OPTIMA
Intelligent Highways Solutions

Land off Hermitage Park, Lepton
Proposed Residential Development
Transport Assessment

January 2022 (Rev 3)

Prepared on behalf of

KCS Developments Ltd

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1. Introduction

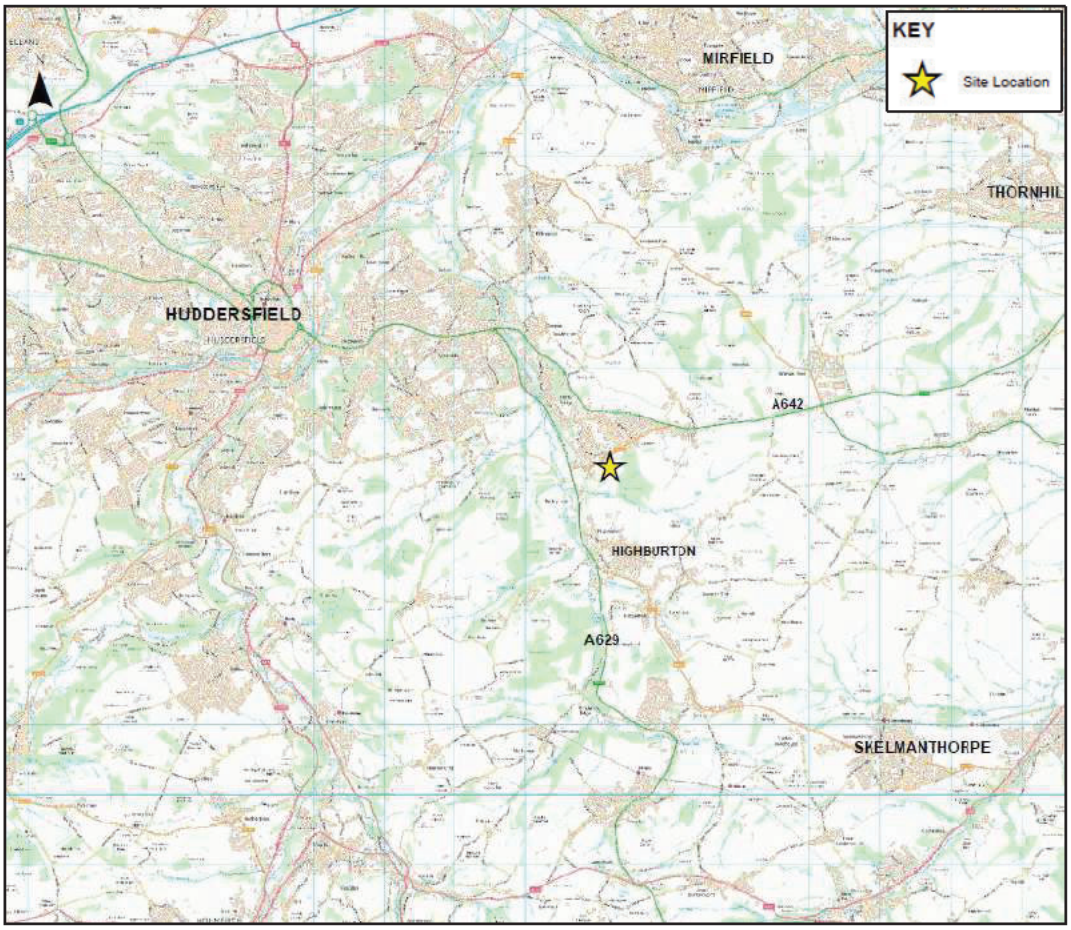
1.1 BACKGROUND

1.1.1 This Transport Assessment (TA) has been undertaken by Optima to consider the highways and transportation matters raised by a proposed housing development on land off Hermitage Park, Lepton.

1.1.2 The Site lies within the administrative area of Kirklees Council (KC) which, as a unitary authority, holds responsibility for both Planning and Highway matters.

1.1.3 The Site location is illustrated on Image 1.1.

Image 1.1 Site Location Plan



1.1.4 The development proposals, which are illustrated on the Niemen Architects Proposed Site Layout drawing contained at Appendix A can be summarised as follows:

- Erection of 80 residential dwellings comprising of 2, 3 and 4 bedroom properties;
- Access via Hermitage Park; and
- Associated parking, landscaping and infrastructure.

1.1 SCOPE OF REPORT

1.1.1 This TA supports an outline planning application for a Phase 1A development made on behalf of KCS Developments Ltd and sets out the transport matters relating to the proposed development and identifies if any measures are necessary to accommodate the anticipated transport impacts of the scheme.

1.1.2 This TA has been prepared in accordance with the Ministry of Housing, Communities & Local Government 'Overarching principles on Travel Plans, Transport Assessment and Statements' document published in March 2014, which supersedes the Department for Transport "Guidance on Transport Assessment" document published in March 2007, which has been withdrawn.

1.1.3 Cognisance has also been taken of the prevailing National Planning Policy Framework (NPPF) published in February 2019 and updated in July 2021, which states that all developments that will generate significant amounts of movements should be required to provide a travel plan, and the application should be supported by a transport statement or assessment so that the likely impacts of the proposal can be assessed.

1.1.4 Paragraph 111 of the NPPF goes on to state that:

> *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe."*

1.2 SITE HISTORY AND ALLOCATION

1.2.1 There have been no previously submitted planning applications on the Site relating to residential development.

1.2.2 Optima produced a Site Access Appraisal in January 2016 to support the allocation of the Site within the Kirklees Local Plan for residential purposes. Following feedback from Highways Development Management two further Transport Addendum reports were produced addressing additional comments from Highway Officers. The points raised during these discussions have been considered and incorporated into this TA where appropriate.

1.2.3 The Site was subsequently allocated for housing development in the Kirklees Local Plan Allocations and Designations document adopted on 27th February 2019 under site reference HS3 'Land to the south east of Hermitage Park, Lepton'. The overall allocation has an estimated capacity of 312 dwellings.

1.2.4 Housing HS2 'Land adjacent Penistone Road/Woodsome Park, Lepton' is located immediately to the west of HS3 and has an indicative capacity of 286 dwellings. A joint masterplan is required to be considered for both HS2 and HS3.

1.2.5 An outline planning application has been submitted by Radcliffe Developments (Farnley) Ltd on HS2 for an initial phase of development comprising of 75 dwellings under planning application reference 2020/60/92307/W.

1.2.6 Housing allocation HS1 'Land to the north west of Woodsome Drive, Fenay Bridge, Huddersfield' is located to the north of the Site and has an indicative capacity of 68 dwellings. A planning application was submitted by Engie Regeneration Ltd and Stonewater Ltd on HS1 for 68 dwellings under planning application reference 2020/62/90725/W, which was granted planning permission in September 2021.

1.3 PRE-APPLICATION DISCUSSIONS

1.3.1 A pre application meeting was held with KC on 18th May 2021 and representatives from Highways Development Management (HDM) attended. The discussions primarily related to the quantum of development proposed to be served from Hermitage Park. HDM confirmed that 40/50 dwellings could be adequately served from Hermitage Park and also stated that there should not be a through route between Penistone Road and Hermitage Park (via HS2).

1.3.2 Subsequently a formal pre application response has been provided by KC dated 22nd June 2021 based on a proposal for 110 dwellings accessed from Hermitage Park. Comments from the Councils HDM and S38 Teams were also provided.

1.3.3 In response to the points raised the layout has been amended in order to address the S38 comments in relation to the layout and the development quantum has been reduced by 27% to 80 dwellings and the suitability of Hermitage Park and the local highway network to accommodate this quantum of development has been considered and assessed within this TA.

1.4 REPORT STRUCTURE

1.4.1 The document structure is as follows:

- Chapter 2 - describes the Site and the existing transport conditions;
- Chapter 3 - defines the development proposals including the access arrangements;
- Chapter 4 - describes the accessibility of the Site by non-car modes;
- Chapter 5 - describes the methodology applied to arrive at the baseline trips generated by the development as well as the distribution/assignment of these trips on the highway network;
- Chapter 6 – summarises the junction capacity assessments undertaken to determine the impact of the development trips on the local highway network; and
- Chapter 7 - summarises and highlights the conclusions of the TA.

2. Existing Site and Conditions

2.1 INTRODUCTION

2.1.1 This chapter describes the Site and considers the existing conditions on the surrounding highway network for a range of transport modes. It also includes a review of traffic survey data, vehicle speed survey results and personal injury collision data.

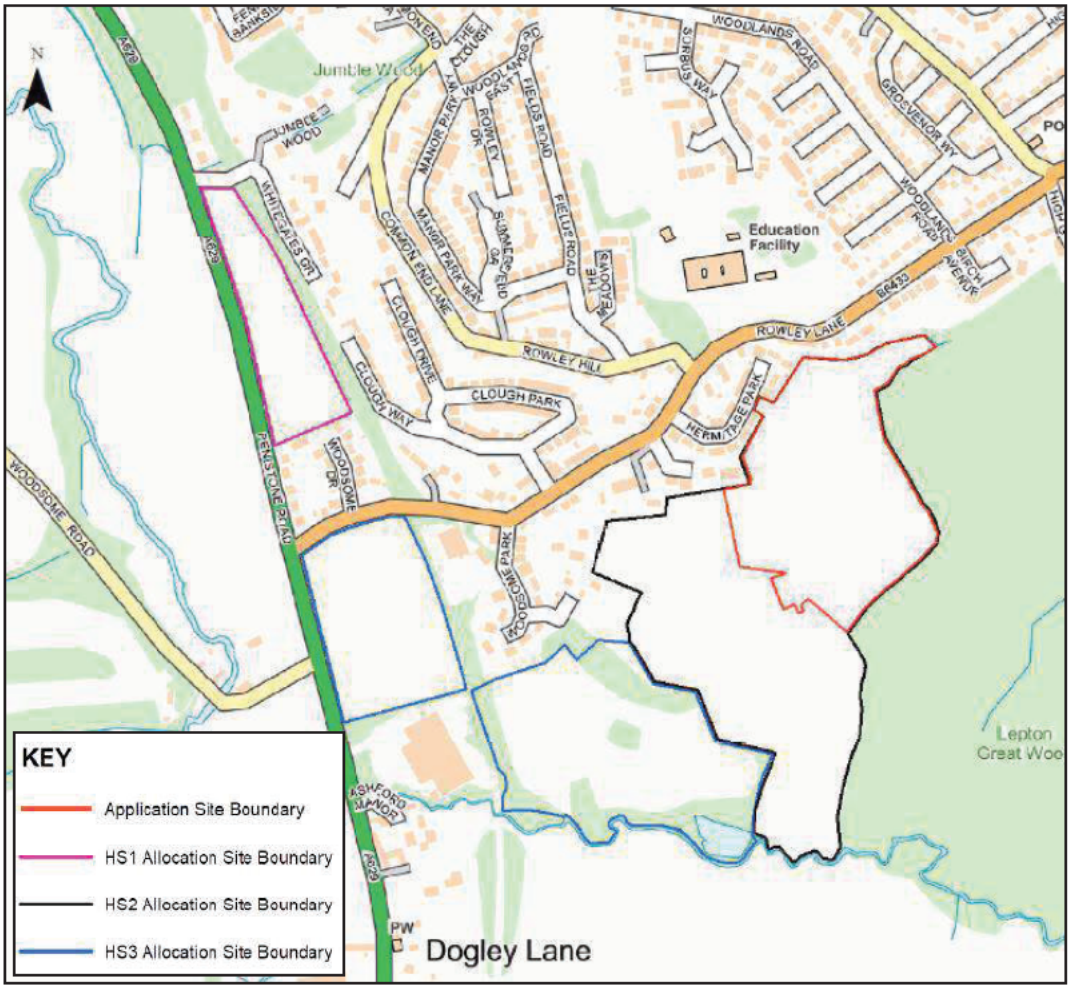
2.2 EXISTING SITE

2.2.1 The Site is located on land to the south of the B6433 Rowley Lane, approximately midway along its length. As set out within Chapter 1, the Site is allocated for housing within the Kirklees Local Plan adopted in February 2019 under Site reference HS3.

2.2.2 The application Site has an approximate area of 4.9 hectares (12.1 acres) and is located in Lepton, approximately 5.1km southwest of Huddersfield and 2.3km north of Kirkburton.

2.2.3 The Site in relation to the strategic transport networks is shown on Figure 1. Figure 2 illustrates the application boundary and extents of allocations, HS1, HS2 and HS3, an extract of which is provided within Image 2.1.

Image 2.1 Indicative Site Boundary



2.2.4 The Site incorporates several agricultural fields and is bound by Lepton Great Wood to the east, further agricultural land to the south and west and existing housing served from Rowley Lane and Hermitage Park to the north. The Site has a circa 18m wide frontage onto Hermitage Park to the north-western corner of the Site.

2.2.5 Land to the west of the Site, which extends to the A629 Penistone Road is allocated for housing under Site allocation reference HS2 'Land adjacent to Penistone Road/Woodsome Park, Lepton'.

2.3 EXISTING LOCAL HIGHWAY NETWORK

2.3.1 The B6433 Rowley Lane runs west to east from a priority T junction with the A629 Penistone Road for approximately 1.6km where it meets the A642 Wakefield Road at a crossroads junction with Knotty Lane.

2.3.2 In the vicinity of the Site, Rowley Lane is subject to a 30mph speed limit with Traffic Regulation Orders in the form of double yellow lines, associated with the nearby primary school (Rowley Lane Junior, Infant & Nursery School), extending up to its junction with Hermitage Park.

2.3.3 Rowley Lane is approximately 5.9m wide with a 1.9m wide footway along its northern flank in the vicinity of the Site.

2.3.4 Hermitage Park is a short residential cul-de-sac serving 20 detached properties. It is laid out as a traditional estate road with a 5.5m wide carriageway and 1.8m wide footways along both flanks. It forms a priority T junction with Rowley Lane and rises in gradient for approximately 160m before forming a turning facility at the head of the cul-de-sac.

2.3.5 Hermitage Park is flanked by detached residential properties along both sides, with the exception of a circa 18m wide gap between properties, which has been retained to facilitate access to the development.

2.3.6 A degree of on-street car parking occurs in the vicinity of the Rowley Lane/Hermitage Park junction associated with parents dropping off/picking up children at the nearby primary school. On Site observations confirm that, as is typical in the vicinity of schools, this on-street parking occurs for a relatively short period of time. School related car parking is considered in further detail within Chapter 3.

2.3.7 Hermitage Park forms part of the adopted highway maintainable at public expense. A copy of the highway adoption records obtained from Kirklees Council are contained at Appendix B, an extract of which is provided within Image 2.2.

Image 2.2 Highway Adoption Records



Source – Kirklees Highways Registry

2.4 EXISTING TRAFFIC SURVEYS

2.4.1 Fully classified turning counts have been undertaken on the local highway network during neutral traffic conditions in September 2019. The traffic survey data was gathered well before the current COVID-19 pandemic and therefore the survey work is not influenced by Government imposed travel restrictions in any way and are therefore considered to be robust.

2.4.2 In addition, a vehicle speed survey and school drop off survey were conducted in January 2016 as part of the Site allocation transport studies. Full details of the surveys are contained at Appendix C and a summary is provided in Table 2.1.

Table 2.1 Summary of Traffic Surveys

Ref	Location	Type	Date	Time Period
1	Rowley Lane/Hermitage Park	Manual Classified Count and Queue Lengths	Thursday 19th September 2019	07:00-10:00 & 14:00-19:00
1a	Rowley Lane/Hermitage Park	School Drop Off Survey	Tuesday 19th January 2016	07:00-10:00 & 14:00-19:00
2	A629 Penistone Road/Rowley Lane	Manual Classified Count and Queue Lengths	Thursday 19th September 2019	07:00-10:00 & 14:00-19:00
3	Rowley Lane/Highgate Lane	Manual Classified Count and Queue Lengths	Thursday 19th September 2019	07:00-10:00 & 14:00-19:00
4	A642 Wakefield Road/Rowley Lane/Knotty Lane	Manual Classified Count and Queue Lengths	Thursday 19th September 2019	07:00-10:00 & 14:00-19:00

2.4.3 The traffic surveys identified the existing weekday morning and evening network peak hours as follows:

- Weekday AM Peak - 07:45 to 08:45; and
- Weekday PM Peak - 17:00 to 18:00.

2.5 VEHICLE SPEED SURVEY

2.5.1 A vehicle speed survey has been undertaken in January 2016 along Rowley Lane on the approaches to the Hermitage Park junction. Drawing 1305/IN/03 rev B contained at Appendix D illustrates the location of the speed survey.

2.5.2 Full details of the speed survey are also contained within Appendix D with a summary provided in Table 2.2.

Table 2.2 Vehicle Speed Survey

Rowley Lane	Northeast bound Readings 232	Southwest bound Readings 244
Mean speed	22 mph	24 mph
85th percentile wet weather speed	26 mph	28 mph

2.5.3 The results within Table 2.2 confirm that 85th percentile wet weather vehicle speeds on the approach to the Hermitage Park junction are within the plated 30mph speed limit. As would be expected vehicle speeds recorded uphill (northeast bound) are slightly lower.

2.6 PERSONAL INJURY COLLISION DATA ANALYSIS

2.6.1 Personal injury collision data has been obtained for the highway network in the vicinity of the Site for the 5-year period prior to 9th September 2019. The study area includes the full length of Rowley Lane including its junctions with the A629 Penistone Road and the A642 Wakefield Road.

2.6.2 For the five-year period, there has been a total of seven collisions, of which four were classified as being slight and three were serious. No fatal collisions have been recorded.

2.6.3 Full details of the collisions can be found at Appendix E and a summary can be found below in Tables 2.3 – 2.8.

Table 2.3 Personal Injury Collision Analysis – Severity

Severity	No of collisions	Percentage
Slight	4	57%
Serious	3	43%
Fatal	0	0%
Total	7	100%

Table 2.4 Personal Injury Collision Analysis – Severity by Year

Severity	2014	2015	2016	2017	2018	2019	Total
Slight	1	1	-	1	1	-	4
Serious	-	2	-	-	-	1	3
Fatal	-	-	-	-	-	-	0
Total	1	3	0	1	1	1	7

Table 2.5 Personal Injury Collision Analysis – Lighting Conditions

Lighting	No of collisions	Percentage
Dark	1	14%
Light	6	86%

Table 2.6 Personal Injury Collision Analysis – Road Surface

Surface	No of collisions	Percentage
Dry	6	86%
Wet	1	14%

Table 2.7 Personal Injury Collision Analysis – Vulnerable Road Users

VRU	No of collisions	Percentage
Pedestrian	0	0%
Cyclist	0	0%
Motorcycle	2	33%

Table 2.8 Personal Injury Collision Analysis – Collision Type

Collison Type	2014	2015	2016	2017	2018	2019	Total
Right Turn	-	1	-	-	1	-	3
Driver error/loss of control	1	-	-	-	-	-	0
Motorcycle	-	1	-	-	-	1	2
Underage driver/rider	-	1	-	-	-	-	1
Misc	-	-	-	1	-	-	1
Total	1	3	0	1	1	1	**7**

2.6.4 A full assessment has been carried out of the circumstances behind each collision that has occurred in order to ascertain whether there are any underlying contributing factors relating to junction design / layout as set out in Table 2.9.

Table 2.9 Study Area - Personal Injury Collision Assessment

Collision Ref	Date / Time	Severity	Location	Summary
1AH0805	17/10/2014 14:50	Slight	A642 Wakefield Road	Driver clips nearside kerb and looses control, resulting in minor injuries.
22L0759	21/02/2015 00:00	Serious	Rowley Lane/Highgate Avenue	Underage rider of a quad bike fails to give way while performing a U turn and collides with oncoming vehicle.
2661652	06/06/2015 22:05	Slight	Penistone Road/Rowley Lane	Vehicle turns right out of Rowley Lane into the path of oncoming traffic, resulting in collision with further vehicle along Rowley Lane.
2AB0899	11/10/2015 14:40	Serious	Penistone Road/Woodsome Road	Vehicle turns right across the path of an oncoming motorcycle.
4AH0515	17/02/2017 10:50	Slight	Penistone Road	Driver suffering from depression deliberately crashes into bus.
58T1517	29/08/218 18:35	Slight	Wakefield Road/Rowley Lane	Vehicle turns right out of Rowley Lane into the path of an oncoming vehicle.
65F0229	15/058/2019 06:50	Serious	Wakefield Road/Rowley Lane	Vehicle turns right our of Rowley Lane into the path of an oncoming motorcycle.

2.6.5 The following conclusions can be made:

- Total of seven collisions have occurred over 5 years;
- Average of 1.4 collisions per year;
- 4 slight collisions (57%) and 3 serious collisions (43%)
- No fatal collisions have been recorded;
- No collisions have been recorded at or near the Rowley Lane/Hermitage Park junction;
- No collisions have been recorded along the full length of Hermitage Park;
- No collisions have been recorded in the vicinity of Rowley Lane Junior Infant & Nursery School;
- No collision clusters have been identified; and
- No collision trends have been identified.

2.6.6 The collision data has been reviewed in detail and taking into account the extent of the study area, the 5 year time period, combined with a number of causation factors and a variety of locations no specific road safety concerns have been identified.

2.6.7 It can be concluded that Hermitage Park and the Rowley Lane/Hermitage Park junction operate in a safe manner at present.

2.6.8 A review of the latest validated collision records from 2020 has not identified any additional collisions within the study area, therefore the above conclusion remains valid.

2.7 EXISTING PEDESTRIAN AND CYCLE FACILITIES

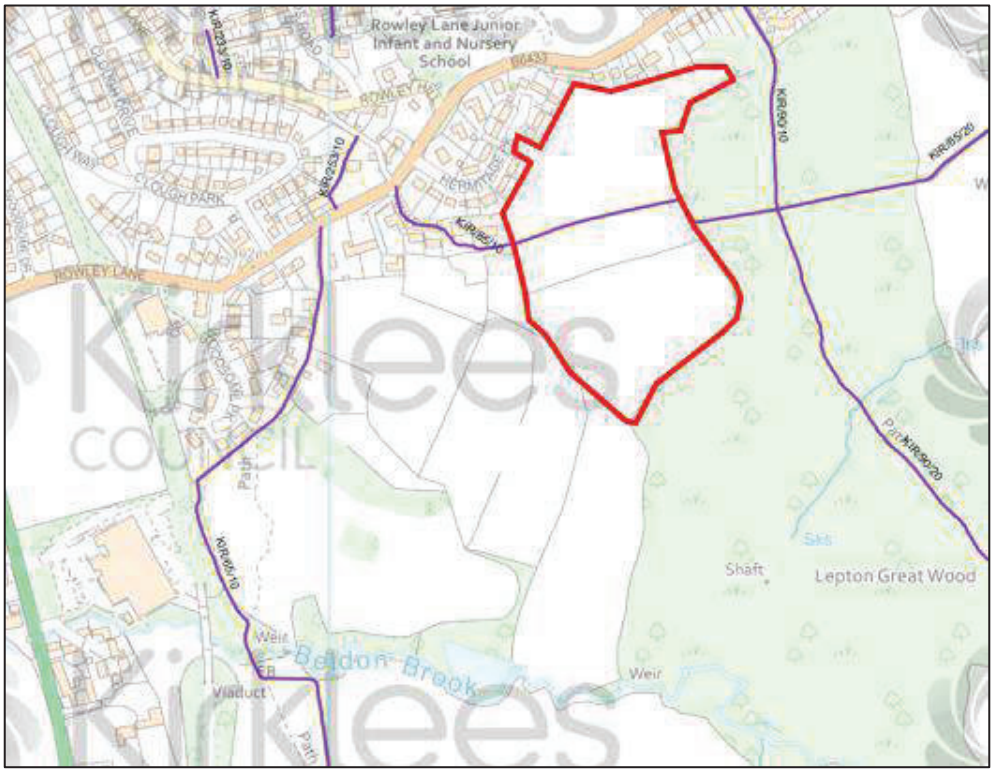
2.7.1 Lit footways are provided along Rowley Lane and Hermitage Park. The footways vary in width between 1.8m and 2.1m. The existing footways provide connections to the bus stops along Rowley Lane, the nearby primary school and Lepton village centre.

2.7.2 Public footpath KIR/65/10 runs to the west of the Site and provides a traffic free pedestrian route to the neighbouring village of Highburton. The footpath commences some 230m to the west of the B6433 Rowley Lane/ Hermitage Park junction and terminates in the centre of Highburton.

2.7.3 Public footpath KIR/85/10 runs through the Site on a west to east alignment from a private drive south of Hermitage Park, through Lepton Great Wood to Green Balk Lane.

2.7.4 An extract of the Kirklees Public Right of Way map is provided within Image 2.3.

Image 2.3 PRoW Map Extract



Source – www.kirklees.gov.uk

2.8 BUS SERVICES

2.8.1 The nearest bus stops to the Site are located along the B6433 Rowley Lane, adjacent to the Hermitage Park junction, some 300m from the centre of the Site.

2.8.2 Further bus stops are located along the A629 Penistone Road and Highgate Lane offering additional high frequency services.

2.8.3 A summary of the bus stop provision is provided within Table 2.10.

Table 2.10 Bus Stop Provision

Bus Stop Reference	Location	Direction	Distance from Site centre	Facilities	Buses towards	Services
450 18785	Rowley Lane/Hermitage Park	Westbound	300m	Bus stop pole and timetable information	Clayton West, Kirkburton & Skelmanthorpe	83, 84A
450 18786	Rowley Lane/Hermitage Park	Eastbound	300m	Bus stop pole and timetable information	Huddersfield	83, 84A
450 16775	Penistone Road/Rowley Lane	Northbound	865m	Bus shelter, raised kerbs, seating, timetable information	Huddersfield	83, 84, 233
450 16774	Highgate Lane/Highgate Avenue	Southbound	810m	Bus shelter and timetable information	Clayton West, Denby Dale Kirkburton, Shepley & Skelmanthorpe	83, 84, 84A, 233
450 18795	Highgate Lane/Highgate Avenue	Southbound	950m	Bus stop and timetable information	Clayton West, Emley, Flockton, Grange Moor, Skelmanthorpe & Wakefield	83, 84A, 231, 232, X41
450 18794	Highgate Lane/Rowley Lane	Northbound	880m	Bus stop and timetable information	Huddersfield	83, 84,A, 231, 232, X41

2.8.4 A summary of the bus services in the vicinity of the Site are provided in Table 2.11-2.16.

Table 2.11 Bus Service Summary – Rowley Lane Westbound

Service	Buses Towards	Operator	Days of Operation	Approximate One-way Frequency	Time of Operation
83	Denby Dale	Team Pennine	Monday – Friday	5 services	06:43, 09:04, 11:15, 13:15, 15:37
			Saturday	5 services	09:14, 11:14, 13:14, 15:14, 17:14
			Sunday	No service	-
84A	Denby Dale	Team Pennine	Monday – Friday	1 service	17:39
			Saturday	No service	-
			Sunday	No service	-

Table 2.12 Bus Service Summary – Rowley Lane Eastbound

Service	Buses Towards	Operator	Days of Operation	Approximate One-way Frequency	Time of Operation
83	Huddersfield	Team Pennine	Monday – Friday	3 services	11:21, 13:18, 15:38
			Saturday	5 services	09:18, 11:18, 13:20, 15:18, 17:18
			Sunday	No service	-
84A	Huddersfield	Team Pennine	Monday - Friday	2 services	08:00 & 10:16
			Saturday	1 service	08:08
			Sunday	No service	-

Table 2.13 Bus Service Summary – Penistone Road Northbound

Service	Buses Towards	Operator	Days of Operation	Approximate One-way Frequency	Time of Operation
83A	Huddersfield	Team Pennine	Monday – Friday	2 services	17:34 &18:42
			Saturday	No service	-
			Sunday	No service	-
84	Huddersfield	Team Pennine	Monday – Friday	5 services	07:09-16:41
			Saturday	5 services	10:20-18:20
			Sunday	No service	-
Denby Darts D1	Huddersfield	Team Pennine	Monday – Friday	30 mins	06:01-23:02
			Saturday	30 mins	06:34-23:23
			Sunday	60 mins	09:23-23:23

Table 2.14 Bus Service Summary – Penistone Road Southbound

Service	Buses Towards	Operator	Days of Operation	Approximate One-way Frequency	Time of Operation
83	Denby Dale	Team Pennine	Monday - Friday	5 services	06:44, 09:05, 11:16, 13:16, 15:38
			Saturday	5 services	09:15, 11:15, 13:15, 15:15, 17:15
			Sunday	No service	-
84	Denby Dale	Team Pennine	Monday - Friday	6 services	08:01, 10:09, 12:09, 14:31, 16:33, 18:30
			Saturday	6 services	08:08, 10:08, 12:09, 14:10, 16:07, 18:07
			Sunday	No service	-
84A	Denby Dale	Team Pennine	Monday - Friday	1 service	17:40
			Saturday	No service	-
			Sunday	No service	-
Denby Darts D1	Denby Dale	Team Pennine	Monday - Friday	30 mins	06:01-23:02
			Saturday	30 mins	07:06-23:01
			Sunday	60 mins	10:02-23:01

Table 2.15 Bus Service Summary – Highgate Lane Northbound

Service	Buses Towards	Operator	Days of Operation	Approximate One-way Frequency	Time of Operation
83	Denby Dale	Team Pennine	Monday – Friday	3 services	11:18, 13:18, 15:38
			Saturday	5 services	09:18, 11:18, 13:18, 15:18, 17:18
			Sunday	No service	-
84A	Denby Dale	Team Pennine	Monday – Friday	2 services	08:06, 10:16
			Saturday	1 service	08:06
			Sunday	No services	-
231	Wakefield	First	Monday – Friday	1 per hour	05:22-22:13
			Saturday	1 per hour	07:19- 22:48
			Sunday	1 every 2 hours	09:48- 21:48
232	Wakefield	First	Monday - Friday	1 per hour	06:40- 22:48
			Saturday	1 per hour	07:48- 22:48
			Sunday	1 every 2 hours	10:48-22:48
X41	Huddersfield	South Pennine Community Transport	Monday - Friday	60 mins	09:03-16:46
			Saturday	No service	-
			Sunday	No service	-

Table 2.16 Bus Service Summary – Highgate Lane Southbound

Service	Buses Towards	Operator	Days of Operation	Approximate One-way Frequency	Time of Operation
83	Denby Dale	Team Pennine	Monday – Friday	5 services	06:42, 09:03, 11:14, 13:14, 15:36
			Saturday	5 services	09:13, 11:13, 13:13, 15:13, 17:13
			Sunday	No service	-
84A	Denby Dale	Team Pennine	Monday – Friday	1 service	17:38
			Saturday	No service	-
			Sunday	No service	-
231	Huddersfield	First	Monday – Friday	1 per hour	05:55- 21:56
			Saturday	1 per hour	07:58- 21:56
			Sunday	7 services	09:56-21:56
232	Huddersfield	First	Monday - Friday	1 per hour	06:25-20:56
			Saturday	1 per hour	07:02-20:56
			Sunday	7 services	08:56-20:56
241	Houses Hill	South Pennine Community Transport	Monday - Friday	60 mins	08:07-16:05
			Saturday	No service	-
			Sunday	No service	-

2.8.5 As can be seen from Tables 2.11 - 2.16 the existing bus services provide regular journeys to major employment, retail, health, leisure and education facilities within the surrounding areas of Huddersfield.

2.9 RAIL SERVICES

2.9.1 The nearest Station is Stocksmoor Railway Station which is located approximately 4.7km to the south of the Site off Station Road.

2.9.2 Stocksmoor Railway Station is located on the Penistone line which provides regular connections to major destinations such as Huddersfield, Penistone, Barnsley and Sheffield. Huddersfield Station provides further direct trains to Leeds, Manchester and Hull as it is on the main Transpennine line.

2.9.3 Stocksmoor Railway Station can be accessed by bus (service 84) or a 23 minute cycle journey, and there is a bicycle store facility.

2.9.4 A summary of the available services is contained within Table 2.17.

Table 2.17 Rail Service Summary

Route	Monday to Saturday Frequency		Sunday Frequency
	Daytime	Late Evening	
Huddersfield – Sheffield (Penistone Line)	60*	60*	60

*additional peak hour services

2.9.5 A summary of typical journey times by train can be found below:

- Huddersfield - 16 minutes; and
- Sheffield – 60 minutes.

3. Development Proposals and Access Strategy

3.1 DEVELOPMENT PROPOSALS

3.1.1 The development proposals, which are illustrated on the Niemen Architects Proposed Site Layout drawing contained at Appendix A can be summarised as follows:

- Erection of 80 residential dwellings comprising of 2, 3 and 4 bedroom properties;
- Access via Hermitage Park; and
- Associated parking, landscaping and infrastructure.

3.2 PEDESTRIAN/CYCLE ACCESS

3.2.1 The existing footways along Hermitage Park will be extended into the development to tie into the proposed infrastructure. The internal layout will accommodate footways with a minimum width of 2.0m.

3.2.2 The existing public right of way (KIR/85/10), which runs through the Site will be maintained and improved.

3.3 INTERNAL LAYOUT

3.3.1 The layout has been designed to be suitable for adoption by Kirklees Council and is laid out as a traditional estate road with a carriageway width of 5.5m and 2.0m wide footways to each flank. Shared surfaces are provided with a carriageway width of 5.5m with 600mm wide hard margins. A maximum gradient of 1 in 12 has been achieved within the Site.

3.3.2 Natural traffic calming measures are provided in the form of speed controlling bends which follow the topography of the Site. Elsewhere raised tables/junctions with contrasting surfaces are provided at regular intervals to maintain a 20mph design speed within the Site.

3.3.3 S38 comments are provided within the pre application response, which have been addressed within the internal layout. The main changes are summarised below:

- A 5.5m wide carriageway and 2.0m footways are provided on the main traditional estate road;
- A 5.5m wide carriageway with 0.6m hard margins are provided on shared surfaces;
- 6.0m corner kerb radii's are provided throughout;
- Internal junctions are provided with visibility splays of 2.4m x 25m;
- Visitor parking has been provided on shared surfaces;
- Minimum 20m centreline radii have been provided; and
- The internal layout including turning heads are suitable to accommodate a KC refuse vehicle set out within Table 1 of Emergency Access, Waste Management, Servicing & Deliveries – April 2020 (version 1).

3.3.4 Internal visibility splays and vehicle swept path analysis are illustrated on drawing 13015/ATR/06 and 13015/IN/09 contained at Appendix F.

3.4 SERVICING

3.4.1 The internal layout has been designed in order to minimise refuse vehicle turning. All turning heads within the development have been designed to accommodate a refuse collection vehicle equivalent to the vehicle dimensions contained within Section 6.9 of Highway Design Guide SPD. A vehicle swept path analysis is shown on drawing 13015/ATR/06 contained at Appendix F.

3.5 VEHICULAR ACCESS STRATEGY

3.5.1 Access will be formed onto Hermitage Park, which comprises of:

- 5.5m wide carriageway;
- 2.0m footways to both flanks;
- 6.0m corner kerb radii; and
- 2.4m x 40m visibility splays.

3.5.2 The following site specific considerations are set out within the Kirklees Local Plan Allocations and Designations document in relation to HS3 and HS2.

HS3 Land to the South East Hermitage Park, Lepton (312 dwellings)

- The primary access to the site will be via adjacent site allocation HS2 to the south with a secondary access via Hermitage Park; and
- A joint masterplan is required with adjacent site HS2 to be prepared in accordance with policies in the Local Plan.

HS2 Land adjacent Penistone Road/Woodsome Road, Lepton (286 dwellings)

- Access into the site is proposed from a single access of a new link road which would connect Rowley Lane with a new roundabout junction at Penistone Road/Woodsome Road; and
- A joint masterplan is required with adjacent site HS3 to be prepared in accordance with policies in the Local Plan.

3.5.3 The two allocations combine to deliver up to 598 dwellings, and the site specific considerations within each allocation make it clear that the sites would be served from a primary access to the west via Penistone Road, with a secondary access to the east via Hermitage Park.

3.5.4 This principle complies with the Kirklees Highway Design Guide adopted in November 2019 which states that:

> *'For developments over 300 dwellings at least two points of vehicle entry/exit are preferred to maximise accessibility, connectivity and efficient operation in emergencies'.*

3.5.5 Access to a limited amount of dwellings served via Phase 1A (approximately 25% of the HS3 allocation) will be provided via a new priority T junction onto Hermitage Park. Phase 2A (see Appendix G) will facilitate a connection to HS2 to enable the remaining majority of the allocation to be served via Penistone Road.

3.5.6 Contrary to the above Site Allocation wording, Highway Development Management have confirmed within the pre application response that they only consider a development of circa 40-50

dwellings could be adequately served via Hermitage Park, however no justification is provided to explain why development from Hermitage Park should be limited to 50 additional dwellings.

3.5.7 Also contrary to the allocation, which requests both a primary and secondary point of access to serve up to 598 dwellings, HDM have stated that there should not be a vehicular connection between Penistone Road and Hermitage Park and the connection between Phase 1A and 2A should be provided for pedestrians, cyclists and emergency vehicles only.

3.5.8 Notwithstanding the above, it is clear that the Allocations and Designations document places no restrictions on the number of dwellings that can be served from Hermitage Park and given that both allocations together cater for nearly 600 dwellings, at least two points of access are required to satisfactorily serve this number of properties in accordance with the Kirklees Highway Design Guide.

3.5.9 Furthermore the Planning Inspectorates Report on the Examination of the Kirklees Publication Draft Local Plan does not reference any limitation on the number of dwellings to be served from Hermitage Park, nor does it state a cul-de-sac or emergency connection would be necessary to limit numbers. It is clear that a primary access would be formed onto Penistone Road, however a secondary access via Hermitage Park is required to deliver a development that complies with the site specific criteria and the Highways Design Guide SPD.

3.5.10 In accordance with the Site specific considerations of HS3 and HS2 a joint Lepton Framework Development Plan has been produced by Urban Wilderness which is contained at Appendix G along with the proposed phasing plan, which illustrate a primary access via Penistone Road with a secondary access via Hermitage Park. An extract of the Lepton Framework Development Plan is provided within Image 3.1.

Image 3.1 HS2 & HS3 Joint Masterplan



3.5.11 Detailed discussions over the suitability of Hermitage Park to serve the development took place within Highways during the promotion and allocation of the Site.

3.5.12 Although no specific concerns or deficiencies in relation to Hermitage Park are raised within the KC pre application response, the main points raised and discussed as part of the allocation of the Site are summarised below.

Junction Visibility

- Visibility splays of 2.4m x 40m can be achieved in both directions from the proposed access on to Hermitage Park, which are appropriate for a 30mph speed limit and exceed S38 requirements; and
- Visibility splays of 2.4m x 37m to the north and 2.4m x 33m to the south can be achieved at the Rowley Lane/Hermitage Park junction in accordance with the recorded vehicle speeds (Table 2.2) on the approaches to the junction.

3.5.13 Drawing 15112/IN/02 rev D contained at Appendix H illustrates the level of visibility at both junctions referenced above.

3.5.14 The level of visibility provided at each of the above junctions complies with the recommended X and Y distances contained with Manual for Streets and the Highway Design Guide SPD.

3.5.15 It can therefore be concluded that appropriate visibility is provided at the proposed Site access and at the primary access on to the external highway network.

Geometry

- Hermitage Park is laid out as a traditional estate road with a 5.5m wide carriageway and 1.8m wide footways to both flanks;
- The width of the carriageway complies with the Highway Design Guide SPD; and
- Table 1 'Summary of Residential Street Types' (Street Type B) of the Highway Design Guide SPD states footways should be 2.0m in width. Guidance contained within Inclusive Mobility states that a minimum width of 2.0m is preferred, however a 1.5m wide footway is sufficient to enable a pedestrian and a wheelchair user/pram to pass. The existing 1.8m wide footways are therefore considered appropriate to safely and satisfactorily serve the proposed development.

3.5.16 No collisions have been recorded along Hermitage park over a 22 year period. It can therefore be concluded that Hermitage Park is of sufficient width to serve the proposed development.

Gradient

- The gradient of Hermitage Park varies over its length and has an average gradient of 10.2% (1 in 10) between Rowley Lane and the Site frontage. The first 10m accommodates a gradient of 8.1% (1 in 12) providing a 'level' platform at the give way position where Hermitage Park meets Rowley Lane;
- The Kirklees Highway Design Guide states that a gradient no steeper than 1 in 10 (10%) is preferred;

- Lepton and the Site itself include level challenges, however despite this and the existing gradient, Hermitage Park has been identified as the secondary point of access to serve up to 598 dwellings from HS2 and HS3;
- Although it is acknowledged that sections of Hermitage Park do not fully comply with the Council's current design standards, its average gradient complies with the Kirklees Highway Design Guide and the Site has been allocated for residential purposes. Furthermore, there is no evidence to suggest that the gradient of Hermitage Park is in any way contributing to a highway safety issue that would be exacerbated by the development;
- In order to demonstrate this a collision search has been undertaken over an extensive 22 year period from 1999 using Crashmap.co.uk. This extended search confirms that only a single collision has occurred along the full length of Hermitage Park which involved a pedestrian crossing at the Rowley Lane junction;
- No collisions have been recorded relating to loss of control, skidding or junction overshooting, which would typically be associated with roads with steeper gradients. Therefore, there is no local or site specific evidence to suggest that this road or its junction with Rowley Lane, which both have excellent safety records, would not continue to operate in a safe manner;
- Highways Development Management has confirmed up to 50 dwellings can be safely accommodated, taking into consideration the gradient of Hermitage Park. It is therefore illogical and without justification to suggest that up to 50 dwellings could be safely accommodated and would be acceptable, but a greater number would result in a severe or unacceptable safety issue;
- It should also be noted that parts of Rowley Lane are also of a comparable gradient to Hermitage Park. Therefore, both vehicular, pedestrian and cycle traffic from both HS2 and HS3 will be required to travel along steeper than recommended gradients even if the number of dwellings along Hermitage Park were restricted; and
- Clearly if Hermitage Park was not of a suitable standard to safely accommodate further development, it would not have been allocated for residential purposes.

On-street Parking

3.5.17 The traffic surveys undertaken at the Rowley Lane/Hermitage Park junction identified those trips associated with school drop off. The raw data is contained at Appendix C and is summarised within Table 3.1.

Table 3.1 Trips Associated with School Drop Off

Movement	AM Peak	PM Peak
Left into Hermitage Park	1	0
Right into Hermitage Park	10	0
Left out of Hermitage Park	8	0
Right out of Hermitage Park	3	0

3.5.18 The traffic survey undertaken demonstrates that there are a total of 11 vehicles in the AM peak hour associated with school drop off i.e. in the table above they are counted twice as an arrival

and then again as a departure in a short period of time. This number of vehicles over a period of 30 minutes (the majority of movements occur between 8:30am and 9:00am) is not considered to be material and is certainly not 'significant' at 1 vehicle every 2.7 minutes.

3.5.19 There are no parked cars associated with the school during the network/development PM peak hour as the school activity occurs prior to the network PM peak.

3.5.20 Image 3.2 below shows the peak number of vehicles parking around the Hermitage Park junction at 8:51am on the day of the survey.

Image 3.2 Rowley Lane/Hermitage Park – School Parking



3.5.21 Traffic Data Collection who undertook the independent survey has confirmed that this parking cleared at 9am. Therefore, it is clear that this is an existing occurrence in a very isolated location, over a short period of time. The number of vehicles parking in this location will not be exacerbated by the proposed development, given that the development is well within suitable walking distance.

3.5.22 Highways Development Management have requested that the applicant funds waiting restrictions and a supporting traffic regulation order in the vicinity of the junction in the form of double yellow lines. A financial contribution can be secured by S106 legal agreement.

3.5.23 It is therefore concluded that Hermitage Park is sufficient in geometric terms to serve the proposed development and the use of Hermitage Park would not result in an unacceptable impact on highway safety.

3.6 CONSTRUCTION ACCESS STRATEGY

3.6.1 The effect of the proposed development construction traffic on the surrounding network is considered low and will be temporary during the short term.

3.6.2 For residential developments, the traffic generated during the construction phase would typically be significantly less than the traffic generated by the development when fully operational, particularly during peak periods.

3.6.3 A Construction Management Plan (CMP) will be secured by planning condition, which will address any potential impacts arising from the construction of the development and ensure that each phase operates efficiently and safely. The CMP will address construction hours of operation, wheel washing requirements, construction workers parking and access routes to/from the Site.

4. Site Accessibility

4.1 INTRODUCTION

4.1.1 This chapter describes the accessibility of the Site by non-car modes and sets out how the measures proposed in Chapter 3 and the Travel Plan (TP) will further enhance accessibility and minimise trips by car.

4.2 ACCESSIBILITY ON FOOT

4.2.1 The residential design guide "Manual for Streets" (MfS) advises that *"walkable neighbourhoods are typically characterised by having a range of facilities within ten minutes (up to about 800m) walking distance of residential areas..."* (ref para 4.4.1). However, this is not regarded as an upper limit in MfS and reference is also made to walking offering *"the greatest potential to replace short car trips, particularly those under 2km"*.

4.2.2 The acceptability of walking trips up to 2km (an approximate 25 minute walk time) is also supported in the IHT document 'Providing for Journeys on Foot' as shown in Table 4.1.

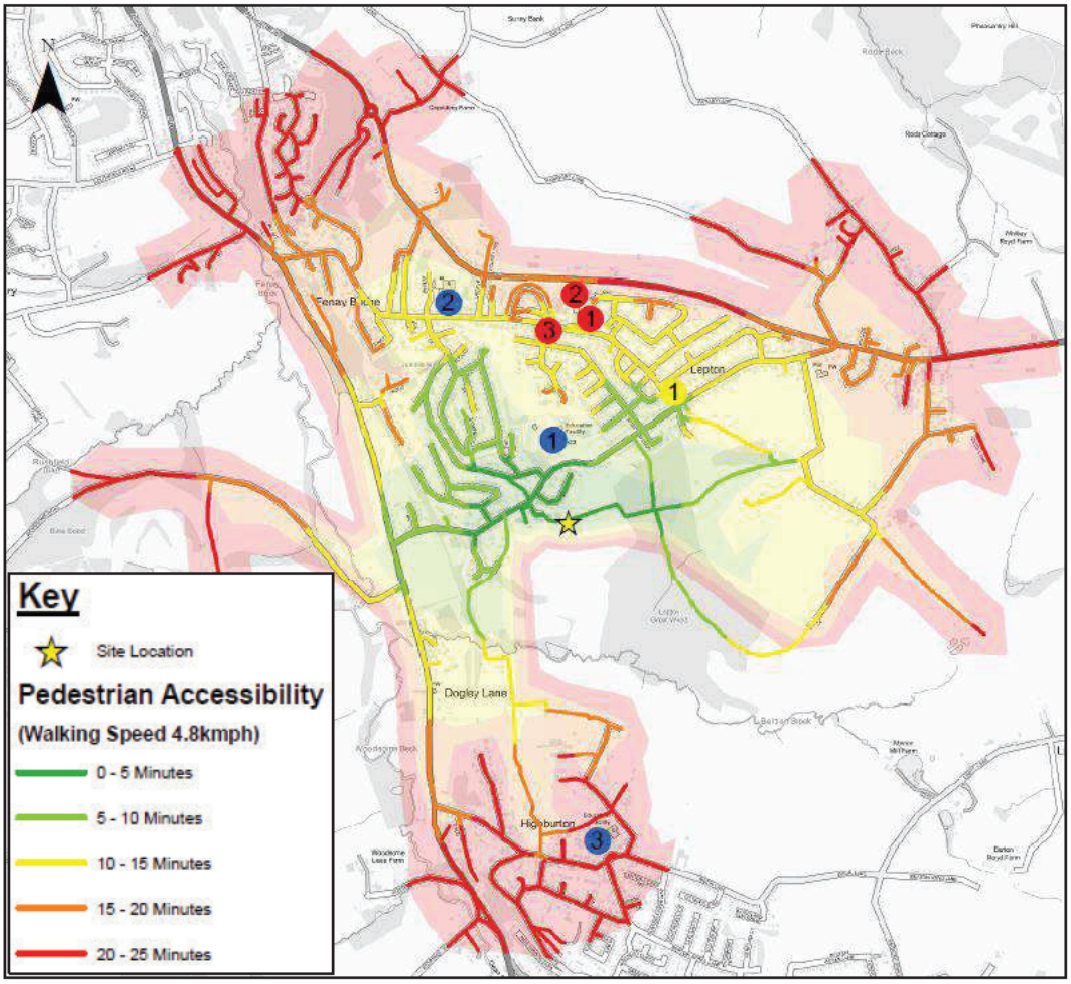
Table 4.1 Accessibility by Foot

	Town Centres (m)	School/Work (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1,000	800
Preferred Maximum	800	2,000	1,200

Source – Table 3.2 'Guidelines for Providing for Journey on Foot' published by IHT

4.2.3 Using GIS Network Analyst software typical walk times (up to 25 mins) from the proposed Site centre are shown on Figure 3. An extract of Figure 3 is provided within Image 4.1.

Image 4.1 Pedestrian Accessibility



4.2.4 Figure 3 (Image 4.1) demonstrates that the Site is within walking distance of the centre of both Lepton and Fenay Bridge.

4.2.5 The following key facilities can be accessed on foot:

- Shops and facilities (including Lepton GP surgery and Pharmacy) within Lepton can be walked within 14 minutes;
- Rowley Hill Primary school can be walked in under 5 minutes;
- Lepton CE Junior and Infant School can be walked in 15 minutes
- Bus stops along Rowley Lane can be walked in under 5 minutes;
- Bus stops along the A629 Penistone Road can be walked within 10 minutes;
- Bus stops at Highgate Lane can be walked within 10 minutes; and
- Bus stops along the A642 Wakefield can be walked within 20 minutes.

