

Appendix AV G: Crown Crossroads Mitigation

Drawing TPMA5021_102 – B5102 Gresford Rd: Proposed Alt. Signalised Junction

Highway Boundary Extents

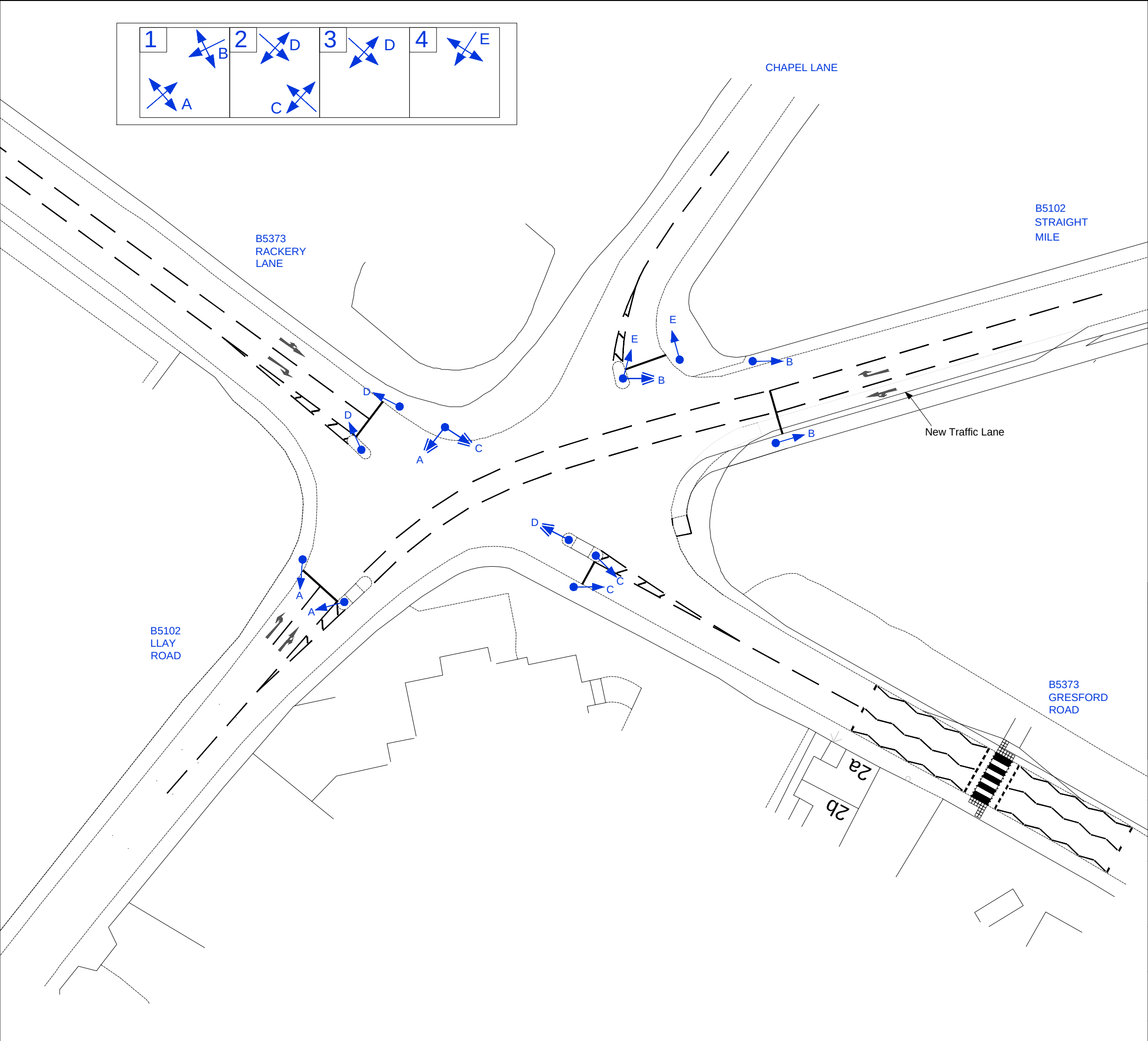
Red Line Plan

Traffic Advisory Leaflet 3/97

Crown Crossroads LinSig Outputs: Do Nothing

Crown Crossroads LinSig Outputs: Physical Improvements Only

Crown Crossroads LinSig Outputs: Physical Improvements + MOVA



NOTES:

KEY:

- PROPOSED ROAD MARKINGS
- PRIMARY RAG HEAD MOUNTED ON 4M POLE
- SECONDARY RAG HEAD ON MOUNTED 4M POLE

SUBJECT TO DETAILED DESIGN

C	Highway Layout - Road Markings	28.09	TL	KY
B	Highway Layout - Pedestrian Crossing Improvements	22.06	TL	KY
A	Highway Layout Alterations	17.06	KY	KY
Rev:	Description:	Date:	By:	Chkd:



Curtins Consulting Ltd,
Merchant Exchange, 17-19 Whitworth St West, Manchester, M1 5WG
t: 0161 236 2394
e: manchester@curtins.com
www.curtins.com

Structures - Civils - Environmental - Infrastructure - Transport Planning - Sustainability - Expert Advisory Services
Birmingham - Bristol - Cardiff - Douglas - Edinburgh - Kendal - Leeds - Liverpool - London - Manchester - Nottingham

Status:

PRELIMINARY

Project:

HOME FARM RESIDENTIAL DEVELOPMENT
LLAY

Drg Title:

B5102 - GRESFORD RD JUNCTION
PROPOSED ALT. SIGNALISED JUCNTION

Scale:	Size:	First Issue:	Drawn:	Checked:
1:500	A3	26/04/16	TL	JBG
Drg No:				Rev:
TPMA5021-102				C

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Adopted Roads Map

Key to road type:  A-roads,  B-Roads,  C-Roads.  Unclassified Roads,  Adopted footpaths. For further information please call Pride in your Streets 01978 298989





Notes

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All dimensions in millimeters and to be checked on site prior to commencement of any works.

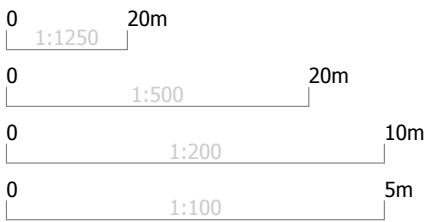
Do not scale from this drawing.

Builder to verify all dimensions, heights and levels prior to commencement of work.

No encroachment onto neighbours property without written permission.

The contractor in preparing his estimate shall visit the site and acquaint himself with the problems involved & shall allow in his price for any detail whether indicated or not which may be reasonably considered necessary to ensure a neat structurally sound & workmanlike job.

The contractor shall issue all statutory notices to the Local Authority at commencement, during progress & completion of the works.



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cunningham
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Revision		Drawn	Checked
Date			
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Unit 202, Vanilla Factory, 39 Fleet Street, Liverpool, L1 4AR
t. 0151 707 9944
f. 0151 707 0996
Portland Tower, Portland Street, Manchester M1 3LD
t. 0161 238 4914
info@michaelcunninghamarchitects.com

Job Title

Home Farm
Gresford Road
Llay
Wrexham
LL12 0NW
UK

Drawing Name

OS MAP

Drawing Status

Planning

Drawn by

AJ

Checked by

Drawing Scale

1:1250@A1

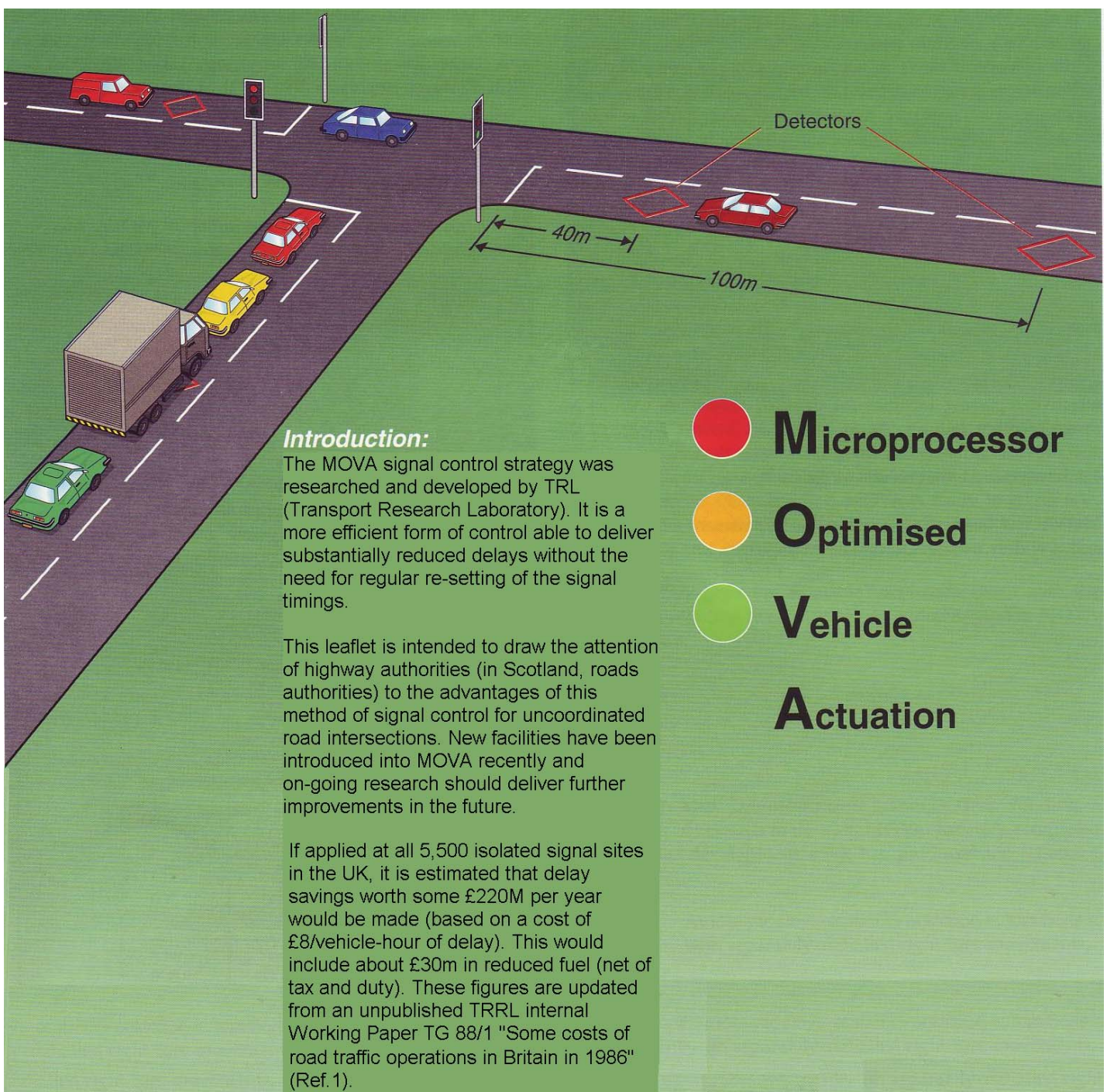
Layout ID

653 P (00) 001

Traffic Advisory Leaflet 3/97
March 1997



The "MOVA" signal control system



Background

Vehicle-Actuated control (VA) has been the standard method of signal control in UK since the second World War. VA is a simple method for allocating the green times to different traffic movements, between preset minimum and maximum limits. Vehicles detected during the green phase extend the green period until a gap exceeding a critical value is found or the maximum is reached. Variations on this basic gap-seeking control logic are widely used throughout the world, with various detector sizes and layouts; however, the basic principles remain substantially the same. The only major development has been the change from pneumatic tube detectors to inductive loops, and latterly to much improved detector electronics. Until MOVA, there had been no substantial advance in control strategies over a period of some forty years.

VA has considerable merit compared with fixed-time signal control, but is prone to extend the green phase inefficiently, particularly when there are long queues waiting at red signals. It is also difficult to set maximum greens effectively, and this can seriously degrade performance if they are poorly-related to the balance of flows in conflicting traffic streams. Thus, if performance is not to deteriorate by ageing, it is necessary to measure traffic flows at regular intervals in order to reset maximum greens. This places a considerable burden on traffic engineers and is often neglected. In the mid-eighties, TRL developed a control strategy to overcome these problems - MOVA.

MOVA signal timings vary widely in response to traffic conditions. This innovative method of signal control can reduce delays and accident levels. Detector failure is one of the main problems associated with existing vehicle actuated signals. MOVA has an effective back-up system that allows the worst effects of detector failure to be avoided. MOVA also has effective reporting facilities for detector failure, as well as a range of other failures. As an additional benefit, the system also provides information on traffic flows at the junction, which can be accessed either on site or remotely.

MOVA has been approved by the Department of Transport and is widely used in UK and overseas.

Costs and Benefits

The costs and benefits of converting sites to MOVA control have been evaluated during a comprehensive, country-wide trial at 20 sites (Ref.2).

TRL/Department of Transport (DOT) trials have shown that MOVA reduces delays by an average of 13% compared to the earlier, vehicle actuated system. Benefits are likely to be largest when compared with vehicle actuated signal control that has not been recently validated. There is also evidence that MOVA reduces injury accidents at signals on high speed roads. It has the additional advantage that it is no longer necessary to install speed discrimination or speed assessment detectors and equipment; this was needed with the earlier vehicle actuated system in order to minimise high-speed vehicles running through red signals at the end of green.

Table 1 below shows the annual benefits arising from reduced delays, and the installation costs. The costs include staff time for planning and commissioning the sites as well as all the direct installation costs. The third column shows the payback time in weeks. The figures are presented for small, medium and large junctions. The data are taken directly from TRRL Research Report RR 279 (Ref.2), at 1989 prices.

These figures take account of delay benefits only. No attempt has been made to include any safety benefits that may accrue from conversion to MOVA control.

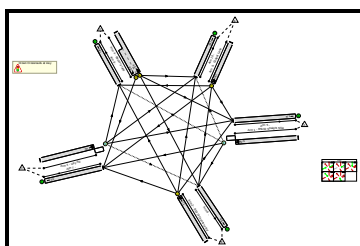
Injury accident records from the initial 20 MOVA sites have been compared for the three years prior to MOVA installation and three years after. The results showed a small overall reduction, which was not statistically significant. However, when major, high flow, high speed junctions were examined as a separate group, a 30% reduction in injury accidents was found, with 90% confidence.

The potential for safety benefits at large high-speed sites is supported by MOVA trials at two major trunk road sites; these showed reductions in red-running equivalent to 50,000 fewer vehicles per junction jumping the lights per year, compared with the previous VA plus speed-assessment control. As this class of junction is also the prime group for conversion on delay grounds, there is the possibility of substantial safety benefits to add to the delay/congestion benefits.

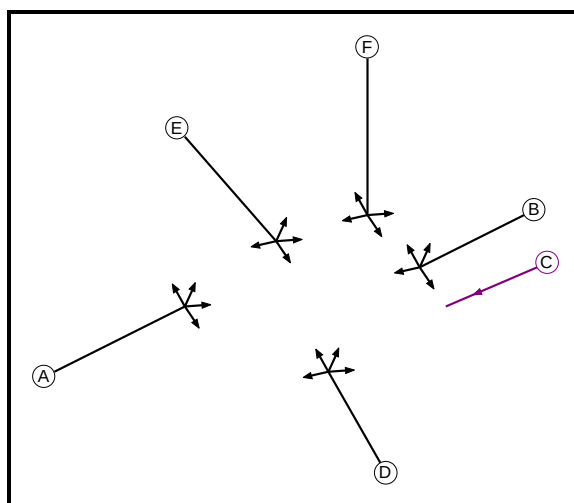
User and Project Details

Project:	Home Farm Residential Development
Title:	Crown Crossroads at Llay
Location:	Llay Wrexham LL12 0NT
File name:	J1 (council signal)_2026.lsg3x
Author:	GlanvilleJB
Company:	Curtins
Address:	Manchester
Notes:	Do Nothing

Network Layout Diagram



Phase Diagram



Phase Input Data

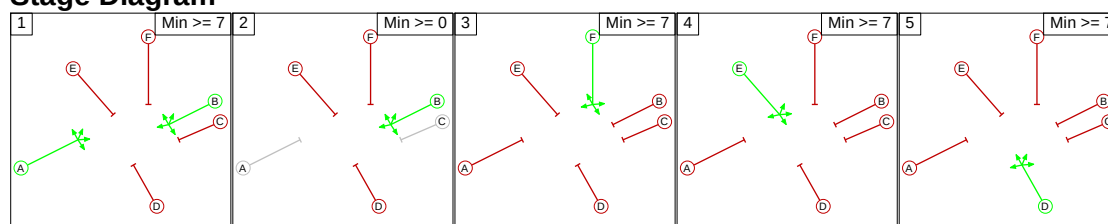
Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Ind. Arrow	B	4	4
D	Traffic		7	7
E	Traffic		7	7
F	Traffic		7	7

Phase Intergreens Matrix

	Starting Phase						
		A	B	C	D	E	F
	A		-	4	5	5	9
	B	-		-	7	10	5
	C	2	-		5	10	5
	D	7	6	5		6	9
	E	6	5	5	5		9
	F	9	5	5	7	8	

Phases in Stage

Stage No.	Phases in Stage
1	A B
2	B
3	F
4	E
5	D

Stage Diagram**Phase Delays**

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

Prohibited Stage Change

From Stage	To Stage					
		1	2	3	4	5
	1		0	9	10	7
	2	2		5	10	7
	3	9	5		8	7
	4	6	5	9		5
	5	7	6	9	6	

Give-Way Lane Input Data

Junction: Crown Crossroads at Llay											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/1 (B5102 Straight Mile)	8/1 (Right)	1439	0	3/1	1.09	To 5/1 (Ahead) To 8/1 (Left) To 10/1 (Left)	3.00	3.00	0.50	3	3.00
	10/1 (Right)	1439	0	3/1	1.09	To 5/1 (Ahead) To 10/1 (Left)					
3/1 (Llay Rd)	6/1 (Right)	1439	0	1/1	1.09	To 6/1 (Left) To 7/1 (Ahead)	3.00	3.00	0.50	3	3.00

