BRYAN G HALL

CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Proposed Residential Development Land North of Hemingfield Road, Hemingfield, Barnsley

Highways and Transport Report

January 2025

PROPOSED RESIDENTIAL DEVELOPMENT
HEMINGFIELD, BARNSLEY

HARGREAVES LAND LIMITED

HIGHWAYS AND TRANSPORT REPORT

Report by: Stuart Wilkins

Bryan G Hall
Consulting Civil & Transportation Planning Engineers
Suite E15, Joseph's Well, Hanover Walk, Leeds, LS3 1AB

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	Name	Signed	Date
Report prepared by	Stuart Wilkins		28/01/2025

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1.0 INTRODUCTION

Background

1.1 This Highways and Transport Report (HTR) has been prepared to outline the findings of the highways and transport work carried out in support of an outline planning application submitted by Hargreaves Land Limited, in relation to land north of Hemingfield Road, Hemingfield, Barnsley. The outline planning application, reference 2024/0122, sought planning permission for the demolition of existing structures and erection of residential dwellings with associated infrastructure and open space on land between Hemingfield Road and the A6195 Dearne Valley Parkway in Hemingfield, Barnsley. All matters were reserved except for means of access into the site.

1.2 The planning application for this scheme was submitted to Barnsley Metropolitan Borough Council (BMBC) and validated on 9th February 2024. The application was refused on 11th December 2024 for two reasons. Neither of the reasons expressly relate to highways matters, however, the second reason for refusal refers to the potential impact of the proposals on the comprehensive development of the wider area of safeguarded land. This is potentially relevant to highways matters.The potential traffic impact of the wider area of safeguarded land was addressed as part of the application for outline planning permission, in agreement with BMBC Highways. It was demonstrated that the proposals would not prejudice the future development of the wider area of safeguarded land. The planning officer's report notes that the application has been assessed by BMBC Highways, who provided no objection to the proposed development, subject to conditions and a Section 106 Agreement to secure financial contributions to highways works.

1.3 The Applicant pro-actively proposed a number of highway improvements to BMBC Highways officers during pre-application discussions and held further discussions about these during the consideration of the application. The provision of the following highway improvements would be secured and these are supported by BMBC's Highways officers:

- The construction of a new access to the site via a new priority ghost island right turn lane T-junction from Hemingfield Road, with the existing access to the site to be closed.
- Provision of a 2.0 metre wide footway to be provided on the site side of Hemingfield Road to the north of the site entrance, and uncontrolled pedestrian crossing points with dropped kerbs and tactile paving provided

on Hemingfield Road to the north of the site access junction and on the sites southern frontage to the east of Mellwood Grove.

- Creation of a development platform for the relocated southbound bus stop on Hemingfield Road in order to allow the installation of the relocated bus waiting shelter including raised kerbs, tactile paving and Bus Stop Clearway markings for Bus Stop ID 50030.
- Raised kerbs, tactile paving and Bus Stop Clearway markings for Bus Stop ID 50031 also on Hemingfield Road.

1.4 In addition, following the receipt of responses from consultees, it was agreed that the following would also be provided:

- Based on the South Yorkshire Mayoral Combined Authority consultation response dated 17th March 2024, the following financial contributions:
  - A developer contribution of £44,374.00 in order to help ongoing bus provision to the application site over a period of 3 years.
  - A developer contribution of £45,626.00 in order to provide Public Transport Infrastructure Enhancements.

1.5 This HTR has been prepared to outline the information that was submitted to BMBC highways as part of the planning application and as part of post-submission discussions with highways officers. This HTR is based on the Transport Assessment (TA – document reference 23-160-001.03, dated 6th February 2024). It is also based on the subsequent Technical Note (TN - document reference 23-160-004.04, dated 22nd August 2024) submitted to BMBC during the consideration of the application by BMBC and also refers to the Travel Plan (TP – document reference 23-160-002.04, dated 6th February 2024) that was also submitted alongside the planning application.

Site Location and Development Proposals

1.6 The site is located approximately 6.5 kilometres to the south-east of the centre of Barnsley. At present, the site is mostly undeveloped land which is used for agricultural purposes. At the south-western extents of the site are agricultural buildings associated with Hilltop Farm and the former Billy's Hill Farm Shop. The site is bound to the north by a band of mature trees and the A6195 Dearne Valley Parkway, to the east by existing undeveloped agricultural land, to the south by Hemingfield Road and Briery Meadows and to the west by Hemingfield Road and a further line of trees. There are two existing Public Rights of Way (PRoW) which pass through the site and further detail on these is provided in Section 3.0 of this HTR.

1.7 The site is within Hemingfield, which forms part of the Principal Town of Hoyland as defined in the Barnsley Local Plan Settlement Hierarchy. The extent of Hemingfield's defined settlement boundary is shown on the extract of the Local Plan Policies Map in Figure 1.1, and includes the proposed development site.

Figure 1.1 – Extract of Barnsley Local Plan (2019) Policies Map

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1.8 A site location plan is provided at Figure 1.2 and is also attached at **Appendix BGH1**.

Figure 1.2 - Site Location

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1.9 The development proposals seek to provide new residential development on the site, with associated infrastructure and open space. The outline application was for the erection of residential dwellings and identified the means of access into the site. However, the layout and access arrangements within the site itself will be considered later at reserved matters stage.

1.10 Vehicular access to the site would be provided via a new right turn ghost island priority junction from Hemingfield Road at the western site boundary. There will also be a pedestrian access point onto Hemingfield Road at the southern site boundary, together with Briery Meadows and Garden Grove via existing PRoWs and also a pedestrian access via the underpass beneath Dearne Valley Parkway to the north. A plan showing an illustrative site layout is provided at **Appendix BGH2**.

1.11 The site forms part of a wider area of land which is identified in the Barnsley Local Plan as safeguarded land for future development. The safeguarded land (which includes the appeal site) is known as site SL6 'Land North East of Hemingfield', with an area of 18.2 hectares. The proposed development site is located broadly on the western third of the wider safeguarded land.

Application Discussions

1.12 The applicant submitted a pre-application advice request to BMBC in November 2023. Subsequently, a pre-application meeting was held with Officers of BMBC on 13th December 2023, which was attended by a Highways Officer and a PRoW Officer. The highways issues discussed during the meeting are broadly summarised as follows:

- The retention of the two existing PRoWs through the site;
- The proposed site access arrangement, including the proposed 4 metre wide northbound lane to accommodate existing parking on Hemingfield Road;
- Surveying vehicle speeds on Hemingfield Road to demonstrate visibility splays at the proposed site access are appropriate;
- The junction survey scope for the TA for the outline application site noting that it should be based on a 30 additional two-way trip threshold;
- A high level discussion in relation to potential site specific design principles to be considered for the internal layout in the future; and,
- Confirmation of refuse vehicle dimensions for swept path analysis.

1.13 The minutes from the meeting were issued to the Highways Officer and the PRoW Officer who attended the meeting. BMBC's planning department did not issue

formal pre-application advice to the Applicant prior to the submission of the application.

1.14 Following the initial pre-application meeting and the submission of the planning application on 9th February 2024, the development of the site was discussed extensively with highway officers at BMBC as part of the planning application consultation process. The first Highways Consultation Response was provided on 14th March 2024 and a meeting was held with a BMBC Highways Officer on 19th April 2024 to discuss the consultation response, the key points of which can be summarised as follows:

- Detailed design of proposed site access junction – it was subsequently agreed that the submitted detail was acceptable, subject to an additional note regarding the gradient of the site access road being a maximum of 1 in 20 for the first 10 metres;
- Safety Audit – it was confirmed that a Stage 1 Road Safety Audit (RSA) of the proposed site access was required;
- Pedestrian and cycle access through the site – it was noted this should adhere to the guidance in LTN 1/20, although it was clarified by the applicant that only approval of the means of access into the site was being considered as part of the outline application, with access within the site to be addressed at the reserved matters stage; and,
- Safeguarded land – the BMBC Highways Officer was to confirm whether or not the impact of trips generated by development on the wider safeguarded land needs to be considered. It was later confirmed by the BMBC Highways Officer via email on 30th April 2024 that this was the case and the impact of the wider safeguarded land should be considered.

1.15 A further meeting was held with BMBC Highways on 13th May 2024, to discuss the scope of the assessment for the impact of trips generated by the wider safeguarded land. An email was sent to BMBC Highways that same day, confirming the following:

- Operational assessments using the computer modelling software "Junctions" would be undertaken to determine the impact of the vehicular trips associated with the total safeguarded land at three junctions (i.e. the proposed site access junction, the Hemingfield Road Roundabout and the Cemetery Road/Hemingfield Road/School Street priority T-junction); and,
- Along the Dearne Valley Parkway, given the impact of the development related vehicular trips beyond the Hemingfield Road Roundabout would be minimal, only a development trip percentage impact assessment would be required to be undertaken.

1.16 BMBC highways confirmed that the above described approach to the assessment of trips generated by the wider safeguarded land was satisfactory in an email dated 31st May 2024. Subsequently, a Technical Note (document reference 23-160-004.04, dated 22nd August 2024) was prepared to address the matters raised in the BMBC Highways Consultation Response, reflecting the relevant discussions held. The Technical Note included the following:

- A Stage 1 RSA of the proposed site access arrangement, for which the audit brief was agreed with BMBC Highways in advance of the audit taking place. A Designer's Response to the Stage 1 RSA was also provided, along with a revised site access drawing which was amended to satisfactorily address the minor issues identified in the Stage 1 RSA, and to confirm that the gradient of the site access road would be no greater than 5% for the first 10 metres;
- The results of a sensitivity test to assess the impact of trips generated by a total of 430 dwellings on the wider safeguarded land (including the estimated capacity of 180 dwellings likely to be accommodated on the site being considered). This showed that the proposed site access junction, the Hemingfield Road Roundabout and the Cemetery Road/Hemingfield Road/School Street priority T-junction would have sufficient capacity to accommodate the additional trips, and that the percentage impact of trips on the Dearne Valley Parkway would be minimal and would not have a material impact on the operation of the junctions on the Dearne Valley Parkway; and,
- Updated swept path analysis of the proposed site access using a refuse vehicle to the dimensions specified by BMBC, which demonstrated that the refuse vehicle would be able to safely access and egress the site from Hemingfield Road.

1.17 As part of the preparation of the Technical Note, a further meeting with BMBC Highways was held on 2nd August 2024 to discuss the outcome of the Stage 1 RSA, specifically the assessment of the southbound movement of large vehicles on Hemingfield Road through the proposed site access junction. The approach of the Designer's Response to this point was subsequently agreed in principle by BMBC Highways via email on 9th August 2024, and BMBC's agreement to the Designer's Responses to all the minor issues raised in the Stage 1 RSA was confirmed through the return of the Designer's Response signed by BMBC on 16th October 2024.

1.18 The final consultation response from BMBC Highways was received on 28th November 2024 and recommended 'no objection' subject to a number of conditions and the planning obligations outlined earlier in this HTR.

1.19 This HTR reaffirms that the development proposals accord with relevant national and local transport planning policy, that the site is situated in a sustainable location within Hemingfield and that the traffic generated will have no severe residual cumulative impact on the operation of the local highway network, and in fact the impact is far from anything that could be considered severe. The way in which the proposals have been brought forward will not prejudice the delivery of the rest of the safeguarded land and BMBC's Highways officers have not raised any concerns that it would prejudice the delivery of the remaining land. Furthermore, while the sensitivity test undertaken was considered robust (and this is explained below), this report presents an updated sensitivity test which is presented later in this report which tests a worst-case scenario. This scenario assumes just a single point of access to the site when it may be that the delivery of the remaining area of the safeguarded land would include the provision of an access to that area from the east.

1.20 The planning application was supported by a Travel Plan (TP) for the residential units. The TP sets out a series of measures to be adopted by the developer of the site, to assist with the commitment to minimising the number of car trips associated with the houses and encouraging travel by more sustainable means. A commitment to the TP and monitoring of its implementation will form part of the planning obligations.

Report Structure

1.21 This HTR is based on the TA (and the subsequent Technical Note) that was prepared in support of the development proposals, which in turn was prepared with reference to the Government's web-based resource 'Planning Practice Guidance' (PPG) and consistent with the approach of the National Planning Policy Framework (NPPF) (in particular, section 9, Promoting Sustainable Transport). The TA considered the current usage of the local highway network and assessed its suitability to accommodate traffic that is likely to be generated by the proposed development, taking into account all reasonable future scenarios, including the full development of the remaining area of designated safeguarded land.

1.22 The TA considered the historic road safety record of the highway network in the vicinity of the site and showed that the site is in a safe and sustainable location, which will provide access by modes other than the private car, i.e. active travel and public transport. It also provided information on the proposed site access, and an overview of future servicing arrangements and on-site parking provision.

1.23 Following this introduction, this HTR is split into the following sections:

Section 2: sets out the relevant transport-related planning policies and guidance;

Section 3: provides a description of the site and the highway network in the vicinity of the proposed development. This section also details the consideration given to current traffic use and road safety characteristics of the local highway network;

Section 4: describes the accessibility of the site in terms of sustainable and active modes of transport;

Section 5: describes the development proposals and the means of access;

Section 6: considers the derivation of the vehicle trips likely to be generated by the development proposals, taking into account all reasonable future scenarios and how these were distributed onto the local highway network;

Section 7: sets out how the forecasted background traffic growth was calculated, taking into account committed development;

Section 8: provides a summary of the assessment of the impact of the traffic generated from the proposed development on the local highway network in the vicinity of the site including the sensitivity testing of the impact of the wider site; and,

Section 9: provides a summary and presents the conclusions of the HTR.

2.0 RELEVANT NATIONAL AND LOCAL POLICY

National Planning Policy Framework (NPPF)

2.1 The National Planning Policy Framework (NPPF) was most recently published in December 2024. It sets out the Government's planning policies for England and how these should be applied.

2.2 Paragraph 115 of the NPPF states that:

> *"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:*
>
> *a) sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;*
> *b) Safe and suitable access to the site can be achieved for all users;*
> *c) The design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code; and*
> *d) Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach."*

2.3 Paragraph 116 of the NPPF states that:

> *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network following mitigation, would be severe, taking into account all reasonable future scenarios."*

2.4 Paragraph 117 of the NPPF goes on to state:

> *"Within this context, applications for development should:*
>
> *a) Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;*

b) *Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;*
c) *Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;*
d) *Allow for the efficient delivery of goods, and access by service and emergency vehicles; and*
e) *Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations."*

2.5 Paragraph 118 states that developments that will generate significant amounts of movement should be required to provide a Travel Plan, and the application should be supported by a vision-led Transport Statement or Transport Assessment, so that the likely impacts of the proposal can be assessed.

Planning Practice Guidance (PPG)

2.6 The PPG covers Transport in two sections, the first being 'Transport evidence bases in plan making' and the second being 'Travel plans, transport assessments and statements in decision taking'. The latter refers to Transport Assessments, Transport Statements and Travel Plans as ways of assessing and mitigating negative transport impacts of development, in order to promote sustainable development.

Manual for Streets

2.7 Although they do not form part of planning policy, Manual for Streets (2007) and Manual for Streets 2 (2010) provide national guidance on the design, construction, adoption and maintenance of urban streets, particularly residential streets. This guidance is referred to within the submitted TA for the site, particularly in relation to visibility provision for the proposed site access arrangements.

Active Travel England

2.8 Active Travel England is the Government's executive agency responsible for improving active travel. The Active Travel England Standing Advice Note: Active Travel and Sustainable Development was considered in the production of the Transport Assessment report and the supporting Travel Plan. Active Travel England were consulted during the application process and their response referred BMBC to their standing advice.

Local Policy

Barnsley Local Plan 2019-2033

2.9 The following key policies set out within the Barnsley Local Plan are relevant to the highways and transport aspects of the proposed development:

- Policy SD1 Presumption in favour of Sustainable Development – this policy reflects the positive approach set out in the NPPF.

- Policy GD1 General Development – sets out, inter alia, that development proposals will be approved if adequate access and internal road layouts are provided and appropriate vehicular and pedestrian links are provided through the site and into adjacent areas.

- Policy T3 New Development and Sustainable Travel – sets out that new development will be expected to be designed to reduce the need to travel, be accessible to public transport and meet the needs of pedestrians and cyclists, including the provision of suitable cycle parking. Policy T3 notes that a Transport Statement or Assessment and Travel Plan should be provided in line with the NPPF.

- Policy T4 New development and Transport Safety – sets out that new development should be designed to provide all transport users within and surrounding the site with safe, secure and convenient access and movement.

- Policy GS2 Green Ways and Public Rights of Way – sets out that where development affects an existing Public Right of Way, it must protect the existing route within the development or include an equally convenient and attractive alternative route.

2.10 It is considered that the proposed residential development at Hemingfield is consistent with the key policies, given it is an application for outline planning permission, and the contents of the TA and TP provide the information required at this stage to confirm the development accords with the applicable BMBC local planning policies. Given that it is an application for outline planning permission, further detail in relation to the development would be provided at subsequent reserved matters stage. Where there are specific policies affecting highways matters, requirements can be secured by imposing appropriate conditions on the outline planning permission.

Barnsley's Transport Strategy (2020 – 2030)

2.11 Barnsley's Transport Strategy outlines BMBC's commitment to improve transport options and reduce the negative impacts of travel on the borough. It identifies key improvements needed for the 10 year period from 2020 to 2030 to help deliver BMBC's vision, many of which relate to improvements which facilitate active travel and reduce motor vehicle dominance.

Active Travel in Barnsley (2019 – 2033)

2.12 Barnsley's Active Travel strategy aims to make active travel modes an attractive and realistic choice for short journeys, involving the development and promotion of accessible, safe and well planned active travel opportunities.

Barnsley's Supplementary Planning Documents

2.13 Following the adoption of the Local Plan in 2019, BMBC produced a number of Supplementary Planning Documents (SPDs). The following SPDs were considered as part of the preparation of the TA and the accompanying TP:

- Design of Housing Development (adopted July 2023) – sets out the principles that will apply to planning applications for new housing development, including the design of streets, parking and public rights of way. The SPD frequently refers to design guidance provided in the South Yorkshire Residential Design Guide and Manual for Streets.

- Sustainable Travel (adopted July 2022) – supplements the sustainable travel related policies of the Local Plan to ensure that accessibility of new development via public transport, walking and cycling is acceptable.

- Parking (adopted November 2019) – sets out the parking standards applied to new development in Barnsley.

South Yorkshire Residential Design Guide (2011)

2.14 Although not forming part of planning policy, the South Yorkshire Residential Design Guide provides guidance on the design of residential development, and is referred to within the TA, as appropriate.

2.15 The illustrative scheme and access arrangements included with the application are consistent with national and local policy. The reserved matters submission will be capable of addressing other relevant guidance through the detailed design process.

3.0 THE APPLICATION SITE AND EXISTING HIGHWAY NETWORK

Existing Access to the Application Site

3.1 There is currently one main existing vehicular access to the existing agricultural buildings and former farm shop on the site, which is from Hemingfield Road at the southern site boundary. The access is in the form of a vehicular dropped crossing over the footway on the northern side of Hemingfield Road, which provides access to the site via a 5.9 metre wide gated gap in the existing stone wall, which runs along the site boundary in this location.

3.2 A second existing gated vehicular access to the site is located around 25 metres to the west of the main access. This is also a vehicular dropped crossing over the footway on the northern side of Hemingfield Road, which provides access to the site via a 4.3 metre wide gated gap in the existing stone wall. However, at present the second access is gated and obstructed and not currently in use. The location of these accesses is shown in Figure 3.1.

Figure 3.1 – Existing Site Access Arrangements

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The Existing Highway Network

3.3 Hemingfield Road is a two-way, single carriageway road which runs in an east to west alignment along the southern site boundary. In the vicinity of the existing site access points, the carriageway is a minimum of 7.3 metres wide, with footways on both sides of the carriageway which are typically around 2 metres wide. The road has a speed limit of 30mph and street lighting is in place in the vicinity of the site.

3.4 To the west of the main site access, Hemingfield Road provides frontage access to residential dwellings on the southern side of the carriageway, as well as access to

two small cul-de-sacs. The first cul-de-sac, Mellwood Grove, forms a junction with Hemingfield Road around 25 metres to the west of the existing main site access. The second cul-de-sac is also known as Hemingfield Road and meets the main Hemingfield Road around 50 metres to the west of Mellwood Grove.

3.5 Approximately 80 metres to the west of the main site access, in the vicinity of the Hemingfield Road cul-de-sac, the main Hemingfield Road curves to the north, continuing on a north to south alignment along the western site boundary. After the bend, Hemingfield Road continues to provide frontage access to dwellings on the western side of the carriageway. Some on street parking associated with these dwellings takes place on the western side of the carriageway in front of the properties. The footways initially continue around the bend along both sides of Hemingfield Road. The footway on the eastern site side continues for around 80 metres to the north of the Hemingfield Road cul-de-sac, where it terminates and is replaced with a verge containing vegetation and trees. An uncontrolled pedestrian crossing point with dropped kerbs is provided in this location to allow pedestrians to continue north using the footway on the western side of Hemingfield Road.

3.6 Approximately 115 metres to the north of the point where the footway on the eastern side of the carriageway terminates, Hemingfield Road forms the major arm of a priority T-junction with a further road named Hemingfield Road, located on the western side of the carriageway, as illustrated in Figure 3.2.

Figure 3.2 – Hemingfield Road/Hemingfield Road Junction

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3.7 Following a short east/west link around 25 metres long, the minor arm of this junction, also known as Hemingfield Road as shown in Figure 3.2, runs north/south parallel to the major arm. This section of Hemingfield Road provides access to further residential properties on the west side of the carriageway, and a footway is provided along this section. Around 55 metres to the south of the east/west link, the carriageway of this section of Hemingfield Road terminates, however the footway continues and links with the existing footway along the west side of the main Hemingfield Road providing pedestrian access between the two.

3.8 Around 60 metres to the north of the east/west link, this section of Hemingfield Road terminates for vehicles. To the north of this point, the carriageway narrows significantly and there are bollards in place to prevent vehicle access and to allow cycle access alongside the pedestrian footway beneath the A6195 Dearne Valley Parkway via a lit underpass, adjacent to Hemingfield Road Roundabout.

3.9 Returning to the T-junction with the main Hemingfield Road, approximately 90 metres to the north of the junction, Hemingfield Road meets the A6195 Dearne Valley Parkway to form the Hemingfield Road Roundabout. A footway continues along the western side of Hemingfield Road between the T-junction and the roundabout. Hemingfield Road serves as the southern arm of the four arm Hemingfield Road Roundabout. The A6195 Dearne Valley Parkway forms the eastern and western arms and the continuation of Hemingfield Road forms the north-western arm. Uncontrolled pedestrian crossing points with dropped kerbs and splitter islands are provided on all four arms. There is no footway provision on the A6195 Dearne Valley Parkway to the east and west of Hemingfield Road Roundabout.

3.10 The A6195 Dearne Valley Parkway (which is part of the local highway network) is a dual carriageway road that runs in an east / west alignment, and serves as a major link between the M1 Junction 36, located approximately 4.7 kilometres to the south-west of the site, and areas to the south-east of Barnsley, including Hemingfield. The A6195 Dearne Valley Parkway includes several at-grade roundabouts, is subject to the national speed limit, and street lighting is in place in the vicinity of the site and the Hemingfield Road Roundabout.

3.11 Between the Hemingfield Road Roundabout and the M1 Junction 36, the A6195 Dearne Valley Parkway provides direct connectivity to large employment areas such as Shortwood and Ashroyd Business Parks. To the east of Hemingfield Road Roundabout, the A6195 Dearne Valley Parkway provides access to towns and villages such as Brampton and the southern part of Wombwell. It also provides access to Cortonwood Retail Park around 1.5 kilometres to the east of the site.

3.12 Returning to the Hemingfield Road Roundabout, Hemingfield Road continues to the north-west in the form of a single carriageway road, initially subject to the national speed limit but reducing to a 30mph speed limit with street lighting in place. Around 25 metres to the north-west of the roundabout, the footway/cycleway which passes under the A6195 Dearne Valley Parkway to the west of the roundabout, joins the footway on the south-western side of Hemingfield Road (North), with a dropped kerb provided for cycle access to and from the carriageway.

3.13 After a further 15 metres, Hemingfield Road (North) passes over the Hallam and Penistone railway line via a bridge, where the speed limit reduces to 30mph. Immediately after the Hemingfield Road Roundabout, there is a footpath on the western side of the road. However, approximately 25 metres to the north of the bridge, a footway is also provided on the north-eastern side of Hemingfield Road (North), where a pedestrian crossing point with dropped kerbs and tactile paving is provided. Hemingfield Road (North) provides a connection to the town of Wombwell to the north of the site, including Wombwell railway station, which is located around 500 metres to the north-west of the Hemingfield Road Roundabout.

3.14 Returning to the main existing site access with Hemingfield Road, at the southern site boundary, around 30 metres to the east of this point, Hemingfield Road curves around to the south. On the outside of this bend, Hemingfield Road forms the major arm of a priority T-junction with Briery Meadows, which includes a right-turn lane for traffic turning into Briery Meadows. Briery Meadows is a residential access road that runs along the southern site boundary, broadly in an east to west alignment. It is a cul-de-sac which terminates after around 150 metres.

3.15 Approximately 200 metres to the south of the junction with Briery Meadows, Hemingfield Road curves around to the east and meets Cemetery Road by way of a priority T-junction just after the bend, with Cemetery Road forming a junction on the southern side of the carriageway. Hemingfield Road becomes School Street immediately to the east of the Cemetery Road junction, forming a priority T-junction with Tingle Bridge Lane around 230 metres to the east of Cemetery Road and continuing as Beech House Road out of Hemingfield to the east, passing under the A6195 Dearne Valley Parkway and towards the southern extents of Wombwell.

3.16 The speed limit of Hemingfield Road through Hemingfield is 30mph and street lighting is provided. Hemingfield Road, School Street and Cemetery Road have footways to both sides of the carriageway and provide access to properties on both sides, including direct frontage access and further access via cul-de-sacs. Cemetery Road also provides access to various local shops and amenities in Hemingfield, and continues to the south-west, providing access to the neighbouring village of Jump.

Public Rights of Way

3.17 There are two existing PRoWs which pass through the site, as shown by the blue dashed lines in the screenshot of BMBC's online PRoW map at Figure 3.3. The site boundary has been added to the screenshot for context, shown by the red line.

Figure 3.3 – Public Rights of Way in the vicinity of the Site

3.18 The first PRoW (Footpath No. 17) traverses directly through the proposed development site along a north to south alignment. At the northern site boundary, Footpath No. 17 passes under the A6195 Dearne Valley Parkway via an underpass. This provides an alternative pedestrian access route to Wombwell to the north of the site and Cortonwood Retail Park to the east, via other connecting PRoWs. The underpass also provides private vehicular access to the fields on the northern side of the A6195 Dearne Valley Parkway, and the footpath stretches approximately 700 metres to the south-east of the underpass and provides a circular leisure walking route back into Hemingfield via the pedestrian footbridge over the Dearne Valley Parkway located to the east.

3.19 At the southern site boundary, Footpath No. 17 meets Footpath No. 18, a further PRoW which runs along the southern site boundary along an east to west alignment, facilitating pedestrian access between Hemingfield Road/Briery Meadows and Garden Grove to the east. Footpath 17 continues beyond the site

boundary onto and across Briery Meadows and then through to Ellis Court to the south of the site.

3.20 Both existing PRoWs through the site are to be retained along their current alignment.

Traffic Surveys

3.21 In order to determine the peak hour usage of the local highway network, traffic surveys were undertaken on Tuesday 27th June 2023 between the hours of 7:00am – 10:00am and 2:00pm - 7:00pm. These time periods, which represented normal operating conditions outside of the school holidays as per the advice in PPG, were chosen to ensure that the weekday morning and evening peak hours were fully captured for consideration in the TA. The surveys recorded fully classified turning counts in 15-minute intervals at the following locations, as illustrated on the survey location plans at **Appendix BGH3**:

1. Hemingfield Road Roundabout;
2. Briery Meadows/ Hemingfield Road priority T-junction; and,
3. Cemetery Road/ School Street priority T-junction.

3.22 It was identified from the raw traffic survey data that the weekday morning peak hour occurred between 8:00am and 9:00am and the weekday evening peak hour occurred between 4:00pm and 5:00pm. Traffic flow diagrams showing the 2023 existing peak hour traffic flows on the local highway network are attached at **Appendix BGH4**.

3.23 Two Automatic Traffic Counters (ATCs) were also put in place to collect traffic and speed data, for 7 days from Tuesday 9th January 2024 to Monday 15th January 2024. The locations of the two ATCs are shown on the survey location plans at **Appendix BGH3**. The ATC data was used to determine 85th percentile vehicle speeds on Hemingfield Road on which to base the visibility provision at the proposed site access junction.

2023 Existing Operational Assessment

3.24 The impact of development traffic was assessed only on the Hemingfield Road Roundabout, as this was the only junction, other than the site access, where the proposed development generated trips were anticipated to exceed 30 additional two-way trips in the peak hours. This is the threshold for assessment which was agreed with BMBC during the pre-application meeting.

3.25 The traffic conditions during the peak time periods identified above were assessed within the TA, and the results demonstrate that the Hemingfield Road roundabout provides a satisfactory level of provision for the peak hours considered.

Personal Injury Collisions

3.26 As part of the TA, the record of personal injury collisions (PICs) that have occurred on the local highway network were requested from BMBC for the most recent 5 year period available at the time. The data that was provided was for the 69 month period from 1st January 2018 to 17th September 2023 and is attached at **Appendix BGH5**.

3.27 For the purpose of this HTR, an update of the PIC data has been requested from BMBC and the records provided cover the period from 1st September 2023 to 27th September 2024. This covers the most recent records that BMBC hold and the updated data is also attached at **Appendix BGH5**.

3.28 The PPG document '*Travel Plans, Transport Assessments and Statements*' suggests that PIC data analysis should cover the most recent 3 year period, or 5 year period if within a high accident area. While the site is not considered to be within a high accident area, the most recent 5 year period from 1st October 2019 to 27th September 2024 has been considered.

3.29 The combined data shows that during the 5 year period from 1st October 2019 to 27th September 2024, there were a total of five PICs within the study area, three of which were classified as slight in severity, one as serious and with one fatality. The location plans supplied by BMBC with the PIC data are included at **Appendix BGH5** and shown in Figures 3.4 and 3.5, noting that 1 of the slight PICs at the Hemingfield Road Roundabout shown in Figure 3.4 occurred in February 2019, outside of the 5 year period considered in this PIC data analysis.

Figure 3.4 – PIC Location Plan (2018 to 2023)

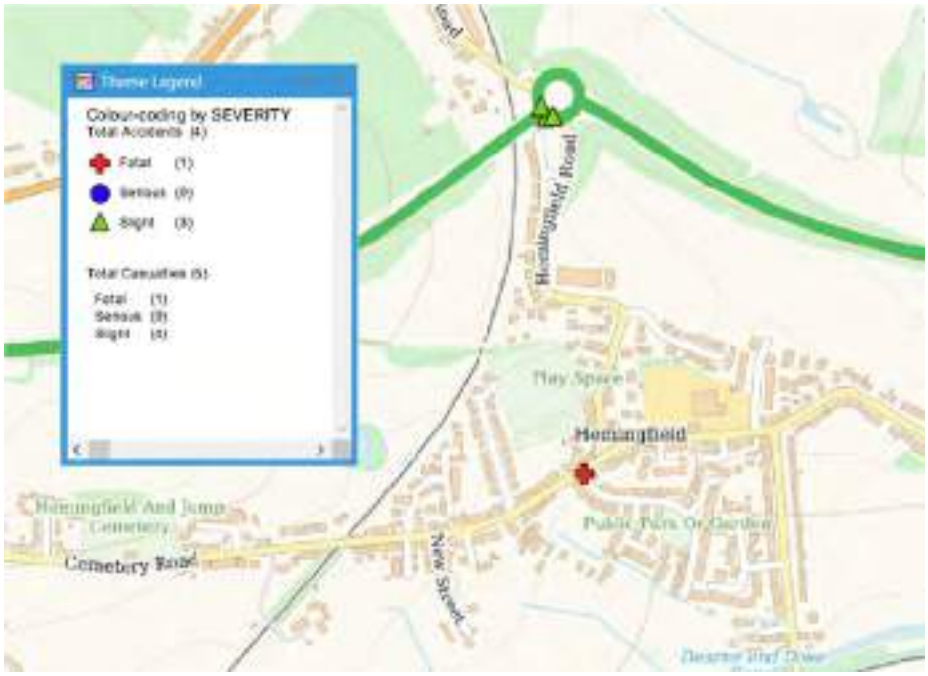
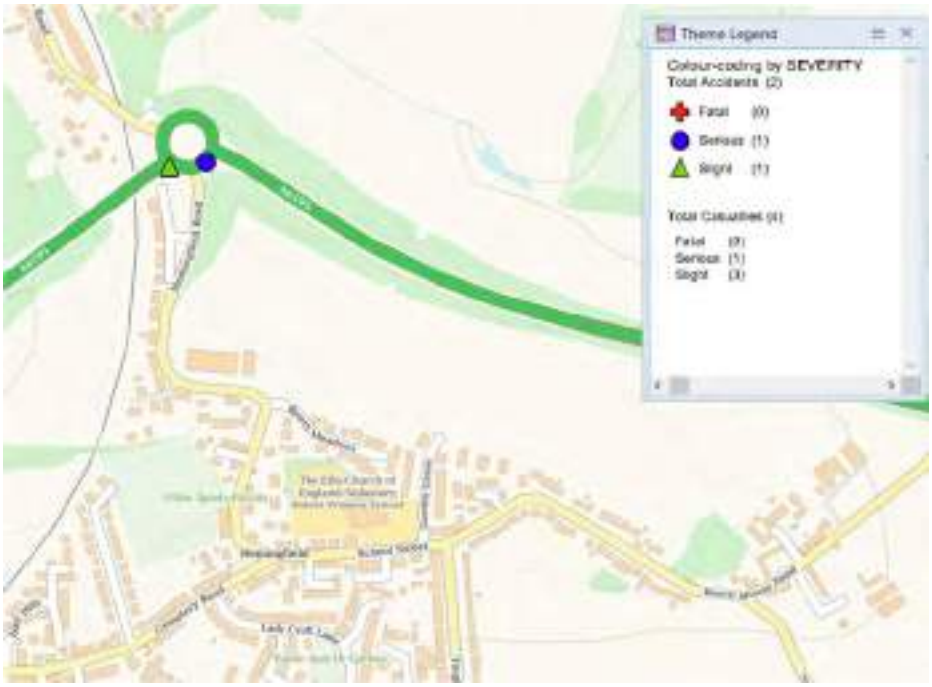


Figure 3.5 – PIC Location Plan (2023 to 2024)



Cemetery Road

3.30 The PIC data shows that one fatal PIC was recorded on Cemetery Road during the study period, at the junction with Lady Croft Lane. This involved a collision between a motorcycle travelling ahead on Cemetery Road south-westbound and a car turning right into Lady Croft Lane.

3.31 While of course any PIC is regrettable, it appears as though this was an isolated incident and so does not indicate that there are any inherent road safety issues with the operation of the Lady Croft Lane/Cemetery Road junction, relevant to the proposed development.

Hemingfield Road Roundabout

3.32 Four PICs were recorded at the Hemingfield Road Roundabout, one of which was classed as serious and three of which were classed as slight. The serious PIC occurred when a car entered the roundabout and collided with a motorcycle which was already on the roundabout circulatory carriageway.

3.33 The first slight PIC occurred when a driver travelling along the A6195 Dearne Valley Parkway (eastern arm) towards the Hemingfield Road Roundabout suffered a medical episode at the wheel. The car subsequently travelled onto the roundabout and made contact with another vehicle.

3.34 The second slight PIC took place on the A6195 Dearne Valley Parkway (eastern arm) approach to the Hemingfield Road Roundabout, when a goods vehicle changed lanes to overtake a car which had not set off on the approach to the roundabout, resulting in a collision with another car.

3.35 The third slight PIC involved two cars travelling westbound on the A6195 Dearne Valley Parkway, with the PIC occurring when the car in the nearside lane attempted to continue around the roundabout to the third exit, but the car in the offside lane was leaving the roundabout at the second exit.

Proposed Site Access

3.36 The PIC data showed that no PICs were recorded on Hemingfield Road in the vicinity of the proposed site access junction, which is approximately 210 metres to the south of the Hemingfield Road Roundabout.

Summary

3.37 The above analysis indicates that in the 5 year period considered, five recorded PICs occurred on the road network in the vicinity of the site, equating to one PIC per year. While the data shows that four PICs occurred at Hemingfield Road

Roundabout during the 5 year period, one of which involved a motorcycle, these PICs were all different in nature and so do not indicate that there are any inherent road safety issues at the junction.

3.38 Following the review of the PIC data for the highway network in the vicinity of the site, it was concluded that the highway network is operating satisfactorily at present with no recurring causation factors associated with PICs at any single location. The analysis did not reveal any existing road safety issues which would be exacerbated by the proposed development traffic. The BMBC Highways consultation responses to the outline planning application did not raise any concerns with the PIC data analysis, and therefore it is considered that BMBC Highways agree with these conclusions.

4.0 ACCESS BY SUSTAINABLE TRANSPORT

4.1 The national and local transport policies referred to in Section 2.0 of this HTR seek to reduce the need to travel by private car and to promote travel by other means. A review of the accessibility of the site by walking, cycling and using public transport has been undertaken and is set out as follows.

Walking

4.2 Regarding pedestrian provision at new developments, guidance is set out within the Chartered Institution of Highways and Transportation (CIHT) document 'Planning for Walking' (March 2015) and describes how approximately 80% of all journeys, shorter than 1 mile (1.6 kilometres), are made wholly on foot. If destinations are within a convenient walking distance, people are more likely to walk if it is safe, comfortable, and the surrounding environment is attractive. Walking is also regarded as an essential part of public transport travel, as bus stops are usually accessed on foot.

4.3 Further guidance within the earlier CIHT Publication 'Guidelines for Providing for Journeys on Foot' (2000) sets out the suggested acceptable walking distances for pedestrians without any mobility impairment. The recommended desirable, acceptable and preferred maximum walking distances for commuting/school and other journeys, such as retail/shopping, are shown in Table 4.1.