4.2.6 The existence of internal links, pedestrian routes and public rights of way will positively influence trips on foot.

4.2.7 It is therefore concluded that the Site is accessible on foot.

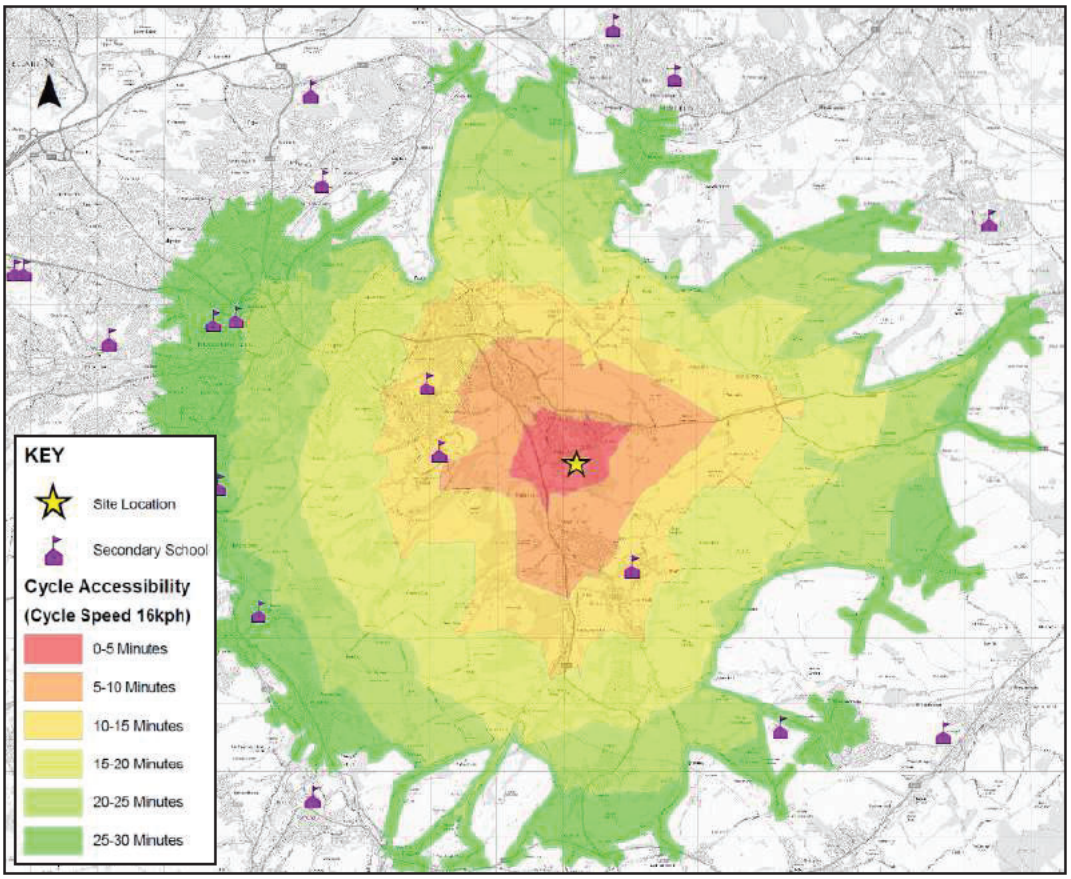
4.3 ACCESSIBILITY BY CYCLE

4.3.1 An acceptable and comfortable distance for general cycling trips is considered to be up to 5km as referred to in Local Transport Note 2/08 (published by the Department for Transport (DfT)). However, the same guidance also refers to commuting cycle trips up to 8km.

4.3.2 Whilst LTN 1/20, Cycle Infrastructure Design, July 2020, has replaced LTN 2/08 and has resulted in it being withdrawn, LTN 1/20 does not contain definitive recommended maximum cycling distances and therefore there is no reason to suggest that these distances are not still applicable.

4.3.3 Using GIS Network Analyst software typical cycle times (with 20 mins approximating to just over a 5km distance) from the Site are shown on Figure 4 an extract of which is provided within Image 4.2.

Image 4.2 Cycle Accessibility



4.3.4 Figure 4 (Image 4.2) shows that:

- Local schools including Rowley Hill Primary and Lepton CE Junior and Infant School can be cycled within 5 minutes;
- Retail and employment opportunities within Kirkburton can be cycled within 15 minutes;
- Kirkburton Middle School is located within a 15 minute cycle journey;
- Southgate Secondary School is located within a 25 minute cycle journey;
- Stocksmoor Railway Station can be cycled within 25 minutes; and

- Retail and employment opportunities within Huddersfield and surrounding places such as Almondbury and Kirkheaton can be reached within a 25 minute cycle ride.

4.3.5 It is therefore concluded that the Site is accessible by bicycle.

4.4 ACCESSIBILITY BY BUS

4.4.1 The centre of the development is located some 300m of the bus stops along Rowley Lane.

4.4.2 Further bus stops offering additional services are situated within a 10 minute walk along both Penistone Road and Highgate Lane. The existing routes and service times are shown on timetable information provided in Chapter 2.

4.4.3 Indicative bus journey times to local destinations are summarised within Table 4.2 below:

Table 4.2 Indicative Journey Times

Destination	Estimated Journey Time
Huddersfield	28 mins
Denby Dale	33 mins
Morrison's food store Waterloo	13 mins

4.4.4 It is therefore concluded that the Site is accessible by bus.

4.5 TRAVEL PLAN

4.5.1 In line with both local and national guidance a Travel Plan (TP) has been produced which includes a package of measures tailored to the needs of the Site aimed at promoting greener, cleaner travel choices and reducing the reliance on the car. The plan involves the development of a set of mechanisms, initiatives and targets that together can enable a development to reduce the impact of travel and transport on the environment, whilst also achieving a number of other benefits for residents i.e. health and financial.

4.5.2 A TP provides a means of promoting sustainable travel behaviour by the occupiers of a development. The plan will adopt a package of measures that aim to achieve target reductions in the level of car trips generated by the development, by facilitating access to other forms of transport and by reducing the need to travel in the first instance.

4.6 ACCESSIBILITY SUMMARY

4.6.1 It is concluded that the proposed development is provided with appropriate accessibility by foot, cycle and public transport and as such is in a sustainable location.

5. Traffic Generation and Distribution

5.1 INTRODUCTION

5.1.1 This chapter sets out the trip generation and distribution methodologies associated with the proposed development.

5.2 VEHICULAR TRIP RATES

5.2.1 Vehicular trip rates calculated using the TRICS database were presented within the Optima Site Access Appraisal prepared in January 2016 to support the allocation of the Site for residential use. The trip rates presented within that document are summarised within Table 5.1.

Table 5.1 Vehicular Trip Rates – TRICS

Time Period	Total Vehicular Trip Rates (per dwelling)		
	Arrivals	Departures	Total
AM Peak	0.123	0.387	0.510
PM Peak	0.0299	0.144	0.443

5.2.2 Following Highways Development Management feedback, a sensitivity test was undertaken using a bespoke trip rate calculated from the Hermitage Park traffic survey. A summary of the residential traffic movements at the Rowley Lane/Hermitage Park junction are summarised within Table 5.2.

Table 5.2 Vehicular Trip Rates - Surveyed Vehicles Arriving/Departing Hermitage Park

Time Period	Hermitage Park Traffic Movements		
	Arrivals	Departures	Total
AM Peak	3	9	12
PM Peak	7	4	13

5.2.3 In order to calculate a bespoke trip rate, the surveyed trips contained in Table 5.2 are divided by 20 (the number of dwellings served via Hermitage Park). The bespoke trip rates are shown within Table 5.3, which have been accepted by HDM.

Table 5.3 Agreed Hermitage Park Trip Rates

Time Period	Hermitage Park Trip Rate		
	Arrivals	Departures	Total
AM Peak	0.150	0.450	0.600
PM Peak	0.350	0.200	0.550

5.3 PROPOSED VEHICULAR TRAFFIC GENERATION

5.3.1 The vehicular traffic generation associated with the proposal for 80 residential dwellings, applying the bespoke trip rates contained within Table 5.3 are shown within Table 5.4.

Table 5.4 Proposed Traffic Generation

Time Period	Total Vehicular Traffic Generation (80 dwellings)		
	Arrivals	Departures	Total
AM Peak	12	36	48
PM Peak	28	16	44

5.3.2 As can be seen from Table 5.4, 80 residential dwellings are predicted to generate 48 two-way trips during the AM peak hour and 44 two-way trips during the PM peak hour.

5.3.3 For comparison purposes, the level of trips generated by 50 dwellings, which HDM have confirmed is acceptable is set out within Table 5.5.

Table 5.5 Acceptable Traffic Generation

Time Period	Total Vehicular Traffic Generation (50 dwellings)		
	Arrivals	Departures	Total
AM Peak	8	23	31
PM Peak	18	10	28

5.3.4 The NET increase between the accepted quantum of development (50 dwellings) and the proposed quantum of development (80 dwellings) is set out within Table 5.6.

Table 5.6 NET Traffic Generation

Time Period	NET Increase in Vehicular Traffic Generation		
	Arrivals	Departures	Total
AM Peak	+4	+13	+17
PM Peak	+10	+6	+16

5.3.5 Table 5.6 demonstrates that the proposed development is predicted to generate just 16-17 two way trips above the level that HDM deem to be acceptable and safe. This equates to 1 additional vehicle every 3.5 minutes on average, which is highly unlikely to be perceived and cannot be considered to result in an additional, unacceptable highway safety concern or severe traffic impact (see Chapter 6).

5.4 PROPOSED MULTI MODAL TRAFFIC GENERATION

5.4.1 In order to establish the trip generations by mode for the development the most up to date Census data (2011) has been obtained from www.nomisweb.co.uk.

5.4.2 The development is located within the boundary of super output area (mid layer) (MSOA) Kirklees 046 as illustrated in Image 5.1.

Image 5.1 Kirklees 046 MSOA



5.4.3 The output area is considered to represent similar characteristics to the Site in terms of accessibility by all modes. As such the mode share of the selected output area is the most appropriate way to predict the proposed mode split. The Method of Travel to Work data from the 2011 Census is contained at Appendix I with the mode share for Kirklees 046 MSOA summarised in Table 5.7.

Table 5.7 Summary of Census Mode Splits – Kirklees 046 MSOA

Mode	Total Residents	Trips %
Work from home	0	0.0%
Rail	44	1.7%
Bus	185	7.1%
Taxi	8	0.3%
Motorcycle	15	0.6%
Driving a car or van	2,050	78.8%
Passenger	154	5.9%
Cycle	12	0.5%
Walk	132	5.1%
Other	2	0.1%
Total	2,602	100%

5.4.4 Having established the proposed vehicular trip rates it is possible to calculate the number of trips by other modes by factoring the vehicular arrivals and departures by the baseline modal split values shown in Table 5.7. The resulting numbers of development trips by mode are shown in Table 5.8 for the AM and PM peak hours respectively.

Table 5.8 Proposed Multi Modal Trip Generation

	AM Peak Hour Trip Generation by Mode			PM Peak Hour Trip Generation by Mode		
Trip Type	**Arrivals**	**Departures**	**Total**	**Arrivals**	**Departures**	**Total**
Work from home	0	0	0	0	0	0
Rail	0	1	1	1	0	1
Bus	1	3	4	3	1	4
Taxi	0	0	0	0	0	0
Motorcycle	0	0	0	0	0	0
Driving a car or van	12	36	48	28	16	44
Passenger	1	3	4	2	1	3
Cycle	0	0	0	0	0	0
Walk	1	2	3	2	1	3
Other	0	0	0	0	0	0
Total	**15**	**46**	**61**	**36**	**20**	**56**

5.5 TRAFFIC DISTRIBUTION

5.5.1 Kirklees Council has provided details of a population based gravity model prepared as part of the Local Plan studies based on 2011 Census data. This distribution has been applied within the Transport Assessment prepared for the adjacent HS2 allocation (application 2020/60/92307/W) and is summarised below:

- 32% to the east via Rowley Lane;
- 50% to the north via Penistone Road;
- 7% to the west via Woodsome Road; and
- 11%to the south via Penistone Road.

5.5.2 A separate distribution has been undertaken as part of this Transport Assessment using Census journey to work information using the Kirklees 046 Middle Super Output Area. A copy of this distribution is contained at Appendix J and is summarised below.

- 35% to the east via Rowley Lane;
- 50% to the north via Penistone Road;
- 6% to the west via Woodsome Road; and
- 9%to the south via Penistone Road.

5.5.3 As can be seen the distribution exercise compares well to the Kirklees figures. Therefore for consistency with HS2, the Kirklees distribution will be applied for the purpose of this assessment, as shown on Figure 110. The proposed distribution has been agreed by HDM.

5.5.4 Development trips distributed on the local highway network are shown on Figures 111 and 112.

6. Identification of Impacts

6.1 INTRODUCTION

6.1.1 This chapter describes the impact of the development trips on the local highway network and identifies if any potential mitigation works are required.

6.2 EXISTING TRAFFIC FLOW DATA

6.2.1 The traffic surveys identified the following existing weekday peak hour periods:

- Weekday AM Peak – 07:45 to 08:45; and
- Weekday PM Peak – 17:00 to 18:00.

6.2.2 The traffic survey flows for these periods are shown on Figures 100 and 101 for the morning and evening peak hours respectively and will be used to validate the junction models against the recorded queue lengths.

6.3 COMMITTED DEVELOPMENT & TRAFFIC GROWTH

6.3.1 A review of KC's planning portal has been conducted to identify whether any major developments within the vicinity of the study area have been granted planning permission within the past 5 years in order accurately model design year traffic levels.

6.3.2 The review concluded that there are no significant consented developments within the vicinity of the agreed study area that would need to be considered in addition to TEMPro growth.

6.3.3 An allowance has however been made of application 2020/60/92307/W submitted for Phase 1B (75 dwellings) of HS2 and also application 2020/62/90725/W (based on 72 dwellings) on HS1 (Land to the north west of Woodsome Drive, Fenay Bridge).

6.3.4 Traffic flows associated with residential allocations HS1 & HS2 are provided within Figures 104 to 107. Traffic flows beyond Penistone Road/Rowley Lane have been distributed on the wider highway network applying the distribution exercise described in Section 5.5.

6.3.5 Assuming a build out rate of 35 dwellings per annum the proposed development could be completed and occupied within approximately 2 years (2024), however for robustness a Base Year of 2027 (5 years) has been assumed.

6.3.6 Traffic growth rates, between 2019 and 2027 have been obtained from TEMPro v7.2c for the Kirklees 046 MSOA for Principal Roads. The following growth factors have been applied:

Kirklees 046 – Principal Roads

- 2019-2027 AM growth rate of 1.0532 (5.3%); and
- 2019-2027 PM growth rate of 1.0512 (5.1%).

6.3.7 The default base and future housing assumptions within TEMPro V7.2c are set out within Table 6.1.

Table 6.1 TEMPro Housing & Job Assumptions

Kirklees 046	Base 2019	Future 2027	Net
Housing	2,909	3,062	+153
Jobs	2,086	2,125	+39

6.3.8 As can be seen, the default TEMPro assumptions allow for 153 additional houses and 39 additional jobs between 2019 and 2027 within Kirklees 046. Since housing allocations HS1, HS2 and HS3 significantly exceed this number and are allowed for within the capacity assessments, the application of TEMPro growth in addition to the specific allowance for HS1, HS2 represents a robust assessment.

6.3.9 Applying the identified growth rates to the 2019 survey flows shown in Figures 100 and 101 produce the Growth 2027 traffic flows shown on Figures 102 and 103.

6.3.10 Base 2027 traffic flows (incorporating growth and housing allocations) are shown on Figures 108 and 109.

6.4 SCOPE OF JUNCTION ASSESSSMENT

6.4.1 The following study area was highlighted by Highways Development Management during site allocation discussions:

- Junction 1: Rowley Lane/Hermitage Park – T junction;
- Junction 2: A629 Penistone Road/Rowley Lane – T junction;
- Junction 3: Rowley Lane/Highgate Lane – mini roundabout; and
- Junction 4: A642 Wakefield Road/Rowley Lane/Knotty Lane – crossroads.

6.4.2 In order to identify whether more detailed analysis and capacity assessments are required a materiality assessment has been undertaken as summarised within Table 6.2.

6.4.3 The materiality assessment summarises the total two-way development trips generated at each junction and compares these against the 2027 Base flows. A percentage increase in traffic at the junction has then been calculated based on the additional development traffic.

Table 6.2 Junction Materiality Assessment (PCUs) – 80 dwellings

Ref	Junction Name	AM Dev Trips	2027 AM Base Flows	% Increase	PM Dev Trips	2027 PM Base Flows	% Increase
1	**Rowley Lane/Hermitage Park**	**48**	**615**	**8%**	**44**	**571**	**8%**
2	**A629 Penistone Road/Rowley Lane**	**33**	**2,198**	**1%**	**30**	**2,300**	**1%**
3	Rowley Lane/Highgate Lane	15	652	2%	14	694	2%
4	A642 Wakefield Road/Rowley Lane/Knotty Lane	14	1,564	1%	13	1,653	1%

6.4.4 The Department for Transport document 'Guidance on Transport Assessment' (now withdrawn) suggested that a development traffic generation of 30 two-way trips represented an appropriate threshold figure above which further assessment may be required but below which the impact could be considered non-material. Whilst the Government's current NPPG does not specifically refer to 30 two-way trips this remains a threshold which is typically applied within the industry by highway professionals, local authorities and Highways England.

6.4.5 As can be seen from Table 6.2, the development is predicted to generate less than 30 two-way vehicle trips at Junctions 3 and 4 during both the AM and PM peak hours. It can therefore be concluded that the proposed development will not result in either a material or severe impact on the operation at either of these junctions and further capacity analysis or mitigation is not required.

6.4.6 The development will exceed the 30 two-way trip threshold at the Rowley Lane/Hermitage Park junction and will slightly exceed this threshold at the A629 Penistone Road/Rowley Lane

junction during the AM peak only (although the level of traffic increase remains low at just 1%). As such junction capacity assessments will be undertaken at Junctions 1 and 2 as detailed within Chapter 7.

6.5 DESIGN TRAFFIC FLOWS

6.5.1 Adding the proposed development trips described in Chapter 5 to the Base 2027 traffic flows produces the Design 2027 traffic flows and these are shown diagrammatically on Figures 113 and 114 for the morning and evening peak hours respectfully.

6.6 JUNCTION CAPACITY ASSESSMENT

6.6.1 This section describes the junction capacity assessments which have been undertaken. Full software output data can be found at Appendix K.

Junction 1: Rowley Lane/Hermitage Park

6.6.2 The existing layout of the Rowley Lane/Hermitage Park junction has been modelled using the PICADY function in JUNCTIONS 9 software. Dimensions have been based upon on site measurements which are summarised on drawing 13015/IN/07 contained at Appendix L.

6.6.3 The results of the 2019 Survey, 2027 Base and 2027 Design scenarios are summarised in Table 6.3.

Table 6.3 Rowley Lane/Hermitage Park – Modelling Summary

Arm/Movement	AM (07:45-08:45) Peak			PM (17:00-18:00) Peak		
	RFC	Q (PCU)	Observed Queue	RFC	Q (PCU)	Observed Queue
2019 Survey						
Hermitage Park LT	0.00	0.0	0	0.00	0.0	0
Hermitage Park RT	0.01	0.0	0	0.01	0.0	0
Rowley Lane	0.00	0.0	0	0.01	0.0	0
2027 Base						
Hermitage Park LT	0.00	0.0	-	0.00	0.0	-
Hermitage Park RT	0.01	0.0	-	0.01	0.0	-
Rowley Lane	0.00	0.0	-	0.01	0.0	-
2027 Design						
Hermitage Park LT	0.05	0.1	-	0.02	0.0	-
Hermitage Park RT	0.04	0.0	-	0.02	0.0	-
Rowley Lane	0.02	0.0	-	0.05	0.1	-

6.6.4 A Ratio of Flow to Capacity (RFC) value below 0.85 indicates that a junction or arm operates within its desirable practical capacity. An RFC value between 0.85 and 1.00 indicates that there may be occasions during the period modelled when queues will develop and delays will occur. An RFC value greater than 1.00 indicates that the junction or arm operates beyond its theoretical capacity and increased queuing and delay will be experienced.

6.6.5 The results in Table 6.3 demonstrate that the junction operates with significant spare capacity at present during the AM and PM peak hours with no queuing across all arms of the junction in both peak hours.

6.6.6 The addition of background traffic growth and housing allocations has minimal effect on the operation of the junction, which continues to operate well within capacity in both peak hours.

6.6.7 The addition of the development traffic has no material impact on the operation of the junction. A maximum RFC value of 0.05 is predicted in each peak hour. The junction will continue to operate with significant spare capacity and no mitigation is required to accommodate the development of 80 dwellings.

6.6.8 Based on the above analysis junction capacity is not a factor in limiting development served by Hermitage Park to a maximum of 50 dwellings.

Junction 2: A629 Penistone Road/Rowley Lane

6.6.9 The existing layout of the A629 Penistone Road/Rowley Lane junction has been modelled using the PICADY function in JUNCTIONS 9 software. Dimensions have been based upon on site measurements which are summarised on drawing 13015/IN/06 contained at Appendix M.

6.6.10 The results of the 2019 Survey, 2027 Base and 2027 Design scenarios are summarised in Table 6.4.

Table 6.4 A629 Penistone Road/Rowley Lane – Modelling Summary

Arm/Movement	AM (07:45-08:45) Peak			PM (17:00-18:00) Peak		
	RFC	Q (PCU)	Observed Queue	RFC	Q (PCU)	Observed Queue
2019 Survey						
Rowley Lane LT	0.61	1.5	2	0.81	3.6	4
Rowley Lane RT	0.27	0.4	2	0.65	1.5	4
A629 Penistone Road	0.53	1.1	*	0.50	1.0	0
2027 Base						
Rowley Lane LT	0.76	2.9	-	1.19	27.9	-
Rowley Lane RT	0.58	1.2	-	1.11	6.5	-
A629 Penistone Road	0.58	1.3	-	0.57	1.3	-
2027 Design						
Rowley Lane LT	0.99	10.0	-	1.30	39.8	-
Rowley Lane RT	0.91	3.9	-	1.24	9.4	-
A629 Penistone Road	0.58	1.4	-	0.58	1.4	-

*observed queue length impacted by northbound bus stop during AM peak

6.6.11 The results in Table 6.4 show that the junction currently operates within the desired capacity of 0.85 in both the AM & PM peak hours.

6.6.12 With the addition of traffic growth and committed development the junction is predicted to continue to operate within capacity in the AM Peak, however the performance of Rowley Lane will deteriorate and RFC values of 1.11 to 1.19 are predicted during the PM peak hour.

6.6.13 When adding the development traffic the performance of Rowley Lane deteriorates during the AM peak with a maximum RFC value of 0.99 during the AM and 1.30 during the PM.

6.6.14 It should be noted that the junction capacity assessments undertaken have been setup using a 'HOURLY' (ODTAB) profile in JUNCTIONS 9 which incorporates a 12.5% surge within the analysis. In addition, robust assumptions on both trip rates and base traffic flows are incorporated in the assessments, and as such the RFC values quoted represent an absolute worst-case scenario.

6.6.15 Notwithstanding the above, a mitigation scheme is proposed which includes the widening of Rowley Lane within the adopted highway to provide a two-lane approach and more effectively segregate left turn and right turn movements at the junction to improve junction performance, reduce blocking and minimise delay.

6.6.16 The proposed improvements compliment the widening works along Rowley Lane to be delivered by HS2 to allow this first phase to come forward in advance of the wider connection and proposed roundabout onto Penistone Road.

6.6.17 The proposed mitigation scheme is shown on drawing 13015/GA/01 contained at Appendix N and the results of the updated PICADY assessment are summarised within Table 6.5.

Table 6.5 A629 Penistone Road/Rowley Lane – Design 2027 with Mitigation

Arm/Movement	AM Peak (07:45-08:45)		PM Peak (17:00-18:00)	
	RFC	Q (PCU)	RFC	Q (PCU)
Rowley Lane LT	0.75	2.8	0.94	7.6
Rowley Lane RT	0.58	1.3	0.87	3.5
A629 Penistone Road	0.58	1.4	0.58	1.4

6.6.18 It can be seen from Table 6.5 that the mitigation scheme significantly improves the operation of the junction, which will perform better than the Base 2027 scenario without the development in place. Maximum RFC values reduce to 0.75 during the AM peak (0.76 during the base scenario without mitigation) and 0.94 during the PM peak (1.30 during the base scenario without mitigation). Overall queuing at the junction is also improved over the Base 2027 levels during the worst case PM peak hour.

6.6.19 The impact at this junction is fully mitigated by the proposed improvements, which enhances the operation of the junction when compared against Base 2027 levels, even when applying robust trip generation and growth assumptions.

7. Summary and Conclusions

7.1.1 This Transport Assessment has been undertaken by Optima to consider the highways and transportation issues raised by a proposed housing development on land off Hermitage Park, Lepton. This TA supports a full planning application made on behalf of KCS Developments Ltd.

7.1.2 The development proposals can be summarised as follows:

- Erection of 80 residential dwellings comprising of 2, 3 and 4 bedroom properties;
- Access via Hermitage Park; and
- Associated parking, landscaping and infrastructure.

7.1.3 The report has identified what measures will be taken to deal with the anticipated impacts of the scheme proposals and has defined what improvements and initiatives will be implemented to improve accessibility to the Site by all modes of travel.

7.1.4 This report has provided a commentary on the existing Site and its conditions. It has demonstrated that the Site is in a sustainable location that is accessible with appropriate public transport and pedestrian links. This provision provides future residents with opportunities to travel via alternative modes of transport and minimise trips by the private car.

7.1.5 A review of the personal injury collision data has been undertaken for the study area, which has shown that there are no specific road safety concerns.

7.1.6 The Kirklees Local Plan Allocations and Designations document states that access to HS3 and HS2 shall be formed from a primary access onto Penistone Road with a secondary access onto Hermitage Park.

7.1.7 HS3 and HS2 combine to deliver up to 598 dwellings. In accordance with the Kirklees Highway Design Guide at least two points of access would be required.

7.1.8 Access to a limited amount of dwellings served via Phase 1A (approximately 25% of the HS3 allocation) will be provided via a new priority T junction onto Hermitage Park. Phase 2A will facilitate a connection to HS2 to enable the remaining majority of the site to be served via Penistone Road.

7.1.9 No restriction is placed on the number of dwellings to be served from Hermitage Park within the Allocations and Designation document nor the Planning Inspectorates Report on the Kirklees Publication Draft Local Plan.

7.1.10 It has been demonstrated that Hermitage Park is of a suitable geometric standard to serve the development and following an extensive review of collision data, there is no local or site specific evidence to suggest that Hermitage Park, which has an excellent safety record would not continue to operate in a safe manner.

7.1.11 The predicted development trip generations have been undertaken based on a bespoke trip rate of Hermitage Park. The proposed trip rates have been agreed with Highways Development Management and generated traffic used for assessment purposes are therefore considered to be representative and robust.

7.1.12 Assessments of the off-site junctions within the study area confirm that the Rowley Lane/Hermitage Park junction can comfortably accommodate the proposed development at the design year of 2027.

7.1.13 Assessments of the Penistone Road/Rowley Lane confirm that the junction will operate over capacity in the base 2027 scenario. The addition of the development traffic will deteriorate the

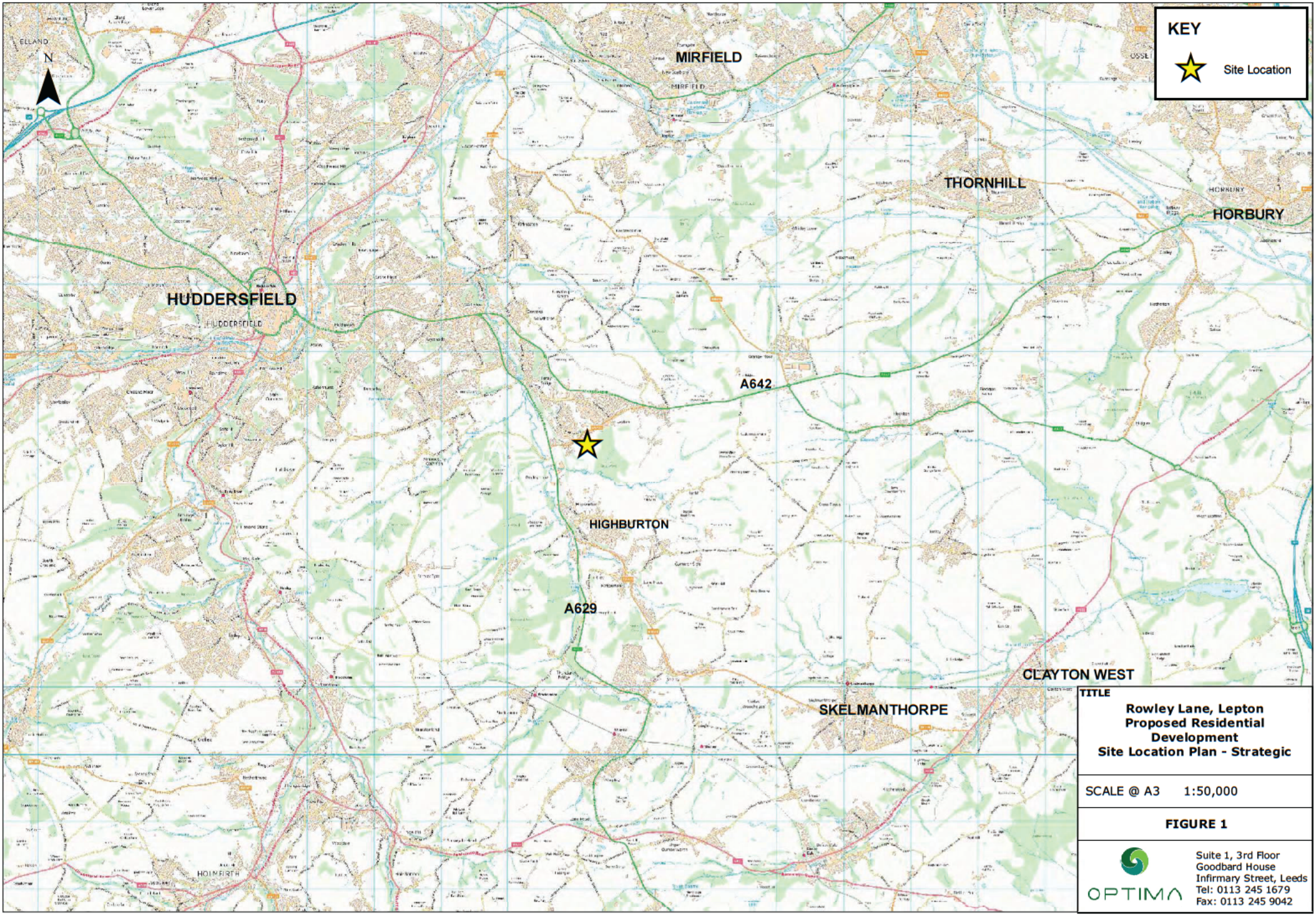
performance of the junction, therefore the junction will be improved in order to proportionately mitigate the impact of the development.

7.1.14 The mitigation scheme includes widening of Rowley Lane to create two approach lanes. The junction will perform better than Base 2027 levels with the improvements in place.

7.1.15 The development will not result in a material or severe impact at the Rowley Lane/Highgate Lane or Wakefield Road/Rowley Lane/Knotty Lane junctions, with traffic volumes below 30 two-way trips during both the AM and PM peak hours.

7.1.16 From the extensive work undertaken it is concluded that there are no reasons on highways or transport grounds why the proposed development should not be granted planning permission.

Figures



Path: O:\Rowley Lane, Lepton\DRAWINGS\GIS\ARCEDITOR\Site Location - Strategic.mxd

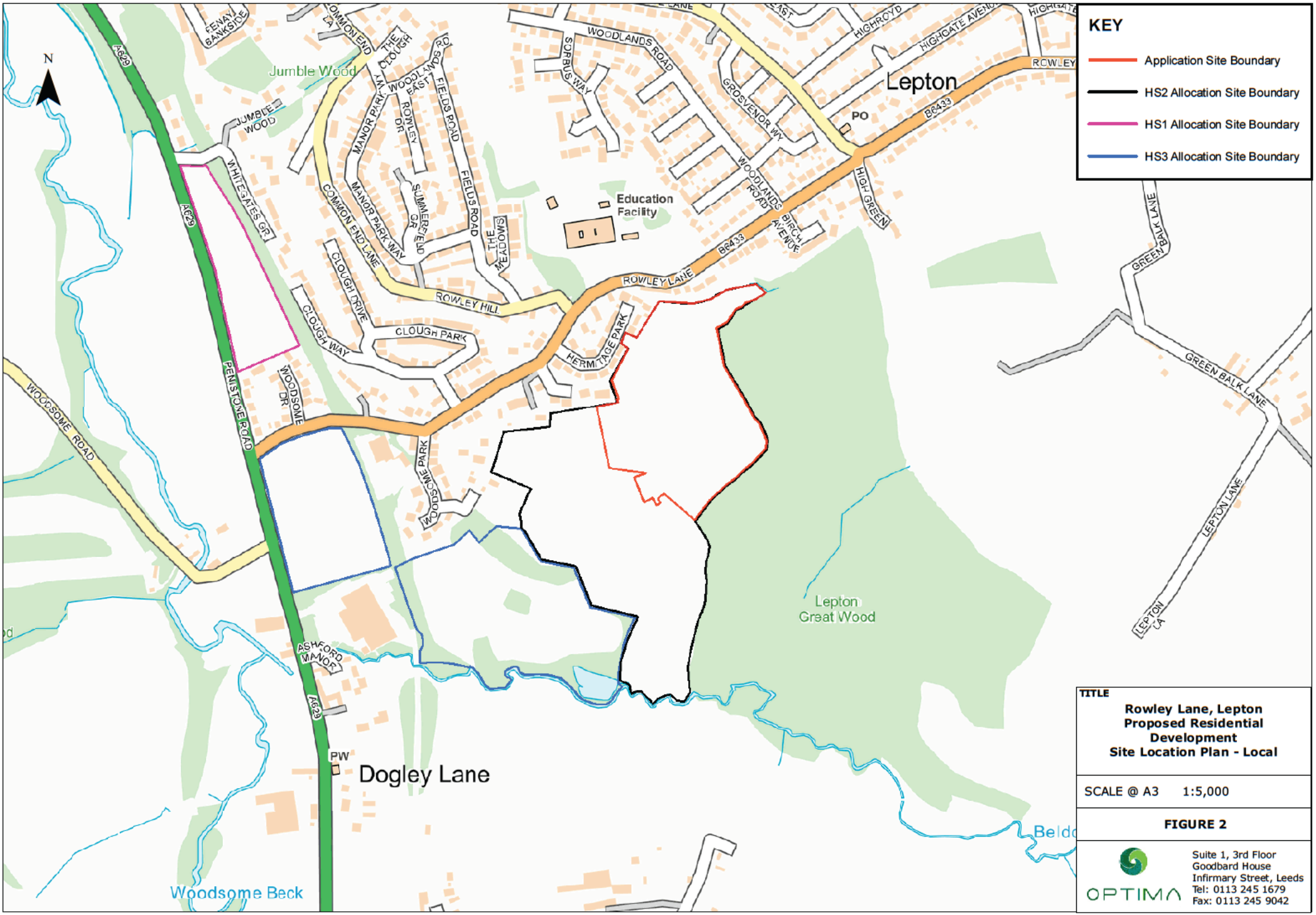
TITLE

Rowley Lane, Lepton
Proposed Residential Development
Site Location Plan - Strategic

SCALE @ A3 1:50,000

FIGURE 1

OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street, Leeds
Tel: 0113 245 1679
Fax: 0113 245 9042



TITLE

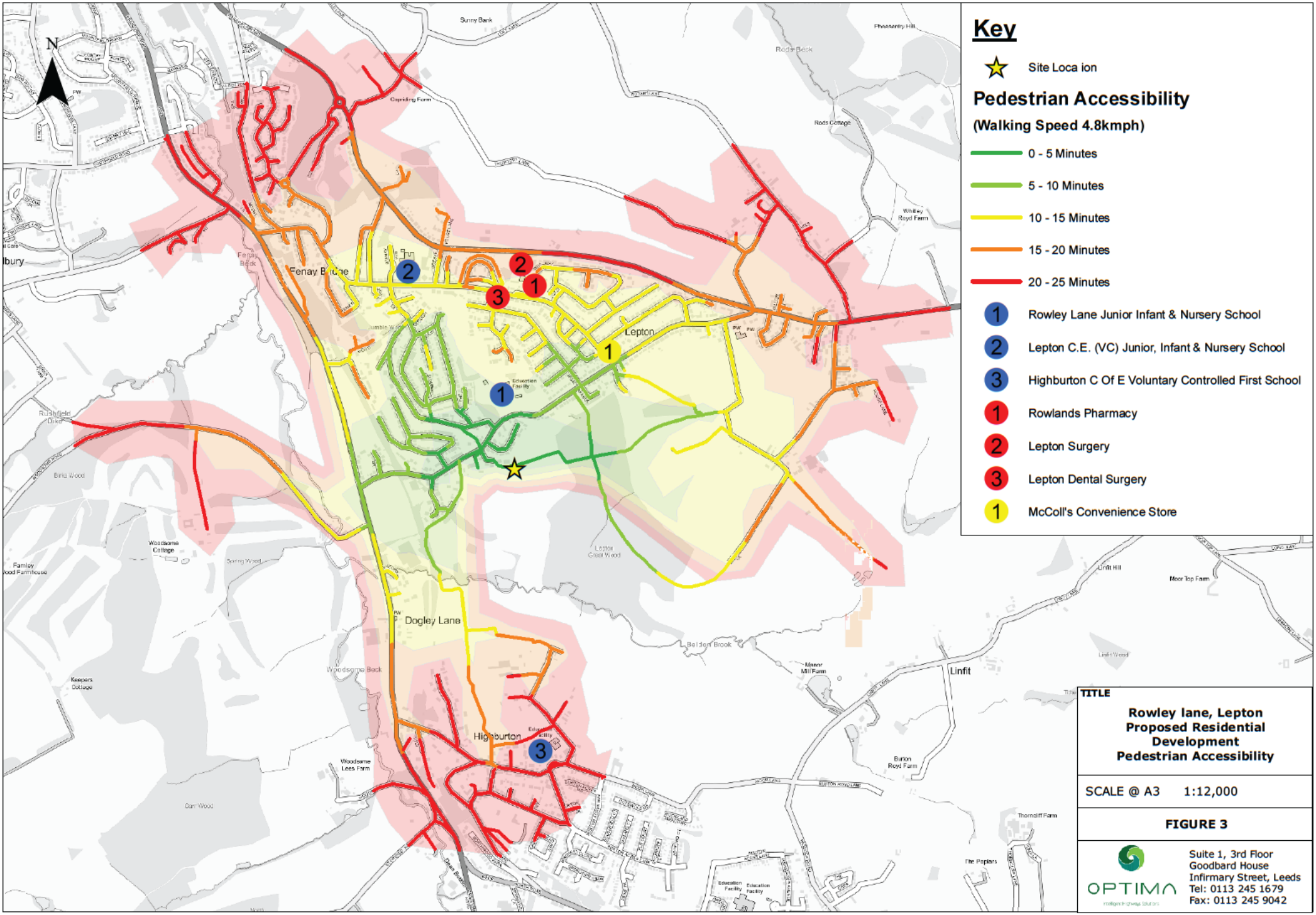
Rowley Lane, Lepton
Proposed Residential Development
Site Location Plan - Local

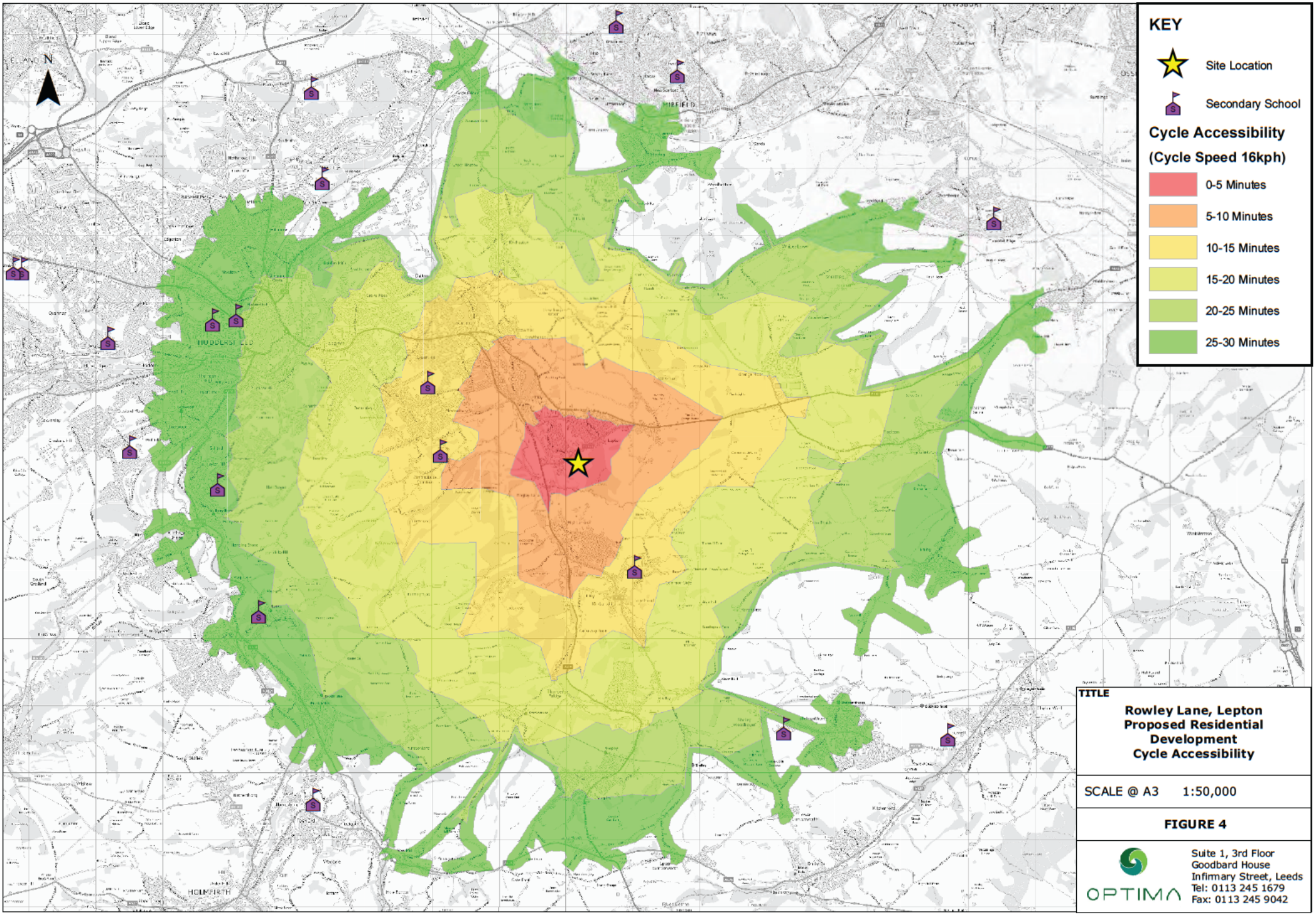
SCALE @ A3 1:5,000

FIGURE 2

OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street, Leeds
Tel: 0113 245 1679
Fax: 0113 245 9042

Path O:\Rowley Lane, Lepton\DRAWINGS\GIS\ARCEDITOR\Site Location - Local.mxd


N
Key
Site Loca ion
Pedestrian Accessibility
(Walking Speed 4.8kmph)
0 - 5 Minutes
5 - 10 Minutes
10 - 15 Minutes
15 - 20 Minutes
20 - 25 Minutes
1 Rowley Lane Junior Infant & Nursery School
2 Lepton C.E. (VC) Junior, Infant & Nursery School
3 Highburton C Of E Voluntary Controlled First School
1 Rowlands Pharmacy
2 Lepton Surgery
3 Lepton Dental Surgery
1 McColl's Convenience Store
Fenay Bridge
Lepton
Dogley Lane
Highburton
Linfit
Sunny Bank
Rods Beck
Rods Cottage
Whitley Royd Farm
Jumble Wood
Education Facility
Rushfield Dike
Bins Wood
Woodsome Cottage
Spring Wood
Lepton Giant Wood
Linfit Hill
Moor Top Farm
Belden Brook
Manor Mill Farm
Keepers Cottage
Woodsome Beck
Woodsome Lees Farm
Burton Royd Farm
Thorncliff Farm
The Poplars
Oak Wood
TITLE
Rowley lane, Lepton
Proposed Residential Development
Pedestrian Accessibility
SCALE @ A3 1:12,000
FIGURE 3
OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street, Leeds
Tel: 0113 245 1679
Fax: 0113 245 9042
Path O:\Rowley Lane, Lepton\DRAWINGS\GIS\ARCEDITOR\Ped Accessibility.mxd



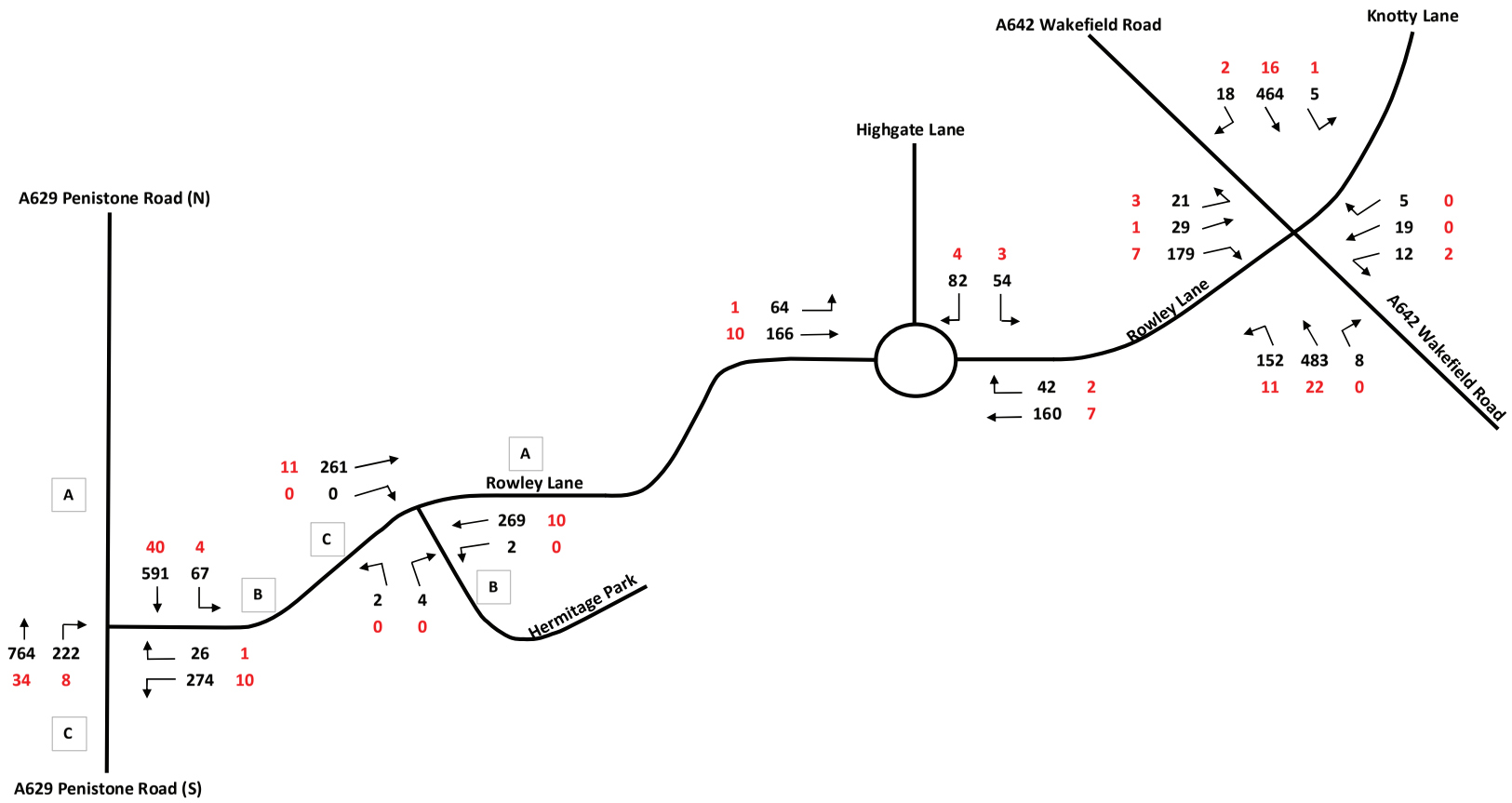
TITLE

Rowley Lane, Lepton
Proposed Residential Development
Cycle Accessibility

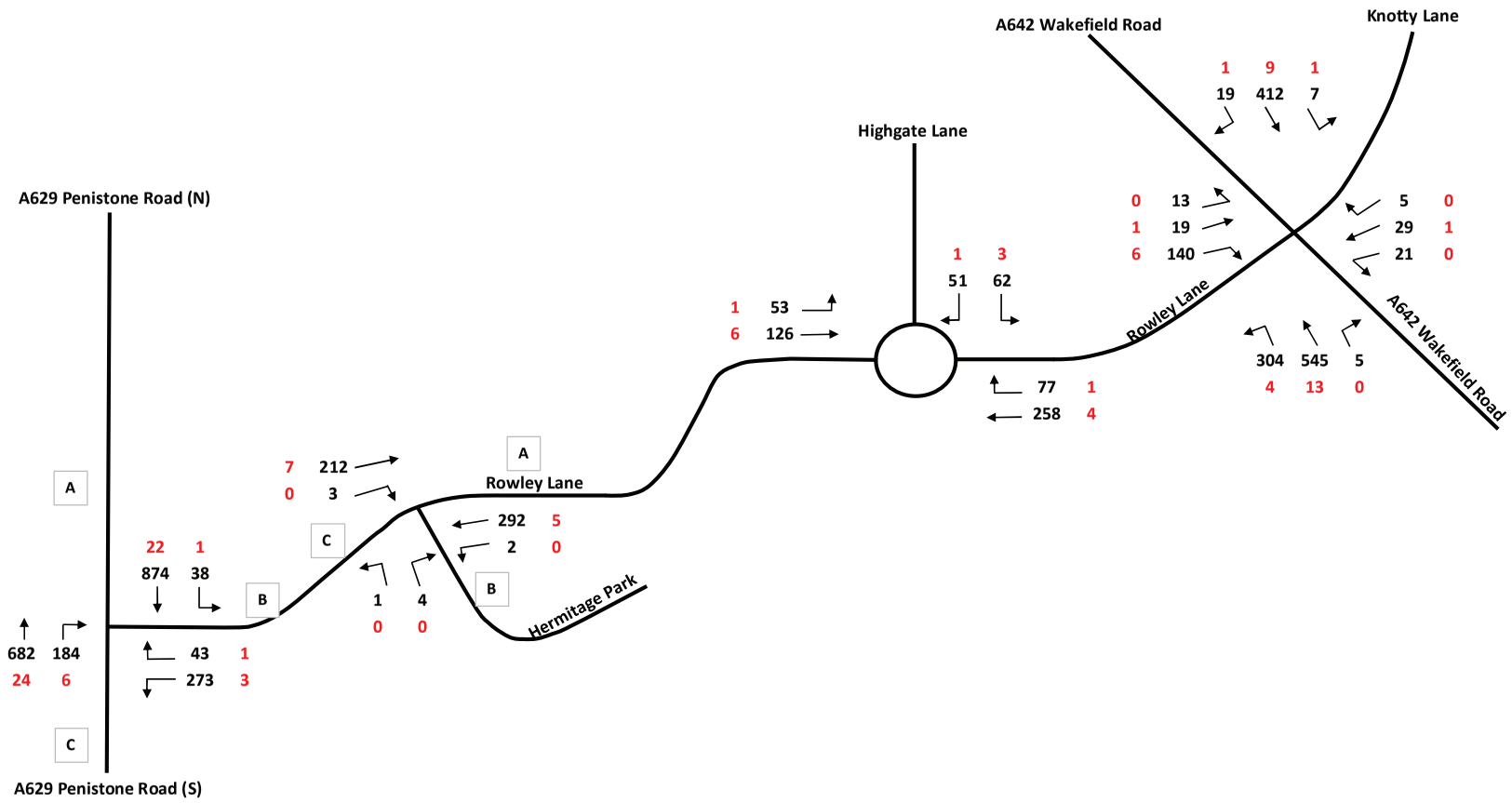
SCALE @ A3 1:50,000

FIGURE 4

OPTIMA
Suite 1, 3rd Floor
Goodbard House
Infirmary Street, Leeds
Tel: 0113 245 1679
Fax: 0113 245 9042

