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The Priory, Wakefield Road
Pontefract

Transport Appeal Statement

Final Report for:

Mr Duffy, Mr Duffy & Mr Davies

February 2021

Cora IHT Ltd
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Infrastructure Highways Transport

Document Control

Document:	**Transport Appeal Statement**
Client:	**Mr Duffy, Mr Duffy & Mr Davies**
Project Number:	**16-1104**
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Checked:	**JW**
Date:	**18th January 2021**

Issue Number:	Date:	Revision Details:
1	18th January 2021	1st Issue
2	4th February 2021	2nd Issue
3		
4		

Cora IHT

Infrastructure Highways Transport

CONTENTS

1.0 INTRODUCTION

1.1 Qualification and Experience

1.1.1 My name is Toan Chau and I am a Director of Cora IHT Ltd. I hold a master's degree [MSc] in Highway Management and Engineering and a bachelor's degree [BEng (Hons)] in Civil Engineering.

1.1.2 Having worked in the transport sector for the last 23 years, I have considerable experience in the fields of highways, traffic and transportation, particularly in relation to the planning and development control aspects across the spectrum of land uses including residential, renewables, energy, retail, employment, leisure, health and education.

1.1.3 In addition to producing Transportation Assessments, Travel Plans, negotiating S106 agreements and S278 works, I've undertaken town centre studies, public transport studies, provided input into environmental impact assessments, and assessed brownfield regeneration sites. I have represented Clients at all levels, at Public Consultations, meetings in respect of both statutory requirements and the community involvement process, and I have prepared and given evidence at planning hearings and inquiries.

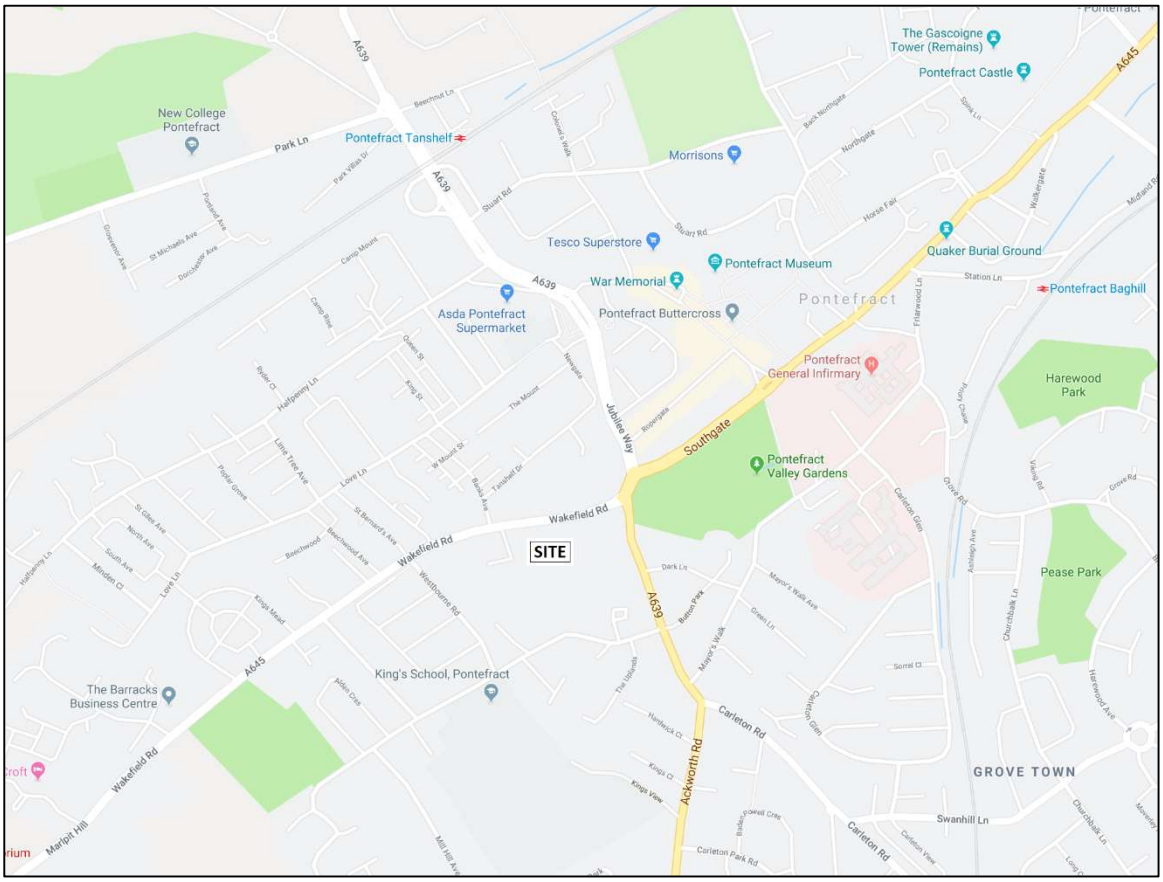
1.2 Introduction

1.2.1 Cora IHT have been instructed by Mr Duffy, Mr Duffy & Mr Davies to prepare a Transport Appeal statement following the refusal of a planning application for:

"Twenty-Two (22) Dwellings including associated works (Outline including access and layout) at Land Off Wakefield Road Town End Pontefract WF8 4H" (under reference 19/02277/OUT) by Wakefield Council on the 11th August 2020.

1.2.2 The site is located to the south of Wakefield Road which is subject to a 30mph speed limit. **Figure 1.1** illustrates the site location.

Figure 1.1: Site Location



1.2.3 The site has previously benefitted from an outline consent for 22 residential units (13/02705/OUT, decision dated 11 Feb 2014) where all access and highways matters were agreed:

"Outline Application for 22no. Dwellings (access only) together with demolition of existing dwelling and removal of commercial uses, Land at Wakefield Road Pontefract WF8 4HW"

