

Prepared on behalf of

Stuart Brook

**Proposed Residential Development
Land off Redwood Close
Long Lee, Keighley**

Transport Statement

Acknowledgements:

Collision data has been obtained from Leeds City Council.

The TRICS database has been used to derive trip rates and then calculate trip generation.

Census data has been used to determine traffic distribution.

Disclaimer

The methodology adopted and the sources of information used by Sanderson Associates (Consulting Engineers) Ltd in providing its services are outlined within this Report.

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1 Introduction

- 1.1 Sanderson Associates (Consulting Engineers) Limited has been appointed by Stuart Brook to advise on traffic and transportation issues relating to an outline planning application for a residential development on land off Redwood Close, Long Lee, Keighley.
- 1.2 Outline planning permission is sought for the residential development, which for assessment purposes comprises of circa 45 dwellings and includes approval of the proposed means of access on to Redwood Close from the site. The internal layout of the development will need to be subsequently approved at the reserved matters stage. However, an Illustrative Masterplan has been prepared to support the planning application to inform the level of development that might be accommodated. A copy of this is attached at **Appendix A**.
- 1.3 Pre-application consultation with the Council took place in 2013, albeit for a variation of the scheme containing 45 dwellings with access from Long Lee Lane. The site is allocated as safeguarded land (K/UR5.21: Redwood Close) however it was confirmed that the development of the site for residential use is acceptable in principle. The Council also confirmed that a Transport Statement should be provided in support of the proposals, in accordance with DfT guidance and that access should be from Redwood Close. The submission of a Travel Plan was not requested in the pre-application advice. A copy of the Council's comments is included at **Appendix B**.
- 1.4 This Transport Statement considers the following aspects:
- the local highway network and its road traffic collision record
 - the access arrangements to the proposed development
 - the proposed development and its operational characteristics
 - the impact of the development on the local highway network in terms of highway safety
 - the accessibility of the site in relation to sustainable transport and local facilities

1.5 National Planning Policy

1.5.1 On 27 March 2012 the National Planning Policy Framework (NPPF) was published, which sets out the Government's planning policies for England and how these are expected to be applied. The NPPF supersedes a number of documents, including Planning Policy Guidance 13: Transport.

1.5.2 At paragraph 14 it is stated that:

'At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking.'

1.5.3 Section 4 of NPPF outlines the Government's planning policies for promoting sustainable transport. The section begins at paragraph 29, which states:

'Transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives. Smarter use of technologies can reduce the need to travel. The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel. However, the Government recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban to rural areas.'

1.5.4 Paragraph 32 states that; *'All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether':*

- *the opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;*
- *safe and suitable access to the site can be achieved for all people; and*
- *improvements can be undertaken within the transport network that cost effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.*

2 Existing Situation

2.1 The Site and Surrounding Area

2.1.1 The site is located on land to the south of Redwood Close, within the village of Long Lee, and situated approximately 2.0km southeast of Keighley Town Centre and 12km northwest of Bradford City Centre. Its location is shown on **Figure 1** in **Appendix C**.

2.1.2 The site is bound by Redwood Close to the north and by existing residential properties to the east, south and west. There are no definitive public rights of way within the confines of the site.

2.1.3 In terms of the site's topography, the highest point of the site is along its frontage with Redwood Close. The land then steadily falls away to the south-western corner of the site, at an approximate average gradient of 12% although there are steeper areas.

2.2 Highway Network

2.2.1 Redwood Close, which runs parallel to the northern site boundary, is a residential cul-de-sac with a carriageway width of approximately 5.4m which currently serves approximately 40 dwellings. Footways are present on both sides of the road and are street-lit. To the north, Redwood Close meets Dale View Road as the minor arm of a priority T-junction.

2.2.2 Table 7.1 of Manual for Streets indicates that for a speed of 30mph the stopping sight distance would be 43m. The existing visibility at the junction of Redwood Close and Dale View Road has been assessed and this is considered to be in excess of 2.4m x 43m in both directions. On this basis the available visibility is considered to be satisfactory.

2.2.3 Dale View Road is a residential distributor road which provides access to a number of other minor residential roads. Dale View Road has an approximate carriageway width of 5.4m and provides street-lit footway on both sides. This road is also a bus route and provides bus stop facilities within approximately 300m of the centre of the proposed site. The services and facilities provided at these stops is described

further in Section 4 of this report. This road forms the minor arm at priority junctions with Spring Avenue (to the east) and Cherry Tree Rise (to the west), both of which lead south towards Long Lee Lane.

- 2.2.4 Long Lee Lane is a single carriageway road to the south of the site which provides footways on both sides. Long Lee Lane can be followed east towards the village centre of Long Lee, as well as providing access to Bradford City Centre via Harden Road. To the west of the site, Long Lee Lane becomes Park Lane that runs northwest to Keighley town centre via Coney Bridge. In proximity to the site the road is lit, subject to a speed limit of 30mph and no parking restrictions currently exist.