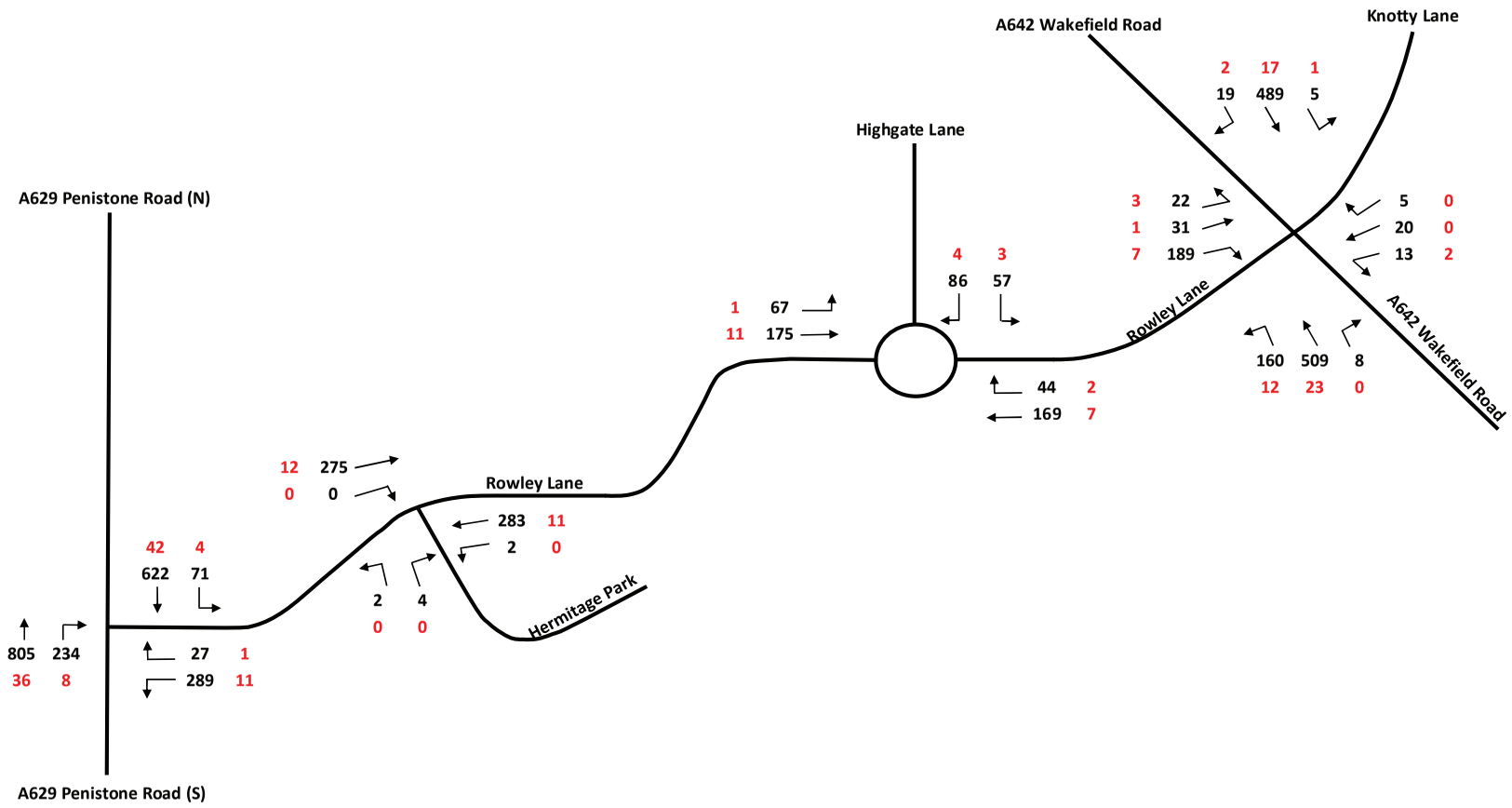


OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **AM 2019 COUNT (07:45 - 08:45)**	Figure: 100



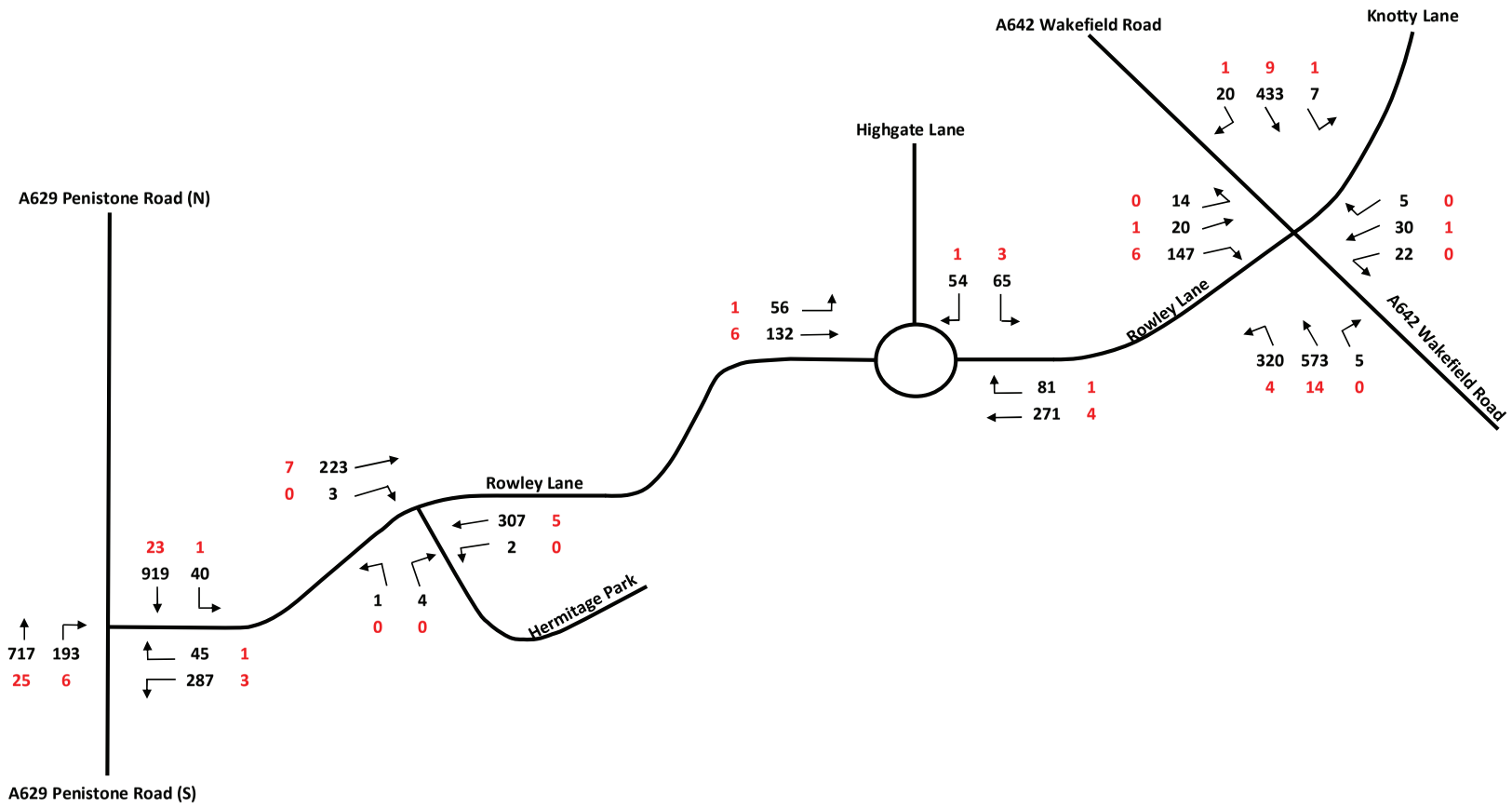
OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **PM 2019 COUNT (17:00 - 18:00)**	Figure: 101

GROWTH FACTOR 1.0532

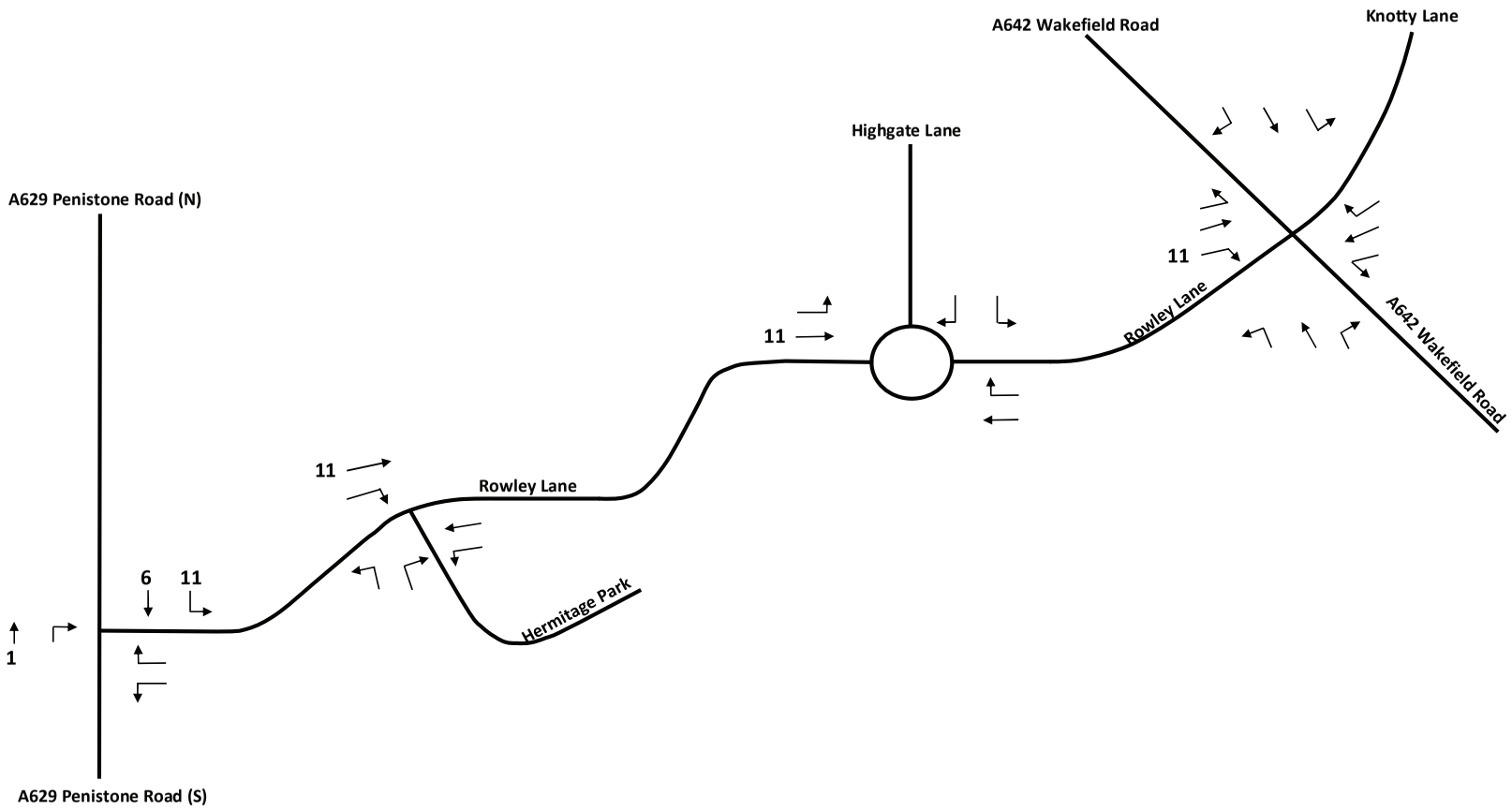


OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **AM 2027 GROWTHED**	Figure: 102

GROWTH FACTOR 1.0512



OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **PM 2027 GROWTHED**	Figure: 103



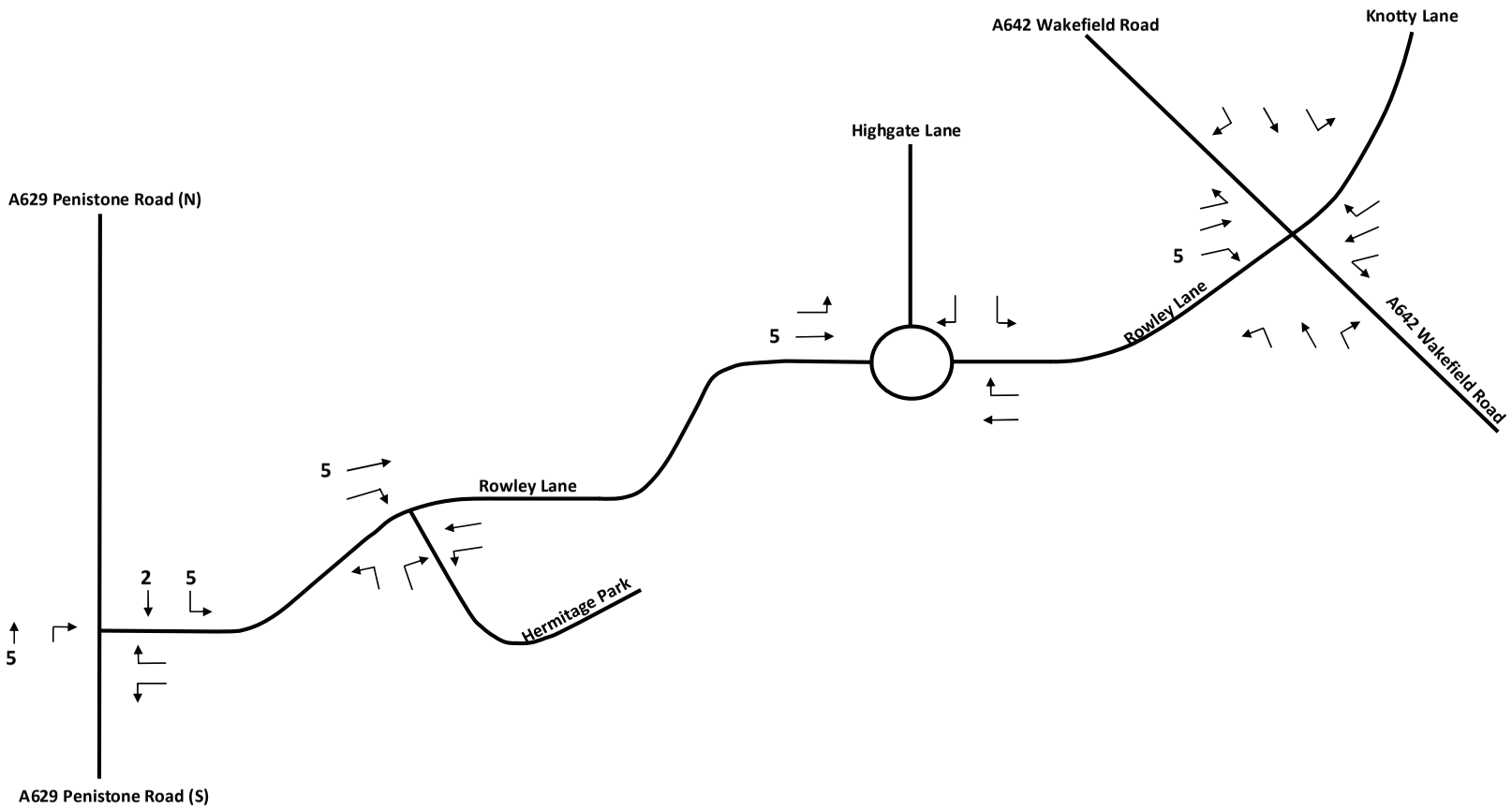
OPTIMA
Intelligent Highways Solutions

Rowley Lane, Lepton

AM HS1 HOUSING ALLOCATION

Figure:

104



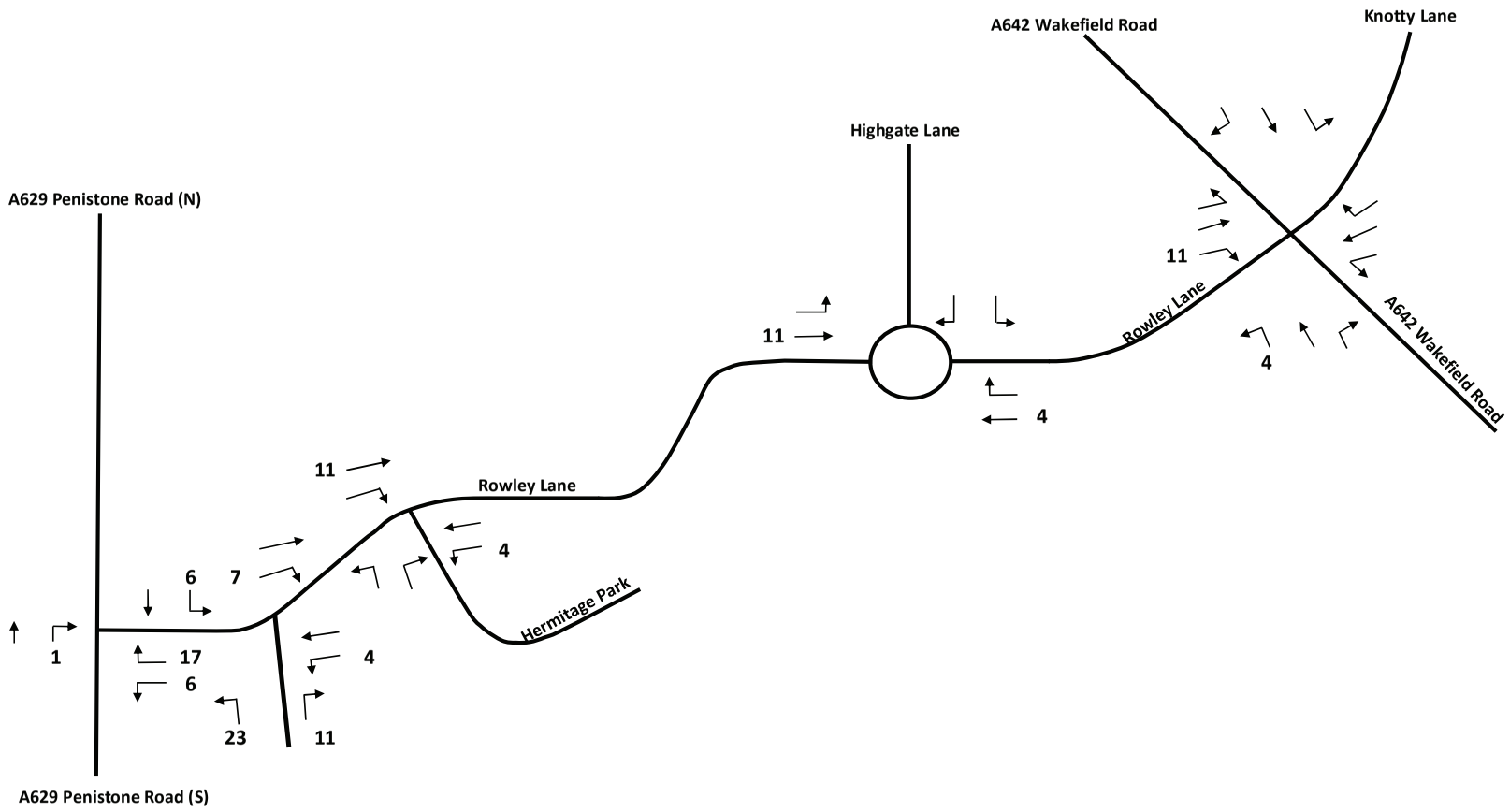
OPTIMA
Intelligent Highways Solutions

Rowley Lane, Lepton

PM HS1 HOUSING ALLOCATION

Figure:

105



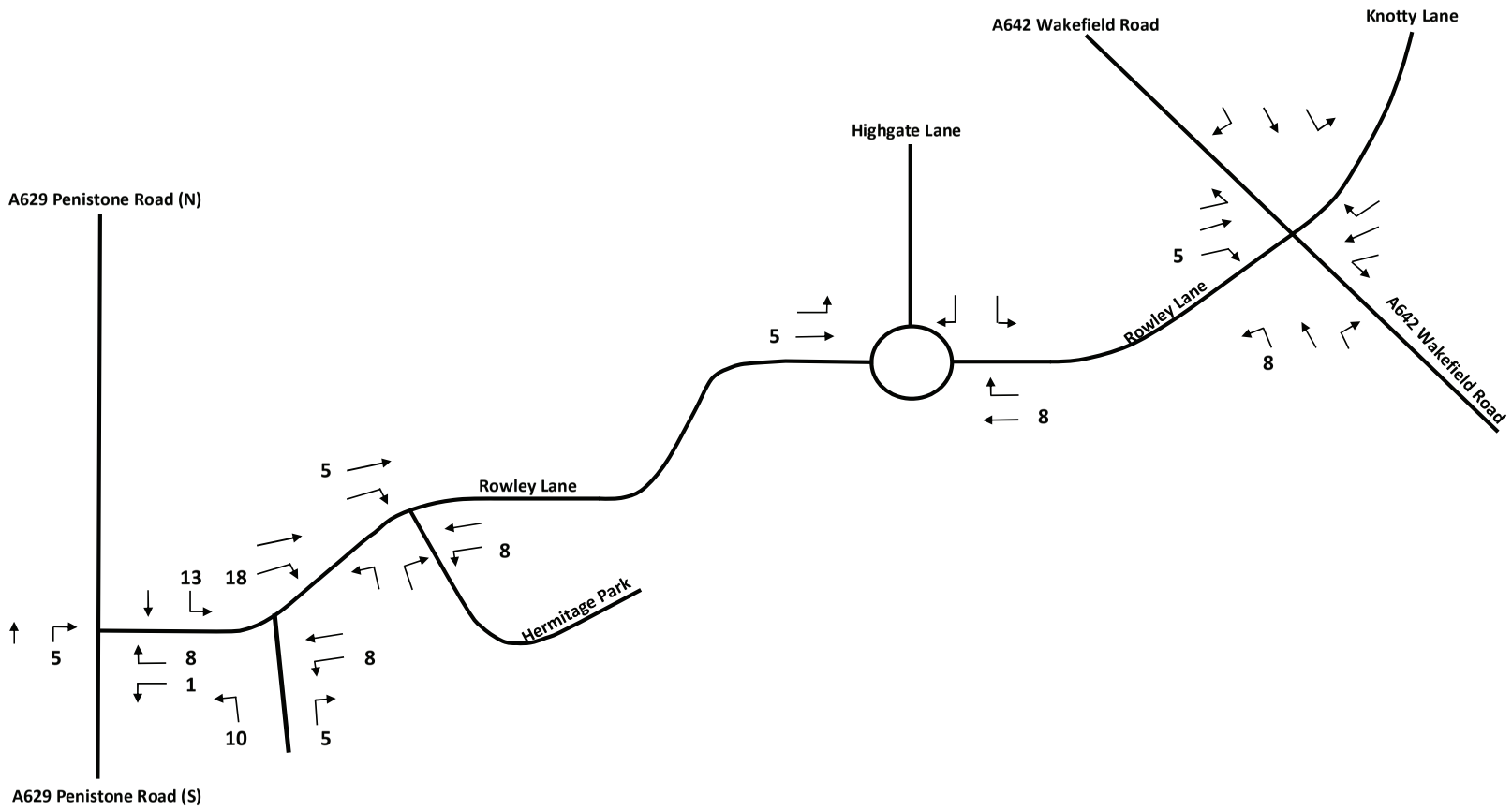
OPTIMA
Intelligent Highways Solutions

Rowley Lane, Lepton

AM HS2 PHASE 1 HOUSING ALLOCATION

Figure:

106



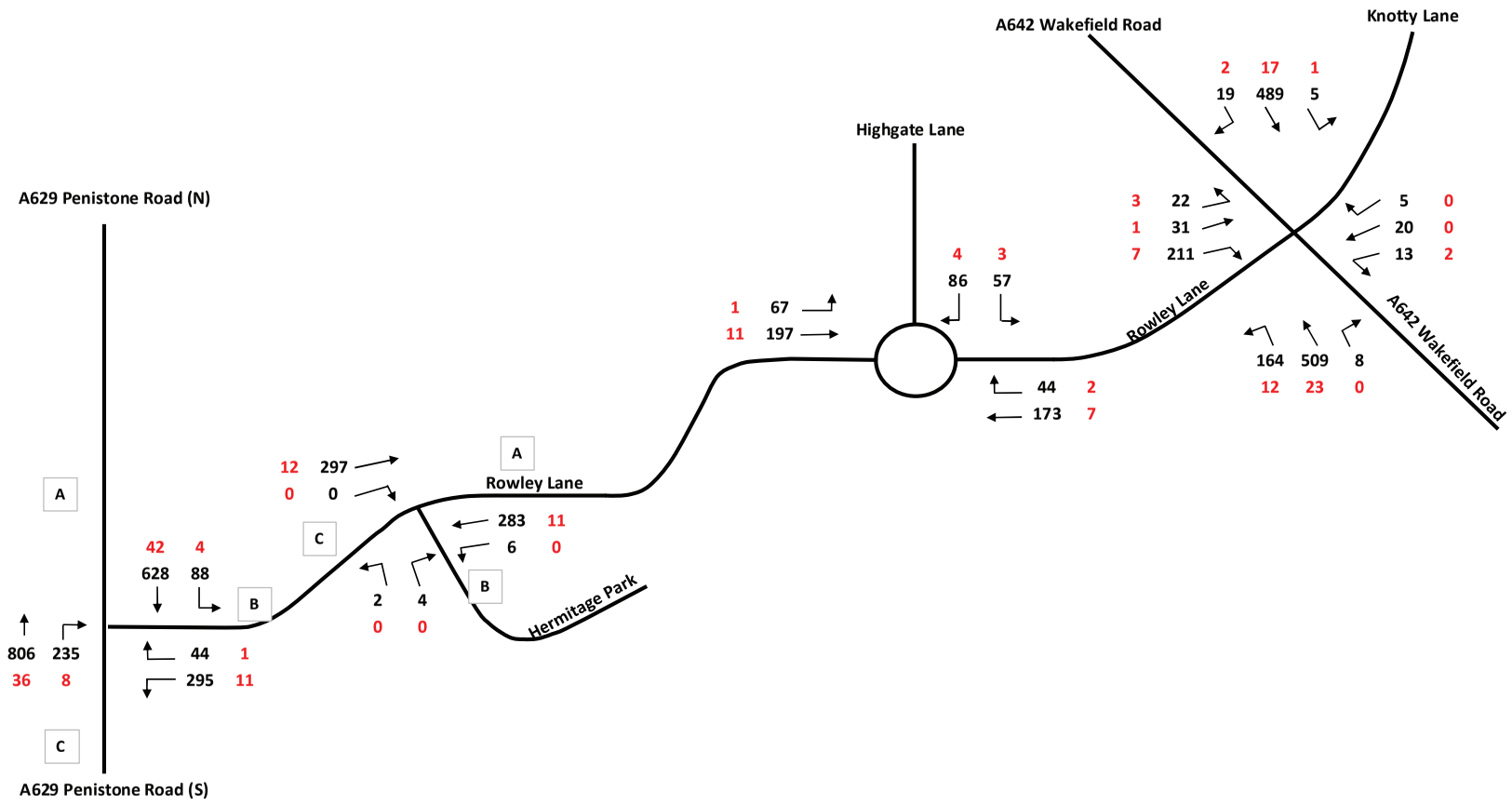
OPTIMA
Intelligent Highways Solutions

Rowley Lane, Lepton

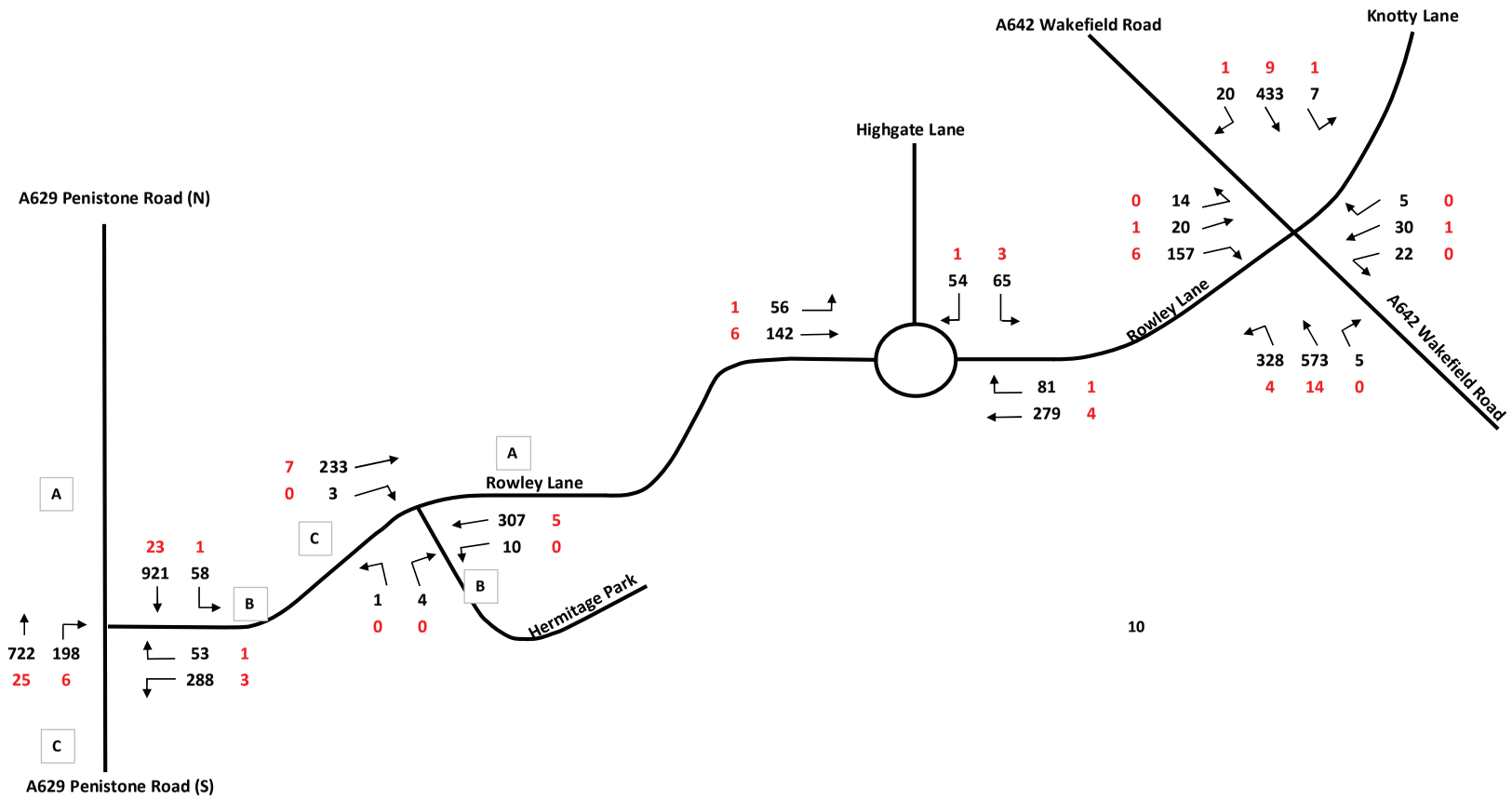
PM HS2 PHASE 1 HOUSING ALLOCATION

Figure:

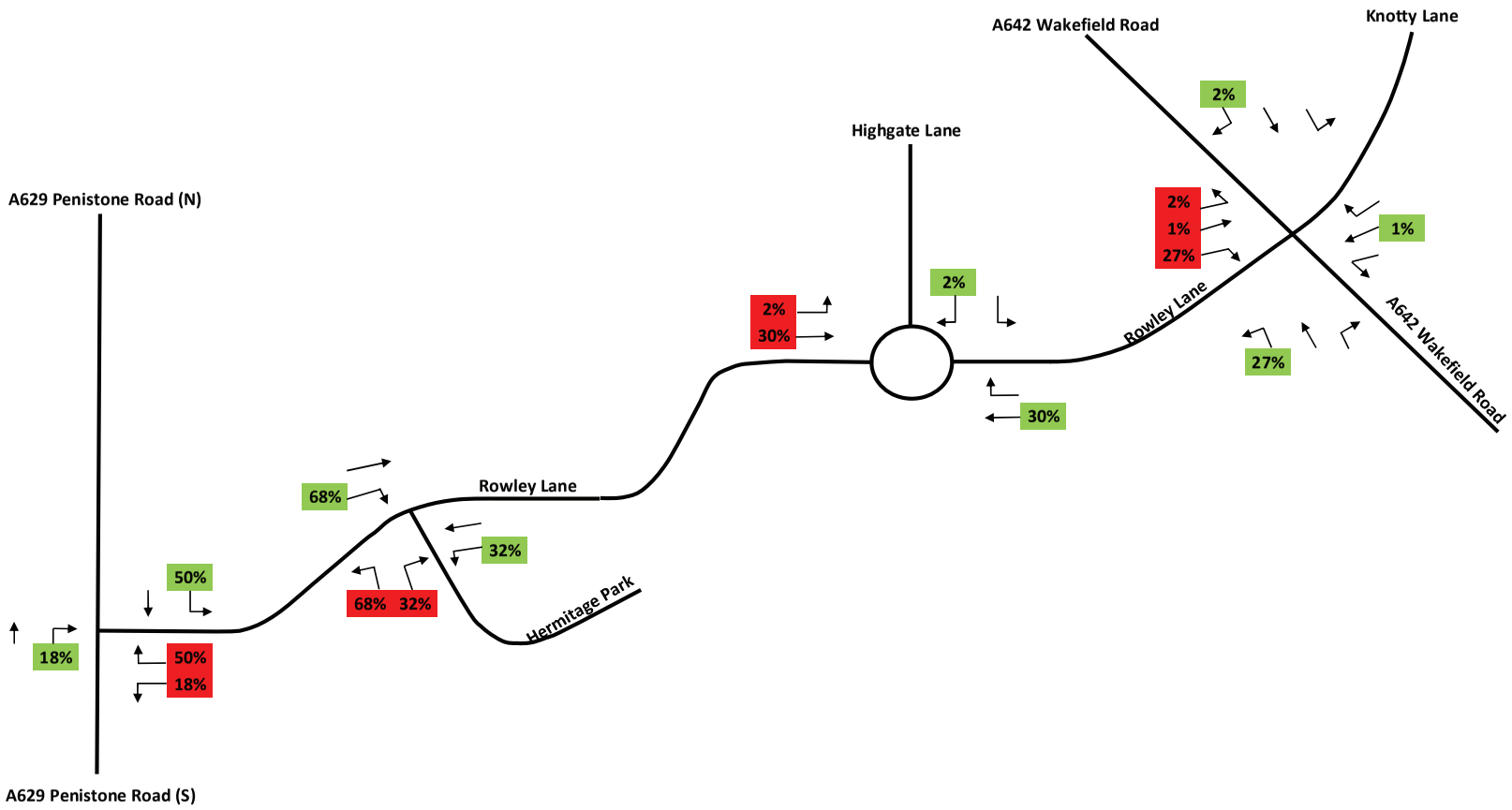
107



OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **AM 2027 BASE**	Figure: 108

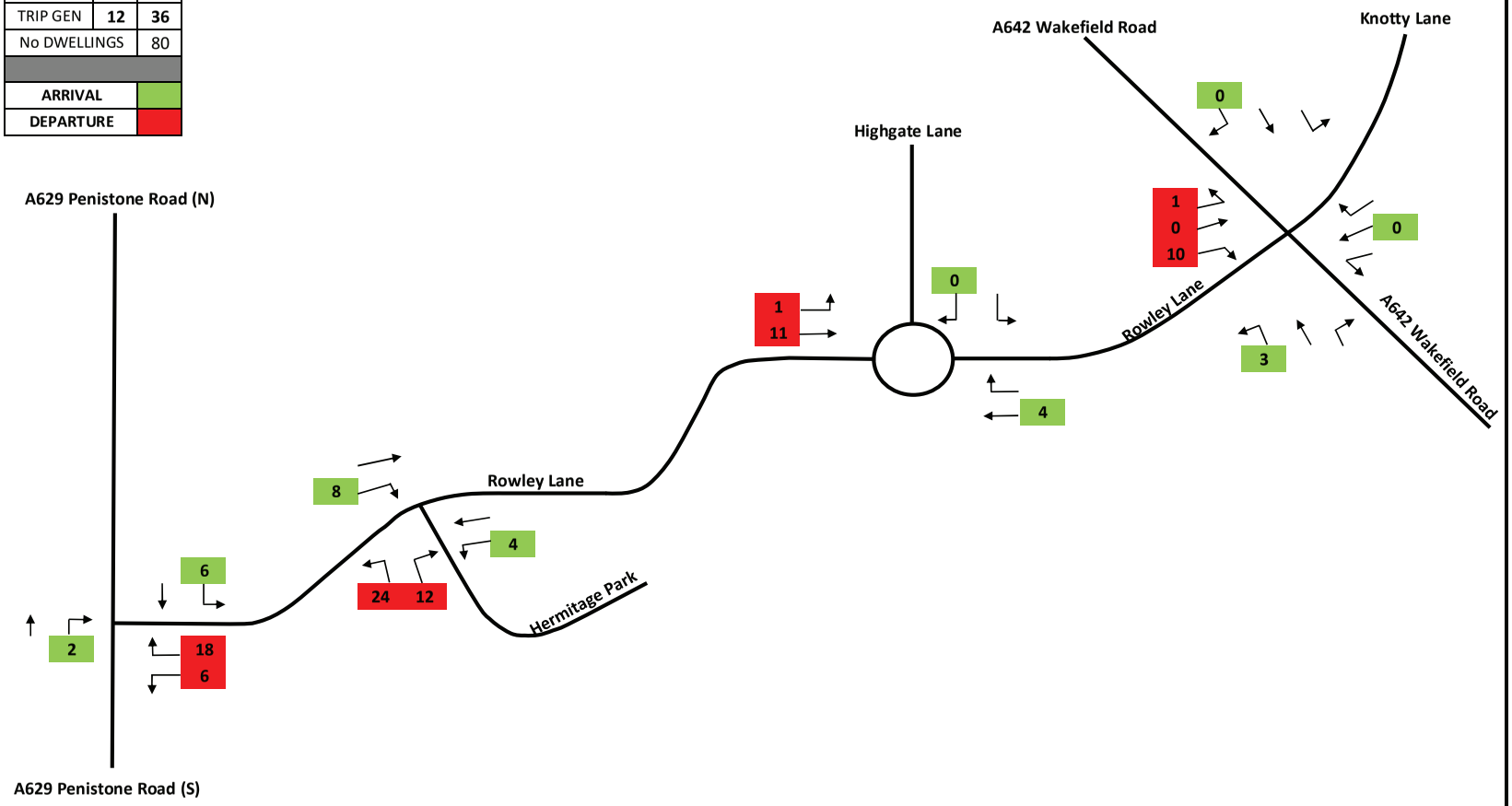


OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **PM 2027 BASE**	Figure: 109



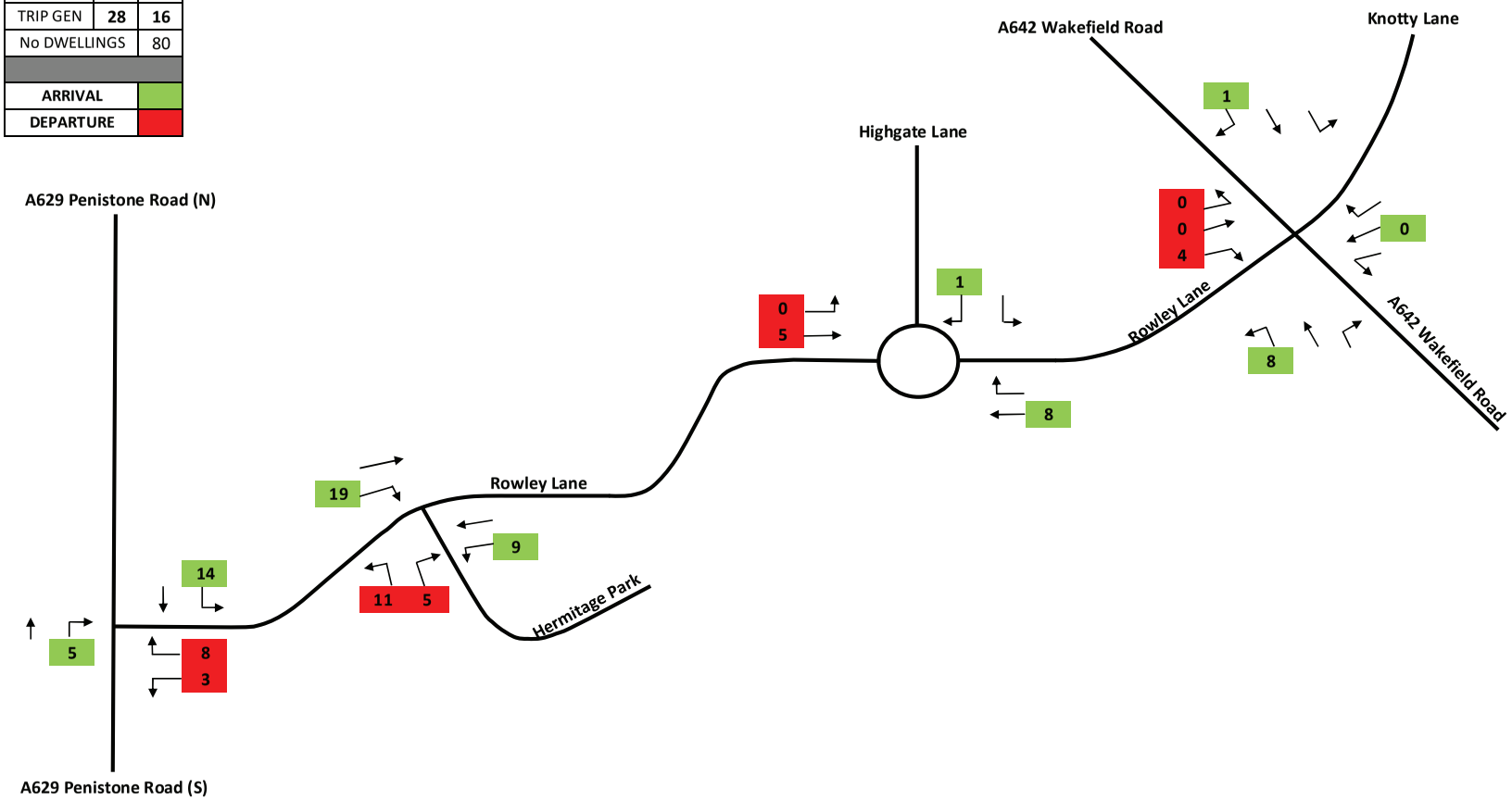
OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **RESIDENTIAL TRAFFIC DISTRIBUTION**	Figure: 110

AM	ARR	DEP
TRIP RATE	0.15	0.45
TRIP GEN	**12**	**36**
No DWELLINGS		80
ARRIVAL		
DEPARTURE		



OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **AM DEVELOPMENT TRIPS**	Figure: 111