1.2.4 The reserved matters application, 14/01310/REM was approved on 13th October 2014.

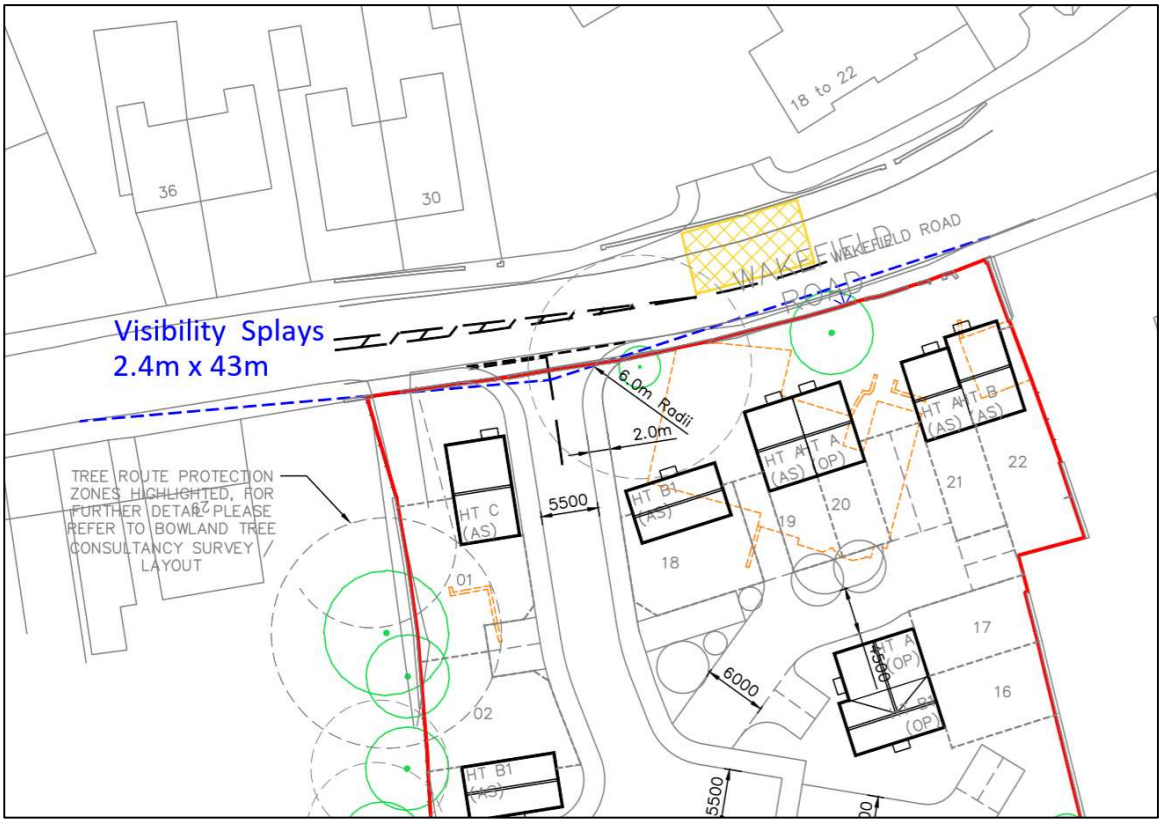
1.3 Proposed Development

1.3.1 The development proposals are for a residential development for up to 22 dwellings.

1.3.2 Access to the site is proposed off Wakefield Road provide a 5.5m carriageway, 2m footways on both sides and visibility of 2.4m x 43m to the west and exceeds 2.4m x 43m to the east.

1.3.3 **Figure 1.2** shows the proposed access arrangement as submitted in the original Transport Assessment. **Appendix A** provides the full drawing (*Dwg 16-1104-001A-Access Arrangement*).

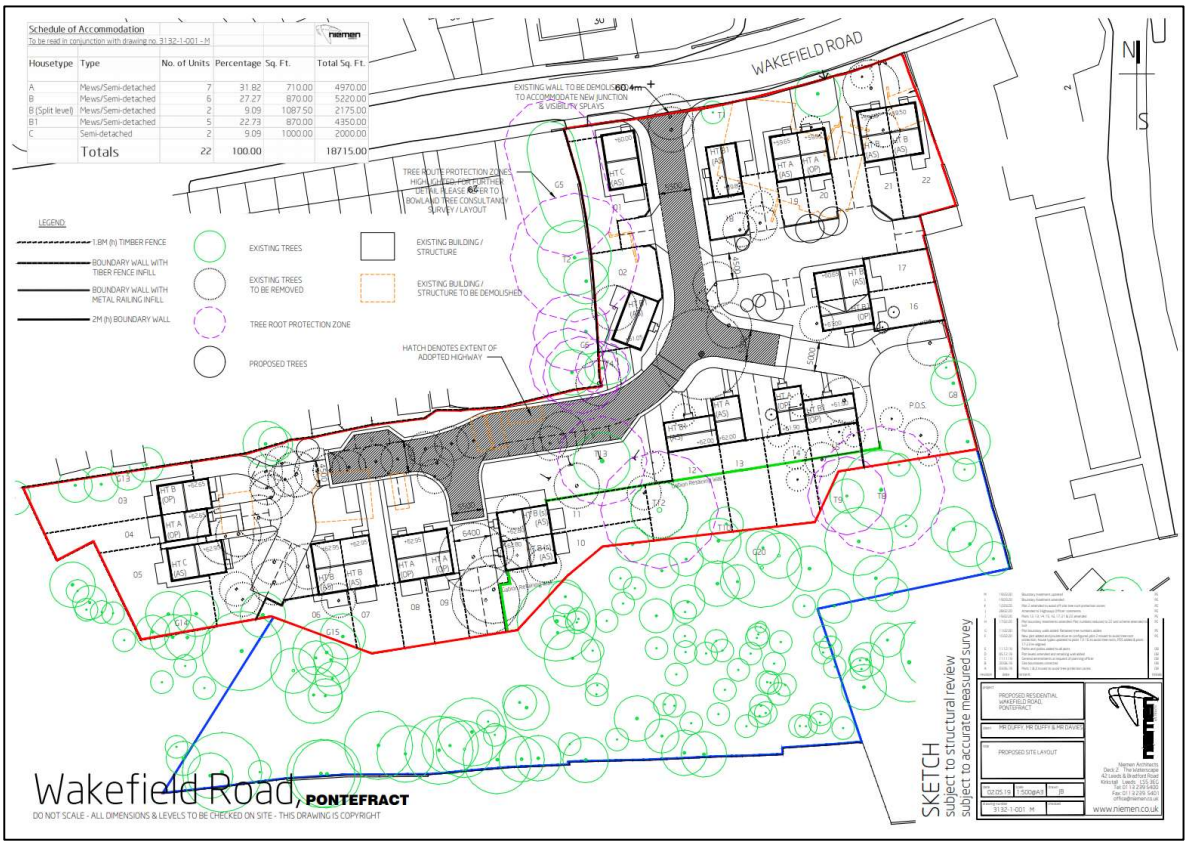
Figure 1.2: Proposed Access Arrangement



1.3.4 The highway consultation response following the submission of the transport assessment raised issues with the proposed internal layout. The site layout was amended to ensure each of the issues were addressed. This included ensuring the internal access had an adequate radius and that the turning head could accommodate the turning of larger vehicles.

1.3.5 **Figure 1.3** provides an extract of the latest site layout whilst **Appendix B** provides the full drawing (*Dwg 3132-1-001 -M- Proposed Site Layout 23-03-2020*).

Figure 1.3: Proposed Site Layout



1.4 Scope

1.4.1 Following this brief introduction:

- Section 2 sets out the highway reasons for refusal and Cora IHT's assessment of the reasons for refusal.
- The summary and conclusion are presented in Section 3.

2.0 HIGHWAY OBJECTION

2.1 Highway Reason for Refusal

2.1.1 The refusal reason 1 is as follows:

"By virtue of the existing levels of traffic upon, and the congested nature of, Wakefield Road (A645) the proposed development would have a detrimental impact upon access and highway safety for vehicles and pedestrians contrary to policy D14 of the Council's adopted Local Development Framework Development Policies Document and the NPPF."

2.1.2 The above objection was against the highway officer's recommendation provided at (CD2k) as all access and highways matters were agreed with the highway authority.

2.1.3 The highway comments were addressed within the committee report (CD3d) as follows:

"Having regard to the nature of the scheme, response of the Council's Highways Team and the details submitted as part of this application it is considered that the proposal is acceptable with regard to access and highway safety in accordance with the aforementioned policy."

