

TRANSYT 15
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Filename: M23 J10 Existing Layout v04.t15

Path: J:\48559 Crawley Transport Study\Transport\Working Documents\Junction Modelling\HE SRN Junction Data\M23 J10 Model

Report generation date: 18/10/2021 14:12:27

»A1 - 2015 Base AM : D1 - 2015 Base AM* :

»A2 - 2015 Base PM : D2 - 2015 Base PM* :

File summary

File description

File title	M23 J10 Reference Layout
Location	Crawley
Site number	1
UTCRegion	UTC +1
Driving side	Left
Date	08/09/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	330610079
Enumerator	CORP\dansmith
Description	

Model and Results

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

Units

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

Sorting

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

Network Diagrams



M23 J10 Reference Layout
Cyclotime 0s / 60s , Timesteps 59 / 60
2, 2
Diagram produced using TRANSYT 15.5.3.7

A1 - 2015 Base AM D1 - 2015 Base AM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Traffic Stream Data	Arm 302 - Traffic Stream 2	Arm 302 - Traffic Stream 2 is over 200m. Recommend the use of PDM to model platooning effects.
Warning	Traffic Stream Data	Arm 302 - Traffic Stream 3	Arm 302 - Traffic Stream 3 is over 200m. Recommend the use of PDM to model platooning effects.

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	18/10/2021 14:11:52	18/10/2021 14:11:52	08:00	60	1864.89	121.37	109.11	302/2	4	15	302/2	401/1	302

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2015 Base AM		D1	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2015 Base AM				08:00	

Local OD Matrix - Local Matrix: 1

Local Matrix Options

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

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	579	159	62
	2	1040	0	408	0
	3	283	350	0	677
	4	869	0	472	58

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	A2011	102/2, 102/3	121/1, 121/2	#0000FF
	2	M23 Southbound Off-slip	202/2, 202/3	221/1, 221/2	#FF0000
	3	Copthorne Way	302/3, 302/2	322/1	#00FF00
	4	M23 Northbound Off-slip	401/1, 401/2	421/1, 421/2	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	8		1	1	102/3, 211/2, 311/2, 411/1, 121/1	Normal	0
	9		1	4	102/3, 211/2, 311/2, 421/2	Normal	31
	10		4	1	401/2, 402/3, 111/2, 211/2, 311/2, 411/1, 121/1	Disabled	0
	11		4	4	401/2, 402/3, 111/2, 211/2, 311/2, 421/2	Normal	29
	12		1	2	102/3, 211/2, 311/3, 411/2, 111/1, 221/1	Disabled	0
	13		1	1	102/3, 211/2, 311/3, 411/2, 121/2	Normal	0
	14		4	1	401/2, 402/3, 111/2, 211/2, 311/3, 411/2, 121/2	Disabled	0
	15		2	3	202/2, 322/1	Normal	408
	16		2	1	202/2, 311/2, 411/1, 121/1	Normal	520
	17		2	4	202/2, 311/2, 421/2	Normal	0
	18		2	2	202/3, 311/3, 411/2, 111/1, 221/1	Normal	0
	19		2	3	202/3, 311/3, 411/2, 111/2, 211/1, 322/1	Disabled	0
	20		2	1	202/3, 311/3, 411/2, 121/2	Percentage	520
	21		3	2	302/3, 411/2, 111/1, 221/1	Normal	350
	22		3	3	302/3, 411/2, 111/2, 211/1, 322/1	Normal	0
	23		1	2	102/2, 221/1	Normal	290
	24		3	1	302/3, 411/2, 121/2	Percentage	57
	25		3	1	302/2, 411/1, 121/1	Normal	226
	26		3	4	302/2, 421/2	Normal	677
	27		1	4	102/3, 211/2, 311/2, 421/1	Normal	31
	28		2	4	202/2, 311/2, 421/1	Normal	0
	29		3	4	302/3, 411/2, 111/2, 211/2, 311/2, 421/1	Disabled	0
	30		4	4	401/2, 402/3, 111/2, 211/2, 311/2, 421/1	Normal	29
	36		4	1	401/1, 402/1, 121/1	Normal	695
	59		1	2	102/2, 221/2	Normal	290
	60		1	3	102/3, 211/1, 322/1	Normal	159
	61		4	3	401/2, 402/3, 111/2, 211/1, 322/1	Normal	472
	62		3	4	302/3, 411/2, 111/2, 211/2, 311/2, 421/2	Disabled	0
	63		4	2	401/2, 402/2, 111/1, 221/1	Normal	0
	64		4	1	401/2, 402/2, 121/2	Percentage	174

