



TPS Transport Consultants Ltd

Technical Note

Client	Warrior Developments
Project	High Street, Goldthorpe
TPS Reference	P1902
Date Prepared	March 2022
Prepared By	JM
Checked By	CG

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1. INTRODUCTION

- 1.1 TPS Transport Consultants Ltd (TPS) has been appointed by Warrior Developments to prepare a Highways Technical Note in support of a planning application for the redevelopment of the former Goldthorpe Primary School site, to the immediate south of Doncaster Road, in Goldthorpe.
- 1.2 The site is currently subject to a planning application (ref: 2022/0056), which is pending a decision.
- 1.3 This Technical Note has been prepared to address comments provided by Barnsley Metropolitan Borough Council (BMBC) dated February 2022

2. BMBC HIGHWAYS COMMENTS

2.1 The following comments were provided by the BMBC Highways Officer on 21st February 2022 and are summarised below, for ease of reference, along with our response, which can be found in **Section 3** of this Technical Note:

- *I am not aware that any details have been provided with regard to the manoeuvre that will need to be undertaken by delivery vehicles. Paragraph 7.11 of the Transport Assessment refers to the drawing at Appendix A illustrating the swept path analysis of a 16.5m articulated vehicle manoeuvring within the site but no swept path is shown on the drawing. Likewise, with the supporting document 'Servicing Management Plan', no swept path analysis is contained within it. This swept path analysis needs to be provided so that the servicing/delivery aspect of the site can be properly assessed.*
- *For the assessment of the Barnsley Road/Doncaster Road/High Street signalised junction the committed development flows need to include the residential site off East Street (2021/1171) as well as the Kingsmark Way residential development. This application and app.no. 2021/1171 are both current applications that are yet to be determined and I am aware that the Transport Assessments for both proposed developments have been produced by the same Transport Consultants. I would therefore like to see the modelling of the High Street signalised junction in each of the respective TA's to have the same flows and therefore identical results. Also, our Traffic Signals department has stated a requirement for the signalised junction to be modelled using sat flows of 1600 PCU's. Although this is lower than the figure that would perhaps ordinarily be used elsewhere, there is significant evidence that shows that sat flows are lower than average in Barnsley.*

3. RESPONSE TO HIGHWAYS COMMENTS

Introduction

3.1 Each point made by the Highways Officer is addressed in turn, below.

Swept Path Analysis

3.2 Swept path analysis of a 16.5m articulated vehicle, accessing and egressing the site and entering the servicing area is provided at **Appendix A**.

3.3 The swept path analysis demonstrates that servicing vehicles would not be required to overrun the footway when accessing or egressing the site and can safely access the servicing area.

Operational Assessments

3.4 As requested by BMBC, trip generation for the following two developments have been included as committed development flows, for the operational assessment carried out at the High Street / Doncaster Road junction:

- East Street (2021/1171); and
- Kingsmark Way (2018/0103).

3.5 Traffic Flow diagrams can be found at **Appendix B**.

3.6 Furthermore, saturation flows at each of the approaches has been fixed at 1,600 pcus. Consequently, the Doncaster Road / Barnsley Road / High Street signalised T-junction has been remodelled for the Base + Committed Development and Base + Committed Development + Development scenarios, in the current and design year. The results are summarised in **Table 3.1** and **Table 3.2**, below, while full outputs can be found in **Appendix C**.

Table 3.1: Doncaster Road / Barnsley Road / High Street, Base + Committed Development

	2021 + Committed Development						2026 + Committed Development					
	AM		PM		Saturday		AM		PM		Saturday	
	Dos	Ø	Dos	Ø	Dos	Ø	Dos	Ø	Dos	Ø	Dos	Ø
Doncaster Road	44.3	11.4	42.9	10.6	38.0	9.7	45.5	11.8	44.1	11.0	39.4	10.2
High Street	74.9	19.7	75.7	21.6	57.3	12.4	79.7	21.5	80.2	23.5	61.0	13.3

Barnsley Road	73.9	18.1	76.0	18.9	57.8	15.3	78.2	19.5	79.3	20.4	60.5	16.3
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(Source: LINSIG 3)

- 3.7 As can be seen from **Table 3.1**, the Doncaster Road / Barnsley Road / High Street junction operates within capacity in all peak periods, both currently and in the design year of 2026. **Table 3.2** summarises the operation of the junction, with the addition of the development traffic.

Table 3.2: Doncaster Road / Barnsley Road / High Street, Base + Committed Development + Development

	2021						2026					
	AM		PM		Saturday		AM		PM		Saturday	
	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q	DoS	Q
Doncaster Road	44.7	11.6	44.1	10.8	40.6	10.3	45.8	12.0	42.0	11.3	42.0	10.8
High Street	78.4	21.1	82.0	25.0	63.7	15.0	83.2	23.0	71.3	27.3	67.5	16.0
Barnsley Road	78.2	18.9	81.2	20.2	63.9	16.8	82.6	20.7	82.7	21.8	67.8	17.9

(Source: LINSIG 3)

- 3.8 As can be seen from **Table 3.2**, with the addition of development trips there is an increase in the DoS and queue lengths at the junction. The highest anticipated DoS is 82.7% on the Barnsley Road approach with an associated queue of 21.8 pcu's. This is an increase in DoS of just 3.4% and an increase in queue length of just 1.4 pcu's. This level of increase cannot be considered to constitute a severe impact, particularly as the junction operates within capacity.

4. SUMMARY AND CONCLUSIONS

- 4.1 TPS has been appointed by Warrior Developments (the client) to provide transport and highways advice in relation to a planning application for the redevelopment of the former Goldthorpe Primary School site, to the immediate south of Doncaster Road, in Goldthorpe.
- 4.2 The site is currently subject to a planning application (ref: 2022/0056), which is pending a decision.
- 4.3 Comments have been provided by the Barnsley Metropolitan Borough Council (BMBC) Highways Officer, on 22nd February 2022 and are summarised below:.
- Swept Path Analysis of a 16.5m articulated vehicle should be provided;
 - Trip generation for two committed development sites (East Street and Kingsmark Way, should be included); and
 - Saturation flows should be set to 1,600 pcu.
- 4.4 The swept path analysis further demonstrates that servicing vehicles would not be required to overrun the footway when accessing or egressing the site and can safely access the servicing area.
- 4.5 Operational assessments of the High Street / Doncaster Road junction indicate a negligible uplift in queue length and degree of saturation. This level of increase cannot be considered to constitute a severe impact, particularly as the junction operates within capacity.
- 4.6 As such, there are no substantive highway grounds why the development should not be granted consent.



