

Transport Assessment Addendum

4 April 2023
Version 1.0
Issue



1 Introduction

1.1 Purpose of this Report

Fore Consulting Limited (Fore) are instructed by Keyland Developments to assist the preparation of an outline planning application for employment development on land to the south of the former North Bierley Waste Water Treatment Works (WWTW), Bradford, in respect of transport and highways matters. The commission includes preparation of Transport Assessment and Travel Plan reports submitted as part of the planning application to Kirklees Council¹.

Following discussions with the planning and highway authorities through consideration of the planning application to date, as well as discussion at Kirklees Council's Planning Committee on 2 March 2023, this Transport Assessment Addendum sets out the consolidated position in relation to the land use proposed and the associated transport impacts.

1.2 Background

The planning application seeks outline planning permission for 130,000 sqft (12,077 sqm) of gross floor area to be used flexibly for storage and distribution (B8 use class) or industrial use (B2 or E(g_{iii}) use class).

During consideration of the planning application, Kirklees Council requested assessment of a development scenario assuming the site is used for a 'last mile'-type parcel distribution use, as a sub-sector of the B8 use class. This was accepted by the applicant on the basis that, should an occupier seek to take floorspace for parcel distribution use, it is unlikely they would seek more than 6,000 sqm, as this is beyond the average size of units typically being brought forward for parcel distribution-type uses.

Consequently, for the purposes of considering the transport impacts of the development, a 'sensitivity test' scenario was assessed, assuming 6,000 sqm of the proposed floorspace was used for parcel distribution, with the remainder (6,077 sqm) used for B2 industrial use.

¹ Kirklees Council planning application reference 2021/60/94208/E.

Based on trip rates agreed with Kirklees Council’s highways officers, the ‘sensitivity test’ scenario represented the maximum impact of traffic movements generated by the development during the weekday peak periods.

The changes in traffic flows related to all development scenarios were assessed using local junction models of the key junctions in the vicinity of the site, based on a methodology that was fully discussed and agreed with Kirklees Council officers:

- Base traffic flow data was collected in September 2021. At the time of the surveys there were no pandemic-related measures in operation that would have unduly affected traffic flows collected, and the use of this data was agreed as suitable for the purposes of the planning application by the Council’s highways officers.
- A future year of 2031 was considered, incorporating background growth derived from NTM/TEMPro through the period of 2021 to 2031. In addition, traffic related to a number of agreed committed and planned developments in the vicinity of the site was incorporated, including development of “Phase 1” of the North Bierley WWTW located immediately north of the proposed development site, as approved through the respective outline and reserved matters applications.
- In addition, notwithstanding that it was not committed at the time of undertaking the assessment work, to ensure a robust approach the proposed development of a storage / distribution unit off Whitehall Road to the west of M62 Junction 26 was also incorporated.
- Vehicle trip rates and distribution assumptions were fully agreed.

Overall, the assessment work concluded that **the changes in traffic flows associated with the development (including a possible parcel distribution use) are of a scale that is safely and efficiently accommodated at the key junctions on the local network, and changes beyond those being implemented as part of the ‘Phase 1’ works were not considered to be necessary.** This conclusion is accepted by Kirklees Council’s highways officers.

1.3 Current Position Regarding Proposed Land Use

Notwithstanding the above, following further review and consideration **the applicant no longer proposes to seek permission for parcel distribution uses on site.** The assessment of a ‘sensitivity test’ scenario as submitted to date was undertaken for robustness purposes only, and there is no intention to pursue such a use on the site.

The applicant will accept a planning condition to restrict such a parcel distribution use accordingly.



2 Consolidated Transport Assessment

The following sections consolidate the Transport Assessment work submitted to date, excluding the scenario related to a possible parcel distribution use.

2.1 Vehicle Trip Generation

Vehicle trip rates for the proposed Phase 2 site were taken from the Transport Assessment undertaken by AECOM for the approved Phase 1 application. For the purposes of this assessment, it is assumed that the development is occupied fully for either industrial or warehousing use, to robustly indicate the range of impacts with these scenarios.

The resulting vehicle trip generation is summarised in Table 1, for the weekday AM and PM peak hours which represent the ‘worst case’ combination of development-related impacts and background traffic on the wider network. Although the applicant no longer seeks permission for a parcel distribution use, vehicle trips associated with the ‘sensitivity test’ scenario previously considered are included for illustrative purposes.

Table 1: Vehicle Trip Generation

Development Scenario	Vehicle Type	Weekday AM Peak Hour (08:00-09:00)			Weekday PM Peak Hour (17:00-18:00)		
		Arr	Dep	Tot	Arr	Dep	Tot
Industrial Use	Total	63	12	75	7	52	59
	OGVs	4	3	7	1	2	3
Warehousing Use	Total	20	7	27	7	19	26
	OGVs	3	4	7	3	2	5
‘Sensitivity Test’ <i>Parcel Distribution (6,000 sqm) + Industrial Use (6,077 sqm)</i>	Total	55	29	84	31	54	85
	OGVs	3	7	10	5	2	7

The assessment demonstrates that:

- The proposed development would generate up to approximately 75 and 60 vehicle movements during the weekday AM and PM peak hours respectively, assuming the site is fully occupied for industrial use. On average, this represents approximately 1 vehicle movement per minute at peak times; such an impact is unlikely to be discernible in practice.
- Full occupation of the site for warehousing use would reduce development traffic flows to around 30 vehicle movements during the AM and PM peak hours. On average,

this represents approximately 1 vehicle every 2 minutes at peak times, which is similarly unlikely to be discernible in practice.

- Through no longer seeking permission for a parcel distribution use, the maximum peak hour vehicle trip generation is reduced by around 10 and 16 vehicle trips during the AM and PM peak hour respectively, including 3 and 4 OGV movements, compared to the sensitivity test scenario assessed previously. This is the minimum reduction in peak hour vehicle trips that would apply, related to the scenario if the site is fully occupied for industrial use.
- If part of the site is occupied for warehousing use, the number of peak hour vehicle movements is further reduced. Assuming the site is fully occupied for warehousing use, vehicle trips are reduced by around to 57 and 59 vehicles in the AM and PM peak hour respectively compared to the sensitivity test scenario.

In practice, given the intention for the proposed floorspace to be used flexibly for either industrial or warehousing use, it is likely that the eventual mix of uses delivered on site will lie between the two scenarios (assuming the site is fully occupied for either industrial or warehousing use).

2.2 Vehicle Trip Distribution

Notwithstanding that development traffic associated with the industrial and warehousing use scenarios is considered to be of a modest scale, the impact of the changes in flows on the wider network has been considered in further detail. As discussed and agreed with Kirklees Council's highways officers, the trip distribution assumptions used for the purposes of the Phase 1 planning application (in turn based on 2011 Census data for travel to work purposes), are applied both to light vehicles and HGVs associated with the proposed development.

At the time of writing, equivalent data from the 2021 Census has not been published, and therefore 2011 Census data continues to provide the most up-to-date information relating to commuting patterns.

The resulting trip distribution is summarised in Table 2 and demonstrated on Figure 5 to Figure 8.

Table 2: Vehicle Trip Distribution

	Route	Trip Distribution (% of trips)
1	Wyke Lane	0%
2	Bradford Road north (towards Low Moor)	20%
3	Mill Carr Hill Road	3%
4	Cliff Hollins Lane	3%
5	M62 north (towards Leeds)	21%
6	A58 Whitehall Road east (towards Hunsworth)	7%
7	A638 Bradford Road (towards Cleckheaton)	25%
8	M62 south (towards Brighouse)	11%
9	A58 Whitehall Road west (towards Halifax)	10%
10	M606	0%
	Total	100%

2.3 Impact on the Highway Network

2.3.1 Scope of Assessment

Based on the assumptions set out above, the resulting development traffic flows are demonstrated on Figure 9 to Figure 12 for the weekday AM and PM peak hour scenarios respectively.

In accordance with discussion with Kirklees Council’s highways officers, the traffic impacts of the development on the operation of the following junctions in the immediate vicinity of the site has been considered further:

- Cliff Hollins Lane / Access junction.
- Cliff Hollins Lane / Mill Carr Hill Road.
- Bradford Road / Mill Carr Hill Road.

Beyond these junctions, the traffic impacts of the proposed development are not considered to be significant in terms of the operation of the highway network. Specifically, the changes in flows on the slip roads and approaches at the Junction 26 roundabout during the peak hour are of a scale that is likely to be imperceptible in practice. Fewer than 10 vehicles would typically be generated on all slip roads and approaches to the

Junction 26 roundabout, and although the impacts on a small number of links at the Junction would be slightly higher, in all cases fewer than 15 vehicles would be generated.

Detailed assessment of the operation of the above junctions has been undertaken using ‘Junctions10’ software, based on the junction models agreed with Kirklees Council’s highways officers to date through consideration of the planning application².

The assessment assumes identified changes to the layout of each junction that are committed as part of the Phase 1 permission are implemented in the future ‘do minimum’ scenario. These works are currently being implemented by the developer of the Phase 1 site under a s278 agreement.

2.3.2 Cliff Hollins Lane / Site Access Junction

The model results for the Cliff Hollins Lane / site access junction are summarised in Table 3, and presented in full at Appendix A.

Table 3: Cliff Hollins Lane / Site Access Junction - Highway Capacity Assessment

Approach	Weekday AM Peak Hour		Weekday PM Peak Hour	
	RFC	Q	RFC	Q
2031 Do Minimum				
Cliff Hollins Lane east (LT + RT)	0.09	0.1	0.17	0.2
Site Access (RT)	0.00	0.0	0.02	0.0
2031 With Development - 100% Industrial Use				
Cliff Hollins Lane east (LT + RT)	0.10	0.1	0.18	0.2
Site Access (RT)	0.00	0.0	0.02	0.0
2031 With Development - 100% Warehousing Use				
Cliff Hollins Lane east (LT + RT)	0.09	0.1	0.17	0.2
Site Access (RT)	0.00	0.0	0.02	0.0

The assessment demonstrates that the access junction will operate satisfactorily during the weekday AM and PM peak hours with either proposed industrial or warehousing development. The maximum RFC value is significantly below the normal threshold value of 0.85 on all approaches, with maximum average queues of less than 1 PCU modelled.

² Reference: “Update to Highway Response Note 1 - Sensitivity Testing”, Fore Consulting, dated 25 August 2022.



2.3.3 Mill Carr Hill Road / Cliff Hollins Lane Junction

The model results for the Mill Carr Hill Road / Cliff Hollins Lane junction are summarised in Table 4, and presented in full at Appendix A.

Table 4: Mill Carr Hill Road / Cliff Hollins Lane Junction - Highway Capacity Assessment

Approach	Weekday AM Peak Hour		Weekday PM Peak Hour	
	RFC	Q	RFC	Q
2031 Do Minimum				
Cliff Hollins Lane (LT)	0.11	0.1	0.27	0.4
Cliff Hollins Lane (RT)	0.02	0.0	0.04	0.0
Mill Carr Hill Road west (RT)	0.43	1.0	0.18	0.3
2031 With Development - 100% Industrial Use				
Cliff Hollins Lane (LT)	0.13	0.2	0.35	0.6
Cliff Hollins Lane (RT)	0.02	0.0	0.05	0.1
Mill Carr Hill Road west (RT)	0.58	1.8	0.20	0.3
2031 With Development - 100% Warehousing Use				
Cliff Hollins Lane (LT)	0.12	0.2	0.30	0.5
Cliff Hollins Lane (RT)	0.02	0.0	0.05	0.0
Mill Carr Hill Road west (RT)	0.48	1.2	0.20	0.3

The assessment demonstrates that the Mill Carr Hill Road / Cliff Hollins Lane junction will operate satisfactorily during the weekday AM and PM peak hours with either industrial or warehousing development in place. The maximum RFC value is significantly below the normal threshold value of 0.85 on all approaches, with maximum average queues of less than 1 PCU modelled.

2.3.4 Bradford Road / Mill Carr Hill Road Junction

The model results for the Bradford Road / Mill Carr Hill Road junction are summarised in Table 5, and presented in full at Appendix A.

The assessment assumes the changes to the junction layout committed as part of the Phase 1 permission are implemented in the future ‘do minimum’ scenario.

Table 5: Bradford Road / Mill Carr Hill Road Junction - Highway Capacity Assessment

Approach	Weekday AM Peak Hour		Weekday PM Peak Hour	
	RFC	Q	RFC	Q
2031 Do Minimum				
Mill Carr Hill Road (LT)	0.20	0.3	0.40	0.7
Mill Carr Hill Road (RT)	0.34	0.5	0.51	1.0
Bradford Road south (RT)	0.48	1.5	0.18	0.3
2031 With Development - 100% Industrial Use				
Mill Carr Hill Road (LT)	0.22	0.3	0.50	1.0
Mill Carr Hill Road (RT)	0.39	0.6	0.57	1.3
Bradford Road south (RT)	0.59	1.8	0.20	0.4
2031 With Development - 100% Warehousing Use				
Mill Carr Hill Road (LT)	0.21	0.3	0.44	0.8
Mill Carr Hill Road (RT)	0.36	0.6	0.53	1.1
Bradford Road south (RT)	0.52	1.8	0.20	0.4

The assessment demonstrates that the Bradford Road / Mill Carr Hill Road junction will operate satisfactorily during the weekday AM and PM peak hours with the development in place, regardless of the land use scenario. The RFC is predicted to remain below the normal practical capacity threshold on all approaches. Modelled queues would be satisfactorily accommodated, without impacts on the wider network.

2.4 Road Safety

2.4.1 Proposed Access Road

The application is in outline and therefore the layout of the development, including configuration of parking to be provided on site, will be determined as part of a future application for reserved matters. However, the clear likelihood is that access will be taken by continuing the access road infrastructure to be provided as part of the Phase 1 development into the Phase 2 site. The illustrative masterplan (demonstrating one way in which the development could be delivered) demonstrates this accordingly.

In turn, as part of the Phase 1 permission, a suite of highway works were secured to ensure safe and efficient vehicular access to the site from Bradford Road. These works include:

- Improvements at the Bradford Road / Mill Carr Hill Road junction to provide additional capacity for right-turning vehicles, as well as new footways and pedestrian crossing facilities.
- Changes to the Mill Carr Hill Road / Cliff Hollins Lane junction to improve the junction layout, with new footways.
- Realignment of Cliff Hollins Lane around the proposed access; the junction priorities will be changed such that Cliff Hollins Lane becomes the priority route into the development site (effectively Cliff Hollins Lane to the north east of the access road becomes the minor approach to the junction).
- Measures to discourage use of Mill Carr Hill Road and Cliff Hollins Lane by HGVs, including traffic calming measures and HGV restrictions on Wyke Lane and Cliff Hollins Lane specifically.

These works were accepted by Kirklees Council as suitable to safely and efficiently accommodate the Phase 1 development, and have been subject to road safety audit through the subsequent detailed design process. It is understood that delivery of the works has now commenced on site.

As set out above, the anticipated changes in traffic flows associated with the proposed development are satisfactorily accommodated by the highway works being implemented for the Phase 1 scheme, and on this basis further changes are not considered to be necessary.

Notwithstanding this, following discussion with Kirklees Council's highways officers the applicant will deliver improvements to footways being provided as part of the package of highway works associated with the Phase 1 development, to allow for shared pedestrian

and cycling use off the carriageway from Mill Carr Hill Road through to the development site, in accordance with the principles of LTN 1/20.

The proposed arrangements are demonstrated on the drawings provided at Appendix B. Two options have been identified, recognising highway boundary constraints at the junction between Mill Carr Hill Road / Cliff Hollins Lane. However, both options provide a new off-carriageway cycle route separate from turning traffic at the Mill Carr Hill Road / Cliff Hollins Lane junction and represent a significant benefit to supporting cycling as a travel choice for future staff to access the development site (as well as the Phase 1 site to the north).

2.4.2 Wider Highway Network

As part of preparing the Transport Assessment, personal injury accident data was obtained for the highway network in the vicinity of the site, for the most recently available five-year period between 1 January 2016 and 31 December 2020. This confirms the following:

- One accident was recorded at the Cliff Hollins Lane / Mill Carr Hill Road junction, which resulted in a slight injury.
- Three accidents occurred at the Bradford Road / Wyke Lane junction, with two slight in severity and one fatal.
- Between the Bradford Road / Wyke Lane junction and M62 Junction 26, two accidents were recorded; one resulted in a slight injury, with the other serious in severity.
- Heading west, one accident took place 25m west of the Bradford Road / Mill Carr Hill Road junction which was slight in severity.
- None of the above accidents involved a cycle, with only one resulting in a pedestrian casualty (at the Cleckheaton Road / South Street junction, beyond the Bradford Road / Mill Carr Hill Road junction to the northwest).

No further accidents were recorded in the study area during 2021 (as the most recent period available).

Overall, on the basis of accidents recorded between 2016 and 2021 inclusive, there is no pattern of accidents suggestive of a specific issue related to the existing highway network, which in turn could be exacerbated by changes in traffic flows associated with the proposals. No specific action is therefore considered to be necessary to accommodate the proposed development.

3 Summary

This Transport Assessment Addendum has been prepared to set out the consolidated position in relation to the land use proposed and the associated transport impacts, following discussions with the planning and highway authorities through consideration of the planning application to date. It also follows discussion at Kirklees Council’s Planning Committee on 2 March 2023, at which concerns were raised that the traffic impacts of the proposed development would be unacceptable.

Specifically, the applicant no longer proposes to seek permission for ‘last mile’-type parcel distribution use. Such a use was tested at the request of Kirklees Council’s highways officers to ensure a robust analysis for the purposes of the planning application only. There is no intention to pursue parcel distribution use on the site, and the applicant will accept a planning condition to restrict parcel distribution use accordingly.

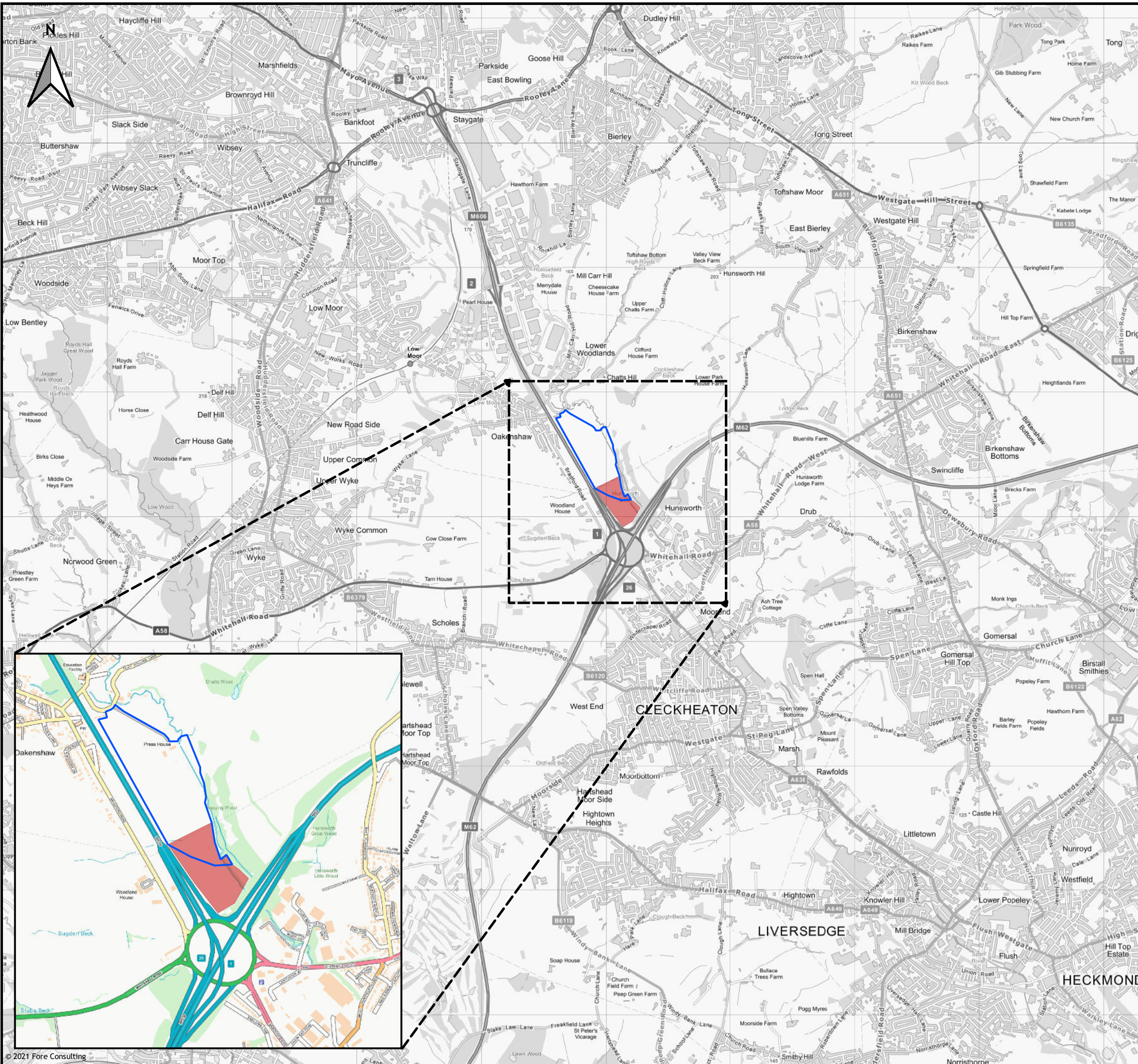
This Addendum demonstrates that the removal of parcel distribution use would remove 10 and 16 vehicles from the road network in the respective peak hours, compared to the scenario if the site were developed for industrial uses (as the next highest traffic-generating use). If the development were to proceed for warehousing use only, the reduction in vehicle movements would be between 57 and 59 vehicles in the peak hours. In practice, it is likely that the eventual mix of uses delivered on site will lie between the two scenarios assessed (assuming the site is fully occupied for either industrial or warehousing use); however, to address the concerns raised, restricting a possible parcel distribution use avoids the ‘worst case’ scenario arising at peak times.

Capacity assessment undertaken in accordance with a methodology agreed with Kirklees Council’s highways officers demonstrates that the changes to the key junctions in the vicinity of the site to accommodate the Phase 1 scheme would safely and efficiently accommodate the development as proposed. On this basis, no further changes to the layout of the key junctions in the vicinity of the site are necessary to accommodate the proposed development.

Notwithstanding this, the applicant will deliver improvements to footways being provided as part of the package of highway works associated with the Phase 1 development, to allow for shared pedestrian and cycling use off the carriageway from Mill Carr Hill Road to the development site, in accordance with the principles of LTN 1/20. This will support and encourage cycling as a travel choice for future staff to access the development site.

On this basis, it is concluded that the proposed development will not result in unacceptable highway safety impacts or result in a severe impact within the context of Paragraph 111 of the NPPF and, accordingly, there are no grounds for refusing the application in relation to transport and highways matters.