Table 4.1: Recommended Walking Distances

	Trip Purpose	
	Commuting/School	**Other Journeys (Retail/Shopping)**
Desirable	500 metres	400 metres
Acceptable	1,000 metres	800 metres
Preferred Maximum	2,000 metres	1,200 metres

4.4 Table 4.1 show that the preferred maximum walking distance for 'commuting / school' journeys is 2,000 metres (2.0 kilometres) and the preferred maximum walking distance for other journeys is 1,200 metres (1.2 kilometres). A walking catchment plan which illustrates the destinations accessible within a maximum 2.0 kilometres walking distance from the centre of the site, in 400 metre intervals, was

prepared using the TRACC accessibility software. The walking catchment plan is attached at **Appendix BGH6.**

4.5 The walking catchment plan reflects the four existing and proposed points of pedestrian access to the site. Pedestrian access to the site will be provided from Hemingfield Road via footways along both sides of the vehicular site access and a separate pedestrian only access on the southern boundary. Further pedestrian access to the site will be provided through the retention of the existing PRoW connections into the site from Briery Meadows and Garden Grove.

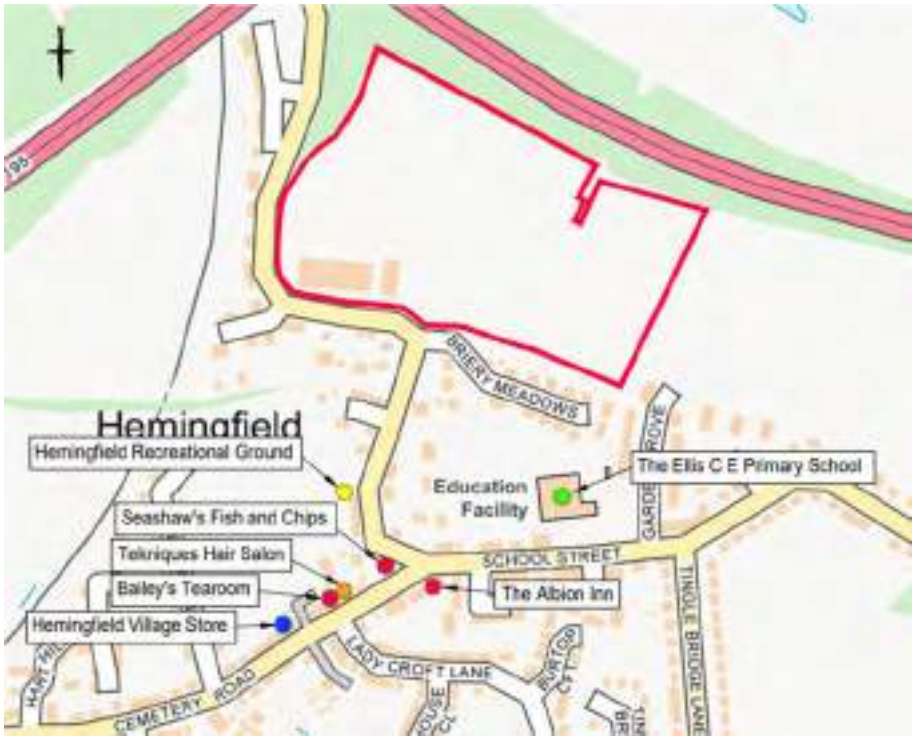
4.6 The walking catchment plan shows that all of Hemingfield is accessible within the preferred maximum 2.0 kilometre walking distance, along with a large area of Wombwell to the north of the site, Jump to the south-west and Cortonwood Retail Park, the latter via a PRoW, to the east of the site.

4.7 Table 4.2 summarises the walking distances from the centre of the site to each of the nearest key amenities in Hemingfield, the location of these relative to the site are shown on Figure 4.1 overleaf.

Table 4.2: Walking Distances to Amenities

Amenity	Trip Purpose	
	Location	Approximate Walking Distance from Centre of Site
The Ellis C E Primary School	School Street/Garden Grove	410 metres
Hemingfield Recreation Ground (Childrens' Play Area)	Hemingfield Road	460 metres
Seashaw's Fish and Chips (Hot Food Takeaway)	Cemetery Road	560 metres
The Albion Inn (Public House)	Cemetery Road	570 metres
Tekniques Hair Salon	Cemetery Road	600 metres
Tearoom (Café)	Cemetery Road	610 metres
Hemingfield Village Store	Cemetery Road	620 metres

Figure 4.1 – Local Facilities



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4.8 Table 4.2 shows that there are local amenities which are within the preferred maximum walking distance for retail/shopping journeys of 1,200 metres. It also shows that The Ellis C E Primary School is within the desirable walking distance for school journeys of 500 metres. While the school address refers to School Street, where there is a pedestrian access to the school, the main entrance for pedestrians and vehicles is from Garden Grove to the south-east of the site. This can be accessed via the existing PRoW which runs through the site onto Garden Grove, which has footways either side of the carriageway and is street lit. The PRoW is to be retained and improved as part of the development proposals and will provide a direct walking route to the school from the site. The section between the site and Garden Grove (from which access to the school is gained) is lit and provides a suitable and safe route.

4.9 The nearest Secondary Schools to the site are the Netherwood Academy and the Kirk Balk Academy. The Netherwood Academy is located within around 3.2 kilometres walking distance to the north-east of the site. It can also be accessed by a combined walking and bus journey, via the 67a bus, which stops at the nearest bus stops to the site on Hemingfield Road and around 800 metres walking distance

from Netherwood Academy (approximately 35 minutes journey time including walking time).

4.10 The Kirk Balk Academy is located to the south-east of the site within around 3.8 kilometres walking distance. It can also be accessed by a combined walking and bus journey via the number 72 bus service, which stops at the nearest bus stops to the site on Hemingfield Road and directly outside Kirk Balk Academy (approximately 15 minutes journey time including walking time).

4.11 A further secondary school, Saint Pius X Catholic High School, is located in Wath-upon-Dearne to the south-east of the site. It is accessible from the site via the 662 bus, which stops at the nearest bus stops to the site on Hemingfield Road and directly outside the school (approximately 25 minutes journey time including walking time). Wath Academy is also located in Wath-upon-Dearne to the south-east of the site.

Cycling

4.12 Guidance in the Department for Transport's (DfT) 'Cycling and Walking Investment Strategy' (April 2017) and 'Cycle Infrastructure Design' (LTN 1/20 – July 2020) sets out that two out of every three personal trips are within 5 miles (8 kilometres), which is an achievable distance to cycle for most people.

4.13 It is also generally accepted that the bike is an ideal mode of transport for journeys under 8 kilometres and that cycling has clear potential to substitute for short car trips, particularly those under 5 kilometres, and to form part of a longer journey by public transport.

4.14 A 5 and 8 kilometre cycling catchment plan was prepared using the TRACC accessibility software and is included at **Appendix BGH7**. This shows that Hemingfield, Wombwell, Darfield, Brampton, Jump, Elsecar and Hoyland are accessible within a 5 kilometre cycle distance. Birdwell, Tankersley, Wath upon Dearne, Bolton-upon-Dearne, Worsborough and other areas to the south-east of the centre of Barnsley are accessible within an 8 kilometre cycle distance.

4.15 Key employment areas, such as Cortonwood Retail Park to the east of the site and Shortwood Business Park to the west of the site, are also well within a 5 kilometre cycle.

4.16 The cycle route beneath the A6195 Dearne Valley Parkway, via a lit underpass as described in Section 3.0 of this HTR, provides a high quality cycle link which allows cyclists to travel between the site and Wombell, without needing to travel via the Hemingfield Road Roundabout.

4.17 The Wortley to Brampton Cycle Route (Route Number 67), which is part of the National Cycle Network (NCN), runs in an east to west alignment at the southern extents of Hemingfield. This NCN route can be accessed from the site via Hemingfield Road, School Street and Tingle Bridge Lane, some 950 metres from the centre of the site to the south-east. It provides access to both Wortley and Brampton, as well as other towns such as Hoyland and Wombwell, with a large proportion of the route being traffic free.

Figure 4.2 – National Cycle Network Route 67

©OpenStreetMap

4.18 The Wortley to Brampton Cycle Route also forms part of the Trans Pennine Trail, which is a combination of local cycle routes that provide mostly traffic free access to various locations. As part of the Trans Pennine Trail, a largely traffic free route is provided to areas further afield, such as Doncaster to the east, and Barnsley to the north.

Public Transport

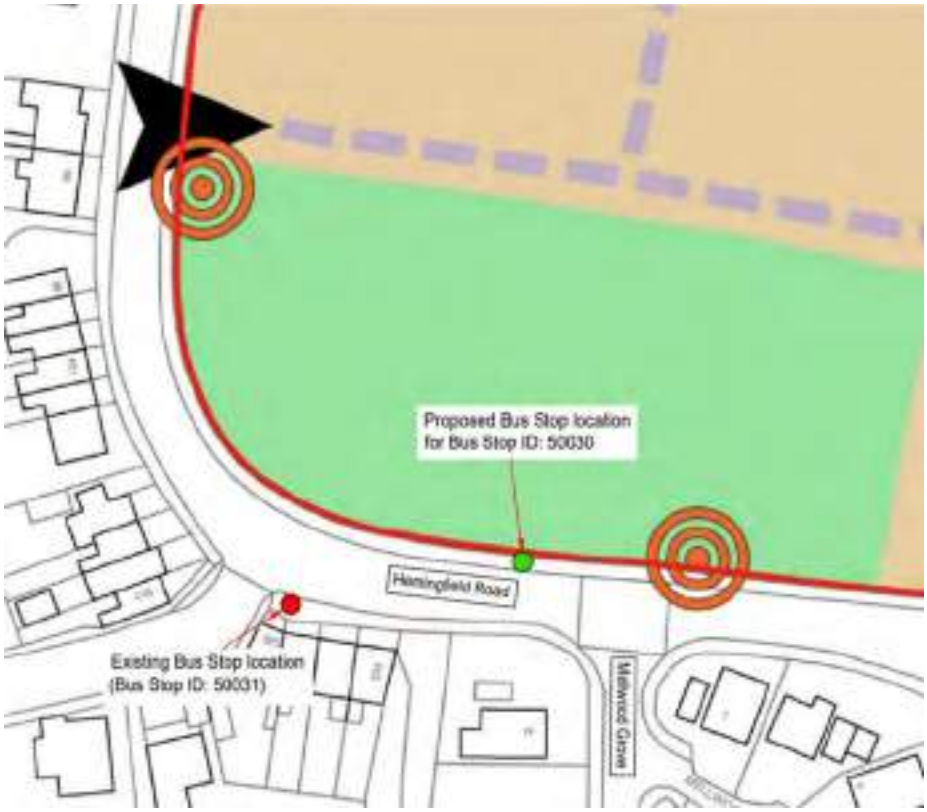
Bus

4.19 The closest bus stops to the site are located on Hemingfield Road, with the northbound bus stop located around 260 metres walking distance from the centre of the site, on the southern site boundary. The southbound bus stop is currently located at the western site boundary, but it is proposed to relocate the existing stop to facilitate the delivery of the proposed site access arrangement. The new bus stop would be located just to the west of Mellwood Grove on the southern site boundary

on the north side of Hemingfield Road within a walking distance of around 280 metres from the centre of the site.

4.20 Figure 4.3 shows the location of the existing (bus stop ID 50031) and proposed relocated (bus stop ID 50030) bus stops on Hemingfield Road, overlaid on the parameter plan for context, which shows the location of the two nearest pedestrian site access points (as indicated on the Parameters Plan [document reference]) in orange.

Figure 4.3 – Location of Nearest Bus Stops



4.21 Clearly then, there are bus stops well within the recommended maximum walking distance of 400 metres as they are adjacent to the site boundary, and therefore it is considered that there is excellent accessibility from the site to bus stops.

4.22 The bus stops on Hemingfield Road are served by the 72/72a, 662, and 67/67a/67c number bus services. The stops are marked by a flag and provide timetable information.

4.23 Further bus stops are located on Cemetery Road, approximately 390 metres walking distance from the centre of the site. These bus stops are also served by the 662 and 67/67a/67c number bus services. Both of the stops on Cemetery Road benefit from a shelter, seating, and timetable information. Table 4.3 summarises the bus services available from the Hemingfield Road stops.

Table 4.3: Summary of Existing Bus Services

Route Number	Route Description	Frequency		
		Weekdays	Saturday	Evenings & Sunday
67/67a/67c	Barnsley Interchange – Wombwell	Hourly	Hourly	Every two hours
72/72a	Wath Road – Chapeltown	Hourly	Hourly	No Service
662	Elsecar – Wath upon Dearne	1 service towards Wath-upon-Dearne AM Peak 1 service towards Elsecar PM Peak	No Service	No Service

**Note – 67 does not stop at Tankersley or Pilley, 67a does not stop at Worsborough Dale and 67c does not stop at Pilley. 72 does not stop at Tankersley Maple Road.*

4.24 Table 4.3 shows that there are regular services from the bus stops on Hemingfield Road, to key destinations including Barnsley, Wombwell and Wath Upon Dearne. Two of the services run approximately every hour, which are timed such that they provide a service approximately every half an hour and the 662 service is timed such that it facilitates access to the Saint Pius X Catholic High School.

4.25 All variants of the 67 and 72 bus services offer regular journeys to Cortonwood Retail Park, which is located approximately 1.5 kilometres to the east of the site. This provides convenient access to both employment opportunities and the facilities available at the retail park, which include convenience and comparison shopping, including two supermarkets.

4.26 Given the above, it is considered that bus travel will be a convenient and very attractive travel mode for future residents of the site.

Rail

4.27 The closest railway station to the proposed development site is Wombwell Railway Station, which is located around 850 metres walking distance to the north-west of the site, via the pedestrian route under the A6195 Dearne Valley Parkway to the west of the Hemingfield Road Roundabout. The station is also accessible within an

approximate 4 minute cycle ride and, at the station, there are 12 sheltered cycle parking spaces which are monitored by CCTV. The number 67/67a/67c bus, which serves the nearest bus stops to the site on Hemingfield Road, also stops immediately outside Wombwell station, although it does travel via the Cortonwood Retail Park first in both directions. Even so, the bus journey between the site and the station is generally less than 10 minutes.

4.28 The station offers frequent services to nearby destinations including Barnsley, Wakefield, Huddersfield, Leeds, and Sheffield, which also stop at other local stations. Subsequently, from these stations, connections can be made to access additional destinations further afield, including Manchester, Liverpool, Newcastle, Edinburgh, and London.

4.29 The close proximity to Wombwell station provides an opportunity for many future residents to travel by rail be it when commuting or taking a trip for leisure.

Public Transport Catchment Plans

4.30 Public transport catchment plans which show the areas that are accessible within a 60 minute journey of the site using public transport were prepared using the TRACC accessibility software. The catchment plans for the morning and evening peak periods are attached at **Appendix BGH8**. The plans show that residents can reach the centre of Barnsley within a 30 minute journey during both peak periods. Hoyland and Wath upon Dearne are accessible within 20 to 30 minutes and Sheffield, Rotherham and Wakefield are accessible within a 40 minute journey. Leeds (during the morning peak), Doncaster (during the evening peak) and the outer areas of Sheffield, Rotherham and Wakefield (during both peak periods) are within a 60 minute journey.

Sustainable Transport Summary

4.31 There are numerous opportunities for sustainable travel to and from the proposed development site, which is compliant with the objectives of local and national transport planning policy.

4.32 It is considered that the site is very well located to promote trips on foot to local amenities. The provision of the cycle link under the A6195 Dearne Valley Parkway to the north-west of the site and NCN Route 67 to the south-east will also help to encourage cycling journeys.

4.33 Regular bus services are provided from bus stops within a short walking distance of the centre of the site, providing services to key leisure, employment and transport hubs, such as Barnsley Interchange and Cortonwood Retail Park. Wombwell

Railway Station is located within an approximate 4 minute cycle ride or 850 metre walk from the site, and offers a range of local rail services, and an opportunity to connect to national services.

4.34 The evidence provided in this section therefore demonstrates that the site is accessible using sustainable modes of transport, including walking, cycling and the use of public transport. Indeed, the BMBC Officer's Report for the outline planning application confirms (on page 10) that the '*application is in a sustainable area within the Accessibility Improvement Zone*', while the Council's Highways department note, in their consultation response, that there is a *'proliferation of sustainable transport routes within and adjacent to the site'*. We endorse this view.

5.0 DEVELOPMENT PROPOSALS

5.1 The appellant seeks consent for a new residential development on land between Hemingfield Road and the A6195 Dearne Valley Parkway in Hemingfield, Barnsley. An illustrative masterplan showing how the site could be developed is provided at **Appendix BGH2.**

5.2 The description of the development for the planning application is as follows:

> *"Application for outline planning permission for the demolition of existing structures and the erection of residential dwellings with associated infrastructure and open space. All matters reserved except for means of access into the site."*

5.3 The outline application is for the erection of residential dwellings on the site, and identifies the means of access into the site, however, the layout and arrangements within the site will be considered at reserved matters stage.

5.4 The site forms part of a wider area of land which is identified in the Barnsley Local Plan as safeguarded land for future development. The safeguarded land is known as site SL6 'Land North East of Hemingfield', with an area of 18.2 hectares. The proposed development site is located broadly on the western third of the wider safeguarded land.

5.5 From the early stages of the preparation of the planning application, the brief was to ensure that development of the site would not prejudice or harm the delivery of further development on the remaining area of safeguarded land located to the east of the site. There currently are no proposals for the development of the remainder of the allocation and it is not known whether access would be required through the appeal site. However, for robustness, the new junction from Hemingfield Road has been designed to ensure that it is sufficient to accommodate further development of the whole of the remaining area of the wider site. Therefore, a scenario where all development from the SL6 area utilises the appeal site access has been modelled as part of a sensitivity test. This approach was agreed with the Council's highway officers. The internal roads within the site will be designed in such a way as to ensure that they are sufficient to accommodate further development to the east of the site (and this is covered below).

Vehicular Access

Proposed Arrangement

5.6 Vehicular access to the site will be by way of a new ghost island right turn lane priority T-junction on Hemingfield Road, at the western site boundary. A drawing which shows the proposed site access arrangements was prepared and is attached at **Appendix BGH9** (drawing number 23/160/SKH/007 Rev E).

5.7 The South Yorkshire Residential Design Guide (2011) paragraphs B.2.1.6 and B.2.1.7 state that conventional residential streets, with a design speed of 20mph or less, should have a minimum carriageway width of 4.8 metres and that streets with higher design speeds should have a minimum carriageway width of 5.5 metres. The first section of the proposed site access road will be 6.0 metres wide, although it is likely to narrow to 5.5 metres within the site subject to detailed design of the internal site layout at the reserved matters stage, and subject to the provision of an internal looped arrangement. The internal layout of the development proposal remains a reserved matter and conditions could be imposed if necessary to ensure that the internal road layout sufficiently addresses these points. 10.0 metre radius kerbs are proposed to both sides of the proposed site access junction with Hemingfield Road, which facilitate access to the site for larger vehicles such as refuse vehicles.

5.8 In order to accommodate the proposed right turn ghost island, it is proposed to widen Hemingfield Road into the site (using land within the control of the appellant or which forms part of the adopted highway) in the vicinity of the proposed site access junction. The carriageway of Hemingfield Road will be widened from its current width of 7.0 metres to a total of 10.0 metres, to allow the formation of a 3.0 metre wide right turn ghost island, a 3.0 metre wide through lane for southbound vehicle movements on Hemingfield Road and a 4.0 metre wide through lane for northbound vehicle movements on Hemingfield Road.

5.9 The 4.0 metre wide northbound through lane was proposed at an early stage in the preliminary design of the proposed site access junction to accommodate the current on-street parking on Hemingfield Road in the vicinity of the proposed site access junction. The parking is associated with existing residential properties to the western side of the carriageway, therefore the wider northbound through lane addresses any potential issue associated with on street parking. The widening of the northbound lane and introduction of a right turn ghost island means that northbound traffic will be able to continue to flow while vehicles are waiting to turn right into the site.

5.10 The preliminary design of the proposed right turn ghost island junction has been designed in accordance with the geometric standards contained within the Design Manual for Roads and Bridges (DMRB) CD 123, specifically Chapters 5 and 6.

5.11 An independent Stage 1 Road Safety Audit (RSA – document reference 23-160-005.01) was undertaken for the proposed site access on Hemingfield Road. A Designers Response (DR - document reference 23-160-006.03) report was subsequently prepared to address the comments raised within the Stage 1 RSA, and included the following amendments to the proposed site access drawing to address the problems raised:

- The proposed footway on the eastern side of Hemingfield Road has been extended to the north of the proposed site access for a distance of around 45 metres;
- An uncontrolled pedestrian crossing point with dropped kerbs and tactile paving has been added in the vicinity of 86 and 88 Hemingfield Road, to facilitate pedestrian access to the north of the site;
- Tactile paving has been added to the proposed site access junction, to provide an uncontrolled pedestrian crossing with dropped kerbs and tactile paving across the junction bell-mouth; and,
- An uncontrolled pedestrian crossing point with dropped kerbs and tactile paving has been added around 5 metres to the east of Mellwood Grove, to facilitate pedestrian crossing movements associated with use of the bus stops on Hemingfield Road.

5.12 These amendments are illustrated on the revised site access drawing which was submitted to the Council prior to their determination of the planning application (drawing number 23/160/SKH/007 Rev E). In addition to the above amendments to the proposed site access drawing, it was confirmed that suitable visibility is achievable for the proposed site access and pedestrian crossing points, taking into account the alignment of the road. Swept path analysis of a HGV and a bus travelling southbound on Hemingfield Road were also undertaken, in response to a potential issue identified regarding the southbound through lane width. The swept path analysis demonstrates that these vehicles can be safely accommodated.

5.13 The Designer's Response to the RSA demonstrates that all of the potential problems identified in the Stage 1 RSA have been satisfactorily addressed, and this has been agreed with BMBC Highways who returned a signed version of the Designer's Response to confirm this. Therefore, BMBC Highways have confirmed that they are content with the proposed site access arrangement and associated visibility splays, bus stop relocation, swept path analysis and pedestrian access arrangement.

Visibility

5.14 Manual for Streets advises that for a speed limit of 30mph, in the absence of known speeds of traffic, visibility splays of 2.4 metres x 43 metres should be provided at a junction. In this case, speed data on the approach to the site access was collected by the ATCs described in Section 3.0, and was used to calculate the visibility provision based on the surveyed 85th percentile speeds.

5.15 Guidance on speed surveys is provided in the Design Manual for Roads and Bridges (DMRB) CA 185 – Vehicle Speed Measurement. Paragraph 3.1.1 of the document states that where speed measurements have been taken in either partially or entirely wet weather, the speeds recorded on a single carriageway should be increased by 4kph (2.5mph). The weather was assessed using online forecasts during the ATC survey period, from which it was apparent that rain is likely to have occurred on Wednesday 10th January only. Therefore, the recorded speeds for this day were increased by 2.5mph before the 85th percentile speeds were calculated.

5.16 The ATC data in the vicinity of the proposed site access junction has been extracted for the time periods from 10am to 12pm and from 2pm to 4pm on weekdays only. This includes for speeds recorded outside of peak traffic flow periods to ensure speeds were collected in free flow conditions, and also excludes weekends, as per the guidance in CA 185. The 85th percentile vehicle speeds obtained are summarised at Table 5.1.

Table 5.1: Surveyed 85th %ile Speeds – Hemingfield Road

Location	Northbound	Southbound	Eastbound	Westbound
ATC1 – Hemingfield Road Western Site Boundary	35.0mph	34.7mph	-	-
ATC2 – Hemingfield Road Southern Site boundary	-	-	28.3mph	26.5mph

5.17 With reference to the survey location plan at **Appendix BGH3**, for the visibility splay to the north, the southbound (vehicles travelling towards the site access) 85th percentile vehicle speed of 34.7mph from ATC1 is relevant. As the surveyed 85th percentile speed is higher than the 30mph speed limit, the measured speed was used to calculate the required visibility provision to the north of the proposed site access. Paragraph 7.5.1 of Manual for Streets states:

> *"This section provides guidance on stopping sight distances (SSDs) for streets where 85th percentile speeds are up to 60 km/h. At speeds above this, the*

recommended SSDs in the Design Manual for Roads and Bridges may be more appropriate."

5.18 As the measured speeds are below 60km/h (or 37.5mph), it is appropriate to calculate the stopping sight distance using the guidance in Manual for Streets. Based on the guidance, the visibility provision for 34.7mph equates to 53 metres, which is 10 metres greater than the recommended provision for the speed limit of 30mph.

5.19 For the visibility splay to the south, the westbound (vehicles travelling towards the proposed site access location) 85th percentile vehicle speeds recorded by ATC2 show that speeds are lower than the 30mph speed limit at 26.5mph, which is to be expected as vehicles are travelling around the bend in the road. To be robust, the 2.4 metres x 43 metres visibility splay appropriate for the speed limit on Hemingfield Road is to be provided for the visibility to the south of the proposed site access.

5.20 The drawing at **Appendix BGH9** demonstrates that the visibility splays described above are achievable at the site access within land which forms part of the adopted highway or land within the site boundary. This will involve some minor trimming back of the existing vegetation and trees to the north of the proposed site access. The area behind the footway within the visibility splay to the south of the proposed site access is within the site boundary and so will be dedicated as public highway and will be kept clear of obstruction, to ensure that the visibility splay is readily maintained.

Bus Stop Relocation

5.21 The proposed site access drawing at **Appendix BGH9** also indicates that the existing southbound bus stop on Hemingfield Road would need to be relocated from its existing position near the proposed site access junction, to a location just to the west of Mellwood Grove on the north side of Hemingfield Road, to allow adequate spacing between the bus stop and the proposed site access junction. The proposed location of the relocated bus stop has been indicated on the site access drawing (drawing number 23/160/SKH/007 Rev E). The exact location of the bus stop will be agreed with BMBC and the local public transport operators, however, the bus stop platform will be enhanced to incorporate a bus shelter and associated facilities.

Swept Path Analysis

5.22 A swept path analysis of the proposed site access was undertaken for a refuse vehicle. The refuse vehicle used in Barnsley is a 10.3 metre long 3 axle rear steer vehicle. Drawing number 23/160/ATR/001 Rev D attached at **Appendix BGH10**

shows that a refuse vehicle of this size can comfortably access and egress the site from Hemingfield Road, at the proposed site access junction.

5.23 As the proposals form part of an application for outline planning permission, the details of the proposed site layout are to be agreed as part of a reserved matters application. However, turning heads will be provided within the site to accommodate a refuse vehicle, such that it can enter and exit the site via Hemingfield Road in a forward gear.

Pedestrian Access and Public Rights of Way

5.24 Footways will be provided to both sides of the proposed vehicular site access junction with Hemingfield Road, which will be 2.0 metres wide and will tie into the existing footway provision on Hemingfield Road. This aligns with the design guidance contained within paragraph B.2.2.2 of the South Yorkshire Residential Design Guide.

5.25 The illustrative masterplan attached at **Appendix BGH2** shows that it is the intention that pedestrian access to the site will also be provided at the southern site boundary via a link into the public open space, and through the retention of the existing PRoW connections into the site from Briery Meadows and Garden Grove, together with access to the underpass beneath Dearne Valley Parkway to the north.

5.26 Both existing PRoW routes through the site, as described in Section 3.0, will be retained along their current alignment, with Footpath No. 17 likely to run through open space as indicated on the illustrative masterplan at **Appendix BGH2**. Suitable crossing points would be provided at the points where the retained PRoW crosses the vehicular access roads within the site. This approach was agreed with BMBC's PRoW Officer during the pre-application meeting.

5.27 Where the retained PRoWs continue as footpaths, BMBC's PRoW Officer suggested that these would need to be widened to a minimum of 1.8 metres. However, it was discussed that Footpath No. 17 could be widened further to provide a route for pedestrians and cyclists through the site, to align with BMBCs future aspirations for active travel links in the vicinity of the site.

5.28 It is anticipated that the existing un-made surface treatment of both PRoWs would be upgraded within the site as part of the development. As the proposals form part of an application for outline planning permission, the detail of the retention of the PRoW's and any surface treatment for the PRoW's within the site is to be agreed at reserved matters stage.

Parking Provision

5.29 Parking standards for new development in Barnsley are provided within BMBC's Parking SPD, which was adopted in November 2019.

5.30 The parking standards recommend that one space should be provided for dwellings with one or two bedrooms, and that two spaces should be provided for dwellings with three or more bedrooms.

5.31 Parking provision within the site will be provided in accordance with these local standards and will be agreed as part of any application for the approval of reserved matters.

5.32 Cycle parking will also be provided in accordance with the local standards at reserved matters stage.

6.0 TRIP GENERATION AND DISTRIBUTION

Vehicular Trip Generation

6.1 The Trip Rate Information Computer System (TRICS) was used to calculate the vehicular trip generation for the proposed residential development. Under the 'Houses Privately Owned' category, all sites excluding Ireland and Greater London were interrogated to establish vehicular trip rates for the proposed development.

6.2 An upper estimate of 180 dwellings on the site has been determined. This was based on a capacity exercise which considered planning policy (such as the need to provide public open space and biodiversity net gain requirements), drainage requirements (such as attenuation basins), a typical housebuilder's mix of dwellings inclusive of policy compliant affordable housing in terms of quantum, mix and tenure, as well as known constraints (such as the sewer easement and the alignment of existing hedgerows). The TRICS trip rates were applied to 180 dwellings to establish the weekday morning and evening peak hour development trips. The trip rates and trip generation are shown in Table 6.1, with the full TRICS output attached at **Appendix BGH11.**

Table 6.1 – TRICS Trip Rates and Trip Generation for 180 Dwellings

	Morning Peak Hour			Evening Peak Hour		
	In	Out	Two-Way	In	Out	Two-Way
TRICS Trip Rates	0.129	0.366	0.495	0.323	0.143	0.466
Trip Generation	23	66	89	58	26	84

6.3 Table 6.1 shows that the proposed development will generate around 89 two-way trips during the morning peak hour and 84 two-way trips during the evening peak hour. This equates to just over one vehicle movement per minute on average, a relatively low flow.

Vehicular Trip Distribution

6.4 The likely distribution of the traffic predicted to be generated by the proposed development was determined using origin/destination 2011 Census Data for "Location of usual residence and place of work by method of travel to work (MSOA level)". The location of usual residence was set as "Barnsley 029", the area in which the site is situated, and the place of work was set to "All". The possible route choices were determined based on the Google Maps route planning tool.

6.5 The resulting assignment of the generated traffic to and from the proposed development on the surrounding highway network during the morning and evening peak hours is shown at **Appendix BGH12**. The additional traffic movements through the road network in the vicinity of the site using the derived trip generation, is as shown on the diagrams at **Appendix BGH13**.

Multi-Modal Trip Generation

6.6 In order to estimate the number of trips that the proposed development will generate by all modes of travel, the anticipated modal split of movements to and from the site, determined from the Census data used for the trip distribution exercise, was applied to the vehicle trips presented at Table 6.1.

6.7 The multi-modal trip generation was estimated using the vehicle trip generation, on the basis that the number of vehicle trips would form 71% of trips during the weekday morning and evening peak hours. The resulting estimate of the multi-modal trip generation is presented in Table 6.2.

Table 6.2: Multi-Modal Trip Generation

Modal Split	% Split	Morning Peak Hour			Evening Peak Hour		
		In	Out	Two-Way	In	Out	Two-Way
Car (single occupancy)	71%	23	66	89	58	26	84
Pedestrian	6%	2	6	8	5	2	7
Cycle	1%	0	1	1	1	0	1
Bus	7%	2	6	8	6	2	8
Rail	6%	2	5	7	5	2	7
Car (multiple occupancy)	8%	2	7	9	6	3	9
Motorcyclist	1%	0	1	1	1	0	1
Total	100%	31	92	123	82	365	117

6.8 The multi-modal trip generation at Table 6.2 shows that based on existing mode share 8 trips either to or from the site are anticipated to be made on foot during the morning peak hour with 7 on foot during the evening peak hour. During both

the morning and evening peak hours, 1 trip in or out of the site is anticipated to be made by cycle. It is also anticipated that there will be trips made by public transport, 8 in both peaks, car (multi occupancy trips as passengers), 9 in both peaks, and motorcyclists. Given the active implementation of the site Travel Plan, it is considered that a greater no of residents would utilise active travel to egress and access the site.

6.9 The modal split percentages at Table 6.2 are referenced in the TP for the site, where an initial target for a 10% reduction in single occupancy car journeys has been set. Given these targets will be monitored against, the impact of the proposed development generated traffic is likely to be less than that assessed in the TA.

7.0 BACKGROUND TRAFFIC GROWTH

Growth Factors

7.1 Historic good practice guidance for TAs is set out within the Department for Transport's (DfT) 'Guidance on Transport Assessment' which sets out that traffic flows should be projected to a future year 5 years post submission of the planning application, which in this case was 2029.

7.2 The traffic flows for the surveyed junctions were projected by applying growth factors which were determined using TEMPro (v8.1), for the Barnsley 029 MSOA. The Road Traffic Forecasts (RTF) adjusted growth rates are set out in Table 7.1.

Table 7.1 – TEMPro Adjusted Road Traffic Forecasts Growth Factors

MSOA	RTF Growth Factors	
	AM Peak Period	PM Peak Period
2023 – 2029 Doncaster 033	1.0579	1.0581

7.3 The factors anticipate a circa 5.8% growth in local background traffic between 2023 and 2029 and take account of planned increases in households and employment figures. The growth factors were applied to the 2023 existing peak hour flows at **Appendix BGH4**, resulting in the 2029 growthed traffic flows as shown on the diagrams at **Appendix BGH14**.

Committed Development

7.4 Following a search of the planning portal, a committed development at the former Wombwell School site was identified and accounted for within the TA. Planning application number 2019/0089 for a residential development of 235 dwellings was approved in April 2020. It is understood that development on the site has commenced, however, no dwellings were occupied at the time of the traffic surveys in June 2023.

7.5 AECOM prepared a TA for the planning application, which is dated 11th January 2019. Appendix D (diagram 12) of the AECOM TA includes the total development generated flows for the committed development site, including those passing through the Hemingfield Roundabout, which were accounted for in the TA as shown on the diagrams at **Appendix BGH15**.

7.6 The 2029 growthed traffic flows at **Appendix BGH14** were added to the committed development flows at **Appendix BGH15** to provide the 2029 base traffic flows at **Appendix BGH16**.

8.0 TRAFFIC IMPACT OPERATIONAL ASSESSMENTS

Scope of Assessment

8.1 A threshold of 30 vehicles or more in either peak hour was set out within the Department for Transport's 'Guidance on Transport Assessment', to establish the need for operational assessment at a junction. While this guidance has been withdrawn, it is still a valid reference document. It is considered that this 30 two-way trip threshold (i.e. an average of an additional vehicle movement every 2 minutes) provides a helpful starting point for establishing the need for operational assessment of the impact of development generated trips.

8.2 Table 8.1 provides a summary of the number of additional trips which will be generated on the local highway network in the vicinity of the site, based on the assigned development generated trips at **Appendix BGH13**.

Table 8.1 – Additional Two-Way Trip Generation at Junctions

Junction	Additional Two-Way Trip Generation	
	Morning Peak Hour	Evening Peak Hour
Site Access Junction	89	84
Hemingfield Road Roundabout	71	67
Briery Meadow/Hemingfield Road	17	17
School Street/Cemetery Road	17	16
A6195 West	31	29
A6195 East	19	18
Hemingfield Road (north of Hemingfield Road Roundabout)	22	21

8.3 It is clear from Table 8.1 that the proposed development would only generate in excess of 30 or more two-way trips at the proposed site access junction with Hemingfield Road and at the Hemingfield Road Roundabout. Therefore, in the future year assessment, operational assessment was undertaken for these two junctions.

8.4 While it is acknowledged that Table 8.1 indicates 31 two-way trips predicted to be generated by the proposed development site to or from the west on the A6195 Dearne Valley Parkway, which is one vehicle over the 30 two-way trip threshold, the 30 two-way trips is not an absolute point above which operational assessment should be undertaken. As set out at paragraph 8.1, it simply provides a helpful starting point for establishing the need for operational assessment.

8.5 The percentage impact on the A6195 Dearne Valley Parkway west, comparing the additional proposed development trips to the 2029 base traffic flows, is only an additional 1.6% during the weekday morning peak hour and 1.2% during the weekday evening peak hour. This is well within the day to day variation in traffic flows, and is clearly not significant and would not be perceptible to existing drivers on the road.

8.6 The 31 additional development generated trips that will be generated to the west on the A6195 Dearne Valley Parkway, will disperse at the roundabout junctions to the west of the Hemingfield Road Roundabout. It is clear that traffic would disperse into Hoyland and the nearby employment sites to the west of Hemingfield. The proposed development generated trips would therefore certainly be below 30 two-way trips beyond the Wombwell Wood roundabout.

8.7 A sensitivity test of the impact of trips generated by the wider safeguarded land on the A6195 Dearne Valley Parkway was undertaken, in the form of a percentage impact assessment. This assessment takes into account trips from development on the outline application site.

Operational Assessment of Traffic Flows

8.8 To calculate the traffic flows for the 2029 predicted scenario, the 2029 base traffic flows at **Appendix BGH16** were added to the proposed development generated traffic flow diagrams at **Appendix BGH13**. The resulting 2029 predicted traffic flows are shown on the diagrams at **Appendix BGH17**.

8.9 The operational assessments presented within the TA demonstrated that the proposed site access junction on Hemingfield Road and the Hemingfield Road Roundabout were predicted to continue to provide a satisfactory level of provision for the peak hours considered in the future year assessments, even allowing for the development traffic.

Sensitivity Test of Full Development of the Safeguarded Land

8.10 During the consultation process for the application, at the request of BMBC Highways, a sensitivity test was conducted to analyse the operational capacity of the local road network in the future, in the event that additional dwellings are built on the remaining area of safeguarded land located to the east of the proposed development site.

8.11 For the purpose of this assessment, a total of 430 dwellings was assessed and this is inclusive of the upper estimate of 180 dwellings from the site subject to this appeal. This 430 dwelling figure was derived by apportioning the upper limit of 180 dwellings calculated for this appeal site to the estimated developable area for the full extent of safeguarded land. The developable area was estimated based on the same principles as for the appeal site and taking account of planning policy (such as the need to provide public open space and biodiversity net gain requirements), land take to meet drainage requirements (such as attenuation basins), a typical housebuilder's mix of dwellings inclusive of policy compliant affordable housing in terms of quantum, mix and tenure, as well as known constraints. This sensitivity test provides a robust assessment of the impact that the development of the full extent of safeguarded land would have on the local highway network. BMBC's Highways department considered the assessment and were satisfied with the results.

