

BARTON LINK ROAD TECHNICAL NOTE #2 (25/03/2022)

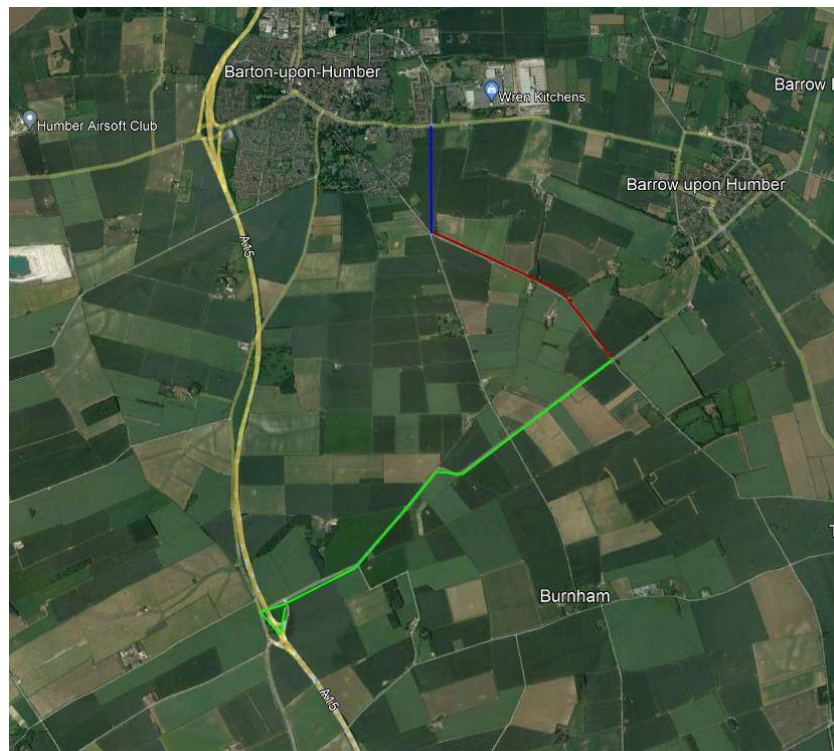
Introduction & Background

Local Transport Projects Ltd (LTP) has been commissioned by North Lincolnshire Council (NLC) to undertake assessment work that considers a new option for the potential link road to the south of Barton-upon-Humber to support future residential development aspirations. The work that has informed this Technical Note follows on from a number of previous commissions, including the Barton Highways Masterplan (LTP, 2018), Barton Link Road Preliminary Design Layout Briefing Note (LTP, 2020a), Barton Southern Access Road, North Lincolnshire Feasibility Design Assessment Summary Note (LTP, 2020b), Barton Link Road Technical Note (LTP, 2021a) and A1077 Corridor Improvements Technical Note (LTP, 2021b).

Updated Option 1 Link Road Alignment

It is considered that, as a minimum, a number of improvements would need to be made to the previously identified Option 1 route alignment considered in the Barton Link Road Technical Note (LTP, 2021a) in order for it to accommodate increased traffic flows, including Heavy Commercial Vehicle (HCV) movements, whilst providing an improvement to journey times on the route. An overview of the revised Option 1 link road alignment is shown in Figure 1, with the section highlighted in blue forming new carriageway, the Caistor Road section highlighted in red would be upgraded and the green section along the B1206 would be retained as existing connecting to the A15 at the Bonby Lodge junction to the south-west.

Figure 1: Updated Option 1 Link Road Alignment



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Further details on the updated Option 1 link road alignment are outlined below and a concept plan is attached as Appendix 1:

A1077 to Caistor Road (1,080m):

It should be noted that elements of this section have been considered as part of previous studies undertaken on behalf of NLC and would comprise the following:

- Provision of a standard roundabout at A1077/Falkland Way/Link Road connection, with notional 60m Inscribed Circle Diameter (ICD);
- Provision of a 7.3m wide link road, including 3.0m cycle/footway either side of the carriageway between the A1077 and Caistor Road; and
- Provision of a standard roundabout at Caistor Road/Burnham Road/Link Road connection with notional 50m ICD.

Caistor Road: Proposed Link Road to B1206 (1,880m):

In this section, Caistor Road has a carriageway width between 5.0 and 5.5m and is bounded on either side by grassed verges with widths of circa 4m-5m extending to either a hedgerow or field edge that forms the boundary with adjacent farmland.

The width of the adopted public highway between the adjacent land boundary ranges between approximately 10m and 15m.

A land drain is evident on the western side of the carriageway for much of its length. There are also lengths of land drain evident for shorter sections on the eastern side.

The road is not kerbed and drains into the verge and land drain to either side of the carriageway.

For the purposes of this assessment, it is proposed that:

- the carriageway will be widened to 7.3m being the minimum standard width of a single carriageway all-purpose road (ref. DMRB CD127);
- the carriageway will not be kerbed and will drain into the adjacent verges/land drains as per existing arrangements; and
- the new road alignment will not include either a cycleway or footway.

It has been assumed that the following construction works would be required to achieve the foregoing requirements:

- Acquisition of ~3-5m of adjacent agricultural land on the eastern side of Caistor Road (i.e. opposite side to land drain);
- Construction of a 2.0-2.5m haunch to widen existing 5.0-5.5m carriageway to 7.3m;
- Removal and disposal of existing carriageway construction (wearing/binder/base course) to sub-base level;
- Regrading of existing sub-base;
- Reconstruction of carriageway on regraded sub-base;
- Road markings and traffic signs.

B1206/Caistor Road Junction:

- Provision of a standard roundabout at B1206/Caistor Road with notional 60m ICD.

B1206: Caistor Road to A15 Bonby Lodge Interchange:

- It is assumed that the road alignment and layout is retained.

A15 Bonby Lodge Interchange:

- It is assumed that the existing junction arrangements, alignment and layout is retained.

Budgetary Cost Estimates

Table 1 provides a sectional breakdown summary of estimated scheme costs for the updated Option 1. The costs are based on item price rates provided in SPONs Civil Engineering and Highway Works Price Book 2020 and are presented in 2022 prices based on the Building Cost Information Service (BCIS) 5-year forecast 2020 to 2022 tender price increase rate of 2.4%.

The works would require ~3 acres of 3rd party land adjacent to Caistor Road to accommodate the road widening and junction construction works.

Optimism Bias of 44% has been applied to the costs to reflect the early feasibility design stage of the Link Road option proposals. This value is consistent with Department for Transport (DfT) WebTAG guidance on local roads scheme costings at feasibility design stage.

The cost estimates include an allowance of 12% of the estimated construction costs for professional design fees.

The costs for potential diversion and/or protection of Statutory Undertakers (SUs) equipment and services are not included and would need to be obtained through the relevant New Roads and Street Works Act 1991 (NRSWA91) notice process (i.e. C3/C4 notices).

Table 1: Budgetary Cost Estimates

Section/Item	Cost (£)
A1077 Barrow Road to Caistor Road (1,080m)	
Roundabout junction - 4-arm junction with 60m ICD	879,395
Roundabout junction - 4-arm junction with 50m ICD	811,749
Urban link roads: two lane link road (carriageway is 7.3m wide) inc. footways and junctions	2,209,116
Sub-total	3,900,260
Caistor Road: Proposed Link Road to B1206 (1,880m)	
Provide 2.5m haunch to single side of existing carriageway to widen to 7.3m.	1,353,713
Excavate unacceptable material in existing carriageway to sub-base level. Assume notional 300mm depth of material to be removed.	16,278
Dispose of unacceptable material. Assume 20km haul.	186,723
Disposal Landfill Tax for unacceptable material (92.35)	130,902
Regrade existing sub-base. Assume 100mm depth of material.	41,692
Reconstruct carriageway (DBM - Base = 200mm, Binder = 100, WC = 50mm)	771,946
Sub-total	2,501,254
B1206/Caistor Road Junction	
Roundabout junction - 4-arm junction with 50m ICD	811,749
Sub-total	811,749
B1206: Caistor Road to A15 Bonby Lodge Interchange	
Assume no works.	0
Sub-total	0
A15 Bonby Lodge Interchange	

Section/Item	Cost (£)
Assume no works.	0
Sub-total	0
Sub-total (Construction)	7,213,263
Optimism Bias (44%)	3,173,836
Professional fees (12%)	865,592
Total	11,252,690
Estimated 3rd Party Land costs	
Estimated area of highway works in 3rd party land	26,421

From Table 1 above, the updated Option 1 link road alignment would be expected to cost in the region of £11.25 million.

Prohibition of HCVs from Barton Town Centre

Environmental weight restrictions provide a potential measure to manage the movement of HCV traffic on roads and typically only apply to vehicles with a maximum gross weight (i.e. maximum permitted weight of the vehicle when fully loaded) of 7.5 tonnes or above. They are introduced through a Traffic Regulation Order (TRO) made by the Local Authority pursuant to their powers under the Road Traffic Regulation Act 1984 (RTA84) and enforced by the Police.