Figures



Key:

- Indicative Site Boundary
- Phase 1 Development

Contains OS data © Crown copyright and database rights (2021)

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG



enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

Client:
 Keyland Developments

Project:
 North Bierley Phase 2

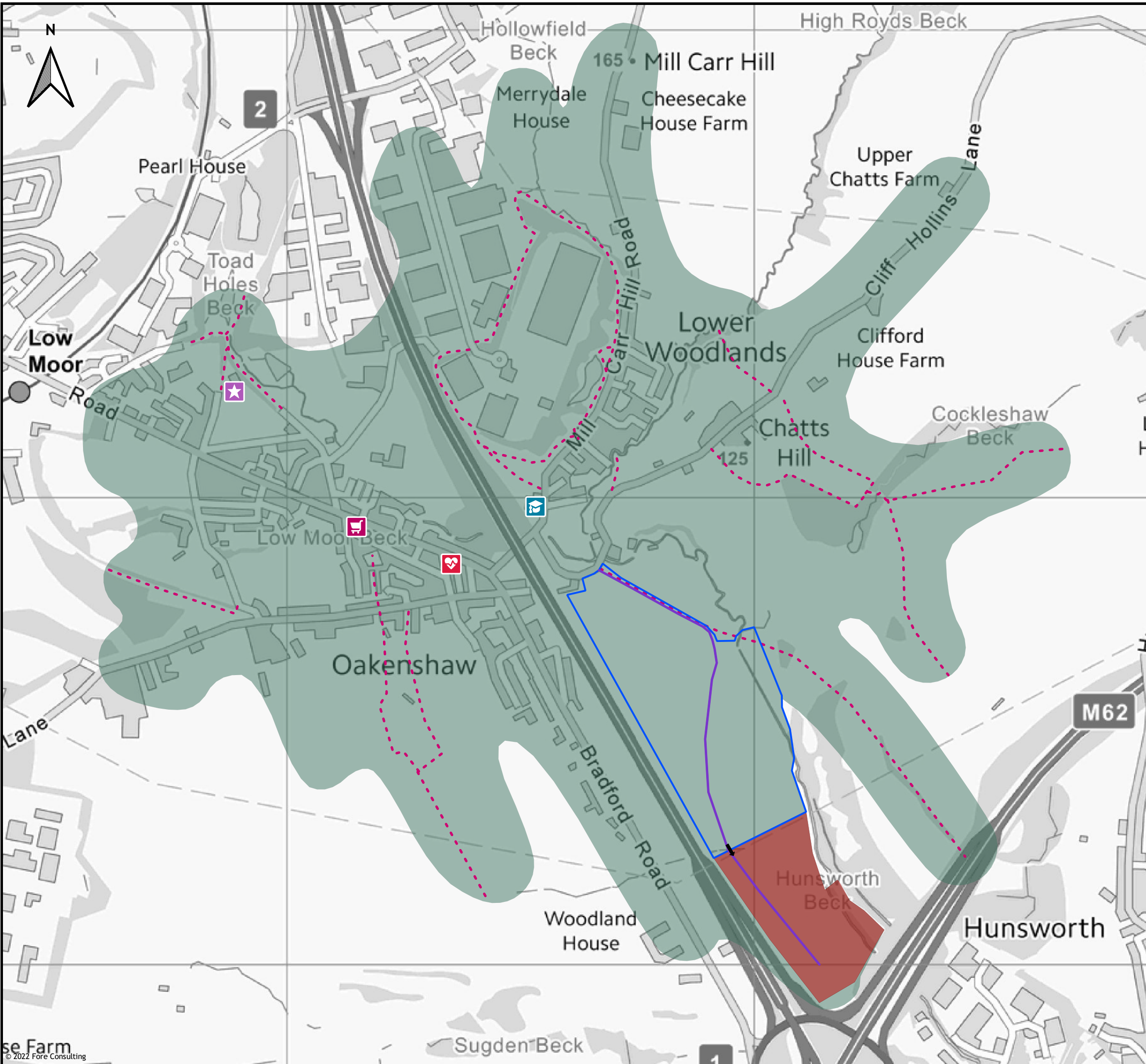
Figure Title:
 Site Location

Scale:
 1:30000

Figure Status:
 Issue

Job Number:
 31019

Figure Number:
 Figure 1



- Key:**
- Indicative Site Boundary
 - Phase 1 Development
 - Indicative Site Access
 - Indicative Access Road
 - 2.0km Walking Catchment
 - Public Rights of Way

- Local Amenities**
- 🎓 Primary School
 - 🛒 Retail
 - ★ Leisure
 - 🏥 Health

Contains OS data © Crown copyright and database rights (2022)

Fore Consulting Limited
1st Floor, 15 St Paul's Street
Leeds
LS1 2JG

enquiries@foreconsulting.co.uk
www.foreconsulting.co.uk



Client:
Keyland Developments

Project:
North Bierley Phase 2

Figure Title:
Walking Catchment and Local Land Uses

Scale: 1:8,000	Figure Status: Issue
Job Number: 31019	Figure Number: Figure 2



Key:

- Indicative Site Boundary
- Phase 1 Development
- Indicative Site Access
- Indicative Access Road
- 8.0km Cycle Catchment
- National Cycle Route 66

Contains OS data © Crown copyright and database rights (2022)

Fore Consulting Limited
1st Floor, 15 St Paul's Street
Leeds
LS1 2JG

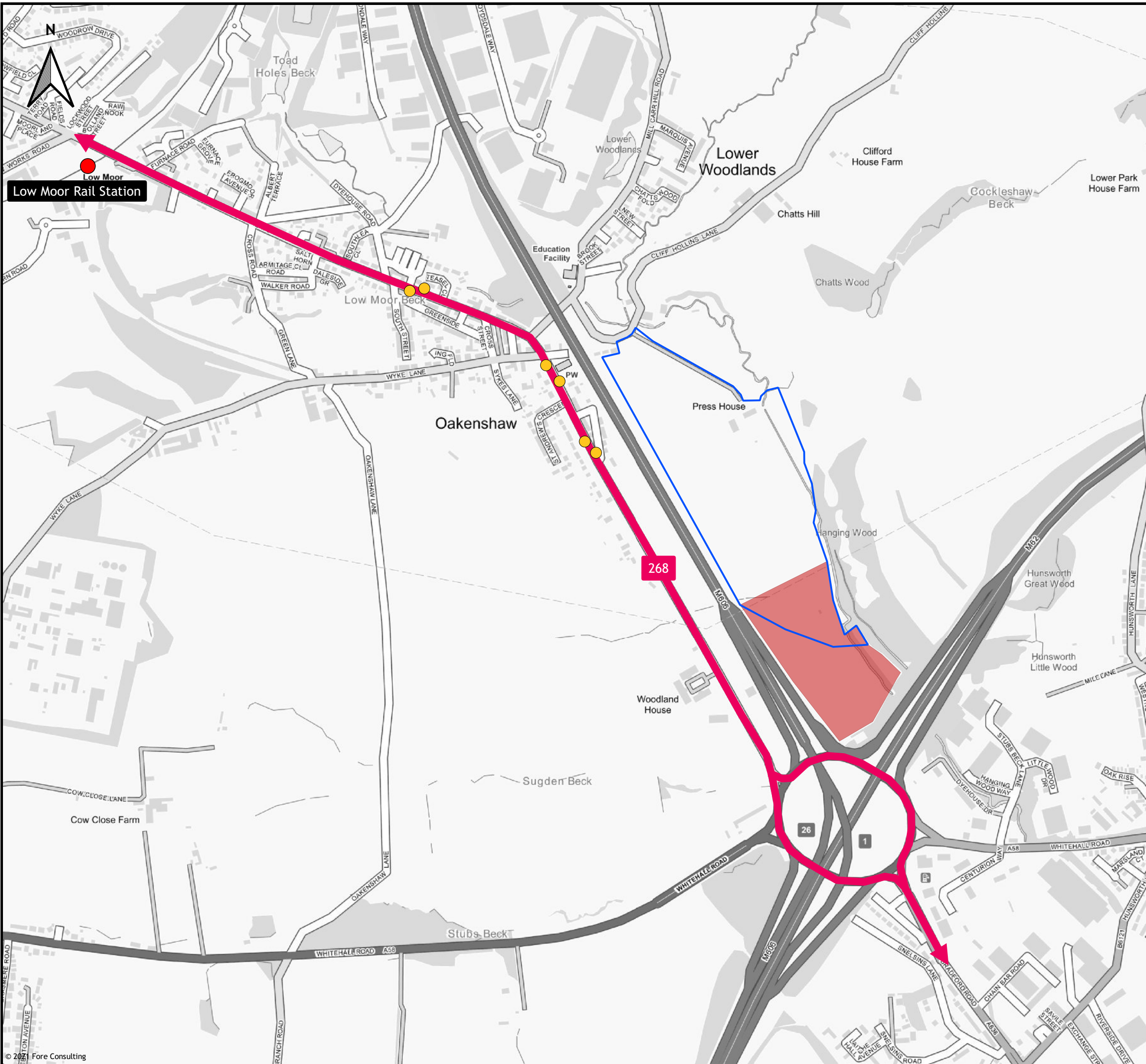
enquiries@foreconsulting.co.uk
www.foreconsulting.co.uk

Client:
Keyland Developments

Project:
North Bierley Phase 2

Figure Title:
Cycle Catchment and Long Distance Cycle Routes

Scale: 1:45,000	Figure Status: Issue
Job Number: 31019	Figure Number: Figure 3



- Key:**
- Indicative Site Boundary
 - Phase 1 Development
 - Bus Stop
 - Low Moor Rail Station
 - Bus Route

Contains OS data © Crown copyright and database rights (2021)

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG



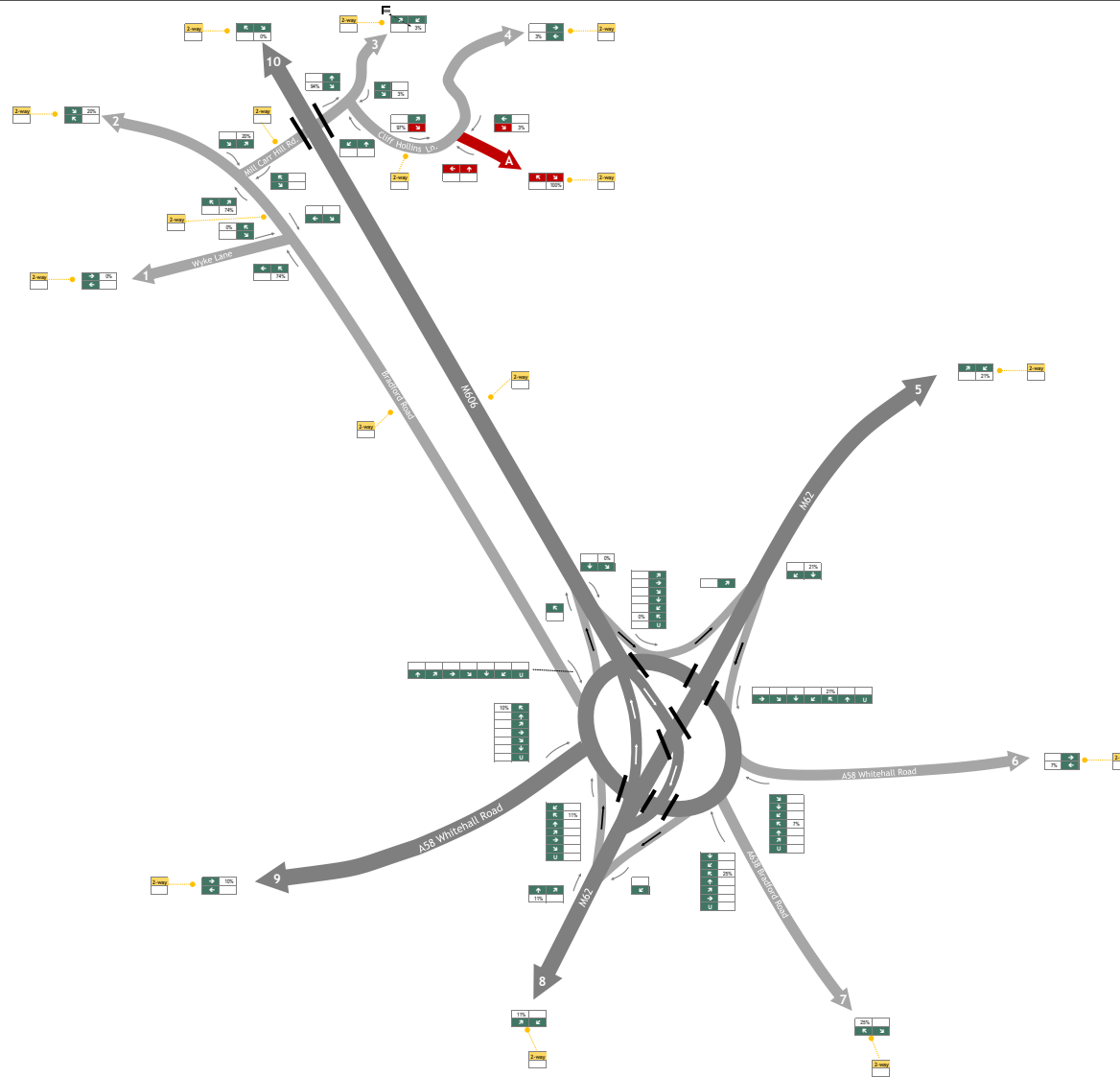
enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

Client:
Keyland Developments

Project:
North Bierley Phase 2

Figure Title:
Public Transport Network

Scale: 1:8500	Figure Status: Issue
Job Number: 31019	Figure Number: Figure 4



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
1st Floor, 15 St Pauls Street
Leeds
LS1 2JG
enquiries@foreconsulting.co.uk
www.foreconsulting.co.uk



Client:
Keyland Developments

Project:
North Bierley Phase 2

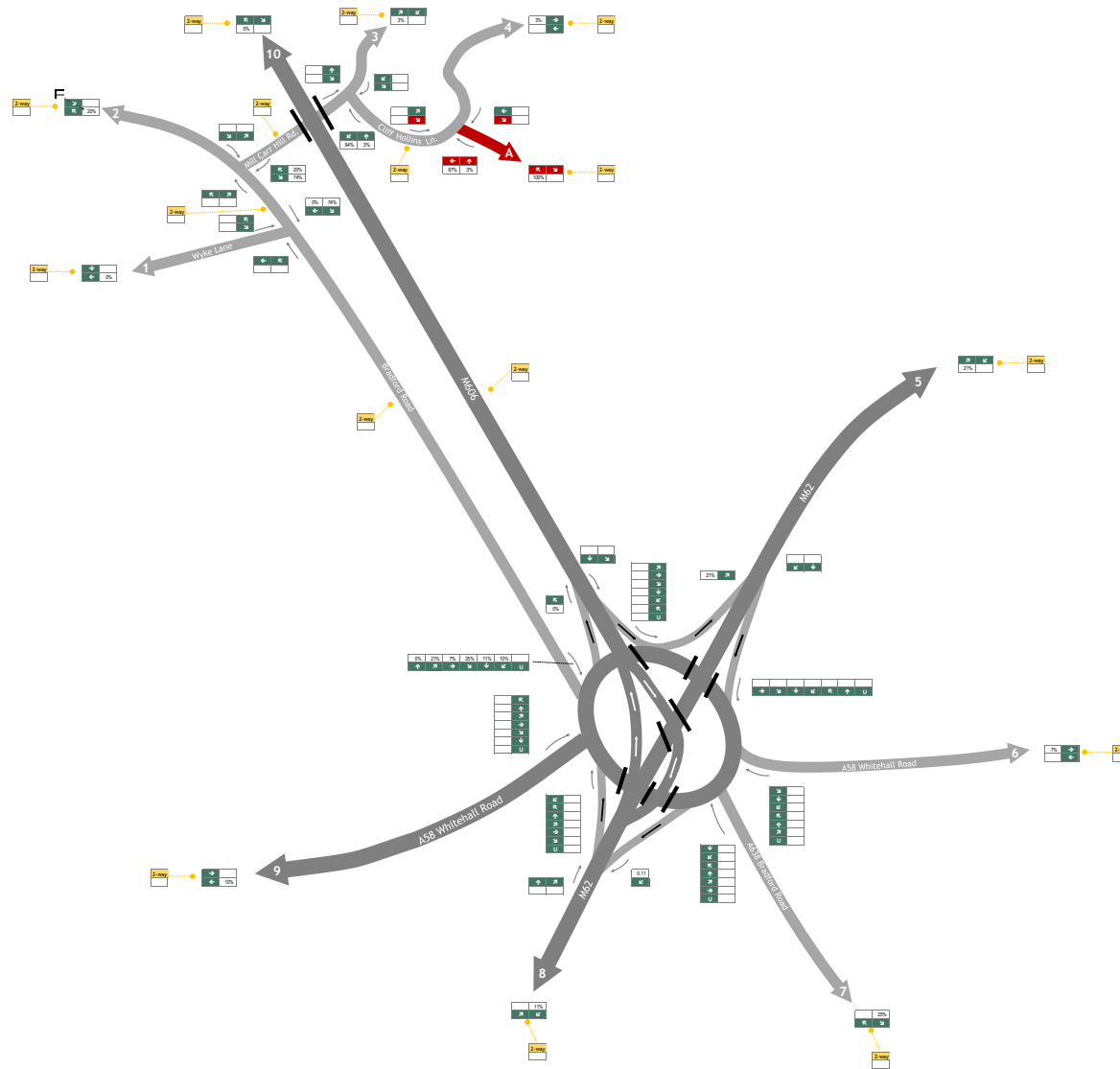
Figure Title:
Trip Distribution Arrivals (%) - Light Vehicles

Scale:
Not to scale

Figure Status:
Issue

Job Number:
31019

Figure Number:
Figure 5



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
1st Floor, 15 St Pauls Street
Leeds
LS1 2JG
enquiries@foreconsulting.co.uk
www.foreconsulting.co.uk



Client:
Keyland Developments

Project:
North Bierley Phase 2

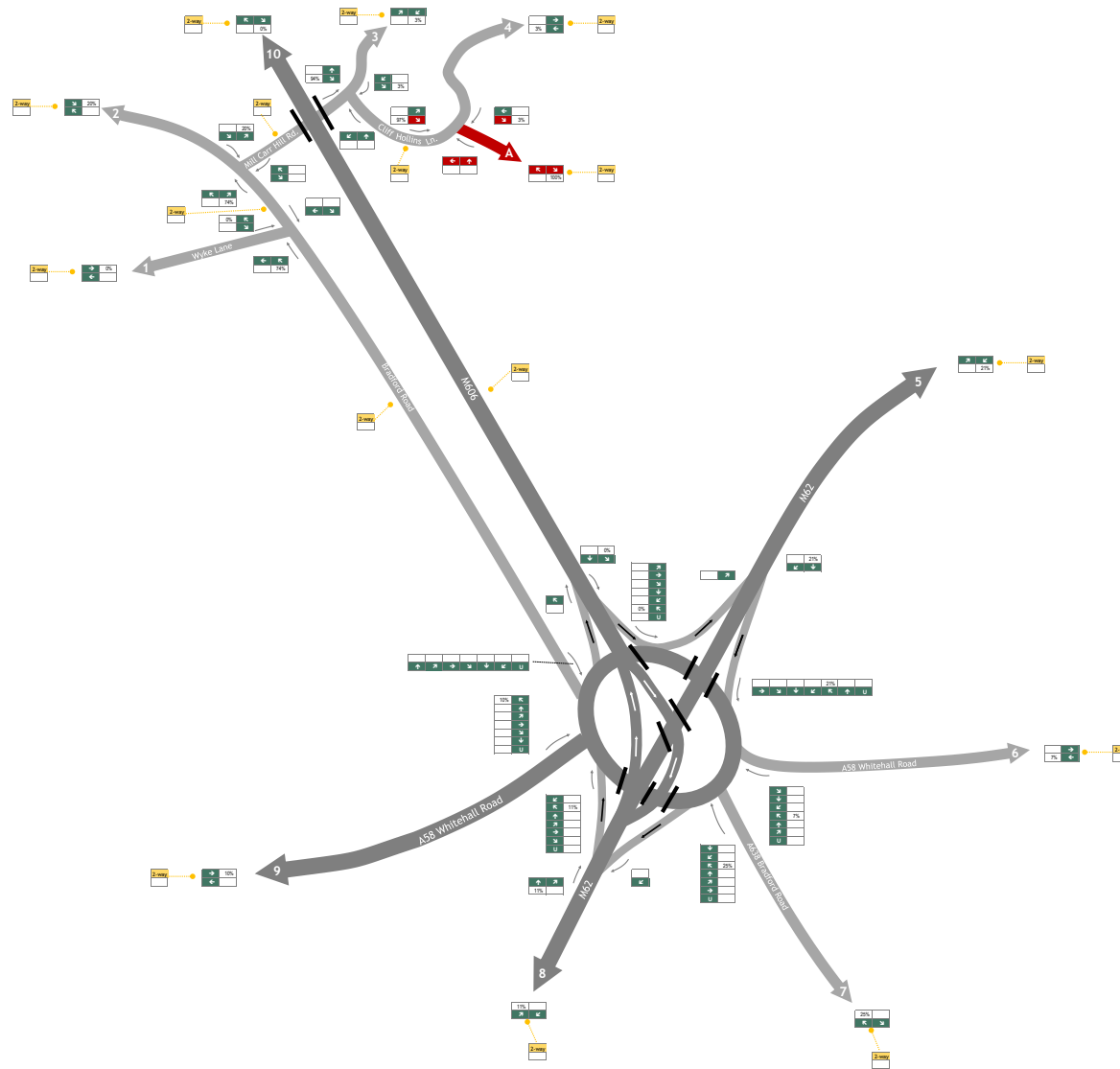
Figure Title:
Trip Distribution Departures (%) - Light Vehicles

Scale:
Not to scale

Figure Status:
Issue

Job Number:
31019

Figure Number:
Figure 6



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
1st Floor, 15 St Pauls Street
Leeds
LS1 2JG
enquiries@foreconsulting.co.uk
www.foreconsulting.co.uk



Client:
Keyland Developments

Project:
North Bierley Phase 2

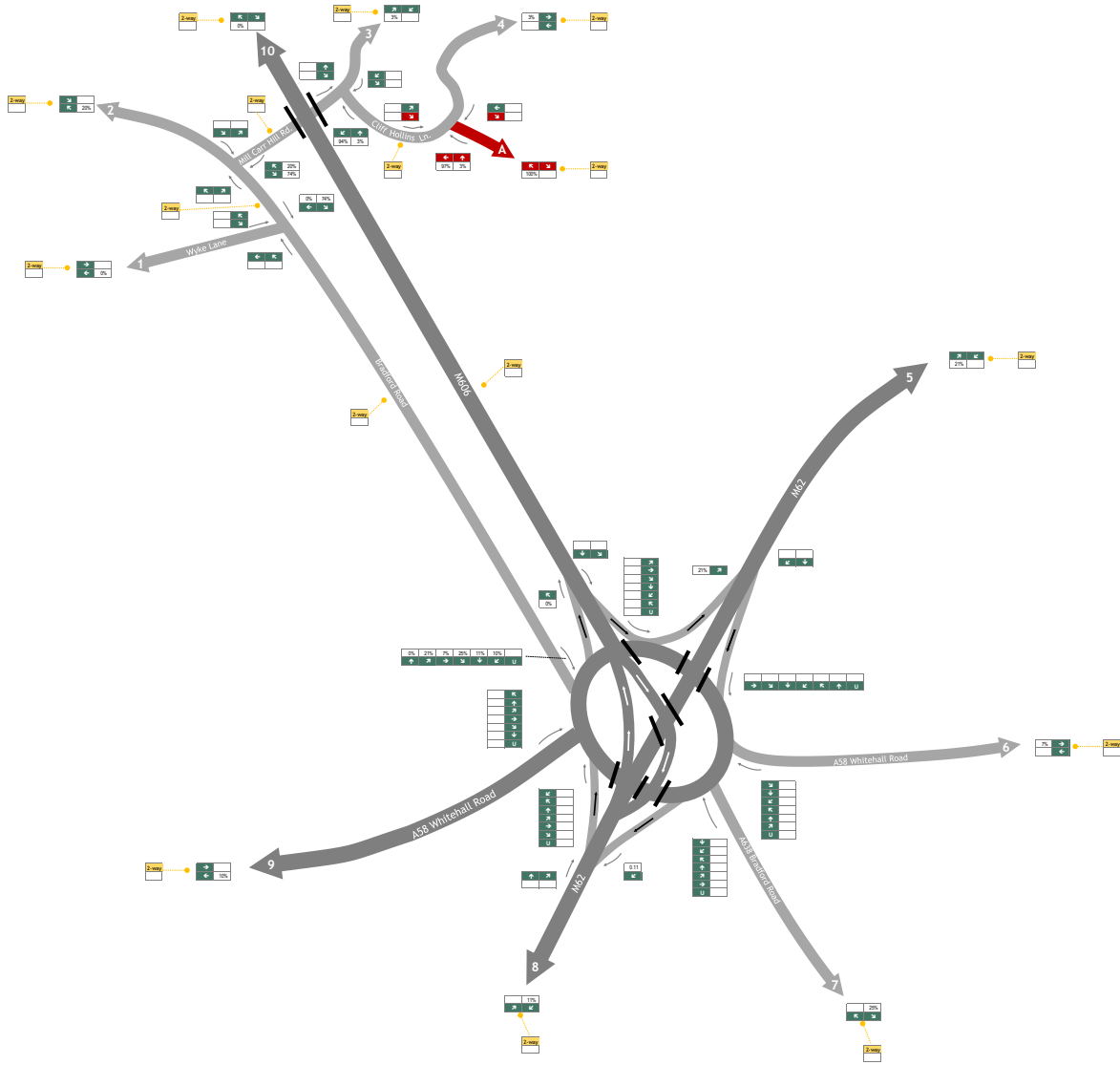
Figure Title:
Trip Distribution Arrivals (%) - HGVs

Scale:
Not to scale

Figure Status:
Issue

Job Number:
31019

Figure Number:
Figure 7



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
1st Floor, 15 St Pauls Street
Leeds
LS1 2JG
0113 246 0204
enquiries@foreconsulting.co.uk
www.foreconsulting.co.uk



Client:
Keyland Developments

Project:
North Bierley Phase 2

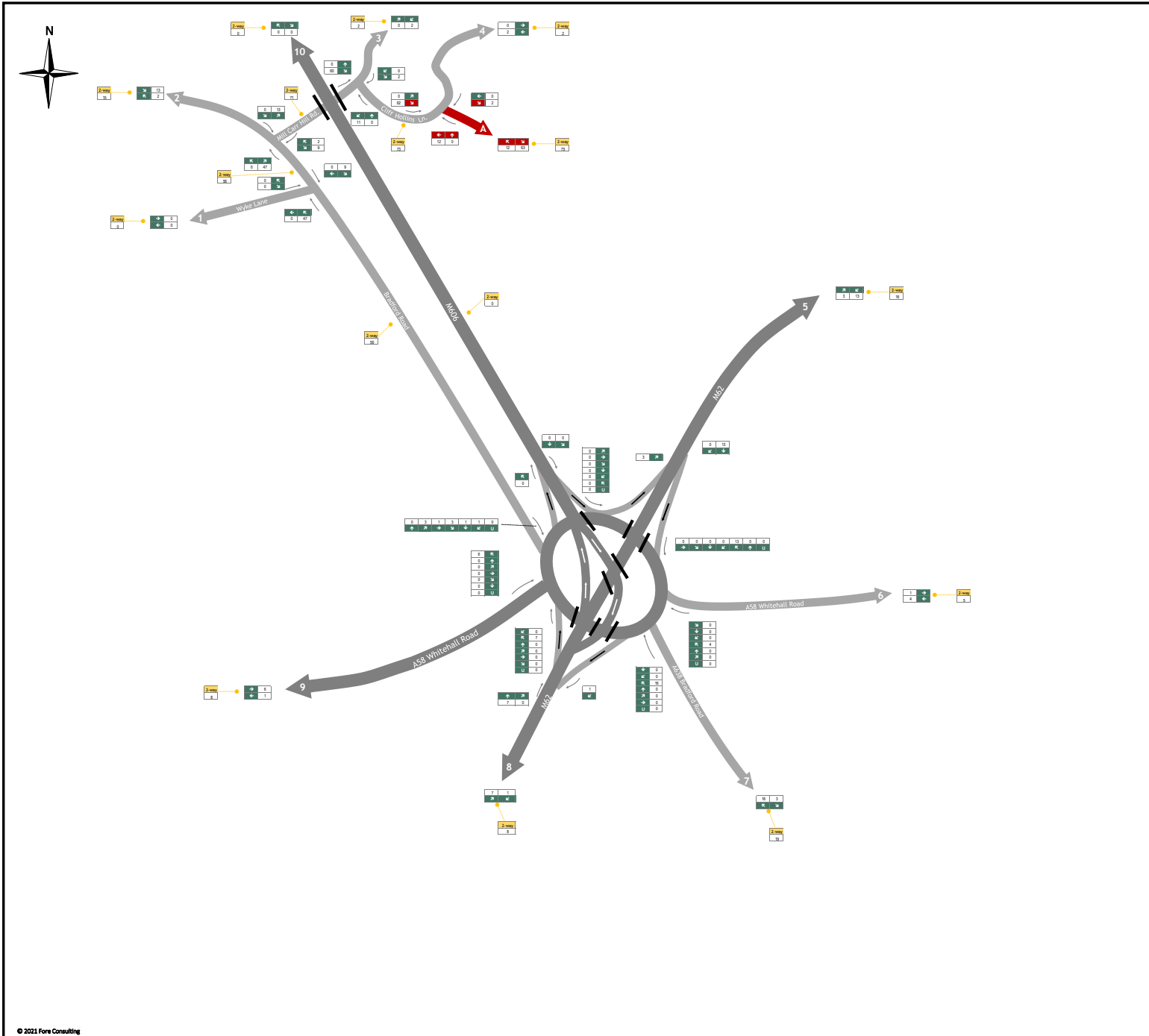
Figure Title:
Trip Distribution Departures (%) - HGVs