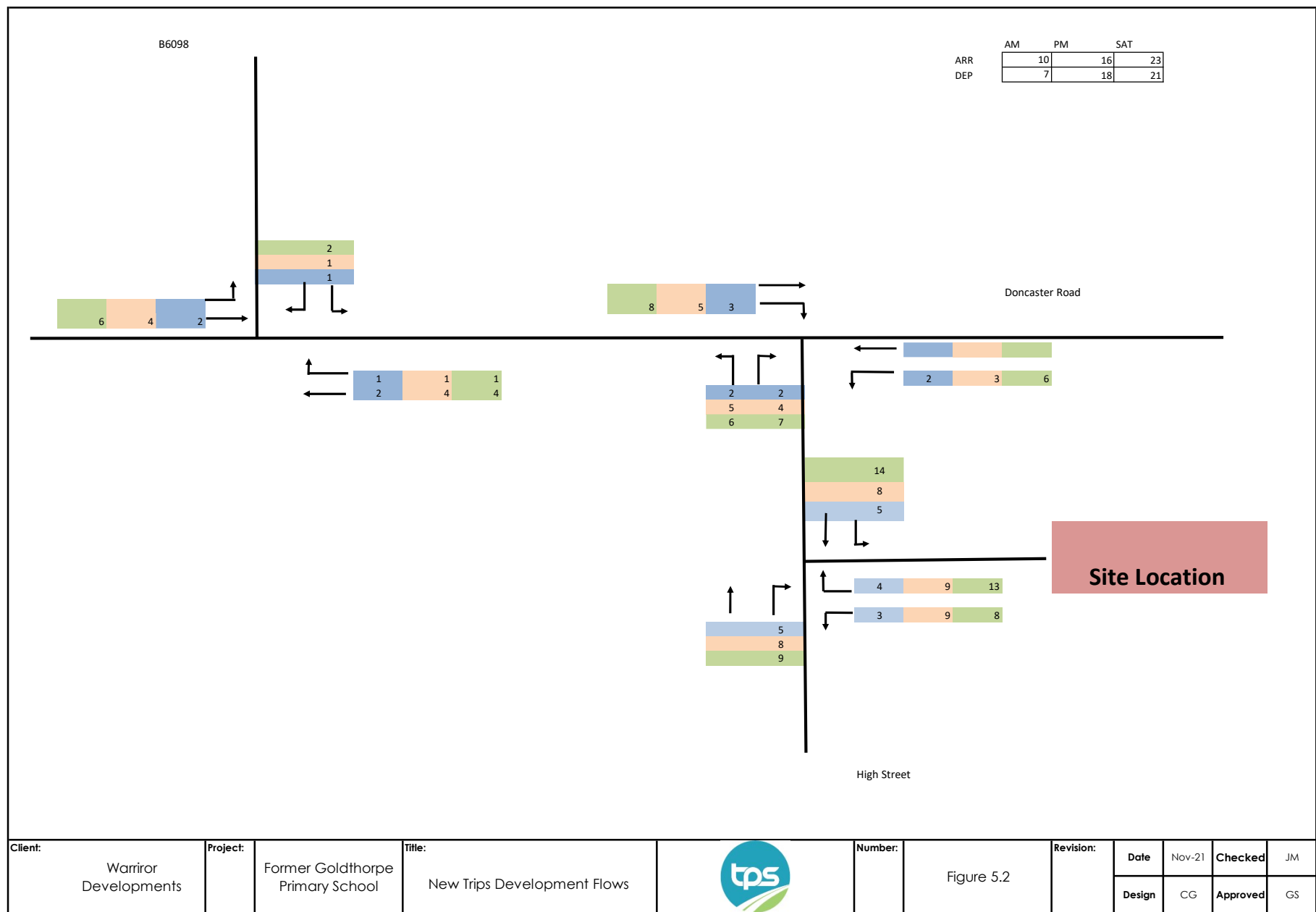
Appendix A

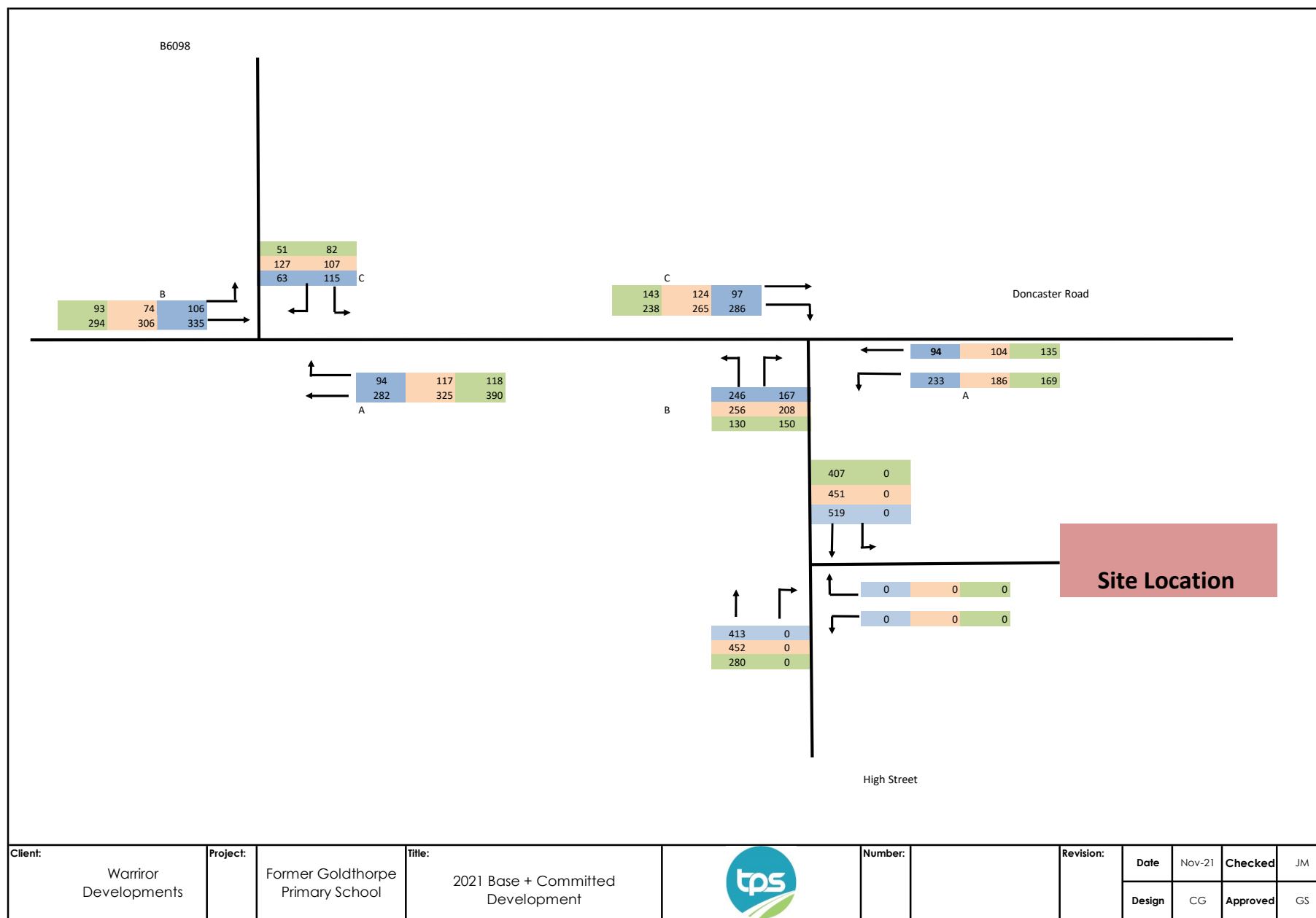
Swept Path Analysis



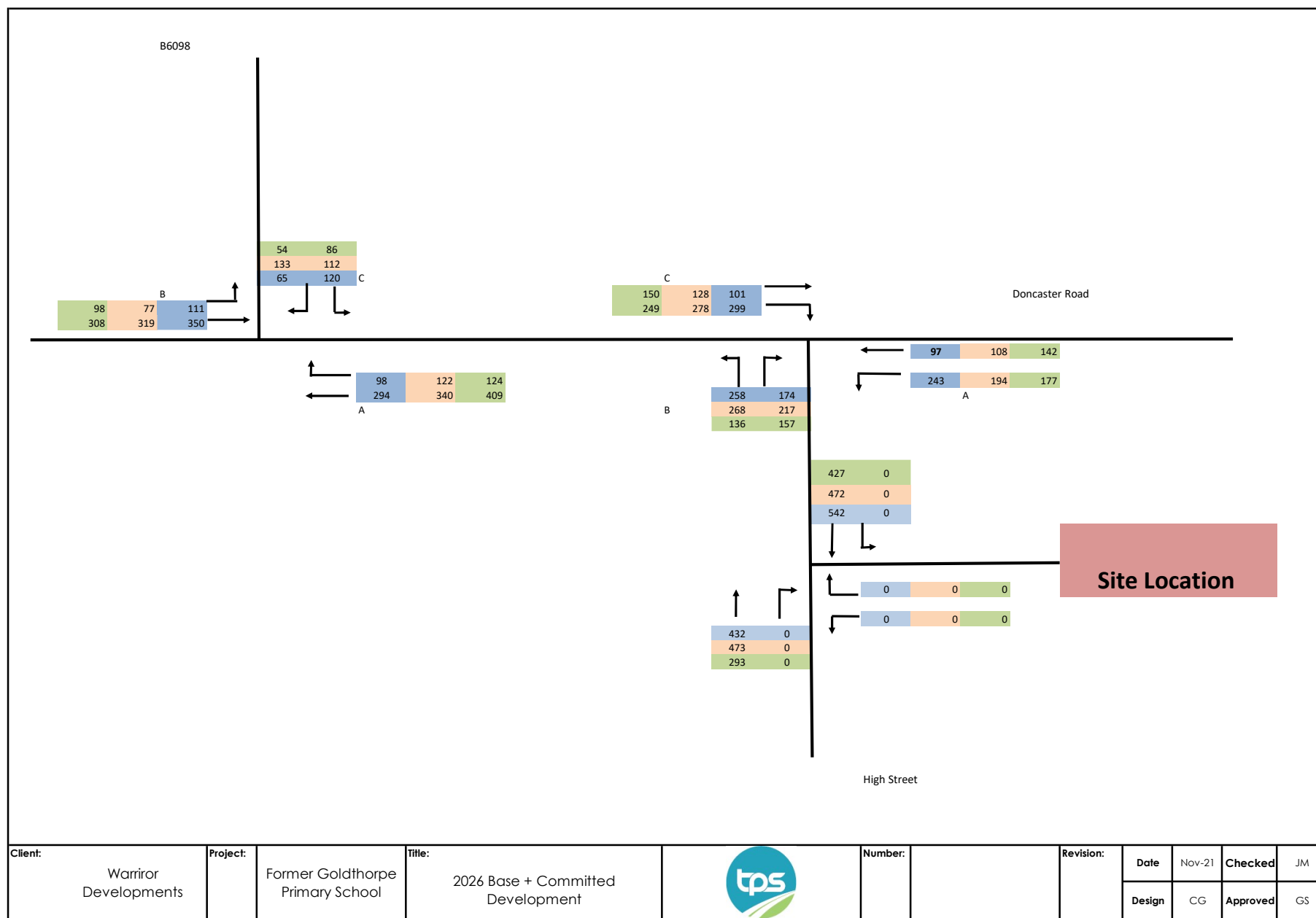
Appendix B

Traffic Flow Diagrams

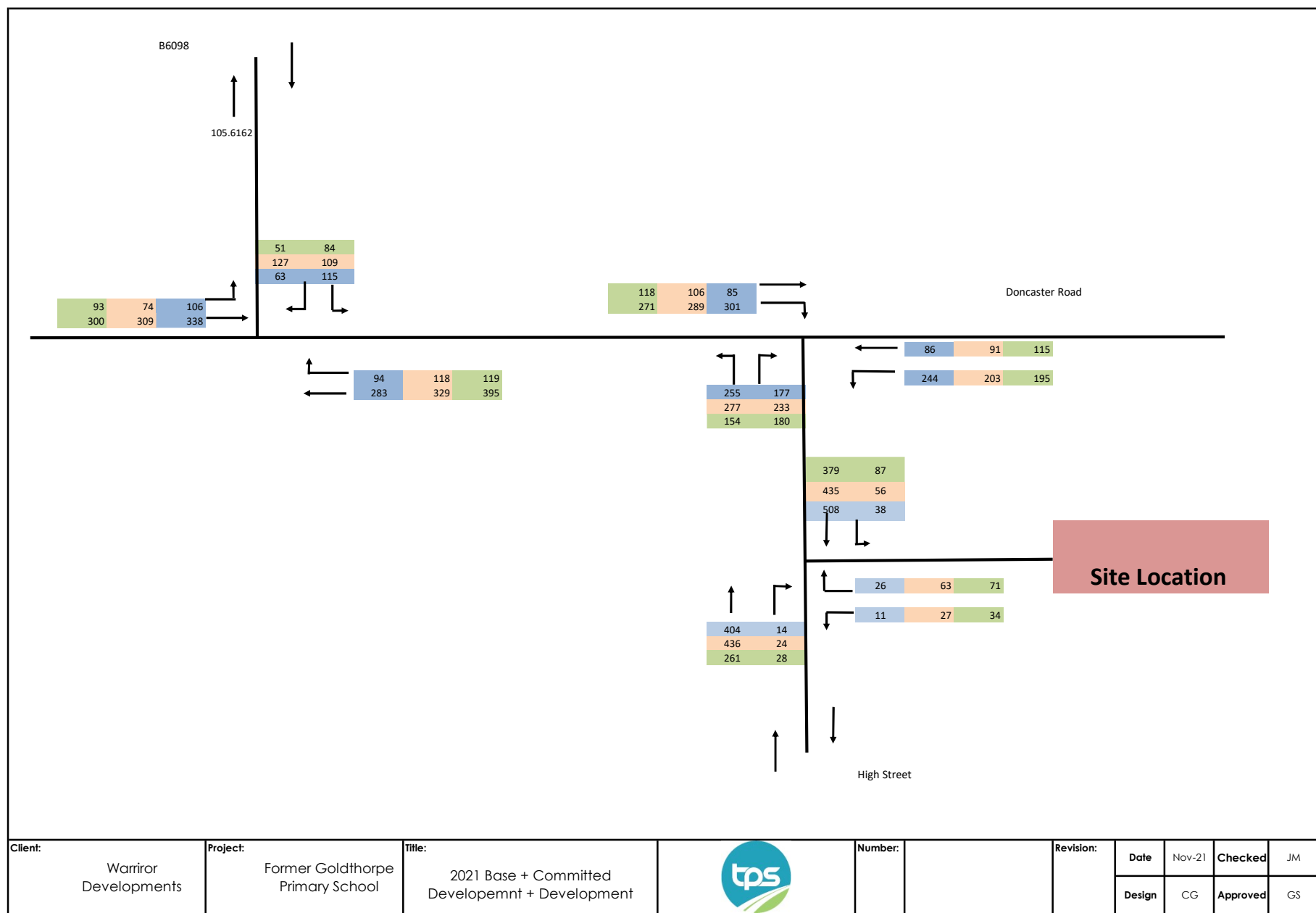




Client:	Project:	Former Goldthorpe Primary School	Title:	2021 Base + Committed Development		Number:		Revision:	Date	Nov-21	Checked	JM
									Design	CG	Approved	GS



Client:	Project:	Former Goldthorpe Primary School	Title:	2026 Base + Committed Development		Number:		Revision:		Date	Nov-21	Checked	JM