2.3 Road Traffic Collision Data

- 2.3.1 Road traffic collision data has been obtained from Leeds City Council over a 5 year period (from November 2011 to 21 November 2016). The study area included an 800m length of Long Lee Lane / Harden Road together with the local streets serving the site. The study area and the location of two incidents is shown on the accident plot in **Appendix D**.

- 2.3.2 The accident data indicates that there have been no recoded incidents on Dale View Road, Cherry Tree Rise (between Dale View Road and Long Lee Lane), and Spring Avenue or at any of the key junctions included in the study area that may be used to access the wider highway network. However, one serious incident is noted that occurred in June 2014 on Long Lee Lane at its junction with Royd House Road and one slight severity incident on Harden Road. A summary of the serious incident is given below: -

Accident ref: 1681144, 8 June 2014

Vehicle 1 is travelling along Royd House Road and stops at the junction with Long Lee Lane with a view to turning right out of the junction. Vehicle 2, a motorcycle, is travelling along Long Lee Lane with the junction to Royd House Road on his O/S. As Vehicle 2 approaches the junction with Royd House Road, Vehicle 1 pulls out of the junction to turn right, striking Vehicle 2 on the front near side wing. The

collision causes the rider of vehicle 2 to be knocked off the bike sustaining substantial injuries.

2.3.3 The slight incident (ref 130113221) occurred on the 15 March 2103 and involved a light goods type vehicle travelling eastbound on Harden Road colliding with a motorcyclist turning right into a driveway.

2.3.4 Based on this incident data, there does not appear to be a specific accident problem within the immediate vicinity of the site that might, materially be effected by the traffic from the development.

3 Development Proposals

3.1 Overview

- 3.1.1 The outline development proposals consist of approximately 45 dwellings for assessment purposes, An Illustrative Masterplan is included in **Appendix A**.

3.2 Site Access

- 3.2.1 Access to the site is proposed from Redwood Close in the form of an extension of the existing carriageway in a southerly direction where Redwood Close turns in an easterly direction. This is shown on the Illustrative Masterplan. A small number of units would be served directly from Redwood Close.
- 3.2.2 The Illustrative Masterplan indicates that a traditional street, 5.5m wide, with footways on both sides could be provided on the initial section of the layout, with shared surface type streets further into the layout. The Layout also indicates the potential for a footpath link to Long Lee Lane.
- 3.2.3 In the pre-application response from the Council it has been requested that access to the site be taken via Redwood Close. If the site was laid out as a cul-de-sac a full size turning head would be required for refuse vehicles to turn. Furthermore, the pre-application response indicated that the maximum acceptable gradient is 1 in 10.
- 3.2.4 The potential gradients of the internal roads shown on the Illustrative Master Plan have been considered based on a typical gradient of 1 in 12.5. Drawing 9683-001 (**Appendix A**) shows the long section with a 20m long vehicle curve joining on to Redwood Close. As can be seen this broadly follows the ground profile, but the loop arrangement would need to be omitted with a turning head being provided around plot 29.
- 3.2.5 In addition to the footways proposed along the site access road, the potential for a footpath link to Long Lee Lane is noted which would improve accessibility to the site and provide a direct access to the nearby bus stops on Long Lee Lane. Whilst detailed internal layout proposals are not included at this stage, the Illustrative Masterplan shows how permeable pedestrian routes could be provided.

3.3 *Parking*

- 3.3.1 As the proposals are at outline stage, details are not provided regarding the proposed parking provision at the site. The Council's residential parking standards state a requirement of 2 spaces for 2/3 bedroom units, and 3 spaces for 4/5 bedroom units. In addition to the dedicated car parking spaces, additional visitor parking should be provided of approximately 1 space per 4 dwellings.
- 3.3.2 Facilities for cycle parking will be provided for all units, which will include specific provision for any units that may not benefit from a garage.
- 3.3.3 In accordance with the Council's Low Emission Strategy, it is anticipated that all dwellings would be provided with infrastructure for electric vehicle charging facilities within garages.

3.4 *Servicing*

- 3.4.1 Again, as the proposals are at outline stage, details are not provided regarding the proposed servicing provision at the site. However, appropriate turning heads would be provided to accommodate refuse vehicles and large delivery vehicles.

4 Sustainable Transport Modes

4.1 Introduction

4.1.1 The National Planning Policy Framework (NPPF) was published by the Government in March 2012 and replaced PPG13: Transport. The NPPF however retains the objectives of PPG13, and in particular the need to rebalance the transport system in favour of sustainable transport modes, but does not include the same level of detail as the previous guidance. Some of the policies included in PPG13 Transport have therefore been mentioned in this section to assess travel to the site by sustainable transport modes.

4.1.2 This section includes an assessment of the accessibility of the site by non-car modes, to review the opportunities that will exist for residents to travel by sustainable modes, which is a core objective of local and national policy.

- Accessibility on foot;
- Accessibility by cycle;
- Accessibility by bus;
- Accessibility by rail;

4.2 Accessibility on Foot

4.2.1 Walking is the most important mode of transport in the local level and can replace short car trips in journeys under 2km, which contribute to congestion and pollution, and the need for car parking. Walking is the most sustainable form of transport and provides one way of reducing pressure on the environment. People walking are also travelling at a pace that gives them a greater connection with their surroundings and can have positive benefits in relation to a community's security through increased surveillance.