Signal Timings

Network Default: 60s cycle time; 60 steps

Intergreen Matrix for Controller Stream 1

		To	
		A	B
From	A		5
	B	5	

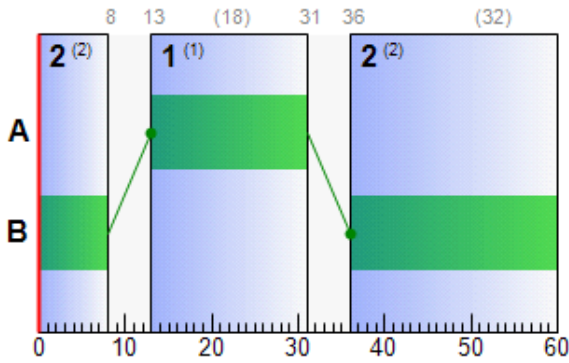
Resultant Stages

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	13	31	18	1	7
	2	✓	2	B	36	8	32	1	7

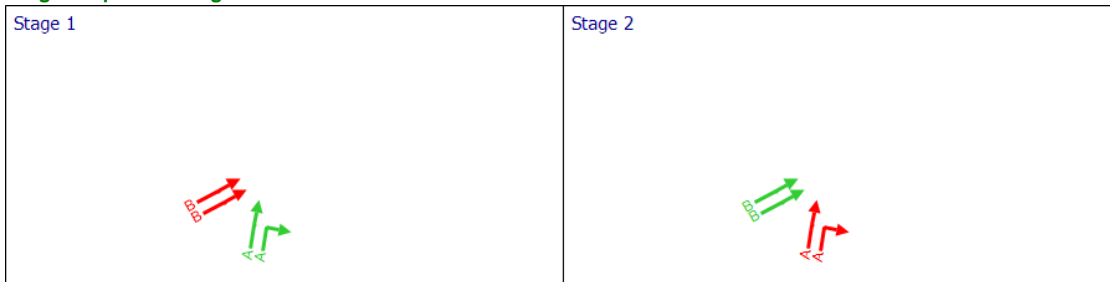
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
102	2	1	1	B	36	8	32
102	3	1	1	B	36	8	32
111	1	1	1	A	13	31	18
111	2	1	1	A	13	31	18

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Intergreen Matrix for Controller Stream 2

		To	
		A	B
From	A		5
	B	5	

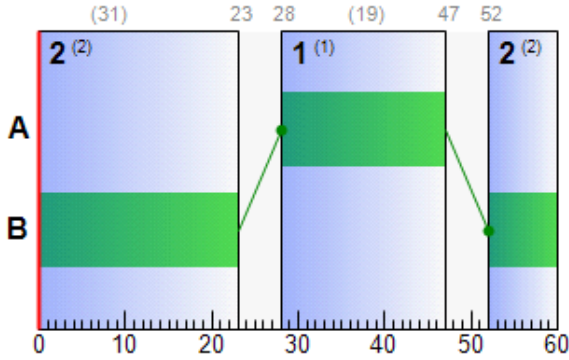
Resultant Stages

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)
2	1	✓	1	A	28	47	19	1	7
	2	✓	2	B	52	23	31	1	7

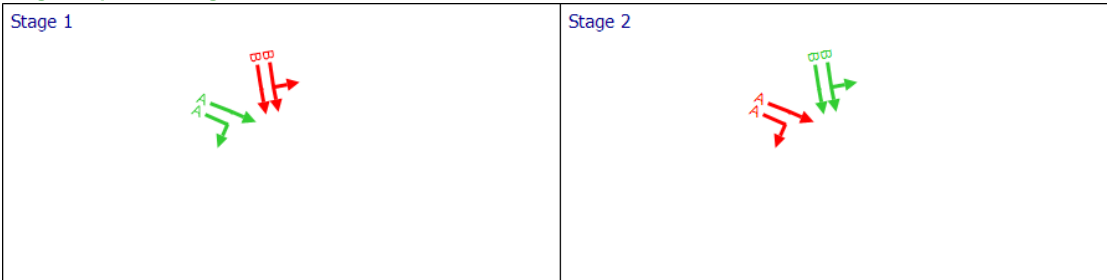
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
202	2	2	2	B	52	23	31
202	3	2	2	B	52	23	31
211	1	2	2	A	28	47	19
211	2	2	2	A	28	47	19

Phase Timings Diagram for Controller Stream 2



Stage Sequence Diagram for Controller Stream 2



Intergreen Matrix for Controller Stream 3

		To	
		A	B
From	A		6
	B	6	

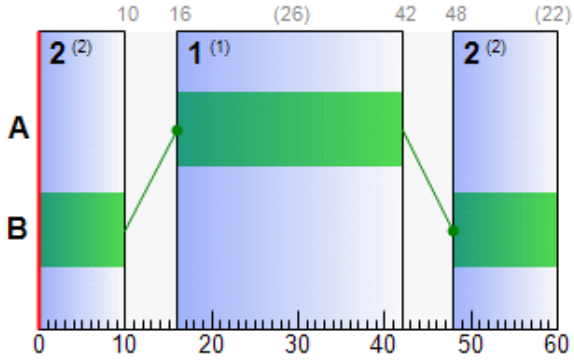
Resultant Stages

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)
3	1	✓	1	A	16	42	26	1	7
	2	✓	2	B	48	10	22	1	7

