

Prepared on behalf of

Westwood Wilson Ltd.

**Proposed Residential Development
Westwood Mill, Linthwaite, Huddersfield**

Transport Assessment

Acknowledgements:

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The methodology adopted and the sources of information used by Sanderson Associates (Consulting Engineers) Ltd in providing its services are outlined within this Report.

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Report Ref:	10821/003/01	February 2019	
Author:	Brett Littlewood		
Checked & Approved:	Simon Burkinshaw MIHE	Date:	21 st February 2019

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LinSig Results

1 Introduction

1.1 A Transport Assessment (ref: 10821-001-02) has been prepared by Sanderson Associates in relation to development proposals comprising the part demolition and part conversion of Westwood Mill to form 63 apartments and 64 dwellings.

1.2 Following the submission of the report to the Council; Highways have requested further assessment which takes into consideration 2 N^o local plan sites which are to be treated as committed development. These sites are;

- Site H213: Black Rock Mills, Waingate, Linthwaite, Huddersfield; and,
- Site H712: Land south of, Hillside View, Linthwaite, Huddersfield.

1.3 The location of these sites are highlighted below;

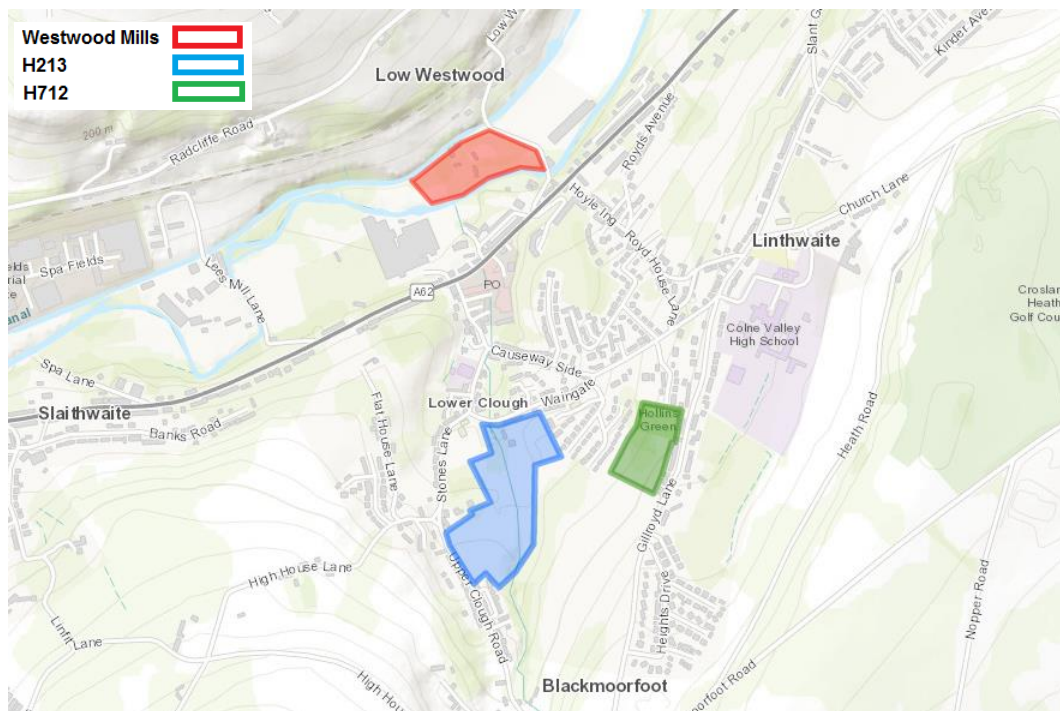


Figure 1 – Location of Local Plan sites in relation to application site

1.4 This report has been prepared as an Addendum to the original Transport Assessment and will identify the predicted trip generations and distributions associated with each Local Plan site and evaluate the cumulative impact on the local highway network.

2 Site H213: Black Rock Mills

2.1 This development comprised the construction of circa. 238 dwellings and was approved by the Council under planning application 2013/90853.

2.2 It should be noted that part of the development is already built and occupied. However, the extent which was occupied at the time of the surveys is unknown. Therefore, for the purpose of providing a robust assessment the impact of the full 238 units is to be assessed using the approved trip generations taken from Addendum Transport Assessment (ref: 6840-003-01) dated July 2013.

238 dwellings from 3.2.1	Traffic Generations		
	Arrivals	Departure	Total
0800-0900	27	82	109
1700-1800	79	44	123

Table extract from TA ref: 6840-003-01

2.3 With regards to distribution, the following suppositions were made;

- Departures: 68% to the west towards the A62 and 32% to the east towards Cowlersley Lane
- Arrivals: 77% from the west from the A62 and 23% from the east from Cowlersley Lane

2.4 In order to estimate the wider distribution (i.e. at the A62 and the A62 / Bargate signal junction); turning proportions have been calculated from the surveyed traffic flows undertaken as part of the Westwood Mills assessment. The overall distributions are illustrated overleaf:

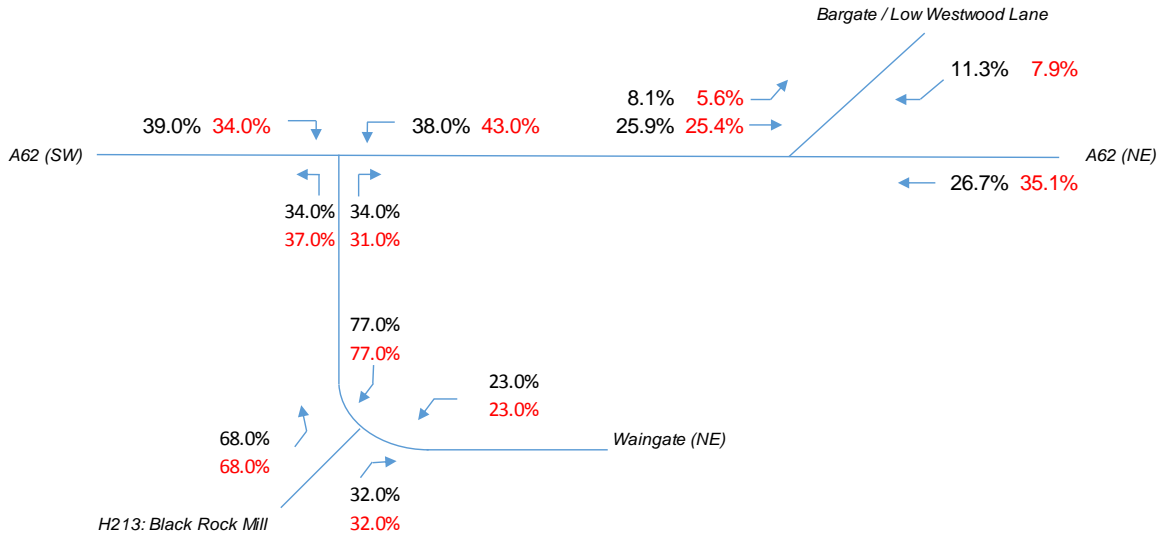


Figure 1 – Black Rock Mills development traffic distribution

2.5 The approved traffic generations have been assigned to the above distribution percentages and the resulting development traffic flows are shown below;

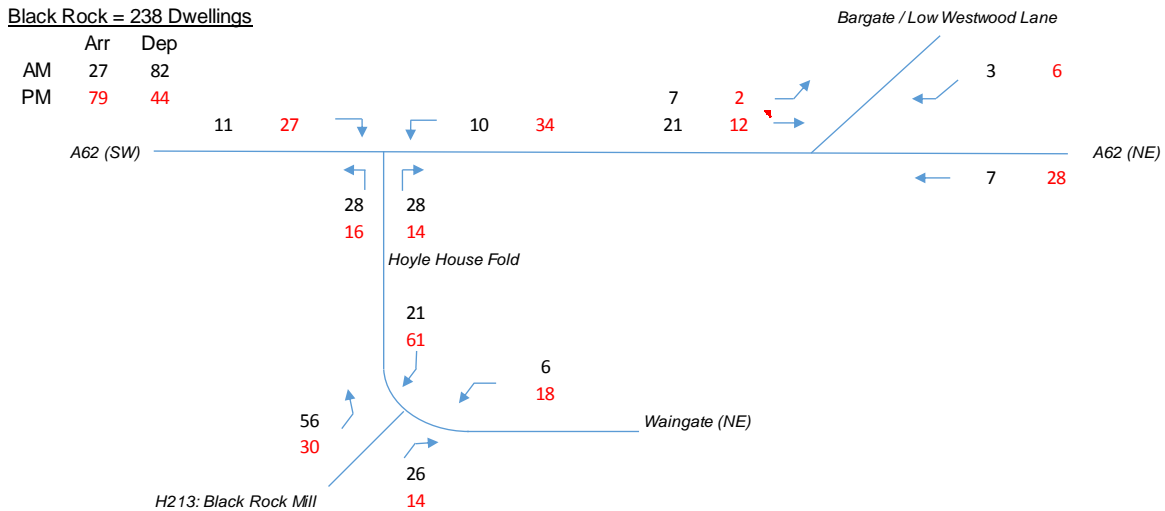


Figure 2 – Black Rock Mills development traffic flows

3 Site H712: Land south of Hillside View

3.1 This site is identified by the Council as having the capacity for circa. 65 dwellings. In order to establish the potential traffic generations from the site, we have applied a 0.7 two-way trip rate with a 60/40 split between arrivals and departures. This is consistent with the methodology of the Westwood Mills assessment.

3.2 The resulting peak hour traffic generations are as follows:

65 Units	Trip Rates			Traffic Generations		
	Arr	Dep	2-way	Arr	Dep	2-way
AM	0.28	0.42	0.7	18	27	46
PM	0.42	0.28	0.7	27	18	46

Table 3/1 – Predicted trip generations for 65 dwellings

3.3 To identify the likely distribution of traffic from this site a distribution assessment has been conducted using 2011 Census: Origin / Destination statistics (Dataset: WU03EW) which identifies 'Location of usual residence and place of work by method of travel to work' at Middle Super Output Area (MSOA) level.

3.4 The likely traffic route assignments between the committed development site and the identified MSOA's have been determined using online route mapping and Population Centroid Data which identifies the centre of each MSOA based upon its residential population.

3.5 The table included at **Appendix A** details the percentage draw from each surrounding MSOA and identifies the suggested route assignment on the local highway network.

3.6 The predicted distribution is illustrated on the figure overleaf;

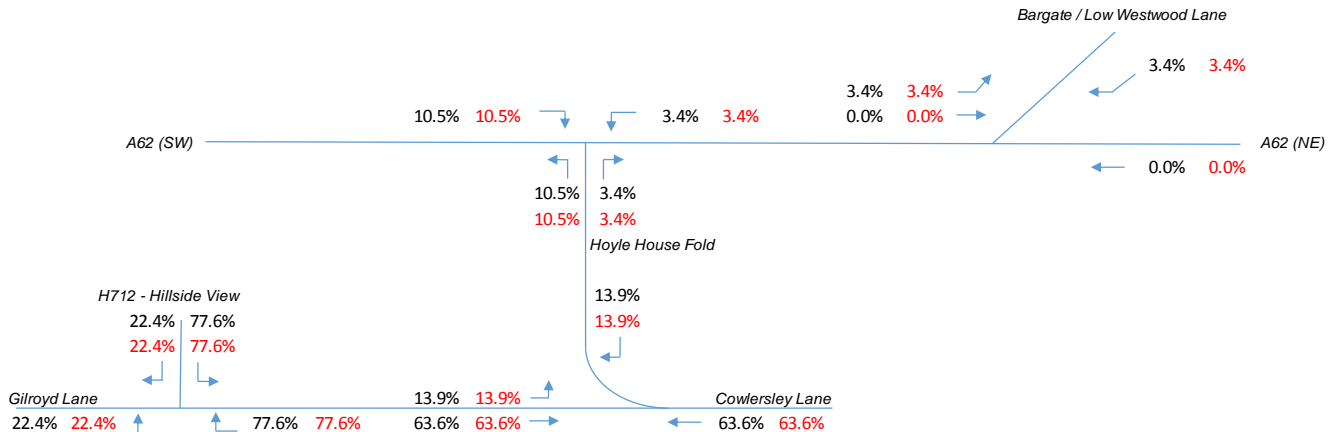


Figure 3 – Hillside View development traffic distribution

3.7 The traffic generations from Table 3/1 have been assigned to the above distribution percentages and the resulting development traffic flows are shown below;