4.2.2 Walking stimulates both personal health and the health of communities and local economies. Government health improvement advice states that just 30 minutes brisk walking 5 times a week can bring about significant reductions in the risk of coronary heart disease, high blood pressure and diabetes.

4.2.3 In relation to acceptable walking distances, Manual for Streets offers the following guidance in Section 4.4 "The Walkable Neighbourhood".

"Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes (up to about 800m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPG13 states that walking offers the greatest potential to replace short car trips, particularly those under 2km. MfS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents". It is noted that PPS 13 has been superseded by NPPF but the general guidance offered in Manual for Streets is considered relevant.

4.2.4 The IHT publication "Providing for Journeys on Foot" identifies suggested walking distances for commuting, school and sight-seeing as follows, with times based on a walking speed of (1.4m/s).

- | | |
|----------------------------|------------|
| • Desirable 500m | 6 minutes |
| • Acceptable 1,000m | 12 minutes |
| • Preferred maximum 2,000m | 24 minutes |

4.2.5 Figure 2 in **Appendix C** indicates destinations that lie within 800m and 2,000m radius of the application site. It is noted that walking routes will not follow the simple radius of this plan, which is provided as an indication of where destinations lie and the general extent to which the local area can be accessed on foot.

4.2.6 A summary of some of the services and amenities that fall within an 800m walking distance of the site are listed below:

- Bus stops on Dale View Road
- Long Lee Primary School
- Long Lee Methodist Chapel
- Long Lee Doctors Surgery
- Thwaites Brow Post Office
- Sykes Chemist
- Southams (Newsagent, Off-licence, Bakers)

4.2.7 The footway network surrounding the site appear to be well maintained and have street lighting. Keighley town centre is located approximately 2.0km northwest of the site and provides a wide range of facilities and amenities.

4.2.8 The site is within the recommended walking distance to bus stops on Dale View Road that provide regular services between the site and Keighley. Therefore, it is considered that combined journeys by bus and on foot provide a realistic alternative for residents, instead of the private car.

4.3 *Accessibility by Cycle*

4.3.1 Like walking, cycling has an important part to play in reducing congestion, improving accessibility and reducing pollution. Cycling is also linked to increased general health and fitness which has personal benefits as well as economic benefits in terms of health service costs. The bicycle is generally more affordable than the car and hence there are personal financial benefits to the promotion of cycling. Cycling may also allow people without cars to reach destinations that they may otherwise be unable to reach.

4.3.2 Paragraph 78 of PPG13 states that "cycling has the potential to substitute for short car trips, particularly those under 5km and to form part of a longer journey by public transport".

4.3.3 **Figure 3** in **Appendix C** indicates destinations that lie within a 5km radius of the application site. Again it is noted that cycling will not follow the simple radius shown on this plan and is provided to give an indication of where destinations lie and the general extent to which the site is accessible by cycle.

4.3.4 In relation to the application site; cycling distances to local centres within 5km, along with the corresponding cycle time based on 12 km per hour are as follows:

| Destination | Distance | Duration |
|--------------------------|----------|--------------|
| Long Lee | 0.6km | 3 minutes |
| Thwaites | 1.5km | 7 ½ minutes |
| Keighley town centre | 2.0km | 10 minutes |
| Keighley Railway Station | 2.2km | 11 minutes |
| Harden | 3.3km | 16 ½ minutes |
| Riddlesden | 3.5km | 17 ½ minutes |
| Cullingworth | 3.8km | 19 minutes |

4.3.5 As can be seen from the above, as well as Keighley Railway Station and Keighley Town Centre there are a number of local centres within a 5km cycling distance of the site.

4.4 **Accessibility by Bus**

4.4.1 Bus stops are located on Dale View Road within approximately 300m of the centre of the site. Details of the facilities provided at the stops, along with the available services are as follows, with the stop locations shown on **Figure 4** including in **Appendix C**.

Dale View Road

| | |
|-------------------|------------------------------|
| Location: | Dale View Road, Aspen Close |
| Direction: | Both directions |
| Distance to Stop: | 285m from centre of the site |
| Facilities: | Pole stop |
| Bus Services: | K5 |

| | |
|-------------------|--------------------------------------|
| Location: | Dale View Road, Dale View Close |
| Direction: | Both directions |
| Distance to stop: | 270m from centre of the site |
| Facilities: | Pole stop with timetable information |
| Bus services: | K5 |

- 4.4.2 The K5 bus service runs between Thwaites Brow and Keighley Bus Station (via Long Lee). This service runs a half-hourly daytime service from Monday – Saturday (hourly in the evening), and an hourly service on a Sunday. The journey time from the site to Keighley is approximately 10 minutes. It is considered that the available service provides a feasible alternative to travel by car for people travelling to Keighley.