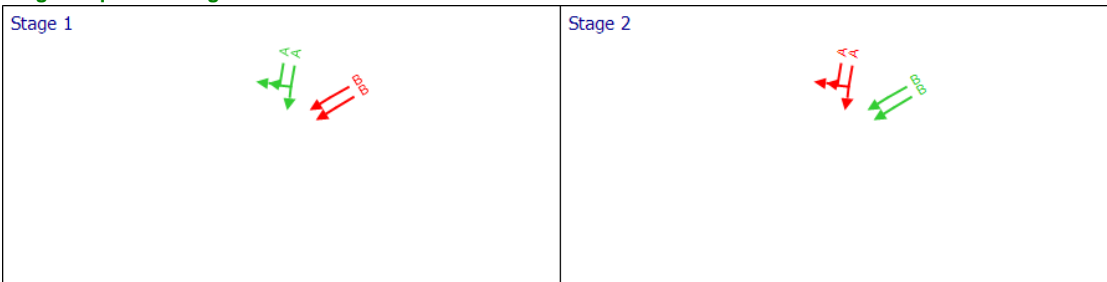
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
302	2	3	3	B	48	10	22
302	3	3	3	B	48	10	22
311	2	3	3	A	16	42	26
311	3	3	3	A	16	42	26

Phase Timings Diagram for Controller Stream 3



Stage Sequence Diagram for Controller Stream 3



Intergreen Matrix for Controller Stream 4

		To	
		A	B
From	A		5
	B	5	

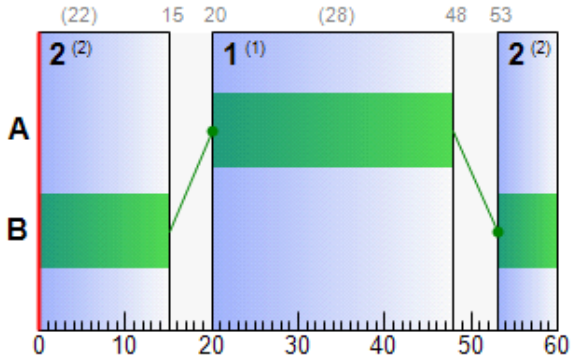
Resultant Stages

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)
4	1	✓	1	A	20	48	28	1	7
	2	✓	2	B	53	15	22	1	7

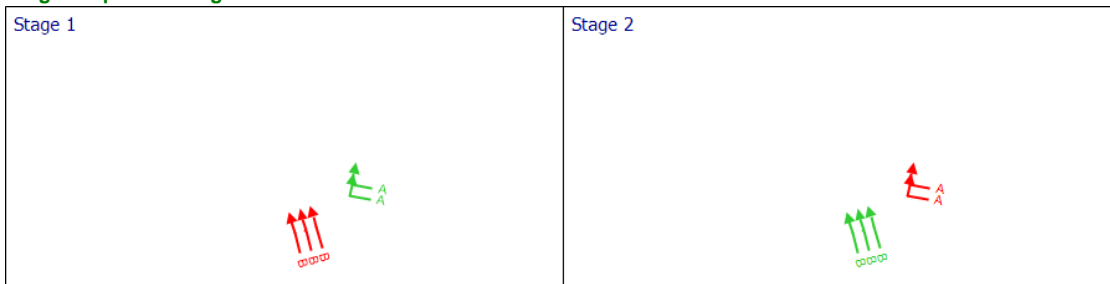
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
402	1	4	4	B	53	15	22
402	2	4	4	B	53	15	22
402	3	4	4	B	53	15	22
411	1	4	4	A	20	48	28
411	2	4	4	A	20	48	28