										Design	CG	Approved	GS



Client:	Project:	Title:		Number:		Revision:	Date	Nov-21	Checked	JM
							Design	CG	Approved	GS

Warriror
Developments

Former Goldthorpe
Primary School

2021 Base + Committed
Developemnt + Development



Nov-21

Checked

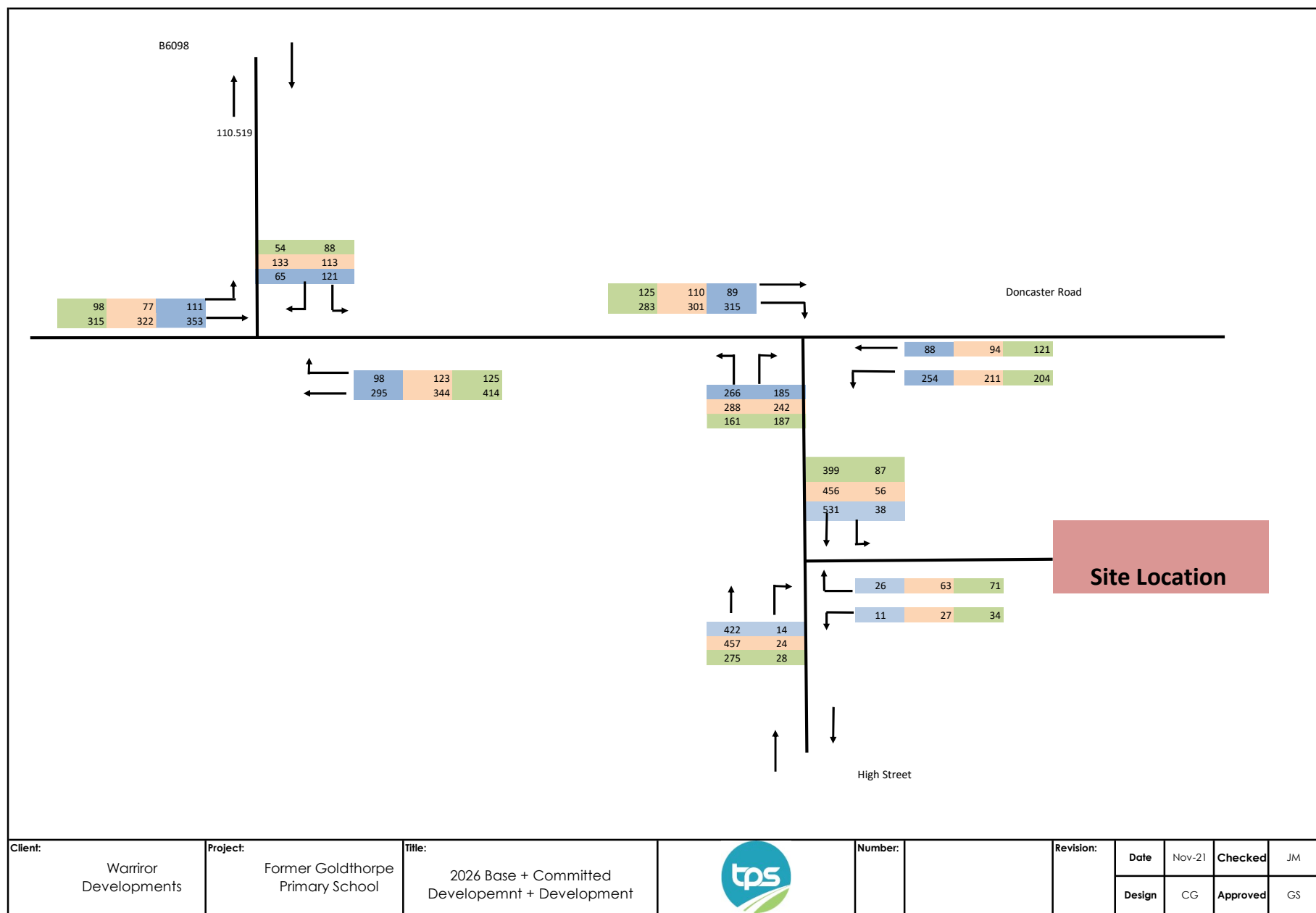
JM

Design

CG

Approved

GS



Client:	Warrior Developments	Project:	Former Goldthorpe Primary School	Title:	2026 Base + Committed Developemnt + Development		Number:		Revision:		Date	Nov-21	Checked	JM
											Design	CG	Approved	GS