An environmental weight restriction can be introduced for a variety of reasons including:

- to reduce risks to vulnerable road users, including pedestrians, cyclists and equestrians;
- to protect the character and environment of rural areas, villages and residential estates;
- to manage congestion; and
- to prevent damage to highway infrastructure and assets.

In the case of the A1077, if the link road was implemented, the potential introduction of an environmental weight restriction would be seeking to reduce the volume of daily HCV movements travelling through Barton town centre as an alternative route is provided.

However, careful consideration needs to be given to the appropriateness of the alternative routes that HCVs will use to avoid the restriction in order to avoid creating environmental and traffic management issues elsewhere. In addition, the effectiveness of the weight restriction also needs to be considered as certain HCV movements will remain exempt from the restrictions including:

- vehicles making deliveries or collections at premises within the restriction;
- vehicles working on or near the roads in question;
- emergency service and military vehicles; and
- buses, coaches and other public service vehicles.

A further key consideration is the balance between the environmental benefit provided and the economic disbenefit incurred by HCV operators in avoiding the restriction. Where operators can demonstrate that their costs would exceed the scheme benefits, they would be potentially able to successfully object to the making of the TRO on the basis of the scheme being inequitable. This is of particular relevance on A and B roads, such as the A1077, which tend to provide efficient routes for HCVs and serve a more important strategic function within the road network by connecting communities and economic centres. It should be noted that some Local Authorities adopt policies that generally exclude A and B road from consideration for environmental weight limits for these reasons.

In terms of enforcement, although the Police will enforce weight limits it is not a priority for them, and it is therefore important that weight limits can be largely self-enforcing in relation to the HCVs they seek to restrict and the alternative routes that can be provided.

The origin and destination surveys undertaken in June 2019 indicate that during the PM peak hour, 4 HCVs travel through Barton to/from the A15. Traffic growth 2019 to 2031 is estimated at 4.4% and therefore the number of HCVs is unlikely to increase in this period. If these 4 No. HCVs were prohibited from using the A1077 then there would be potential to replace them with 8 No. cars (assuming 1 HCV is equivalent to 2 PCUs), associated with residential development trips, which would equate to approximately 16 additional dwellings.

In summary, the introduction of a weight limit within Barton town centre may be difficult to implement and not achieve the envisaged aspirations of restricting HCV movements through Barton town centre, for example articulated vehicles accessing retail within Barton town centre would be exempt from the weight restriction. There is also the potential for local businesses to object to any future TRO.

A1077/Holydyke/Hungate Junction

A sensitivity test was undertaken as part of the A1077 Corridor Improvements Technical Note (LTP, 2021b) to understand the level of dwellings that could potentially be delivered, in addition to those promoted in the refreshed North Lincolnshire Local Plan, with the proposed junction improvement scheme still operating within capacity. The modelling results are summarised in Table 2 with the complete modelling output provided in Appendix 2.

Table 2: A1077/Holydyke/Hungate Signalised Junction Modelling Results

Movement From	DoS (%)	MMQ (PCU)	Average Delay (Secs/PCU)
AM PEAK			
A1077 (W)	70.6%	18.7	26.5
Holydyke	71.5%	12.4	50.4
A1077 (E)	69.6%	14.5	23.1
A1077 (W) Internal	52.0%	3.5	3.1
PRC	+25.9%		
PM PEAK			
A1077 (W)	89.6%	31.7	36.9
Holydyke	89.4%	16.7	76.6
A1077 (E)	79.9%	12.8	25.6
A1077 (W) Internal	50.0%	3.3	3.2
PRC	+0.5%		

The previous modelling results indicated that a total of 190 additional dwellings (587 dwellings in total) could potentially be provided with the junction still operating within theoretical capacity. The PM peak hour is the critical time period where the junction experiences its highest traffic levels. If the A1077 eastbound HCV movements (6 in total) were removed from the junction during the PM peak hour this would equate to 12 cars and therefore the equivalent of 24 additional dwellings could theoretical be provided subject to the reassignment of the HCV movements onto the proposed link road.

Potential Reassignment of Residential Development Trips

For trips from the A15 south of Bonby Lodge, the proposed Option 1 route has the potential to provide a similar but more reliable journey time for those journeys that are currently made between A15 (South) and A1077 at Falkland Way via Barton Interchange. From the 2019 origin-destination surveys this amounts to between 7 and 9 PCUs in the PM peak period which might be expected to reassign to the new Option 1 route. This potential reduction in demand at the A1077/Holydyke/Hungate junction could be potentially replaced with 7-9 No. cars, associated with residential development trips, which would equate to between 14 and 18 additional dwellings.

For trips from the A15 north or A1077 west of Barton Interchange, the distance and estimated time to travel from Barton Interchange to Falkland Way by either the A1077 or proposed Option 1 route during the PM peak in 2031 has been undertaken as shown in Table 3. The impact of future delay for vehicles during the PM peak hour, travelling eastbound on the A1077, has also been considered within this assessment.

Table 3: Journey Time Comparison A15 Interchange to Falkland Way

Route Section	Distance (km)	Average Travel Speed (mph)	Average Travel Speed (kph)	Time (mins/seconds)
Existing Route				
A15/A1077 interchange to Falkland Way*	2.40			00:05:16
Future vehicle delay during the PM peak on the A1077 (W) arm at A1077/Holydyke/Hungate junction (with improvement scheme)				00:00:37
Total				00:05:53
Proposed Route				
A15	4.87	60	96	00:03:02
B1206	4.23	40	65	00:03:53
Caistor Road (Improved Section)	2.22	50	80	00:01:40
Proposed Link Road (A1077 to Caistor Road)	1.09	25	40	00:01:38
Total	12.41	-	-	00:10:15
Difference				+00:04:14

*based on average recorded journey times in the PM peak hour from the origin/destination surveys undertaken in June 2019.

As can be seen in Table 3, the journey time associated with the proposed link road would be expected to be over five times longer than utilising the existing route through Barton town centre even with the addition of future delay for vehicles travelling eastbound on the A1077, with the junction improvement scheme implemented at the A1077/Holydyke/Hungate junction. Based on this delay penalty, it is considered unlikely that trips from A15 (North) or A1077 (West) would reassign to the Option 1 route and create capacity on the A1077 at Holydyke to accommodate residential development traffic.

References

- DMRB (Design Manual for Roads and Bridges), 2021. CD 127 - Cross-sections and headrooms.
- LTP (Local Transport Projects), 2021a. Barton Link Road Technical Note Issue 06.05.2021.
- LTP, 2021b. A1077 Corridor Improvements Technical Note Issue 22.12.2021.
- LTP, 2020a. Barton Link Road Preliminary Design Layout Briefing Note
- LTP, 2020b. Barton Southern Access Road, North Lincolnshire Feasibility Design Assessment Summary Note.
- LTP, 2018. Barton Highways Masterplan.
- New Roads and Street Works Act 1991.
- Road Traffic Regulation Act 1984.
- SPONs, 2020. Civil Engineering and Highway Works Price Book 2020

Appendix I – Revised Option I Alignment Concept Plan



Proposed Link Road Alignment

- Key Features:**
- 1.1km of 7.3m single carriageway road with pedestrian/cycle facilities linking A1077 Barrow Road at Falkland Way to Caistor Road and Burnham Road
 - 3 No. new roundabout junctions at Falkland Way, Caistor Road, and B1206.
 - Widening to 2.2km of Caistor Road to provide a 7.3m single carriageway road.
 - Reduction of vehicles on A1077 in Barton town centre east of Brigg Road.
 - Unlocks potential future development land to the south-east and east of Barton.

Cost:
£11,252,690

- Key:**
- Proposed New Carriageway Construction
 - Proposed New Roundabout
 - Proposed Improvement to Existing Carriageway (Widen to 7.3m)
 - Existing Carriageway to link Proposed Link Road and A15

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Rev.	Date	By	Chk	Description

Client: **North Lincolnshire Council**

Project: **Barton Link Road**

Title: **Revised Option 1 Alignment Route Overview**

local transport projects
 traffic engineering and transport planning

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Drawn: SL Date: 24 03 22
 Scale: 1 : 1000 Checked: MR Approved: NW
 Status: **CONCEPT**

