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Selby Local Development Framework

Phase 2 – Option Testing and Forecasting

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JACOBS Consultancy

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1 INTRODUCTION

1.1 Background

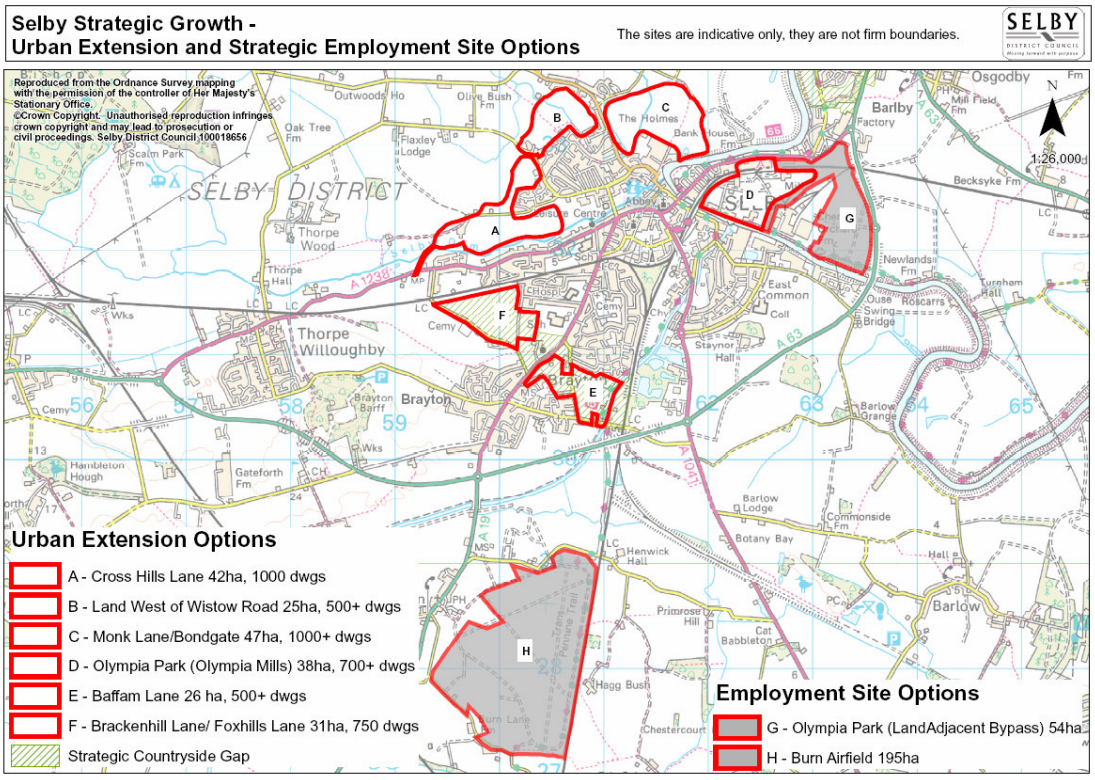
Jacobs Consultancy was commissioned in 2008 by North Yorkshire County Council (NYCC) and Selby District Council (SDC) to construct a traffic model of Selby and its surroundings. This model is now being used to assess the impact on the Selby road network of strategic developments that have been detailed within SDC's emerging Core Strategy for the Local Development Framework (LDF).

The assessment of the strategic developments is to be carried out in two phases. Phase 1 examined the impact on the road network of each individual site in isolation. This resulted in the selection of preferred options which are to be tested together in Phase 2 of the work. This report details the results of Phase 2 testing. The methodology for forecasting and analysis is the same as that used for Phase 1 testing. The report *Phase 1 - Option Testing and Forecasting* should be referred to for detailed descriptions of the methodology.

1.2 Development sites

Within the emerging Core Strategy for the Selby LDF a total of six strategic housing developments and two strategic employment sites have been identified. These are shown in Figure 1 below.

Figure 1 Selby development sites



Subsequent investigations determined that sites B and C were no longer under consideration. The remaining four housing sites and the two employment sites were modelled individually as part of the Phase 1 testing. The maximum number of dwellings the maximum employment area used for each site in Phase 1 testing is given in Table 1 below.

Table 1 Maximum number of dwellings per housing site and maximum area of employment sites

Site	Dwellings / Area
Site A	1000 dwellings
Site D	800 dwellings
Site E	650 dwellings
Site F	750 dwellings
Site G	50 ha
Site H	50 ha

Employment sites G and H were modelled with two different development mixes, bringing the total number of tests carried out in Phase 1 to eight; four housing and four employment tests. The employment mixes are as follows:

- Employment Mix 1: 75% B2/B8, 12.5% B1 office, and 12.5% high values uses (e.g. car showrooms, hotel, public house, health and fitness)
- Employment Mix 2: 50% B2/B8, 25% B1 office, and 25% high values uses (e.g. car showrooms, hotel, public house, health and fitness)

On completion of the Phase 1 testing NYCC and SDC selected housing sites A and D and employment site G to be taken forward for testing in Phase 2. A total of two tests were commissioned which involved testing combinations of sites as opposed to the individual testing in Phase 1. The sites to be included in each test are given below.

Table 2 Combination of sites and land use used in Phase 2 testing

Test	Sites	Dwellings / Area
1	Site D	800 dwellings
	Site G2	50 ha
2	Site A	1000 dwellings
	Site D	800 dwellings
	Site G1	50 ha

Site D and G are located on the same site and form the Olympia Park development. When Olympia Park was modelled in Test 1 employment development mix 2 was used, in Test 2 employment development mix 1 was used. This was to minimise the impact on the Selby road network as development mix 2 generated more trips than development mix 1 owing to the high value land use. Development mix 2 was only used with a single housing site (D), development mix 1 with two housing sites (A and D).

1.3 Purpose of report

The purpose of this report is to provide a detailed report of the impact of each of the site combination tests on the Selby road network. The impact of each test on the operation of key junctions in the network is examined.

The structure of the remainder of this document is as follows:

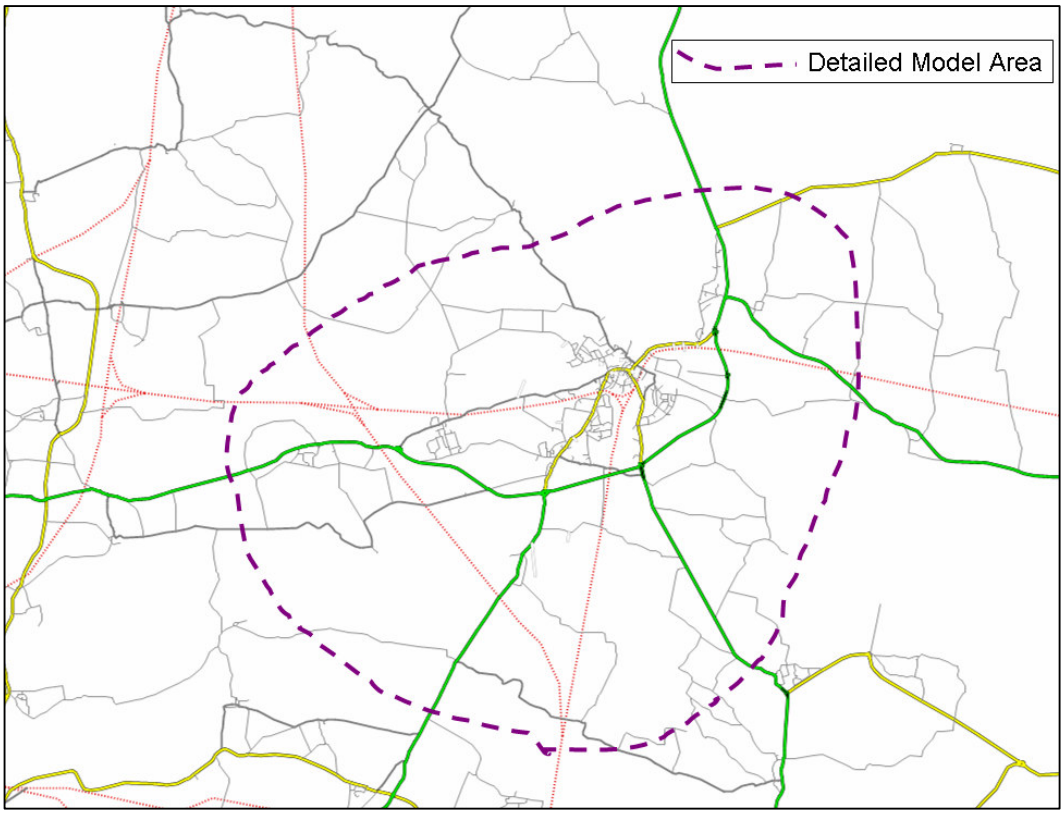
- Methodology
- Results
- Conclusions

2 METHODOLOGY

2.1 VISUM modelling

The Selby VISUM model was completed in 2008 and forms the basis for this option testing. The base model is a PM (1700 – 1800) average weekday (Mon – Fri) time scenario and the base year is 2008. The model extent is sufficient to analyse the impacts of developments within Selby town as well as on all radials to the bypass and beyond.

Figure 2 Detailed model area



The model is currently a highway only assignment and as detailed below, there are five user classes in the model:

- UC1 Business and Education
- UC2 Employers Business
- UC3 Other Car
- UC4 Light Goods Vehicles (LGVs)
- UC5 Heavy Goods Vehicles (HGVs)

More details on the model can be found in *Selby Transport Model Local Validation Report*, Jacobs Consultancy, September 2008.

2.2 Trip generation

The number of trips generated by the individual sites was estimated using trips rates calculated from the TRICS database based upon the maximum number of dwellings and maximum employment area given in Table 1. Further details of the trip generation assumptions using TRICS can be found in *Phase 1 - Option Testing and Forecasting*, Jacobs Consultancy, September 2009.

The trips generated by the individual sites are given in Table 3 and Table 4.

Table 3 Trips generated by housing developments

Site	Dwellings	Trip rate IN	Trip rate OUT	Trips IN	Trips OUT	Trips TOTAL
A	1000	0.382	0.205	382	205	587
D	800	0.382	0.205	306	164	470

Table 4 Trips generated by employment developments

Site	TCPA class	Description	Site Area (ha)	GFA (m^2)	Trip rate IN*	Trip rate OUT*	Trips IN	Trips OUT	Trips TOTAL
G1	B1	Office	6.3	25,000	0.124	1.209	31	302	333
	B2	Industrial estate	18.8	75,000	0.087	0.289	65	217	282
	B8	Warehouse	18.8	75,000	0.074	0.109	56	82	137
	A4	Pub	0.3	1,278	3.110	2.258	40	29	69
	C1	Hotel	2.4	9,565	0.276	0.273	26	26	53
	D2	Leisure centre	2.4	9,627	29.79	22.94	72	55	127
	sui generis	Car showroom	1.1	4,530	14.62	41.04	17	46	63
						TOTAL	306	757	1064
G2	B1	Office	12.5	50,000	0.124	1.209	62	605	667
	B2	Industrial estate	12.5	50,000	0.087	0.289	44	145	188
	B8	Warehouse	12.5	50,000	0.074	0.109	37	55	92
	A4	Pub	0.6	2,555	3.110	2.258	79	58	137
	C1	Hotel	4.8	19,130	0.276	0.273	53	52	105
	D2	Leisure centre	4.8	19,254	29.79	22.94	143	110	254
	sui generis	Car showroom	2.3	9,061	14.62	41.04	33	93	126
						TOTAL	451	1117	1568

* trip rate per $100m^2$ GFA except for D2 and sui generis where trip rate is per ha of site area

It can be seen from the information above that Employment Scenario 2 produces almost 50% more trips than Employment Scenario 1 due to the greater proportion of the site given over to high end uses.

2.3 Matrix forecasting

To determine and compare the impact of options on Selby's highway network it was agreed that tests should be undertaken in the forecast year 2026 as thus represents the end of the LDF plan period. This assessment has required the base model matrices to be factored up from 2008 to 2026. Growth factors were calculated using a

combination of the Department for Transport accepted Trip End Model Presentation pROgram (TEMPRO) and National Road Traffic Forecast (NRTF). TEMPRO growth factors were used for internal to internal trips within the Selby district TEMPRO zone for users classes 1, 2 and 3 (see section 2.1 for definition). NRTF factors were used for internal to internal trips within the Selby district TEMPRO zone for user classes 4 and 5 (see section 2.1 for definition), and for all other trips in the matrices.

The base scenario matrices for 2026 have then been calculated using the following growth factors given in Table 5.

Table 5 Growth factors used to produce 2026 base matrices

	UC1	UC2	UC3	UC4	UC5
Internal to internal	1.125*	1.149*	1.212*	1.468	1.372
All other trips	1.211	1.211	1.211	1.468	1.372

* growth factor calculated by TEMPRO

In order to avoid double counting of trips the TEMPRO planning data must be adjusted for each of the option tests. The TEMPRO planning data was reduced by the appropriate number of dwellings or number of employees depending on the option to be tested. The number of employees was estimated during the trip generation process using the TRICS database. This was done by calculating an average employee per GFA ratio using the same site surveys that produced the trip rates. The adjusted planning data in TEMPRO produced the following growth factors.

Table 6 Adjusted TEMPRO growth factors

Model	UC1	UC2	UC3
Base	1.125	1.149	1.212
Test 1 - D & G2	1.056	1.039	1.139
Test 2 - A, D & G1	1.056	1.058	1.138

The other growth factors remained the same for all of the option testing.

2.4 Trip distribution

The matrix forecasting process factored up the 2008 base matrices to 2026 with the appropriate adjustment in growth for each scenario. The development trips were then added to the appropriate growthed matrix in the form of point zones. Each development required a trip distribution which was obtained by the use of parent zones. A parent zone was selected for each site which had similar land use and was located close to the site. The development trips were allocated to a user class in the same ratio as the parent zone and then distributed with the same user class distribution. The parent zones used for distribution are given in Table 7 below.

Table 7 Parent zones used for trip distribution for each development site

Site	Parent Zone	Description
A	260	Residential area bounded by Flaxley Street and Charles Street
D	230	Residential area of Barlby Road
G	175	Point zone representing industrial area on East Common Lane

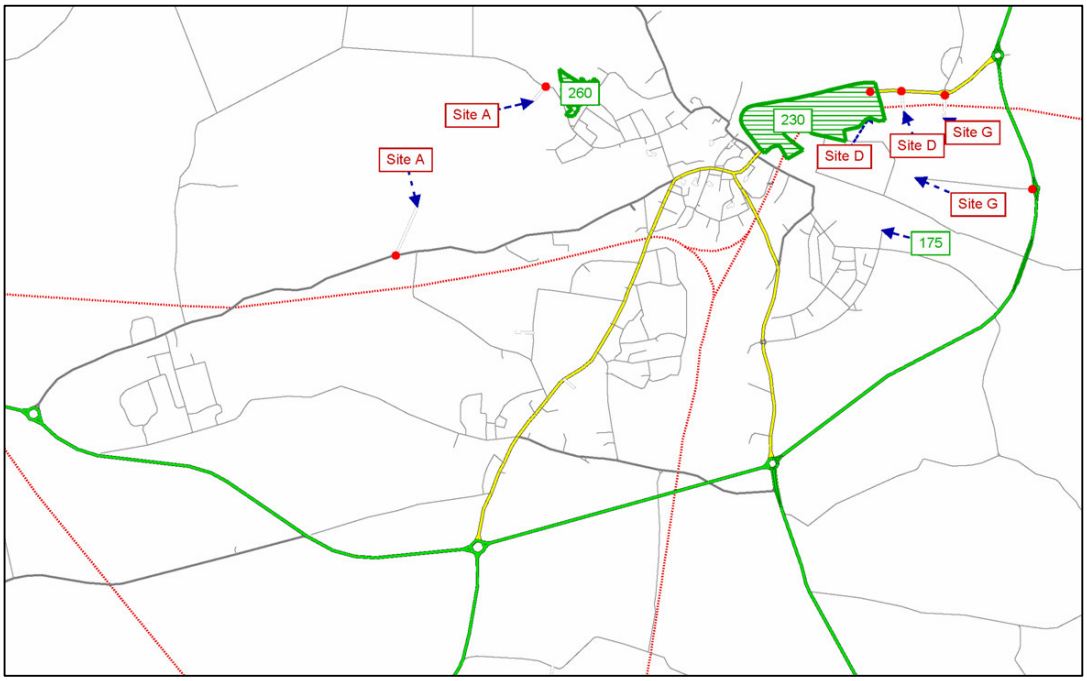
A total of 6 points zones were created to represent the development sites. Each site had two loading points at which equal numbers of trips with the same distribution were added to the network. There was no modelling of any internal development site road network. The loading points for each development site is given in Table 8 below.