Lane Input Data

Junction: Crown Crossroads at Llay												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (B5102 Straight Mile)	O	B	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 6 Left	9.00
											Arm 7 Ahead	Inf
											Arm 8 Right	11.00
											Arm 10 Right	7.00
2/1 (B5373 Gresford Rd)	U	D	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 5 Right	7.00
											Arm 7 Left	9.00
											Arm 8 Ahead	Inf
3/1 (Llay Rd)	O	A	2	3	60.0	Geom	-	5.00	0.00	Y	Arm 10 Right	8.00
											Arm 5 Ahead	Inf
											Arm 6 Right	20.00
4/1 (Rackery lane)	U	E	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 8 Left	18.00
											Arm 10 Left	Inf
											Arm 5 Left	22.00
4/2 (Rackery lane)	U	E	2	3	10.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead	Inf
											Arm 10 Left	11.00
5/1	U		2	3	60.0	Inf	-	-	-	-	Arm 7 Right	12.00
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (Chapel Lane)	U	F	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 5 Left	7.00
											Arm 6 Left	20.00
											Arm 7 Right	40.00
											Arm 8 Right	40.00

10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
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Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Peak 2014 Surveyed Flows'	07:45	08:45	01:00	
2: 'PM Peak 2014 Surveyed Flows'	16:45	17:45	01:00	
3: 'AM Peak 2019 Base'	07:45	08:45	01:00	
4: 'PM Peak 2019 Base'	16:45	17:45	01:00	
5: 'AM Peak 2019 Base + Com.+Dev.'	07:45	08:45	01:00	
6: 'PM Peak 2019 Base + Com.+Dev.'	16:45	17:45	01:00	
7: 'AM Peak 2024 Base'	07:45	08:45	01:00	
8: 'PM Peak 2024 Base'	16:45	17:45	01:00	
9: 'AM Peak 2024 Base + Com.+Dev.'	07:45	08:45	01:00	
10: 'PM Peak 2024 Base + Com.+Dev.'	16:45	17:45	01:00	
11: 'AM Police Stn'	08:00	09:00	01:00	
12: 'PM Police Stn'	16:45	17:45	01:00	
13: 'AM Base+Police'	08:00	09:00	01:00	F7+F11
14: 'PM Base+Police'	16:45	17:45	01:00	F8+F12
15: 'AM 2026 BASE'	07:45	08:45	01:00	
16: 'PM 2026 BASE'	16:45	17:45	01:00	
17: 'AM 2026 DEV (Base+Com+Dev)'	07:45	08:45	01:00	
18: 'PM 2026 DEV (Base+Com+Dev)'	16:45	17:45	01:00	

Scenario 1: 'AM 2026 BASE' (FG15: 'AM 2026 BASE', Plan 1: 'Chapel Ln in Every Other Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	8	55	165	0	228
	B	19	0	75	253	3	350
	C	122	48	0	550	3	723
	D	181	135	338	0	1	655
	E	2	1	7	8	0	18
	Tot.	324	192	475	976	7	1974

Traffic Lane Flows

Lane	Scenario 1: AM 2026 BASE
Junction: Crown Crossroads at Llay	
1/1	228
2/1	350
3/1	723
4/1 (with short)	655(In) 317(Out)
4/2 (short)	338
5/1	324
6/1	192
7/1	475
8/1	976
9/1	18
10/1	7

Lane Saturation Flows

Junction: Crown Crossroads at Llay								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile)	3.50	0.00	Y	Arm 6 Left Arm 7 Ahead Arm 8 Right Arm 10 Right	9.00 Inf 11.00 7.00	3.5 % 24.1 % 72.4 % 0.0 %	1779	1779
2/1 (B5373 Gresford Rd)	3.40	0.00	Y	Arm 5 Right Arm 7 Left Arm 8 Ahead Arm 10 Right	7.00 9.00 Inf 8.00	5.4 % 21.4 % 72.3 % 0.9 %	1864	1864
3/1 (Llay Rd)	5.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left Arm 10 Left	Inf 20.00 18.00 Inf	16.9 % 6.6 % 76.1 % 0.4 %	1980	1980
4/1 (Rackery lane)	3.00	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 10 Left	22.00 Inf 11.00	57.1 % 42.6 % 0.3 %	1842	1842
4/2 (Rackery lane)	3.00	0.00	Y	Arm 7 Right	12.00	100.0 %	1702	1702
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane)	4.50	0.00	Y	Arm 5 Left Arm 6 Left Arm 7 Right Arm 8 Right	7.00 20.00 40.00 40.00	11.1 % 5.6 % 38.9 % 44.4 %	1950	1950
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM 2026 BASE' (FG16: 'PM 2026 BASE', Plan 4: 'Chapel in Every Four Cycle')**Traffic Flows, Desired****Desired Flow :**

Origin	Destination						
		A	B	C	D	E	Tot.
	A	0	26	148	221	1	396
	B	8	0	59	164	0	231
	C	99	76	0	357	5	537
	D	213	170	455	0	2	840
	E	2	2	3	1	0	8
	Tot.	322	274	665	743	8	2012

Traffic Lane Flows

Lane	Scenario 2: PM 2026 BASE
Junction: Crown Crossroads at Llay	
1/1	396
2/1	231
3/1	537
4/1 (with short)	840(In) 385(Out)
4/2 (short)	455
5/1	322
6/1	274
7/1	665
8/1	743
9/1	8
10/1	8

Lane Saturation Flows

Junction: Crown Crossroads at Llay								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile)	3.50	0.00	Y	Arm 6 Left Arm 7 Ahead Arm 8 Right Arm 10 Right	9.00 Inf 11.00 7.00	6.6 % 37.4 % 55.8 % 0.3 %	1807	1807
2/1 (B5373 Gresford Rd)	3.40	0.00	Y	Arm 5 Right Arm 7 Left Arm 8 Ahead Arm 10 Right	7.00 9.00 Inf 8.00	3.5 % 25.5 % 71.0 % 0.0 %	1862	1862
3/1 (Llay Rd)	5.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left Arm 10 Left	Inf 20.00 18.00 Inf	18.4 % 14.2 % 66.5 % 0.9 %	1984	1984
4/1 (Rackery lane)	3.00	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 10 Left	22.00 Inf 11.00	55.3 % 44.2 % 0.5 %	1844	1844
4/2 (Rackery lane)	3.00	0.00	Y	Arm 7 Right	12.00	100.0 %	1702	1702
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane)	4.50	0.00	Y	Arm 5 Left Arm 6 Left Arm 7 Right Arm 8 Right	7.00 20.00 40.00 40.00	25.0 % 25.0 % 37.5 % 12.5 %	1893	1893
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM 2026 DEV' (FG17: 'AM 2026 DEV (Base+Com+Dev)', Plan 1: 'Chapel Ln in Every Other Cycle')
Traffic Flows, Desired**Desired Flow :**

Origin	Destination						
		A	B	C	D	E	Tot.
	A	0	10	76	216	0	302
	B	19	0	100	273	3	395
	C	127	57	0	555	3	742
	D	186	142	340	0	1	669
	E	2	1	7	8	0	18
	Tot.	334	210	523	1052	7	2126

Traffic Lane Flows

Lane	Scenario 3: AM 2026 DEV
Junction: Crown Crossroads at Llay	
1/1	302
2/1	395
3/1	742
4/1 (with short)	669(In) 329(Out)
4/2 (short)	340
5/1	334
6/1	210
7/1	523
8/1	1052
9/1	18
10/1	7

Lane Saturation Flows

Junction: Crown Crossroads at Llay								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile)	3.50	0.00	Y	Arm 6 Left Arm 7 Ahead Arm 8 Right Arm 10 Right	9.00 Inf 11.00 7.00	3.3 % 25.2 % 71.5 % 0.0 %	1781	1781
2/1 (B5373 Gresford Rd)	3.40	0.00	Y	Arm 5 Right Arm 7 Left Arm 8 Ahead Arm 10 Right	7.00 9.00 Inf 8.00	4.8 % 25.3 % 69.1 % 0.8 %	1855	1855
3/1 (Llay Rd)	5.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left Arm 10 Left	Inf 20.00 18.00 Inf	17.1 % 7.7 % 74.8 % 0.4 %	1980	1980
4/1 (Rackery lane)	3.00	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 10 Left	22.00 Inf 11.00	56.5 % 43.2 % 0.3 %	1843	1843
4/2 (Rackery lane)	3.00	0.00	Y	Arm 7 Right	12.00	100.0 %	1702	1702
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane)	4.50	0.00	Y	Arm 5 Left Arm 6 Left Arm 7 Right Arm 8 Right	7.00 20.00 40.00 40.00	11.1 % 5.6 % 38.9 % 44.4 %	1950	1950
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM 2026 DEV' (FG18: 'PM 2026 DEV (Base+Com+Dev)', Plan 4: 'Chapel in Every Four Cycle')
Traffic Flows, Desired
Desired Flow :

Origin	Destination						
		A	B	C	D	E	Tot.
	A	0	26	157	228	1	412
	B	8	0	75	176	0	259
	C	111	100	0	357	5	573
	D	223	189	459	0	2	873
	E	2	2	3	1	0	8
	Tot.	344	317	694	762	8	2125

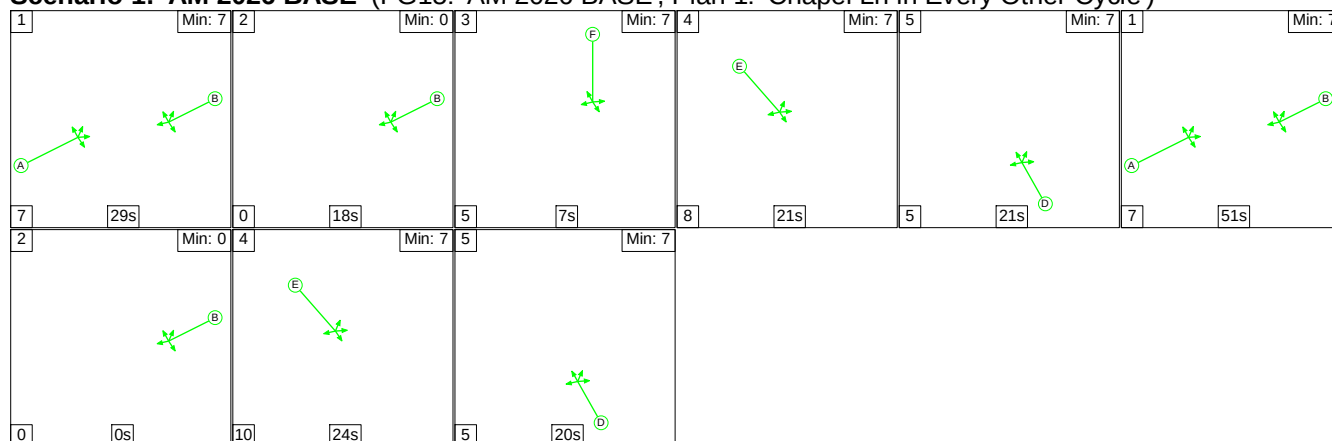
Traffic Lane Flows

Lane	Scenario 4: PM 2026 DEV
Junction: Crown Crossroads at Llay	
1/1	412
2/1	259
3/1	573
4/1 (with short)	873(In) 414(Out)
4/2 (short)	459
5/1	344
6/1	317
7/1	694
8/1	762
9/1	8
10/1	8

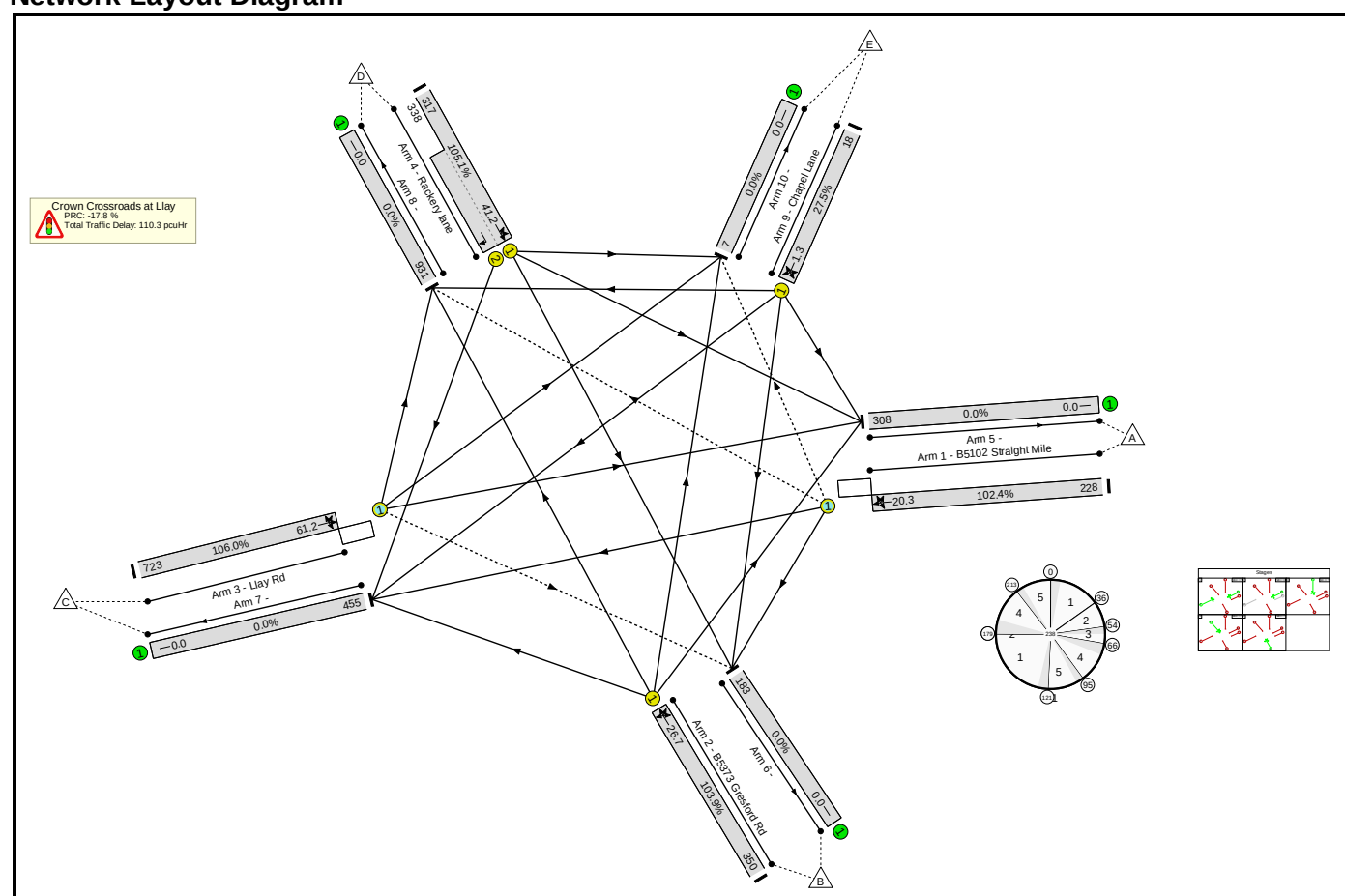
Lane Saturation Flows

Junction: Crown Crossroads at Llay								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile)	3.50	0.00	Y	Arm 6 Left Arm 7 Ahead Arm 8 Right Arm 10 Right	9.00 Inf 11.00 7.00	6.3 % 38.1 % 55.3 % 0.2 %	1809	1809
2/1 (B5373 Gresford Rd)	3.40	0.00	Y	Arm 5 Right Arm 7 Left Arm 8 Ahead Arm 10 Right	7.00 9.00 Inf 8.00	3.1 % 29.0 % 68.0 % 0.0 %	1853	1853
3/1 (Llay Rd)	5.00	0.00	Y	Arm 5 Ahead Arm 6 Right Arm 8 Left Arm 10 Left	Inf 20.00 18.00 Inf	19.4 % 17.5 % 62.3 % 0.9 %	1986	1986
4/1 (Rackery lane)	3.00	0.00	Y	Arm 5 Left Arm 6 Ahead Arm 10 Left	22.00 Inf 11.00	53.9 % 45.7 % 0.5 %	1846	1846
4/2 (Rackery lane)	3.00	0.00	Y	Arm 7 Right	12.00	100.0 %	1702	1702
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane)	4.50	0.00	Y	Arm 5 Left Arm 6 Left Arm 7 Right Arm 8 Right	7.00 20.00 40.00 40.00	25.0 % 25.0 % 37.5 % 12.5 %	1893	1893
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM 2026 BASE' (FG15: 'AM 2026 BASE', Plan 1: 'Chapel Ln in Every Other Cycle')