Phase Timings Diagram for Controller Stream 4



Stage Sequence Diagram for Controller Stream 4



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)	
08:00-09:00	102	2	51	77	580	2079	32	10.05	6.22	13.53	22.99	4.46	27.45	
		3	19	366	221	2079	32	7.19	1.86	4.03	6.26	1.33	7.60	
	111	1	56	61	350	1981	18	37.98	6.18	34.61	52.43	4.65	57.08	
		2	81	11	530	2060	18	13.88	8.56	46.98	29.02	5.65	34.67	
	121	1	0	Unrestricted	1391	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2	0	Unrestricted	751	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	202	2	80	12	928	2164	31	19.33	14.73	62.99	70.75	10.35	81.10	
		3	45	101	520	2187	31	10.22	5.15	21.94	20.97	3.86	24.83	
	211	1	96	-6	631	1980	19	49.16	15.58	65.86	122.36	7.69	130.05	
		2	17	421	120	2085	19	14.23	1.19	4.85	6.73	0.84	7.58	
	221	1	0	Unrestricted	640	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2	0	Unrestricted	290	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	302	2	109	-18	704	2159	22	334.44	71.47	157.01	928.49	49.75	978.23	
		3	49	82	407	2159	22	16.59	5.13	11.21	26.63	3.85	30.49	
	311	2	71	27	640	2081	26	11.33	8.93	58.06	28.59	6.55	35.14	
		3	56	61	520	2068	26	10.41	7.72	51.47	21.35	5.80	27.15	
	322	1	0	Unrestricted	1039	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	401	1	83	9	695	1917	60	23.14	10.70	46.30	63.43	7.66	71.09	
		2	64	41	704	2070	60	13.14	8.28	23.81	36.49	6.10	42.59	
	402	1	96	-6	695	1886	22	43.58	9.13	456.28	119.47	6.05	125.52	
		2	22	303	174	2030	22	7.49	1.70	84.94	5.14	0.50	5.64	
		3	68	32	530	2023	22	12.21	2.73	136.47	25.53	2.04	27.57	
	411	1	75	21	696	1931	28	15.60	6.67	29.31	42.85	5.09	47.94	
		2	92	-2	927	2085	28	25.68	12.75	53.32	93.91	9.25	103.16	
	421	1	0	Unrestricted	60	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2	0	Unrestricted	588	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Final Prediction Table

Traffic Stream Results

Arm	Traffic Stream	Name	Traffic node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUE
				Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s per cycle)	Wasted time total (s per cycle)	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)
102	2	A2011	1	1	B	580	2079	32	0.00	51	77	41.77	10.05	61.38	6.22
	3		1	1	B	221	2079	32	0.00	19	366	39.10	7.19	48.11	1.86
111	1		1	1	A	350	1981	18	8.00	56	61	54.21	37.98	105.91	6.18
	2		1	1	A	530	2060	18	1.00	81	11	29.80	13.88	85.06	8.56
121	1					1391	Unrestricted	60	0.00	0	Unrestricted	40.68	0.00	0.00	0.00
	2					751	Unrestricted	60	0.00	0	Unrestricted	41.09	0.00	0.00	0.00
202	2	M23 Southbound Off-slip	2	2	B	928	2164	31	0.00	80	12	35.47	19.33	88.91	14.73
	3		2	2	B	520	2187	31	0.16	45	101	26.44	10.22	59.27	5.15
211	1		2	2	A	631	1980	19	0.00	96	-6	70.67	49.16	97.22	15.58
	2		2	2	A	120	2085	19	3.00	17	421	35.18	14.23	56.01	1.19
221	1					640	Unrestricted	60	0.00	0	Unrestricted	22.54	0.00	0.00	0.00
	2					290	Unrestricted	60	16.00	0	Unrestricted	22.67	0.00	0.00	0.00
302	2		3	3	B	704 <	2159	22	0.00	109	-18	365.85	334.44	563.70	71.47 +
	3		3	3	B	407	2159	22	0.10	49	82	48.17	16.59	75.49	5.13
311	2		3	3	A	640	2081	26	4.94	71	27	24.65	11.33	81.59	8.93
	3		3	3	A	520	2068	26	6.00	56	61	23.46	10.41	89.02	7.72
322	1					1039	Unrestricted	60	0.00	0	Unrestricted	38.02	0.00	0.00	0.00
401	1	M23 Northbound Off-slip	4			695	1917	60	33.64	83	9	39.09	23.14	87.96	10.70
	2		4			704	2070	60	32.00	64	41	37.14	13.14	69.12	8.28
402	1	M23 Northbound Off-slip	4	4	B	695 <	1886	22	0.00	96	-6	44.78	43.58	69.44	9.13 +
	2		4	4	B	174	2030	22	2.00	22	303	8.69	7.49	23.10	1.70
	3		4	4	B	530 <	2023	22	0.00	68	32	13.41	12.21	30.73	2.73 +
411	1		4	4	A	696	1931	28	6.00	75	21	36.81	15.60	58.33	6.67
	2		4	4	A	927	2085	28	2.00	92	-2	46.33	25.68	79.56	12.75
421	1					60	Unrestricted	60	37.00	0	Unrestricted	30.02	0.00	0.00	0.00
	2					588	Unrestricted	60	1.00	0	Unrestricted	30.24	0.00	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	3003.49	221.48	13.56	50.18	71.19	1723.39	141.50	0.00	1864.89
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians									
TOTAL	3003.49	221.48	13.56	50.18	71.19	1723.39	141.50	0.00	1864.89

- 1 < = adjusted flow warning (upstream links/traffic streams are over-saturated)
- 1 * = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%
- 1 ^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%
- 1 + = average link/traffic stream excess queue is greater than 0
- 1 P.I. = PERFORMANCE INDEX

A2 - 2015 Base PM

D2 - 2015 Base PM*

Summary

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Traffic Stream Data	Arm 302 - Traffic Stream 2	Arm 302 - Traffic Stream 2 is over 200m. Recommend the use of PDM to model platooning effects.
Warning	Traffic Stream Data	Arm 302 - Traffic Stream 3	Arm 302 - Traffic Stream 3 is over 200m. Recommend the use of PDM to model platooning effects.

Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (PCU-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
2	18/10/2021 14:11:52	18/10/2021 14:11:53	17:00	60	997.76	62.55	96.00	211/2	3	12	211/2	401/2	211

Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2015 Base PM		D2	✓	

Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2015 Base PM				17:00	

Local OD Matrix - Local Matrix: 1

Local Matrix Options

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

Normal Input Flows (PCU/hr)

		To			
		1	2	3	4
From	1	0	926	206	636
	2	748	0	445	0
	3	197	349	0	562
	4	192	0	261	95

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	A2011	102/2, 102/3	121/1, 121/2	#0000FF
	2	M23 Southbound Off-slip	202/2, 202/3	221/1, 221/2	#FF0000
	3	Copthorne Way	302/3, 302/2	322/1	#00FF00
	4	M23 Northbound Off-slip	401/1, 401/2	421/1, 421/2	#FFFF00

Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (PCU/hr)
1	8		1	1	102/3, 211/2, 311/2, 411/1, 121/1	Normal	0
	9		1	4	102/3, 211/2, 311/2, 421/2	Normal	318
	10		4	1	401/2, 402/3, 111/2, 211/2, 311/2, 411/1, 121/1	Disabled	0
	11		4	4	401/2, 402/3, 111/2, 211/2, 311/2, 421/2	Normal	48
	12		1	2	102/3, 211/2, 311/3, 411/2, 111/1, 221/1	Disabled	0
	13		1	1	102/3, 211/2, 311/3, 411/2, 121/2	Normal	0
	14		4	1	401/2, 402/3, 111/2, 211/2, 311/3, 411/2, 121/2	Disabled	0
	15		2	3	202/2, 322/1	Normal	445
	16		2	1	202/2, 311/2, 411/1, 121/1	Percentage	75
	17		2	4	202/2, 311/2, 421/2	Normal	0
	18		2	2	202/3, 311/3, 411/2, 111/1, 221/1	Normal	0
	19		2	3	202/3, 311/3, 411/2, 111/2, 211/1, 322/1	Disabled	0
	20		2	1	202/3, 311/3, 411/2, 121/2	Normal	673
	21		3	2	302/3, 411/2, 111/1, 221/1	Normal	349
	22		3	3	302/3, 411/2, 111/2, 211/1, 322/1	Normal	0
	23		1	2	102/2, 221/1	Normal	463
	24		3	1	302/3, 411/2, 121/2	Normal	197
	25		3	1	302/2, 411/1, 121/1	Normal	0
	26		3	4	302/2, 421/2	Normal	562
	27		1	4	102/3, 211/2, 311/2, 421/1	Normal	318
	28		2	4	202/2, 311/2, 421/1	Normal	0
	29		3	4	302/3, 411/2, 111/2, 211/2, 311/2, 421/1	Disabled	0
	30		4	4	401/2, 402/3, 111/2, 211/2, 311/2, 421/1	Normal	48
	36		4	1	401/1, 402/1, 121/1	Normal	92
	59		1	2	102/2, 221/2	Normal	463
	60		1	3	102/3, 211/1, 322/1	Normal	206
	61		4	3	401/2, 402/3, 111/2, 211/1, 322/1	Normal	261
	62		3	4	302/3, 411/2, 111/2, 211/2, 311/2, 421/2	Disabled	0
	63		4	2	401/2, 402/2, 111/1, 221/1	Normal	0
	64		4	1	401/2, 402/2, 121/2	Normal	100

Signal Timings

Network Default: 60s cycle time; 60 steps

Intergreen Matrix for Controller Stream 1

		To	
		A	B
From	A		5
	B	5	

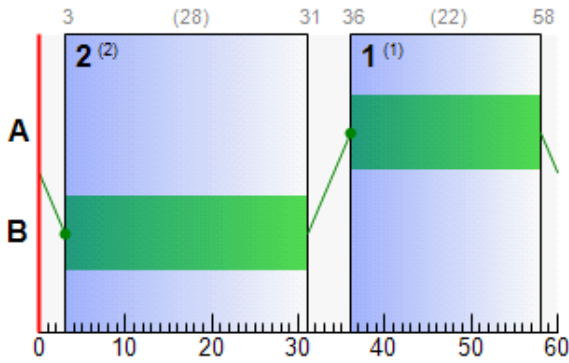
Resultant Stages

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	36	58	22	1	7
	2	✓	2	B	3	31	28	1	7

