

Hebble Homes Ltd

Proposed Industrial Development
Forge Lane, Dewsbury

Transport Assessment



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Acknowledgements

Google My Maps has been used to generate figures included in this report for illustrative purposes only.

The Crashmap Pro Collision Analysis System has been utilised to carry out a road traffic incident review.
www.crashmap.co.uk

2011 Census data has been used to identify origin distribution data.

The TRICS database has been used in this report to calculate traffic generations.

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1. Introduction

1.1 Sanderson Associates Consulting Engineers has been appointed by Hebble Homes Ltd to provide highways consultancy services in relation to proposals for an industrial development on land off Forge Lane, Dewsbury. The location of the site is indicated in **Figure 1**, below.

Figure 1 – Location of site

[MyGoogleMaps]



1.2 The In accordance with the Planning Practice Guidance ‘Transport evidence bases in plan making and decision taking’ this Transport Assessment addresses key issues including:

- the existing use of the site;
- the local highway network;
- accessibility of the site in relation to sustainable transport and local facilities;
- the proposed development and its operational facilities;
- the access arrangements to the proposed development; and,
- the impact of the development on the local highway network in terms of operation and highway safety

2. Planning Policy Context

2.1 National Planning Policy

2.1.1 At national level, planning policy in England is set out by the National Planning Policy Framework (NPPF), which must be considered when making planning decisions.

2.1.2 Considering the planning policy context of the development, Paragraph 114 of the NPPF (last revised in December 2023) states that:

“In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

a) Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, give the type of development and its location;

b) Safe and suitable access to the site can be achieved for all people;

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.”

2.1.3 Paragraph 115 then states:

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

2.1.4 In relation to paragraph 115, NPPF paragraph 116 goes on to say:

‘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.’

2.1.5 Finally, paragraph 117 states that:

'All developments that will generate significant amounts of movement should be required to provide a travel plan, and the application should be supported by a transport statement or transport assessment so that the likely impacts of the proposal can be assessed.'

2.2 National Planning Practice Guidance

2.2.1 The National Planning Practice Guidance (NPPG) brings together National Planning Policy Framework. It was launched in March 2014 and coincided with the cancelling of the majority of Government Circulars which had previously given guidance on many aspects of planning.

2.2.2 In relation to Transport NPPG provides the following guidance:

- Transport evidence bases in plan making and decision taking - March 2015
- Travel Plans, Transport Assessments and Statements - March 2014

2.2.3 NPPG *Transport evidence bases in plan making and decision taking* sets out the key issues that local planning authorities should consider in developing the transport base to support the Local Plan, including:

- assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms;
- assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;
- highlight and promote opportunities to reduce the need for travel where appropriate;
- identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate;
- consider the cumulative impacts of existing and proposed development on transport networks;
- assess the quality and capacity of transport infrastructure and its ability to meet forecast demands;
- identify the short, medium and long-term transport proposals across all modes.

2.2.4 NPPG *Travel Plans, Transport Assessments and Statements* sets out the key principles that should be taken into account in preparing a Transport Statement. NPPG states that Transport Statements are important as they can positively contribute to:

- encouraging sustainable travel;
- lessening traffic generation and its detrimental impacts;
- reducing carbon emissions and climate impacts;
- creating accessible, connected, inclusive communities;
- improving health outcomes and quality of life;
- improving road safety; and
- reducing the need for new development to increase existing road capacity or provide new roads.

2.3 Local Planning Policy – Kirklees Local Plan, 2013-2031, adopted 27 February 2019

2.3.1 The current adopted Local Plan is the Kirklees Local Plan and is the statutory development plan for the area, covering the period 2013-2031. **Policy LP1: Presumption in favour of sustainable development** which outlines that the Council will work pro-actively with applicants to allow for their proposal to be approved.

2.3.2 Chapter 10 outlines the policies relating to Transport. **Policy LP20: Sustainable Travel** which outlines the following:

New development will be located in accordance with the spatial development strategy to ensure the need to travel is reduced and that essential travel needs can be met by forms of sustainable transport other than the private car. The council will support development proposals that can be served by alternative modes of transport such as public transport, cycling and walking and in the case of new residential development is located close to local facilities or incorporates opportunities for day to day activities on site and will accept that variations in opportunity for this will vary between larger and smaller settlements in the area.

Travel plans will normally be required for all major planning applications in accordance with current guidance and should set targets and monitoring arrangements to ensure sustainable travel patterns are maintained. Travel plans should include agreed and defined outcomes related to a package of specified measures to be implemented including an approach to lower carbon emissions where applicable.

The requirement of a travel plan will also be considered on case by case basis where the proposed development falls below the major application category where it has the potential to generate significant transport movements and/or has insufficient off-street parking within the vicinity of a stressed part of the highway network.

2.3.3 **Policy LP21: Highways and Access** will also be key to this development as work will need to be completed to Barnsley Road to allow for a right-turn lane to be constructed. The policy outlines:

Proposals shall demonstrate that they can accommodate sustainable modes of transport and be accessed effectively and safely by all users.

New development will normally be permitted where safe and suitable access to the site can be achieved for all people and where the residual cumulative impacts of development are not severe.

All proposals shall:

- ensure the safe and efficient flow of traffic within the development and on the surrounding highway network;
- where needed, provide new infrastructure or improvements on or off site to ensure safe access from the highway network for pedestrians, cyclists, public transport users and private vehicles;

- be accompanied by a supporting Transport Assessment or Transport Statement where the development would generate significant trip generation, providing detail as to the impact on highway safety, air quality, noise and light restrictions;
- take into account changes in site levels and topography to ensure the development can be accessed easily and safely by all sections of the community and by different modes of transport;
- take into account the features of surrounding roads and footpaths and provide adequate layout and visibility to allow the development to be accessed safely;
- take into account access for emergency, service and refuse collection vehicles;
- provide on-site safe, secure and convenient cycle parking/storage facilities to encourage sustainable travel modes.

2.4 West Yorkshire Combined Authority Transport Strategy 2040

- 2.4.1 This transport strategy sets out a vision and framework to deliver a world-class, modern, integrated transport system. Their ambition is to connect people to better living standards and higher earning jobs, and to significantly improve the health, overall wellbeing and environment of the people living and working here.

3. Existing Situation

3.1 Site and Surrounding Area

- 3.1.1 The site is located to the south east of Forge Lane, approximately 2km south of Dewsbury town centre.
- 3.1.2 The application site is unallocated land within the Kirklees Local Plan and is understood to have previously been a steel works. The site was cleared many years ago and is still vacant.
- 3.1.3 The site boundaries are:
- North: Calder and Hebble Navigation
 - South: Woodland / Residential properties
 - East: Residential properties
 - West: Forge Lane
- 3.1.4 The site previously had an access onto Forge Lane near the canal bridge which still has a dropped vehicle crossover, however, at present the site cannot be physically accessed from this location.

3.2 Local Highway Network

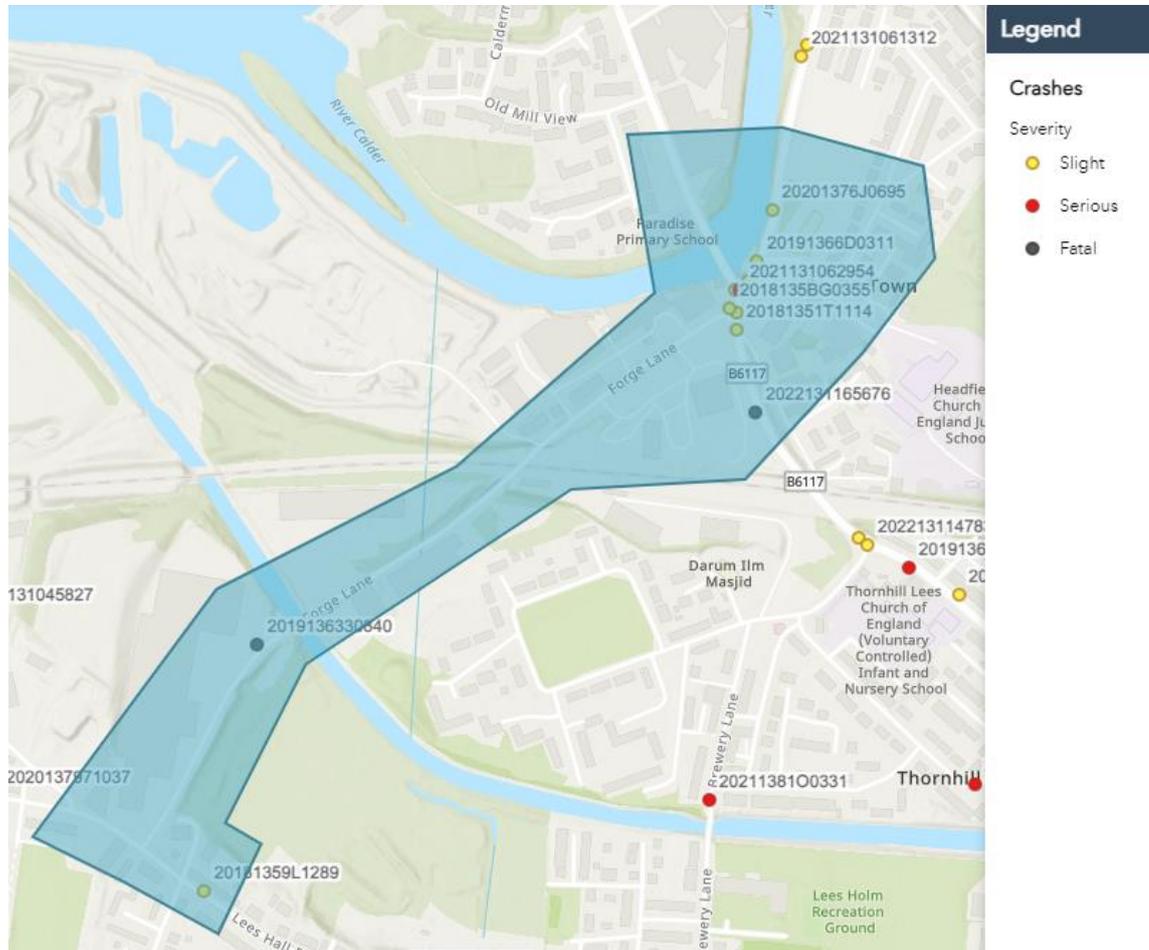
- 3.2.1 Forge Lane is a two-way road with a width of approximately 7.3m in the vicinity of the site and footways are present on both flanks. The road is street lit and subject to a speed limit of 30mph it also has traffic calming features in the form of speed humps and speed cushions which include central islands with keep left bollards.
- 3.2.2 To the south of the site Forge Lane joins Lees Hall Road via a mini roundabout and to the north it joins the B6117 and B6409 via a double mini roundabout junction. Approximately 300m north east of the site there are a set of railways bridges and these have a height restriction of 4.2m (14ft).
- 3.2.3 Lees Hall Road, the B6117 and the B6409 all join the A644 to the north and west provided access to the wider highway network.

3.3 Road Traffic Incident Review

- 3.3.1 National guidance states that a transport assessment should include; “an analysis of the injury accident records on the public highway in the vicinity of the site access for the most recent 3-year period, or 5-year period if the proposed site has been identified as within a high accident area.” The most recent 5-year period, covering accidents from January 2018 to December 2022, has been considered in order to provide a robust assessment.

3.3.2 Road traffic collision data has been obtained from the CrashMap Pro Collision Analysis System v1.31 database for the 2018-2022 period. The incident plot diagram within the site vicinity is shown in **Figure 2** A full copy of the CrashMap Pro accident report is included in **Appendix A**.

Figure 2 – Incident plot diagram [CrashMap Pro]



3.3.3 As can be seen from the report a total of 11 collisions have occurred of which 8 were slight, 1 were serious and 2 were fatal in severity. Nine of the collisions occurred at or within the vicinity of the B6117 / B6409 roundabout junctions, a summary of the slight collisions that occurred in this area are as follows;

Table 1 – Review of B6117 / B6409 slight Incidents

| # | Reference | Date | Description |
|---|---------------|---------------------------|---|
| 1 | 2018135BG0355 | 16 th Nov 2018 | Collision between a Goods vehicle over 7.5t (V1) and car (V2). V1 collided with rear of V2 |
| 3 | 20181351T1114 | 29 th Jan 2018 | Collision between two cars (V1 and V2). V1 was proceeding normally and V2 was turning left |
| 4 | 20191363E1745 | 3 rd Mar 2019 | Collision between two cars (V1 and V2). V1 was proceeding normally and V2 was turning right |
| 6 | 20191366D0311 | 13 rd Jun 2019 | Collision between two cars (V1 and V2). V1 was moving off and V2 was turning right |
| 7 | 20201376J0695 | 19 rd Jun 2020 | Collision between two cars (V1 and V2). V1 collided with the rear of V2 |
| 8 | 2021131048863 | 24 th May 2021 | Collision between a taxi (V1) and a cyclist (V2). V1 was slowing or stopping and V2 was proceeding normally |

| | | | |
|----|---------------|-----------------------------|---|
| 10 | 2021131040971 | 30 th April 2021 | Collision between a motorcyclist (V1) and a car (V2). V1 was proceeding normally and V2 was slowing or stopping |
|----|---------------|-----------------------------|---|

- 3.3.4 In addition to the slight accidents in table 1 a serious accident and a fatal accident have also occurred in this area, a copy of the accident reports for these are attached at **Appendix A** and these are also detailed below;
- Serious accident reference: 2021131062954 – occurred on 5th July 2021 at 08:16 in light rainy conditions on a wet road surface. The accident involved collision a between two cars and occurred at the Thornton Road (B6117) / Station Road (B6409) roundabout. One car was travelling south to north proceeding normally and the other was travelling north to west in the act of turning right. The accident resulted in serious injuries to the passenger of vehicle 1.
 - Fatal accident reference: 2022131165676 – occurred on 21st March 2022 at 19:40 in dark conditions on a dry road surface. The accident involved two cars and occurred on the B6117 approximately 100m south of the Forge Lane / B6117 roundabout. Both cars were proceeding normally along the carriageway in opposite directions and collided. However, as can be seen from the accident report this accident resulted in fatal injuries to a pedestrian attributed to vehicle 1.
- 3.3.5 Another slight accident also occurred on Lees Hall Road, this occurred in September 2018 and involved a collision between a car and a pedestrian. A fatal accident also occurred on Forge Lane and a copy of the accident report for this are attached at **Appendix A** and is also summarised below;
- Fatal accident reference: 2019136330840 – occurred on 3rd March 2019 at 12:53 in light rainy conditions on a wet road surface. The accident involved a collision between two cars and occurred on Forge Lane approximately 30m south of the canal bridge. Both cars were travelling north east to south west and were proceeding normally along the carriageway. The two vehicles did not impact, however, the incident involved one of the cars colliding with a lamp post result in fatal injuries to the driver.
- 3.3.6 As can be seen from the assessment the majority of accidents recorded were slight in severity and occurred at the B6117 / B6409 roundabouts. The accidents at this location appear to generally be rear shunt or failing to give way type accidents which is typical for this junction type and are as a result of driver error, rather than deficiencies in the highway network.
- 3.3.7 The two fatal accidents that occurred are isolated incidents and did not occur at a formal junction. It is again considered that these occurred as a result of driver error, rather than deficiencies in the highway network. Furthermore, the Fatal accident on Forge Lane occurred in March 2019 before the traffic calming facilities detailed in paragraph 3.2.1 were introduced.
- 3.3.8 Based on the information and analysis it is considered that the injury accidents would not be exacerbated by the proposed development.