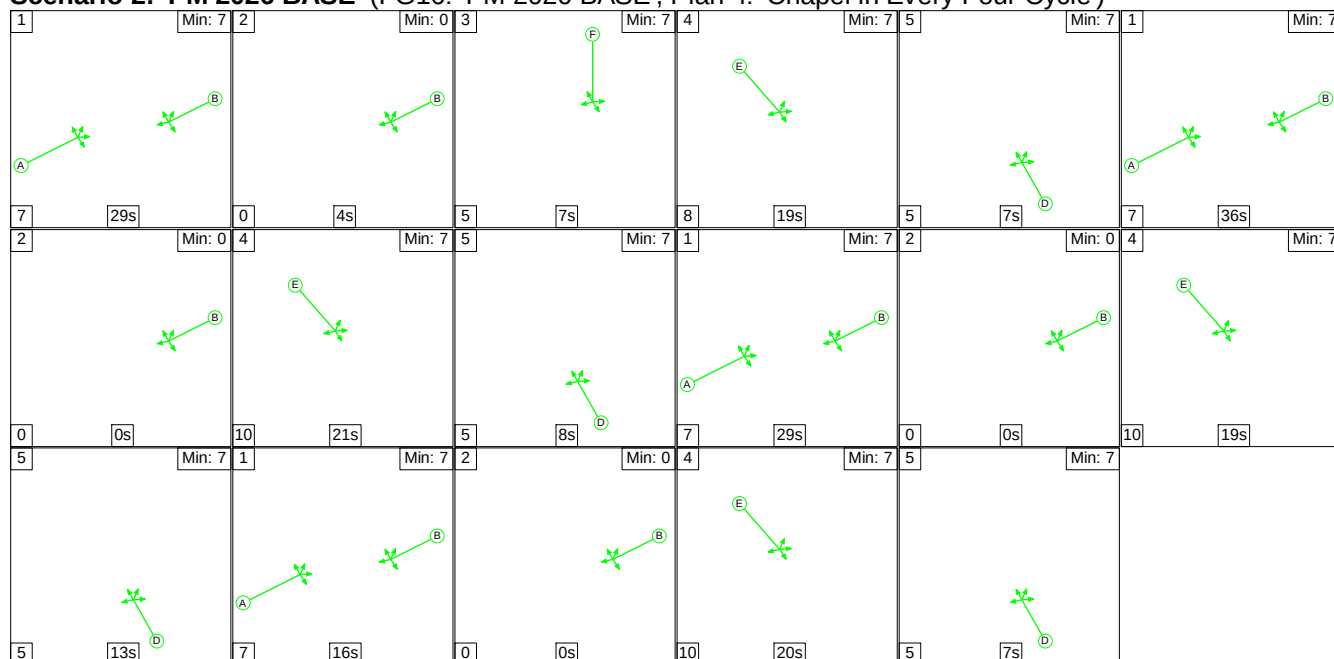
Network Layout Diagram



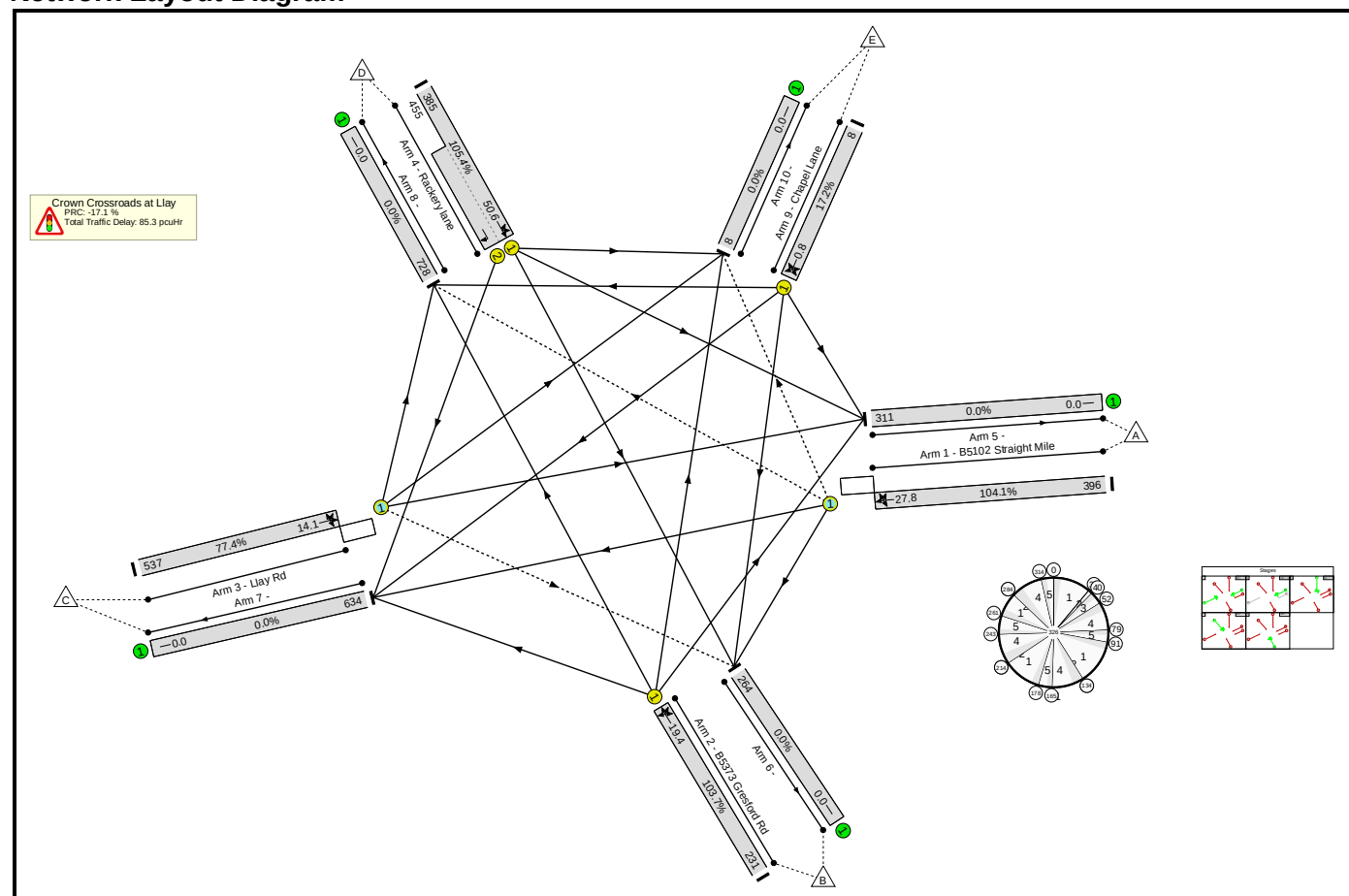
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	106.0%	36.8	72.5	110.3	-	-	-	-
Crown Crossroads at Llay	-	-	-	-	-	106.0%	36.8	72.5	110.3	-	-	-	-
1/1	B5102 Straight Mile Left Ahead Right Right2	B	228	1779	223	102.4%	4.4	9.0	14.5	228.3	11.3	9.0	20.3
2/1	B5373 Gresford Rd Right Left Ahead Right2	D	350	1864	337	103.9%	6.7	13.2	19.9	205.0	13.5	13.2	26.7
3/1	Llay Rd Ahead Right Left Left2	A	723	1980	682	106.0%	13.3	27.1	40.4	201.0	34.1	27.1	61.2
4/1+4/2	Rackery lane Left Ahead Right Left2	E	655	1842:1702	623	105.1%	11.8	23.0	34.8	191.2	18.3	23.0	41.2
9/1	Chapel Lane Left Left2 Right Right2	F	18	1950	66	27.5%	0.6	0.2	0.7	149.8	1.2	0.2	1.3
C1			PRC for Signalled Lanes (%):		-17.8	Total Delay for Signalled Lanes (pcuHr):		110.29	Cycle Time (s): 238				
			PRC Over All Lanes (%):		-17.8	Total Delay Over All Lanes (pcuHr):		110.29					

Scenario 2: 'PM 2026 BASE' (FG16: 'PM 2026 BASE', Plan 4: 'Chapel in Every Four Cycle')



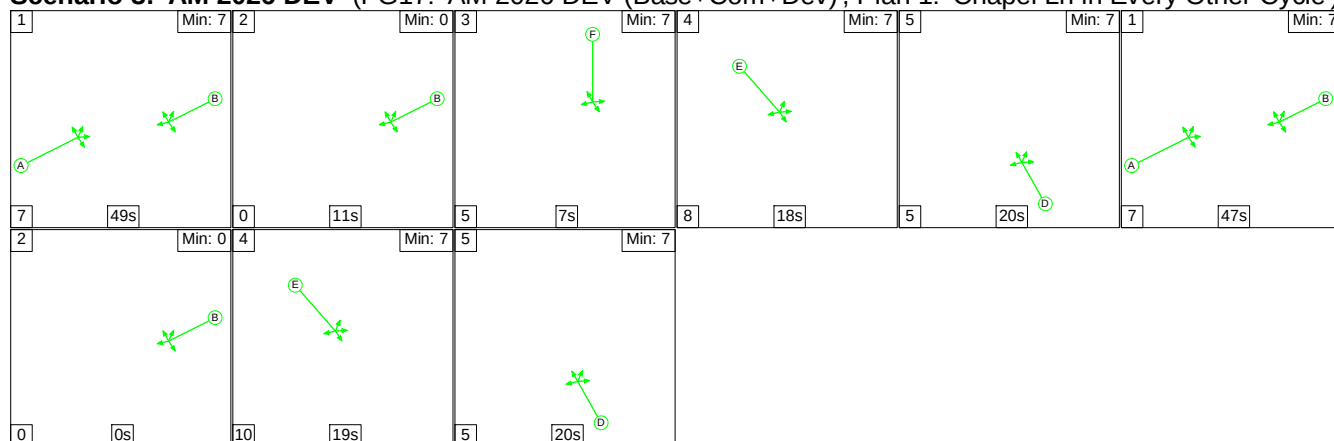
Network Layout Diagram



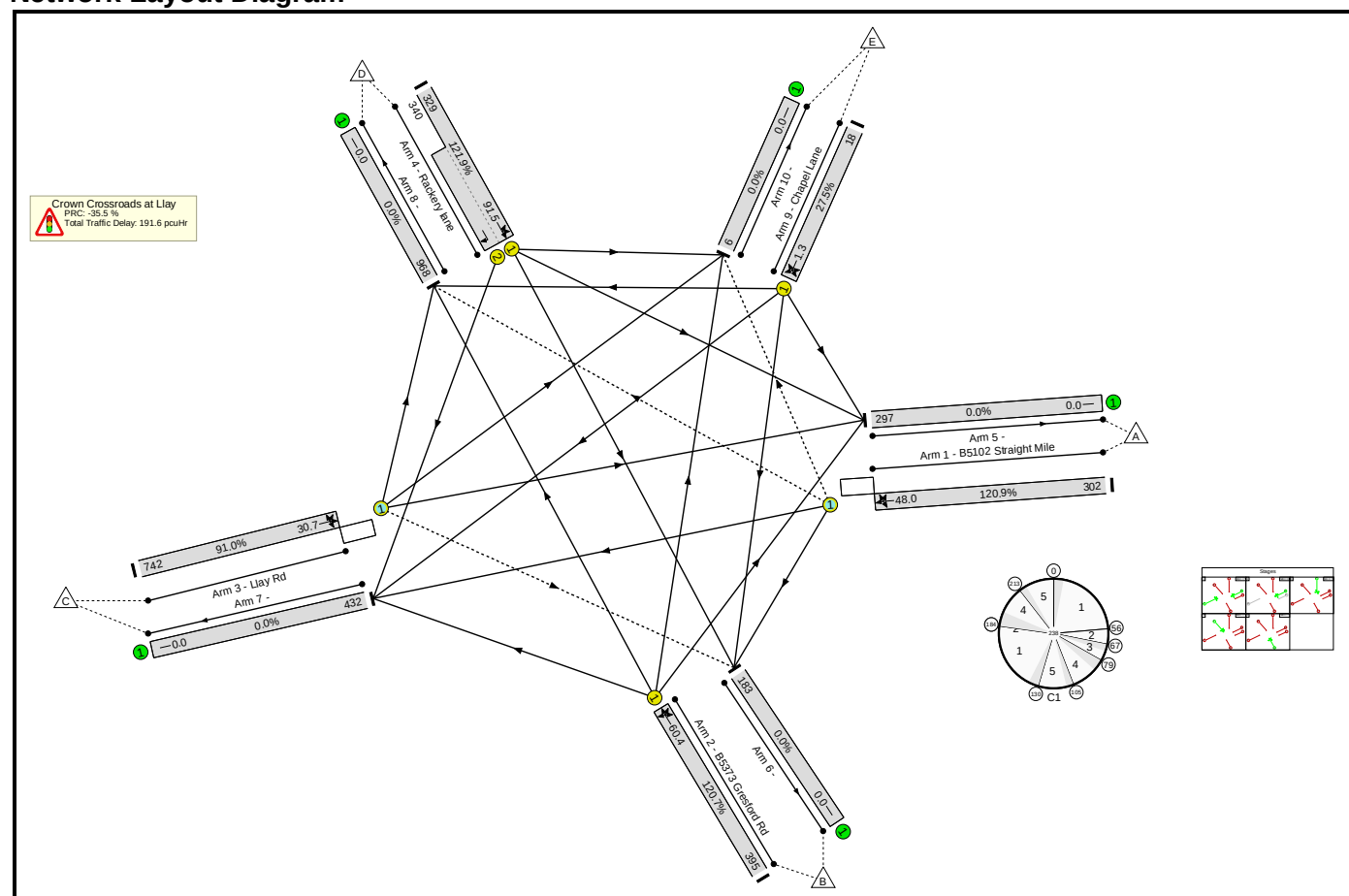
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	105.4%	29.4	55.0	85.3	-	-	-	-
Crown Crossroads at Llay	-	-	-	-	-	105.4%	29.4	55.0	85.3	-	-	-	-
1/1	B5102 Straight Mile Left Ahead Right Right2	B	396	1807	380	104.1%	6.0	14.6	21.4	194.2	13.2	14.6	27.8
2/1	B5373 Gresford Rd Right Left Ahead Right2	D	231	1862	223	103.7%	5.1	9.9	15.0	234.1	9.4	9.9	19.4
3/1	Llay Rd Ahead Right Left Left2	A	537	1984	694	77.4%	3.8	1.7	5.4	36.5	12.4	1.7	14.1
4/1+4/2	Rackery lane Left Ahead Right Left2	E	840	1844:1702	797	105.4%	14.3	28.7	43.0	184.2	21.9	28.7	50.6
9/1	Chapel Lane Left Left2 Right Right2	F	8	1893	46	17.2%	0.3	0.1	0.4	202.4	0.7	0.1	0.8
C1			PRC for Signalled Lanes (%):		-17.1	Total Delay for Signalled Lanes (pcuHr):			85.26	Cycle Time (s): 326			
			PRC Over All Lanes (%):		-17.1	Total Delay Over All Lanes (pcuHr):			85.26				

Scenario 3: 'AM 2026 DEV' (FG17: 'AM 2026 DEV (Base+Com+Dev)', Plan 1: 'Chapel Ln in Every Other Cycle')