Gilroyd Lane = 65 Dwellings

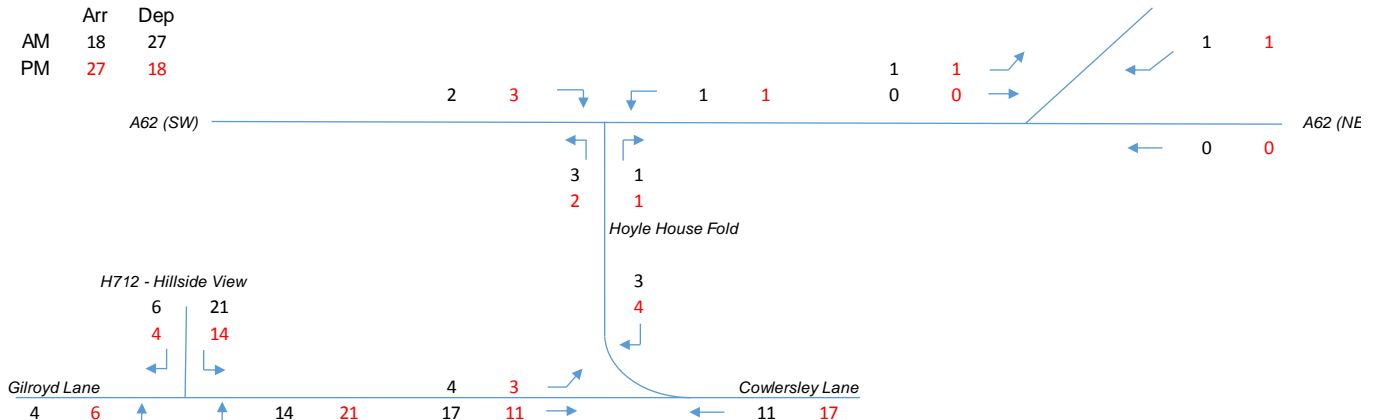


Figure 4 – Hillside View development traffic flows

4 Junction Modelling

- 4.1 As requested by the Council this assessment takes into consideration the 2 N^o local plan sites which are to be treated as committed development.
- 4.2 Using the base traffic flow data and the proposed development flows set out in Transport Assessment (ref: 10821-001-02) and committed development traffic set out earlier in this report, a capacity assessment has been undertaken of the A62 / Bargate / Coldwell Street signalised junction using the computer modelling program Linsig v3.2.
- 4.3 The controller specifications for the junction were obtained from Kirklees Council and details of the junction operation abstracted from them.
- 4.4 For assessment purposes the following development scenarios have been assessed:
- 2019 Base Traffic
 - 2019 Base Traffic + Committed Traffic
 - 2019 Base Traffic + Committed Traffic + Proposed Development
 - 2024 Base Traffic + Committed Traffic
 - 2024 Base Traffic + Committed Traffic + Proposed Development
- 4.5 The capacity threshold for a traffic signal controlled junction is a degree of saturation of 90%. This threshold is consistent with established traffic signal practice. It should be noted that this represents the practical rather than the absolute limit for the junction. The practical limit of 90% retains 10% spare capacity whereas the absolute limit stands at 100%.
- 4.6 The results of the scenarios modelled are summarised in the following tables with the full results included at **Appendix B**.

Item	Lane Description	2019 AMBase		2019 AMBase + Committed		2019 AMBase + Committed + Development		2024 AMBase + Committed		2024 AMBase + Committed + Development	
		Deg Sat (%)	MMQ (pcu)	Deg Sat (%)	MMQ (pcu)	Deg Sat (%)	MMQ (pcu)	Deg Sat (%)	MMQ (pcu)	Deg Sat (%)	MMQ (pcu)
A62 Manchester Road / Bargate Linthwaite	-	63.00%	-	64.30%	-	75.70%	-	72.90%	-	84.30%	-
1/1	A62 Man Rd (N) Ahead Left Right Right	61.20%	8.3	63.70%	8.5	75.70%	11	72.90%	9.6	83.60%	13
2/1	Ind Estate Left Right Ahead Right	7.70%	0.3	7.70%	0.3	7.70%	0.3	8.40%	0.3	8.40%	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	57.00%	9.6	60.50%	10.4	64.10%	11.1	64.80%	11.6	66.60%	12
4/1	Coldwell St Right Ahead Left Left	1.40%	0.1	1.40%	0.1	1.40%	0.1	1.40%	0.1	1.40%	0.1
5/1	Bargate Right Left Left2 Right	63.00%	5.1	64.30%	5.3	75.40%	7	69.00%	5.8	84.30%	8.4
		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90	
		PRC Over All Lanes (%): 42.8		PRC Over All Lanes (%): 40.0		PRC Over All Lanes (%): 18.9		PRC Over All Lanes (%): 23.5		PRC Over All Lanes (%): 6.8	

Table 4/1 – AM LinSig Results

4.7 The modelling results for the AM assessment scenarios show that even with 5 years base traffic growth and the addition of committed development traffic and development traffic, the junction would remain to operate with practical reserve capacity.