Table 8 Location of loading points

Site	Loading point(s)
Site A	Leeds Road, west of Sandhill Lane junction, and Flaxley Lane, north of Deeping Way junction
Site D	Two loading points on Barlby Road between Olympia Crescent and A19 / Barlby Road roundabout
Site G	New arm on A19 / Barlby Road roundabout, and A63 at Potters roundabout

The location of the point zones, loading points and parent zones used for trip distribution are shown in Figure 3 below.

Figure 3 Location development zones, loading points and parent zones



2.5 Internal Trips

Sites D and G2 form the residential and employment developments respectively of Olympia Park. A methodology has been agreed between Jacobs, NYCC and SDC to account for trips between the residential and employment areas of the Olympia Park site. These trips were assumed to be contained within Olympia Park and thus for the VISUM modelling were required to be removed from the development trip totals. The methodology analysed the trip lengths from the 2008 Base model of the employment site parent zone, zone 175. This is summarised in Table 9 below.

Table 9 Percentage of trips by distance for employment parent zone 175 from 2008 base model

Distance (km)	Percentage of total trips
1	7%
2	28%
3	36%
4	44%
5	46%

It was agreed with NYCC to assume that all employment based trips less than or equal to 1km in length would be contained within the Olympia Park site. Thus the percentage reduction used was 7% of total employment trips. This would account for all internal trips (i.e from employment to residential and vice versa in Olympia Park) and thus 93% of employment trips would be the amount assigned to the external road network. The reduced trip totals used for modelling are given below.

Table 10 Olympia Park trip generation with employment development mix 1

Site	Trips –as individual sites			Trips –combined site with internal trips		
	In	Out	TOTAL	In	Out	TOTAL
Site D	306	164	470	252	142	395
Site G1	306	757	1063	285	704	988

Table 11 Olympia Park trip generation with employment development mix 2

Site	Trips –as individual sites			Trips –combined site with internal trips		
	In	Out	TOTAL	In	Out	TOTAL
Site D	306	164	470	227	132	359
Site G2	451	1117	1568	419	1038	1457

The total development trips for each test are given in Table 12.

Table 12 Total development trips for Phase 2 testing

Test	Site	In	Out	TOTAL
1	D	227	132	359
	G2	419	1038	1457
				1816
2	A	382	205	587
	D	252	142	395
	G1	285	704	988
				1970

2.6 Network changes

To allow for the development trips to be loaded onto the network, links were created that connected the development point zone to the relevant loading point in the network. The loading points had been suggested by SDC and agreed by the Highway Authority. Where the trips joined the network an uncontrolled node was used.

Site D required Recreation Road to be closed and Site G required an additional arm to be added to the A19 Barlby Road roundabout for access to the site.

2.7 Junction Assessment

The two development scenarios were tested using the Selby VISUM model. The flows and turning movements from each of these models were exported to junction modelling software for detailed junction analysis. Arcady software was used to assess the roundabouts and LINSIG software to assess the signalised junctions. The junctions selected for analysis are listed below along with four level crossings which were analysed within the VISUM model.

Roundabouts

1. A63 / A19 North
2. A19 / Barlby Road / Site G access
3. A63 / Site G access
4. A63 / A1041 Bawtry Road
5. A1041 Bawtry Road / Abbotts Road
6. A63 / A19 Doncaster Road
7. A63 / Leeds Road

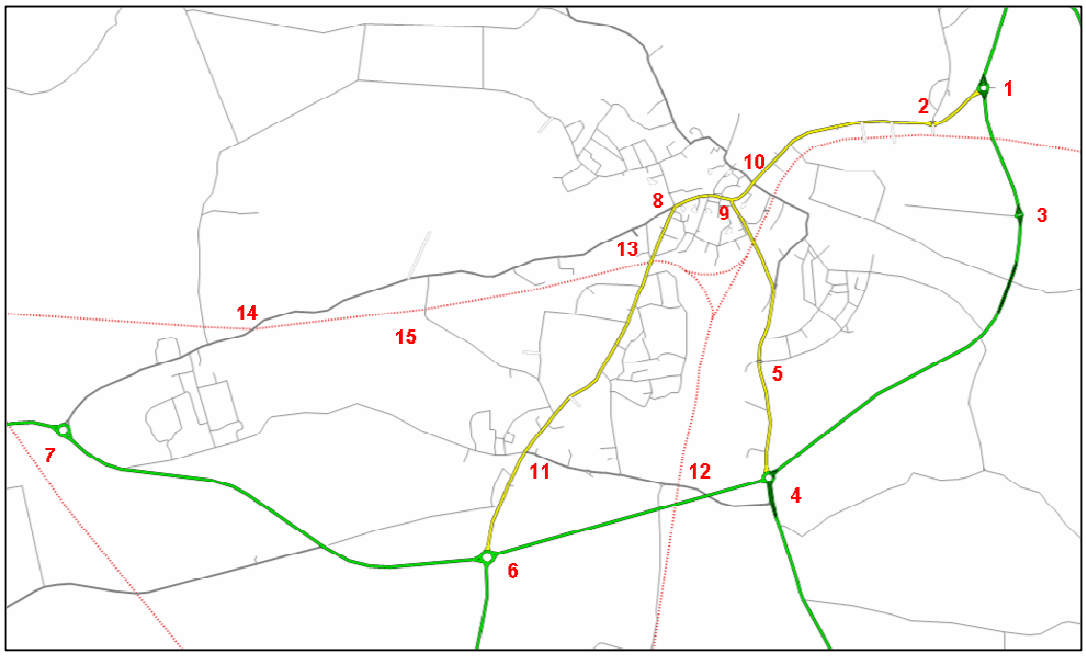
Traffic Signal Controlled

8. Gowthorpe / Scott Road / Brook Street
9. The Crescent / Park Street
10. Barlby Road / Ousegate / New Street / Water Hill Lane
11. Doncaster Road / Brayton Lane / Barff Lane

Level Crossings

12. Brayton Lane
13. Doncaster Road
14. Leeds Road
15. Sandhill Lane

Figure 4 Roundabouts, signalised junctions and level crossings selected for assessment



3 RESULTS

3.1 Introduction

This chapter provides the results of the option testing. The impact of each test on key junctions has been assessed and a comparative study between the results undertaken. The tests undertaken are described below.

Test 1 consists of housing site D and employment site G. This is the complete development at Olympia Park. The employment mix chosen here is development mix 2 which has more high land use values than development mix 1. The total number of houses modelled is 800 and the total estimated number of jobs is around 4,600. The total number of residential trips is 359 and the total number of employment trips is 1457 in the PM peak period. Internal trips have been accounted for (see section 2.5) but there has been no modelling of any internal site road network.

Test 2 consists of housing sites A and D and employment site G. This is the complete development at Olympia Park with an additional housing site to the north west of the town centre. . The employment mix chosen here is development mix 1 which has less high land use values than development mix 2. The total number of houses modelled is 1,800 (1,000 at Site A and 800 at Site D) and the total estimated number of jobs is around 3,650. The total number of residential trips is 982 and the total number of employment trips is 988 in the PM peak period. Internal trips have been accounted for (see section 2.5) but there has been no modelling of any internal site road network.

A summary of the findings from the option testing is given for junction description of traffic behaviour in each test.

3.2 Junction assessment

3.2.1 Roundabouts

The results of the Arcady testing for key roundabout junctions are given in Table 13. The results for 2008 and 2026 base conditions are also included. The results presented show the maximum Ratio of Flow to Capacity (RFC) on any arm of the roundabout during the analysis period, i.e. PM peak 1700 – 1800. The maximum RFC for each junction is highlighted in **bold**.

Table 13 Maximum RFCs of roundabouts

No.	Roundabout	2008 Base	2026 Base	Test 1 – Sites D & G2	Test 2 – Sites A, D & G1
1	A63 / A19 North	0.404	0.502	0.629	**0.633**
2	A19 / Barlby Rd / Site G	0.519	0.573	**0.765**	0.747
3	A63 / Site G	0.327	0.44	**0.671**	0.656
4	A63 / A1041 Bawtry Rd	0.486	0.625	0.601	**0.603**
5	A1041 Bawtry Rd / Abbotts Rd	0.66	0.717	0.685	**0.692**
6	A63 / A19 Doncaster Rd	0.296	0.373	**0.401**	0.392
7	A63 / Leeds Rd	0.245	0.302	0.292	**0.298**

The results show that all of the roundabouts operate within capacity for all options tested. The highest RFC is 0.765 which occurs at A19 / Barlby Rd / Site G during modelling of Test 1. This junction also produces the highest RFC for Test 2. This is due to it providing one of the two access points to Site G and it is also in close proximity to the Site D access points on Barlby Road. Junctions 2 and 3 have higher RFCs in Test 1 than Test 2 reflecting the high number of trips that employment development mix 2 produces.

There is little appreciable difference in the RFC value for each junction between tests. The addition of Site A in Test 2 increases the number of development trips relative to Test 1 but does not cause large increases in the RFC values. This is due to the location of Site A in to the north of the town centre which is far away from the roundabouts. Trips from Site A are therefore well distributed by the time they reach the roundabouts which results in a series of RFCs that are not much different from Test 1 for all junctions.

The Arcady output files are included in Appendix D.

3.2.2 Signals

The results of the LINSIG testing for key signalised junctions are given in Table 14. The results presented show the maximum RFC on any arm of the junction during the analysis period, i.e. PM peak 1700 – 1800. RFCs between 0.85 and 1 are shown in orange, and RFCs greater than 1 in red. As above the maximum RFC for each junction is highlighted in **bold**.

Table 14 Maximum RFCs of signalised junctions

No.	Junction	2008 Base	2026 Base	Test 1 – Sites D & G2	Test 2 – Sites A, D & G1
8	Gowthorpe / Scott Rd / Brook St	0.872	1.036	1.090	**1.235**
9	The Crescent / Park St	0.683	0.794	0.842	0.892
10	Barlby Rd / Ousegate / New St / Water Hill Ln	0.865	0.988	1.150	**1.246**
11	Doncaster Rd / Brayton Ln / Barff Ln	0.556	0.684	0.670	0.663

The results show that the signalised junctions at Gowthorpe / Scott Road / Brook Street and Barlby Road / Ousegate / New Street / Water Hill Lane operate over capacity (RFC greater than 1) for both of the combined tests. The junction of The Crescent / Park Street operates under capacity but close to the RFC threshold value of 0.85 for both of the combined tests.

The addition of Site A in Test 2 causes the signalised junctions at Gowthorpe / Scott Road / Brook Street and Barlby Road / Ousegate / New Street / Water Hill Lane to operate further over capacity than in Test 1. The maximum RFCs of the junctions increase by 10 – 14% when Site A is included. This is due to the location of Site A and its development trip distribution. Any development trips which are to / from Selby town centre, A19 north and A63 east must pass through these two junctions.

The Linsig output files are included in Appendix E.

3.2.3 Level crossings

The results of the level crossing analysis are given in Table 15. The results presented show the percentage change in total vehicle delay at the crossings compared to the 2026 Base model. All level crossings were modelled as being down for 15 minutes in the hour. Total delay reductions greater than 5% are shown in green and journey time increases greater than 5% are shown in red.

Table 15 Total delay at level crossings compared to 2026 Base model

No.	Level crossing	2026 Base (hr)	Test 1 – Sites D & G2	Test 2 – Sites A, D & G1
12	Brayton Lane	3.5	11%	10%
13	Doncaster Road	14.4	-12%	-16%
14	Leeds Road	2.4	7%	21%
15	Sandhill Lane	0.1	-8%	196%

The level crossing with the greatest delay is Doncaster Road but in both Test 1 and Test 2 delays are reduced compared to the 2026 base model. This is due to the proximity of the Olympia Park site to the bypass meaning that development traffic will avoid the town centre if possible. This is consistent with the results of Phase 1 where sites D and G saw reduction in delay at Doncaster Road. The effect of Site A can be seen by comparing the results for Leeds Road and Sandhill Lane which both show increases in delays in Test 2 compared to Test 1. This is solely due to the Site A access off Leeds Road. The Sandhill Lane increase is a large percentage figure but in reality is only an increase in overall delay from 4 minutes to 14 minutes and thus a low delay compared to the other level crossings.

3.3 Flows

Drawings have been produced for each test that show the total flows, development trip distribution and difference between the test flows and the base flows. These are included in Appendix A, Appendix B and Appendix C. The main findings from the flow analysis are given below for each test.

Test 1

The impact of this development is to produce an additional (compared to 2026 Base) 700 total trips on A63 Selby bypass from East Common Lane to A63 / A19 Barlby Road roundabout, and an additional 580 total trips on Barlby Road in the vicinity of the site access points. Flow increases on Wistow Lane as traffic from the north looks for an alternative route to avoid Barlby Road. Flows decrease on Doncaster Road and Bawtry Road as traffic uses the bypass to access the development rather than the town centre.

Test 2

The impact of this development is to produce an additional (compared to 2026 Base) 600 total trips on A63 Selby bypass from East Common Lane to A63 / A19 Barlby Road roundabout, and an additional 600 total vehicles on Barlby Road in the vicinity of the site access points. Total flow increases on Leeds Road and Flaxley Road by around 220 vehicles which accounts for the majority of development trips produced by Site A.

When compared to Test 1 flows there is an increase in vehicles travelling through the town centre which explains why the signalised junctions perform better in Test 1.

Flows are slightly reduced on Wistow Road as traffic from the north west seeks an alternative route avoiding the more congested town centre.

4 CONCLUSIONS

4.1 Junction operation

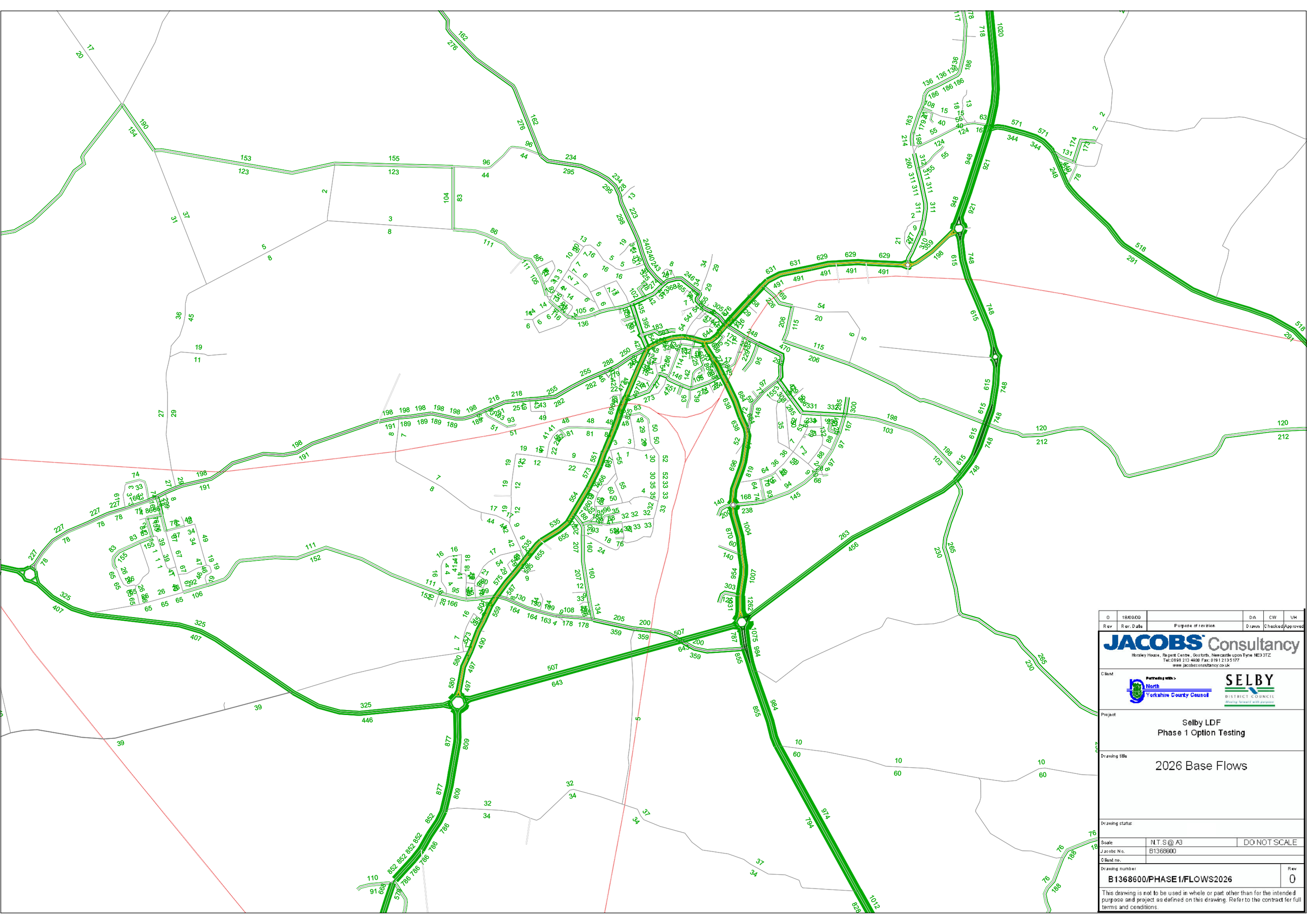
The modelling of both Test 1 (Sites D and G2) and Test 2 (Sites A, D and G1) resulted in the signalised junctions at Gowthorpe / Scott Road / Brook Street and at Barlby Road / Ousegate / New Street / Water Hill Lane in Selby town centre operating over capacity. Test 2 produced higher RFC values due to the routing of development trips produced by Site A which travel through the town centre. Modifications are required to these junctions in order to accommodate the development traffic.