Drawing number: LTP/3628/P4/01_01

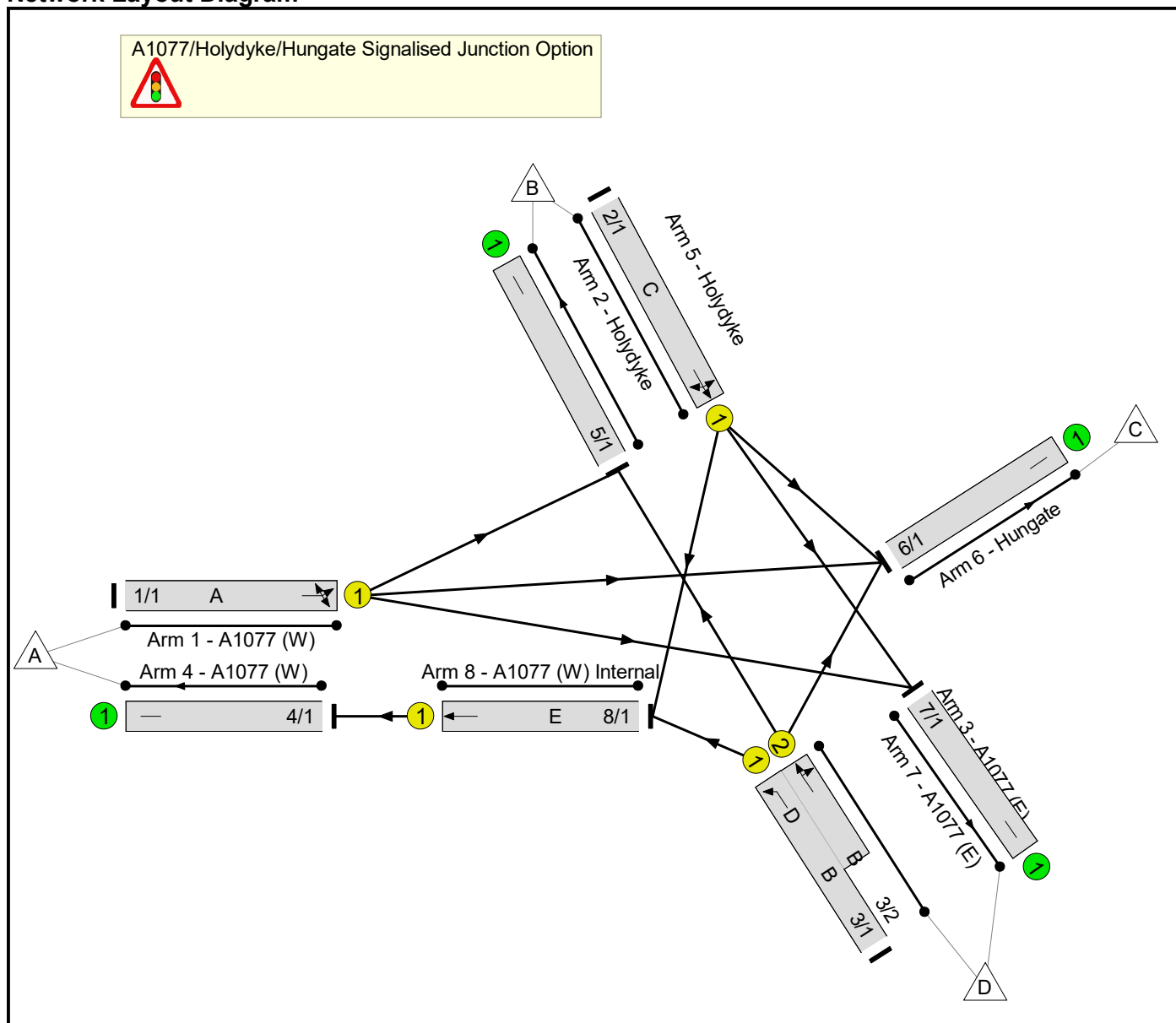
Appendix 2 – Junction Modelling Results

LTP LinSig Output

User and Project Details

Project:	Barton Link Road
Title:	A1077/Holydyke/Hungate Signalised Junction Option
Location:	Barton upon Humber, North Lincolnshire
Client:	North Lincolnshire Council
Additional detail:	
File name:	A1077 Holydyke Hungate Signalised Junction Improvement Scheme.lsg3x
Author:	MR
Company:	LTP
Address:	

Network Layout 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	Filter	B	4	0
E	Traffic		7	7
F	Pedestrian		6	6
G	Pedestrian		6	6

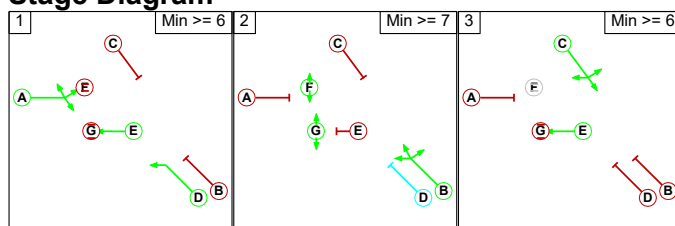
Phase Intergreens Matrix

	Starting Phase						
	A	B	C	D	E	F	G
Terminating Phase	A	5	5	-	-	5	-
	B	5	5	-	-	-	-
	C	5	5	6	-	-	-
	D	-	-	5	-	-	-
	E	-	-	-	-	-	5
	F	5	-	-	-	-	-
	G	-	-	-	6	-	-

Phases in Stage

Stage No.	Phases in Stage
1	A D E
2	B F G
3	C E

Stage Diagram



Phase Delays

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

Prohibited Stage Change

		To Stage		
		1	2	3
From Stage	1	■	5	X
	2	6	■	6
	3	6	5	■

Give-Way Lane Input Data

Junction: A1077/Holydyke/Hungate Signalised Junction Option

There are no Opposed Lanes in this Junction

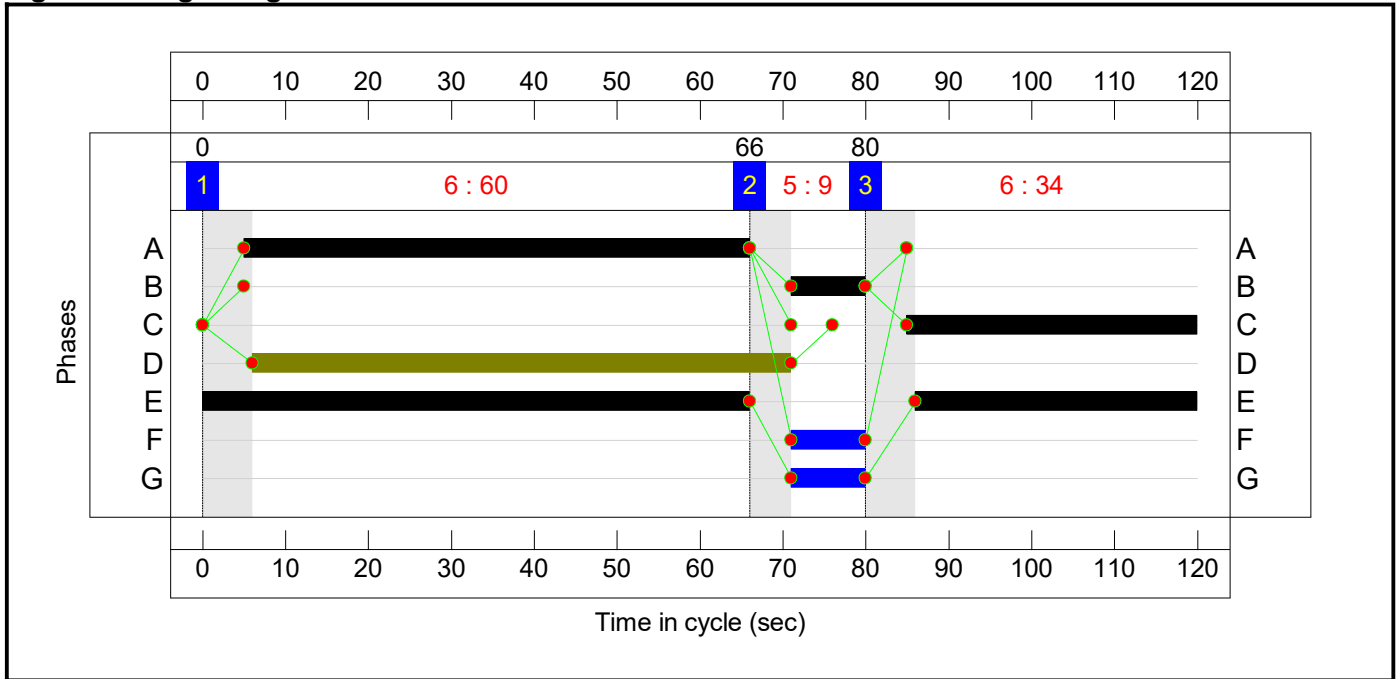
Lane Input Data

Junction: A1077/Holydyke/Hungate Signalised Junction Option												
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 (A1077 (W))	U	A	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 5 Left	10.41
											Arm 6 Ahead	Inf
											Arm 7 Right	28.00
2/1 (Holydyke)	U	C	2	3	60.0	Geom	-	3.85	0.00	Y	Arm 6 Left	12.00
											Arm 7 Ahead	Inf
											Arm 8 Right	12.90
3/1 (A1077 (E))	U	B D	2	3	60.0	Geom	-	3.50	0.00	Y	Arm 8 Left	27.15
3/2 (A1077 (E))	U	B	2	3	5.8	Geom	-	3.50	0.00	Y	Arm 5 Ahead	Inf
											Arm 6 Right	6.65
4/1 (A1077 (W))	U		2	3	60.0	Inf	-	-	-	-	-	-
5/1 (Holydyke)	U		2	3	60.0	Inf	-	-	-	-	-	-
6/1 (Hungate)	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1 (A1077 (E))	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1 (A1077 (W) Internal)	U	E	2	3	3.0	Geom	-	4.00	0.00	Y	Arm 4 Ahead	Inf

Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2021 Base AM'	07:45	08:45	01:00	
2: '2021 Base PM'	17:00	18:00	01:00	
3: '2031 With Residential Site Allocations AM'	07:45	08:45	01:00	
4: '2031 With Residential Site Allocations PM'	17:00	18:00	01:00	
5: 'Sensitivity Test AM (587 dwellings)'	07:45	08:45	01:00	
6: 'Sensitivity Test PM (587 dwellings)'	17:00	18:00	01:00	
19: 'Sensitivity Test AM (1,500 dwellings)'	07:45	08:45	01:00	
20: 'Sensitivity Test PM (1,500 dwellings)'	17:00	18:00	01:00	

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')
Signal Timings Diagram



Traffic Flows, Desired
Desired Flow :

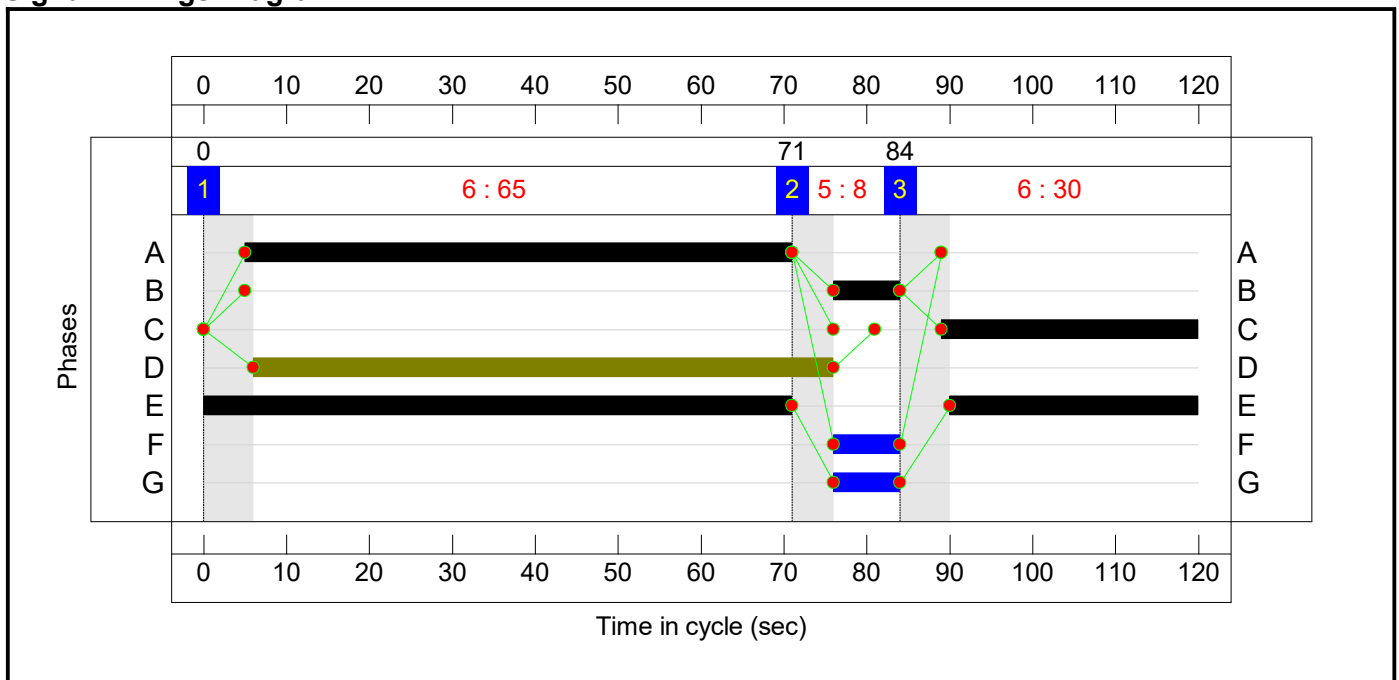
		Destination				Tot.
		A	B	C	D	
Origin	A	0	116	86	396	598
	B	214	0	10	127	351
	C	0	0	0	0	0
	D	436	92	7	0	535
	Tot.	650	208	103	523	1484

Lane Saturation Flows

Junction: A1077/Holydyke/Hungate Signalised Junction Option								
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 (A1077 (W))	3.50	0.00	Y	Arm 5 Left	10.41	19.4 %	1848	1848
				Arm 6 Ahead	Inf	14.4 %		
				Arm 7 Right	28.00	66.2 %		
2/1 (Holydyke)	3.85	0.00	Y	Arm 6 Left	12.00	2.8 %	1861	1861
				Arm 7 Ahead	Inf	36.2 %		
				Arm 8 Right	12.90	61.0 %		
3/1 (A1077 (E))	3.50	0.00	Y	Arm 8 Left	27.15	100.0 %	1862	1862
3/2 (A1077 (E))	3.50	0.00	Y	Arm 5 Ahead	Inf	92.9 %	1934	1934
				Arm 6 Right	6.65	7.1 %		
4/1 (A1077 (W) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Holydyke Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hungate Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A1077 (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1077 (W) Internal)	4.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	2015	2015

Scenario 2: '2021 Base PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Signal Timings Diagram



Traffic Flows, Desired

Desired Flow :

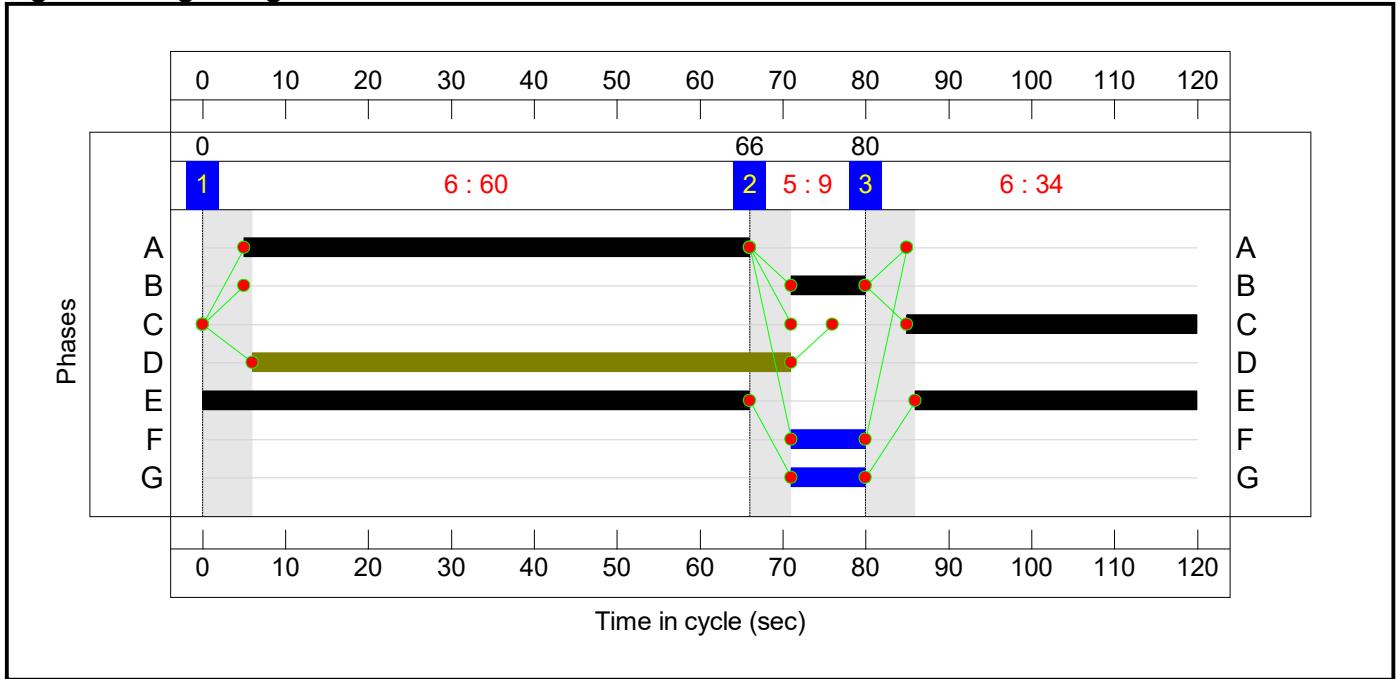
		Destination				
		A	B	C	D	Tot.
Origin	A	0	240	110	471	821
	B	219	0	4	166	389
	C	0	0	0	0	0
	D	540	98	11	0	649
	Tot.	759	338	125	637	1859