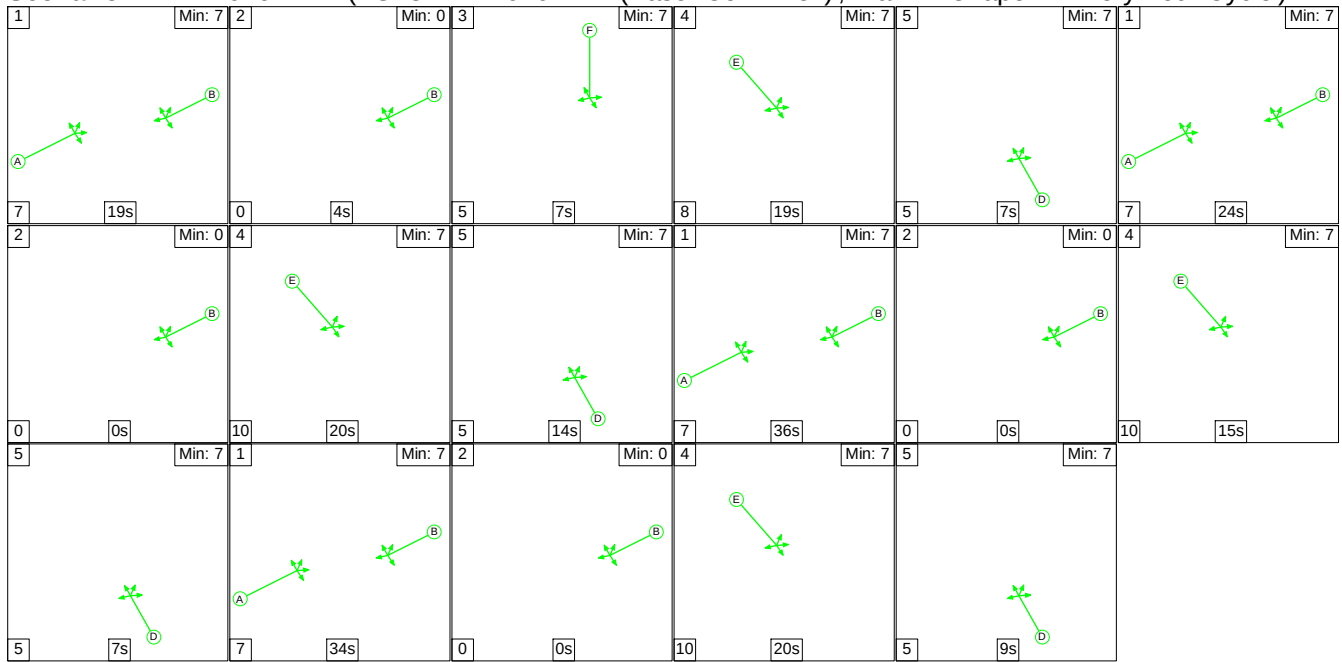
Network Layout Diagram



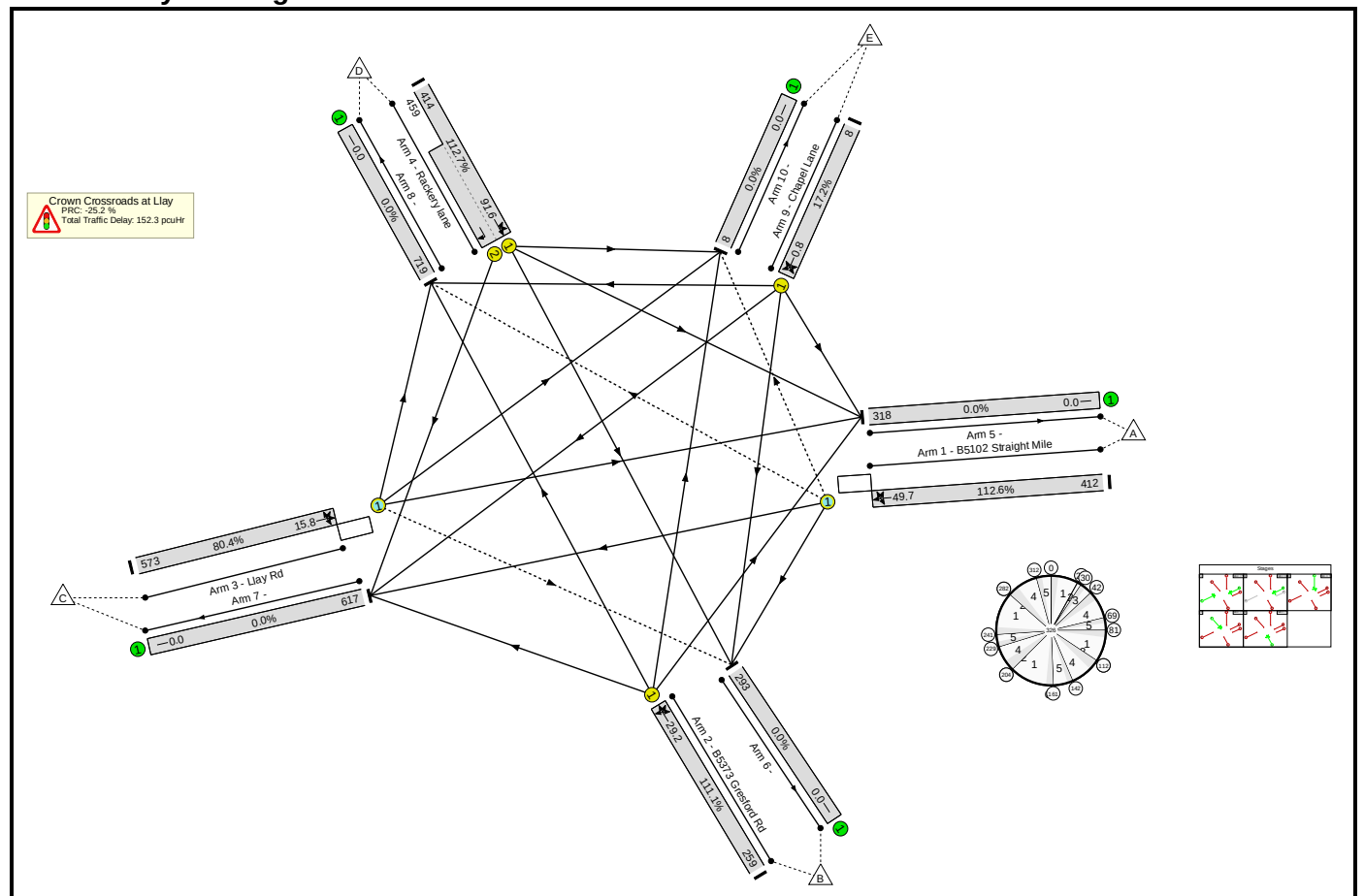
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	121.9%	57.6	132.7	191.6	-	-	-	-
Crown Crossroads at Llay	-	-	-	-	-	121.9%	57.6	132.7	191.6	-	-	-	-
1/1	B5102 Straight Mile Left Ahead Right Right2	B	302	1781	250	120.9%	11.6	28.7	41.6	495.9	19.2	28.7	48.0
2/1	B5373 Gresford Rd Right Left Ahead Right2	D	395	1855	327	120.7%	16.1	36.5	52.6	479.5	23.9	36.5	60.4
3/1	Llay Rd Ahead Right Left Left2	A	742	1980	815	91.0%	6.9	4.5	11.4	55.5	26.2	4.5	30.7
4/1+4/2	Rackery lane Left Ahead Right Left2	E	669	1843:1702	549	121.9%	22.4	62.8	85.2	458.4	28.7	62.8	91.5
9/1	Chapel Lane Left Left2 Right Right2	F	18	1950	66	27.5%	0.6	0.2	0.7	149.8	1.2	0.2	1.3
C1			PRC for Signalled Lanes (%):		-35.5	Total Delay for Signalled Lanes (pcuHr):		191.58	Cycle Time (s): 238				
			PRC Over All Lanes (%):		-35.5	Total Delay Over All Lanes (pcuHr):		191.58					

Scenario 4: 'PM 2026 DEV' (FG18: 'PM 2026 DEV (Base+Com+Dev)', Plan 4: 'Chapel in Every Four Cycle')



Network Layout Diagram



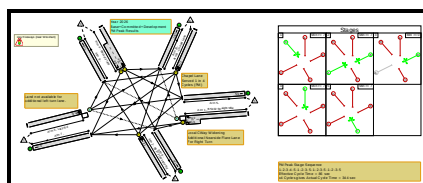
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	112.7%	52.4	99.1	152.3	-	-	-	-
Crown Crossroads at Llay	-	-	-	-	-	112.7%	52.4	99.1	152.3	-	-	-	-
1/1	B5102 Straight Mile Left Ahead Right Right2	B	412	1809	366	112.6%	13.0	26.8	40.7	355.9	22.8	26.8	49.7
2/1	B5373 Gresford Rd Right Left Ahead Right2	D	259	1853	233	111.1%	8.2	16.8	25.1	348.3	12.4	16.8	29.2
3/1	Llay Rd Ahead Right Left Left2	A	573	1986	713	80.4%	3.8	2.0	5.8	36.6	13.8	2.0	15.8
4/1+4/2	Rackery lane Left Ahead Right Left2	E	873	1846:1702	775	112.7%	27.0	53.3	80.3	331.1	38.3	53.3	91.6
9/1	Chapel Lane Left Left2 Right Right2	F	8	1893	46	17.2%	0.3	0.1	0.4	202.4	0.7	0.1	0.8
C1			PRC for Signalled Lanes (%):		-25.2	Total Delay for Signalled Lanes (pcuHr):		152.35	Cycle Time (s): 326				
			PRC Over All Lanes (%):		-25.2	Total Delay Over All Lanes (pcuHr):		152.35					

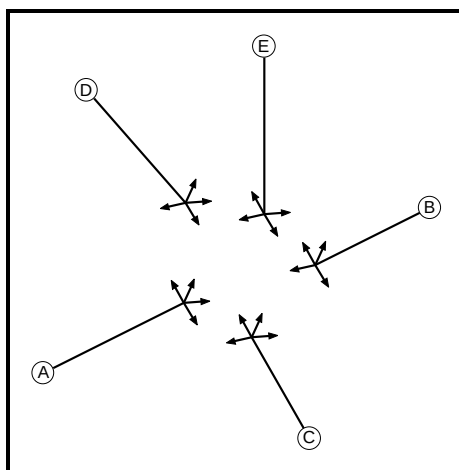
User and Project Details

Project:	Home Farm Residential Development
Title:	Crown Crossroads at Llay
Location:	Llay Wrexham LL12 0NT
File name:	J1 GlanvilleJB Layout_2026.lsg3x
Author:	GlanvilleJB
Company:	Curtins
Address:	Manchester
Notes:	Physical Junction Improvements

Network Layout Diagram



Phase Diagram



Phase Input Data

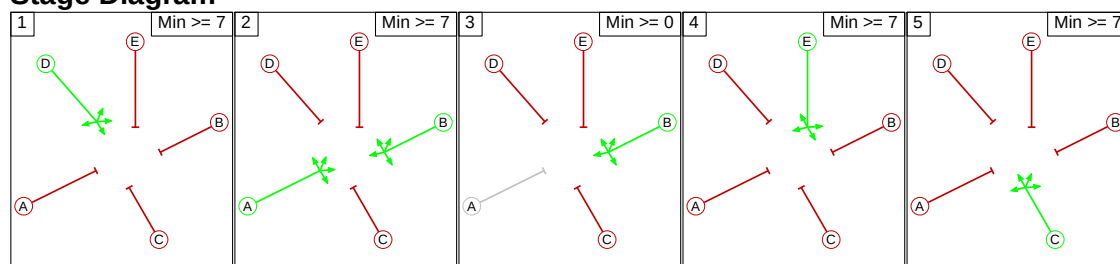
Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7

Phase Intergreens Matrix

Terminating Phase	Starting Phase					
		A	B	C	D	E
	A		-	5	5	9
	B	-		7	10	5
	C	7	6		6	9
	D	6	5	5		9
	E	9	5	7	8	

Phases in Stage

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

Stage Diagram**Phase Delays**

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

Prohibited Stage Change

From Stage	To Stage				
	1	2	3	4	5
	1		6	5	9
	2	10		0	9
	3	10	2		5
	4	8	9	5	
	5	6	7	6	9

Give-Way Lane Input Data

Junction: Llay Fiveways (near Wrexham)											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/2 (B5102 Straight Mile)	8/1 (Right)	1439	0	3/1	1.09	All	2.00	-	0.50	2	2.00
	10/1 (Right)	1439	0	3/1	1.09	All					
	6/1 (Right)	1439	0	1/1 1/2	1.09 1.09	All All	2.00	2.00	0.50	2	2.00

Lane Input Data

Junction: Llay Fiveways (near Wrexham)												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (B5102 Straight Mile)	U	B	2	3	5.0	Geom	-	3.00	0.00	Y	Arm 6 Left Arm 7 Ahead	12.00 Inf
1/2 (B5102 Straight Mile)	O	B	2	3	60.0	Geom	-	3.50	0.00	N	Arm 8 Right Arm 10 Right	11.00 7.00
2/1 (B5373 Gresford Rd)	U	C	2	3	60.0	Geom	-	3.40	0.00	Y	Arm 5 Right	7.00
											Arm 7 Left Arm 8 Ahead	9.00 Inf
											Arm 10 Right Arm 5 Ahead Arm 6 Right	8.00 Inf 20.00
3/1 (Llay Rd)	O	A	2	3	60.0	Geom	-	5.00	0.00	Y	Arm 8 Left Arm 10 Left Arm 5 Left	18.00 15.00 22.00
4/1 (Rackery lane)	U	D	2	3	60.0	Geom	-	3.00	0.00	Y	Arm 6 Ahead Arm 10 Left	Inf 11.00
4/2 (Rackery lane)	U	D	2	3	10.0	Geom	-	3.00	0.00	Y	Arm 7 Right	12.00
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (Chapel Lane)	U	E	2	3	60.0	Geom	-	4.50	0.00	Y	Arm 5 Left Arm 6 Left Arm 7 Right	7.00 15.00 15.00
											Arm 8 Right	15.00

10/1	U		2	3	60.0	Inf	-	-	-	-	-	-
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Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Peak 2014 Surveyed Flows'	07:45	08:45	01:00	
2: 'PM Peak 2014 Surveyed Flows'	16:45	17:45	01:00	
3: 'AM Peak 2019 Base'	07:45	08:45	01:00	
4: 'PM Peak 2019 Base'	16:45	17:45	01:00	
5: 'AM Peak 2019 Base + Com.+Dev.'	07:45	08:45	01:00	
6: 'PM Peak 2019 Base + Com.+Dev.'	16:45	17:45	01:00	
7: 'AM Peak 2024 Base'	07:45	08:45	01:00	
8: 'PM Peak 2024 Base'	16:45	17:45	01:00	
9: 'AM Peak 2026 Base + Com.+Dev.'	07:45	08:45	01:00	
10: 'PM Peak 2026 Base + Com.+Dev.'	16:45	17:45	01:00	
11: 'AM Dev 2026'	07:45	08:45	01:00	
12: 'PM Dev 2026'	16:45	17:45	01:00	
13: 'AM Base 2026'	07:45	08:45	01:00	
14: 'PM Base 2026'	16:45	17:45	01:00	

Scenario 1: 'AM Design 2026' (FG11: 'AM Dev 2026', Plan 1: 'Chapel Ln in Every Other Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	10	76	216	0	302
	B	19	0	100	273	3	395
	C	127	57	0	555	3	742
	D	186	142	340	0	1	669
	E	2	1	7	8	0	18
	Tot.	334	210	523	1052	7	2126

Traffic Lane Flows

Lane	Scenario 1: AM Design 2026
Junction: Llay Fiveways (near Wrexham)	
1/1 (short)	86
1/2 (with short)	302(In) 216(Out)
2/1	395
3/1	742
4/1 (with short)	669(In) 329(Out)
4/2 (short)	340
5/1	334
6/1	210
7/1	523
8/1	1052
9/1	18
10/1	7

Lane Saturation Flows

Junction: Llay Fiveways (near Wrexham)								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile)	3.00	0.00	Y	Arm 6 Left	12.00	11.6 %	1888	1888
				Arm 7 Ahead	Inf	88.4 %		
1/2 (B5102 Straight Mile)	3.50	0.00	N	Arm 8 Right	11.00	100.0 %	1852	1852
				Arm 10 Right	7.00	0.0 %		
2/1 (B5373 Gresford Rd)	3.40	0.00	Y	Arm 5 Right	7.00	4.8 %	1855	1855
				Arm 7 Left	9.00	25.3 %		
				Arm 8 Ahead	Inf	69.1 %		
				Arm 10 Right	8.00	0.8 %		
3/1 (Llay Rd)	5.00	0.00	Y	Arm 5 Ahead	Inf	17.1 %	1979	1979
				Arm 6 Right	20.00	7.7 %		
				Arm 8 Left	18.00	74.8 %		
				Arm 10 Left	15.00	0.4 %		
4/1 (Rackery lane)	3.00	0.00	Y	Arm 5 Left	22.00	56.5 %	1843	1843
				Arm 6 Ahead	Inf	43.2 %		
				Arm 10 Left	11.00	0.3 %		
4/2 (Rackery lane)	3.00	0.00	Y	Arm 7 Right	12.00	100.0 %	1702	1702
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane)	4.50	0.00	Y	Arm 5 Left	7.00	11.1 %	1856	1856
				Arm 6 Left	15.00	5.6 %		
				Arm 7 Right	15.00	38.9 %		
				Arm 8 Right	15.00	44.4 %		
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM Design 2026' (FG12: 'PM Dev 2026', Plan 4: 'Chapel in Every Four Cycle')**Traffic Flows, Desired****Desired Flow :**

Origin	Destination						
		A	B	C	D	E	Tot.
	A	0	26	157	228	1	412
	B	8	0	75	176	0	259
	C	111	100	0	357	5	573
	D	223	189	459	0	2	873
	E	2	2	3	1	0	8
	Tot.	344	317	694	762	8	2125

Traffic Lane Flows

Lane	Scenario 2: PM Design 2026
Junction: Llay Fiveways (near Wrexham)	
1/1 (short)	183
1/2 (with short)	412(In) 229(Out)
2/1	259
3/1	573
4/1 (with short)	873(In) 414(Out)
4/2 (short)	459
5/1	344
6/1	317
7/1	694
8/1	762
9/1	8
10/1	8

Lane Saturation Flows

Junction: Llay Fiveways (near Wrexham)								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile)	3.00	0.00	Y	Arm 6 Left	12.00	14.2 %	1882	1882
				Arm 7 Ahead	Inf	85.8 %		
1/2 (B5102 Straight Mile)	3.50	0.00	N	Arm 8 Right	11.00	99.6 %	1852	1852
				Arm 10 Right	7.00	0.4 %		
2/1 (B5373 Gresford Rd)	3.40	0.00	Y	Arm 5 Right	7.00	3.1 %	1853	1853
				Arm 7 Left	9.00	29.0 %		
				Arm 8 Ahead	Inf	68.0 %		
				Arm 10 Right	8.00	0.0 %		
3/1 (Llay Rd)	5.00	0.00	Y	Arm 5 Ahead	Inf	19.4 %	1984	1984
				Arm 6 Right	20.00	17.5 %		
				Arm 8 Left	18.00	62.3 %		
				Arm 10 Left	15.00	0.9 %		
4/1 (Rackery lane)	3.00	0.00	Y	Arm 5 Left	22.00	53.9 %	1846	1846
				Arm 6 Ahead	Inf	45.7 %		
				Arm 10 Left	11.00	0.5 %		
4/2 (Rackery lane)	3.00	0.00	Y	Arm 7 Right	12.00	100.0 %	1702	1702
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane)	4.50	0.00	Y	Arm 5 Left	7.00	25.0 %	1830	1830
				Arm 6 Left	15.00	25.0 %		
				Arm 7 Right	15.00	37.5 %		
				Arm 8 Right	15.00	12.5 %		
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM Base 2026' (FG13: 'AM Base 2026', Plan 1: 'Chapel Ln in Every Other Cycle')**Traffic Flows, Desired****Desired Flow :**

Origin	Destination						
		A	B	C	D	E	Tot.
	A	0	8	55	165	0	228
	B	19	0	75	253	3	350
	C	122	48	0	550	3	723
	D	181	135	338	0	1	655
	E	2	1	7	8	0	18
	Tot.	324	192	475	976	7	1974

Traffic Lane Flows

Lane	Scenario 3: AM Base 2026
Junction: Llay Fiveways (near Wrexham)	
1/1 (short)	63
1/2 (with short)	228(In) 165(Out)
2/1	350
3/1	723
4/1 (with short)	655(In) 317(Out)
4/2 (short)	338
5/1	324
6/1	192
7/1	475
8/1	976
9/1	18
10/1	7