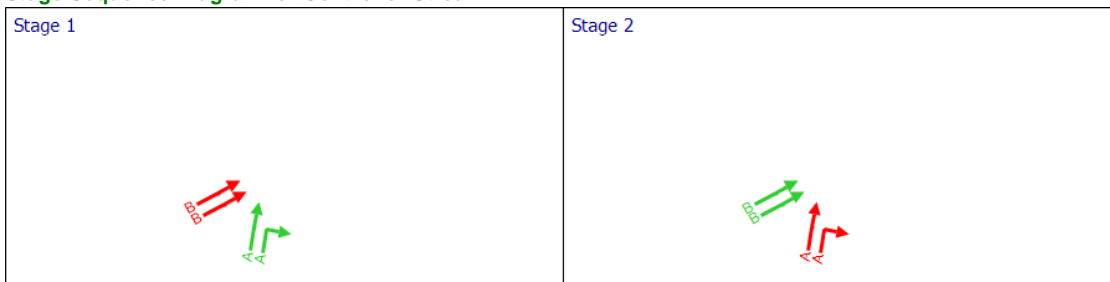
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
102	2	1	1	B	3	31	28
102	3	1	1	B	3	31	28
111	1	1	1	A	36	58	22
111	2	1	1	A	36	58	22

Phase Timings Diagram for Controller Stream 1



Stage Sequence Diagram for Controller Stream 1



Intergreen Matrix for Controller Stream 2

		To	
		A	B
From	A		5
	B	5	

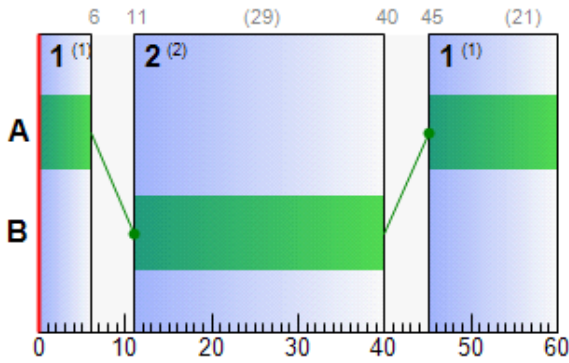
Resultant Stages

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)
2	1	✓	1	A	45	6	21	1	7
	2	✓	2	B	11	40	29	1	7

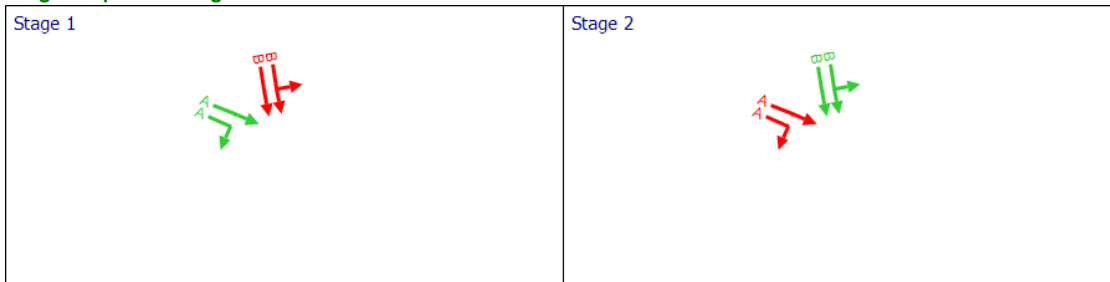
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
202	2	2	2	B	11	40	29
202	3	2	2	B	11	40	29
211	1	2	2	A	45	6	21
211	2	2	2	A	45	6	21

Phase Timings Diagram for Controller Stream 2



Stage Sequence Diagram for Controller Stream 2



Intergreen Matrix for Controller Stream 3

		To	
		A	B
From	A		6
	B	6	

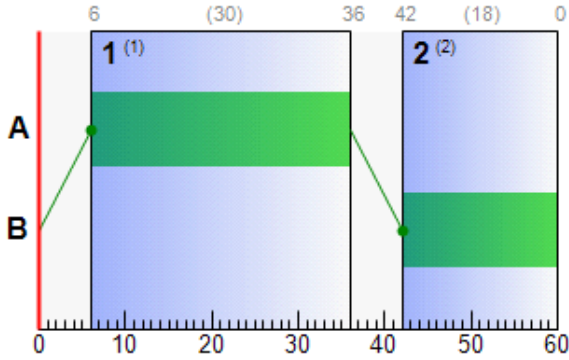
Resultant Stages

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)
3	1	✓	1	A	6	36	30	1	7
	2	✓	2	B	42	0	18	1	7