4.5 Accessibility by Rail

- 4.5.1 The closest railway station to the site is Keighley Railway Station, which is approximately 2.2km to the northwest of the site. The location of the station is shown on **Figure 4** in **Appendix C**.
- 4.5.2 The railway station is accessible from the site on foot, cycle and by bus. Bus service K5 stops at the Keighley bus station, which is located approximately 400m from the railway station. The railway station is within an acceptable cycling distance of 5km, with cycle storage and parking facilities available at the station.
- 4.5.3 Keighley Railway Station is a staffed station that is under the management of Northern Rail. The following facilities are provided at the station:
- Ticket office
 - Waiting rooms
 - Newsagents
 - Seating
 - Ramps for train access
 - 8 cycle lockers
 - 40 cycle stands
 - Car park

- 4.5.4 Keighley Railway station is located on the Airedale Line and provides services to Leeds, Bradford Forster Square, Frizinghall, Shipley, Saltaire, Bingley, Crossflatts, Steeton & Silsden, Cononley and Skipton. A summary of the services operating at the station are as follows:

| Route | Monday to Saturday Frequency | | Sunday Frequency |
|--|------------------------------|--------------|------------------|
| | Daytime | Late Evening | |
| Leeds - Shipley - Keighley - Skipton* | 30 minutes | 30 minutes | 60 minutes |
| Bradford Forster Square - Shipley - Keighley - Skipton | 30 minutes | 60 minutes | 120 minutes |

4.6 Accessibility Summary

- 4.6.1 It is considered that the site provides reasonable opportunities to travel sustainably, with a regular bus service provided in close proximity to the site that provides a link to the wider public transport network. As such, residents and visitors to the development will have a realistic choice of sustainable travel options.

5 Multimodal Trip Generations

5.1 Multimodal trip generations for the development have been calculated using the TRICS database v7.3.3. A search of multimodal surveys in Mainland UK (excluding London) has been undertaken for privately owned residential dwellings. The following other search criteria has been used:

- Sites up to 100 units have been included.
- Site in Town Centre and Edge of Town Centre excluded.
- Sites with car ownership ratio below 1 per dwelling have been excluded (as local car ownership ranges from 0.8-1.3 cars per household).
- Weekend surveys excluded.

5.2 A full copy of the TRICS output data is included at **Appendix E**.

5.3 The following table overleaf provides details of the multimodal two-way trip rates along with the corresponding modal percentage split and generated trips. For the development the data has been split between weekday AM and PM peaks.

| | Mode of Travel | Trip Rate (Two-way) | Modal Split % | Generations |
|----------------|------------------------|------------------------|---------------|-------------|
| AM Peak Period | Pedestrians | 0.255 | 23.6% | 12 |
| | Cyclists | 0.032 | 3.0% | 1 |
| | Public Transport Users | 0.014 | 1.3% | 1 |
| | Vehicle Occupants | 0.781 | 72.2% | 35 |
| | Total People Trips | 1.081 | 100.0% | 49 |
| PM Peak Period | Pedestrians | 0.16 | 17.7% | 7 |
| | Cyclists | 0.035 | 3.9% | 2 |
| | Public Transport Users | 0.022 | 2.4% | 1 |
| | Vehicle Occupants | 0.685 | 72.0% | 31 |
| | Total People Trips | 0.903 | 100.0% | 41 |
| Daily | Pedestrians | 1.597 | 20.1% | 72 |
| | Cyclists | 0.229 | 2.9% | 10 |
| | Public Transport Users | 0.192 | 2.4% | 9 |
| | Vehicle Occupants | 5.941 | 74.6% | 267 |
| | Total People Trips | 7.962 | 100.0% | 358 |

Table 5.3 – Multimodal Trip Generations (45 dwellings)

- 5.4 Based on the TRICS data the development could be expected to generate 27.9% of trips by walking, cycling and public transport modes in the AM peak hour and 24% in the PM peak hour. Over a 24 hour weekday period 25.4% of travel could be by sustainable modes.
- 5.5 This modal split has been compared to the 2011 Census travel to work data for the Bradford 008 middle super output area (MSOA) in which the site is located, Bradford and England, as summarised in the following table:

| | Bradford 008 (MSOA) | Bradford | England |
|--------------------------------------|---------------------|-----------|-----------|
| Method of Travel to Work | % working | % working | % working |
| Work Mainly at or From Home | 3.5 | 4.2 | 5.4 |
| Underground, Metro, Light Rail, Tram | 0.2 | 0.1 | 4.1 |
| Train | 6.9 | 5.1 | 5.3 |
| Bus, Minibus or Coach | 6.4 | 9.2 | 7.5 |
| Taxi | 1.9 | 1.2 | 0.5 |
| Motorcycle, Scooter or Moped | 0.5 | 0.5 | 0.8 |
| Driving a Car or Van | 52.8 | 59.9 | 57.0 |
| Passenger in a Car or Van | 8.5 | 7.2 | 5.0 |
| Bicycle | 0.6 | 0.8 | 3.0 |
| On Foot | 17.5 | 11.3 | 10.7 |
| Other Method of Travel to Work | 1.1 | 0.7 | 0.6 |

Table 5.5 – 2011 Census: Method of travel to Work Data (Bradford 008 MSOA)

- 5.6 The data in the table above indicates that in the Bradford 008 MSOA, 61.3% of people travel to work in a car or van as either the driver or passenger. This suggests that the modal split identified in Table 5.3 (74.6% daily vehicle occupants) is not entirely representative of existing travel patterns in this area. It is considered that in reality the number of vehicle occupants would be lower, with a greater tendency to travel by active or public modes of transport as suggested by the census data.
- 5.7 It is considered that the additional demand for walking, cycling and public transport can be readily accommodated within the existing transport infrastructure.