Scale:
Not to scale

Figure Status:
Issue

Job Number:
31019

Figure Number:
Figure 8



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



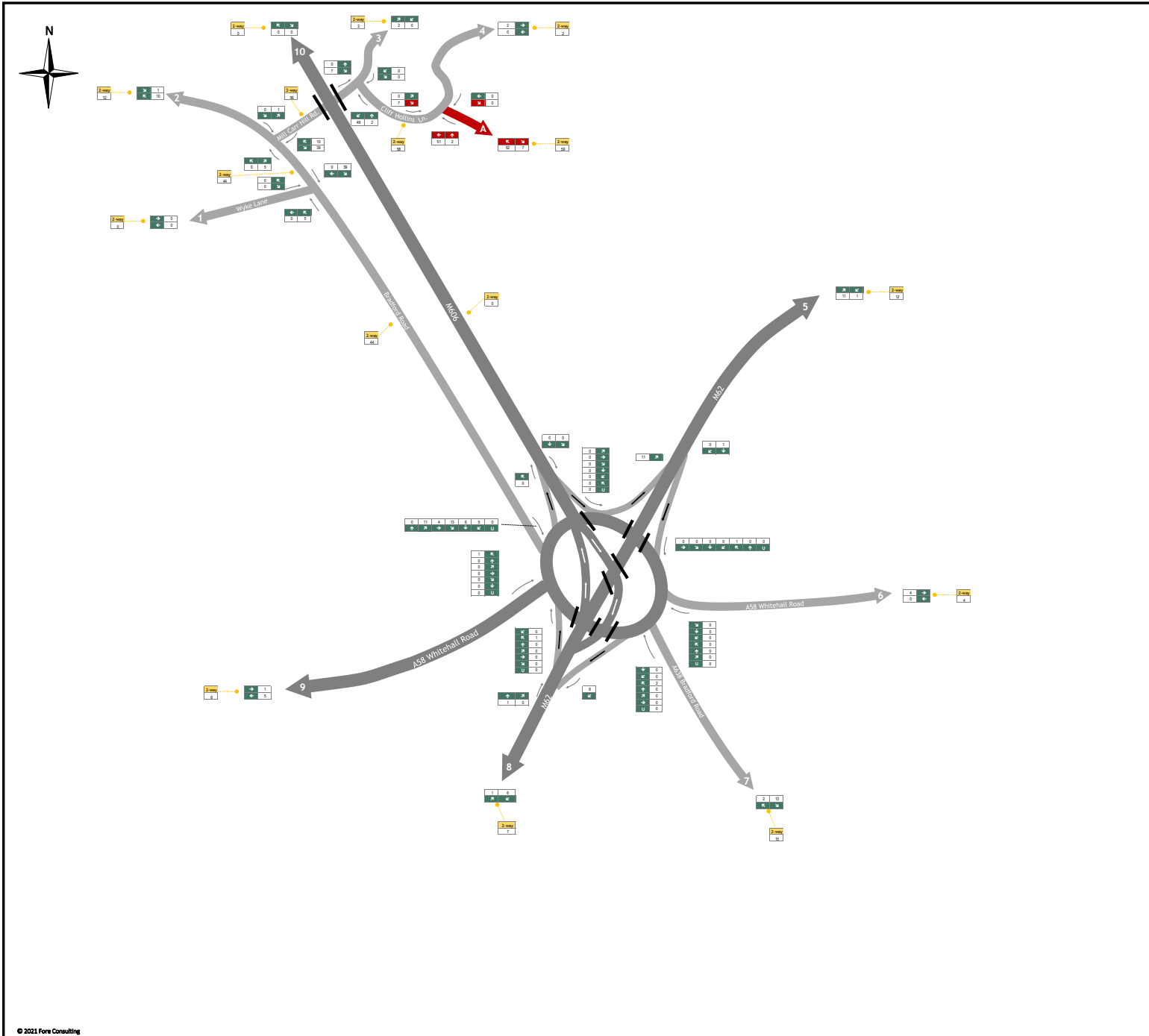
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Industrial Use) - Total Vehicles - Weekday AM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 9



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



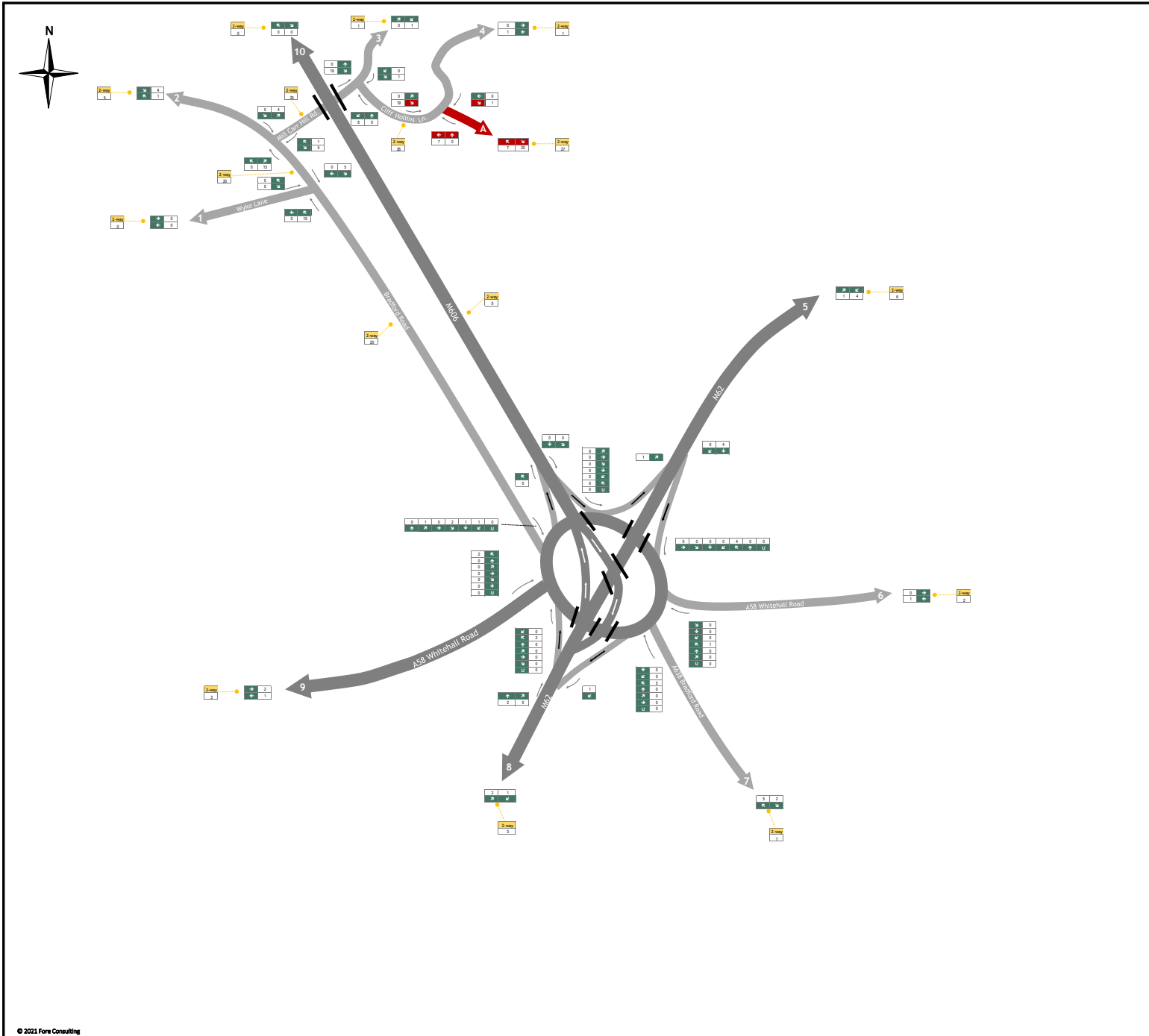
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Industrial Use) - Total Vehicles - Weekday PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 10



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



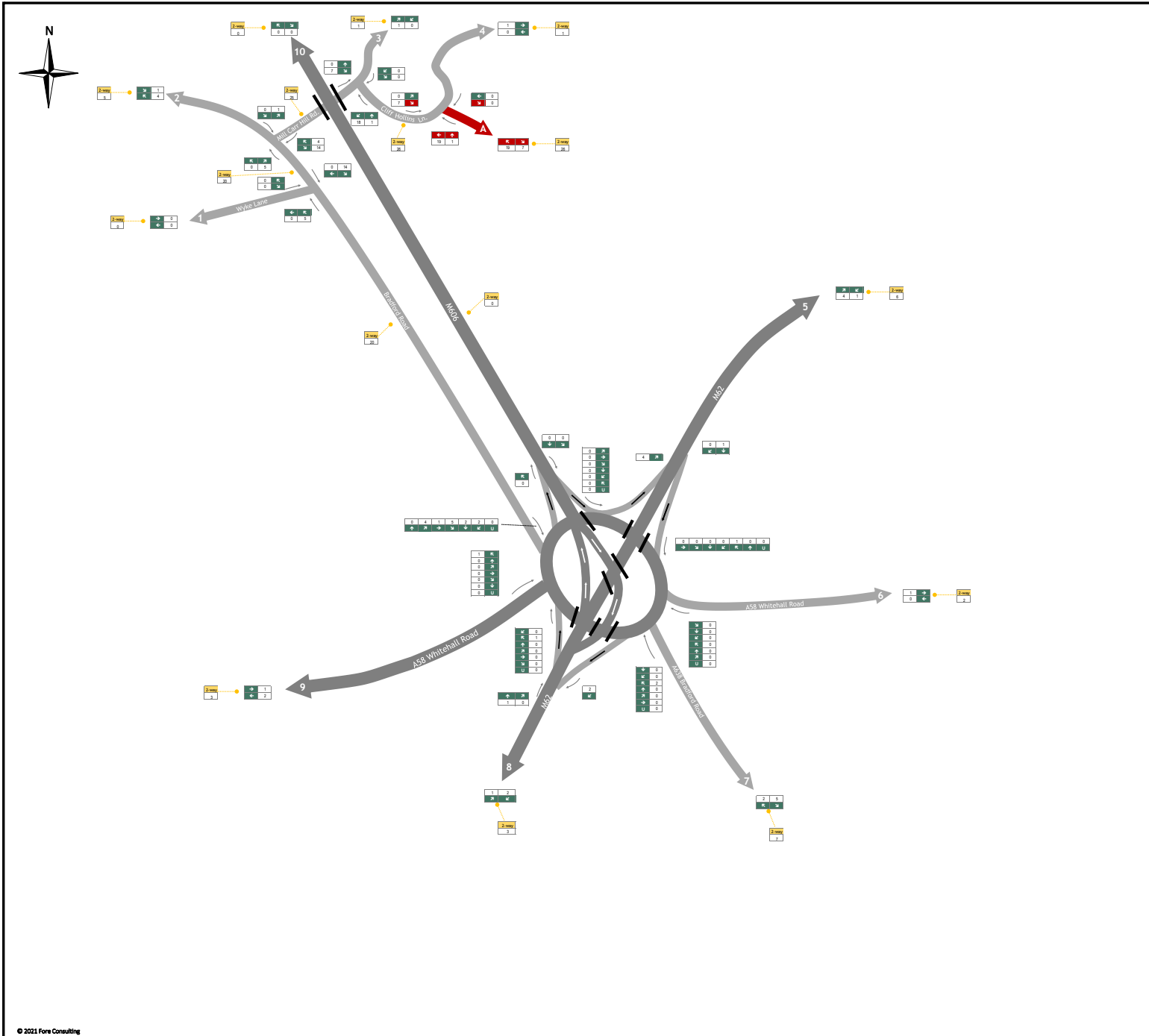
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Warehousing Use) - Total Vehicles - Weekday AM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 11



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



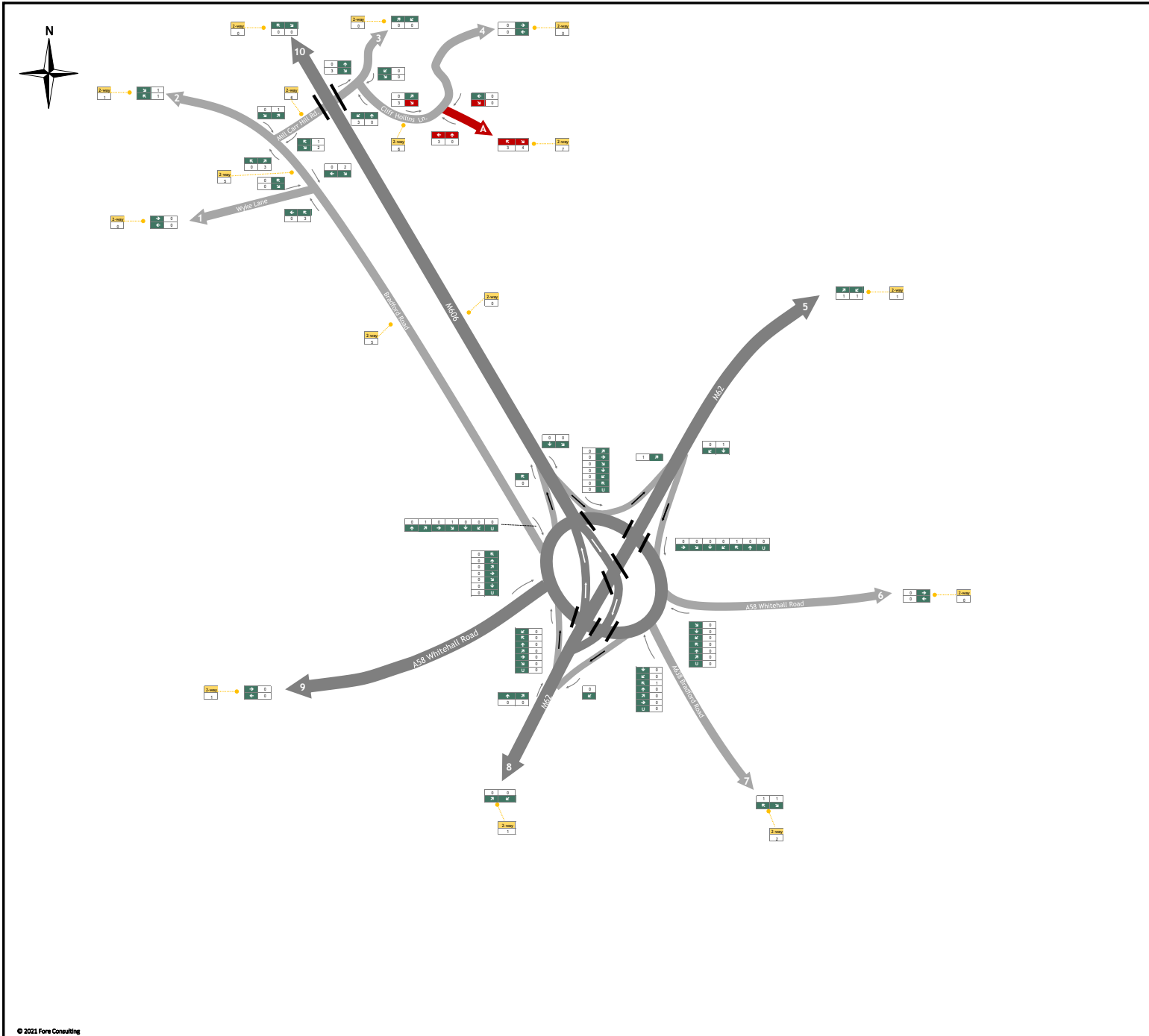
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Warehousing Use) - Total Vehicles - Weekday PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 12



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



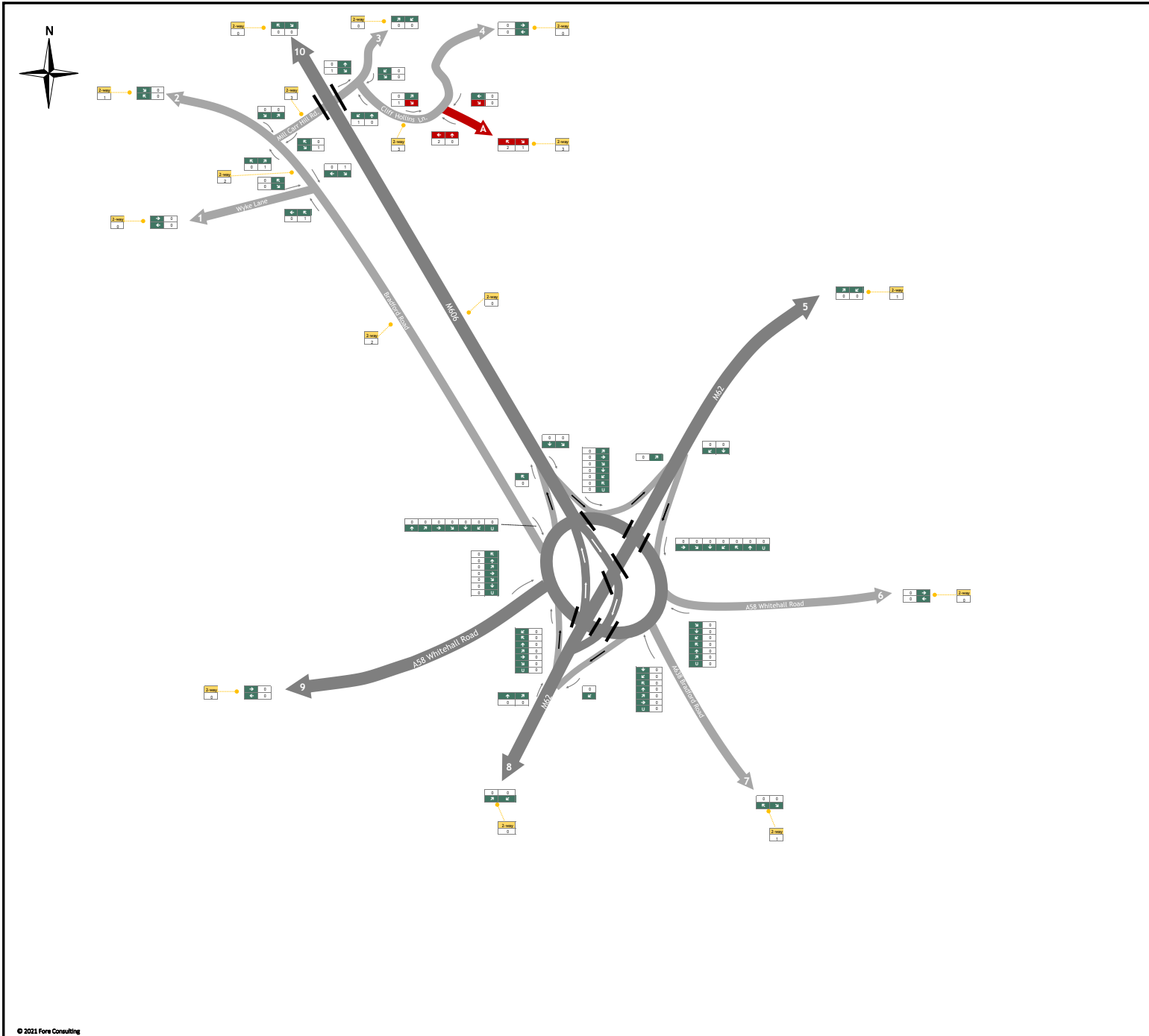
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Industrial Use) - HGVs - Weekday AM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 13



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

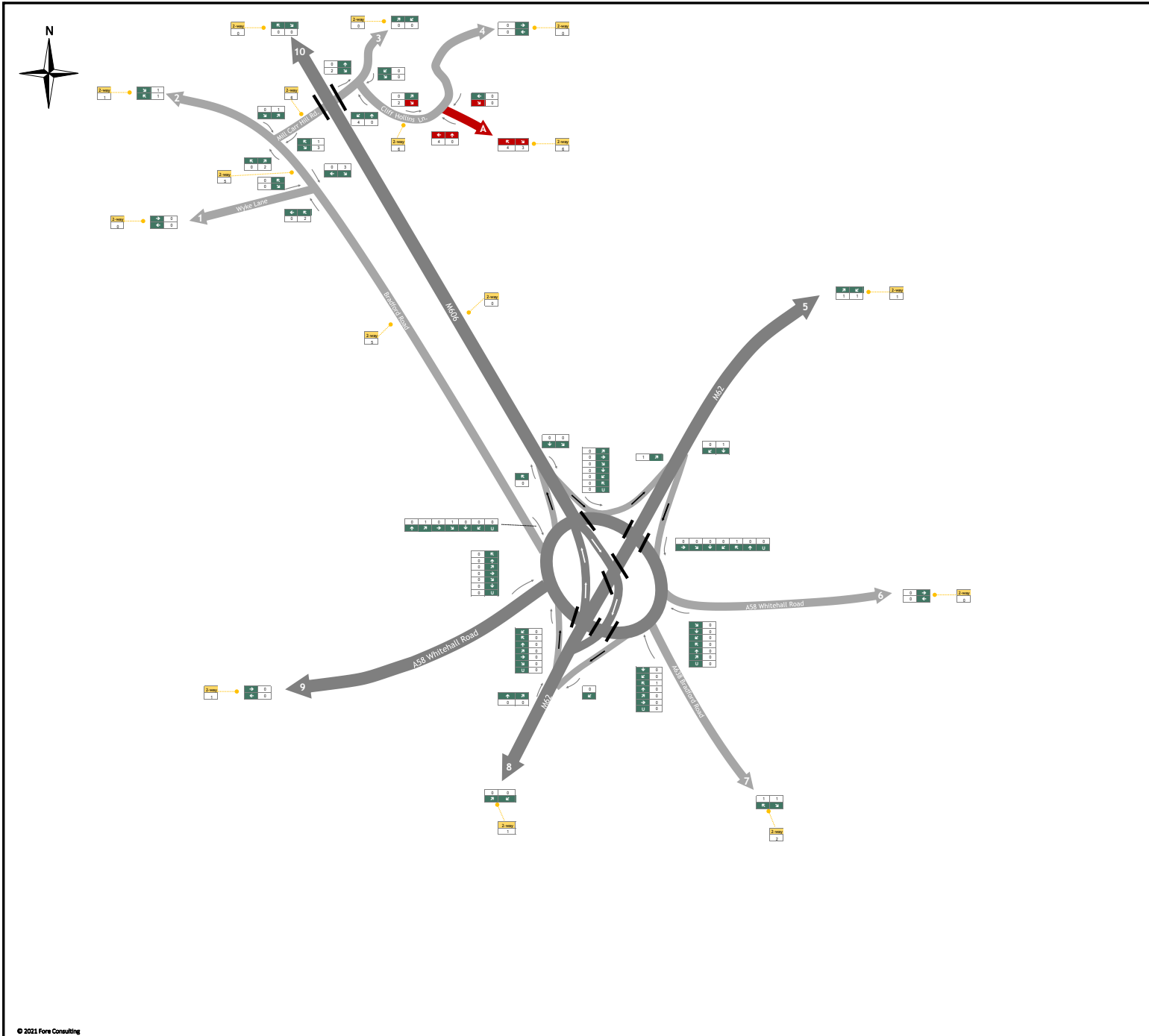


Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Industrial Use) - HGVs - Weekday PM Peak Hour

Scale: Not to scale	Figure Status: Issue
Job Number: 31019	Figure Number: Figure 14