The roundabouts tested all coped comfortably with the additional trips provided by the developments. There is therefore scope to attempt to divert traffic from the congested town centre to make more use of the bypass.

4.2 Mitigation study

A mitigation study must now be carried out on the signalised junctions at Gowthorpe / Scott Road / Brook Street and at Barlby Road / Ousegate / New Street / Water Hill Lane. The aim of the mitigation study must be to propose, test and cost a method by which the RFCs of these junctions is reduced to less than 1, and if possible to 0.85. The basis for this study must be to use the worse case scenario flows from Test 2 (Sites A, D and G1).

APPENDIX A FLOW DIAGRAMS



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0	18/09/09		DA	CW	VH

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Client: Partnering with: North Yorkshire County Council; SELBY DISTRICT COUNCIL

Project: Selby LDF
Phase 1 Option Testing

Drawing title: 2026 Base Flows

Drawing status:

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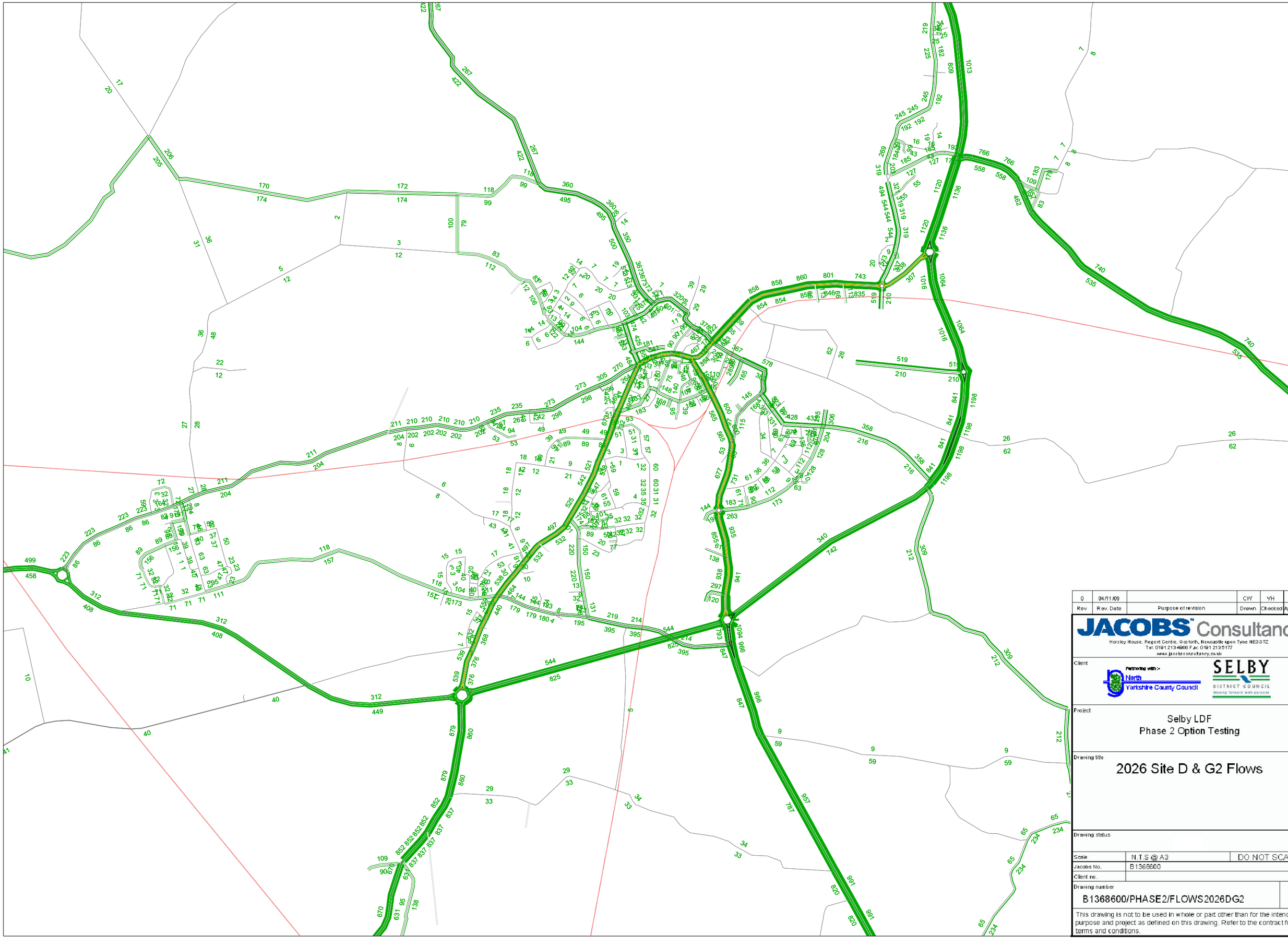
Client no.		

Drawing number: B1368600/PHASE1/FLOWS2026 — Rev: 0



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Rev	Rev. Date	Purpose of revision	Drawn	Checked	Approved

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Partnering with :- North Yorkshire County Council

SELBY DISTRICT COUNCIL Moving forward with purpose

Project

Selby LDF
Phase 2 Option Testing

Drawing title

2026 Site D & G2 Flows

Drawing status

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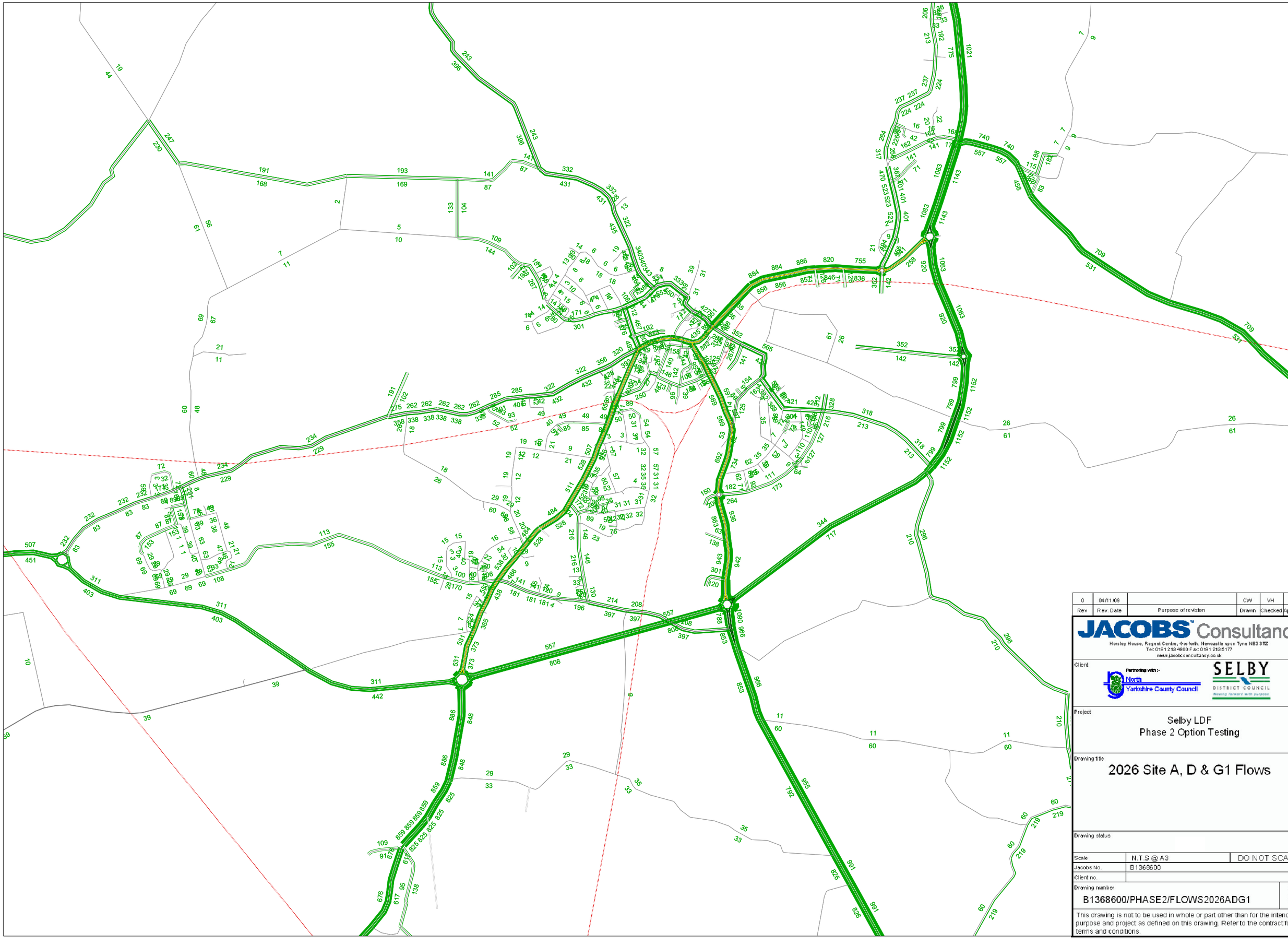

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SELBY DISTRICT COUNCIL Moving forward with purpose

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Selby LDF
Phase 2 Option Testing

Drawing title

2026 Site A, D & G1 Flows

Drawing status

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Client no.		

Drawing number: B1368600/PHASE2/FLOWS2026ADG1 — Rev: 0

APPENDIX B TRIP DISTRIBUTION FROM DEVELOPMENTS

Rev	Rev. Date	Purpose of revision	Drawn	Checked	Approved
0	22/10/09		CW	VH	SB

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Project

Selby LDF
Phase 2 Option Testing

Drawing title

2026 Site D & G2 Distribution

Drawing status

Scale	N.T.S @ A3	DO NOT SCALE
Jacobs No.	B1368600	
Client no.		
Drawing number	B1368600/PHASE2/DIST2026DG2	Rev 0

Rev.	Rev. Date	Purpose of revision	Drawn	Checked	Approved
0	04/11/09		CW	VH	SB

JACOBS Consultancy

Jacobs House, Regent Centre, Gosforth, Newcastle upon Tyne NE3 3TZ
Tel: 0191 2134900 Fax: 0191 2135177
www.jacobsconsultancy.co.uk

Client

Partnering with :-
North Yorkshire County Council

SELBY DISTRICT COUNCIL
Moving forward with purpose

Project

Selby LDF
Phase 2 Option Testing

Drawing title

2026 Site A, D & G1 Distribution

Drawing status

Scale	N.T.S @ A3	DO NOT SCALE
Jacobs No.	B1368600	
Client no.		
Drawing number	B1368600/PHASE2/DIST2026ADG1	Rev 0

APPENDIX C DIFFERENCE NETWORKS

Rev	Rev. Date	Purpose of revision	Drawn	Checked	Approved
0	04/11/09		CW	VH	SB

JACOBS Consultancy
Hornley House, Regent Centre, Gosforth, Newcastle upon Tyne NE3 3TZ
Tel: 0191 213 4000 Fax: 0191 213 5177
www.jacobsconsultancy.co.uk

Client: Partnering with:- North Yorkshire County Council; SELBY DISTRICT COUNCIL

Project: Selby LDF
Phase 2 Option Testing

Drawing title: Difference Network
2026 Site D & G2 - Base

Drawing status:

Scale	N.T.S @ A3	DO NOT SCALE
Jacobs No.	B1368600	
Client no.		
Drawing number	B1368600/PHASE2/DF2026DG2	Rev 0

Rev	Rev. Date	Purpose of revision	Drawn	Checked	Approved
0	04/11/09		CW	VH	SB

JACOBS Consultancy
Horsley House, Regent Centre, Gosforth, Newcastle upon Tyne NE3 3TZ
Tel: 0191 213 4900 Fax: 0191 213 5177
www.jacobsconsultancy.co.uk

Client

Partnering with :- North Yorkshire County Council

SELBY DISTRICT COUNCIL
Moving forward with purpose

Project

Selby LDF
Phase 2 Option Testing

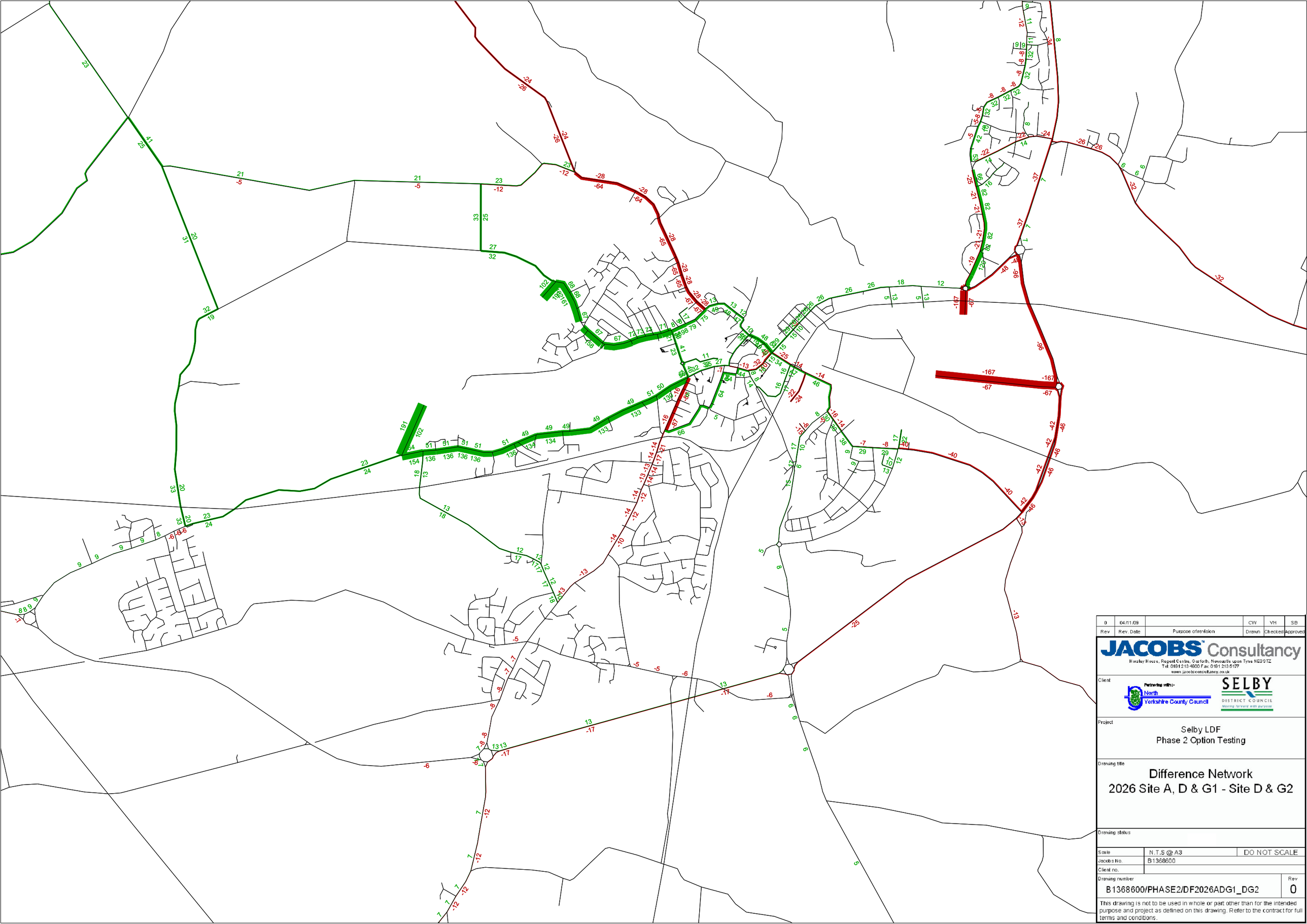
Drawing title

Difference Network
2026 Site A, D & G1 - Base

Drawing status

Scale	N.T.S @ A3	DO NOT SCALE
Jacobs No.	B1368600	
Client no.		