2.2 Access Review

2.2.1 Cora IHT Limited has reviewed the highway reason for refusal and agrees with the committee report that *"the proposal is acceptable with regard to access and highway safety in accordance with the aforementioned policy".*

2.2.2 The proposed footway within the site is 2m which will be extended along the site boundary. The provision of 2m footways represents a significant betterment over the existing situation where the footpaths are narrow in places.

2.2.3 The proposed access is similar to the consented 13/02705/OUT application's access, however, further improves it by providing 2m footways on both sides of the access road rather than on one side. **Figure 2.1** provides an extract of the consented access whilst **Appendix C** provides the full drawing.

2.2.4 For completeness the proposed site access has been updated to reflect the updated site layout povides clarity on the improvements over and above what was previously consented. **Figure 2.2** provides an extract of the updated site access. **Appendix D** provides the full drawing (*Dwg 16-1104-001B-Access Arrangement*).

2.2.5 *Dwg 002-Access 11.85m Refuse Tracking* submitted during the consultation period presented the tracking for an 11.85m refuse vehicles entering and turning around within the site. For completeness a further tracking drawing has been prepared to show all tracking movements for an 11.85m at the proposed site access. **Appendix E** provides the full tracking drawing (Dwg 002A-Access 11.85m Refuse Tracking).

2.2.6 The access review shows that the proposed development would not have a detrimental impact upon access and highway safety for vehicles and pedestrians.

Figure 2.1: Consented* 13/02705/OUT *Access

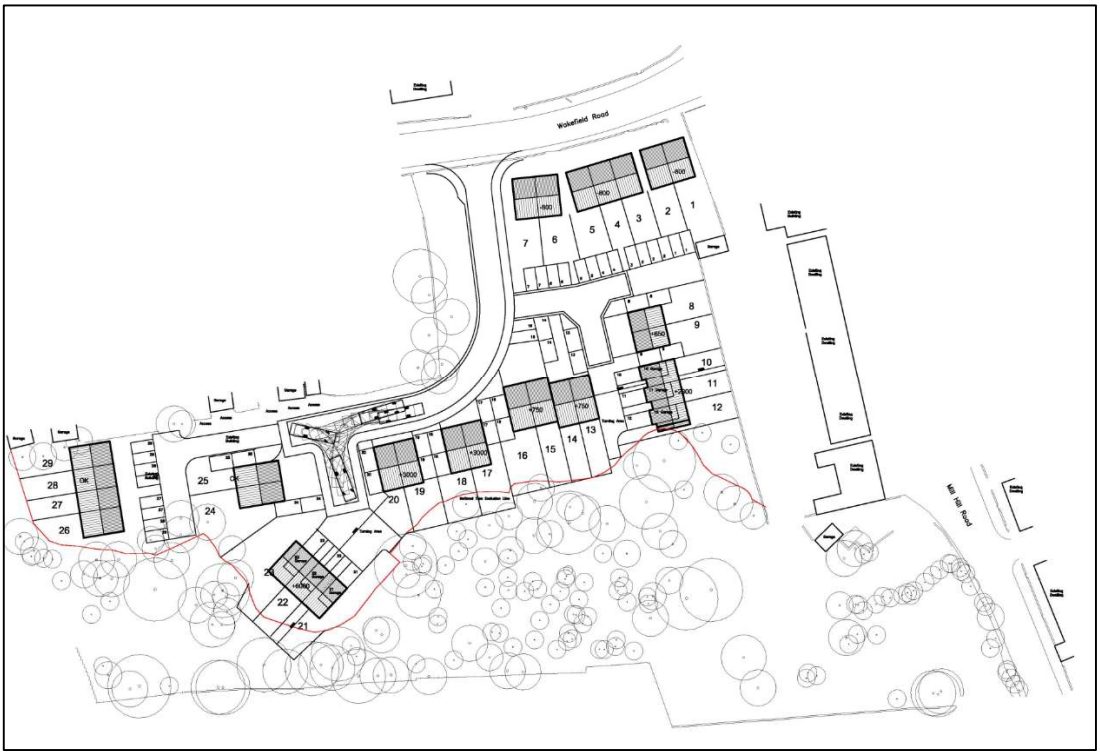
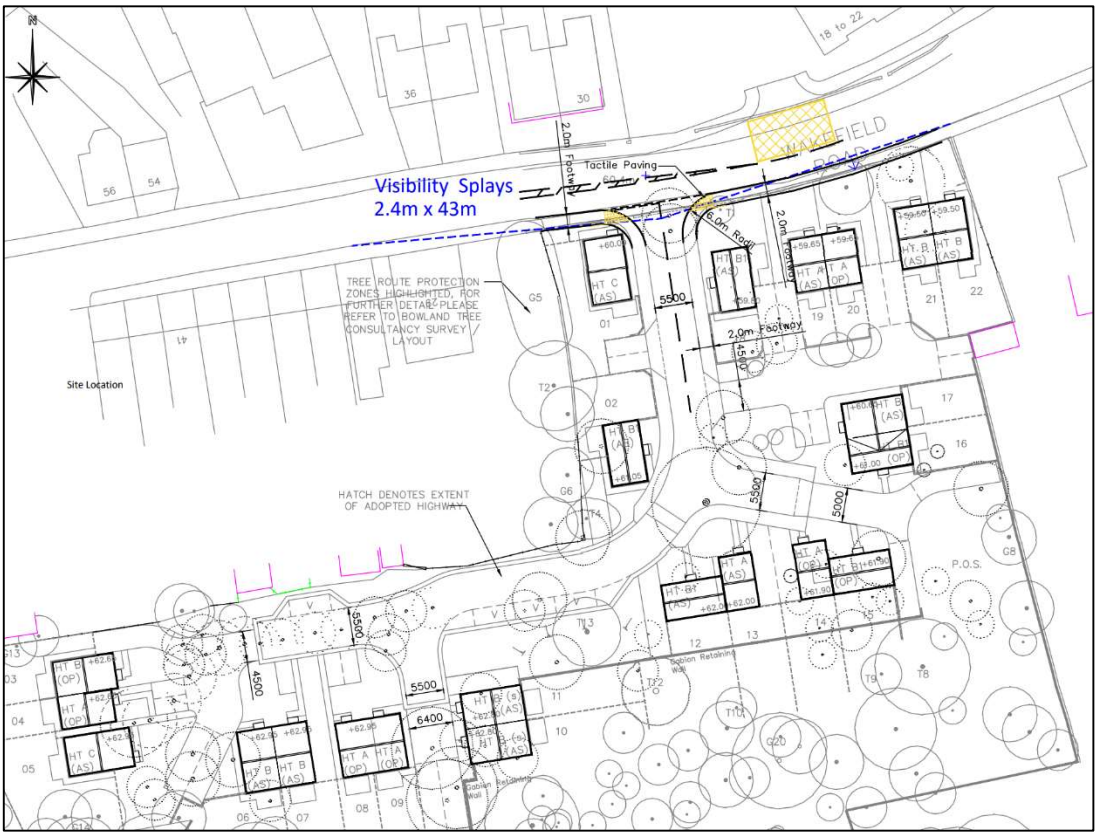


Figure 2.2: Updated Site Access



2.3 Pedestrian Safety

2.3.1 Pedestrian safety was included as a reason for refusal, however, Cora IHT Limited disagrees to this.

2.3.2 The proposed development will improve the existing footway along the boundary of the site to 2m thereby delivering a betterment.