8.12 However, as an additional layer of robustness,the sensitivity test has also been updated to evaluate the impact of 520 dwellings across the wider safeguarded land, inclusive of the estimated upper limit capacity of 180 dwellings considered achievable on the outline application site which was the subject of the TA. This figure has been selected because the Council's Strategic Housing Land and Employment Availability Assessment (SHELAA), which was published in 2016 and informed the preparation of the Local Plan, suggested an estimated capacity of 518 dwellings for the full extent of the safeguarded land site SL6. This figure has therefore been marginally rounded upwards.

8.13 The Council's figure of 518 would have been derived without the benefit of an analysis of likely constraints informed by technical reports and was also set prior to certain policies coming into effect (such as the local plan's public open space requirement and prior to biodiversity net gain). This additional sensitivity test therefore represents a likely upper limit scenario in terms of the number of dwellings which could be delivered on the site and is considered to be an over-estimation, with 430 dwellings representing a more reasonable assumption for the capacity of the full extent of safeguarded land. It also does not reflect that the wider

area of safeguarded land may also be served by an additional access taken from the east.

8.14 The impact of a total of 520 dwellings on the wider safeguarded land, including the 180 dwellings on the proposed development site, has been considered for the following three junctions:

- Proposed Site Access Junction with Hemingfield Road;
- Hemingfield Road Roundabout; and,
- Cemetery Road/Hemingfield Road/School Street Priority T-junction.

8.15 The number of vehicular trips associated with an estimated 520 dwellings on the total safeguarded land, based on the TRICS trip rates included in Table 6.1 of this HTR, is summarised in Table 8.2.

Table 8.2 – TRICS Trip Rates and Trip Generation for 520 Dwellings

	Morning Peak Hour			Evening Peak Hour		
	In	Out	Two-Way	In	Out	Two-Way
TRICS Trip Rates	0.129	0.366	0.495	0.323	0.143	0.466
Trip Generation	67	190	257	168	74	242

8.16 The sensitivity test generated traffic flows for 520 dwellings and the 2029 predicted sensitivity test traffic flow diagrams are included at **Appendix BGH18** and **Appendix BGH19** of this HTR.

Operational Assessment – Proposed Site Access

8.17 The operation of the proposed site access junction with Hemingfield Road has been assessed for the 2029 predicted weekday morning and evening peak hours, using the PICADY element of the Junctions 10 modelling software. The results of the modelling are summarised in Table 8.3 and the full model outputs are attached at **Appendix BGH20**.

Table 8.3: Operational Assessment – Sensitivity Test
Proposed Site Access Junction with Hemingfield Road (520 Dwellings)

Assessment Year	Movement	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
		RFC	Queue (PCU)	RFC	Queue (PCU)
2029 Predicted Sensitivity Test	Site Access - (Left & Right Out)	0.45	1	0.20	0
	Hemingfield Road - (Ahead & Right In)	0.03	0	0.07	0

8.18 It can be seen in the results at Table 8.3 that even if the proposed site access junction with Hemingfield Road was to serve an estimated total of 520 dwellings (in a scenario where no alternative access to the site was provided), it is predicted to remain well within its operational capacity. The maximum RFC of 0.45 is expected to occur on the proposed site access arm during the morning peak hour, resulting in an associated queue of only 1 vehicle. Therefore, the proposed site access does not prejudice the delivery of the rest of the safeguarded land, both in the way that it has been designed and in capacity terms to accommodate development generated trips.

Operational Assessment – Hemingfield Road Roundabout

8.19 The operation of the Hemingfield Road Roundabout has been assessed for the 2029 predicted sensitivity test weekday morning and evening peak hours, using the ARCADY element of the Junctions 10 modelling software. The results of the modelling are summarised in Table 8.4, along with the 2023 existing and 2029 base results from the TA for reference. The full model output is attached at **Appendix BGH20**.

Table 8.4: Operational Assessment – Sensitivity Test
Hemingfield Road Roundabout (520 dwellings)

Assessment Year	Movement	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
		RFC	Queue (PCU)	RFC	Queue (PCU)
2023 Existing	A6195 Dearne Valley Parkway (East)	0.43	1	0.62	2
	Hemingfield Road (South)	0.21	0	0.19	0
	A6195 Dearne Valley Parkway (West)	0.45	1	0.56	1
	Hemingfield Road (North)	0.28	0	0.30	0
2029 Base	A6195 Dearne Valley Parkway (East)	0.46	1	0.66	2
	Hemingfield Road (South)	0.24	0	0.23	0
	A6195 Dearne Valley Parkway (West)	0.49	1	0.60	2
	Hemingfield Road (North)	0.31	1	0.34	1
2029 Predicted Sensitivity Test	A6195 Dearne Valley Parkway (East)	0.47	1	0.69	2
	Hemingfield Road (South)	0.38	1	0.29	0
	A6195 Dearne Valley Parkway (West)	0.51	1	0.63	2
	Hemingfield Road (North)	0.35	1	0.42	1

8.20 Table 8.4 shows that the Hemingfield Road Roundabout is predicted to continue operating well within capacity at a future year of 2029, with the addition of traffic generated by a worst-case scenario of a total of 520 dwellings on the whole area of safeguarded land. The maximum RFC of 0.69 is predicted to occur on the A6195 Dearne Valley Parkway (East) arm of the roundabout during the weekday evening peak hour, with an associated queue of 2 vehicles. When compared with the 2029 base scenario, this equates to an increase in the maximum RFC of only 0.03, with no increase in queuing.

Operational Assessment – Cemetery Road/Hemingfield Road/School Street

8.21 The operation of the Cemetery Road/Hemingfield Road/School Street priority T-junction has been assessed for the 2023 existing, 2029 base and 2029 predicted

sensitivity test weekday morning and evening peak hours, using the PICADY element of the Junctions 10 modelling software. The results of the modelling are summarised in Table 8.5, with the full model output attached at **Appendix BGH20**.

Table 8.5: Operational Assessment – Sensitivity Test
Cemetery Road/Hemingfield Road/School Street Junction (520 dwellings)

Assessment Year	Movement	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
		RFC	Queue (PCU)	RFC	Queue (PCU)
2023 Existing	Cemetery Road Left Out	0.11	0	0.08	0
	Cemetery Road Right Out	0.13	0	0.09	0
	Hemingfield Road Ahead and Right In	0.06	0	0.16	0
2029 Base	Cemetery Road Left Out	0.12	0	0.08	0
	Cemetery Road Right Out	0.14	0	0.10	0
	Hemingfield Road Ahead and Right In	0.07	0	0.18	0
2029 Predicted Sensitivity Test	Cemetery Road Left Out	0.13	0	0.10	0
	Cemetery Road Right Out	0.15	0	0.10	0
	Hemingfield Road Ahead and Right In	0.10	0	0.20	0

8.22 Table 8.5 shows that the Cemetery Road/Hemingfield Road/School Street priority T-junction is predicted to continue operating well within capacity at a future year of 2029, with the addition of traffic generated by a total of 520 dwellings on the whole area of safeguarded land. The maximum RFC of 0.20 is predicted to occur on the Hemingfield Road ahead and right turn in movement during the weekday evening peak hour, with no associated queuing. When compared with the 2029 base scenario, this is an increase in the maximum RFC of only 0.02, with no increase in queuing.

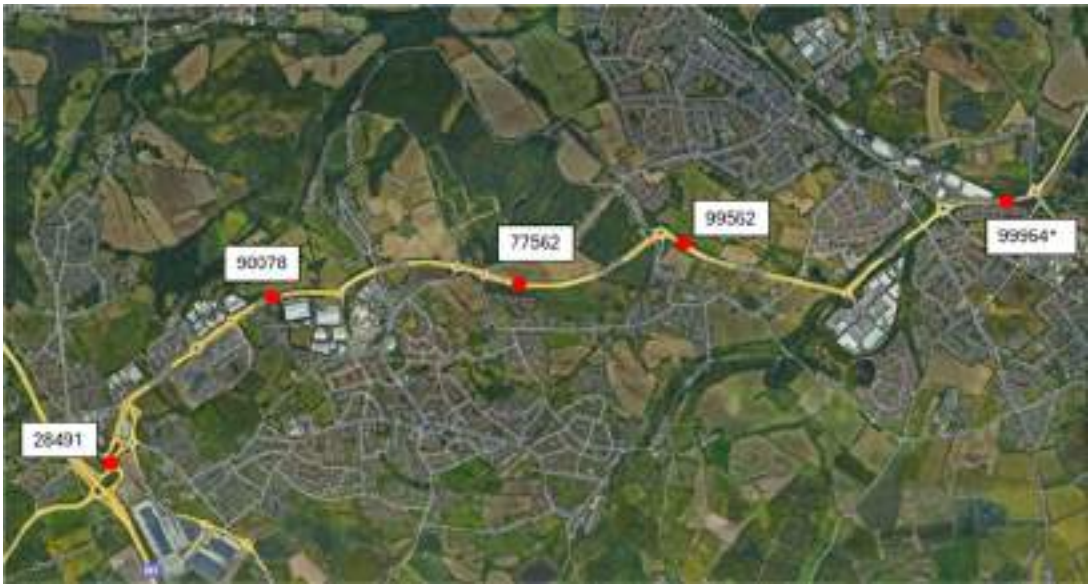
8.23 It is therefore clear that the proposed site access junction, the Hemingfield Road Roundabout and the Cemetery Road/Hemingfield Road/School Street priority T-junction will have sufficient capacity to accommodate additional trips, resulting from this additional sensitivity test of an estimated total of up to 520 dwellings on

the whole area of safeguarded land, including the 180 dwellings associated with the development proposals.

Percentage Impact Assessment

8.24 It was previously agreed with BMBC Highways that the impact of the development related vehicular trips beyond the Hemingfield Road Roundabout would be minimal and, as such, would not require operational assessments. To confirm this still applies, an updated percentage increase in traffic assessment has been carried out to demonstrate the traffic impact of this additional sensitivity test of an estimated 520 dwellings from the full extent of the safeguarded land on the A6195 Dearne Valley Parkway, to the east and west of the Hemingfield Road Roundabout. Link count traffic data is available for the A6195 from the Department for Transport (DfT) Road Traffic Statistics website, at the locations illustrated in Figure 8.1.

Figure 8.1 – A6195 Dearne Valley Parkway DfT Count Point Locations



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8.25 Manual counts were conducted in 2023 at all points identified in Figure 8.1, apart from count point number 99964, where the latest manual count was conducted in 2022. Where manual count data is not available, the DfT provide Annual Average Daily Flows (AADF) as an estimate using the previous year's AADF on the same link. While the manual counts include the raw data showing hourly counts from 7am to 7pm, from which the peak hour flows can be determined, the estimated data is only presented as AADF by direction.

8.26 The 2023 AADF for count point 99964 is estimated at 27,811 vehicles, based on the 2022 manual count of 27,206 vehicles. As the estimated 2023 AADF is only

marginally higher than the 2022 manual count it would make only a marginal difference to the percentage increase impact assessment, and it is therefore considered appropriate to utilise the 2022 manual count hourly data for count point 99964 in order to calculate the % increases resulting from development.

8.27 In order to calculate the amount of traffic generated from an estimated 520 dwellings across the safeguarded land that would pass through each of the DfT count points, the trip distribution exercise undertaken as part of the TA, based on 2011 Census Data, has been revisited and extended for the wider network. Table 8.6 provides a summary of the extended percentage assignment of development generated trips based on origin/destination 2011 Census Data for "Location of usual residence and place of work by method of travel to work (MSOA level)" with the location of usual residence set as "Barnsley 029", the area in which the site is situated, and the place of work set to "All". The possible route choices have been determined based on the Google Maps route planning tool.

Table 8.6: Extended Trip Distribution from the Development – Based on method of travel to work 2011 Census Data from Barnsley 029

Route ID	Route	%age Assignment
A1	Dovecliffe Road	5.5%
A2	Windmill Road/Aldham House Lane	9.4%
A3	A633 (N) Mitchells Way	9.4%
A4	B6096 Station Road	0.2%
B1	M1 (South)	11.6%
B2	A61 Westwood New Road	5.7%
B3	M1 (North)	7.7%
B4	A61 Sheffield Road	1.4%
B5	B6096 Wood Walk	2.9%
B6	A6135 Olympus way	5.0%
C1	Wath Road	9.3%

Table 8.6 (continued): Extended Trip Distribution from the Development – Based on method of travel to work 2011 Census Data from Barnsley 029

Route ID	Route	%age Assignment
C2	A6195 (east of Wath Road)	9.4%
C3	A633 Wath Road	2.2%
D	Cemetery Road	7.7%
E	School Street	12.5%
Total	-	100%

8.28 Table 8.7 provides a summary of the distribution routes identified within Table 8.6 summarising which ones would pass through the individual DfT count points. In this way the total % of development traffic passing through each count point can be identified.

Table 8.7: Routes from the Development Passing Through the DfT Count Points

Count Point	Routes Passing Through Count Point	%age Assignment
28491	B1 B2 B3	25.0%
90078	B1 B2 B3 B4 B6	31.5%
77562	B1 B2 B3 B4 B5 B6 (all of B)	34.4%
99562	C1 C2 C3 (all of C)	20.9%
99964	C2	9.4%

8.29 Having established the wider assignment of development traffic, Table 8.8 presents the 2023 (or 2022 for count point 99964) two-way traffic flows from the DfT count points, for both the morning and evening peak hours, and sets these flows alongside the number of vehicle trips that would be generated by an estimated 520 dwellings on the fully developed site, passing through these count points, based on the percentage assignment at Table 8.7. The estimated percentage impact of the vehicle trips generated by 520 dwellings on the current two way flows at each count point during the peak hourly flows is also provided.

Table 8.8 – Estimated 520 Dwellings Development Trip Impact Assessment through the DfT Count Points on A6195 Dearne Valley Parkway

	28491	90078	77562	99562	99964 *(2022)
2023 Existing AM Peak Hour Flows	3,011	2,006	1,931	1,776	1,979
2023 Existing PM Peak Hour Flows	3,352	2,566	2,273	2,544	2,299
Estimated Vehicle Trips for 520 dwellings – AM Peak Hour	64	81	88	54	24
Estimated Vehicle Trips for 520 dwellings – PM Peak Hour	61	76	83	51	23
Percentage Increase AM Peak Hour	2.1%	4.0%	4.6%	3.0%	1.2%
Percentage Increase PM Peak Hour	1.8%	3.0%	3.7%	2.0%	1.0%

8.30 Table 8.8 shows that the percentage impact on the A6195 Dearne Valley Parkway traffic flows at the DfT count points, based on increases in traffic as a result of the estimated number of vehicle trips generated by 520 dwellings on the safeguarded land, would be minimal, less than 5% in all instances. As such the impact would be well within the expected day to day variation in traffic flows along the link and would certainly not be perceptible to regular drivers using the road.

8.31 The maximum percentage increase of 4.6% is predicted to occur at count point 77562 during the morning peak hour, which is around 1.2 kilometres to the west of Hemingfield Roundabout. As development traffic is assigned further west, the traffic is anticipated to dissipate onto the wider network at the various roundabout junctions along the A6195, resulting in the percentage impact being around 2% on approach to Tankersley Roundabout. To the east of the site, traffic is anticipated to dissipate at Cortonwood Retail Park and Wath Road Roundabout, with the percentage impact being around 1% to the east of the Wath Road Roundabout.

Sensitivity Test Summary

8.32 The operational assessments undertaken demonstrate that the proposed site access junction on Hemingfield Road, the Hemingfield Road roundabout and the Hemingfield Road junction with Cemetery Road are predicted to continue to provide a satisfactory level of provision for the peak hours considered in the future year assessments, even allowing for full development on the remaining safeguarded land.

8.33 It should be noted that the surveyed Cemetery Road/Hemingfield Road junction has been modelled for the sensitivity test, as the additional trips generated by 520 dwellings through the junction would be more than 30 two-way trips, which is not the case for the 180 dwelling scenario on the outline application site.

8.34 It has been demonstrated that the proposed site access junction would have sufficient capacity to serve the wider safeguarded land, and so the outline application site does not prejudice the delivery of the rest of the safeguarded land.

8.35 The impact of these development related vehicular trips beyond the Hemingfield Road Roundabout on the A6195 Dearne Valley Parkway corridor has been considered but has been found to be minimal and, as such, does not require operational assessment. This was agreed with officers of BMBC at a meeting held in April 2024, and in order to confirm this, a development traffic percentage increase assessment was carried out on the A6195 corridor in the vicinity of the site, beyond the Hemingfield Road Roundabout. The previous assessment was based on 430 dwellings, which resulted in a maximum percentage increase of 3.8% on the A6195 Dearne Valley Parkway around 1.2 kilometres to the west of Hemingfield Road Roundabout. The conclusion reached and agreed with BMBC Highways, as confirmed in their November 2024 consultation response, was that the percentage impact in flows resulting from full development of the wider safeguarded land is minimal and at less than 5% would be well within the expected day to day variation in traffic flows.

8.36 The updated sensitivity test for 520 dwellings on the safeguarded land shows that the increase in development would result in a maximum percentage increase in traffic of 4.6%, on the A6195 around 1.2 kilometres to the west of Hemingfield Roundabout. The percentage impact of 520 dwellings would remain below 5% in all instances and therefore, the conclusion that the impact is minimal and would be well within the expected day to day variation in traffic flows, which was previously agreed with BMBC Highways, remains valid.

8.37 The sensitivity test of the traffic impact of 520 dwellings on the safeguarded land therefore demonstrates that the impact on the highway network can be accommodated satisfactorily in the immediate vicinity of the site. Further afield along the A6195 Dearne Valley Parkway, the impact would not be material, and with reference to paragraph 116 of NPPF could not be described as severe, and would have no material impact on the operation of this part of the network, in terms of traffic impact.

9.0 SUMMARY AND CONCLUSIONS

9.1 This Highways and Transport Report has been prepared in relation to an appeal against the refusal of an application for outline planning permission which was submitted by Hargreaves Land Limited for proposed residential development on land between Hemingfield Road and the A6195 Dearne Valley Parkway in Hemingfield, Barnsley.

9.2 The description of the development for the planning application is as follows:

> *"Application for outline planning permission for the demolition of existing structures and the erection of residential dwellings with associated infrastructure and open space. All matters reserved except for means of access into the site."*

9.3 The site forms part of a wider area of land which is identified in the Barnsley Local Plan as safeguarded land for future development. The safeguarded land is known as site SL6 'Land North East of Hemingfield', with an area of 18.2 hectares. The proposed development site is located broadly on the western third of the wider safeguarded land.

9.4 A description of the site, the existing local highway network in the vicinity of the site and the existing PRoW's which pass through the site has been provided. Traffic surveys were undertaken on Tuesday 27th June 2023 at the Hemingfield Road Roundabout and the Briery Meadows/Hemingfield Road and Cemetery Road/School Street priority T-junctions to ascertain current traffic flows. Two 7 day ATCs were also put in place on Hemingfield Road in the vicinity of the proposed site access to collect traffic and speed data.

9.5 The existing weekday morning and evening peak hours were determined for the surveyed network, and the operation of the Hemingfield Road Roundabout was assessed, which showed that the junction currently operates within capacity.

9.6 It was demonstrated that the traffic impact of the development at the other two surveyed junctions is below 30 two-way trips and so operational assessment to assess the impact of development traffic was not required at these junctions.

9.7 A review of personal injury collision data for the most recent 5 year period available, which has been updated since the TA was prepared to include data from September 2023 to September 2024, indicates that there are no existing road safety issues which would be exacerbated by the proposed development.

9.8 It was demonstrated that the site is accessible using sustainable modes of transport, such as walking, cycling and public transport. The site is well located to promote trips on foot to local amenities, including a nearby Primary School. There are a number of nearby Secondary Schools which are accessible from the site by bus. BMBC consider that the site is in a sustainable location, which is confirmed by the BMBC Officer's Report on the outline planning application.

9.9 Bus services are provided from bus stops within a short walking distance of the centre of the site, providing services to key leisure, employment and transport hubs, such as Barnsley Interchange and Cortonwood Retail Park. Wombwell Railway Station is located within an approximate 4 minute cycle ride or 850 metre walk from the site, and the station offers a range of local rail services, and an opportunity to connect to national services.

9.10 The site will be accessed by way of a new ghost island right turn lane priority T-junction on Hemingfield Road, at the western site boundary. The existing issue of on-street parking on Hemingfield Road was identified at the outset and a solution was developed to address this. The widening of the northbound lane and introduction of a right turn ghost island means that traffic can continue to flow northbound in the event that vehicles are waiting to turn right into the site. The 4.0 metre wide northbound through lane is proposed to accommodate current on-street parking on Hemingfield Road in the vicinity of the proposed site access junction, which is associated with existing residential properties to the western side of the carriageway. The visibility requirement at the site access junction was calculated based on 85th percentile vehicle speeds determined from the ATC surveys. It was demonstrated that suitable visibility splays of 2.4 metres x 53 metres to the north and 2.4 metres x 43 metres to the south are achievable at the proposed site access junction, in accordance with the guidance in Manual for Streets.

9.11 A Stage 1 Road Safety Audit of the proposals was undertaken and a Designer's Response was prepared accepting the recommendations of the audit and detailing amendments made to the proposed site access drawing to address the minor issues raised. This has been agreed with BMBC Highways, who have confirmed this through returning a signed version of the Designer's Response report.

9.12 The existing southbound bus stop is to be relocated from its existing position near the proposed site access junction, to a location just to the west of Mellwood Grove. The exact location of the bus stop is to be agreed with BMBC and the local public transport operators. Financial contributions are to be secured via planning obligations to upgrade the facilities at the two nearest bus stops to the site on

Hemingfield Road, and to help ongoing bus provision to the application site over a period of 3 years.

9.13 Swept path analysis of the proposed site access was undertaken, which demonstrates that it can be comfortably used by a refuse vehicle, the specification of which was provided by BMBC Highways.

9.14 Pedestrian access to the site will be provided via 2 metre wide footways to both sides of the proposed vehicular site access junction with Hemingfield Road. Pedestrian access to the site will also be provided via pedestrian access at the southern site boundary via a link into the public open space, and through the retention of the existing PRoW connections into the site from Briery Meadows and Garden Grove together with access to the underpass beneath Dearne Valley Parkway to the north. The PRoW routes which pass through the site will be retained along their current alignment, with suitable crossing points to be provided where the retained north/south PRoW crosses the vehicular access roads within the site. This approach was agreed with BMBC's PRoW Officer. The surface treatment and width of the retained PRoW routes through the site are to be agreed with BMBC at the reserved matters stage, and will be dependent on whether or not they will cater for just pedestrians or cyclists as well.

9.15 Parking for cars and cycle parking will be provided in line with the standards set out within the 'Parking' SPD adopted by BMBC.

9.16 The TRICS database was used to establish the trip generation associated with the development proposals. The proposed development is anticipated to generate around 89 two-way trips during the morning peak hour and 84 two-way trips during the evening peak hour. The development generated trips were distributed onto the local highway network based on 2011 Census data.

9.17 An estimate of the multi-modal trip generation for the site was provided, based on the modal split percentages determined from the 2011 Census data. These are also referred to in the Travel Plan developed for the site, to set initial modal split targets for a reduction in single occupancy car journeys.

9.18 To account for background traffic growth on the network, the relevant growth factors were obtained using TEMPro. These factors were applied to the 2023 surveyed traffic flows, to project them to a future year of 2029. Committed development traffic was also added at the Hemingfield Road Roundabout, for the residential development located at the former Wombwell School site. The proposed development generated flows were then added to the 2029 base flows,

which is considered to be robust given that the proposed development site traffic is likely to be accounted for in the growth factors.

9.19 It was predicted that 31 two-way trips could be generated by the proposed development site to or from the west on the A6195 Dearne Valley Parkway. This is just one vehicle over the 30 two-way trip threshold which is used to determine whether or not operational assessment of a junction should be undertaken. It was demonstrated that the percentage impact of these development generated trips on the flows on the A6195 Dearne Valley Parkway to the west of the Hemingfield Road Roundabout will be minimal, and that the additional development generated trips would certainly be way below the 30 two-way trip threshold by the time development traffic reaches the Wombwell Wood roundabout.

9.20 Operational assessment of the Hemingfield Road Roundabout was undertaken for the 2029 future year. This showed that the junction is predicted to continue operating within capacity, both with and without the proposed development trip generation. It was also demonstrated that the proposed site access junction will operate within capacity. Therefore the proposed development generated trips can be accommodated by the junctions on the local highway network in the vicinity of the site.

9.21 A sensitivity test has also been undertaken, at the request of BMBC Highways, which was conducted to demonstrate that the local road network would have sufficient capacity to accommodate future full development on the safeguarded land. As part of the planning application in response to the request from BMBC Highways, the impact of 430 dwellings was considered, which is considered to represent a reasonable assumption for the capacity of the full extent of safeguarded land taking into account policy requirements and site constraints. For additional robustness, we have also(voluntarily) updated this exercise to test 520 dwellings on the safeguarded land as a worst case, which is based on BMBC's estimated capacity for the safeguarded land in their Strategic Housing and Employment Land Availability Assessment (2016). Both the 430 and 520 dwelling figures are inclusive of the estimated 180 dwellings which would be delivered on the outline application site, which was the subject of the TA.

9.22 Operational assessments demonstrate that the proposed site access junction on Hemingfield Road, the Hemingfield Road roundabout and the Hemingfield Road junction with Cemetery Road are predicted to continue to provide a satisfactory level of provision for the peak hours considered in the future year assessments, even allowing for full development on the remaining safeguarded land. Therefore,

it has been demonstrated that development of the outline application site does not prejudice the delivery of the rest of the safeguarded land.

9.23 The impact of the safeguarded land development related vehicular trips beyond the Hemingfield Road Roundabout, on the A6195 Dearne Valley Parkway corridor, has been considered through a percentage impact assessment and this approach was agreed with BMBC Highways. The assessment of 430 dwellings as part of the planning application concluded that the maximum percentage increase on the A6195 Dearne Valley Parkway would be 3.8%. This is less than 5% and so would be within the expected day to day variation in traffic flows on this link. This conclusion was agreed with BMBC Highways, in their consultation response on the application.

9.24 The updated sensitivity test for 520 dwellings on the safeguarded land results in a maximum percentage impact on the A6195 Dearne Valley Parkway of 4.6%, which is still less than 5% and so again would be well within the expected day to day variation in traffic flows on the Dearne Valley Parkway. Therefore, the agreement reached with BMBC Highways in relation to the initial sensitivity test still holds good.

9.25 The sensitivity test demonstrates that the impact of future development of the safeguarded land can be accommodated on the highway network in the vicinity of the site, and further afield along the A6195 Dearne Valley Parkway, the impact could not be considered severe, with reference to paragraph 116 of NPPF, and would have no material impact on the operation of this part of the network, in terms of capacity.

9.26 In summary, this Highways and Transport Report reaffirms that the proposed development site will be accessible by all modes of transport, and that the traffic generated by the site can be accommodated by the site access junction and will have no material impact upon the operation of the local highway network. This is subject to the works agreed with BMBC Highways as detailed in Section 1.0 of this HTR, which will be secured by planning conditions or planning obligations as appropriate. It has also been clearly demonstrated that the proposed development will not prejudice the delivery of further development on the wider area of safeguarded land.

APPENDIX BGH 1

BRYAN G HALL

CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

LEEDS T 0113 246 1555

LONDON T 0203 5532336

Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB

E transportleeds@bryanghall.co.uk

W www.bryanghall.co.uk
twitter.com/Bryanghall1
Bryan G Hall

Title: SITE LOCATION PLAN

Status: FOR PLANNING

Scale: N.T.S.
Size: A3 - 420 x 297

Drawn: PP | Chkd: RD | Appvd: MC

Rev:	Date:	Amendment:	DRN	CHK	APR

Client: PTARMIGAN LAND NORTH LTD

Project: HEMINGFIELD ROAD, BARNSLEY

Drawing No: 23/160/LOC/005
Job No: 23-160

Revision: -
Date: 19/01/2024

APPENDIX BGH 2

Hargreaves Land

A6195 - DEARNE VALLEY PARKWAY

DRAINAGE BASIN

OPEN SPACE

OPEN SPACE

HEMINGFIELD ROAD

BRIERY MEADOWS

N

Scaled @ 1:1250

0 25m 50m 100m

Notes:

All Dimensions are to be verified on site before any work commences. If any discrepancies, errors or emissions are noted, these are to be reported to STEN Architecture immediately.

If any other drawings are referenced within this layout, please refer to the specific detailed drawing for design, materials and specific working practices.

1. PRIMARY VEHICULAR ENTRANCE FROM HEMINGFIELD ROAD
2. RETAINED FOOTPATH ROUTE THROUGH THE CENTRE OF THE SITE AND CONNECTION TO THE NORTH. THIS ROUTE IS SET IN A PLEASANT GREEN CORRIDOR WITH THE POTENTIAL TO INCLUDE NEW NATIVE PLANTING AND TREES
3. RETAINED PUBLIC RIGHTS OF WAY (FOOTPATH 17 AND 18)
4. ATTRACTIVE GREENSPACE AT THE DEVELOPMENT ENTRANCE
5. PROPOSED DRAINAGE BASIN
6. FEATURE SPACES AND GATEWAY BUILDINGS
7. POTENTIAL ACCESS POINTS TO ADJACENT LAND
8. RETAINED HEDGEROW ALONG THE EASTERN BOUNDARY
9. DEDICATED WALKING ROUTE
10. PROPOSED EQUIPPED PLAY AREA
11. AMENITY SPACE

DEVELOPMENT PARCELS

FRONTAGE AND BUILT FORM

KEY PEDESTRIAN ROUTES

VEHICLE ROUTES

REAR BOUNDARIES

EXISTING SEWER AND EASEMENT

NB:-

A) Proposed Landscaping is shown indicatively and subject to detailed design and recommendations from Ecology, Landscape, and Arboriculture consultants.

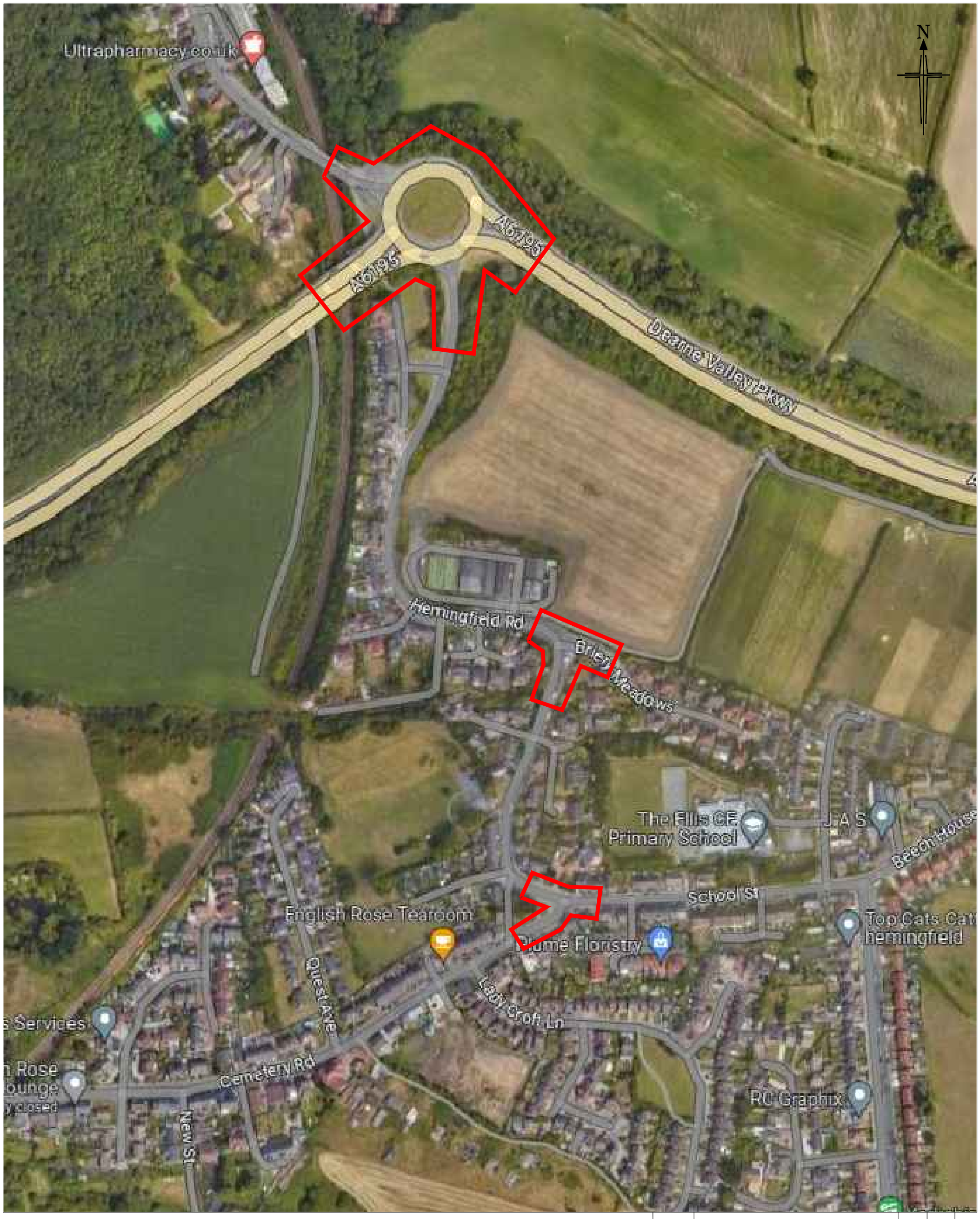
B) Proposed highways and footpaths are shown indicatively. All streets and routes will comply with Local Authority Guidance.

- Primary Streets will mainly comprise 5.5m highway, flanked by 2m footpaths.
- Shared Surfaces will be a maximum overall width of 7.4m including appropriate service margins.
- Private Drives will be a maximum of 5.5m.