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



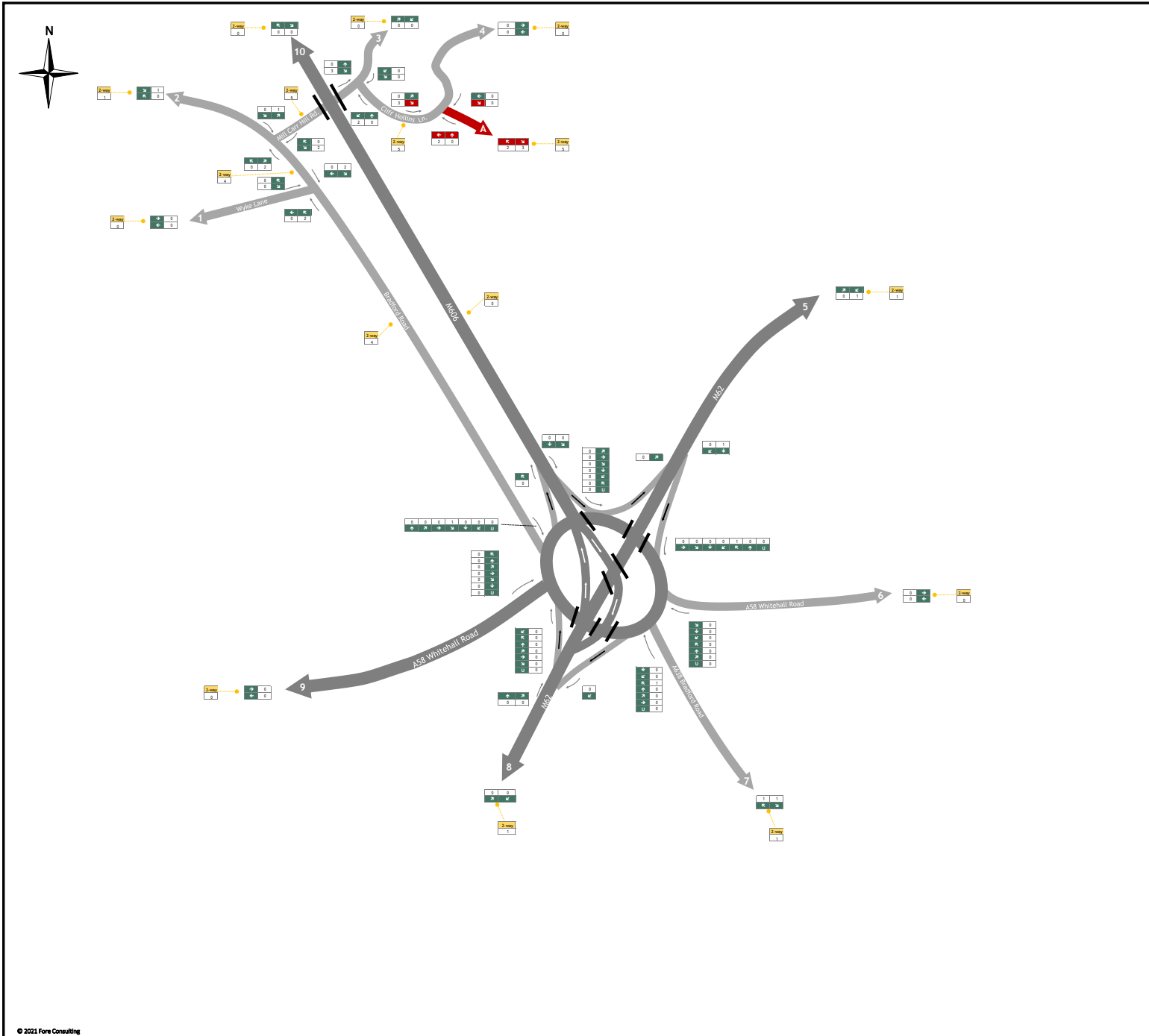
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Warehousing Use) - HGVs - Weekday AM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 15



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



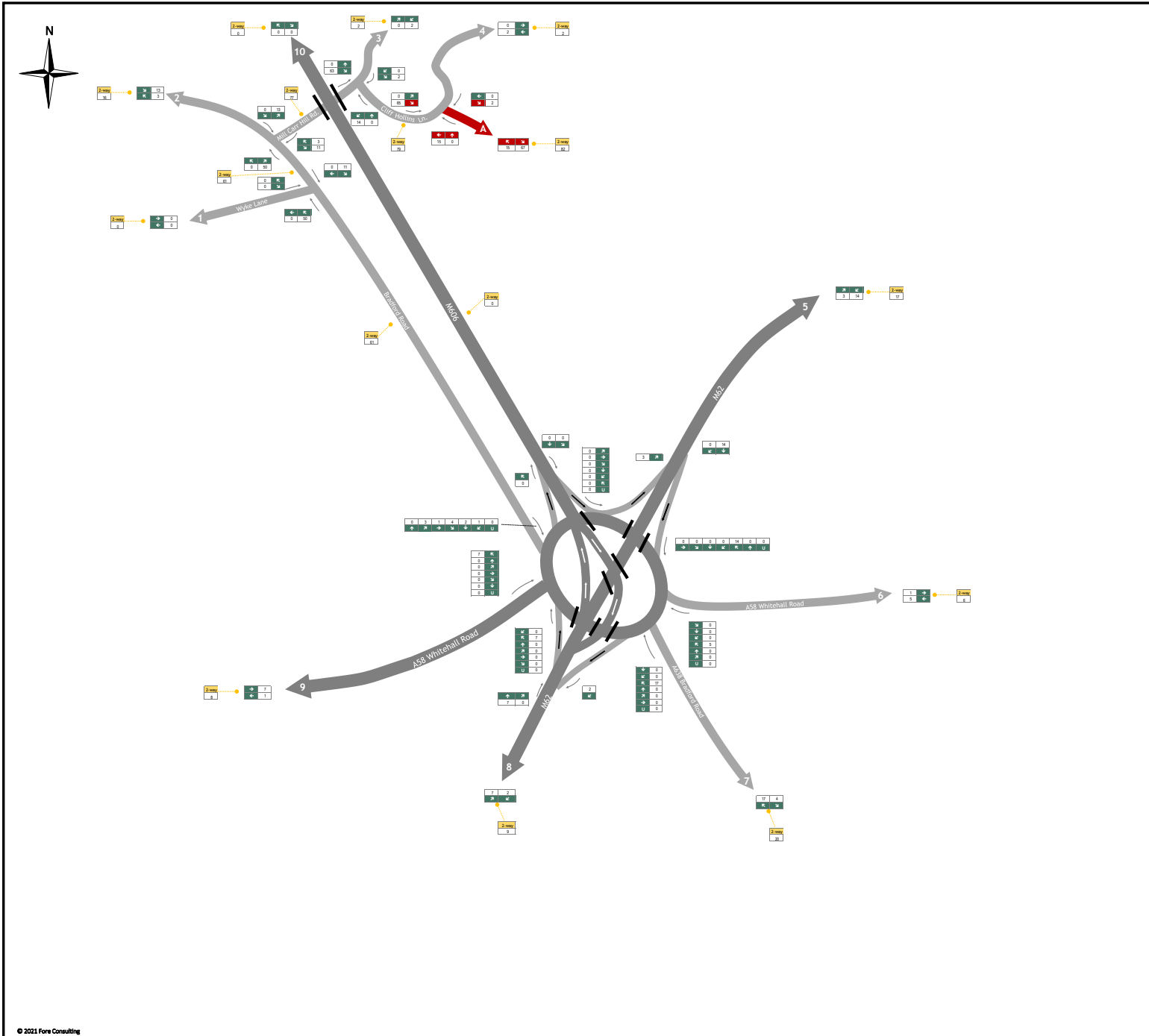
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Warehousing Use) - HGVs - Weekday PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 16



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

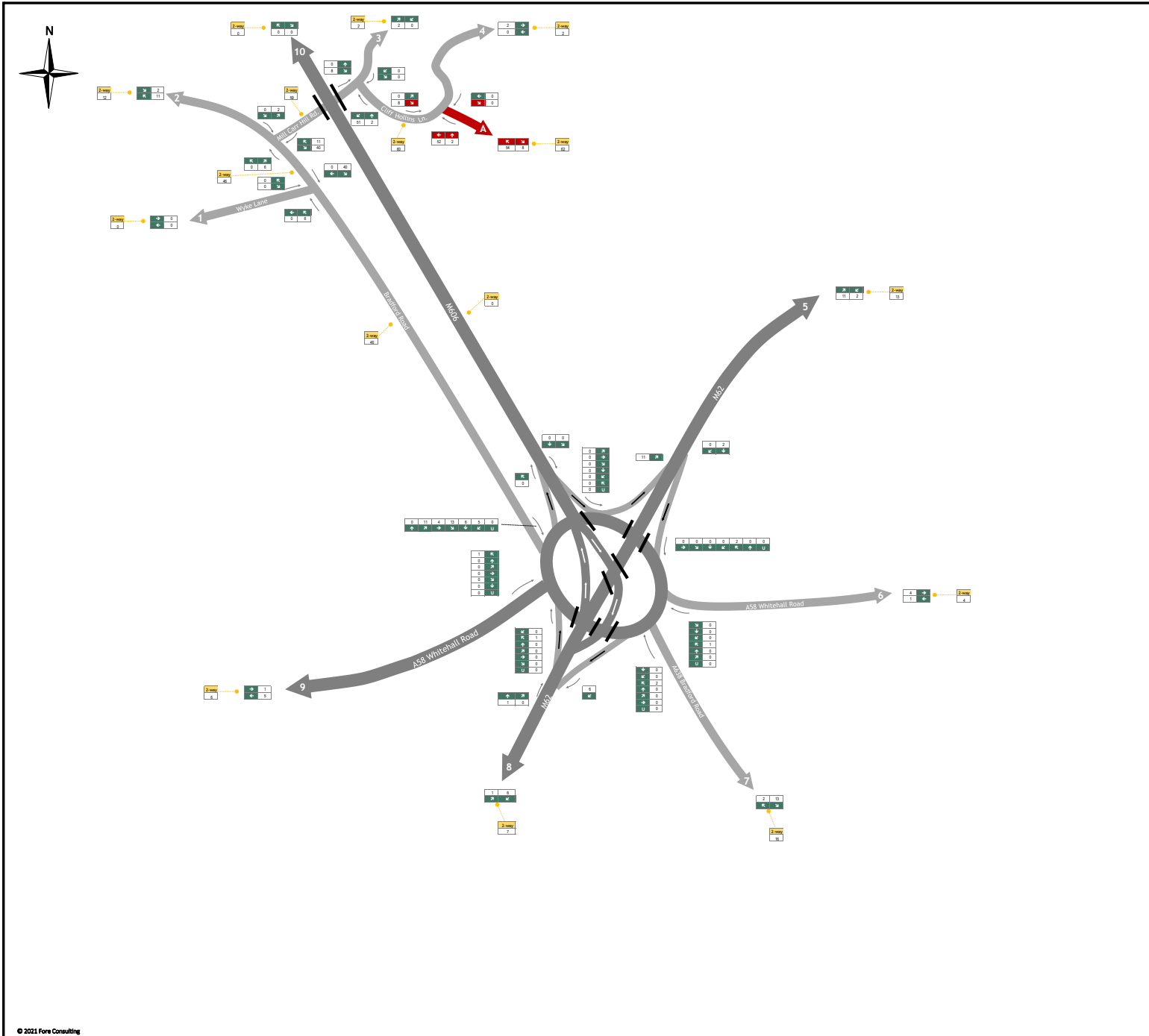


Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Industrial Use) - PCUs - Weekday AM Peak Hour

Scale: Not to scale	Figure Status: Issue
Job Number: 31019	Figure Number: Figure 17



- Key:
- Primary Road
 - Secondary Road
 - Site Access
 - Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



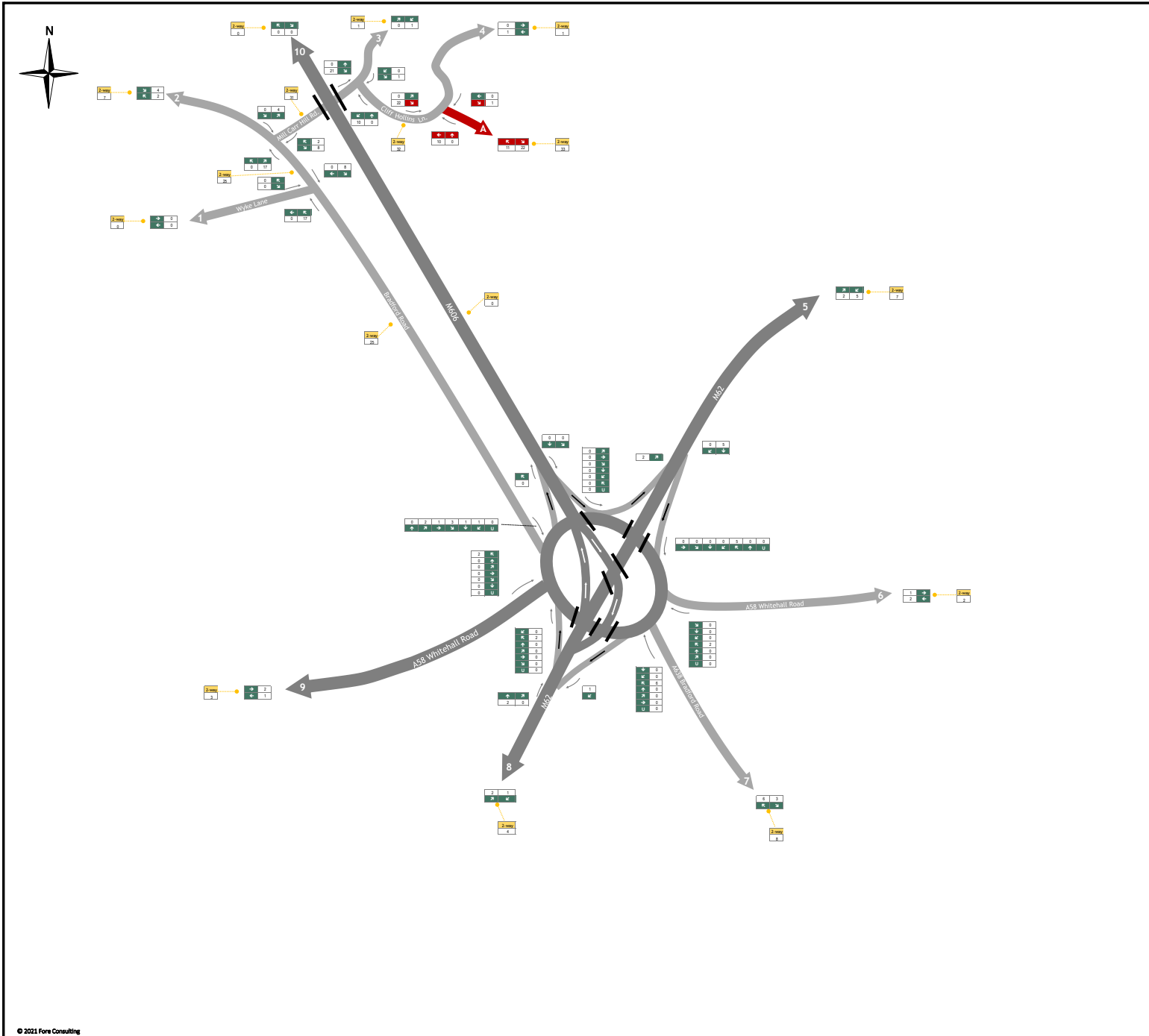
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Industrial Use) - PCUs - Weekday PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 18



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



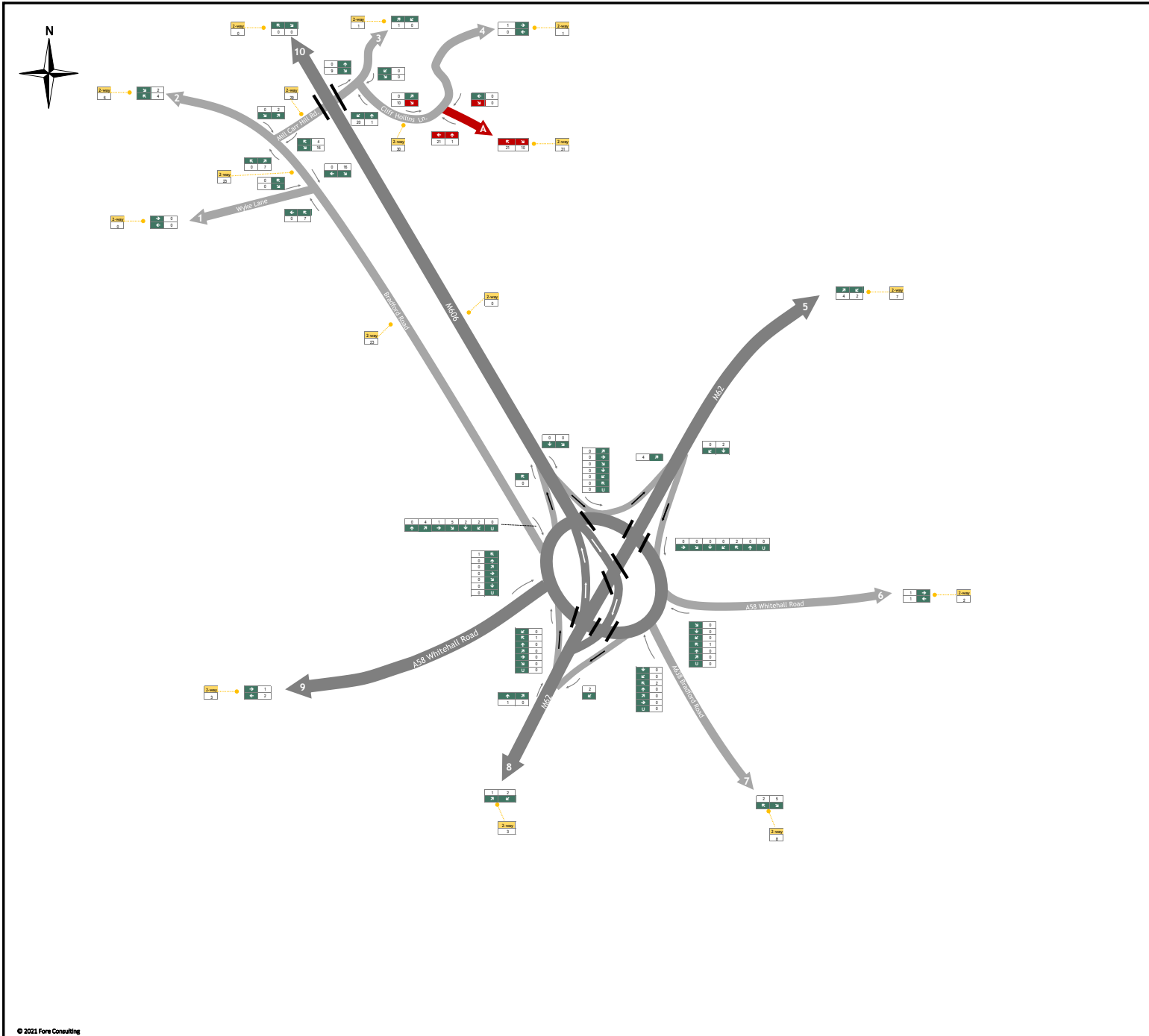
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Warehousing Use) - PCUs - Weekday AM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 19



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



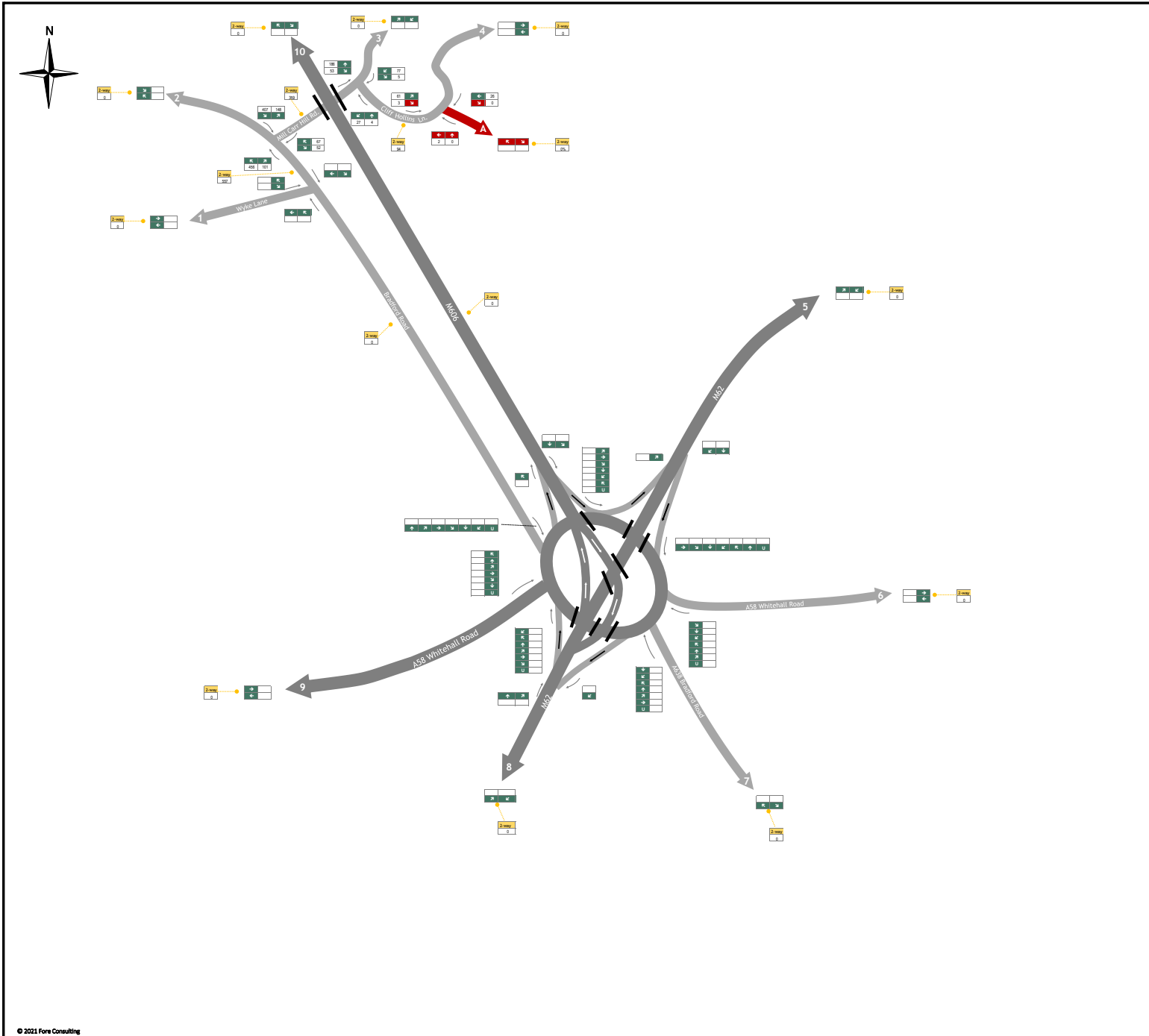
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Development Traffic Flows (Warehousing Use) - PCUs - Weekday PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 20



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

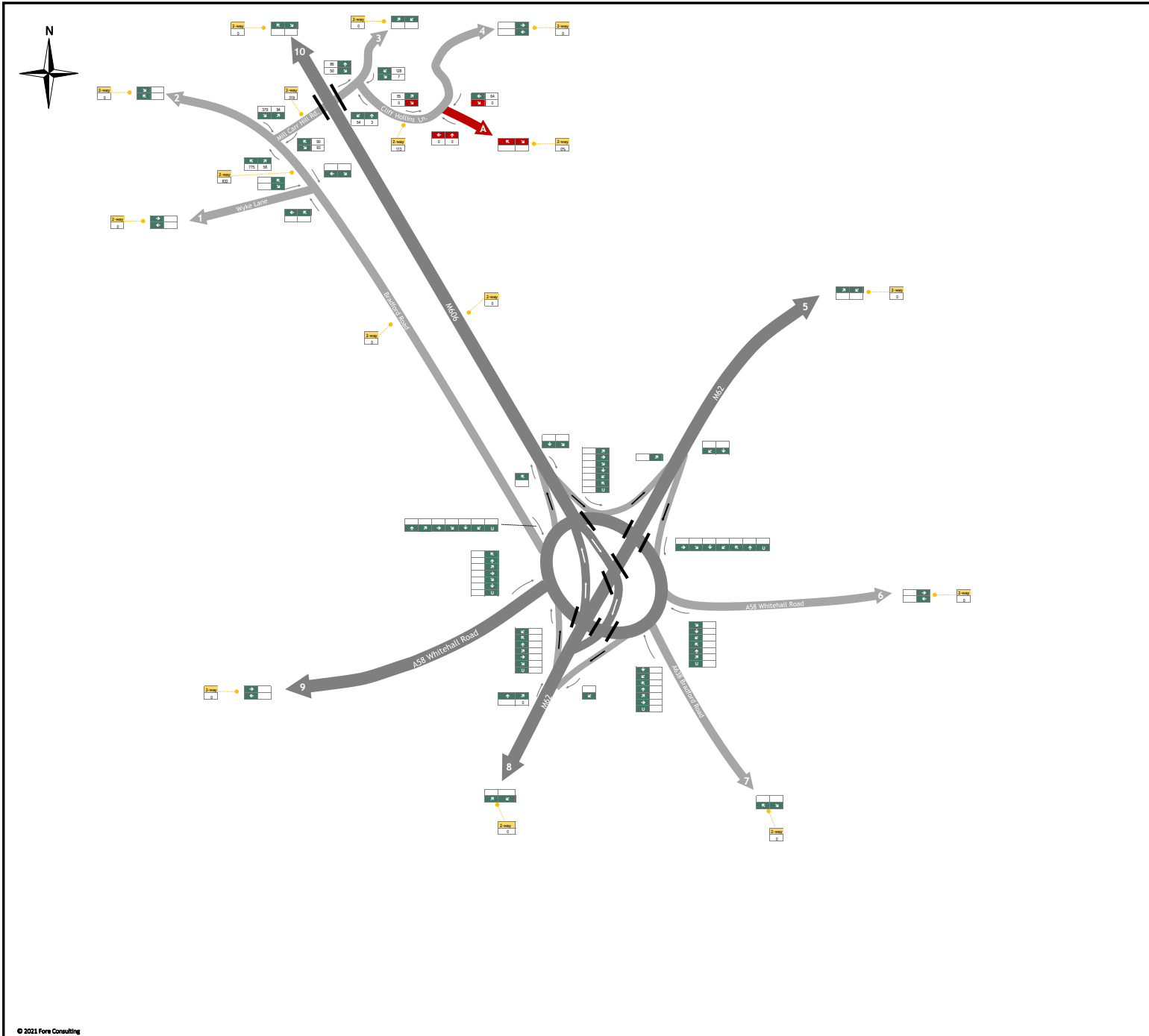


Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 2021 Base PCU Traffic Flows - Weekday AM Peak Hour