2.3.3 Dropped kerbs and tactile paving will be introduced at the vehicle site access providing a safe crossing point whilst immediately to the east of the site there is a signalised pedestrian crossing facility.

2.3.4 The internal site access road will provide 2m footways on both sides of the road which is an improvement to the originally consented scheme which only had a footway on the eastern site of the access.

2.3.5 The pedestrian review shows that the proposed development would not have a detrimental impact upon access or highway safety for pedestrians.

2.4 Wakefield Road Capacity Assessment

2.4.1 A 7-day automatic traffic count was installed on Wakefield Road adjacent to the site October 2018. For a typical Tuesday **Table 2.1** summarises the flows and speeds were recorded:

Table 2.1: Traffic Survey Summary

	Total Vehicles AM Peak 0800-0900	**Total Vehicles PM Peak Flow 1700-1800**	**85th Percentile Speed**
Eastbound	779	608	28.4mph
Westbound	678	869	28.4mph
Total 2-Way	1457	1477	-

2.4.2 The above shows that traffic speeds along Wakefield Road are in keeping with the speed limit.

2.4.3 The link capacity of a 7m two-way road is 3600 vehicles per hour. **Table 2.1** shows that the 2018 two-way flow for the for the AM and PM peaks are 1457 and 1477 respectively. This equates to maximum link capacity of 40.5% and 41.0% which demonstrates that Wakefield Road has significant spare capacity.

2.4.4 The site has previously benefitted from an outline consent for 22 residential units (13/02705/OUT, decision dated 11 Feb 2014) where all transport and highways matters were agreed, although the transport assessment assessed a maximum of 40 residential units.

2.4.5 **Table 2.2** summarises the trip rates and generations associated with the proposed residential use at the site.

Table 2.2: Trip Rates and Generation

	Morning Peak (08:00-09:00)			Evening Peak (17:00-18:00)		
	Arr	**Dep**	**Total**	**Arr**	**Dep**	**Total**
Trip Rates	0.225	0.523	0.748	0.5	0.319	0.819
Agreed Trips	9	21	30	20	13	33
Proposed Trips	5	12	16	11	7	18
Difference	**-4**	**-9**	**-13**	**-9**	**-6**	**-15**

2.4.6 **Table 2.2** shows that the proposed development would generate less traffic than what was previously agreed as part of the 2014 consent assessed.

2.4.7 For the purpose of the appeal, capacity assessments have been carried out at the proposed site access for the 2021 year. The AM and PM Tempro growth factors are 1.0806 and 1.0757 respectively.

2.4.8 **Table 2.3** summarises the 2021 growthed traffic flows and speeds were recorded:

Table 2.3: 2021 Growthed Traffic Flow Summary

	Total Vehicles AM Peak 0800-0900	**Total Vehicles PM Peak Flow 1700-1800**
Eastbound	842	609
Westbound	729	870
Total 2-Way	1571	1479

2.4.9 The "PICADY" assessment program has been used to assess the capacity at the Wakefield Road / Access junction.

2.4.10 **Table 2.4** summarises the 2021 with Development capacity assessments. The PICADY output is provided in **Appendix F**. Note for robustness the proposed development trips have been distributed 50/50 between the east and west movements.

Table 2.4: Wakefield Road / Access – Capacity Summary

	AM 2021 Base		PM 2021 Base		AM 2021 With Development		PM 2021 With Development	
Arm	**RFC**	**Queue**	**RFC**	**Queue**	**RFC**	**Queue**	**RFC**	**Queue**
Access	0.00	0	0.00	0	0.05	0	0.03	0
Wakefield Road Right Turn	0.00	0	0.00	0	0.010	0	0.01	0

2.4.11 The capacity assessments show that the Wakefield Road / Access would operate well within capacity with no impact on free flow movement or additional queuing.

2.5 Wakefield Council's Local Development Framework Development Policy 14

2.5.1 An extract of Policy 14 is provided below.

> **Policy D 14**
>
> **Access and Highway Safety**
>
> Highway safety, road traffic congestion, and the impact of vehicles on environmental quality and amenity are increasingly of concern within the district. Development proposals shall demonstrate that they can be accessed conveniently and safely and by modes of transport other than the car. In particular proposals shall:
>
> a. ensure the safe and free flow of traffic within the development and on the surrounding highway network;
> b. be supported by travel plans which encourage the use of public transport, cycling and walking, where appropriate;
> c. allow access and penetration by public transport, where appropriate;
> d. provide pedestrian and cycling connections within the site and to its surroundings, including linking into existing and proposed pedestrian and cycling routes where appropriate, and ensuring these can be accessed easily and safely by all sections of the community;
> e. include provision for safe cycle storage;
> f. provide a level of parking provision appropriate to the proposal and its location (applying the agreed maximum standards set out in current guidance), ensuring that such provision is located in safe and accessible locations, paying particular attention to the needs of wheelchair/pram users which should be located close to entrances;
> g. take into account changes in site levels to ensure the development can be accessed easily and safely by all sections of the community and by different modes of transport;
> h. take into account the features of surrounding roads and footpaths and provide adequate layout and visibility to allow the development to be accessed safely; and
> i. take into account access for emergency, service and refuse collection vehicles.

2.5.2 It has been agreed with the highway authority the development proposals are in accordance with Policy D14.

2.6 National Planning Policy Framework [NPPF] 2019

2.6.1 The NPPF sets out the Government's planning policies for England and how these are expected to be applied. The NPPF provides a framework within which locally-prepared plans for housing and other development can be produced.

2.6.2 Whilst considering sites for specific development proposals, paragraph 108 outlines that it should be ensured that:

- Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all users;
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

2.6.3 Paragraph 109 of the NPPF states that: "Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe". The proposed development would not have a severe impact on the highway network on both highway safety or residual cumulative impact.

3.0 SUMMARY AND CONCLUSION

3.1 Summary

3.1.1 Cora IHT have been instructed by Mr Duffy, Mr Duffy & Mr Davies to prepare a Transport Appeal statement following the refusal of a planning application for:

"Twenty-Two (22) Dwellings including associated works (Outline including access and layout) at Land Off Wakefield Road Town End Pontefract WF8 4H" (under reference 19/02277/OUT) by Wakefield Council on the 11th August 2020.

3.1.2 The development proposals are for a residential development for up to 22 dwellings.

3.1.3 Access to the site is proposed off Wakefield Road provide a 5.5m carriageway, 2m footways on both sides and visibility of 2.4m x 43m to the west and exceeds 2.4m x 43m to the east.

3.1.4 The refusal reason 1 is as follows:

"By virtue of the existing levels of traffic upon, and the congested nature of, Wakefield Road (A645) the proposed development would have a detrimental impact upon access and highway safety for vehicles and pedestrians contrary to policy D14 of the Council's adopted Local Development Framework Development Policies Document and the NPPF."

3.1.5 The above objection was against the highway officer's recommendation as all access and highways matters were agreed with the highway authority.