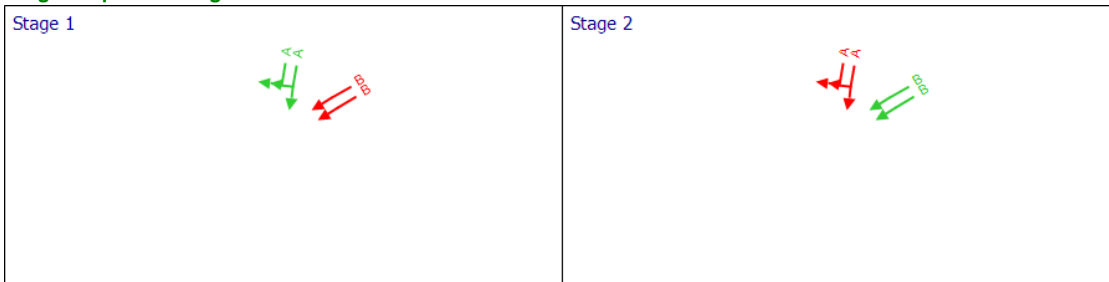
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
302	2	3	3	B	42	0	18
302	3	3	3	B	42	0	18
311	2	3	3	A	6	36	30
311	3	3	3	A	6	36	30

Phase Timings Diagram for Controller Stream 3



Stage Sequence Diagram for Controller Stream 3



Intergreen Matrix for Controller Stream 4

		To	
		A	B
From	A		5
	B	5	

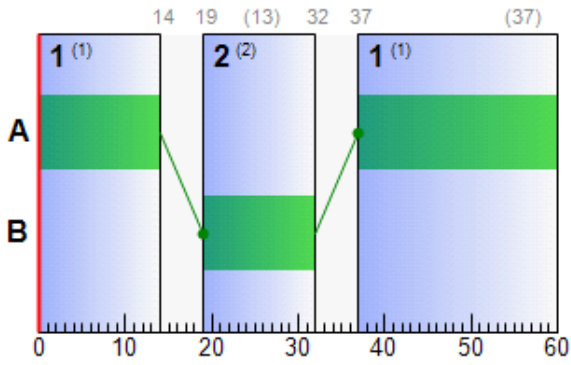
Resultant Stages

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)
4	1	✓	1	A	37	14	37	1	7
	2	✓	2	B	19	32	13	1	7

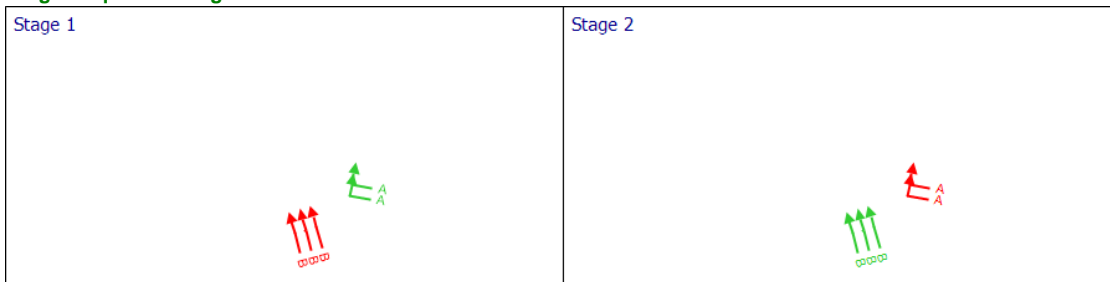
Traffic Stream Green Times

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
402	1	4	4	B	19	32	13
402	2	4	4	B	19	32	13
402	3	4	4	B	19	32	13
411	1	4	4	A	37	14	37
411	2	4	4	A	37	14	37