4. Proposed Development

4.1 Development Overview

4.1.1 The proposed development comprises the construction of two new industrial units with a total floor area of approx. 10,100m² with associated on-site parking. The proposed site layout can be found at **Appendix B** and a breakdown of the units is provide below;

- Unit 1 – 6,250m² warehouse with 500m² ancillary office space
- Unit 2 – 3,850m² warehouse with 300m² ancillary office space

4.2 Access

4.2.1 Access will be taken from Forge Lane via a new priority junction which is proposed to have 10m junction radii and a 7.3m wide access road.

4.2.2 The access road will lead to associated car parking and service areas for each unit. A shared cycle footways will also be provided along the access road providing a traffic free connection between Forge Lane and the units. As can be seen from the plan this will also continue through the site and connect to the existing cycle link onto Brewery Lane.

4.2.3 At the site access visibility splays of 2.4m x 43m will be available in both directions which is considered acceptable based on the plated speed limit, using the guidance set out in Manual for Streets.

4.3 Parking

4.3.1 It is understood that the current Kirklees local plan does not set out parking standards for commercial developments and the standards set out in the previous UDP can be used. These standards establish the maximum level of car parking generally allowable and are as follows;

- Office: 1 space per 25m²
- Industry: 1 space per 50m²
- Warehouse Use: 1 space per 150m² (Plus provision in accordance with class B1 for any office accommodation)
- Service Vehicles 1 space per 500m²

4.3.2 Based on these standards the development could be expected to provide up to 202 parking spaces if solely 'industrial' and up to 100 spaces if solely 'warehouse'. It is understood that these are maximum standards which are from the previous UPD and therefore maybe outdated.

4.3.3 Car parking at the site is proposed at 62 spaces which will include disabled spaces (at least two for each unit). EV charging bays will also be provided in accordance with Building Regulations.

4.3.4 It is acknowledged that the proposed parking provision is below the maximum parking standards identified above and therefore to provide further analysis a parking accumulation has been undertaken using the TRICS data detailed in section 6.1 of this report.

4.3.5 The total vehicle trip rates have been used to derive the number of arrivals and departures to site based on the overall proposed floor area (10,100m²). Using the information from the TRICS data, parking accumulations have been calculated for the proposals, the results are summarised in the following table;

Table 2 – Parking Accumulation

| Time | Trip Rate | | Generations | | Accumulation |
|-------------|-----------|------------|-------------|------------|--------------|
| | Arrivals | Departures | Arrivals | Departures | |
| 0500 – 0600 | 0.078 | 0.007 | 8 | 1 | 7 |
| 0600 – 0700 | 0.214 | 0.148 | 22 | 15 | 14 |
| 0700 – 0800 | 0.173 | 0.032 | 17 | 3 | 28 |
| 0800 – 0900 | 0.15 | 0.036 | 15 | 4 | 39 |
| 0900 – 1000 | 0.137 | 0.068 | 14 | 7 | 46 |
| 1000 – 1100 | 0.142 | 0.065 | 14 | 7 | 53 |
| 1100 – 1200 | 0.057 | 0.074 | 6 | 7 | 52 |
| 1200 – 1300 | 0.101 | 0.125 | 10 | 13 | 49 |
| 1300 – 1400 | 0.076 | 0.131 | 8 | 13 | 44 |
| 1400 – 1500 | 0.063 | 0.074 | 6 | 7 | 43 |
| 1500 – 1600 | 0.04 | 0.129 | 4 | 13 | 34 |
| 1600 – 1700 | 0.023 | 0.167 | 2 | 17 | 19 |
| 1700 – 1800 | 0.106 | 0.099 | 11 | 10 | 20 |
| 1800 – 1900 | 0.089 | 0.118 | 9 | 12 | 17 |
| 1900 – 2000 | 0.006 | 0.029 | 1 | 3 | 15 |
| 2000 – 2100 | 0.003 | 0.049 | 0 | 5 | 10 |

4.4 As can be seen from the above table, parking demand is estimated to reach 53 spaces, therefore, it is demonstrated that the proposed level of parking is adequate and it is considered that the level of parking provided would not lead to vehicle overspill onto the adjacent roads.

4.4.1 It is also proposed to provide 2 sheltered and secure cycle storage points (one for each unit) adjacent to the unit’s entrances. These would be able to accommodate 20 bicycles, the location and amount of cycle parking is considered suitable for the proposals.

4.4.2 Each unit will have dedicated parking / loading bays and as can be seen from the proposed plan the units have separate service areas and therefore vehicles loading at one unit would not obstruct access to the other.

4.5 Servicing

- 4.5.1 All servicing activities will take place from within the site with the necessary servicing and delivery vehicles being able to access and egress the site in forward gear. It is proposed to provide separate bins stores for each unit.

- 4.5.2 Autotrack vehicle tracking software has been used to demonstrate that service and delivery vehicles are be able to gain safe access with space provided within the site allowing these vehicles to manoeuvre and service their respective unit. A copy of the vehicle tracking drawing 163219-001 show these is attached at **Appendix C**.

5. Accessibility by Sustainable Modes of Travel

5.1 Overview

5.1.1 This section of the report considers the accessibility of the development by active travel modes (walking and cycling) and public transport (bus and rail) in order to review the opportunities that will exist for staff to travel to the site sustainably.

5.2 Accessibility on Foot

5.2.1 The Planning for Walking Guidance (2015), published by CIHT highlights that *“Across Britain about 80 per cent of journeys shorter than 1 mile are made wholly on foot – something that has changed little in 30 years. For journeys that are 1 to 2 miles long, 26 per cent are made on foot (NTS, 2012).”*

5.2.2 CIHT notes that people will be willing to walk further to reflect a greater perceived quality or importance of a service or amenity, for example rail services. The report does not provide a definitive view on distances, however, the report makes reference to the IHT publication *“Providing for Journeys on Foot,”* (2000) which suggests a maximum walking distance for commuting, school and sightseeing as 2000m (25-minute walk).

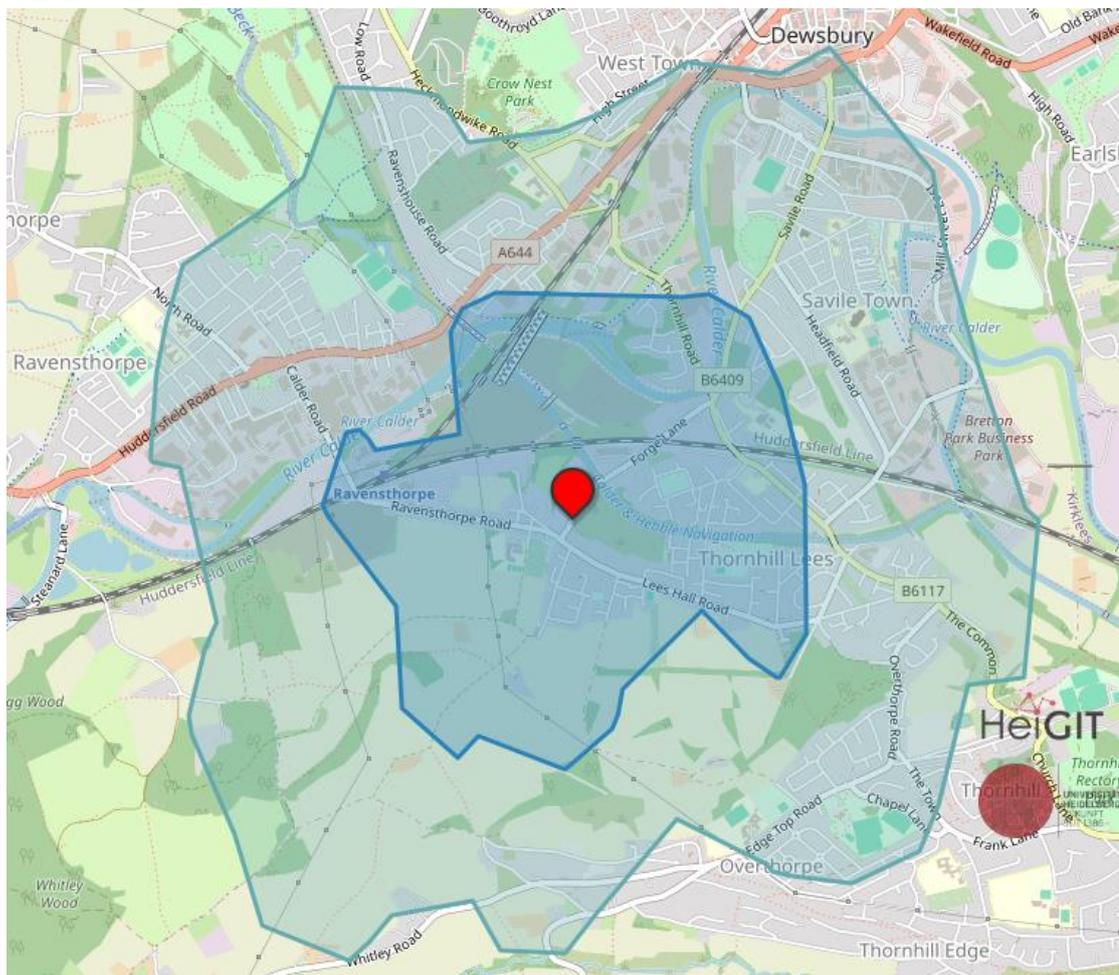
5.2.3 It is also important to consider the routes that would be taken to get to these locations. Building Sustainable Transport into New Developments (DfT, 2008) gives the following advice on pedestrian catchment areas:

“Walking neighbourhoods are typically characterised as having a range of facilities within 10 minutes’ walking distance (around 800 metres). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating.”

5.2.4 **Figure 3** identifies the 1000m and 2000m walking isochrone from the site which indicates areas that should be easily accessible to the site on foot.

Figure 3 – 1km and 2km Walking Isochrones

[OpenRouteService]



5.2.5 The following amenities can be accessed within a 1km walk from the site:

| Amenity | Walking Distance (m) | Travel time |
|---|----------------------|-------------|
| Bus Stops | 180 | 3 minutes |
| Lees Hall Playgroup | 190 | 3 minutes |
| Brewery Lane Surgery | 200 | 3 minutes |
| Brewery Lane Pharmacy | 200 | 3 minutes |
| H & N News Convenience Store | 240 | 3 minutes |
| Ravenshall School | 280 | 4 minutes |
| Arnie's Fish and Chips | 350 | 5 minutes |
| The Bakery | 350 | 5 minutes |
| Thornhill Lees Post Office | 450 | 6 minutes |
| Thornhill Lees C of E Infant and Nursery School | 650 | 9 minutes |
| Mava's Fast Food | 700 | 10 minutes |
| Ravensthorpe Station | 1000 | 14 minutes |

5.2.6 Additionally, the following amenities can be accessed within a 2km walk from the site:

- Dewsbury ASDA
- Mullaco Supermarket
- Dewsbury Bus Station
- Saville Town Park

- Ravensthorpe Retail Park
- Thornhill Sports and Community Centre

- 5.2.7 It is therefore demonstrated that a range of facilities are available in the vicinity of the site that can accommodate the typical daily needs of staff who work in the development.
- 5.2.8 The majority of Thornhill Lees is within a 1km walking distance of the site including the surrounding residential areas. Further residential areas such as the village of Savile town, Ravensthorpe and south Dewsbury are within a 2km walking distance from the site, it is possible that staff may be from the local residential areas and would be able to walk to the site.
- 5.2.9 The roads surrounding the site are street lit with shared cycle and pedestrian footways present to the northeast of the site connecting to Brewery Lane. On the immediate western boundary of the site Forge Lane features traffic calming measures in the form of speed cushions.
- 5.2.10 Throughout the site a proposed lit shared cycle and pedestrian footway will link the units and run between Brewery Lane to the north east of the site, to Forge Lane to the west of the site allowing a safe pedestrian and cycle route around the site and to the main road network.

5.3 *Accessibility by Cycle*

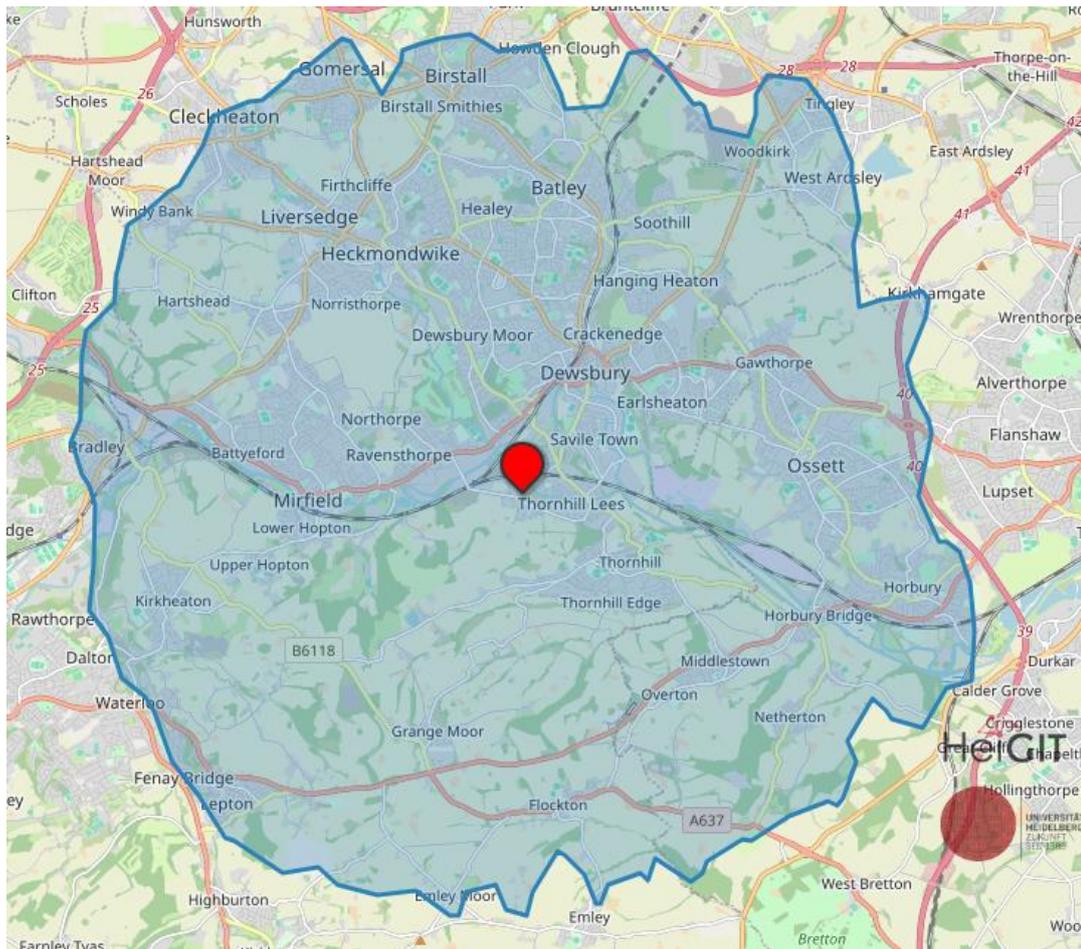
- 5.3.1 Like walking, cycling has an important part to play in reducing congestion, improving accessibility and reducing pollution. Cycling may also allow people without cars to reach destinations that they may otherwise be unable to reach. CIHT's Planning for Cycling (2014) states that:

"The majority of cycling trips are for short distances, with 80% being less than five miles and with 40% being less than two miles. However, the majority of trips by all modes are also short distances (67% are less than five miles, and 38% are less than two miles); therefore, the bicycle is a potential mode for many of these trips. Electric bicycles extend the range that can be cycled comfortably, and combined cycle-rail or cycle-bus journeys offer an alternative to car travel for many longer trips."