PM	ARR	DEP
TRIP RATE	0 35	0 20
TRIP GEN	**28**	**16**
No DWELLINGS		80
ARRIVAL		
DEPARTURE		

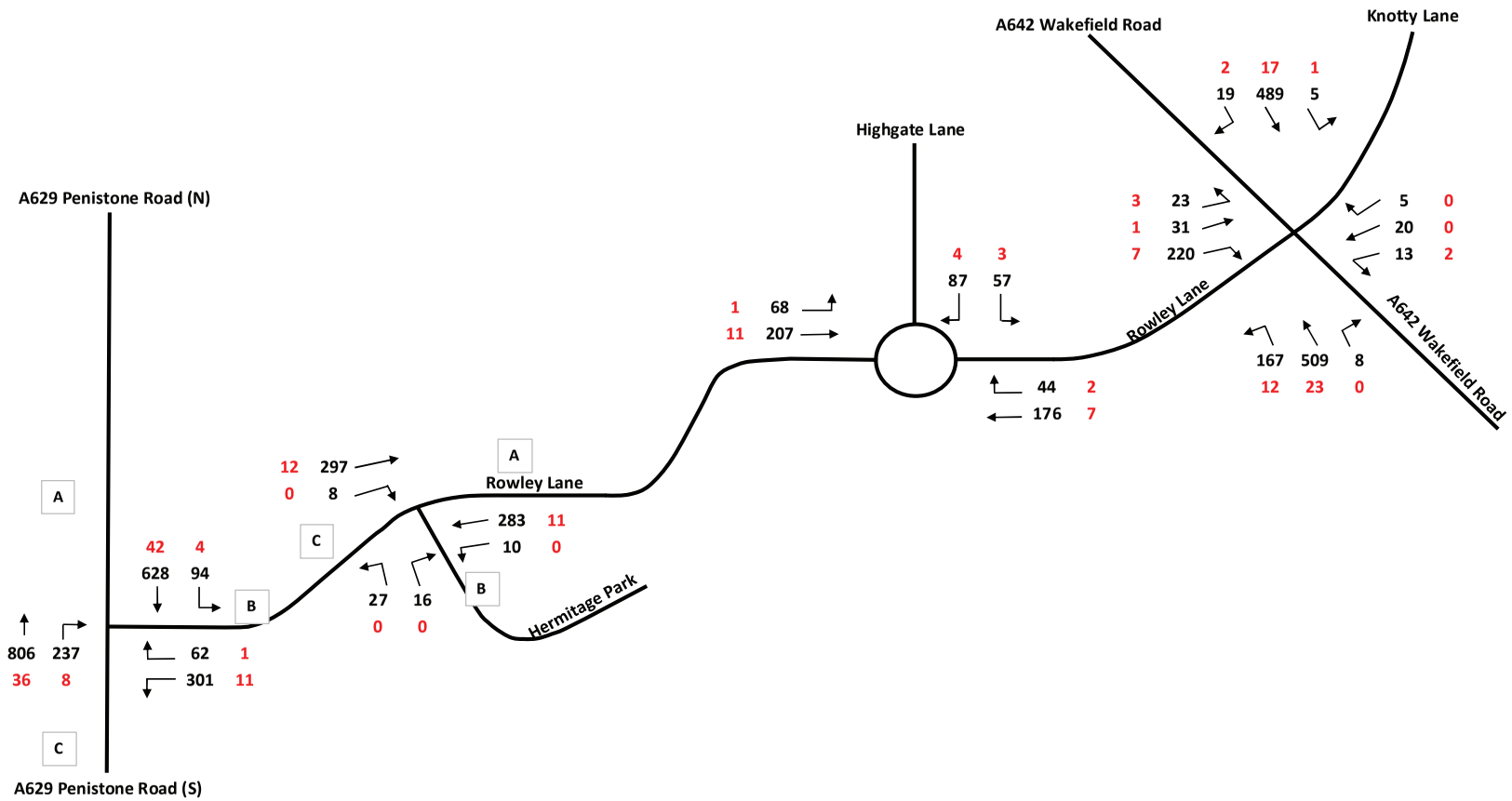


OPTIMA Intelligent Highways Solutions

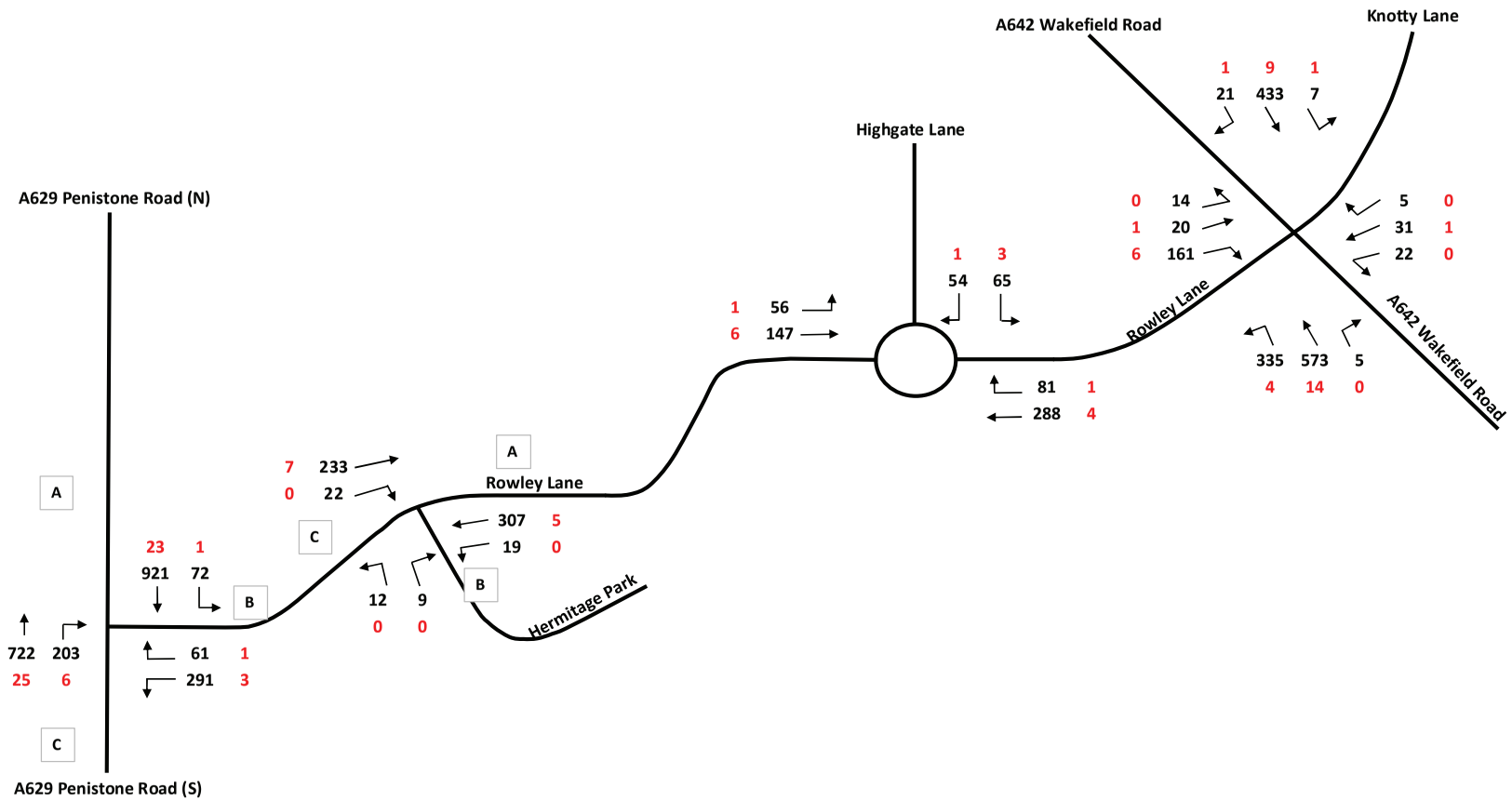
Rowley Lane, Lepton

PM DEVELOPMENT TRIPS

Figure: 112



OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **AM 2027 DESIGN**	Figure: 113



OPTIMA Intelligent Highways Solutions	Rowley Lane, Lepton **PM 2027 DESIGN**	Figure: 114

Appendices

Appendix A Proposed Site Layout



N

S

ANCIENT WOODLAND - 5m OFFSET TO REAR ES / PATHS

ANCIENT WOODLAND 20m OFFSET TO BUILDINGS

ANCIENT WOODLAND SEMINATURAL BUFFER

ROOT PROTECTION ZONE

FORMATIVE BALTY SPLAYS

Schedule of Accommodation

Ref.	No. of Beds	No. of Units	Percentage	M²	Total M²
B	2 Bedrooms	12	15.00	70.00	840.00
C	3 Bedrooms	10	12.50	94.00	940.00
D	3 Bedrooms	8	10.00	84.20	673.60
E	4 Bedrooms	9	11.25	109.00	981.00
F	4 Bedrooms	4	5.00	110.50	442.00
G	4 Bedrooms	6	7.50	117.00	702.00
H	4 Bedrooms	11	13.75	120.50	1325.50
J	4 Bedrooms	10	12.50	128.00	1280.00
K	4 Bedrooms	10	12.50	140.00	1400.00
		80	100.00		8484.10

Hermitage Park, LEPTON

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

revision	date	content	initials
N	24.03.22	LAYOUT ADJUSTED IN LINE WITH ENGINEERS ADJUSTMENTS AND ARCHITECTS ADJUSTMENTS	JB
M	22.02.22	HT DRAWINGS REV 'B' TO SHOW PATIOS TO REAR DOORS	ED
L	22.09.21	GARAGES TO PLOTS 41 & 54 REMOVED FROM HPA	ED
K	13.09.21	KERB RADII TO HERMITAGE RD REVISED TO TIE INTO EXISTING KERB LINE	ED
J	08.09.21	VISSPLAY TO PLOTS 26 & 17 REVISED.	ED
I	06.09.21	CENTRELINE RADII SCALPLOT 43, V SPLAY UTILITY SPLAYS INCORPORATED WITHIN PROPOSED ADOPTED HIGHWAY LIMIT	ED
H	31.08.21	LAYOUT REVISED IN LINE WITH HIGHWAYS ENGINEERS COMMENTS	ED
G	10.08.21	REVISED SITE LAYOUT	SN
F	02.11.20	ROOT PROTECTION ZONES ADDED AND SITE LAYOUT UPDATED TO SUIT	SN
E	23.10.20	TURNING HEADS INFRONT OF PLOTS 58-61 &70-72 UPDATED	SN
D	20.10.20	ANCIENT WOODLAND BUFFER SUDS BASINS & PUMPING STATION ADDED SITE LAYOUT AMENDED TO SUIT	SN
C	15.07.20	HIGHWAY UPDATES	SN
B	10.07.20	APARTMENTS ADDED & SITE UPDATED TO SUIT	SN
A	19.06.20	SHARED SURFACES UPDATED	SN

SKETCH
subject to structural review
subject to accurate measured survey

project: PROPOSED RESIDENTIAL HERMITAGE PARK LEPTON, HUDDERSFIELD

client: KCS DEVELOPMENTS

title: PROPOSED SITE LAYOUT

date: 17.06.20 | scale: 1:500 @ A0 | drawn: SN

drawing number: 3284-0-002 N | checked:

Nieman Architects
Deck 2 The Waterscape
42 Leeds & Bradford Road
Kirkstall Leeds LS5 3EG
Tel 0113 299 5400
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Appendix B Highway Adoption Records



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Kirklees COUNCIL

Kompass

Tel: 01484 221757
(Internal 860 1757)
E-Mail: maps@kirklees.gov.uk

0 m 30 m 60 m

Scale 1: 1250

N W E S

Appendix C Traffic Survey Data

TRANSPORT Data Collection

DATE: TUESDAY 19th JANUARY 2016

TURNING COUNT LOCATION: ROWLEY LANE / HERMITAGE PARK

APPROACHING FROM: ROWLEY LANE (NORTH)

TIME / CLASS	LEFT TO HERMITAGE PARK								STRAIGHT TO ROWLEY LANE (SOUTH)								U-TURN TO ROWLEY LANE (NORTH)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0	29	3	0	1	0	33	0	0	0	0	0	0	0	0	33
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	48	4	2	0	3	57	0	0	0	0	0	0	0	0	57
8:00 - 8:15	0	0	0	0	0	0	0	0	0	1	56	7	0	0	2	66	0	0	0	0	0	0	0	0	66
8:15 - 8:30	0	0	1	0	0	0	0	1	0	0	66	6	0	0	1	73	0	0	1	0	0	0	0	1	75
HOURLY TOTAL	0	0	1	0	0	0	0	1	0	1	199	20	2	1	6	229	0	0	1	0	0	0	0	1	231
8:30 - 8:45	0	0	1	0	0	0	0	1	0	0	50	3	0	0	0	53	0	0	1	0	0	0	0	1	55
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	49	5	1	0	1	56	0	0	0	0	0	0	0	0	56
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	32	4	0	0	0	36	0	0	0	0	0	0	0	0	36
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	17	1	0	0	0	18	0	0	0	0	0	0	0	0	18
HOURLY TOTAL	0	0	1	0	0	0	0	1	0	0	148	13	1	0	1	163	0	0	1	0	0	0	0	1	165
PERIOD TOTAL	0	0	2	0	0	0	0	2	0	1	347	33	3	1	7	392	0	0	2	0	0	0	0	2	396
16:30 - 16:45	0	0	2	0	0	0	0	2	0	0	46	5	1	0	1	53	0	0	0	0	0	0	0	0	55
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	50	2	0	0	0	52	0	0	0	0	0	0	0	0	52
17:00 - 17:15	0	0	1	0	0	0	0	1	0	0	47	1	1	0	0	49	0	0	0	0	0	0	0	0	50
17:15 - 17:30	0	0	1	0	0	0	0	1	0	0	63	2	1	0	0	66	0	0	0	0	0	0	0	0	67
HOURLY TOTAL	0	0	4	0	0	0	0	4	0	0	206	10	3	0	1	220	0	0	0	0	0	0	0	0	224
17:30 - 17:45	0	0	2	0	0	0	0	2	0	0	61	2	0	0	1	64	0	0	0	0	0	0	0	0	66
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	45	1	0	0	0	46	0	0	0	0	0	0	0	0	46
18:00 - 18:15	0	0	0	0	0	0	0	0	0	0	44	0	0	0	0	44	0	0	0	0	0	0	0	0	44
18:15 - 18:30	0	0	2	0	0	0	0	2	0	0	31	1	1	0	1	34	0	0	0	0	0	0	0	0	36
HOURLY TOTAL	0	0	4	0	0	0	0	4	0	0	181	4	1	0	2	188	0	0	0	0	0	0	0	0	192
PERIOD TOTAL	0	0	8	0	0	0	0	8	0	0	387	14	4	0	3	408	0	0	0	0	0	0	0	0	416

TRANSPORT Data Collection

DATE: TUESDAY 19th JANUARY 2016

TURNING COUNT LOCATION: ROWLEY LANE / HERMITAGE PARK

APPROACHING FROM: HERMITAGE PARK

TIME / CLASS	LEFT TO ROWLEY LANE (SOUTH)								RIGHT TO ROWLEY LANE (NORTH)								U-TURN TO HERMITAGE PARK								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	0	1	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	3
HOURLY TOTAL	0	0	1	1	0	0	0	2	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	6
8:30 - 8:45	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	3
8:45 - 9:00	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
9:00 - 9:15	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2
9:15 - 9:30	0	0	5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
HOURLY TOTAL	0	0	9	0	0	0	0	9	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	11
PERIOD TOTAL	0	0	10	1	0	0	0	11	0	0	6	0	0	0	0	6	0	0	0	0	0	0	0	0	17
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1
17:00 - 17:15	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY TOTAL	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2
17:30 - 17:45	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	1
18:00 - 18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15 - 18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY TOTAL	0	0	1	0	0	0	0	1	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	3
PERIOD TOTAL	0	0	2	0	0	0	0	2	0	0	3	0	0	0	0	3	0	0	0	0	0	0	0	0	5

TRANSPORT Data Collection

DATE: TUESDAY 19th JANUARY 2016

TURNING COUNT LOCATION: ROWLEY LANE / HERMITAGE PARK

APPROACHING FROM: ROWLEY LANE (SOUTH)

TIME / CLASS	STRAIGHT TO ROWLEY LANE (NORTH)								RIGHT TO HERMITAGE PARK								U-TURN TO ROWLEY LANE (SOUTH)								TOTAL MOVEMENT FROM APPROACH
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	
7:30 - 7:45	0	0	64	1	0	0	0	65	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65
7:45 - 8:00	0	0	36	4	0	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40
8:00 - 8:15	0	0	40	3	0	0	0	43	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43
8:15 - 8:30	0	0	59	5	0	0	0	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
HOURLY TOTAL	0	0	199	13	0	0	0	212	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	212
8:30 - 8:45	0	0	63	3	0	0	2	68	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	1	70
8:45 - 9:00	0	0	45	1	2	0	0	48	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	49
9:00 - 9:15	0	0	39	5	1	0	0	45	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	48
9:15 - 9:30	0	2	21	3	1	0	0	27	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	28
HOURLY TOTAL	0	2	168	12	4	0	2	188	0	0	2	0	0	0	0	2	0	0	5	0	0	0	0	5	195
PERIOD TOTAL	0	2	367	25	4	0	2	400	0	0	2	0	0	0	0	2	0	0	5	0	0	0	0	5	407
16:30 - 16:45	0	0	37	3	0	0	1	41	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	41
16:45 - 17:00	0	0	26	4	0	0	0	30	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	31
17:00 - 17:15	0	0	50	2	0	0	0	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
17:15 - 17:30	0	0	44	1	0	0	0	45	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	46
HOURLY TOTAL	0	0	157	10	0	0	1	168	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	170
17:30 - 17:45	0	0	54	1	0	0	0	55	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	57
17:45 - 18:00	0	0	35	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35
18:00 - 18:15	0	0	30	0	0	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30
18:15 - 18:30	0	0	24	2	1	0	0	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
HOURLY TOTAL	0	0	143	3	1	0	0	147	0	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	149
PERIOD TOTAL	0	0	300	13	1	0	1	315	0	0	4	0	0	0	0	4	0	0	0	0	0	0	0	0	319

TRANSPORT Data Collection

DATE: TUESDAY 19th JANUARY 2016

TURNING COUNT LOCATION: ROWLEY LANE / HERMITAGE PARK

VEHICLES USING HERMITAGE PARK AS A DROP OFF AREA

TIME / CLASS	LEFT INTO HERMITAGE PARK								RIGHT INTO HERMITAGE PARK								LEFT OUT OF HERMITAGE PARK								RIGHT OUT OF HERMITAGE PARK							
	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL	PEDAL CYCLE	MOTOR CYCLE	CAR TAXI	LGV	OGV1	OGV2	BUS COACH	TOTAL
7:30 - 7:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 - 8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 - 8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	0	7	1	0	0	0	8	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	4	1	0	0	0	5	0	0	2	0	0	0	0	2
9:00 - 9:15	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	0	0	1	0	0	0	0	1
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY TOTAL	0	0	1	0	0	0	0	1	0	0	9	1	0	0	0	10	0	0	7	1	0	0	0	8	0	0	3	0	0	0	0	3
PERIOD TOTAL	0	0	1	0	0	0	0	1	0	0	9	1	0	0	0	10	0	0	7	1	0	0	0	8	0	0	3	0	0	0	0	3
16:30 - 16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45 - 17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00 - 17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15 - 17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30 - 17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:45 - 18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00 - 18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15 - 18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HOURLY TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERIOD TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Queue Lengths

DATE: TUESDAY 19th JANUARY 2016

LOCATION: ROWLEY LANE / HERMITAGE PARK

ARM:	ROWLEY LANE (NORTH)			HERMITAGE PARK			ROWLEY LANE (SOUTH)		
maxQ in a 5 min intervals	LANE 1			LANE 1			LANE 1		
	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)	LIGHTS	HEAVIES	QUEUE LENGTH (M)
7:30	0	0	0	0	0	0	0	0	0
7:35	0	0	0	0	0	0	0	0	0
7:40	0	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0	0
7:50	0	0	0	0	0	0	0	0	0
7:55	0	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0	0
8:05	0	0	0	0	0	0	0	0	0
8:10	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0
8:20	0	0	0	0	0	0	0	0	0
8:25	0	0	0	0	0	0	0	0	0
8:30	0	0	0	1	0	6	0	0	0
8:35	0	0	0	1	0	6	0	0	0
8:40	0	0	0	0	0	0	0	0	0
8:45	0	0	0	1	0	6	0	0	0
8:50	0	0	0	0	0	0	0	0	0
8:55	0	0	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0	0	0
9:05	0	0	0	0	0	0	0	0	0
9:10	0	0	0	0	0	0	0	0	0
9:15	0	0	0	0	0	0	0	0	0
9:20	0	0	0	0	0	0	0	0	0
9:25	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0
16:35	0	0	0	0	0	0	0	0	0
16:40	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0
16:50	0	0	0	0	0	0	0	0	0
16:55	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0
17:05	0	0	0	0	0	0	0	0	0
17:10	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0
17:20	0	0	0	0	0	0	0	0	0
17:25	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0
17:35	0	0	0	0	0	0	0	0	0
17:40	0	0	0	0	0	0	0	0	0
17:45	0	0	0	0	0	0	0	0	0
17:50	0	0	0	0	0	0	0	0	0
17:55	0	0	0	0	0	0	0	0	0
18:00	0	0	0	0	0	0	0	0	0
18:05	0	0	0	0	0	0	0	0	0
18:10	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0
18:20	0	0	0	0	0	0	0	0	0
18:25	0	0	0	0	0	0	0	0	0

Site 1:	**A629 Penistone Road/B6433 Rowley Lane**	**A:**	**A629 Huddersfield**
Day:	**Wednesday**	**B:**	**B6433 Rowley Lane**
Date:	**13 July 2016**	**C:**	**A629 Penistone**
Weather:	**Fine & Cloudy AM/Fine & Sunny Periods PM**		

	A - B								A - C							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
8:00	14	0	0	0	0	0	0	14	113	24	9	1	0	0	6	153
8:15	11	2	0	0	0	0	0	13	126	16	4	2	0	0	0	148
8:30	30	2	1	0	0	0	1	34	91	18	8	2	0	2	3	124
8:45	32	5	0	0	0	0	0	37	102	20	7	1	0	0	1	131
9:00	6	0	0	0	0	0	0	6	64	25	7	2	0	0	2	100
9:15	8	3	0	0	0	0	0	11	91	17	2	1	0	0	3	114
9:30	4	1	0	0	0	0	0	5	80	17	4	4	0	0	4	109
9:45	3	1	0	0	0	0	0	4	74	9	4	2	0	1	2	92
Total	**108**	**14**	**1**	**0**	**0**	**0**	**1**	**124**	**741**	**146**	**45**	**15**	**0**	**3**	**21**	**971**
16:00	7	3	0	0	0	0	0	10	126	17	3	3	1	3	3	156
16:15	7	1	0	0	0	0	0	8	180	22	1	0	1	0	1	205
16:30	17	1	0	0	0	0	0	18	165	27	3	1	1	2	2	201
16:45	16	1	0	0	0	0	0	17	196	21	1	2	4	1	2	227
17:00	8	0	0	0	0	0	0	8	185	23	4	1	2	2	1	218
17:15	11	1	0	0	0	0	0	12	193	17	4	0	1	6	1	222
17:30	17	0	0	0	0	0	0	17	205	19	2	2	0	3	2	233
17:45	15	0	0	0	0	0	0	15	191	11	1	2	3	2	4	214
Total	**98**	**7**	**0**	**0**	**0**	**0**	**0**	**105**	**1441**	**157**	**19**	**11**	**13**	**19**	**16**	**1676**

	B - A								B - C							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	10	2	0	0	0	0	0	12	61	11	2	0	0	0	3	77
8:15	6	3	1	0	0	0	0	10	59	10	2	0	0	0	1	72
8:30	6	0	0	0	0	0	0	6	29	5	1	0	0	0	0	35
8:45	17	1	0	0	0	0	1	19	27	5	2	0	0	0	1	35
9:00	19	1	0	0	0	0	0	20	29	5	0	0	0	0	0	34
9:15	9	0	0	0	0	0	0	9	19	4	3	0	1	0	0	27
9:30	11	0	0	0	0	0	0	11	14	3	1	0	1	0	1	20
9:45	6	1	1	0	0	0	0	8	23	5	1	1	0	0	0	30
Total	**84**	**8**	**2**	**0**	**0**	**0**	**1**	**95**	**261**	**48**	**12**	**1**	**2**	**0**	**6**	**330**
16:00	9	0	0	0	0	0	0	9	32	1	2	0	0	0	0	35
16:15	9	3	0	0	0	0	2	14	34	9	0	0	0	1	0	44
16:30	10	2	0	0	0	0	0	12	31	5	1	0	0	0	1	38
16:45	13	3	0	0	0	0	0	16	42	2	0	0	0	0	0	44
17:00	9	0	0	0	0	0	0	9	54	7	0	0	0	0	0	61
17:15	12	0	0	0	0	0	1	13	53	12	0	1	0	0	0	66
17:30	17	1	0	0	0	0	0	18	69	3	0	1	0	0	1	74
17:45	12	1	0	0	0	0	0	13	67	7	0	0	0	0	0	74
Total	**91**	**10**	**0**	**0**	**0**	**0**	**3**	**104**	**382**	**46**	**3**	**2**	**0**	**1**	**2**	**436**

	C - A								C - B							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	221	13	2	1	0	1	2	240	32	6	2	0	0	0	0	40
8:15	202	20	5	2	0	0	7	236	50	5	1	2	0	0	0	58
8:30	193	28	5	0	3	2	3	234	66	6	0	0	0	0	0	72
8:45	169	12	2	1	1	0	5	190	37	6	0	0	0	0	0	43
9:00	222	13	5	1	0	2	4	247	28	5	1	0	0	0	0	34
9:15	180	8	1	0	1	0	5	195	28	3	1	0	0	1	0	33
9:30	124	17	4	1	1	1	2	150	15	3	1	0	0	1	1	21
9:45	137	15	3	1	2	0	4	162	10	5	1	0	0	0	0	16
Total	**1448**	**126**	**27**	**7**	**8**	**6**	**32**	**1654**	**266**	**39**	**7**	**2**	**0**	**2**	**1**	**317**
16:00	132	21	3	2	0	0	2	160	26	6	1	0	0	0	0	33
16:15	121	21	5	1	0	2	3	153	23	5	0	0	0	1	0	29
16:30	131	18	2	0	0	1	4	156	20	9	0	0	0	0	2	31
16:45	118	20	3	0	2	1	2	146	32	14	1	0	0	0	0	47
17:00	170	21	3	0	1	1	2	198	39	5	1	0	0	1	1	47
17:15	159	11	2	2	1	1	3	179	27	3	0	0	0	0	0	30
17:30	144	10	0	0	0	1	2	157	34	4	0	0	0	0	1	39
17:45	134	16	0	1	2	1	1	155	34	2	0	0	0	0	0	36
Total	**1109**	**138**	**18**	**6**	**6**	**8**	**19**	**1304**	**235**	**48**	**3**	**0**	**0**	**2**	**4**	**292**

Summary

Site 1:	**A629 Penistone Road/B6433 Rowley Lane**	**A:**	**A629 Huddersfield**
Day:	**Wednesday**	**B:**	**B6433 Rowley Lane**
Date:	**13 July 2016**	**C:**	**A629 Penistone**
Weather:	**Fine & Cloudy AM/Fine & Sunny Periods PM**		

	From A								From B								From C							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
8:00	127	24	9	1	0	0	6	167	71	13	2	0	0	0	3	89	253	19	4	1	0	1	2	280
8:15	137	18	4	2	0	0	0	161	65	13	3	0	0	0	1	82	252	25	6	4	0	0	7	294
8:30	121	20	9	2	0	2	4	158	35	5	1	0	0	0	0	41	259	34	5	0	3	2	3	306
8:45	134	25	7	1	0	0	1	168	44	6	2	0	0	0	2	54	206	18	2	1	1	0	5	233
9:00	70	25	7	2	0	0	2	106	48	6	0	0	0	0	0	54	250	18	6	1	0	2	4	281
9:15	99	20	2	1	0	0	3	125	28	4	3	0	1	0	0	36	208	11	2	0	1	1	5	228
9:30	84	18	4	4	0	0	4	114	25	3	1	0	1	0	1	31	139	20	5	1	1	2	3	171
9:45	77	10	4	2	0	1	2	96	29	6	2	1	0	0	0	38	147	20	4	1	2	0	4	178
Total	**849**	**160**	**46**	**15**	**0**	**3**	**22**	**1095**	**345**	**56**	**14**	**1**	**2**	**0**	**7**	**425**	**1714**	**165**	**34**	**9**	**8**	**8**	**33**	**1971**
16:00	133	20	3	3	1	3	3	166	41	1	2	0	0	0	0	44	158	27	4	2	0	0	2	193
16:15	187	23	1	0	1	0	1	213	43	12	0	0	0	1	2	58	144	26	5	1	0	3	3	182
16:30	182	28	3	1	1	2	2	219	41	7	1	0	0	0	1	50	151	27	2	0	0	1	6	187
16:45	212	22	1	2	4	1	2	244	55	5	0	0	0	0	0	60	150	34	4	0	2	1	2	193
17:00	193	23	4	1	2	2	1	226	63	7	0	0	0	0	0	70	209	26	4	0	1	2	3	245
17:15	204	18	4	0	1	6	1	234	65	12	0	1	0	0	1	79	186	14	2	2	1	1	3	209
17:30	222	19	2	2	0	3	2	250	86	4	0	1	0	0	1	92	178	14	0	0	0	1	3	196
17:45	206	11	1	2	3	2	4	229	79	8	0	0	0	0	0	87	168	18	0	1	2	1	1	191
Total	**1539**	**164**	**19**	**11**	**13**	**19**	**16**	**1781**	**473**	**56**	**3**	**2**	**0**	**1**	**5**	**540**	**1344**	**186**	**21**	**6**	**6**	**10**	**23**	**1596**

	To A								To B								To C							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	231	15	2	1	0	1	2	252	46	6	2	0	0	0	0	54	174	35	11	1	0	0	9	230
8:15	208	23	6	2	0	0	7	246	61	7	1	2	0	0	0	71	185	26	6	2	0	0	1	220
8:30	199	28	5	0	3	2	3	240	96	8	1	0	0	0	1	106	120	23	9	2	0	2	3	159
8:45	186	13	2	1	1	0	6	209	69	11	0	0	0	0	0	80	129	25	9	1	0	0	2	166
9:00	241	14	5	1	0	2	4	267	34	5	1	0	0	0	0	40	93	30	7	2	0	0	2	134
9:15	189	8	1	0	1	0	5	204	36	6	1	0	0	1	0	44	110	21	5	1	1	0	3	141
9:30	135	17	4	1	1	1	2	161	19	4	1	0	0	1	1	26	94	20	5	4	1	0	5	129
9:45	143	16	4	1	2	0	4	170	13	6	1	0	0	0	0	20	97	14	5	3	0	1	2	122
Total	1532	134	29	7	8	6	33	1749	374	53	8	2	0	2	2	441	1002	194	57	16	2	3	27	1301
16:00	141	21	3	2	0	0	2	169	33	9	1	0	0	0	0	43	158	18	5	3	1	3	3	191
16:15	130	24	5	1	0	2	5	167	30	6	0	0	0	1	0	37	214	31	1	0	1	1	1	249
16:30	141	20	2	0	0	1	4	168	37	10	0	0	0	0	2	49	196	32	4	1	1	2	3	239
16:45	131	23	3	0	2	1	2	162	48	15	1	0	0	0	0	64	238	23	1	2	4	1	2	271
17:00	179	21	3	0	1	1	2	207	47	5	1	0	0	1	1	55	239	30	4	1	2	2	1	279
17:15	171	11	2	2	1	1	4	192	38	4	0	0	0	0	0	42	246	29	4	1	1	6	1	288
17:30	161	11	0	0	0	1	2	175	51	4	0	0	0	0	1	56	274	22	2	3	0	3	3	307
17:45	146	17	0	1	2	1	1	168	49	2	0	0	0	0	0	51	258	18	1	2	3	2	4	288
Total	1200	148	18	6	6	8	22	1408	333	55	3	0	0	2	4	397	1823	203	22	13	13	20	18	2112

A629 PENISTONE ROAD/B6433 ROWLEY LANE, LEPTON

QUEUE LENGTH SURVEY - WEDNESDAY 13 JULY 2016

Arm	A	B	B	C
Time	-	Inside	Outside	R/T
8:00	-	-	-	-
8:05	-	2	1	1
8:10	-	2	1	2
8:15	-	4	1	1
8:20	-	3	-	1
8:25	-	-	-	2
8:30	-	2	-	4
8:35	-	-	-	-
8:40	-	1	-	-
8:45	-	-	-	-
8:50	-	2	-	1
8:55	-	1	4	-
9:00	-	-	1	-
9:05	-	1	3	1
9:10	-	-	-	1
9:15	-	-	1	-
9:20	-	2	1	1
9:25	-	1	-	1
9:30	-	-	-	-
9:35	-	-	1	-
9:40	-	-	-	-
9:45	-	-	-	-
9:50	-	1	-	-
9:55	-	-	-	-

Arm	A	B	B	C
Time	-	Inside	Outside	R/T
16:00	-	1	1	2
16:05	-	1	-	-
16:10	-	-	-	-
16:15	-	1	2	-
16:20	-	3	1	1
16:25	-	-	-	-
16:30	-	1	1	-
16:35	-	-	-	-
16:40	-	-	-	3
16:45	-	1	-	-
16:50	-	3	3	2
16:55	-	-	-	-
17:00	-	1	-	-
17:05	-	1	-	-
17:10	-	2	1	2
17:15	-	-	-	-
17:20	-	3	-	1
17:25	-	3	1	2
17:30	-	7	-	-
17:35	-	5	2	-
17:40	-	7	-	1
17:45	-	4	2	-
17:50	-	-	-	1
17:55	-	2	1	1

Site 2:	**B6433 Rowley Lane/High Green/Highgate Lane**	**A:**	**B6433 Rowley Lane (North)**
Day:	**Wednesday**	**B:**	**High Green**
Date:	**13 July 2016**	**C:**	**B6433 Rowley Lane (South)**
Weather:	**Fine & Cloudy AM/Fine & Sunny Periods PM**	**D:**	**Highgate Lane**

	A - B								A - C								A - D							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
8:00	0	0	0	0	0	0	0	0	45	9	3	0	0	0	0	57	5	4	0	0	0	0	1	10
8:15	0	0	0	0	0	0	0	0	24	7	1	0	0	0	0	32	4	2	1	0	0	0	1	8
8:30	0	0	0	0	0	0	0	0	33	4	1	0	0	0	0	38	6	1	0	0	0	0	1	8
8:45	0	0	0	0	0	0	0	0	13	5	0	0	0	0	0	18	9	0	0	0	0	0	0	9
9:00	0	0	0	0	0	0	0	0	18	3	0	0	0	0	1	22	7	0	0	0	0	0	1	8
9:15	0	0	0	0	0	0	0	0	15	3	2	0	1	0	0	21	6	1	0	0	0	0	1	8
9:30	0	0	0	0	0	0	0	0	12	2	2	0	0	0	0	16	5	1	0	0	0	0	0	6
9:45	0	0	0	0	0	0	0	0	12	1	0	1	0	0	0	14	6	0	0	0	0	0	1	7
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**172**	**34**	**9**	**1**	**1**	**0**	**1**	**218**	**48**	**9**	**1**	**0**	**0**	**0**	**6**	**64**
16:00	1	0	0	0	0	0	0	1	25	2	1	0	0	0	0	28	10	1	0	0	0	0	1	12
16:15	0	0	0	0	0	0	0	0	30	8	0	0	0	1	2	41	19	5	0	0	0	0	2	26
16:30	0	0	0	0	0	0	0	0	30	4	1	0	0	0	0	35	16	5	0	0	0	0	0	21
16:45	0	0	0	0	0	0	0	0	52	0	0	0	0	0	0	52	18	3	0	0	0	0	1	22
17:00	1	0	0	0	0	0	0	1	57	8	0	0	0	0	0	65	21	2	0	0	0	0	0	23
17:15	0	0	0	0	0	0	0	0	52	8	0	1	0	0	1	62	22	2	0	0	0	0	1	25
17:30	1	0	0	0	0	0	0	1	54	6	1	1	0	0	0	62	13	1	0	0	0	0	0	14
17:45	0	0	0	0	0	0	0	0	49	8	0	0	0	0	0	57	22	2	0	0	0	0	0	24
Total	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**349**	**44**	**3**	**2**	**0**	**1**	**3**	**402**	**141**	**21**	**0**	**0**	**0**	**0**	**5**	**167**

	B - A								B - C								B - D							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**

	C - A								C - B								C - D							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	30	3	2	0	0	0	0	35	1	0	0	0	0	0	0	1	5	1	0	0	0	0	0	6
8:15	39	5	1	1	0	0	0	46	0	0	0	0	0	0	0	0	12	1	0	1	0	0	0	14
8:30	50	6	0	0	0	0	1	57	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	11
8:45	30	6	0	0	0	0	0	36	0	0	0	0	0	0	0	0	20	1	0	0	0	0	0	21
9:00	30	6	0	0	0	0	1	37	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	22
9:15	22	3	0	0	0	1	0	26	0	0	0	0	0	0	0	0	9	1	0	0	0	0	0	10
9:30	14	2	1	0	0	0	0	17	0	0	0	0	0	0	0	0	9	1	0	0	0	1	0	11
9:45	12	3	1	0	0	0	0	16	0	0	0	0	0	0	0	0	2	2	0	0	0	0	1	5
Total	**227**	**34**	**5**	**1**	**0**	**1**	**2**	**270**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**90**	**7**	**0**	**1**	**0**	**1**	**1**	**100**
16:00	13	8	0	0	0	0	0	21	0	0	0	0	0	0	0	0	7	1	0	0	0	0	2	10
16:15	12	3	0	0	0	0	0	15	0	0	0	0	0	0	0	0	7	2	0	0	0	1	0	10
16:30	28	7	0	0	0	0	1	36	0	0	0	0	0	0	0	0	7	1	0	0	0	0	1	9
16:45	24	8	1	0	0	0	0	33	0	0	0	0	0	0	0	0	10	4	0	0	0	0	0	14
17:00	28	4	1	0	0	0	0	33	0	0	0	0	0	0	0	0	7	2	0	0	0	1	0	10
17:15	19	2	0	0	0	0	1	22	0	0	0	0	0	0	0	0	14	1	0	0	1	0	0	16
17:30	39	2	0	0	0	0	0	41	0	0	0	0	0	0	0	0	16	0	0	0	0	0	1	17
17:45	27	2	0	0	0	0	0	29	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	16
Total	**190**	**36**	**2**	**0**	**0**	**0**	**2**	**230**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**84**	**11**	**0**	**0**	**1**	**2**	**4**	**102**

	D - A								D - B								D - C							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	8	4	1	0	0	0	0	13	0	0	0	0	0	0	0	0	12	2	0	0	0	0	2	16
8:15	7	1	0	0	0	0	1	9	0	0	0	0	0	0	0	0	16	1	0	0	0	0	1	18
8:30	9	2	0	0	0	0	0	11	0	0	0	0	0	0	0	0	20	1	0	0	0	0	0	21
8:45	11	1	0	0	0	0	0	12	0	0	0	0	0	0	0	0	13	0	1	0	0	0	2	16
9:00	9	2	0	0	0	0	0	11	0	0	0	0	0	0	0	0	13	2	0	0	0	0	0	15
9:15	6	2	1	0	0	0	1	10	0	0	0	0	0	0	0	0	7	1	1	0	0	0	0	9
9:30	10	3	1	0	0	1	1	16	0	0	0	0	0	0	0	0	4	0	0	0	0	0	1	5
9:45	5	1	0	0	0	0	1	7	0	0	0	0	0	0	0	0	3	1	1	0	0	0	0	5
Total	**65**	**16**	**3**	**0**	**0**	**1**	**4**	**89**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**88**	**8**	**3**	**0**	**0**	**0**	**6**	**105**
16:00	11	3	0	0	0	0	1	15	0	0	0	0	0	0	0	0	18	0	0	0	0	0	0	18
16:15	15	1	0	0	0	1	0	17	0	0	0	0	0	0	0	0	10	1	0	0	0	0	1	12
16:30	14	1	1	0	0	0	1	17	0	0	0	0	0	0	0	0	5	0	0	0	0	0	1	6
16:45	13	2	0	0	0	0	1	16	1	0	0	0	0	0	0	1	9	1	0	0	0	0	0	10
17:00	14	2	1	0	0	0	0	17	0	0	0	0	0	0	0	0	16	1	0	0	0	0	0	17
17:15	13	3	0	0	0	0	1	17	0	0	0	0	0	0	0	0	14	3	0	0	0	0	0	17
17:30	20	0	0	0	0	0	0	20	0	0	0	0	0	0	0	0	12	1	0	0	0	0	1	14
17:45	19	0	0	0	0	0	2	21	0	0	0	0	0	0	0	0	14	1	0	0	0	0	1	16
Total	**119**	**12**	**2**	**0**	**0**	**1**	**6**	**140**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**98**	**8**	**0**	**0**	**0**	**0**	**4**	**110**

Summary

Site 2:	**B6433 Rowley Lane/High Green/Highgate Lane**	**A:**	**B6433 Rowley Lane (North)**
Day:	**Wednesday**	**B:**	**High Green**
Date:	**13 July 2016**	**C:**	**B6433 Rowley Lane (South)**
Weather:	**Fine & Cloudy AM/Fine & Sunny Periods PM**	**D:**	**Highgate Lane**

	From A								From B							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
8:00	50	13	3	0	0	0	1	67	0	1	0	0	0	0	0	1
8:15	28	9	2	0	0	0	1	40	0	0	0	0	0	0	0	0
8:30	39	5	1	0	0	0	1	46	0	0	0	0	0	0	0	0
8:45	22	5	0	0	0	0	0	27	0	0	0	0	0	0	0	0
9:00	25	3	0	0	0	0	2	30	0	0	0	0	0	0	0	0
9:15	21	4	2	0	1	0	1	29	0	0	0	0	0	0	0	0
9:30	17	3	2	0	0	0	0	22	0	0	0	0	0	0	0	0
9:45	18	1	0	1	0	0	1	21	1	0	0	0	0	0	0	1
Total	**220**	**43**	**10**	**1**	**1**	**0**	**7**	**282**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**2**
16:00	36	3	1	0	0	0	1	41	0	0	0	0	0	0	0	0
16:15	49	13	0	0	0	1	4	67	1	0	0	0	0	0	0	1
16:30	46	9	1	0	0	0	0	56	0	0	0	0	0	0	0	0
16:45	70	3	0	0	0	0	1	74	0	0	0	0	0	0	0	0
17:00	79	10	0	0	0	0	0	89	1	0	0	0	0	0	0	1
17:15	74	10	0	1	0	0	2	87	0	0	0	0	0	0	0	0
17:30	68	7	1	1	0	0	0	77	1	0	0	0	0	0	0	1
17:45	71	10	0	0	0	0	0	81	0	0	0	0	0	0	0	0
Total	**493**	**65**	**3**	**2**	**0**	**1**	**8**	**572**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**3**

	From C								From D							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
8:00	36	4	2	0	0	0	0	42	20	6	1	0	0	0	2	29
8:15	51	6	1	2	0	0	0	60	23	2	0	0	0	0	2	27
8:30	61	6	0	0	0	0	1	68	29	3	0	0	0	0	0	32
8:45	50	7	0	0	0	0	0	57	24	1	1	0	0	0	2	28
9:00	52	6	0	0	0	0	1	59	22	4	0	0	0	0	0	26
9:15	31	4	0	0	0	1	0	36	13	3	2	0	0	0	1	19
9:30	23	3	1	0	0	1	0	28	14	3	1	0	0	1	2	21
9:45	14	5	1	0	0	0	1	21	8	2	1	0	0	0	1	12
Total	**318**	**41**	**5**	**2**	**0**	**2**	**3**	**371**	**153**	**24**	**6**	**0**	**0**	**1**	**10**	**194**
16:00	20	9	0	0	0	0	2	31	29	3	0	0	0	0	1	33
16:15	19	5	0	0	0	1	0	25	25	2	0	0	0	1	1	29
16:30	35	8	0	0	0	0	2	45	19	1	1	0	0	0	2	23
16:45	34	12	1	0	0	0	0	47	23	3	0	0	0	0	1	27
17:00	35	6	1	0	0	1	0	43	30	3	1	0	0	0	0	34
17:15	33	3	0	0	1	0	1	38	27	6	0	0	0	0	1	34
17:30	55	2	0	0	0	0	1	58	32	1	0	0	0	0	1	34
17:45	43	2	0	0	0	0	0	45	33	1	0	0	0	0	3	37
Total	**274**	**47**	**2**	**0**	**1**	**2**	**6**	**332**	**218**	**20**	**2**	**0**	**0**	**1**	**10**	**251**

	To A								To B							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	38	7	3	0	0	0	0	48	1	0	0	0	0	0	0	1
8:15	46	6	1	1	0	0	1	55	0	0	0	0	0	0	0	0
8:30	59	8	0	0	0	0	1	68	0	0	0	0	0	0	0	0
8:45	41	7	0	0	0	0	0	48	0	0	0	0	0	0	0	0
9:00	39	8	0	0	0	0	1	48	0	0	0	0	0	0	0	0
9:15	28	5	1	0	0	1	1	36	0	0	0	0	0	0	0	0
9:30	24	5	2	0	0	1	1	33	0	0	0	0	0	0	0	0
9:45	18	4	1	0	0	0	1	24	0	0	0	0	0	0	0	0
Total	293	50	8	1	0	2	6	360	1	0	0	0	0	0	0	1
16:00	24	11	0	0	0	0	1	36	1	0	0	0	0	0	0	1
16:15	27	4	0	0	0	1	0	32	0	0	0	0	0	0	0	0
16:30	42	8	1	0	0	0	2	53	0	0	0	0	0	0	0	0
16:45	37	10	1	0	0	0	1	49	1	0	0	0	0	0	0	1
17:00	42	6	2	0	0	0	0	50	1	0	0	0	0	0	0	1
17:15	32	5	0	0	0	0	2	39	0	0	0	0	0	0	0	0
17:30	59	2	0	0	0	0	0	61	1	0	0	0	0	0	0	1
17:45	46	2	0	0	0	0	2	50	0	0	0	0	0	0	0	0
Total	309	48	4	0	0	1	8	370	4	0	0	0	0	0	0	4

	To C								To D							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	57	12	3	0	0	0	2	74	10	5	0	0	0	0	1	16
8:15	40	8	1	0	0	0	1	50	16	3	1	1	0	0	1	22
8:30	53	5	1	0	0	0	0	59	17	1	0	0	0	0	1	19
8:45	26	5	1	0	0	0	2	34	29	1	0	0	0	0	0	30
9:00	31	5	0	0	0	0	1	37	29	0	0	0	0	0	1	30
9:15	22	4	3	0	1	0	0	30	15	2	0	0	0	0	1	18
9:30	16	2	2	0	0	0	1	21	14	2	0	0	0	1	0	17
9:45	15	2	1	1	0	0	0	19	8	2	0	0	0	0	2	12
Total	260	43	12	1	1	0	7	324	138	16	1	1	0	1	7	164
16:00	43	2	1	0	0	0	0	46	17	2	0	0	0	0	3	22
16:15	41	9	0	0	0	1	3	54	26	7	0	0	0	1	2	36
16:30	35	4	1	0	0	0	1	41	23	6	0	0	0	0	1	30
16:45	61	1	0	0	0	0	0	62	28	7	0	0	0	0	1	36
17:00	74	9	0	0	0	0	0	83	28	4	0	0	0	1	0	33
17:15	66	11	0	1	0	0	1	79	36	3	0	0	1	0	1	41
17:30	66	7	1	1	0	0	1	76	30	1	0	0	0	0	1	32
17:45	63	9	0	0	0	0	1	73	38	2	0	0	0	0	0	40
Total	449	52	3	2	0	1	7	514	226	32	0	0	1	2	9	270

B6433 ROWLEY LANE/HIGH GREEN/HIGHGATE LANE, LEPTON

QUEUE LENGTH SURVEY - WEDNESDAY 13 JULY 2016

Arm	A	B	C	D
8:00	-	-	-	-
8:05	-	-	-	-
8:10	-	-	-	-
8:15	-	-	-	-
8:20	-	-	-	-
8:25	-	-	-	1
8:30	-	-	-	-
8:35	-	-	-	-
8:40	2	-	1	2
8:45	-	-	-	-
8:50	-	-	-	1
8:55	-	-	3	-
9:00	-	-	-	-
9:05	-	-	-	-
9:10	-	-	-	-
9:15	-	-	-	-
9:20	-	-	-	-
9:25	-	-	-	-
9:30	-	-	-	-
9:35	-	-	-	-
9:40	-	-	-	-
9:45	-	-	-	-
9:50	-	-	-	-
9:55	-	-	-	-

Arm	A	B	C	D
16:00	-	-	3	-
16:05	-	-	-	1
16:10	-	-	-	-
16:15	-	-	-	-
16:20	1	-	-	-
16:25	-	-	-	1
16:30	1	-	2	2
16:35	-	-	-	-
16:40	-	-	-	1
16:45	1	-	1	2
16:50	-	-	-	-
16:55	-	-	-	-
17:00	-	-	-	2
17:05	2	-	1	-
17:10	2	-	3	2
17:15	-	-	-	1
17:20	2	-	-	-
17:25	-	-	-	-
17:30	-	-	-	2
17:35	1	-	-	1
17:40	1	-	2	-
17:45	-	-	-	-
17:50	1	-	-	1
17:55	-	-	-	2

Site 3:	**A642 Wakefield Road/B6433 Rowley Lane/Knotty Lane**	**A:**	**Knotty Lane**
Day:	**Wednesday**	**B:**	**A642 Wakefield**
Date:	**13 July 2016**	**C:**	**B6433 Rowley Lane**
Weather:	**Fine & Cloudy AM/Fine & Sunny Periods PM**	**D:**	**A642 Huddersfield**

	A - B								A - C								A - D							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
8:00	0	1	0	0	0	0	0	1	1	1	1	0	0	0	0	3	1	0	1	0	0	0	0	2
8:15	1	1	0	0	0	0	0	2	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1
8:45	3	0	0	0	0	0	0	3	3	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0
9:00	3	0	0	0	0	0	0	3	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
9:15	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
9:30	0	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	3	0	0	0	0	0	0	3
9:45	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
Total	**9**	**3**	**0**	**0**	**0**	**0**	**0**	**12**	**14**	**2**	**1**	**0**	**0**	**0**	**0**	**17**	**6**	**0**	**1**	**0**	**0**	**0**	**0**	**7**
16:00	2	2	0	1	0	0	0	5	3	0	0	0	0	0	0	3	0	1	0	0	0	0	0	1
16:15	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	2	0	1	0	0	0	0	0	1
16:30	2	1	0	0	0	1	0	4	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
16:45	1	0	0	0	0	0	0	1	7	0	0	0	1	0	0	8	0	0	0	0	0	0	0	0
17:00	2	0	0	1	0	0	0	3	1	2	0	0	0	0	0	3	1	0	0	0	0	0	0	1
17:15	5	0	0	0	0	0	0	5	5	2	0	1	0	0	0	8	0	0	0	0	0	0	0	0
17:30	5	0	0	0	0	1	0	6	1	1	1	0	1	0	0	4	2	0	0	0	0	0	0	2
17:45	4	0	0	0	0	0	0	4	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1
Total	**23**	**3**	**0**	**2**	**0**	**2**	**0**	**30**	**22**	**5**	**1**	**1**	**2**	**0**	**0**	**31**	**4**	**3**	**0**	**0**	**0**	**0**	**0**	**7**