Lane Saturation Flows

Junction: A1077/Holydyke/Hungate Signalised Junction Option									
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 (A1077 (W))	3.50	0.00	Y	Arm 5 Left	10.41	29.2 %	1832	1832	
				Arm 6 Ahead	Inf	13.4 %			
				Arm 7 Right	28.00	57.4 %			
2/1 (Holydyke)	3.85	0.00	Y	Arm 6 Left	12.00	1.0 %	1875	1875	
				Arm 7 Ahead	Inf	42.7 %			
				Arm 8 Right	12.90	56.3 %			
3/1 (A1077 (E))	3.50	0.00	Y	Arm 8 Left	27.15	100.0 %	1862	1862	
3/2 (A1077 (E))	3.50	0.00	Y	Arm 5 Ahead	Inf	89.9 %	1921	1921	
				Arm 6 Right	6.65	10.1 %			
4/1 (A1077 (W) Lane 1)	Infinite Saturation Flow						Inf	Inf	
5/1 (Holydyke Lane 1)	Infinite Saturation Flow						Inf	Inf	
6/1 (Hungate Lane 1)	Infinite Saturation Flow						Inf	Inf	
7/1 (A1077 (E) Lane 1)	Infinite Saturation Flow						Inf	Inf	
8/1 (A1077 (W) Internal)	4.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	2015	2015	

Scenario 3: '2031 With Residential Allocation Sites AM' (FG3: '2031 With Residential Site Allocations AM', Plan 1: 'Network Control Plan 1')

Signal Timings Diagram



Traffic Flows, Desired

Desired Flow :

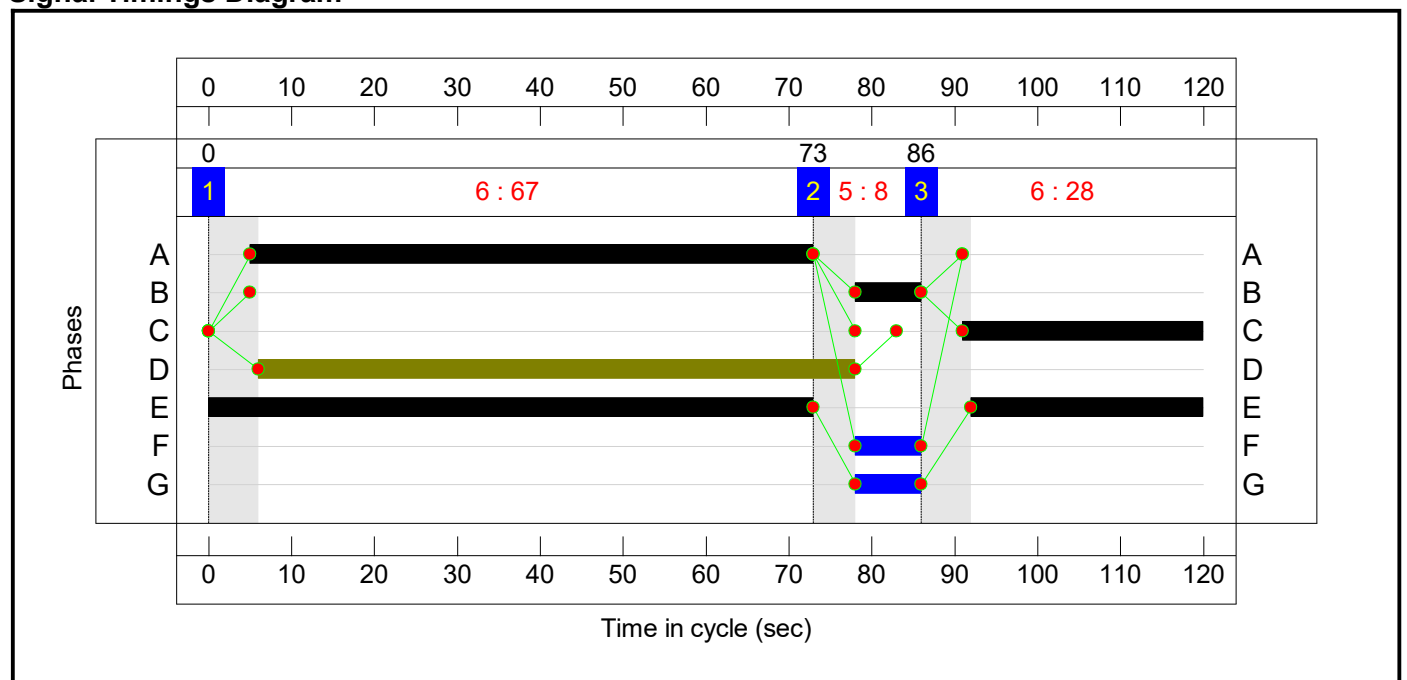
		Destination				
		A	B	C	D	Tot.
Origin	A	0	123	90	427	640
	B	231	0	10	122	363
	C	0	0	0	0	0
	D	539	94	7	0	640
	Tot.	770	217	107	549	1643

Lane Saturation Flows

Junction: A1077/Holydyke/Hungate Signalised Junction Option								
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 (A1077 (W))	3.50	0.00	Y	Arm 5 Left	10.41	19.2 %	1848	1848
				Arm 6 Ahead	Inf	14.1 %		
				Arm 7 Right	28.00	66.7 %		
2/1 (Holydyke)	3.85	0.00	Y	Arm 6 Left	12.00	2.8 %	1856	1856
				Arm 7 Ahead	Inf	33.6 %		
				Arm 8 Right	12.90	63.6 %		
3/1 (A1077 (E))	3.50	0.00	Y	Arm 8 Left	27.15	100.0 %	1862	1862
3/2 (A1077 (E))	3.50	0.00	Y	Arm 5 Ahead	Inf	93.1 %	1935	1935
				Arm 6 Right	6.65	6.9 %		
4/1 (A1077 (W) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Holydyke Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hungate Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A1077 (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1077 (W) Internal)	4.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	2015	2015

Scenario 4: '2031 With Residential Allocation Sites PM' (FG4: '2031 With Residential Site Allocations PM', Plan 1: 'Network Control Plan 1')

Signal Timings Diagram



Traffic Flows, Desired

Desired Flow :

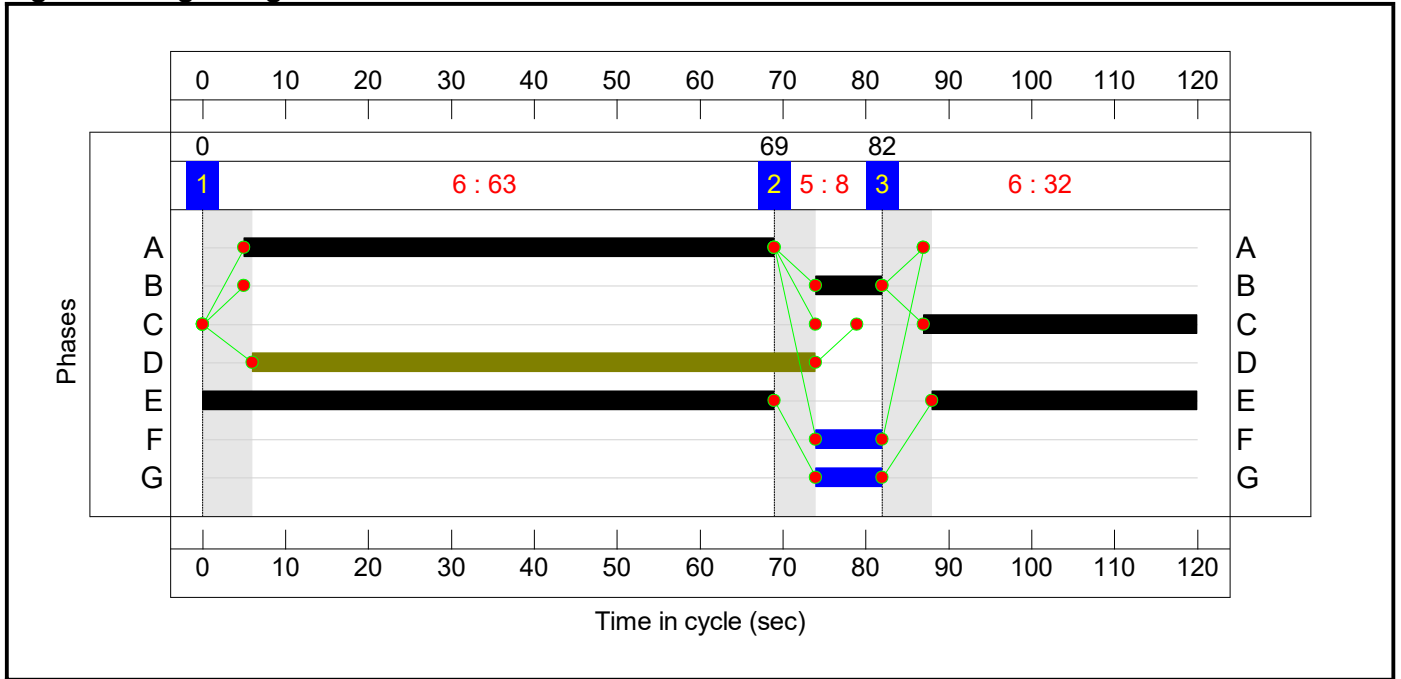
		Destination				
		A	B	C	D	Tot.
Origin	A	0	254	118	524	896
	B	230	0	4	170	404
	C	0	0	0	0	0
	D	581	100	11	0	692
	Tot.	811	354	133	694	1992