6 Vehicle Trip Generations

6.1 In order to predict the traffic generation potential of development, the TRICS database v7.3.3 has been interrogated using the same search parameters as the Multimodal TRICS search as described in paragraph 5.1. The following table illustrates the potential vehicular traffic generation for up to 45 dwellings:

| | Arrivals | Departures | Arrivals | Departures | Total |
|-------|----------|------------|----------|------------|-------|
| AM | 0.163 | 0.403 | 7 | 18 | 25 |
| PM | 0.362 | 0.173 | 16 | 8 | 24 |
| Daily | 2.246 | 2.303 | 101 | 104 | 205 |

Table 6.1 – Vehicle trip generations (45 dwellings)

6.2 As mentioned in paragraph 5.6, in comparison to the modal split identified by the TRICS data, the existing travel patterns within the Bradford 008 MSOA are materially more in favour of travel by sustainable modes (13.3% less vehicle occupants), therefore it is considered that in reality the number of vehicle trips generated by the proposed development would be lower than identified in Table 6.1. Nevertheless, for the purpose of conducting a robust assessment, these generations have been utilised.

6.3 In terms of determining the likely distribution of development traffic, Origin / Destination statistics have been used (Dataset WU03EW) which identify the workplace destinations of people residing within the Bradford 008 MSOA during the 2011 Census. A full breakdown of the assumed routes for each destination is included at **Appendix F** and is summarised in terms of percentage in the following table and illustrated in Figure 6.3, overleaf;

| Route via: | % based on 2011 Census: Origin / Destination Statistics |
|-------------------------|---|
| Harden Road | 22.9% |
| Park Lane | 38.6% |
| Glen Lee Lane | 6.2% |
| Hainworth Wood Road (N) | 8.3% |
| Parkwood Street | 23.9% |
| Total | 100.0% |

Table 6.3 – Summary of traffic distribution based on 2011 Census data

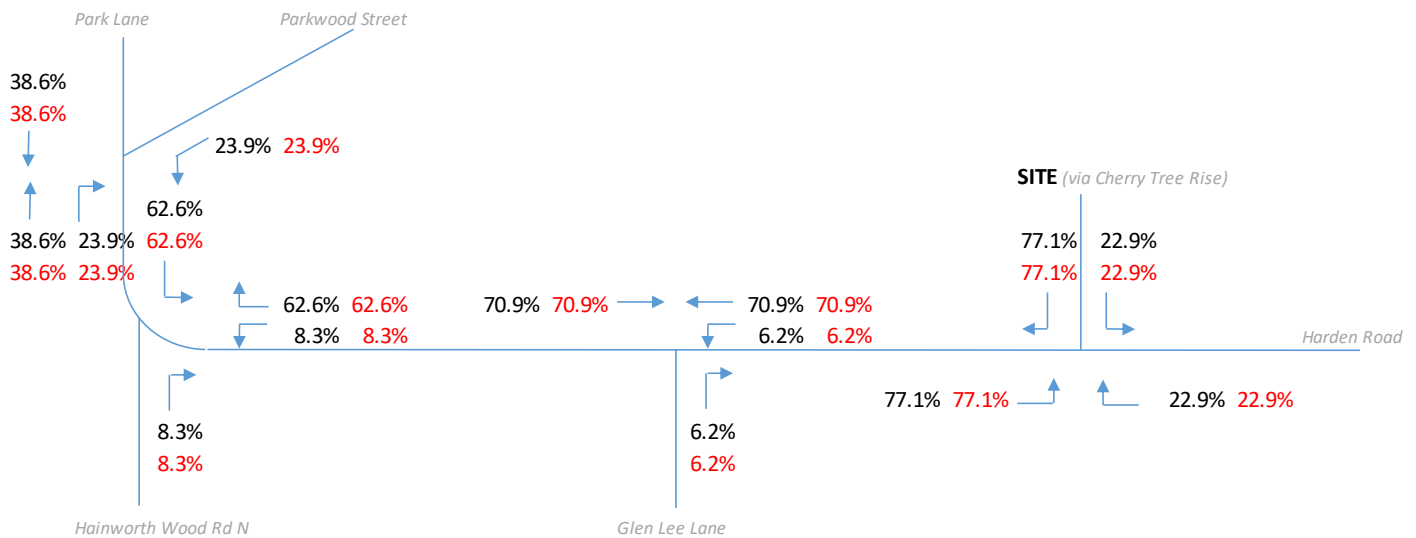


Figure 6.3 – Traffic distribution (%)

6.4 With reference to the predicted development traffic generations set out in Table 6.1., the following development traffic flows could be expected;