Drawing number: B1368600/PHASE2/DF2026ADG1 — Rev: 0



Rev	Rev. Date	Purpose of revision	Drawn	Checked	Approved
0	04/11/09		CW	YH	SB

JACOBS Consultancy
Hedley House, Regent Centre, Gosforth, Newcastle upon Tyne NE3 3TZ
Tel: 0191 213 4600 Fax: 0191 213 5177
www.jacobsconsultancy.co.uk

Client

Partnering with:- North Yorkshire County Council

SELBY DISTRICT COUNCIL

Project

Selby LDF
Phase 2 Option Testing

Drawing title

Difference Network
2026 Site A, D & G1 - Site D & G2

Drawing status

Scale	N.T.S @ A3	DO NOT SCALE
Jacobs No.	B1368600	
Client no.		

Drawing number: B1368600/PHASE2/DF2026ADG1_DG2 — Rev: 0

APPENDIX D JUNCTION ANALYSIS - ROUNDABOUTS

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
A1041 Abbots Rd 2026 Site A_D_G1.vai"
(drive-on-the-left) at 12:38:16 on Tuesday, 27 October 2009

.FILE PROPERTIES

RUN TITLE: A1041/Abbots Rd
LOCATION: Selby
DATE: 02/09/09
CLIENT: Selby
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A1041/Abbots Rd Roundabout Assessment

.INPUT DATA

ARM A - A1041 North
ARM B - Abbots Rd East
ARM C - A1041 South
ARM D - Shop Car Park

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.50	5.50	0.00	20.00	35.00	55.0	0.589	25.366
ARM B	3.50	5.75	5.50	23.00	35.00	50.0	0.545	21.172
ARM C	5.25	5.75	3.00	15.00	35.00	45.0	0.605	26.235
ARM D	3.75	5.00	3.00	19.00	35.00	53.0	0.523	19.860

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A1041/Abbots Rd

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.16	13.74	9.16
ARM B	15.00	45.00	75.00	3.30	4.95	3.30
ARM C	15.00	45.00	75.00	10.79	16.18	10.79
ARM D	15.00	45.00	75.00	1.88	2.81	1.88

DEMAND SET TITLE: A1041/Abbots Rd

TIME	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					

	ARM A	0.000	0.010	0.941	0.049
		0.0	7.0	690.0	36.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM B	0.072	0.000	0.780	0.148
		19.0	0.0	206.0	39.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM C	0.677	0.180	0.000	0.144
		584.0	155.0	0.0	124.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM D	0.593	0.133	0.273	0.000
		89.0	20.0	41.0	0.0
		(10.0)	(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.16	21.48	0.427		0.0	0.7	10.7		0.08
ARM B	3.30	14.05	0.235		0.0	0.3	4.4		0.09
ARM C	10.79	23.14	0.466		0.0	0.9	12.5		0.08
ARM D	1.88	13.12	0.143		0.0	0.2	2.4		0.09

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	10.94	21.16	0.517		0.7	1.1	15.4		0.10
ARM B	3.94	13.02	0.303		0.3	0.4	6.3		0.11
ARM C	12.88	23.00	0.560		0.9	1.3	18.2		0.10
ARM D	2.24	12.15	0.184		0.2	0.2	3.3		0.10

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	13.40	20.74	0.646		1.1	1.8	25.4		0.13
ARM B	4.83	11.63	0.415		0.4	0.7	10.1		0.15
ARM C	15.78	22.81	0.692		1.3	2.2	30.9		0.14
ARM D	2.74	10.83	0.253		0.2	0.3	4.9		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	13.40	20.73	0.646		1.8	1.8	26.9		0.14
ARM B	4.83	11.60	0.416		0.7	0.7	10.5		0.15
ARM C	15.78	22.81	0.692		2.2	2.2	33.0		0.14
ARM D	2.74	10.81	0.254		0.3	0.3	5.1		0.12

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	10.94	21.15	0.517		1.8	1.1	16.9		0.10
ARM B	3.94	12.98	0.304		0.7	0.4	6.8		0.11
ARM C	12.88	23.00	0.560		2.2	1.3	20.2		0.10
ARM D	2.24	12.11	0.185		0.3	0.2	3.5		0.10

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	9.16	21.47	0.427		1.1	0.8	11.6		0.08
ARM B	3.30	14.01	0.236		0.4	0.3	4.8		0.09
ARM C	10.79	23.14	0.466		1.3	0.9	13.6		0.08
ARM D	1.88	13.08	0.143		0.2	0.2	2.6		0.09

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.1	*
17.30	1.8	**
17.45	1.8	**
18.00	1.1	*
18.15	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.7	*
17.45	0.7	*

18.00	0.4
18.15	0.3

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.9	*
17.15	1.3	*
17.30	2.2	**
17.45	2.2	**
18.00	1.3	*
18.15	0.9	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1005.1	670.1	106.9	0.11	106.9	0.11
B	362.0	241.3	42.9	0.12	42.9	0.12
C	1183.4	788.9	128.3	0.11	128.4	0.11
D	205.7	137.1	21.8	0.11	21.8	0.11
ALL	2756.1	1837.4	299.9	0.11	299.9	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
A1041 Abbots Rd 2026 Site D_G2.vai"
(drive-on-the-left) at 15:25:13 on Wednesday, 21 October 2009

.FILE PROPERTIES

RUN TITLE: A1041/Abbots Rd
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A1041/Abbots Rd Roundabout Assessment

.INPUT DATA

ARM A - A1041 North
ARM B - Abbots Rd East
ARM C - A1041 South
ARM D - Shop Car Park

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	5.50	5.50	0.00	20.00	35.00	55.0	0.589	25.366
ARM B	3.50	5.75	5.50	23.00	35.00	50.0	0.545	21.172
ARM C	5.25	5.75	3.00	15.00	35.00	45.0	0.605	26.235
ARM D	3.75	5.00	3.00	19.00	35.00	53.0	0.523	19.860

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A1041/Abbots Rd

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS IFALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	9.13	13.69	9.13
ARM B	15.00	45.00	75.00	3.30	4.95	3.30
ARM C	15.00	45.00	75.00	10.69	16.03	10.69
ARM D	15.00	45.00	75.00	1.86	2.79	1.86

DEMAND SET TITLE: A1041/Abbots Rd

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					

	ARM A	0.000	0.010	0.944	0.047
		0.0	7.0	689.0	34.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM B	0.068	0.000	0.780	0.152
		18.0	0.0	206.0	40.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM C	0.674	0.181	0.000	0.145
		576.0	155.0	0.0	124.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM D	0.591	0.134	0.275	0.000
		88.0	20.0	41.0	0.0
		(10.0)	(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	9.13	21.48	0.425		0.0	0.7	10.6		0.08
ARM B	3.30	14.07	0.235		0.0	0.3	4.4		0.09
ARM C	10.69	23.16	0.462		0.0	0.8	12.3		0.08
ARM D	1.86	13.18	0.141		0.0	0.2	2.4		0.09
17.00-17.15									
ARM A	10.90	21.16	0.515		0.7	1.0	15.2		0.10
ARM B	3.94	13.04	0.302		0.3	0.4	6.3		0.11
ARM C	12.76	23.02	0.554		0.8	1.2	17.8		0.10
ARM D	2.22	12.22	0.182		0.2	0.2	3.2		0.10
17.15-17.30									
ARM A	13.34	20.74	0.643		1.0	1.8	25.1		0.13
ARM B	4.83	11.66	0.414		0.4	0.7	10.0		0.15
ARM C	15.63	22.84	0.684		1.2	2.1	30.0		0.14
ARM D	2.72	10.92	0.249		0.2	0.3	4.8		0.12
17.30-17.45									
ARM A	13.34	20.73	0.644		1.8	1.8	26.6		0.14
ARM B	4.83	11.63	0.415		0.7	0.7	10.5		0.15
ARM C	15.63	22.83	0.685		2.1	2.1	31.9		0.14
ARM D	2.72	10.89	0.250		0.3	0.3	5.0		0.12
17.45-18.00									
ARM A	10.90	21.15	0.515		1.8	1.1	16.8		0.10
ARM B	3.94	13.00	0.303		0.7	0.4	6.8		0.11
ARM C	12.76	23.02	0.555		2.1	1.3	19.7		0.10
ARM D	2.22	12.18	0.183		0.3	0.2	3.5		0.10
18.00-18.15									
ARM A	9.13	21.47	0.425		1.1	0.7	11.5		0.08
ARM B	3.30	14.03	0.235		0.4	0.3	4.8		0.09
ARM C	10.69	23.15	0.462		1.3	0.9	13.4		0.08
ARM D	1.86	13.14	0.142		0.2	0.2	2.5		0.09

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.0	*
17.30	1.8	**
17.45	1.8	**
18.00	1.1	*
18.15	0.7	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.7	*
17.45	0.7	*

18.00	0.4
18.15	0.3

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.2	*
17.30	2.1	**
17.45	2.1	**
18.00	1.3	*
18.15	0.9	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1001.0	667.3	105.9	0.11	105.9	0.11
B	362.0	241.3	42.8	0.12	42.8	0.12
C	1172.4	781.6	125.0	0.11	125.1	0.11
D	204.3	136.2	21.4	0.10	21.4	0.10
ALL	2739.7	1826.5	295.1	0.11	295.1	0.11

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited
Crowthorne House
Nine Mile Ride
Wokingham, Berks.
RG40 3GA,UK

Tel: +44 (0) 1344 770018
Fax: +44 (0) 1344 770864
Email: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
A19 Barlby Rd 2026 Site A_D_G1.vai"
(drive-on-the-left) at 12:46:00 on Tuesday, 27 October 2009

FILE PROPERTIES

RUN TITLE: A19/Barlby Rd
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby
ENUMERATOR: foleyd [LEC10579]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A19/Barlby Road Roundabout Assessment

INPUT DATA

ARM A - Barlby Rd (north)
ARM B - A19 East
ARM C - New Link South
ARM D - A19 West

GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.60	4.75	5.00	21.00	46.00	50.0	0.508	20.082
ARM B	3.75	5.50	4.00	34.00	46.00	48.0	0.534	21.662
ARM C	3.75	5.00	4.00	28.00	46.00	48.0	0.525	21.022
ARM D	4.00	5.00	3.50	23.00	46.00	40.0	0.544	22.191

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

TIME PERIOD BEGINS 16.45 AND ENDS 18.15
LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A19/Barlby Rd

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	5.88	8.81	5.88
ARM B	15.00	45.00	75.00	3.24	4.86	3.24
ARM C	15.00	45.00	75.00	4.41	6.62	4.41
ARM D	15.00	45.00	75.00	9.44	14.16	9.44

DEMAND SET TITLE: A19/Barlby Rd

TIME	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					

	ARM A	0.000	0.064	0.009	0.928
		0.0	30.0	4.0	436.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM B	0.039	0.000	0.158	0.803
		10.0	0.0	41.0	208.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM C	0.178	0.278	0.000	0.544
		63.0	98.0	0.0	192.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM D	0.588	0.283	0.128	0.000
		444.0	214.0	97.0	0.0
		(10.0)	(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	5.88	15.67	0.375		0.0	0.6	8.6		0.10
ARM B	3.24	16.13	0.201		0.0	0.2	3.6		0.08
ARM C	4.41	14.85	0.297		0.0	0.4	6.1		0.10
ARM D	9.44	19.02	0.496		0.0	1.0	13.9		0.10
17.00-17.15									
ARM A	7.02	15.16	0.463		0.6	0.8	12.3		0.12
ARM B	3.87	15.42	0.251		0.2	0.3	4.9		0.09
ARM C	5.27	14.00	0.376		0.4	0.6	8.7		0.11
ARM D	11.27	18.79	0.600		1.0	1.5	21.1		0.13
17.15-17.30									
ARM A	8.59	14.48	0.594		0.8	1.4	20.2		0.17
ARM B	4.73	14.47	0.327		0.3	0.5	7.0		0.10
ARM C	6.45	12.86	0.502		0.6	1.0	14.2		0.15
ARM D	13.80	18.48	0.747		1.5	2.8	38.7		0.21
17.30-17.45									
ARM A	8.59	14.46	0.594		1.4	1.4	21.5		0.17
ARM B	4.73	14.45	0.328		0.5	0.5	7.3		0.10
ARM C	6.45	12.84	0.503		1.0	1.0	14.9		0.16
ARM D	13.80	18.47	0.747		2.8	2.9	42.7		0.21
17.45-18.00									
ARM A	7.02	15.13	0.464		1.4	0.9	13.7		0.12
ARM B	3.87	15.39	0.251		0.5	0.3	5.2		0.09
ARM C	5.27	13.96	0.377		1.0	0.6	9.5		0.12
ARM D	11.27	18.78	0.600		2.9	1.5	24.3		0.14
18.00-18.15									
ARM A	5.88	15.65	0.375		0.9	0.6	9.4		0.10
ARM B	3.24	16.10	0.201		0.3	0.3	3.9		0.08
ARM C	4.41	14.81	0.298		0.6	0.4	6.6		0.10
ARM D	9.44	19.01	0.497		1.5	1.0	15.5		0.11

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.6	*
17.15	0.8	*
17.30	1.4	*
17.45	1.4	*
18.00	0.9	*
18.15	0.6	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.3
17.30	0.5
17.45	0.5

18.00	0.3
18.15	0.3

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	1.0	*
17.45	1.0	*
18.00	0.6	*
18.15	0.4	

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.5	*
17.30	2.8	***
17.45	2.9	***
18.00	1.5	**
18.15	1.0	*

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	644.5	429.6	85.8	0.13	85.8	0.13
B	355.1	236.8	31.9	0.09	31.9	0.09
C	484.0	322.7	60.0	0.12	60.0	0.12
D	1035.3	690.2	156.3	0.15	156.3	0.15
ALL	2518.9	1679.3	333.9	0.13	334.0	0.13

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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RG40 3GA,UK

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
A19 Barlby Rd 2026 Site D_G2.vai"
(drive-on-the-left) at 15:09:05 on Wednesday, 21 October 2009

.FILE PROPERTIES

RUN TITLE: A19/Barlby Rd
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby
ENUMERATOR: foleyd [LEC10579]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A19/Barlby Road Roundabout Assessment

.INPUT DATA

ARM A - Barlby Rd (north)
ARM B - A19 East
ARM C - New Link South
ARM D - A19 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	3.60	4.75	5.00	21.00	46.00	50.0	0.508	20.082
ARM B	3.75	5.50	4.00	34.00	46.00	48.0	0.534	21.662
ARM C	3.75	5.00	4.00	28.00	46.00	48.0	0.525	21.022
ARM D	4.00	5.00	3.50	23.00	46.00	40.0	0.544	22.191

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15

.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A19/Barlby Rd

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	FLOW STOPS IS REACHED	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK	RATE OF FLOW (VEH/MIN)
ARM A	15.00	45.00	75.00	4.34	6.51	4.34
ARM B	15.00	45.00	75.00	3.84	5.76	3.84
ARM C	15.00	45.00	75.00	6.49	9.73	6.49
ARM D	15.00	45.00	75.00	9.29	13.93	9.29

DEMAND SET TITLE: A19/Barlby Rd

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					

	ARM A	0.000	0.081	0.017	0.902
		0.0	28.0	6.0	313.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM B	0.033	0.000	0.199	0.769
		10.0	0.0	61.0	236.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM C	0.202	0.247	0.000	0.551
		105.0	128.0	0.0	286.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM D	0.564	0.244	0.192	0.000
		419.0	181.0	143.0	0.0
		(10.0)	(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	4.34	15.40	0.282		0.0	0.4	5.7		0.09
ARM B	3.84	16.63	0.231		0.0	0.3	4.4		0.08
ARM C	6.49	15.46	0.420		0.0	0.7	10.3		0.11
ARM D	9.29	18.53	0.501		0.0	1.0	14.2		0.11

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	5.18	14.84	0.349		0.4	0.5	7.8		0.10
ARM B	4.58	16.02	0.286		0.3	0.4	5.8		0.09
ARM C	7.75	14.74	0.526		0.7	1.1	15.7		0.14
ARM D	11.09	18.21	0.609		1.0	1.5	21.8		0.14

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	6.34	14.09	0.450		0.5	0.8	11.7		0.13
ARM B	5.61	15.20	0.369		0.4	0.6	8.5		0.10
ARM C	9.49	13.76	0.689		1.1	2.1	29.4		0.23
ARM D	13.58	17.77	0.764		1.5	3.1	41.7		0.23

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	6.34	14.06	0.451		0.8	0.8	12.2		0.13
ARM B	5.61	15.18	0.370		0.6	0.6	8.7		0.10
ARM C	9.49	13.75	0.690		2.1	2.2	32.3		0.23
ARM D	13.58	17.76	0.765		3.1	3.1	46.7		0.24

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	5.18	14.79	0.350		0.8	0.5	8.4		0.10
ARM B	4.58	15.99	0.287		0.6	0.4	6.2		0.09
ARM C	7.75	14.72	0.526		2.2	1.1	17.9		0.15
ARM D	11.09	18.18	0.610		3.1	1.6	25.4		0.15