Lane Saturation Flows

Junction: A1077/Holydyke/Hungate Signalised Junction Option									
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 (A1077 (W))	3.50	0.00	Y	Arm 5 Left	10.41	28.3 %	1833	1833	
				Arm 6 Ahead	Inf	13.2 %			
				Arm 7 Right	28.00	58.5 %			
2/1 (Holydyke)	3.85	0.00	Y	Arm 6 Left	12.00	1.0 %	1874	1874	
				Arm 7 Ahead	Inf	42.1 %			
				Arm 8 Right	12.90	56.9 %			
3/1 (A1077 (E))	3.50	0.00	Y	Arm 8 Left	27.15	100.0 %	1862	1862	
3/2 (A1077 (E))	3.50	0.00	Y	Arm 5 Ahead	Inf	90.1 %	1922	1922	
				Arm 6 Right	6.65	9.9 %			
4/1 (A1077 (W) Lane 1)	Infinite Saturation Flow						Inf	Inf	
5/1 (Holydyke Lane 1)	Infinite Saturation Flow						Inf	Inf	
6/1 (Hungate Lane 1)	Infinite Saturation Flow						Inf	Inf	
7/1 (A1077 (E) Lane 1)	Infinite Saturation Flow						Inf	Inf	
8/1 (A1077 (W) Internal)	4.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	2015	2015	

Scenario 5: 'Sensitivity Test AM (587 dwellings)' (FG5: 'Sensitivity Test AM (587 dwellings)', Plan 1: 'Network Control Plan 1')

Signal Timings Diagram



Traffic Flows, Desired

Desired Flow :

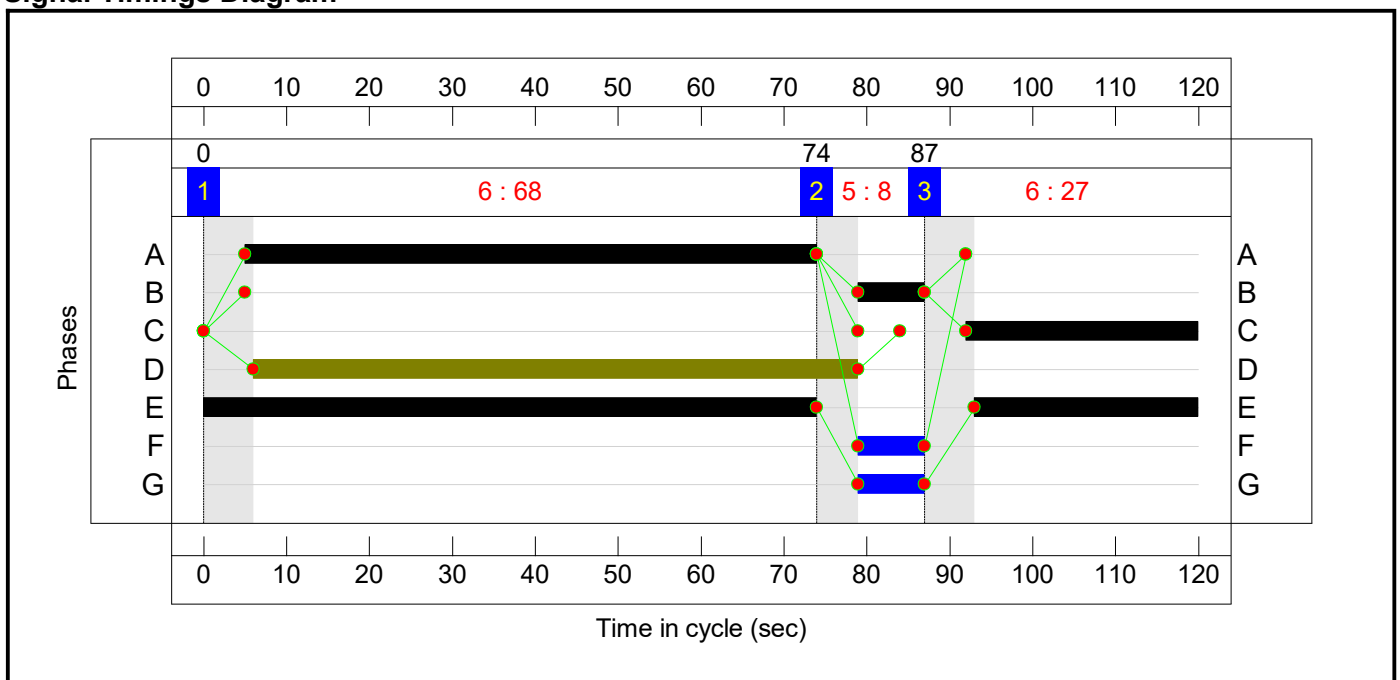
		Destination				
		A	B	C	D	Tot.
Origin	A	0	126	93	488	707
	B	238	0	10	128	376
	C	0	0	0	0	0
	D	653	94	7	0	754
	Tot.	891	220	110	616	1837

Lane Saturation Flows

Junction: A1077/Holydyke/Hungate Signalised Junction Option								
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 (A1077 (W))	3.50	0.00	Y	Arm 5 Left	10.41	17.8 %	1849	1849
				Arm 6 Ahead	Inf	13.2 %		
				Arm 7 Right	28.00	69.0 %		
2/1 (Holydyke)	3.85	0.00	Y	Arm 6 Left	12.00	2.7 %	1857	1857
				Arm 7 Ahead	Inf	34.0 %		
				Arm 8 Right	12.90	63.3 %		
3/1 (A1077 (E))	3.50	0.00	Y	Arm 8 Left	27.15	100.0 %	1862	1862
3/2 (A1077 (E))	3.50	0.00	Y	Arm 5 Ahead	Inf	93.1 %	1935	1935
				Arm 6 Right	6.65	6.9 %		
4/1 (A1077 (W) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Holydyke Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hungate Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A1077 (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1077 (W) Internal)	4.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	2015	2015

Scenario 6: 'Sensitivity Test PM (587 dwellings)' (FG6: 'Sensitivity Test PM (587 dwellings)', Plan 1: 'Network Control Plan 1')

Signal Timings Diagram



Traffic Flows, Desired

Desired Flow :

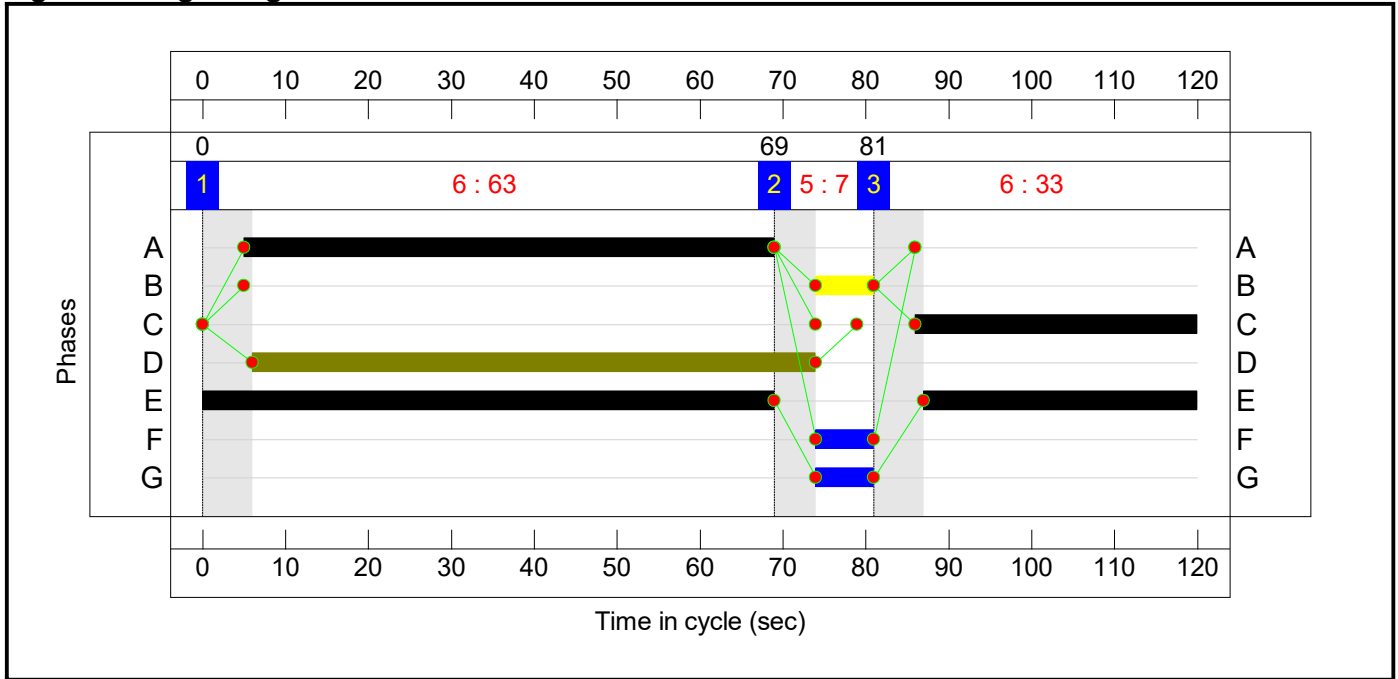
		Destination				
		A	B	C	D	Tot.
Origin	A	0	254	118	587	959
	B	230	0	4	171	405
	C	0	0	0	0	0
	D	626	103	12	0	741
	Tot.	856	357	134	758	2105