STEN ARCHITECTURE

SITE: HEMINGFIELD, BARNSLEY			
TITLE: ILLUSTRATIVE MASTERPLAN			
SCALE AT A2: 1:1250	DATE: DEC 2023	DRAWN: SSH	CHECKED:
PROJECT NO: 2344	DRAWING NO: 2344:01		REVISION: D

APPENDIX BGH 3



BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS
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LEEDS T 0113 246 1555
LONDON T 0203 5532336

Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB

E transportleeds@bryanghall.co.uk
W www.bryanghall.co.uk
twitter.com/Bryanghall1
Bryan G Hall

Rev:	Date:	Amendment:	DRN	CHK	APR

Title: TRAFFIC SURVEY LOCATION PLAN

Client: -

Project: -

Scale: N.T.S. Size: A3 - 297 x 420

Drawn: LD Chkd: MC Appvd: MC

Drawing No: 23/160/LOC/001

Job No: 23-160

Revision: -

Date: 21/06/2023

BRYAN G HALL

CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

LEEDS T 0113 246 1555

LONDON T 0203 5532336

Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB

E transportleeds@bryanghall.co.uk

W www.bryanghall.co.uk
twitter.com/Bryanghall1
Bryan G Hall

Rev:	Date:	Amendment:	DRN	CHK	APR

Title: ATC LOCATION PLAN

Client: -

Project: HEMINGFIELD, BARNSLEY-

Scale: N.T.S. Size: A3 - 297 x 420

Drawn: RD Chkd: MC Appvd: MC

Drawing No: 23/160/LOC/003

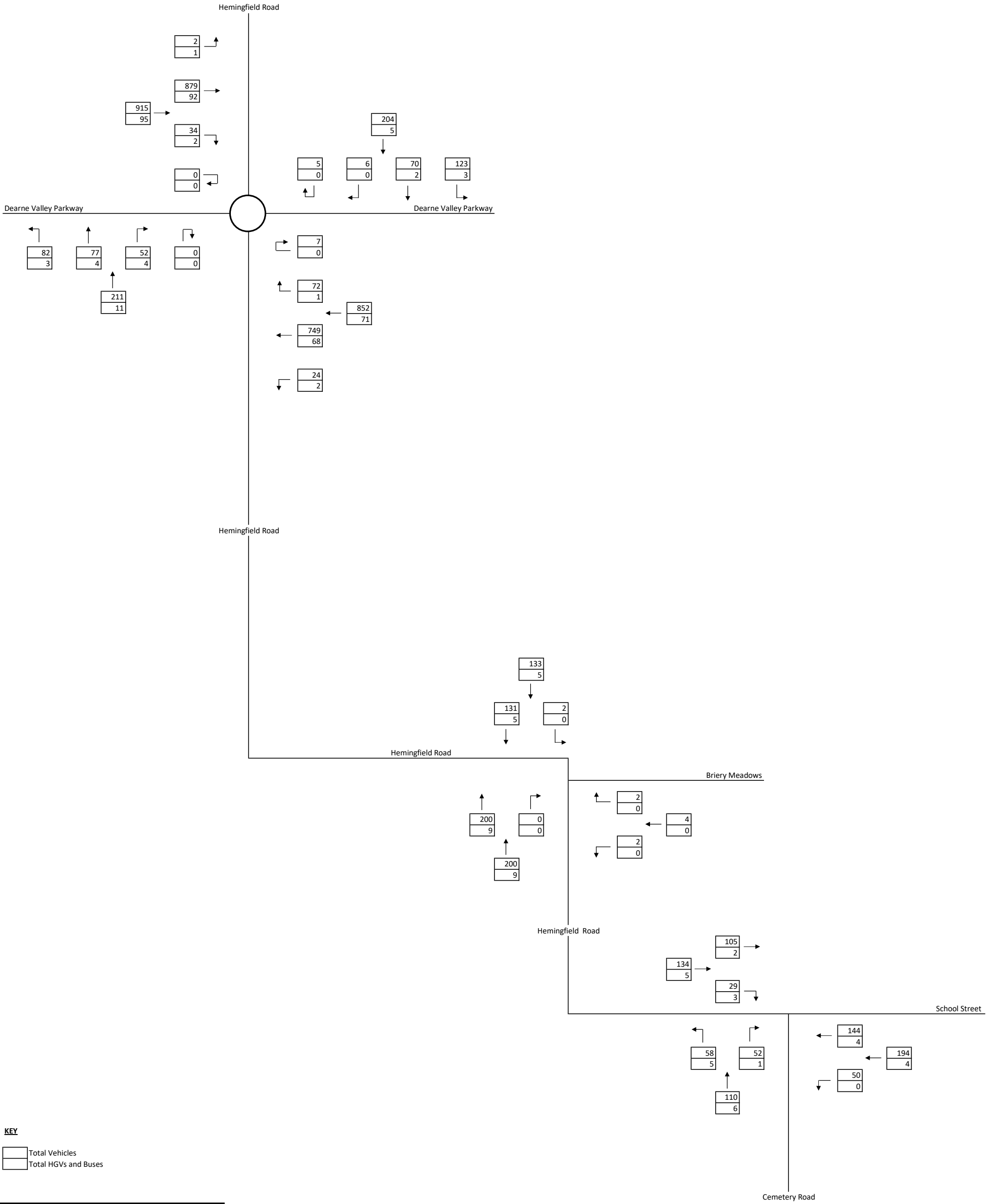
Job No: 23-160

Revision: -

Date: 21/12/2023

APPENDIX BGH 4

2023 EXISTING VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
TUESDAY 27TH JUNE 2023
AM PEAK HOUR
8:00am - 9:00am



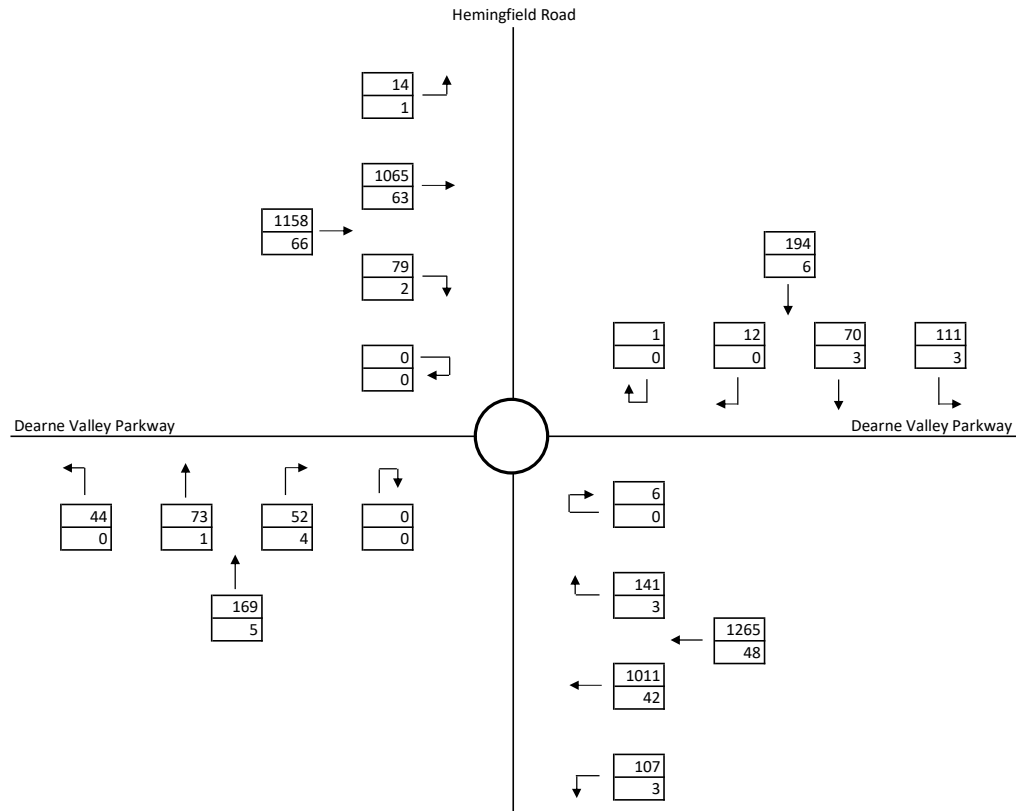
KEY

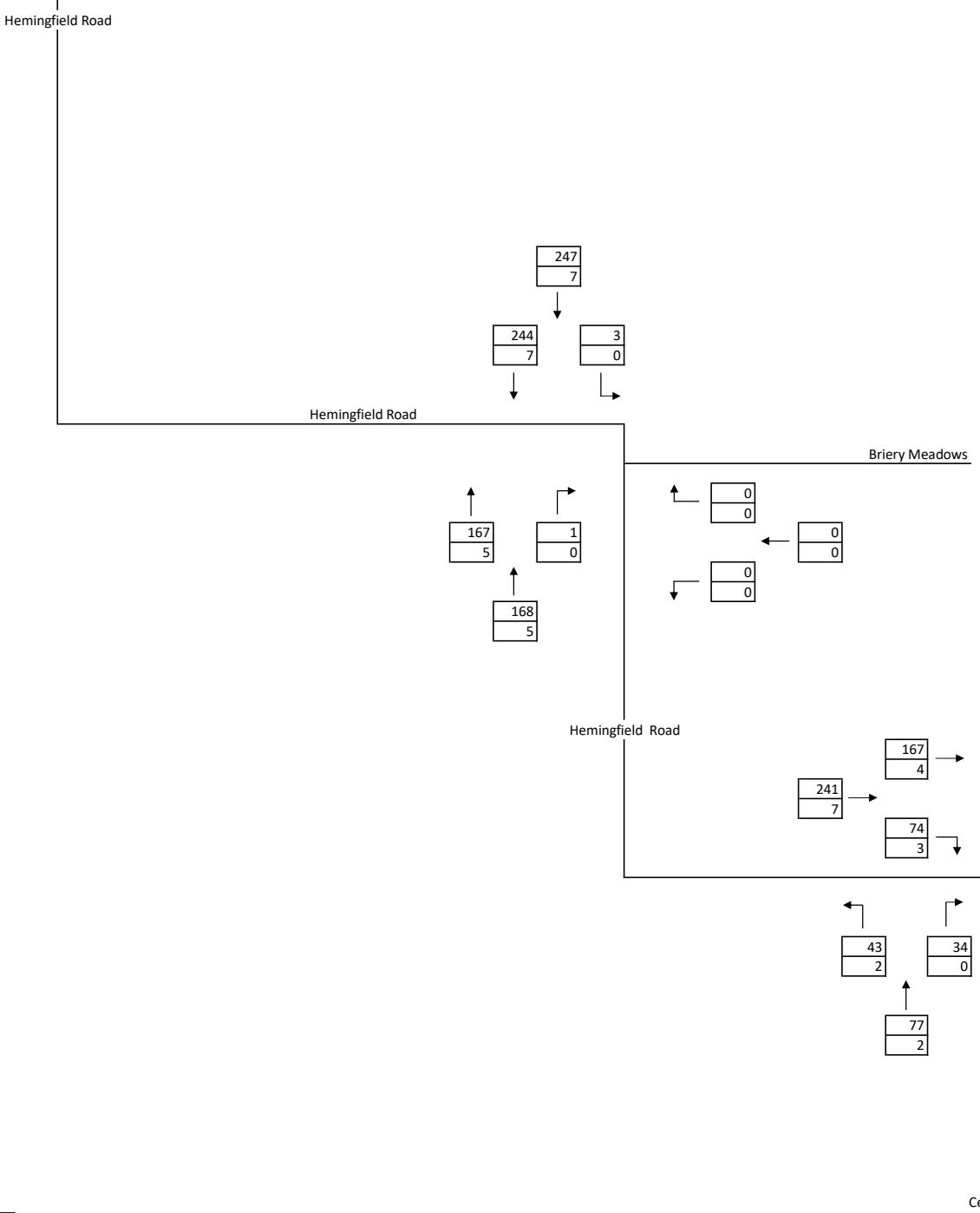
	Total Vehicles
	Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

2023 EXISTING VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
TUESDAY 27TH JUNE 2023
PM PEAK HOUR
4:00pm - 5:00pm





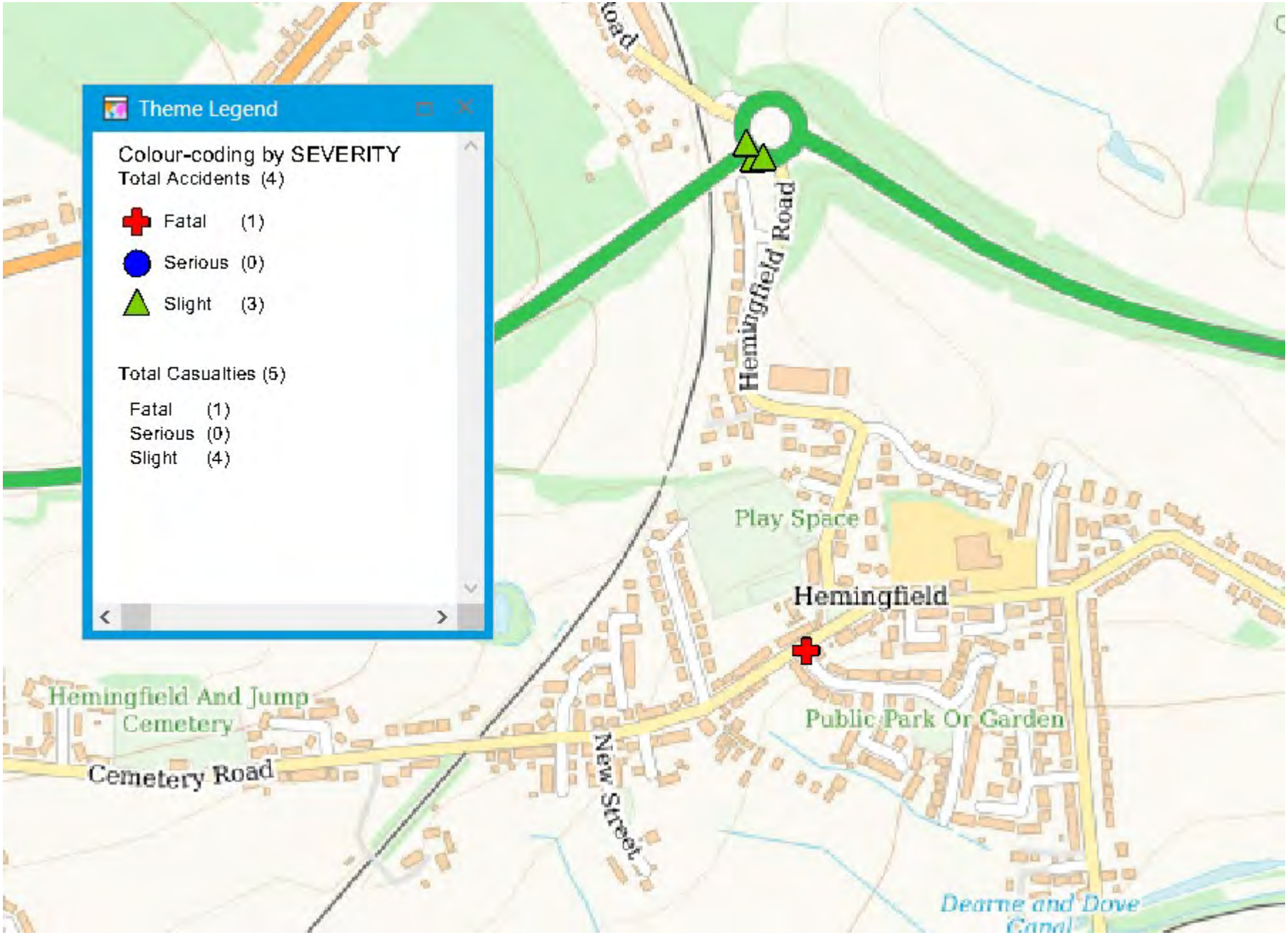
KEY

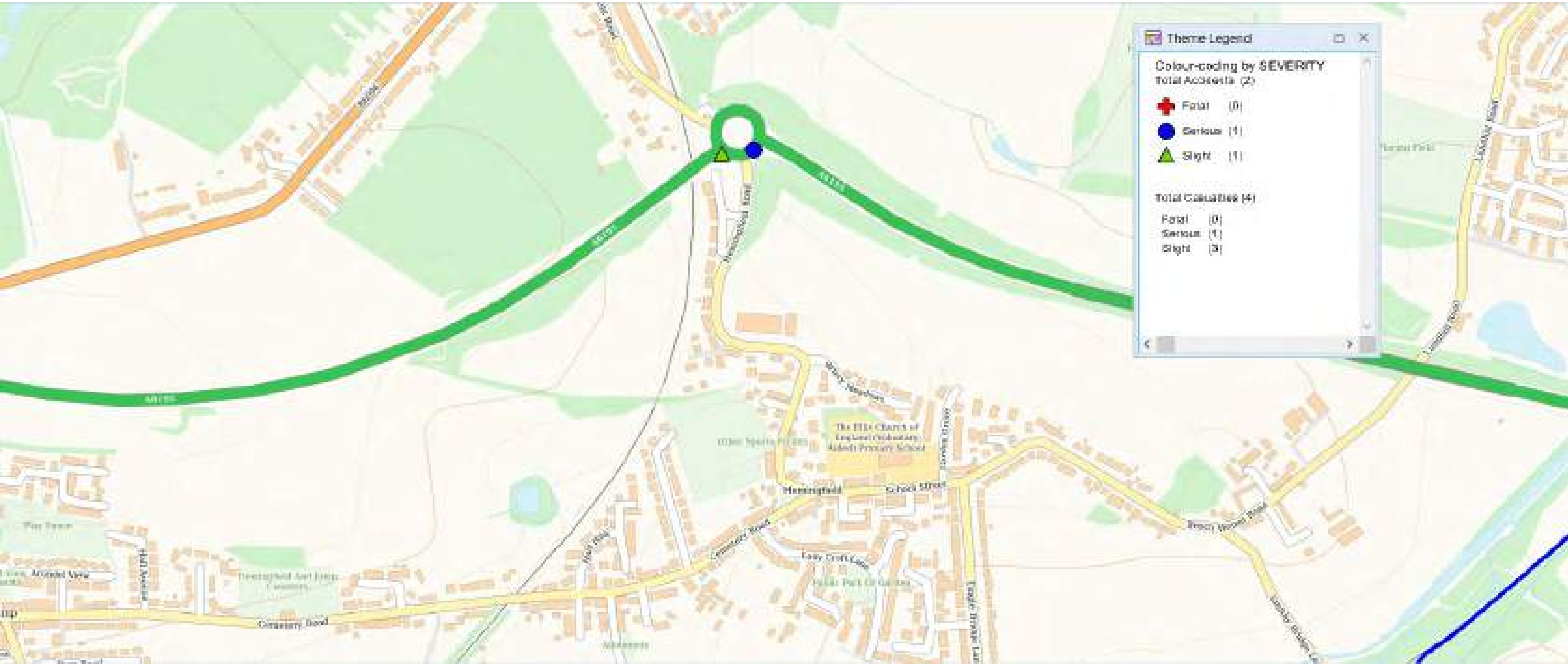
	Total Vehicles
	Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

APPENDIX BGH 5


Theme Legend
Colour-coding by SEVERITY
Total Accidents (4)
Fatal (1)
Serious (0)
Slight (3)
Total Casualties (5)
Fatal (1)
Serious (0)
Slight (4)
Hemingfield Road
Play Space
Hemingfield
Hemingfield And Jump Cemetery
Cemetery Road
New Street
Public Park Or Garden
Dearne and Dove Canal



Theme Legend
Colour-coding by SEVERITY
Total Accidents (2)
Fatal (0)
Serious (1)
Slight (1)
Total Casualties (4)
Fatal (0)
Serious (1)
Slight (3)
Hemingfield
School Street
Cemetery Road

Accidents between dates **01/01/2018** **and** **17/09/2023** (69) months

Selection:

Selected using Manual Selection

Notes:

Police Ref.	Date	Cas.	Sev.	P2W	Cycs	Peds	Ch	60+	Vis.	Manv.	Road Cond.	Time	Location
221244476	20/11/2022	1	Slight	0	0	0	0	0	Light	No turn	Dry	1335	
19818240	24/02/2019	1	Slight	1	0	0	0	0	Light	No turn	Dry	1227	DEARNE VALLEY PARKWAY (A6195) BARNSLEY AT OR NR JN WITH I
20987486	05/10/2020	2	Slight	0	0	0	0	1	Light	Left	Dry	0952	HEMINGFIELD ROAD ROUNDABOUT (A6195) BARNSLEY AT OR NR J
20941957	22/03/2020	1	Fatal	1	0	0	0	0	Light	Right	Dry	1648	CEMETERY ROAD BARNSLEY AT OR NR JN WITH LADY CROFT LAN
Column Totals		5		2	0	0	0	1					
No. of Accidents				2	0	0	0	1					

Total number of accidents listed: 4

Accidents between dates **01/09/2023** **and** **27/09/2024** (13) months

Selection:

Selected using Manual Selection

Notes:

Police Ref.	Date	Cas.	Sev.	P2W	Cycs	Peds	Ch	60+	Vis.	Manv.	Road Cond.	Time	Location
231355496	23/09/2023	1	Serious	1	0	0	0	0	Light	No turn	Dry	1255	HEMINGFIELD ROAD ROUNDABOUT (A6195) AT JUNCTION WITH DE
241464657	05/07/2024	3	Slight	0	0	0	1	0	Light	Left	Dry	1530	DEARNE VALLEY PARKWAY WESTBOUND (A6195) NEAR JUNCTION '
Column Totals		4		1	0	0	1	0					
No. of Accidents				1	0	0	1	0					

Total number of accidents listed: 2

Details of Personal Injury Accidents for Period - **01/01/2018** **to** **17/09/2023** (69) months

Selection: **Notes:**

Selected using Manual Selection

			Vehicles					Casualties		
Police Ref.	Day	Location Description	Veh No / Type / Manv / Dir / Class					Sex / Age / Sev		
	Date									
Road No.	Time									
2nd Road No.										
Grid Ref.	D/L									
	R.S.C									
	Weather									
	Speed									
	Account of Accident									
Causation Factor:										

221244476	Sunday		Veh 1	Car	Going ahead	SW	to	E	Dri	M	46 Slight
	20/11/2022		Veh 2	Car	Going ahead RH bend	E	to	NW			
R1: A 6195	1335hrs										
R2: U	Daylight:street lights present										
E 439,099	Dry										
N 402,033	Fine without high winds										
	70 mph										

Causation Factor:		**Participant:**	**Confidence:**
1st:	Illness or disability, mental or physical	Vehicle 1	Very Likely

V1 TRAVELLING FROM CORTON WOOD ON DVP A6195 TOWARDS HEMMINFIELD ROUNDABOUT. HE HAS HAD AN EPILEPTIC FIT AND TRAVELLED OVER THE ROUNDABOUT INTO ONCOMING TRAFFIC STRIKING V2 AND THEN THE BARRIER. SEEN BY AMBULANCE. CONFIRMED NO DRINK OR DRUGS AND TAKEN
TO HOSPITAL

19818240	Sunday	DEARNE VALLEY PARKWAY (A6195)	Veh 1	M/C < 125 cc	Going ahead	E	to	SW	Dri	M	49 Slight
	24/02/2019	BARNSLEY AT OR NR JN WITH	Veh 2	Car	Going ahead	E	to	SW			
R1: A 6195	1227hrs	HEMINGFIELD ROAD ROUNDABOUT									
R2: A 6195	Daylight:street lights present										
E 439,108	Dry										
N 402,014	Fine without high winds										
	70 mph										

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to judge other persons path or speed	Vehicle 1	Possible
2nd:	Failed to look properly	Vehicle 1	Possible

BOTH VEHICLES ONE AND TWO HAVE BEEN TRAVELLING UPHILL ON THE DEARNE VALLEY PARKWAY. AS EXITING THE ROUNDABOUT, THERE HAS BEEN A MINOR COLLISION WHEN VEHICLE ONE, THE MOTORCYCLE, HAS CONNECTED WITH THE FRONT CORNER OF VEHICLE TWO. THIS HAS CAUSED THE RIDE
R TO FALL FROM THE BIKE. AFTER GETTING UP FROM THE ROAD, INITIALLY HE DIDN'T THINK THAT HE HAD BEEN INJURED. HE SPOKE WITH THE DRIVER OF VEHICLE TWO, PASSED HIM HIS DETAILS AND MOBILE NUMBER AND ASKED THE DRIVER TO CONTACT HIM LATER AS HE DIDN'T HAVE ANY
THING TO WRITE THE DETAILS DOWN WITH. VEHICLE TWO HAD LEFT THE SCENE PRIOR TO OFFICER ARRIVAL. THEY LOCATED THE RIDER SAT AT THE ROADSIDE WITH HIS BIKE. HE THEN REALISED THAT HE WAS SUFFERING PAIN TO HIS RIGHT SHOULDER AND THAT HE HAD SUSTAINED A SHOULDE
R INJURY. HE HAS TRAVELLED TO BDGH WITH A FRIEND FOR ASSESSMENT.

Details of Personal Injury Accidents for Period - **01/01/2018** **to** **17/09/2023** (69) months

Selection: **Notes:**

Selected using Manual Selection

			Vehicles				Casualties		
Police Ref.	Day	Location Description	Veh No / Type / Manv / Dir / Class				Sex / Age / Sev		
	Date								
Road No. **2nd Road No.**	Time								
Grid Ref.	D/L								
	R.S.C								
	Weather								
	Speed								
	Account of Accident								
Causation Factor:									

20987486	Monday	HEMINGFIELD ROAD ROUNDABOUT (A6195) BARNSLEY AT OR NR JN WITH HEMMINGFIELD ROAD	Veh 1	Goods < 3.5t	Change lane to right	SE to SW			
	05/10/2020		Veh 2	Car	Turning left	SE to SW FSP	M	19	Slight
R1: A 6195	0952hrs		Veh 2	Car	Turning left	SE to SW Dri	M	71	Slight
R2: U	Daylight:street lights present								
E 439,119	Dry								
N 402,016	Fine without high winds								
	60 mph								

Causation Factor:		**Participant:**	**Confidence:**
1st:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely

IT WOULD APPEAR THAT THE DRIVER OF V1 HAS INCORRECTLY NEGOTIATED THE ROUNDABOUT PULLING OUT TO THE RIGHT TO GET AROUND A CAR WHICH DIDN'T SET OFF THAT WAS IN THE LANE IN FRONT OF IT, COLLIDING WITH V2 WHICH WAS IN THE LEFT LANE PROCEEDING ONTO THE ROUNDA
BOUT AND GOING IN THE SAME DIRECTION

20941957	Sunday	CEMETERY ROAD BARNSLEY AT OR NR JN WITH LADY CROFT LANE	Veh 1	Car	Turning right	SW to SE			
	22/03/2020		Veh 2	M/C > 125 cc	Going ahead	NE to SW Dri	M	25	Fatal
R1: U	1648hrs		Veh 3	Car	Parked	0 to 0			
R2: U	Daylight:street lights present		Veh 4	Car	Parked	0 to 0			
E 439,168	Dry								
N 401,448	Fine without high winds								
	30 mph								

Causation Factor:		**Participant:**	**Confidence:**
1st:	Aggressive driving	Vehicle 2	Very Likely

V1 TRAVELS ALONG CEMETRY ROAD AND AS IT TURNS RIGHT INTO LADY CROFT LANE, V2 OFF ROAD MOTORCYCLE COLLIDES WITH NEAR SIDE FRONT OF V1, RIDER IS THROWN ONTO THE ROAD SURFACE AND LIFE IS PRONOUNCED EXTINCT AT SCENE

Details of Personal Injury Accidents for Period - **01/09/2023** **to** **27/09/2024** (13) months

Selection: **Notes:**

Selected using Manual Selection

			Vehicles				Casualties		
Police Ref.	Day	Location Description	Veh No / Type / Manv / Dir / Class				Sex / Age / Sev		
	Date								
Road No. **2nd Road No.**	Time								
Grid Ref.	D/L								
	R.S.C								
	Weather								
	Speed								
	Account of Accident								

Causation Factor:

231355496	Saturday	HEMINGFIELD ROAD ROUNDABOUT (A6195) AT JUNCTION WITH DEARNE VALLEY PARKWAY WESTBOUND	Veh 1	M/C Unknown	Starting	S	to N	Dri	M	54	Serious
	23/09/2023		Veh 2	Car	Starting	SE	to NW				
R1: A 6195	1255hrs										
R2: A 6195	Daylight:street lights present										
E 439,153	Dry										
N 402,025	Fine without high winds										
	70 mph										

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to judge other persons path or speed	Vehicle 2	Very Likely

V1 MOTORBIKE HAS COME UP THE LANE 2 OF THE DEARNE VALLEY PARKWAY TOWARDS HEMMINGFIELD ROUNDABOUT. V1 HAS THEN ENTERED THE ROUNDABOUT. V2 HAS ENTERED THE ROUNDABOUT AND NOT ANTICIPATED SPEED OR DIRECTION OF V1. V1 HAS COLLIDED TO O/S DOOR OF V2.

241464657	Friday	DEARNE VALLEY PARKWAY WESTBOUND (A6195) NEAR JUNCTION WITH HEMINGFIELD	Veh 1	Car	Going ahead	E	to W	RSP	M	8	Slight
	05/07/2024		Veh 1	Car	Going ahead	E	to W	Dri	F	32	Slight
R1: A 6195	1530hrs		Veh 2	Car	Turning left	E	to W	Dri	F	30	Slight
R2: A 6195	Daylight:street lights present										
E 439,104	Dry										
N 402,016	Fine without high winds										
	70 mph										

Causation Factor:		**Participant:**	**Confidence:**
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Distraction in vehicle	Vehicle 1	Very Likely

V1 AND V2 WERE TRAVELLING ON DUAL CARRIAGEWAY AND ENTERED THE ROUNDABOUT. V1 IN LANE 1 AND V2 IN LANE 2. AS V2 HAS GONE TO EXIT THE ROUNDABOUT AT THE SECOND EXIT, REMAINING IN LANE 2 TO EXIT INTO LANE 2, V1 HAS CONTINUED AROUND THE ROUNDABOUT, HEADING
TOWARD THE 3RD EXIT, ESSENTIALLY CUTTING ACROSS THE PATH OF V2. THE NEARSIDE OF V2 HAS COLLIDED WITH THE OFFSIDE OF V1 CAUSING IT TO SPIN IN THE ROAD AND PARTIALLY EXIT THE ROUNDABOUT ONTO THE CENTRAL RESERVATION.

Accidents between dates **01/01/2018** **and** **17/09/2023** **(69) months**
Selection: **Notes:**
Selected using Manual Selection

221244476 20/11/2022 Sunday Time: 1335 Vehicles 2 Casualties 1 Slight
Easting: 439,099 Northing: 402,033
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 70

Location:
Description: V1 TRAVELLING FROM CORTON WOOD ON DVP A6195 TOWARDS HEMMINFIELD ROUNDABOUT. HE HAS HAD AN EPILEPTIC FIT AND TRAVELLED OVER THE ROUNDABOUT INTO ONCOMING TRAFFIC STRIKING V2 AND THEN THE BARRIER. SEEN BY AMBULANCE. CONFIRMED NO DRINK OR DRUGS AND TAKEN TO HOSPITAL

Vehicle Reference: 1 Car Going ahead
First point of impact: Front
Vehicle direction: SW to E Journey: Other
Age of Driver : 46 Breath test: Negative

Contributory Factors : 505

Casualty Reference: 1 Age: 46 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Car Going ahead right hand bend
First point of impact: Front
Vehicle direction: E to NW Journey: Other
Age of Driver : 80 Breath test: Not requested

Contributory Factors : 505

Accidents between dates **01/01/2018** **and** **17/09/2023** **(69) months**
Selection: **Notes:**
Selected using Manual Selection

19818240 24/02/2019 Sunday Time: 1227 Vehicles 2 Casualties 1 Slight
Easting: 439,108 Northing: 402,014
Fine without high winds Road Surface: Dry Daylight
Road Type: Dual carriageway Speed Limit: 70

Location: DEARNE VALLEY PARKWAY (A6195) BARNSLEY AT OR NR JN WITH HEMINGFIELD ROAD ROUNDABOUT (A6195)
Description: BOTH VEHICLES ONE AND TWO HAVE BEEN TRAVELLING UPHILL ON THE DEARNE VALLEY PARKWAY. AS EXITING THE ROUNDABOUT, THERE HAS BEEN A MINOR COLLISION WHEN VEHICLE ONE, THE MOTORCYCLE, HAS CONNECTED WITH THE FRONT CORNER OF VEHICLE TWO. THIS HAS CAUSED THE RIDE R TO FALL FROM THE BIKE. AFTER GETTING UP FROM THE ROAD, INITIALLY HE DIDN'T THINK THAT HE HAD BEEN INJURED. HE SPOKE WITH THE DRIVER OF VEHICLE TWO, PASSED HIM HIS DETAILS AND MOBILE NUMBER AND ASKED THE DRIVER TO CONTACT HIM LATER AS HE DIDN'T HAVE ANY THING TO WRITE THE DETAILS DOWN WITH. VEHICLE TWO HAD LEFT THE SCENE PRIOR TO OFFICER ARRIVAL. THEY LOCATED THE RIDER SAT AT THE ROADSIDE WITH HIS BIKE. HE THEN REALISED THAT HE WAS SUFFERING PAIN TO HIS RIGHT SHOULDER AND THAT HE HAD SUSTAINED A SHOULDE R INJURY. HE HAS TRAVELLED TO BDGH WITH A FRIEND FOR ASSESSMENT.

Vehicle Reference: 1 Motorcycle over 50cc and up Going ahead
First point of impact: Offside
Vehicle direction: E to SW Journey: Other
Age of Driver : 49 Breath test: Negative

Contributory Factors : 406 405

Casualty Reference: 1 Age: 49 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Car Going ahead
First point of impact: Nearside
Vehicle direction: E to SW Journey: Not known
Age of Driver : 82 Breath test: Driver not contacted

Contributory Factors : 406 405

Accidents between dates **01/01/2018** **and** **17/09/2023** **(69) months**
Selection: **Notes:**
Selected using Manual Selection

20987486 05/10/2020 Monday Time: 0952 Vehicles 2 Casualties 2 Slight
Easting: 439,119 Northing: 402,016
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 60

Location: HEMINGFIELD ROAD ROUNDABOUT (A6195) BARNSLEY AT OR NR JN WITH HEMMINGFIELD ROAD
Description: IT WOULD APPEAR THAT THE DRIVER OF V1 HAS INCORRECTLY NEGOTIATED THE ROUNDABOUT PULLING OUT TO THE RIGHT TO GET AROUND A CAR WHICH DIDN'T SET OFF THAT WAS IN THE LANE IN FRONT OF IT, COLLIDING WITH V2 WHICH WAS IN THE LEFT LANE PROCEEDING ONTO THE ROUNDA BOUT AND GOING IN THE SAME DIRECTION

Vehicle Reference: 1 Van or Goods <= 3.5 tonnes Changing lane to right
First point of impact: Offside
Vehicle direction: SE to SW Journey: Journey as part of work
Age of Driver : 38 Breath test: Negative

Contributory Factors : 602

Vehicle Reference: 2 Car Turning left
First point of impact: Nearside
Vehicle direction: SE to SW Journey: Not known
Age of Driver : 71 Breath test: Negative

Contributory Factors : 602

Casualty Reference: 1 Age: 71 Male Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Casualty Reference: 2 Age: 19 Male Passenger Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/01/2018** **and** **17/09/2023** **(69) months**
Selection: **Notes:**
Selected using Manual Selection

20941957 22/03/2020 Sunday Time: 1648 Vehicles 4 Casualties 1 Fatal
Easting: 439,168 Northing: 401,448
Fine without high winds Road Surface: Dry Daylight
Road Type: Single carriageway Speed Limit: 30

Location: CEMETERY ROAD BARNSLEY AT OR NR JN WITH LADY CROFT LANE
Description: V1 TRAVELS ALONG CEMETRY ROAD AND AS IT TURNS RIGHT INTO LADY CROFT LANE, V2 OFF ROAD MOTORCYCLE COLLIDES WITH NEAR SIDE FRONT OF V1, RIDER IS THROWN ONTO THE ROAD SURFACE AND LIFE IS PRONOUNCED EXTINCT AT SCENE

Vehicle Reference: 1 Car Turning right
First point of impact: Nearside
Vehicle direction: SW to SE Journey: Other
Age of Driver : 27 Breath test: Negative

Contributory Factors : 601

Vehicle Reference: 2 Motorcycle over 125cc and up Going ahead
First point of impact: Front
Vehicle direction: NE to SW Journey: Not known
Age of Driver : 25 Breath test: Not provided (medical)

Contributory Factors : 601

Casualty Reference: 1 Age: 25 Male Driver/rider Severity: Fatal
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 3 Car Parked
First point of impact: Back
Vehicle direction: Parked to Parked Journey: Not known
Age of Driver : Breath test: Driver not contacted

Contributory Factors : 601

Accidents between dates **01/01/2018** **and** **17/09/2023** **(69) months**
Selection: **Notes:**
Selected using Manual Selection

Vehicle Reference: 4 Car Parked
First point of impact: Back
Vehicle direction: Parked to Parked Journey: Not known
Age of Driver : Breath test: Driver not contacted

Contributory Factors : 601

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only excluding 2-wheels	0	0	2	2
2-wheeled motor vehicles	1	0	1	2
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	1	0	3	4

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	0	2	2
Passenger	0	0	1	1
Motorcycle rider	1	0	1	2
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	1	0	4	5

Accidents between dates **01/09/2023** **and** **27/09/2024** **(13) months**
Selection: **Notes:**
Selected using Manual Selection

231355496 23/09/2023 Saturday Time: 1255 Vehicles 2 Casualties 1 Serious
Easting: 439,153 Northing: 402,025
Fine without high winds Road Surface: Dry Daylight
Road Type: Roundabout Speed Limit: 70

Location: HEMINGFIELD ROAD ROUNDABOUT (A6195) AT JUNCTION WITH DEARNE VALLEY PARKWAY WESTBOUND (A6195), JUMP, BARNSLEY
Description: V1 MOTORBIKE HAS COME UP THE LANE 2 OF THE DEARNE VALLEY PARKWAY TOWARDS HEMMINGFIELD ROUNDABOUT. V1 HAS THEN ENTERED THE ROUNDABOUT. V2 HAS ENTERED THE ROUNDABOUT AND NOT ANTICIPATED SPEED OR DIRECTION OF V1. V1 HAS COLLIDED TO O/S DOOR OF V2.

Vehicle Reference: 1 Motorcycle - unknown cc Moving off
First point of impact: Front
Vehicle direction: S to N Journey: Other
Age of Driver : 54 Breath test: Not requested

Contributory Factors : 406

Casualty Reference: 1 Age: 54 Male Driver/rider Severity: Serious
Ped Dir: Ped Movement :
Ped Location:

Vehicle Reference: 2 Car Moving off
First point of impact: Offside
Vehicle direction: SE to NW Journey: Other
Age of Driver : 36 Breath test: Not requested

Contributory Factors : 406

Accidents between dates **01/09/2023** **and** **27/09/2024** **(13) months**
Selection: **Notes:**
Selected using Manual Selection

241464657 05/07/2024 Friday Time: 1530 Vehicles 2 Casualties 3 Slight
Easting: 439,104 Northing: 402,016
Fine without high winds Road Surface: Dry Daylight
Road Type: Dual carriageway Speed Limit: 70

Location: DEARNE VALLEY PARKWAY WESTBOUND (A6195) NEAR JUNCTION WITH HEMINGFIELD ROAD ROUNDABOUT (A6195), JUMP, BARNSLEY
Description: V1 AND V2 WERE TRAVELLING ON DUAL CARRIAGEWAY AND ENTERED THE ROUNDABOUT. V1 IN LANE 1 AND V2 IN LANE 2. AS V2 HAS GONE TO EXIT THE ROUNDABOUT AT THE SECOND EXIT, REMAINING IN LANE 2 TO EXIT INTO LANE 2, V1 HAS CONTINUED AROUND THE ROUNDABOUT, HEADING TOWARD THE 3RD EXIT, ESSENTIALLY CUTTING ACROSS THE PATH OF V2. THE NEARSIDE OF V2 HAS COLLIDED WITH THE OFFSIDE OF V1 CAUSING IT TO SPIN IN THE ROAD AND PARTIALLY EXIT THE ROUNDABOUT ONTO THE CENTRAL RESERVATION.