- 5.3.2 **Figure 4** identifies destinations that lie within an 8km cycling distance of the site.

Figure 4 – 8km Cycling Isochrone

[OpenRouteService]



5.3.3 **Figure 4** shows that within an 8km cycle from the site areas such as Dewsbury, Batley, Birstall, Heckmondwike, Ossett, Mirfield, Liversedge and Cleckheaton can be accessed. This means that staff working at the proposed site may live within cycling distance in one of these residential areas.

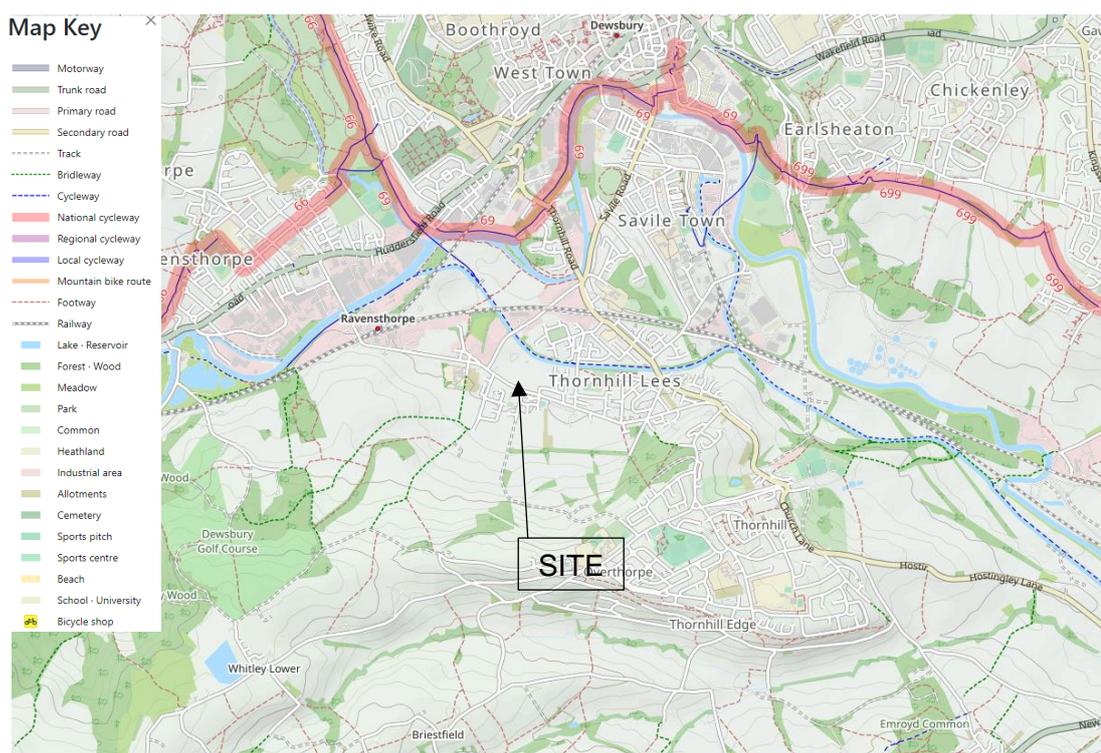
5.3.4 The following railway stations are within an 8km cycling distance, with distance and travel time provided below, which allow for sustainable travel to a wider area:

| | | |
|----------------------|-------|------------|
| Ravensthorpe Station | 1km | 4 minutes |
| Dewsbury Station | 2.7km | 11 minutes |

5.3.5 Where cycle infrastructure such as on and off carriageway cycle paths are in place it is more likely to encourage individuals to cycle. The cycle routes close to the site are shown in Figure 5 below.

Figure 5 – Cycle Routes

[OpenStreetMap]



5.3.6 As shown in Figure 5 the Calder and Hebble Navigation towpath to the north of the site is a designated cycleway, connecting to the Calder Valley Greenway National Cycle Route 69, which connects to the Dewsbury -Ossett Greenway National Cycle Route 699. Additionally, the local road network is generally considered suitable for cyclists.

5.4 Accessibility by Public Transport

Bus Services

5.4.1 The closest bus stops to the site are located on Ouzelwell Lane approx. 215m south of the main site entrance. There are additional bus stops located on Brewery Lane approx. 260m east of the shared cycle and pedestrian access to the site. The location of these stops in relation to the site are shown in **Figure 6**.

Figure 6 – Nearest Bus Stop Location [Google MyMaps]



5.4.2 The facilities at these bus stops and their bus services are shown in **Table 3**:

Table 3 – Bus Stop Facilities

| Bus Stop Location | Bus Stop Information | |
|-------------------------------------|----------------------|--|
| Ouzelwell Lane | Reference | → 45023519 / 45023518 |
| | Direction of travel | → Northbound / Southbound |
| | Distance from site | → 215m / 180m |
| | Facilities | → Shelter, service information / Pole and flag |
| | Services | → 230, 230A |
| Brewery Lane, Thornhill Lees Centre | Reference | → 45015272 / 45015271 |
| | Direction of travel | → Northbound / Southbound |
| | Distance from site | → 260m / 240m |
| | Facilities | → Pole and flag, service information |
| | Services | → 280 |

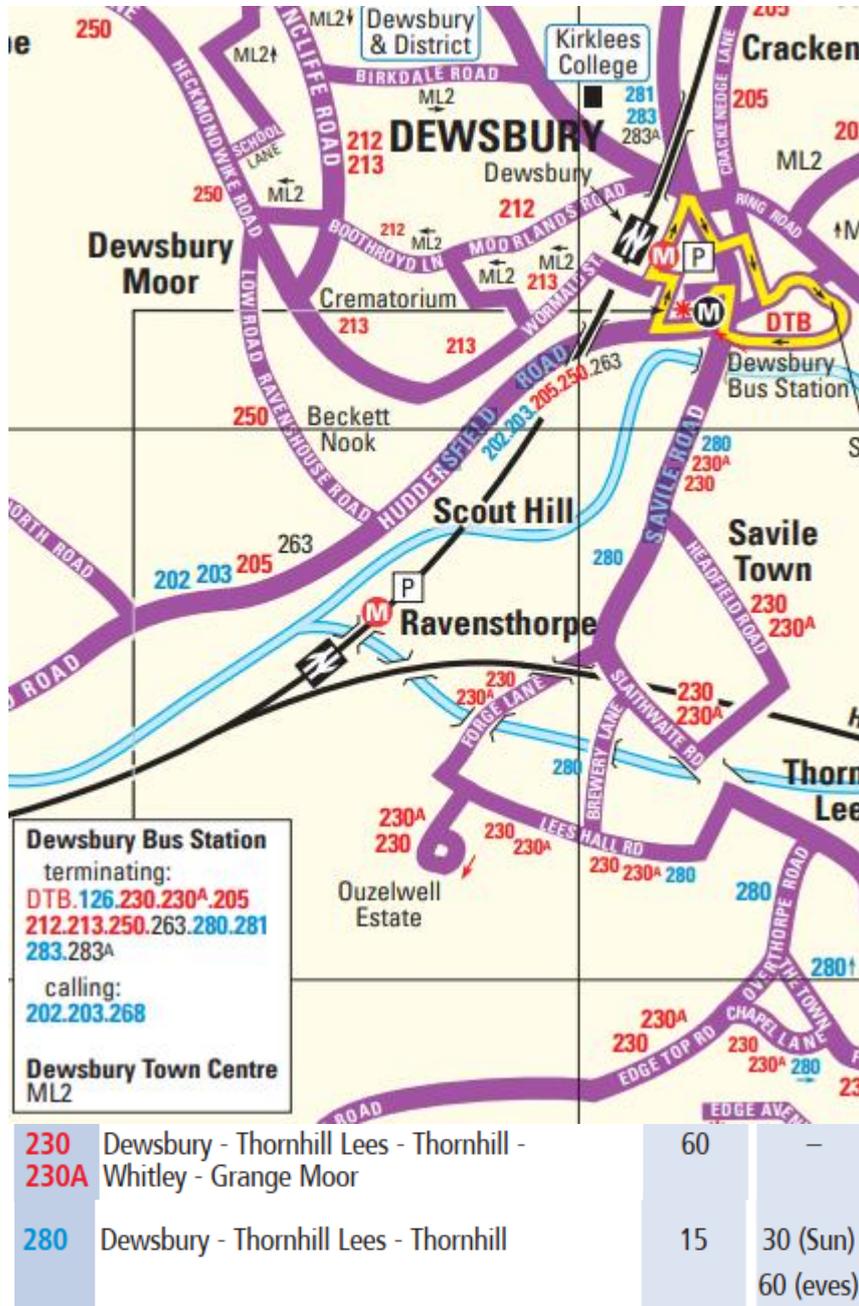
5.4.3 A summary of the services available from these stops are shown in **Table 4**:

Table 4 – Summary of Bus Services

| Number | Route | Approximate Peak Frequency | | |
|--------------|------------------------|----------------------------|------------------|------------|
| | | Mon – Sat Daytime | Mon- Sat Evening | Sunday |
| 230/ 230A | Grange Moor - Dewsbury | 60 mins | No service | No service |
| 280 | Thornhill - Dewsbury | 15 mins | 60 mins | 30 mins |

5.4.4 As all services connect to Dewsbury Bus Station, it is envisaged staff will be able to commute to site from a wide area by bus, The services available at Dewsbury Bus Station are shown in the extract of WYMetro North Kirklees Bus Map, at **Figure 7**.

Figure 7 – Extract from WYMetro North Kirklees Bus Map [WYMetro]



Rail Services

5.4.5 Ravensthorpe Rail Station is located approximately 1km east of the site. Ravensthorpe Station is on the Huddersfield Line and is managed by Northern Rail. The station is unstaffed however there is a helpline available. The following facilities are available

- CCTV
- 10 cycle parking spaces with CCTV

-
- 5.4.6 Ravensthorpe station provides hourly services through to Leeds and Huddersfield, calling at Mirfield, Batley, Morley and Cottingley. As can be seen above the station has cycle parking and the cycle time from the site to the station takes approximately 4 minutes.
- 5.4.7 Dewsbury rail station is the next stop travelling north, located approximately 2.7km north of the site. Dewsbury station provides additional, more frequent services to destinations such as Manchester, Scarborough and Redcar. Station has cycle parking and the cycle time from the site to the station takes approximately 11 minutes.
- 5.4.8 Joint cycle and rail journeys are considered to be a viable option for staff.

5.5 *Accessibility Summary*

- 5.5.1 It is considered that the site has an acceptable level of accessibility by sustainable transport modes, amenities staff are likely to need are within walking and cycling distance from the site. There are a number of residential areas within walking distance of the site, and many more residential areas are within an 8km (approx. 30 minutes) cycling distance of the site.

6. Vehicular Trip Generations and Distribution

6.1 Trip Generations

6.1.1 The trip generation for the proposed development has been estimated using the TRICS database (v7.11.3). The land use category 02 – Employment : C – Industrial Unit has been used to determine appropriate trip rates for the proposals.

6.1.2 The search parameters chosen are summarised in Table 5 below.

Table 5 – TRICS Search Parameters

| Land Use | Trip Rate Selection Criteria |
|------------|---|
| Employment | <ul style="list-style-type: none"> → Land Use Category: 'Employment – Industrial Unit'; → Multi modal trip rate surveys; → Gross Floor Area range: 3413 to 17834 (units: sqm); → The regions of Greater London and Ireland were excluded; → Saturday and Sunday surveys were excluded; and, → Town Centre and Free Standing area sites were excluded. |

6.1.3 The trip generations from the proposed development are summarised in Tables 6 below. The full TRICS report can be found at **Appendix D**.

Table 6 – Predicted Trip Rates and Resultant Trips – Industrial Unit

| Time Period | Trip Rates | | Generations | | |
|-------------------------|------------|------------|-------------|------------|-------|
| | Arrivals | Departures | Arrivals | Departures | Total |
| AM Peak 06:00-07:00* | 0.214 | 0.148 | 22 | 15 | 37 |
| AM Peak 08:00-09:00 | 0.150 | 0.036 | 15 | 4 | 19 |
| PM Peak 16:00-17:00 | 0.023 | 0.167 | 2 | 17 | 19 |
| PM Peak 17:00-18:00 | 0.106 | 0.099 | 11 | 10 | 21 |

*Busiest TRICS peak period

6.1.4 Based on the above table it can be seen that the proposed development would result in 37 vehicle movements (two way) in the AM peak (based on busiest TRICS period) and 21 vehicle movements in the PM peak. Which equates to approximately 1 vehicle every 1 ½ minutes in the AM peak and approximately 1 vehicle every 3 minutes PM peak periods.

6.2 Traffic Distribution

- 6.2.1 In order to determine the potential distribution of the proposed development estimated on the local highway network, a traffic distribution assessment has been undertaken using the 2011 Census: Origin/ Destination statistics (dataset: WU03EW) which identifies; Location of usual residence and place of work by method of travel to work' at Middle Super Output Area (MSOA) level.
- 6.2.2 The site is located on the boundaries of both Kirklees 023 and 024 MSOAs, the extent of these MSOAs are illustrated on Figures 3 and 4. Given this, both Kirklees 023 and 024 have been selected as the place of work and then combined.