Lane Saturation Flows

Junction: Llay Fiveways (near Wrexham)								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile)	3.00	0.00	Y	Arm 6 Left	12.00	12.7 %	1885	1885
				Arm 7 Ahead	Inf	87.3 %		
1/2 (B5102 Straight Mile)	3.50	0.00	N	Arm 8 Right	11.00	100.0 %	1852	1852
				Arm 10 Right	7.00	0.0 %		
2/1 (B5373 Gresford Rd)	3.40	0.00	Y	Arm 5 Right	7.00	5.4 %	1864	1864
				Arm 7 Left	9.00	21.4 %		
				Arm 8 Ahead	Inf	72.3 %		
				Arm 10 Right	8.00	0.9 %		
3/1 (Llay Rd)	5.00	0.00	Y	Arm 5 Ahead	Inf	16.9 %	1979	1979
				Arm 6 Right	20.00	6.6 %		
				Arm 8 Left	18.00	76.1 %		
				Arm 10 Left	15.00	0.4 %		
4/1 (Rackery lane)	3.00	0.00	Y	Arm 5 Left	22.00	57.1 %	1842	1842
				Arm 6 Ahead	Inf	42.6 %		
				Arm 10 Left	11.00	0.3 %		
4/2 (Rackery lane)	3.00	0.00	Y	Arm 7 Right	12.00	100.0 %	1702	1702
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane)	4.50	0.00	Y	Arm 5 Left	7.00	11.1 %	1856	1856
				Arm 6 Left	15.00	5.6 %		
				Arm 7 Right	15.00	38.9 %		
				Arm 8 Right	15.00	44.4 %		
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM Base 2026' (FG14: 'PM Base 2026', Plan 4: 'Chapel in Every Four Cycle')**Traffic Flows, Desired****Desired Flow :**

Origin	Destination						
		A	B	C	D	E	Tot.
	A	0	26	148	221	1	396
	B	8	0	59	164	0	231
	C	99	76	0	357	5	537
	D	213	170	455	0	2	840
	E	2	2	3	1	0	8
	Tot.	322	274	665	743	8	2012

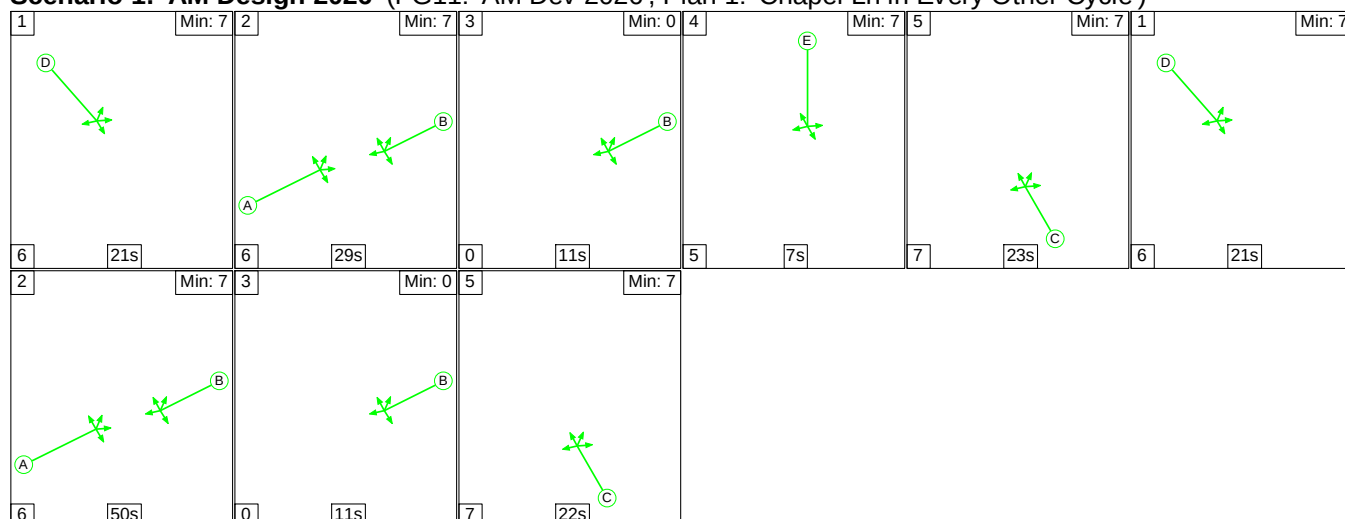
Traffic Lane Flows

Lane	Scenario 4: PM Base 2026
Junction: Llay Fiveways (near Wrexham)	
1/1 (short)	174
1/2 (with short)	396(In) 222(Out)
2/1	231
3/1	537
4/1 (with short)	840(In) 385(Out)
4/2 (short)	455
5/1	322
6/1	274
7/1	665
8/1	743
9/1	8
10/1	8

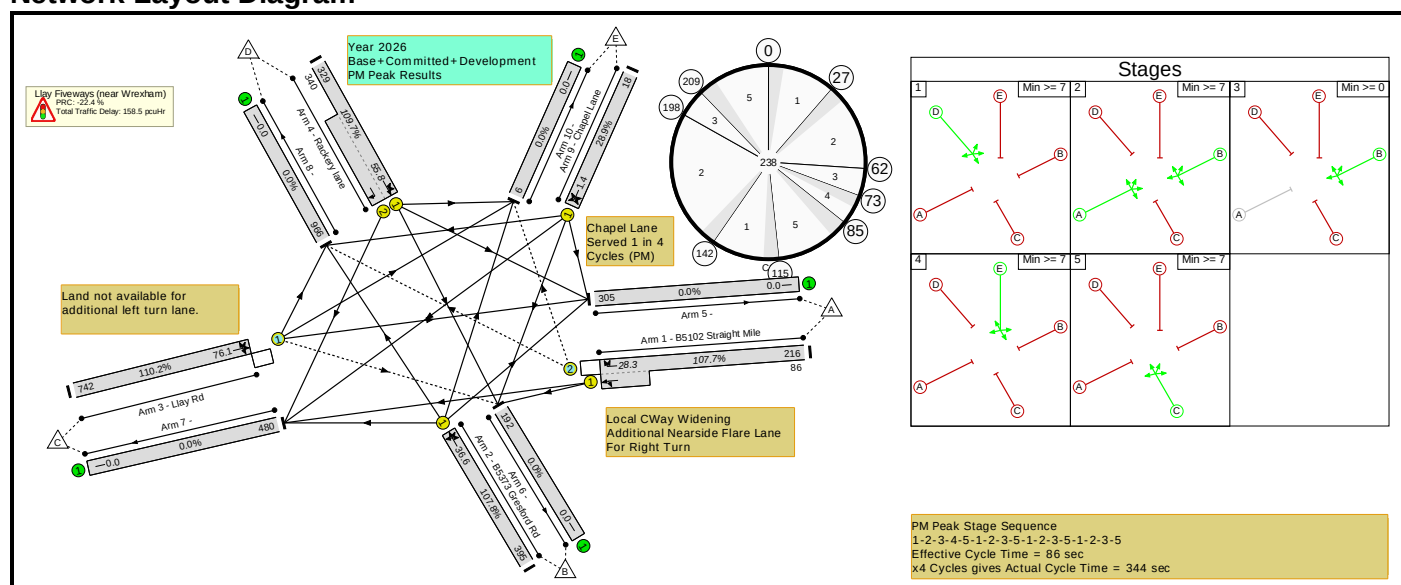
Lane Saturation Flows

Junction: Llay Fiveways (near Wrexham)								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile)	3.00	0.00	Y	Arm 6 Left	12.00	14.9 %	1880	1880
				Arm 7 Ahead	Inf	85.1 %		
1/2 (B5102 Straight Mile)	3.50	0.00	N	Arm 8 Right	11.00	99.5 %	1852	1852
				Arm 10 Right	7.00	0.5 %		
2/1 (B5373 Gresford Rd)	3.40	0.00	Y	Arm 5 Right	7.00	3.5 %	1862	1862
				Arm 7 Left	9.00	25.5 %		
				Arm 8 Ahead	Inf	71.0 %		
				Arm 10 Right	8.00	0.0 %		
3/1 (Llay Rd)	5.00	0.00	Y	Arm 5 Ahead	Inf	18.4 %	1982	1982
				Arm 6 Right	20.00	14.2 %		
				Arm 8 Left	18.00	66.5 %		
				Arm 10 Left	15.00	0.9 %		
4/1 (Rackery lane)	3.00	0.00	Y	Arm 5 Left	22.00	55.3 %	1844	1844
				Arm 6 Ahead	Inf	44.2 %		
				Arm 10 Left	11.00	0.5 %		
4/2 (Rackery lane)	3.00	0.00	Y	Arm 7 Right	12.00	100.0 %	1702	1702
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane)	4.50	0.00	Y	Arm 5 Left	7.00	25.0 %	1830	1830
				Arm 6 Left	15.00	25.0 %		
				Arm 7 Right	15.00	37.5 %		
				Arm 8 Right	15.00	12.5 %		
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM Design 2026' (FG11: 'AM Dev 2026', Plan 1: 'Chapel Ln in Every Other Cycle')



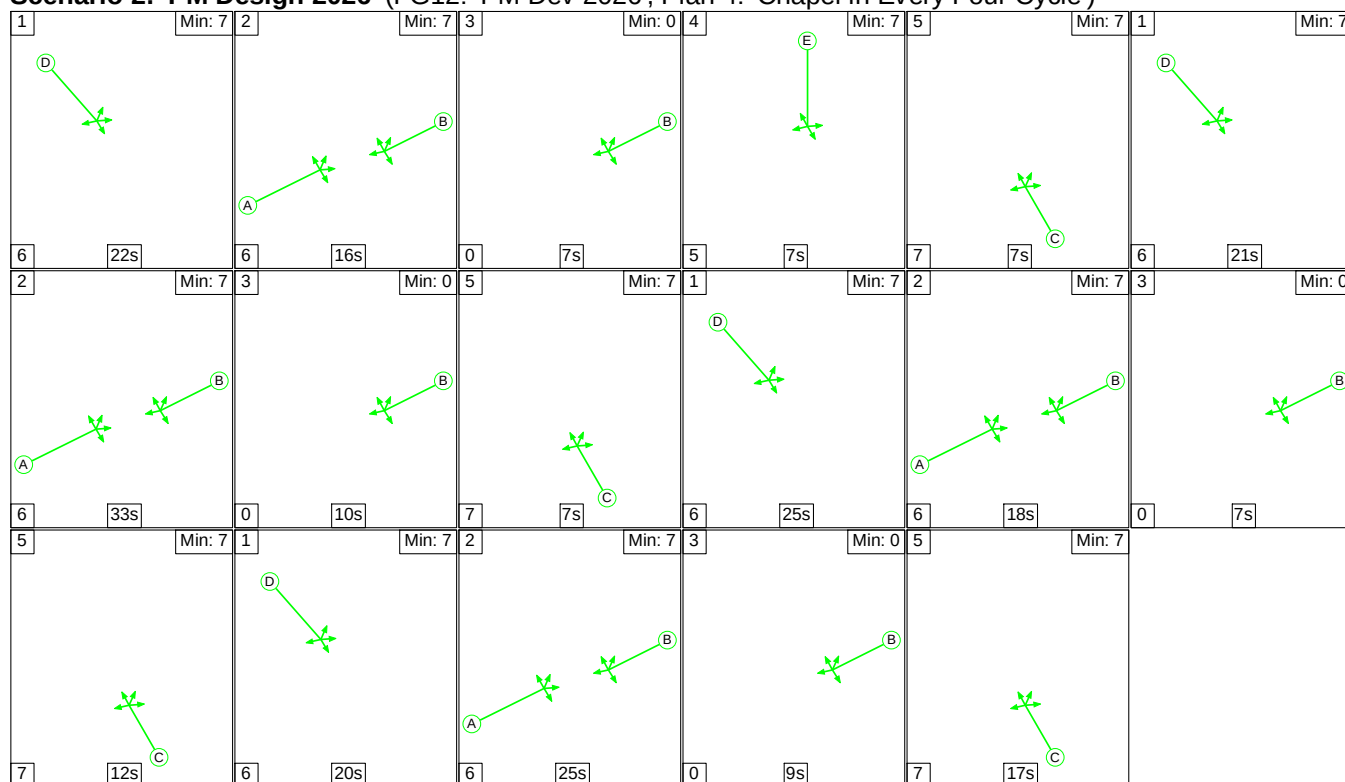
Network Layout Diagram



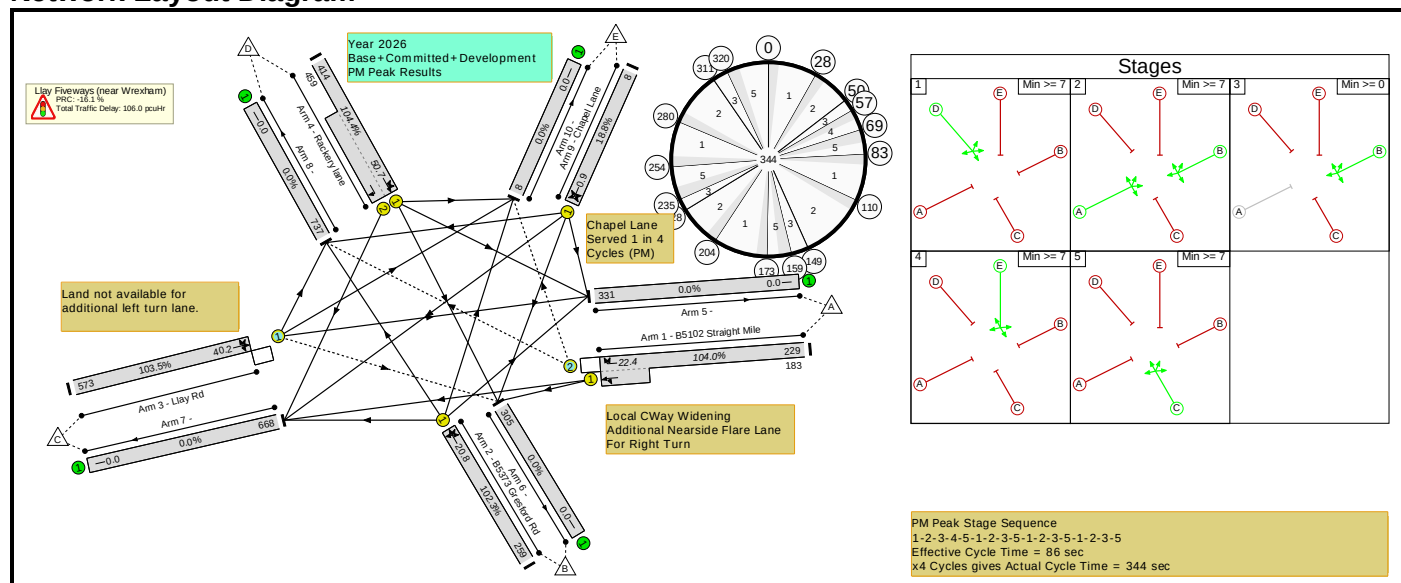
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	110.2%	49.1	108.6	158.5	-	-	-	-
Llay Fiveways (near Wrexham)	-	-	-	-	-	110.2%	49.1	108.6	158.5	-	-	-	-
1/2+1/1	B5102 Straight Mile Left Ahead Right Right2	B	302	1852:1888	280	107.7%	6.2	15.6	22.6	269.0	12.7	15.6	28.3
2/1	B5373 Gresford Rd Right Left Ahead Right2	C	395	1855	366	107.8%	9.2	19.4	28.7	261.2	17.2	19.4	36.6
3/1	Llay Rd Ahead Right Left Left2	A	742	1979	674	110.2%	16.3	39.0	55.3	268.3	37.1	39.0	76.1
4/1+4/2	Rackery lane Left Ahead Right Left2	D	669	1843:1702	610	109.7%	16.9	34.3	51.2	275.4	21.5	34.3	55.8
9/1	Chapel Lane Left Left2 Right Right2	E	18	1856	62	28.9%	0.6	0.2	0.8	152.5	1.2	0.2	1.4
C1			PRC for Signalled Lanes (%):		-22.4	Total Delay for Signalled Lanes (pcuHr):		158.47	Cycle Time (s): 238				
			PRC Over All Lanes (%):		-22.4	Total Delay Over All Lanes(pcuHr):		158.47					

Scenario 2: 'PM Design 2026' (FG12: 'PM Dev 2026', Plan 4: 'Chapel in Every Four Cycle')