Vehicle Reference: 1 Car Going ahead
First point of impact: Offside
Vehicle direction: E to W Journey: Other
Age of Driver : 32 Breath test: Not requested

Contributory Factors : 405 509

Casualty Reference: 1 Age: 32 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Casualty Reference: 2 Age: 8 Male Passenger Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents between dates **01/09/2023** **and** **27/09/2024** **(13) months**
Selection: **Notes:**
Selected using Manual Selection

Vehicle Reference: 2 Car Turning left
First point of impact: Front
Vehicle direction: E to W Journey: Commuting to/from work
Age of Driver : 30 Breath test: Not requested

Contributory Factors : 405 509

Casualty Reference: 3 Age: 30 Female Driver/rider Severity: Slight
Ped Dir: Ped Movement :
Ped Location:

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only excluding 2-wheels	0	0	1	1
2-wheeled motor vehicles	0	1	0	1
Pedal cycles	0	0	0	0
Horses & other	0	0	0	0
Total	0	1	1	2

Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	1	2	3
Passenger	0	0	1	1
Motorcycle rider	0	1	0	1
Cyclist	0	0	0	0
Pedestrian	0	0	0	0
Other	0	0	0	0
Total	0	1	3	4

Accidents between dates **01/01/2018** **and** **17/09/2023** (69) months

Selection:

Selected using Manual Selection

Notes:

Police Ref.	Acc Class	Date	Day	Time	Grid References	Casualties Ftl	Ser	Slt	Causation Factors/ Prob	Ped L M D	Light	Weather	Road Surface	Vehicle Types
221244476	Slight	20/11/2022	Sun	1335	439099 402033	0	0	1	505V1A	0 0 0	Light	Fine without high winds	Dry	9 9
19818240	Slight	24/02/2019	Sun	1227	439108 402014	0	0	1	406V1B 405V1B	0 0 0	Light	Fine without high winds	Dry	3 9
20987486	Slight	05/10/2020	Mon	0952	439119 402016	0	0	2	602V1A	0 0 0	Light	Fine without high winds	Dry	19 9
20941957	Fatal	22/03/2020	Sun	1648	439168 401448	1	0	0	601V2A	0 0 0	Light	Fine without high winds	Dry	9 4 9 9

Column Totals

Slight : 3
Serious : 0
Fatal : 1

1 0 0

Light : 4
Dark : 0

Dry : 4
Wet : 0

Total number of accidents listed: 4

Accidents between dates **01/09/2023** **and** **27/09/2024** (13) months

Selection:

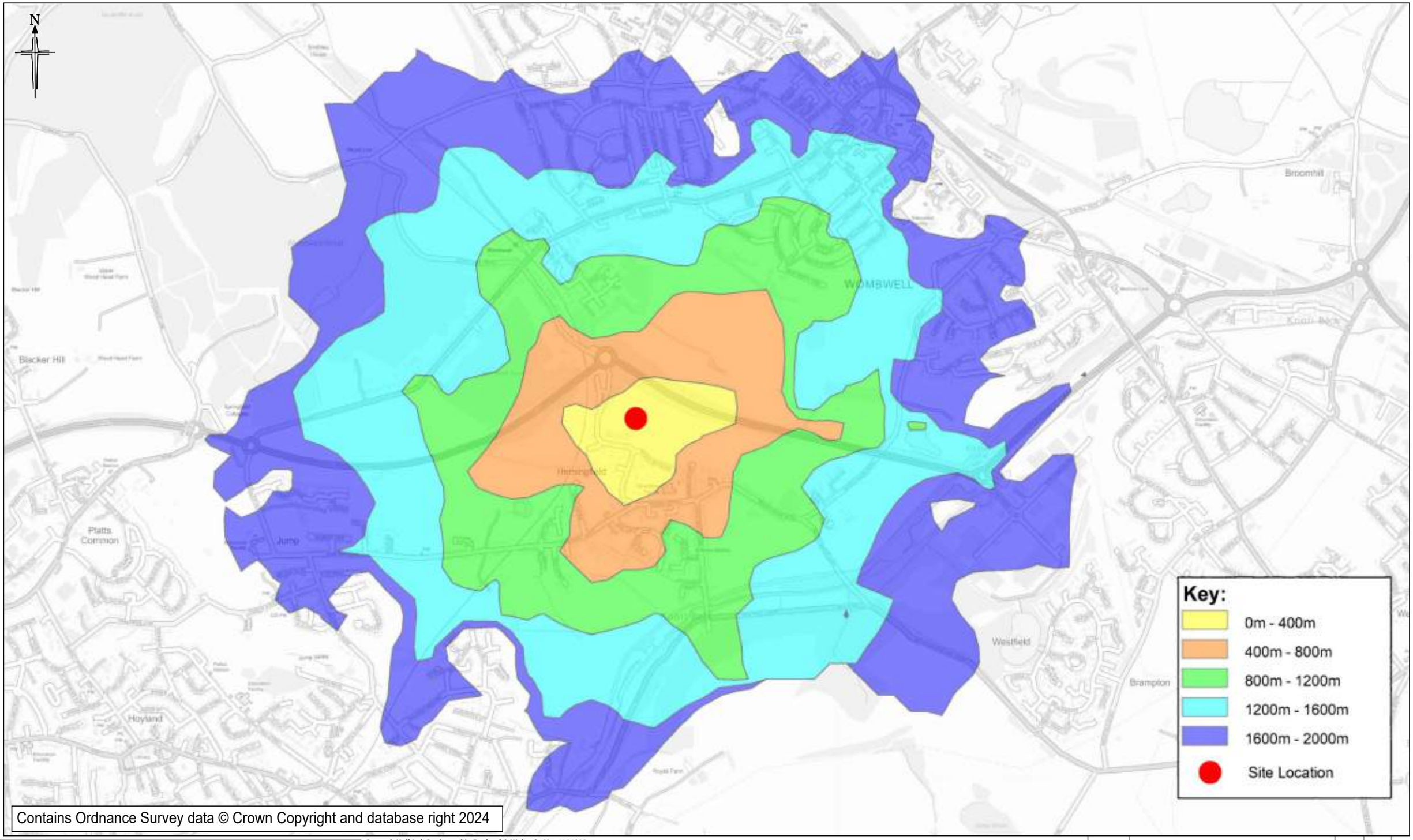
Selected using Manual Selection

Notes:

Police Ref.	Acc Class	Date	Day	Time	Grid References	Casualties Ftl	Ser	Slt	Causation Factors/ Prob	Ped L M D	Light	Weather	Road Surface	Vehicle Types
231355496	Serious	23/09/2023	Sat	1255	439153 402025	0	1	0	406V2A	0 0 0	Light	Fine without high winds	Dry	97 9
241464657	Slight	05/07/2024	Fri	1530	439104 402016	0	0	3	405V1A 509V1A	0 0 0	Light	Fine without high winds	Dry	9 9
Column Totals	**Slight :** 1					0	1	1		**Light :** 2			**Dry :** 2	
	Serious : 1									**Dark :** 0			**Wet :** 0	
	Fatal : 0													

Total number of accidents listed: 2

APPENDIX BGH 6



BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

LEEDS T 0113 246 1555
LONDON T 0203 5532336
Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB
E transportleeds@bryanghall.co.uk
W www.bryanghall.co.uk
twitter.com/Bryanghall1
Bryan G Hall

Rev:	Date:	Amendment:	DRN	CHK	APR

Title: TRACC 2KM WALKING CATCHMENT PLAN

Status: FOR PLANNING

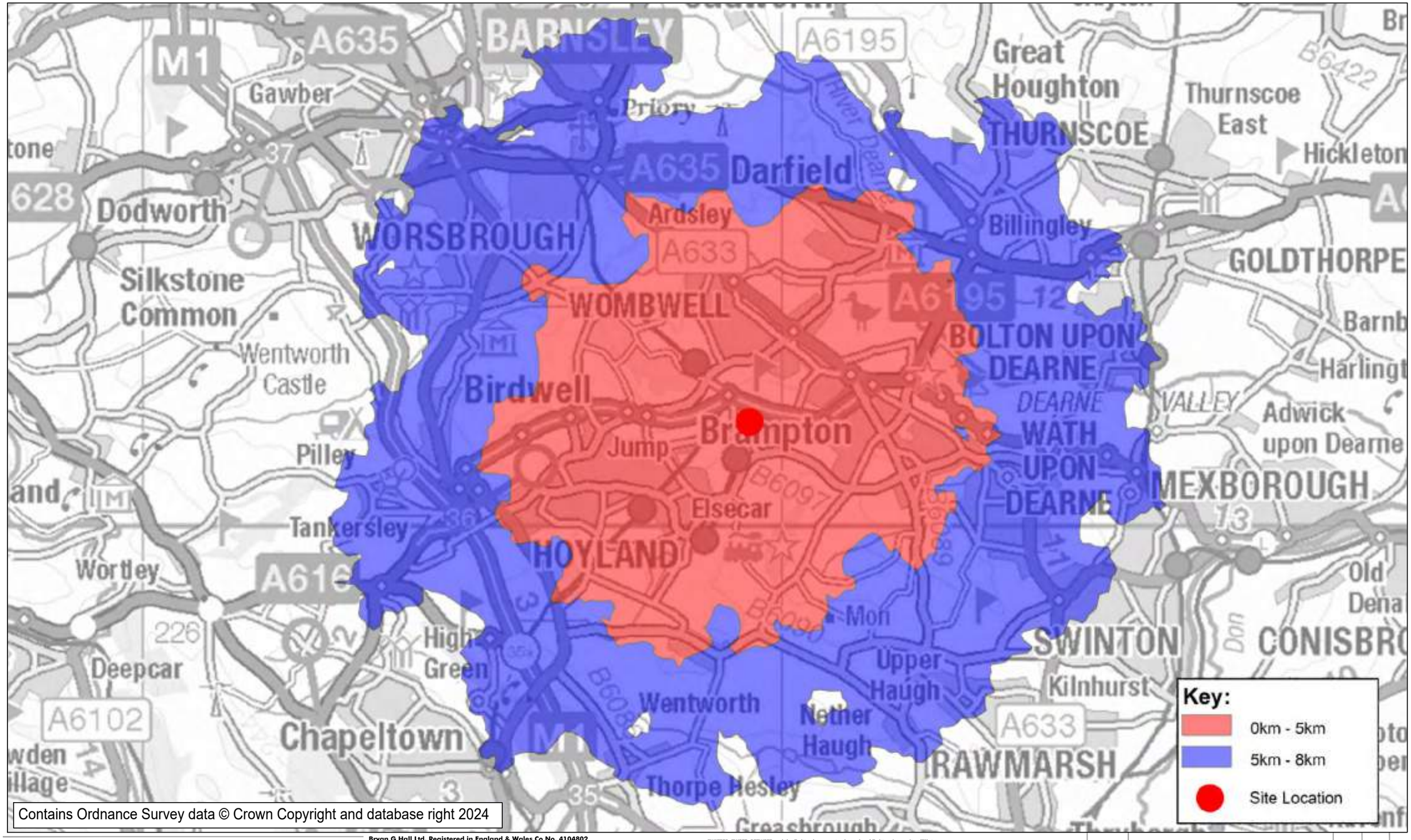
Client: PTARMIGAN LAND NORTH LTD

Project: RESIDENTIAL DEVELOPMENT HEMINGFIELD, BARNSLEY

Scale: N.T.S.
Size: A3 - 420 x 297
Drawn: PP
Chkd: RD
Appvd: MC

Drawing No: 23/160/ACC/001
Job No: 23-160
Revision: -
Date: 16/01/2024

APPENDIX BGH 7



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CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

LEEDS T 0113 246 1555
LONDON T 0203 5532336
Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB
E transportleeds@bryanghall.co.uk
W www.bryanghall.co.uk
twitter.com/Bryanghall1
Bryan G Hall

Title: TRACC 8KM CYCLING CATCHMENT PLAN

Status: FOR PLANNING

Scale: N.T.S.
Size: A3 - 420 x 297
Drawn: PP
Chkd: RD
Appvd: MC

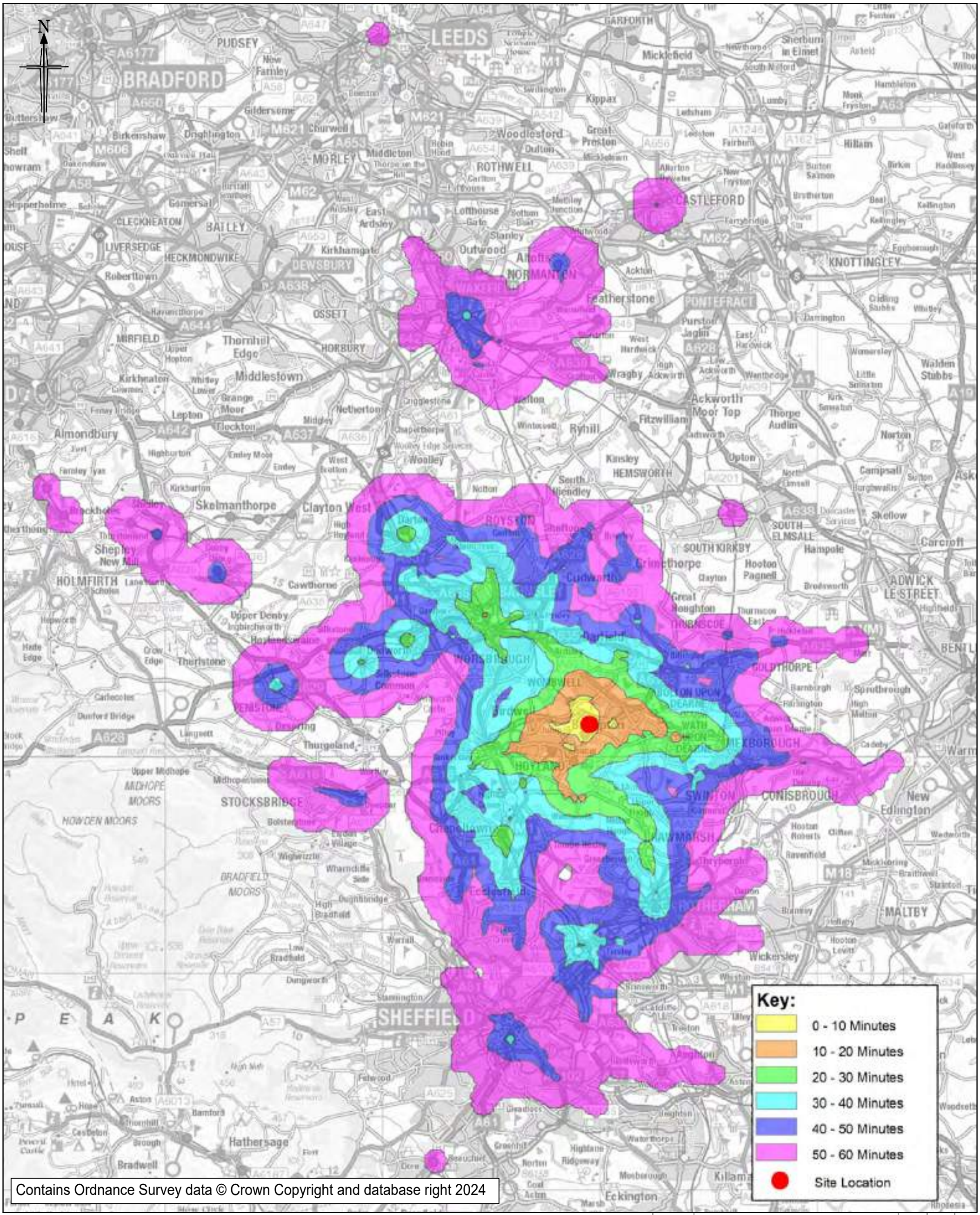
Rev:	Date:	Amendment:	DRN	CHK	APR

Client: PTARMIGAN LAND NORTH LTD

Project: RESIDENTIAL DEVELOPMENT HEMINGFIELD, BARNSLEY

Drawing No: 23/160/ACC/002
Job No: 23-160
Revision: -
Date: 16/01/2024

APPENDIX BGH 8



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CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

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LEEDS T 0113 246 1555

LONDON T 0203 5532336

Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB

E transportleeds@bryanghall.co.uk

W www.bryanghall.co.uk
twitter.com/Bryanghall1
Bryan G Hall

Rev:	Date:	Amendment:	DRN	CHK	APR

Title: TRACC 60 MINUTE PUBLIC TRANSPORT CATCHMENT AM PEAK

Client: PTARMIGAN LAND NORTH LTD

Project: RESIDENTIAL DEVELOPMENT HEMINGIFELD, BARNSLEY

Scale: N.T.S. Size: A3 - 297 x 420

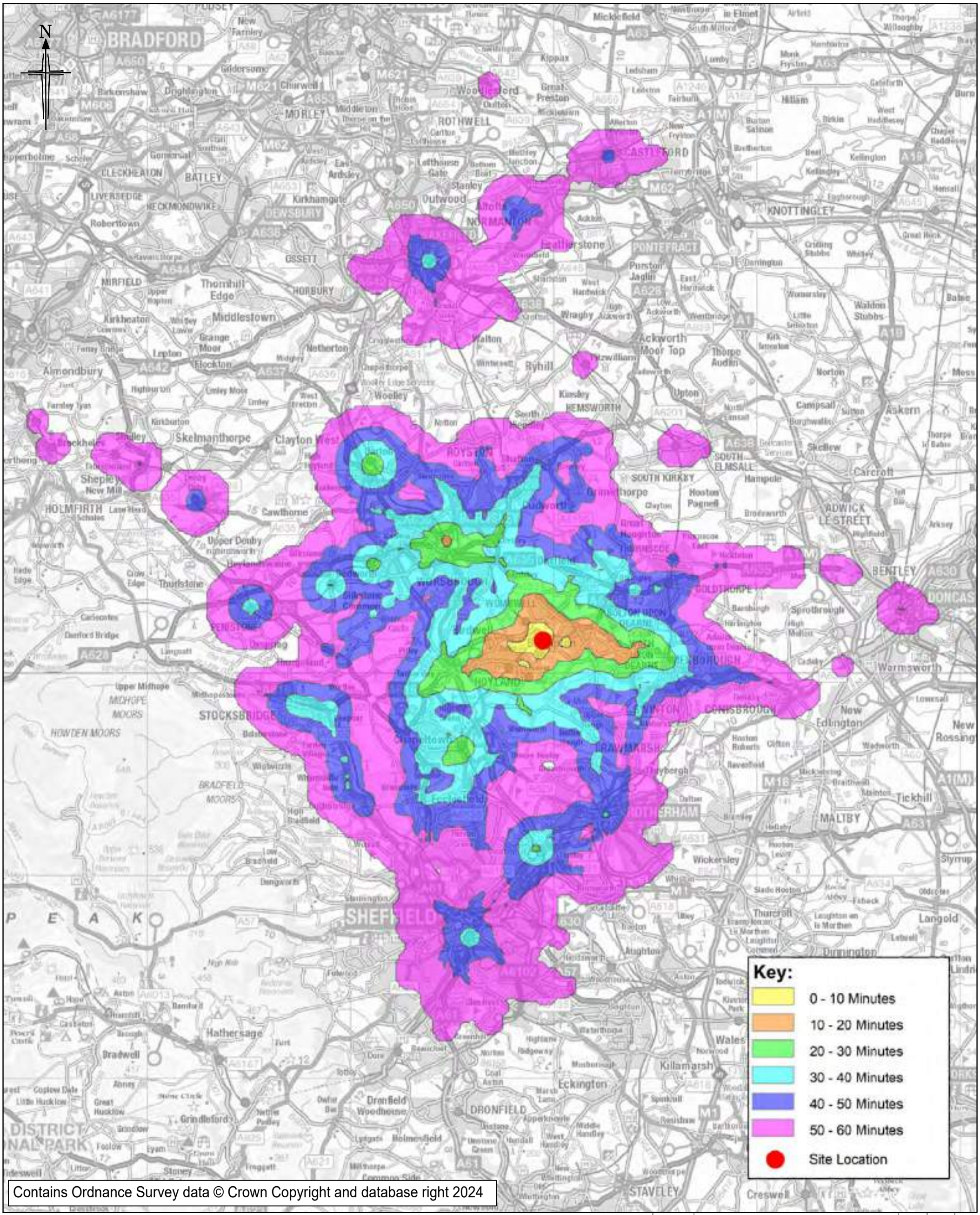
Drawn: PP Chkd: RD Appvd: MC

Drawing No: 23/160/ACC/003

Job No: 23-160

Revision: -

Date: 16/01/2024



Rev:	Date:	Amendment:	DRN	CHK	APR

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CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

LEEDS T 0113 246 1555

LONDON T 0203 5532336

Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB

E transportleeds@bryanghall.co.uk

W www.bryanghall.co.uk
twitter.com/Bryanghall1
Bryan G Hall

Title: TRACC 60 MINUTE PUBLIC TRANSPORT CATCHMENT PM PEAK

Client: PTARMIGAN LAND NORTH LTD

Project: RESIDENTIAL DEVELOPMENT HEMINGFIELD, BARNSLEY

Scale: N.T.S. Size: A3 - 297 x 420

Drawn: PP Chkd: RD Appvd: MC

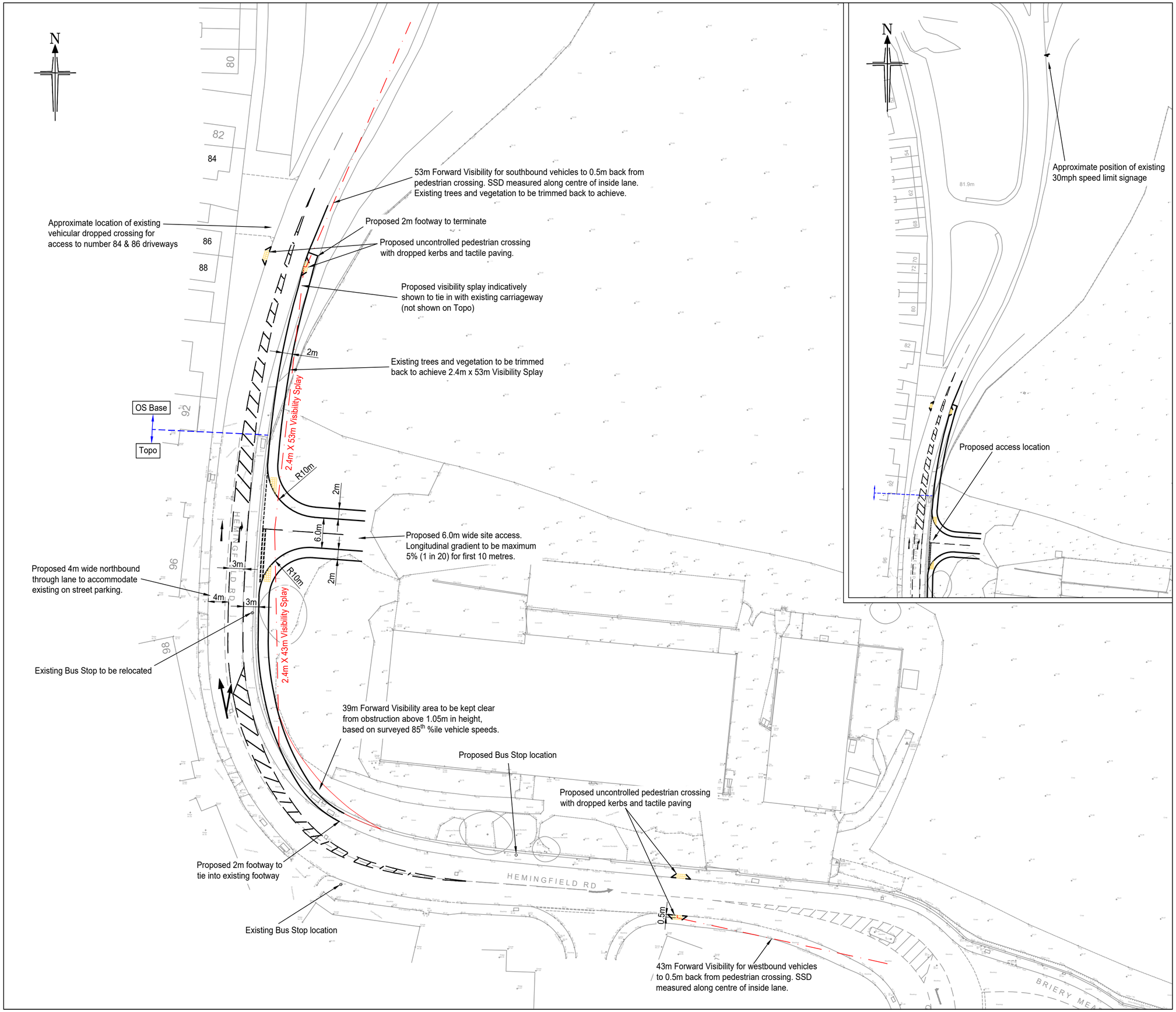
Drawing No: 23/160/ACC/004

Job No: 23-160

Revision: -

Date: 16/01/2024

APPENDIX BGH 9



Rev:	Date:	Amendment:	DRN	CHK	APR
E	21.08.24	Client name updated	RD	MC/JP	MC
D	19.07.24	Amended in response to Stage 1 RSA	RD	MC/JP	MC
C	18.01.24	Visibility amended to ATC speeds	RD	MC	MC
B	06.11.23	Title block updated following client comments	MIT	MC	SCW

BRYAN G HALL

CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

LEEDS T 0113 246 1555 LONDON T 0203 5532336

Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB

W www.bryanghall.co.uk
E transportleeds@bryanghall.co.uk

Client: Hargreaves Land Limited

Status: For Planning

Scale: 1:500
Size: A2 - 594 x 420

Drawn: MIT
Chkd: MC
Appvd: BR

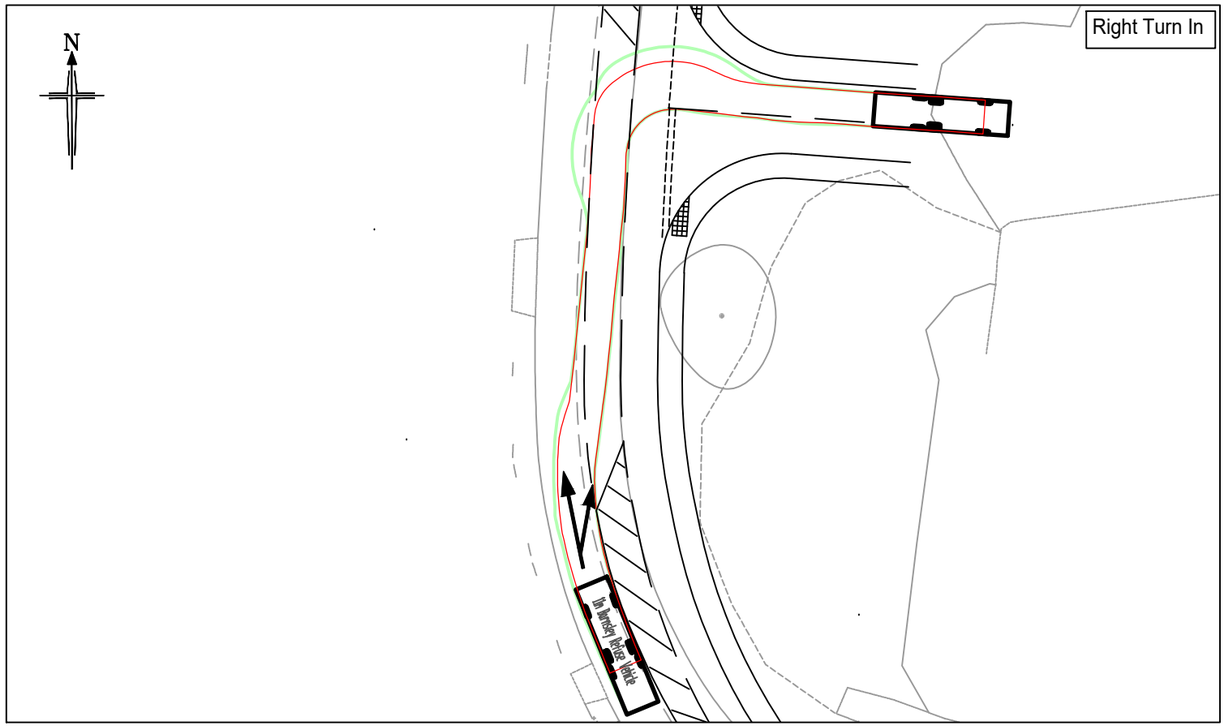
Project: Residential Development Hemingfield, Barnsley

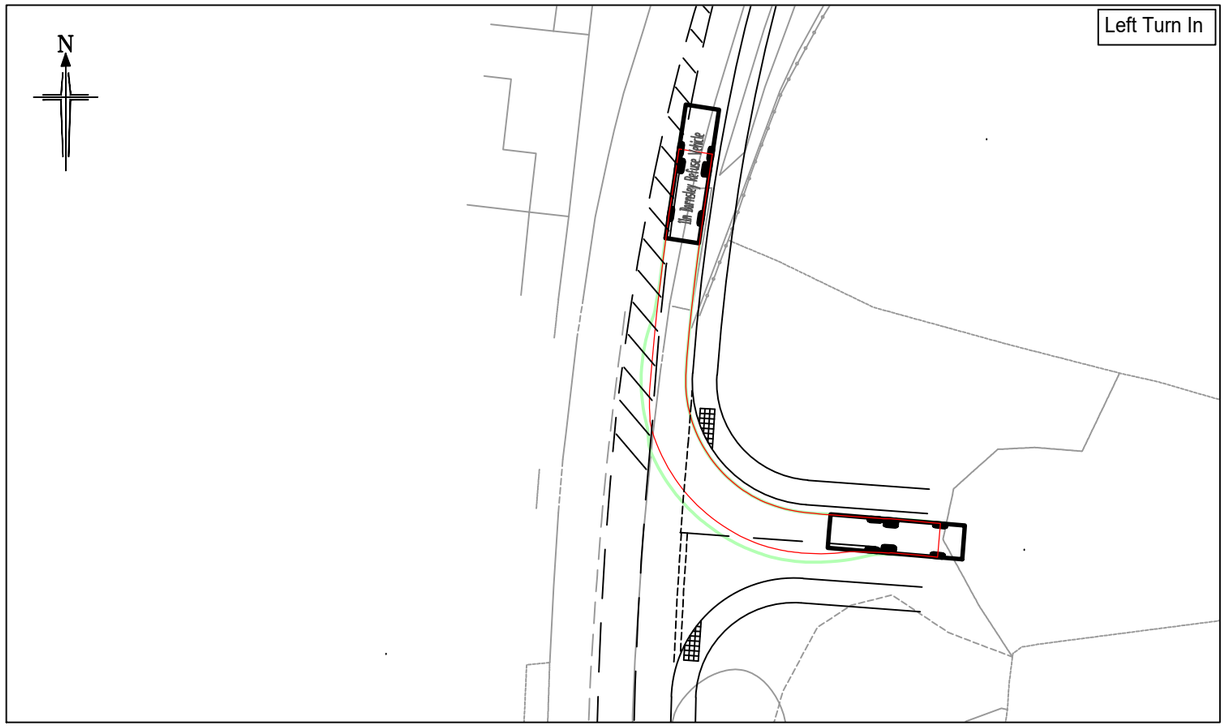
Title: Proposed Access Arrangement - Right Turn Ghost Island Junction

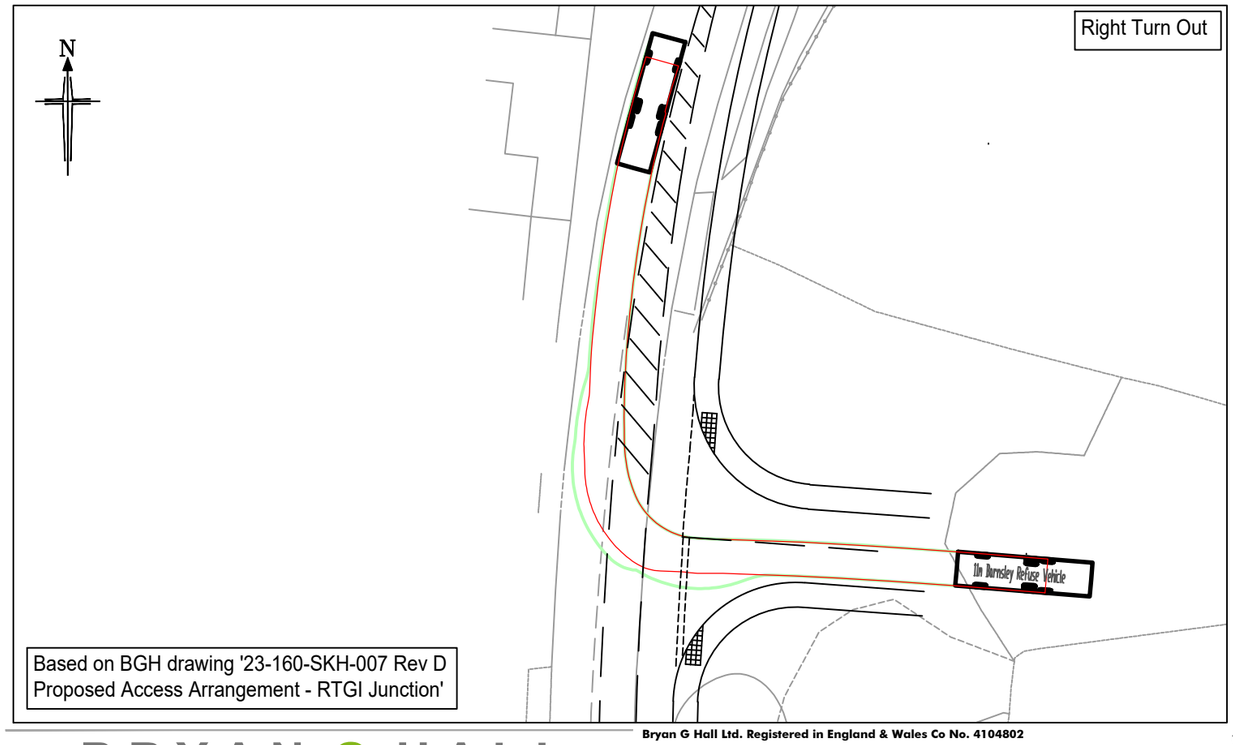
Drawing No: 23/160/SKH/007
Job No: 23-160

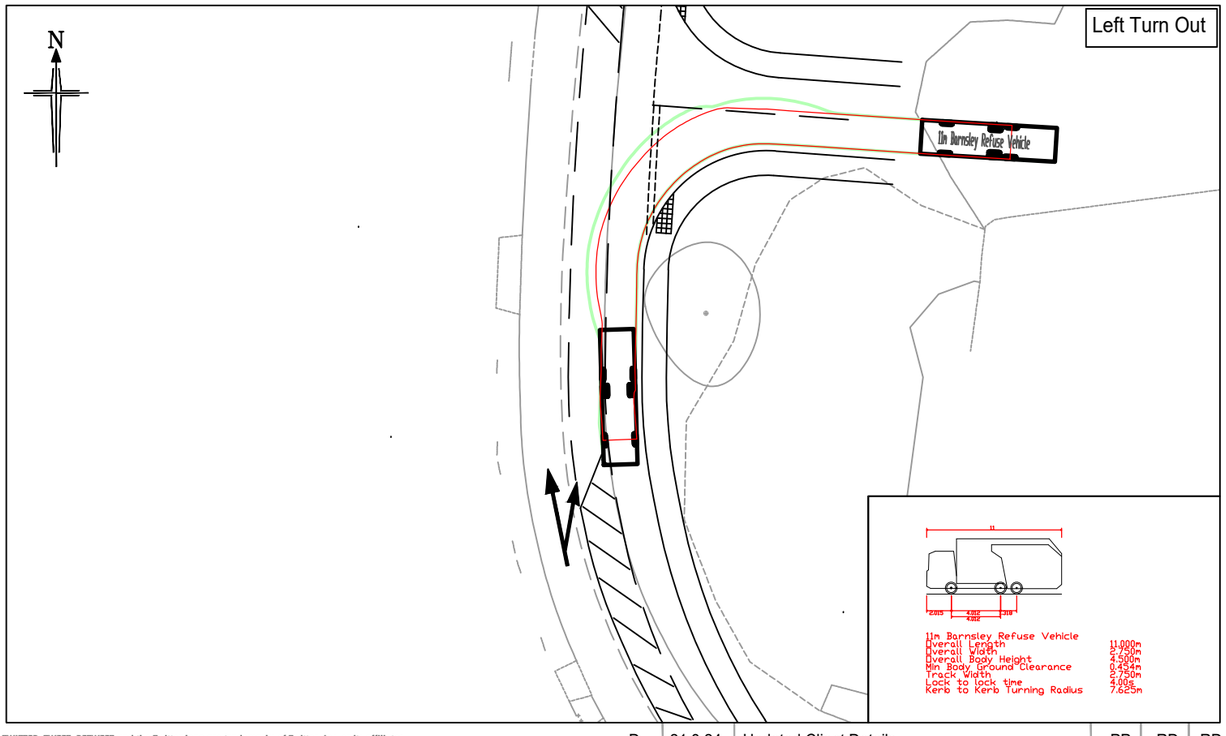
Revision: E
Date: 13.10.23

APPENDIX BGH 10









Based on BGH drawing '23-160-SKH-007 Rev D
Proposed Access Arrangement - RTGI Junction'

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

LEEDS T 0113 246 1555
LONDON T 0203 5532336
Suite E15 | Josephs Well
Hanover Walk | LEEDS | LS3 1AB
E transportleeds@bryanghall.co.uk
W www.bryanghall.co.uk
twitter.com/Bryanghall1
Bryan G Hall

Rev:	Date:	Amendment:			
D	21.8.24	Updated Client Details	PP	RD	RD

Title: SWEPT PATH ANALYSIS OF REFUSE VEHICLE USING SITE ACCESS

Status: FOR PLANNING

Client: HARGREAVES LAND LIMITED

Project: RESIDENTIAL DEVELOPMENT HEMINGFIELD, BARNSLEY

Scale: 1:500
Size: A3 - 420 x 297
Drawn: PP
Chkd: RD
Appvd: MC

Drawing No: 23/160/ATR/001
Job No: 23-160
Revision: D
Date: 16/01/2024

APPENDIX BGH 11

Calculation Reference: AUDIT-604801-231130-1139

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	2 days
	HF	HERTFORDSHIRE	1 days
	KC	KENT	1 days
	SC	SURREY	1 days
	SP	SOUTHAMPTON	1 days
	WS	WEST SUSSEX	2 days
04	EAST ANGLIA		
	CA	CAMBRIDGESHIRE	1 days
	NF	NORFOLK	5 days
06	WEST MIDLANDS		
	ST	STAFFORDSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter:	No of Dwellings
Actual Range:	152 to 250 (units:)
Range Selected by User:	150 to 250 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/15 to 15/05/23

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	4 days
Tuesday	4 days
Wednesday	3 days
Thursday	4 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	12 days
Directional ATC Count	4 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town	13
Neighbourhood Centre (PPS6 Local Centre)	3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	11
Village	3
Out of Town	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	6 days - Selected
Servicing vehicles Excluded	19 days - Selected

Secondary Filtering selection:

Use Class:

C3	16 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:
All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	4 days
5,001 to 10,000	5 days
10,001 to 15,000	5 days
15,001 to 20,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	4 days
25,001 to 50,000	2 days
50,001 to 75,000	2 days
75,001 to 100,000	3 days
125,001 to 250,000	3 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	11 days
1.6 to 2.0	2 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	12 days
No	4 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	16 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 CA-03-A-06 MIXED HOUSES CAMBRIDGESHIRE
CRAFT'S WAY
NEAR CAMBRIDGE
BAR HILL
Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 207
Survey date: FRIDAY *22/06/18* *Survey Type: MANUAL*

2 ES-03-A-03 MIXED HOUSES & FLATS EAST SUSSEX
SHEPHAM LANE
POLEGATE

Edge of Town
Residential Zone
Total No of Dwellings: 212
Survey date: MONDAY *11/07/16* *Survey Type: MANUAL*

3 HC-03-A-24 MIXED HOUSES & FLATS HAMPSHIRE
STONEHAM LANE
EASTLEIGH

Edge of Town
Residential Zone
Total No of Dwellings: 243
Survey date: WEDNESDAY *10/11/21* *Survey Type: MANUAL*

4 HC-03-A-29 MIXED HOUSES & FLATS HAMPSHIRE
CROW LANE
RINGWOOD
CROW
Edge of Town
Residential Zone
Total No of Dwellings: 195
Survey date: THURSDAY *30/06/22* *Survey Type: MANUAL*

5 HF-03-A-03 MIXED HOUSES HERTFORDSHIRE
HARE STREET ROAD
BUNTINGFORD

Edge of Town
Residential Zone
Total No of Dwellings: 160
Survey date: MONDAY *08/07/19* *Survey Type: MANUAL*

6 KC-03-A-08 MIXED HOUSES KENT
MAIDSTONE ROAD
CHARING

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 159
Survey date: TUESDAY *22/05/18* *Survey Type: MANUAL*

7 NF-03-A-13 MIXED HOUSES NORFOLK
BEAUFORT WAY
GREAT YARMOUTH
BRADWELL
Edge of Town
Residential Zone
Total No of Dwellings: 198
Survey date: TUESDAY *11/09/18* *Survey Type: DIRECTIONAL ATC COUNT*

8 NF-03-A-15 MIXED HOUSES & FLATS NORFOLK
SILFIELD ROAD
WYMONDHAM

Edge of Town
Out of Town
Total No of Dwellings: 235
Survey date: THURSDAY *20/09/18* *Survey Type: DIRECTIONAL ATC COUNT*

9 NF-03-A-32 MIXED HOUSES & FLATS NORFOLK
HUNSTANTON ROAD
HUNSTANTON

Edge of Town
Residential Zone
Total No of Dwellings: 164
Survey date: WEDNESDAY *21/09/22* *Survey Type: DIRECTIONAL ATC COUNT*

LIST OF SITES relevant to selection parameters (Cont.)