Appendix C

LinSig Outputs

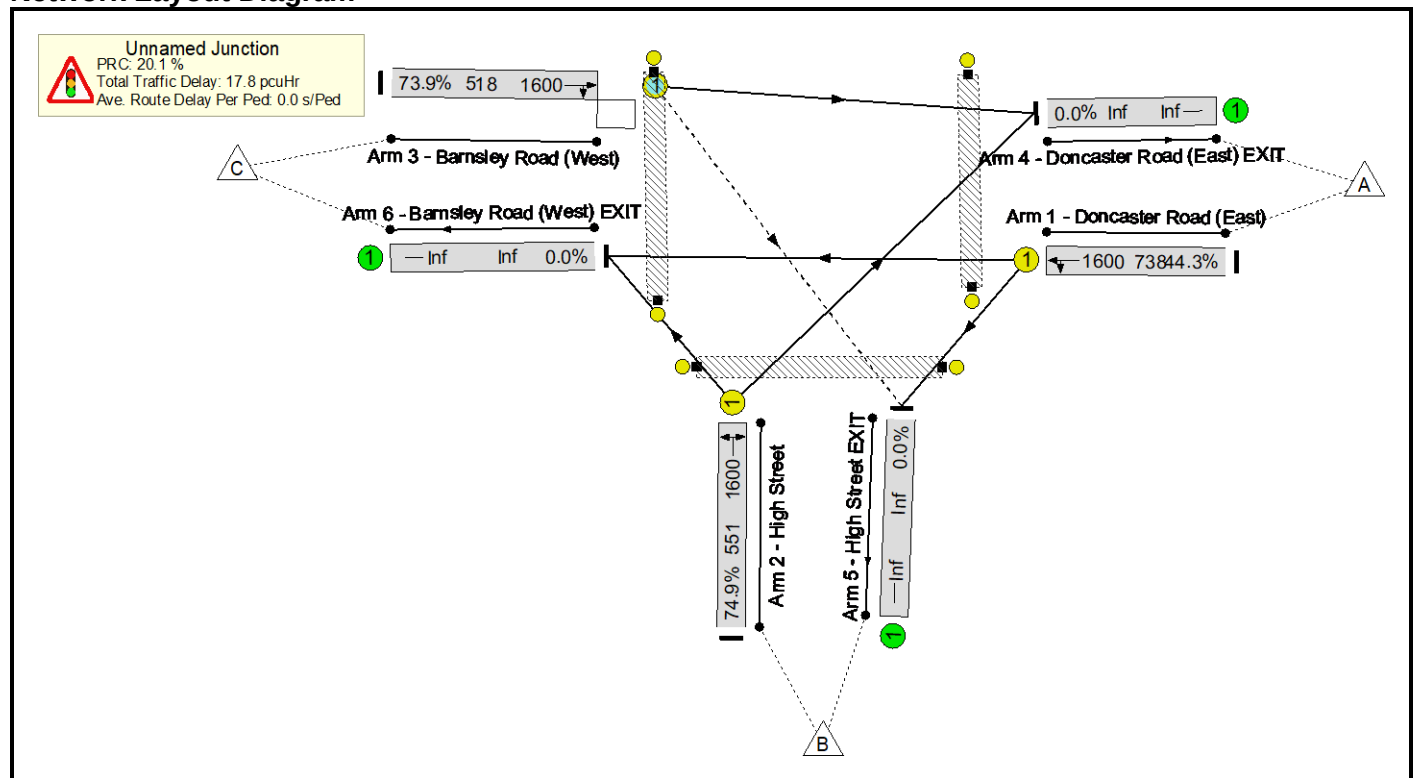
Basic Results Summary
Basic Results Summary

User and Project Details

Project:	
Title:	
Location:	
Additional detail:	
File name:	Barnsley Road_Doncaster Road_High Street.lsg3x
Author:	
Company:	
Address:	

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

Network Layout Diagram

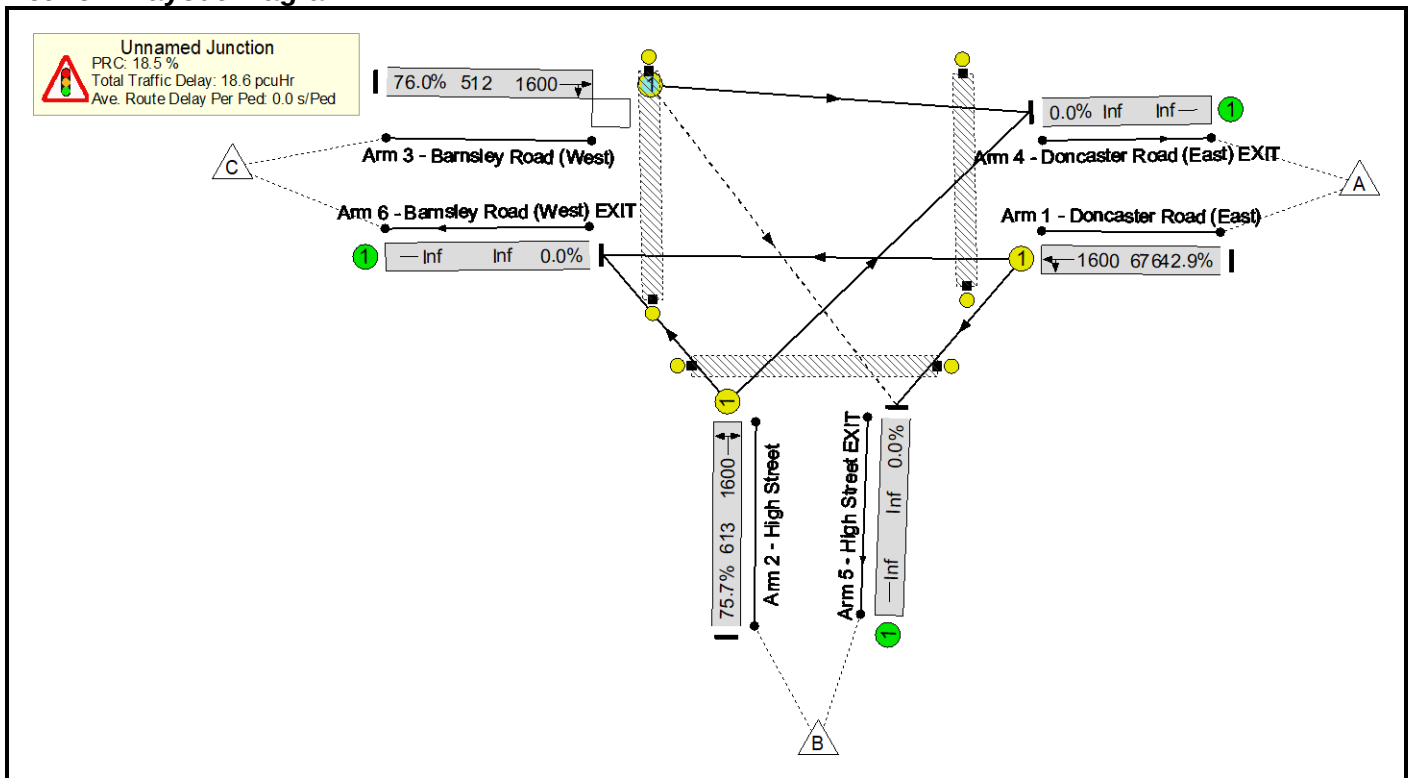


Network Results

Basic Results Summary

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

Network Layout Diagram

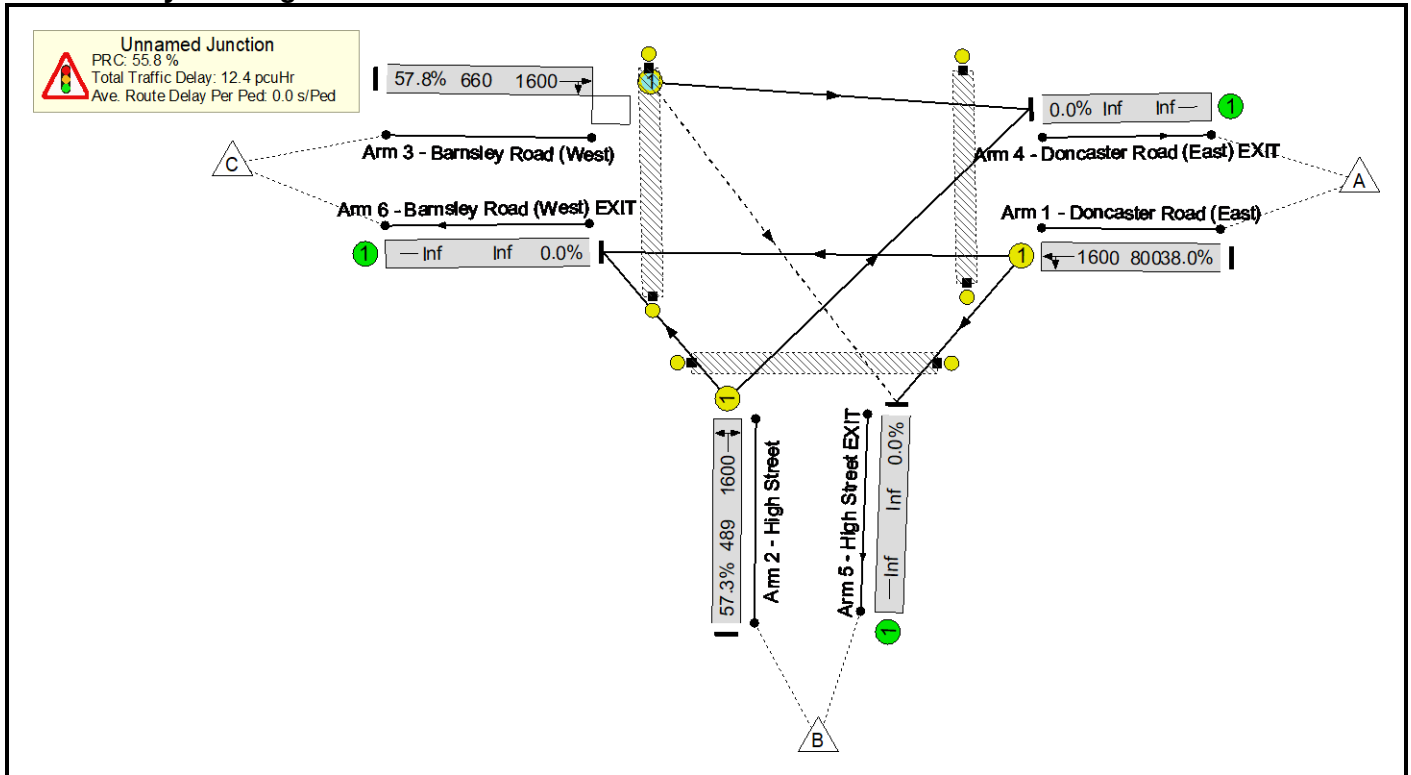


Network Results

Basic Results Summary

Scenario 3: '2021 Sat Base' (FG3: '2021 Sat Base', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