	B - A								B - C								B - D							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	1	0	0	0	0	0	0	1	36	11	1	0	0	0	1	49	106	12	8	2	0	0	0	128
8:15	1	0	0	0	0	0	0	1	21	10	2	0	0	0	1	34	84	19	6	2	1	0	1	113
8:30	1	0	0	0	0	0	0	1	29	4	1	0	0	0	1	35	85	15	5	3	0	0	0	108
8:45	0	0	0	0	0	0	0	0	15	4	0	0	0	0	0	19	76	13	3	0	0	2	0	94
9:00	0	0	0	0	0	0	0	0	20	3	0	0	1	0	2	26	81	13	4	1	0	0	0	99
9:15	2	0	0	0	0	0	0	2	13	3	2	0	0	0	1	19	72	15	7	3	0	0	0	97
9:30	1	0	0	0	0	0	0	1	19	2	2	1	0	0	0	24	71	10	4	2	0	0	0	87
9:45	0	0	0	0	0	0	0	0	26	2	0	0	0	0	1	29	73	12	3	2	0	0	1	91
Total	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**179**	**39**	**8**	**1**	**1**	**0**	**7**	**235**	**648**	**109**	**40**	**15**	**1**	**2**	**2**	**817**
16:00	1	0	0	0	0	0	0	1	26	4	0	0	1	0	1	32	80	8	0	1	0	1	0	90
16:15	2	0	0	0	0	0	0	2	44	12	2	0	0	1	4	63	92	25	1	0	0	0	0	118
16:30	0	0	0	0	0	0	0	0	43	9	0	0	1	0	0	53	112	20	3	2	0	2	0	139
16:45	0	0	0	0	0	0	0	0	54	1	0	0	0	0	1	56	101	18	2	0	0	1	1	123
17:00	3	0	0	0	0	0	0	3	63	7	0	0	0	0	0	70	109	21	3	1	1	0	1	136
17:15	0	0	0	0	0	0	0	0	59	7	0	0	0	0	2	68	128	9	1	0	0	3	2	143
17:30	1	0	0	0	0	0	0	1	68	8	1	1	0	0	0	78	117	16	1	2	0	0	0	136
17:45	0	0	0	0	0	0	0	0	62	4	0	0	0	0	0	66	119	12	0	0	0	0	2	133
Total	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**7**	**419**	**52**	**3**	**1**	**2**	**1**	**8**	**486**	**858**	**129**	**11**	**6**	**1**	**7**	**6**	**1018**

	C - A								C - B								C - D							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	4	0	0	0	0	0	0	4	36	7	2	0	0	0	0	45	2	0	0	0	0	0	0	2
8:15	4	0	0	0	0	0	0	4	42	6	2	1	0	0	0	51	1	0	0	0	0	0	0	1
8:30	4	2	0	0	0	0	0	6	49	3	0	0	0	0	2	54	2	1	1	0	0	0	0	4
8:45	2	0	0	0	0	0	0	2	30	7	0	0	0	0	0	37	4	1	0	0	0	0	0	5
9:00	5	0	0	0	0	0	0	5	30	5	0	0	0	0	0	35	6	0	0	0	0	0	1	7
9:15	2	0	0	0	0	0	0	2	23	6	1	0	0	1	1	32	4	0	0	0	0	0	0	4
9:30	1	0	0	0	0	0	0	1	23	4	1	0	0	0	1	29	2	0	0	0	0	0	0	2
9:45	1	1	0	0	0	0	0	2	11	3	2	0	0	0	1	17	4	0	0	0	0	0	0	4
Total	**23**	**3**	**0**	**0**	**0**	**0**	**0**	**26**	**244**	**41**	**8**	**1**	**0**	**1**	**5**	**300**	**25**	**2**	**1**	**0**	**0**	**0**	**1**	**29**
16:00	4	1	0	0	0	0	0	5	19	12	0	0	0	0	1	32	5	0	0	0	0	0	0	5
16:15	3	0	0	0	0	0	0	3	8	5	1	0	0	1	0	15	4	0	0	0	0	0	0	4
16:30	5	0	0	0	0	0	0	5	28	6	1	0	0	0	1	36	3	0	0	0	0	0	0	3
16:45	3	1	0	0	0	0	0	4	24	8	1	0	0	0	1	34	3	0	0	0	0	0	0	3
17:00	2	1	1	0	0	0	0	4	25	3	0	0	0	0	1	29	4	2	0	0	0	0	0	6
17:15	1	1	1	0	0	0	0	3	28	6	0	0	0	0	1	35	1	0	0	0	0	0	0	1
17:30	4	0	0	0	0	0	0	4	38	4	0	0	0	0	1	43	7	0	0	0	0	0	0	7
17:45	3	1	0	0	0	0	0	4	41	4	0	0	0	0	2	47	7	0	0	0	0	0	0	7
Total	**25**	**5**	**2**	**0**	**0**	**0**	**0**	**32**	**211**	**48**	**3**	**0**	**0**	**1**	**8**	**271**	**34**	**2**	**0**	**0**	**0**	**0**	**0**	**36**

	D - A								D - B								D - C							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	0	0	0	0	0	0	0	0	136	15	0	2	0	1	1	155	2	1	0	0	0	0	0	3
8:15	2	0	0	0	0	0	0	2	99	10	5	0	0	0	0	114	1	0	1	0	0	0	0	2
8:30	2	0	0	0	0	0	0	2	113	14	3	1	0	1	1	133	0	1	0	0	0	0	0	1
8:45	1	0	0	0	0	0	0	1	82	6	2	2	0	0	0	92	4	0	0	0	0	0	0	4
9:00	1	0	0	0	0	0	0	1	70	14	5	2	0	0	0	91	0	0	0	0	0	0	0	0
9:15	2	1	0	0	0	0	0	3	55	5	2	0	0	1	0	63	2	1	0	0	0	0	0	3
9:30	0	0	0	0	0	0	0	0	58	13	5	1	0	0	0	77	2	0	0	0	0	0	0	2
9:45	2	0	0	0	0	0	0	2	55	6	2	2	0	3	0	68	6	0	0	0	0	0	0	6
Total	**10**	**1**	**0**	**0**	**0**	**0**	**0**	**11**	**668**	**83**	**24**	**10**	**0**	**6**	**2**	**793**	**17**	**3**	**1**	**0**	**0**	**0**	**0**	**21**
16:00	4	0	0	0	0	0	0	4	67	20	1	2	0	1	0	91	1	0	0	0	0	0	0	1
16:15	1	0	0	0	0	0	0	1	103	21	3	1	0	0	0	128	2	0	0	0	0	0	0	2
16:30	2	0	0	0	0	0	0	2	94	20	1	0	0	0	0	115	9	2	0	0	0	0	0	11
16:45	1	0	0	0	0	0	0	1	84	15	1	0	0	0	0	100	5	0	0	0	0	0	0	5
17:00	1	0	0	0	0	0	0	1	106	13	3	1	1	1	0	125	6	0	0	0	0	0	0	6
17:15	1	0	0	0	0	0	0	1	101	12	0	0	0	1	0	114	7	1	0	0	1	0	0	9
17:30	2	0	0	0	0	0	0	2	81	5	0	1	0	1	0	88	6	0	0	0	0	0	0	6
17:45	1	0	0	0	0	0	0	1	88	13	1	0	0	0	0	102	6	1	0	0	0	0	0	7
Total	**13**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**724**	**119**	**10**	**5**	**1**	**4**	**0**	**863**	**42**	**4**	**0**	**0**	**1**	**0**	**0**	**47**

Summary

Site 3:	**A642 Wakefield Road/B6433 Rowley Lane**	**A:**	**Knotty Lane**
Day:	**Wednesday**	**B:**	**A642 Wakefield**
Date:	**13 July 2016**	**C:**	**B6433 Rowley Lane**
Weather:	**Fine & Cloudy AM/Fine & Sunny Periods PM**	**D:**	**A642 Huddersfield**

	From A								From B							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
8:00	2	2	2	0	0	0	0	6	143	23	9	2	0	0	1	178
8:15	3	1	0	0	0	0	0	4	106	29	8	2	1	0	2	148
8:30	3	0	0	0	0	0	0	3	115	19	6	3	0	0	1	144
8:45	6	1	0	0	0	0	0	7	91	17	3	0	0	2	0	113
9:00	5	0	0	0	0	0	0	5	101	16	4	1	1	0	2	125
9:15	3	0	0	0	0	0	0	3	87	18	9	3	0	0	1	118
9:30	4	1	0	0	0	0	0	5	91	12	6	3	0	0	0	112
9:45	3	0	0	0	0	0	0	3	99	14	3	2	0	0	2	120
Total	**29**	**5**	**2**	**0**	**0**	**0**	**0**	**36**	**833**	**148**	**48**	**16**	**2**	**2**	**9**	**1058**
16:00	5	3	0	1	0	0	0	9	107	12	0	1	1	1	1	123
16:15	4	1	0	0	0	0	0	5	138	37	3	0	0	1	4	183
16:30	3	2	0	0	0	1	0	6	155	29	3	2	1	2	0	192
16:45	8	0	0	0	1	0	0	9	155	19	2	0	0	1	2	179
17:00	4	2	0	1	0	0	0	7	175	28	3	1	1	0	1	209
17:15	10	2	0	1	0	0	0	13	187	16	1	0	0	3	4	211
17:30	8	1	1	0	1	1	0	12	186	24	2	3	0	0	0	215
17:45	7	0	0	0	0	0	0	7	181	16	0	0	0	0	2	199
Total	**49**	**11**	**1**	**3**	**2**	**2**	**0**	**68**	**1284**	**181**	**14**	**7**	**3**	**8**	**14**	**1511**

	From C								From D							
Time	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**	**Car**	**LGV**	**OGVI**	**0GV2**	**P/C**	**M/C**	**PSV**	**Total**
8:00	42	7	2	0	0	0	0	51	138	16	0	2	0	1	1	158
8:15	47	6	2	1	0	0	0	56	102	10	6	0	0	0	0	118
8:30	55	6	1	0	0	0	2	64	115	15	3	1	0	1	1	136
8:45	36	8	0	0	0	0	0	44	87	6	2	2	0	0	0	97
9:00	41	5	0	0	0	0	1	47	71	14	5	2	0	0	0	92
9:15	29	6	1	0	0	1	1	38	59	7	2	0	0	1	0	69
9:30	26	4	1	0	0	0	1	32	60	13	5	1	0	0	0	79
9:45	16	4	2	0	0	0	1	23	63	6	2	2	0	3	0	76
Total	**292**	**46**	**9**	**1**	**0**	**1**	**6**	**355**	**695**	**87**	**25**	**10**	**0**	**6**	**2**	**825**
16:00	28	13	0	0	0	0	1	42	72	20	1	2	0	1	0	96
16:15	15	5	1	0	0	1	0	22	106	21	3	1	0	0	0	131
16:30	36	6	1	0	0	0	1	44	105	22	1	0	0	0	0	128
16:45	30	9	1	0	0	0	1	41	90	15	1	0	0	0	0	106
17:00	31	6	1	0	0	0	1	39	113	13	3	1	1	1	0	132
17:15	30	7	1	0	0	0	1	39	109	13	0	0	1	1	0	124
17:30	49	4	0	0	0	0	1	54	89	5	0	1	0	1	0	96
17:45	51	5	0	0	0	0	2	58	95	14	1	0	0	0	0	110
Total	**270**	**55**	**5**	**0**	**0**	**1**	**8**	**339**	**779**	**123**	**10**	**5**	**2**	**4**	**0**	**923**

	To A								To B							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	5	0	0	0	0	0	0	5	172	23	2	2	0	1	1	201
8:15	7	0	0	0	0	0	0	7	142	17	7	1	0	0	0	167
8:30	7	2	0	0	0	0	0	9	162	17	3	1	0	1	3	187
8:45	3	0	0	0	0	0	0	3	115	13	2	2	0	0	0	132
9:00	6	0	0	0	0	0	0	6	103	19	5	2	0	0	0	129
9:15	6	1	0	0	0	0	0	7	79	11	3	0	0	2	1	96
9:30	2	0	0	0	0	0	0	2	81	18	6	1	0	0	1	107
9:45	3	1	0	0	0	0	0	4	67	9	4	2	0	3	1	86
Total	39	4	0	0	0	0	0	43	921	127	32	11	0	7	7	1105
16:00	9	1	0	0	0	0	0	10	88	34	1	3	0	1	1	128
16:15	6	0	0	0	0	0	0	6	113	26	4	1	0	1	0	145
16:30	7	0	0	0	0	0	0	7	124	27	2	0	0	1	1	155
16:45	4	1	0	0	0	0	0	5	109	23	2	0	0	0	1	135
17:00	6	1	1	0	0	0	0	8	133	16	3	2	1	1	1	157
17:15	2	1	1	0	0	0	0	4	134	18	0	0	0	1	1	154
17:30	7	0	0	0	0	0	0	7	124	9	0	1	0	2	1	137
17:45	4	1	0	0	0	0	0	5	133	17	1	0	0	0	2	153
Total	45	5	2	0	0	0	0	52	958	170	13	7	1	7	8	1164

	To C								To D							
Time	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total	Car	LGV	OGVI	0GV2	P/C	M/C	PSV	Total
8:00	39	13	2	0	0	0	1	55	109	12	9	2	0	0	0	132
8:15	24	10	3	0	0	0	1	38	85	19	6	2	1	0	1	114
8:30	31	5	1	0	0	0	1	38	88	16	6	3	0	0	0	113
8:45	22	5	0	0	0	0	0	27	80	14	3	0	0	2	0	99
9:00	22	3	0	0	1	0	2	28	87	13	4	1	0	0	1	106
9:15	17	4	2	0	0	0	1	24	76	15	7	3	0	0	0	101
9:30	22	2	2	1	0	0	0	27	76	10	4	2	0	0	0	92
9:45	33	2	0	0	0	0	1	36	78	12	3	2	0	0	1	96
Total	210	44	10	1	1	0	7	273	679	111	42	15	1	2	3	853
16:00	30	4	0	0	1	0	1	36	85	9	0	1	0	1	0	96
16:15	48	12	2	0	0	1	4	67	96	26	1	0	0	0	0	123
16:30	53	11	0	0	1	0	0	65	115	21	3	2	0	2	0	143
16:45	66	1	0	0	1	0	1	69	104	18	2	0	0	1	1	126
17:00	70	9	0	0	0	0	0	79	114	23	3	1	1	0	1	143
17:15	71	10	0	1	1	0	2	85	129	9	1	0	0	3	2	144
17:30	75	9	2	1	1	0	0	88	126	16	1	2	0	0	0	145
17:45	70	5	0	0	0	0	0	75	127	12	0	0	0	0	2	141
Total	483	61	4	2	5	1	8	564	896	134	11	6	1	7	6	1061

A642 WAKEFIELD ROAD/B6433 ROWLEY LANE/KNOTTY LANE, LEPTON

QUEUE LENGTH SURVEY - WEDNESDAY 13 JULY 2016

Arm	A	B	C	D
8:00	1	-	4	-
8:05	-	-	1	-
8:10	-	-	3	-
8:15	-	-	6	1
8:20	-	-	-	-
8:25	-	-	3	-
8:30	-	-	6	-
8:35	1	-	9	-
8:40	1	-	4	-
8:45	-	-	1	-
8:50	-	-	1	-
8:55	-	-	4	-
9:00	1	-	2	-
9:05	-	-	6	-
9:10	1	-	5	-
9:15	-	-	-	-
9:20	-	-	2	-
9:25	1	-	2	-
9:30	-	-	2	-
9:35	1	-	1	-
9:40	-	-	1	-
9:45	-	-	2	-
9:50	-	-	-	-
9:55	-	-	3	-

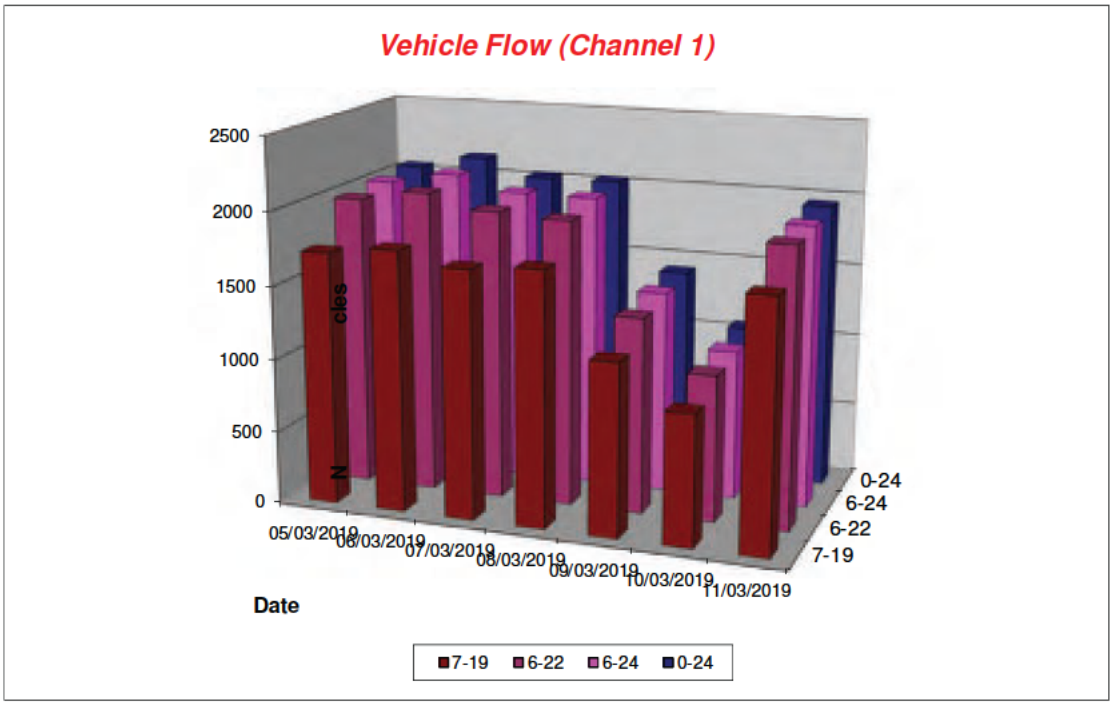
Arm	A	B	C	D
16:00	-	-	1	-
16:05	-	-	2	-
16:10	1	-	1	-
16:15	-	-	1	-
16:20	1	-	1	-
16:25	-	-	5	1
16:30	-	-	5	1
16:35	-	-	4	1
16:40	-	-	3	1
16:45	1	-	4	-
16:50	1	-	2	-
16:55	-	-	1	-
17:00	1	-	1	-
17:05	1	-	9	-
17:10	1	-	7	1
17:15	1	-	1	-
17:20	1	-	6	1
17:25	-	-	2	1
17:30	-	-	8	1
17:35	-	-	12	-
17:40	1	-	6	-
17:45	-	-	6	-
17:50	-	-	5	-
17:55	1	-	4	-

Lepton ATC, B6433 Rowley Lane

Produced by Road Data Services Ltd.

Channel 1 - Eastbound | **Vehicle Flow** | **Week 1**

Hr Ending	05/03/2019 Tuesday	06/03/2019 Wednesday	07/03/2019 Thursday	08/03/2019 Friday	09/03/2019 Saturday	10/03/2019 Sunday	11/03/2019 Monday	5 Day Ave	7 Day Ave
1	1	2	2	6	11	12	4	3	5
2	1	3	1	1	4	7	1	1	3
3	0	0	0	3	3	5	1	1	2
4	1	3	0	0	4	3	2	1	2
5	7	2	2	2	2	3	4	3	3
6	15	25	16	15	5	2	20	18	14
7	76	78	79	55	26	6	70	72	56
8	200	197	200	180	40	12	183	192	145
9	206	242	199	213	69	33	220	216	169
10	118	123	125	128	96	78	127	124	114
11	114	92	88	84	95	105	91	94	96
12	101	105	117	113	138	109	102	108	112
13	105	128	100	142	155	99	100	115	118
14	102	101	102	109	131	86	104	104	105
15	101	103	96	113	106	111	99	102	104
16	166	199	193	184	103	76	182	185	158
17	196	173	173	177	86	66	157	175	147
18	185	222	193	171	81	63	205	195	160
19	129	92	107	117	75	52	120	113	99
20	97	93	91	75	51	49	60	83	74
21	46	70	53	47	45	27	37	51	46
22	45	43	53	38	41	28	42	44	41
23	23	23	23	35	26	20	15	24	24
24	10	17	12	22	23	7	7	14	14
7-19	1723	1777	1693	1731	1175	890	1690	1723	1526
6-22	1987	2061	1969	1946	1338	1000	1899	1972	1743
6-24	2020	2101	2004	2003	1387	1027	1921	2010	1780
0-24	2045	2136	2025	2030	1416	1059	1953	2038	1809



Lepton ATC, B6433 Rowley Lane

Produced by Road Data Services Ltd.

Channel 1 - Eastbound **Average Speed** **Week 1**

Hr Ending	05/03/2019 Tuesday	06/03/2019 Wednesday	07/03/2019 Thursday	08/03/2019 Friday	09/03/2019 Saturday	10/03/2019 Sunday	11/03/2019 Monday
1	29.4	30.1	29.0	33.8	29.0	30.1	30.3
2	26.2	34.0	31.0	33.6	23.5	28.3	45.6
3	-	-	-	32.1	30.3	30.4	32.9
4	19.6	29.2	-	-	28.7	28.4	28.2
5	31.1	26.0	39.6	26.1	35.3	31.5	29.8
6	30.4	30.9	32.2	31.7	32.9	36.0	30.9
7	31.4	32.4	30.8	30.9	32.3	32.0	30.3
8	30.2	29.3	29.8	30.9	30.3	29.7	30.4
9	25.4	24.1	25.6	25.2	31.2	30.1	26.5
10	26.9	26.9	27.0	26.6	28.9	30.4	28.0
11	27.9	26.8	26.8	27.5	30.0	29.4	28.4
12	26.7	26.7	27.0	27.0	27.3	29.7	28.0
13	27.2	26.1	28.6	27.5	28.2	30.1	27.1
14	26.8	26.8	27.3	27.0	29.1	30.8	28.4
15	24.3	23.3	26.4	26.2	30.3	30.2	26.6
16	23.2	23.6	23.3	22.3	30.0	30.7	23.0
17	27.8	26.8	28.5	26.9	28.6	30.7	29.8
18	29.6	25.9	28.3	29.6	28.9	31.9	25.5
19	29.0	27.9	29.1	29.9	29.1	29.3	30.3
20	27.6	30.2	29.8	29.3	29.2	30.9	29.0
21	28.0	28.9	29.8	32.7	30.4	30.0	29.6
22	29.3	29.1	30.4	30.9	30.5	30.5	31.2
23	29.8	31.2	29.7	31.8	30.8	29.8	30.0
24	31.3	31.4	30.8	31.7	31.3	35.2	33.9
10-12	27.3	26.7	26.9	27.2	28.4	29.6	28.2
14-16	23.6	23.5	24.3	23.7	30.1	30.4	24.3
0-24	27.5	26.8	27.8	27.7	29.3	30.3	27.8

Average	27.9

Channel 1 - Eastbound **85th Percentile**

Hr Ending	05/03/2019 Tuesday	06/03/2019 Wednesday	07/03/2019 Thursday	08/03/2019 Friday	09/03/2019 Saturday	10/03/2019 Sunday	11/03/2019 Monday
1	-	31.1	29.9	38.8	32.4	33.9	33.8
2	-	35.9	-	-	31.2	30.2	-
3	-	-	-	36.4	33.0	34.9	-
4	-	33.3	-	-	32.9	31.0	29.7
5	36.5	35.3	42.0	30.7	39.5	32.5	36.8
6	38.3	35.2	37.7	37.4	35.3	36.1	34.0
7	37.2	36.7	35.3	35.0	38.3	36.5	33.8
8	34.2	33.1	34.5	34.9	36.4	33.6	34.3
9	30.8	29.9	31.3	31.1	35.1	34.6	30.9
10	30.6	31.0	31.3	32.1	34.1	34.4	32.7
11	32.3	30.6	31.8	31.0	33.9	33.2	33.0
12	32.3	32.0	31.6	32.1	32.4	33.8	31.7
13	30.8	30.6	32.7	32.6	32.6	34.2	32.5
14	31.3	30.9	31.9	30.8	33.3	34.5	32.8
15	31.0	30.0	30.3	30.3	34.8	34.7	31.4
16	30.1	29.9	29.7	27.0	35.1	34.3	29.3
17	32.2	32.2	33.0	31.9	33.2	36.7	33.6
18	33.1	30.4	33.3	33.3	34.2	34.9	30.6
19	33.4	34.1	33.1	35.8	34.3	33.6	35.5
20	32.9	34.4	34.5	33.6	33.6	35.9	36.2
21	32.7	33.3	33.6	37.3	34.0	34.6	34.1
22	32.9	33.0	33.8	33.6	35.9	34.9	37.2
23	34.5	34.6	33.3	36.5	33.8	33.1	34.0
24	36.4	36.7	34.0	33.9	35.5	39.2	37.2
10-12	32.3	31.2	31.6	31.6	32.8	33.5	32.5
14-16	30.6	29.9	29.8	29.3	34.9	34.5	30.3
0-24	32.7	32.4	32.7	32.9	34.0	34.5	32.9

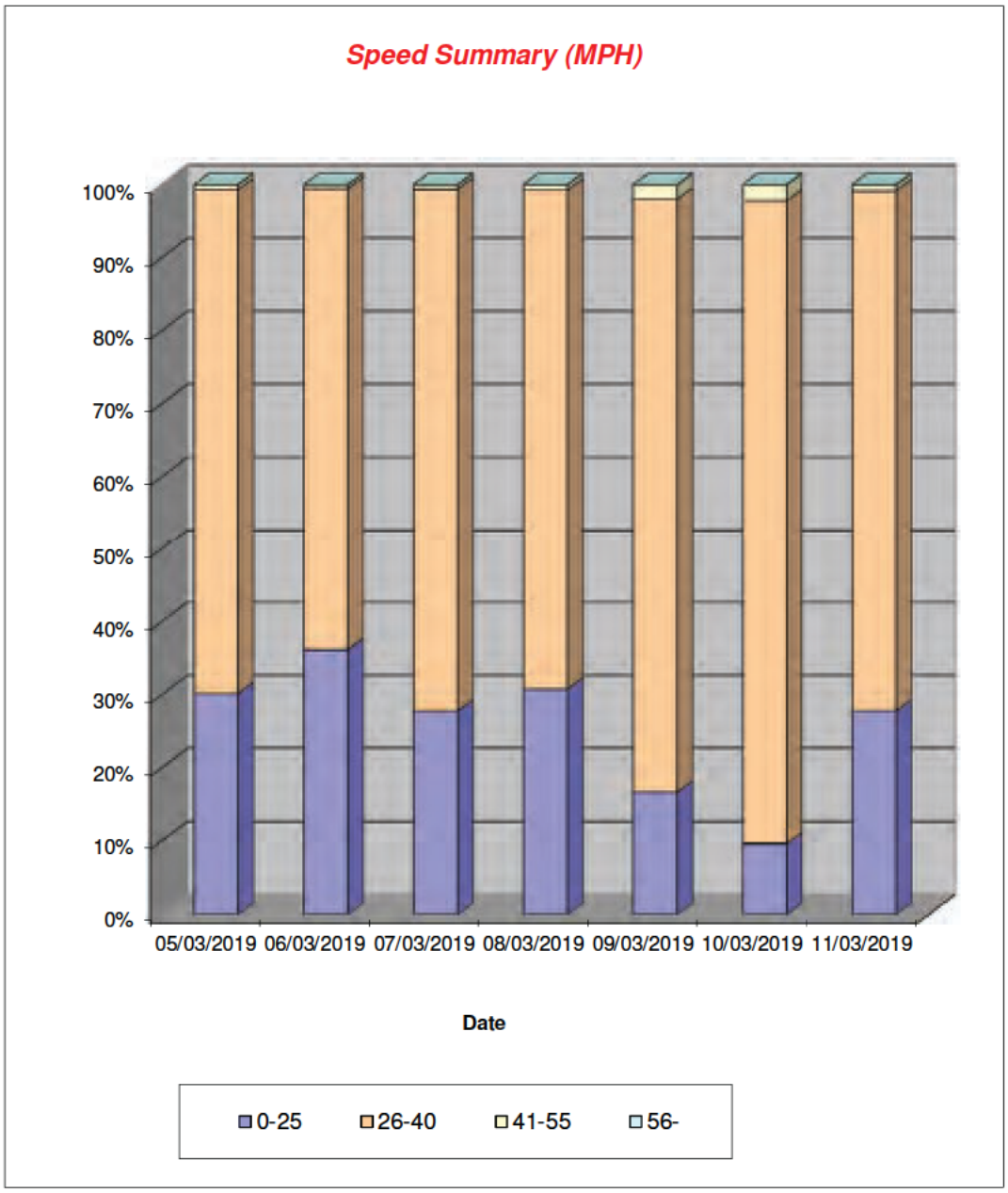
85th %ile	33.1

Lepton ATC, B6433 Rowley Lane

Produced by Road Data Services Ltd.

Channel 1 - Eastbound | **Speed Summary** | **Week 1**

Speed (MPH)	05/03/2019 Tuesday	06/03/2019 Wednesday	07/03/2019 Thursday	08/03/2019 Friday	09/03/2019 Saturday	10/03/2019 Sunday	11/03/2019 Monday
0-25	617	773	563	625	236	102	543
26-40	1414	1352	1450	1390	1152	934	1394
41-55	14	11	12	15	28	23	16
56-	0	0	0	0	0	0	0
TOTAL	2045	2136	2025	2030	1416	1059	1953



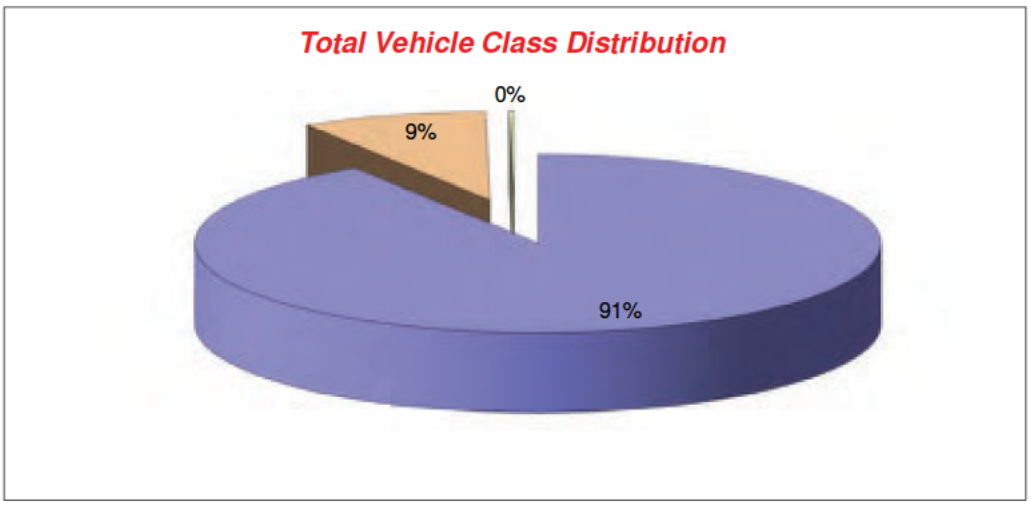
Lepton ATC, B6433 Rowley Lane

Produced by Road Data Services Ltd.

Channel 1 - Eastbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
05/03/2019				
7-19	1526	191	6	1723
6-22	1767	214	6	1987
6-24	1800	214	6	2020
0-24	1820	219	6	2045
06/03/2019				
7-19	1624	149	4	1777
6-22	1885	172	4	2061
6-24	1923	174	4	2101
0-24	1953	179	4	2136
07/03/2019				
7-19	1538	154	1	1693
6-22	1789	179	1	1969
6-24	1823	180	1	2004
0-24	1839	185	1	2025
08/03/2019				
7-19	1560	167	4	1731
6-22	1760	182	4	1946
6-24	1815	184	4	2003
0-24	1838	188	4	2030
09/03/2019				
7-19	1085	86	4	1175
6-22	1236	98	4	1338
6-24	1283	100	4	1387
0-24	1311	101	4	1416
10/03/2019				
7-19	841	48	1	890
6-22	946	53	1	1000
6-24	971	55	1	1027
0-24	998	60	1	1059
11/03/2019				
7-19	1531	152	7	1690
6-22	1721	171	7	1899
6-24	1742	172	7	1921
0-24	1771	175	7	1953

Average				
7-19	1386	135	4	1526
6-22	1586	153	4	1743
6-24	1622	154	4	1780
0-24	1647	158	4	1809

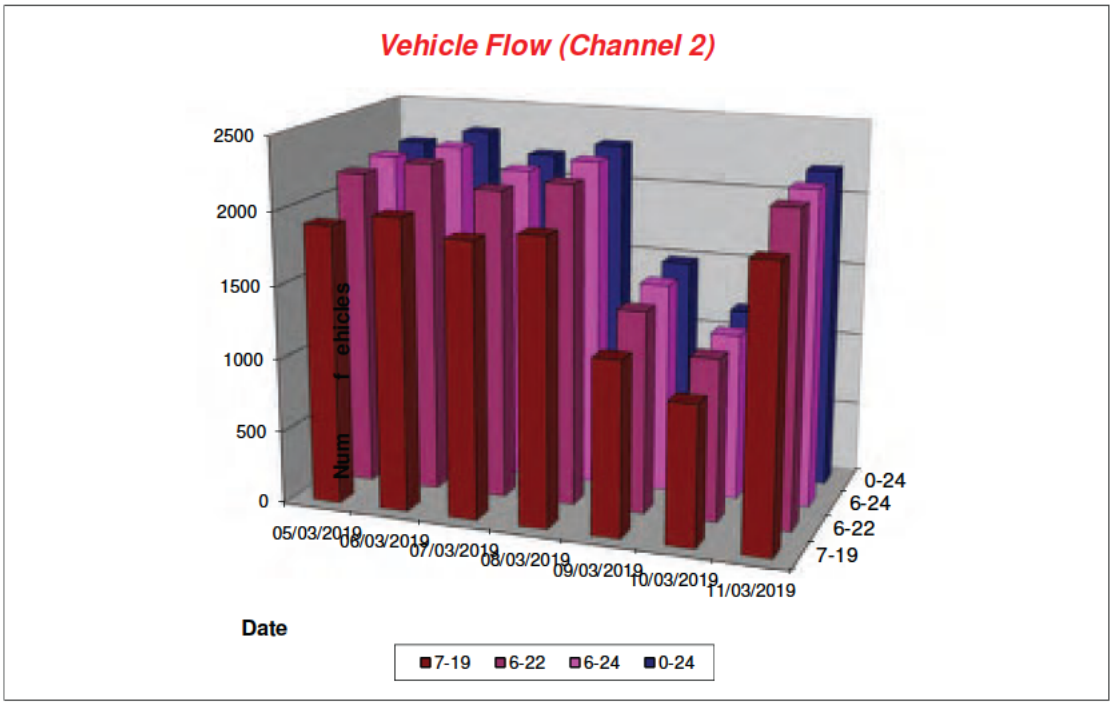


Lepton ATC, B6433 Rowley Lane

Produced by Road Data Services Ltd.

Channel 2 - Westbound | **Vehicle Flow** | **Week 1**

Hr Ending	05/03/2019 Tuesday	06/03/2019 Wednesday	07/03/2019 Thursday	08/03/2019 Friday	09/03/2019 Saturday	10/03/2019 Sunday	11/03/2019 Monday	5 Day Ave	7 Day Ave
1	2	2	5	4	16	20	4	3	8
2	0	1	1	1	5	7	0	1	2
3	1	3	3	3	3	2	0	2	2
4	0	2	0	2	4	3	2	1	2
5	3	3	4	3	4	3	5	4	4
6	18	20	16	17	9	5	19	18	15
7	47	48	41	48	21	8	47	46	37
8	181	180	163	158	24	7	174	171	127
9	254	279	235	237	63	22	266	254	194
10	129	126	124	141	93	67	137	131	117
11	95	94	94	102	114	90	91	95	97
12	84	108	91	110	116	89	104	99	100
13	105	114	104	126	136	113	107	111	115
14	115	109	94	137	132	127	102	111	117
15	114	138	125	140	100	128	133	130	125
16	148	170	173	168	81	88	140	160	138
17	236	241	219	236	106	87	231	233	194
18	292	253	309	240	124	87	270	273	225
19	153	183	148	153	102	51	150	157	134
20	102	100	82	94	91	66	92	94	90
21	54	68	60	59	40	43	55	59	54
22	54	48	51	38	40	40	34	45	44
23	23	26	31	35	30	18	14	26	25
24	13	6	14	30	31	9	15	16	17
7-19	1906	1995	1879	1948	1191	956	1905	1927	1683
6-22	2163	2259	2113	2187	1383	1113	2133	2171	1907
6-24	2199	2291	2158	2252	1444	1140	2162	2212	1949
0-24	2223	2322	2187	2282	1485	1180	2192	2241	1982



Lepton ATC, B6433 Rowley Lane

Produced by Road Data Services Ltd.

Channel 2 - Westbound **Average Speed** **Week 1**

Hr Ending	05/03/2019 Tuesday	06/03/2019 Wednesday	07/03/2019 Thursday	08/03/2019 Friday	09/03/2019 Saturday	10/03/2019 Sunday	11/03/2019 Monday
1	35.7	33.8	32.7	32.0	32.3	33.2	36.4
2	-	27.3	33.9	33.1	28.3	35.5	-
3	37.6	34.8	34.6	38.3	30.1	32.2	-
4	-	29.7	-	34.9	34.1	36.2	29.3
5	33.0	34.8	35.4	30.0	32.0	32.2	33.2
6	32.6	32.9	34.6	31.5	33.2	28.6	29.0
7	31.9	33.1	33.0	32.4	31.6	28.4	31.9
8	30.7	31.8	31.4	31.1	30.5	34.5	30.1
9	27.6	26.2	28.2	27.4	30.8	31.9	27.5
10	28.6	28.5	27.5	27.7	30.3	28.6	29.1
11	28.3	28.7	28.9	28.7	30.6	29.7	29.5
12	29.1	27.2	28.9	29.3	28.4	30.6	29.7
13	27.8	29.4	29.7	29.0	30.9	30.7	29.1
14	28.7	28.7	29.2	28.6	30.5	31.1	29.8
15	27.9	27.8	29.2	27.2	30.8	30.3	27.2
16	26.5	27.3	26.4	25.7	30.7	30.4	24.4
17	30.5	30.4	30.9	28.6	29.3	30.3	29.5
18	30.6	29.8	30.8	31.0	30.3	31.3	30.5
19	30.8	31.6	31.6	31.2	31.9	31.5	31.2
20	30.4	31.8	31.2	32.4	30.3	31.1	30.3
21	31.8	31.2	30.4	32.2	30.4	31.3	30.9
22	30.2	31.7	32.1	32.3	32.1	31.8	31.4
23	32.0	32.6	32.8	32.4	32.0	30.3	31.3
24	33.8	30.7	33.2	32.2	32.5	30.4	32.1
10-12	28.7	27.9	28.9	29.0	29.5	30.2	29.6
14-16	27.1	27.5	27.5	26.4	30.8	30.3	25.8
0-24	29.4	29.4	29.9	29.3	30.6	30.7	29.3

Average	29.7

Channel 2 - Westbound **85th Percentile**

Hr Ending	05/03/2019 Tuesday	06/03/2019 Wednesday	07/03/2019 Thursday	08/03/2019 Friday	09/03/2019 Saturday	10/03/2019 Sunday	11/03/2019 Monday
1	42.2	34.1	36.0	34.9	37.4	35.4	38.3
2	-	-	-	-	33.6	39.6	-
3	-	35.3	38.4	42.4	33.0	33.6	-
4	-	30.0	-	40.3	36.2	37.8	29.9
5	34.2	38.2	37.5	31.6	33.5	34.1	34.8
6	36.7	36.4	39.4	34.0	33.9	31.4	30.9
7	35.1	35.8	38.2	38.9	35.6	32.6	35.8
8	34.7	36.0	35.6	34.8	34.5	39.6	34.5
9	33.4	31.7	33.8	34.0	35.4	35.2	33.3
10	33.8	32.8	33.1	32.2	33.7	32.7	33.9
11	32.4	33.6	32.8	33.0	34.2	34.1	34.0
12	33.9	32.2	33.0	33.2	32.1	35.1	34.8
13	33.1	35.0	34.6	34.5	34.9	34.9	34.1
14	32.8	33.0	33.5	33.4	35.1	34.8	33.7
15	33.6	33.4	33.4	32.2	34.9	34.6	31.1
16	33.6	32.4	32.2	30.9	34.8	35.2	30.5
17	34.8	34.3	34.9	33.2	34.5	34.8	33.2
18	34.8	33.4	34.7	34.8	35.6	35.7	34.8
19	34.4	35.5	34.9	35.1	35.9	35.6	35.3
20	34.3	35.6	35.2	35.5	34.5	34.9	34.9
21	36.8	34.9	35.3	35.2	33.8	34.8	36.3
22	34.9	36.7	36.2	36.2	34.5	35.1	35.7
23	36.1	35.1	35.1	38.8	35.8	32.8	36.3
24	39.3	32.7	36.4	35.5	36.1	35.3	36.3
10-12	33.2	33.3	32.9	33.2	33.8	34.7	34.5
14-16	33.6	32.6	32.8	31.7	34.8	34.9	30.9
0-24	34.4	34.5	34.6	34.3	34.8	35.0	34.3

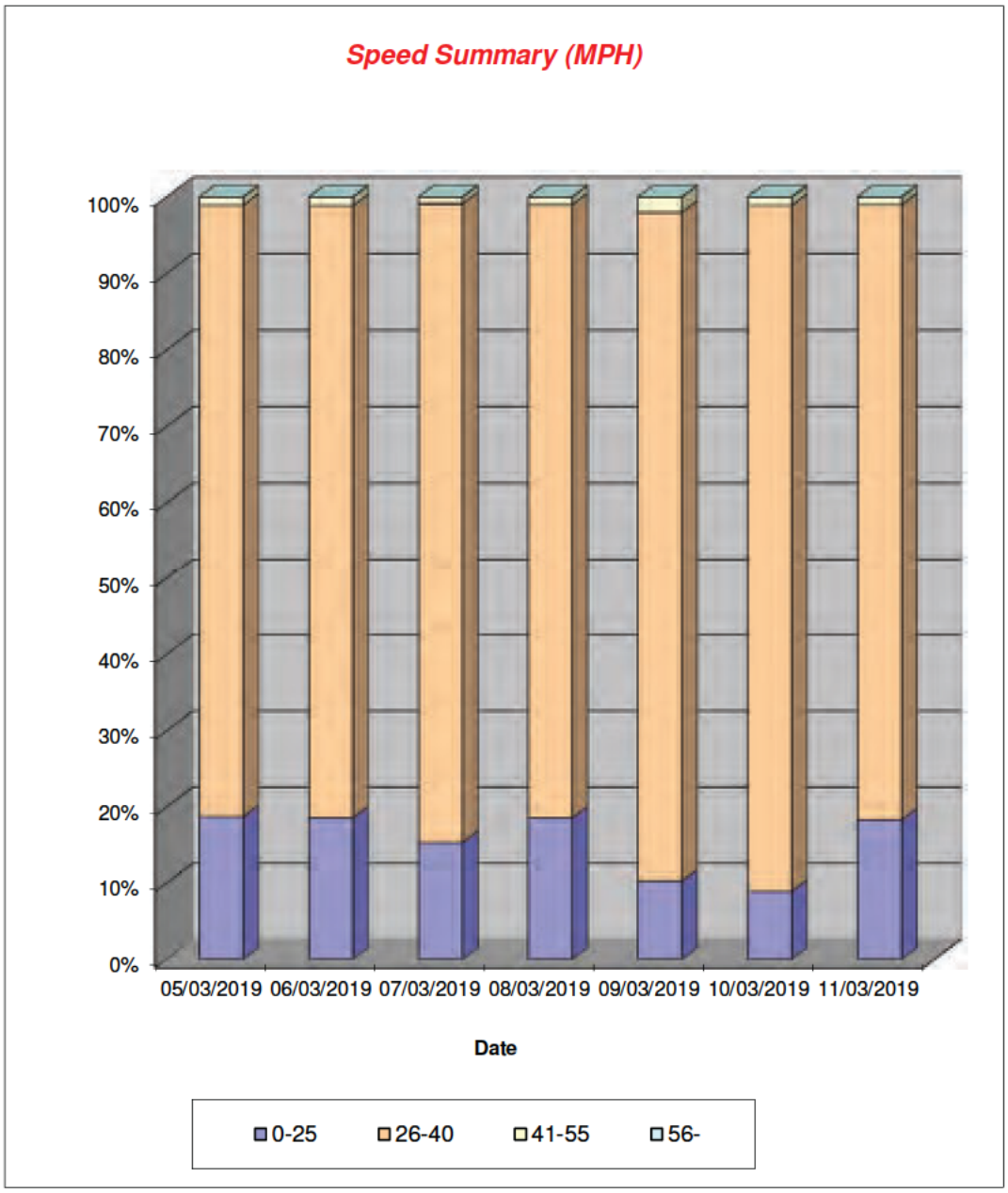
85th %ile	34.5

Lepton ATC, B6433 Rowley Lane

Produced by Road Data Services Ltd.

Channel 2 - Westbound | **Speed Summary** | **Week 1**

Speed (MPH)	05/03/2019 Tuesday	06/03/2019 Wednesday	07/03/2019 Thursday	08/03/2019 Friday	09/03/2019 Saturday	10/03/2019 Sunday	11/03/2019 Monday
0-25	416	431	335	423	152	105	401
26-40	1783	1864	1833	1836	1303	1062	1769
41-55	24	27	19	23	30	13	22
56-	0	0	0	0	0	0	0
TOTAL	2223	2322	2187	2282	1485	1180	2192



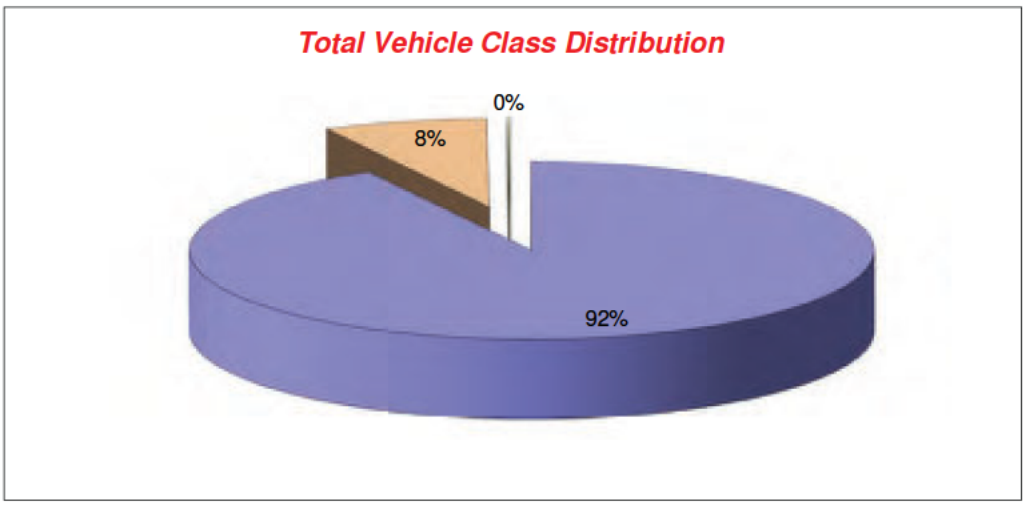
Lepton ATC, B6433 Rowley Lane

Produced by Road Data Services Ltd.