3.1.6 The highway comments were addressed within the committee report as follows:

"Having regard to the nature of the scheme, response of the Council's Highways Team and the details submitted as part of this application it is considered that the proposal is acceptable with regard to access and highway safety in accordance with the aforementioned policy."

3.1.7 The "PICADY" assessment program has been used to assess the capacity at the Wakefield Road / Access junction which shows that the access would operate well within capacity with no impact on free flow movement or additional queuing.

3.1.8 The access and pedestrian safety review show that the proposed development would not have a detrimental impact upon access and highway safety for vehicles or pedestrians.

3.1.9 It has been agreed with the highway authority the development proposals are in accordance with Policy D14.

3.1.10 Paragraph 109 of the NPPF states that: "Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe". The proposed development would not have a severe impact on the highway network on both highway safety or residual cumulative impact.

3.2 Conclusion

It is concluded that the development proposals are acceptable in highways and transportation terms. There are no highways or transportation related reasons upon which a refusal of the planning application for the proposals would be justified.

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APPENDICES

APPENDIX A – PROPOSED ACCESS (TRANSPORT ASSESSMENT)

Site Location

N

Notes:

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications. This drawing is copyright.

Rev	Date	Description	Ckd	By
A	06/08/19	Updated site layout	TC	GE

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Client
Mr Duffy, Mr Duffy & Mr Davies

Project
Wakefield Road
Pontefract

Title
Proposed Access Arrangement

Drawing Status

Job No. 16-1104

Drawn	Checked	Scale at A3	Date	Issue Date
LB	TC	1:500	06/06/19	-

Drawing No. 001 A

APPENDIX B – PROPOSED SITE LAYOUT

Schedule of Accommodation

To be read in conjunction with drawing no. 3132-1-001 - M

Housetype	Type	No. of Units	Percentage	Sq. Ft.	Total Sq. Ft.
A	Mews/Semi-detached	7	31.82	710.00	4970.00
B	Mews/Semi-detached	6	27.27	870.00	5220.00
B (Split level)	Mews/Semi-detached	2	9.09	1087.50	2175.00
B1	Mews/Semi-detached	5	22.73	870.00	4350.00
C	Semi-detached	2	9.09	1000.00	2000.00
	Totals	22	100.00		18715.00

LEGEND:

- 1.8M (h) TIMBER FENCE
- BOUNDARY WALL WITH TIBER FENCE INFILL
- BOUNDARY WALL WITH METAL RAILING INFILL
- 2M (h) BOUNDARY WALL
- EXISTING TREES
- EXISTING TREES TO BE REMOVED
- TREE ROOT PROTECTION ZONE
- PROPOSED TREES
- EXISTING BUILDING / STRUCTURE
- EXISTING BUILDING / STRUCTURE TO BE DEMOLISHED

WAKEFIELD ROAD

EXISTING WALL TO BE DEMOLISHED 4m TO ACCOMMODATE NEW JUNCTION & VISIBILITY SPLAYS

TREE ROUTE PROTECTION ZONES HIGHLIGHTED, FOR FURTHER DETAIL PLEASE REFER TO BOWLAND TREE CONSULTANCY SURVEY / LAYOUT

HATCH DENOTES EXTENT OF ADOPTED HIGHWAY

Gabion Retaining Wall

Gabion Retaining Wall

P.O.S.

N

Wakefield Road, PONTEFRACT

DO NOT SCALE - ALL DIMENSIONS & LEVELS TO BE CHECKED ON SITE - THIS DRAWING IS COPYRIGHT

SKETCH
subject to structural review
subject to accurate measured survey

revision	date	content	initials
M	19.03.20	Boundary treatment updated	PG
L	19.03.20	Boundary treatment amended	PG
K	12.03.20	Plot 2 amended to avoid off site tree root protection zones	PG
J	28.02.20	Amended to 'Highways Officer' comments	PG
I	19.02.20	Plots 12, 13, 14, 15, 16, 17, 21 & 22 amended	PG
H	17.02.20	Plot boundary treatments amended. Plot numbers reduced to 22 and scheme amended to suit	PG
G	11.02.20	Plot boundary walls added. Retained tree numbers added	PG
F	10.02.20	New plot added and private drive re-configured, plot 2 moved to avoid tree root protection, house types updated to plots 13-16 to avoid tree roots, POS added & plots 17-23 re-aligned	PG
E	11.12.19	Paths and patios added to all plots	OB
D	05.12.19	Plot levels amended and retaining wall added	OB
C	11.11.19	General amendments at request of planning officer	OB
B	20.06.19	Site boundaries corrected	OB
A	03.06.19	Plots 1 & 2 moved to avoid tree protection zones	OB

project: PROPOSED RESIDENTIAL WAKEFIELD ROAD, PONTEFRACT

client: MR DUFFY, MR DUFFY & MR DAVIES

title: PROPOSED SITE LAYOUT

date: 02.05.19 | scale: 1:500@A3 | drawn: JB

drawing number: 3132-1-001 M | checked:

Niemen Architects
Deck 2 The Waterscape
42 Leeds & Bradford Road
Kirkstall Leeds LS5 3EG
Tel: 0113 239 5400
Fax: 0113 239 5401
office@niemen.co.uk
www.niemen.co.uk

APPENDIX C – 13/02705/OUT APPLICATION'S ACCESS

1:500

REVISION	DATE	DESCRIPTION
A	23/07/2013	Plots amended and Site Sections added.
B	26/07/2013	Layout and road amended
C	07/08/2013	plots 1–12 incl,+15&16 amended and rear gardens identified

Note to CONTRACTOR

Check all dimensions prior to commencing works or ordering any materials

On no account are any works whatsoever including foundations to be undertaken outside the boundary of the site without the express permission of the adjoing owner

Note to CLIENT

It is your responsibility to check with the Statutory Authorities where all the services, particularly those outside the property are located, and to advise the Contractor accordingly, prior to accepting his quotation for the works Note, this may have both cost and safety issues

Note to Client : These works will be subject to CDM Legislation

APPROVAL	DATE	DRAWING	AUTHORITY	REFERENCE NO
Building Regulations				
Planning Approval				
Planning Submission				

CHARTERED ARCHITECTS
NEIL BOWEN
R.I.B.A.

Unit 2, The Office Campus, Paragon Business Park, Red Hall Court, Wakefield, WF1 2UY
01924 380873

Project Proposed Development. at Mill Hill. Pontefract. for Yorkshire Timber Group.