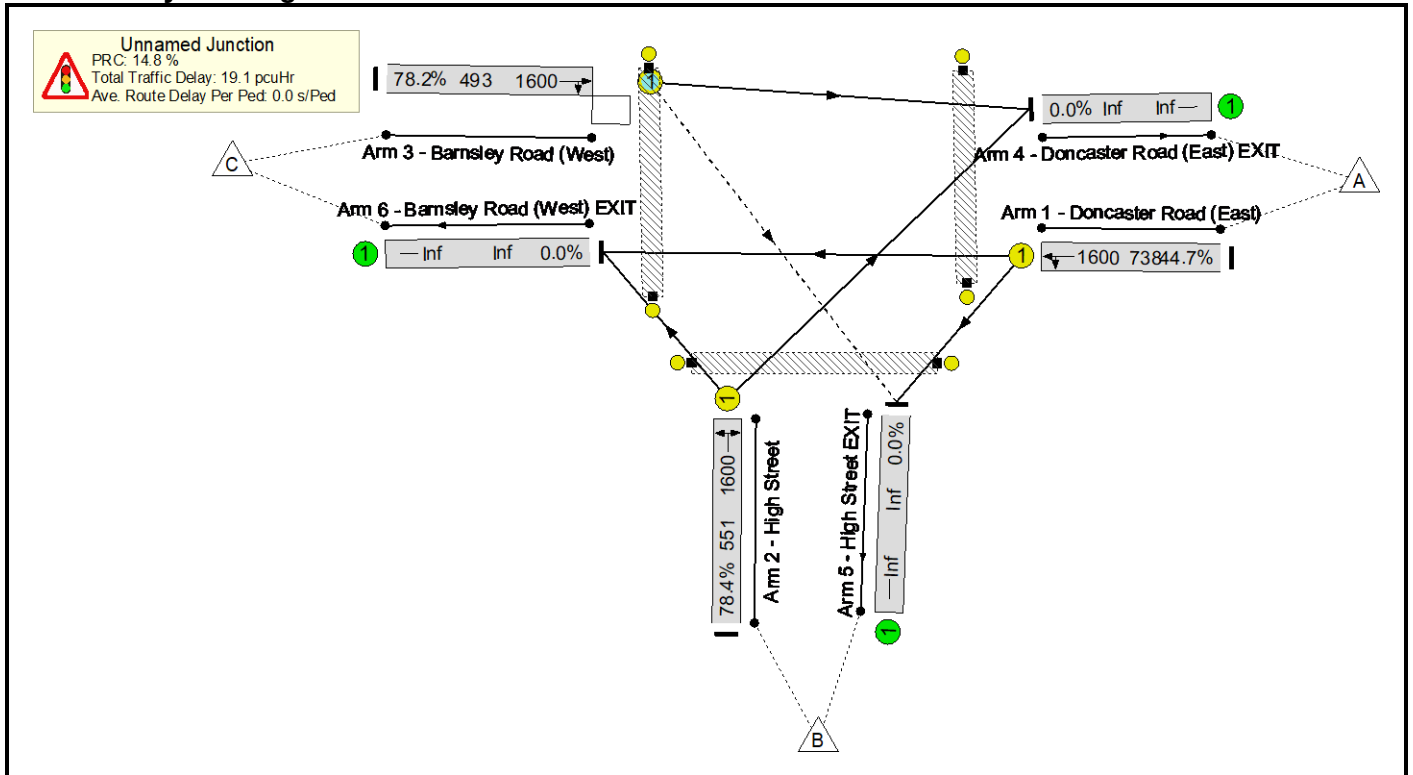


Network Results

Basic Results Summary

Scenario 4: '2021 AM Base + Development' (FG4: '2021 AM Base + Development', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



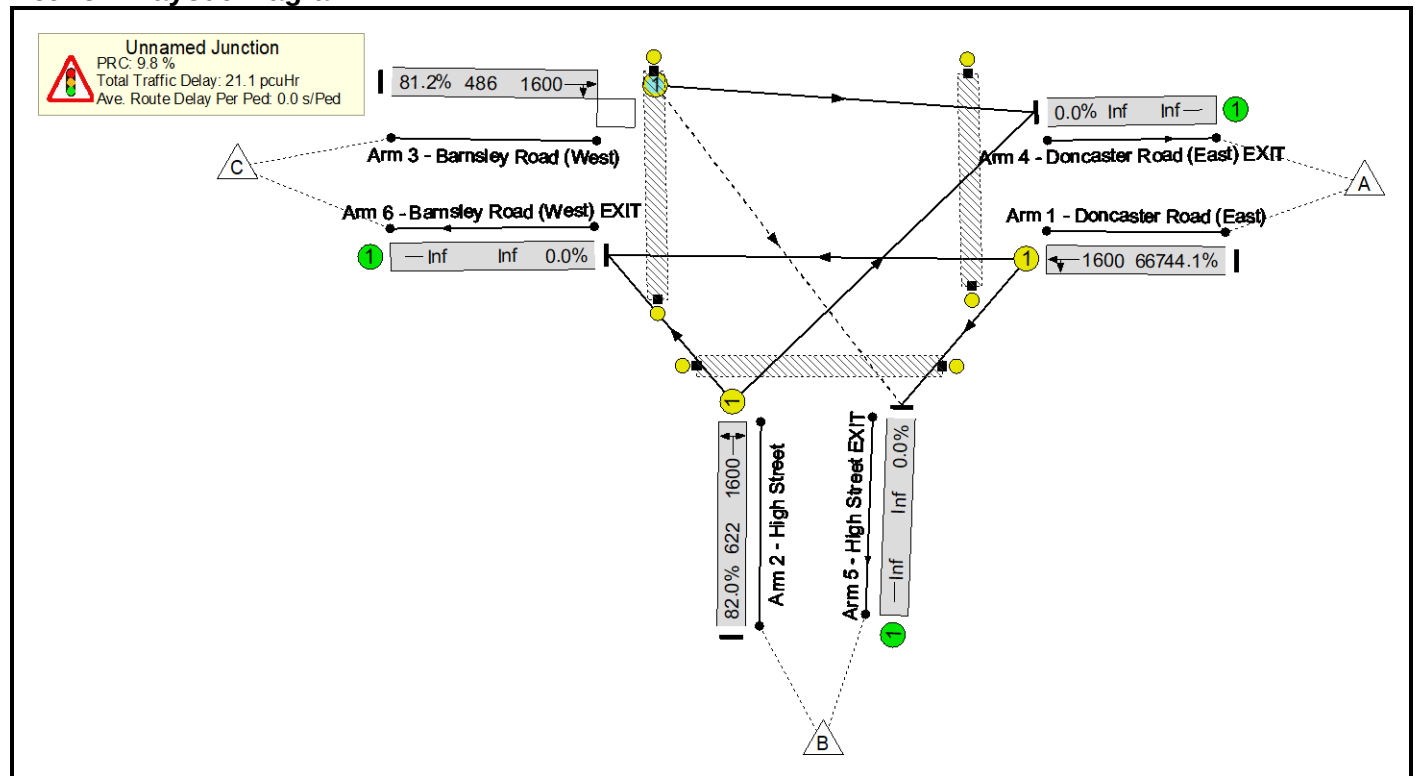
Network Results

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 (%)	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	-	-	-		-	-	-	-	-	-	78.4%	298	0	3	19.1	-	-
Unnamed Junction	-	-	-		-	-	-	-	-	-	78.4%	298	0	3	19.1	-	-
1/1	Doncaster Road (East) Left Ahead	U	A		1	82	-	330	1600	738	44.7%	-	-	-	3.4	37.3	11.6
2/1	High Street Right Left	U	B		1	61	-	432	1600	551	78.4%	-	-	-	8.1	67.7	21.1
3/1	Barnsley Road (West) Ahead Right	O	C		1	84	-	386	1600	493	78.2%	298	0	3	7.6	70.5	18.9
Ped Link: P1	Unnamed Ped Link	-	D		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	E		1	12	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	F		1	9	-	0	-	0	0.0%	-	-	-	-	-	-
C1 PRC for Signalled Lanes (%): 14.8 Total Delay for Signalled Lanes (pcuHr): 19.10 Cycle Time (s): 180 PRC Over All Lanes (%): 14.8 Total Delay Over All Lanes(pcuHr): 19.10																	

Basic Results Summary

Scenario 5: '2021 PM Base + Development' (FG5: '2021 PM Base + Development', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