Lane Saturation Flows

Junction: A1077/Holydyke/Hungate Signalised Junction Option									
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 (A1077 (W))	3.50	0.00	Y	Arm 5 Left	10.41	26.5 %	1835	1835	
				Arm 6 Ahead	Inf	12.3 %			
				Arm 7 Right	28.00	61.2 %			
2/1 (Holydyke)	3.85	0.00	Y	Arm 6 Left	12.00	1.0 %	1874	1874	
				Arm 7 Ahead	Inf	42.2 %			
				Arm 8 Right	12.90	56.8 %			
3/1 (A1077 (E))	3.50	0.00	Y	Arm 8 Left	27.15	100.0 %	1862	1862	
3/2 (A1077 (E))	3.50	0.00	Y	Arm 5 Ahead	Inf	89.6 %	1920	1920	
				Arm 6 Right	6.65	10.4 %			
4/1 (A1077 (W) Lane 1)	Infinite Saturation Flow						Inf	Inf	
5/1 (Holydyke Lane 1)	Infinite Saturation Flow						Inf	Inf	
6/1 (Hungate Lane 1)	Infinite Saturation Flow						Inf	Inf	
7/1 (A1077 (E) Lane 1)	Infinite Saturation Flow						Inf	Inf	
8/1 (A1077 (W) Internal)	4.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	2015	2015	

Scenario 7: 'Sensitivity Test AM (1,500 dwellings)' (FG19: 'Sensitivity Test AM (1,500 dwellings)', Plan 1: 'Network Control Plan 1')

Signal Timings Diagram



Traffic Flows, Desired

Desired Flow :

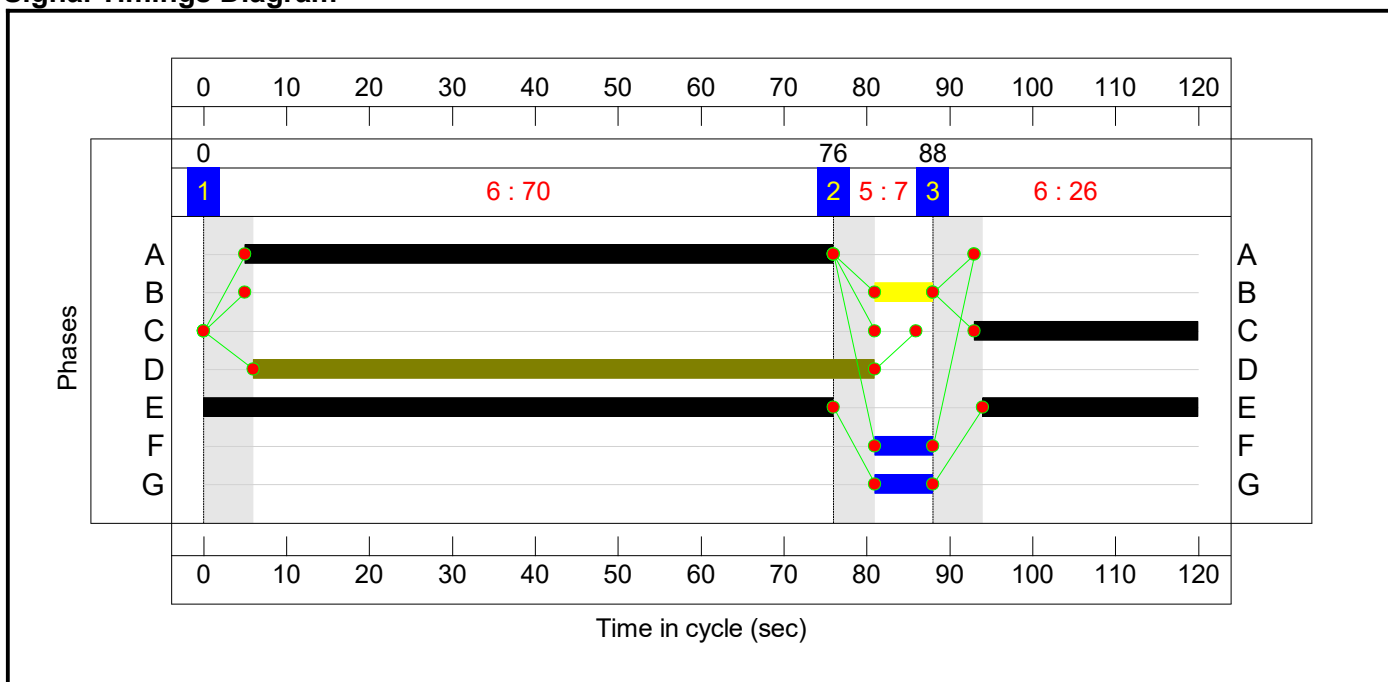
		Destination				
		A	B	C	D	Tot.
Origin	A	0	126	93	570	789
	B	280	0	10	128	418
	C	0	0	0	0	0
	D	838	94	7	0	939
	Tot.	1118	220	110	698	2146

Lane Saturation Flows

Junction: A1077/Holydyke/Hungate Signalised Junction Option								
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 (A1077 (W))	3.50	0.00	Y	Arm 5 Left	10.41	16.0 %	1851	1851
				Arm 6 Ahead	Inf	11.8 %		
				Arm 7 Right	28.00	72.2 %		
2/1 (Holydyke)	3.85	0.00	Y	Arm 6 Left	12.00	2.4 %	1850	1850
				Arm 7 Ahead	Inf	30.6 %		
				Arm 8 Right	12.90	67.0 %		
3/1 (A1077 (E))	3.50	0.00	Y	Arm 8 Left	27.15	100.0 %	1862	1862
3/2 (A1077 (E))	3.50	0.00	Y	Arm 5 Ahead	Inf	93.1 %	1935	1935
				Arm 6 Right	6.65	6.9 %		
4/1 (A1077 (W) Lane 1)	Infinite Saturation Flow						Inf	Inf
5/1 (Holydyke Lane 1)	Infinite Saturation Flow						Inf	Inf
6/1 (Hungate Lane 1)	Infinite Saturation Flow						Inf	Inf
7/1 (A1077 (E) Lane 1)	Infinite Saturation Flow						Inf	Inf
8/1 (A1077 (W) Internal)	4.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	2015	2015

Scenario 8: 'Sensitivity Test PM (1,500 dwellings)' (FG20: 'Sensitivity Test PM (1,500 dwellings)', Plan 1: 'Network Control Plan 1')

Signal Timings Diagram



Traffic Flows, Desired

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	254	118	803	1175
	B	280	0	4	171	455
	C	0	0	0	0	0
	D	677	103	12	0	792
	Tot.	957	357	134	974	2422

Lane Saturation Flows

Junction: A1077/Holydyke/Hungate Signalised Junction Option									
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 (A1077 (W))	3.50	0.00	Y	Arm 5 Left	10.41	21.6 %	1840	1840	
				Arm 6 Ahead	Inf	10.0 %			
				Arm 7 Right	28.00	68.3 %			
2/1 (Holydyke)	3.85	0.00	Y	Arm 6 Left	12.00	0.9 %	1865	1865	
				Arm 7 Ahead	Inf	37.6 %			
				Arm 8 Right	12.90	61.5 %			
3/1 (A1077 (E))	3.50	0.00	Y	Arm 8 Left	27.15	100.0 %	1862	1862	
3/2 (A1077 (E))	3.50	0.00	Y	Arm 5 Ahead	Inf	89.6 %	1920	1920	
				Arm 6 Right	6.65	10.4 %			
4/1 (A1077 (W) Lane 1)	Infinite Saturation Flow						Inf	Inf	
5/1 (Holydyke Lane 1)	Infinite Saturation Flow						Inf	Inf	
6/1 (Hungate Lane 1)	Infinite Saturation Flow						Inf	Inf	
7/1 (A1077 (E) Lane 1)	Infinite Saturation Flow						Inf	Inf	
8/1 (A1077 (W) Internal)	4.00	0.00	Y	Arm 4 Ahead	Inf	100.0 %	2015	2015	

Network Results

Scenario 1: '2021 Base AM' (FG1: '2021 Base AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	62.9%	-	-	0	0	0	12.8	-	-
A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	62.9%	-	-	0	0	0	12.8	-	-
1/1	A1077 (W) Left Ahead Right	U	A		1	61	-	598	1848	955	62.6%	598	598	-	-	-	4.3	25.7	15.0
2/1	Holydyke Left Ahead Right	U	C		1	35	-	351	1861	558	62.9%	351	351	-	-	-	4.4	44.9	10.9
3/1+3/2	A1077 (E) Ahead Right Left	U	B	D	1	74:9	65	535	1862:1934	710+161	61.4 : 61.4%	535	535	-	-	-	3.6	24.1	8.1
8/1	A1077 (W) Internal Ahead	U	E		1	100	-	650	2015	1696	38.3%	650	650	-	-	-	0.5	2.8	2.2
C1		PRC for Signalled Lanes (%):		43.2		PRC Over All Lanes (%):		43.2		Total Delay for Signalled Lanes (pcuHr):		12.75		Total Delay Over All Lanes(pcuHr):		12.75		Cycle Time (s): 120	