Item	Lane Description	2019 AM Base		2019 AM Base + Committed		2019 AM Base + Committed + Development		2024 AM Base + Committed		2024 AM Base + Committed + Development	
		Deg Sat (%)	MMQ (pcu)	Deg Sat (%)	MMQ (pcu)	Deg Sat (%)	MMQ (pcu)	Deg Sat (%)	MMQ (pcu)	Deg Sat (%)	MMQ (pcu)
A62 Manchester Road / Bargate Linthwaite	-	63.00%	-	64.30%	-	75.70%	-	72.90%	-	84.30%	-
1/1	A62 Man Rd (N) Ahead Left Right Right	61.20%	8.3	63.70%	8.5	75.70%	11	72.90%	9.6	83.60%	13
2/1	Ind Estate Left Right Ahead Right	7.70%	0.3	7.70%	0.3	7.70%	0.3	8.40%	0.3	8.40%	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	57.00%	9.6	60.50%	10.4	64.10%	11.1	64.80%	11.6	66.60%	12
4/1	Coldwell St Right Ahead Left Left	1.40%	0.1	1.40%	0.1	1.40%	0.1	1.40%	0.1	1.40%	0.1
5/1	Bargate Right Left Left2 Right	63.00%	5.1	64.30%	5.3	75.40%	7	69.00%	5.8	84.30%	8.4
		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90		Cycle Time (s): 90	
		PRC Over All Lanes (%): 42.8		PRC Over All Lanes (%): 40.0		PRC Over All Lanes (%): 18.9		PRC Over All Lanes (%): 23.5		PRC Over All Lanes (%): 6.8	

Table 4/2 – PM LinSig Results

4.8 The modelling results for the PM assessment scenarios also show that with 5 years base traffic growth and the addition of committed development traffic and development traffic, the junction would remain to operate with a material degree of practical reserve capacity.

5 Summary and Conclusion

- 5.1 A Transport Assessment (ref: 10821-001-02) has been prepared by Sanderson Associates in relation to development proposals comprising the part demolition and part conversion of Westwood Mill to form 63 apartments and 64 dwellings.
- 5.2 Following the submission of the report to the Council; Highways have requested further assessment which takes into consideration 2 N^o local plan sites which are to be treated as committed development. These sites are;
- Site H213: Black Rock Mills, Waingate, Linthwaite, Huddersfield; and,
 - Site H712: Land south of, Hillside View, Linthwaite, Huddersfield.
- 5.3 A junction capacity assessments has been undertaken at the A62 / Bargate / Coldwell Street signalised junction. The results of the modelling predict that the junction will operate with reserve capacity in a future design year of 2024 with development traffic.
- 5.4 The conclusion drawn from this assessment is that the residual cumulative impact of the development proposals could not be classed as “severe” under the terms of the NPPF paragraph 109. It is, therefore, concluded that there is no highway related reason why the development should not gain planning approval. The LPA are requested to confirm the findings of this report.

APPENDIX A
Census Distribution Assessment



WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

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population All usual residents aged 16 and over in employment the week before the census
 units Persons
 date 2011
 method of travel to work Driving a car or van

place of work : 2011 super output area - middle layer	usual residence E02002319 : Kirklees 049	%	Population Centroid		Suggested Routes				
			LATITUDE	LONGITUDE	A62 NE	A62 SW	Cowesley Lane	Gilroyd Lane (S)	Bargate
Kirklees 029	213	16.1%	53.662793	-1.774482922			16.1%		
Kirklees 049	139	10.5%	53.62243473	-1.870764008		10.5%			
Kirklees 045	103	7.8%	53.63547017	-1.833404492			7.8%		
Kirklees 042	102	7.7%	53.63767906	-1.774200861			7.7%		
Kirklees 033	71	5.4%	53.65368664	-1.818793049			5.4%		
Kirklees 052	55	4.2%	53.60381124	-1.922435613				4.2%	
Kirklees 055	52	3.9%	53.5930202	-1.8520789				3.9%	
Calderdale 025	51	3.9%	53.68276837	-1.839340735			3.9%		
Kirklees 039	49	3.7%	53.64450637	-1.804512408			3.7%		
Calderdale 008	41	3.1%	53.730992	-1.861927794			3.1%		
Kirklees 034	38	2.9%	53.65158955	-1.801115691			2.9%		
Kirklees 043	36	2.7%	53.63699514	-1.798262774				2.7%	
Kirklees 059	34	2.6%	53.57011979	-1.769208438				2.6%	
Kirklees 025	30	2.3%	53.67209457	-1.759159989			2.3%		
Kirklees 053	30	2.3%	53.60066202	-1.792815027				2.3%	
Kirklees 031	25	1.9%	53.65967639	-1.789816033			1.9%		
Kirklees 036	24	1.8%	53.64764511	-1.859338692					1.8%
Leeds 111	24	1.8%	53.79781511	-1.545775517			1.8%		
Kirklees 050	22	1.7%	53.61624653	-1.80740724				1.7%	
Kirklees 041	21	1.6%	53.64050344	-1.845854137					1.6%
Calderdale 019	16	1.2%	53.70953965	-1.78738712			1.2%		
Calderdale 015	15	1.1%	53.71907182	-1.779176744			1.1%		
Kirklees 038	15	1.1%	53.64796536	-1.833685082			1.1%		
Kirklees 047	15	1.1%	53.63273377	-1.814052125				1.1%	
Kirklees 048	15	1.1%	53.6284573	-1.787310843				1.1%	
Kirklees 058	15	1.1%	53.56948961	-1.802769243				1.1%	
Calderdale 021	13	1.0%	53.705159	-1.863018349			1.0%		
Kirklees 022	13	1.0%	53.67991278	-1.755612624			1.0%		
Kirklees 005	11	0.8%	53.72419675	-1.718424652			0.8%		
Kirklees 051	11	0.8%	53.61475209	-1.70996327				0.8%	
Kirklees 054	11	0.8%	53.59289016	-1.649788032				0.8%	
Bradford 039	10	0.8%	53.79808185	-1.746919373			0.8%		
Total	1,320	100.0%			A62 NE	A62 SW	Cowesley Lane	Gilroyd Lane (S)	Bargate
					0.0%	10.5%	63.6%	22.4%	3.4%