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	4.34	15.37	0.282		0.5	0.4	6.1		0.09
ARM B	3.84	16.60	0.231		0.4	0.3	4.6		0.08
ARM C	6.49	15.44	0.420		1.1	0.7	11.4		0.11
ARM D	9.29	18.51	0.502		1.6	1.0	15.9		0.11

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	*
17.30	0.8	*
17.45	0.8	*
18.00	0.5	*
18.15	0.4	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.6	*
17.45	0.6	*

18.00	0.4
18.15	0.3

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.1	*
17.30	2.1	**
17.45	2.2	**
18.00	1.1	*
18.15	0.7	*

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.0	*
17.15	1.5	**
17.30	3.1	***
17.45	3.1	***
18.00	1.6	**
18.15	1.0	*

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	475.8	317.2	51.8	0.11	51.8	0.11
B	421.0	280.6	38.2	0.09	38.2	0.09
C	711.7	474.4	116.9	0.16	116.9	0.16
D	1018.8	679.2	165.8	0.16	165.8	0.16
ALL	2627.2	1751.5	372.6	0.14	372.7	0.14

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
A63 A1041 2026 Site A_D_G1.vai"
(drive-on-the-left) at 12:55:17 on Tuesday, 27 October 2009

.FILE PROPERTIES

RUN TITLE: A63/A1041
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby CC
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A53/A1041 roundabout assessment

.INPUT DATA

ARM A - A1041 North
ARM B - A63 East
ARM C - A1041 South
ARM D - A63 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.50	10.50	8.00	16.50	80.00	57.0	0.583	43.485
ARM B	8.50	10.50	8.00	21.00	80.00	35.0	0.640	47.807
ARM C	7.15	9.00	9.00	22.00	80.00	47.0	0.558	39.466
ARM D	6.50	11.25	18.00	28.00	80.00	63.0	0.563	41.223

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A63/A1041

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.86	22.29	14.86
ARM B	15.00	45.00	75.00	8.96	13.44	8.96
ARM C	15.00	45.00	75.00	9.82	14.74	9.82
ARM D	15.00	45.00	75.00	6.97	10.46	6.97

DEMAND SET TITLE: A63/A1041

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15	TURNING PROPORTIONS TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S)				

	ARM A	0.000	0.023	0.715	0.262
		0.0	27.0	850.0	312.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM B	0.049	0.000	0.321	0.630
		35.0	0.0	230.0	452.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM C	0.892	0.046	0.008	0.055
		701.0	36.0	6.0	43.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM D	0.489	0.504	0.007	0.000
		273.0	281.0	4.0	0.0
		(10.0)	(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	14.86	37.16	0.400		0.0	0.7	9.7		0.04
ARM B	8.96	34.11	0.263		0.0	0.4	5.2		0.04
ARM C	9.82	30.32	0.324		0.0	0.5	7.0		0.05
ARM D	6.97	32.01	0.218		0.0	0.3	4.1		0.04
17.00-17.15									
ARM A	17.75	36.69	0.484		0.7	0.9	13.7		0.05
ARM B	10.70	32.27	0.332		0.4	0.5	7.3		0.05
ARM C	11.73	29.23	0.401		0.5	0.7	9.8		0.06
ARM D	8.33	30.94	0.269		0.3	0.4	5.4		0.04
17.15-17.30									
ARM A	21.74	36.05	0.603		0.9	1.5	21.8		0.07
ARM B	13.11	29.76	0.440		0.5	0.8	11.5		0.06
ARM C	14.37	27.74	0.518		0.7	1.1	15.5		0.07
ARM D	10.20	29.48	0.346		0.4	0.5	7.8		0.05
17.30-17.45									
ARM A	21.74	36.05	0.603		1.5	1.5	22.6		0.07
ARM B	13.11	29.74	0.441		0.8	0.8	11.8		0.06
ARM C	14.37	27.73	0.518		1.1	1.1	16.0		0.07
ARM D	10.20	29.46	0.346		0.5	0.5	7.9		0.05
17.45-18.00									
ARM A	17.75	36.68	0.484		1.5	0.9	14.5		0.05
ARM B	10.70	32.23	0.332		0.8	0.5	7.6		0.05
ARM C	11.73	29.21	0.402		1.1	0.7	10.4		0.06
ARM D	8.33	30.92	0.269		0.5	0.4	5.6		0.04
18.00-18.15									
ARM A	14.86	37.15	0.400		0.9	0.7	10.2		0.04
ARM B	8.96	34.07	0.263		0.5	0.4	5.4		0.04
ARM C	9.82	30.30	0.324		0.7	0.5	7.4		0.05
ARM D	6.97	31.99	0.218		0.4	0.3	4.2		0.04

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	0.9	*
17.30	1.5	**
17.45	1.5	**
18.00	0.9	*
18.15	0.7	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	
17.30	0.8	*
17.45	0.8	*

18.00	0.5
18.15	0.4

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.7	*
17.30	1.1	*
17.45	1.1	*
18.00	0.7	*
18.15	0.5	

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.5	*
17.45	0.5	*
18.00	0.4	
18.15	0.3	

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1630.4	1086.9	92.6	0.06	92.6	0.06
B	983.2	655.4	48.8	0.05	48.8	0.05
C	1077.8	718.5	66.1	0.06	66.1	0.06
D	765.1	510.1	35.1	0.05	35.1	0.05
ALL	4456.4	2971.0	242.6	0.05	242.6	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited
Crowthorne House
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Wokingham, Berks.
RG40 3GA,UK

Tel: +44 (0) 1344 770018
Fax: +44 (0) 1344 770864
Email: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
A63 A1041 2026 Site D_G2.vai"
(drive-on-the-left) at 15:22:19 on Wednesday, 21 October 2009

.FILE PROPERTIES

RUN TITLE: A63/A1041
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby CC
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A53/A1041 roundabout assessment

.INPUT DATA

ARM A - A1041 North
ARM B - A63 East
ARM C - A1041 South
ARM D - A63 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	8.50	10.50	8.00	16.50	80.00	57.0	0.583	43.485
ARM B	8.50	10.50	8.00	21.00	80.00	35.0	0.640	47.807
ARM C	7.15	9.00	9.00	22.00	80.00	47.0	0.558	39.466
ARM D	6.50	11.25	18.00	28.00	80.00	63.0	0.563	41.223

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15

.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A63/A1041

ARM	NUMBER OF MINUTES FROM START WHEN TO RISE	FLOW STARTS	TOP OF PEAK IS REACHED	FLOW STOPS IFALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00		14.84	22.26	14.84
ARM B	15.00	45.00	75.00		9.27	13.91	9.27
ARM C	15.00	45.00	75.00		9.91	14.87	9.91
ARM D	15.00	45.00	75.00		6.81	10.22	6.81

DEMAND SET TITLE: A63/A1041

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S)				

	ARM A	0.000	0.024	0.714	0.263
		0.0	28.0	847.0	312.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM B	0.047	0.000	0.321	0.632
		35.0	0.0	238.0	469.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM C	0.881	0.057	0.008	0.054
		699.0	45.0	6.0	43.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM D	0.501	0.492	0.007	0.000
		273.0	268.0	4.0	0.0
		(10.0)	(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	14.84	37.19	0.399		0.0	0.7	9.7		0.04
ARM B	9.27	34.13	0.272		0.0	0.4	5.5		0.04
ARM C	9.91	30.20	0.328		0.0	0.5	7.1		0.05
ARM D	6.81	31.96	0.213		0.0	0.3	4.0		0.04
17.00-17.15									
ARM A	17.72	36.73	0.482		0.7	0.9	13.6		0.05
ARM B	11.08	32.30	0.343		0.4	0.5	7.7		0.05
ARM C	11.84	29.09	0.407		0.5	0.7	10.0		0.06
ARM D	8.13	30.88	0.263		0.3	0.4	5.3		0.04
17.15-17.30									
ARM A	21.70	36.10	0.601		0.9	1.5	21.7		0.07
ARM B	13.56	29.80	0.455		0.5	0.8	12.2		0.06
ARM C	14.50	27.57	0.526		0.7	1.1	16.0		0.08
ARM D	9.96	29.41	0.339		0.4	0.5	7.5		0.05
17.30-17.45									
ARM A	21.70	36.09	0.601		1.5	1.5	22.4		0.07
ARM B	13.56	29.77	0.456		0.8	0.8	12.5		0.06
ARM C	14.50	27.55	0.526		1.1	1.1	16.5		0.08
ARM D	9.96	29.39	0.339		0.5	0.5	7.7		0.05
17.45-18.00									
ARM A	17.72	36.72	0.483		1.5	0.9	14.4		0.05
ARM B	11.08	32.26	0.343		0.8	0.5	8.0		0.05
ARM C	11.84	29.07	0.407		1.1	0.7	10.6		0.06
ARM D	8.13	30.86	0.264		0.5	0.4	5.5		0.04
18.00-18.15									
ARM A	14.84	37.18	0.399		0.9	0.7	10.2		0.04
ARM B	9.27	34.09	0.272		0.5	0.4	5.7		0.04
ARM C	9.91	30.18	0.328		0.7	0.5	7.5		0.05
ARM D	6.81	31.94	0.213		0.4	0.3	4.1		0.04

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	0.9	*
17.30	1.5	*
17.45	1.5	*
18.00	0.9	*
18.15	0.7	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	*
17.30	0.8	*
17.45	0.8	*

18.00	0.5	*
18.15	0.4	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.7	*
17.30	1.1	*
17.45	1.1	*
18.00	0.7	*
18.15	0.5	

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.5	*
17.45	0.5	*
18.00	0.4	
18.15	0.3	

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1627.6	1085.1	92.0	0.06	92.0	0.06
B	1017.4	678.3	51.5	0.05	51.5	0.05
C	1087.4	724.9	67.8	0.06	67.8	0.06
D	747.3	498.2	34.0	0.05	34.0	0.05
ALL	4479.7	2986.5	245.4	0.05	245.4	0.05

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited
Crowthorne House
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Tel: +44 (0) 1344 770018
Fax: +44 (0) 1344 770864
Email: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
A63 A19 North 2026site A_D_G1.vai"
(drive-on-the-left) at 13:04:31 on Tuesday, 27 October 2009

.FILE PROPERTIES

RUN TITLE: A19 / A63 North
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby District Council
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby LDF
STATUS: Draft 1
DESCRIPTION: Roundabout Assessment

.INPUT DATA

ARM A - A63 North
ARM B - A63 South
ARM C - A19 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	6.25	9.50	11.20	18.00	80.00	50.0	0.533	37.074
ARM B	7.75	10.50	8.50	15.00	80.00	60.0	0.552	40.427
ARM C	7.00	9.00	8.50	21.00	80.00	62.0	0.521	36.642

V = approach half-width E = entry width L = effective flare length R = entry radius D = inscribed circle diameter PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15

.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A19 / A63

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.29	21.43	14.29
ARM B	15.00	45.00	75.00	11.50	17.25	11.50
ARM C	15.00	45.00	75.00	4.26	6.39	4.26

DEMAND SET TITLE: A19 / A63

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15	ARM A	0.000	0.870	0.130
		0.0	994.0	149.0
		(10.0)	(10.0)	(10.0)

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

```
I                   I  ARM B  I  0.882 I  0.000 I  0.118 I
I                   I         I  811.0 I    0.0 I  109.0 I
I                   I         I ( 10.0)I ( 10.0)I ( 10.0)I
I                   I         I       I       I       I
I                   I  ARM C  I  0.798 I  0.202 I  0.000 I
I                   I         I  272.0 I   69.0 I    0.0 I
I                   I         I ( 10.0)I ( 10.0)I ( 10.0)I
I                   I         I       I       I       I
 ------------------------------------------------------
```

. QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	14.29	33.25	0.430		0.0	0.7	11.0		0.05
ARM B	11.50	35.73	0.322		0.0	0.5	7.0		0.04
ARM C	4.26	28.04	0.152		0.0	0.2	2.6		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	17.06	33.16	0.515		0.7	1.1	15.4		0.06
ARM B	13.73	35.53	0.387		0.5	0.6	9.3		0.05
ARM C	5.09	27.01	0.188		0.2	0.2	3.4		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	20.89	33.03	0.633		1.1	1.7	24.6		0.08
ARM B	16.82	35.25	0.477		0.6	0.9	13.3		0.05
ARM C	6.23	25.59	0.244		0.2	0.3	4.7		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	20.89	33.03	0.633		1.7	1.7	25.6		0.08
ARM B	16.82	35.25	0.477		0.9	0.9	13.6		0.05
ARM C	6.23	25.58	0.244		0.3	0.3	4.8		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	17.06	33.15	0.515		1.7	1.1	16.5		0.06
ARM B	13.73	35.52	0.387		0.9	0.6	9.7		0.05
ARM C	5.09	26.99	0.189		0.3	0.2	3.5		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	14.29	33.24	0.430		1.1	0.8	11.6		0.05
ARM B	11.50	35.72	0.322		0.6	0.5	7.2		0.04
ARM C	4.26	28.02	0.152		0.2	0.2	2.7		0.04

.QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.1	*
17.30	1.7	**
17.45	1.7	**
18.00	1.1	*
18.15	0.8	*

.QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.6	*
17.30	0.9	*
17.45	0.9	*
18.00	0.6	*
18.15	0.5	

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3

17.45	0.3
18.00	0.2
18.15	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1567.3	1044.9	104.6	0.07	104.6	0.07
B	1261.5	841.0	60.1	0.05	60.1	0.05
C	467.6	311.7	21.9	0.05	21.9	0.05
ALL	3296.4	2197.6	186.6	0.06	186.6	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
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TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\A63 A19 North 2026site D_G2.vai"
(drive-on-the-left) at 14:51:32 on Wednesday, 21 October 2009

.FILE PROPERTIES

RUN TITLE: A19 / A63 North
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby District Council
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby LDF
STATUS: Draft 1
DESCRIPTION: Roundabout Assessment

.INPUT DATA

ARM A - A63 North
ARM B - A63 South
ARM C - A19 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	6.25	9.50	11.20	18.00	80.00	50.0	0.533	37.074
ARM B	7.75	10.50	8.50	15.00	80.00	60.0	0.552	40.427
ARM C	7.00	9.00	8.50	21.00	80.00	62.0	0.521	36.642

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A19 / A63

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS	TO RISE	TO TOP OF PEAK	FLOW STOPS	IS REACHED IFALLING	BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	14.20	21.30	14.20
ARM B	15.00	45.00	75.00	12.70	19.05	12.70
ARM C	15.00	45.00	75.00	4.22	6.34	4.22

DEMAND SET TITLE: A19 / A63

TIME	TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15	ARM A	0.000	0.873	0.127
		0.0	992.0	144.0
		(10.0)	(10.0)	(10.0)

	ARM B	0.841	0.000	0.159
		854.0	0.0	162.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.787	0.213	0.000
		266.0	72.0	0.0
		(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	14.20	33.23	0.427		0.0	0.7	10.9		0.05
ARM B	12.70	35.76	0.355		0.0	0.5	8.1		0.04
ARM C	4.22	27.76	0.152		0.0	0.2	2.6		0.04
17.00-17.15									
ARM A	16.96	33.13	0.512		0.7	1.0	15.3		0.06
ARM B	15.17	35.57	0.426		0.5	0.7	10.9		0.05
ARM C	5.05	26.67	0.189		0.2	0.2	3.4		0.05
17.15-17.30									
ARM A	20.77	33.00	0.629		1.0	1.7	24.2		0.08
ARM B	18.57	35.30	0.526		0.7	1.1	16.1		0.06
ARM C	6.18	25.18	0.245		0.2	0.3	4.8		0.05
17.30-17.45									
ARM A	20.77	33.00	0.629		1.7	1.7	25.2		0.08
ARM B	18.57	35.30	0.526		1.1	1.1	16.6		0.06
ARM C	6.18	25.17	0.245		0.3	0.3	4.9		0.05
17.45-18.00									
ARM A	16.96	33.13	0.512		1.7	1.1	16.3		0.06
ARM B	15.17	35.56	0.426		1.1	0.7	11.4		0.05
ARM C	5.05	26.66	0.189		0.3	0.2	3.6		0.05
18.00-18.15									
ARM A	14.20	33.22	0.427		1.1	0.8	11.5		0.05
ARM B	12.70	35.76	0.355		0.7	0.6	8.4		0.04
ARM C	4.22	27.74	0.152		0.2	0.2	2.7		0.04

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.0	*
17.30	1.7	**
17.45	1.7	**
18.00	1.1	*
18.15	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	*
17.15	0.7	*
17.30	1.1	*
17.45	1.1	*
18.00	0.7	*
18.15	0.6	*