Figure 8 – 'Kirklees 023' MSOA Output Area

Map of E02002293 : Kirklees 023

Close

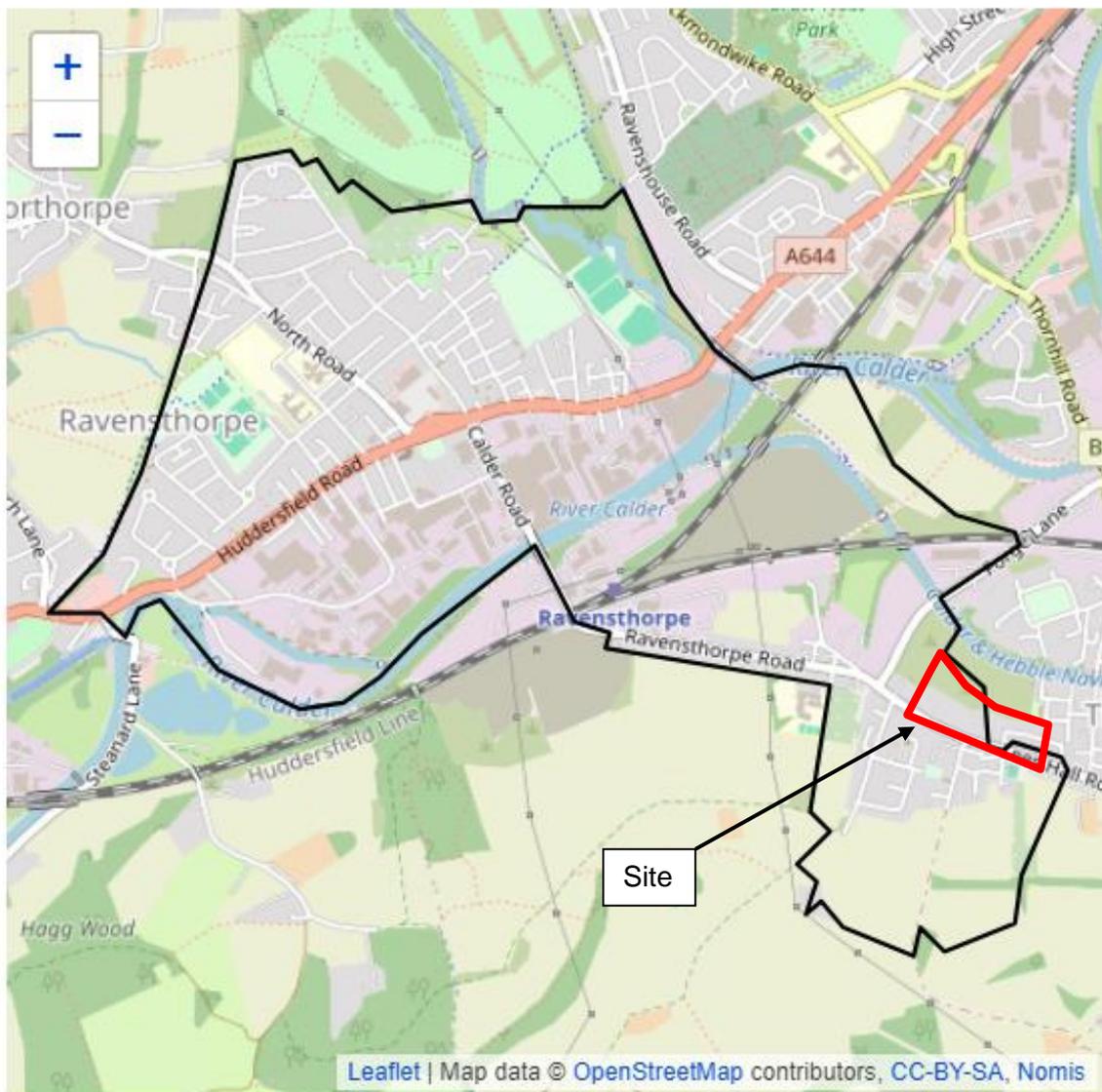
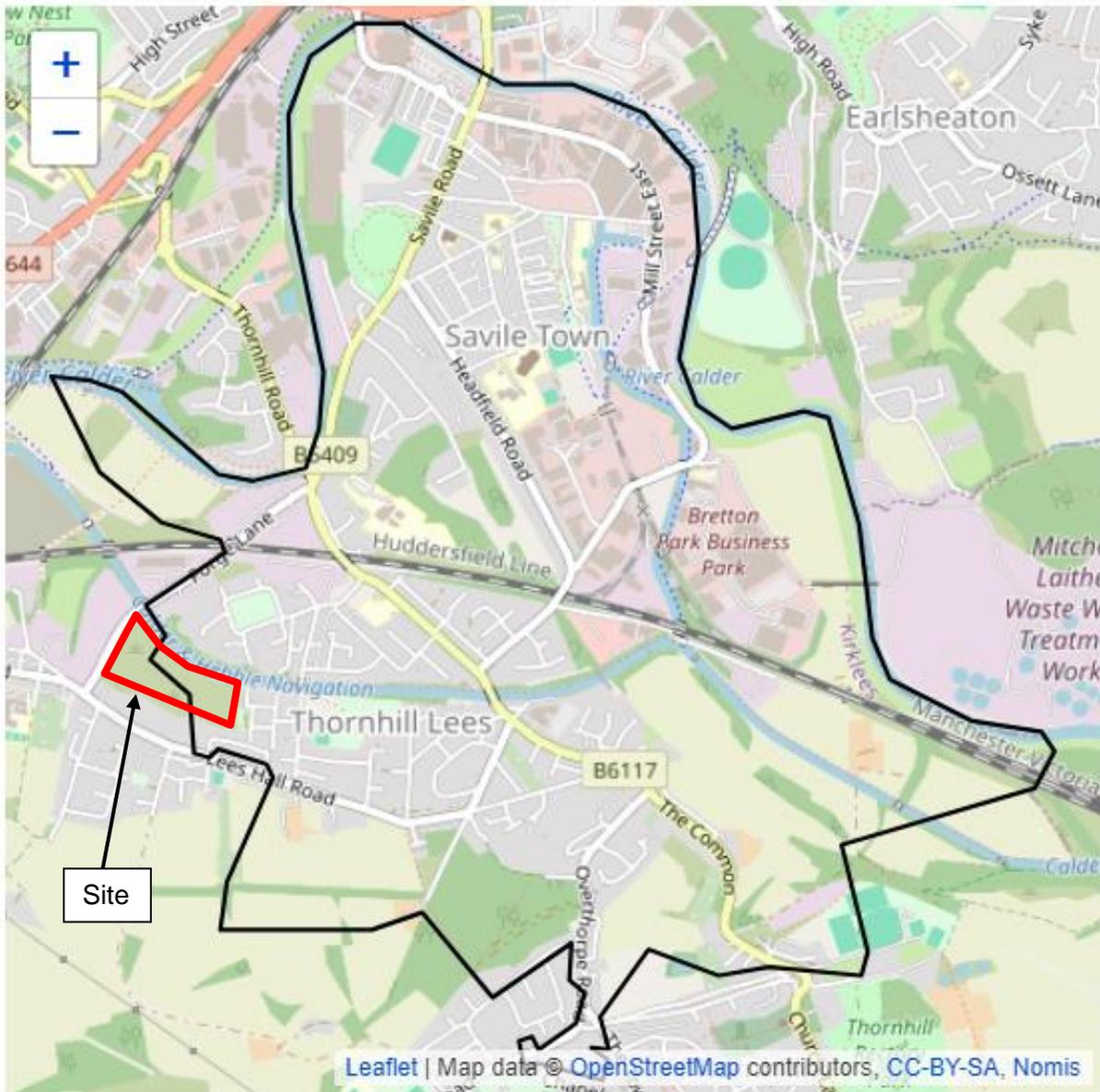


Figure 9 – ‘Kirklees 024’ MSOA Output Area

Map of E02002294 : Kirklees 024

Close



6.2.3 As the MSOA data includes all nationwide destinations, the results of the search have been refined to exclude all MSOA's which generate less than 1% of the overall sample. It is considered that this excluded information is not relevant in terms of establishing a 'likely' distribution of traffic.

- 6.2.4 The likely traffic route assignments between the site and the identified MSOA's have been determined using online route mapping and Population Centroid Data which identifies the centre of each MSOA based upon its residential population.
- 6.2.5 The table included at **Appendix E** details the percentage drawn from each surrounding MSOA and identifies the suggested route assignment on the local highway network. The assignment percentages on the highway network are shown indicatively on the diagram in **Appendix F**. The predicted development traffic flows are shown assigned to the highway network and illustrated on diagram in **Appendix G**.
- 6.2.6 As can be seen from the data the development traffic has an approximately 50/50 split along Forge Lane with 52.1% traveling north east to the B6117 / B6409 junction and the other 47.9% travelling south west toward the Ravensthorpe Road junction.
- 6.2.7 The assessment predicts that the development would result in an additional 20 vehicles in the AM and 11 vehicles in the PM peak at the B6117 / B6409 junction, which equates to approximately 1 additional vehicle every 3 minutes in the AM peak hour and 1 vehicle every 5 ½ minutes in the PM peak hour.
- 6.2.8 The assessment also predicts that the development would result in an additional 17 vehicle in the AM and 10 vehicles in the PM peak at the Forge Lane / Ravensthorpe Road junction which equates to approximately 1 additional vehicle every 3 ½ minutes in the AM peak hour and 1 vehicle every 6 minutes in the PM peak hour.
- 6.2.9 As can be seen from the above the maximum amount of traffic generated at either junction is no more than 20 vehicles in either peak hour period. This is below 30 two-way vehicle movements in any hour and therefore at a level where junction capacity assessments are not considered to be required.
- 6.2.10 In accordance with NPPF, it is considered that the proposals would not have an unacceptable impact on highway safety and the residual cumulative impacts of the development on the road network would not be severe.

7. Summary and Conclusions

- 7.1 Sanderson Associates Consulting Engineers has been appointed by Hebble Homes Ltd to provide highways consultancy services in relation to proposals for an industrial development on land off Forge Lane, Dewsbury.
- 7.2 The site is located to the south east of Forge Lane, approximately 2km south of Dewsbury town centre. It is unallocated land within the Kirklees Local Plan and is understood to have previously been a steel works. The site was cleared many years ago and is still vacant.
- 7.3 The proposed development comprises the construction of two new industrial units with a total floor area of approx. 10,100m² with associated on-site parking. Access will be taken from Forge Lane via a new priority junction which is proposed to have 10m junction radii and a 7.3m wide access road.
- 7.4 At the site access visibility splays of 2.4m x 43m will be available in both directions which is considered acceptable based on the plated speed limit, using the guidance set out in Manual for Streets.
- 7.5 The access road will lead to associated car parking and service areas for each unit. It is demonstrated that the proposed level of parking is adequate and it is considered that the level of parking provided would not lead to vehicle overspill onto the adjacent roads.
- 7.6 It can be concluded that the incidents within the study are likely to be due to human error as opposed to deficiencies in the local highway network. There are no accident trends in close proximity to the site which are likely to be adversely affected by the proposal.
- 7.7 It is considered that the site has a reasonable level of accessibility by sustainable transport modes, amenities' staff are likely to need are within walking and cycling distance from the site.
- 7.8 The assessment in section 6 of the Transport Assessment shows that the proposed development is estimated to generate 37 vehicle movements in the AM peak hour and 21 in the PM peak hour. This equates to approximately 1 vehicle every 1½ minutes in the AM and 1 vehicle every 3 minutes in the PM.
- 7.9 Once this level of traffic is distributed onto the network it is considered that this number of vehicle movements would not have an adverse impact on the operation of the local highway network.
- 7.10 This Transport Assessment demonstrates that the development will not have an unacceptable impact on highway safety and that residual cumulative impacts of the development are not severe in transport terms, consequently the planning application should be supported by the Local Authority on transport grounds.



Appendix A

Collison Data

Summary

| Name | Count | Area(m ²) | Length(m) |
|---------|-------|-----------------------|-----------|
| Crashes | 11 | N/A | N/A |

Crashes

| # | Carriageway_Hazards | Severity | Officer_Attended | Accident_DateTime | Year | Number_of_vehicles | Number_of_casualties | Easting |
|----|---------------------|----------|-------------------------------------|--------------------|------|--------------------|----------------------|---------|
| 1 | None | Slight | Police officer attended crash scene | November 16, 2018 | 2018 | 2 | 1 | 424099 |
| 2 | None | Slight | Police officer attended crash scene | September 21, 2018 | 2018 | 1 | 1 | 423583 |
| 3 | None | Slight | Police officer attended crash scene | January 29, 2018 | 2018 | 2 | 2 | 424105 |
| 4 | None | Slight | Police officer attended crash scene | March 14, 2019 | 2019 | 2 | 2 | 424106 |
| 5 | None | Fatal | Police officer attended crash scene | March 3, 2019 | 2019 | 2 | 2 | 423633 |
| 6 | None | Slight | No officer attended crash scene | June 13, 2019 | 2019 | 2 | 2 | 424125 |
| 7 | None | Slight | Police officer attended crash scene | June 19, 2020 | 2020 | 2 | 2 | 424141 |
| 8 | None | Slight | No officer attended crash scene | May 24, 2021 | 2021 | 2 | 1 | 424117 |
| 9 | None | Serious | Police officer attended crash scene | July 5, 2021 | 2021 | 2 | 1 | 424108 |
| 10 | None | Slight | Police officer attended crash scene | April 30, 2021 | 2021 | 2 | 1 | 424104 |
| 11 | None | Fatal | Police officer attended crash scene | March 21, 2022 | 2022 | 2 | 1 | 424124 |

| # | Northing | Highway_Authority | Road_Number | Weather_conditions | Road_Type | Road_surface | Speed_Limit | Light_conditions |
|----|----------|-------------------|-------------|----------------------------|--------------------|--------------|-------------|--|
| 1 | 420244 | Kirklees | U0 | Fine without high winds | Single carriageway | Wet or Damp | 30 | Daylight: regardless of presence of streetlights |
| 2 | 419663 | Kirklees | U0 | Fine without high winds | Single carriageway | Dry | 30 | Daylight: regardless of presence of streetlights |
| 3 | 420223 | Kirklees | B6117 | Fine without high winds | Single carriageway | Dry | 30 | Daylight: regardless of presence of streetlights |
| 4 | 420241 | Kirklees | B6117 | Fine without high winds | Roundabout | Dry | 30 | Darkness: street lights present and lit |
| 5 | 419908 | Kirklees | U0 | Raining without high winds | Single carriageway | Wet or Damp | 30 | Daylight: regardless of presence of streetlights |
| 6 | 420292 | Kirklees | U0 | Fine without high winds | Single carriageway | Dry | 30 | Daylight: regardless of presence of streetlights |
| 7 | 420343 | Kirklees | B6409 | Fine without high winds | Single carriageway | Wet or Damp | 30 | Daylight: regardless of presence of streetlights |
| 8 | 420271 | Kirklees | B6409 | Fine without high winds | Roundabout | Dry | 30 | Daylight: regardless of presence of streetlights |
| 9 | 420263 | Kirklees | B6409 | Raining without high winds | Roundabout | Wet or Damp | 30 | Daylight: regardless of presence of streetlights |
| 10 | 420263 | Kirklees | B6117 | Fine without high winds | Single carriageway | Dry | 30 | Daylight: regardless of presence of streetlights |
| 11 | 420142 | Kirklees | B6117 | Fine without high winds | Single carriageway | Dry | 30 | Darkness: street lights present and lit |

| # | Junction_detail | Pedestrian_Crossing | Involved_pedalcycle | Involved_Motorcycle | Pedestrian_casualty | Child_casualty | Pedal_cycleuser_casualty | Motorcycle_user_casualty |
|----|--|---|---------------------|---------------------|---------------------|----------------|--------------------------|--------------------------|
| 1 | Roundabout | No physical crossing facility within 50 metres | 0 | 0 | 0 | 0 | 0 | 0 |
| 2 | Not at or within 20 metres of junction | No physical crossing facility within 50 metres | 0 | 0 | 1 | 0 | 0 | 0 |
| 3 | T or staggered junction | Zebra crossing | 0 | 0 | 0 | 0 | 0 | 0 |
| 4 | Roundabout | No physical crossing facility within 50 metres | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | Not at or within 20 metres of junction | No physical crossing facility within 50 metres | 0 | 0 | 0 | 0 | 0 | 0 |
| 6 | T or staggered junction | No physical crossing facility within 50 metres | 0 | 0 | 0 | 0 | 0 | 0 |
| 7 | Not at or within 20 metres of junction | Pelican, puffin, toucan or similar non-junction pedestrian light crossing | 0 | 0 | 0 | 1 | 0 | 0 |
| 8 | Mini roundabout | No physical crossing facility within 50 metres | 1 | 0 | 0 | 0 | 1 | 0 |
| 9 | Mini roundabout | Zebra crossing | 0 | 0 | 0 | 0 | 0 | 0 |
| 10 | Mini roundabout | Zebra crossing | 0 | 1 | 0 | 0 | 0 | 1 |
| 11 | Not at or within 20 metres of junction | Zebra crossing | 0 | 0 | 1 | 1 | 0 | 0 |

| # | Involved_car | Involved_goodsvehicle | Involved_Bus | Involved_young_driver | Local_Authority_District | Junction_control | Is_Provisional | Is_Amended | Web_Link | Count |
|---|--------------|-----------------------|--------------|-----------------------|--------------------------|--------------------------|----------------|------------|---|-------|
| 1 | 1 | 1 | 0 | 0 | Kirklees | Give way or uncontrolled | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportId=2018135BG0355 | 1 |
| 2 | 1 | 0 | 0 | 0 | Kirklees | Not Applicable | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportId=20181359L1289 | 1 |
| 3 | 1 | 0 | 0 | 0 | Kirklees | Give way or uncontrolled | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportId=20181351T1114 | 1 |
| 4 | 1 | 0 | 0 | 1 | Kirklees | Give way or uncontrolled | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportId=20191363E1745 | 1 |
| 5 | 1 | 0 | 0 | 1 | Kirklees | Not Applicable | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportId=2019136330840 | 1 |
| 6 | 1 | 0 | 0 | 0 | Kirklees | Give way or uncontrolled | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportId=20191366D0311 | 1 |
| 7 | 1 | 0 | 0 | 0 | Kirklees | Not Applicable | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportId=20201376J0695 | 1 |
| 8 | 0 | 0 | 0 | 0 | Kirklees | Give way or uncontrolled | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportId=2021131048863 | 1 |