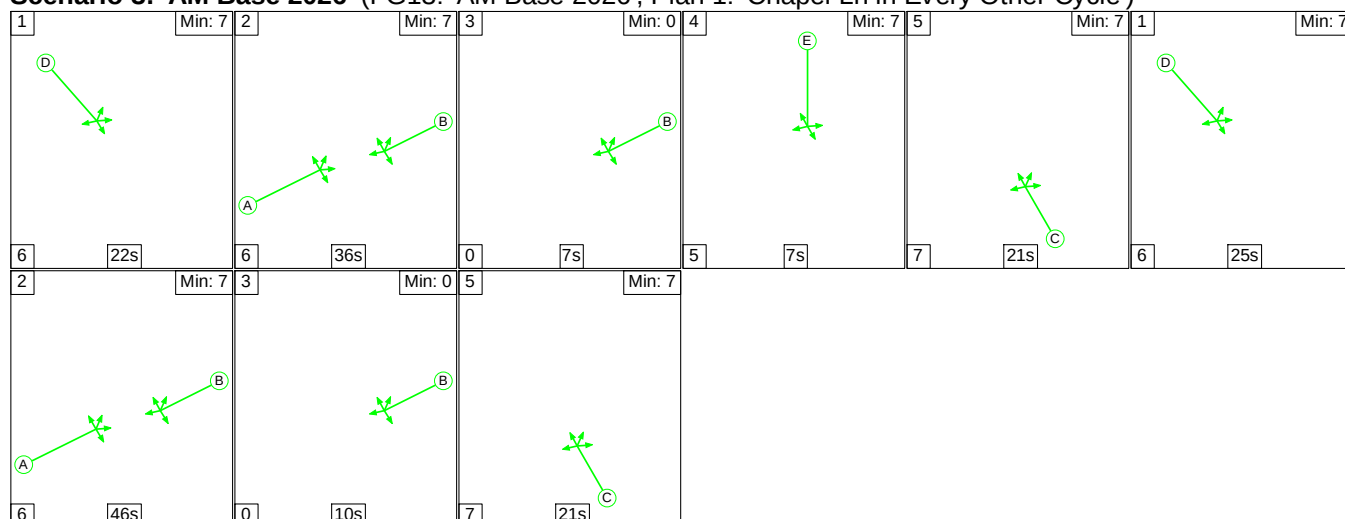
Network Layout Diagram



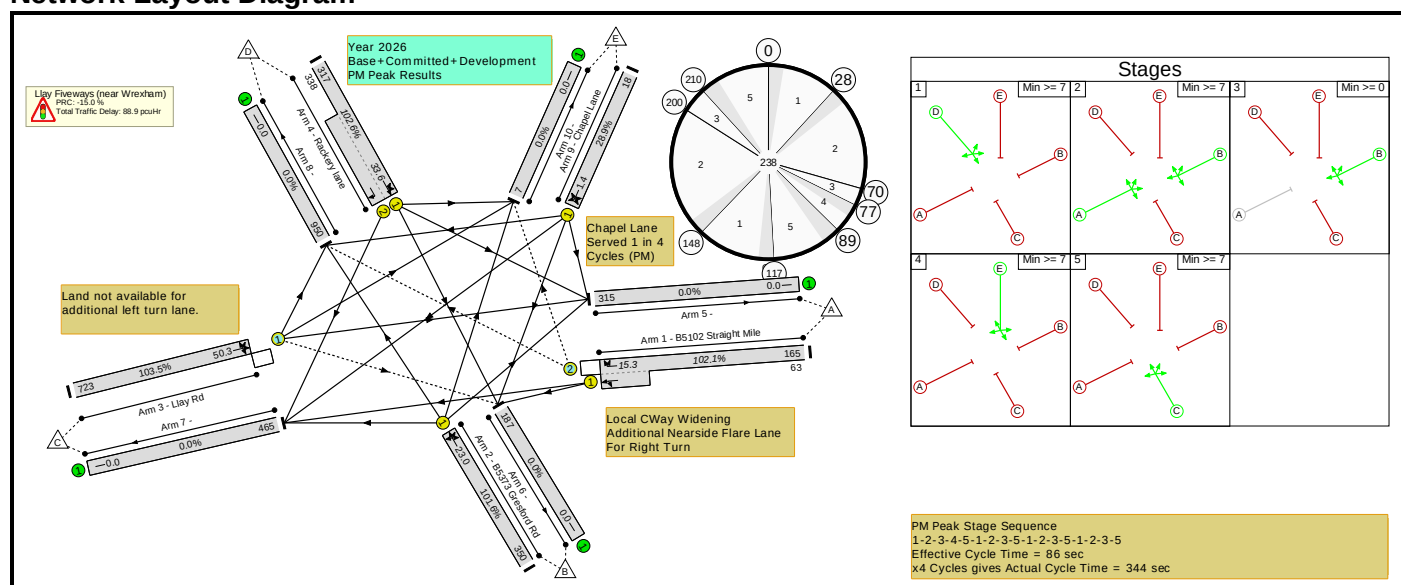
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	104.4%	36.3	69.1	106.0	-	-	-	-
Llay Fiveways (near Wrexham)	-	-	-	-	-	104.4%	36.3	69.1	106.0	-	-	-	-
1/2+1/1	B5102 Straight Mile Left Ahead Right Right2	B	412	1852:1882	396	104.0%	4.9	14.8	20.4	177.8	7.5	14.8	22.4
2/1	B5373 Gresford Rd Right Left Ahead Right2	C	259	1853	253	102.3%	6.1	9.6	15.7	218.7	11.2	9.6	20.8
3/1	Llay Rd Ahead Right Left Left2	A	573	1984	554	103.5%	9.9	17.7	27.7	173.9	22.4	17.7	40.2
4/1+4/2	Rackery lane Left Ahead Right Left2	D	873	1846:1702	836	104.4%	15.0	26.7	41.8	172.2	23.9	26.7	50.7
9/1	Chapel Lane Left Left2 Right Right2	E	8	1830	43	18.8%	0.4	0.1	0.5	216.6	0.7	0.1	0.9
C1			PRC for Signalled Lanes (%):		-16.1	Total Delay for Signalled Lanes (pcuHr):		106.00	Cycle Time (s): 344				
			PRC Over All Lanes (%):		-16.1	Total Delay Over All Lanes (pcuHr):		106.00					

Scenario 3: 'AM Base 2026' (FG13: 'AM Base 2026', Plan 1: 'Chapel Ln in Every Other Cycle')



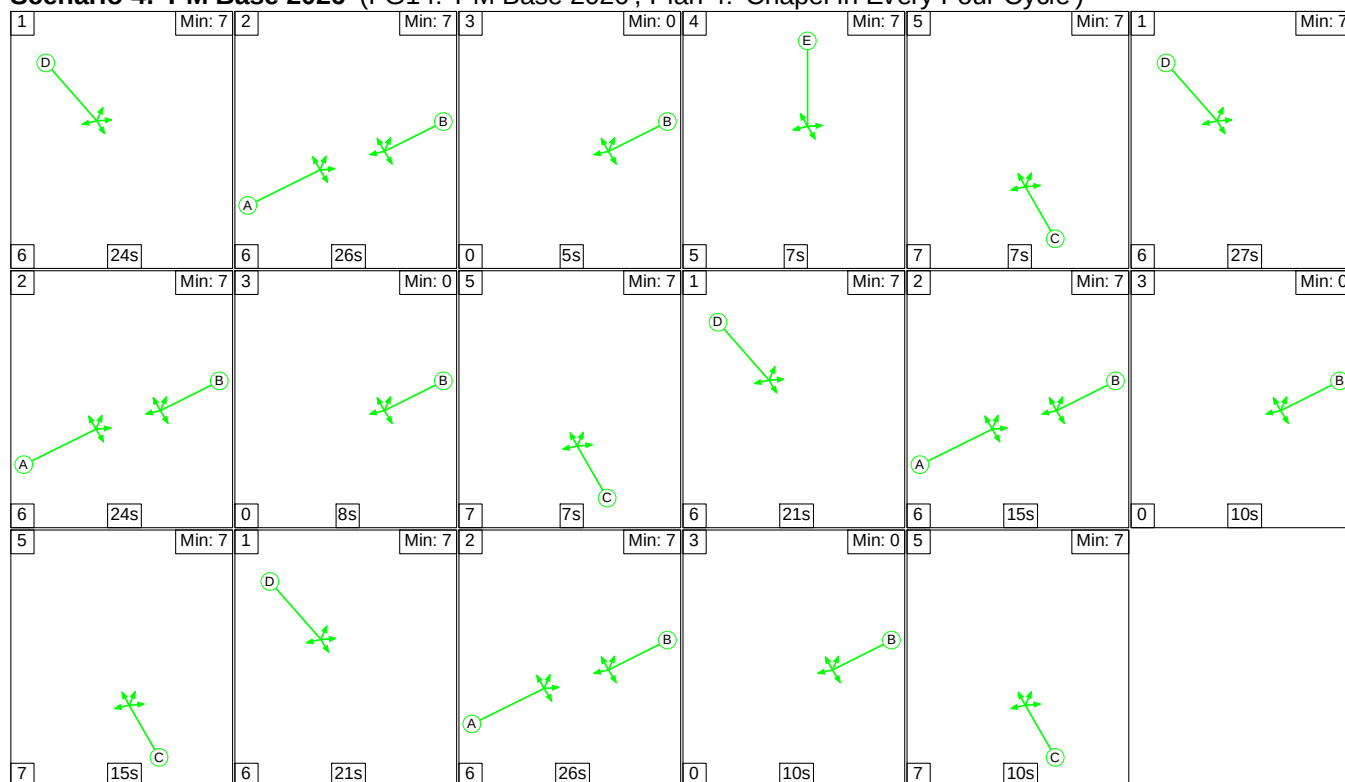
Network Layout Diagram



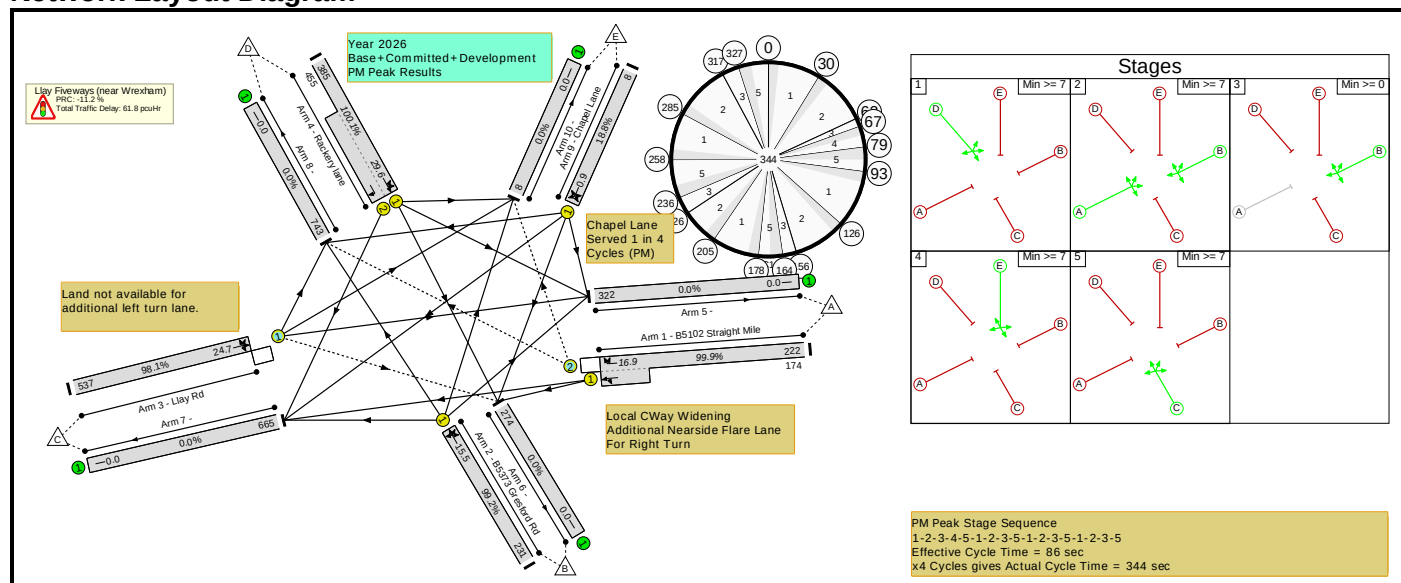
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	103.5%	29.7	58.4	88.9	-	-	-	-
Llay Fiveways (near Wrexham)	-	-	-	-	-	103.5%	29.7	58.4	88.9	-	-	-	-
1/2+1/1	B5102 Straight Mile Left Ahead Right Right2	B	228	1852:1885	223	102.1%	2.6	8.8	12.1	191.6	6.6	8.8	15.3
2/1	B5373 Gresford Rd Right Left Ahead Right2	C	350	1864	345	101.6%	5.5	10.8	16.3	167.1	12.2	10.8	23.0
3/1	Llay Rd Ahead Right Left Left2	A	723	1979	698	103.5%	10.8	20.9	31.7	157.9	29.4	20.9	50.3
4/1+4/2	Rackery lane Left Ahead Right Left2	D	655	1842:1702	638	102.6%	10.4	17.7	28.0	154.0	15.9	17.7	33.6
9/1	Chapel Lane Left Left2 Right Right2	E	18	1856	62	28.9%	0.6	0.2	0.8	152.5	1.2	0.2	1.4
C1			PRC for Signalled Lanes (%):		-15.0	Total Delay for Signalled Lanes (pcuHr):		88.86	Cycle Time (s): 238				
			PRC Over All Lanes (%):		-15.0	Total Delay Over All Lanes(pcuHr):		88.86					

Scenario 4: 'PM Base 2026' (FG14: 'PM Base 2026', Plan 4: 'Chapel in Every Four Cycle')



Network Layout Diagram



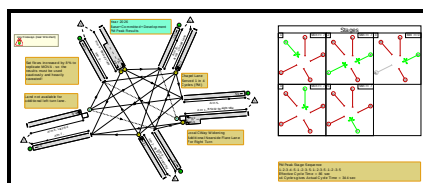
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	100.1%	20.1	41.0	61.8	-	-	-	-
Llay Fiveways (near Wrexham)	-	-	-	-	-	100.1%	20.1	41.0	61.8	-	-	-	-
1/2+1/1	B5102 Straight Mile Left Ahead Right Right2	B	396	1852:1880	396	99.9%	3.7	9.9	14.2	128.9	7.0	9.9	16.9
2/1	B5373 Gresford Rd Right Left Ahead Right2	C	231	1862	233	99.2%	3.6	7.2	10.7	167.5	8.3	7.2	15.5
3/1	Llay Rd Ahead Right Left Left2	A	537	1982	547	98.1%	5.3	9.3	14.6	98.0	15.5	9.3	24.7
4/1+4/2	Rackery lane Left Ahead Right Left2	D	840	1844:1702	839	100.1%	7.2	14.6	21.8	93.5	15.0	14.6	29.6
9/1	Chapel Lane Left Left2 Right Right2	E	8	1830	43	18.8%	0.4	0.1	0.5	216.6	0.7	0.1	0.9
C1			PRC for Signalled Lanes (%):		-11.2	Total Delay for Signalled Lanes (pcuHr):		61.85	Cycle Time (s): 344				
			PRC Over All Lanes (%):		-11.2	Total Delay Over All Lanes(pcuHr):		61.85					

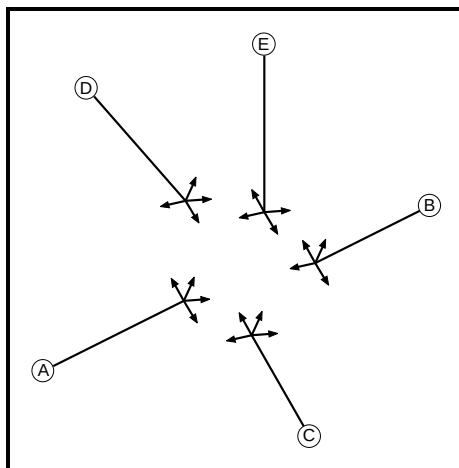
User and Project Details

Project:	Home Farm Residential Development
Title:	Crown Crossroads at Llay
Location:	Llay Wrexham LL12 0NT
File name:	J1 GlanvilleJB Layout_2026 MOVA+8%.lsg3x
Author:	GlanvilleJB
Company:	Curtins
Address:	Manchester
Notes:	Physical Junction Improvements and MOVA

Network Layout Diagram



Phase Diagram



Phase Input Data

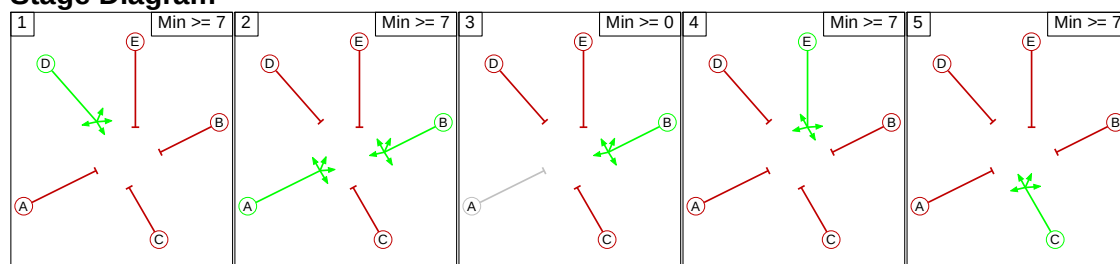
Phase Name	Phase Type	Assoc. Phase	Street Min	Cont Min
A	Traffic		7	7
B	Traffic		7	7
C	Traffic		7	7
D	Traffic		7	7
E	Traffic		7	7

Phase Intergreens Matrix

Terminating Phase	Starting Phase					
		A	B	C	D	E
	A		-	5	5	9
	B	-		7	10	5
	C	7	6		6	9
	D	6	5	5		9
	E	9	5	7	8	

Phases in Stage

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

Stage Diagram**Phase Delays**

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

Prohibited Stage Change

From Stage	To Stage				
	1	2	3	4	5
	1		6	5	9
	2	10		0	9
	3	10	2		5
	4	8	9	5	
	5	6	7	6	9

Give-Way Lane Input Data

Junction: Llay Fiveways (near Wrexham)											
Lane	Movement	Max Flow when Giving Way (PCU/Hr)	Min Flow when Giving Way (PCU/Hr)	Opposing Lane	Opp. Lane Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	Non-Blocking Storage (PCU)	RTF	Right Turn Move up (s)	Max Turns in Intergreen (PCU)
1/2 (B5102 Straight Mile)	8/1 (Right)	1439	0	3/1	1.09	All	2.00	-	0.50	2	2.00
	10/1 (Right)	1439	0	3/1	1.09	All					
	3/1 (Llay Rd)	1439	0	1/1 1/2	1.09 1.09	All All	2.00	2.00	0.50	2	2.00