APPENDIX B

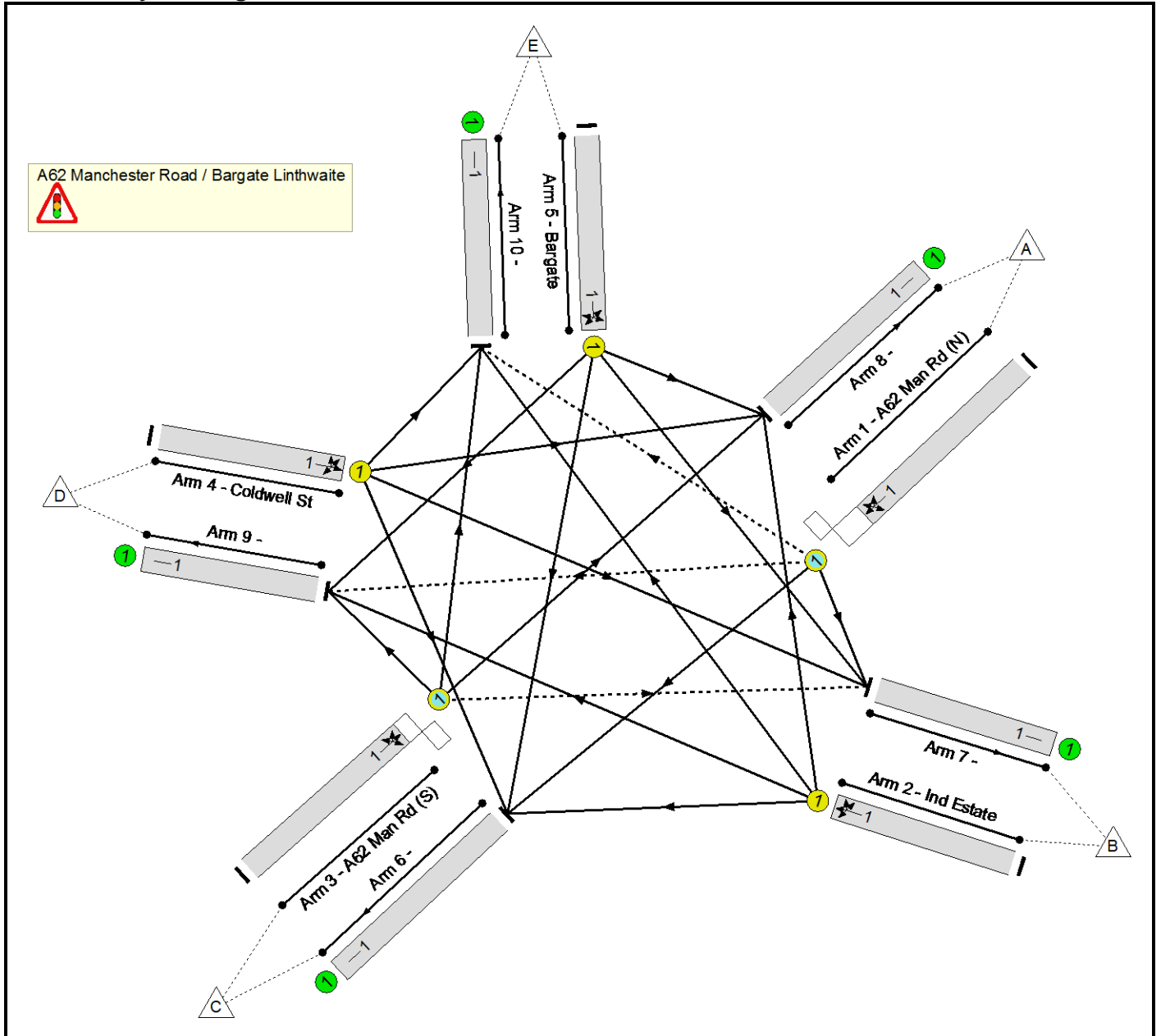
LinSig Results



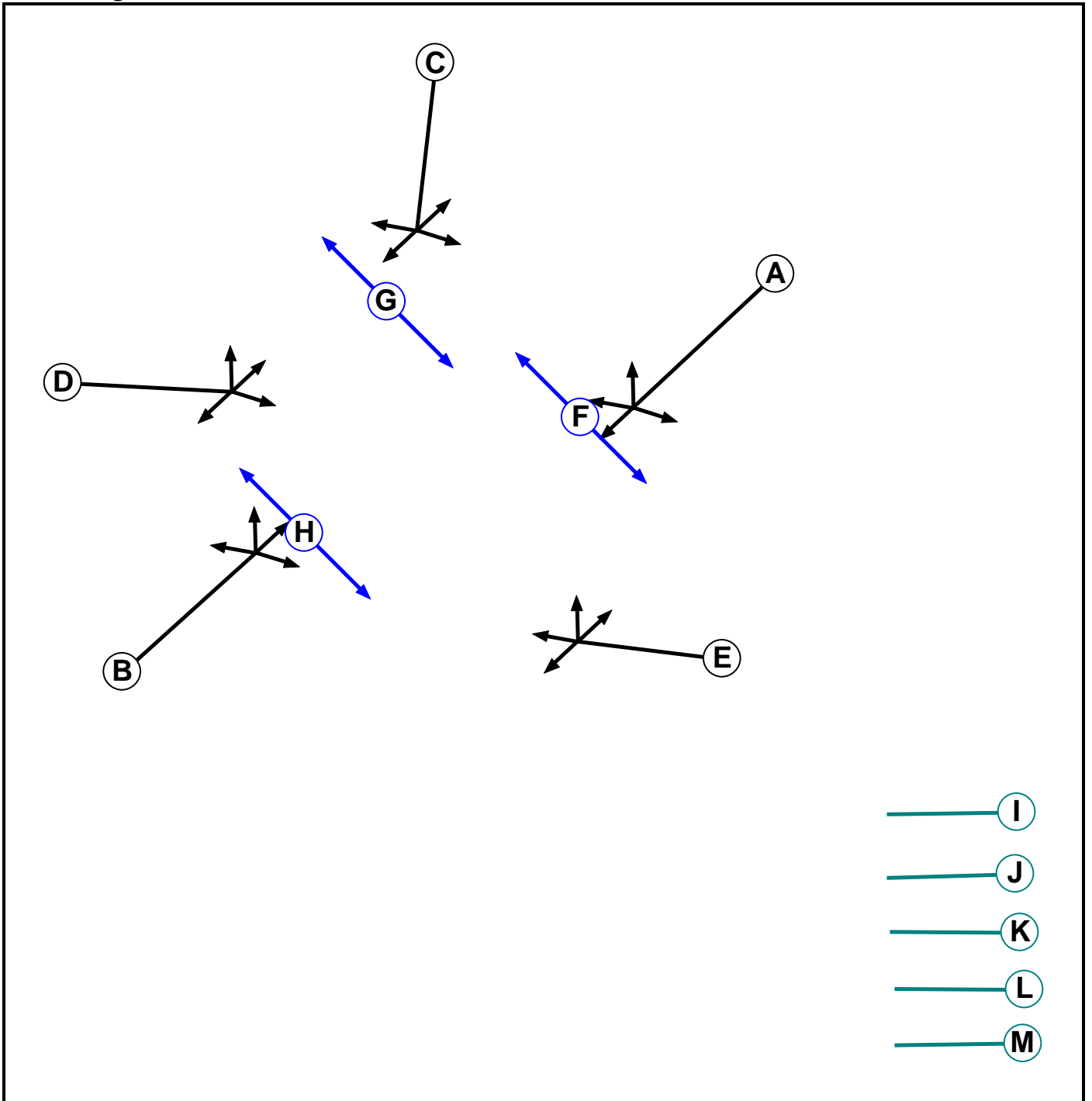
User and Project Details

Project:	Westwood Mill Linthwaite
Title:	Westwood Mill Linthwaite
Location:	A62 Manchester Road / Bargate, Linthwaite
Site Ref(s):	A62 / Bargate
Date Started:	January 2019
Date Completed:	January 2019
Flow Details:	2019 and 2024 models as agreed with Kirklees Council
Additional detail:	Junction is currently running VA as confirmed by Kirklees Council
File name:	A61 Manchester Rd Bargate, Linthwaite (Comm inc).lsg3x
Author:	Sanderson Associates
Company:	Sanderson Associates
Address:	