Scale: Not to scale	Figure Status: Issue
Job Number: 31019	Figure Number: Figure 21



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



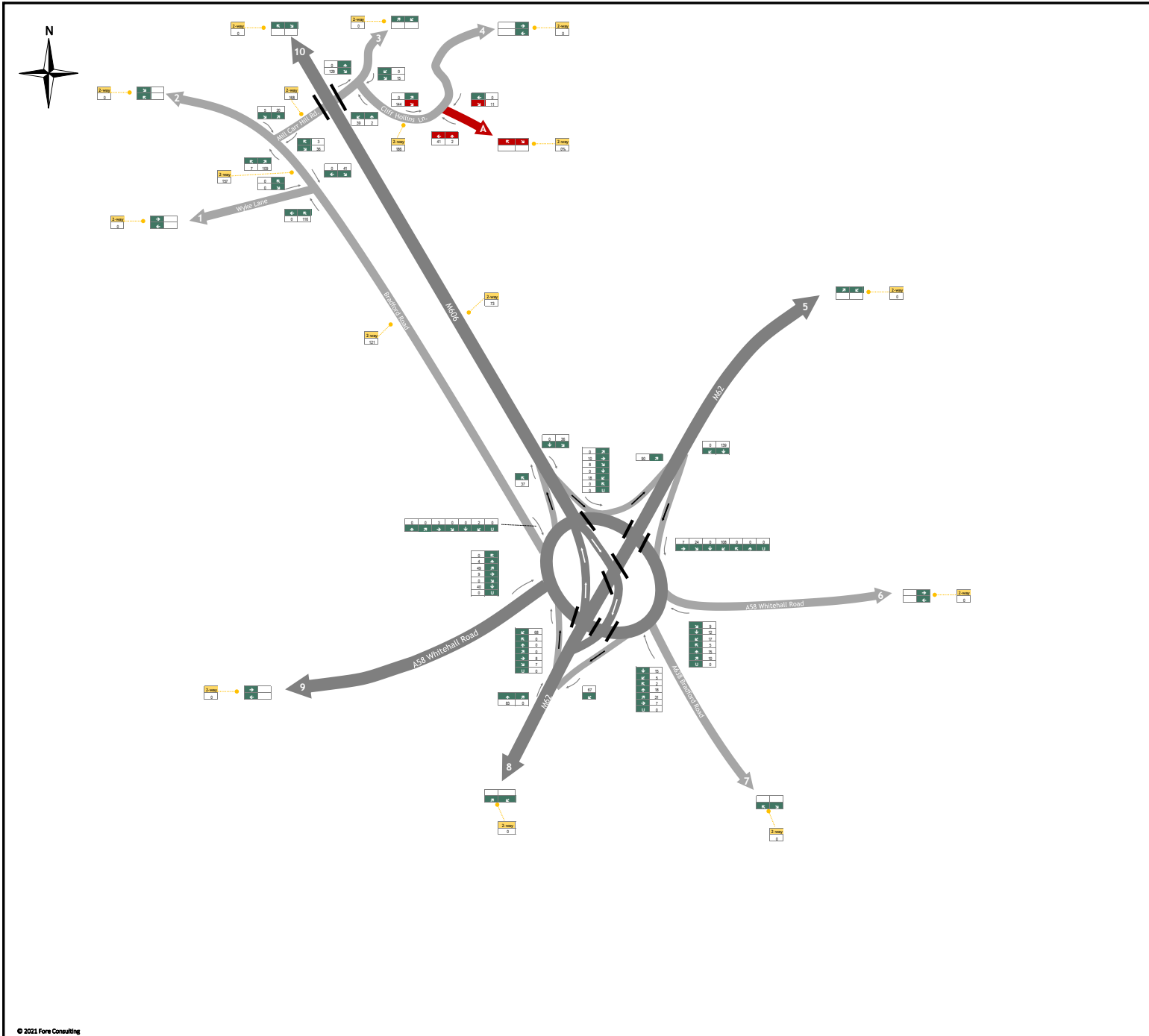
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 2021 Base PCU Traffic Flows - Weekday PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 22



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



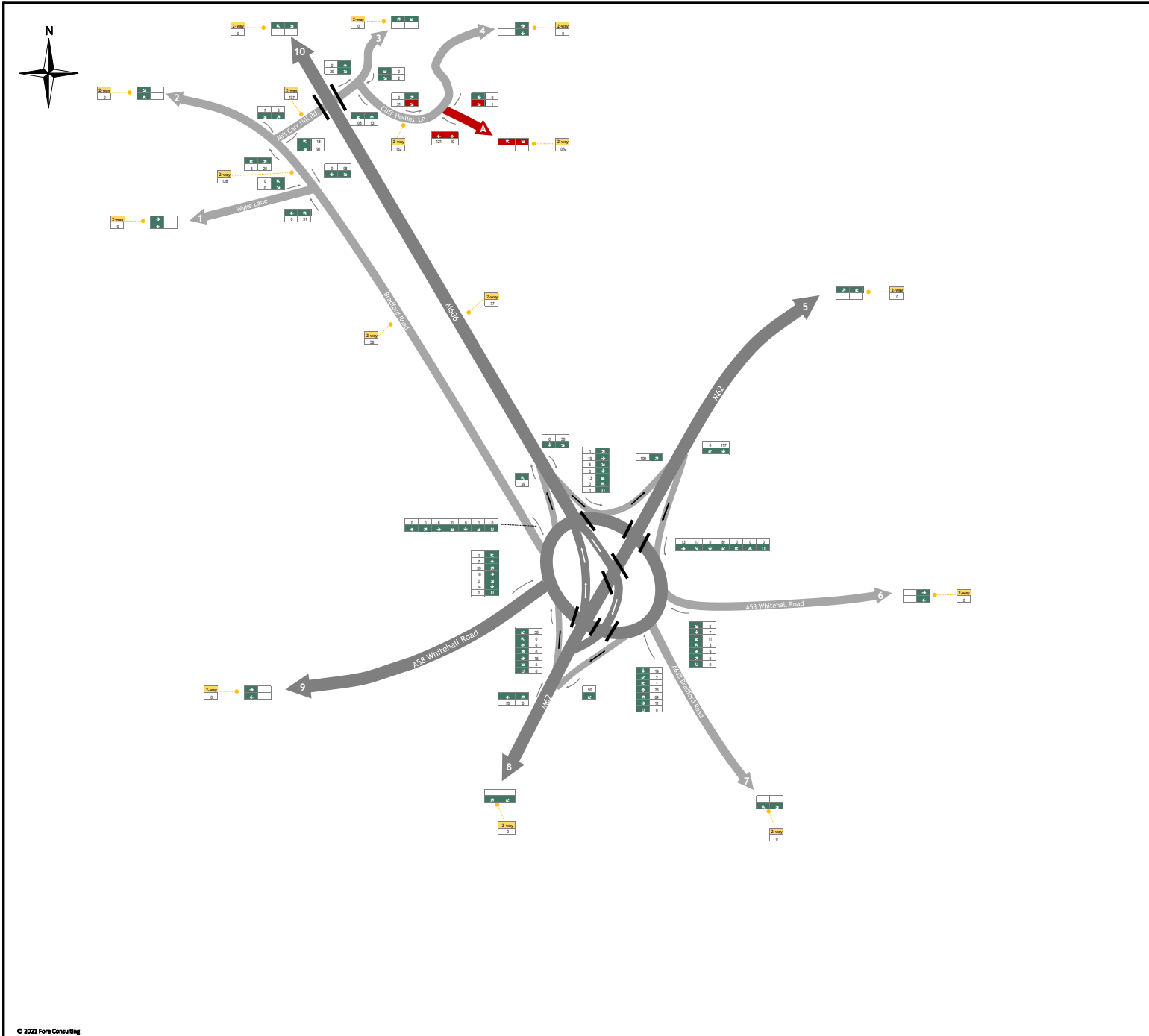
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Total Committed Development PCU Traffic Flows - Weekday AM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 23



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

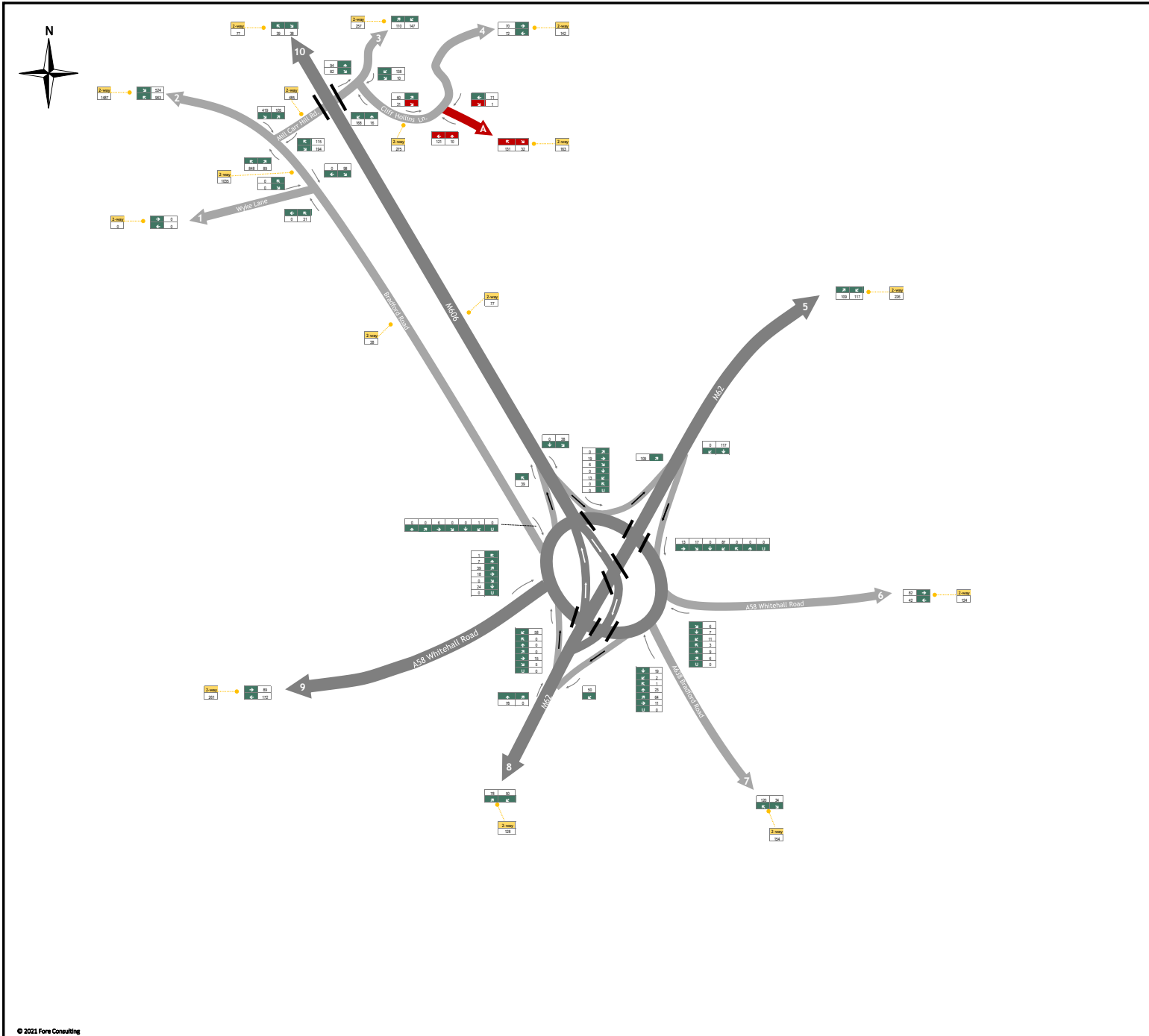


Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 Total Committed Development PCU Traffic Flows - Weekday PM Peak Hour

Scale: Not to scale	Figure Status: Issue
Job Number: 31019	Figure Number: Figure 24



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Legend for traffic flow matrices and symbols:

- Signal light
- Circle
- Square with cross

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

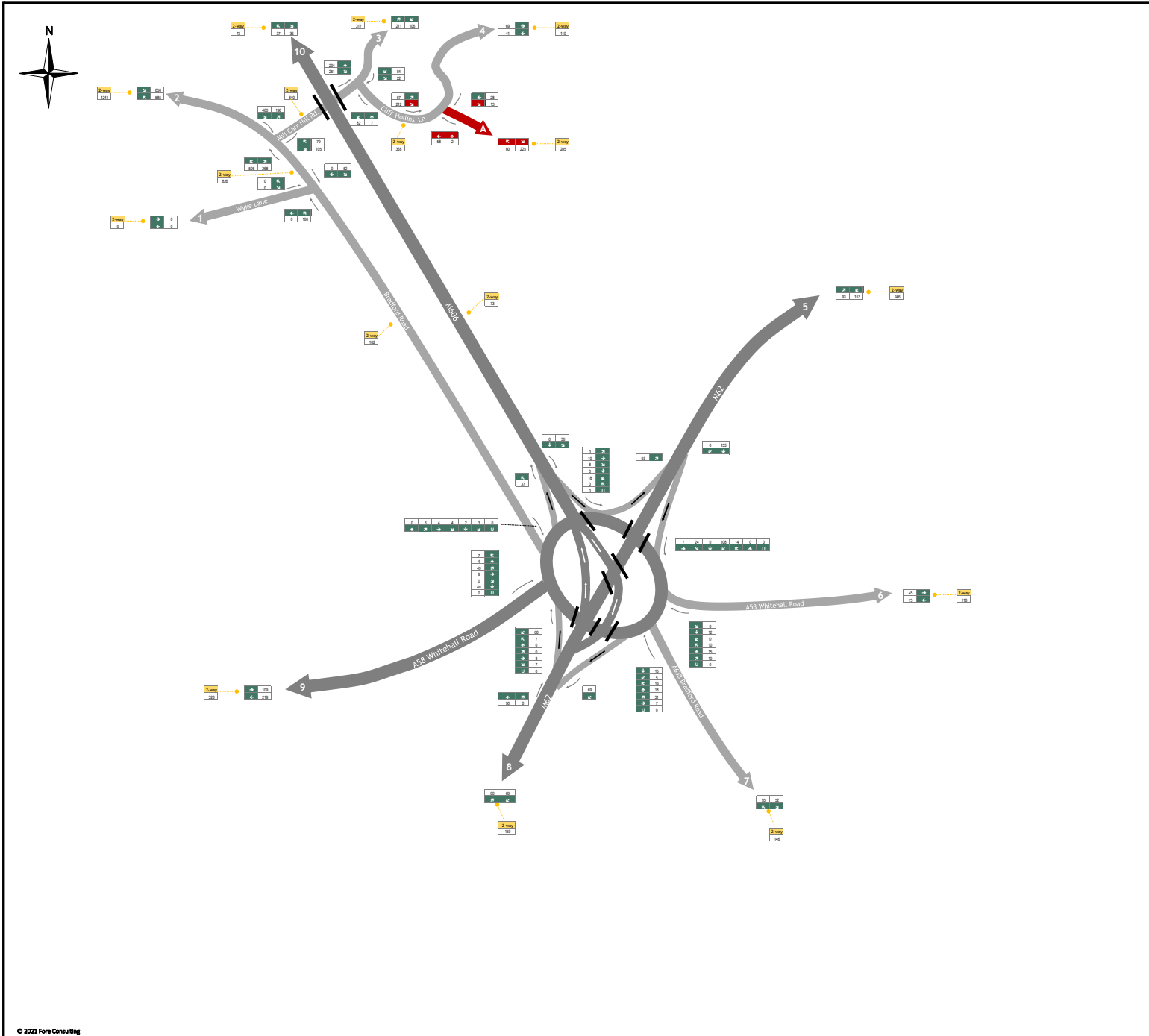


Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 2031 Do Minimum PCU Traffic Flows - Weekday PM Peak Hour

Scale: Not to scale	Figure Status: Issue
Job Number: 31019	Figure Number: Figure 26



Key:

- 1 Primary Road
- 1 Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



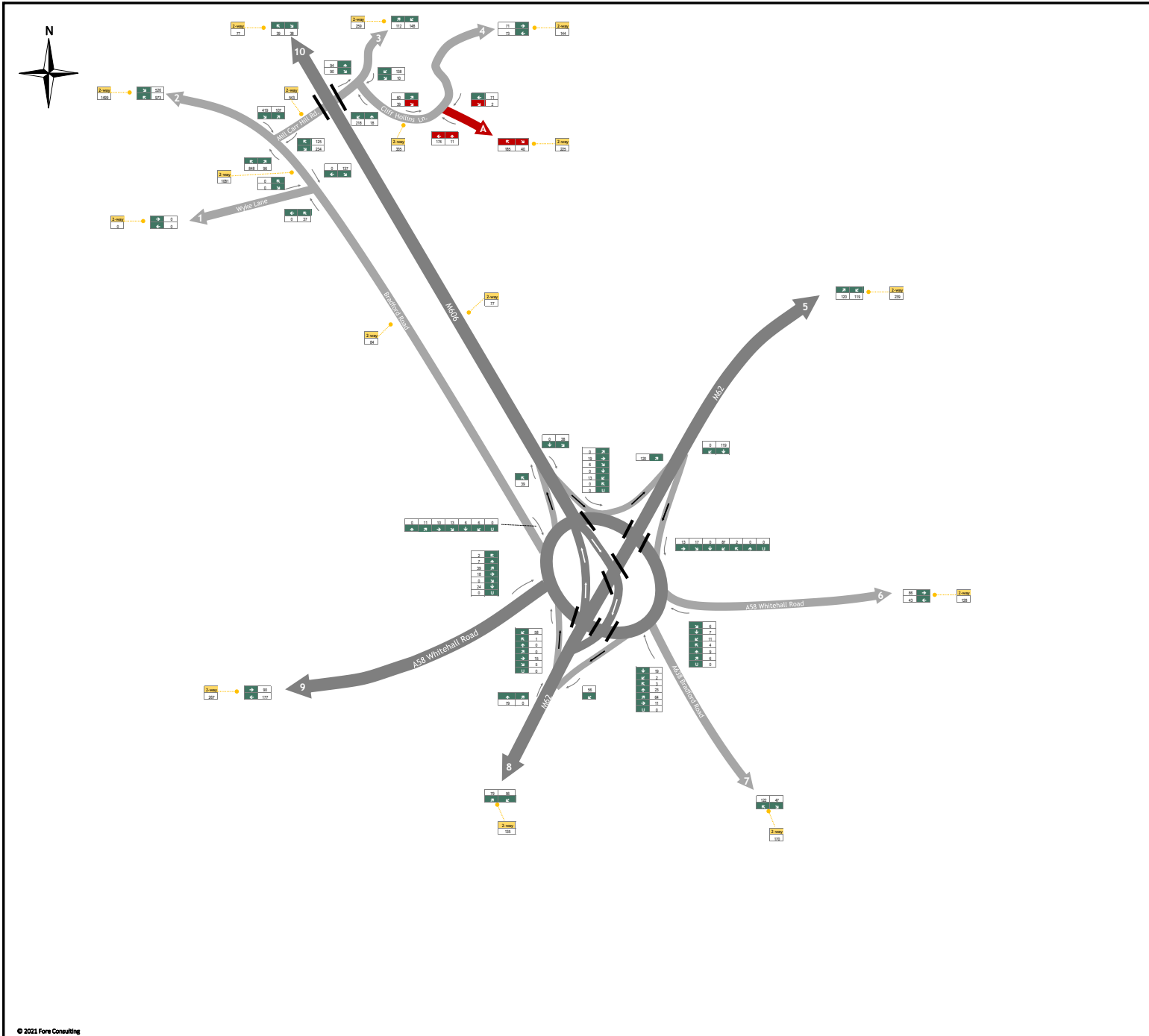
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 2031 With Development PCU Traffic Flows (Industrial Use) - Weekday AM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 27



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



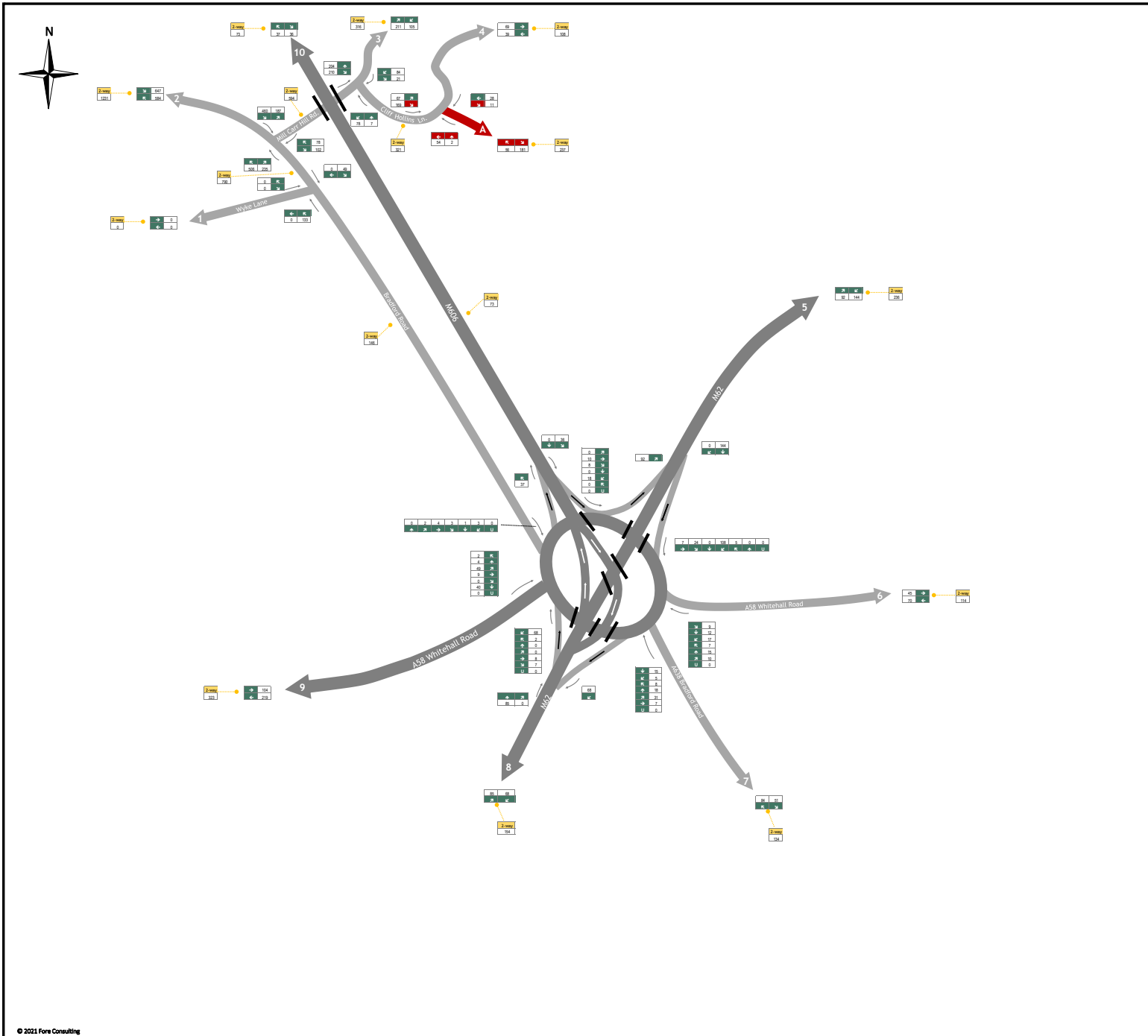
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 2031 With Development PCU Traffic Flows (Industrial Use) - Weekday PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 28



Key:

- Primary Road
- Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution



Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



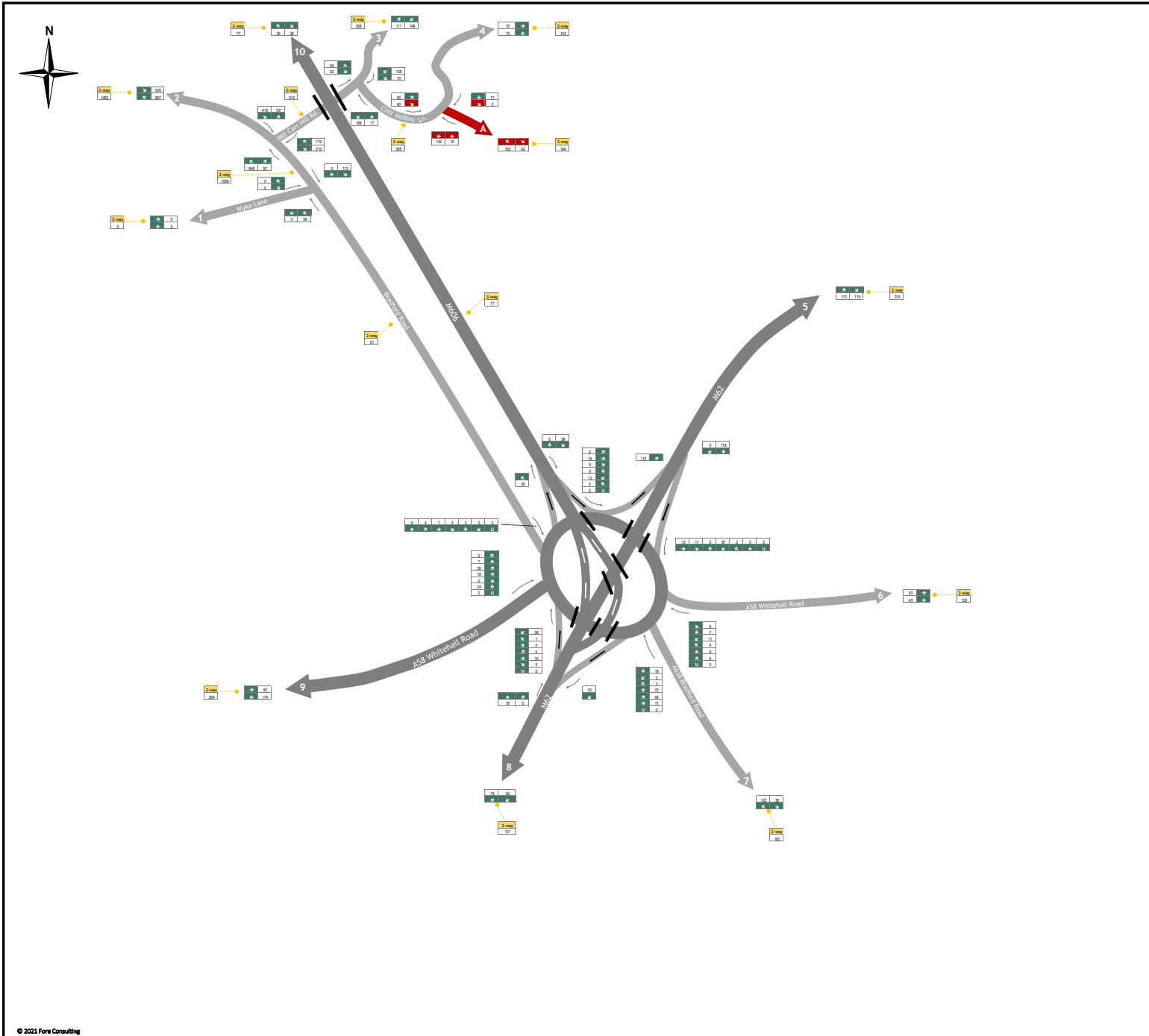
Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 2031 With Development PCU Traffic Flows (Warehousing Use) - Weekday AM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 29



Key:

- 1 Primary Road
- 1 Secondary Road
- Site Access
- Additional traffic movements not explicitly represented in the network diagram (e.g. minor roads)

Note: The number in each arrowhead relates to the route reference used in the Trip Distribution

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds
 LS1 2JG
 0113 246 0204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk



Client:
 Keyland Developments

Project:
 North Bierley Phase 2

Figure Title:
 2031 With Development PCU Traffic Flows (Warehousing Use) - Weekday PM Peak Hour

Scale: Not to scale | Figure Status: Issue

Job Number: 31019 | Figure Number: Figure 30

Appendix A

Junction Assessment

Junctions 10
PICADY 10 - Priority Intersection Module
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2022-08-11_Site Access Junction.j10
Path: G:\Shared drives\Jobs31000\31019 Keyland - North Bierley\Models\2023-04-04 Model Files for TA Addendum
Report generation date: 04/04/2023 09:37:44

- »2021 Base, AM
- »2021 Base, PM
- »2031 Do Minimum, AM
- »2031 Do Minimum, PM
- »2031 B2 With Development, AM
- »2031 B2 With Development, PM
- »2031 B8 With Development, AM
- »2031 B8 With Development, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2021 Base										
Stream B-AC	D1	0.1	8.08	0.06	A	D2	0.2	8.66	0.14	A
Stream C-AB		0.0	0.00	0.00	A		0.0	0.00	0.00	A
2031 Do Minimum										
Stream B-AC	D3	0.1	8.40	0.09	A	D4	0.2	9.47	0.17	A
Stream C-AB		0.0	6.45	0.00	A		0.0	5.79	0.02	A
2031 B2 With Development										
Stream B-AC	D5	0.1	8.72	0.10	A	D6	0.2	9.71	0.18	A
Stream C-AB		0.0	6.77	0.00	A		0.0	5.59	0.02	A
2031 B8 With Development										
Stream B-AC	D7	0.1	8.55	0.09	A	D8	0.2	9.60	0.17	A
Stream C-AB		0.0	6.79	0.00	A		0.0	5.74	0.02	A

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	
Location	
Site number	
Date	13/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	WEEZY\Modelling
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Do Minimum	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Do Minimum	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 B2 With Development	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 B2 With Development	PM	ONE HOUR	16:45	18:15	15	✓
D7	2031 B8 With Development	AM	ONE HOUR	07:45	09:15	15	✓
D8	2031 B8 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cliff Hollins Ln / Site Access Junction	T-Junction	Two-way	Two-way	Two-way		2.33	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.33	A

Arms

Arms

Arm	Name	Description	Arm type
A	Cliff Hollins Ln west		Major
B	Cliff Hollins Ln east		Minor
C	Site Access		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Site Access	7.30			25.0	✓	0.00

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 - Cliff Hollins Ln east	One lane	3.00	25	25

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	498	0.086	0.216	0.136	0.309
B-C	640	0.093	0.234	-	-
C-B	588	0.215	0.215	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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)	Run automatically
D1	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Cliff Hollins Ln west		ONE HOUR	✓	64	100.000
B - Cliff Hollins Ln east		ONE HOUR	✓	26	100.000
C - Site Access		ONE HOUR	✓	2	100.000

Origin-Destination Data

Demand (PCU/hr)

From	To		
	A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
A - Cliff Hollins Ln west	0	61	3
B - Cliff Hollins Ln east	26	0	0
C - Site Access	2	0	0

Vehicle Mix

Heavy Vehicle Percentages

From	To		
	A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
A - Cliff Hollins Ln west	0	3	40
B - Cliff Hollins Ln east	4	0	0
C - Site Access	67	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.06	8.08	0.1	A	24	36
C-AB	0.00	0.00	0.0	A	0	0
C-A					0	0
A-B					56	84
A-C					3	4

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20	5	494	0.040	19	0.0	0.0	7.886	A
C-AB	0	0	578	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	46	11			46				
A-C	2	0.56			2				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	23	6	493	0.047	23	0.0	0.1	7.969	A
C-AB	0	0	576	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	55	14			55				
A-C	3	0.67			3				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	492	0.058	29	0.1	0.1	8.078	A
C-AB	0	0	573	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	67	17			67				
A-C	3	0.83			3				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	492	0.058	29	0.1	0.1	8.080	A
C-AB	0	0	573	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	67	17			67				
A-C	3	0.83			3				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	23	6	493	0.047	23	0.1	0.1	7.972	A
C-AB	0	0	576	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	55	14			55				
A-C	3	0.67			3				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	20	5	494	0.040	20	0.1	0.0	7.893	A
C-AB	0	0	578	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	46	11			46				
A-C	2	0.56			2				

2021 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cliff Hollins Ln / Site Access Junction	T-Junction	Two-way	Two-way	Two-way		4.66	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.66	A

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)	Run automatically
D2	2021 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Cliff Hollins Ln west		ONE HOUR	✓	55	100.000
B - Cliff Hollins Ln east		ONE HOUR	✓	64	100.000
C - Site Access		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	55	0
	B - Cliff Hollins Ln east	64	0	0
	C - Site Access	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	0	0
	B - Cliff Hollins Ln east	2	0	0
	C - Site Access	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.14	8.66	0.2	A	59	88
C-AB	0.00	0.00	0.0	A	0	0
C-A					0	0
A-B					50	76
A-C					0	0

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	12	494	0.097	48	0.0	0.1	8.181	A
C-AB	0	0	580	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	41	10			41				
A-C	0	0			0				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	58	14	494	0.117	57	0.1	0.1	8.381	A
C-AB	0	0	578	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	49	12			49				
A-C	0	0			0				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	18	493	0.143	70	0.1	0.2	8.655	A
C-AB	0	0	575	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	61	15			61				
A-C	0	0			0				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	70	18	493	0.143	70	0.2	0.2	8.660	A
C-AB	0	0	575	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	61	15			61				
A-C	0	0			0				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	58	14	494	0.117	58	0.2	0.1	8.391	A
C-AB	0	0	578	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	49	12			49				
A-C	0	0			0				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	48	12	494	0.097	48	0.1	0.1	8.199	A
C-AB	0	0	580	0.000	0	0.0	0.0	0.000	A
C-A	0	0			0				
A-B	41	10			41				
A-C	0	0			0				

2031 Do Minimum, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cliff Hollins Ln / Site Access Junction	T-Junction	Two-way	Two-way	Two-way		1.15	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.15	A

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)	Run automatically
D3	2031 Do Minimum	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Cliff Hollins Ln west		ONE HOUR	✓	214	100.000
B - Cliff Hollins Ln east		ONE HOUR	✓	39	100.000
C - Site Access		ONE HOUR	✓	45	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	67	147
	B - Cliff Hollins Ln east	28	0	11
	C - Site Access	43	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	3	8
	B - Cliff Hollins Ln east	4	0	0
	C - Site Access	28	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	8.40	0.1	A	36	54
C-AB	0.00	6.45	0.0	A	2	3
C-A					39	59
A-B					61	92
A-C					135	202

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	498	0.059	29	0.0	0.1	7.878	A
C-AB	2	0.40	576	0.003	2	0.0	0.0	6.341	A
C-A	32	8			32				
A-B	50	13			50				
A-C	111	28			111				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9	492	0.071	35	0.1	0.1	8.094	A
C-AB	2	0.48	574	0.003	2	0.0	0.0	6.379	A
C-A	39	10			39				
A-B	60	15			60				
A-C	132	33			132				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	11	483	0.089	43	0.1	0.1	8.400	A
C-AB	2	0.60	571	0.004	2	0.0	0.0	6.438	A
C-A	47	12			47				
A-B	74	18			74				
A-C	162	40			162				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	11	483	0.089	43	0.1	0.1	8.404	A
C-AB	2	0.60	571	0.004	2	0.0	0.0	6.448	A
C-A	47	12			47				
A-B	74	18			74				
A-C	162	40			162				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9	492	0.071	35	0.1	0.1	8.100	A
C-AB	2	0.48	574	0.003	2	0.0	0.0	6.399	A
C-A	39	10			39				
A-B	60	15			60				
A-C	132	33			132				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	498	0.059	29	0.1	0.1	7.888	A
C-AB	2	0.40	576	0.003	2	0.0	0.0	6.353	A
C-A	32	8			32				
A-B	50	13			50				
A-C	111	28			111				

2031 Do Minimum, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cliff Hollins Ln / Site Access Junction	T-Junction	Two-way	Two-way	Two-way		2.56	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.56	A

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)	Run automatically
D4	2031 Do Minimum	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Cliff Hollins Ln west		ONE HOUR	✓	91	100.000
B - Cliff Hollins Ln east		ONE HOUR	✓	72	100.000
C - Site Access		ONE HOUR	✓	131	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	60	31
	B - Cliff Hollins Ln east	71	0	1
	C - Site Access	121	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	0	23
	B - Cliff Hollins Ln east	2	0	0
	C - Site Access	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.17	9.47	0.2	A	66	99
C-AB	0.02	5.79	0.0	A	11	17
C-A					109	164
A-B					55	83
A-C					28	43

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	54	14	476	0.114	54	0.0	0.1	8.640	A
C-AB	9	2	636	0.014	9	0.0	0.0	5.779	A
C-A	90	22			90				
A-B	45	11			45				
A-C	23	6			23				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	16	471	0.137	65	0.1	0.2	8.977	A
C-AB	11	3	645	0.017	11	0.0	0.0	5.716	A
C-A	107	27			107				
A-B	54	13			54				
A-C	28	7			28				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	465	0.170	79	0.2	0.2	9.459	A
C-AB	14	3	658	0.021	14	0.0	0.0	5.636	A
C-A	130	33			130				
A-B	66	17			66				
A-C	34	9			34				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	79	20	465	0.170	79	0.2	0.2	9.469	A
C-AB	14	3	658	0.021	14	0.0	0.0	5.642	A
C-A	130	33			130				
A-B	66	17			66				
A-C	34	9			34				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	65	16	471	0.137	65	0.2	0.2	8.991	A
C-AB	11	3	645	0.017	11	0.0	0.0	5.726	A
C-A	107	27			107				
A-B	54	13			54				
A-C	28	7			28				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	54	14	476	0.114	54	0.2	0.1	8.668	A
C-AB	9	2	636	0.014	9	0.0	0.0	5.786	A
C-A	90	22			90				
A-B	45	11			45				
A-C	23	6			23				

2031 B2 With Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cliff Hollins Ln / Site Access Junction	T-Junction	Two-way	Two-way	Two-way		0.98	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	0.98	A

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)	Run automatically
D5	2031 B2 With Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Cliff Hollins Ln west		ONE HOUR	✓	279	100.000
B - Cliff Hollins Ln east		ONE HOUR	✓	41	100.000
C - Site Access		ONE HOUR	✓	60	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	67	212
	B - Cliff Hollins Ln east	28	0	13
	C - Site Access	58	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	3	7
	B - Cliff Hollins Ln east	4	0	1
	C - Site Access	26	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.10	8.72	0.1	A	38	56
C-AB	0.00	6.77	0.0	A	2	3
C-A					53	80
A-B					61	92
A-C					195	292

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	8	490	0.063	31	0.0	0.1	8.044	A
C-AB	2	0.41	574	0.003	2	0.0	0.0	6.649	A
C-A	44	11			44				
A-B	50	13			50				
A-C	160	40			160				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	37	9	482	0.077	37	0.1	0.1	8.320	A
C-AB	2	0.49	571	0.003	2	0.0	0.0	6.693	A
C-A	52	13			52				
A-B	60	15			60				
A-C	191	48			191				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	45	11	470	0.096	45	0.1	0.1	8.719	A
C-AB	2	0.62	568	0.004	2	0.0	0.0	6.762	A
C-A	64	16			64				
A-B	74	18			74				
A-C	233	58			233				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	45	11	470	0.096	45	0.1	0.1	8.722	A
C-AB	2	0.62	568	0.004	2	0.0	0.0	6.773	A
C-A	64	16			64				
A-B	74	18			74				
A-C	233	58			233				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	37	9	482	0.077	37	0.1	0.1	8.325	A
C-AB	2	0.50	571	0.003	2	0.0	0.0	6.718	A
C-A	52	13			52				
A-B	60	15			60				
A-C	191	48			191				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	31	8	490	0.063	31	0.1	0.1	8.058	A
C-AB	2	0.41	574	0.003	2	0.0	0.0	6.662	A
C-A	44	11			44				
A-B	50	13			50				
A-C	160	40			160				

2031 B2 With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cliff Hollins Ln / Site Access Junction	T-Junction	Two-way	Two-way	Two-way		2.21	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.21	A

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)	Run automatically
D6	2031 B2 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Cliff Hollins Ln west		ONE HOUR	✓	99	100.000
B - Cliff Hollins Ln east		ONE HOUR	✓	73	100.000
C - Site Access		ONE HOUR	✓	185	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	60	39
	B - Cliff Hollins Ln east	71	0	2
	C - Site Access	174	11	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	0	21
	B - Cliff Hollins Ln east	2	0	2
	C - Site Access	4	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.18	9.71	0.2	A	67	100
C-AB	0.02	5.59	0.0	A	13	20
C-A					156	235
A-B					55	83
A-C					36	54

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	14	471	0.117	54	0.0	0.1	8.770	A
C-AB	10	3	662	0.016	10	0.0	0.0	5.589	A
C-A	129	32			129				
A-B	45	11			45				
A-C	29	7			29				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	16	465	0.141	65	0.1	0.2	9.150	A
C-AB	13	3	676	0.019	13	0.0	0.0	5.492	A
C-A	153	38			153				
A-B	54	13			54				
A-C	35	9			35				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	80	20	457	0.176	80	0.2	0.2	9.704	A
C-AB	17	4	696	0.024	17	0.0	0.0	5.368	A
C-A	187	47			187				
A-B	66	17			66				
A-C	43	11			43				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	80	20	457	0.176	80	0.2	0.2	9.713	A
C-AB	17	4	696	0.024	17	0.0	0.0	5.374	A
C-A	187	47			187				
A-B	66	17			66				
A-C	43	11			43				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	16	465	0.141	66	0.2	0.2	9.165	A
C-AB	13	3	676	0.019	13	0.0	0.0	5.503	A
C-A	153	38			153				
A-B	54	13			54				
A-C	35	9			35				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	14	471	0.117	55	0.2	0.1	8.797	A
C-AB	10	3	662	0.016	10	0.0	0.0	5.594	A
C-A	129	32			129				
A-B	45	11			45				
A-C	29	7			29				

2031 B8 With Development, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cliff Hollins Ln / Site Access Junction	T-Junction	Two-way	Two-way	Two-way		1.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.05	A

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)	Run automatically
D7	2031 B8 With Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Cliff Hollins Ln west		ONE HOUR	✓	236	100.000
B - Cliff Hollins Ln east		ONE HOUR	✓	39	100.000
C - Site Access		ONE HOUR	✓	56	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	67	169
	B - Cliff Hollins Ln east	28	0	11
	C - Site Access	54	2	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	3	8
	B - Cliff Hollins Ln east	4	0	1
	C - Site Access	29	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.09	8.55	0.1	A	36	54
C-AB	0.00	6.79	0.0	A	2	3
C-A					49	74
A-B					61	92
A-C					155	233

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	494	0.059	29	0.0	0.1	7.973	A
C-AB	2	0.40	578	0.003	2	0.0	0.0	6.687	A
C-A	41	10			41				
A-B	50	13			50				
A-C	127	32			127				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9	486	0.072	35	0.1	0.1	8.209	A
C-AB	2	0.49	577	0.003	2	0.0	0.0	6.721	A
C-A	48	12			48				
A-B	60	15			60				
A-C	152	38			152				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	11	476	0.090	43	0.1	0.1	8.549	A
C-AB	2	0.61	574	0.004	2	0.0	0.0	6.776	A
C-A	59	15			59				
A-B	74	18			74				
A-C	186	47			186				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	43	11	476	0.090	43	0.1	0.1	8.552	A
C-AB	2	0.61	574	0.004	2	0.0	0.0	6.790	A
C-A	59	15			59				
A-B	74	18			74				
A-C	186	47			186				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	35	9	486	0.072	35	0.1	0.1	8.216	A
C-AB	2	0.49	577	0.003	2	0.0	0.0	6.746	A
C-A	48	12			48				
A-B	60	15			60				
A-C	152	38			152				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	29	7	494	0.059	29	0.1	0.1	7.983	A
C-AB	2	0.41	578	0.003	2	0.0	0.0	6.700	A
C-A	41	10			41				
A-B	50	13			50				
A-C	127	32			127				

2031 B8 With Development, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cliff Hollins Ln / Site Access Junction	T-Junction	Two-way	Two-way	Two-way		2.38	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.38	A

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)	Run automatically
D8	2031 B8 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Cliff Hollins Ln west		ONE HOUR	✓	100	100.000
B - Cliff Hollins Ln east		ONE HOUR	✓	73	100.000
C - Site Access		ONE HOUR	✓	152	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	60	40
	B - Cliff Hollins Ln east	71	0	2
	C - Site Access	142	10	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Cliff Hollins Ln west	B - Cliff Hollins Ln east	C - Site Access
From	A - Cliff Hollins Ln west	0	0	24
	B - Cliff Hollins Ln east	2	0	5
	C - Site Access	6	1	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-AC	0.17	9.60	0.2	A	67	100
C-AB	0.02	5.74	0.0	A	12	17
C-A					128	192
A-B					55	83
A-C					37	55

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	14	474	0.116	54	0.0	0.1	8.706	A
C-AB	9	2	645	0.014	9	0.0	0.0	5.737	A
C-A	105	26			105				
A-B	45	11			45				
A-C	30	8			30				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	16	469	0.140	65	0.1	0.2	9.067	A
C-AB	11	3	656	0.017	11	0.0	0.0	5.661	A
C-A	125	31			125				
A-B	54	13			54				
A-C	36	9			36				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	80	20	461	0.174	80	0.2	0.2	9.587	A
C-AB	14	4	672	0.021	14	0.0	0.0	5.562	A
C-A	153	38			153				
A-B	66	17			66				
A-C	44	11			44				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	80	20	461	0.174	80	0.2	0.2	9.596	A
C-AB	14	4	672	0.021	14	0.0	0.0	5.567	A
C-A	153	38			153				
A-B	66	17			66				
A-C	44	11			44				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	66	16	469	0.140	66	0.2	0.2	9.082	A
C-AB	11	3	656	0.017	11	0.0	0.0	5.671	A
C-A	125	31			125				
A-B	54	13			54				
A-C	36	9			36				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	55	14	474	0.116	55	0.2	0.1	8.735	A
C-AB	9	2	645	0.014	9	0.0	0.0	5.742	A
C-A	105	26			105				
A-B	45	11			45				
A-C	30	8			30				

Junctions 10
PICADY 10 - Priority Intersection Module
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2022-08-11_Mill Carr_Cliff Hollins.j10
Path: G:\Shared drives\Jobs31000\31019 Keyland - North Bierley\Models\2023-04-04 Model Files for TA Addendum
Report generation date: 04/04/2023 09:36:40

- »2021 Base, AM
- »2021 Base, PM
- »2031 Do Minimum, AM
- »2031 Do Minimum, PM
- »2031 B2 With Development, AM
- »2031 B2 With Development, PM
- »2031 B8 With Development, AM
- »2031 B8 With Development, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2021 Base										
Stream B-C	D1	0.0	5.57	0.04	A	D2	0.1	5.70	0.09	A
Stream B-A		0.0	8.55	0.01	A		0.0	8.57	0.01	A
Stream C-AB		0.2	6.22	0.12	A		0.1	6.65	0.11	A
2031 Do Minimum										
Stream B-C	D3	0.1	6.81	0.11	A	D4	0.4	7.55	0.27	A
Stream B-A		0.0	9.90	0.02	A		0.0	9.19	0.04	A
Stream C-AB		1.0	9.48	0.43	A		0.3	7.68	0.18	A
2031 B2 With Development										
Stream B-C	D5	0.2	7.01	0.13	A	D6	0.6	8.49	0.35	A
Stream B-A		0.0	10.69	0.02	B		0.1	9.45	0.05	A
Stream C-AB		1.8	12.74	0.58	B		0.3	7.88	0.20	A
2031 B8 With Development										
Stream B-C	D7	0.2	7.07	0.12	A	D8	0.5	7.95	0.30	A
Stream B-A		0.0	10.30	0.02	B		0.0	9.37	0.05	A
Stream C-AB		1.2	10.44	0.48	B		0.3	8.01	0.20	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	
Location	
Site number	
Date	13/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	WEEZY\Modelling
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Do Minimum	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Do Minimum	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 B2 With Development	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 B2 With Development	PM	ONE HOUR	16:45	18:15	15	✓
D7	2031 B8 With Development	AM	ONE HOUR	07:45	09:15	15	✓
D8	2031 B8 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Cliff Hollins Ln - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mill Carr Hill Rd / Cliff Hollins Ln	T-Junction	Two-way	Two-way	Two-way		1.79	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.79	A

Arms

Arms

Arm	Name	Description	Arm type
A	Mill Carr Hill Rd east		Major
B	Cliff Hollins Ln		Minor
C	Mill Carr Hill Rd west		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Mill Carr Hill Rd west	7.30			0.0	✓	0.00

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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Cliff Hollins Ln	One lane plus flare	10.00	7.50	5.00	3.50	3.50		2.00	33	31

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	489	0.084	0.212	0.134	0.304
B-C	725	0.105	0.265	-	-
C-B	574	0.210	0.210	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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)	Run automatically
D1	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Mill Carr Hill Rd east		ONE HOUR	✓	82	100.000
B - Cliff Hollins Ln		ONE HOUR	✓	31	100.000
C - Mill Carr Hill Rd west		ONE HOUR	✓	239	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	5	77
	B - Cliff Hollins Ln	4	0	27
	C - Mill Carr Hill Rd west	186	53	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	0	1
	B - Cliff Hollins Ln	0	0	4
	C - Mill Carr Hill Rd west	2	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.04	5.57	0.0	A	25	37
B-A	0.01	8.55	0.0	A	4	6
C-AB	0.12	6.22	0.2	A	66	99
C-A					154	230
A-B					5	7
A-C					71	106

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	20	5	708	0.029	20	0.0	0.0	5.430	A
B-A	3	0.75	446	0.007	3	0.0	0.0	8.131	A
C-AB	51	13	657	0.077	50	0.0	0.1	6.215	A
C-A	129	32			129				
A-B	4	0.94			4				
A-C	58	14			58				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	24	6	705	0.034	24	0.0	0.0	5.488	A
B-A	4	0.90	437	0.008	4	0.0	0.0	8.303	A
C-AB	63	16	674	0.094	63	0.1	0.1	6.178	A
C-A	151	38			151				
A-B	4	1			4				
A-C	69	17			69				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	700	0.042	30	0.0	0.0	5.570	A
B-A	4	1	425	0.010	4	0.0	0.0	8.549	A
C-AB	83	21	697	0.119	83	0.1	0.2	6.134	A
C-A	180	45			180				
A-B	6	1			6				
A-C	85	21			85				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	7	700	0.042	30	0.0	0.0	5.571	A
B-A	4	1	425	0.010	4	0.0	0.0	8.550	A
C-AB	83	21	697	0.119	83	0.2	0.2	6.133	A
C-A	180	45			180				
A-B	6	1			6				
A-C	85	21			85				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	24	6	705	0.034	24	0.0	0.0	5.489	A
B-A	4	0.90	437	0.008	4	0.0	0.0	8.306	A
C-AB	64	16	674	0.094	64	0.2	0.2	6.175	A
C-A	151	38			151				
A-B	4	1			4				
A-C	69	17			69				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	20	5	708	0.029	20	0.0	0.0	5.433	A
B-A	3	0.75	446	0.007	3	0.0	0.0	8.136	A
C-AB	51	13	658	0.077	51	0.2	0.1	6.220	A
C-A	129	32			129				
A-B	4	0.94			4				
A-C	58	14			58				