Date 21/05/2013

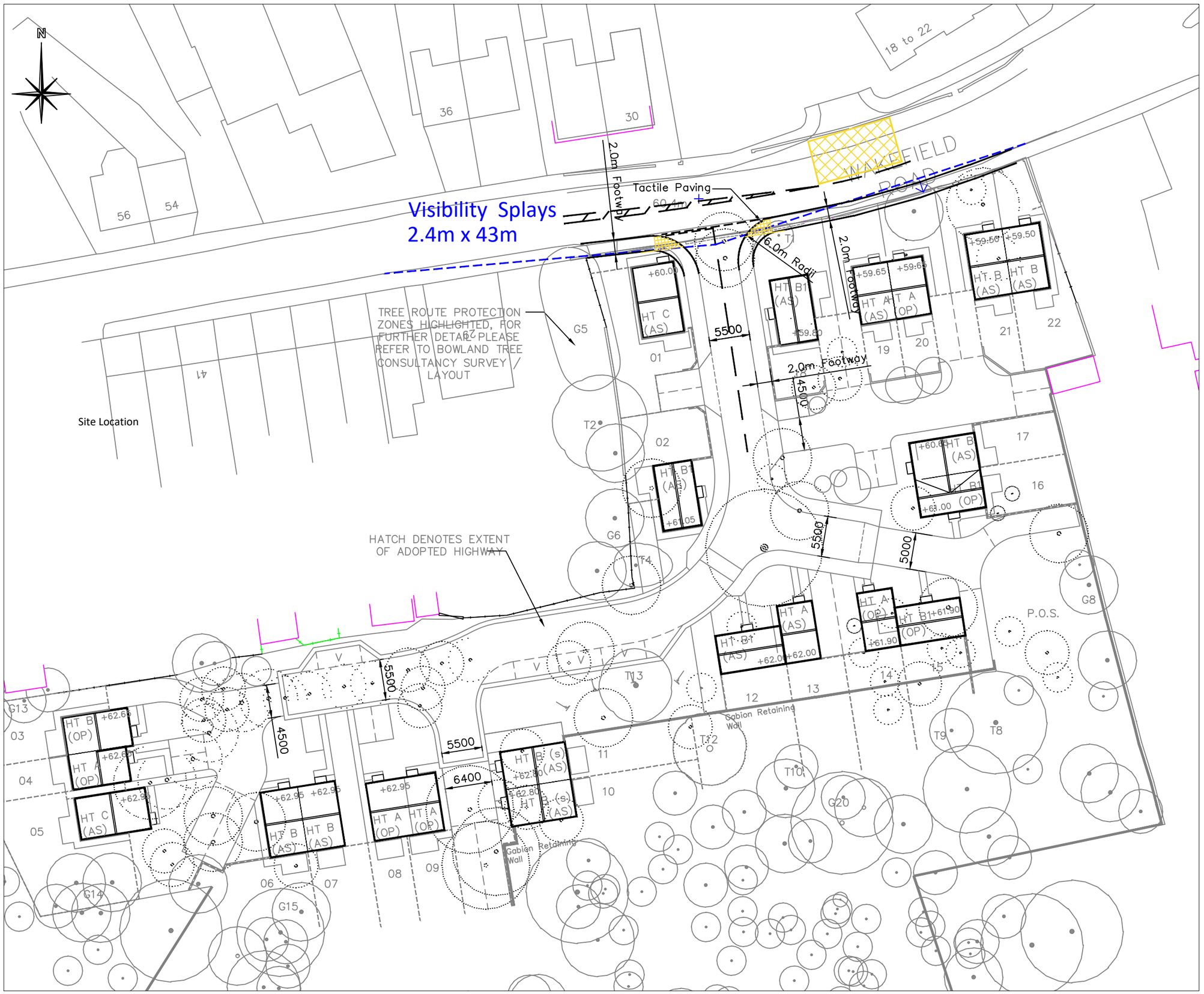
Drawing Site Layout as Proposed. Option 6 – Housing.