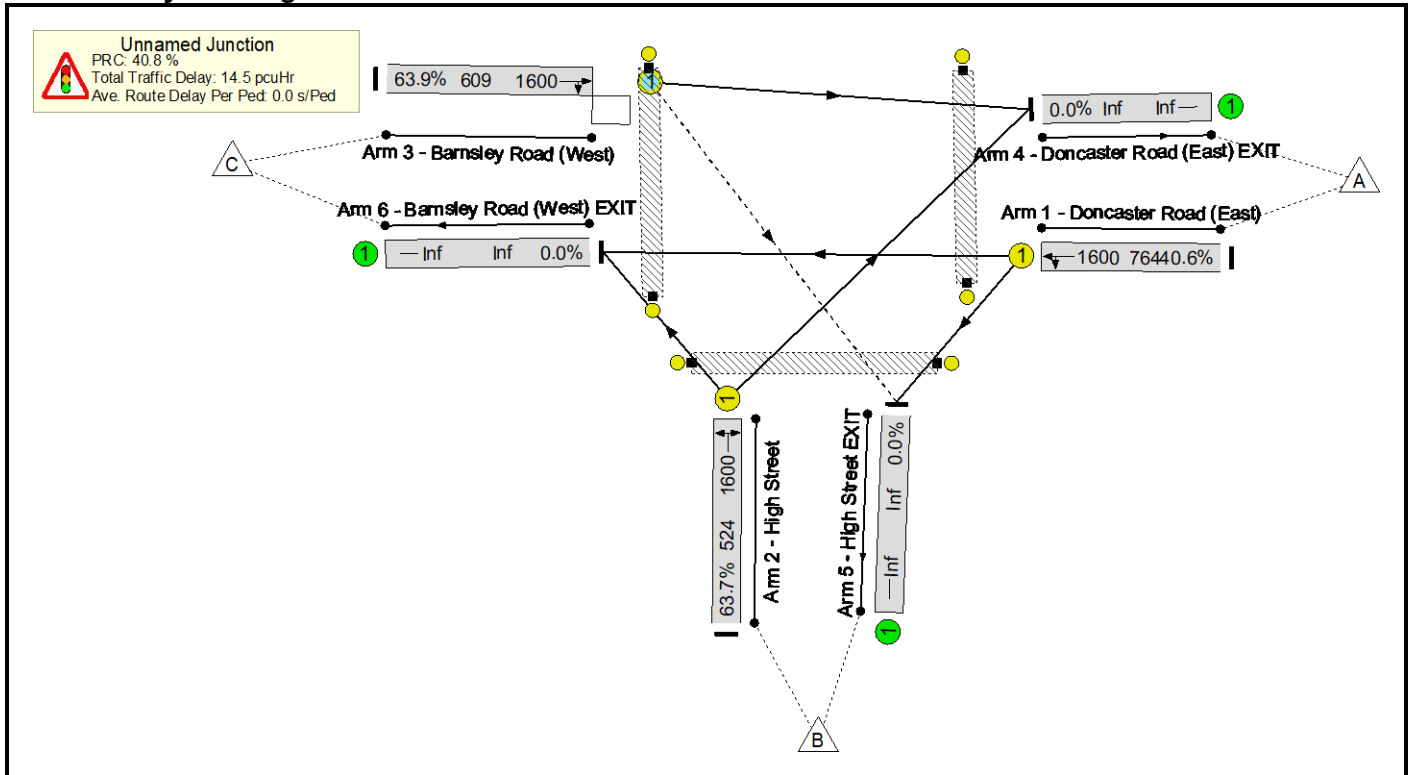


Network Results

Basic Results Summary

Scenario 6: '2021 Sat Base + Development' (FG6: '2021 Sat Base + Development', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

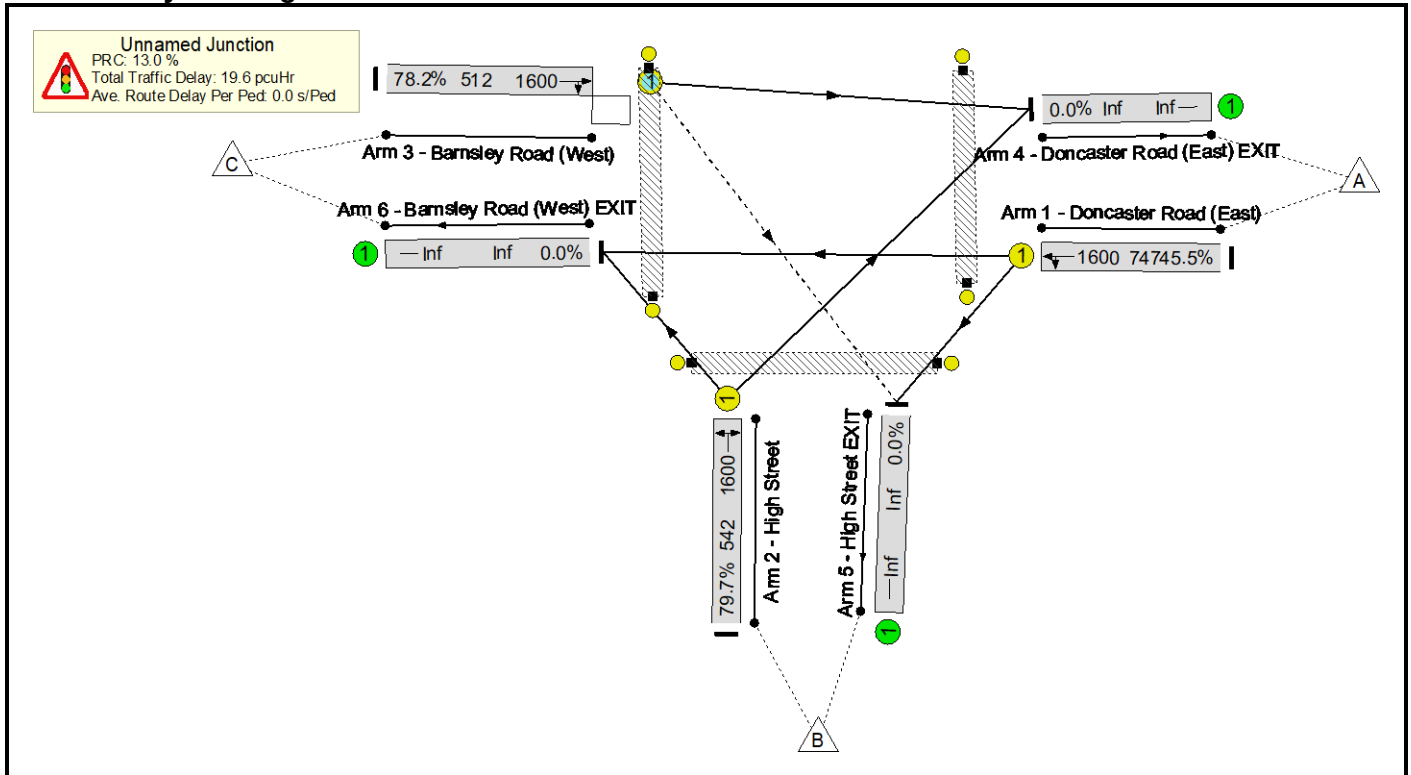


Network Results

Basic Results Summary

Scenario 7: '2026 AM Base' (FG7: '2026 AM Base', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

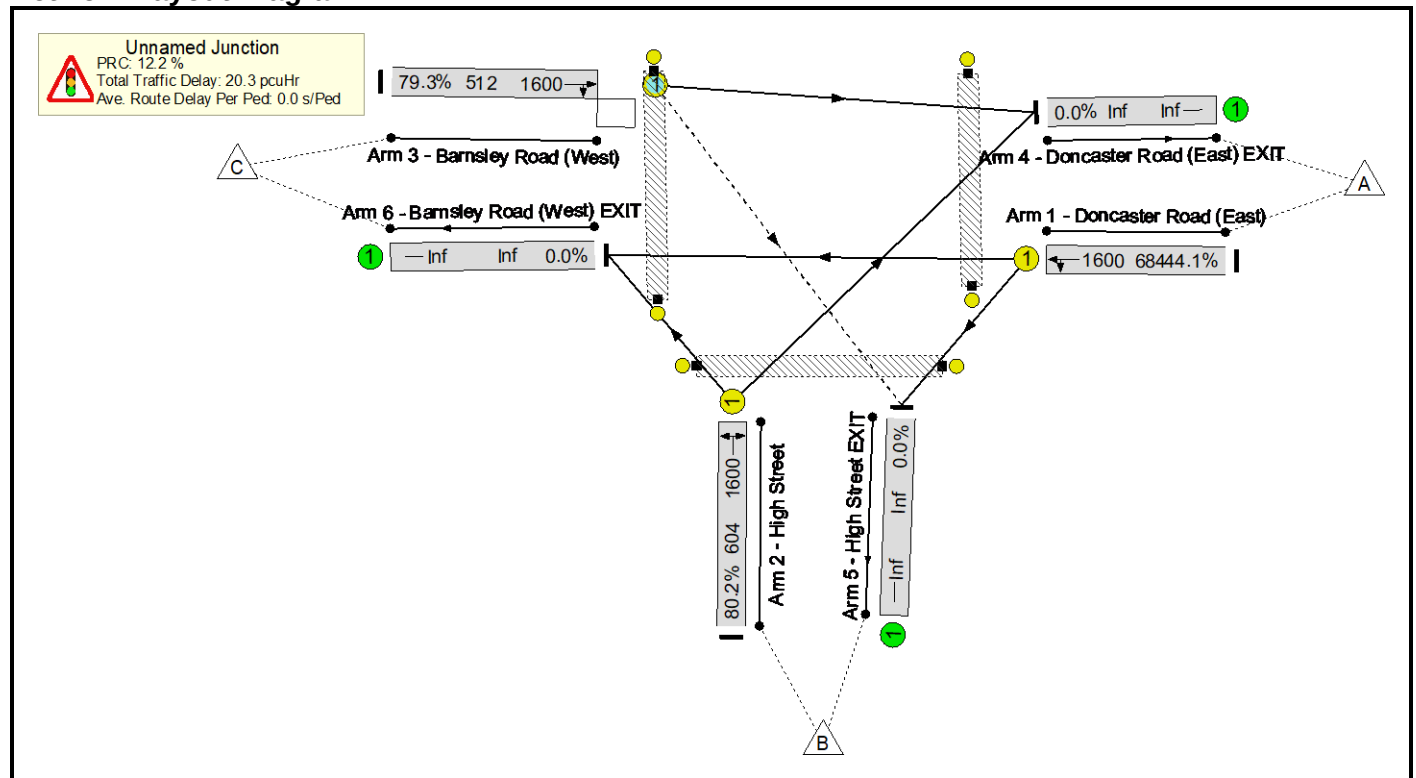


Network Results

Basic Results Summary

Scenario 8: '2026 PM Base' (FG8: '2026 PM Base', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