2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Cliff Hollins Ln - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mill Carr Hill Rd / Cliff Hollins Ln	T-Junction	Two-way	Two-way	Two-way		2.19	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.19	A

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)	Run automatically
D2	2021 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Mill Carr Hill Rd east		ONE HOUR	✓	135	100.000
B - Cliff Hollins Ln		ONE HOUR	✓	57	100.000
C - Mill Carr Hill Rd west		ONE HOUR	✓	136	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	7	128
	B - Cliff Hollins Ln	3	0	54
	C - Mill Carr Hill Rd west	86	50	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	15	1
	B - Cliff Hollins Ln	0	0	0
	C - Mill Carr Hill Rd west	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.09	5.70	0.1	A	50	74
B-A	0.01	8.57	0.0	A	3	4
C-AB	0.11	6.65	0.1	A	53	80
C-A					72	108
A-B					6	10
A-C					117	176

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	10	703	0.058	40	0.0	0.1	5.431	A
B-A	2	0.56	442	0.005	2	0.0	0.0	8.181	A
C-AB	42	11	598	0.071	42	0.0	0.1	6.493	A
C-A	60	15			60				
A-B	5	1			5				
A-C	96	24			96				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	12	698	0.070	48	0.1	0.1	5.544	A
B-A	3	0.67	434	0.006	3	0.0	0.0	8.340	A
C-AB	52	13	602	0.086	52	0.1	0.1	6.554	A
C-A	71	18			71				
A-B	6	2			6				
A-C	115	29			115				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	59	15	690	0.086	59	0.1	0.1	5.704	A
B-A	3	0.83	423	0.008	3	0.0	0.0	8.568	A
C-AB	65	16	609	0.107	65	0.1	0.1	6.641	A
C-A	84	21			84				
A-B	8	2			8				
A-C	141	35			141				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	59	15	690	0.086	59	0.1	0.1	5.704	A
B-A	3	0.83	423	0.008	3	0.0	0.0	8.569	A
C-AB	65	16	609	0.107	65	0.1	0.1	6.648	A
C-A	84	21			84				
A-B	8	2			8				
A-C	141	35			141				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	49	12	698	0.070	49	0.1	0.1	5.545	A
B-A	3	0.67	434	0.006	3	0.0	0.0	8.341	A
C-AB	52	13	602	0.086	52	0.1	0.1	6.562	A
C-A	71	18			71				
A-B	6	2			6				
A-C	115	29			115				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	41	10	703	0.058	41	0.1	0.1	5.437	A
B-A	2	0.56	442	0.005	2	0.0	0.0	8.185	A
C-AB	42	11	598	0.071	42	0.1	0.1	6.506	A
C-A	60	15			60				
A-B	5	1			5				
A-C	96	24			96				

2031 Do Minimum, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Cliff Hollins Ln - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mill Carr Hill Rd / Cliff Hollins Ln	T-Junction	Two-way	Two-way	Two-way		5.28	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.28	A

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)	Run automatically
D3	2031 Do Minimum	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Mill Carr Hill Rd east		ONE HOUR	✓	104	100.000
B - Cliff Hollins Ln		ONE HOUR	✓	75	100.000
C - Mill Carr Hill Rd west		ONE HOUR	✓	392	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	20	84
	B - Cliff Hollins Ln	7	0	68
	C - Mill Carr Hill Rd west	204	188	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	0	1
	B - Cliff Hollins Ln	0	0	18
	C - Mill Carr Hill Rd west	2	7	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.11	6.81	0.1	A	62	94
B-A	0.02	9.90	0.0	A	6	10
C-AB	0.43	9.48	1.0	A	240	361
C-A					119	179
A-B					18	28
A-C					77	116

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	51	13	707	0.072	51	0.0	0.1	6.455	A
B-A	5	1	408	0.013	5	0.0	0.0	8.927	A
C-AB	184	46	664	0.278	182	0.0	0.5	7.895	A
C-A	111	28			111				
A-B	15	4			15				
A-C	63	16			63				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	15	703	0.087	61	0.1	0.1	6.602	A
B-A	6	2	393	0.016	6	0.0	0.0	9.313	A
C-AB	232	58	682	0.340	231	0.5	0.7	8.458	A
C-A	121	30			121				
A-B	18	4			18				
A-C	76	19			76				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	75	19	697	0.107	75	0.1	0.1	6.809	A
B-A	8	2	372	0.021	8	0.0	0.0	9.888	A
C-AB	305	76	706	0.431	303	0.7	1.0	9.433	A
C-A	127	32			127				
A-B	22	6			22				
A-C	92	23			92				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	75	19	697	0.107	75	0.1	0.1	6.809	A
B-A	8	2	371	0.021	8	0.0	0.0	9.896	A
C-AB	305	76	707	0.431	305	1.0	1.0	9.476	A
C-A	127	32			127				
A-B	22	6			22				
A-C	92	23			92				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	61	15	703	0.087	61	0.1	0.1	6.605	A
B-A	6	2	392	0.016	6	0.0	0.0	9.325	A
C-AB	232	58	682	0.341	234	1.0	0.7	8.506	A
C-A	120	30			120				
A-B	18	4			18				
A-C	76	19			76				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	51	13	707	0.072	51	0.1	0.1	6.463	A
B-A	5	1	408	0.013	5	0.0	0.0	8.946	A
C-AB	185	46	664	0.278	186	0.7	0.5	7.973	A
C-A	110	28			110				
A-B	15	4			15				
A-C	63	16			63				

2031 Do Minimum, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Cliff Hollins Ln - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mill Carr Hill Rd / Cliff Hollins Ln	T-Junction	Two-way	Two-way	Two-way		4.24	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.24	A

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)	Run automatically
D4	2031 Do Minimum	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Mill Carr Hill Rd east		ONE HOUR	✓	148	100.000
B - Cliff Hollins Ln		ONE HOUR	✓	184	100.000
C - Mill Carr Hill Rd west		ONE HOUR	✓	176	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	10	138
	B - Cliff Hollins Ln	16	0	168
	C - Mill Carr Hill Rd west	94	82	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	11	1
	B - Cliff Hollins Ln	0	0	4
	C - Mill Carr Hill Rd west	2	9	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.27	7.55	0.4	A	154	231
B-A	0.04	9.19	0.0	A	15	22
C-AB	0.18	7.68	0.3	A	88	132
C-A					73	110
A-B					9	14
A-C					127	190

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	126	32	695	0.182	126	0.0	0.2	6.541	A
B-A	12	3	435	0.028	12	0.0	0.0	8.515	A
C-AB	70	17	600	0.117	69	0.0	0.2	7.306	A
C-A	63	16			63				
A-B	8	2			8				
A-C	104	26			104				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	688	0.219	151	0.2	0.3	6.937	A
B-A	14	4	424	0.034	14	0.0	0.0	8.785	A
C-AB	86	21	605	0.142	86	0.2	0.2	7.464	A
C-A	72	18			72				
A-B	9	2			9				
A-C	124	31			124				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	185	46	679	0.272	185	0.3	0.4	7.531	A
B-A	18	4	409	0.043	18	0.0	0.0	9.188	A
C-AB	109	27	612	0.178	109	0.2	0.3	7.682	A
C-A	85	21			85				
A-B	11	3			11				
A-C	152	38			152				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	185	46	679	0.272	185	0.4	0.4	7.548	A
B-A	18	4	409	0.043	18	0.0	0.0	9.192	A
C-AB	109	27	612	0.178	109	0.3	0.3	7.684	A
C-A	85	21			85				
A-B	11	3			11				
A-C	152	38			152				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	151	38	688	0.219	151	0.4	0.3	6.955	A
B-A	14	4	424	0.034	14	0.0	0.0	8.789	A
C-AB	86	21	605	0.142	86	0.3	0.2	7.463	A
C-A	72	18			72				
A-B	9	2			9				
A-C	124	31			124				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	126	32	695	0.182	127	0.3	0.2	6.568	A
B-A	12	3	434	0.028	12	0.0	0.0	8.524	A
C-AB	70	18	600	0.117	70	0.2	0.2	7.321	A
C-A	62	16			62				
A-B	8	2			8				
A-C	104	26			104				

2031 B2 With Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Cliff Hollins Ln - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mill Carr Hill Rd / Cliff Hollins Ln	T-Junction	Two-way	Two-way	Two-way		7.86	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	7.86	A

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)	Run automatically
D5	2031 B2 With Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Mill Carr Hill Rd east		ONE HOUR	✓	106	100.000
B - Cliff Hollins Ln		ONE HOUR	✓	89	100.000
C - Mill Carr Hill Rd west		ONE HOUR	✓	455	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	22	84
	B - Cliff Hollins Ln	7	0	82
	C - Mill Carr Hill Rd west	204	251	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	1	1
	B - Cliff Hollins Ln	1	0	18
	C - Mill Carr Hill Rd west	2	7	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.13	7.01	0.2	A	75	113
B-A	0.02	10.69	0.0	B	6	10
C-AB	0.58	12.74	1.8	B	321	482
C-A					96	144
A-B					20	30
A-C					77	116

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	62	15	708	0.087	61	0.0	0.1	6.579	A
B-A	5	1	393	0.013	5	0.0	0.0	9.403	A
C-AB	246	61	663	0.371	243	0.0	0.7	8.998	A
C-A	97	24			97				
A-B	17	4			17				
A-C	63	16			63				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	74	18	703	0.105	74	0.1	0.1	6.757	A
B-A	6	2	374	0.017	6	0.0	0.0	9.907	A
C-AB	310	77	681	0.454	308	0.7	1.0	10.186	B
C-A	99	25			99				
A-B	20	5			20				
A-C	76	19			76				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	90	23	697	0.129	90	0.1	0.2	7.004	A
B-A	8	2	349	0.022	8	0.0	0.0	10.675	B
C-AB	407	102	706	0.576	404	1.0	1.7	12.546	B
C-A	94	24			94				
A-B	24	6			24				
A-C	92	23			92				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	90	23	697	0.129	90	0.2	0.2	7.007	A
B-A	8	2	349	0.022	8	0.0	0.0	10.695	B
C-AB	408	102	707	0.577	408	1.7	1.8	12.740	B
C-A	93	23			93				
A-B	24	6			24				
A-C	92	23			92				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	74	18	703	0.105	74	0.2	0.1	6.760	A
B-A	6	2	373	0.017	6	0.0	0.0	9.934	A
C-AB	311	78	682	0.455	313	1.8	1.1	10.366	B
C-A	98	25			98				
A-B	20	5			20				
A-C	76	19			76				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	62	15	708	0.087	62	0.1	0.1	6.590	A
B-A	5	1	392	0.013	5	0.0	0.0	9.435	A
C-AB	247	62	664	0.372	248	1.1	0.8	9.174	A
C-A	96	24			96				
A-B	17	4			17				
A-C	63	16			63				

2031 B2 With Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Cliff Hollins Ln - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mill Carr Hill Rd / Cliff Hollins Ln	T-Junction	Two-way	Two-way	Two-way		5.02	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.02	A

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)	Run automatically
D6	2031 B2 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Mill Carr Hill Rd east		ONE HOUR	✓	148	100.000
B - Cliff Hollins Ln		ONE HOUR	✓	236	100.000
C - Mill Carr Hill Rd west		ONE HOUR	✓	184	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	10	138
	B - Cliff Hollins Ln	18	0	218
	C - Mill Carr Hill Rd west	94	90	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	11	1
	B - Cliff Hollins Ln	0	0	3
	C - Mill Carr Hill Rd west	2	9	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.35	8.49	0.6	A	200	300
B-A	0.05	9.45	0.1	A	17	25
C-AB	0.20	7.88	0.3	A	97	145
C-A					72	108
A-B					9	14
A-C					127	190

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	164	41	695	0.236	163	0.0	0.3	6.976	A
B-A	14	3	431	0.031	13	0.0	0.0	8.640	A
C-AB	77	19	600	0.128	76	0.0	0.2	7.434	A
C-A	62	15			62				
A-B	8	2			8				
A-C	104	26			104				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	196	49	688	0.285	196	0.3	0.4	7.555	A
B-A	16	4	419	0.039	16	0.0	0.0	8.953	A
C-AB	94	24	605	0.156	94	0.2	0.2	7.622	A
C-A	71	18			71				
A-B	9	2			9				
A-C	124	31			124				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	240	60	679	0.354	239	0.4	0.6	8.462	A
B-A	20	5	402	0.049	20	0.0	0.1	9.447	A
C-AB	119	30	612	0.195	119	0.2	0.3	7.884	A
C-A	83	21			83				
A-B	11	3			11				
A-C	152	38			152				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	240	60	679	0.354	240	0.6	0.6	8.486	A
B-A	20	5	402	0.049	20	0.1	0.1	9.452	A
C-AB	119	30	612	0.195	119	0.3	0.3	7.883	A
C-A	83	21			83				
A-B	11	3			11				
A-C	152	38			152				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	196	49	688	0.285	197	0.6	0.4	7.586	A
B-A	16	4	419	0.039	16	0.1	0.0	8.961	A
C-AB	94	24	605	0.156	95	0.3	0.2	7.621	A
C-A	71	18			71				
A-B	9	2			9				
A-C	124	31			124				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	164	41	695	0.236	164	0.4	0.3	7.025	A
B-A	14	3	431	0.031	14	0.0	0.0	8.654	A
C-AB	77	19	600	0.128	77	0.2	0.2	7.455	A
C-A	62	15			62				
A-B	8	2			8				
A-C	104	26			104				

2031 B8 With Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Cliff Hollins Ln - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mill Carr Hill Rd / Cliff Hollins Ln	T-Junction	Two-way	Two-way	Two-way		6.09	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	6.09	A

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)	Run automatically
D7	2031 B8 With Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Mill Carr Hill Rd east		ONE HOUR	✓	105	100.000
B - Cliff Hollins Ln		ONE HOUR	✓	85	100.000
C - Mill Carr Hill Rd west		ONE HOUR	✓	414	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	21	84
	B - Cliff Hollins Ln	7	0	78
	C - Mill Carr Hill Rd west	204	210	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	0	1
	B - Cliff Hollins Ln	2	0	20
	C - Mill Carr Hill Rd west	2	7	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.12	7.07	0.2	A	72	107
B-A	0.02	10.30	0.0	B	6	10
C-AB	0.48	10.44	1.2	B	269	403
C-A					111	167
A-B					19	29
A-C					77	116

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	59	15	708	0.083	58	0.0	0.1	6.655	A
B-A	5	1	403	0.013	5	0.0	0.0	9.212	A
C-AB	206	51	663	0.310	203	0.0	0.6	8.280	A
C-A	106	26			106				
A-B	16	4			16				
A-C	63	16			63				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	70	18	703	0.100	70	0.1	0.1	6.827	A
B-A	6	2	386	0.016	6	0.0	0.0	9.643	A
C-AB	259	65	681	0.380	258	0.6	0.8	9.025	A
C-A	113	28			113				
A-B	19	5			19				
A-C	76	19			76				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	86	21	698	0.123	86	0.1	0.2	7.065	A
B-A	8	2	363	0.021	8	0.0	0.0	10.290	B
C-AB	340	85	706	0.482	339	0.8	1.2	10.371	B
C-A	116	29			116				
A-B	23	6			23				
A-C	92	23			92				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	86	21	697	0.123	86	0.2	0.2	7.068	A
B-A	8	2	363	0.021	8	0.0	0.0	10.301	B
C-AB	341	85	707	0.482	341	1.2	1.2	10.444	B
C-A	115	29			115				
A-B	23	6			23				
A-C	92	23			92				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	70	18	703	0.100	70	0.2	0.1	6.830	A
B-A	6	2	385	0.016	6	0.0	0.0	9.660	A
C-AB	260	65	682	0.381	261	1.2	0.8	9.099	A
C-A	113	28			113				
A-B	19	5			19				
A-C	76	19			76				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	59	15	707	0.083	59	0.1	0.1	6.668	A
B-A	5	1	402	0.013	5	0.0	0.0	9.235	A
C-AB	206	52	664	0.311	207	0.8	0.6	8.384	A
C-A	105	26			105				
A-B	16	4			16				
A-C	63	16			63				

2031 B8 With Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Cliff Hollins Ln - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Mill Carr Hill Rd / Cliff Hollins Ln	T-Junction	Two-way	Two-way	Two-way		4.67	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.67	A

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)	Run automatically
D8	2031 B8 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Mill Carr Hill Rd east		ONE HOUR	✓	148	100.000
B - Cliff Hollins Ln		ONE HOUR	✓	205	100.000
C - Mill Carr Hill Rd west		ONE HOUR	✓	186	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	10	138
	B - Cliff Hollins Ln	17	0	188
	C - Mill Carr Hill Rd west	94	92	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Mill Carr Hill Rd east	B - Cliff Hollins Ln	C - Mill Carr Hill Rd west
From	A - Mill Carr Hill Rd east	0	12	1
	B - Cliff Hollins Ln	0	0	4
	C - Mill Carr Hill Rd west	2	11	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.30	7.95	0.5	A	173	259
B-A	0.05	9.37	0.0	A	16	23
C-AB	0.20	8.01	0.3	A	99	148
C-A					72	108
A-B					9	14
A-C					127	190

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	35	695	0.204	140	0.0	0.3	6.757	A
B-A	13	3	432	0.030	13	0.0	0.0	8.622	A
C-AB	79	20	600	0.131	78	0.0	0.2	7.542	A
C-A	62	15			62				
A-B	8	2			8				
A-C	104	26			104				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	169	42	688	0.246	169	0.3	0.3	7.221	A
B-A	15	4	421	0.036	15	0.0	0.0	8.918	A
C-AB	96	24	605	0.159	96	0.2	0.2	7.737	A
C-A	71	18			71				
A-B	9	2			9				
A-C	124	31			124				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	207	52	679	0.305	207	0.3	0.5	7.936	A
B-A	19	5	404	0.046	19	0.0	0.0	9.368	A
C-AB	122	31	612	0.199	122	0.2	0.3	8.011	A
C-A	83	21			83				
A-B	11	3			11				
A-C	152	38			152				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	207	52	679	0.305	207	0.5	0.5	7.952	A
B-A	19	5	404	0.046	19	0.0	0.0	9.372	A
C-AB	122	31	612	0.199	122	0.3	0.3	8.011	A
C-A	83	21			83				
A-B	11	3			11				
A-C	152	38			152				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	169	42	688	0.246	169	0.5	0.3	7.240	A
B-A	15	4	420	0.036	15	0.0	0.0	8.925	A
C-AB	96	24	605	0.159	97	0.3	0.2	7.734	A
C-A	71	18			71				
A-B	9	2			9				
A-C	124	31			124				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	142	35	695	0.204	142	0.3	0.3	6.789	A
B-A	13	3	432	0.030	13	0.0	0.0	8.633	A
C-AB	79	20	600	0.131	79	0.2	0.2	7.560	A
C-A	61	15			61				
A-B	8	2			8				
A-C	104	26			104				

Junctions 10
PICADY 10 - Priority Intersection Module
Version: 10.0.4.1693 © Copyright TRL Software Limited, 2021
For sales and distribution information, program advice and maintenance, contact TRL Software: +44 (0)1344 379777 software@trl.co.uk trlsoftware.com
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: 2022-08-11_Bradford Road_Mill Carr Hill.j10

Path: G:\Shared drives\Jobs31000\31019 Keyland - North Bierley\Models\2023-04-04 Model Files for TA Addendum

Report generation date: 04/04/2023 09:35:31

- »2021 Base, AM
- »2021 Base, PM
- »2031 Do Minimum, AM
- »2031 Do Minimum, PM
- »2031 B2 With Development, AM
- »2031 B2 With Development, PM
- »2031 B8 With Development, AM
- »2031 B8 With Development, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
2021 Base										
Stream B-C	D1	0.1	7.99	0.11	A	D2	0.2	8.36	0.19	A
Stream B-A		0.3	14.59	0.22	B		0.5	17.93	0.33	C
Stream C-AB		0.3	7.42	0.21	A		0.2	6.48	0.12	A
2031 Do Minimum										
Stream B-C	D3	0.3	9.79	0.20	A	D4	0.7	11.92	0.40	B
Stream B-A		0.5	23.34	0.34	C		1.0	29.23	0.51	D
Stream C-AB		1.5	9.55	0.48	A		0.3	6.70	0.18	A
2031 B2 With Development										
Stream B-C	D5	0.3	10.26	0.22	B	D6	1.0	14.26	0.50	B
Stream B-A		0.7	27.80	0.39	D		1.3	33.95	0.57	D
Stream C-AB		2.5	11.46	0.59	B		0.4	6.72	0.20	A
2031 B8 With Development										
Stream B-C	D7	0.3	10.16	0.21	B	D8	0.8	12.85	0.44	B
Stream B-A		0.6	25.16	0.36	D		1.1	31.54	0.53	D
Stream C-AB		1.8	10.07	0.52	B		0.4	6.76	0.20	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	
Location	
Site number	
Date	13/10/2021
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	WEEZY\Modelling
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

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Show lane queues in feet / metres	Show all PICADY stream intercepts	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)	Use iterations with HCM roundabouts	Max number of iterations for roundabouts
5.75						0.85	36.00	20.00		500

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓
D2	2021 Base	PM	ONE HOUR	16:45	18:15	15	✓
D3	2031 Do Minimum	AM	ONE HOUR	07:45	09:15	15	✓
D4	2031 Do Minimum	PM	ONE HOUR	16:45	18:15	15	✓
D5	2031 B2 With Development	AM	ONE HOUR	07:45	09:15	15	✓
D6	2031 B2 With Development	PM	ONE HOUR	16:45	18:15	15	✓
D7	2031 B8 With Development	AM	ONE HOUR	07:45	09:15	15	✓
D8	2031 B8 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2021 Base, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Mill Carr Hill Rd - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bradford Rd / Mill Carr Hill Rd	T-Junction	Two-way	Two-way	Two-way		1.83	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.83	A

Arms

Arms

Arm	Name	Description	Arm type
A	Bradford Rd north		Major
B	Mill Carr Hill Rd		Minor
C	Bradford Rd south		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Bradford Rd south	7.80		✓	2.20	170.0	✓	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	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B - Mill Carr Hill Rd	One lane plus flare	10.00	8.75	7.00	7.00	7.00		4.60	50	30

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	577	0.097	0.245	0.154	0.350
B-C	681	0.096	0.243	-	-
C-B	672	0.240	0.240	-	-

The slopes and intercepts shown above include custom intercept adjustments only.