Lane Input Data

Junction: Llay Fiveways (near Wrexham)												
Lane	Lane Type	Phases	Start Disp.	End Disp.	Physical Length (PCU)	Sat Flow Type	Def User Saturation Flow (PCU/Hr)	Lane Width (m)	Gradient	Nearside Lane	Turns	Turning Radius (m)
1/1 (B5102 Straight Mile)	U	B	2	3	5.0	User	2033	-	-	-	-	-
1/2 (B5102 Straight Mile)	O	B	2	3	60.0	User	2000	-	-	-	-	-
2/1 (B5373 Gresford Rd)	U	C	2	3	60.0	User	2001	-	-	-	-	-
3/1 (Llay Rd)	O	A	2	3	60.0	User	2143	-	-	-	-	-
4/1 (Rackery lane)	U	D	2	3	60.0	User	1994	-	-	-	-	-
4/2 (Rackery lane)	U	D	2	3	10.0	User	1838	-	-	-	-	-
5/1	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-
9/1 (Chapel Lane)	U	E	2	3	60.0	User	1976	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: 'AM Peak 2014 Surveyed Flows'	07:45	08:45	01:00	
2: 'PM Peak 2014 Surveyed Flows'	16:45	17:45	01:00	
3: 'AM Peak 2019 Base'	07:45	08:45	01:00	
4: 'PM Peak 2019 Base'	16:45	17:45	01:00	
5: 'AM Peak 2019 Base + Com.+Dev.'	07:45	08:45	01:00	
6: 'PM Peak 2019 Base + Com.+Dev.'	16:45	17:45	01:00	
7: 'AM Peak 2024 Base'	07:45	08:45	01:00	
8: 'PM Peak 2024 Base'	16:45	17:45	01:00	
9: 'AM Peak 2026 Base + Com.+Dev.'	07:45	08:45	01:00	
10: 'PM Peak 2026 Base + Com.+Dev.'	16:45	17:45	01:00	
11: 'AM Dev 2026'	07:45	08:45	01:00	
12: 'PM Dev 2026'	16:45	17:45	01:00	
13: 'AM Base 2026'	07:45	08:45	01:00	
14: 'PM Base 2026'	16:45	17:45	01:00	

Scenario 1: 'AM Design 2026' (FG11: 'AM Dev 2026', Plan 1: 'Chapel Ln in Every Other Cycle')

Traffic Flows, Desired

Desired Flow :

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	10	76	216	0	302
	B	19	0	100	273	3	395
	C	127	57	0	555	3	742
	D	186	142	340	0	1	669
	E	2	1	7	8	0	18
	Tot.	334	210	523	1052	7	2126

Traffic Lane Flows

Lane	Scenario 1: AM Design 2026
Junction: Llay Fiveways (near Wrexham)	
1/1 (short)	86
1/2 (with short)	302(In) 216(Out)
2/1	395
3/1	742
4/1 (with short)	669(In) 329(Out)
4/2 (short)	340
5/1	334
6/1	210
7/1	523
8/1	1052
9/1	18
10/1	7

Lane Saturation Flows

Junction: Llay Fiveways (near Wrexham)								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile Lane 1)	This lane uses a directly entered Saturation Flow						2033	2033
1/2 (B5102 Straight Mile Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
2/1 (B5373 Gresford Rd Lane 1)	This lane uses a directly entered Saturation Flow						2001	2001
3/1 (Llay Rd Lane 1)	This lane uses a directly entered Saturation Flow						2143	2143
4/1 (Rackery lane Lane 1)	This lane uses a directly entered Saturation Flow						1994	1994
4/2 (Rackery lane Lane 2)	This lane uses a directly entered Saturation Flow						1838	1838
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane Lane 1)	This lane uses a directly entered Saturation Flow						1976	1976
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 2: 'PM Design 2026' (FG12: 'PM Dev 2026', Plan 4: 'Chapel in Every Four Cycle')**Traffic Flows, Desired****Desired Flow :**

Origin	Destination						
		A	B	C	D	E	Tot.
	A	0	26	157	228	1	412
	B	8	0	75	176	0	259
	C	111	100	0	357	5	573
	D	223	189	459	0	2	873
	E	2	2	3	1	0	8
	Tot.	344	317	694	762	8	2125

Traffic Lane Flows

Lane	Scenario 2: PM Design 2026
Junction: Llay Fiveways (near Wrexham)	
1/1 (short)	183
1/2 (with short)	412(In) 229(Out)
2/1	259
3/1	573
4/1 (with short)	873(In) 414(Out)
4/2 (short)	459
5/1	344
6/1	317
7/1	694
8/1	762
9/1	8
10/1	8

Lane Saturation Flows

Junction: Llay Fiveways (near Wrexham)								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile Lane 1)	This lane uses a directly entered Saturation Flow						2033	2033
1/2 (B5102 Straight Mile Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
2/1 (B5373 Gresford Rd Lane 1)	This lane uses a directly entered Saturation Flow						2001	2001
3/1 (Llay Rd Lane 1)	This lane uses a directly entered Saturation Flow						2143	2143
4/1 (Rackery lane Lane 1)	This lane uses a directly entered Saturation Flow						1994	1994
4/2 (Rackery lane Lane 2)	This lane uses a directly entered Saturation Flow						1838	1838
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane Lane 1)	This lane uses a directly entered Saturation Flow						1976	1976
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 3: 'AM Base 2026' (FG13: 'AM Base 2026', Plan 1: 'Chapel Ln in Every Other Cycle')**Traffic Flows, Desired****Desired Flow :**

	Destination						
		A	B	C	D	E	Tot.
Origin	A	0	8	55	165	0	228
	B	19	0	75	253	3	350
	C	122	48	0	550	3	723
	D	181	135	338	0	1	655
	E	2	1	7	8	0	18
	Tot.	324	192	475	976	7	1974

Traffic Lane Flows

Lane	Scenario 3: AM Base 2026
Junction: Llay Fiveways (near Wrexham)	
1/1 (short)	63
1/2 (with short)	228(In) 165(Out)
2/1	350
3/1	723
4/1 (with short)	655(In) 317(Out)
4/2 (short)	338
5/1	324
6/1	192
7/1	475
8/1	976
9/1	18
10/1	7

Lane Saturation Flows

Junction: Llay Fiveways (near Wrexham)								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile Lane 1)	This lane uses a directly entered Saturation Flow						2033	2033
1/2 (B5102 Straight Mile Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
2/1 (B5373 Gresford Rd Lane 1)	This lane uses a directly entered Saturation Flow						2001	2001
3/1 (Llay Rd Lane 1)	This lane uses a directly entered Saturation Flow						2143	2143
4/1 (Rackery lane Lane 1)	This lane uses a directly entered Saturation Flow						1994	1994
4/2 (Rackery lane Lane 2)	This lane uses a directly entered Saturation Flow						1838	1838
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane Lane 1)	This lane uses a directly entered Saturation Flow						1976	1976
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 4: 'PM Base 2026' (FG14: 'PM Base 2026', Plan 4: 'Chapel in Every Four Cycle')**Traffic Flows, Desired****Desired Flow :**

Origin	Destination						
		A	B	C	D	E	Tot.
	A	0	26	148	221	1	396
	B	8	0	59	164	0	231
	C	99	76	0	357	5	537
	D	213	170	455	0	2	840
	E	2	2	3	1	0	8
	Tot.	322	274	665	743	8	2012

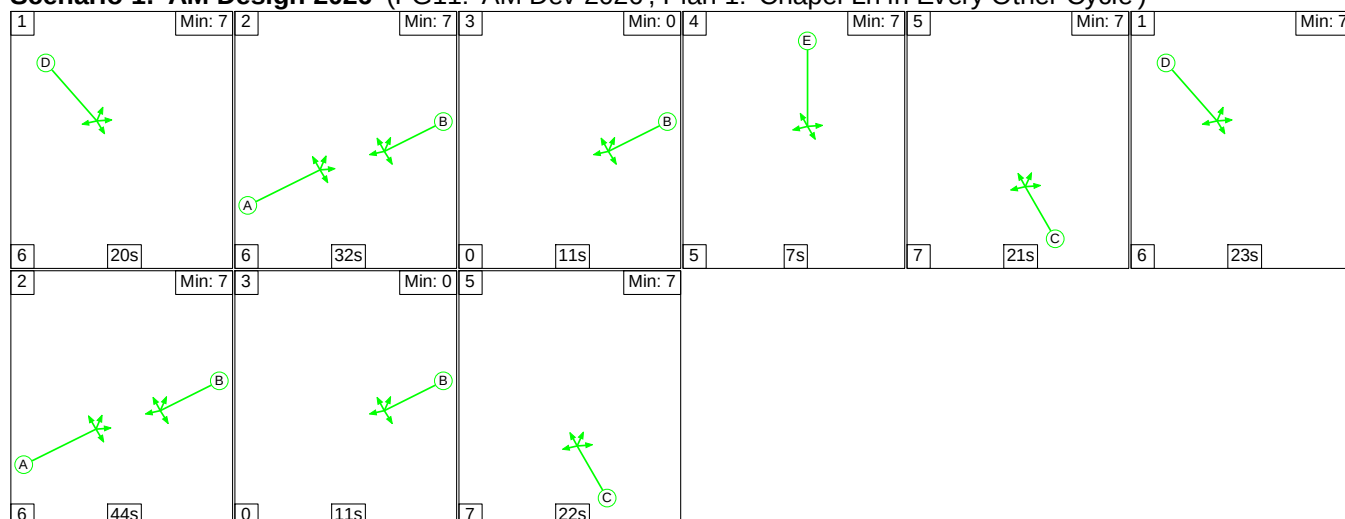
Traffic Lane Flows

Lane	Scenario 4: PM Base 2026
Junction: Llay Fiveways (near Wrexham)	
1/1 (short)	174
1/2 (with short)	396(In) 222(Out)
2/1	231
3/1	537
4/1 (with short)	840(In) 385(Out)
4/2 (short)	455
5/1	322
6/1	274
7/1	665
8/1	743
9/1	8
10/1	8

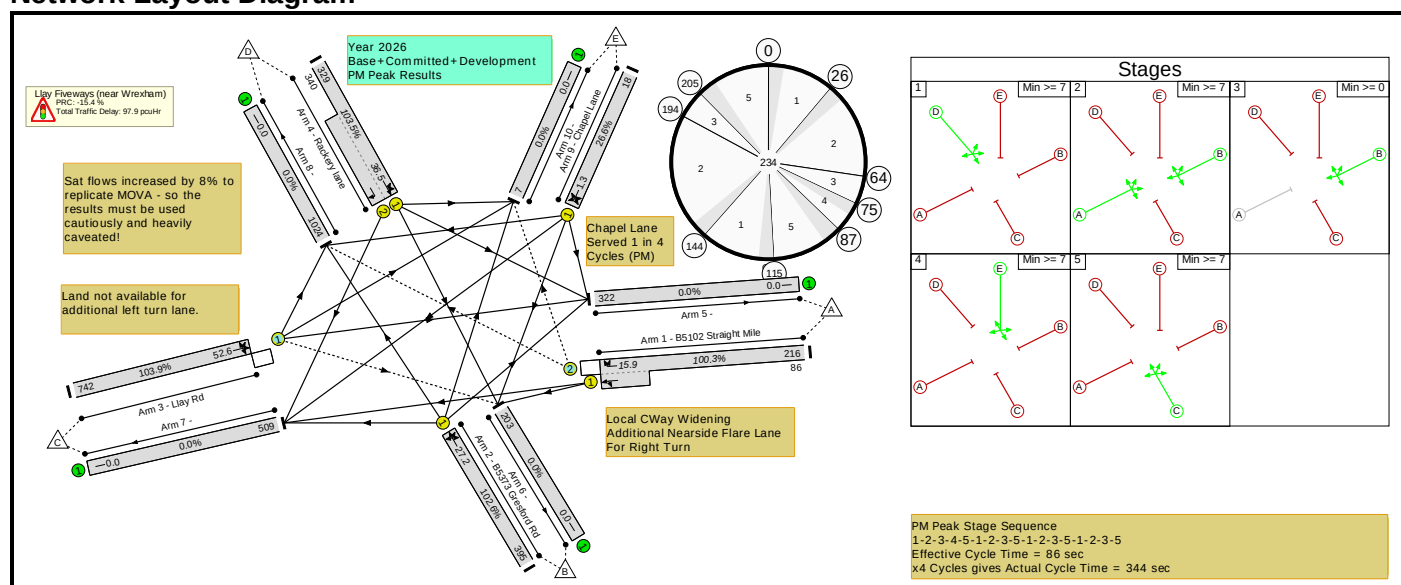
Lane Saturation Flows

Junction: Llay Fiveways (near Wrexham)								
Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat Flow (PCU/Hr)	Flared Sat Flow (PCU/Hr)
1/1 (B5102 Straight Mile Lane 1)	This lane uses a directly entered Saturation Flow						2033	2033
1/2 (B5102 Straight Mile Lane 2)	This lane uses a directly entered Saturation Flow						2000	2000
2/1 (B5373 Gresford Rd Lane 1)	This lane uses a directly entered Saturation Flow						2001	2001
3/1 (Llay Rd Lane 1)	This lane uses a directly entered Saturation Flow						2143	2143
4/1 (Rackery lane Lane 1)	This lane uses a directly entered Saturation Flow						1994	1994
4/2 (Rackery lane Lane 2)	This lane uses a directly entered Saturation Flow						1838	1838
5/1	Infinite Saturation Flow						Inf	Inf
6/1	Infinite Saturation Flow						Inf	Inf
7/1	Infinite Saturation Flow						Inf	Inf
8/1	Infinite Saturation Flow						Inf	Inf
9/1 (Chapel Lane Lane 1)	This lane uses a directly entered Saturation Flow						1976	1976
10/1	Infinite Saturation Flow						Inf	Inf

Scenario 1: 'AM Design 2026' (FG11: 'AM Dev 2026', Plan 1: 'Chapel Ln in Every Other Cycle')



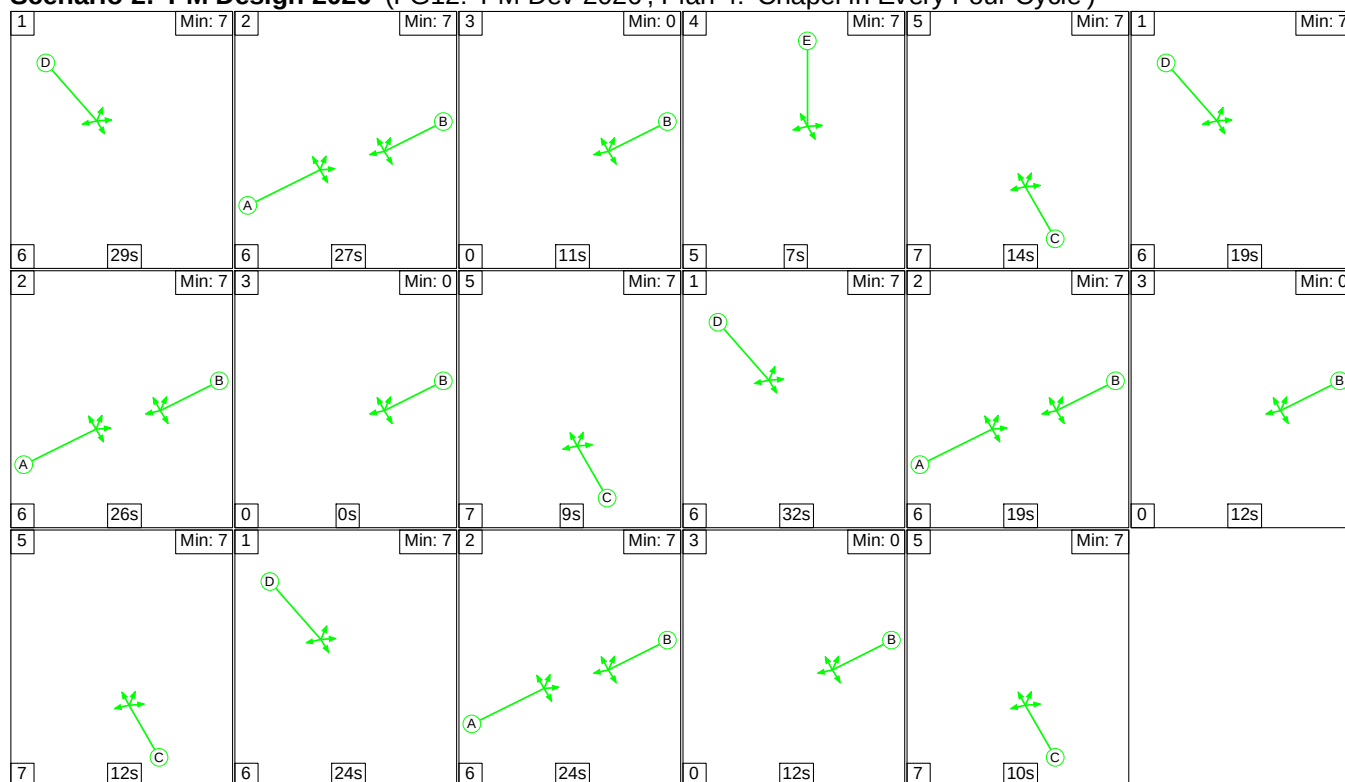
Network Layout Diagram



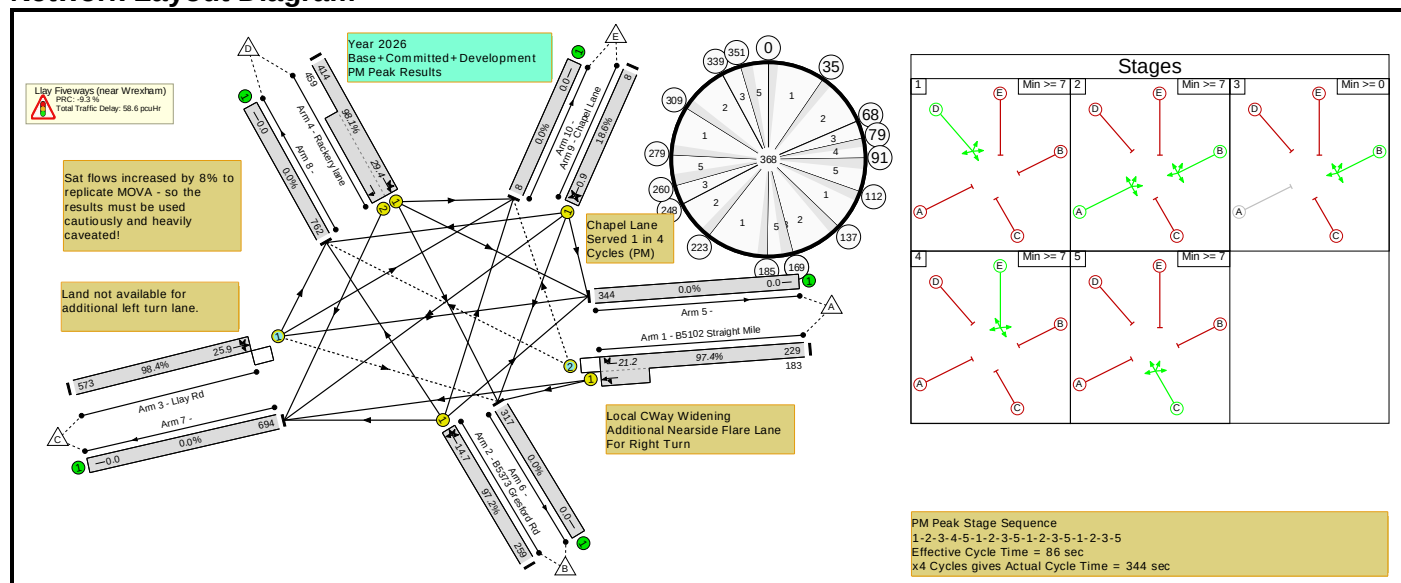
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	103.9%	33.3	63.9	97.9	-	-	-	-
Llay Fiveways (near Wrexham)	-	-	-	-	-	103.9%	33.3	63.9	97.9	-	-	-	-
1/2+1/1	B5102 Straight Mile Left Ahead Right Right2	B	302	2000:2033	301	100.3%	3.5	8.9	13.2	157.2	7.0	8.9	15.9
2/1	B5373 Gresford Rd Right Left Ahead Right2	C	395	2001	385	102.6%	6.7	12.8	19.5	178.1	14.4	12.8	27.2
3/1	Llay Rd Ahead Right Left Left2	A	742	2143	714	103.9%	11.3	22.2	33.5	162.7	30.4	22.2	52.6
4/1+4/2	Rackery lane Left Ahead Right Left2	D	669	1994:1838	646	103.5%	11.1	19.8	30.9	166.5	16.7	19.8	36.5
9/1	Chapel Lane Left Left2 Right Right2	E	18	1976	68	26.6%	0.6	0.2	0.7	146.2	1.1	0.2	1.3
C1 PRC for Signalled Lanes (%): -15.4 Total Delay for Signalled Lanes (pcuHr): 97.93 Cycle Time (s): 234 PRC Over All Lanes (%): -15.4 Total Delay Over All Lanes(pcuHr): 97.93													