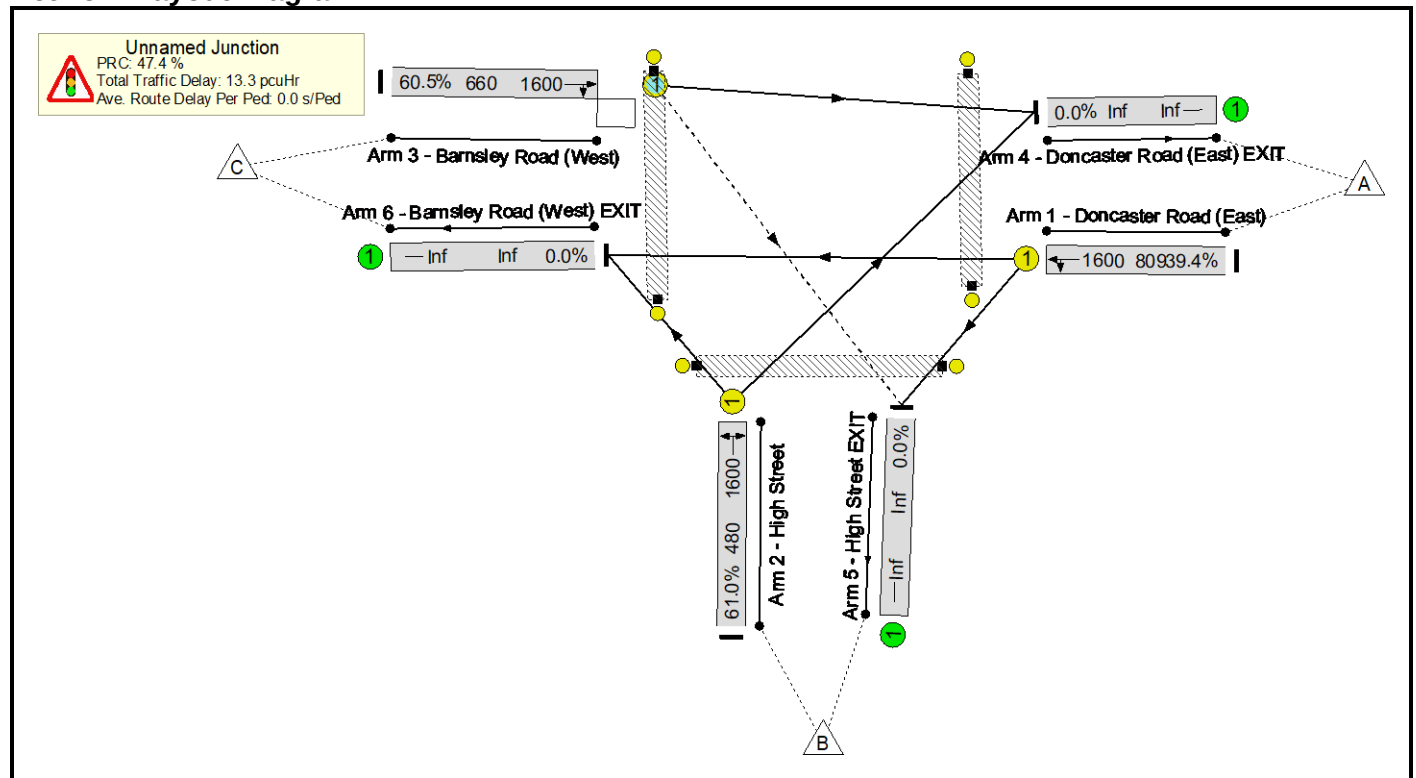
Network Results

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 (%)	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	-	-	-		-	-	-	-	-	-	80.2%	275	0	3	20.3	-	-
Unnamed Junction	-	-	-		-	-	-	-	-	-	80.2%	275	0	3	20.3	-	-
1/1	Doncaster Road (East) Left Ahead	U	A		1	76	-	302	1600	684	44.1%	-	-	-	3.4	41.0	11.0
2/1	High Street Right Left	U	B		1	67	-	485	1600	604	80.2%	-	-	-	8.7	64.6	23.5
3/1	Barnsley Road (West) Ahead Right	O	C		1	78	-	406	1600	512	79.3%	275	0	3	8.2	72.7	20.4
Ped Link: P1	Unnamed Ped Link	-	D		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	E		1	12	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	F		1	9	-	0	-	0	0.0%	-	-	-	-	-	-
C1 PRC for Signalled Lanes (%): 12.2 Total Delay for Signalled Lanes (pcuHr): 20.34 Cycle Time (s): 180 PRC Over All Lanes (%): 12.2 Total Delay Over All Lanes(pcuHr): 20.34																	

Basic Results Summary

Scenario 9: '2026 Sat Base' (FG9: '2026 Sat Base', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



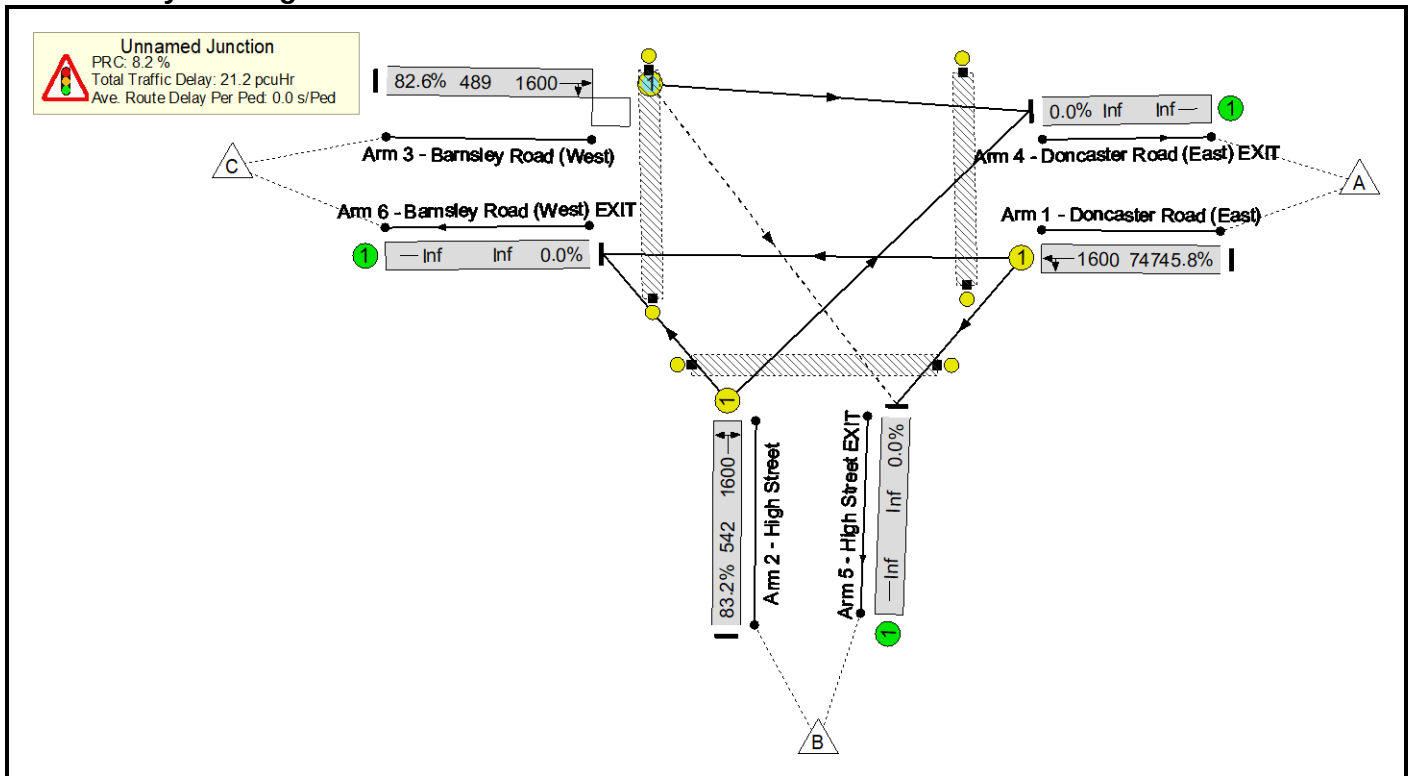
Network Results

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 (%)	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	-	-	-		-	-	-	-	-	-	61.0%	246	0	3	13.3	-	-
Unnamed Junction	-	-	-		-	-	-	-	-	-	61.0%	246	0	3	13.3	-	-
1/1	Doncaster Road (East) Left Ahead	U	A		1	90	-	319	1600	809	39.4%	-	-	-	2.8	31.2	10.2
2/1	High Street Right Left	U	B		1	53	-	293	1600	480	61.0%	-	-	-	5.2	63.5	13.3
3/1	Barnsley Road (West) Ahead Right	O	C		1	92	-	399	1600	660	60.5%	246	0	3	5.3	48.1	16.3
Ped Link: P1	Unnamed Ped Link	-	D		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	E		1	12	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	F		1	9	-	0	-	0	0.0%	-	-	-	-	-	-
C1 PRC for Signalised Lanes (%): 47.4 Total Delay for Signalised Lanes (pcuHr): 13.26 Cycle Time (s): 180 PRC Over All Lanes (%): 47.4 Total Delay Over All Lanes(pcuHr): 13.26																	