Scenario 2: '2021 Base PM' (FG2: '2021 Base PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)		
Network: A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	80.3%	-	-	0	0	0	18.2	-	-		
A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	80.3%	-	-	0	0	0	18.2	-	-		
1/1	A1077 (W) Left Ahead Right	U	A		1	66	-	821	1832	1023	80.3%	821	821	-	-	-	6.8	30.0	23.9		
2/1	Holydyke Left Ahead Right	U	C		1	31	-	389	1875	500	77.8%	389	389	-	-	-	6.1	56.4	13.7		
3/1+3/2	A1077 (E) Ahead Right Left	U	B	D	1	78.8	70	649	1862:1921	714+144	75.7 : 75.7%	649	649	-	-	-	4.7	25.9	10.8		
8/1	A1077 (W) Internal Ahead	U	E		1	101	-	759	2015	1713	44.3%	759	759	-	-	-	0.6	3.0	2.7		
C1		PRC for Signalled Lanes (%):		12.1		Total Delay for Signalled Lanes (pcuHr):		18.22		Cycle Time (s):		120		PRC Over All Lanes (%):		12.1		Total Delay Over All Lanes(pcuHr):		18.22	

Scenario 3: '2031 With Residential Allocation Sites AM' (FG3: '2031 With Residential Site Allocations AM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)
Network: A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	67.0%	-	-	0	0	0	14.2	-	-
A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	67.0%	-	-	0	0	0	14.2	-	-
1/1	A1077 (W) Left Ahead Right	U	A		1	61	-	640	1848	955	67.0%	640	640	-	-	-	4.8	27.1	16.7
2/1	Holydyke Left Ahead Right	U	C		1	35	-	363	1856	557	65.2%	363	363	-	-	-	4.6	45.8	11.4
3/1+3/2	A1077 (E) Ahead Right Left	U	B	D	1	74:9	65	640	1862:1935	861+161	62.6 : 62.6%	640	640	-	-	-	4.1	23.1	11.1
8/1	A1077 (W) Internal Ahead	U	E		1	100	-	770	2015	1696	45.4%	770	770	-	-	-	0.7	3.1	2.9
C1						PRC for Signalled Lanes (%):	34.3	Total Delay for Signalled Lanes (pcuHr):			14.22	Cycle Time (s):			120				
						PRC Over All Lanes (%):	34.3	Total Delay Over All Lanes(pcuHr):			14.22								

Scenario 4: '2031 With Residential Allocation Sites PM' (FG4: '2031 With Residential Site Allocations PM', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)		
Network: A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	86.2%	-	-	0	0	0	21.2	-	-		
A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	86.2%	-	-	0	0	0	21.2	-	-		
1/1	A1077 (W) Left Ahead Right	U	A		1	68	-	896	1833	1054	85.0%	896	896	-	-	-	8.0	32.2	27.4		
2/1	Holydyke Left Ahead Right	U	C		1	29	-	404	1874	469	86.2%	404	404	-	-	-	7.7	68.7	15.7		
3/1+3/2	A1077 (E) Ahead Right Left	U	B	D	1	80:8	72	692	1862:1922	755+144	77.0 : 77.0%	692	692	-	-	-	4.8	25.1	11.5		
8/1	A1077 (W) Internal Ahead	U	E		1	101	-	811	2015	1713	47.4%	811	811	-	-	-	0.7	3.1	2.9		
C1		PRC for Signalled Lanes (%):		4.4		Total Delay for Signalled Lanes (pcuHr):		21.24		Cycle Time (s):		120		PRC Over All Lanes (%):		4.4		Total Delay Over All Lanes(pcuHr):		21.24	

Scenario 5: 'Sensitivity Test AM (587 dwellings)' (FG5: 'Sensitivity Test AM (587 dwellings)', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)		
Network: A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	71.5%	-	-	0	0	0	16.1	-	-		
A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	71.5%	-	-	0	0	0	16.1	-	-		
1/1	A1077 (W) Left Ahead Right	U	A		1	64	-	707	1849	1002	70.6%	707	707	-	-	-	5.2	26.5	18.7		
2/1	Holydyke Left Ahead Right	U	C		1	33	-	376	1857	526	71.5%	376	376	-	-	-	5.3	50.4	12.4		
3/1+3/2	A1077 (E) Ahead Right Left	U	B	D	1	76:8	68	754	1862:1935	938+145	69.6 : 69.6%	754	754	-	-	-	4.8	23.1	14.5		
8/1	A1077 (W) Internal Ahead	U	E		1	101	-	891	2015	1713	52.0%	891	891	-	-	-	0.8	3.4	3.5		
C1		PRC for Signalled Lanes (%):		25.9		Total Delay for Signalled Lanes (pcuHr):		16.13		Cycle Time (s):		120		PRC Over All Lanes (%):		25.9		Total Delay Over All Lanes(pcuHr):		16.13	

Scenario 6: 'Sensitivity Test PM (587 dwellings)' (FG6: 'Sensitivity Test PM (587 dwellings)', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)		
Network: A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	89.6%	-	-	0	0	0	24.5	-	-		
A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	89.6%	-	-	0	0	0	24.5	-	-		
1/1	A1077 (W) Left Ahead Right	U	A		1	69	-	959	1835	1070	89.6%	959	959	-	-	-	9.8	36.9	31.7		
2/1	Holydyke Left Ahead Right	U	C		1	28	-	405	1874	453	89.4%	405	405	-	-	-	8.6	76.6	16.7		
3/1+3/2	A1077 (E) Ahead Right Left	U	B	D	1	81:8	73	741	1862:1920	784+144	79.9 : 79.9%	741	741	-	-	-	5.3	25.6	12.8		
8/1	A1077 (W) Internal Ahead	U	E		1	101	-	856	2015	1713	50.0%	856	856	-	-	-	0.8	3.2	3.3		
C1		PRC for Signalled Lanes (%):		0.5		Total Delay for Signalled Lanes (pcuHr):		24.49		Cycle Time (s):		120		PRC Over All Lanes (%):		0.5		Total Delay Over All Lanes(pcuHr):		24.49	

Scenario 7: 'Sensitivity Test AM (1,500 dwellings)' (FG19: 'Sensitivity Test AM (1,500 dwellings)', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)		
Network: A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	78.7%	-	-	0	0	0	20.9	-	-		
A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	78.7%	-	-	0	0	0	20.9	-	-		
1/1	A1077 (W) Left Ahead Right	U	A		1	64	-	789	1851	1003	78.7%	789	789	-	-	-	6.6	30.3	22.6		
2/1	Holydyke Left Ahead Right	U	C		1	34	-	418	1850	540	77.5%	418	418	-	-	-	6.2	53.3	14.3		
3/1+3/2	A1077 (E) Ahead Right Left	U	B	D	1	75:7	68	939	1862:1935	1081+129	77.5 : 78.3%	939	939	-	-	-	6.8	26.1	22.9		
8/1	A1077 (W) Internal Ahead	U	E		1	102	-	1118	2015	1730	64.6%	1118	1118	-	-	-	1.3	4.1	5.0		
C1		PRC for Signalled Lanes (%):		14.4		Total Delay for Signalled Lanes (pcuHr):		20.88		Cycle Time (s):		120		PRC Over All Lanes (%):		14.4		Total Delay Over All Lanes(pcuHr):		20.88	

Scenario 8: 'Sensitivity Test PM (1,500 dwellings)' (FG20: 'Sensitivity Test PM (1,500 dwellings)', Plan 1: 'Network Control Plan 1')

Item	Lane Description	Lane Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)	Arriving (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Total Delay (pcuHr)	Av. Delay Per PCU (s/pcu)	Mean Max Queue (pcu)		
Network: A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	106.4%	-	-	0	0	0	86.5	-	-		
A1077/Holydyke/Hungate Signalised Junction Option	-	-	-		-	-	-	-	-	-	106.4%	-	-	0	0	0	86.5	-	-		
1/1	A1077 (W) Left Ahead Right	U	A		1	71	-	1175	1840	1104	106.4%	1175	1104	-	-	-	54.2	165.9	84.0		
2/1	Holydyke Left Ahead Right	U	C		1	27	-	455	1865	435	104.6%	455	435	-	-	-	23.9	189.3	32.8		
3/1+3/2	A1077 (E) Ahead Right Left	U	B	D	1	82:7	75	792	1862:1920	754+128	89.8 : 89.8%	792	792	-	-	-	7.5	34.3	16.3		
8/1	A1077 (W) Internal Ahead	U	E		1	102	-	957	2015	1730	54.6%	945	945	-	-	-	0.9	3.3	3.5		
C1		PRC for Signalled Lanes (%):		-18.3		Total Delay for Signalled Lanes (pcuHr):		86.48		Cycle Time (s):		120		PRC Over All Lanes (%):		-18.3		Total Delay Over All Lanes(pcuHr):		86.48	