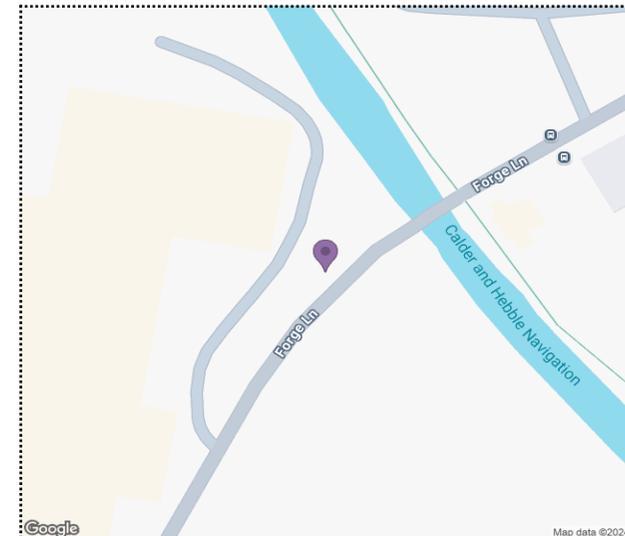
| | | | | | | | | | | |
|----|---|---|---|---|----------|--------------------------|----|----|---|---|
| 9 | 1 | 0 | 0 | 0 | Kirklees | Give way or uncontrolled | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportid=2021131062954 | 1 |
| 10 | 1 | 0 | 0 | 1 | Kirklees | Give way or uncontrolled | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportid=2021131040971 | 1 |
| 11 | 1 | 0 | 0 | 1 | Kirklees | Not Applicable | No | No | https://www.crashmap.co.uk/reports/proreportservice?reportid=2022131165676 | 1 |

Report produced from CrashMap Pro



Validated Data

| | | | | | |
|--------------------------------------|--|-----------------------|----------|---------------------------|---------------|
| Crash Date: | Sunday, March 3, 2019 | Time of Crash: | 12:53:00 | Crash Reference: | 2019136330840 |
| Highest Injury Severity: | Fatal | Road Number: | U0 | Casualties: | 2 |
| Highway Authority: | Kirklees | | | Vehicles: | 2 |
| Local Authority: | Kirklees | | | OS Grid Reference: | 423633 419908 |
| Weather Description: | Raining without high winds | | | | |
| Road Surface Description: | Wet or Damp | | | | |
| Speed Limit: | 30 | | | | |
| Light Conditions: | Daylight: regardless of presence of streetlights | | | | |
| Carriageway Hazards: | None | | | | |
| Junction Detail: | Not at or within 20 metres of junction | | | | |
| Junction Pedestrian Crossing: | No physical crossing facility within 50 metres | | | | |
| Road Type: | Single carriageway | | | | |
| Junction Control: | Not Applicable | | | | |



For more information about the data please visit: www.crashmap.co.uk/home/faq

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Crash Date:

Sunday, March 3, 2019

Time of Crash: 12:53:00

Crash Reference: 2019136330840

Vehicles Involved

| Vehicle Ref | Vehicle Type | Vehicle Age | Driver Gender | Driver Age Band | Vehicle Manoeuvre | First Point of Impact | Journey Purpose | Hit Object - On Carriageway | Hit Object - Off Carriageway |
|-------------|------------------------------|-------------|---------------|-----------------|--|-----------------------|-----------------|-----------------------------|------------------------------|
| 1 | Car (excluding private hire) | 12 | Female | 21 - 25 | Vehicle proceeding normally along the carriageway, not on a bend | Did not impact | Unknown | None | None |
| 2 | Car (excluding private hire) | 16 | Male | 21 - 25 | Vehicle proceeding normally along the carriageway, not on a bend | Front | Unknown | None | Lamp post |

Casualties

| Vehicle Ref | Casualty Ref | Injury Severity | Casualty Class | Gender | Age Band | Pedestrian Location | Pedestrian Movement |
|-------------|--------------|-----------------|------------------------------|--------|----------|---------------------|---------------------|
| 2 | 1 | Fatal | Driver or rider | Male | 21 - 25 | Unknown or other | Unknown or other |
| 2 | 2 | Slight | Vehicle or pillion passenger | Female | 16 - 20 | Unknown or other | Unknown or other |

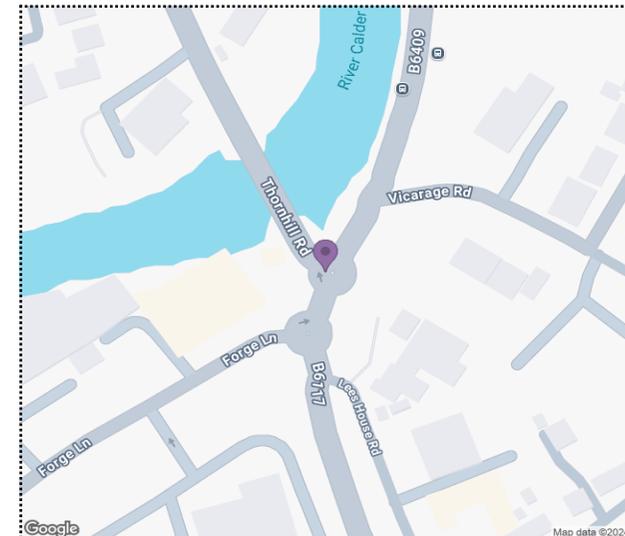
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Validated Data

| | | | | | |
|--------------------------------------|--|-----------------------|----------|---------------------------|---------------|
| Crash Date: | Monday, July 5, 2021 | Time of Crash: | 07:16:00 | Crash Reference: | 2021131062954 |
| Highest Injury Severity: | Serious | Road Number: | B6409 | Casualties: | 1 |
| Highway Authority: | Kirklees | | | Vehicles: | 2 |
| Local Authority: | Kirklees | | | OS Grid Reference: | 424108 420263 |
| Weather Description: | Raining without high winds | | | | |
| Road Surface Description: | Wet or Damp | | | | |
| Speed Limit: | 30 | | | | |
| Light Conditions: | Daylight: regardless of presence of streetlights | | | | |
| Carriageway Hazards: | None | | | | |
| Junction Detail: | Mini roundabout | | | | |
| Junction Pedestrian Crossing: | Zebra crossing | | | | |
| Road Type: | Roundabout | | | | |
| Junction Control: | Give way or uncontrolled | | | | |



For more information about the data please visit: www.crashmap.co.uk/home/faq

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Validated Data

Crash Date:

Monday, July 5, 2021

Time of Crash: 07:16:00

Crash Reference: 2021131062954

Vehicles Involved

| Vehicle Ref | Vehicle Type | Vehicle Age | Driver Gender | Driver Age Band | Vehicle Manoeuvre | First Point of Impact | Journey Purpose | Hit Object - On Carriageway | Hit Object - Off Carriageway |
|-------------|------------------------------|-------------|---------------|-----------------|--|-----------------------|------------------------|-----------------------------|------------------------------|
| 1 | Car (excluding private hire) | 11 | Male | 66 - 75 | Vehicle proceeding normally along the carriageway, not on a bend | Front | Other | None | None |
| 2 | Car (excluding private hire) | 8 | Male | 26 - 35 | Vehicle is in the act of turning right | Nearside | Commuting to/from work | None | None |

Casualties

| Vehicle Ref | Casualty Ref | Injury Severity | Casualty Class | Gender | Age Band | Pedestrian Location | Pedestrian Movement |
|-------------|--------------|-----------------|------------------------------|--------|----------|---------------------|---------------------|
| 1 | 1 | Serious | Vehicle or pillion passenger | Female | 56 - 65 | Unknown or other | Unknown or other |

For more information about the data please visit: www.crashmap.co.uk/home/faq

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Validated Data

Crash Date: Monday, March 21, 2022

Time of Crash: 19:40:00

Crash Reference: 2022131165676

Highest Injury Severity: Fatal

Road Number: B6117

Casualties: 1

Highway Authority: Kirklees

Vehicles: 2

Local Authority: Kirklees

OS Grid Reference: 424124 420142

Weather Description: Fine without high winds

Road Surface Description: Dry

Speed Limit: 30

Light Conditions: Darkness: street lights present and lit

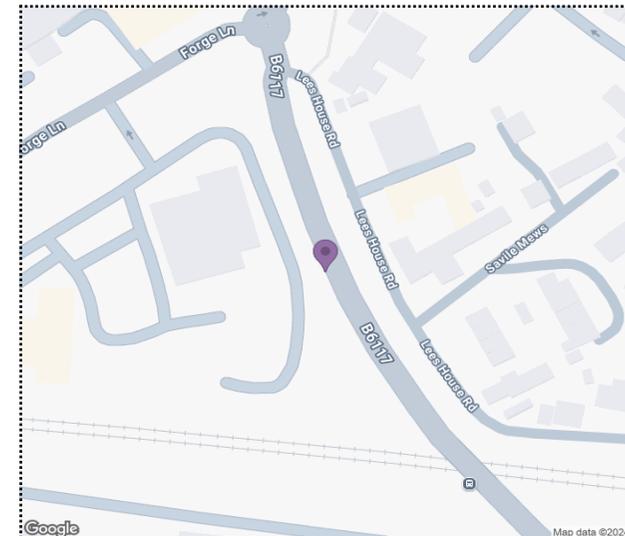
Carriageway Hazards: None

Junction Detail: Not at or within 20 metres of junction

Junction Pedestrian Crossing: Zebra crossing

Road Type: Single carriageway

Junction Control: Not Applicable



For more information about the data please visit: www.crashmap.co.uk/home/faq

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Validated Data

Crash Date:

Monday, March 21, 2022

Time of Crash:

19:40:00

Crash Reference: 2022131165676

Vehicles Involved

| Vehicle Ref | Vehicle Type | Vehicle Age | Driver Gender | Driver Age Band | Vehicle Maneuvre | First Point of Impact | Journey Purpose | Hit Object - On Carriageway | Hit Object - Off Carriageway |
|-------------|------------------------------|-------------|---------------|-----------------|--|-----------------------|-----------------|-----------------------------|------------------------------|
| 1 | Car (excluding private hire) | 14 | Male | 46 - 55 | Vehicle proceeding normally along the carriageway, not on a bend | Front | Unknown | None | None |
| 2 | Car (excluding private hire) | 5 | Female | 16 - 20 | Vehicle proceeding normally along the carriageway, not on a bend | Front | Unknown | None | None |

Casualties

| Vehicle Ref | Casualty Ref | Injury Severity | Casualty Class | Gender | Age Band | Pedestrian Location | Pedestrian Movement |
|-------------|--------------|-----------------|----------------|--------|----------|--|---------------------------------|
| 1 | 1 | Fatal | Pedestrian | Male | 11 - 15 | In carriageway, crossing on pedestrian crossing facility | Crossing from driver's nearside |

For more information about the data please visit: www.crashmap.co.uk/home/faq

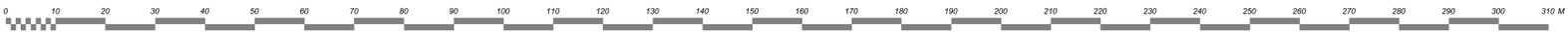
To subscribe to unlimited reports using CrashMap Pro visit: www.crashmap.co.uk/home/premium_services



Appendix B

Proposed Site Layout

Do not scale from this drawing. If in doubt please contact the architect.
 Revisions
 E 13/06/2024 CS Final site boundary revised to accommodate road alignment slope
 F 16/09/2024 CS Final site boundary adjacent to canal relocated away from canal
 G 10/10/2024 CS Final site boundary adjacent to canal relocated away from canal