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3

17.45	0.3
18.00	0.2
18.15	0.2

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1557.7	1038.5	103.3	0.07	103.3	0.07
B	1393.2	928.8	71.5	0.05	71.5	0.05
C	463.5	309.0	22.0	0.05	22.0	0.05
ALL	3414.3	2276.2	196.9	0.06	196.9	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
program advice and maintenance, contact:

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Email: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\A63 A19 South 2026 Site A_D_G1.vai"
(drive-on-the-left) at 13:08:16 on Tuesday, 27 October 2009

.FILE PROPERTIES

RUN TITLE: A63/A19 South
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A63/A19 South Roundabout assessment

.INPUT DATA

ARM A - A19 North
ARM B - A63 East
ARM C - A19 South
ARM D - A63 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.00	9.00	7.00	31.00	103.00	45.0	0.532	39.216
ARM B	8.25	10.50	18.00	29.00	103.00	55.0	0.583	46.216
ARM C	9.50	11.00	12.00	28.00	103.00	41.0	0.642	52.094
ARM D	8.75	10.25	10.50	31.00	103.00	55.0	0.582	45.959

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15

.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A63/A19 South

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.66	6.99	4.66
ARM B	15.00	45.00	75.00	10.10	15.15	10.10
ARM C	15.00	45.00	75.00	11.09	16.63	11.09
ARM D	15.00	45.00	75.00	3.89	5.83	3.89

DEMAND SET TITLE: A63/A19 South

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					

	ARM A	0.000	0.013	0.777	0.209
		0.0	5.0	290.0	78.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM B	0.001	0.000	0.640	0.359
		1.0	0.0	517.0	290.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM C	0.431	0.485	0.000	0.085
		382.0	430.0	0.0	75.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM D	0.476	0.392	0.132	0.000
		148.0	122.0	41.0	0.0
		(10.0)	(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	4.66	31.71	0.147		0.0	0.2	2.5		0.04
ARM B	10.10	39.04	0.259		0.0	0.3	5.1		0.03
ARM C	11.09	44.40	0.250		0.0	0.3	4.9		0.03
ARM D	3.89	35.88	0.108		0.0	0.1	1.8		0.03
17.00-17.15									
ARM A	5.57	30.94	0.180		0.2	0.2	3.2		0.04
ARM B	12.06	38.46	0.314		0.3	0.5	6.7		0.04
ARM C	13.24	43.82	0.302		0.3	0.4	6.4		0.03
ARM D	4.64	34.73	0.134		0.1	0.2	2.3		0.03
17.15-17.30									
ARM A	6.82	29.88	0.228		0.2	0.3	4.4		0.04
ARM B	14.77	37.66	0.392		0.5	0.6	9.5		0.04
ARM C	16.22	43.03	0.377		0.4	0.6	8.9		0.04
ARM D	5.69	33.14	0.172		0.2	0.2	3.1		0.04
17.30-17.45									
ARM A	6.82	29.88	0.228		0.3	0.3	4.4		0.04
ARM B	14.77	37.65	0.392		0.6	0.6	9.7		0.04
ARM C	16.22	43.02	0.377		0.6	0.6	9.0		0.04
ARM D	5.69	33.14	0.172		0.2	0.2	3.1		0.04
17.45-18.00									
ARM A	5.57	30.93	0.180		0.3	0.2	3.3		0.04
ARM B	12.06	38.45	0.314		0.6	0.5	7.0		0.04
ARM C	13.24	43.82	0.302		0.6	0.4	6.6		0.03
ARM D	4.64	34.72	0.134		0.2	0.2	2.3		0.03
18.00-18.15									
ARM A	4.66	31.70	0.147		0.2	0.2	2.6		0.04
ARM B	10.10	39.03	0.259		0.5	0.4	5.3		0.03
ARM C	11.09	44.39	0.250		0.4	0.3	5.1		0.03
ARM D	3.89	35.87	0.108		0.2	0.1	1.8		0.03

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.2	
17.15	0.2	
17.30	0.3	
17.45	0.3	
18.00	0.2	
18.15	0.2	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.5	
17.30	0.6	*
17.45	0.6	*

18.00	0.5
18.15	0.4

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.6	*
17.45	0.6	*
18.00	0.4	
18.15	0.3	

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2
18.15	0.1

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	511.5	341.0	20.5	0.04	20.5	0.04
B	1107.9	738.6	43.3	0.04	43.3	0.04
C	1216.3	810.8	40.9	0.03	40.9	0.03
D	426.4	284.3	14.4	0.03	14.4	0.03
ALL	3262.1	2174.7	119.2	0.04	119.2	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

For sales and distribution information,
program advice and maintenance, contact:

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Fax: +44 (0) 1344 770864
Email: softwarebureau@trl.co.uk
Web: www.trlsoftware.co.uk

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
A63 A19 South 2026 Site D_G2.vai"
(drive-on-the-left) at 16:12:24 on Wednesday, 21 October 2009

.FILE PROPERTIES

RUN TITLE: A63/A19 South
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A63/A19 South Roundabout assessment

.INPUT DATA

ARM A - A19 North
ARM B - A63 East
ARM C - A19 South
ARM D - A63 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	7.00	9.00	7.00	31.00	103.00	45.0	0.532	39.216
ARM B	8.25	10.50	18.00	29.00	103.00	55.0	0.583	46.216
ARM C	9.50	11.00	12.00	28.00	103.00	41.0	0.642	52.094
ARM D	8.75	10.25	10.50	31.00	103.00	55.0	0.582	45.959

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100
D	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15

.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A63/A19 South

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	TOP OF PEAK IS REACHED	FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	4.70	7.05	4.70
ARM B	15.00	45.00	75.00	10.31	15.47	10.31
ARM C	15.00	45.00	75.00	11.00	16.50	11.00
ARM D	15.00	45.00	75.00	3.89	5.83	3.89

DEMAND SET TITLE: A63/A19 South

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C	ARM D
16.45 - 18.15					

	ARM A	0.000	0.019	0.774	0.207
		0.0	7.0	291.0	78.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM B	0.001	0.000	0.640	0.359
		1.0	0.0	528.0	296.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM C	0.443	0.472	0.000	0.085
		390.0	415.0	0.0	75.0
		(10.0)	(10.0)	(10.0)	(10.0)
	ARM D	0.476	0.392	0.132	0.000
		148.0	122.0	41.0	0.0
		(10.0)	(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	4.70	31.81	0.148		0.0	0.2	2.6		0.04
ARM B	10.31	39.03	0.264		0.0	0.4	5.3		0.03
ARM C	11.00	44.35	0.248		0.0	0.3	4.9		0.03
ARM D	3.89	35.93	0.108		0.0	0.1	1.8		0.03
17.00-17.15									
ARM A	5.61	31.06	0.181		0.2	0.2	3.3		0.04
ARM B	12.31	38.45	0.320		0.4	0.5	7.0		0.04
ARM C	13.14	43.76	0.300		0.3	0.4	6.3		0.03
ARM D	4.64	34.79	0.133		0.1	0.2	2.3		0.03
17.15-17.30									
ARM A	6.87	30.03	0.229		0.2	0.3	4.4		0.04
ARM B	15.08	37.65	0.401		0.5	0.7	9.8		0.04
ARM C	16.09	42.96	0.374		0.4	0.6	8.8		0.04
ARM D	5.69	33.22	0.171		0.2	0.2	3.1		0.04
17.30-17.45									
ARM A	6.87	30.03	0.229		0.3	0.3	4.4		0.04
ARM B	15.08	37.64	0.401		0.7	0.7	10.0		0.04
ARM C	16.09	42.95	0.375		0.6	0.6	9.0		0.04
ARM D	5.69	33.21	0.171		0.2	0.2	3.1		0.04
17.45-18.00									
ARM A	5.61	31.05	0.181		0.3	0.2	3.4		0.04
ARM B	12.31	38.44	0.320		0.7	0.5	7.2		0.04
ARM C	13.14	43.76	0.300		0.6	0.4	6.5		0.03
ARM D	4.64	34.78	0.133		0.2	0.2	2.3		0.03
18.00-18.15									
ARM A	4.70	31.80	0.148		0.2	0.2	2.6		0.04
ARM B	10.31	39.02	0.264		0.5	0.4	5.5		0.03
ARM C	11.00	44.34	0.248		0.4	0.3	5.0		0.03
ARM D	3.89	35.92	0.108		0.2	0.1	1.8		0.03

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.2	
17.15	0.2	
17.30	0.3	
17.45	0.3	
18.00	0.2	
18.15	0.2	

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	
17.30	0.7	*
17.45	0.7	*

18.00	0.5
18.15	0.4

.QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.6	*
17.45	0.6	*
18.00	0.4	
18.15	0.3	

.QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2
18.15	0.1

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	515.6	343.7	20.6	0.04	20.6	0.04
B	1131.2	754.2	44.7	0.04	44.7	0.04
C	1206.7	804.4	40.5	0.03	40.5	0.03
D	426.4	284.3	14.4	0.03	14.4	0.03
ALL	3279.9	2186.6	120.3	0.04	120.3	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
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Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
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Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
a63 Leeds Rd 2026 Site A_D_G1.vai"
(drive-on-the-left) at 13:11:29 on Tuesday, 27 October 2009

.FILE PROPERTIES
****

RUN TITLE: A63/Leeds Rd
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby
ENUMERATOR: Foleyd [LEC10579]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A63/Leeds Rd(A63) Roundabout assessment

.INPUT DATA
****
ARM A - Leeds Rd (A63)
ARM B - A63 East
ARM C - A63 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	6.25	8.25	8.20	23.00	100.00	55.0	0.482	34.242
ARM B	6.00	9.25	9.50	22.00	100.00	50.0	0.497	35.658
ARM C	6.25	8.00	6.00	25.00	100.00	45.0	0.493	34.606

V = approach half-width E = entry width L = effective flare length R = entry radius D = inscribed circle diameter PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A63/Leeds Rd

ARM	FLOW STARTS	NUMBER OF MINUTES FROM START WHEN TO TOP OF PEAK	FLOW STOPS	BEFORE TO RISE	AT TOP IS REACHED	AFTER IFALLING	RATE OF FLOW (VEH/MIN) PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	1.04	1.56	1.04			
ARM B	15.00	45.00	75.00	5.04	7.56	5.04			
ARM C	15.00	45.00	75.00	6.34	9.51	6.34			

DEMAND SET TITLE: A63/Leeds Rd

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.000	1.000
		0.0	0.0	83.0
		(10.0)	(10.0)	(10.0)

	ARM B	0.089	0.000	0.911
		36.0	0.0	367.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.387	0.613	0.000
		196.0	311.0	0.0
		(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	1.04	29.25	0.035		0.0	0.0	0.5		0.04
ARM B	5.04	31.90	0.158		0.0	0.2	2.8		0.04
ARM C	6.34	31.24	0.203		0.0	0.3	3.7		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	1.24	28.89	0.043		0.0	0.0	0.7		0.04
ARM B	6.02	31.80	0.189		0.2	0.2	3.5		0.04
ARM C	7.57	31.20	0.243		0.3	0.3	4.7		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	1.52	28.39	0.053		0.0	0.1	0.8		0.04
ARM B	7.37	31.66	0.233		0.2	0.3	4.5		0.04
ARM C	9.27	31.14	0.298		0.3	0.4	6.2		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	1.52	28.39	0.053		0.1	0.1	0.8		0.04
ARM B	7.37	31.66	0.233		0.3	0.3	4.5		0.04
ARM C	9.27	31.14	0.298		0.4	0.4	6.3		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	1.24	28.89	0.043		0.1	0.0	0.7		0.04
ARM B	6.02	31.80	0.189		0.3	0.2	3.5		0.04
ARM C	7.57	31.19	0.243		0.4	0.3	4.9		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	1.04	29.25	0.035		0.0	0.0	0.6		0.04
ARM B	5.04	31.90	0.158		0.2	0.2	2.8		0.04
ARM C	6.34	31.24	0.203		0.3	0.3	3.9		0.04

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.1
17.45	0.1
18.00	0.0
18.15	0.0

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.3
17.15	0.3
17.30	0.4

17.45	0.4
18.00	0.3
18.15	0.3

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	113.8	75.9	4.1	0.04	4.1	0.04
B	552.6	368.4	21.6	0.04	21.6	0.04
C	695.2	463.5	29.8	0.04	29.8	0.04
ALL	1361.6	907.7	55.6	0.04	55.6	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

_____

For sales and distribution information,
program advice and maintenance, contact:

TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
a63 Leeds Rd 2026 Site D_G2.vai"
(drive-on-the-left) at 15:30:31 on Wednesday, 21 October 2009

.FILE PROPERTIES
****

RUN TITLE: A63/Leeds Rd
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby
ENUMERATOR: Foleyd [LEC10579]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A63/Leeds Rd(A63) Roundabout assessment

.INPUT DATA
****
ARM A - Leeds Rd (A63)
ARM B - A63 East
ARM C - A63 West

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	6.25	8.25	8.20	23.00	100.00	55.0	0.482	34.242
ARM B	6.00	9.25	9.50	22.00	100.00	50.0	0.497	35.658
ARM C	6.25	8.00	6.00	25.00	100.00	45.0	0.493	34.606

V = approach half-width E = entry width L = effective flare length R = entry radius D = inscribed circle diameter PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A63/Leeds Rd

ARM	FLOW STARTS (TO RISE)	TOP OF PEAK (IS REACHED)	FLOW STOPS (IFALLING)	RATE OF FLOW (VEH/MIN) BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
ARM A	15.00	45.00	75.00	1.08	1.61	1.08
ARM B	15.00	45.00	75.00	5.10	7.65	5.10
ARM C	15.00	45.00	75.00	6.22	9.34	6.22

DEMAND SET TITLE: A63/Leeds Rd

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.000	1.000
		0.0	0.0	86.0
		(10.0)	(10.0)	(10.0)

	ARM B	0.088	0.000	0.912
		36.0	0.0	372.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.376	0.624	0.000
		187.0	311.0	0.0
		(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	1.08	29.25	0.037		0.0	0.0	0.6		0.04
ARM B	5.10	31.88	0.160		0.0	0.2	2.8		0.04
ARM C	6.22	31.24	0.199		0.0	0.2	3.7		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	1.28	28.89	0.044		0.0	0.0	0.7		0.04
ARM B	6.09	31.78	0.192		0.2	0.2	3.5		0.04
ARM C	7.43	31.20	0.238		0.2	0.3	4.6		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	1.57	28.39	0.055		0.0	0.1	0.9		0.04
ARM B	7.46	31.63	0.236		0.2	0.3	4.6		0.04
ARM C	9.10	31.14	0.292		0.3	0.4	6.1		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	1.57	28.39	0.055		0.1	0.1	0.9		0.04
ARM B	7.46	31.63	0.236		0.3	0.3	4.6		0.04
ARM C	9.10	31.14	0.292		0.4	0.4	6.2		0.05

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	1.28	28.89	0.044		0.1	0.0	0.7		0.04
ARM B	6.09	31.78	0.192		0.3	0.2	3.6		0.04
ARM C	7.43	31.19	0.238		0.4	0.3	4.8		0.04

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	1.08	29.25	0.037		0.0	0.0	0.6		0.04
ARM B	5.10	31.88	0.160		0.2	0.2	2.9		0.04
ARM C	6.22	31.24	0.199		0.3	0.2	3.8		0.04

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.1
17.45	0.1
18.00	0.0
18.15	0.0

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.2
17.15	0.3
17.30	0.4

17.45	0.4
18.00	0.3
18.15	0.2

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	117.9	78.6	4.3	0.04	4.3	0.04
B	559.5	373.0	22.0	0.04	22.0	0.04
C	682.9	455.2	29.1	0.04	29.1	0.04
ALL	1360.2	906.8	55.4	0.04	55.4	0.04

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
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END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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TRL Limited Tel: +44 (0) 1344 770018
Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
a63 minor road 2026 Site A_D_G1.vai"
(drive-on-the-left) at 13:14:10 on Tuesday, 27 October 2009

.FILE PROPERTIES

RUN TITLE: A63/Minor Road
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby CC
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A63/Minor road junction assessment

.INPUT DATA

ARM A - A63 North
ARM B - A63 South
ARM C - Minor Road

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	6.50	8.00	7.80	19.00	60.00	55.0	0.594	34.163
ARM B	8.00	10.25	11.00	18.00	60.00	50.0	0.697	43.730
ARM C	4.75	8.25	10.50	19.00	60.00	68.0	0.520	28.165

V = approach half-width E = entry width L = effective flare length R = entry radius D = inscribed circle diameter PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A63/Minor Road

ARM	FLOW STARTS	TOP OF PEAK	FLOW STOPS	BEFORE	AT TOP	AFTER
	TO RISE	IS REACHED	IFALLING	PEAK	OF PEAK	PEAK
ARM A	15.00	45.00	75.00	13.29	19.93	13.29
ARM B	15.00	45.00	75.00	9.99	14.98	9.99
ARM C	15.00	45.00	75.00	4.40	6.60	4.40