Scenario 2: 'PM Design 2026' (FG12: 'PM Dev 2026', Plan 4: 'Chapel in Every Four Cycle')



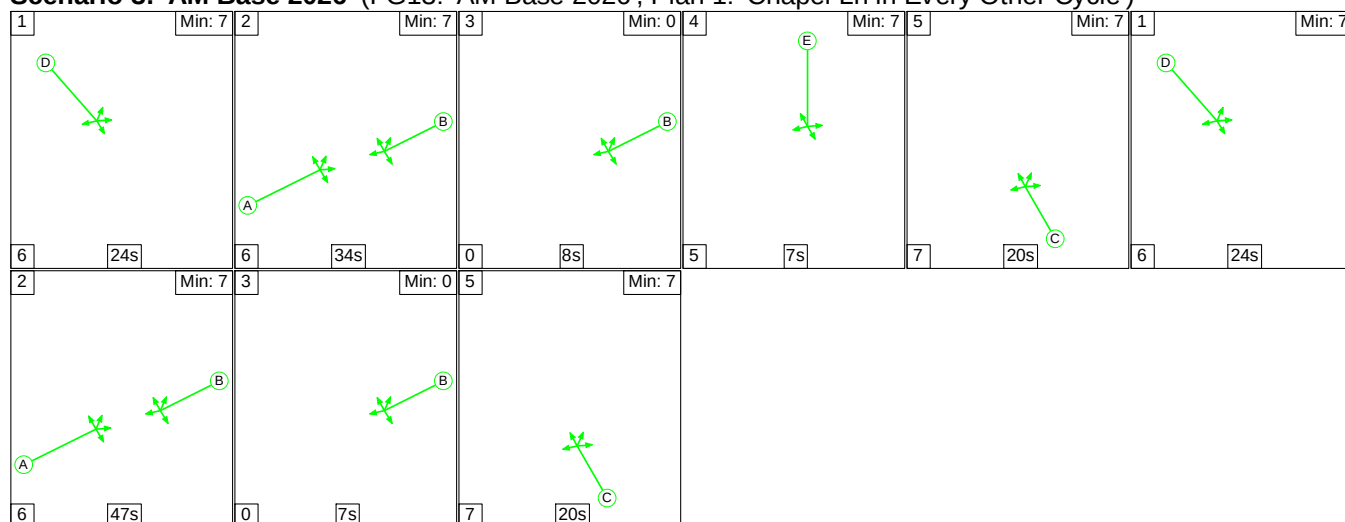
Network Layout Diagram



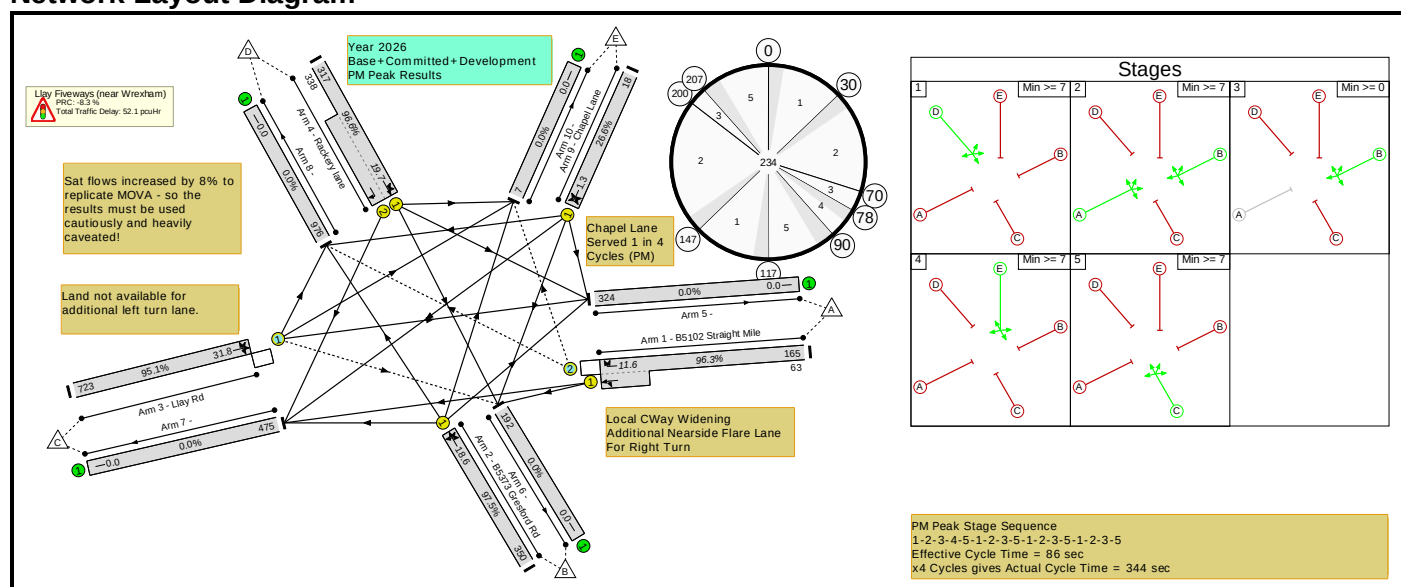
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	98.4%	22.6	35.4	58.6	-	-	-	-
Llay Fiveways (near Wrexham)	-	-	-	-	-	98.4%	22.6	35.4	58.6	-	-	-	-
1/2+1/1	B5102 Straight Mile Left Ahead Right Right2	B	412	2000:2033	423	97.4%	4.9	7.8	13.4	116.7	13.4	7.8	21.2
2/1	B5373 Gresford Rd Right Left Ahead Right2	C	259	2001	266	97.2%	3.0	6.4	9.4	130.8	8.3	6.4	14.7
3/1	Llay Rd Ahead Right Left Left2	A	573	2143	582	98.4%	5.6	9.9	15.5	97.1	16.1	9.9	25.9
4/1+4/2	Rackery lane Left Ahead Right Left2	D	873	1994:1838	889	98.1%	8.7	11.2	19.9	82.0	18.1	11.2	29.4
9/1	Chapel Lane Left Left2 Right Right2	E	8	1976	43	18.6%	0.4	0.1	0.5	228.0	0.8	0.1	0.9
C1 PRC for Signalled Lanes (%): -9.3 Total Delay for Signalled Lanes (pcuHr): 58.61 Cycle Time (s): 368 PRC Over All Lanes (%): -9.3 Total Delay Over All Lanes(pcuHr): 58.61													

Scenario 3: 'AM Base 2026' (FG13: 'AM Base 2026', Plan 1: 'Chapel Ln in Every Other Cycle')



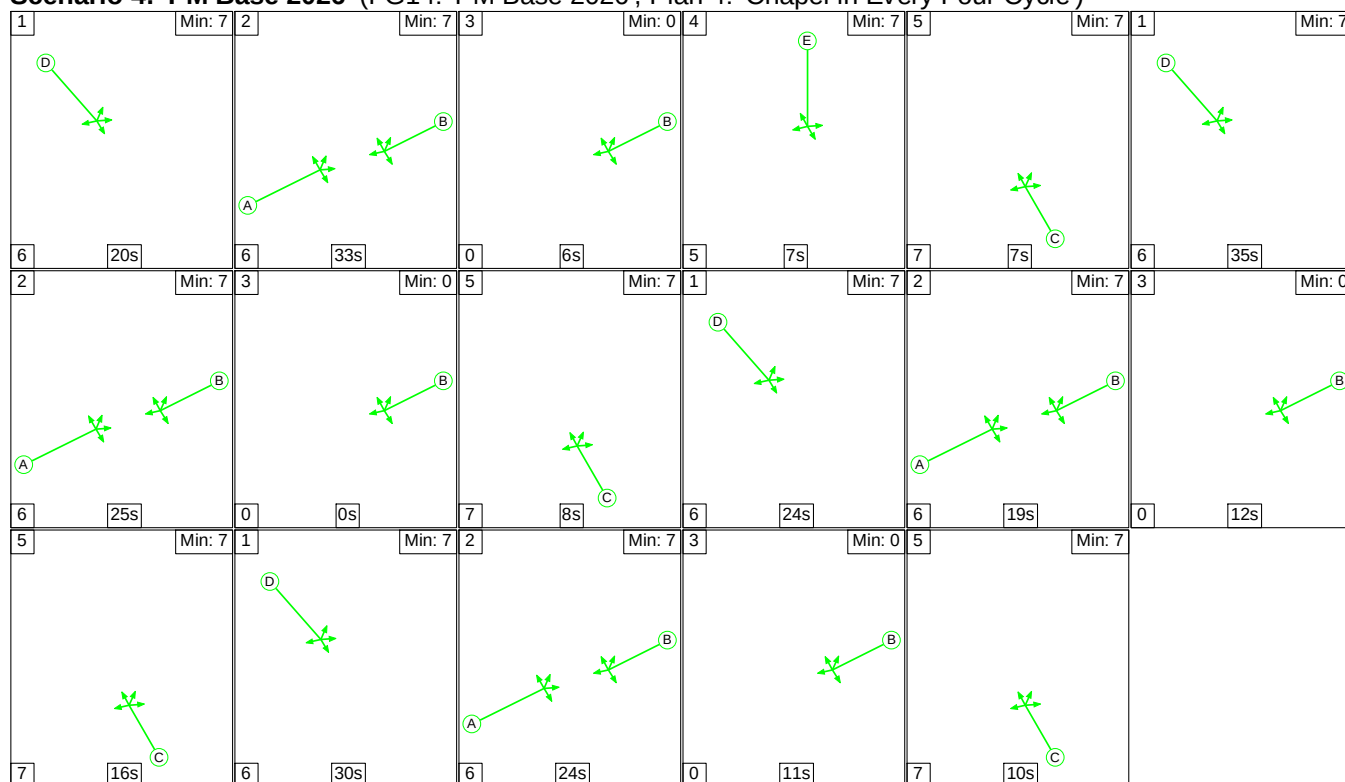
Network Layout Diagram



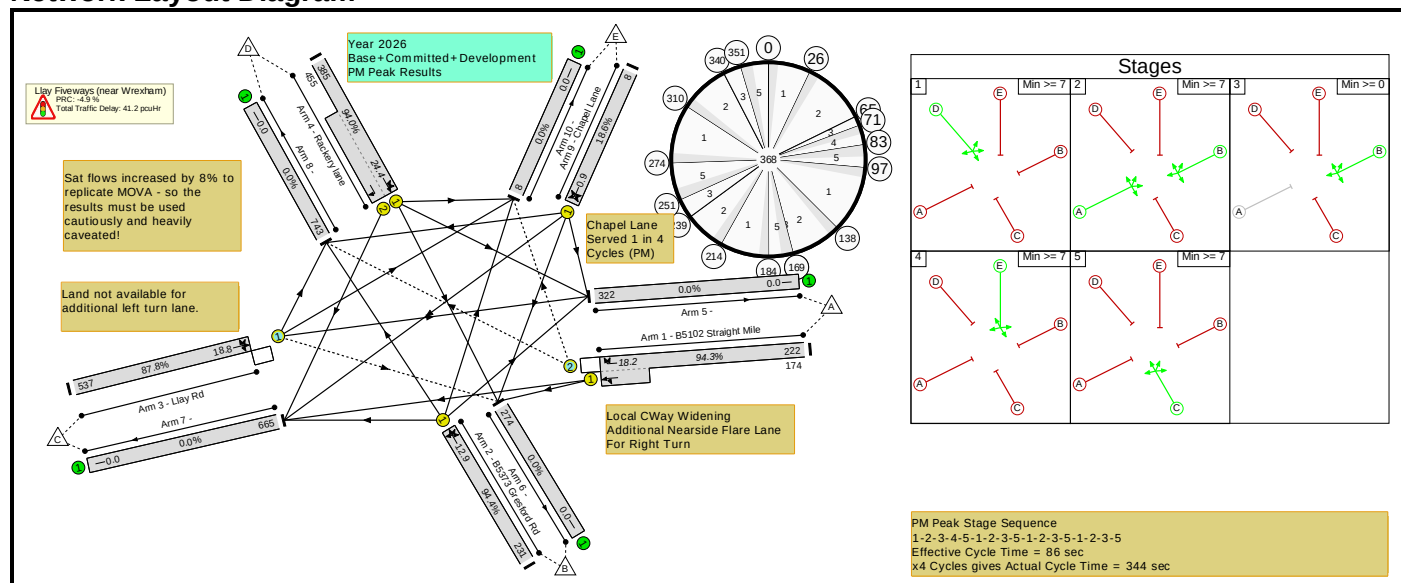
Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	97.5%	22.8	28.5	52.1	-	-	-	-
Llay Fiveways (near Wrexham)	-	-	-	-	-	97.5%	22.8	28.5	52.1	-	-	-	-
1/2+1/1	B5102 Straight Mile Left Ahead Right Right2	B	228	2000:2033	237	96.3%	2.2	5.7	8.6	135.5	5.9	5.7	11.6
2/1	B5373 Gresford Rd Right Left Ahead Right2	C	350	2001	359	97.5%	4.6	7.3	12.0	123.3	11.3	7.3	18.6
3/1	Llay Rd Ahead Right Left Left2	A	723	2143	760	95.1%	7.5	7.1	14.5	72.3	24.8	7.1	31.8
4/1+4/2	Rackery lane Left Ahead Right Left2	D	655	1994:1838	678	96.6%	8.0	8.3	16.3	89.4	11.5	8.3	19.7
9/1	Chapel Lane Left Left2 Right Right2	E	18	1976	68	26.6%	0.6	0.2	0.7	146.2	1.1	0.2	1.3
C1 PRC for Signalled Lanes (%): -8.3 Total Delay for Signalled Lanes (pcuHr): 52.08 Cycle Time (s): 234 PRC Over All Lanes (%): -8.3 Total Delay Over All Lanes(pcuHr): 52.08													

Scenario 4: 'PM Base 2026' (FG14: 'PM Base 2026', Plan 4: 'Chapel in Every Four Cycle')



Network Layout Diagram



Network Results

Item	Lane Description	Full Phase	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
Network: Crown Crossroads at Llay	-	-	-	-	-	94.4%	20.3	20.3	41.2	-	-	-	-
Llay Fiveways (near Wrexham)	-	-	-	-	-	94.4%	20.3	20.3	41.2	-	-	-	-
1/2+1/1	B5102 Straight Mile Left Ahead Right Right2	B	396	2000:2033	420	94.3%	4.5	5.6	10.7	97.5	12.6	5.6	18.2
2/1	B5373 Gresford Rd Right Left Ahead Right2	C	231	2001	245	94.4%	3.5	4.9	8.5	131.7	7.9	4.9	12.9
3/1	Llay Rd Ahead Right Left Left2	A	537	2143	611	87.8%	4.9	3.3	8.2	54.9	15.5	3.3	18.8
4/1+4/2	Rackery lane Left Ahead Right Left2	D	840	1994:1838	893	94.0%	7.0	6.4	13.3	57.1	18.0	6.4	24.4
9/1	Chapel Lane Left Left2 Right Right2	E	8	1976	43	18.6%	0.4	0.1	0.5	228.0	0.8	0.1	0.9
C1 PRC for Signalled Lanes (%): -4.9 Total Delay for Signalled Lanes (pcuHr): 41.19 Cycle Time (s): 368 PRC Over All Lanes (%): -4.9 Total Delay Over All Lanes(pcuHr): 41.19													