Junction 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
F	Pedestrian		6	6
G	Pedestrian		8	8
H	Pedestrian		7	7
I	Dummy		2	2
J	Dummy		2	2
K	Dummy		2	2
L	Dummy		2	2
M	Dummy		7	7

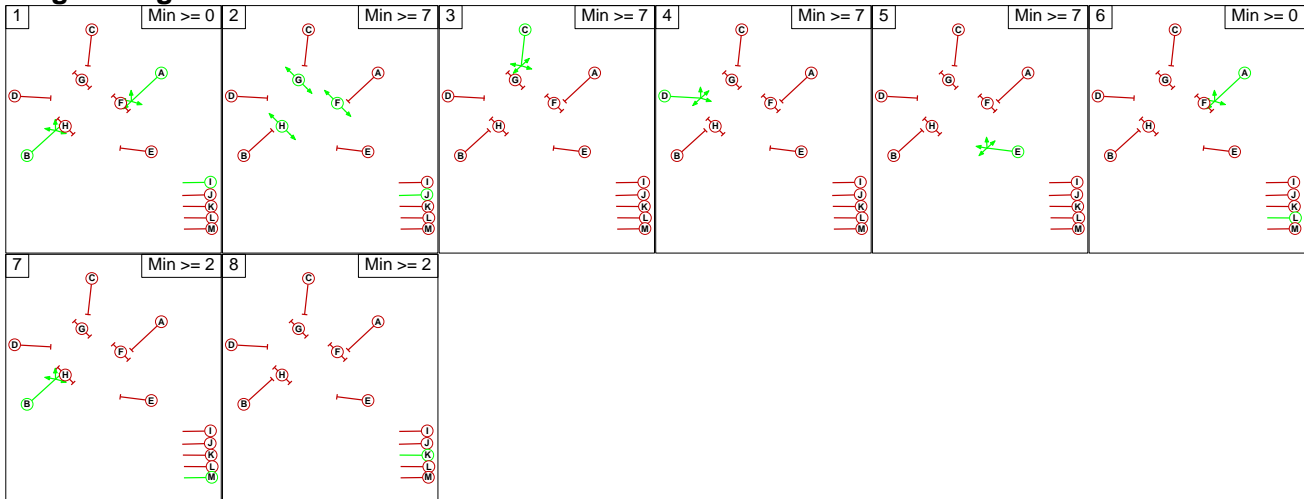
Phase Intergreens Matrix

	Starting Phase												
	A	B	C	D	E	F	G	H	I	J	K	L	M
A	-	6	8	7	7	7	9	-	9	3	-	6	
B	-	-	5	5	5	9	9	9	-	5	3	6	-
C	7	7	-	7	7	9	8	10	7	8	3	3	3
D	5	5	5	-	5	8	8	6	5	6	3	3	3
E	5	5	5	5	-	8	7	7	5	7	3	3	3
F	6	4	4	5	5	-	-	5	-	3	3	3	3
G	5	5	5	6	6	-	-	5	-	3	3	3	3
H	4	8	4	6	6	-	-	5	-	3	3	3	3
I	-	-	3	3	3	3	3	3	-	3	3	3	3
J	8	8	5	6	6	-	-	-	8	-	3	3	3
K	3	3	3	3	3	3	3	3	3	-	3	3	3
L	-	8	3	3	3	3	3	3	3	3	-	3	3
M	8	-	3	3	3	3	3	3	3	3	3	-	3