Drg No

A2

F	1615	Scale
R	C	1:500
	6	

APPENDIX D – UPDATED SITE ACCESS



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Rev	Date	Description	Ckd	By

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Client

Frontline Estates

Project

Wakefield Road
Pontefract

Title

Proposed Access Arrangement

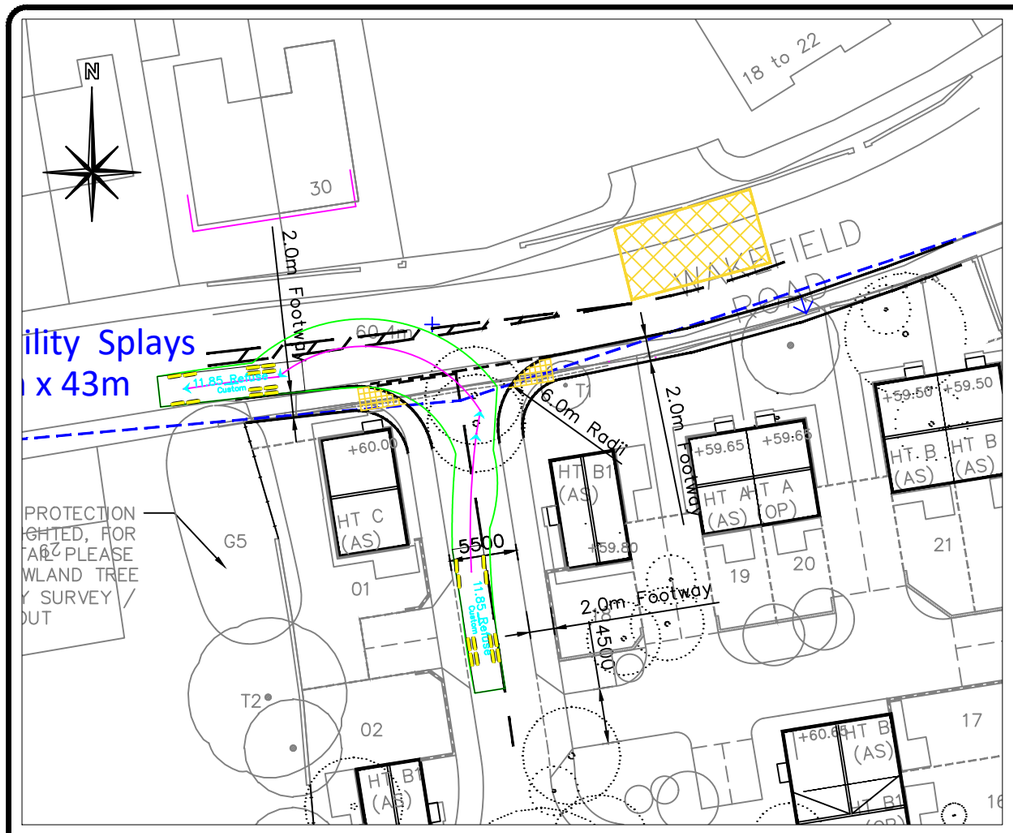
Drawing Status

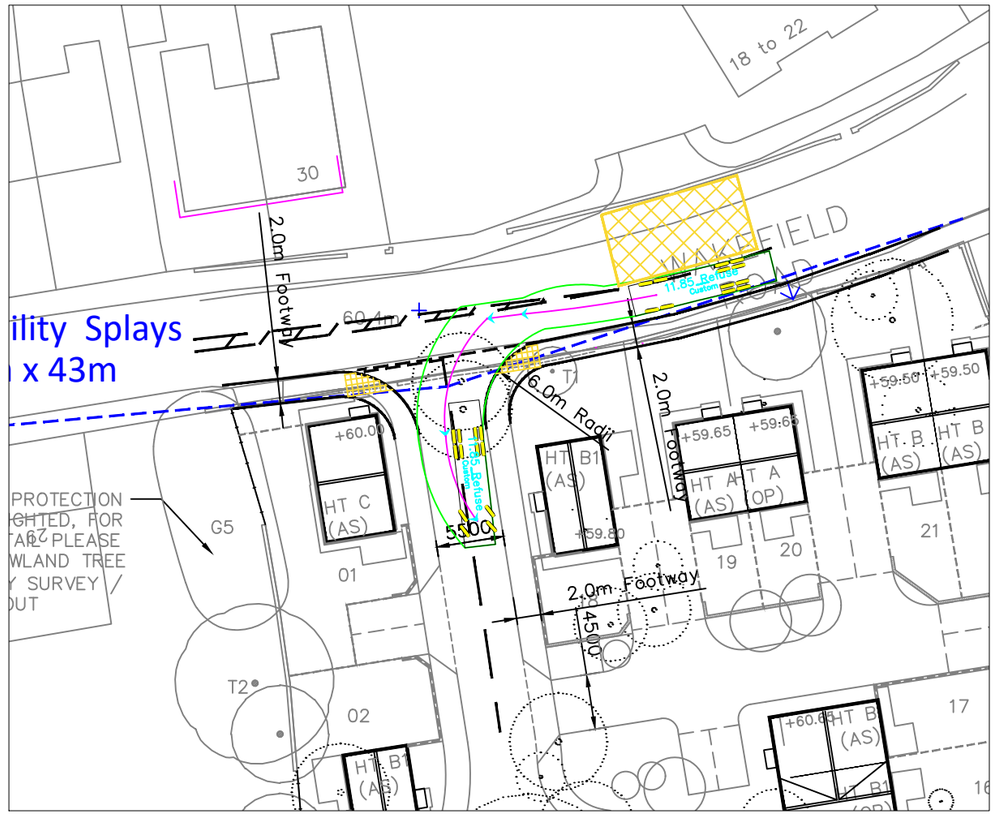
Job No. 16-1104

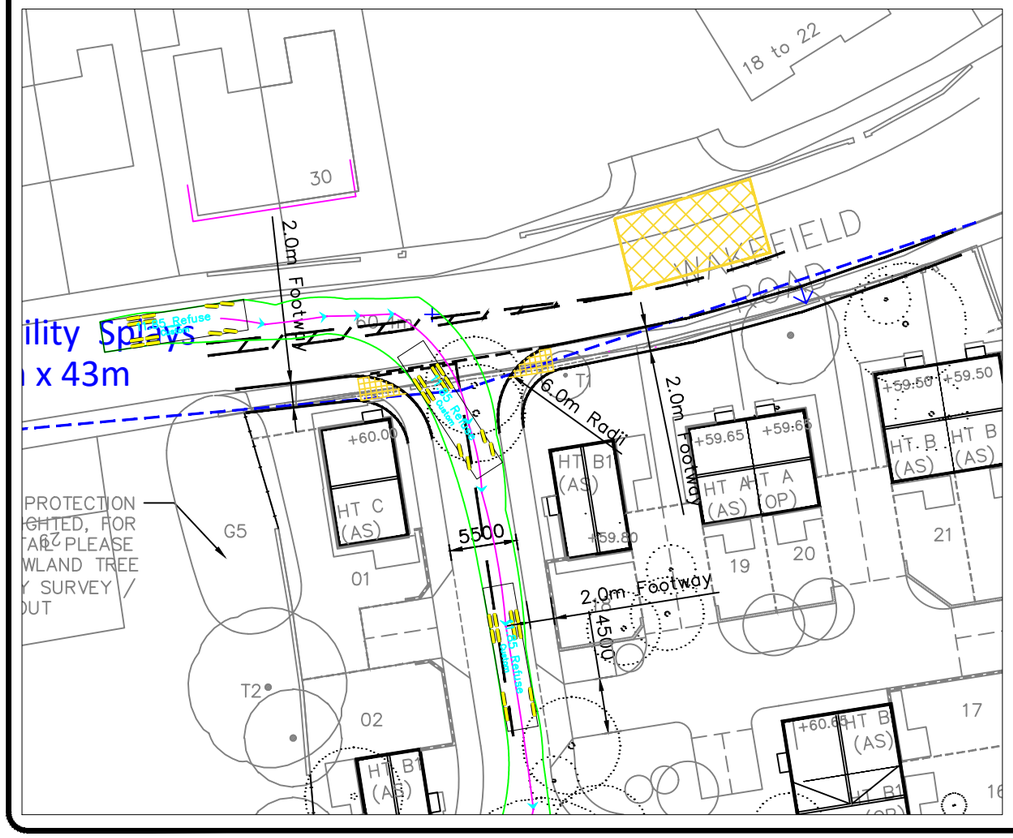
Drawn	Checked	Scale at A3	Date	Issue Date
LB	TC	1:500	04/03/21	-