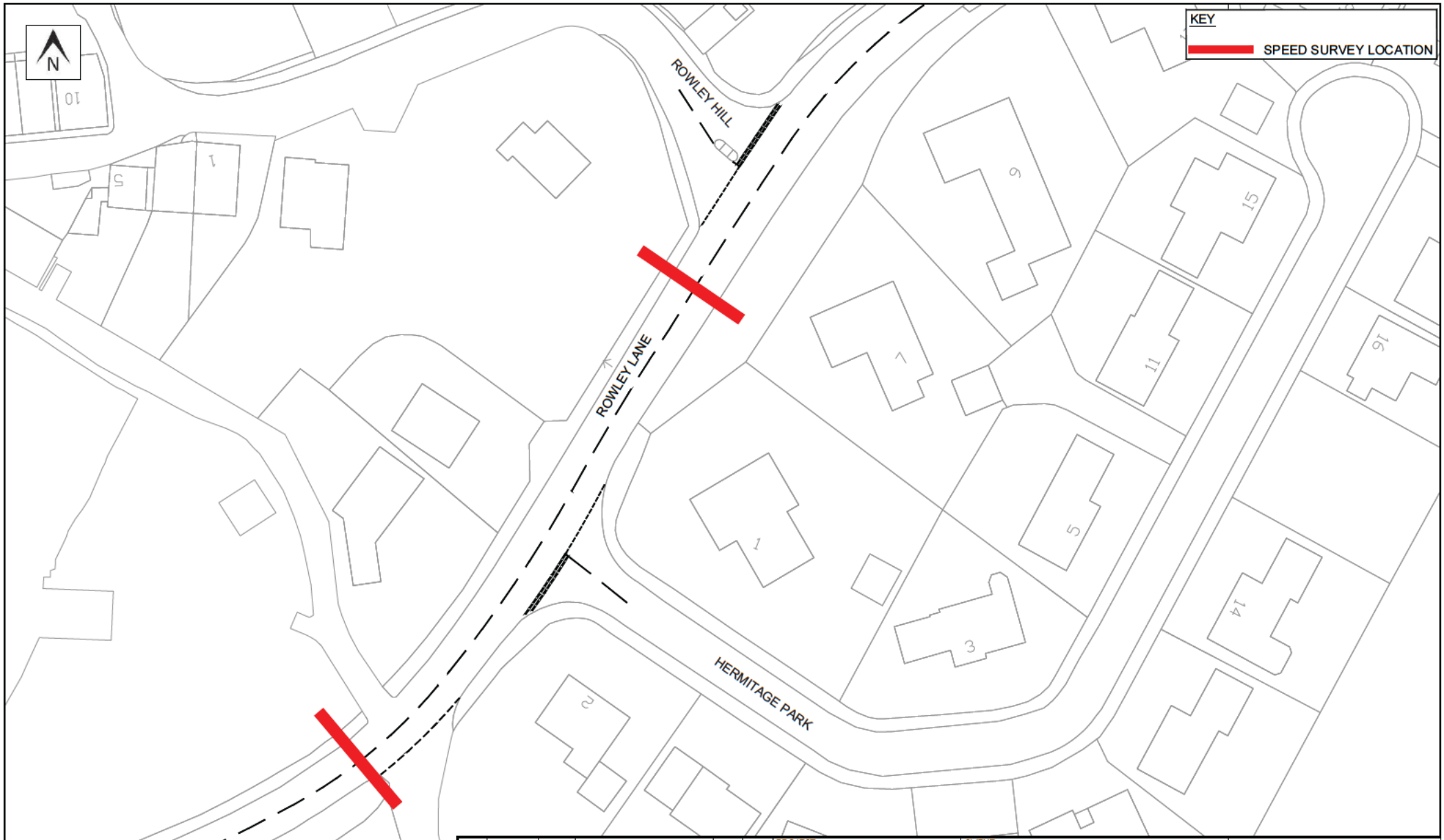
Channel 2 - Westbound | **Vehicle Class** | **Week 1**

Classes / Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
05/03/2019				
7-19	1719	180	7	1906
6-22	1964	192	7	2163
6-24	1998	194	7	2199
0-24	2021	195	7	2223
06/03/2019				
7-19	1817	172	6	1995
6-22	2066	187	6	2259
6-24	2096	189	6	2291
0-24	2122	194	6	2322
07/03/2019				
7-19	1724	153	2	1879
6-22	1947	164	2	2113
6-24	1992	164	2	2158
0-24	2019	166	2	2187
08/03/2019				
7-19	1772	175	1	1948
6-22	1999	187	1	2187
6-24	2063	188	1	2252
0-24	2092	189	1	2282
09/03/2019				
7-19	1109	82	0	1191
6-22	1297	86	0	1383
6-24	1355	89	0	1444
0-24	1395	90	0	1485
10/03/2019				
7-19	915	41	0	956
6-22	1067	46	0	1113
6-24	1092	48	0	1140
0-24	1129	51	0	1180
11/03/2019				
7-19	1729	175	1	1905
6-22	1942	190	1	2133
6-24	1970	191	1	2162
0-24	1999	192	1	2192

Average				
7-19	1541	140	2	1683
6-22	1755	150	2	1907
6-24	1795	152	2	1949
0-24	1825	154	2	1982



Appendix D Vehicle Speed Survey & Drawing 13015/IN/03



REV	DATE	BY	DESCRIPTION	CHK	APP
B	24/09/19	JS	CLIENT NAME AMENDED	MEW	MEW
A	19/09/19	NJ	MINOR AMENDS	MEW	MEW

STATUS: PRELIMINARY

PROJECT: LAND OFF HERMITAGE PARK, LEPTON

CLIENT: KCS DEVELOPMENTS LTD.

DRAWING TITLE: LOCATION OF SPEED SURVEYS ON ROWLEY LANE

CHECKED	APPROVED	DRG No.	
RAM	RAM	13015/IN/03	
DRAWN BY:	SCALE @ A3	DATE	REV.
TP	1:500	SEP 20	B

OPTIMA
Intelligent Highways Solutions
Atlas House, 31 King Street, Leeds, LS1 2HL
T 0113 245 1679 F 0113 245 6862

Manual Speed Survey, Lepton

DATE : WEDNESDAY 13th JANUARY 2016

LOCATION: A642 APPROACHING APPROACHING JUNCTION

SINGLE CARRIAGEWAY

OFF PEAK			
DIRECTION : WESTBOUND		DIRECTION : EASTBOUND	
SPEED (MPH)	NUMBER OF VEHICLES	SPEED (MPH)	NUMBER OF VEHICLES
15	0	15	0
16	0	16	0
17	0	17	0
18	0	18	0
19	0	19	0
20	0	20	0
21	0	21	0
22	0	22	0
23	0	23	0
24	0	24	0
25	0	25	1
26	0	26	0
27	0	27	2
28	0	28	2
29	0	29	2
30	1	30	1
31	0	31	1
32	2	32	4
33	1	33	3
34	1	34	3
35	2	35	11
36	10	36	9
37	10	37	11
38	12	38	19
39	21	39	29
40	32	40	45
41	24	41	26
42	25	42	12
43	15	43	7
44	19	44	8
45	15	45	9
46	11	46	5
47	12	47	1
48	5	48	1
49	4	49	1
50	0	50	0
51	0	51	0
52	0	52	0
53	0	53	0
54	0	54	0
55	0	55	0
56	0	56	0
57	0	57	0
58	0	58	0
59	0	59	0
60	0	60	0
61	0	61	0
62	0	62	0
63	0	63	0
64	0	64	0
65	0	65	0
66	0	66	0
67	0	67	0
68	0	68	0
69	0	69	0
70	0	70	0
71	0	71	0
72	0	72	0
73	0	73	0
74	0	74	0
75	0	75	0

Manual Speed Survey, Lepton

DATE : WEDNESDAY 13th JANUARY 2016

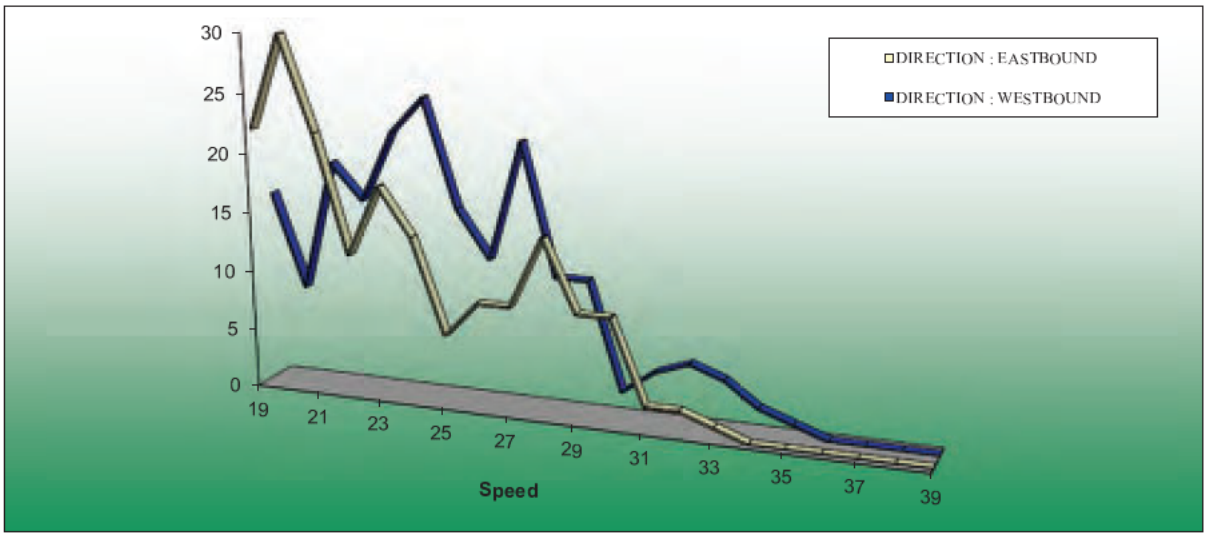
LOCATION: A642 APPROACHING APPROACHING JUNCTION

TRANSPORT DATA COLLECTION

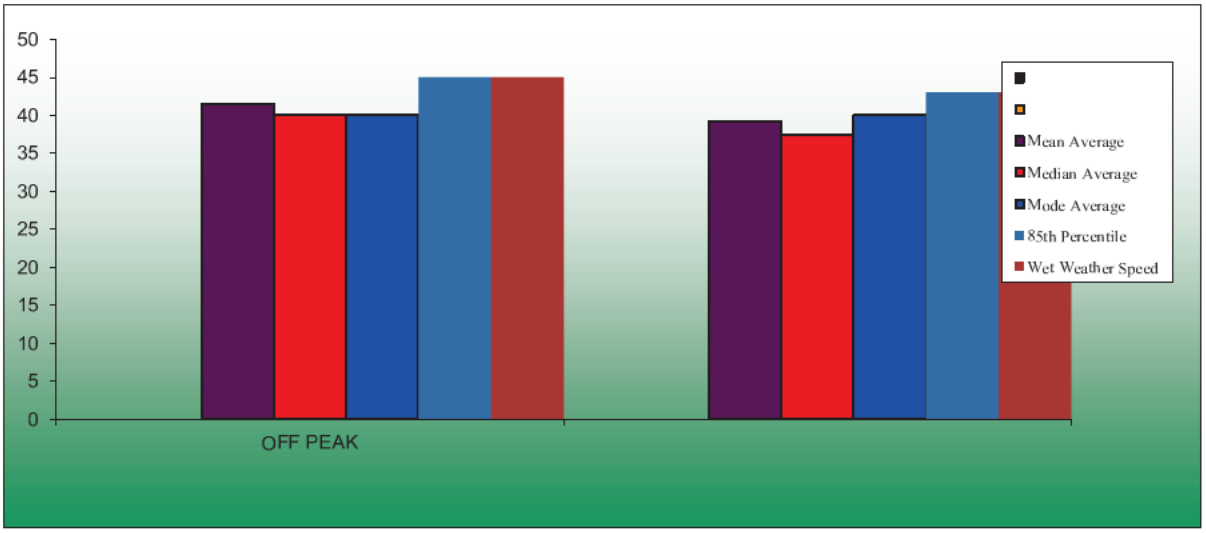
SINGLE CARRIAGEWAY

SPEED (MPH)	OFF PEAK	
	DIRECTION : WESTBOUND	DIRECTION : EASTBOUND
< 20	0	0
20 - 30	0	7
30 - 40	60	91
40 - 50	162	115
50 - 60	0	0
60 - 70	0	0
>70	0	0

ROAD CONDITIONS	WET
SPEED LIMIT	30



SPEED (MPH)	OFF PEAK	
	DIRECTION : WESTBOUND	DIRECTION : EASTBOUND
No of Readings	222	213
Mean Average	41	39
Median Average	40	38
Mode Average	40	40
Standard Deviation	4	4
85th Percentile	45	43
Wet Weather Speed	45	43



Manual Speed Survey, Lepton

DATE : WEDNESDAY 13th JANUARY 2016

LOCATION: ROWLEY LANE APPROACHING APPROACHING JUNCTION

SINGLE CARRIAGEWAY

OFF PEAK			
DIRECTION : EASTBOUND		DIRECTION : WESTBOUND	
SPEED (MPH)	NUMBER OF VEHICLES	SPEED (MPH)	NUMBER OF VEHICLES
15	2	15	0
16	8	16	3
17	18	17	5
18	24	18	6
19	22	19	16
20	30	20	8
21	22	21	19
22	12	22	16
23	18	23	22
24	14	24	25
25	6	25	16
26	9	26	12
27	9	27	22
28	15	28	11
29	9	29	11
30	9	30	2
31	2	31	4
32	2	32	5
33	1	33	4
34	0	34	2
35	0	35	1
36	0	36	0
37	0	37	0
38	0	38	0
39	0	39	0
40	0	40	0
41	0	41	0
42	0	42	0
43	0	43	0
44	0	44	0
45	0	45	0
46	0	46	0
47	0	47	0
48	0	48	0
49	0	49	0
50	0	50	0
51	0	51	0
52	0	52	0
53	0	53	0
54	0	54	0
55	0	55	0
56	0	56	0
57	0	57	0
58	0	58	0
59	0	59	0
60	0	60	0
61	0	61	0
62	0	62	0
63	0	63	0
64	0	64	0
65	0	65	0
66	0	66	0
67	0	67	0
68	0	68	0
69	0	69	0
70	0	70	0
71	0	71	0
72	0	72	0
73	0	73	0
74	0	74	0
75	0	75	0

Manual Speed Survey, Lepton

DATE : WEDNESDAY 13th JANUARY 2016

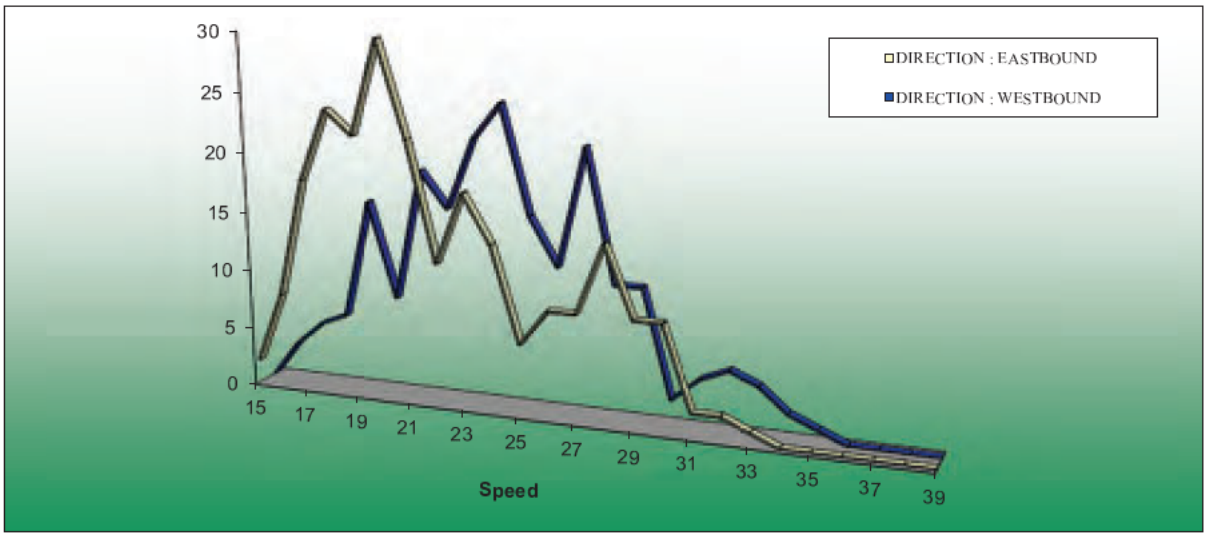
LOCATION: ROWLEY LANE APPROACHING APPROACHING JUNCTION

TRANSPORT DATA COLLECTION

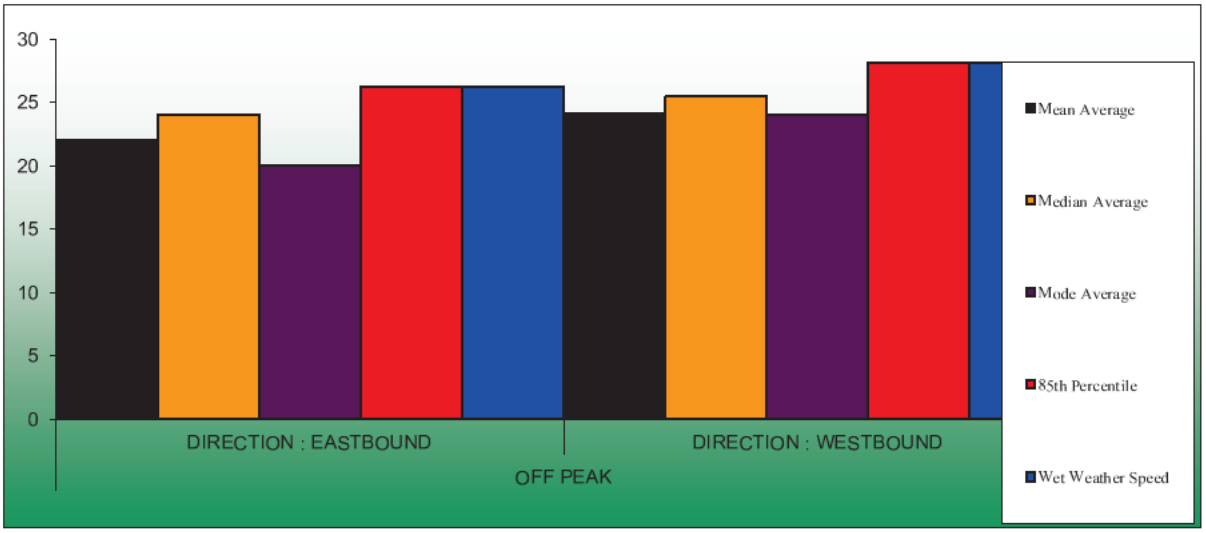
SINGLE CARRIAGEWAY

SPEED (MPH)	OFF PEAK	
	DIRECTION : EASTBOUND	DIRECTION : WESTBOUND
< 20	74	30
20 - 30	144	162
30 - 40	14	18
40 - 50	0	0
50 - 60	0	0
60 - 70	0	0
>70	0	0

ROAD CONDITIONS	WET
SPEED LIMIT	30



SPEED (MPH)	OFF PEAK	
	DIRECTION : EASTBOUND	DIRECTION : WESTBOUND
No of Readings	232	210
Mean Average	22	24
Median Average	24	26
Mode Average	20	24
Standard Deviation	4	4
85th Percentile	26	28
Wet Weather Speed	26	28



Manual Speed Survey, Lepton

DATE : WEDNESDAY 13th JANUARY 2016

LOCATION: PENISTONE ROAD APPROACHING JUNCTION

SINGLE CARRIAGEWAY

OFF PEAK				
DIRECTION : NORTHBOUND			DIRECTION : SOUTHBOUND	
SPEED (MPH)	NUMBER OF VEHICLES		SPEED (MPH)	NUMBER OF VEHICLES
15	0		15	0
16	0		16	0
17	0		17	0
18	0		18	0
19	0		19	0
20	0		20	0
21	0		21	0
22	0		22	0
23	0		23	0
24	1		24	0
25	1		25	1
26	2		26	0
27	2		27	1
28	8		28	1
29	15		29	1
30	18		30	1
31	20		31	1
32	16		32	1
33	20		33	4
34	8		34	5
35	16		35	11
36	12		36	9
37	12		37	8
38	15		38	15
39	15		39	26
40	12		40	34
41	11		41	26
42	5		42	29
43	4		43	15
44	1		44	11
45	1		45	2
46	0		46	2
47	0		47	1
48	0		48	1
49	0		49	0
50	0		50	0
51	0		51	0
52	0		52	0
53	0		53	0
54	0		54	0
55	0		55	0
56	0		56	0
57	0		57	0
58	0		58	0
59	0		59	0
60	0		60	0
61	0		61	0
62	0		62	0
63	0		63	0
64	0		64	0
65	0		65	0
66	0		66	0
67	0		67	0
68	0		68	0
69	0		69	0
70	0		70	0
71	0		71	0
72	0		72	0
73	0		73	0
74	0		74	0
75	0		75	0

Manual Speed Survey, Lepton

DATE : WEDNESDAY 13th JANUARY 2016

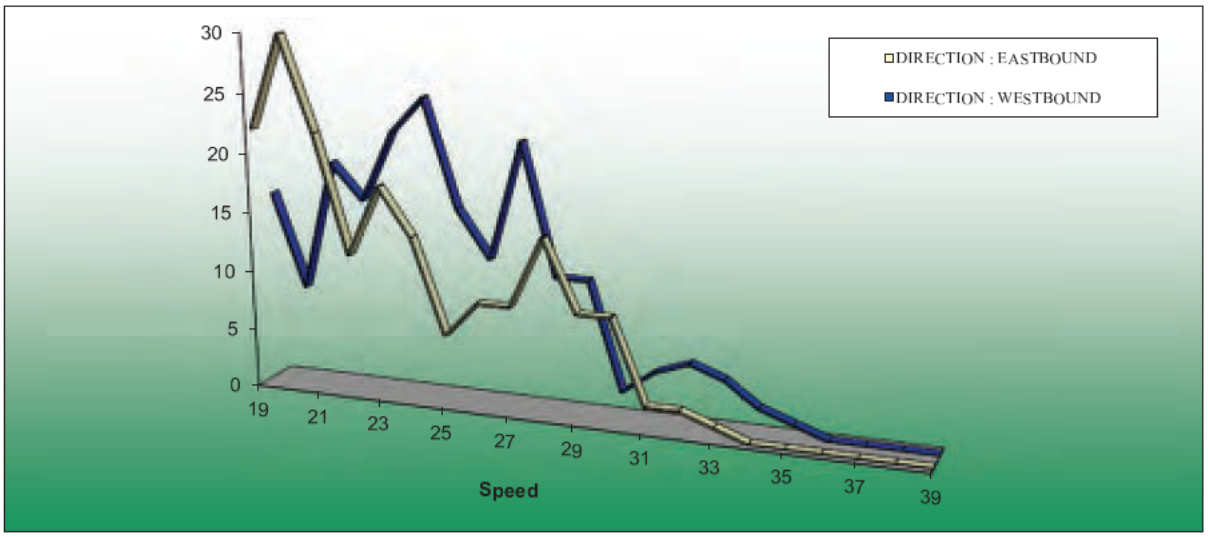
LOCATION: PENISTONE ROAD APPROACHING JUNCTION

TRANSPORT DATA COLLECTION

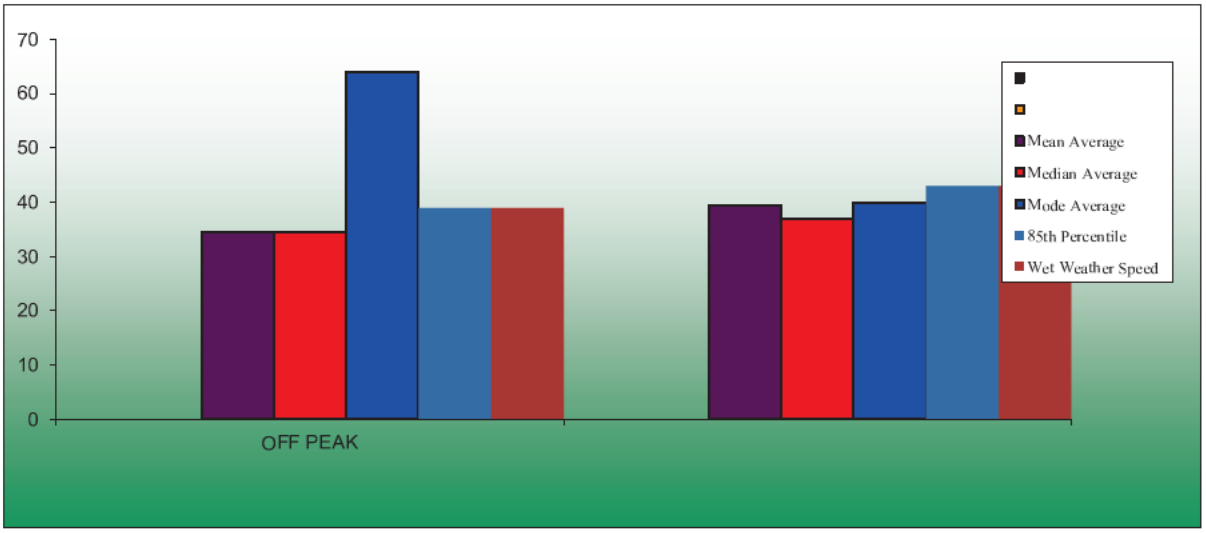
SINGLE CARRIAGEWAY

SPEED (MPH)	OFF PEAK	
	DIRECTION : NORTHBOUND	DIRECTION : SOUTHBOUND
< 20	0	0
20 - 30	29	4
30 - 40	152	81
40 - 50	34	121
50 - 60	0	0
60 - 70	0	0
>70	0	0

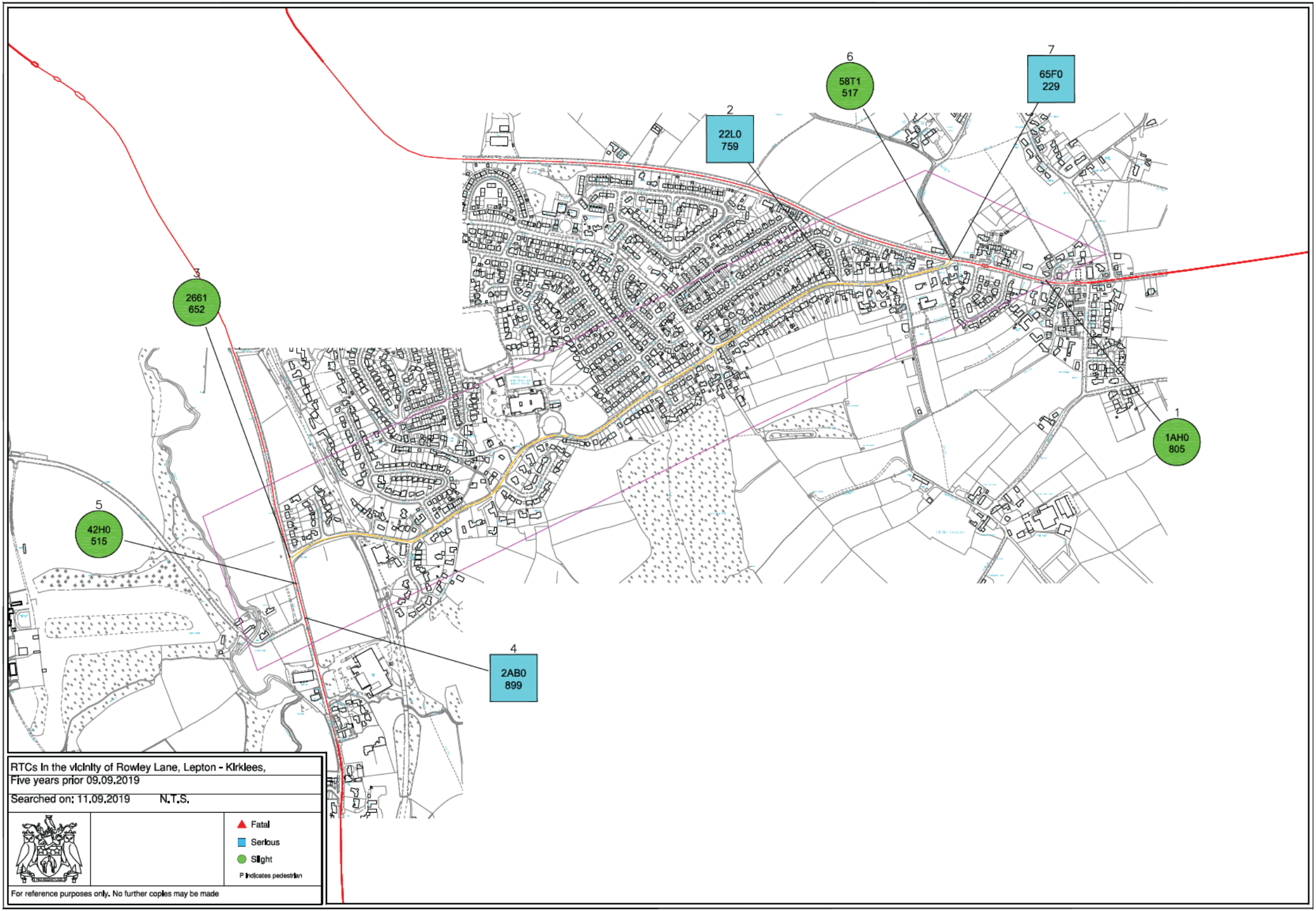
ROAD CONDITIONS	WET
SPEED LIMIT	40



SPEED (MPH)	OFF PEAK	
	DIRECTION : NORTHBOUND	DIRECTION : SOUTHBOUND
No of Readings	215	206
Mean Average	34	40
Median Average	35	37
Mode Average	64	40
Standard Deviation	4	3
85th Percentile	39	43
Wet Weather Speed	39	43



Appendix E Personal Injury Collision Data



RTCs In the vicinity of Rowley Lane, Lepton - Kirklees,
Five years prior 09.09.2019

Searched on: 11.09.2019 N.T.S.

Fatal
Serious
Slight
P Indicates pedestrian

For reference purposes only. No further copies may be made

RTC in the vicinity of Rowley Lane, Lepton, five years prior to 09.09.2019

ACCIDENT SEVERITY UPTO 2019

		2014	2015	2016	2017	2018	2019	Total
Fatal	0%	0	0	0	0	0	0	**0**
Serious	43%	0	2	0	0	0	1	**3**
Slight	57%	1	1	0	1	1	0	**4**
TOTAL		**1**	**3**	**0**	**1**	**1**	**1**	**7**

WEATHER

	No.	%
Fine	7	100
TOTAL	**7**	

ROAD SURFACE

	Number	%
Dry	6	86
Wet	1	14
TOTAL	**7**	

LIGHT CONDITIONS

	Number	%
Light	6	86
Dark	1	14
TOTAL	**7**	

PEDESTRIAN ACCIDENTS	**No.**	**%**
	0	0

SKIDDING ACCIDENTS	**No.**	**%**
	1	14

ACCIDENTS BY DAY AND TIME

	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Total
00.00 - 00:59	0	0	0	0	0	0	1	**1**
01:00 - 01:59	0	0	0	0	0	0	0	**0**
02:00 - 02:59	0	0	0	0	0	0	0	**0**
03:00 - 03:59	0	0	0	0	0	0	0	**0**
04:00 - 04:59	0	0	0	0	0	0	0	**0**
05:00 - 05:59	0	0	0	0	0	0	0	**0**
06:00 - 06:59	0	0	0	1	0	0	0	**1**
07:00 - 07:59	0	0	0	0	0	0	0	**0**
08:00 - 08:59	0	0	0	0	0	0	0	**0**
09:00 - 09:59	0	0	0	0	0	0	0	**0**
10:00 - 10:59	0	0	0	0	0	1	0	**1**
11:00 - 11:59	0	0	0	0	0	0	0	**0**
12:00 - 12:59	0	0	0	0	0	0	0	**0**
13:00 - 13:59	0	0	0	0	0	0	0	**0**
14:00 - 14:59	1	0	0	0	0	1	0	**2**
15:00 - 15:59	0	0	0	0	0	0	0	**0**
16:00 - 16:59	0	0	0	0	0	0	0	**0**
17:00 - 17:59	0	0	0	0	0	0	0	**0**
18:00 - 18:59	0	0	0	1	0	0	0	**1**
19:00 - 19:59	0	0	0	0	0	0	0	**0**
20:00 - 20:59	0	0	0	0	0	0	0	**0**
21:00 - 21:59	0	0	0	0	0	0	0	**0**
22:00 - 22:59	0	0	0	0	0	0	1	**1**
23:00 - 23:59	0	0	0	0	0	0	0	**0**
TOTAL	**1**	**0**	**0**	**2**	**0**	**2**	**2**	**7**
%	14%	0%	0%	29%	0%	29%	29%	100%

ACCIDENTS BY MONTH AND YEAR UPTO 2019

	2014	2015	2016	2017	2018	2019	Total
Jan	0	0	0	0	0	0	**0**
Feb	0	1	0	1	0	0	**2**
Mar	0	0	0	0	0	0	**0**
Apr	0	0	0	0	0	0	**0**
May	0	0	0	0	0	1	**1**
June	0	1	0	0	0	0	**1**
July	0	0	0	0	0	0	**0**
Aug	0	0	0	0	1	0	**1**
Sep	0	0	0	0	0	0	**0**
Oct	1	1	0	0	0	0	**2**
Nov	0	0	0	0	0	0	**0**
Dec	0	0	0	0	0	0	**0**
TOTAL	**1**	**3**	**0**	**1**	**1**	**1**	**7**
%	14%	43%	0%	14%	14%	14%	100%

RTC in the vicinity of Rowley Lane, Lepton, five years prior to 09.09.2019

CASUALTY SEVERITY UPTO 2019

	2014	2015	2016	2017	2018	2019	Total
Fatal	0	0	0	0	0	0	**0**
Serious	0	2	0	0	0	1	**3**
Slight	1	4	0	15	2	0	**22**
TOTAL	**1**	**6**	**0**	**15**	**2**	**1**	**25**

JUNCTION DETAIL

	Number	%
T or staggered	4	57
Cross roads	1	14
Not at junction	2	29
TOTAL	**7**	

JUNCTION CONTROLS

	Number	%
Authorised person	1	14
Give way sign	4	57
Not at junction	2	29
TOTAL	**7**	

CASUALTIES BY TYPE AND AGE GROUPING

	0 to 4	5 to 15	16 to 19	20 to 29	30 to 59	60 Plus	Total	%
PTW rider	0	0	0	1	1	0	**2**	8
Car driver	0	0	0	2	2	0	**4**	16
Car passenger	0	0	1	2	1	1	**5**	20
PSV driver	0	0	0	0	1	0	**1**	4
PSV passenger	0	0	2	0	7	3	**12**	48
Others/unknown	0	1	0	0	0	0	**1**	4
TOTAL	**0**	**1**	**3**	**5**	**12**	**4**	**25**	
%	0	4	12	20	48	16		

Number of Casualties with unknown age: 0

SPEED LIMIT

	Number	%
30 MPH	2	29
40 MPH	5	71
TOTAL	**7**	

ROAD CLASS

	Number	%
A	6	86
B	1	14
TOTAL	**7**	

VEHICLES INVOLVED BY TYPE AND AGE OF DRIVER

	0 to 15	16 to 19	20 to 29	30 to 59	60 Plus	Unknown	Total	%
PTW	0	0	1	1	0	0	**2**	14
Car	0	0	2	6	2	0	**10**	71
PSV	0	0	0	1	0	0	**1**	7
Other/Unknown	1	0	0	0	0	0	**1**	7
TOTAL	**1**	**0**	**3**	**8**	**2**	**0**	**14**	
%	7	0	21	57	14	0		

VEHICLE MANOEUVRES

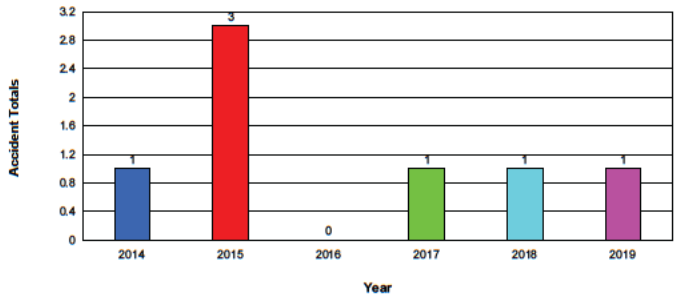
	Number	%
U turn	1	7
Waiting to turn left	1	7
Turning right	3	21
Waiting to turn right	1	7
Overtaking moving veh on its offside	1	7
Going ahead right hand bend	1	7
Going ahead other	6	43
TOTAL	**14**	

BREATH TEST

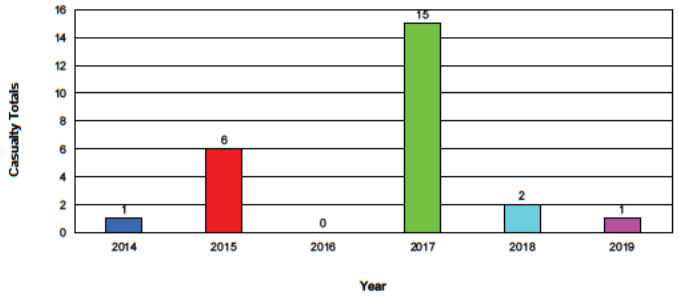
	Number	%
Negative	12	86
Not requested	2	14
TOTAL	**14**	

RTC in the vicinity of Rowley Lane, Lepton, five years prior to 09.09.2019

Accident Totals/Year

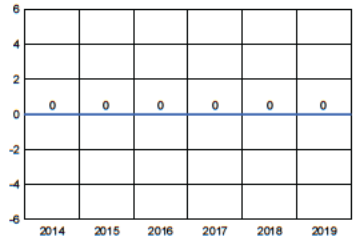


Casualty Totals/Year

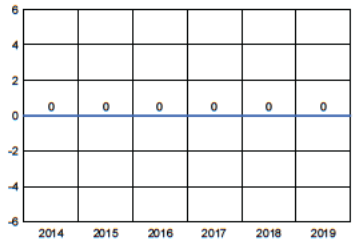


Casualty Data

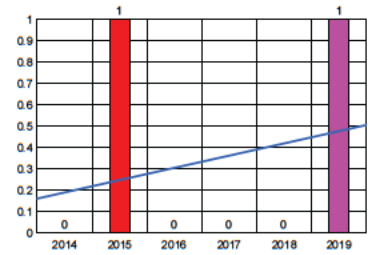
Pedestrians



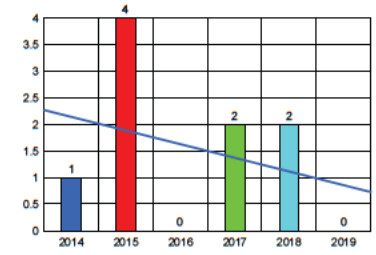
Pedal Cyclists



Motor Cyclists



Car Occupants



Acc	2014	2015	2016	2017	2018	2019	Total
Fatal	0	0	0	0	0	0	0
Serious	0	2	0	0	0	1	3
Slight	1	1	0	1	1	0	4
Damage	0	0	0	0	0	0	0
Total	1	3	0	1	1	1	7

Cas	2014	2015	2016	2017	2018	2019	Total
Fatal	0	0	0	0	0	0	0
Serious	0	2	0	0	0	1	3
Slight	1	4	0	15	2	0	22
Total	1	6	0	15	2	1	25

RTC in the vicinity of Rowley Lane, Lepton, five years prior to 09.09.2019

		PEDESTRIANS	PEDAL CYCLIST	PTW USER	HACKNEY PRI/HIRE	CAR DRIVER	CAR PASS	GOODS OCCUPANT	PSV	OTHER VEH OCCUPANT	TOTAL
0 to 4	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	0	0	0	0	0	**0**
	TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
5 to 15	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	1	**1**
	Slight	0	0	0	0	0	0	0	0	0	**0**
	TOTAL	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**
16 to 19	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	0	1	0	2	0	**3**
	TOTAL	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**	**0**	**3**
20 to 29	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	1	0	0	0	0	0	0	**1**
	Slight	0	0	0	0	2	2	0	0	0	**4**
	TOTAL	**0**	**0**	**1**	**0**	**2**	**2**	**0**	**0**	**0**	**5**
30 to 59	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	1	0	0	0	0	0	0	**1**
	Slight	0	0	0	0	2	1	0	8	0	**11**
	TOTAL	**0**	**0**	**1**	**0**	**2**	**1**	**0**	**8**	**0**	**12**
60+	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	0	0	0	0	0	0	0	**0**
	Slight	0	0	0	0	0	1	0	3	0	**4**
	TOTAL	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**	**0**	**4**
All Ages	Fatal	0	0	0	0	0	0	0	0	0	**0**
	Serious	0	0	2	0	0	0	0	0	1	**3**
	Slight	0	0	0	0	4	5	0	13	0	**22**
	TOTAL	**0**	**0**	**2**	**0**	**4**	**5**	**0**	**13**	**1**	**25**

Number of Casualties with unknown age: 0

RTC in the vicinity of Rowley Lane, Lepton, five years prior to 09.09.2019

1AH0805 SLIGHT 17/10/2014 (14:50 420242 / 415144 A642 Wakefield Road

V1 travelling Wakefield Road towards Waterloo from Lepton in stream of traffic. V1 clips nearside kerb on right hand bend and as driver tries to correct he panics and presses the accelerator instead of brake. Vehicles continues straight on onto kerb and strikes lamp post. Passenger in rear of V1 suffers minor injuries.

Vehicles		From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Car	Going ahead RHB	E	W	Male	45	Not requested	1 Passenger	SLIGHT		1	Male	21	

Contributory Factors

Poor turn or manoeuvre V001 Possible Loss of control V001 Possible

---

22L0759 SERIOUS 21/02/2015 (00:00 419803 / 415142 Junction of B6433 Rowley Lane and Highgate Avenue

THIS COLLISION INVOLVES TWO VEHICLES , OFFENDING VEHICLE , V1 IS OFF ROAD QUAD BIKE.....V1 IS TRAVELLIING ON HIGHGATE AVENUE TOWARDS ROWLEY LANE , V2 IS TRAVELLING UP ROWLEY LANE TOWARDS WAKEFIELD ROAD .... V1 EXITS HIGHGATE AVENUE ATTEMPTING TO MAKE A U TURN IN ROWLEY LANE AND THEN BACK INTO HIGHGATE , RIDER FAILS TO GIVE WAY AT JUNCTION AND COLLIDES WITH V2 TRAVELLING UP ROWLEY LANE , FRONT OF QUAD BIKE COLLIDES WITH NEARSIDE OF V2 , RIDER IS THOWN FROM V1 INTO ROAD FRACTURING COLLAR BONE.

Vehicles		From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1 Other: OFF ROAD QUAD	U Turn	W	E	Male	15	Negative	1 Driver/Rider	SERIOUS		1	Male	15	
2 Car	Going ahead other	N	S	Female	52	Negative							

Contributory Factors

2661652 SLIGHT 06/06/2015 (22:05 418632 / 414555 Junction of A629 Penistone Road and B6433 Rowley Lane

V1 (Audi) has turned right into Penistone Road from the junction of Rowley Lane in Lepton, Huddersfield. V2 has been travelling along Penistone Road towards the junction of Rowley Lane and collides with V1. Upon impact V1 is spun around 180 degrees and comes to rest facing back into the junction of Rowley Lane. V2 then collides with V3, which was waiting in the junction mouth of Rowley Lane. All vehicles are extensively damaged and the occupants of V1+V2 sustain minor injuries. V2 driver taken to Huddersfield Royal.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	S	E	Male	49	Negative	1	Driver/Rider	SLIGHT	1	Male	49	
2	Car	Going ahead other	E	W	Male	22	Negative	2	Passenger	SLIGHT	1	Male	16	
3	Car	Waiting to turn left	S	W	Male	60	Negative	3	Driver/Rider	SLIGHT	2	Male	22	
								4	Passenger	SLIGHT	2	Male	20	

Contributory Factors

Failed to look properly V001 V.likely Fail to judge other person path or speed V001 Possible Exceeding speed limit V002 V.likely

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2AB0899 SERIOUS 11/10/2015 (14:40 418665 / 414426 Junction of A629 Penistone Road and Woodsome Road Huddersfield

.....THIS COLLISION INVOLVES TWO VEHICLES , SERIOUS INJURY TO RIDER OF V2 .....V1 IS TRAVELLING ON PENISTONE ROAD AWAY FROM HUDDERSFIELD , V2 IS TRAVELLING ON PENISTONE ROAD TOWARDS HUUDERSFIELD ..... V1 IS STATIONARY IN DEDICATED RIGHT TURN LEFT WAITING TO TURN INTO WOODSOME ROAD , AS V2 REACHES JUNCTION WITH WOODSOME ROAD DRIVER OF V1 TURNS RIGHT DIRECTLY INTO PATH OF V2 .....FRONT OF V2 COLLIDES WITH FRONT OFFSIDE OF V1.....RIDER OF V2 IS THROWN FROM MOTORCYCLE INTO WINDSCREEN OF V1 CAUSING SERIOUS INJURIES

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Waiting to turn right	S	E	Female	48	Negative	1	Driver/Rider	SERIOUS	2	Male	21	
2	M/cycle 50 - 125cc	Going ahead other	N	S	Male	21	Negative							

Contributory Factors

Failed to look properly V001 V.likely No lights at night or in poor visibility V001 Possible

---

42H0515 SLIGHT 17/02/2017 (10:50 418646 / 414499 A629 Penistone Road

This is a minor injury RTC involving a single decker bus and a motor car. The bus contained a driver and 12 passengers, the car contained a driver and a front seat passenger. Vehicle one is a motor car which is travelling along Penistone Road in the direction of Huddersfield. Vehicle two is a single decker bus which is travelling along Penistone Road away from Huddersfield. Driver of vehicle one is suffering from depression and makes a deliberate act to crash his car into the front of the moving bus in an attempt to end his life. Extensive damage is caused to both vehicles. Driver of vehicle one only suffers minor injuries and is arrested for his actions. All persons involved suffer minor injuries.

Vehicles			From	To	Driver		Breath Test
1	Car	Going ahead other	SE	NW	Male	51	Negative
2	Bus or Coach	Going ahead other	NW	SE	Male	51	Negative

Casualties			Veh	Sex	Age	Ped direction to
1	Driver/Rider	SLIGHT	1	Male	51	
2	Passenger	SLIGHT	1	Male	52	
3	Driver/Rider	SLIGHT	2	Male	51	
4	Passenger	SLIGHT	2	Male	16	
5	Passenger	SLIGHT	2	Male	30	
6	Passenger	SLIGHT	2	Male	42	
7	Passenger	SLIGHT	2	Female	16	
8	Passenger	SLIGHT	2	Female	40	
9	Passenger	SLIGHT	2	Female	76	
10	Passenger	SLIGHT	2	Male	45	
11	Passenger	SLIGHT	2	Female	67	
12	Passenger	SLIGHT	2	Female	81	
13	Passenger	SLIGHT	2	Female	30	
14	Passenger	SLIGHT	2	Female	37	
15	Passenger	SLIGHT	2	Female	36	

Contributory Factors

58T1517 SLIGHT 29/08/2018 (18:35 420039 / 415190 Junction of A642 Wakefield Road and B6433 Rowley Lane

Vehicle 001 has been travelling on ROWLEY LANE towards WAKEFIELD ROAD, LEPTON. Vehicle 002 has been travelling along WAKEFIELD ROAD approaching ROWLEY LANE on the nearside. Vehicle 001 has been intending to turn right at the junction and has pulled into the path of Vehicle 002 causing a collision.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	S	E	Male	85	Negative	1	Passenger	SLIGHT	1	Female	87	
2	Car	Going ahead other	E	W	Female	29	Negative	2	Driver/Rider	SLIGHT	2	Female	29	

Contributory Factors

Failed to look properly V001 V.likely Fail to judge other person path or speed V001 V.likely

---

65F0229 SERIOUS 15/05/2019 (06:50 420043 / 415192 Junction of A642(M) and B6433

AT APPROXIMATELY 06:50HRS ON WEDNESDAY 15TH MAY 2019 VEHICLE 001 (MOTORBIKE) HAS BEEN TRAVELLING ALONG WAKEFIELD ROAD TOWARDS HUDDERSFIELD. VEHICLE 002 HAS BEEN AT THE JUNCTION OF ROWLEY LANE AND WAKEFIELD ROAD WAITING TO TURN RIGHT ONTO WAKEFIELD ROAD. VEHICLE 002 HAS NOTICED A WHITE VAN TRAVELLING ON WAKEFIELD ROAD FROM HIS RIGHT TO HIS LEFT APPROACHING THE JUNCTION OF ROWLEY LANE. THE VAN WAS INDICATING LEFT AND STARTED TO SLOW DOWN IN PREPARATION OF TURNING. VEHICLE 002 LOOKED TO HIS LEFT AND THE ROAD WAS CLEAR. THE DRIVER THEN LOOKED TO HIS RIGHT AND COULD SEE THE VEHICLES BEHIND THE VAN WAS SLOWING AND THE ROAD WAS CLEAR FOR HIM TO TURN RIGHT. VEHICLE 002 HAS THEN TURNED RIGHT ONTO WAKEFIELD ROAD AND AS HE HAS DROVE OVER THE CENTRE LINE A MOTORBIKE HAS APPEARED OVERTAKING THE TURNING VAN AND HAS COLLIDED WITH VEHICLE 002. THE RIDER OF VEHICLE 001 HAS COME OFF HIS MOTORBIKE AND SUSTAINED INJURIES.