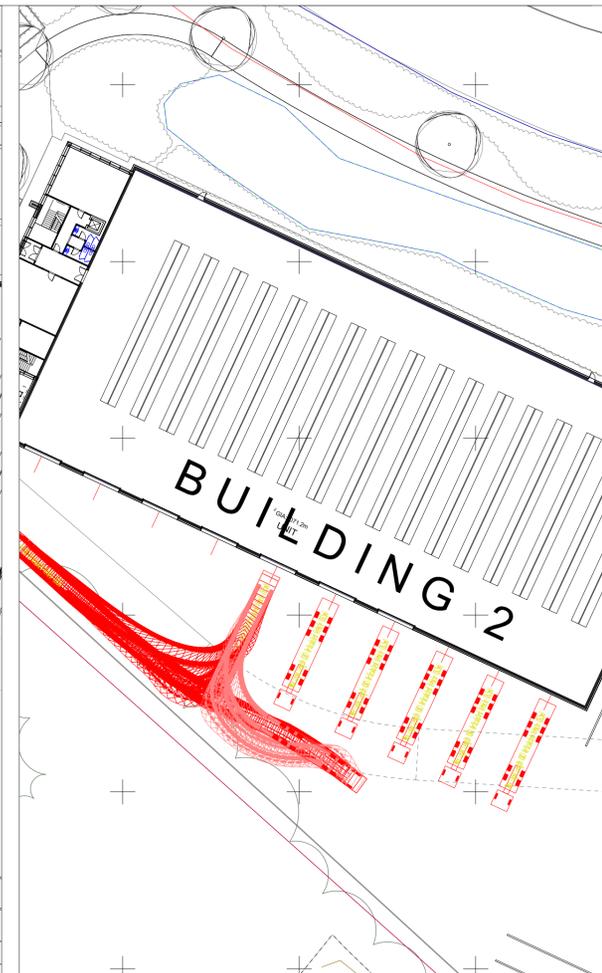
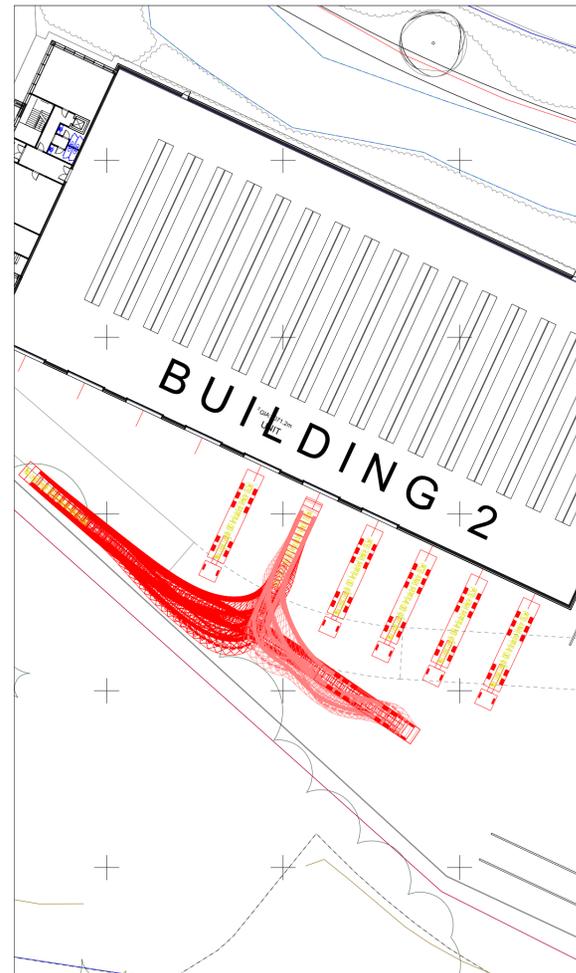
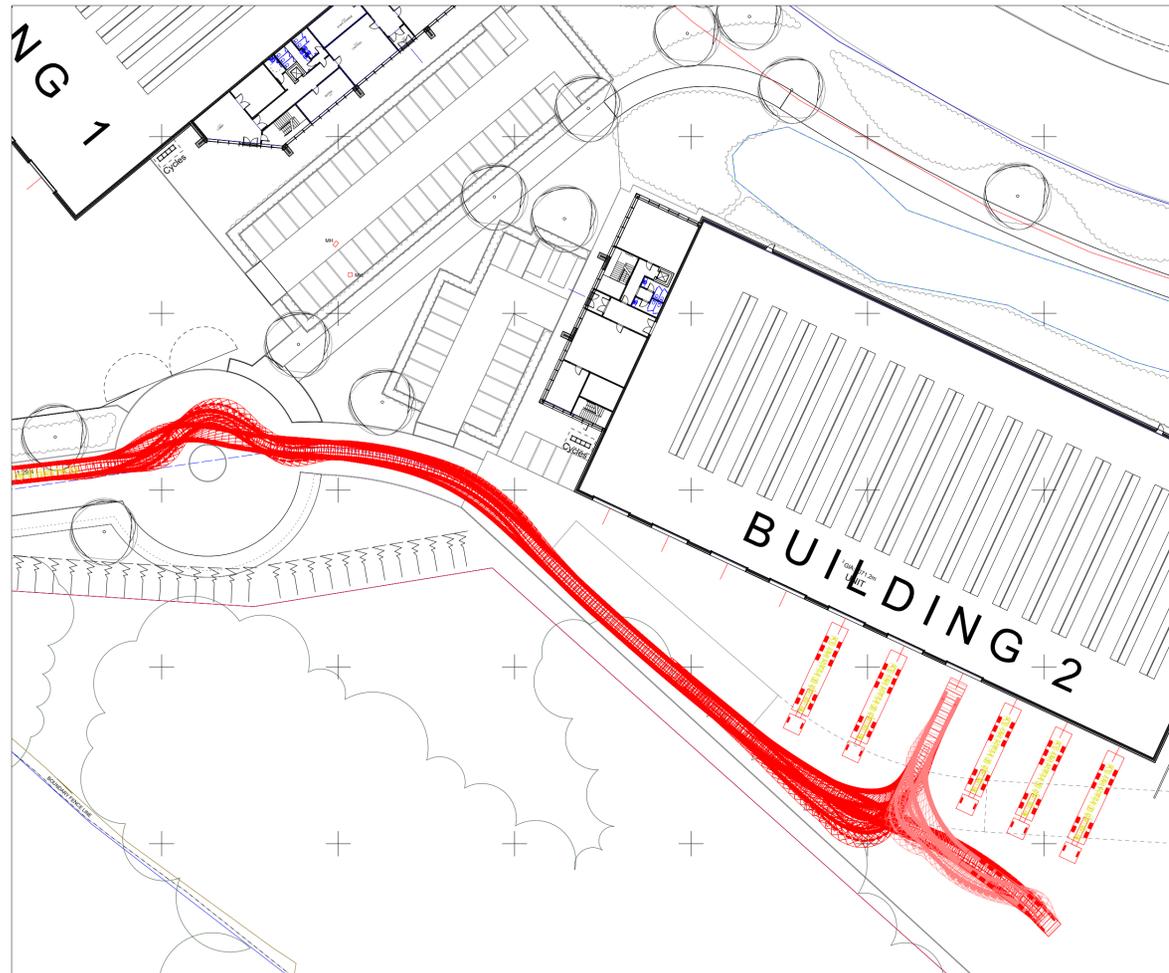
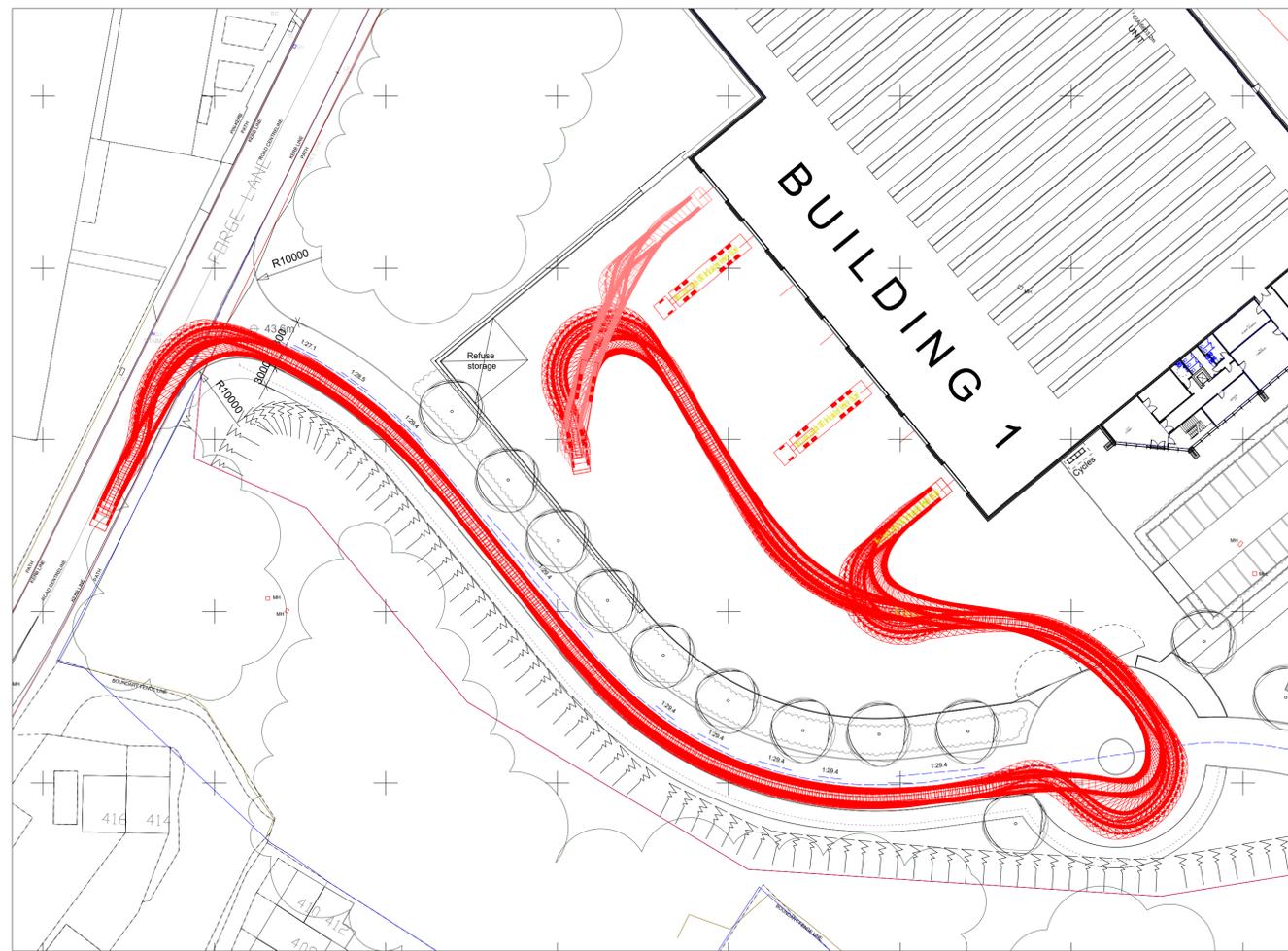
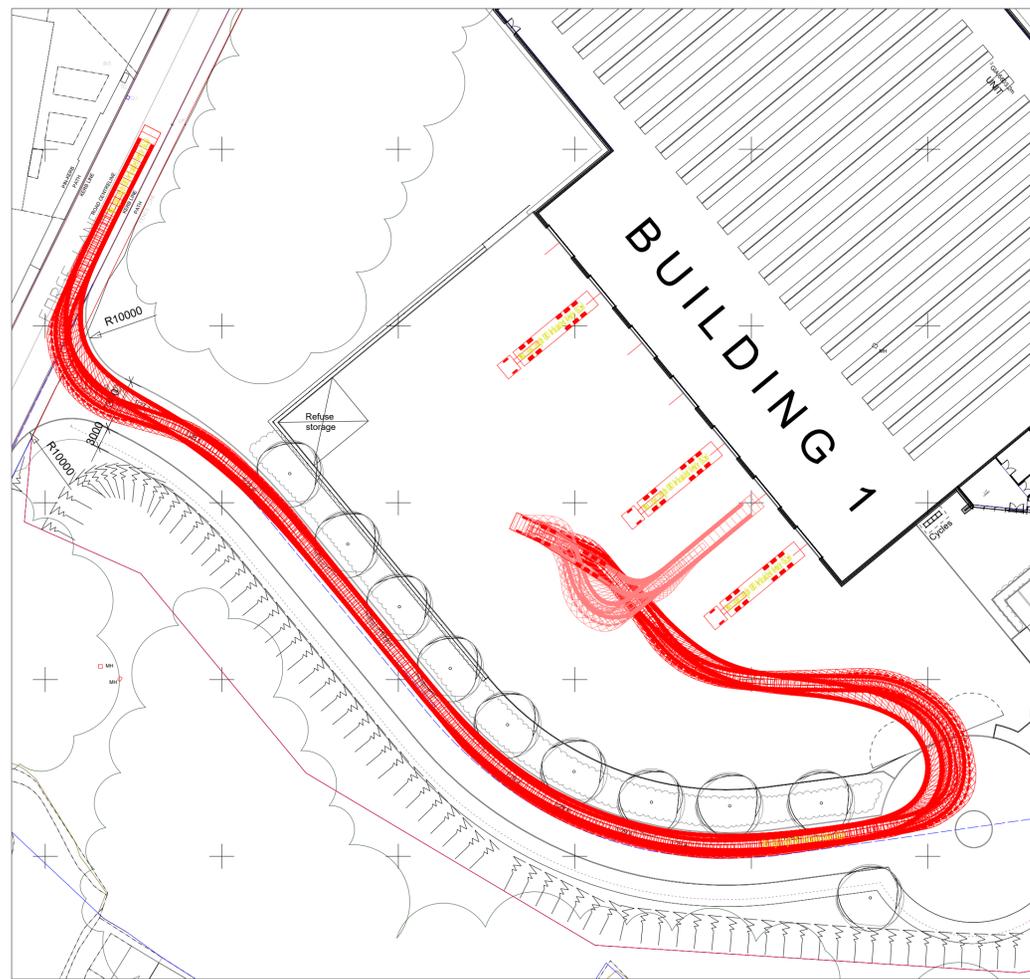


KS architects
 project
Forge Lane, Dewsbury
 drawing title
Site layout industrial
 drawing number
2776(1)003 G
 scale drawn/checked date
 1:500 ISO A0 / 14/02/2023
 status
Comment RIBA #
 email: info@ks-architects.co.uk
 web: www.ks-architects.co.uk
 © Copyright 2023 - James Peate - Forge Lane, Dewsbury Drawing 2776(1)003 G

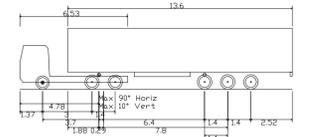


Appendix C

Drawing 16321-001



- Sanderson Associates Consulting Engineers ("the consultant"), has not checked or verified, and shall have no liability whatsoever for any inaccuracies which may be attributable to any data, reports, base plan(s) and drawings provided by the client, or purchased by the consultant on the client's behalf, that may have been utilised within this drawing.
- The consultant shall not be liable for the use by any person of any document for any purpose other than that for which the same were provided by the consultant.
- No liability whatsoever is accepted by the consultant for any error or omissions.
- The consultant accepts no liability for any vehicle specification errors within the vehicle track software used and / or its vehicle libraries.



Max Legal Length (UK) Articulated Vehicle (16.5m)
 Overall Length 16.500m
 Overall Width 2.550m
 Overall Body Height 3.681m
 Min Body Ground Clearance 0.411m
 Max Track Width 2.500m
 Lock to lock time 6.00s
 Kerb to Kerb Turning Radius 6.530m

| Rev | Amendment | Drawn | Date | Checked |
|-----|-----------|-------|------|---------|
| | | | | |



| | | | | |
|----------------|-----------------------------|-------------|----|-----|
| Client | Hebble Homes Ltd | | | |
| Project Title | Forge Lane, Dewsbury | | | |
| Drawing Title | Vehicle Swept Path Analysis | | | |
| Scale | 1:200 | Drawn By | AA | |
| Drawing Size | A1 | Checked By | SB | |
| Date | December 2024 | Approved By | SB | |
| Drawing Number | | 163219-001 | | Rev |



Appendix D

TRICS Output

Calculation Reference: AUDIT-109307-241004-1052

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT

Category : C - INDUSTRIAL UNIT

MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

| | | |
|----|------------------|--------|
| 02 | SOUTH EAST | |
| | HC HAMPSHIRE | 1 days |
| | HF HERTFORDSHIRE | 1 days |
| 03 | SOUTH WEST | |
| | DV DEVON | 1 days |
| 06 | WEST MIDLANDS | |
| | WK WARWICKSHIRE | 1 days |
| 10 | WALES | |
| | CF CARDIFF | 1 days |

Primary Filtering selection:

Parameter: Gross floor area
 Actual Range: 3513 to 17834 (units: sqm)
 Range Selected by User: 2500 to 25000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 08/11/23

Selected survey days:

Wednesday 3 days
 Thursday 2 days

Selected survey types:

Manual count 5 days
 Directional ATC Count 0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre) 2
 Edge of Town 2
 Neighbourhood Centre (PPS6 Local Centre) 1

Selected Location Sub Categories:

Industrial Zone 4
 Village 1

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 4 days - Selected
 Servicing vehicles Excluded 1 days - Selected

Secondary Filtering selection:

Use Class:

Not Known 5 days

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,000 or Less 1 days
 5,001 to 10,000 1 days
 15,001 to 20,000 2 days
 25,001 to 50,000 1 days

Population within 5 miles:

25,001 to 50,000 1 days
 75,001 to 100,000 1 days
 125,001 to 250,000 2 days
 250,001 to 500,000 1 days

Car ownership within 5 miles:

0.6 to 1.0 2 days
 1.1 to 1.5 2 days
 1.6 to 2.0 1 days

Travel Plan:

No 5 days

PTAL Rating:

No PTAL Present 5 days

LIST OF SITES relevant to selection parameters

| | | | |
|---|---|--------------------------|----------------------------|
| 1 | CF-02-C-02 MAES-Y-COED ROAD CARDIFF | BAKERY | CARDIFF |
| | Suburban Area (PPS6 Out of Centre) Industrial Zone Total Gross floor area: 14125 sqm <i>Survey date: THURSDAY 06/10/16</i> | | <i>Survey Type: MANUAL</i> |
| 2 | DV-02-C-02 GRACE ROAD SOUTH EXETER | ENERGY RECOVERY FACILITY | DEVON |
| | MARSH BARTON TRAD. EST. Suburban Area (PPS6 Out of Centre) Industrial Zone Total Gross floor area: 3513 sqm <i>Survey date: THURSDAY 06/07/17</i> | | <i>Survey Type: MANUAL</i> |
| 3 | HC-02-C-02 LONDON ROAD LAVERSTOKE | GIN DISTILLERY | HAMPSHIRE |
| | Neighbourhood Centre (PPS6 Local Centre) Village Total Gross floor area: 8000 sqm <i>Survey date: WEDNESDAY 09/05/18</i> | | <i>Survey Type: MANUAL</i> |
| 4 | HF-02-C-02 COCKERELL CLOSE STEVENAGE | FRESH PRODUCE | HERTFORDSHIRE |
| | Edge of Town Industrial Zone Total Gross floor area: 17834 sqm <i>Survey date: WEDNESDAY 08/11/23</i> | | <i>Survey Type: MANUAL</i> |
| 5 | WK-02-C-01 CASTLE MOUND WAY RUGBY | MACHINE ENGINEERING | WARWICKSHIRE |
| | Edge of Town Industrial Zone Total Gross floor area: 9216 sqm <i>Survey date: WEDNESDAY 10/11/21</i> | | <i>Survey Type: MANUAL</i> |

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 2.21

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
| | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | 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 | 2 | 13525 | 0.078 | 2 | 13525 | 0.007 | 2 | 13525 | 0.085 |
| 06:00 - 07:00 | 2 | 13525 | 0.214 | 2 | 13525 | 0.148 | 2 | 13525 | 0.362 |
| 07:00 - 08:00 | 5 | 10538 | 0.173 | 5 | 10538 | 0.032 | 5 | 10538 | 0.205 |
| 08:00 - 09:00 | 5 | 10538 | 0.150 | 5 | 10538 | 0.036 | 5 | 10538 | 0.186 |
| 09:00 - 10:00 | 5 | 10538 | 0.137 | 5 | 10538 | 0.068 | 5 | 10538 | 0.205 |
| 10:00 - 11:00 | 5 | 10538 | 0.142 | 5 | 10538 | 0.065 | 5 | 10538 | 0.207 |
| 11:00 - 12:00 | 5 | 10538 | 0.057 | 5 | 10538 | 0.074 | 5 | 10538 | 0.131 |
| 12:00 - 13:00 | 5 | 10538 | 0.101 | 5 | 10538 | 0.125 | 5 | 10538 | 0.226 |
| 13:00 - 14:00 | 5 | 10538 | 0.076 | 5 | 10538 | 0.131 | 5 | 10538 | 0.207 |
| 14:00 - 15:00 | 5 | 10538 | 0.063 | 5 | 10538 | 0.074 | 5 | 10538 | 0.137 |
| 15:00 - 16:00 | 5 | 10538 | 0.040 | 5 | 10538 | 0.129 | 5 | 10538 | 0.169 |
| 16:00 - 17:00 | 5 | 10538 | 0.023 | 5 | 10538 | 0.167 | 5 | 10538 | 0.190 |
| 17:00 - 18:00 | 5 | 10538 | 0.106 | 5 | 10538 | 0.099 | 5 | 10538 | 0.205 |
| 18:00 - 19:00 | 5 | 10538 | 0.089 | 5 | 10538 | 0.118 | 5 | 10538 | 0.207 |
| 19:00 - 20:00 | 3 | 11683 | 0.006 | 3 | 11683 | 0.029 | 3 | 11683 | 0.035 |
| 20:00 - 21:00 | 3 | 11683 | 0.003 | 3 | 11683 | 0.049 | 3 | 11683 | 0.052 |
| 21:00 - 22:00 | 1 | 8000 | 0.000 | 1 | 8000 | 0.000 | 1 | 8000 | 0.000 |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 1.458 | | | 1.351 | | | 2.809 |

Parameter summary

Trip rate parameter range selected: 3513 - 17834 (units: sqm)
 Survey date date range: 01/01/13 - 08/11/23
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 0

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
| | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | 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 | 2 | 13525 | 0.000 | 2 | 13525 | 0.000 | 2 | 13525 | 0.000 |
| 06:00 - 07:00 | 2 | 13525 | 0.022 | 2 | 13525 | 0.004 | 2 | 13525 | 0.026 |
| 07:00 - 08:00 | 5 | 10538 | 0.004 | 5 | 10538 | 0.006 | 5 | 10538 | 0.010 |
| 08:00 - 09:00 | 5 | 10538 | 0.004 | 5 | 10538 | 0.000 | 5 | 10538 | 0.004 |
| 09:00 - 10:00 | 5 | 10538 | 0.002 | 5 | 10538 | 0.000 | 5 | 10538 | 0.002 |
| 10:00 - 11:00 | 5 | 10538 | 0.000 | 5 | 10538 | 0.002 | 5 | 10538 | 0.002 |
| 11:00 - 12:00 | 5 | 10538 | 0.002 | 5 | 10538 | 0.000 | 5 | 10538 | 0.002 |
| 12:00 - 13:00 | 5 | 10538 | 0.000 | 5 | 10538 | 0.000 | 5 | 10538 | 0.000 |
| 13:00 - 14:00 | 5 | 10538 | 0.006 | 5 | 10538 | 0.000 | 5 | 10538 | 0.006 |
| 14:00 - 15:00 | 5 | 10538 | 0.000 | 5 | 10538 | 0.006 | 5 | 10538 | 0.006 |
| 15:00 - 16:00 | 5 | 10538 | 0.000 | 5 | 10538 | 0.004 | 5 | 10538 | 0.004 |
| 16:00 - 17:00 | 5 | 10538 | 0.000 | 5 | 10538 | 0.004 | 5 | 10538 | 0.004 |
| 17:00 - 18:00 | 5 | 10538 | 0.011 | 5 | 10538 | 0.008 | 5 | 10538 | 0.019 |
| 18:00 - 19:00 | 5 | 10538 | 0.013 | 5 | 10538 | 0.006 | 5 | 10538 | 0.019 |
| 19:00 - 20:00 | 3 | 11683 | 0.000 | 3 | 11683 | 0.006 | 3 | 11683 | 0.006 |
| 20:00 - 21:00 | 3 | 11683 | 0.000 | 3 | 11683 | 0.000 | 3 | 11683 | 0.000 |
| 21:00 - 22:00 | 1 | 8000 | 0.000 | 1 | 8000 | 0.000 | 1 | 8000 | 0.000 |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 0.064 | | | 0.046 | | | 0.110 |

Sanderson Associates (Consulting Engineers) Ltd Jubilee Way Wakefield

Licence No: 109307

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT
 MULTI-MODAL VEHICLE OCCUPANTS
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
| | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | 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 | 2 | 13525 | 0.074 | 2 | 13525 | 0.007 | 2 | 13525 | 0.081 |
| 06:00 - 07:00 | 2 | 13525 | 0.288 | 2 | 13525 | 0.174 | 2 | 13525 | 0.462 |
| 07:00 - 08:00 | 5 | 10538 | 0.177 | 5 | 10538 | 0.044 | 5 | 10538 | 0.221 |
| 08:00 - 09:00 | 5 | 10538 | 0.171 | 5 | 10538 | 0.036 | 5 | 10538 | 0.207 |
| 09:00 - 10:00 | 5 | 10538 | 0.182 | 5 | 10538 | 0.082 | 5 | 10538 | 0.264 |
| 10:00 - 11:00 | 5 | 10538 | 0.203 | 5 | 10538 | 0.063 | 5 | 10538 | 0.266 |
| 11:00 - 12:00 | 5 | 10538 | 0.085 | 5 | 10538 | 0.085 | 5 | 10538 | 0.170 |
| 12:00 - 13:00 | 5 | 10538 | 0.148 | 5 | 10538 | 0.186 | 5 | 10538 | 0.334 |
| 13:00 - 14:00 | 5 | 10538 | 0.106 | 5 | 10538 | 0.207 | 5 | 10538 | 0.313 |
| 14:00 - 15:00 | 5 | 10538 | 0.091 | 5 | 10538 | 0.099 | 5 | 10538 | 0.190 |
| 15:00 - 16:00 | 5 | 10538 | 0.053 | 5 | 10538 | 0.178 | 5 | 10538 | 0.231 |
| 16:00 - 17:00 | 5 | 10538 | 0.032 | 5 | 10538 | 0.214 | 5 | 10538 | 0.246 |
| 17:00 - 18:00 | 5 | 10538 | 0.125 | 5 | 10538 | 0.116 | 5 | 10538 | 0.241 |
| 18:00 - 19:00 | 5 | 10538 | 0.123 | 5 | 10538 | 0.167 | 5 | 10538 | 0.290 |
| 19:00 - 20:00 | 3 | 11683 | 0.009 | 3 | 11683 | 0.046 | 3 | 11683 | 0.055 |
| 20:00 - 21:00 | 3 | 11683 | 0.003 | 3 | 11683 | 0.083 | 3 | 11683 | 0.086 |
| 21:00 - 22:00 | 1 | 8000 | 0.000 | 1 | 8000 | 0.000 | 1 | 8000 | 0.000 |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 1.870 | | | 1.787 | | | 3.657 |

Sanderson Associates (Consulting Engineers) Ltd Jubilee Way Wakefield

Licence No: 109307

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL PEDESTRIANS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
| | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | 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 | 2 | 13525 | 0.000 | 2 | 13525 | 0.000 | 2 | 13525 | 0.000 |
| 06:00 - 07:00 | 2 | 13525 | 0.000 | 2 | 13525 | 0.000 | 2 | 13525 | 0.000 |
| 07:00 - 08:00 | 5 | 10538 | 0.015 | 5 | 10538 | 0.006 | 5 | 10538 | 0.021 |
| 08:00 - 09:00 | 5 | 10538 | 0.011 | 5 | 10538 | 0.006 | 5 | 10538 | 0.017 |
| 09:00 - 10:00 | 5 | 10538 | 0.008 | 5 | 10538 | 0.006 | 5 | 10538 | 0.014 |
| 10:00 - 11:00 | 5 | 10538 | 0.011 | 5 | 10538 | 0.011 | 5 | 10538 | 0.022 |
| 11:00 - 12:00 | 5 | 10538 | 0.009 | 5 | 10538 | 0.009 | 5 | 10538 | 0.018 |
| 12:00 - 13:00 | 5 | 10538 | 0.011 | 5 | 10538 | 0.009 | 5 | 10538 | 0.020 |
| 13:00 - 14:00 | 5 | 10538 | 0.017 | 5 | 10538 | 0.019 | 5 | 10538 | 0.036 |
| 14:00 - 15:00 | 5 | 10538 | 0.011 | 5 | 10538 | 0.011 | 5 | 10538 | 0.022 |
| 15:00 - 16:00 | 5 | 10538 | 0.013 | 5 | 10538 | 0.013 | 5 | 10538 | 0.026 |
| 16:00 - 17:00 | 5 | 10538 | 0.019 | 5 | 10538 | 0.015 | 5 | 10538 | 0.034 |
| 17:00 - 18:00 | 5 | 10538 | 0.032 | 5 | 10538 | 0.023 | 5 | 10538 | 0.055 |
| 18:00 - 19:00 | 5 | 10538 | 0.017 | 5 | 10538 | 0.011 | 5 | 10538 | 0.028 |
| 19:00 - 20:00 | 3 | 11683 | 0.000 | 3 | 11683 | 0.000 | 3 | 11683 | 0.000 |
| 20:00 - 21:00 | 3 | 11683 | 0.000 | 3 | 11683 | 0.000 | 3 | 11683 | 0.000 |
| 21:00 - 22:00 | 1 | 8000 | 0.000 | 1 | 8000 | 0.000 | 1 | 8000 | 0.000 |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 0.174 | | | 0.139 | | | 0.313 |

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
| | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | 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 | 2 | 13525 | 0.004 | 2 | 13525 | 0.000 | 2 | 13525 | 0.004 |
| 06:00 - 07:00 | 2 | 13525 | 0.089 | 2 | 13525 | 0.078 | 2 | 13525 | 0.167 |
| 07:00 - 08:00 | 5 | 10538 | 0.019 | 5 | 10538 | 0.006 | 5 | 10538 | 0.025 |
| 08:00 - 09:00 | 5 | 10538 | 0.034 | 5 | 10538 | 0.000 | 5 | 10538 | 0.034 |
| 09:00 - 10:00 | 5 | 10538 | 0.061 | 5 | 10538 | 0.002 | 5 | 10538 | 0.063 |
| 10:00 - 11:00 | 5 | 10538 | 0.080 | 5 | 10538 | 0.066 | 5 | 10538 | 0.146 |
| 11:00 - 12:00 | 5 | 10538 | 0.106 | 5 | 10538 | 0.013 | 5 | 10538 | 0.119 |
| 12:00 - 13:00 | 5 | 10538 | 0.085 | 5 | 10538 | 0.078 | 5 | 10538 | 0.163 |
| 13:00 - 14:00 | 5 | 10538 | 0.059 | 5 | 10538 | 0.055 | 5 | 10538 | 0.114 |
| 14:00 - 15:00 | 5 | 10538 | 0.011 | 5 | 10538 | 0.135 | 5 | 10538 | 0.146 |
| 15:00 - 16:00 | 5 | 10538 | 0.131 | 5 | 10538 | 0.063 | 5 | 10538 | 0.194 |
| 16:00 - 17:00 | 5 | 10538 | 0.013 | 5 | 10538 | 0.078 | 5 | 10538 | 0.091 |
| 17:00 - 18:00 | 5 | 10538 | 0.133 | 5 | 10538 | 0.101 | 5 | 10538 | 0.234 |
| 18:00 - 19:00 | 5 | 10538 | 0.133 | 5 | 10538 | 0.082 | 5 | 10538 | 0.215 |
| 19:00 - 20:00 | 3 | 11683 | 0.060 | 3 | 11683 | 0.143 | 3 | 11683 | 0.203 |
| 20:00 - 21:00 | 3 | 11683 | 0.009 | 3 | 11683 | 0.203 | 3 | 11683 | 0.212 |
| 21:00 - 22:00 | 1 | 8000 | 0.013 | 1 | 8000 | 0.000 | 1 | 8000 | 0.013 |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 1.040 | | | 1.103 | | | 2.143 |

TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 2.21

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
| | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | Trip Rate | No. Days | Ave. GFA | 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 | 2 | 13525 | 0.078 | 2 | 13525 | 0.007 | 2 | 13525 | 0.085 |
| 06:00 - 07:00 | 2 | 13525 | 0.399 | 2 | 13525 | 0.255 | 2 | 13525 | 0.654 |
| 07:00 - 08:00 | 5 | 10538 | 0.214 | 5 | 10538 | 0.061 | 5 | 10538 | 0.275 |
| 08:00 - 09:00 | 5 | 10538 | 0.220 | 5 | 10538 | 0.042 | 5 | 10538 | 0.262 |
| 09:00 - 10:00 | 5 | 10538 | 0.252 | 5 | 10538 | 0.089 | 5 | 10538 | 0.341 |
| 10:00 - 11:00 | 5 | 10538 | 0.294 | 5 | 10538 | 0.142 | 5 | 10538 | 0.436 |
| 11:00 - 12:00 | 5 | 10538 | 0.203 | 5 | 10538 | 0.108 | 5 | 10538 | 0.311 |
| 12:00 - 13:00 | 5 | 10538 | 0.245 | 5 | 10538 | 0.273 | 5 | 10538 | 0.518 |
| 13:00 - 14:00 | 5 | 10538 | 0.188 | 5 | 10538 | 0.281 | 5 | 10538 | 0.469 |
| 14:00 - 15:00 | 5 | 10538 | 0.114 | 5 | 10538 | 0.251 | 5 | 10538 | 0.365 |
| 15:00 - 16:00 | 5 | 10538 | 0.197 | 5 | 10538 | 0.258 | 5 | 10538 | 0.455 |
| 16:00 - 17:00 | 5 | 10538 | 0.065 | 5 | 10538 | 0.311 | 5 | 10538 | 0.376 |
| 17:00 - 18:00 | 5 | 10538 | 0.302 | 5 | 10538 | 0.247 | 5 | 10538 | 0.549 |
| 18:00 - 19:00 | 5 | 10538 | 0.287 | 5 | 10538 | 0.266 | 5 | 10538 | 0.553 |
| 19:00 - 20:00 | 3 | 11683 | 0.068 | 3 | 11683 | 0.194 | 3 | 11683 | 0.262 |
| 20:00 - 21:00 | 3 | 11683 | 0.011 | 3 | 11683 | 0.285 | 3 | 11683 | 0.296 |
| 21:00 - 22:00 | 1 | 8000 | 0.013 | 1 | 8000 | 0.000 | 1 | 8000 | 0.013 |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 3.150 | | | 3.070 | | | 6.220 |