10 NF-03-A-39 MIXED HOUSES NORFOLK
HEATH DRIVE
HOLT

Edge of Town
Residential Zone
Total No of Dwellings: 212
Survey date: TUESDAY *27/09/22* *Survey Type: MANUAL*

11 NF-03-A-48 MIXED HOUSES NORFOLK
BRANDON ROAD
SWAFFHAM

Edge of Town
Residential Zone
Total No of Dwellings: 181
Survey date: THURSDAY *19/09/19* *Survey Type: DIRECTIONAL ATC COUNT*

12 SC-03-A-05 MIXED HOUSES SURREY
REIGATE ROAD
HORLEY

Edge of Town
Residential Zone
Total No of Dwellings: 207
Survey date: MONDAY *01/04/19* *Survey Type: MANUAL*

13 SP-03-A-02 MIXED HOUSES & FLATS SOUTHAMPTON
BARNFIELD WAY
NEAR SOUTHAMPTON
HEDGE END
Edge of Town
Out of Town
Total No of Dwellings: 250
Survey date: TUESDAY *12/10/21* *Survey Type: MANUAL*

14 ST-03-A-07 DETACHED & SEMI-DETACHED STAFFORDSHIRE
BEACONSIDE
STAFFORD
MARSTON GATE
Edge of Town
Residential Zone
Total No of Dwellings: 248
Survey date: WEDNESDAY *22/11/17* *Survey Type: MANUAL*

15 WS-03-A-08 MIXED HOUSES WEST SUSSEX
ROUNDSTONE LANE
ANGMERING

Edge of Town
Residential Zone
Total No of Dwellings: 180
Survey date: THURSDAY *19/04/18* *Survey Type: MANUAL*

16 WS-03-A-18 MIXED HOUSES & FLATS WEST SUSSEX
LONDON ROAD
HASSOCKS

Neighbourhood Centre (PPS6 Local Centre)
Village
Total No of Dwellings: 156
Survey date: MONDAY *15/05/23* *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
SF-03-A-09	24/06/21	During COVID-19
WS-03-A-12	16/06/21	During COVID-19
WS-03-A-13	23/06/21	During COVID-19

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
TOTAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	16	200	0.090	16	200	0.285	16	200	0.375
08:00 - 09:00	16	200	0.129	16	200	0.366	16	200	0.495
09:00 - 10:00	16	200	0.147	16	200	0.188	16	200	0.335
10:00 - 11:00	16	200	0.140	16	200	0.159	16	200	0.299
11:00 - 12:00	16	200	0.148	16	200	0.159	16	200	0.307
12:00 - 13:00	16	200	0.155	16	200	0.164	16	200	0.319
13:00 - 14:00	16	200	0.152	16	200	0.152	16	200	0.304
14:00 - 15:00	16	200	0.168	16	200	0.189	16	200	0.357
15:00 - 16:00	16	200	0.239	16	200	0.173	16	200	0.412
16:00 - 17:00	16	200	0.257	16	200	0.163	16	200	0.420
17:00 - 18:00	16	200	0.323	16	200	0.143	16	200	0.466
18:00 - 19:00	16	200	0.273	16	200	0.140	16	200	0.413
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.221			2.281			4.502

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

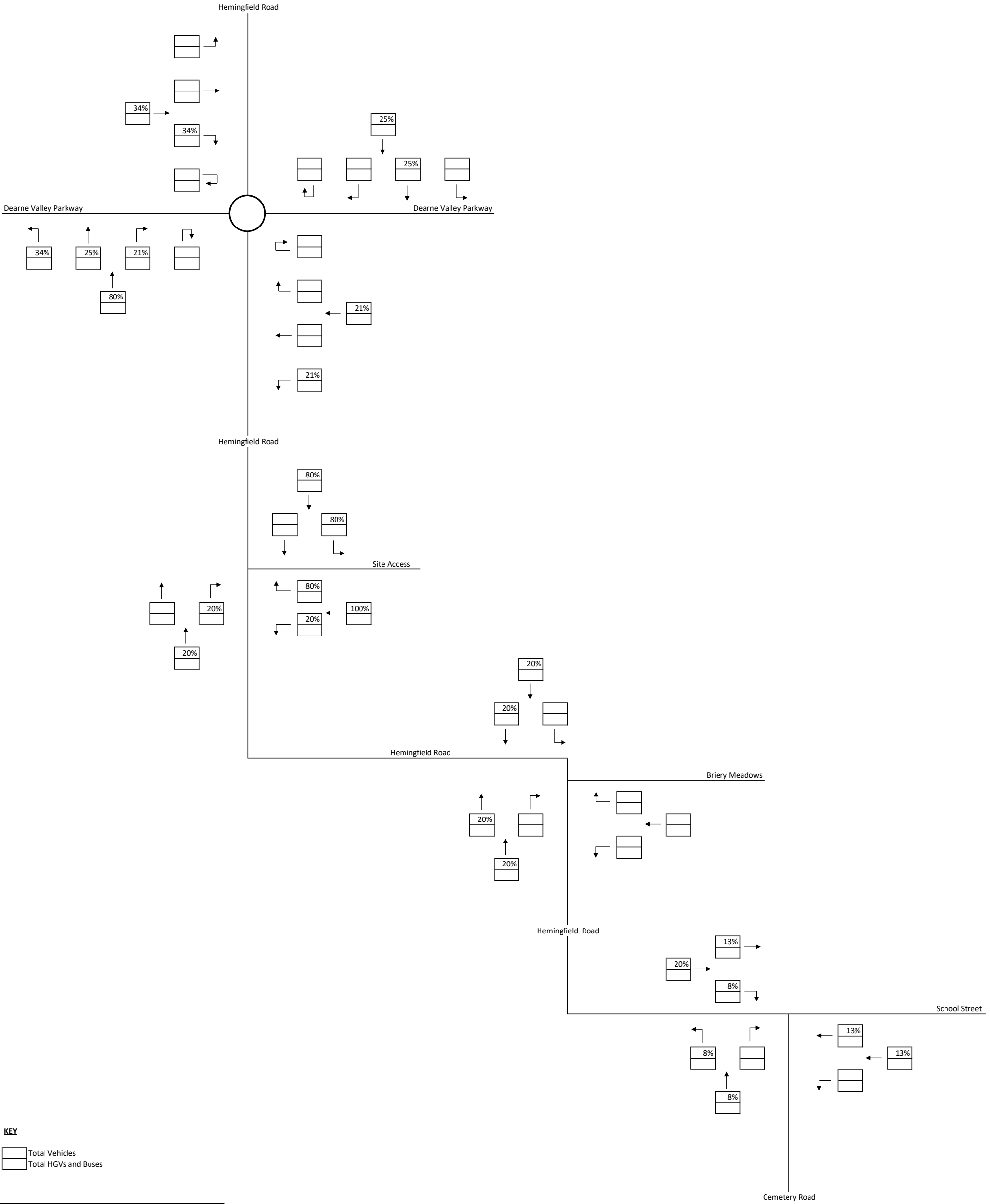
Trip rate parameter range selected:	152 - 250 (units:)
Survey date date range:	01/01/15 - 15/05/23
Number of weekdays (Monday-Friday):	23
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	5
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

APPENDIX BGH 12

TRIP DISTRIBUTION

PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY



KEY

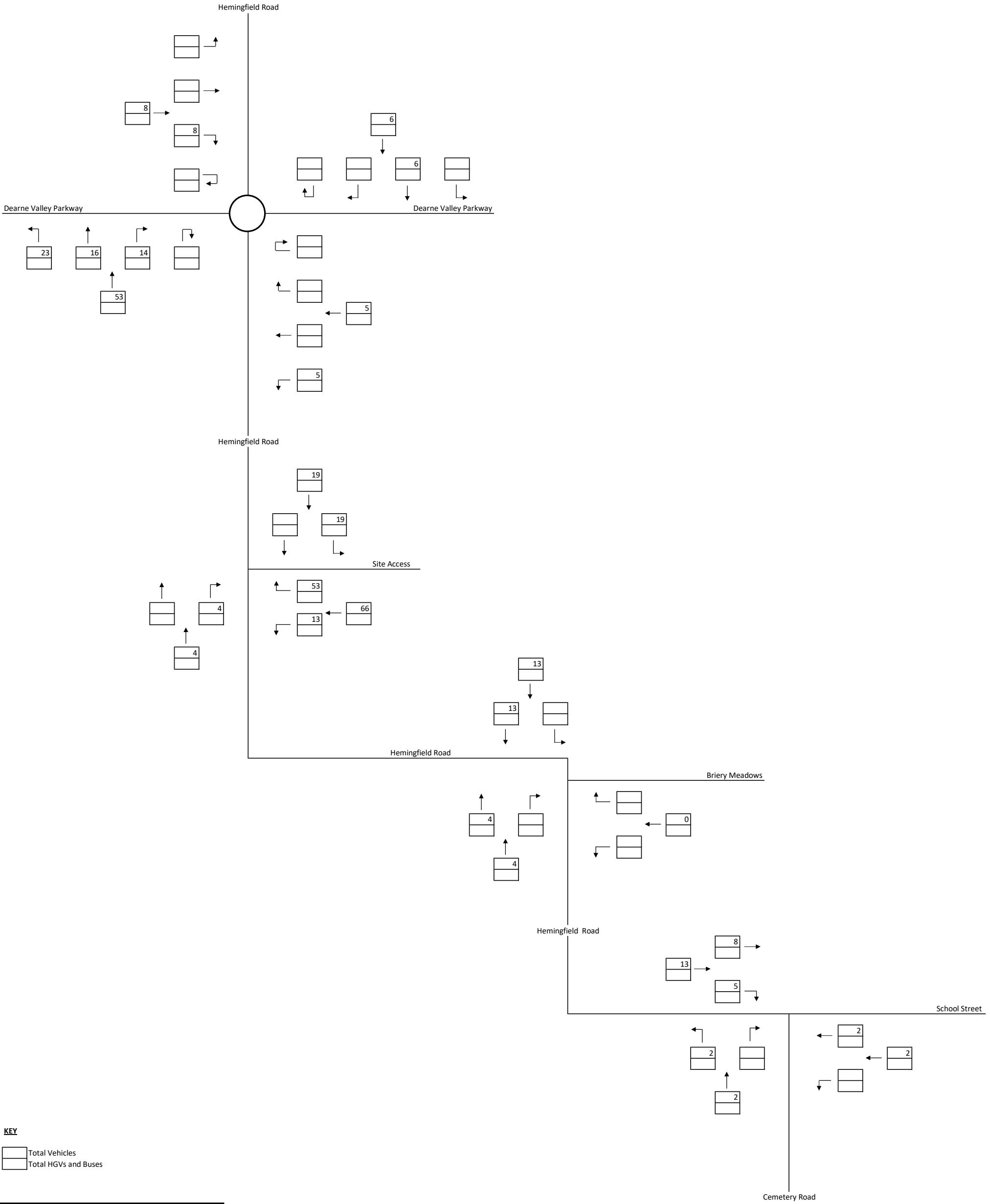
Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

APPENDIX BGH 13

DEVELOPMENT GENERATED VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
AM PEAK HOUR



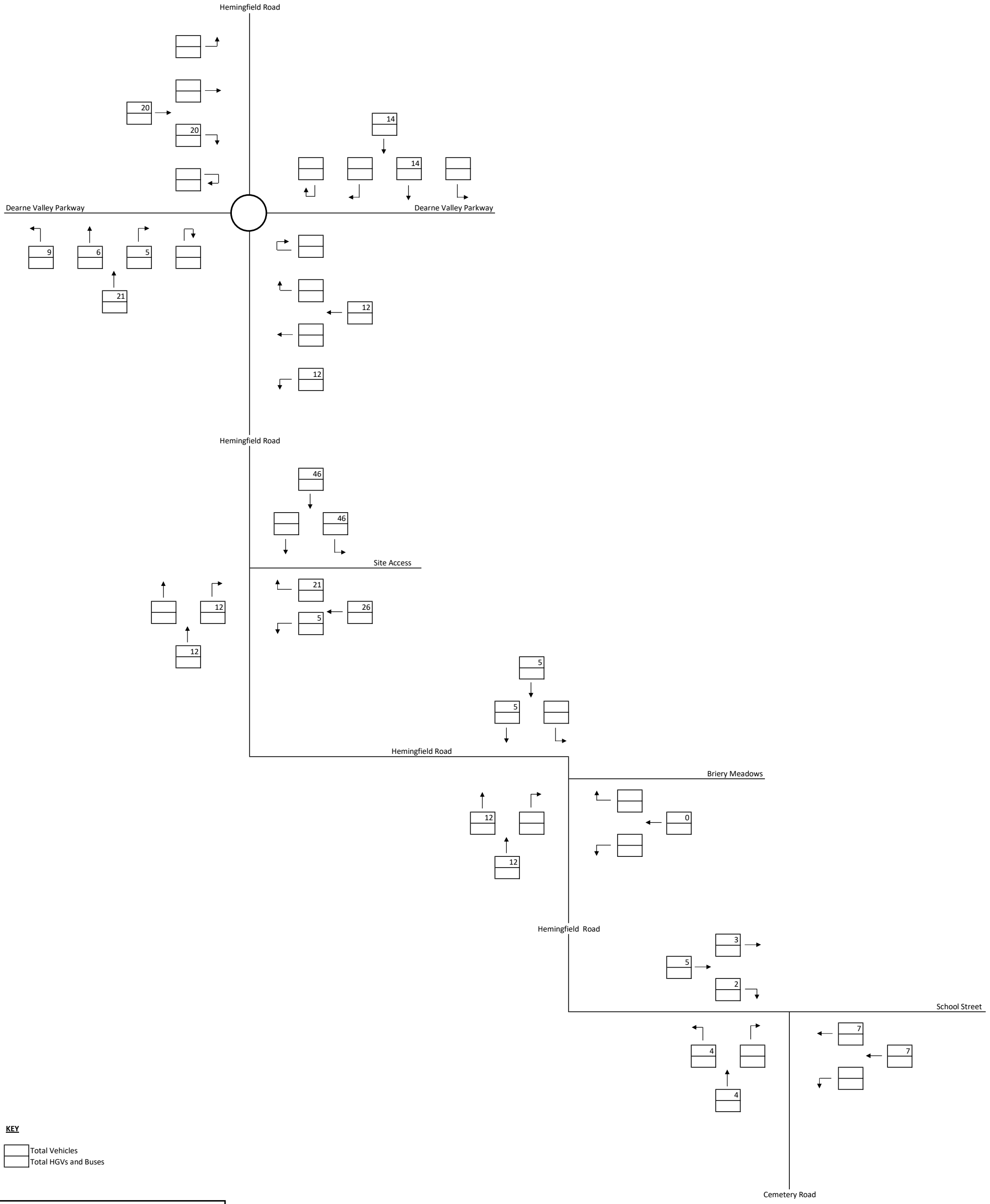
KEY

Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

DEVELOPMENT GENERATED VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
PM PEAK HOUR



KEY

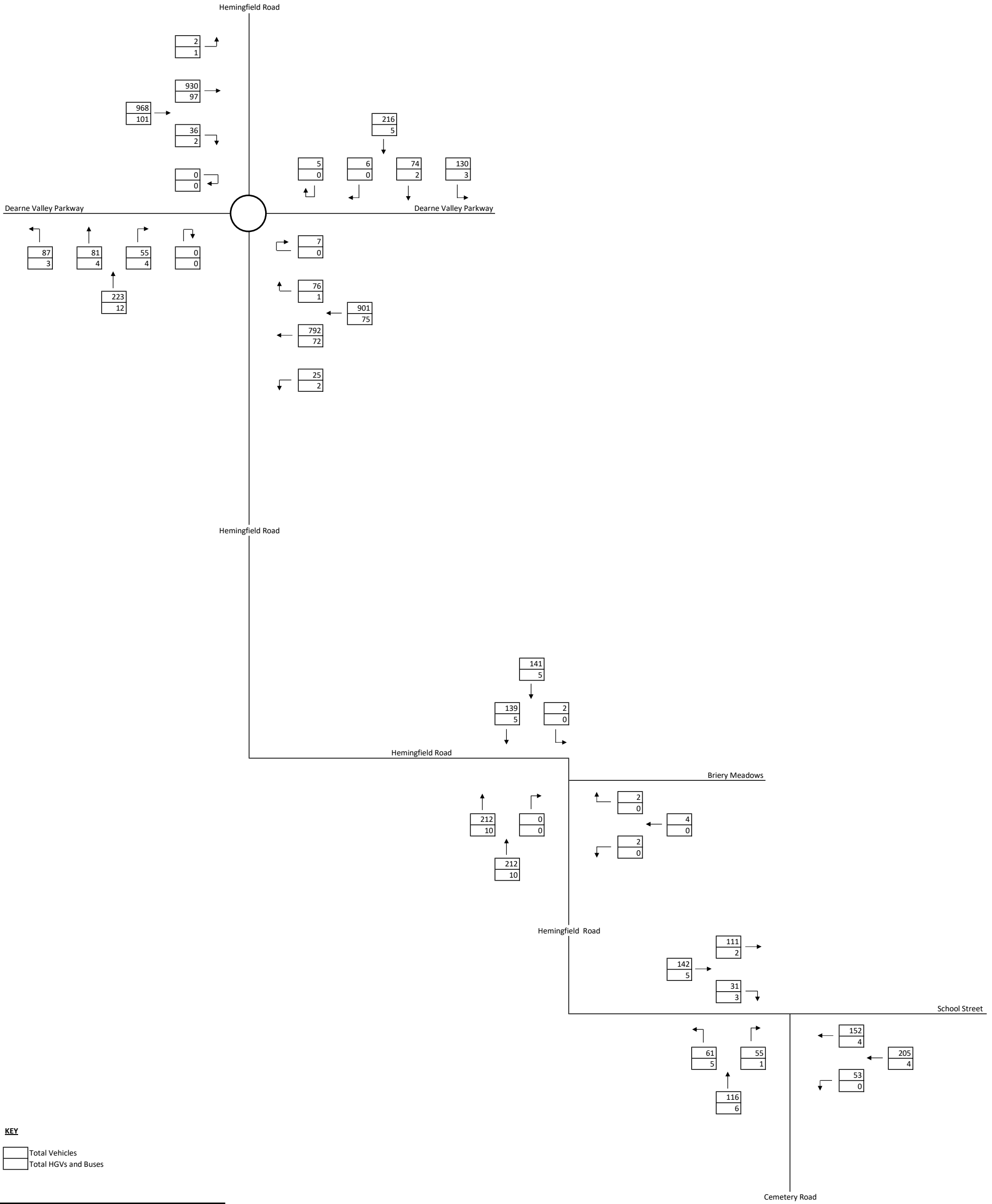
Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

APPENDIX BGH 14

2029 GROWTHED VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
8:00am - 9:00am
AM PEAK HOUR



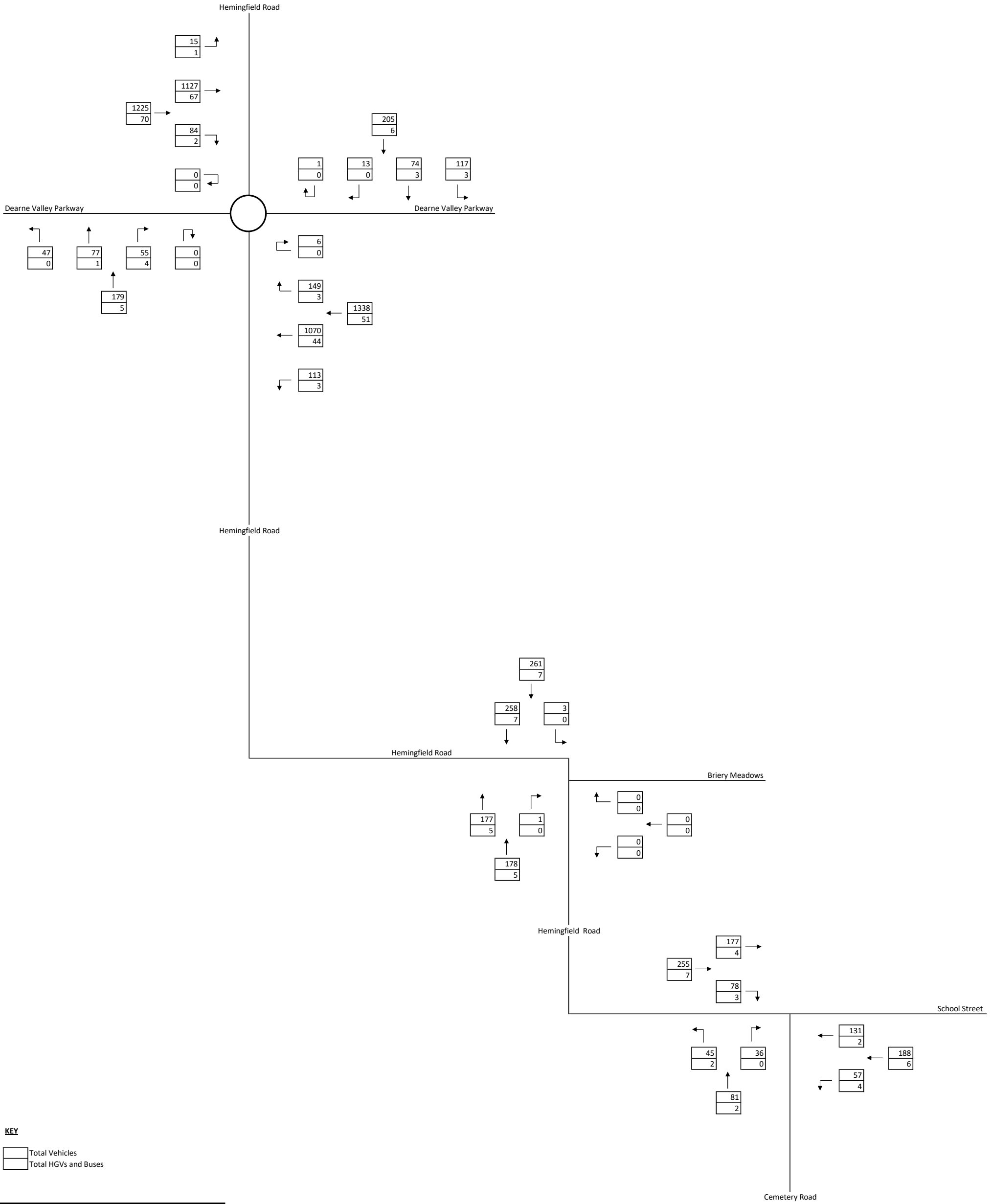
KEY

Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

2029 GROWTHED VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
4:00pm - 5:00pm
PM PEAK HOUR



KEY

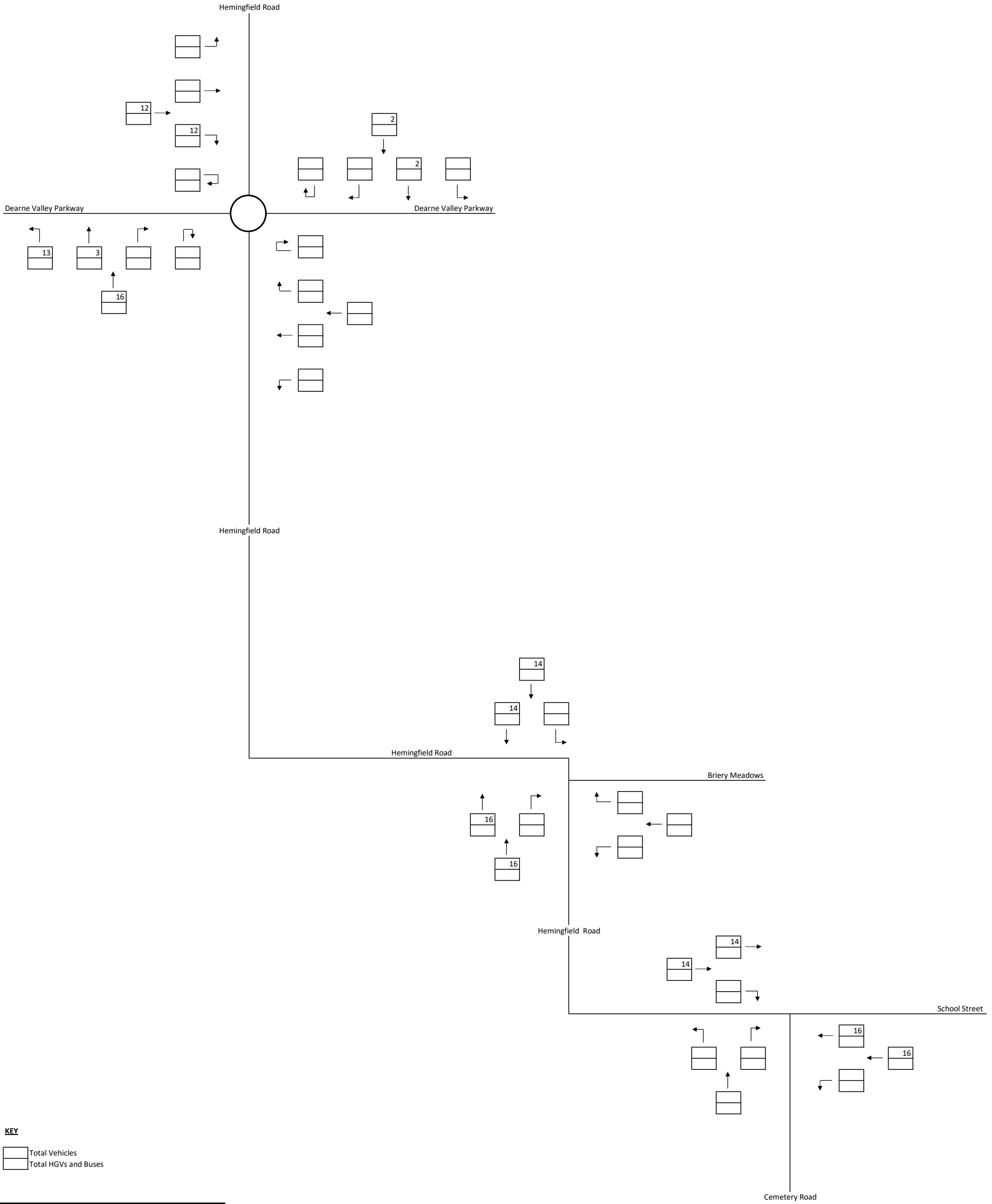
	Total Vehicles
	Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

APPENDIX BGH 15

COMMITED DEVELOPMENT FLOWS - FORMER WOMBWELL SCHOOL SITE (APPLICATION REF: 2019/0089)
PROPOSED, RESIDENTIAL DEVELOPMENT HEMINGFIELD, BARNSLEY
AM PEAK
FROM AECOM TRANSPORT ASSESSMENT DATED 11/01/2019 - APPENDIX D, DIAGRAM 12



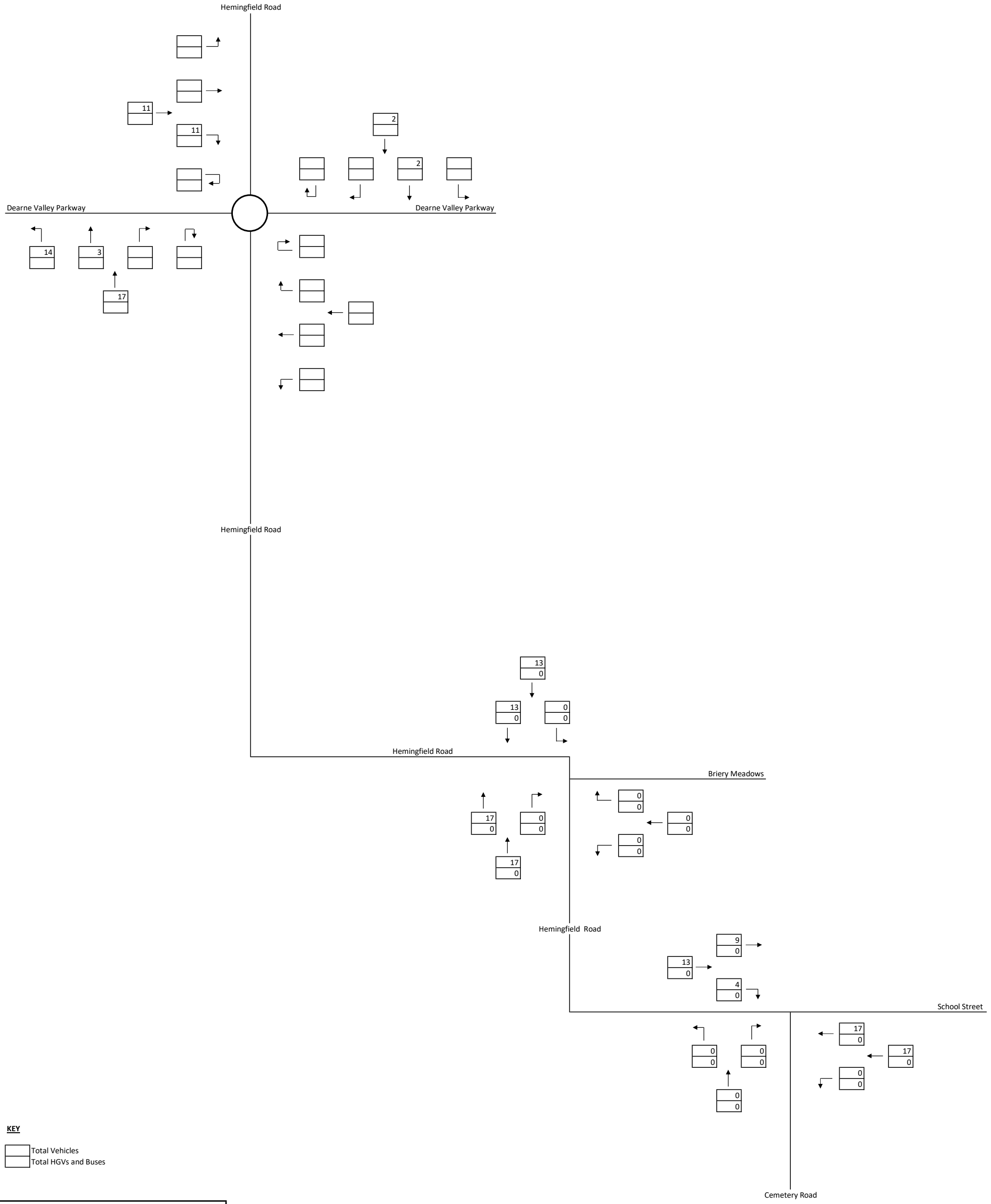
KEY

Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

COMMITED DEVELOPMENT FLOWS - FORMER WOMBWELL SCHOOL SITE (APPLICATION REF: 2019/0089)
PROPOSED, RESIDENTIAL DEVELOPMENT HEMINGFIELD, BARNSLEY
PM PEAK
FROM AECOM TRANSPORT ASSESSMENT DATED 11/01/2019 - APPENDIX D, DIAGRAM 12

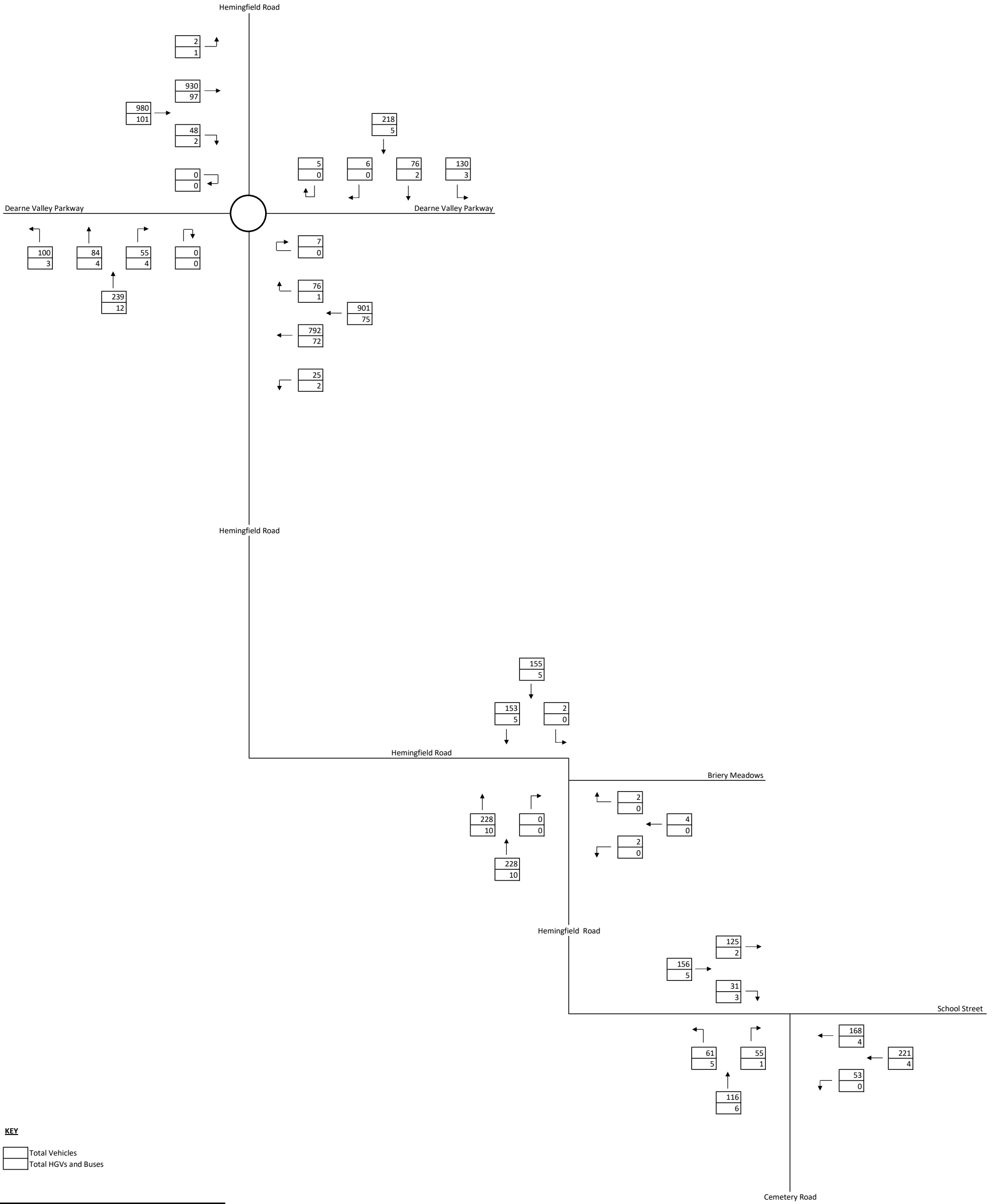


BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

APPENDIX BGH 16

2029 BASE VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
8:00am - 9:00am
AM PEAK HOUR



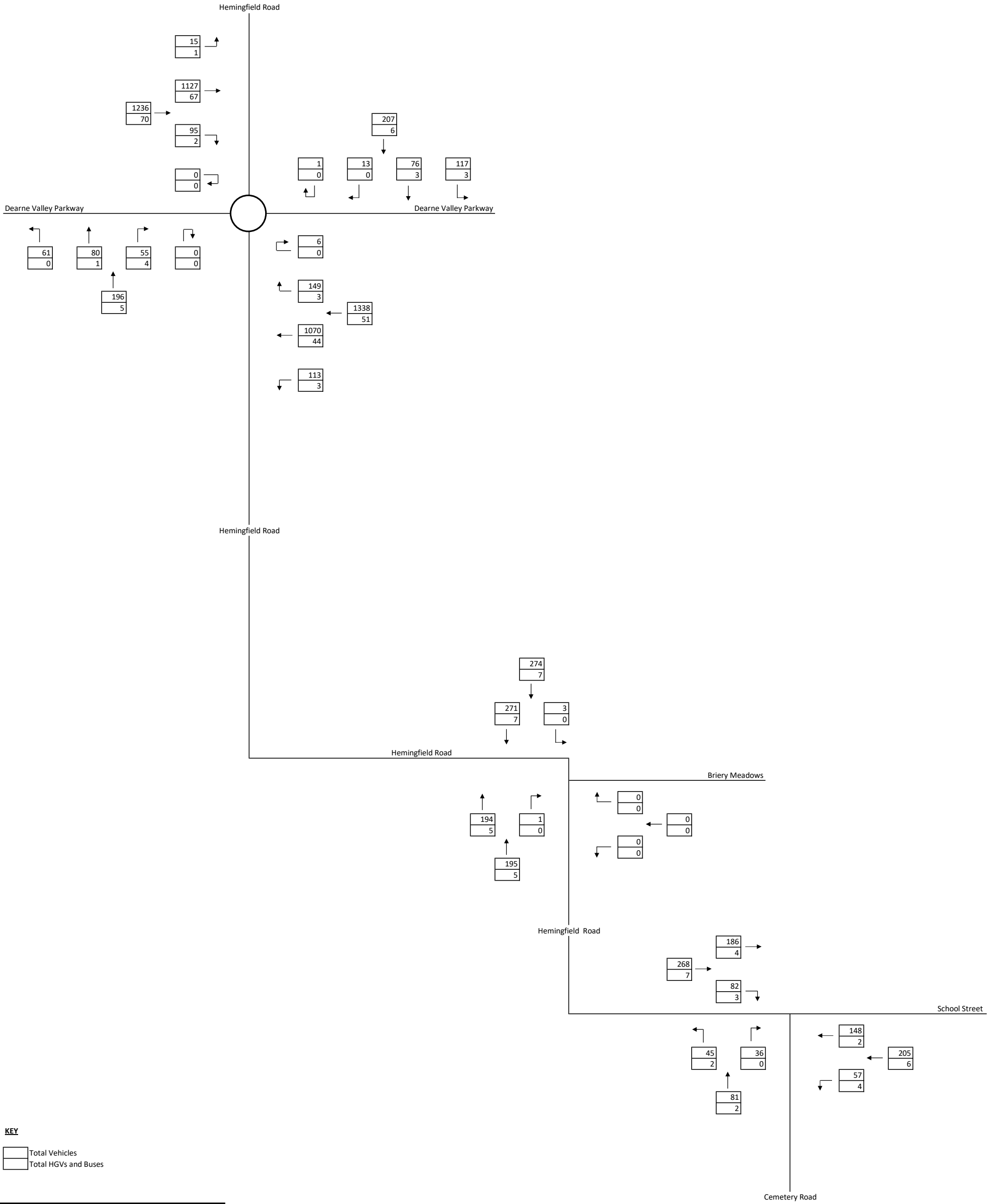
KEY

Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

2029 BASE VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
4:00pm - 5:00pm
PM PEAK HOUR



KEY

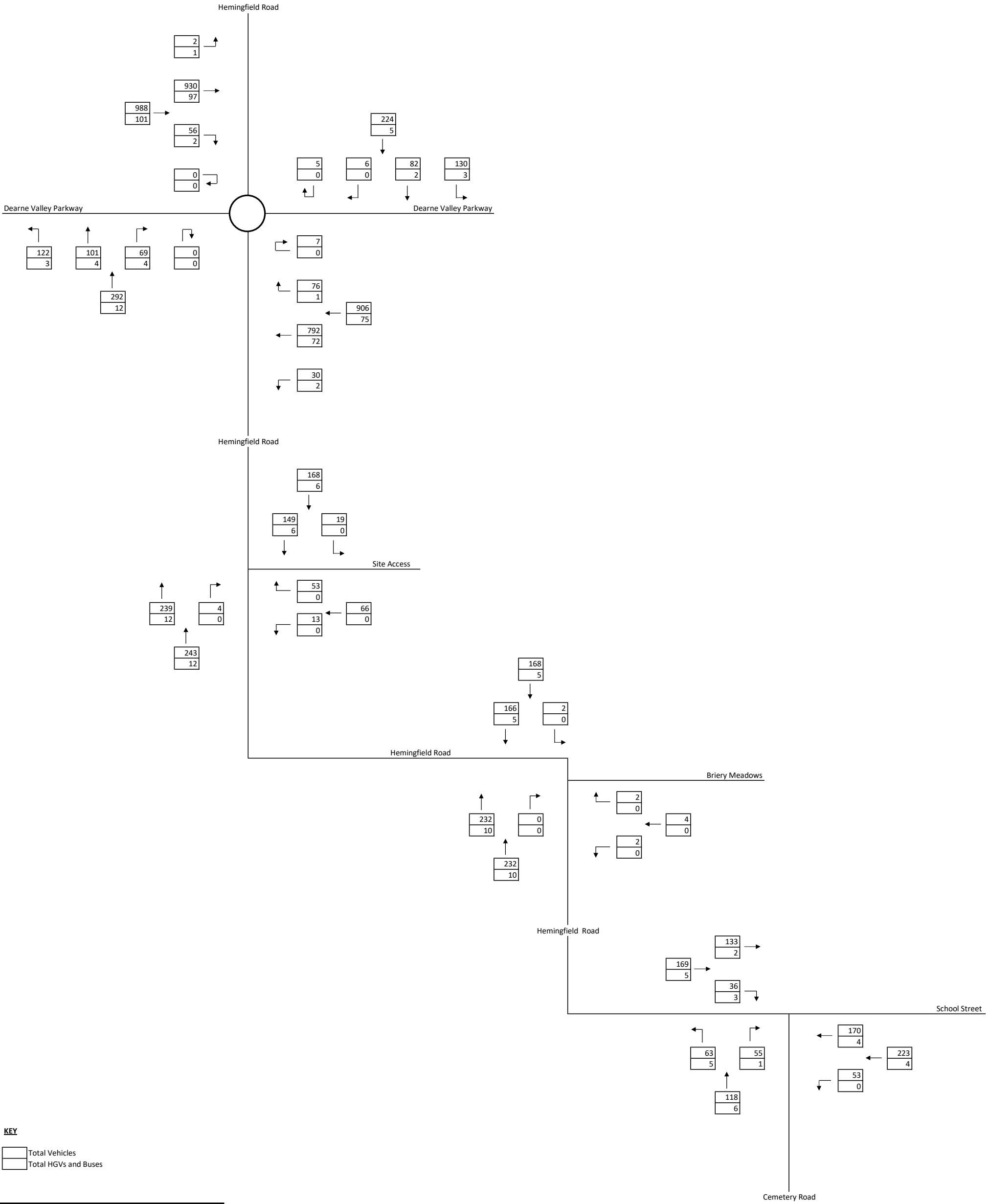
Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