DEMAND SET TITLE: A63/Minor Road

TIME	FROM/TO	ARM A	ARM B	ARM C
16.45 - 18.15				
	ARM A	0.000	0.960	0.040
		0.0	1020.0	43.0
		(10.0)	(10.0)	(10.0)

	ARM B	0.876	0.000	0.124
		700.0	0.0	99.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.625	0.375	0.000
		220.0	132.0	0.0
		(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	13.29	30.08	0.442		0.0	0.8	11.5		0.06
ARM B	9.99	39.38	0.254		0.0	0.3	5.0		0.03
ARM C	4.40	21.07	0.209		0.0	0.3	3.9		0.06

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.00-17.15									
ARM A	15.87	29.89	0.531		0.8	1.1	16.4		0.07
ARM B	11.93	39.31	0.303		0.3	0.4	6.4		0.04
ARM C	5.25	20.17	0.260		0.3	0.4	5.2		0.07

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.15-17.30									
ARM A	19.43	29.63	0.656		1.1	1.9	26.9		0.10
ARM B	14.61	39.21	0.373		0.4	0.6	8.7		0.04
ARM C	6.43	18.96	0.339		0.4	0.5	7.5		0.08

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.30-17.45									
ARM A	19.43	29.62	0.656		1.9	1.9	28.2		0.10
ARM B	14.61	39.21	0.373		0.6	0.6	8.9		0.04
ARM C	6.43	18.95	0.340		0.5	0.5	7.7		0.08

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
17.45-18.00									
ARM A	15.87	29.88	0.531		1.9	1.1	17.7		0.07
ARM B	11.93	39.31	0.303		0.6	0.4	6.6		0.04
ARM C	5.25	20.17	0.261		0.5	0.4	5.4		0.07

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
18.00-18.15									
ARM A	13.29	30.08	0.442		1.1	0.8	12.2		0.06
ARM B	9.99	39.38	0.254		0.4	0.3	5.2		0.03
ARM C	4.40	21.05	0.209		0.4	0.3	4.0		0.06

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.1	*
17.30	1.9	**
17.45	1.9	**
18.00	1.1	*
18.15	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.6	*
17.45	0.6	*
18.00	0.4	
18.15	0.3	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.3	
17.15	0.4	
17.30	0.5	*

17.45	0.5	*
18.00	0.4	
18.15	0.3	

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1457.6	971.7	112.9	0.08	112.9	0.08
B	1095.6	730.4	40.9	0.04	40.9	0.04
C	482.7	321.8	33.6	0.07	33.6	0.07
ALL	3035.9	2023.9	187.4	0.06	187.4	0.06

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

_____ A R C A D Y 6 _____

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)

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Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK

Run with file:-
"p:\JC\FeeNo\B1368600 XT Selby LDF Option Appraisal\Modelling\Junctions\Arcady\Arcady Files KD\
a63 minor road 2026 Site D_G2.vai"
(drive-on-the-left) at 15:13:25 on Wednesday, 21 October 2009

.FILE PROPERTIES

RUN TITLE: A63/Minor Road
LOCATION: Selby
DATE: 21/10/09
CLIENT: Selby CC
ENUMERATOR: holdenv [NEW25515]
JOB NUMBER: Selby
STATUS:
DESCRIPTION: A63/Minor road junction assessment

.INPUT DATA

ARM A - A63 North
ARM B - A63 South
ARM C - Minor Road

.GEOMETRIC DATA

ARM	V (M)	E (M)	L (M)	R (M)	D (M)	PHI (DEG)	SLOPE	INTERCEPT (PCU/MIN)
ARM A	6.50	8.00	7.80	19.00	60.00	55.0	0.594	34.163
ARM B	8.00	10.25	11.00	18.00	60.00	50.0	0.697	43.730
ARM C	4.75	8.25	10.50	19.00	60.00	68.0	0.520	28.165

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

.TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

ARM	FLOW SCALE(%)
A	100
B	100
C	100

.TIME PERIOD BEGINS 16.45 AND ENDS 18.15
.LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

DEMAND SET TITLE: A63/Minor Road

ARM	FLOW STARTS TO RISE	TOP OF PEAK	FLOW STOPS IS REACHED	BEFORE PEAK	AT TOP OF PEAK	AFTER PEAK
	NUMBER OF MINUTES FROM START WHEN			RATE OF FLOW (VEH/MIN)		
ARM A	15.00	45.00	75.00	13.30	19.95	13.30
ARM B	15.00	45.00	75.00	10.51	15.77	10.51
ARM C	15.00	45.00	75.00	6.49	9.73	6.49

DEMAND SET TITLE: A63/Minor Road

TIME	FROM/TO	ARM A	ARM B	ARM C
	TURNING PROPORTIONS			
	TURNING COUNTS (VEH/HR)			
	(PERCENTAGE OF H.V.S)			
16.45 - 18.15	ARM A	0.000	0.949	0.051
		0.0	1010.0	54.0
		(10.0)	(10.0)	(10.0)

	ARM B	0.816	0.000	0.184
		686.0	0.0	155.0
		(10.0)	(10.0)	(10.0)
	ARM C	0.636	0.364	0.000
		330.0	189.0	0.0
		(10.0)	(10.0)	(10.0)

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
16.45-17.00									
ARM A	13.30	29.66	0.448		0.0	0.8	11.8		0.06
ARM B	10.51	39.29	0.268		0.0	0.4	5.4		0.03
ARM C	6.49	21.16	0.307		0.0	0.4	6.4		0.07
17.00-17.15									
ARM A	15.88	29.38	0.540		0.8	1.2	17.0		0.07
ARM B	12.55	39.19	0.320		0.4	0.5	7.0		0.04
ARM C	7.75	20.28	0.382		0.4	0.6	9.0		0.08
17.15-17.30									
ARM A	19.45	29.01	0.670		1.2	2.0	28.6		0.10
ARM B	15.37	39.07	0.394		0.5	0.6	9.5		0.04
ARM C	9.49	19.09	0.497		0.6	1.0	14.1		0.10
17.30-17.45									
ARM A	19.45	29.00	0.671		2.0	2.0	30.1		0.10
ARM B	15.37	39.07	0.394		0.6	0.6	9.7		0.04
ARM C	9.49	19.08	0.497		1.0	1.0	14.7		0.10
17.45-18.00									
ARM A	15.88	29.38	0.541		2.0	1.2	18.4		0.07
ARM B	12.55	39.19	0.320		0.6	0.5	7.2		0.04
ARM C	7.75	20.28	0.382		1.0	0.6	9.6		0.08
18.00-18.15									
ARM A	13.30	29.65	0.449		1.2	0.8	12.6		0.06
ARM B	10.51	39.28	0.268		0.5	0.4	5.6		0.03
ARM C	6.49	21.14	0.307		0.6	0.4	6.8		0.07

QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.2	*
17.30	2.0	**
17.45	2.0	**
18.00	1.2	*
18.15	0.8	*

QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.5	
17.30	0.6	*
17.45	0.6	*
18.00	0.5	
18.15	0.4	

QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.4	
17.15	0.6	*
17.30	1.0	*

17.45	1.0	*
18.00	0.6	*
18.15	0.4	

. QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

ARM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
A	1459.0	972.6	118.5	0.08	118.5	0.08
B	1153.2	768.8	44.3	0.04	44.3	0.04
C	711.7	474.4	60.7	0.09	60.7	0.09
ALL	3323.8	2215.9	223.5	0.07	223.5	0.07

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.
* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.
* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

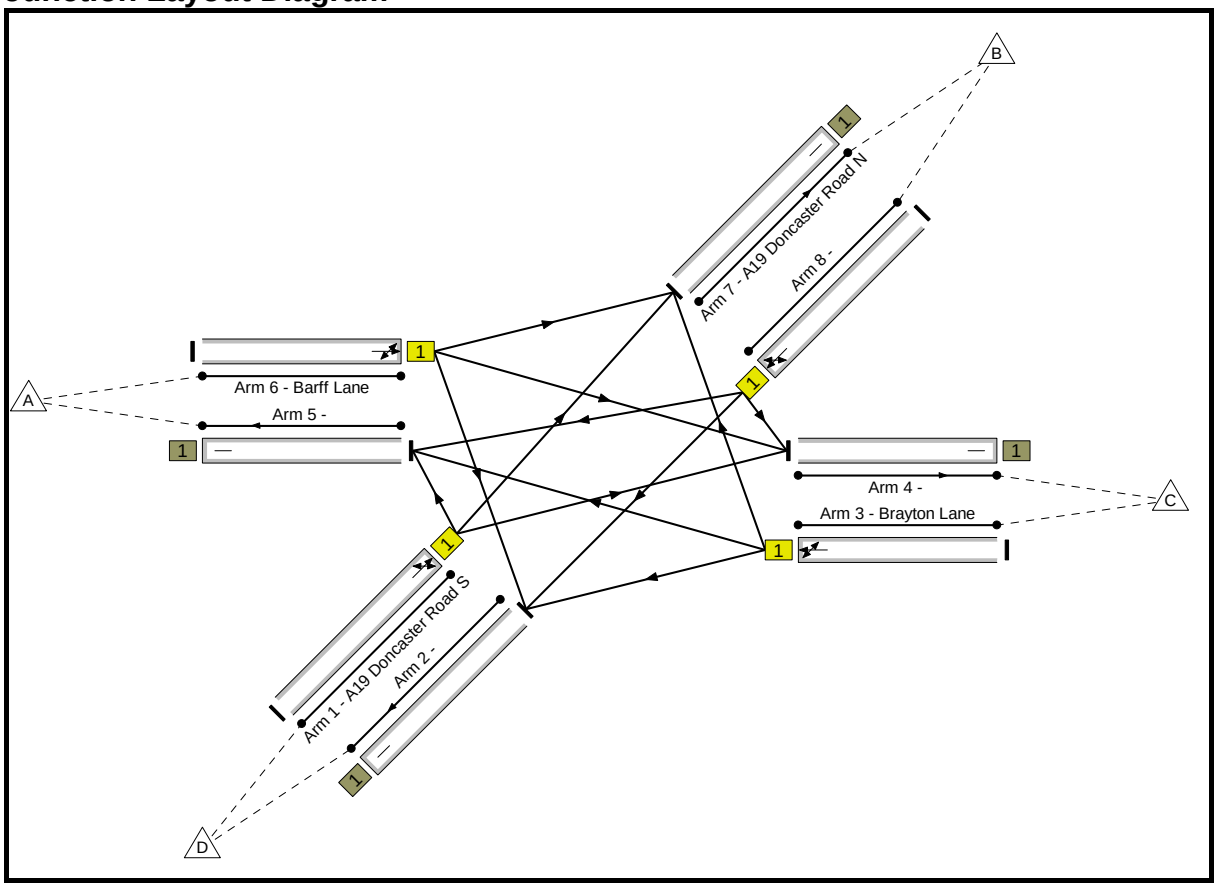
APPENDIX E JUNCTION ANALYSIS – SIGNALS

Basic Results Summary

User and Project Details

Project:	**Selby VISUM**
Title:	**Brayton Crossroads**
Location:	Selby
File name:	KD Brayton Crossroads.lsgx
Author:	Edward Downer
Company:	Jacobs Consultancy
Address:	Horsley House, Regent Centre, Gosforth, Newcastle upon Tyne, NE3 3
Controller:	Generic
SCN:	
Notes:	

Junction Layout Diagram



Scenario 12: '2026 Site D & G2'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 12: '2026 Site D & G2'

Traffic Flow Matrix

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	10	85	16	111
	B	58	0	22	384	464
	C	108	34	0	40	182
	D	23	494	41	0	558
	Tot.	189	538	148	440	1315

Basic Results Summary

Link Results

Link Num	Link Desc	Link Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave 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 Veh (s/pcu)	Mean Max Queue (pcu)
1/1	A19 Doncaster Road S Right Left Ahead	U	C		1	36	-	558	1800	1800	833	67.0	-	-	-	3.6	23.3	10.6
3/1	Brayton Lane Left Ahead Right	U	B		1	12	-	182	1800	1800	293	62.2	-	-	-	2.4	47.3	4.6
6/1	Barff Lane U-Turn Ahead Left	U	D		1	12	-	111	1800	1800	293	37.9	-	-	-	1.2	39.8	2.5
8/1	Ahead U-Turn Right	U	A		1	36	-	464	1800	1800	833	55.7	-	-	-	2.6	20.4	8.0

PRC for Signalled Links (%): 34.3 Total Delay for Signalled Links (pcuHr): 9.86

PRC Over All Links (%): 34.3 Total Delay Over All Links(pcuHr): 9.86 Cycle Time (s): 80

Scenario 13: '2026 Site A & D & G1'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 13: '2026 Site A & D & G1'

Traffic Flow Matrix

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	10	80	16	106
	B	58	0	25	383	466
	C	105	40	0	38	183
	D	23	488	41	0	552
	Tot.	186	538	146	437	1307

Basic Results Summary

Link Results

Link Num	Link Desc	Link Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave 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 Veh (s/pcu)	Mean Max Queue (pcu)
1/1	A19 Doncaster Road S Right Left Ahead	U	C		1	36	-	552	1800	1800	833	66.3	-	-	-	3.5	23.0	10.5
3/1	Brayton Lane Left Ahead Right	U	B		1	12	-	183	1800	1800	293	62.6	-	-	-	2.4	47.4	4.6
6/1	Barff Lane U-Turn Ahead Left	U	D		1	12	-	106	1800	1800	293	36.2	-	-	-	1.2	39.4	2.4
8/1	Ahead U-Turn Right	U	A		1	36	-	466	1800	1800	833	56.0	-	-	-	2.7	20.5	8.1

PRC for Signalled Links (%): 35.7 Total Delay for Signalled Links (pcuHr): 9.76

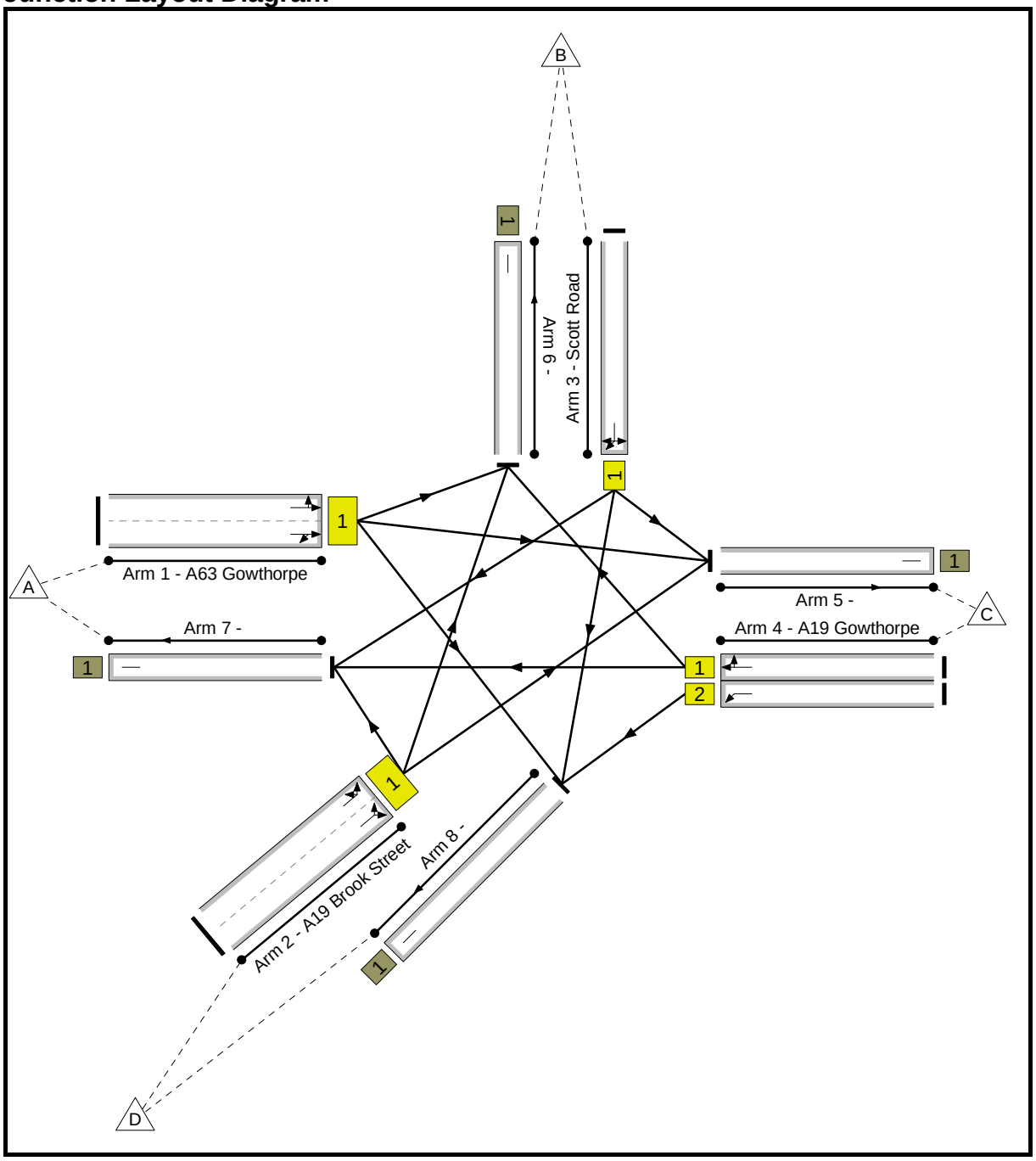
PRC Over All Links (%): 35.7 Total Delay Over All Links(pcuHr): 9.76 Cycle Time (s): 80

