefault	100	100	100		6.00		
B1	1	NetworkDefault	100	100	100		9.00		
C1	1	NetworkDefault	100	100	100				

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	NotIncluded	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/h)	Normal Flow (PCU/h)
Axelt	1	411	411
Baxelt	1	173	173
Caxelt	1	327	327
Al	1	134	134
B1	1	598	598
C1	1	219	219

Signals

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

Pedestrian Crossings

Pedestrian Crossings	Name	Description	Traffic mode	Allow walk on red	Crossing type	Length (m)	Cruise time (seconds)	Cruise speed (kph)
1	(unfilled)				Farside	10.52	7.01	5.40
2	(unfilled)				Farside	10.98	7.32	5.40
3	(unfilled)				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 calculations	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows from	Matrix to copy flows from	Limit paths by length	Path length multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Equilisation			✓			✓	1.25		

Normal Input Flows (PCU/hr)

To			
	1	2	3
From	1	0	129
	2	237	0
	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		(untitled)	C1/1	Ceal/1	#0000FF
	2	(untitled)	B1/1	Bceal/1	#FF0000
	3	(untitled)	A1/1	Aceal/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	2	C1/1, Bceal/1	Normal	129
	2		1	1	B1/1, Ceal/1	Normal	237
	3		1	3	C1/1, Aceal/1	Normal	90
	4		2	3	B1/1, Aceal/1	Normal	321
	5		3	2	A1/1, Bceal/1	Normal	44
	6		3	1	A1/1, Ceal/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	Blockout 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
A		5	5	5	8	7
B		5		7	5	8
C		5		7	8	5
D		11	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
	2	5	0
	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		
	3	✓	3	D, E, F	76	81	5	1	5

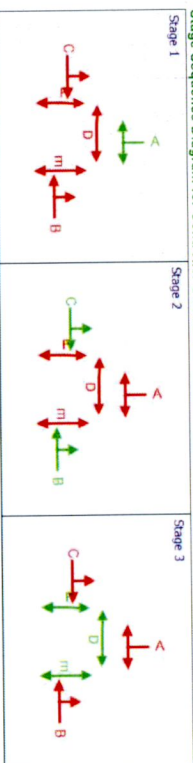
Resultant Phase Green Periods

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	Start	End	Duration
AI	1		1	A	92	4	12
BI	1		1	B	9	68	59
CI	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 (PCU/hr)	Calculated flow entering (PCU/hr)	Calculated flow out (PCU/hr)	Actual green cycle (s)	Mean Delay per Vch (s)	Mean queue max (PCU)	Utilised stage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (per cycle)
17:00-18:00	Aest	1	0	Unrestricted	411	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Beast	1	0	Unrestricted	173	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
	Ceait	1	0	Unrestricted	327	Unrestricted	100	0.00	0.00	0.00	0.00	0.00	0.00
18:00	AI	1	57	57	134	1800	12	51.01	3.84	47.88	26.86	1.71	28.67
	BI	1	52	74	558	1800	59	13.37	9.11	151.84	29.43	4.00	33.43
	CI	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 flow sat flow	Calculated capacity	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity	Mean green modulus (s per cycle)	Actual green cycle (s)
17:00-18:00	Aest	1	411	411	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.56	0.51	100
	Beast	1	173	173	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.47	0.47	100
	Ceait	1	327	327	0	Unrestricted	Unrestricted	Unrestricted	0	Unrestricted	0.00	0.00	12
18:00	AI	1	134	134	0	Unrestricted	1800	234	57	57	0.00	0.00	59
	BI	1	558	558	0	Unrestricted	1800	1080	52	52	74	0.00	59
	CI	1	219	219	0	Unrestricted	1800	1080	20	20	344	0.00	59

Traffic Stream Results: Stops and delays

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Vch (s)	Mean Delay per Vch (s)	Total delay (PCU/hr)	Weighted cost of delay (£ per hr)	Mean stops per Vch (%)	Total stops (Stops per hr)	Weighted cost of stops (£ per hr)
17:00-18:00	Aest	1	26.19	0.00	0.00	0.00	0.00	0.00	0.00
	Beast	1	29.04	0.00	0.00	0.00	0.00	0.00	0.00
	Ceait	1	31.23	0.00	0.00	0.00	0.00	0.00	0.00
18:00	AI	1	5.68	51.01	1.90	26.86	101.88	136.25	1.71
	BI	1	4.32	13.37	2.07	29.43	319.09	4.00	4.00
	CI	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 (PCU)	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time total (s per cycle)	Estimated blocking
17:00-18:00	Aest	1	0.00	0.00	37.95	0.00	0.00	25.00	
	Beast	1	0.00	0.00	42.09	0.00	0.00	17.00	
	Ceait	1	0.00	0.00	45.26	0.00	0.00	11.00	
18:00	AI	1	0.00	3.84	8.00	47.88	0.00	0.00	
	BI	1	0.00	9.11	6.00	151.84	0.00	0.00	
	CI	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 (H:M:S)	Network Cycle Time (s)	Performance Index (per hr)	Total network (PCU/hr)	Highest DOS	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst unsaturated PRC	Item with worst unsaturated PRC
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	Box/8/1

Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Actual green cycle (s)	Mean Delay per Vch (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	Arm	Traffic Stream	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 cycle (s per cycle)
17:00-18:00			1822	1822	0	Unrestricted	57	57	57	462

Network Results: Stops and delays

Time Segment	Mean Cruise Time per Vch (s)	Mean Delay per Vch (s)	Total delay (PCU/hr)	Weighted cost of delay (£ per hr)	Mean stops per Vch (%)	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	5.92

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