Vehicles			From	To	Driver		Breath Test	Casualties			Veh	Sex	Age	Ped direction to
1	Car	Turning right	S	E	Male	33	Negative	1	Driver/Rider	SERIOUS	2	Male	35	
2	M/cycle 125 - 500cc	O/T moving veh on its O/S	E	W	Male	35	Not requested							

Contributory Factors

Fail to judge other person path or speed V001 V.likely Fail to judge other person path or speed V001 V.likely

---

Appendix F Drawings 13015/ATR/06 & IN/09 – Swept Path Analysis & Internal Visibility Splays



REV	DATE	BY	DESCRIPTION	CHK	APP
-	12/01/22	MSP	INITIAL ISSUE	MEW	MEW

STATUS: PRELIMINARY

PROJECT: ROWLEY LANE, LEPTON

CLIENT: KCS DEVELOPMENTS LTD

DRAWING TITLE: SWEPT PATH ANALYSIS

CHECKED	APPROVED	DRG No.	
MEW	MEW	13015/ATR/06	
DRAWN BY:	SCALE @ A2	DATE	REV.
MSP	1:500	JANUARY 2022	-

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodboard House, Infirmary Street
Leeds LS1 2JP
optima@highways.com
T 0113 245 1679

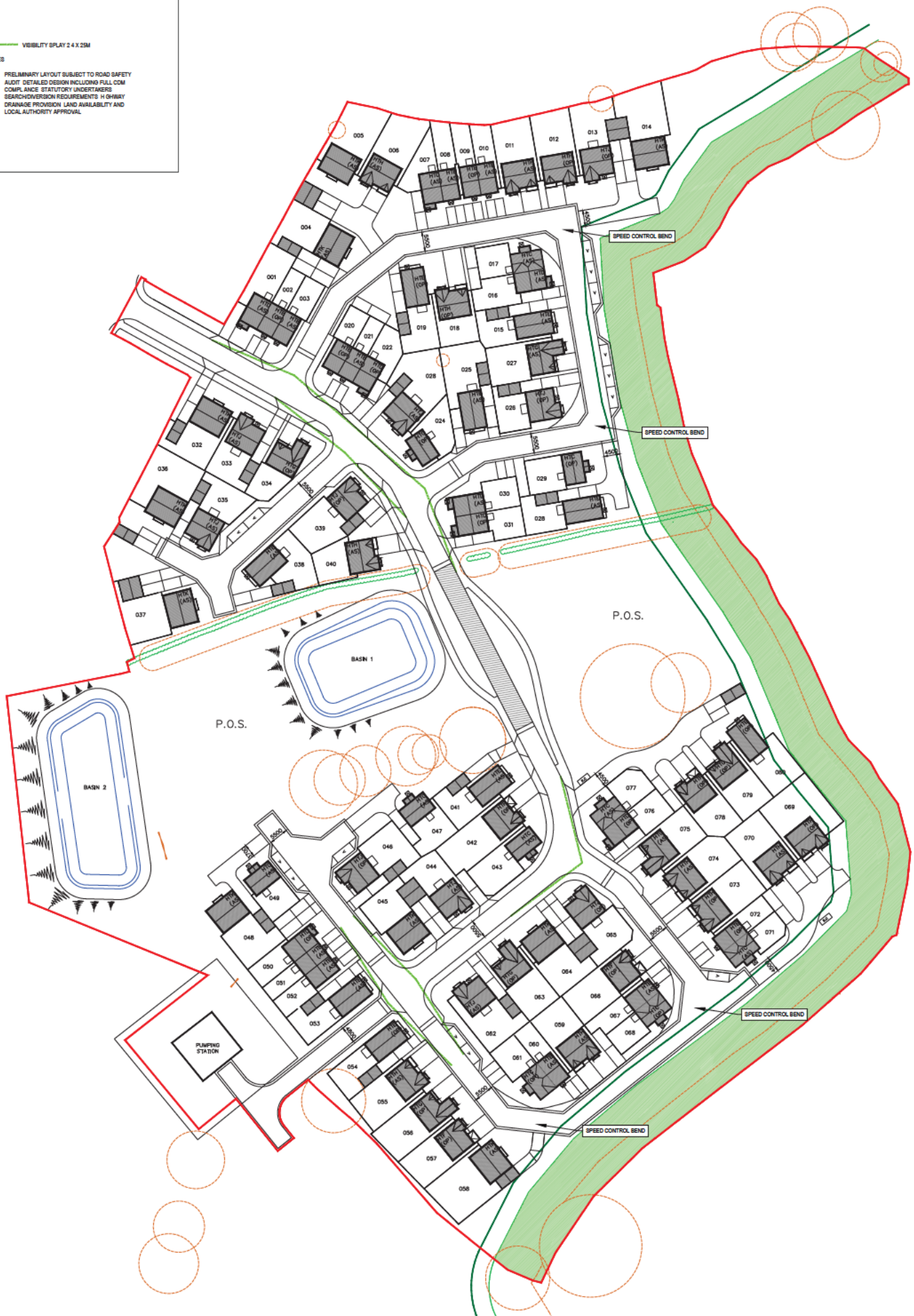
DO NOT SCALE

KEY:

VISIBILITY SPLAY 2 4 X 25M

NOTES

1 PRELIMINARY LAYOUT SUBJECT TO ROAD SAFETY AUDIT DETAILED DESIGN INCLUDING FULL CDM COMPL ANCE STATUTORY UNDERTAKERS SEARCH/DIVERSION REQUIREMENTS H GHWAY DRAINAGE PROVISION LAND AVAILABILITY AND LOCAL AUTHORITY APPROVAL



REV	DATE	BY	DESCRIPTION	CHK	APP
-	12/01/22	MSP	INITIAL ISSUE	MEW	MEW

STATUS: PRELIMINARY

PROJECT: ROWLEY LANE LEPTON

CLIENT: KCS DEVELOPMENTS LTD

DRAWING TITLE: INTERNAL JUNCT ON VISIBILITY CHECK

CHECKED	APPROVED	DRG No	REV
MEW	MEW	13015/IN/09	-

DRAWN BY:	SCALE @ A1	DATE
MSP	1:500	JANUARY 2022

OPTIMA
Intelligent Highway Solutions
Suite 1 2nd Floor Goodhard House 1n Irmary Street
Leeds LS1 2JT
optimahighways.com
T 0113 345 1679

Appendix G HS2 & HS3 Joint Masterplan and Phasing Plan

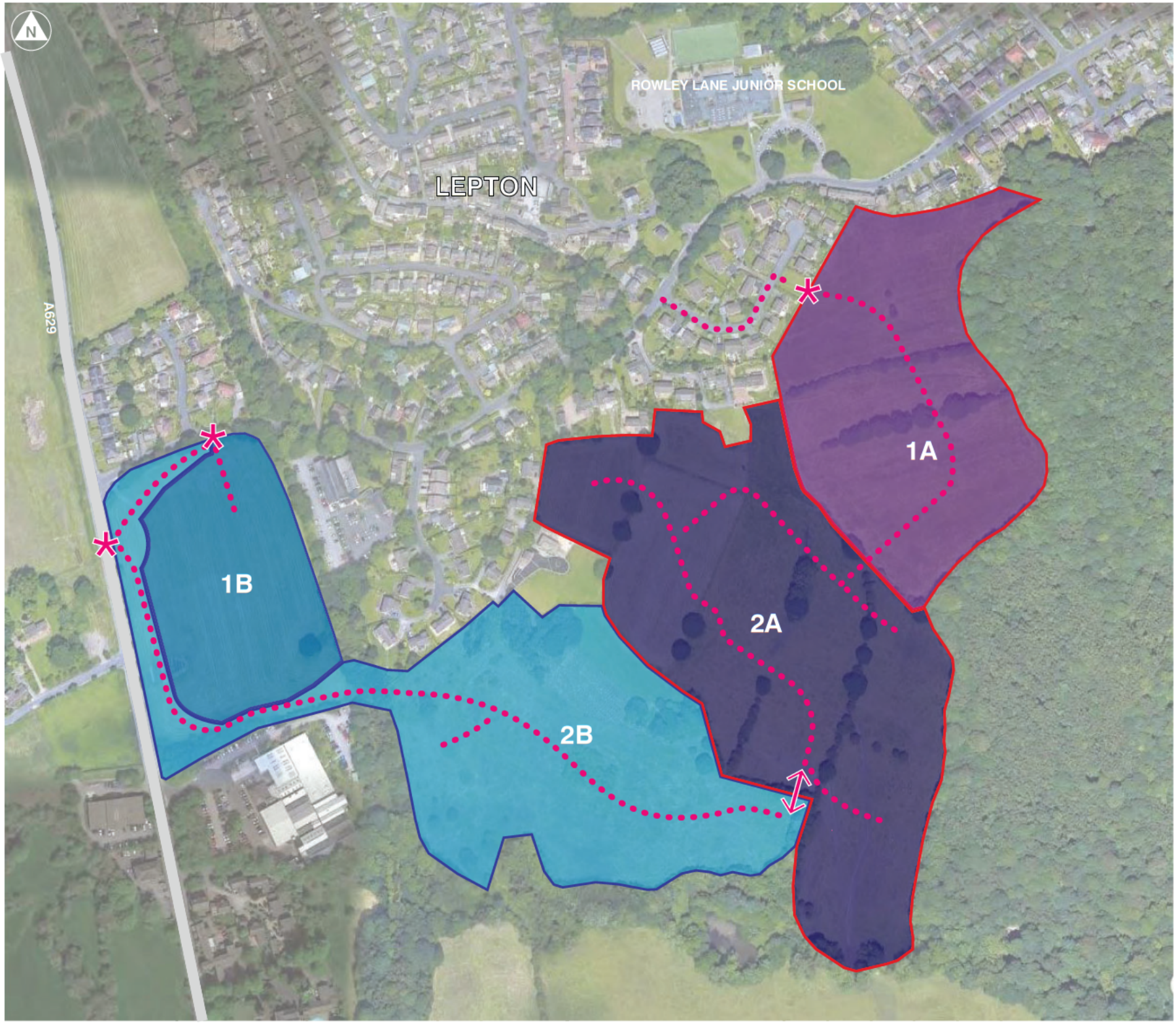


KEY

- Combined Allocation Boundaries
  Combined Net Area: 17.07ha
- Primary Route / Spine Road
- Secondary Road
- Tertiary Road
- Emergency Access Only
- Dedicated Off Road Proposed Footpaths
- Proposed Location for Play
- Public Rights of Way
- Potential Development - inc. areas for residential and other infrastructure
  Circa 600 homes across 4 phases
  refer to 338-P-007 - Phasing Plan
- Proposed green open space
- Proposed Sustainable Drainage
- Beldon Brook
- Huddersfield-Kirkburton Branch Line (disused)
- Existing Mature Trees
- Proposed Tree Lined Street
- Existing Hedgerow
- Proposed Structure Planting
- Existing Woodland
- 20m buffer from Ancient Woodland
- Boundary between HS2 and HS3 Allocations
- Foul Water Pumping Stations

URBAN WILDERNESS

338-P-006 - Rev. I
Lepton Framework Development Plan
SDJ/CH 9 August 21



KEY

- Land within KCS Control
- Farnley Estates Land

PHASING

- Phase 1A
- Phase 1B
- Phase 2A
- Phase 2B

ACCESS

- Potential Site Access - onto existing road network
- Potential Site Access - into neighburing development
- Potential Road Alignment

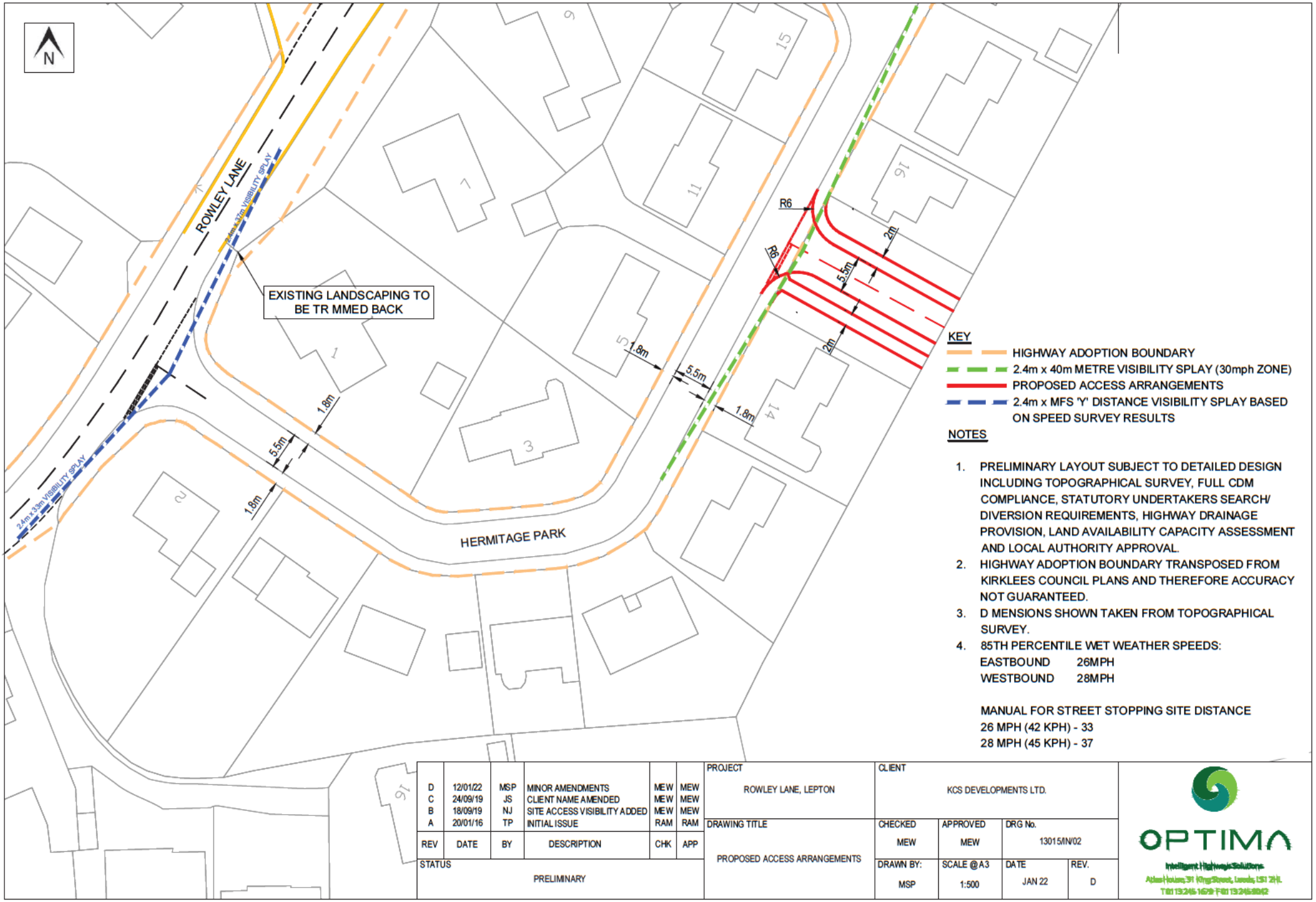
URBAN WILDERNESS

338-SK-003 **Rev.C** NTS

Phasing Plan

SDJ/TBR 31 July 20

Appendix H Drawing IN/02 - Proposed Access Arrangements and Visibility Splays



NOTES

1. PRELIMINARY LAYOUT SUBJECT TO DETAILED DESIGN INCLUDING TOPOGRAPHICAL SURVEY, FULL CDM COMPLIANCE, STATUTORY UNDERTAKERS SEARCH/ DIVERSION REQUIREMENTS, HIGHWAY DRAINAGE PROVISION, LAND AVAILABILITY CAPACITY ASSESSMENT AND LOCAL AUTHORITY APPROVAL.
2. HIGHWAY ADOPTION BOUNDARY TRANSPOSED FROM KIRKLEES COUNCIL PLANS AND THEREFORE ACCURACY NOT GUARANTEED.
3. D MENSIONS SHOWN TAKEN FROM TOPOGRAPHICAL SURVEY.
4. 85TH PERCENTILE WET WEATHER SPEEDS:
   EASTBOUND 26MPH
   WESTBOUND 28MPH

MANUAL FOR STREET STOPPING SITE DISTANCE
26 MPH (42 KPH) - 33
28 MPH (45 KPH) - 37

REV	DATE	BY	DESCRIPTION	CHK	APP
D	12/01/22	MSP	MINOR AMENDMENTS	MEW	MEW
C	24/09/19	JS	CLIENT NAME AMENDED	MEW	MEW
B	18/09/19	NJ	SITE ACCESS VISIBILITY ADDED	MEW	MEW
A	20/01/16	TP	INITIAL ISSUE	RAM	RAM

STATUS: PRELIMINARY

PROJECT: ROWLEY LANE, LEPTON

CLIENT: KCS DEVELOPMENTS LTD.

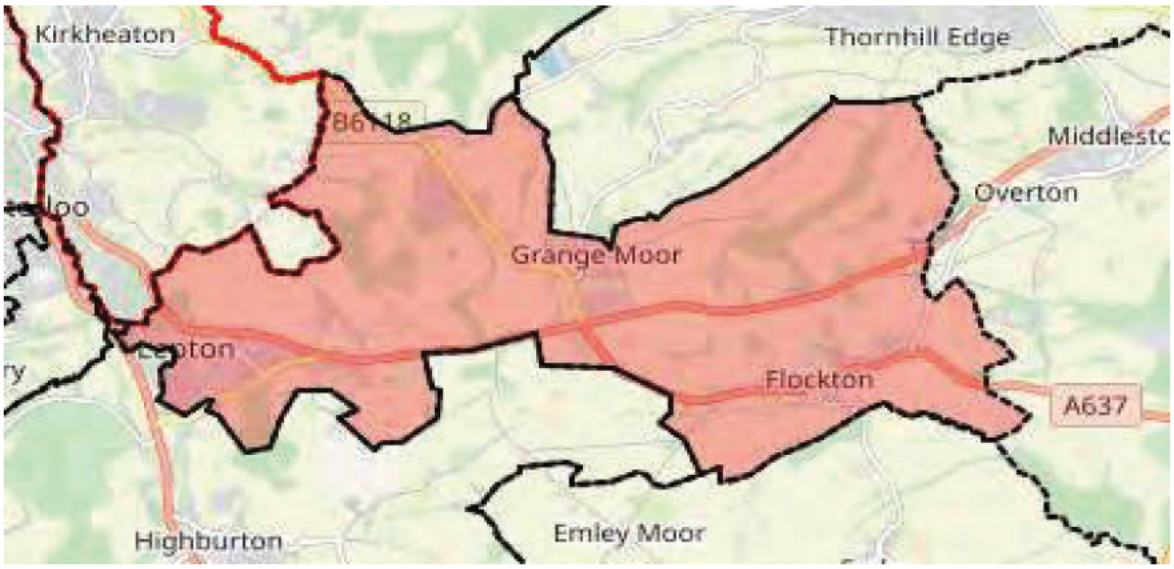
DRAWING TITLE: PROPOSED ACCESS ARRANGEMENTS

CHECKED	APPROVED	DRG No.	
MEW	MEW	13015/IN/02	
DRAWN BY:	SCALE @ A3	DATE	REV.
MSP	1:500	JAN 22	D

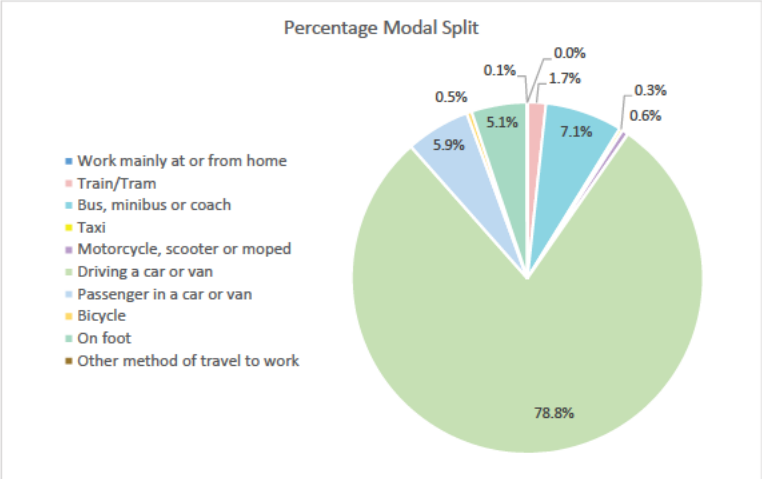
OPTIMA
Intelligent Highways Solutions
Atlas House, 31 King Street, Leeds, LS1 2HL
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Appendix I Method of Travel to Work Data

Kirklees 046 MSOA



Method of Travel	Number of People	%
Work mainly at or from home	0	0 0%
Train/Tram	44	1.7%
Bus, minibus or coach	185	7.1%
Taxi	8	0 3%
Motorcycle, scooter or moped	15	0.6%
Driving a car or van	2050	78.8%
Passenger in a car or van	154	5 9%
Bicycle	12	0 5%
On foot	132	5.1%
Other method of travel to work	2	0.1%
Total	**2602**	**100%**



Appendix J Traffic Distribution

	usual residence					
place of work : 2011 super output area - middle layer	**E02002316 : Kirklees**	**%**	Rowley Lane E	Penistone Rd N	Penistone Rd S	Woodsome Rd W
E02002299 : Kirklees 029	273	10.49%		10.49%		
E02002316 : Kirklees 046	157	6.03%	6.03%			
E02002312 : Kirklees 042	112	4.30%		4.30%		
E02002321 : Kirklees 051	94	3.61%			3.61%	
E02006875 : Leeds 111	83	3.19%	1.59%	1.59%		
E02002302 : Kirklees 032	65	2.50%		2.50%		
E02002454 : Wakefield 017	60	2.31%	2.31%			
E02002303 : Kirklees 033	58	2.23%		2.23%		
E02002329 : Kirklees 059	40	1.54%			0.77%	0.77%
E02002327 : Kirklees 057	39	1.50%			1.50%	
E02002304 : Kirklees 034	38	1.46%		1.46%		
E02002326 : Kirklees 056	36	1.38%			1.38%	
E02002456 : Wakefield 019	36	1.38%	1.38%			
E02002295 : Kirklees 025	35	1.35%		1.35%		
E02002268 : Calderdale 025	34	1.31%		0.65%		0.65%
E02002294 : Kirklees 024	34	1.31%	1.31%			
E02002309 : Kirklees 039	34	1.31%		0.65%		0.65%
E02002472 : Wakefield 035	33	1.27%	1.27%			
E02002251 : Calderdale 008	31	1.19%		1.19%		
E02002323 : Kirklees 053	31	1.19%				1.19%
E02002287 : Kirklees 017	30	1.15%	1.15%			
E02002313 : Kirklees 043	29	1.11%		1.11%		
E02002301 : Kirklees 031	24	0.92%		0.92%		
E02002318 : Kirklees 048	24	0.92%		0.92%		
E02002296 : Kirklees 026	23	0.88%	0.88%			
E02002324 : Kirklees 054	23	0.88%	0.88%			
E02002465 : Wakefield 028	23	0.88%	0.88%			
E02002293 : Kirklees 023	22	0.85%	0.85%			
E02002307 : Kirklees 037	20	0.77%		0.77%		
E02002315 : Kirklees 045	20	0.77%		0.77%		
E02002305 : Kirklees 035	19	0.73%		0.73%		
E02002291 : Kirklees 021	18	0.69%		0.69%		
E02006876 : Leeds 112	18	0.69%	0.69%			
E02002458 : Wakefield 021	18	0.69%	0.69%			
E02002451 : Wakefield 014	17	0.65%	0.65%			
E02002468 : Wakefield 031	17	0.65%	0.65%			
E02002262 : Calderdale 019	16	0.61%		0.61%		
E02002314 : Kirklees 044	16	0.61%		0.31%		0.31%
E02002292 : Kirklees 022	15	0.58%		0.58%		
E02002319 : Kirklees 049	15	0.58%		0.58%		
E02002325 : Kirklees 055	15	0.58%				0.58%
E02002450 : Wakefield 013	15	0.58%	0.58%			
E02002310 : Kirklees 040	13	0.50%		0.50%		
E02002435 : Leeds 106	13	0.50%		0.50%		
E02002258 : Calderdale 015	12	0.46%		0.46%		
E02002328 : Kirklees 058	12	0.46%				0.46%
E02002419 : Leeds 090	12	0.46%		0.46%		
E02002467 : Wakefield 030	12	0.46%	0.46%			
E02002221 : Bradford 039	11	0.42%		0.42%		
E02002298 : Kirklees 028	11	0.42%	0.42%			
E02002306 : Kirklees 036	11	0.42%		0.42%		
E02002459 : Wakefield 022	11	0.42%	0.42%			
E02002466 : Wakefield 029	11	0.42%	0.42%			
E02002264 : Calderdale 021	10	0.38%		0.38%		
E02002272 : Kirklees 002	10	0.38%		0.38%		
E02002286 : Kirklees 016	10	0.38%			0.38%	
E02002297 : Kirklees 027	10	0.38%		0.38%		

E02002320 : Kirklees 050	10	0.38%		0.38%		
E02002384 : Leeds 055	10	0.38%		0.38%		
E02002275 : Kirklees 005	9	0.35%		0.35%		
E02002285 : Kirklees 015	9	0.35%		0.35%		
E02002308 : Kirklees 038	9	0.35%		0.35%		
E02002462 : Wakefield 025	9	0.35%	0.35%			
E02001521 : Barnsley 013	8	0.31%	0.31%			
E02002226 : Bradford 044	8	0.31%		0.31%		
E02002281 : Kirklees 011	8	0.31%		0.31%		
E02002283 : Kirklees 013	8	0.31%	0.31%			
E02002289 : Kirklees 019	8	0.31%	0.31%			
E02002300 : Kirklees 030	8	0.31%		0.31%		
E02002311 : Kirklees 041	8	0.31%		0.31%		
E02002411 : Leeds 082	8	0.31%	0.15%	0.15%		
E02002445 : Wakefield 008	8	0.31%	0.31%			
E02002473 : Wakefield 036	8	0.31%	0.31%			
E02001520 : Barnsley 012	7	0.27%	0.27%			
E02002280 : Kirklees 010	7	0.27%		0.27%		
E02002317 : Kirklees 047	7	0.27%		0.27%		
E02002392 : Leeds 063	7	0.27%		0.27%		
E02002443 : Wakefield 006	7	0.27%	0.27%			
E02002453 : Wakefield 016	7	0.27%	0.27%			
E02002227 : Bradford 045	6	0.23%		0.23%		
E02002259 : Calderdale 016	6	0.23%		0.23%		
E02002422 : Leeds 093	6	0.23%		0.23%		
E02002475 : Wakefield 038	6	0.23%	0.23%			
E02004064 : Chesterfield 010	6	0.23%	0.23%			
E02001524 : Barnsley 016	5	0.19%	0.19%			
E02001532 : Barnsley 024	5	0.19%	0.19%			
E02006843 : Sheffield 073	5	0.19%				
E02002239 : Bradford 057	5	0.19%		0.19%		
E02002255 : Calderdale 012	5	0.19%			0.19%	
E02002273 : Kirklees 003	5	0.19%		0.19%		
E02002279 : Kirklees 009	5	0.19%		0.19%		
E02002284 : Kirklees 014	5	0.19%	0.19%			
E02002288 : Kirklees 018	5	0.19%	0.19%			
E02002290 : Kirklees 020	5	0.19%	0.19%			
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E02002415 : Leeds 086	5	0.19%		0.19%		
E02002431 : Leeds 102	5	0.19%	0.19%			
E02002444 : Wakefield 007	5	0.19%	0.19%			
E02005780 : Harrogate 020	4	0.15%		0.15%		
E02001513 : Barnsley 005	4	0.15%	0.15%			
E02002230 : Bradford 048	4	0.15%		0.15%		
E02002261 : Calderdale 018	4	0.15%		0.15%		
E02002331 : Leeds 002	4	0.15%	0.15%			
E02002336 : Leeds 007	4	0.15%		0.15%		
E02002393 : Leeds 064	4	0.15%	0.15%			
E02002424 : Leeds 095	4	0.15%		0.15%		
E02002425 : Leeds 096	4	0.15%		0.15%		
E02002469 : Wakefield 032	4	0.15%	0.15%			
E02002470 : Wakefield 033	4	0.15%	0.15%			
E02003785 : South Cambridgeshire	4	0.15%	0.15%			
E02000997 : Bolton 014	3	0.12%				0.12%
E02001059 : Manchester 015	3	0.12%		0.12%		
E02001229 : Tameside 001	3	0.12%				0.12%
E02005818 : Selby 010	3	0.12%	0.12%			
E02001523 : Barnsley 015	3	0.12%	0.12%			
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E02001628 : Sheffield 018	3	0.12%				0.12%
E02001632 : Sheffield 022	3	0.12%				0.12%

E02001650 : Sheffield 040	3	0.12%				0.12%
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E02002433 : Leeds 104	3	0.12%		0.12%		
E02006861 : Leeds 110	3	0.12%		0.12%		
E02002439 : Wakefield 002	3	0.12%	0.12%			
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E02001752 : North Tyneside 015	2	0.08%	0.08%			
E02001114 : Oldham 017	2	0.08%				0.08%
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E02001186 : Salford 030	2	0.08%		0.08%		
E02005256 : Preston 004	2	0.08%		0.08%		
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E02002377 : Leeds 048	2	0.08%	0.08%			
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E02002446 : Wakefield 009	2	0.08%	0.08%			
E02002452 : Wakefield 015	2	0.08%	0.08%			

E02002457 : Wakefield 020	2	0.08%	0.08%			
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E02002474 : Wakefield 037	2	0.08%	0.08%			
E02005450 : Lincoln 009	2	0.08%	0.08%			
E02002970 : Stoke-on-Trent 020	2	0.08%		0.08%		
E02006722 : Redditch 002	2	0.08%	0.08%			
E02002573 : Darlington 015	1	0.04%	0.04%			
E02003858 : Cheshire East 006	1	0.04%		0.04%		
E02003988 : Carlisle 002	1	0.04%		0.04%		
E02001025 : Bury 007	1	0.04%				0.04%
E02001029 : Bury 011	1	0.04%				0.04%
E02001031 : Bury 013	1	0.04%				0.04%
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E02001038 : Bury 020	1	0.04%		0.04%		
E02001045 : Manchester 001	1	0.04%		0.04%		
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E02001066 : Manchester 022	1	0.04%				0.04%
E02006902 : Manchester 054	1	0.04%				0.04%
E02006912 : Manchester 055	1	0.04%				0.04%
E02001099 : Oldham 002	1	0.04%		0.04%		
E02001103 : Oldham 006	1	0.04%				0.04%
E02001113 : Oldham 016	1	0.04%		0.04%		
E02001116 : Oldham 019	1	0.04%		0.04%		
E02001128 : Oldham 031	1	0.04%		0.04%		
E02001129 : Oldham 032	1	0.04%				0.04%
E02001131 : Oldham 034	1	0.04%				0.04%
E02001132 : Rochdale 001	1	0.04%		0.04%		
E02001148 : Rochdale 017	1	0.04%		0.04%		
E02001177 : Salford 021	1	0.04%		0.04%		
E02001184 : Salford 028	1	0.04%		0.04%		
E02001211 : Stockport 025	1	0.04%				0.04%
E02001225 : Stockport 039	1	0.04%				0.04%
E02001230 : Tameside 002	1	0.04%	0.04%			
E02001247 : Tameside 019	1	0.04%	0.04%			
E02001248 : Tameside 020	1	0.04%	0.04%			
E02001264 : Trafford 006	1	0.04%				0.04%
E02001273 : Trafford 015	1	0.04%				0.04%
E02001301 : Wigan 015	1	0.04%		0.04%		
E02005198 : Chorley 010	1	0.04%		0.04%		
E02005203 : Fylde 001	1	0.04%		0.04%		
E02005219 : Hyndburn 008	1	0.04%		0.04%		
E02005247 : Pendle 008	1	0.04%		0.04%		
E02002700 : East Riding of Yorkshi	1	0.04%	0.04%			
E02002705 : East Riding of Yorkshi	1	0.04%	0.04%			
E02002682 : Kingston upon Hull 03	1	0.04%	0.04%			
E02002759 : North Lincolnshire 011	1	0.04%	0.04%			
E02002764 : North Lincolnshire 016	1	0.04%	0.04%			
E02002784 : York 013	1	0.04%	0.04%			
E02002792 : York 021	1	0.04%	0.04%			
E02005754 : Hambleton 005	1	0.04%	0.04%			
E02005774 : Harrogate 014	1	0.04%	0.04%			
E02005775 : Harrogate 015	1	0.04%		0.04%		
E02005783 : Richmondshire 002	1	0.04%		0.04%		
E02005790 : Ryedale 003	1	0.04%	0.04%			
E02005809 : Selby 001	1	0.04%	0.04%			
E02001509 : Barnsley 001	1	0.04%			0.04%	
E02001515 : Barnsley 007	1	0.04%			0.04%	
E02001518 : Barnsley 010	1	0.04%			0.04%	
E02001519 : Barnsley 011	1	0.04%			0.04%	
E02001529 : Barnsley 021	1	0.04%			0.04%	
E02001531 : Barnsley 023	1	0.04%			0.04%	
E02001536 : Barnsley 028	1	0.04%			0.04%	

E02001552 : Doncaster 014	1	0.04%	0.04%			
E02001554 : Doncaster 016	1	0.04%	0.04%			
E02001560 : Doncaster 022	1	0.04%	0.04%			
E02001566 : Doncaster 028	1	0.04%	0.04%			
E02001571 : Doncaster 033	1	0.04%	0.04%			
E02001577 : Doncaster 039	1	0.04%	0.04%			
E02001579 : Rotherham 002	1	0.04%	0.04%			
E02001585 : Rotherham 008	1	0.04%	0.04%			
E02001594 : Rotherham 017	1	0.04%	0.04%			
E02001598 : Rotherham 021	1	0.04%			0.04%	
E02001608 : Rotherham 031	1	0.04%			0.04%	
E02001614 : Sheffield 004	1	0.04%			0.04%	
E02001616 : Sheffield 006	1	0.04%			0.04%	
E02001624 : Sheffield 014	1	0.04%			0.04%	
E02001640 : Sheffield 030	1	0.04%			0.04%	
E02001649 : Sheffield 039	1	0.04%	0.04%			
E02001652 : Sheffield 042	1	0.04%	0.04%			
E02001656 : Sheffield 046	1	0.04%	0.04%			
E02001673 : Sheffield 063	1	0.04%			0.04%	
E02006844 : Sheffield 074	1	0.04%	0.04%			
E02002190 : Bradford 008	1	0.04%		0.04%		
E02002200 : Bradford 018	1	0.04%		0.04%		
E02002202 : Bradford 020	1	0.04%		0.04%		
E02002207 : Bradford 025	1	0.04%		0.04%		
E02002209 : Bradford 027	1	0.04%		0.04%		
E02002215 : Bradford 033	1	0.04%		0.04%		
E02002217 : Bradford 035	1	0.04%		0.04%		
E02002236 : Bradford 054	1	0.04%		0.04%		
E02002240 : Bradford 058	1	0.04%		0.04%		
E02002241 : Bradford 059	1	0.04%		0.04%		
E02002250 : Calderdale 007	1	0.04%		0.04%		
E02002252 : Calderdale 009	1	0.04%		0.04%		
E02002260 : Calderdale 017	1	0.04%		0.04%		
E02002263 : Calderdale 020	1	0.04%		0.04%		
E02002266 : Calderdale 023	1	0.04%		0.04%		
E02002270 : Calderdale 027	1	0.04%		0.04%		
E02002274 : Kirklees 004	1	0.04%		0.04%		
E02002282 : Kirklees 012	1	0.04%	0.04%			
E02002333 : Leeds 004	1	0.04%	0.04%			
E02002337 : Leeds 008	1	0.04%	0.04%			
E02002340 : Leeds 011	1	0.04%	0.04%			
E02002343 : Leeds 014	1	0.04%	0.04%			
E02002345 : Leeds 016	1	0.04%	0.04%			
E02002354 : Leeds 025	1	0.04%	0.04%			
E02002356 : Leeds 027	1	0.04%	0.04%			
E02002357 : Leeds 028	1	0.04%		0.04%		
E02002359 : Leeds 030	1	0.04%		0.04%		
E02002361 : Leeds 032	1	0.04%	0.04%			

E02002374 : Leeds 045	1	0.04%		0.04%		
E02002376 : Leeds 047	1	0.04%		0.04%		
E02002385 : Leeds 056	1	0.04%		0.04%		
E02002389 : Leeds 060	1	0.04%		0.04%		
E02002391 : Leeds 062	1	0.04%		0.04%		
E02002403 : Leeds 074	1	0.04%	0.04%			
E02002404 : Leeds 075	1	0.04%	0.04%			
E02002407 : Leeds 078	1	0.04%	0.04%			
E02002408 : Leeds 079	1	0.04%	0.04%			
E02002410 : Leeds 081	1	0.04%		0.04%		
E02002414 : Leeds 085	1	0.04%		0.04%		
E02002428 : Leeds 099	1	0.04%	0.04%			
E02002429 : Leeds 100	1	0.04%		0.04%		
E02002434 : Leeds 105	1	0.04%		0.04%		
E02002449 : Wakefield 012	1	0.04%	0.04%			
E02002464 : Wakefield 027	1	0.04%	0.04%			
E02002471 : Wakefield 034	1	0.04%	0.04%			
E02002476 : Wakefield 039	1	0.04%	0.04%			
E02002481 : Wakefield 044	1	0.04%	0.04%			
E02002869 : Nottingham 002	1	0.04%			0.04%	
E02002895 : Nottingham 028	1	0.04%			0.04%	
E02006905 : Nottingham 040	1	0.04%	0.04%			
E02004072 : Derbyshire Dales 005	1	0.04%			0.04%	
E02005350 : Charnwood 006	1	0.04%	0.04%			
E02005399 : North West Leicesters	1	0.04%	0.04%			
E02005645 : Kettering 007	1	0.04%	0.04%			
E02005860 : Broxtowe 011	1	0.04%	0.04%			
E02006044 : Shropshire 037	1	0.04%		0.04%		
E02006157 : Lichfield 012	1	0.04%	0.04%			
E02006161 : Newcastle-under-Lym	1	0.04%		0.04%		
E02006218 : Tamworth 002	1	0.04%	0.04%			
E02001876 : Birmingham 050	1	0.04%	0.04%			
E02001982 : Coventry 025	1	0.04%	0.04%			
E02002014 : Dudley 015	1	0.04%	0.04%			
E02002143 : Walsall 034	1	0.04%	0.04%			
E02003270 : Luton 013	1	0.04%	0.04%			
E02003246 : Peterborough 010	1	0.04%	0.04%			
E02000113 : Brent 021	1	0.04%	0.04%			
E02000531 : Hounslow 006	1	0.04%	0.04%			
E02000604 : Kingston upon Thame	1	0.04%	0.04%			
E02003463 : Milton Keynes 005	1	0.04%	0.04%			
E02004743 : Gosport 003	1	0.04%	0.04%			
E02005071 : Maidstone 004	1	0.04%	0.04%			
E02005153 : Tonbridge and Malling	1	0.04%	0.04%			
E02002991 : Bath and North East S	1	0.04%	0.04%			
E02003135 : Plymouth 014	1	0.04%	0.04%			
E02003106 : South Gloucestershire	1	0.04%	0.04%			
E02006692 : Wiltshire 042	1	0.04%	0.04%			
E02006076 : South Somerset 002	1	0.04%	0.04%			
W02000030 : Conwy 004	1	0.04%		0.04%		
TOTAL	**2,602**		**35%**	**50%**	**9%**	**6%**
			Rowley Lane E	Penistone Rd N	Penistone Rd S	Woodsom e Rd W

Appendix K Junction Model Outputs

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
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Filename: 220110 - Rowley Lane - Hermitage Park.j9
Path: O:\Rowley Lane, Lepton\ANALYSIS\PICADY\2020 App\Rowley Lane_Hermitage Park
Report generation date: 10/01/2022 13:41:19

»(Default Analysis Set) - 2019 SURVEY, AM
»(Default Analysis Set) - 2019 SURVEY, PM
»(Default Analysis Set) - 2027 BASE, AM
»(Default Analysis Set) - 2027 BASE, PM
»(Default Analysis Set) - 2027 DESIGN, AM
»(Default Analysis Set) - 2027 DESIGN, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
A1 - 2019 SURVEY										
Stream B-C	D1	0 0	5.45	0.00	A	D2	0.0	5.49	0.00	A
Stream B-A		0 0	9.10	0.01	A		0.0	9.04	0.01	A
Stream C-AB		0 0	0.00	0.00	A		0.0	5.33	0.01	A
A1 - 2027 BASE										
Stream B-C	D3	0 0	5.49	0.00	A	D4	0.0	5.54	0.00	A
Stream B-A		0 0	9.34	0.01	A		0.0	9.23	0.01	A
Stream C-AB		0 0	0.00	0.00	A		0.0	5.27	0.01	A
A1 - 2027 DESIGN										
Stream B-C	D5	0.1	6.59	0.05	A	D6	0.0	6.44	0.02	A
Stream B-A		0 0	8.58	0.04	A		0.0	8.41	0.02	A
Stream C-AB		0 0	5.04	0.02	A		0.1	5.44	0.05	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.

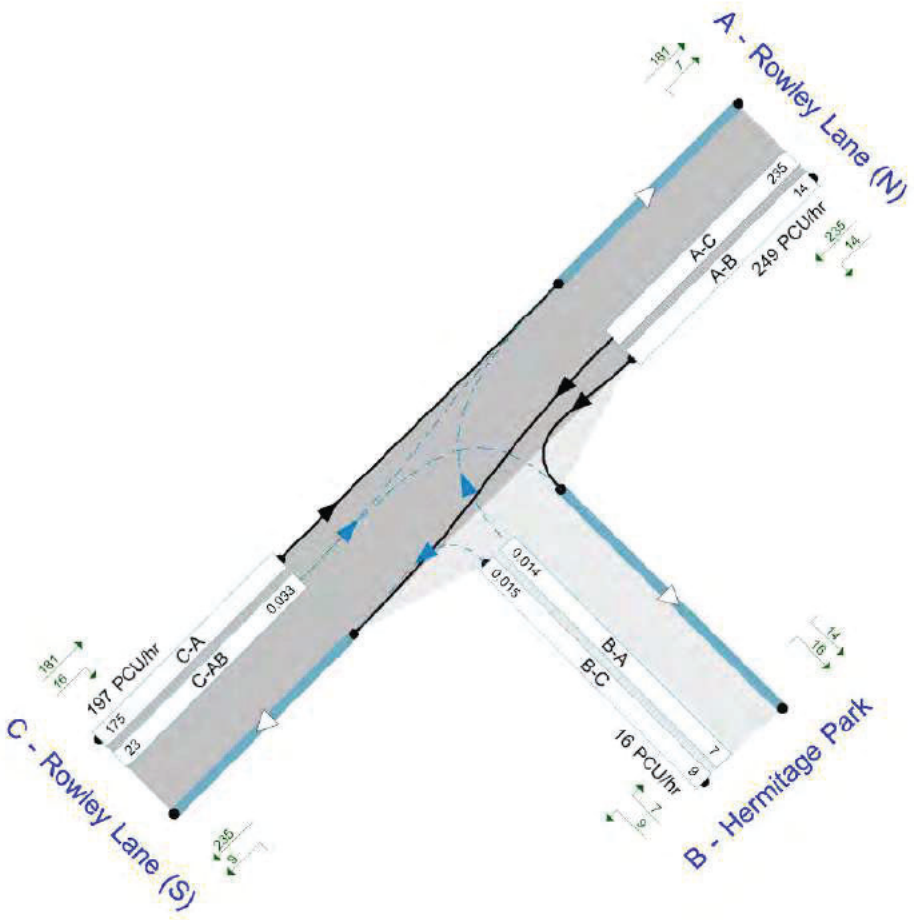
File summary

File Description

Title	Rowley Lane - Hermitage Park Junction
Location	Lepton
Site number	
Date	21/09/2020
Version	
Status	(new file)
Identifier	
Client	Portman Land Limited
Jobnumber	13015
Enumerator	Optima
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



Flows show modelled flow through junction (PCU/hr)
Streams (upstream end) show Total Demand (PCU/hr); Streams (downstream end) show RFC ()

Time Segment: 1630-1645

The junction diagram reflects the last run of Junctions.