Phase Timings Diagram for Controller Stream 4



Stage Sequence Diagram for Controller Stream 4



Traffic Stream Results

Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s (per cycle))	Mean Delay per Veh (s)	Mean max queue (PCU)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)	
17:00-18:00	102	2	92	-2	926	2079	28	32.84	18.88	41.06	119.95	13.53	133.48	
		3	84	7	842	2079	28	22.40	14.25	30.81	74.40	10.18	84.58	
	111	1	46	96	349	1981	22	13.48	4.60	25.73	18.55	3.37	21.92	
		2	45	100	356	2060	22	2.75	3.62	19.86	3.85	2.09	5.95	
	121	1	0	Unrestricted	167	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2	0	Unrestricted	970	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	202	2	49	85	520	2143	29	11.85	5.49	23.45	24.31	4.12	28.43	
		3	62	45	673	2187	29	14.36	8.28	35.26	38.13	6.14	44.27	
	211	1	64	40	466	1980	21	12.78	4.97	21.00	23.50	3.35	26.85	
		2	96	-6	732	2085	21	53.79	19.42	78.96	155.24	13.84	169.07	
	221	1	0	Unrestricted	812	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
		2	0	Unrestricted	463	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	302	2	82	9	562	2159	18	31.60	9.99	21.94	70.05	7.44	77.49	
		3	80	12	546	2159	18	30.16	9.52	20.80	64.96	7.09	72.05	
	311	2	74	22	807	2118	30	12.97	13.82	89.89	41.26	10.44	51.70	
		3	63	43	673	2068	30	13.45	5.05	33.68	35.71	4.18	39.90	
	322	1	0	Unrestricted	911	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	401	1	5	1775	92	1917	60	0.05	0.00	0.01	0.02	0.00	0.00	0.02
		2	82	10	457	2070	60	34.02	8.29	23.83	61.33	6.17	67.49	
	402	1	21	331	92	1886	13	19.65	1.69	84.71	7.13	0.91	8.04	
		2	21	328	100	2030	13	14.86	0.55	27.57	5.84	0.41	6.26	
		3	75	19	356	2023	13	26.50	3.12	155.87	37.19	2.31	39.50	
	411	1	6	1368	75	1931	37	2.93	0.36	1.57	0.87	0.27	1.13	
		2	92	-3	1219	2085	37	22.02	18.87	78.90	105.88	13.76	119.64	
421	1	0	Unrestricted	366	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	2	0	Unrestricted	928	Unrestricted	60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Final Prediction Table

Traffic Stream Results

Arm	Traffic Stream	Name	Traffic node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUE
				Controller stream	Phase	Calculated flow entering (PCU/hr)	Calculated sat flow (PCU/hr)	Actual green (s per cycle)	Wasted time total (s per cycle)	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (PCU)
102	2	A2011	1	1	B	926	2079	28	0.00	92	-2	64.57	32.84	116.52	18.88
	3		1	1	B	842	2079	28	0.00	84	7	54.32	22.40	96.40	14.25
111	1		1	1	A	349	1981	22	10.00	46	96	29.71	13.48	76.99	4.60
	2		1	1	A	356	2060	22	11.00	45	100	18.66	2.75	46.95	3.62
121	1					167	Unrestricted	60	7.00	0	Unrestricted	40.68	0.00	0.00	0.00
	2					970	Unrestricted	60	0.00	0	Unrestricted	41.09	0.00	0.00	0.00
202	2	M23 Southbound Off-slip	2	2	B	520	2143	29	0.00	49	85	27.99	11.85	63.24	5.49
	3		2	2	B	673	2187	29	0.16	62	45	30.58	14.36	72.73	8.28
211	1		2	2	A	466	1980	21	4.00	64	40	34.30	12.78	57.28	4.97
	2		2	2	A	732	2085	21	0.07	96	-6	74.74	53.79	150.81	19.42
221	1					812	Unrestricted	60	0.00	0	Unrestricted	22.54	0.00	0.00	0.00
	2					463	Unrestricted	60	14.00	0	Unrestricted	22.67	0.00	0.00	0.00
302	2		3	3	B	562	2159	18	0.00	82	9	63.01	31.60	105.60	9.99
	3		3	3	B	546	2159	18	0.10	80	12	61.74	30.16	103.54	9.52
311	2		3	3	A	807 <	2118	30	0.00	74	22	26.29	12.97	103.18	13.82 +
	3		3	3	A	673	2068	30	10.00	63	43	26.50	13.45	49.57	5.05
322	1					911	Unrestricted	60	0.00	0	Unrestricted	38.02	0.00	0.00	0.00
401	1	M23 Northbound Off-slip	4			92	1917	60	0.00	5	1775	16.00	0.05	0.00	0.00
	2		4			457	2070	60	47.00	82	10	58.02	34.02	108.02	8.29
402	1	M23 Northbound Off-slip	4	4	B	92	1886	13	0.00	21	331	20.85	19.65	78.46	1.69
	2		4	4	B	100	2030	13	3.00	21	328	16.06	14.86	33.19	0.55
	3		4	4	B	356 <	2023	13	0.00	75	19	27.70	26.50	51.71	3.12 +
411	1		4	4	A	75	1931	37	27.00	6	1368	24.13	2.93	28.49	0.36
	2		4	4	A	1219	2085	37	1.00	92	-3	42.66	22.02	90.02	18.87
421	1					366	Unrestricted	60	15.00	0	Unrestricted	30.02	0.00	0.00	0.00
	2					928	Unrestricted	60	0.00	0	Unrestricted	30.24	0.00	0.00	0.00

Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (PCU-hr/hr)	Random plus oversat delay (PCU-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	2963.54	161.33	18.37	33.77	28.77	888.18	109.58	0.00	997.76
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians									
TOTAL	2963.54	161.33	18.37	33.77	28.77	888.18	109.58	0.00	997.76

- | < = adjusted flow warning (upstream links/traffic streams are over-saturated)
- | * = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%
- | ^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%
- | + = average link/traffic stream excess queue is greater than 0
- | P.I. = PERFORMANCE INDEX