Appendix E

MSOA Routes

WU03EW - Location of usual residence and place of work by method of travel to work (MSOA level)

ONS Crown Copyright Reserved [from Nomis on 1 October 2024]

population All usual residents aged 16 and over in employment the week before the census
 units Persons
 date 2011
 method of travel to work Driving a car or van

| usual residence : 2011 super output area - middle layer | E02002293 : Kirklees 023 | E02002294 : Kirklees 024 | Kirklees 023 + 024 | % of Sample | Long | Lat | Ravensthorpe Rd | Lees Hall Rd | B6117 (N) | B6409 | B6117 (SE) |
|---|-----------------------------|-----------------------------|-----------------------|----------------|----------|----------|-----------------|--------------|-----------|-------|------------|
| E02002294 : Kirklees 024 | 72 | 255 | 327 | 11.0% | 53.67689 | -1.63101 | 11.0% | | | | |
| E02002298 : Kirklees 028 | 70 | 140 | 210 | 7.1% | 53.66619 | -1.62548 | | 4.2% | | | 2.8% |
| E02002288 : Kirklees 018 | 52 | 133 | 185 | 6.2% | 53.68918 | -1.60865 | | | | 6.2% | |
| E02002283 : Kirklees 013 | 28 | 89 | 117 | 3.9% | 53.7056 | -1.63383 | | | | 3.9% | |
| E02002284 : Kirklees 014 | 34 | 88 | 122 | 4.1% | 53.70193 | -1.61173 | | | | 4.1% | |
| E02002293 : Kirklees 023 | 181 | 85 | 266 | 9.0% | 53.6805 | -1.66496 | 9.0% | | | | |
| E02002281 : Kirklees 011 | 71 | 73 | 144 | 4.9% | 53.71093 | -1.66862 | 1.5% | | 3.4% | | |
| E02002289 : Kirklees 019 | 65 | 69 | 134 | 4.5% | 53.68672 | -1.64937 | 0.9% | | 3.6% | | |
| E02002287 : Kirklees 017 | 42 | 65 | 107 | 3.6% | 53.69621 | -1.63817 | | | 1.8% | 1.8% | |
| E02002282 : Kirklees 012 | 34 | 55 | 89 | 3.0% | 53.70876 | -1.65254 | 0.9% | | 2.1% | | |
| E02002286 : Kirklees 016 | 50 | 50 | 100 | 3.4% | 53.6984 | -1.65473 | 1.3% | | 2.0% | | |
| E02002276 : Kirklees 006 | 22 | 50 | 72 | 2.4% | 53.72222 | -1.6519 | | | | 2.4% | |
| E02002285 : Kirklees 015 | 24 | 47 | 71 | 2.4% | 53.70182 | -1.69277 | 1.2% | | 1.2% | | |
| E02002275 : Kirklees 005 | 18 | 47 | 65 | 2.2% | 53.7242 | -1.71842 | 1.3% | | 0.9% | | |
| E02002291 : Kirklees 021 | 51 | 46 | 97 | 3.3% | 53.6838 | -1.70344 | 3.3% | | | | |
| E02002277 : Kirklees 007 | 25 | 44 | 69 | 2.3% | 53.71465 | -1.61984 | | | | 2.3% | |
| E02002296 : Kirklees 026 | 55 | 41 | 96 | 3.2% | 53.6739 | -1.69597 | 3.2% | | | | |
| E02002462 : Wakefield 025 | 15 | 40 | 55 | 1.9% | 53.67733 | -1.58108 | | 0.4% | | 1.1% | 0.4% |
| E02002472 : Wakefield 035 | 13 | 37 | 50 | 1.7% | 53.64698 | -1.59153 | | 0.8% | | | 0.8% |
| E02002466 : Wakefield 029 | 4 | 36 | 40 | 1.3% | 53.66915 | -1.56476 | | 0.5% | | 0.4% | 0.5% |
| E02002290 : Kirklees 020 | 57 | 34 | 91 | 3.1% | 53.68577 | -1.68852 | 3.1% | | | | |
| E02002458 : Wakefield 021 | 23 | 34 | 57 | 1.9% | 53.68814 | -1.58342 | | | | 1.9% | |
| E02002278 : Kirklees 008 | 21 | 34 | 55 | 1.9% | 53.71409 | -1.72654 | 1.3% | | 0.6% | | |
| E02002280 : Kirklees 010 | 18 | 34 | 52 | 1.8% | 53.71195 | -1.6412 | | | | 1.8% | |
| E02002272 : Kirklees 002 | 21 | 32 | 53 | 1.8% | 53.73466 | -1.6561 | | | 1.1% | 0.7% | |
| E02002316 : Kirklees 046 | 17 | 32 | 49 | 1.7% | 53.63294 | -1.7014 | | 0.8% | | | 0.8% |
| E02002302 : Kirklees 032 | 13 | 29 | 42 | 1.4% | 53.65592 | -1.72755 | 1.4% | | | | |
| E02002279 : Kirklees 009 | 26 | 27 | 53 | 1.8% | 53.71336 | -1.6887 | 0.7% | | 1.1% | | |
| E02002274 : Kirklees 004 | 16 | 23 | 39 | 1.3% | 53.73039 | -1.68853 | 0.4% | | 0.8% | 0.1% | |
| E02002463 : Wakefield 026 | 9 | 21 | 30 | 1.0% | 53.67449 | -1.53238 | | 0.3% | | 0.4% | 0.3% |
| E02002271 : Kirklees 001 | 11 | 19 | 30 | 1.0% | 53.75123 | -1.69108 | 0.3% | | 0.6% | 0.1% | |
| Totals | | | 2,967 | | | | 40.8% | 7.1% | 19.1% | 27.4% | 5.6% |

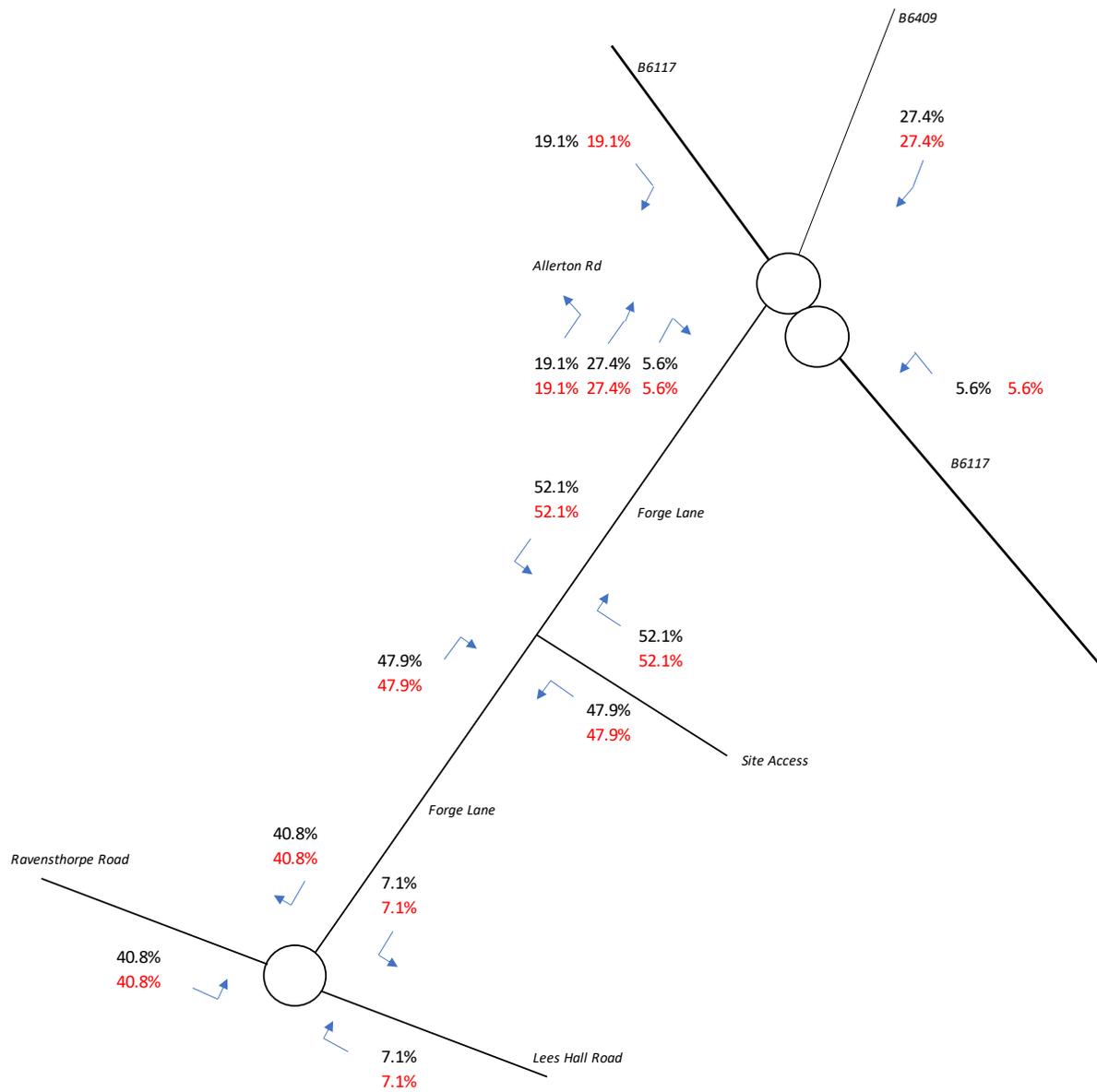
In order to protect against disclosure of personal information, records have been swapped between different geographic areas. Some counts will be affected, particularly small counts at the lowest geographies.



Appendix F

Distribution Percentages

| Ravensthorpe Rd | Lees Hall Rd | B6117 (N) | B6409 | B6117 (SE) |
|-----------------|--------------|-----------|-------|------------|
| 40.8% | 7.1% | 19.1% | 27.4% | 5.6% |



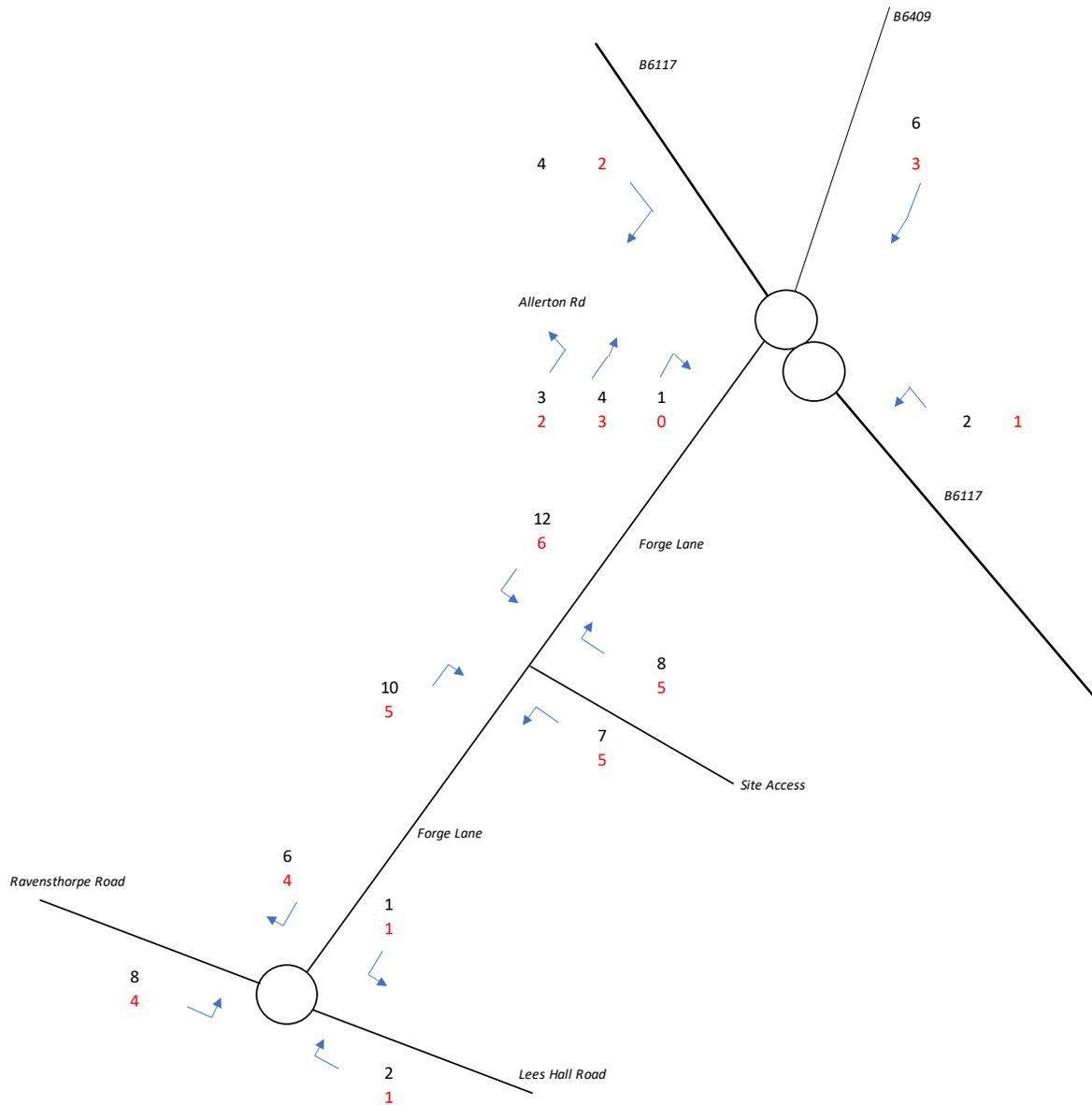


Appendix G

Predicted Development Flows

| Ravensthorpe Rd | Lees Hall Rd | B6117 (N) | B6409 | B6117 (SE) |
|-----------------|--------------|-----------|-------|------------|
| 40.8% | 7.1% | 19.1% | 27.4% | 5.6% |

| Time Period | Trip Rates | | Trip Generations | | |
|------------------------|------------|------------|------------------|------------|-------|
| | Arrivals | Departures | Arrivals | Departures | Total |
| AM Peak 06:00-07:00 | 0.214 | 0.148 | 22 | 15 | 37 |
| PM Peak 17:00-18:00 | 0.106 | 0.099 | 11 | 10 | 21 |





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