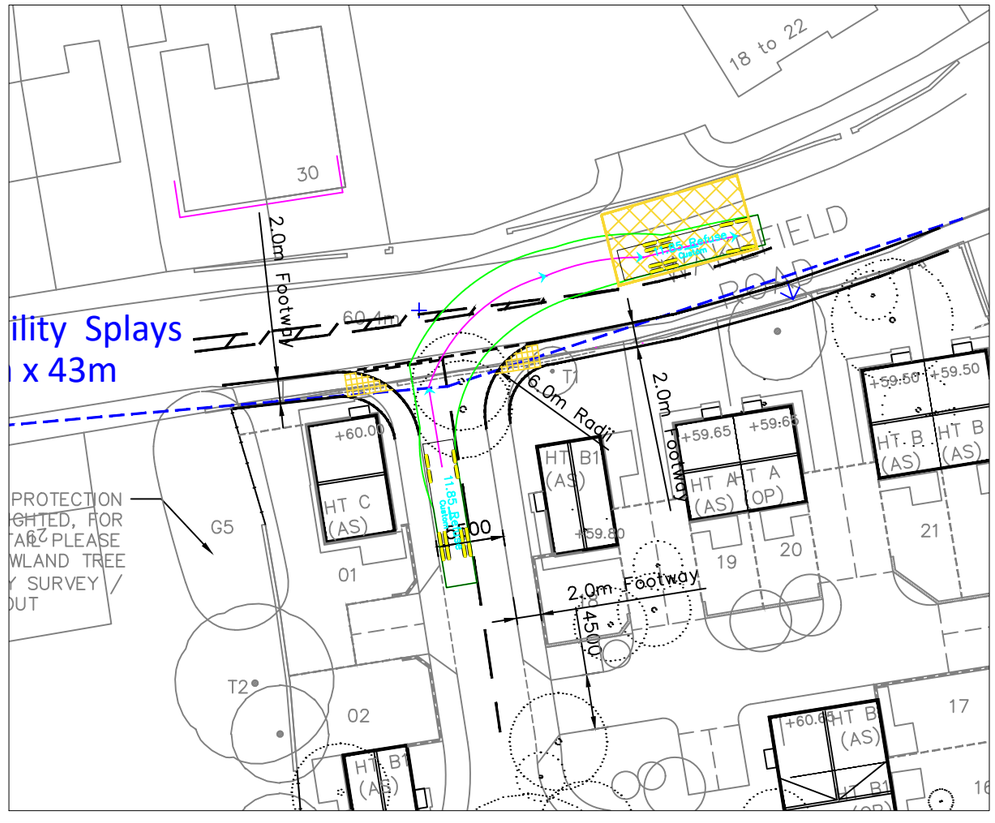
Drawing No. 001 B

APPENDIX E – UPDATED TRACKING









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Rev	Date	Description	Ckd	By

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Client

Frontline Estates

Project

Wakefield Road
Pontefract

Title

Proposed Access Arrangement
11.85m Refuse Vehicle Tracking

Drawing Status

Job No. 16-1104

Drawn	Checked	Scale at A3	Date	Issue Date
LB	TC	1:500	04/03/21	-

Drawing No. 002 A

APPENDIX F – PICADY OUTPUT

Junctions 9

PICADY 9 - Priority Intersection Module

Filename: PICADY.j9
Path: C:\Users
Report generation date: 18/01/2021 15:41:28

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
	2021 Growthed							
Stream B-AC	0.0	0.00	0.00	A	0.0	0.00	0.00	A
Stream C-AB	0.0	0.00	0.00	A	0.0	0.00	0.00	A
	2021 With Dev							
Stream B-AC	0.0	13.61	0.05	B	0.0	12.04	0.03	B
Stream C-AB	0.0	8.79	0.01	A	0.0	7.67	0.01	A

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Wakefield Road / Access
Location	Wakefield
Site number	
Date	18/03/2020
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021 Growthed	AM	ONE HOUR	07:45	09:15	15
D2	2021 Growthed	PM	ONE HOUR	16:45	18:15	15
D3	2021 With Dev	AM	ONE HOUR	07:45	09:15	15
D4	2021 With Dev	PM	ONE HOUR	16:45	18:15	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2021 Growthed, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Wakefield Road (East)		Major
B	Access		Minor
C	Wakefield Road (West)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	7.50			70.0	✓	1.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B	One lane	3.50	30	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	527	0.090	0.227	0.143	0.324
1	B-C	675	0.097	0.244	-	-
1	C-B	615	0.223	0.223	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2021 Growthed	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	842	100.000
B		✓	0	100.000
C		✓	729	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	842
	B	0	0	0
	C	729	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	385	0.000	0	0.0	0.000	A
C-AB	0	947	0.000	0	0.0	0.000	A
C-A	549			549			
A-B	0			0			
A-C	634			634			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	341	0.000	0	0.0	0.000	A
C-AB	0	892	0.000	0	0.0	0.000	A
C-A	655			655			
A-B	0			0			
A-C	757			757			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	279	0.000	0	0.0	0.000	A
C-AB	0	816	0.000	0	0.0	0.000	A
C-A	803			803			
A-B	0			0			
A-C	927			927			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	279	0.000	0	0.0	0.000	A
C-AB	0	816	0.000	0	0.0	0.000	A
C-A	803			803			
A-B	0			0			
A-C	927			927			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	341	0.000	0	0.0	0.000	A

C-AB	0	892	0.000	0	0.0	0.000	A
C-A	655			655			
A-B	0			0			
A-C	757			757			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	385	0.000	0	0.0	0.000	A
C-AB	0	947	0.000	0	0.0	0.000	A
C-A	549			549			
A-B	0			0			
A-C	634			634			

2021 Growthed, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.00	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2021 Growthed	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	609	100.000
B		✓	0	100.000
C		✓	870	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	0	609
	B	0	0	0
	C	870	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.00	0.00	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	416	0.000	0	0.0	0.000	A
C-AB	0	1025	0.000	0	0.0	0.000	A
C-A	655			655			
A-B	0			0			
A-C	458			458			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	379	0.000	0	0.0	0.000	A
C-AB	0	985	0.000	0	0.0	0.000	A
C-A	782			782			
A-B	0			0			
A-C	547			547			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	325	0.000	0	0.0	0.000	A
C-AB	0	931	0.000	0	0.0	0.000	A
C-A	958			958			
A-B	0			0			
A-C	671			671			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	325	0.000	0	0.0	0.000	A
C-AB	0	931	0.000	0	0.0	0.000	A
C-A	958			958			
A-B	0			0			
A-C	671			671			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	379	0.000	0	0.0	0.000	A
C-AB	0	985	0.000	0	0.0	0.000	A
C-A	782			782			
A-B	0			0			
A-C	547			547			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	0	416	0.000	0	0.0	0.000	A
C-AB	0	1025	0.000	0	0.0	0.000	A
C-A	655			655			
A-B	0			0			
A-C	458			458			

2021 With Dev, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.11	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2021 With Dev	AM	ONE HOUR	07:45	09:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	845	100.000
B		✓	12	100.000
C		✓	731	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	3	842
	B	6	0	6
	C	729	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.05	13.61	0.0	B
C-AB	0.01	8.79	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	384	0.024	9	0.0	9.598	A
C-AB	2	475	0.003	1	0.0	7.607	A
C-A	549			549			
A-B	2			2			
A-C	634			634			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	341	0.032	11	0.0	10.912	B
C-AB	2	448	0.004	2	0.0	8.066	A
C-A	655			655			
A-B	3			3			
A-C	757			757			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13	278	0.048	13	0.0	13.600	B
C-AB	2	412	0.005	2	0.0	8.789	A
C-A	803			803			
A-B	3			3			
A-C	927			927			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	13	278	0.048	13	0.0	13.605	B
C-AB	2	412	0.005	2	0.0	8.791	A
C-A	803			803			
A-B	3			3			
A-C	927			927			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	11	341	0.032	11	0.0	10.919	B
C-AB	2	448	0.004	2	0.0	8.066	A
C-A	655			655			
A-B	3			3			
A-C	757			757			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	9	384	0.024	9	0.0	9.604	A
C-AB	2	475	0.003	2	0.0	7.610	A
C-A	549			549			
A-B	2			2			
A-C	634			634			

2021 With Dev, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		0.08	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2021 With Dev	PM	ONE HOUR	16:45	18:15	15

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	615	100.000
B		✓	7	100.000
C		✓	875	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A	B	C
From	A	0	6	609
	B	4	0	3
	C	870	5	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	0	0
	B	0	0	0
	C	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.03	12.04	0.0	B
C-AB	0.01	7.67	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	399	0.013	5	0.0	9.131	A
C-AB	4	516	0.007	4	0.0	7.023	A
C-A	655			655			
A-B	5			5			
A-C	458			458			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	361	0.017	6	0.0	10.137	B
C-AB	5	499	0.009	5	0.0	7.285	A
C-A	782			782			
A-B	5			5			
A-C	547			547			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	8	307	0.025	8	0.0	12.040	B
C-AB	6	475	0.012	6	0.0	7.666	A
C-A	958			958			
A-B	7			7			
A-C	671			671			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	8	307	0.025	8	0.0	12.042	B
C-AB	6	475	0.012	6	0.0	7.669	A
C-A	958			958			
A-B	7			7			
A-C	671			671			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	6	361	0.017	6	0.0	10.141	B

C-AB	5	499	0.009	5	0.0	7.288	A
C-A	782			782			
A-B	5			5			
A-C	547			547			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	5	399	0.013	5	0.0	9.134	A
C-AB	4	516	0.007	4	0.0	7.024	A
C-A	655			655			
A-B	5			5			
A-C	458			458			