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)
D1	2019 SURVEY	AM	ONE HOUR	07:30	09:00	15
D2	2019 SURVEY	PM	ONE HOUR	16:30	18:00	15
D3	2027 BASE	AM	ONE HOUR	07:30	09:00	15
D4	2027 BASE	PM	ONE HOUR	16:30	18:00	15
D5	2027 DESIGN	AM	ONE HOUR	07:30	09:00	15
D6	2027 DESIGN	PM	ONE HOUR	16:30	18:00	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	(Default Analysis Set)	100 000

(Default Analysis Set) - 2019 SURVEY, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Hermitage Park - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

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

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Rowley Lane (N)		Major
B	Hermitage Park		Minor
C	Rowley Lane (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Rowley Lane (S)	6.25			77.0	✓	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 - Hermitage Park	One lane plus flare	9.80	4.30	2.60	2.60	2.60	✓	1.00	21	23

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	517	0.093	0.235	0.148	0.336
B-C	753	0.114	0.289	-	-
C-B	619	0.237	0.237	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)
D1	2019 SURVEY	AM	ONE HOUR	07:30	09:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Rowley Lane (N)		✓	281	100 000
B - Hermitage Park		✓	6	100 000
C - Rowley Lane (S)		✓	272	100 000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	2	279
	B - Hermitage Park	4	0	2
	C - Rowley Lane (S)	272	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	0	0
	B - Hermitage Park	0	0	0
	C - Rowley Lane (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.45	0.0	A
B-A	0.01	9.10	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	691	0.002	1	0.0	5.217	A
B-A	3	437	0.007	3	0.0	8.300	A
C-AB	0	568	0.000	0	0.0	0.000	A
C-A	205			205			
A-B	2			2			
A-C	210			210			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	679	0.003	2	0.0	5.312	A
B-A	4	421	0.009	4	0.0	8.620	A
C-AB	0	559	0.000	0	0.0	0.000	A
C-A	245			245			
A-B	2			2			
A-C	251			251			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	663	0.003	2	0.0	5.450	A
B-A	4	400	0.011	4	0.0	9.104	A
C-AB	0	545	0.000	0	0.0	0.000	A
C-A	299			299			
A-B	2			2			
A-C	307			307			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	663	0.003	2	0.0	5.450	A
B-A	4	400	0.011	4	0.0	9.104	A
C-AB	0	545	0.000	0	0.0	0.000	A
C-A	299			299			
A-B	2			2			
A-C	307			307			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	679	0.003	2	0.0	5.314	A
B-A	4	421	0.009	4	0.0	8.620	A
C-AB	0	559	0.000	0	0.0	0.000	A
C-A	245			245			
A-B	2			2			
A-C	251			251			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	691	0.002	2	0.0	5.219	A
B-A	3	437	0.007	3	0.0	8.302	A
C-AB	0	568	0.000	0	0.0	0.000	A
C-A	205			205			
A-B	2			2			
A-C	210			210			

(Default Analysis Set) - 2019 SURVEY, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Hermitage Park - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		0.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)
D2	2019 SURVEY	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Rowley Lane (N)		✓	299	100 000
B - Hermitage Park		✓	5	100 000
C - Rowley Lane (S)		✓	222	100 000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	2	297
	B - Hermitage Park	4	0	1
	C - Rowley Lane (S)	219	3	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	0	0
	B - Hermitage Park	0	0	0
	C - Rowley Lane (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.49	0.0	A
B-A	0.01	9.04	0.0	A
C-AB	0.01	5.33	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0.75	688	0.001	0.75	0.0	5.241	A
B-A	3	439	0.007	3	0.0	8.263	A
C-AB	3	678	0.004	3	0.0	5.330	A
C-A	164			164			
A-B	2			2			
A-C	224			224			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0.90	675	0.001	0.90	0.0	5.342	A
B-A	4	424	0.008	4	0.0	8.572	A
C-AB	4	691	0.005	4	0.0	5.237	A
C-A	196			196			
A-B	2			2			
A-C	267			267			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1	657	0.002	1	0.0	5.488	A
B-A	4	403	0.011	4	0.0	9.039	A
C-AB	5	709	0.007	5	0.0	5.111	A
C-A	239			239			
A-B	2			2			
A-C	327			327			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1	657	0.002	1	0.0	5.488	A
B-A	4	403	0.011	4	0.0	9.039	A
C-AB	5	709	0.007	5	0.0	5.113	A
C-A	239			239			
A-B	2			2			
A-C	327			327			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0.90	675	0.001	0.90	0.0	5.344	A
B-A	4	424	0.008	4	0.0	8.572	A
C-AB	4	691	0.005	4	0.0	5.239	A
C-A	196			196			
A-B	2			2			
A-C	267			267			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0.75	688	0.001	0.75	0.0	5.243	A
B-A	3	439	0.007	3	0.0	8.265	A
C-AB	3	678	0.004	3	0.0	5.330	A
C-A	164			164			
A-B	2			2			
A-C	224			224			

(Default Analysis Set) - 2027 BASE, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Hermitage Park - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

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

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)
D3	2027 BASE	AM	ONE HOUR	07:30	09:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Rowley Lane (N)		✓	300	100 000
B - Hermitage Park		✓	6	100 000
C - Rowley Lane (S)		✓	308	100 000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	6	294
	B - Hermitage Park	4	0	2
	C - Rowley Lane (S)	308	0	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	0	0
	B - Hermitage Park	0	0	0
	C - Rowley Lane (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.49	0.0	A
B-A	0.01	9.34	0.0	A
C-AB	0.00	0.00	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	688	0.002	1	0.0	5.244	A
B-A	3	430	0.007	3	0.0	8.435	A
C-AB	0	565	0.000	0	0.0	0.000	A
C-A	232			232			
A-B	5			5			
A-C	221			221			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	675	0.003	2	0.0	5.346	A
B-A	4	413	0.009	4	0.0	8.794	A
C-AB	0	555	0.000	0	0.0	0.000	A
C-A	277			277			
A-B	5			5			
A-C	264			264			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	657	0.003	2	0.0	5.494	A
B-A	4	390	0.011	4	0.0	9.345	A
C-AB	0	540	0.000	0	0.0	0.000	A
C-A	339			339			
A-B	7			7			
A-C	324			324			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	657	0.003	2	0.0	5.494	A
B-A	4	390	0.011	4	0.0	9.345	A
C-AB	0	540	0.000	0	0.0	0.000	A
C-A	339			339			
A-B	7			7			
A-C	324			324			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	675	0.003	2	0.0	5.348	A
B-A	4	413	0.009	4	0.0	8.795	A
C-AB	0	555	0.000	0	0.0	0.000	A
C-A	277			277			
A-B	5			5			
A-C	264			264			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	2	688	0.002	2	0.0	5.247	A
B-A	3	430	0.007	3	0.0	8.437	A
C-AB	0	565	0.000	0	0.0	0.000	A
C-A	232			232			
A-B	5			5			
A-C	221			221			

(Default Analysis Set) - 2027 BASE, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Hermitage Park - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		0.12	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)
D4	2027 BASE	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Rowley Lane (N)		✓	322	100 000
B - Hermitage Park		✓	5	100 000
C - Rowley Lane (S)		✓	243	100 000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	10	312
	B - Hermitage Park	4	0	1
	C - Rowley Lane (S)	240	3	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	0	0
	B - Hermitage Park	0	0	0
	C - Rowley Lane (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.00	5.54	0.0	A
B-A	0.01	9.23	0.0	A
C-AB	0.01	5.27	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0.75	684	0.001	0.75	0.0	5.271	A
B-A	3	433	0.007	3	0.0	8.369	A
C-AB	3	685	0.004	3	0.0	5.275	A
C-A	180			180			
A-B	8			8			
A-C	235			235			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0.90	670	0.001	0.90	0.0	5.379	A
B-A	4	417	0.009	4	0.0	8.709	A
C-AB	4	700	0.006	4	0.0	5.172	A
C-A	215			215			
A-B	9			9			
A-C	280			280			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1	651	0.002	1	0.0	5.537	A
B-A	4	395	0.011	4	0.0	9.227	A
C-AB	5	720	0.007	5	0.0	5.034	A
C-A	262			262			
A-B	11			11			
A-C	344			344			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	1	651	0.002	1	0.0	5.537	A
B-A	4	395	0.011	4	0.0	9.227	A
C-AB	5	720	0.007	5	0.0	5.035	A
C-A	262			262			
A-B	11			11			
A-C	344			344			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0.90	670	0.001	0.90	0.0	5.379	A
B-A	4	417	0.009	4	0.0	8.710	A
C-AB	4	700	0.006	4	0.0	5.172	A
C-A	215			215			
A-B	9			9			
A-C	280			280			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	0.75	684	0.001	0.75	0.0	5.273	A
B-A	3	433	0.007	3	0.0	8.370	A
C-AB	3	685	0.004	3	0.0	5.275	A
C-A	180			180			
A-B	8			8			
A-C	235			235			

(Default Analysis Set) - 2027 DESIGN, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Hermitage Park - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		0.57	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)
D5	2027 DESIGN	AM	ONE HOUR	07:30	09:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Rowley Lane (N)		✓	304	100 000
B - Hermitage Park		✓	43	100 000
C - Rowley Lane (S)		✓	316	100 000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	10	294
	B - Hermitage Park	16	0	27
	C - Rowley Lane (S)	308	8	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	0	0
	B - Hermitage Park	0	0	0
	C - Rowley Lane (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.05	6.59	0.1	A
B-A	0.04	8.58	0.0	A
C-AB	0.02	5.04	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:30 - 07:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	20	604	0.034	20	0.0	6.161	A
B-A	12	484	0.025	12	0.0	7.622	A
C-AB	9	723	0.012	9	0.0	5.037	A
C-A	229			229			
A-B	8			8			
A-C	221			221			

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	24	592	0.041	24	0.0	6.337	A
B-A	14	464	0.031	14	0.0	7.997	A
C-AB	11	745	0.015	11	0.0	4.904	A
C-A	273			273			
A-B	9			9			
A-C	264			264			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	576	0.052	30	0.1	6.593	A
B-A	18	437	0.040	18	0.0	8.576	A
C-AB	16	777	0.020	16	0.0	4.729	A
C-A	332			332			
A-B	11			11			
A-C	324			324			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	30	576	0.052	30	0.1	6.593	A
B-A	18	437	0.040	18	0.0	8.576	A
C-AB	16	777	0.020	16	0.0	4.729	A
C-A	332			332			
A-B	11			11			
A-C	324			324			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	24	592	0.041	24	0.0	6.338	A
B-A	14	464	0.031	14	0.0	7.999	A
C-AB	11	746	0.015	11	0.0	4.906	A
C-A	273			273			
A-B	9			9			
A-C	264			264			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	20	604	0.034	20	0.0	6.167	A
B-A	12	484	0.025	12	0.0	7.626	A
C-AB	9	724	0.012	9	0.0	5.037	A
C-A	229			229			
A-B	8			8			
A-C	221			221			

(Default Analysis Set) - 2027 DESIGN, PM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Minor arm flare	B - Hermitage Park - Minor arm geometry	Is flare very short? Estimated flare length is zero but has been increased to 1 because a zero flare length is not allowed.
Warning	Vehicle Mix		HV% is zero for all movements / time segments. Vehicle Mix matrix should be completed whether working in PCUs or Vehs. If HV% at the junction is genuinely zero, please ignore this warning.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		0.54	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)
D6	2027 DESIGN	PM	ONE HOUR	16:30	18:00	15

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

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Rowley Lane (N)		✓	331	100 000
B - Hermitage Park		✓	21	100 000
C - Rowley Lane (S)		✓	262	100 000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	19	312
	B - Hermitage Park	9	0	12
	C - Rowley Lane (S)	240	22	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - Rowley Lane (N)	B - Hermitage Park	C - Rowley Lane (S)
From	A - Rowley Lane (N)	0	0	0
	B - Hermitage Park	0	0	0
	C - Rowley Lane (S)	0	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.02	6.44	0.0	A
B-A	0.02	8.41	0.0	A
C-AB	0.05	5.44	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

16:30 - 16:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	9	602	0.015	9	0.0	6.072	A
B-A	7	484	0.014	7	0.0	7.536	A
C-AB	23	684	0.033	22	0.0	5.439	A
C-A	175			175			
A-B	14			14			
A-C	235			235			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	11	589	0.018	11	0.0	6.220	A
B-A	8	465	0.017	8	0.0	7.882	A
C-AB	29	698	0.041	29	0.1	5.379	A
C-A	207			207			
A-B	17			17			
A-C	280			280			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	13	572	0.023	13	0.0	6.438	A
B-A	10	438	0.023	10	0.0	8.414	A
C-AB	38	718	0.053	38	0.1	5.294	A
C-A	250			250			
A-B	21			21			
A-C	344			344			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	13	572	0.023	13	0.0	6.438	A
B-A	10	438	0.023	10	0.0	8.414	A
C-AB	38	718	0.054	38	0.1	5.297	A
C-A	250			250			
A-B	21			21			
A-C	344			344			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	11	589	0.018	11	0.0	6.223	A
B-A	8	465	0.017	8	0.0	7.885	A
C-AB	29	698	0.041	29	0.1	5.381	A
C-A	207			207			
A-B	17			17			
A-C	280			280			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	9	602	0.015	9	0.0	6.075	A
B-A	7	484	0.014	7	0.0	7.541	A
C-AB	23	684	0.033	23	0.0	5.443	A
C-A	175			175			
A-B	14			14			
A-C	235			235			

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
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Filename: 220110 - Rowley Lane - Penistone Road.j9
Path: O:\Rowley Lane, Lepton\ANALYSIS\PICADY\2020 App\Rowley Lane_Penistone Road
Report generation date: 10/01/2022 13:49:46

»(Default Analysis Set) - 2019 SURVEY, AM
»(Default Analysis Set) - 2019 SURVEY, PM
»(Default Analysis Set) - 2027 BASE, AM
»(Default Analysis Set) - 2027 BASE, PM
»(Default Analysis Set) - 2027 DESIGN, AM
»(Default Analysis Set) - 2027 DESIGN, PM

Summary of junction performance

	AM				PM			
	Set ID	Queue (PCU)	Delay (s)	RFC	Set ID	Queue (PCU)	Delay (s)	RFC
A1 - 2019 SURVEY								
Stream B-C	D1	1 5	17.65	0.61	D2	3.6	45.29	0.81
Stream B-A		0.4	43.87	0.27		1.5	126.43	0.65
Stream C-AB		1.1	15.71	0.53		1.0	17.31	0.50
A1 - 2027 BASE								
Stream B-C	D3	2 9	32.27	0.76	D4	27.9	284 62	1.19
Stream B-A		1 2	95.68	0.58		6.5	395 01	1.11
Stream C-AB		1 3	18.10	0.58		1.3	20.76	0.57
A1 - 2027 DESIGN								
Stream B-C	D5	10.0	104.47	0.99	D6	39.8	410 82	1.30
Stream B-A		3 9	214.13	0.91		9.4	512 98	1.24
Stream C-AB		1.4	18.44	0.58		1.4	21.74	0.58

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.

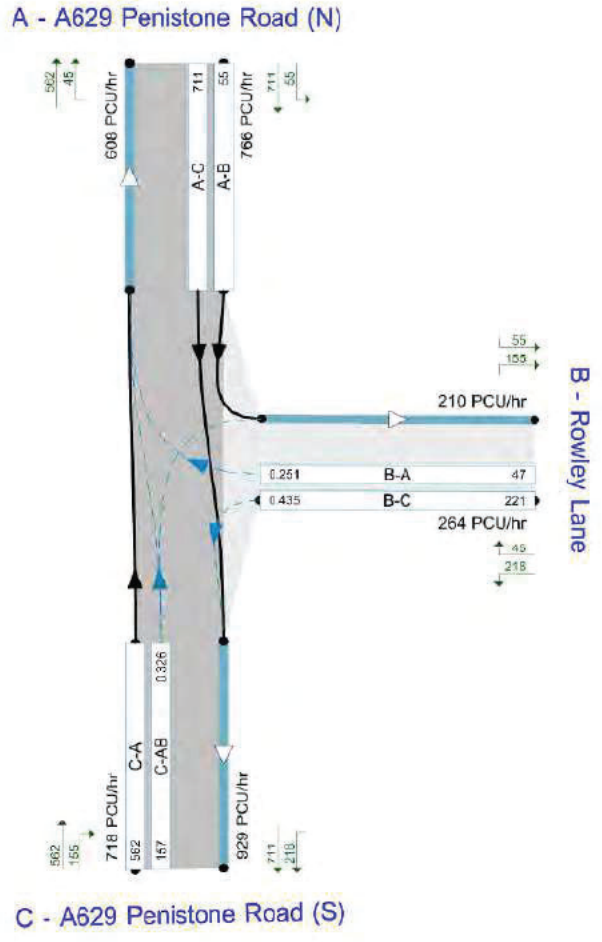
File summary

File Description

Title	Rowley Lane/Penistone Road
Location	
Site number	
Date	21/09/2020
Version	
Status	(new file)
Identifier	
Client	KCS Developments Ltd
Jobnumber	
Enumerator	Optima
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



Flows show modelled flow through junction (PCU/hr)
Streams (upstream end) show Total Demand (PCU/hr). Streams (downstream end) show RFC ()

Time Segment: 1645-17:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20 00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2019 SURVEY	AM	ONE HOUR	07:30	09:00	15	✓
D2	2019 SURVEY	PM	ONE HOUR	16:45	18:15	15	✓
D3	2027 BASE	AM	ONE HOUR	07:30	09:00	15	✓
D4	2027 BASE	PM	ONE HOUR	16:45	18:15	15	✓
D5	2027 DESIGN	AM	ONE HOUR	07:30	09:00	15	✓
D6	2027 DESIGN	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100 000	100 000

(Default Analysis Set) - 2019 SURVEY, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		4.81	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A629 Penistone Road (N)		Major
B	Rowley Lane		Minor
C	A629 Penistone Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - A629 Penistone Road (S)	6 80		✓	2.25	172.0	✓	10.00

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 - Rowley Lane	One lane plus flare	10.00	6.75	6.20	5.20	5 00	✓	3.00	38	26

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	441	0.077	0.196	0.123	0.280
B-C	760	0.112	0.284	-	-
C-B	677	0.253	0.253	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D1	2019 SURVEY	AM	ONE HOUR	07:30	09:00	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 - A629 Penistone Road (N)		ONE HOUR	✓	702	100.000
B - Rowley Lane		ONE HOUR	✓	311	100.000
C - A629 Penistone Road (S)		ONE HOUR	✓	1028	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	71	631
	B - Rowley Lane	27	0	284
	C - A629 Penistone Road (S)	798	230	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	0	0
	B - Rowley Lane	0	0	0
	C - A629 Penistone Road (S)	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-C	0.61	17.65	1.5	C	261	391
B-A	0.27	43.87	0.4	E	25	37
C-AB	0.53	15.71	1.1	C	211	317
C-A					732	1098
A-B					65	98
A-C					579	869

Main Results for each time segment

07:30 - 07:45

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	605	0.354	212	0.0	0.5	9.114	A
B-A	20	5	220	0.092	20	0.0	0.1	17 955	C
C-AB	173	43	543	0.319	171	0.0	0.5	9.630	A
C-A	601	150			601				
A-B	53	13			53				
A-C	475	119			475				

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	255	64	571	0.447	254	0.5	0.8	11 338	B
B-A	24	6	176	0.138	24	0.1	0.2	23.726	C
C-AB	207	52	517	0.400	206	0.5	0.7	11 530	B
C-A	717	179			717				
A-B	64	16			64				
A-C	567	142			567				

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	313	78	517	0.605	310	0.8	1.5	17.148	C
B-A	30	7	112	0.265	29	0.2	0.3	42.796	E
C-AB	254	63	483	0.526	252	0.7	1.1	15.495	C
C-A	878	219			878				
A-B	78	20			78				
A-C	695	174			695				

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	313	78	516	0.606	313	1.5	1.5	17 651	C
B-A	30	7	112	0.266	30	0.3	0.4	43 872	E
C-AB	254	63	483	0.526	254	1.1	1.1	15.708	C
C-A	878	219			878				
A-B	78	20			78				
A-C	695	174			695				

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	255	64	570	0.448	258	1.5	0.8	11 649	B
B-A	24	6	175	0.139	25	0.4	0.2	24.154	C
C-AB	207	52	517	0.400	208	1.1	0.7	11.710	B
C-A	717	179			717				
A-B	64	16			64				
A-C	567	142			567				

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	214	53	604	0.354	215	0.8	0.6	9.281	A
B-A	20	5	219	0.093	21	0.2	0.1	18.131	C
C-AB	173	43	543	0.319	174	0.7	0.5	9.768	A
C-A	601	150			601				
A-B	53	13			53				
A-C	475	119			475				

(Default Analysis Set) - 2019 SURVEY, PM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		9.93	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D2	2019 SURVEY	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 - A629 Penistone Road (N)		ONE HOUR	✓	935	100.000
B - Rowley Lane		ONE HOUR	✓	320	100.000
C - A629 Penistone Road (S)		ONE HOUR	✓	896	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	39	896
	B - Rowley Lane	44	0	276
	C - A629 Penistone Road (S)	706	190	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	0	0
	B - Rowley Lane	0	0	0
	C - A629 Penistone Road (S)	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-C	0.81	45.29	3.6	E	253	380
B-A	0.65	126.43	1.5	F	40	61
C-AB	0.50	17.31	1.0	C	174	262
C-A					648	972
A-B					36	54
A-C					822	1233

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	208	52	537	0.387	205	0.0	0.6	10.778	B
B-A	33	8	202	0.164	32	0.0	0.2	21.126	C
C-AB	143	36	499	0.287	141	0.0	0.4	10 027	B
C-A	532	133			532				
A-B	29	7			29				
A-C	675	169			675				

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	248	62	488	0.509	247	0.6	1.0	14 831	B
B-A	40	10	152	0.260	39	0.2	0.3	31 599	D
C-AB	171	43	464	0.368	170	0.4	0.6	12 204	B
C-A	635	159			635				
A-B	35	9			35				
A-C	805	201			805				

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	304	76	389	0.780	296	1.0	3.0	35 809	E
B-A	48	12	77	0.626	45	0.3	1.3	100.928	F
C-AB	210	52	417	0.502	208	0.6	1.0	17 063	C
C-A	777	194			777				
A-B	43	11			43				
A-C	987	247			987				

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	304	76	377	0.805	302	3.0	3.6	45 291	E
B-A	48	12	74	0.652	47	1.3	1.5	126.428	F
C-AB	210	52	417	0.502	210	1.0	1.0	17 310	C
C-A	777	194			777				
A-B	43	11			43				
A-C	987	247			987				

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	248	62	482	0.515	258	3.6	1.1	16.738	C
B-A	40	10	151	0.262	44	1.5	0.4	34 989	D
C-AB	171	43	464	0.368	172	1.0	0.6	12 397	B
C-A	635	159			635				
A-B	35	9			35				
A-C	805	201			805				

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	208	52	536	0.388	210	1.1	0.6	11.105	B
B-A	33	8	201	0.165	34	0.4	0.2	21 569	C
C-AB	143	36	499	0.287	144	0.6	0.4	10.156	B
C-A	532	133			532				
A-B	29	7			29				
A-C	675	169			675				

(Default Analysis Set) - 2027 BASE, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		8.45	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D3	2027 BASE	AM	ONE HOUR	07:30	09:00	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 - A629 Penistone Road (N)		ONE HOUR	✓	763	100.000
B - Rowley Lane		ONE HOUR	✓	350	100.000
C - A629 Penistone Road (S)		ONE HOUR	✓	1084	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	92	671
	B - Rowley Lane	45	0	305
	C - A629 Penistone Road (S)	841	243	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	0	0
	B - Rowley Lane	0	0	0
	C - A629 Penistone Road (S)	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-C	0.76	32.27	2.9	D	280	420
B-A	0.58	95.68	1.2	F	41	62
C-AB	0.58	18.10	1.3	C	224	336
C-A					771	1156
A-B					84	127
A-C					616	924

Main Results for each time segment

07:30 - 07:45

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	230	57	579	0.396	227	0.0	0.6	10.142	B
B-A	34	8	208	0.163	33	0.0	0.2	20 514	C
C-AB	183	46	532	0.344	181	0.0	0.5	10 203	B
C-A	633	158			633				
A-B	69	17			69				
A-C	505	126			505				

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	274	69	538	0.510	273	0.6	1.0	13 506	B
B-A	40	10	159	0.254	40	0.2	0.3	30 000	D
C-AB	219	55	504	0.434	218	0.5	0.7	12 539	B
C-A	756	189			756				
A-B	83	21			83				
A-C	603	151			603				

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	336	84	453	0.742	330	1.0	2.6	27 896	D
B-A	50	12	88	0.564	47	0.3	1.1	82 391	F
C-AB	270	67	468	0.576	267	0.7	1.3	17.736	C
C-A	924	231			924				
A-B	101	25			101				
A-C	739	185			739				

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	336	84	444	0.756	335	2.6	2.9	32 265	D
B-A	50	12	86	0.579	49	1.1	1.2	95 683	F
C-AB	270	67	468	0.576	270	1.3	1.3	18.103	C
C-A	924	231			924				
A-B	101	25			101				
A-C	739	185			739				

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	274	69	533	0.514	281	2.9	1.1	14 676	B
B-A	40	10	158	0.256	44	1.2	0.4	32 368	D
C-AB	219	55	504	0.434	221	1.3	0.8	12 818	B
C-A	756	189			756				
A-B	83	21			83				
A-C	603	151			603				

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	230	57	578	0.397	231	1.1	0.7	10.432	B
B-A	34	8	207	0.164	35	0.4	0.2	20 945	C
C-AB	183	46	532	0.344	184	0.8	0.5	10 381	B
C-A	633	158			633				
A-B	69	17			69				
A-C	505	126			505				

(Default Analysis Set) - 2027 BASE, PM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		47.14	E

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D4	2027 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 - A629 Penistone Road (N)		ONE HOUR	✓	1003	100.000
B - Rowley Lane		ONE HOUR	✓	345	100.000
C - A629 Penistone Road (S)		ONE HOUR	✓	952	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	59	944
	B - Rowley Lane	54	0	291
	C - A629 Penistone Road (S)	747	205	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	0	0
	B - Rowley Lane	0	0	0
	C - A629 Penistone Road (S)	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-C	1.19	284.62	27.9	F	267	401
B-A	1.11	395.01	6.5	F	50	74
C-AB	0.57	20.76	1.3	C	189	283
C-A					685	1027
A-B					54	81
A-C					866	1299

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	219	55	516	0.424	216	0.0	0.7	11 880	B
B-A	41	10	187	0.217	40	0.0	0.3	24 246	C
C-AB	154	39	486	0.318	153	0.0	0.5	10.739	B
C-A	562	141			562				
A-B	44	11			44				
A-C	711	178			711				

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	262	65	458	0.571	259	0.7	1.3	17 900	C
B-A	49	12	133	0.365	47	0.3	0.5	41 617	E
C-AB	184	46	449	0.411	183	0.5	0.7	13 512	B
C-A	672	168			672				
A-B	53	13			53				
A-C	849	212			849				

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	320	80	283	1.131	268	1.3	14 3	132.312	F
B-A	59	15	54	1.109	45	0.5	4.2	265.110	F
C-AB	227	57	400	0.568	225	0.7	1.3	20 263	C
C-A	821	205			821				
A-B	65	16			65				
A-C	1039	260			1039				

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	320	80	269	1.192	266	14.3	27 9	284.616	F
B-A	59	15	54	1.094	50	4.2	6.5	395.008	F
C-AB	227	57	400	0.568	227	1.3	1.3	20.759	C
C-A	821	205			821				
A-B	65	16			65				
A-C	1039	260			1039				

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	262	65	418	0.625	365	27.9	1.9	113.696	F
B-A	49	12	102	0.478	70	6.5	1.1	142.339	F
C-AB	184	46	449	0.411	187	1.3	0.7	13 840	B
C-A	672	168			672				
A-B	53	13			53				
A-C	849	212			849				

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	219	55	512	0.428	224	1.9	0.8	12 675	B
B-A	41	10	186	0.218	44	1.1	0.3	25 800	D
C-AB	154	39	486	0.318	155	0.7	0.5	10 919	B
C-A	562	141			562				
A-B	44	11			44				
A-C	711	178			711				

(Default Analysis Set) - 2027 DESIGN, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		22.70	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D5	2027 DESIGN	AM	ONE HOUR	07:30	09:00	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 - A629 Penistone Road (N)		ONE HOUR	✓	769	100.000
B - Rowley Lane		ONE HOUR	✓	375	100.000
C - A629 Penistone Road (S)		ONE HOUR	✓	1086	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	98	671
	B - Rowley Lane	63	0	312
	C - A629 Penistone Road (S)	841	245	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	0	0
	B - Rowley Lane	0	0	0
	C - A629 Penistone Road (S)	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-C	0.99	104.47	10.0	F	286	429
B-A	0.91	214.13	3.9	F	58	87
C-AB	0.58	18.44	1.4	C	226	338
C-A					771	1156
A-B					90	135
A-C					616	924

Main Results for each time segment

07:30 - 07:45

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	235	59	565	0.416	232	0.0	0.7	10.719	B
B-A	47	12	209	0.227	46	0.0	0.3	22 009	C
C-AB	184	46	531	0.348	182	0.0	0.5	10 277	B
C-A	633	158			633				
A-B	74	18			74				
A-C	505	126			505				

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	280	70	517	0.542	279	0.7	1.1	14 971	B
B-A	57	14	159	0.356	56	0.3	0.5	34 527	D
C-AB	220	55	502	0.439	219	0.5	0.8	12 677	B
C-A	756	189			756				
A-B	88	22			88				
A-C	603	151			603				

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	344	86	380	0.905	326	1.1	5.6	55 069	F
B-A	69	17	80	0.867	60	0.5	2.8	146.654	F
C-AB	272	68	467	0.583	270	0.8	1.3	18 052	C
C-A	924	231			924				
A-B	108	27			108				
A-C	739	185			739				

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	344	86	347	0.989	326	5.6	10 0	104.466	F
B-A	69	17	76	0.908	65	2.8	3.9	214.135	F
C-AB	272	68	467	0.583	272	1.3	1.4	18.441	C
C-A	924	231			924				
A-B	108	27			108				
A-C	739	185			739				

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	280	70	499	0.562	315	10.0	1.3	23.151	C
B-A	57	14	154	0.369	70	3.9	0.6	48 529	E
C-AB	220	55	502	0.439	223	1.4	0.8	12 972	B
C-A	756	189			756				
A-B	88	22			88				
A-C	603	151			603				

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	235	59	563	0.417	237	1.3	0.7	11.142	B
B-A	47	12	208	0.228	49	0.6	0.3	22.792	C
C-AB	184	46	531	0.348	185	0.8	0.5	10.463	B
C-A	633	158			633				
A-B	74	18			74				
A-C	505	126			505				

(Default Analysis Set) - 2027 DESIGN, PM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		67.47	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D6	2027 DESIGN	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 - A629 Penistone Road (N)		ONE HOUR	✓	1017	100.000
B - Rowley Lane		ONE HOUR	✓	356	100.000
C - A629 Penistone Road (S)		ONE HOUR	✓	956	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	73	944
	B - Rowley Lane	62	0	294
	C - A629 Penistone Road (S)	747	209	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	0	0
	B - Rowley Lane	0	0	0
	C - A629 Penistone Road (S)	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-C	1.30	410.82	39.8	F	270	405
B-A	1.24	512.98	9.4	F	57	85
C-AB	0.58	21.74	1.4	C	193	289
C-A					685	1027
A-B					67	100
A-C					866	1299

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	221	55	509	0.435	218	0.0	0.8	12 262	B
B-A	47	12	186	0.251	45	0.0	0.3	25 383	D
C-AB	157	39	483	0.326	155	0.0	0.5	10 920	B
C-A	562	141			562				
A-B	55	14			55				
A-C	711	178			711				

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	264	66	446	0.592	262	0.8	1.4	19 259	C
B-A	56	14	131	0.426	54	0.3	0.7	46 267	E
C-AB	188	47	446	0.422	187	0.5	0.7	13 856	B
C-A	671	168			671				
A-B	66	16			66				
A-C	849	212			849				

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	324	81	255	1.268	247	1.4	20.7	189.070	F
B-A	68	17	55	1.240	48	0.7	5.7	311.547	F
C-AB	232	58	397	0.585	230	0.7	1.3	21.160	C
C-A	820	205			820				
A-B	80	20			80				
A-C	1039	260			1039				

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	324	81	248	1.304	247	20.7	39 8	410.824	F
B-A	68	17	56	1.228	53	5.7	9.4	512.980	F
C-AB	232	58	397	0.585	232	1.3	1.4	21.741	C
C-A	820	205			820				
A-B	80	20			80				
A-C	1039	260			1039				

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	264	66	383	0.689	374	39.8	12 3	256.374	F
B-A	56	14	84	0.660	76	9.4	4.2	324.255	F
C-AB	188	47	446	0.422	190	1.4	0.7	14 235	B
C-A	671	168			671				
A-B	66	16			66				
A-C	849	212			849				

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	221	55	494	0.448	267	12.3	0.8	19 270	C
B-A	47	12	182	0.256	62	4.2	0.4	33 547	D
C-AB	157	39	483	0.326	158	0.7	0.5	11.114	B
C-A	562	141			562				
A-B	55	14			55				
A-C	711	178			711				

Junctions 9

PICADY 9 - Priority Intersection Module

Version: 9.5.1.7462
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Filename: 220110 - Rowley Lane - Penistone Road Mitigation.j9
Path: O:\Rowley Lane, Lepton\ANALYSIS\PICADY\2020 App\Rowley Lane_Penistone Road
Report generation date: 10/01/2022 13:52:07

»(Default Analysis Set) - 2027 DESIGN, AM
»(Default Analysis Set) - 2027 DESIGN, PM

Summary of junction performance

	AM					PM				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	A1 - 2027 DESIGN									
Stream B-C	D5	2 8	30.30	0.75	D	D6	7.6	88.69	0.94	F
Stream B-A		1 3	70.49	0.58	F		3.5	196.87	0.87	F
Stream C-AB		1.4	18.44	0.58	C		1.4	21.74	0.58	C

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.

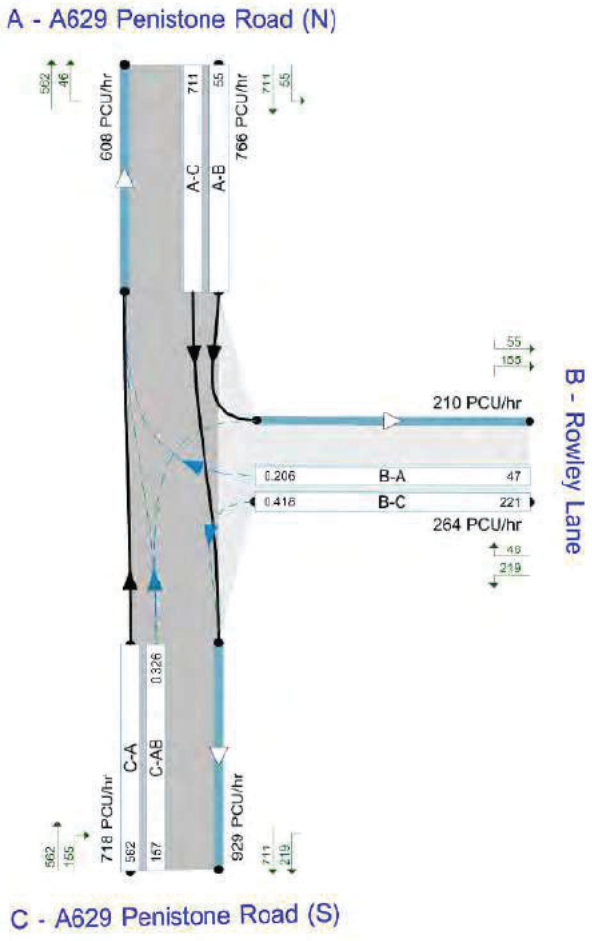
File summary

File Description

Title	(untitled)
Location	
Site number	
Date	03/08/2016
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	Optima
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



Flows show modelled flow through junction (PCU/hr)
Streams (upstream end) show Total Demand (PCU/hr). Streams (downstream end) show RFC ()

Time Segment: 16:45-17:00

The junction diagram reflects the last run of Junctions.

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				0.85	36.00	20 00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D5	2027 DESIGN	AM	ONE HOUR	07:30	09:00	15	✓
D6	2027 DESIGN	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

ID	Name	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	(Default Analysis Set)	✓	100 000	100 000

(Default Analysis Set) - 2027 DESIGN, AM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		8.26	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	A629 Penistone Road (N)		Major
B	Rowley Lane		Minor
C	A629 Penistone Road (S)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - A629 Penistone Road (S)	6 80		✓	2.25	172.0	✓	10.00

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 (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B - Rowley Lane	Two lanes	5.00	3.80	38	27

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	543	0.096	0.241	0.152	0.345
B-C	769	0.114	0.288	-	-
C-B	677	0.253	0.253	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D5	2027 DESIGN	AM	ONE HOUR	07:30	09:00	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 - A629 Penistone Road (N)		ONE HOUR	✓	769	100.000
B - Rowley Lane		ONE HOUR	✓	375	100.000
C - A629 Penistone Road (S)		ONE HOUR	✓	1086	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	98	671
	B - Rowley Lane	63	0	312
	C - A629 Penistone Road (S)	841	245	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	0	0
	B - Rowley Lane	0	0	0
	C - A629 Penistone Road (S)	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-C	0.75	30.30	2.8	D	286	429
B-A	0.58	70.49	1.3	F	58	87
C-AB	0.58	18.44	1.4	C	226	338
C-A					771	1156
A-B					90	135
A-C					616	924

Main Results for each time segment

07:30 - 07:45

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	235	59	587	0.400	232	0.0	0.7	10 081	B
B-A	47	12	255	0.186	47	0.0	0.2	17 231	C
C-AB	184	46	531	0.348	182	0.0	0.5	10 277	B
C-A	633	158			633				
A-B	74	18			74				
A-C	505	126			505				

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	280	70	543	0.516	279	0.7	1.0	13 548	B
B-A	57	14	198	0.286	56	0.2	0.4	25 264	D
C-AB	220	55	502	0.439	219	0.5	0.8	12 677	B
C-A	756	189			756				
A-B	88	22			88				
A-C	603	151			603				

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	344	86	464	0.740	337	1.0	2.6	27 221	D
B-A	69	17	120	0.578	66	0.4	1.2	63.722	F
C-AB	272	68	467	0.583	270	0.8	1.3	18 052	C
C-A	924	231			924				
A-B	108	27			108				
A-C	739	185			739				

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	344	86	460	0.747	343	2.6	2.8	30 299	D
B-A	69	17	119	0.582	69	1.2	1.3	70.488	F
C-AB	272	68	467	0.583	272	1.3	1.4	18.441	C
C-A	924	231			924				
A-B	108	27			108				
A-C	739	185			739				

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	280	70	540	0.520	287	2.8	1.1	14 590	B
B-A	57	14	197	0.288	60	1.3	0.4	26 945	D
C-AB	220	55	502	0.439	223	1.4	0.8	12 972	B
C-A	756	189			756				
A-B	88	22			88				
A-C	603	151			603				

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	235	59	586	0.401	237	1.1	0.7	10 363	B
B-A	47	12	254	0.187	48	0.4	0.2	17 593	C
C-AB	184	46	531	0.348	185	0.8	0.5	10.463	B
C-A	633	158			633				
A-B	74	18			74				
A-C	505	126			505				

(Default Analysis Set) - 2027 DESIGN, PM

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	(untitled)	T-Junction	Two-way		18.40	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH mm)	Finish time (HH mm)	Time segment length (min)	Run automatically
D6	2027 DESIGN	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 - A629 Penistone Road (N)		ONE HOUR	✓	1017	100.000
B - Rowley Lane		ONE HOUR	✓	356	100.000
C - A629 Penistone Road (S)		ONE HOUR	✓	956	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	73	944
	B - Rowley Lane	62	0	294
	C - A629 Penistone Road (S)	747	209	0

Vehicle Mix

Heavy Vehicle Percentages

		To		
		A - A629 Penistone Road (N)	B - Rowley Lane	C - A629 Penistone Road (S)
From	A - A629 Penistone Road (N)	0	0	0
	B - Rowley Lane	0	0	0
	C - A629 Penistone Road (S)	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-C	0.94	88.69	7.6	F	270	405
B-A	0.87	196.87	3.5	F	57	85
C-AB	0.58	21.74	1.4	C	193	289
C-A					685	1027
A-B					67	100
A-C					866	1299

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	221	55	530	0.418	219	0.0	0.7	11.466	B
B-A	47	12	227	0.206	46	0.0	0.3	19.763	C
C-AB	157	39	483	0.326	155	0.0	0.5	10 920	B
C-A	562	141			562				
A-B	55	14			55				
A-C	711	178			711				

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	264	66	473	0.559	262	0.7	1.2	16 906	C
B-A	56	14	165	0.338	55	0.3	0.5	32.461	D
C-AB	188	47	446	0.422	187	0.5	0.7	13 856	B
C-A	671	168			671				
A-B	66	16			66				
A-C	849	212			849				

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	324	81	359	0.901	307	1.2	5.4	56 892	F
B-A	68	17	79	0.859	59	0.5	2.7	144.690	F
C-AB	232	58	397	0.585	230	0.7	1.3	21.160	C
C-A	820	205			820				
A-B	80	20			80				
A-C	1039	260			1039				

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	324	81	346	0.936	315	5.4	7.6	88 688	F
B-A	68	17	79	0.868	65	2.7	3.5	196.873	F
C-AB	232	58	397	0.585	232	1.3	1.4	21.741	C
C-A	820	205			820				
A-B	80	20			80				
A-C	1039	260			1039				

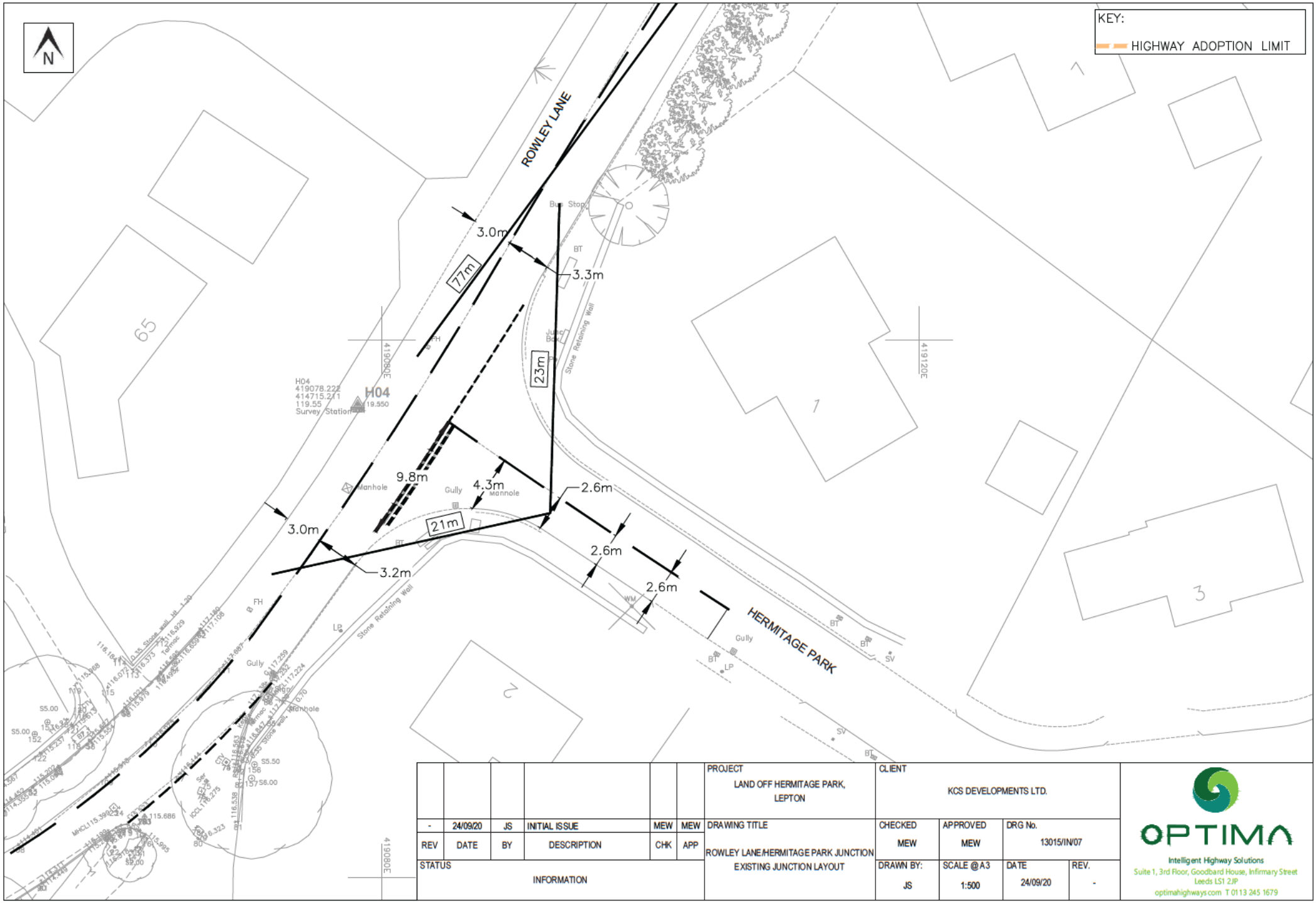
17:45 - 18:00

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	264	66	462	0.572	289	7.6	1.4	23.443	C
B-A	56	14	164	0.341	68	3.5	0.5	41.487	E
C-AB	188	47	446	0.422	190	1.4	0.7	14 235	B
C-A	671	168			671				
A-B	66	16			66				
A-C	849	212			849				

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	221	55	528	0.419	224	1.4	0.7	11 929	B
B-A	47	12	226	0.207	48	0.5	0.3	20 342	C
C-AB	157	39	483	0.326	158	0.7	0.5	11.114	B
C-A	562	141			562				
A-B	55	14			55				
A-C	711	178			711				

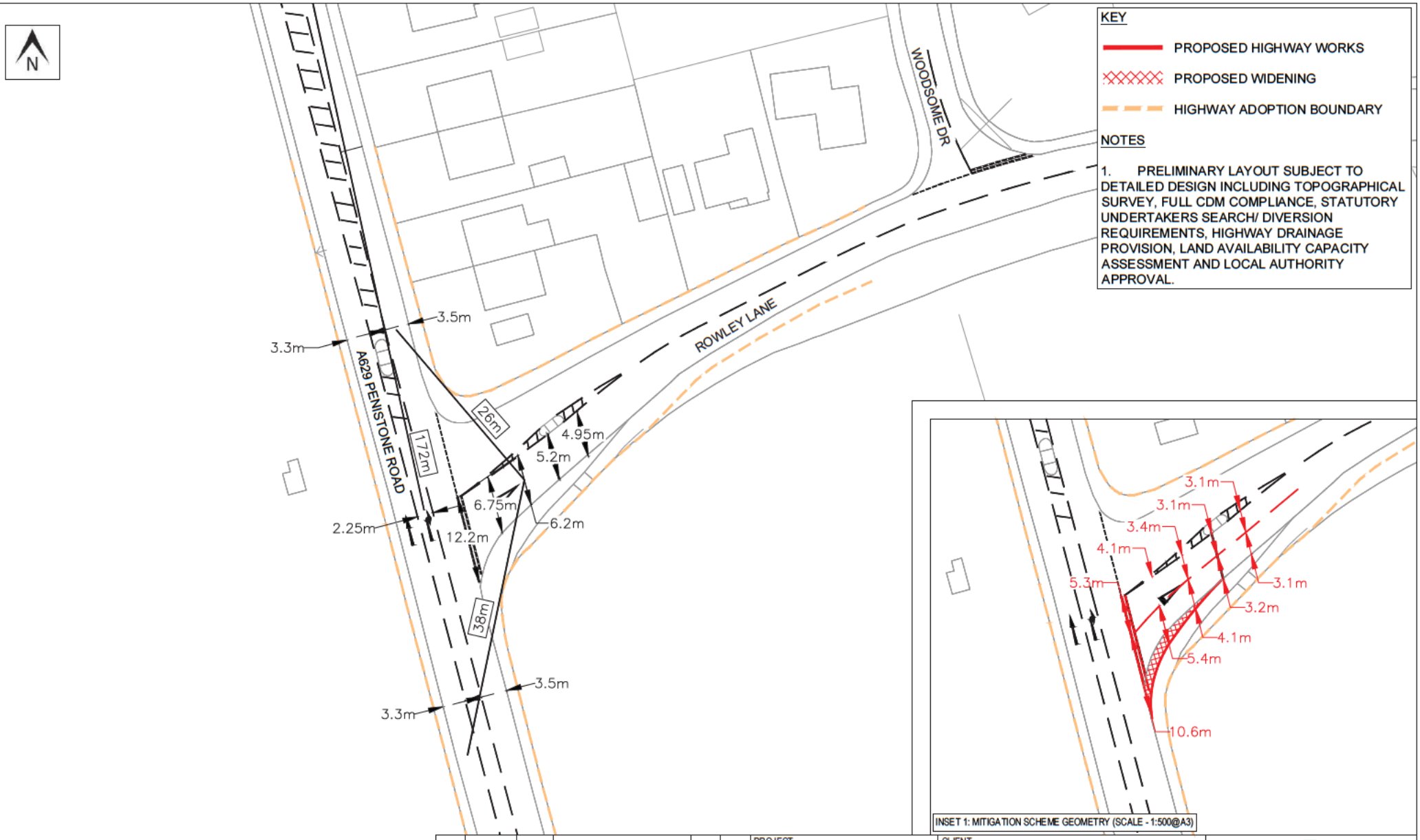
Appendix L Drawing 13015/IN/07 – Rowley Lane/Hermitage Park Junction Dimensions



						PROJECT	CLIENT		
						LAND OFF HERMITAGE PARK, LEPTON	KCS DEVELOPMENTS LTD.		
-	24/09/20	JS	INITIAL ISSUE	MEW	MEW	DRAWING TITLE	CHECKED	APPROVED	DRG No.
REV	DATE	BY	DESCRIPTION	CHK	APP	ROWLEY LANE/HERMITAGE PARK JUNCTION EXISTING JUNCTION LAYOUT	MEW	MEW	13015/IN/07
STATUS							DRAWN BY:	SCALE @ A3	DATE / REV.
INFORMATION							JS	1:500	24/09/20 / -

OPTIMA
Intelligent Highway Solutions
Suite 1, 3rd Floor, Goodbard House, Infirmary Street
Leeds LS1 2JP
optimahighways.com T 0113 245 1679

Appendix M Drawing 13015/IN/06 – Penistone Road/Rowley Lane Junction Dimensions



REV	DATE	BY	DESCRIPTION	CHK	APP
-	24/09/20	JS	INITIAL ISSUE	MEW	MEW

STATUS: PRELIMINARY

PROJECT: LAND OFF HERMITAGE PARK, LEPTON

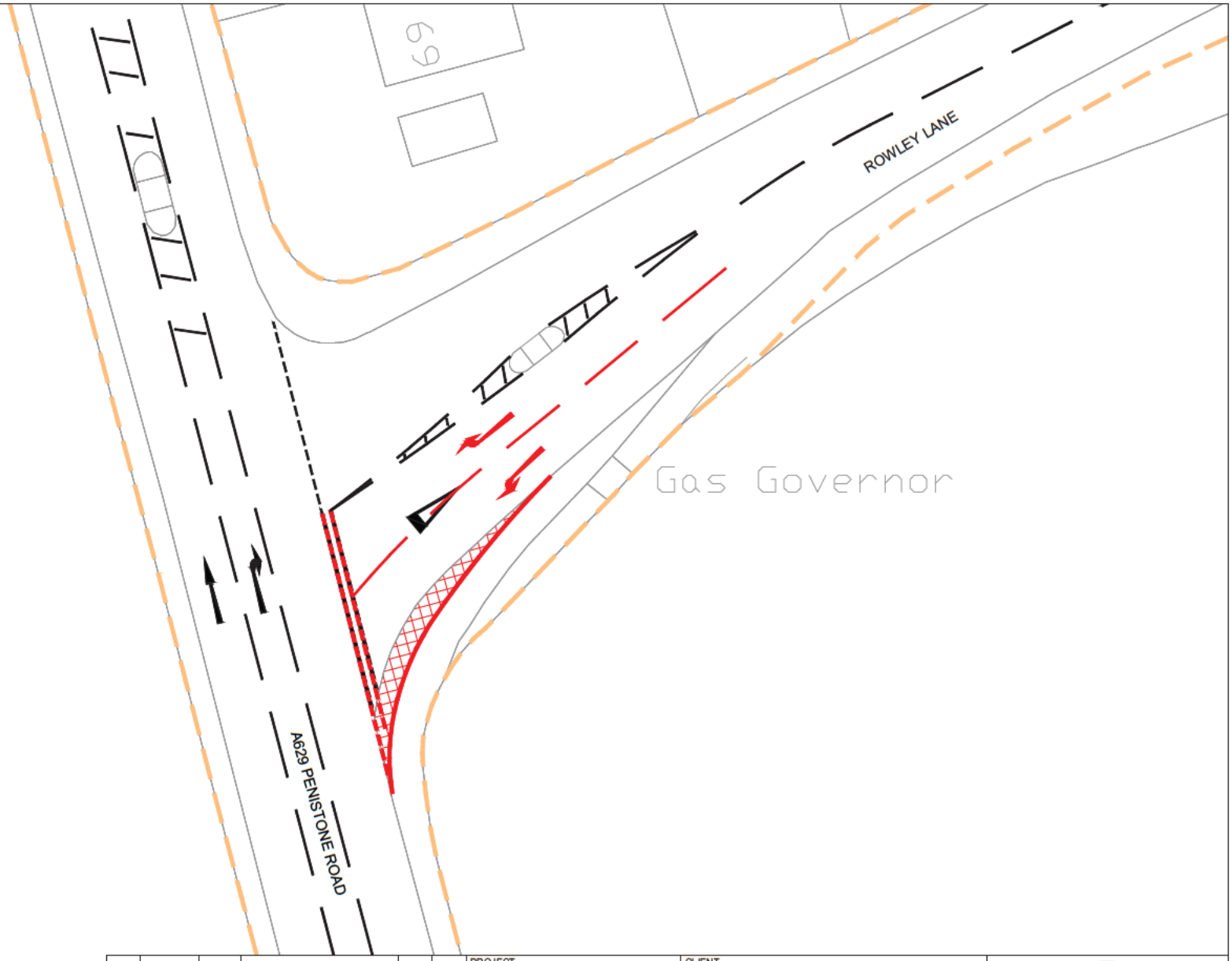
CLIENT: KCS DEVELOPMENTS LTD.

DRAWING TITLE: PENISTONE RD / ROWLEY LANE EXISTING/PROPOSED JUNCTION LAYOUT W/ ONSITE MEASUREMENTS

CHECKED	APPROVED	DRG No.	
MEW	MEW	13015/IN/06	
DRAWN BY:	SCALE @ A3	DATE	REV.
JS	1:500	24/09/20	-

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Appendix N Drawing 13015/GA/01 - Proposed Improvements to Penistone Road/Rowley Lane junction



KEY

PROPOSED HIGHWAY WORKS

PROPOSED WIDENING

HIGHWAY ADOPTION BOUNDARY

NOTES

1. PRELIMINARY LAYOUT SUBJECT TO DETAILED DESIGN INCLUDING TOPOGRAPHICAL SURVEY, FULL CDM COMPLIANCE, STATUTORY UNDERTAKERS SEARCH/ DIVERSION REQUIREMENTS, HIGHWAY DRAINAGE PROVISION, LAND AVAILABILITY CAPACITY ASSESSMENT AND LOCAL AUTHORITY APPROVAL.

REV	DATE	BY	DESCRIPTION	CHK	APP
B	24/09/20	JS	CLIENT NAME AMENDED	MEW	MEW
A	18/09/19	UK	MINOR AMENDMENTS	MEW	MEW
-	19/09/16	TP	INITIAL ISSUE	RAM	RAM

STATUS: PRELIMINARY

PROJECT: LAND OFF HERMITAGE PARK, LEPTON

CLIENT: KCS DEVELOPMENTS LTD.

DRAWING TITLE: PROPOSED IMPROVEMENTS TO PENISTONE RD / ROWLEY LANE JUNCTION

CHECKED	APPROVED	DRG No.	
MEW	MEW	13015/GA/01	
DRAWN BY:	SCALE @ A3	DATE	REV.
UK	1:250	24/09/20	B

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