Phases in Stage

Stage No.	Phases in Stage
1	A B I
2	F G H J
3	C
4	D
5	E
6	A L
7	B M
8	K

Stages Diagram



Phase Delays

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

Prohibited Stage Changes

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

Lane Input Data

Junction: A62 Manchester Road / Bargate Linthwaite												
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 (A62 Man Rd (N))	O	A	2	3	60.0	Geom	-	3.80	0.00	Y	Arm 6 Ahead	Inf
											Arm 7 Left	5.00
											Arm 9 Right	25.00
											Arm 10 Right	7.00
2/1 (Ind Estate)	U	E	2	3	60.0	Geom	-	3.60	0.00	Y	Arm 6 Left	12.00
											Arm 8 Right	10.00
											Arm 9 Ahead	Inf
											Arm 10 Right	13.00
3/1 (A62 Man Rd (S))	O	B	2	3	60.0	Geom	-	3.90	0.00	Y	Arm 7 Right	15.00
											Arm 8 Ahead	Inf
											Arm 9 Left	9.00
											Arm 10 Left	Inf
4/1 (Coldwell St)	U	D	2	3	60.0	Geom	-	2.60	0.00	Y	Arm 6 Right	10.00
											Arm 7 Ahead	Inf
											Arm 8 Left	10.00
											Arm 10 Left	6.00
5/1 (Bargate)	U	C	2	3	60.0	Geom	-	2.70	7.00	Y	Arm 6 Right	Inf
											Arm 7 Left	20.00
											Arm 8 Left	6.00
											Arm 9 Right	9.00
6/1	U		2	3	60.0	Inf	-	-	-	-	-	-
7/1	U		2	3	60.0	Inf	-	-	-	-	-	-
8/1	U		2	3	60.0	Inf	-	-	-	-	-	-

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9/1	U		2	3	60.0	Inf	-	-	-	-	-	-
10/1	U		2	3	60.0	Inf	-	-	-	-	-	-

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Traffic Flow Groups

Flow Group	Start Time	End Time	Duration	Formula
1: '2019 AM Base Flows '	08:00	09:00	01:00	
2: '2019 PM Base Flows '	16:45	17:45	01:00	
3: 'AM Development Traffic '	08:00	09:00	01:00	
4: 'PM Development Traffic '	16:45	17:45	01:00	
5: '2024 AM Base Flows '	08:00	09:00	01:00	F1*1.0753
6: '2024 PM Base Flows '	16:45	17:45	01:00	F2*1.0739
7: '2019 AM Base + Dev Flows '	08:00	09:00	01:00	F1+F3
8: '2019 PM Base + Dev Flows '	16:45	17:45	01:00	F2+F4
9: '2024 AM Base + Dev Flows '	08:00	09:00	01:00	F5+F3
10: '2024 PM Base + Dev Flows '	16:45	17:45	01:00	F6+F4
11: 'AM Comm Dev Traffic H213'	08:00	09:00	01:00	
12: 'PM Comm Dev Traffic H213'	16:45	17:45	01:00	
13: 'AM Comm Dev Traffic H712'	08:00	09:00	01:00	
14: 'PM Comm Dev Traffic H712'	16:45	17:45	01:00	
15: '2019 AM Base + Comm'	08:00	09:00	01:00	F1+F11+F13
16: '2019 PM Base + Comm '	16:45	17:45	01:00	F2+F12+F14
17: '2024 AM Base + Comm'	08:00	09:00	01:00	F5+F11+F13
18: '2024 PM Base + Comm '	16:45	17:45	01:00	F6+F12+F14
19: '2019 AM Base + Comm + Dev Flows '	08:00	09:00	01:00	F1+F3+F11+F13
20: '2019 PM Base + Comm + Dev Flows '	16:45	17:45	01:00	F2+F4+F12+F14
21: '2024 AM Base + Comm + Dev Flows '	08:00	09:00	01:00	F5+F3+F11+F13
22: '2024 PM Base + Comm + Dev Flows '	16:45	17:45	01:00	F6+F4+F12+F14

Link Results

Scenario 1: '2019 AM Base ' (FG1: '2019 AM Base Flows ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	63.0%	6.7	9.2	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	63.0%	6.7	9.2	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	36	-	402	656	61.2%	2.2	3.1	8.3
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	12	155	7.7%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	36	-	469	823	57.0%	2.7	3.3	9.6
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	17	-	188	298	63.0%	1.7	2.6	5.1
C1 PRC for Signalled Lanes (%): 42.8 Total Delay for Signalled Lanes (pcuHr): 9.22 Cycle Time (s): 90 PRC Over All Lanes (%): 42.8 Total Delay Over All Lanes(pcuHr): 9.22													

Scenario 2: '2019 PM Base ' (FG2: '2019 PM Base Flows ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)	
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	60.9%	6.4	8.5	-	
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	60.9%	6.4	8.5	-	
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	39	-	504	827	60.9%	2.6	3.5	10.2	
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	14	154	9.1%	0.1	0.2	0.4	
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	39	-	441	890	49.5%	2.2	2.7	8.3	
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1	
5/1	Bargate Right Left Left2 Right2	U	C		1	14	-	147	245	59.9%	1.4	2.2	4.1	
C1					PRC for Signalled Lanes (%):	47.8	Total Delay for Signalled Lanes (pcuHr):			8.54	Cycle Time (s):			90
					PRC Over All Lanes (%):	47.8	Total Delay Over All Lanes(pcuHr):			8.54				

Scenario 3: '2024 AM Base ' (FG5: '2024 AM Base Flows ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	70.1%	7.4	10.6	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	70.1%	7.4	10.6	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	36	-	432	617	70.1%	2.4	3.8	9.3
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	13	155	8.4%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	36	-	504	823	61.3%	2.9	3.7	10.6
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	17	-	202	298	67.8%	1.9	2.9	5.7

C1	PRC for Signalled Lanes (%): 28.5	Total Delay for Signalled Lanes (pcuHr): 10.59	Cycle Time (s): 90
	PRC Over All Lanes (%): 28.5	Total Delay Over All Lanes(pcuHr): 10.59	

Scenario 4: '2024 PM Base ' (FG6: '2024 PM Base Flows ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	65.7%	7.0	9.6	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	65.7%	7.0	9.6	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	39	-	541	823	65.7%	2.9	3.9	11.3
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	15	154	9.7%	0.2	0.2	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	39	-	474	890	53.2%	2.4	3.0	9.1
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	14	-	157	246	63.9%	1.5	2.4	4.5
C1				PRC for Signalled Lanes (%): 36.9	Total Delay for Signalled Lanes (pcuHr): 9.55	Cycle Time (s): 90							
				PRC Over All Lanes (%): 36.9	Total Delay Over All Lanes(pcuHr): 9.55								