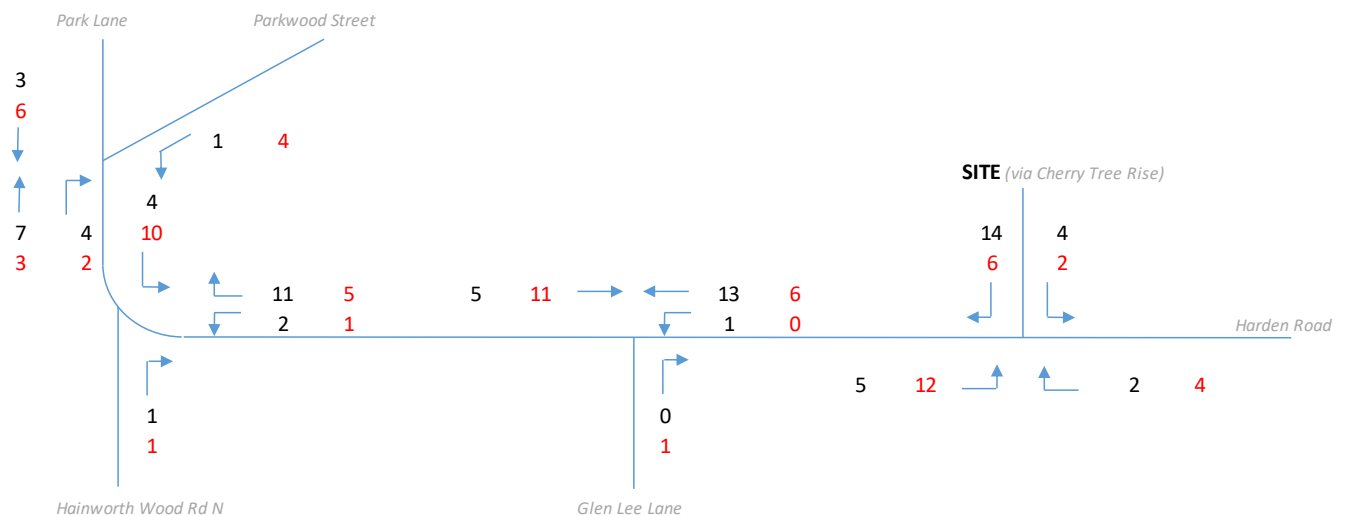


Figure 6.4 – Development traffic generations (45 dwellings)

6.5 It is considered that the development would not have a significant impact on the local transport network, with only a small number of additional trips being generated at Coney Bridge. The figure above identifies a total of 9 (PM) and 10 (AM) peak hour trips (two-way) in the peak hour periods, which equates to approximately 1 vehicle movement every 6 - 7 minutes.

7 Summary and Conclusions

- 7.1 Sanderson Associates (Consulting Engineers) Limited has been appointed by Stuart Brook to advise on traffic and transportation issues relating to an outline planning application for residential development on land off Redwood Close, Long Lee, Keighley.
- 7.2 Outline planning consent for residential development with the assessment based on up to 45 dwellings, with access provided by a new access road junction on to Redwood Close. During the pre-application consultation with the Council they requested that access be taken via Redwood Close.
- 7.3 Visibility splays at the existing Redwood Close / Dale View Road junction have been assessed and are considered satisfactory.
- 7.4 The site provides reasonable opportunities to travel sustainably, with a regular bus service provided in close proximity to the site that provides a link to the wider public transport network. As such, residents and visitors to the development will have a realistic choice of sustainable travel options.
- 7.5 It is considered that the development would not have a significant impact on the local transport network, with only a small number of additional trips being generated at Coney Bridge (10 (AM) and 9 (PM) peak hour trips). Therefore, it is concluded that the development should be acceptable in transport terms.