APPENDIX BGH 17

2029 PREDICTED VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
8:00am - 9:00am
AM PEAK HOUR



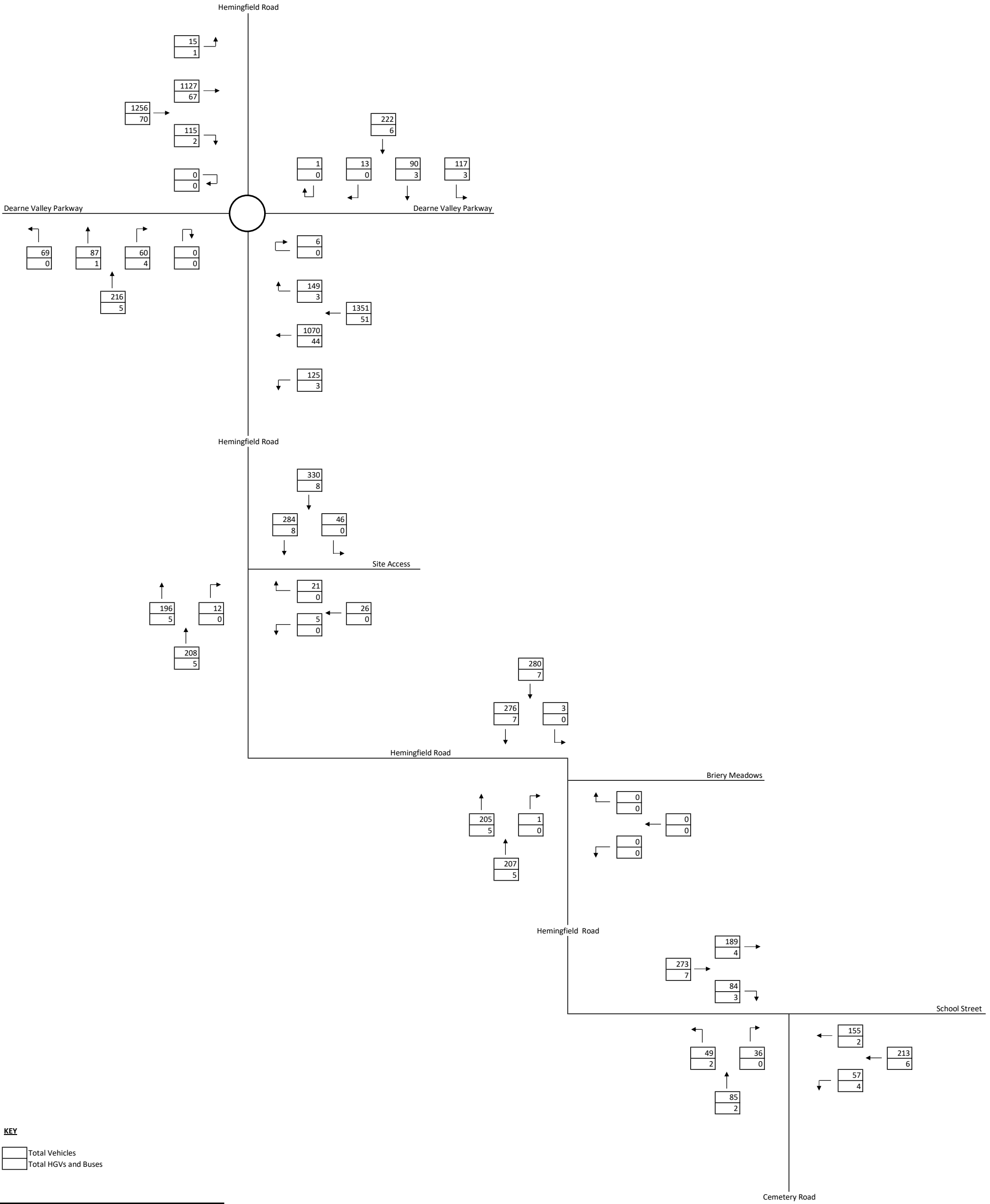
KEY

	Total Vehicles
	Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

2029 PREDICTED VEHICULAR FLOWS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
4:00pm - 5:00pm
PM PEAK HOUR



KEY

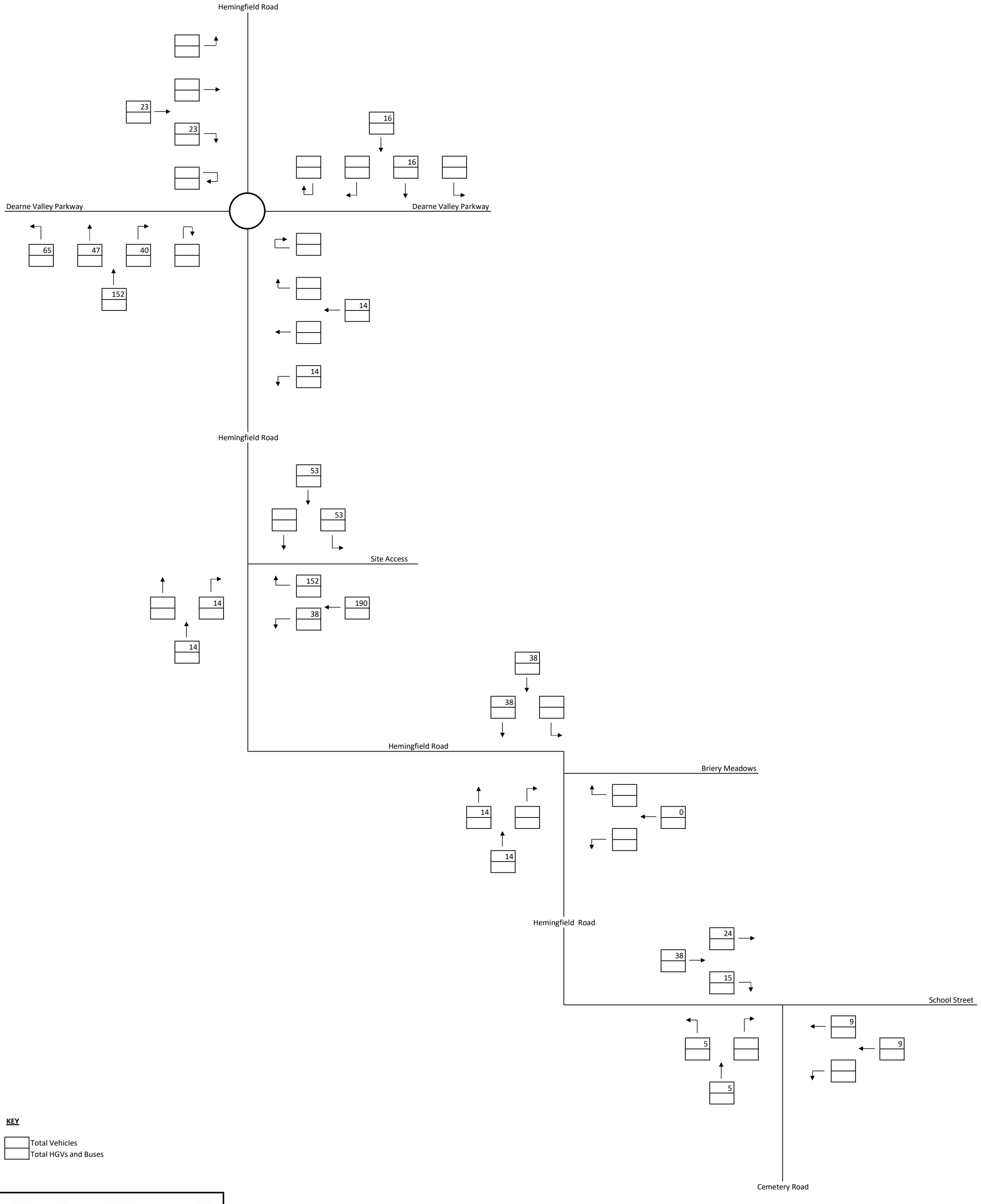
Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Ptarmigan Land North Ltd
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Phoebe Pitcher
Checked by:	Robbie Donaldson

APPENDIX BGH 18

SENSITIVITY TEST - DEVELOPMENT GENERATED VEHICULAR FLOWS FOR 520 DWELLINGS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
AM PEAK HOUR



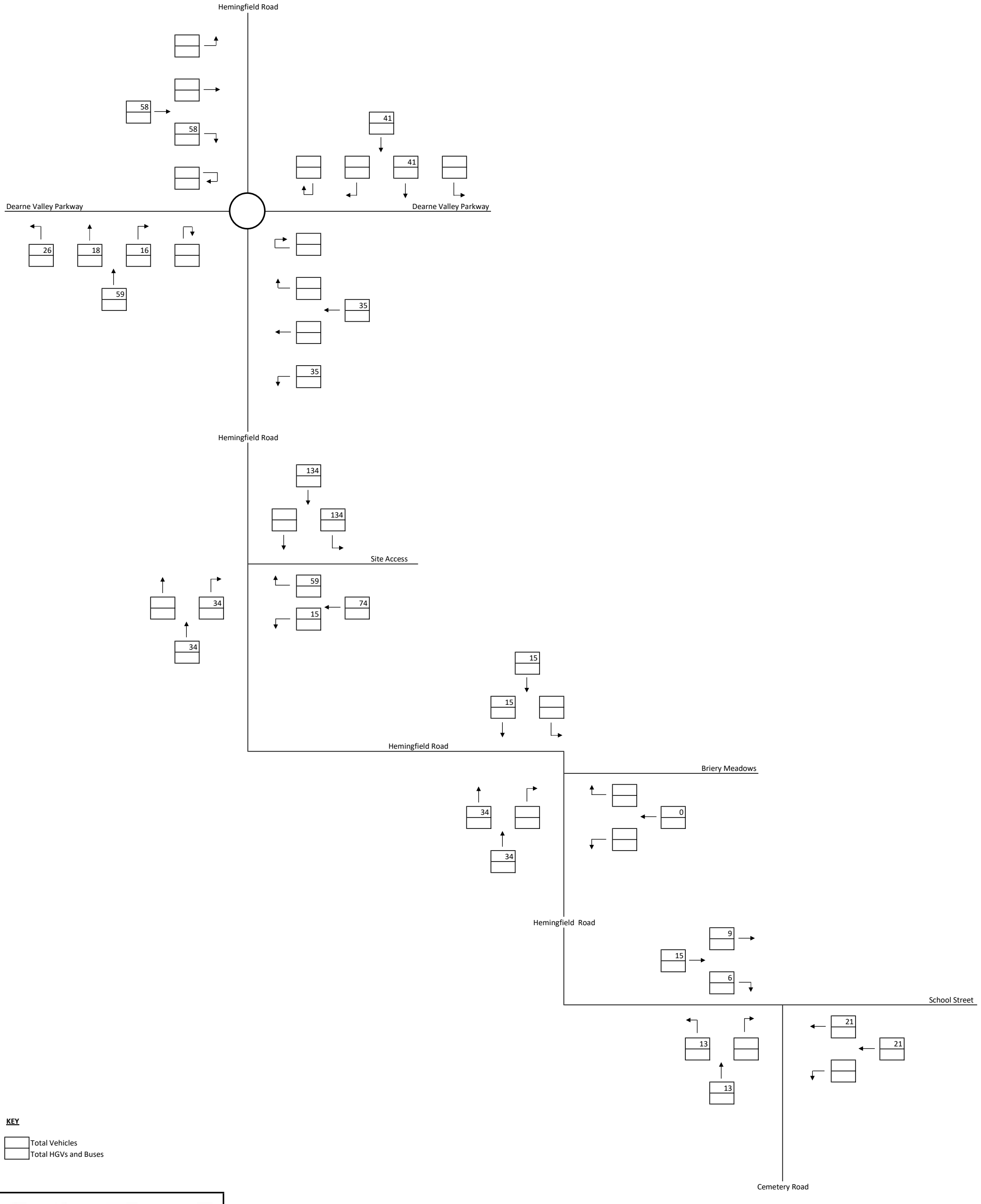
KEY

Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Hargreaves Land Limited
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Robbie Donaldson
Checked by:	Martin Crabtree

SENSITIVITY TEST - DEVELOPMENT GENERATED VEHICULAR FLOWS FOR 520 DWELLINGS
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
PM PEAK HOUR



KEY

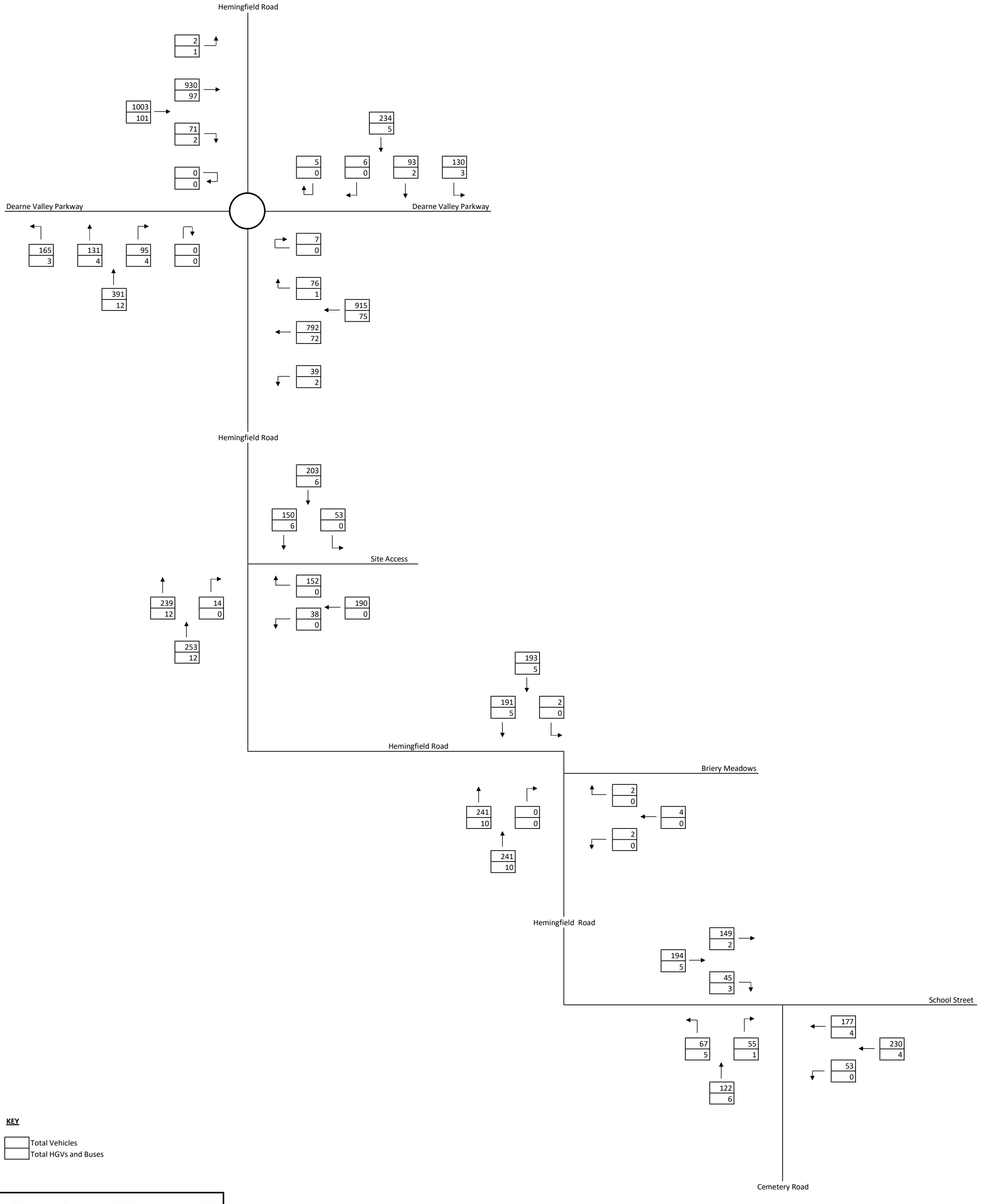
Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Hargreaves Land Limited
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Robbie Donaldson
Checked by:	Martin Crabtree

APPENDIX BGH 19

2029 PREDICTED SENSITIVITY TEST VEHICULAR FLOWS (520 DWELLINGS)
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
8:00am - 9:00am
AM PEAK HOUR



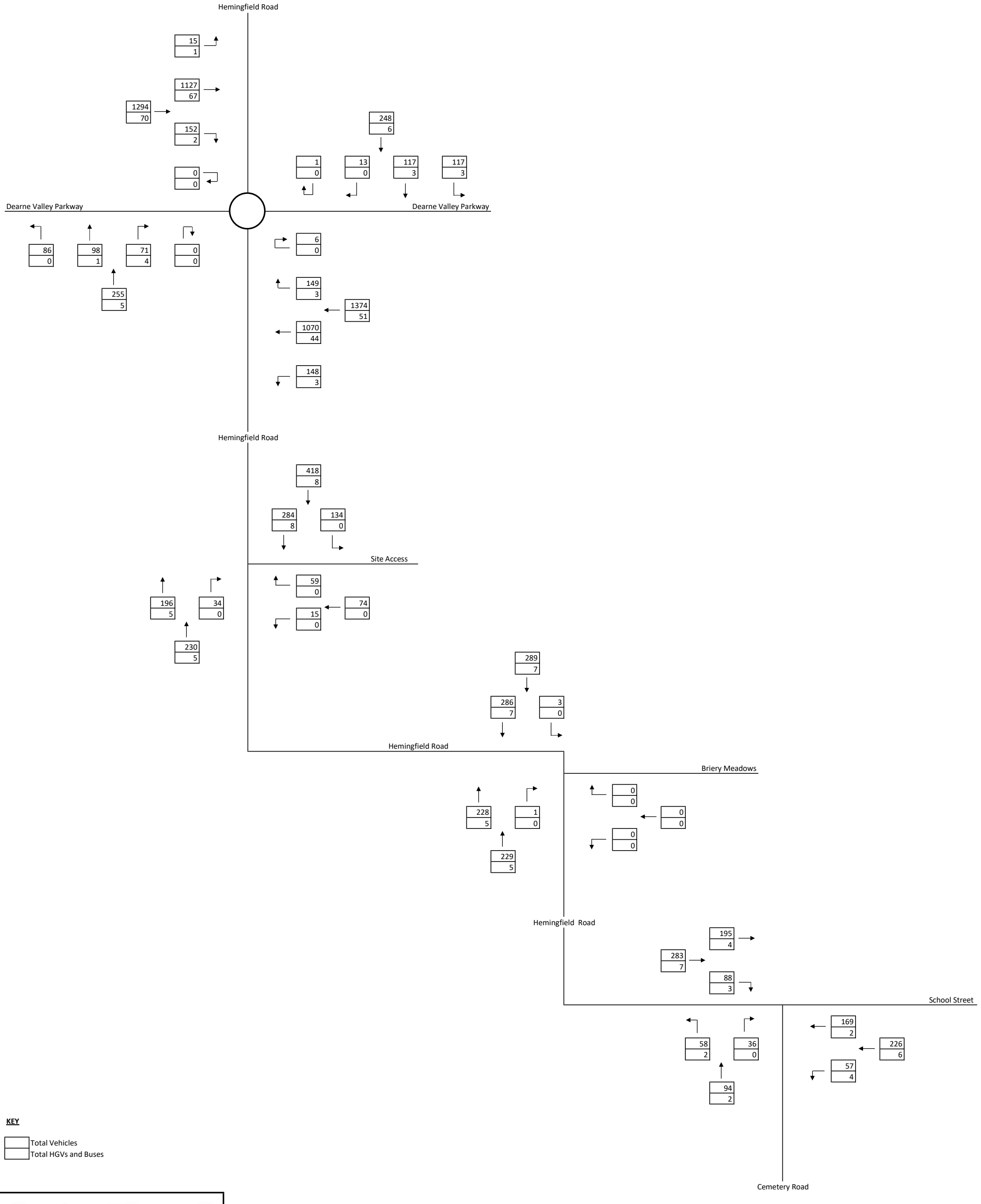
KEY

Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Hargreaves Land Limited
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Robbie Donaldson
Checked by:	Martin Crabtree

2029 PREDICTED SENSITIVITY TEST VEHICULAR FLOWS (520 DWELLINGS)
PROPOSED RESIDENTIAL DEVELOPMENT, HEMINGFIELD, BARNSLEY
4:00pm - 5:00pm
PM PEAK HOUR



KEY

Total Vehicles
Total HGVs and Buses

BRYAN G HALL
CONSULTING CIVIL & TRANSPORTATION PLANNING ENGINEERS

Client:	Hargreaves Land Limited
Project:	Hemingfield, Barnsley
Job Number:	23-160
Prepared by:	Robbie Donaldson
Checked by:	Martin Crabtree

APPENDIX BGH 20

Junctions 10

PICADY 10 - Priority Intersection Module

Filename: 23-160 Proposed Site Access Juction Model - 520 Dwellings.j10
Path: Y:\2023\23-151 to 23-175\23-160 Residential Development Hemingfield, Barnsley\Technical\Junction Modelling\Site Access
Report generation date: 16/12/2024 11:46:19

»Proposed Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings) , AM Peak Hour
»Proposed Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings), PM Peak Hour

Summary of junction performance

	AM Peak Hour					PM Peak Hour				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	Proposed Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings)									
Stream B-AC	D3	0.8	14.20	0.45	B	D4	0.2	10.72	0.20	B
Stream C-AB		0.0	6.13	0.03	A		0.1	7.14	0.07	A

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

File summary

File Description

Title	Proposed Site Access Junction Model
Location	Hemingfield, Barnsley
Site number	
Date	16/12/2024
Version	
Status	(new file)
Identifier	
Client	Hargreaves Land Limited
Jobnumber	23-160
Enumerator	BRYANGHALL\Design
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2029 Predicted (Sensitivity Test, 520 Dwellings)	AM Peak Hour	ONE HOUR	07:45	09:15	15
D4	2029 Predicted (Sensitivity Test, 520 Dwellings)	PM Peak Hour	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Proposed Layout	100.000

Proposed Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings) , AM Peak Hour

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access	T-Junction	Two-way	Two-way	Two-way		4.19	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.19	A

Arms

Arms

Arm	Name	Description	Arm type
A	Hemingfield Road (North)		Major
B	Proposed Site Access		Minor
C	Hemingfield Road (South)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Width for right-turn storage (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Hemingfield Road (South)	6.00		✓	3.00	60.0	✓	5.00

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

Minor Arm Geometry

Arm	Minor arm type	Lane width (m)	Visibility to left (m)	Visibility to right (m)
B - Proposed Site Access	One lane	3.66	26	21

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	529	0.096	0.244	0.153	0.348
B-C	679	0.104	0.263	-	-
C-B	662	0.256	0.256	-	-

The slopes and intercepts shown above include custom intercept adjustments only.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2029 Predicted (Sensitivity Test, 520 Dwellings)	AM Peak Hour	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Hemingfield Road (North)		✓	209	100.000
B - Proposed Site Access		✓	190	100.000
C - Hemingfield Road (South)		✓	265	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Hemingfield Road (North)	B - Proposed Site Access	C - Hemingfield Road (South)
From	A - Hemingfield Road (North)	0	53	156
	B - Proposed Site Access	152	0	38
	C - Hemingfield Road (South)	251	14	0

Vehicle Mix

Heavy Vehicle %

		To		
		A - Hemingfield Road (North)	B - Proposed Site Access	C - Hemingfield Road (South)
From	A - Hemingfield Road (North)	0	0	4
	B - Proposed Site Access	0	0	0
	C - Hemingfield Road (South)	5	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.45	14.20	0.8	B
C-AB	0.03	6.13	0.0	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	143	492	0.291	141	0.4	10.236	B
C-AB	11	621	0.017	10	0.0	5.892	A
C-A	189			189			
A-B	40			40			
A-C	117			117			

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	171	479	0.356	170	0.5	11.622	B
C-AB	13	614	0.021	13	0.0	5.989	A
C-A	226			226			
A-B	48			48			
A-C	140			140			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	209	463	0.452	208	0.8	14.093	B
C-AB	15	603	0.026	15	0.0	6.129	A
C-A	276			276			
A-B	58			58			
A-C	172			172			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	209	463	0.452	209	0.8	14.202	B
C-AB	15	603	0.026	15	0.0	6.129	A
C-A	276			276			
A-B	58			58			
A-C	172			172			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	171	479	0.356	172	0.6	11.745	B
C-AB	13	614	0.021	13	0.0	5.990	A
C-A	226			226			
A-B	48			48			
A-C	140			140			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	143	492	0.291	144	0.4	10.365	B
C-AB	11	621	0.017	11	0.0	5.895	A
C-A	189			189			
A-B	40			40			
A-C	117			117			

Proposed Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings), PM Peak Hour

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Proposed Site Access	T-Junction	Two-way	Two-way	Two-way		1.41	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	1.41	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2029 Predicted (Sensitivity Test, 520 Dwellings)	PM Peak Hour	ONE HOUR	15:45	17:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - Hemingfield Road (North)		✓	426	100.000
B - Proposed Site Access		✓	74	100.000
C - Hemingfield Road (South)		✓	235	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - Hemingfield Road (North)	B - Proposed Site Access	C - Hemingfield Road (South)
From	A - Hemingfield Road (North)	0	134	292
	B - Proposed Site Access	59	0	15
	C - Hemingfield Road (South)	201	34	0

Vehicle Mix

Heavy Vehicle %

		To		
		A - Hemingfield Road (North)	B - Proposed Site Access	C - Hemingfield Road (South)
From	A - Hemingfield Road (North)	0	0	3
	B - Proposed Site Access	0	0	0
	C - Hemingfield Road (South)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-AC	0.20	10.72	0.2	B
C-AB	0.07	7.14	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	56	461	0.121	55	0.1	8.862	A
C-AB	26	579	0.044	25	0.0	6.496	A
C-A	151			151			
A-B	101			101			
A-C	220			220			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	67	443	0.150	66	0.2	9.565	A
C-AB	31	564	0.054	31	0.1	6.753	A
C-A	181			181			
A-B	120			120			
A-C	263			263			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	81	417	0.195	81	0.2	10.695	B
C-AB	37	541	0.069	37	0.1	7.141	A
C-A	221			221			
A-B	148			148			
A-C	321			321			

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-AC	81	417	0.195	81	0.2	10.720	B
C-AB	37	541	0.069	37	0.1	7.141	A
C-A	221			221			
A-B	148			148			
A-C	321			321			

16:45 - 17:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	67	443	0.150	67	0.2	9.586	A
C-AB	31	564	0.054	31	0.1	6.755	A
C-A	181			181			
A-B	120			120			
A-C	263			263			

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-AC	56	461	0.121	56	0.1	8.895	A
C-AB	26	579	0.044	26	0.0	6.499	A
C-A	151			151			
A-B	101			101			
A-C	220			220			

Junctions 10

ARCADY 10 - Roundabout Module

Filename: 23-160 Hemingfield Road Roundabout Model - 520 Dwellings.j10
Path: Y:\2023\23-151 to 23-175\23-160 Residential Development Hemingfield, Barnsley\Technical\Junction Modelling\Hemingfield Road Roundabout
Report generation date: 16/12/2024 12:11:24

Summary of junction performance

	AM Peak Hour					PM Peak Hour				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2023 Existing									
1 - Dearne Valley Parkway (East)	D1	0.8	2.88	0.43	A	D2	1.7	4.18	0.62	A
2 - Hemingfield Road (South)		0.3	4.05	0.21	A		0.2	4.48	0.19	A
3 - Dearne Valley Parkway (West)		0.9	2.96	0.45	A		1.3	3.59	0.56	A
4 - Hemingfield Road (North)		0.4	6.28	0.28	A		0.4	7.30	0.30	A
	Existing Layout - 2029 Base									
1 - Dearne Valley Parkway (East)	D3	0.9	3.04	0.46	A	D4	2.0	4.69	0.66	A
2 - Hemingfield Road (South)		0.3	4.30	0.24	A		0.3	4.86	0.23	A
3 - Dearne Valley Parkway (West)		1.0	3.16	0.49	A		1.6	3.97	0.60	A
4 - Hemingfield Road (North)		0.5	6.81	0.31	A		0.5	8.14	0.34	A
	Existing Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings)									
1 - Dearne Valley Parkway (East)	D5	0.9	3.14	0.47	A	D6	2.3	5.38	0.69	A
2 - Hemingfield Road (South)		0.6	5.26	0.38	A		0.4	5.29	0.29	A
3 - Dearne Valley Parkway (West)		1.1	3.38	0.51	A		1.8	4.35	0.63	A
4 - Hemingfield Road (North)		0.5	7.45	0.35	A		0.8	9.78	0.42	A

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

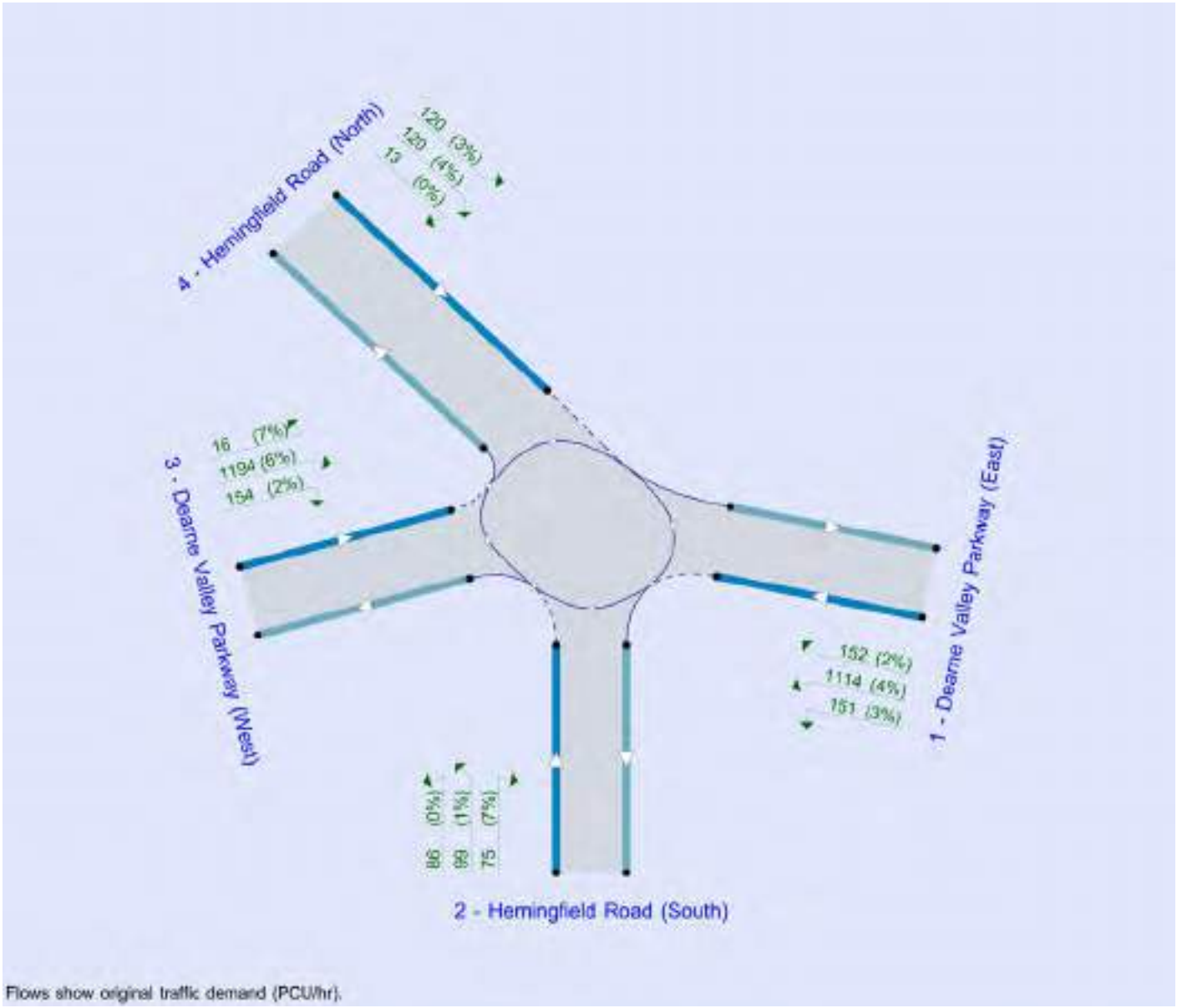
File summary

File Description

Title	Hemingfield Road Roundabout Model
Location	Hemingfield, Barnsley
Site number	
Date	16/12/2024
Version	
Status	(new file)
Identifier	
Client	Hargreaves Land Limited
Jobnumber	23-160
Enumerator	BRYANGHALL\design
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



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	2023 Existing	AM Peak Hour	ONE HOUR	07:45	09:15	15
D2	2023 Existing	PM Peak Hour	ONE HOUR	15:45	17:15	15
D3	2029 Base	AM Peak Hour	ONE HOUR	07:45	09:15	15
D4	2029 Base	PM Peak Hour	ONE HOUR	15:45	17:15	15
D5	2029 Predicted (Sensitivity Test, 520 Dwellings)	AM Peak Hour	ONE HOUR	07:45	09:15	15
D6	2029 Predicted (Sensitivity Test, 520 Dwellings)	PM Peak Hour	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Layout	100.000

Existing Layout - 2023 Existing, AM Peak Hour

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Hemingfield Road Roundabout	Standard Roundabout		1, 2, 3, 4	3.32	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.32	A

Arms

Arms

Arm	Name	Description	No give-way line
1	Dearne Valley Parkway (East)		
2	Hemingfield Road (South)		
3	Dearne Valley Parkway (West)		
4	Hemingfield Road (North)		

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Entry only	Exit only
1 - Dearne Valley Parkway (East)	7.50	8.10	19.4	18.0	79.0	27.5		
2 - Hemingfield Road (South)	3.90	7.00	7.7	28.0	79.0	22.0		
3 - Dearne Valley Parkway (West)	7.50	9.00	8.9	18.0	79.0	25.0		
4 - Hemingfield Road (North)	2.90	5.70	13.4	16.0	79.0	48.0		

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Dearne Valley Parkway (East)	0.585	2446
2 - Hemingfield Road (South)	0.478	1659
3 - Dearne Valley Parkway (West)	0.610	2598
4 - Hemingfield Road (North)	0.396	1284

The slope and intercept shown above include any corrections and adjustments.