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)	Run automatically
D1	2021 Base	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bradford Rd north		ONE HOUR	✓	555	100.000
B - Mill Carr Hill Rd		ONE HOUR	✓	119	100.000
C - Bradford Rd south		ONE HOUR	✓	557	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	148	407
	B - Mill Carr Hill Rd	67	0	52
	C - Bradford Rd south	456	101	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	3	17
	B - Mill Carr Hill Rd	6	0	4
	C - Bradford Rd south	9	2	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.11	7.99	0.1	A	48	72
B-A	0.22	14.59	0.3	B	61	92
C-AB	0.21	7.42	0.3	A	106	159
C-A					405	607
A-B					136	204
A-C					373	560

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	39	10	578	0.068	39	0.0	0.1	6.929	A
B-A	50	13	412	0.122	50	0.0	0.1	10.523	B
C-AB	82	21	620	0.133	82	0.0	0.2	6.855	A
C-A	337	84			337				
A-B	111	28			111				
A-C	306	77			306				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	47	12	556	0.084	47	0.1	0.1	7.334	A
B-A	60	15	380	0.159	60	0.1	0.2	11.928	B
C-AB	102	26	622	0.164	102	0.2	0.2	7.108	A
C-A	398	100			398				
A-B	133	33			133				
A-C	366	91			366				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	57	14	525	0.109	57	0.1	0.1	7.977	A
B-A	74	18	335	0.220	73	0.2	0.3	14.546	B
C-AB	134	34	634	0.212	134	0.2	0.3	7.409	A
C-A	479	120			479				
A-B	163	41			163				
A-C	448	112			448				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	57	14	525	0.109	57	0.1	0.1	7.987	A
B-A	74	18	335	0.220	74	0.3	0.3	14.588	B
C-AB	134	34	635	0.212	134	0.3	0.3	7.421	A
C-A	479	120			479				
A-B	163	41			163				
A-C	448	112			448				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	47	12	555	0.084	47	0.1	0.1	7.347	A
B-A	60	15	380	0.159	61	0.3	0.2	11.967	B
C-AB	102	26	624	0.164	103	0.3	0.2	7.127	A
C-A	398	100			398				
A-B	133	33			133				
A-C	366	91			366				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	39	10	577	0.068	39	0.1	0.1	6.947	A
B-A	50	13	412	0.122	51	0.2	0.1	10.569	B
C-AB	82	21	620	0.133	83	0.2	0.2	6.879	A
C-A	337	84			337				
A-B	111	28			111				
A-C	306	77			306				

2021 Base, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Mill Carr Hill Rd - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bradford Rd / Mill Carr Hill Rd	T-Junction	Two-way	Two-way	Two-way		1.89	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.89	A

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)	Run automatically
D2	2021 Base	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bradford Rd north		ONE HOUR	✓	473	100.000
B - Mill Carr Hill Rd		ONE HOUR	✓	183	100.000
C - Bradford Rd south		ONE HOUR	✓	833	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	94	379
	B - Mill Carr Hill Rd	90	0	93
	C - Bradford Rd south	775	58	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	0	5
	B - Mill Carr Hill Rd	0	0	2
	C - Bradford Rd south	7	3	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.19	8.36	0.2	A	85	128
B-A	0.33	17.93	0.5	C	83	124
C-AB	0.12	6.48	0.2	A	61	91
C-A					704	1056
A-B					86	129
A-C					348	522

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	70	18	601	0.116	69	0.0	0.1	6.902	A
B-A	68	17	381	0.178	67	0.0	0.2	11.447	B
C-AB	47	12	634	0.074	47	0.0	0.1	6.352	A
C-A	580	145			580				
A-B	71	18			71				
A-C	285	71			285				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	84	21	577	0.145	83	0.1	0.2	7.438	A
B-A	81	20	347	0.233	81	0.2	0.3	13.511	B
C-AB	58	15	639	0.091	58	0.1	0.1	6.433	A
C-A	690	173			690				
A-B	85	21			85				
A-C	341	85			341				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	102	26	543	0.189	102	0.2	0.2	8.340	A
B-A	99	25	300	0.331	98	0.3	0.5	17.821	C
C-AB	76	19	654	0.117	76	0.1	0.2	6.478	A
C-A	841	210			841				
A-B	103	26			103				
A-C	417	104			417				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	102	26	542	0.189	102	0.2	0.2	8.363	A
B-A	99	25	300	0.331	99	0.5	0.5	17.929	C
C-AB	76	19	654	0.117	76	0.2	0.2	6.480	A
C-A	841	210			841				
A-B	103	26			103				
A-C	417	104			417				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	84	21	576	0.145	84	0.2	0.2	7.465	A
B-A	81	20	347	0.233	82	0.5	0.3	13.604	B
C-AB	58	15	640	0.091	59	0.2	0.1	6.438	A
C-A	690	173			690				
A-B	85	21			85				
A-C	341	85			341				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	70	18	600	0.117	70	0.2	0.1	6.935	A
B-A	68	17	381	0.178	68	0.3	0.2	11.524	B
C-AB	47	12	635	0.074	47	0.1	0.1	6.362	A
C-A	580	145			580				
A-B	71	18			71				
A-C	285	71			285				

2031 Do Minimum, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Mill Carr Hill Rd - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bradford Rd / Mill Carr Hill Rd	T-Junction	Two-way	Two-way	Two-way		3.64	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.64	A

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)	Run automatically
D3	2031 Do Minimum	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bradford Rd north		ONE HOUR	✓	643	100.000
B - Mill Carr Hill Rd		ONE HOUR	✓	170	100.000
C - Bradford Rd south		ONE HOUR	✓	725	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	183	460
	B - Mill Carr Hill Rd	76	0	94
	C - Bradford Rd south	506	219	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	2	16
	B - Mill Carr Hill Rd	6	0	14
	C - Bradford Rd south	9	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.20	9.79	0.3	A	86	129
B-A	0.34	23.34	0.5	C	70	105
C-AB	0.48	9.55	1.5	A	279	419
C-A					386	579
A-B					168	252
A-C					422	633

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	71	18	596	0.119	70	0.0	0.2	7.799	A
B-A	57	14	341	0.168	56	0.0	0.2	13.336	B
C-AB	201	50	677	0.296	198	0.0	0.5	7.970	A
C-A	345	86			345				
A-B	138	34			138				
A-C	346	87			346				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	85	21	567	0.149	84	0.2	0.2	8.506	A
B-A	68	17	301	0.227	68	0.2	0.3	16.279	C
C-AB	262	66	710	0.369	261	0.5	0.8	8.529	A
C-A	390	97			390				
A-B	165	41			165				
A-C	414	103			414				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	524	0.198	103	0.2	0.3	9.754	A
B-A	84	21	247	0.339	83	0.3	0.5	23.060	C
C-AB	375	94	779	0.481	372	0.8	1.4	9.437	A
C-A	424	106			424				
A-B	201	50			201				
A-C	506	127			506				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	103	26	523	0.198	103	0.3	0.3	9.793	A
B-A	84	21	246	0.340	84	0.5	0.5	23.345	C
C-AB	375	94	780	0.480	374	1.4	1.5	9.551	A
C-A	424	106			424				
A-B	201	50			201				
A-C	506	127			506				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	85	21	565	0.150	85	0.3	0.2	8.550	A
B-A	68	17	301	0.227	69	0.5	0.3	16.480	C
C-AB	262	66	712	0.368	265	1.5	0.8	8.671	A
C-A	390	97			390				
A-B	165	41			165				
A-C	414	103			414				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	71	18	594	0.119	71	0.2	0.2	7.843	A
B-A	57	14	340	0.168	58	0.3	0.2	13.475	B
C-AB	201	50	677	0.296	202	0.8	0.6	8.081	A
C-A	345	86			345				
A-B	138	34			138				
A-C	346	87			346				

2031 Do Minimum, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Mill Carr Hill Rd - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bradford Rd / Mill Carr Hill Rd	T-Junction	Two-way	Two-way	Two-way		3.63	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.63	A

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)	Run automatically
D4	2031 Do Minimum	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bradford Rd north		ONE HOUR	✓	524	100.000
B - Mill Carr Hill Rd		ONE HOUR	✓	309	100.000
C - Bradford Rd south		ONE HOUR	✓	937	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	105	419
	B - Mill Carr Hill Rd	115	0	194
	C - Bradford Rd south	848	89	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	0	5
	B - Mill Carr Hill Rd	0	0	4
	C - Bradford Rd south	7	10	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.40	11.92	0.7	B	178	267
B-A	0.51	29.23	1.0	D	106	158
C-AB	0.18	6.70	0.3	A	104	155
C-A					756	1134
A-B					96	145
A-C					384	577

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	146	37	613	0.238	145	0.0	0.3	7.985	A
B-A	87	22	337	0.257	85	0.0	0.3	14.247	B
C-AB	77	19	668	0.116	77	0.0	0.2	6.679	A
C-A	628	157			628				
A-B	79	20			79				
A-C	315	79			315				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	44	581	0.300	174	0.3	0.4	9.195	A
B-A	103	26	300	0.345	103	0.3	0.5	18.173	C
C-AB	99	25	690	0.143	98	0.2	0.2	6.673	A
C-A	744	186			744				
A-B	94	24			94				
A-C	377	94			377				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	214	53	530	0.403	213	0.4	0.7	11.779	B
B-A	127	32	249	0.508	125	0.5	1.0	28.492	D
C-AB	135	34	735	0.183	134	0.2	0.3	6.564	A
C-A	897	224			897				
A-B	116	29			116				
A-C	461	115			461				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	214	53	528	0.404	214	0.7	0.7	11.918	B
B-A	127	32	249	0.508	127	1.0	1.0	29.227	D
C-AB	135	34	734	0.184	135	0.3	0.3	6.571	A
C-A	897	224			897				
A-B	116	29			116				
A-C	461	115			461				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	174	44	579	0.301	175	0.7	0.5	9.314	A
B-A	103	26	300	0.344	105	1.0	0.5	18.614	C
C-AB	99	25	689	0.143	99	0.3	0.2	6.687	A
C-A	744	186			744				
A-B	94	24			94				
A-C	377	94			377				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	146	37	612	0.239	147	0.5	0.3	8.075	A
B-A	87	22	337	0.257	87	0.5	0.4	14.478	B
C-AB	77	19	667	0.116	78	0.2	0.2	6.700	A
C-A	628	157			628				
A-B	79	20			79				
A-C	315	79			315				

2031 B2 With Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Mill Carr Hill Rd - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bradford Rd / Mill Carr Hill Rd	T-Junction	Two-way	Two-way	Two-way		4.84	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.84	A

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)	Run automatically
D5	2031 B2 With Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bradford Rd north		ONE HOUR	✓	656	100.000
B - Mill Carr Hill Rd		ONE HOUR	✓	184	100.000
C - Bradford Rd south		ONE HOUR	✓	774	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	196	460
	B - Mill Carr Hill Rd	79	0	105
	C - Bradford Rd south	506	268	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	3	16
	B - Mill Carr Hill Rd	6	0	15
	C - Bradford Rd south	9	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.22	10.26	0.3	B	96	145
B-A	0.39	27.80	0.7	D	72	109
C-AB	0.59	11.46	2.5	B	363	544
C-A					347	521
A-B					180	270
A-C					422	633

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	79	20	598	0.132	78	0.0	0.2	7.936	A
B-A	59	15	324	0.183	59	0.0	0.2	14.333	B
C-AB	255	64	700	0.364	252	0.0	0.7	8.500	A
C-A	328	82			328				
A-B	148	37			148				
A-C	346	87			346				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	94	24	567	0.166	94	0.2	0.2	8.727	A
B-A	71	18	283	0.251	71	0.2	0.3	17.999	C
C-AB	339	85	745	0.454	337	0.7	1.2	9.383	A
C-A	357	89			357				
A-B	176	44			176				
A-C	414	103			414				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	116	29	520	0.223	115	0.2	0.3	10.200	B
B-A	87	22	225	0.386	86	0.3	0.6	27.225	D
C-AB	495	124	836	0.592	490	1.2	2.4	11.142	B
C-A	357	89			357				
A-B	216	54			216				
A-C	506	127			506				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	116	29	518	0.223	116	0.3	0.3	10.265	B
B-A	87	22	224	0.388	87	0.6	0.7	27.804	D
C-AB	495	124	838	0.591	495	2.4	2.5	11.457	B
C-A	357	89			357				
A-B	216	54			216				
A-C	506	127			506				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	94	24	565	0.167	95	0.3	0.2	8.791	A
B-A	71	18	282	0.252	72	0.7	0.4	18.359	C
C-AB	339	85	748	0.453	343	2.5	1.3	9.698	A
C-A	357	89			357				
A-B	176	44			176				
A-C	414	103			414				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	79	20	596	0.133	79	0.2	0.2	7.992	A
B-A	59	15	324	0.184	60	0.4	0.2	14.534	B
C-AB	255	64	701	0.364	257	1.3	0.8	8.691	A
C-A	328	82			328				
A-B	148	37			148				
A-C	346	87			346				

2031 B2 With Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Mill Carr Hill Rd - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bradford Rd / Mill Carr Hill Rd	T-Junction	Two-way	Two-way	Two-way		4.60	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.60	A

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)	Run automatically
D6	2031 B2 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bradford Rd north		ONE HOUR	✓	526	100.000
B - Mill Carr Hill Rd		ONE HOUR	✓	359	100.000
C - Bradford Rd south		ONE HOUR	✓	944	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	107	419
	B - Mill Carr Hill Rd	125	0	234
	C - Bradford Rd south	848	96	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	0	5
	B - Mill Carr Hill Rd	0	0	4
	C - Bradford Rd south	7	11	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.50	14.26	1.0	B	215	322
B-A	0.57	33.95	1.3	D	115	172
C-AB	0.20	6.72	0.4	A	114	171
C-A					753	1129
A-B					98	147
A-C					384	577

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	614	0.287	175	0.0	0.4	8.487	A
B-A	94	24	332	0.284	93	0.0	0.4	15.018	C
C-AB	84	21	675	0.125	84	0.0	0.2	6.698	A
C-A	626	157			626				
A-B	81	20			81				
A-C	315	79			315				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	210	53	580	0.363	210	0.4	0.6	10.091	B
B-A	112	28	295	0.381	112	0.4	0.6	19.604	C
C-AB	108	27	700	0.154	108	0.2	0.2	6.685	A
C-A	741	185			741				
A-B	96	24			96				
A-C	377	94			377				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	258	64	523	0.493	256	0.6	1.0	13.966	B
B-A	138	34	243	0.566	135	0.6	1.2	32.672	D
C-AB	149	37	750	0.198	148	0.2	0.4	6.563	A
C-A	891	223			891				
A-B	118	29			118				
A-C	461	115			461				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	258	64	520	0.496	258	1.0	1.0	14.265	B
B-A	138	34	243	0.566	137	1.2	1.3	33.948	D
C-AB	149	37	749	0.198	149	0.4	0.4	6.572	A
C-A	891	223			891				
A-B	118	29			118				
A-C	461	115			461				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	210	53	577	0.364	212	1.0	0.6	10.297	B
B-A	112	28	295	0.381	115	1.3	0.6	20.284	C
C-AB	108	27	699	0.155	109	0.4	0.3	6.701	A
C-A	741	185			741				
A-B	96	24			96				
A-C	377	94			377				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	176	44	612	0.288	177	0.6	0.4	8.617	A
B-A	94	24	332	0.284	95	0.6	0.4	15.322	C
C-AB	84	21	674	0.125	85	0.3	0.2	6.720	A
C-A	626	157			626				
A-B	81	20			81				
A-C	315	79			315				

2031 B8 With Development, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Mill Carr Hill Rd - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bradford Rd / Mill Carr Hill Rd	T-Junction	Two-way	Two-way	Two-way		4.05	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.05	A

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)	Run automatically
D7	2031 B8 With Development	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bradford Rd north		ONE HOUR	✓	647	100.000
B - Mill Carr Hill Rd		ONE HOUR	✓	180	100.000
C - Bradford Rd south		ONE HOUR	✓	741	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	187	460
	B - Mill Carr Hill Rd	78	0	102
	C - Bradford Rd south	506	235	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	3	16
	B - Mill Carr Hill Rd	7	0	16
	C - Bradford Rd south	9	6	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.21	10.16	0.3	B	94	140
B-A	0.36	25.16	0.6	D	72	107
C-AB	0.52	10.07	1.8	B	306	459
C-A					374	561
A-B					172	257
A-C					422	633

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	77	19	599	0.128	76	0.0	0.2	7.961	A
B-A	59	15	334	0.176	58	0.0	0.2	13.849	B
C-AB	218	55	685	0.319	216	0.0	0.6	8.149	A
C-A	340	85			340				
A-B	141	35			141				
A-C	346	87			346				

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	92	23	569	0.161	91	0.2	0.2	8.724	A
B-A	70	18	294	0.239	70	0.2	0.3	17.084	C
C-AB	287	72	722	0.397	285	0.6	0.9	8.794	A
C-A	380	95			380				
A-B	168	42			168				
A-C	414	103			414				

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	112	28	524	0.214	112	0.2	0.3	10.106	B
B-A	86	21	239	0.360	85	0.3	0.6	24.781	C
C-AB	413	103	799	0.517	410	0.9	1.7	9.914	A
C-A	403	101			403				
A-B	206	51			206				
A-C	506	127			506				

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	112	28	522	0.215	112	0.3	0.3	10.156	B
B-A	86	21	238	0.361	86	0.6	0.6	25.156	D
C-AB	413	103	800	0.516	413	1.7	1.8	10.073	B
C-A	403	101			403				
A-B	206	51			206				
A-C	506	127			506				

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	92	23	567	0.162	92	0.3	0.2	8.778	A
B-A	70	18	293	0.239	71	0.6	0.3	17.339	C
C-AB	287	72	724	0.396	290	1.8	1.0	8.979	A
C-A	380	95			380				
A-B	168	42			168				
A-C	414	103			414				

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	77	19	597	0.129	77	0.2	0.2	8.014	A
B-A	59	15	333	0.176	59	0.3	0.2	14.010	B
C-AB	218	55	686	0.318	220	1.0	0.6	8.284	A
C-A	340	85			340				
A-B	141	35			141				
A-C	346	87			346				

2031 B8 With Development, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm visibility to right	B - Mill Carr Hill Rd - Minor arm geometry	Visibility to right expected to have two components if the arm has two lanes, or two lanes in a flared section.

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Bradford Rd / Mill Carr Hill Rd	T-Junction	Two-way	Two-way	Two-way		4.06	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.06	A

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)	Run automatically
D8	2031 B8 With Development	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Bradford Rd north		ONE HOUR	✓	526	100.000
B - Mill Carr Hill Rd		ONE HOUR	✓	329	100.000
C - Bradford Rd south		ONE HOUR	✓	945	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	107	419
	B - Mill Carr Hill Rd	119	0	210
	C - Bradford Rd south	848	97	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Bradford Rd north	B - Mill Carr Hill Rd	C - Bradford Rd south
From	A - Bradford Rd north	0	1	5
	B - Mill Carr Hill Rd	0	0	5
	C - Bradford Rd south	7	12	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
B-C	0.44	12.85	0.8	B	193	289
B-A	0.53	31.54	1.1	D	109	164
C-AB	0.20	6.76	0.4	A	115	173
C-A					752	1127
A-B					98	147
A-C					384	577

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	158	40	614	0.258	157	0.0	0.4	8.217	A
B-A	90	22	333	0.269	88	0.0	0.4	14.657	B
C-AB	86	21	677	0.126	85	0.0	0.2	6.733	A
C-A	626	156			626				
A-B	81	20			81				
A-C	315	79			315				

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	189	47	581	0.325	188	0.4	0.5	9.584	A
B-A	107	27	296	0.361	106	0.4	0.5	18.920	C
C-AB	110	27	704	0.156	109	0.2	0.3	6.711	A
C-A	740	185			740				
A-B	96	24			96				
A-C	377	94			377				

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	526	0.439	230	0.5	0.8	12.653	B
B-A	131	33	245	0.535	129	0.5	1.1	30.569	D
C-AB	151	38	755	0.200	151	0.3	0.4	6.577	A
C-A	889	222			889				
A-B	118	29			118				
A-C	461	115			461				

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	231	58	524	0.441	231	0.8	0.8	12.847	B
B-A	131	33	245	0.535	131	1.1	1.1	31.536	D
C-AB	151	38	754	0.200	151	0.4	0.4	6.587	A
C-A	889	222			889				
A-B	118	29			118				
A-C	461	115			461				

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	189	47	578	0.327	190	0.8	0.5	9.732	A
B-A	107	27	297	0.361	109	1.1	0.6	19.465	C
C-AB	110	27	702	0.156	110	0.4	0.3	6.730	A
C-A	740	185			740				
A-B	96	24			96				
A-C	377	94			377				

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Junction Arrivals (PCU)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	Start queue (PCU)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	158	40	612	0.258	159	0.5	0.4	8.323	A
B-A	90	22	333	0.269	90	0.6	0.4	14.922	B
C-AB	86	21	677	0.127	86	0.3	0.2	6.758	A
C-A	626	156			626				
A-B	81	20			81				
A-C	315	79			315				

Appendix B

Footway / Cycleway Improvements

GENERAL NOTES

a. TOPOGRAPHICAL SURVEY AND CURTINS HIGHWAY DESIGN IS BASED ON INFORMATION DERIVED FROM DWG FILES:
 - 065646-CUR-22-ZZ-DR-C-95001-1-P02-5278 Phase 1 - General Arrangement Model (CAD ISSUE).dwg;
 - 065646-CUR-22-ZZ-DR-C-95001-P01-5278 Phase 2 - General Arrangement Model (CAD ISSUE).dwg; AND
 - 065646-CUR-22-ZZ-DR-C-95001-P01-5278 Phase 1 & 2 FC coordination model.dwg

PRODUCED BY BURTINS, THE INFORMATION USED IN PREPARATION OF THIS AND ALL OTHER FORE CONSULTING DESIGNS AND DRAWINGS IS NOT WARRANTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURVEY INFORMATION PROVIDED AND REPORT ANY ANOMALIES TO FORE CONSULTING.

DESIGN NOTES

- ALL DESIGN AND WORKS TO COMPLY WITH CURRENT VERSION OF THE FOLLOWING DOCUMENTS:
 - DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB);
 - SPECIFICATION FOR HIGHWAY WORKS (SHW);
 - MANUAL FOR STREETS (MFS); AND
 - KIRKLEES COUNCIL (KC) DESIGN GUIDE AND SPECIFICATION.
- FOOTPATH GRADIENT AT TACTILE PAVING TO BE A MAXIMUM OF 1:12.
- EXISTING FENCES, VERGES, SHRUBBERY, FOOTWAY, AND OTHER PHYSICAL FEATURES TO BE REMOVED WITHIN THE AREA OF WORKS.
- ALL KERBS TO BE 80 WITH 125mm KERB CHECK, EXCEPT DROPPED KERBS AT PEDESTRIAN/CYCLIST CROSSING.
- KERB FACE OF DROPPED CROSSINGS:
 - PEDESTRIAN/CYCLIST CROSSING: 0mm;
 - PEDESTRIAN CROSSING: 6mm.
- ALL FENCING TO BE TAKEN UP AND REMOVED FROM SITE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS CLAUSE 201.6 AND SUITABLY DISPOSED.
- BOUNDARY FENCING TO REPLACE EXISTING SUBJECT TO AGREEMENT WITH KC AND LANDSCAPING REQUIREMENTS.
- ALL IRONWORKS WITHIN EXTENT OF WORKS TO BE LOWERED / RAISED AS REQUIRED.
- ALL PROPOSED ROAD MARKINGS TO BE IN ACCORDANCE WITH THE FOLLOWING:
 - TRAFFIC SIGNS REGULATIONS AND GENERAL DIRECTIONS (TSRD); AND
 - TRAFFIC SIGNS MANUALS CHAPTER 5 - ROAD MARKINGS.
- EARTHWORKS SLOPES TO BE MAXIMUM 1:3.

KEY

	CARRIAGEWAY
	FOOTWAY
	TACTILE PAVING
	GRASS VERGE

REV	DESCRIPTION	DATE	ML	BY
A	CHANGES FOLLOWING COMMENTS	01.02.23	ML	

Client: **KEYLAND DEVELOPMENTS**

Project: **NORTH BIERLEY**

Drawing Title: **GENERAL ARRANGEMENT OPTION 1**

FOR COMMENT

Fore Consulting Limited
 1st Floor, 15 St Paul's Street
 Leeds LS1 2SD
 0113 2460204
 enquiries@foreconsulting.co.uk
 www.foreconsulting.co.uk

Drawn by:	AS	Checked by:	AS	Date:	18.10.2022	Scale:	1:250	Revision:	A0
-----------	----	-------------	----	-------	------------	--------	-------	-----------	-----------

31019 100-SK-001 **A**



GENERAL NOTES

a. TOPOGRAPHICAL SURVEY AND CURTINS HIGHWAY DESIGN IS BASED ON INFORMATION DERIVED FROM DWG FILES:

- 065646-CUR-22-ZZ-DR-C-95001-1-P01-5278 Phase 1 - General Arrangement Model (CAD ISSUE).dwg;
- 065646-CUR-22-ZZ-DR-C-95001-P01-5278 Phase 2 - General Arrangement Model (CAD ISSUE).dwg; AND
- 065646-CUR-22-ZZ-DR-C-95001-P01-5278 Phase 1 & 2 FE COORDINATION MODEL.dwg

PRODUCED BY BURTINS, THE INFORMATION USED IN PREPARATION OF THIS AND ALL OTHER FORE CONSULTING DESIGNS AND DRAWINGS IS NOT WARRANTED. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SURVEY INFORMATION PROVIDED AND REPORT ANY ANOMALIES TO FORE CONSULTING.

DESIGN NOTES

- ALL DESIGN AND WORKS TO COMPLY WITH CURRENT VERSION OF THE FOLLOWING DOCUMENTS:
 - DESIGN MANUAL FOR ROADS AND BRIDGES (DMRB);
 - SPECIFICATION FOR HIGHWAY WORKS (SHW);
 - MANUAL FOR STREETS (MFS); AND
 - KIRKLEES COUNCIL (KC) DESIGN GUIDE AND SPECIFICATION.
- FOOTPATH GRADIENT AT TACTILE PAVING TO BE A MAXIMUM OF 1:12.
- EXISTING FENCES, VERGES, SHRUBBERY, FOOTWAY, AND OTHER PHYSICAL FEATURES TO BE REMOVED WITHIN THE AREA OF WORKS.
- ALL KERBS TO BE 100 WITH 125mm KERB CHECK, EXCEPT DROPPED KERBS AT PEDESTRIAN/CYCLIST CROSSING.
- KERB FACE OF DROPPED CROSSINGS:
 - PEDESTRIAN/CYCLIST CROSSING: 0mm;
 - PEDESTRIAN CROSSING: 6mm.
- ALL FENCING TO BE TAKEN UP AND REMOVED FROM SITE SHALL BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAY WORKS CLAUSE 201.6 AND SUITABLY DISPOSED.
- BOUNDARY FENCING TO REPLACE EXISTING SUBJECT TO AGREEMENT WITH KC AND LANDSCAPING REQUIREMENTS.
- ALL IRONWORKS WITHIN EXTENT OF WORKS TO BE LOWERED / RAISED AS REQUIRED.
- ALL PROPOSED ROAD MARKINGS TO BE IN ACCORDANCE WITH THE FOLLOWING:
 - TRAFFIC SIGN REGULATIONS AND GENERAL DIRECTIONS (TSRD); AND
 - TRAFFIC SIGN MANUALS CHAPTER 5 - ROAD MARKINGS.
- EARTHWORKS SLOPES TO BE MAXIMUM 1:3.

KEY

- CARRIAGEWAY
- FOOTWAY
- TACTILE PAVING
- GRASS VERGE

REV	DESCRIPTION	DATE	BY
A	CHANGES FOLLOWING COMMENTS	01.02.23	ML

Client: **KEYLAND DEVELOPMENTS**

Project: **NORTH BIERLEY**

Drawing Title: **GENERAL ARRANGEMENT OPTION 2**

FOR COMMENT

Fore Consulting Limited
1st Floor, 15 St Paul's Street
Leeds LS1 2JQ
0113 2460204
enquiries@foreconsulting.co.uk
www.foreconsulting.co.uk

Drawn by:	AS	Checked by:	ML	Date:	18.10.2022	Scale:	1:250	Revision:	A0
Drawn by:	AS	Checked by:	ML	Date:	18.10.2022	Scale:	1:250	Revision:	A0

31019 100-SK-010