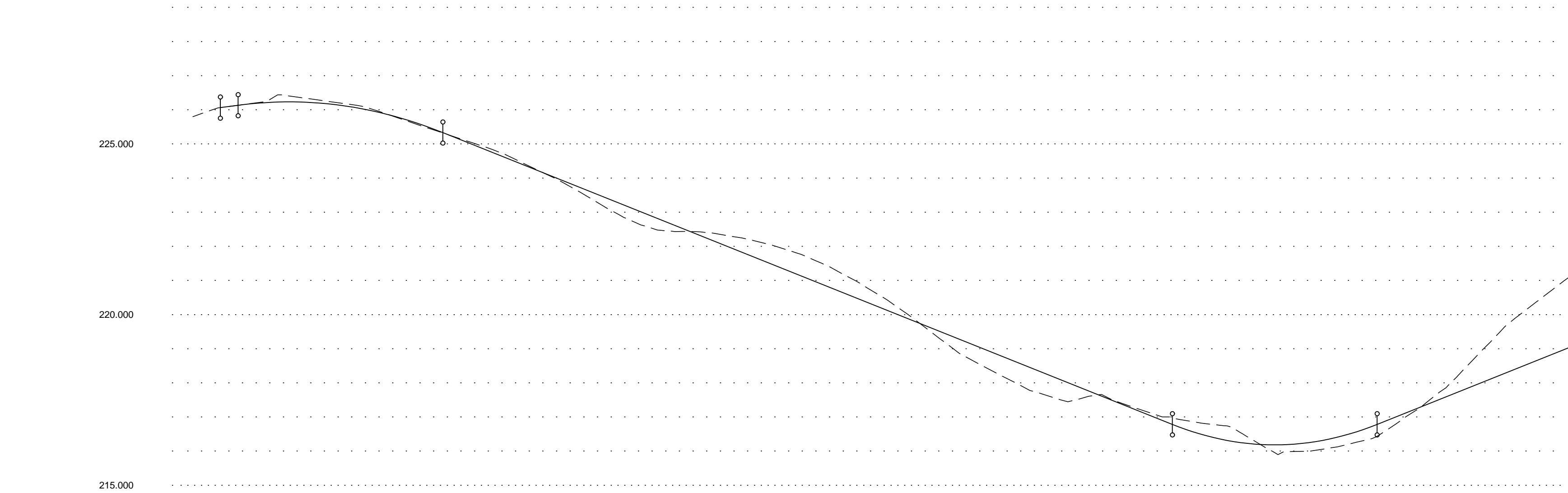
APPENDIX A

Illustrative Masterplan

Drawing 9683-001 – Proposed Long Section





| Mix Schedule | | | |
|----------------------------------|--------|------|--|
| Type A (2bd house) | 650sf | 9no | |
| Type B (3bd house) | 850sf | 17no | |
| Type C (2bd bungalow) | 625sf | 2no | |
| Type D (3bd house) | 975sf | 8no | |
| Type E (3/4bd house) | 1050sf | 2no | |
| TOTAL | | 38no | |
| * Suggested AH units (6No = 15%) | | | |



| CL03 | | HP | | | | | | | | | | LP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------|--|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|------------------------|--------|---------|--------|---------|--------|---------|--|---------|--------|-------------------------|--------|---------|--------|---------|---------|---------|---------|---------|---------|----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|--|--|--|--|--|--|--|--|--|
| CHAINAGE | | 0.000 | 4.028 | 6.618 | 10.000 | 13.236 | 16.618 | 20.000 | 25.000 | 30.000 | 35.000 | 36.618 | 40.000 | | 50.000 | 53.841 | 58.143 | 60.000 | | 70.000 | 72.231 | 80.000 | 82.449 | 84.895 | 90.000 | | 100.000 | 105.981 | 110.000 | | 120.000 | 127.923 | 130.000 | 140.000 | 143.481 | 145.000 | 150.000 | 155.000 | 157.549 | 160.000 | 161.472 | 165.000 | 170.000 | 173.481 | 180.000 | 190.000 | 192.587 | 200.000 | 207.483 | | | | | | | | | | | | |
| EXISTING GROUND LEVEL | | 225.798 | | 226.222 | | 226.242 | | 225.767 | | 225.095 | | | | 224.278 | | 223.192 | | | | 222.436 | | 222.259 | | 221.695 | | | 220.443 | 100.000 | | | | 218.652 | 218.045 | | 217.135 | | 216.762 | | 216.215 | 215.182 | 215.084 | | 216.226 | | 217.311 | | 218.182 | | 218.904 | 220.857 | 221.854 | | | | | | | | | | |
| ALIGNMENT LEVEL | | 225.063 | 225.132 | 226.202 | 226.236 | 226.236 | 226.170 | 225.021 | 225.783 | 225.456 | 225.331 | 225.091 | | 224.261 | | 223.461 | | 222.661 | | 221.861 | | 221.061 | | 220.261 | | 219.461 | | 218.661 | | 217.861 | | 217.061 | 216.792 | 216.697 | 216.374 | 216.215 | 216.189 | 216.296 | 216.536 | 216.782 | | 217.304 | | 218.104 | | 218.904 | 219.023 | 219.904 | | | | | | | | | | | | | |
| VERTICAL ALIGNMENT | | G= 2.684% 1: 37.5 L= 30.000 KF= -2.81320 | | | | | | | | | | G= -8.000% 1: -12.5 | | | | | | | | | | KF= 1.8750 L= 30.000 | | | | | | | | | | G= 8.000% 1: 12.5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| HORIZONTAL ALIGNMENT | | R= 90.000 | | | | | | | | | | R= 10.000 | | | | | | | | | | R= 20.000 | | | | | | | | | | R= 20.000 | | | | | | | | | | R= 12.000 | | | | | | | | | | R= 40.000 | | | | | | | | | |

SCALE V 1:100
H 1:500

| | | | | | | | | | | | | |
|--|-----------|---------------|-----------------------|-----|-----------|-------|------|---------|---|----------|----------------|----------|
|  sanderson associates (consulting engineers) Ltd Highways Traffic Transportation Water T 01924 844080 mail@sandersonassociates.co.uk F 01924 844081 www.sandersonassociates.co.uk | Client | Project Title | Drawing Title | Rev | Amendment | Drawn | Date | Checked | Scale | as shown | Drawn By | MA |
| | MR. BROOK | REDWOOD CLOSE | PROPOSED LONG SECTION | | | | | | Drawing Size | A1 | Checked By | DC |
| | | | | | | | | | Date | 28.01.16 | Approved By | DC |
| | | | | | | | | |  | | Drawing Number | 9683-001 |