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	2023 Existing	AM Peak Hour	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Dearne Valley Parkway (East)		✓	923	100.000
2 - Hemingfield Road (South)		✓	222	100.000
3 - Dearne Valley Parkway (West)		✓	1010	100.000
4 - Hemingfield Road (North)		✓	209	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	7	26	817	73
	2 - Hemingfield Road (South)	56	0	85	81
	3 - Dearne Valley Parkway (West)	971	36	0	3
	4 - Hemingfield Road (North)	126	72	6	5

Vehicle Mix

Heavy Vehicle %

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	0	8	9	1
	2 - Hemingfield Road (South)	8	0	5	4
	3 - Dearne Valley Parkway (West)	10	6	0	50
	4 - Hemingfield Road (North)	2	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Dearne Valley Parkway (East)	0.43	2.88	0.8	A
2 - Hemingfield Road (South)	0.21	4.05	0.3	A
3 - Dearne Valley Parkway (West)	0.45	2.96	0.9	A
4 - Hemingfield Road (North)	0.28	6.28	0.4	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	695	89	2394	0.290	693	0.4	2.289	A
2 - Hemingfield Road (South)	167	682	1333	0.125	167	0.2	3.250	A
3 - Dearne Valley Parkway (West)	760	167	2497	0.305	758	0.5	2.275	A
4 - Hemingfield Road (North)	157	803	965	0.163	157	0.2	4.549	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	830	107	2383	0.348	829	0.6	2.507	A
2 - Hemingfield Road (South)	200	816	1269	0.157	199	0.2	3.546	A
3 - Dearne Valley Parkway (West)	908	199	2477	0.367	907	0.6	2.520	A
4 - Hemingfield Road (North)	188	961	902	0.208	188	0.3	5.149	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1016	131	2369	0.429	1015	0.8	2.876	A
2 - Hemingfield Road (South)	244	999	1181	0.207	244	0.3	4.046	A
3 - Dearne Valley Parkway (West)	1112	244	2449	0.454	1111	0.9	2.954	A
4 - Hemingfield Road (North)	230	1177	817	0.282	230	0.4	6.261	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1016	131	2369	0.429	1016	0.8	2.879	A
2 - Hemingfield Road (South)	244	1000	1181	0.207	244	0.3	4.050	A
3 - Dearne Valley Parkway (West)	1112	244	2449	0.454	1112	0.9	2.959	A
4 - Hemingfield Road (North)	230	1178	816	0.282	230	0.4	6.275	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	830	107	2383	0.348	831	0.6	2.512	A
2 - Hemingfield Road (South)	200	817	1268	0.157	200	0.2	3.553	A
3 - Dearne Valley Parkway (West)	908	200	2476	0.367	909	0.6	2.528	A
4 - Hemingfield Road (North)	188	963	902	0.208	188	0.3	5.164	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	695	90	2393	0.290	695	0.4	2.296	A
2 - Hemingfield Road (South)	167	684	1332	0.126	167	0.2	3.257	A
3 - Dearne Valley Parkway (West)	760	167	2496	0.305	761	0.5	2.282	A
4 - Hemingfield Road (North)	157	806	964	0.163	158	0.2	4.567	A

Existing Layout - 2023 Existing, PM Peak Hour

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Hemingfield Road Roundabout	Standard Roundabout		1, 2, 3, 4	4.16	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.16	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2023 Existing	PM Peak Hour	ONE HOUR	15:45	17:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Dearne Valley Parkway (East)		✓	1313	100.000
2 - Hemingfield Road (South)		✓	174	100.000
3 - Dearne Valley Parkway (West)		✓	1224	100.000
4 - Hemingfield Road (North)		✓	200	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	6	110	1053	144
	2 - Hemingfield Road (South)	56	0	44	74
	3 - Dearne Valley Parkway (West)	1128	81	0	15
	4 - Hemingfield Road (North)	114	73	12	1

Vehicle Mix

Heavy Vehicle %

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	0	3	4	2
	2 - Hemingfield Road (South)	8	0	0	1
	3 - Dearne Valley Parkway (West)	6	3	0	7
	4 - Hemingfield Road (North)	3	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Dearne Valley Parkway (East)	0.62	4.18	1.7	A
2 - Hemingfield Road (South)	0.19	4.48	0.2	A
3 - Dearne Valley Parkway (West)	0.56	3.59	1.3	A
4 - Hemingfield Road (North)	0.30	7.30	0.4	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	988	125	2373	0.417	986	0.7	2.685	A
2 - Hemingfield Road (South)	131	913	1222	0.107	131	0.1	3.390	A
3 - Dearne Valley Parkway (West)	921	211	2470	0.373	919	0.6	2.452	A
4 - Hemingfield Road (North)	151	954	905	0.166	150	0.2	4.911	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1180	150	2358	0.501	1179	1.0	3.163	A
2 - Hemingfield Road (South)	156	1092	1137	0.138	156	0.2	3.777	A
3 - Dearne Valley Parkway (West)	1100	252	2444	0.450	1099	0.9	2.831	A
4 - Hemingfield Road (North)	180	1142	831	0.216	179	0.3	5.698	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1446	183	2338	0.618	1443	1.7	4.157	A
2 - Hemingfield Road (South)	192	1337	1020	0.188	191	0.2	4.469	A
3 - Dearne Valley Parkway (West)	1348	309	2410	0.559	1346	1.3	3.573	A
4 - Hemingfield Road (North)	220	1397	730	0.302	220	0.4	7.273	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1446	184	2338	0.618	1446	1.7	4.181	A
2 - Hemingfield Road (South)	192	1339	1019	0.188	192	0.2	4.476	A
3 - Dearne Valley Parkway (West)	1348	309	2410	0.559	1348	1.3	3.585	A
4 - Hemingfield Road (North)	220	1399	729	0.302	220	0.4	7.301	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1180	151	2358	0.501	1183	1.0	3.182	A
2 - Hemingfield Road (South)	156	1095	1135	0.138	157	0.2	3.788	A
3 - Dearne Valley Parkway (West)	1100	253	2444	0.450	1102	0.9	2.842	A
4 - Hemingfield Road (North)	180	1145	830	0.217	180	0.3	5.724	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	988	126	2372	0.417	990	0.7	2.701	A
2 - Hemingfield Road (South)	131	917	1221	0.107	131	0.1	3.399	A
3 - Dearne Valley Parkway (West)	921	212	2469	0.373	922	0.6	2.463	A
4 - Hemingfield Road (North)	151	958	904	0.167	151	0.2	4.936	A

Existing Layout - 2029 Base, AM Peak Hour

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Hemingfield Road Roundabout	Standard Roundabout		1, 2, 3, 4	3.55	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.55	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2029 Base	AM Peak Hour	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Dearne Valley Parkway (East)		✓	976	100.000
2 - Hemingfield Road (South)		✓	251	100.000
3 - Dearne Valley Parkway (West)		✓	1080	100.000
4 - Hemingfield Road (North)		✓	222	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	7	28	864	77
	2 - Hemingfield Road (South)	59	0	103	89
	3 - Dearne Valley Parkway (West)	1027	50	0	3
	4 - Hemingfield Road (North)	133	78	6	5

Vehicle Mix

Heavy Vehicle %

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	0	8	9	1
	2 - Hemingfield Road (South)	8	0	3	5
	3 - Dearne Valley Parkway (West)	10	4	0	50
	4 - Hemingfield Road (North)	2	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Dearne Valley Parkway (East)	0.46	3.04	0.9	A
2 - Hemingfield Road (South)	0.24	4.30	0.3	A
3 - Dearne Valley Parkway (West)	0.49	3.16	1.0	A
4 - Hemingfield Road (North)	0.31	6.81	0.5	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	735	104	2385	0.308	733	0.5	2.357	A
2 - Hemingfield Road (South)	189	720	1315	0.144	188	0.2	3.350	A
3 - Dearne Valley Parkway (West)	813	178	2490	0.327	811	0.5	2.351	A
4 - Hemingfield Road (North)	167	858	943	0.177	166	0.2	4.732	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	877	125	2373	0.370	877	0.6	2.602	A
2 - Hemingfield Road (South)	226	862	1247	0.181	225	0.2	3.694	A
3 - Dearne Valley Parkway (West)	971	213	2469	0.393	970	0.7	2.636	A
4 - Hemingfield Road (North)	200	1027	876	0.228	199	0.3	5.433	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1075	153	2356	0.456	1074	0.9	3.034	A
2 - Hemingfield Road (South)	276	1055	1155	0.239	276	0.3	4.294	A
3 - Dearne Valley Parkway (West)	1189	261	2439	0.487	1188	1.0	3.155	A
4 - Hemingfield Road (North)	244	1257	785	0.311	244	0.5	6.788	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1075	153	2356	0.456	1075	0.9	3.039	A
2 - Hemingfield Road (South)	276	1056	1154	0.239	276	0.3	4.300	A
3 - Dearne Valley Parkway (West)	1189	261	2439	0.488	1189	1.0	3.160	A
4 - Hemingfield Road (North)	244	1258	785	0.312	244	0.5	6.813	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	877	125	2372	0.370	878	0.6	2.609	A
2 - Hemingfield Road (South)	226	863	1246	0.181	226	0.2	3.700	A
3 - Dearne Valley Parkway (West)	971	213	2468	0.393	972	0.7	2.645	A
4 - Hemingfield Road (North)	200	1029	876	0.228	200	0.3	5.454	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	735	105	2384	0.308	735	0.5	2.363	A
2 - Hemingfield Road (South)	189	723	1313	0.144	189	0.2	3.357	A
3 - Dearne Valley Parkway (West)	813	179	2489	0.327	814	0.5	2.359	A
4 - Hemingfield Road (North)	167	861	942	0.177	167	0.2	4.753	A

Existing Layout - 2029 Base, PM Peak Hour

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Hemingfield Road Roundabout	Standard Roundabout		1, 2, 3, 4	4.64	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	4.64	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2029 Base	PM Peak Hour	ONE HOUR	15:45	17:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Dearne Valley Parkway (East)		✓	1388	100.000
2 - Hemingfield Road (South)		✓	201	100.000
3 - Dearne Valley Parkway (West)		✓	1307	100.000
4 - Hemingfield Road (North)		✓	214	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	6	116	1114	152
	2 - Hemingfield Road (South)	59	0	61	81
	3 - Dearne Valley Parkway (West)	1194	97	0	16
	4 - Hemingfield Road (North)	121	79	13	1

Vehicle Mix

Heavy Vehicle %

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	0	3	4	2
	2 - Hemingfield Road (South)	8	0	0	1
	3 - Dearne Valley Parkway (West)	6	2	0	7
	4 - Hemingfield Road (North)	3	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Dearne Valley Parkway (East)	0.66	4.69	2.0	A
2 - Hemingfield Road (South)	0.23	4.86	0.3	A
3 - Dearne Valley Parkway (West)	0.60	3.97	1.6	A
4 - Hemingfield Road (North)	0.34	8.14	0.5	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1045	142	2362	0.442	1042	0.8	2.819	A
2 - Hemingfield Road (South)	151	965	1197	0.126	151	0.1	3.528	A
3 - Dearne Valley Parkway (West)	984	224	2462	0.400	981	0.7	2.566	A
4 - Hemingfield Road (North)	161	1018	880	0.183	160	0.2	5.153	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1248	171	2346	0.532	1246	1.2	3.389	A
2 - Hemingfield Road (South)	181	1155	1107	0.163	180	0.2	3.988	A
3 - Dearne Valley Parkway (West)	1175	268	2435	0.483	1174	1.0	3.015	A
4 - Hemingfield Road (North)	192	1218	801	0.240	192	0.3	6.097	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1528	209	2324	0.658	1525	2.0	4.655	A
2 - Hemingfield Road (South)	221	1413	983	0.225	221	0.3	4.844	A
3 - Dearne Valley Parkway (West)	1439	329	2398	0.600	1437	1.6	3.949	A
4 - Hemingfield Road (North)	236	1491	693	0.340	235	0.5	8.097	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1528	209	2323	0.658	1528	2.0	4.693	A
2 - Hemingfield Road (South)	221	1416	982	0.225	221	0.3	4.856	A
3 - Dearne Valley Parkway (West)	1439	329	2398	0.600	1439	1.6	3.969	A
4 - Hemingfield Road (North)	236	1493	692	0.341	236	0.5	8.143	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1248	171	2346	0.532	1251	1.2	3.418	A
2 - Hemingfield Road (South)	181	1159	1105	0.164	181	0.2	4.001	A
3 - Dearne Valley Parkway (West)	1175	269	2434	0.483	1177	1.0	3.035	A
4 - Hemingfield Road (North)	192	1221	799	0.241	193	0.3	6.137	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1045	143	2362	0.442	1046	0.8	2.839	A
2 - Hemingfield Road (South)	151	970	1195	0.127	152	0.1	3.539	A
3 - Dearne Valley Parkway (West)	984	225	2461	0.400	985	0.7	2.582	A
4 - Hemingfield Road (North)	161	1022	878	0.183	161	0.2	5.183	A

Existing Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings), AM Peak Hour

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Hemingfield Road Roundabout	Standard Roundabout		1, 2, 3, 4	3.93	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	3.93	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2029 Predicted (Sensitivity Test, 520 Dwellings)	AM Peak Hour	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Dearne Valley Parkway (East)		✓	989	100.000
2 - Hemingfield Road (South)		✓	402	100.000
3 - Dearne Valley Parkway (West)		✓	1103	100.000
4 - Hemingfield Road (North)		✓	239	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	7	41	864	77
	2 - Hemingfield Road (South)	99	0	168	135
	3 - Dearne Valley Parkway (West)	1027	73	0	3
	4 - Hemingfield Road (North)	133	95	6	5

Vehicle Mix

Heavy Vehicle %

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	0	7	9	1
	2 - Hemingfield Road (South)	6	0	3	4
	3 - Dearne Valley Parkway (West)	10	4	0	50
	4 - Hemingfield Road (North)	2	3	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Dearne Valley Parkway (East)	0.47	3.14	0.9	A
2 - Hemingfield Road (South)	0.38	5.26	0.6	A
3 - Dearne Valley Parkway (West)	0.51	3.38	1.1	A
4 - Hemingfield Road (North)	0.35	7.45	0.5	A

Main Results for each time segment

07:45 - 08:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	745	134	2367	0.315	743	0.5	2.393	A
2 - Hemingfield Road (South)	303	720	1315	0.230	301	0.3	3.692	A
3 - Dearne Valley Parkway (West)	830	242	2451	0.339	828	0.6	2.430	A
4 - Hemingfield Road (North)	180	905	925	0.195	179	0.2	4.933	A

08:00 - 08:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	889	161	2352	0.378	888	0.7	2.659	A
2 - Hemingfield Road (South)	361	861	1247	0.290	361	0.4	4.226	A
3 - Dearne Valley Parkway (West)	992	290	2421	0.410	991	0.8	2.758	A
4 - Hemingfield Road (North)	215	1083	854	0.252	214	0.3	5.754	A

08:15 - 08:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1089	197	2331	0.467	1088	0.9	3.130	A
2 - Hemingfield Road (South)	443	1055	1155	0.383	442	0.6	5.248	A
3 - Dearne Valley Parkway (West)	1214	355	2382	0.510	1213	1.1	3.372	A
4 - Hemingfield Road (North)	263	1326	758	0.347	262	0.5	7.421	A

08:30 - 08:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1089	197	2330	0.467	1089	0.9	3.136	A
2 - Hemingfield Road (South)	443	1056	1154	0.384	443	0.6	5.265	A
3 - Dearne Valley Parkway (West)	1214	356	2381	0.510	1214	1.1	3.381	A
4 - Hemingfield Road (North)	263	1328	757	0.348	263	0.5	7.454	A

08:45 - 09:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	889	161	2351	0.378	890	0.7	2.669	A
2 - Hemingfield Road (South)	361	863	1246	0.290	362	0.4	4.242	A
3 - Dearne Valley Parkway (West)	992	291	2421	0.410	993	0.8	2.769	A
4 - Hemingfield Road (North)	215	1086	853	0.252	216	0.3	5.784	A

09:00 - 09:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	745	135	2367	0.315	745	0.5	2.402	A
2 - Hemingfield Road (South)	303	723	1313	0.230	303	0.3	3.709	A
3 - Dearne Valley Parkway (West)	830	244	2450	0.339	831	0.6	2.441	A
4 - Hemingfield Road (North)	180	909	923	0.195	180	0.2	4.959	A

Existing Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings), PM Peak Hour

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	Hemingfield Road Roundabout	Standard Roundabout		1, 2, 3, 4	5.29	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	5.29	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2029 Predicted (Sensitivity Test, 520 Dwellings)	PM Peak Hour	ONE HOUR	15:45	17:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Dearne Valley Parkway (East)		✓	1423	100.000
2 - Hemingfield Road (South)		✓	260	100.000
3 - Dearne Valley Parkway (West)		✓	1364	100.000
4 - Hemingfield Road (North)		✓	254	100.000

Origin-Destination Data

Demand (PCU/hr)

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	6	151	1114	152
	2 - Hemingfield Road (South)	75	0	86	99
	3 - Dearne Valley Parkway (West)	1194	154	0	16
	4 - Hemingfield Road (North)	120	120	13	1

Vehicle Mix

Heavy Vehicle %

		To			
		1 - Dearne Valley Parkway (East)	2 - Hemingfield Road (South)	3 - Dearne Valley Parkway (West)	4 - Hemingfield Road (North)
From	1 - Dearne Valley Parkway (East)	0	3	4	2
	2 - Hemingfield Road (South)	7	0	0	1
	3 - Dearne Valley Parkway (West)	6	2	0	7
	4 - Hemingfield Road (North)	3	4	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
1 - Dearne Valley Parkway (East)	0.69	5.38	2.3	A
2 - Hemingfield Road (South)	0.29	5.29	0.4	A
3 - Dearne Valley Parkway (West)	0.63	4.35	1.8	A
4 - Hemingfield Road (North)	0.42	9.78	0.8	A

Main Results for each time segment

15:45 - 16:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1071	216	2319	0.462	1068	0.9	2.972	A
2 - Hemingfield Road (South)	196	965	1198	0.163	195	0.2	3.668	A
3 - Dearne Valley Parkway (West)	1027	250	2446	0.420	1024	0.8	2.666	A
4 - Hemingfield Road (North)	191	1073	858	0.223	190	0.3	5.556	A

16:00 - 16:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1279	258	2294	0.558	1278	1.3	3.663	A
2 - Hemingfield Road (South)	234	1155	1107	0.211	233	0.3	4.216	A
3 - Dearne Valley Parkway (West)	1226	299	2416	0.508	1225	1.1	3.187	A
4 - Hemingfield Road (North)	228	1283	775	0.295	228	0.4	6.791	A

16:15 - 16:30

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1567	316	2261	0.693	1563	2.3	5.315	A
2 - Hemingfield Road (South)	286	1412	984	0.291	286	0.4	5.272	A
3 - Dearne Valley Parkway (West)	1502	366	2375	0.632	1499	1.8	4.322	A
4 - Hemingfield Road (North)	280	1570	661	0.423	278	0.7	9.690	A

16:30 - 16:45

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1567	317	2260	0.693	1567	2.3	5.378	A
2 - Hemingfield Road (South)	286	1416	982	0.292	286	0.4	5.293	A
3 - Dearne Valley Parkway (West)	1502	367	2375	0.632	1502	1.8	4.352	A
4 - Hemingfield Road (North)	280	1573	660	0.424	280	0.8	9.780	A

16:45 - 17:00

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1279	260	2294	0.558	1283	1.3	3.706	A
2 - Hemingfield Road (South)	234	1160	1104	0.212	234	0.3	4.235	A
3 - Dearne Valley Parkway (West)	1226	300	2415	0.508	1229	1.1	3.212	A
4 - Hemingfield Road (North)	228	1288	773	0.295	230	0.4	6.860	A

17:00 - 17:15

Arm	Total Demand (PCU/hr)	Circulating flow (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
1 - Dearne Valley Parkway (East)	1071	217	2319	0.462	1073	0.9	2.999	A
2 - Hemingfield Road (South)	196	970	1195	0.164	196	0.2	3.689	A
3 - Dearne Valley Parkway (West)	1027	251	2445	0.420	1028	0.8	2.683	A
4 - Hemingfield Road (North)	191	1077	856	0.223	192	0.3	5.598	A

Junctions 10

PICADY 10 - Priority Intersection Module

Version: 10.1.1.1905

For sales and distribution information, program advice and maintenance, contact TRL Software:
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Filename: 23-160 Cemetery Road School Street Model - 520 Dwellings.j10
Path: Y:\2023\23-151 to 23-175\23-160 Residential Development Hemingfield, Barnsley\Technical\Junction Modelling\Cemetery Road School Street Junction
Report generation date: 16/12/2024 11:56:53

Summary of junction performance

	AM Peak Hour					PM Peak Hour				
	Set ID	Queue (PCU)	Delay (s)	RFC	LOS	Set ID	Queue (PCU)	Delay (s)	RFC	LOS
	Existing Layout - 2023 Existing									
Stream B-C	D1	0.1	7.15	0.11	A	D2	0.1	6.43	0.08	A
Stream B-A		0.2	9.38	0.13	A		0.1	9.32	0.09	A
Stream C-AB		0.1	6.32	0.06	A		0.3	6.25	0.16	A
	Existing Layout - 2029 Base									
Stream B-C	D3	0.1	7.26	0.12	A	D4	0.1	6.49	0.08	A
Stream B-A		0.2	9.70	0.14	A		0.1	9.66	0.10	A
Stream C-AB		0.1	6.21	0.07	A		0.3	6.34	0.18	A
	Existing Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings)									
Stream B-C	D5	0.2	7.25	0.13	A	D6	0.1	6.49	0.10	A
Stream B-A		0.2	10.12	0.15	B		0.1	10.19	0.10	B
Stream C-AB		0.2	6.17	0.10	A		0.3	6.40	0.20	A

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

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

File summary

File Description

Title	Cemetery Road / Hemingfield Road/ School Street
Location	Hemingfield, Barnsley
Site number	
Date	16/12/2024
Version	
Status	(new file)
Identifier	
Client	Hargreaves Land Limited
Jobnumber	23-160
Enumerator	BRYANGHALL\Design
Description	

Units

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

Analysis Options

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

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Existing	AM Peak Hour	ONE HOUR	07:45	09:15	15
D2	2023 Existing	PM Peak Hour	ONE HOUR	15:45	17:15	15
D3	2029 Base	AM Peak Hour	ONE HOUR	07:45	09:15	15
D4	2029 Base	PM Peak Hour	ONE HOUR	15:45	17:15	15
D5	2029 Predicted (Sensitivity Test, 520 Dwellings)	AM Peak Hour	ONE HOUR	07:45	09:15	15
D6	2029 Predicted (Sensitivity Test, 520 Dwellings)	PM Peak Hour	ONE HOUR	15:45	17:15	15

Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	Existing Layout	100.000

Existing Layout - 2023 Existing, AM Peak Hour

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cemetery Road / School Street	T-Junction	Two-way	Two-way	Two-way		2.62	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.62	A

Arms

Arms

Arm	Name	Description	Arm type
A	School Street (E)		Major
B	Cemetery Road		Minor
C	Hemingfield Road (W)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right-turn storage	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - Hemingfield Road (W)	7.15			100.0	✓	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 - Cemetery Road	One lane plus flare	10.00	7.00	5.50	4.60	4.60		1.00	41	63

Minor Arm Geometry Notes

Arm	Notes
B - Cemetery Road	Flare length input as 1 PCU due to curved approach to junction

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	521	0.090	0.228	0.143	0.326
B-C	687	0.100	0.253	-	-
C-B	632	0.233	0.233	-	-

The slopes and intercepts shown above include custom intercept adjustments only.
Streams may be combined, in which case capacity will be adjusted.
Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2023 Existing	AM Peak Hour	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - School Street (E)		✓	198	100.000
B - Cemetery Road		✓	116	100.000
C - Hemingfield Road (W)		✓	139	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	50	148
	B - Cemetery Road	53	0	63
	C - Hemingfield Road (W)	107	32	0

Vehicle Mix

Heavy Vehicle %

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	0	3
	B - Cemetery Road	2	0	9
	C - Hemingfield Road (W)	2	10	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.11	7.15	0.1	A
B-A	0.13	9.38	0.2	A
C-AB	0.06	6.32	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	47	641	0.074	47	0.1	6.604	A
B-A	40	473	0.084	40	0.1	8.472	A
C-AB	27	651	0.042	27	0.1	6.286	A
C-A	77			77			
A-B	38			38			
A-C	111			111			

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	57	631	0.090	57	0.1	6.827	A
B-A	48	463	0.103	48	0.1	8.835	A
C-AB	34	655	0.052	34	0.1	6.304	A
C-A	91			91			
A-B	45			45			
A-C	133			133			

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	69	618	0.112	69	0.1	7.151	A
B-A	58	450	0.130	58	0.2	9.378	A
C-AB	43	661	0.065	43	0.1	6.324	A
C-A	110			110			
A-B	55			55			
A-C	163			163			

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	69	618	0.112	69	0.1	7.155	A
B-A	58	450	0.130	58	0.2	9.384	A
C-AB	43	661	0.065	43	0.1	6.321	A
C-A	110			110			
A-B	55			55			
A-C	163			163			

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	57	631	0.090	57	0.1	6.834	A
B-A	48	463	0.103	48	0.1	8.844	A
C-AB	34	655	0.052	34	0.1	6.292	A
C-A	91			91			
A-B	45			45			
A-C	133			133			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	47	641	0.074	48	0.1	6.615	A
B-A	40	473	0.084	40	0.1	8.488	A
C-AB	28	651	0.042	28	0.1	6.284	A
C-A	77			77			
A-B	38			38			
A-C	111			111			

Existing Layout - 2023 Existing, PM Peak Hour

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cemetery Road / School Street	T-Junction	Two-way	Two-way	Two-way		2.41	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.41	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2023 Existing	PM Peak Hour	ONE HOUR	15:45	17:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - School Street (E)		✓	184	100.000
B - Cemetery Road		✓	79	100.000
C - Hemingfield Road (W)		✓	248	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	58	126
	B - Cemetery Road	34	0	45
	C - Hemingfield Road (W)	171	77	0

Vehicle Mix

Heavy Vehicle %

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	7	2
	B - Cemetery Road	0	0	5
	C - Hemingfield Road (W)	2	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.08	6.43	0.1	A
B-A	0.09	9.32	0.1	A
C-AB	0.16	6.25	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	34	657	0.052	34	0.1	6.065	A
B-A	26	453	0.057	25	0.1	8.418	A
C-AB	71	686	0.104	71	0.2	6.069	A
C-A	115			115			
A-B	44			44			
A-C	95			95			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	40	649	0.062	40	0.1	6.213	A
B-A	31	441	0.069	31	0.1	8.777	A
C-AB	89	697	0.128	89	0.2	6.137	A
C-A	134			134			
A-B	52			52			
A-C	113			113			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	50	638	0.078	49	0.1	6.425	A
B-A	37	424	0.088	37	0.1	9.314	A
C-AB	115	712	0.162	115	0.3	6.246	A
C-A	158			158			
A-B	64			64			
A-C	139			139			

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	50	638	0.078	50	0.1	6.426	A
B-A	37	424	0.088	37	0.1	9.318	A
C-AB	116	712	0.162	116	0.3	6.250	A
C-A	158			158			
A-B	64			64			
A-C	139			139			

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	40	649	0.062	41	0.1	6.218	A
B-A	31	441	0.069	31	0.1	8.785	A
C-AB	89	697	0.128	89	0.2	6.140	A
C-A	134			134			
A-B	52			52			
A-C	113			113			

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	34	656	0.052	34	0.1	6.072	A
B-A	26	453	0.057	26	0.1	8.431	A
C-AB	72	686	0.104	72	0.2	6.079	A
C-A	115			115			
A-B	44			44			
A-C	95			95			

Existing Layout - 2029 Base, AM Peak Hour

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cemetery Road / School Street	T-Junction	Two-way	Two-way	Two-way		2.51	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.51	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D3	2029 Base	AM Peak Hour	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - School Street (E)		✓	225	100.000
B - Cemetery Road		✓	122	100.000
C - Hemingfield Road (W)		✓	160	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	53	172
	B - Cemetery Road	56	0	66
	C - Hemingfield Road (W)	127	33	0

Vehicle Mix

Heavy Vehicle %

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	0	2
	B - Cemetery Road	2	0	8
	C - Hemingfield Road (W)	2	9	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.12	7.26	0.1	A
B-A	0.14	9.70	0.2	A
C-AB	0.07	6.21	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	50	635	0.078	49	0.1	6.637	A
B-A	42	466	0.090	42	0.1	8.642	A
C-AB	29	657	0.044	29	0.1	6.187	A
C-A	91			91			
A-B	40			40			
A-C	129			129			

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	59	624	0.095	59	0.1	6.887	A
B-A	50	455	0.111	50	0.1	9.062	A
C-AB	36	662	0.054	36	0.1	6.201	A
C-A	108			108			
A-B	48			48			
A-C	155			155			

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	73	608	0.119	73	0.1	7.252	A
B-A	62	440	0.140	62	0.2	9.695	A
C-AB	46	670	0.069	46	0.1	6.210	A
C-A	130			130			
A-B	58			58			
A-C	189			189			

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	73	608	0.119	73	0.1	7.257	A
B-A	62	440	0.140	62	0.2	9.703	A
C-AB	46	670	0.069	46	0.1	6.205	A
C-A	130			130			
A-B	58			58			
A-C	189			189			

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	59	624	0.095	59	0.1	6.893	A
B-A	50	455	0.111	50	0.1	9.074	A
C-AB	36	662	0.054	36	0.1	6.190	A
C-A	108			108			
A-B	48			48			
A-C	155			155			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	50	634	0.078	50	0.1	6.654	A
B-A	42	466	0.090	42	0.1	8.661	A
C-AB	29	657	0.044	29	0.1	6.185	A
C-A	91			91			
A-B	40			40			
A-C	129			129			

Existing Layout - 2029 Base, PM Peak Hour

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cemetery Road / School Street	T-Junction	Two-way	Two-way	Two-way		2.42	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.42	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D4	2029 Base	PM Peak Hour	ONE HOUR	15:45	17:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - School Street (E)		✓	211	100.000
B - Cemetery Road		✓	83	100.000
C - Hemingfield Road (W)		✓	275	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	61	150
	B - Cemetery Road	36	0	47
	C - Hemingfield Road (W)	190	85	0

Vehicle Mix

Heavy Vehicle %

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	7	1
	B - Cemetery Road	0	0	4
	C - Hemingfield Road (W)	2	4	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.08	6.49	0.1	A
B-A	0.10	9.66	0.1	A
C-AB	0.18	6.34	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	35	650	0.054	35	0.1	6.086	A
B-A	27	445	0.061	27	0.1	8.599	A
C-AB	81	691	0.117	80	0.2	6.102	A
C-A	126			126			
A-B	46			46			
A-C	113			113			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	42	641	0.066	42	0.1	6.250	A
B-A	32	431	0.075	32	0.1	9.020	A
C-AB	101	703	0.144	101	0.2	6.193	A
C-A	146			146			
A-B	55			55			
A-C	135			135			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	52	629	0.082	52	0.1	6.489	A
B-A	40	412	0.096	40	0.1	9.657	A
C-AB	132	720	0.184	132	0.3	6.335	A
C-A	171			171			
A-B	67			67			
A-C	165			165			

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	52	628	0.082	52	0.1	6.491	A
B-A	40	412	0.096	40	0.1	9.661	A
C-AB	132	720	0.184	132	0.3	6.341	A
C-A	170			170			
A-B	67			67			
A-C	165			165			

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	42	641	0.066	42	0.1	6.254	A
B-A	32	431	0.075	32	0.1	9.029	A
C-AB	101	703	0.144	102	0.2	6.198	A
C-A	146			146			
A-B	55			55			
A-C	135			135			

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	35	650	0.054	35	0.1	6.092	A
B-A	27	445	0.061	27	0.1	8.615	A
C-AB	81	691	0.117	81	0.2	6.117	A
C-A	126			126			
A-B	46			46			
A-C	113			113			

Existing Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings), AM Peak Hour

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cemetery Road / School Street	T-Junction	Two-way	Two-way	Two-way		2.61	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.61	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D5	2029 Predicted (Sensitivity Test, 520 Dwellings)	AM Peak Hour	ONE HOUR	07:45	09:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - School Street (E)		✓	234	100.000
B - Cemetery Road		✓	128	100.000
C - Hemingfield Road (W)		✓	199	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	53	181
	B - Cemetery Road	56	0	72
	C - Hemingfield Road (W)	151	48	0

Vehicle Mix

Heavy Vehicle %

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	0	2
	B - Cemetery Road	2	0	7
	C - Hemingfield Road (W)	1	7	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.13	7.25	0.2	A
B-A	0.15	10.12	0.2	B
C-AB	0.10	6.17	0.2	A
C-A				
A-B				
A-C				

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	54	638	0.085	54	0.1	6.586	A
B-A	42	454	0.093	42	0.1	8.896	A
C-AB	44	667	0.065	43	0.1	6.108	A
C-A	106			106			
A-B	40			40			
A-C	136			136			

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	65	627	0.103	65	0.1	6.853	A
B-A	50	442	0.114	50	0.1	9.378	A
C-AB	54	675	0.080	54	0.1	6.137	A
C-A	125			125			
A-B	48			48			
A-C	163			163			

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	79	610	0.130	79	0.2	7.248	A
B-A	62	424	0.145	61	0.2	10.115	B
C-AB	70	685	0.102	70	0.2	6.175	A
C-A	149			149			
A-B	58			58			
A-C	199			199			

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	79	610	0.130	79	0.2	7.252	A
B-A	62	424	0.145	62	0.2	10.123	B
C-AB	70	685	0.102	70	0.2	6.170	A
C-A	149			149			
A-B	58			58			
A-C	199			199			

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	65	626	0.103	65	0.1	6.859	A
B-A	50	442	0.114	51	0.1	9.389	A
C-AB	54	675	0.080	54	0.1	6.127	A
C-A	125			125			
A-B	48			48			
A-C	163			163			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	54	638	0.085	54	0.1	6.601	A
B-A	42	454	0.093	42	0.1	8.918	A
C-AB	44	667	0.065	44	0.1	6.110	A
C-A	106			106			
A-B	40			40			
A-C	136			136			

Existing Layout - 2029 Predicted (Sensitivity Test, 520 Dwellings), PM Peak Hour

Data Errors and Warnings

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

Junction Network

Junctions

Junction	Name	Junction type	Arm A Direction	Arm B Direction	Arm C Direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Cemetery Road / School Street	T-Junction	Two-way	Two-way	Two-way		2.51	A

Junction Network

Driving side	Lighting	Network delay (s)	Network LOS
Left	Normal/unknown	2.51	A

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D6	2029 Predicted (Sensitivity Test, 520 Dwellings)	PM Peak Hour	ONE HOUR	15:45	17:15	15

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A - School Street (E)		✓	232	100.000
B - Cemetery Road		✓	96	100.000
C - Hemingfield Road (W)		✓	290	100.000

Origin-Destination Data

Demand (PCU/hr)

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	61	171
	B - Cemetery Road	36	0	60
	C - Hemingfield Road (W)	199	91	0

Vehicle Mix

Heavy Vehicle %

		To		
		A - School Street (E)	B - Cemetery Road	C - Hemingfield Road (W)
From	A - School Street (E)	0	7	1
	B - Cemetery Road	0	0	3
	C - Hemingfield Road (W)	2	3	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS
B-C	0.10	6.49	0.1	A
B-A	0.10	10.19	0.1	B
C-AB	0.20	6.40	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

15:45 - 16:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	45	662	0.068	45	0.1	6.009	A
B-A	27	428	0.063	27	0.1	8.972	A
C-AB	87	692	0.126	87	0.2	6.111	A
C-A	131			131			
A-B	46			46			
A-C	129			129			

16:00 - 16:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	54	651	0.083	54	0.1	6.206	A
B-A	32	413	0.078	32	0.1	9.452	A
C-AB	110	704	0.156	110	0.2	6.221	A
C-A	151			151			
A-B	55			55			
A-C	154			154			

16:15 - 16:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	Unsignalised level of service
B-C	66	637	0.104	66	0.1	6.492	A
B-A	40	393	0.101	40	0.1	10.185	B
C-AB	144	722	0.200	144	0.3	6.398	A
C-A	175			175			
A-B	67			67			
A-C	188			188			

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	66	637	0.104	66	0.1	6.494	A
B-A	40	393	0.101	40	0.1	10.192	B
C-AB	144	722	0.200	144	0.3	6.404	A
C-A	175			175			
A-B	67			67			
A-C	188			188			

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	54	651	0.083	54	0.1	6.212	A
B-A	32	413	0.078	32	0.1	9.461	A
C-AB	110	705	0.156	110	0.3	6.233	A
C-A	151			151			
A-B	55			55			
A-C	154			154			

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	45	661	0.068	45	0.1	6.019	A
B-A	27	428	0.063	27	0.1	8.990	A
C-AB	88	692	0.127	88	0.2	6.128	A
C-A	131			131			
A-B	46			46			
A-C	129			129			

Bryan G Hall Limited

Registered in England & Wales
Co No: 4104802
VAT No: 399 4601 07

Website: www.bryanghall.co.uk
Email: transportleeds@bryanghall.co.uk

Registered Office

Suite E15, Joseph's Well
Hanover Walk
Leeds, LS3 1AB

☎ Leeds: 0113 246 1555
☎ London: 0203 553 2336