Basic Results Summary

Scenario 10: '2026 AM Base + Development' (FG10: '2026 AM Base + Development', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

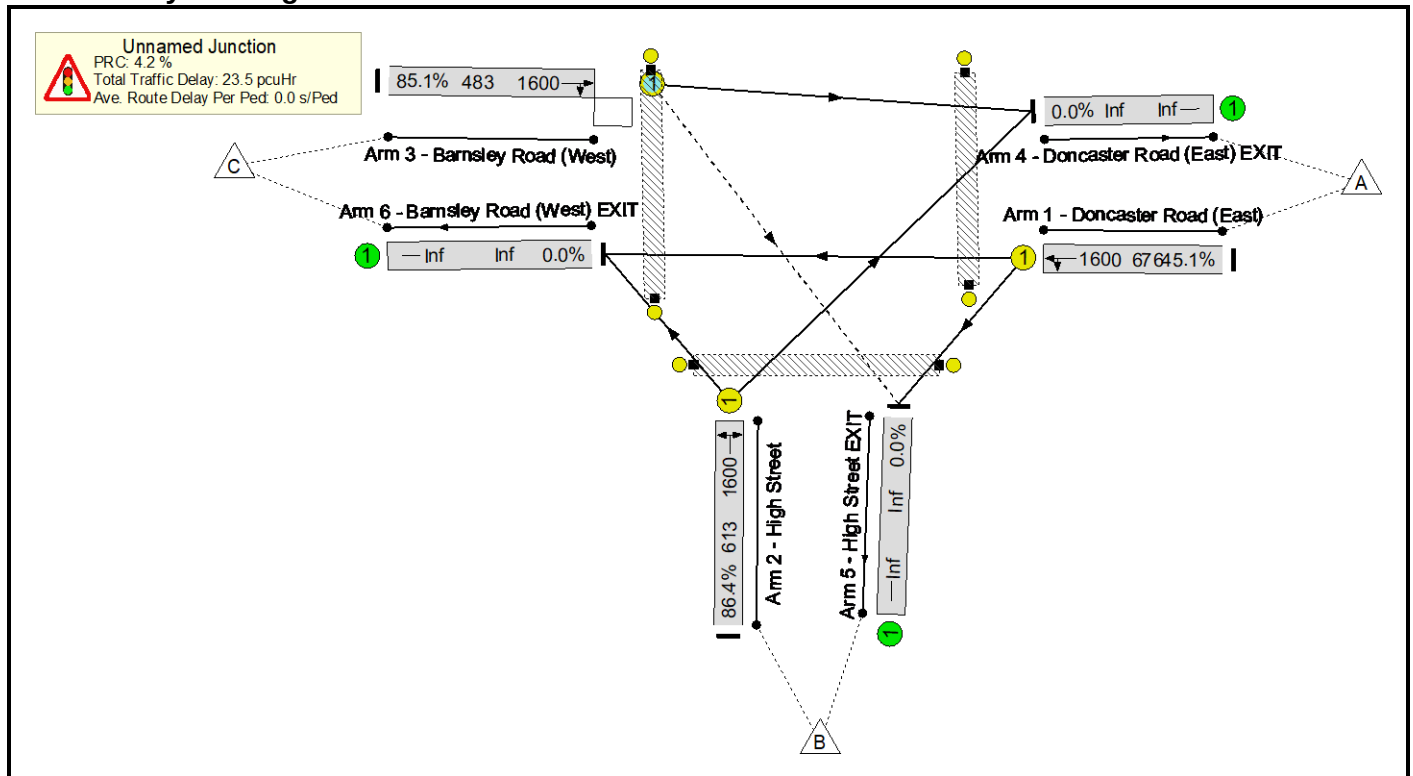


Network Results

Basic Results Summary

Scenario 11: '2026 PM Base + Development' (FG11: '2026 PM Base + Development', Plan 1: 'Network Control Plan 1')

Network Layout Diagram

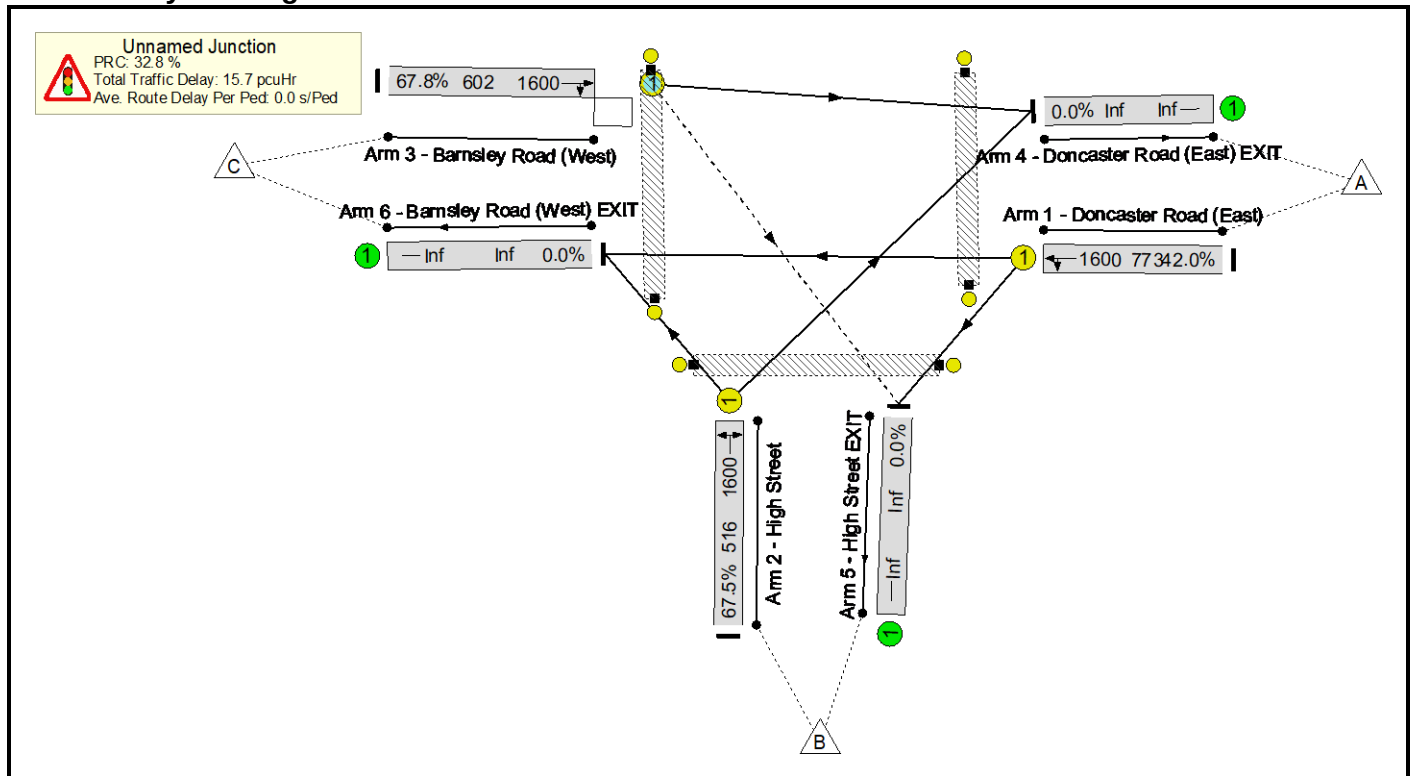


Network Results

Basic Results Summary

Scenario 12: '2026 Sat Base + Development' (FG12: '2026 Sat Base + Development', Plan 1: 'Network Control Plan 1')

Network Layout Diagram



Network Results

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 (%)	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	-	-	-		-	-	-	-	-	-	67.8%	280	0	3	15.7	-	-
Unnamed Junction	-	-	-		-	-	-	-	-	-	67.8%	280	0	3	15.7	-	-
1/1	Doncaster Road (East) Left Ahead	U	A		1	86	-	325	1600	773	42.0%	-	-	-	3.1	34.2	10.8
2/1	High Street Right Left	U	B		1	57	-	348	1600	516	67.5%	-	-	-	6.1	63.4	16.0
3/1	Barnsley Road (West) Ahead Right	O	C		1	88	-	408	1600	602	67.8%	280	0	3	6.5	56.9	17.9
Ped Link: P1	Unnamed Ped Link	-	D		1	7	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P2	Unnamed Ped Link	-	E		1	12	-	0	-	0	0.0%	-	-	-	-	-	-
Ped Link: P3	Unnamed Ped Link	-	F		1	9	-	0	-	0	0.0%	-	-	-	-	-	-
C1 PRC for Signalled Lanes (%): 32.8 Total Delay for Signalled Lanes (pcuHr): 15.67 Cycle Time (s): 180 PRC Over All Lanes (%): 32.8 Total Delay Over All Lanes(pcuHr): 15.67																	