Flow+Results

User and Project Details

Project:	**Selby VISUM**
Title:	**Gowthorpe/Brooke Street/Scott Road/Leeds Road**
Location:	Selby
File name:	KD Gowthorpe Junction.lsgx
Author:	Edward Downer
Company:	Jacobs Consultancy
Address:	Horsley House, Regent Centre, Gosforth, Newcastle upon Tyne, NE3 3
Controller:	Generic
SCN:	NY124
Notes:	

Junction Layout Diagram



Scenario 12: '2026 Site D & G2'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 13: '2026 Site D & G2'

Traffic Flow Matrix

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	67	157	46	270
	B	91	0	131	334	556
	C	145	133	0	207	485
	D	27	284	191	0	502
	Tot.	263	484	479	587	1813

Basic Results Summary

Link Results

Link Num	Link Desc	Link Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave 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 Veh (s/pcu)	Mean Max Queue (pcu)
1/1	A63 Gowthorpe Ahead Left U-Turn	U	A		1	13	-	270	3600	3600	525	51.4	-	-	-	3.4	44.9	7.1
2/1	A19 Brook Street Ahead Left U-Turn	U	D		1	12	-	502	3600	3600	488	103.0	-	-	-	22.0	157.6	29.2
3/1	Scott Road Left Right Right2	U	C		1	26	-	556	1800	1800	506	109.8	-	-	-	37.0	239.4	45.7
4/1	A19 Gowthorpe Right Ahead	U	B		1	13	-	278	1800	1800	263	105.9	-	-	-	17.0	220.1	20.9
4/2	A19 Gowthorpe Left	U	B	E	1	32	19	207	1800	1800	619	33.5	-	-	-	1.6	27.7	4.3

PRC for Signalled Links (%): -22.0 Total Delay for Signalled Links (pcuHr): 80.91

PRC Over All Links (%): -22.0 Total Delay Over All Links(pcuHr): 80.91 Cycle Time (s): 96

Scenario 13: '2026 Site A & D & G1'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 14: '2026 Site A & D & G1'

Traffic Flow Matrix

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	85	189	46	320
	B	132	0	134	336	602
	C	230	142	0	113	485
	D	30	272	188	0	490
	Tot.	392	499	511	495	1897

Basic Results Summary

Link Results

Link Num	Link Desc	Link Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave 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 Veh (s/pcu)	Mean Max Queue (pcu)
1/1	A63 Gowthorpe Ahead Left U-Turn	U	A		1	16	-	320	3600	3600	637	50.2	-	-	-	3.7	41.3	8.1
2/1	A19 Brook Street Ahead Left U-Turn	U	D		1	10	-	490	3600	3600	412	118.8	-	-	-	51.7	379.6	58.5
3/1	Scott Road Left Right Right2	U	C		1	25	-	602	1800	1800	488	123.5	-	-	-	70.3	420.5	78.9
4/1	A19 Gowthorpe Right Ahead	U	B		1	16	-	372	1800	1800	319	116.7	-	-	-	36.4	352.5	41.1
4/2	A19 Gowthorpe Left	U	B	E	1	33	17	113	1800	1800	637	17.7	-	-	-	0.8	24.8	2.2

PRC for Signalled Links (%): -37.2 Total Delay for Signalled Links (pcuHr): 162.86
PRC Over All Links (%): -37.2 Total Delay Over All Links(pcuHr): 162.86 Cycle Time (s): 96

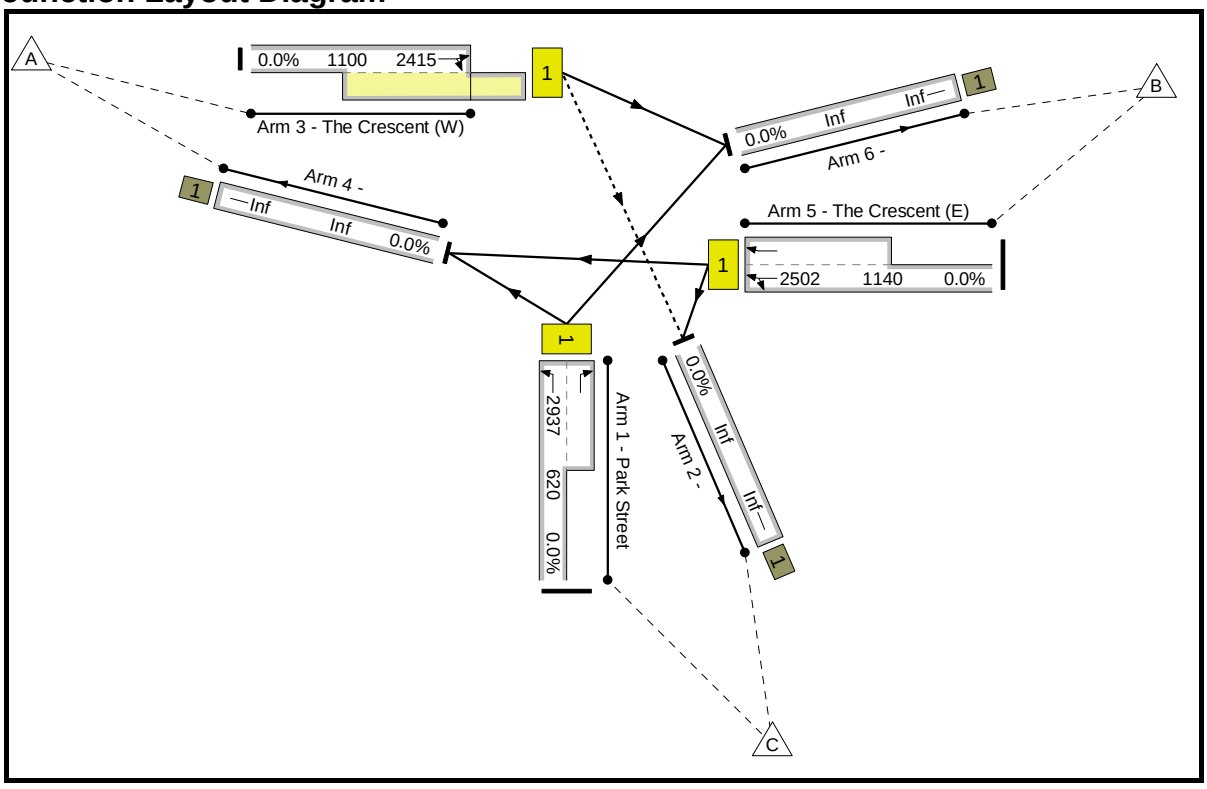
Basic Results Summary

User and Project Details

Project:	**Selby VISUM**
Title:	**Park Street T-Junction**
Location:	Selby
File name:	KD Park Street T-Junction.lsgx
Author:	Edward Downer
Company:	Jacobs Consultancy
Address:	Horsley House, Regent Centre, Gosforth, Newcastle upon Tyne, NE3 3
Controller:	Generic
SCN:	NY126
Notes:	

Scenario 1: 'AM'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 1: 'AM'

Junction Layout Diagram



Basic Results Summary

Flow Group 13: '2026 Site D & G2'
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	201	310	511
	B	247	0	116	363
	C	339	267	0	606
	Tot.	586	468	426	1480

Link Results

Link Num	Link Desc	Link Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave 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 Veh (s/pcu)	Mean Max Queue (pcu)
1/1	Park Street Left Right	U	C		1	19	-	606	3600	2700	720	84.2	-	-	-	6.6	39.4	13.8
3/1	The Crescent (W) Right Ahead	O	A		1	24	-	511	1800	1833	611	83.6	253	0	57	6.0	42.2	12.5
5/1	The Crescent (E) Left Ahead	U	B		1	24	-	363	3600	2952	984	36.9	-	-	-	2.2	21.4	5.8

PRC for Signalled Links (%): 6.9 Total Delay for Signalled Links (pcuHr): 14.79
PRC Over All Links (%): 6.9 Total Delay Over All Links(pcuHr): 14.79 Cycle Time (s): 75

Basic Results Summary

Flow Group 14: '2026 Site A & D & G1'
Desired Flow :

		Destination			
		A	B	C	Tot.
Origin	A	0	171	327	498
	B	274	0	108	382
	C	357	264	0	621
	Tot.	631	435	435	1501

Link Results

Link Num	Link Desc	Link Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave 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 Veh (s/pcu)	Mean Max Queue (pcu)
1/1	Park Street Left Right	U	C		1	18	-	621	3600	2747	696	89.2	-	-	-	8.1	47.2	15.8
3/1	The Crescent (W) Right Ahead	O	A		1	25	-	498	1800	1665	577	86.3	261	0	66	6.4	46.2	12.7
5/1	The Crescent (E) Left Ahead	U	B		1	25	-	382	3600	2908	1008	37.9	-	-	-	2.2	20.8	6.0

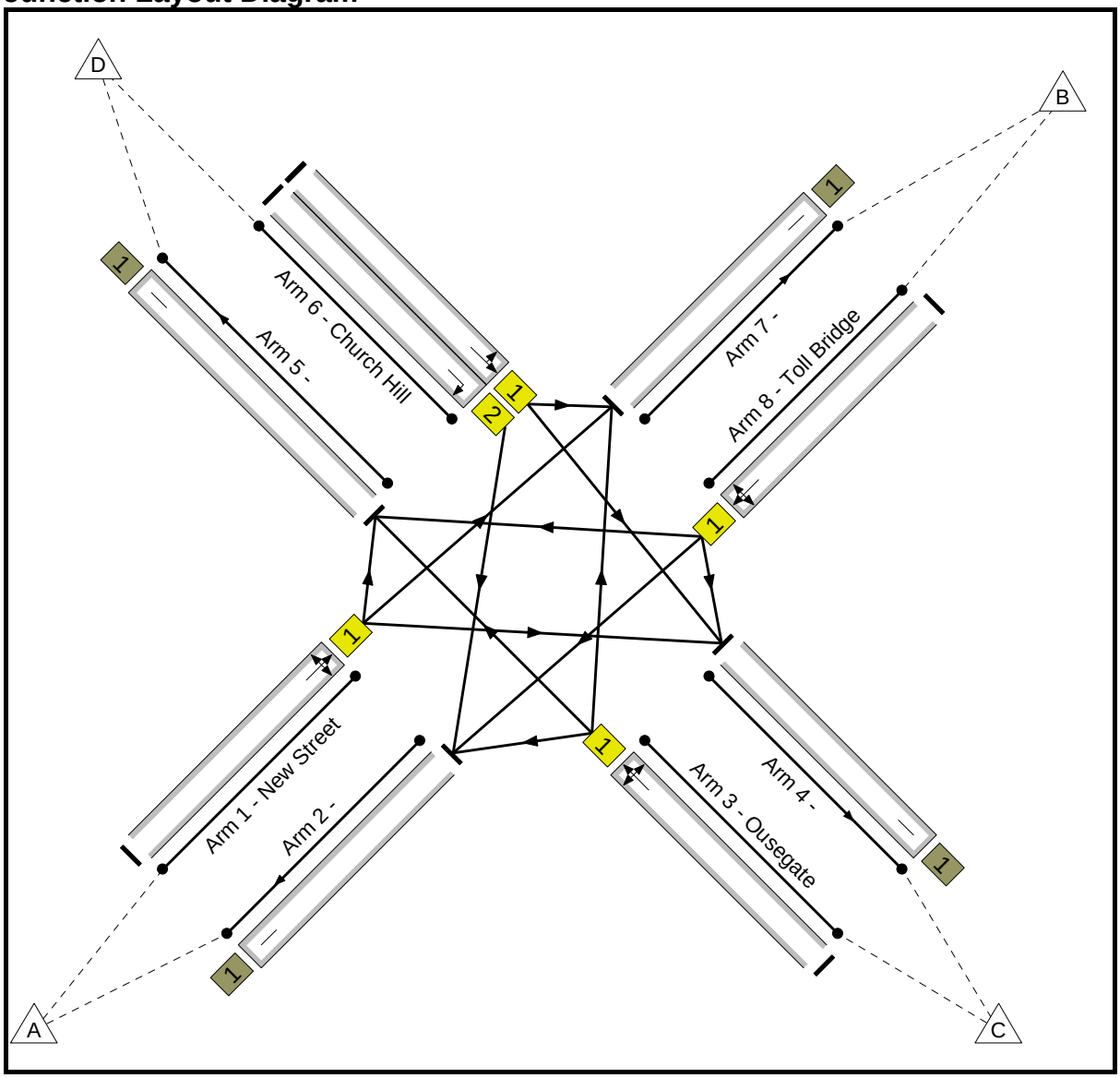
PRC for Signalled Links (%): 0.9 Total Delay for Signalled Links (pcuHr): 16.75
PRC Over All Links (%): 0.9 Total Delay Over All Links(pcuHr): 16.75 Cycle Time (s): 75

Flow+Results

User and Project Details

Project:	
Title:	
Location:	
File name:	KD Selby Toll Bridge.lsgx
Author:	Edward Downer
Company:	Jacobs Consultancy
Address:	Horsley House, Regent Centre, Gosforth, Newcastle upon Tyne, NE3 3
Controller:	Generic
SCN:	
Notes:	

Junction Layout Diagram



Scenario 12: '2026 Site D & G2'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 12: '2026 Site D & G2'

Traffic Flow Matrix

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	482	10	43	535
	B	280	0	146	397	823
	C	12	146	0	91	249
	D	42	294	101	0	437
	Tot.	334	922	257	531	2044

Basic Results Summary

Link Results

Link Num	Link Desc	Link Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave 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 Veh (s/pcu)	Mean Max Queue (pcu)
1/1	New Street Right Left Ahead	U	A		1	32	-	535	1800	1800	716	74.8	-	-	-	4.6	31.2	12.0
3/1	Ousegate Left Ahead Right	U	D		1	15	-	249	1800	1800	347	71.8	-	-	-	3.4	49.3	6.6
6/1	Church Hill Ahead Left	U	C		1	15	-	395	1800	1800	347	113.8	-	-	-	32.7	298.0	37.8
6/2	Church Hill Right	U	C		1	15	-	42	1800	1800	347	12.1	-	-	-	0.4	33.6	0.9
8/1	Toll Bridge Ahead Left Right	U	B		1	32	-	823	1800	1800	716	115.0	-	-	-	67.1	293.6	78.7

PRC for Signalled Links (%): -27.8 Total Delay for Signalled Links (pcuHr): 108.26

PRC Over All Links (%): -27.8 Total Delay Over All Links(pcuHr): 108.26 Cycle Time (s): 83

Scenario 13: '2026 Site A & D & G1'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 13: '2026 Site A & D & G1'

Traffic Flow Matrix

Desired Flow :

		Destination				
		A	B	C	D	Tot.
Origin	A	0	437	10	43	490
	B	294	0	128	416	838
	C	15	148	0	120	283
	D	40	366	95	0	501
	Tot.	349	951	233	579	2112

Basic Results Summary

Link Results

Link Num	Link Desc	Link Type	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave 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 Veh (s/pcu)	Mean Max Queue (pcu)
1/1	New Street Right Left Ahead	U	A		1	30	-	490	1800	1800	672	72.9	-	-	-	4.4	32.1	11.0
3/1	Ousegate Left Ahead Right	U	D		1	17	-	283	1800	1800	390	72.5	-	-	-	3.7	46.6	7.3
6/1	Church Hill Ahead Left	U	C		1	17	-	461	1800	1800	390	118.1	-	-	-	44.6	348.4	50.6
6/2	Church Hill Right	U	C		1	17	-	40	1800	1800	390	10.2	-	-	-	0.3	31.2	0.8
8/1	Toll Bridge Ahead Left Right	U	B		1	30	-	838	1800	1800	672	124.6	-	-	-	97.8	420.2	108.5

PRC for Signalled Links (%): -38.5 Total Delay for Signalled Links (pcuHr): 150.81

PRC Over All Links (%): -38.5 Total Delay Over All Links(pcuHr): 150.81 Cycle Time (s): 83