Scenario 5: '2019 AM Base + Comm' (FG15: '2019 AM Base + Comm', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	64.3%	7.0	9.8	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	64.3%	7.0	9.8	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	36	-	409	642	63.7%	2.3	3.3	8.5
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	12	155	7.7%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	36	-	498	823	60.5%	2.9	3.6	10.4
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	17	-	192	299	64.3%	1.8	2.6	5.3
C1		PRC for Signalled Lanes (%):		40.0	Total Delay for Signalled Lanes (pcuHr):		9.78	Cycle Time (s):		90			
		PRC Over All Lanes (%):		40.0	Total Delay Over All Lanes(pcuHr):		9.78						

Scenario 6: '2019 PM Base + Comm' (FG16: '2019 PM Base + Comm ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	63.9%	6.8	9.1	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	63.9%	6.8	9.1	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	39	-	532	833	63.9%	2.8	3.8	10.9
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	14	154	9.1%	0.1	0.2	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	39	-	456	890	51.2%	2.3	2.8	8.6
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	14	-	154	246	62.5%	1.5	2.3	4.4

C1	PRC for Signalled Lanes (%): 40.9	Total Delay for Signalled Lanes (pcuHr): 9.14	Cycle Time (s): 90
	PRC Over All Lanes (%): 40.9	Total Delay Over All Lanes(pcuHr): 9.14	

Scenario 7: '2019 AM Base + Comm + Dev' (FG19: '2019 AM Base + Comm + Dev Flows ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	75.7%	8.0	12.1	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	75.7%	8.0	12.1	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	35	-	423	559	75.7%	2.5	4.3	11.0
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	12	155	7.7%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	35	-	513	800	64.1%	3.1	4.0	11.1
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	18	-	235	312	75.4%	2.2	3.6	7.0
C1				PRC for Signalled Lanes (%): 18.9	Total Delay for Signalled Lanes (pcuHr): 12.11	Cycle Time (s): 90							
				PRC Over All Lanes (%): 18.9	Total Delay Over All Lanes(pcuHr): 12.11								

Scenario 8: '2019 PM Base + Comm + Dev' (FG20: '2019 PM Base + Comm + Dev Flows ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	74.7%	7.5	10.9	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	74.7%	7.5	10.9	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	39	-	556	776	71.7%	3.1	4.5	12.8
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	14	154	9.1%	0.1	0.2	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	39	-	475	890	53.4%	2.4	3.0	9.1
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	14	-	183	245	74.7%	1.8	3.2	5.7
C1		PRC for Signalled Lanes (%):		20.5	Total Delay for Signalled Lanes (pcuHr):		10.91	Cycle Time (s):		90			
		PRC Over All Lanes (%):		20.5	Total Delay Over All Lanes (pcuHr):		10.91						

Scenario 9: '2024 AM Base + Comm' (FG17: '2024 AM Base + Comm', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	72.9%	7.7	11.3	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	72.9%	7.7	11.3	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	36	-	439	602	72.9%	2.5	4.0	9.6
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	13	155	8.4%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	36	-	533	823	64.8%	3.1	4.1	11.6
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	17	-	206	298	69.0%	1.9	3.0	5.8

C1	PRC for Signalled Lanes (%): 23.5	Total Delay for Signalled Lanes (pcuHr): 11.28	Cycle Time (s): 90
	PRC Over All Lanes (%): 23.5	Total Delay Over All Lanes(pcuHr): 11.28	

Scenario 10: '2024 PM Base + Comm' (FG18: '2024 PM Base + Comm ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	69.2%	7.4	10.2	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	69.2%	7.4	10.2	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	39	-	569	823	69.2%	3.1	4.3	12.2
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	15	154	9.7%	0.2	0.2	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	39	-	489	890	54.9%	2.5	3.1	9.6
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	14	-	164	246	66.6%	1.6	2.6	4.8
C1				PRC for Signalled Lanes (%): 30.1	Total Delay for Signalled Lanes (pcuHr): 10.24	Cycle Time (s): 90							
				PRC Over All Lanes (%): 30.1	Total Delay Over All Lanes(pcuHr): 10.24								

Scenario 11: '2024 AM Base + Comm + Dev' (FG21: '2024 AM Base + Comm + Dev Flows ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	84.3%	8.6	14.7	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	84.3%	8.6	14.7	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	36	-	453	542	83.6%	2.8	5.4	13.0
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	13	155	8.4%	0.1	0.2	0.3
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	36	-	548	823	66.6%	3.3	4.3	12.0
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	2	145	1.4%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	17	-	249	295	84.3%	2.4	4.8	8.4
C1					PRC for Signalled Lanes (%): 6.8		Total Delay for Signalled Lanes (pcuHr): 14.71		Cycle Time (s): 90				
					PRC Over All Lanes (%): 6.8		Total Delay Over All Lanes(pcuHr): 14.71						

Scenario 12: '2024 PM Base + Comm + Dev' (FG22: '2024 PM Base + Comm + Dev Flows ', 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)	Capacity (pcu)	Deg Sat (%)	Uniform Delay (pcuHr)	Total Delay (pcuHr)	Mean Max Queue (pcu)
Network: Westwood Mill Linthwaite	-	-	-		-	-	-	-	-	79.9%	8.2	12.8	-
A62 Manchester Road / Bargate Linthwaite	-	-	-		-	-	-	-	-	79.9%	8.2	12.8	-
1/1	A62 Man Rd (N) Ahead Left Right Right2	O	A		1	39	-	593	742	79.9%	3.5	5.5	15.0
2/1	Ind Estate Left Right Ahead Right2	U	E		1	7	-	15	154	9.7%	0.2	0.2	0.4
3/1	A62 Man Rd (S) Right Ahead Left Left2	O	B		1	39	-	508	890	57.1%	2.6	3.3	10.0
4/1	Coldwell St Right Ahead Left Left2	U	D		1	7	-	3	141	2.1%	0.0	0.0	0.1
5/1	Bargate Right Left Left2 Right2	U	C		1	14	-	193	245	78.7%	1.9	3.7	6.3

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C1	PRC for Signalled Lanes (%):	12.6	Total Delay for Signalled Lanes (pcuHr):	12.75	Cycle Time (s):	90
	PRC Over All Lanes (%):	12.6	Total Delay Over All Lanes(pcuHr):	12.75		