APPENDIX B

Council's Pre-application comments

Mr. M Widdup
Planet Architecture Ltd
Mill Cottage
Ickornshaw
Cowling
BD22 0DB

Department of Regeneration and Culture

Planning, Transportation and Highways Development Services

2nd Floor, Jacobs Well
Bradford
BD1 5RW

Contact: Fiona Tiplady
Tel: (01274) 432033
E-Mail: fiona.tiplady@bradford.gov.uk

Application Number: 13/02993/PMJ

Date: 04/10/13

By email only

Dear Mr. Widdup,

Pre-application reference: 13/02993/PMJ

Proposal: Construction of residential development of approximately 45 dwellings with associated parking and landscaping

Location: Land off Redwood Close, Long Lee, Keighley

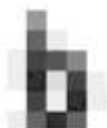
I refer to your recent pre-application enquiry submission which was discussed at the major team meeting on 07 August 2013 and your subsequent meeting and discussions with my Development Team Leader, Fiona Tiplady and Principal Highway Engineer, John Rowley on 18th September 2013.

Please note that these comments essentially reflect the initial details of your pre-application submission but as advised by Fiona, the planning service would like to work with you to find a suitable layout on the site in terms of layout and highway details.

Principle of development

Within the Keighley Constituency Volume of the Replacement Unitary Development Plan (RUDP) this predominately green field site is allocated as safeguarded land (K/UR5.21: Redwood Close). It is considered that the development of the safeguarded site, which is located within the urban area of Keighley and surrounded on 3 sides by existing residential use is acceptable in principle for housing development.

The National Planning Policy Framework (NPPF) underlines and increases the importance of delivering housing development in support of the district's growing population. A core



planning principle in the NPPF states that planning should proactively drive and support sustainable economic development to the deliver homes, business and industrial units, infrastructure and thriving local places that the country needs (page 5, paragraph 17). The NPPF states that every effort should be made objectively to identify and meet the housing needs of an area and respond positively to wider opportunities for growth.

Local Planning Authorities (LPAs) are now responsible for setting their own housing requirement. However, this must be based on robust evidence including household and population projections, which take into account migration and demographic change. In assessing the housing needs in their area over the plan period, the NPPF states LPAs should identify the scale and mix of housing that meets household and population projections, taking account of migration and demographic change (pages 12-13, section 6).

In terms of delivering a wide choice of high quality homes the NPPF states at page 12, paragraph 47 that LPAs should boost significantly the supply of new housing. In order to achieve this goal the NPPF requires LPAs to identify a 5 year supply of deliverable housing sites judged against their housing requirement. Moreover the NPPF goes on to state that where there has been a record of persistent under delivery of housing, local planning authorities should increase the buffer i.e. over and above the basic 5 year requirement by 20% to provide a realistic prospect of achieving the planned housing supply. It is clear that Bradford has experienced just such a sizeable and persistent under delivery of housing in recent years which amounts to a back log of over 5000 units since 2008/9. Bradford will therefore be required to identify the additional 20% of deliverable land in order to meet the requirements of NPPF paragraph 47. It is also clear that unless sites such as this one are successfully implemented and brought to the market this under supply will not only remain unmet but will also grow significantly worse. This in turn will have severe impacts on the prospects for regeneration in the district and will exacerbate existing and growing problems of overcrowding and long waiting lists for social housing which already exist in parts of the district.

Although the detailed wording has changed in the NPPF as compared to Planning Policy Statement 3 is clear that there are still significant implications in national policy terms if a Local Planning Authority cannot demonstrate an adequate supply of deliverable sites. In line with the advice at paragraph 49 of the NPPF the relevant policies for the supply of housing land in Bradford should not be considered up to date and in this case the provisions of paragraph 14 of the NPPF should be applied. Paragraph 14 indicates that where the development plan is out of date planning permission should be granted unless there are any adverse impacts of doing so which would significantly and demonstrably outweigh the benefits when assessed against the policies in the NPPF document. The strategic case for permitting housing development at this site therefore has been strengthened as a result of the application of the policies of the NPPF.

The appropriateness of the principal town of Keighley as a location for further housing development is reinforced by the emerging Core Strategy where it is intended to be a main local focus for housing and other development. As such, it is considered that the

location and scale of the housing proposed on the safeguarded land part of the application site would be consistent with policies promoting a sustainable pattern of development in the Bradford District. Furthermore, although the application site is Greenfield land, it well-located in relation to the built-up areas and their form in the locality and as such, it can be concluded that a housing proposal (in this location) represents a sustainable form of development and that it would thereby comply with policy UDP1 of the RUDP.

Indeed, it is considered that a development of the site with residential use would represent a natural extension of the built-up area which lies to the north, east and west and the overall pattern of settlement and open landscape would not be materially altered. It can be appropriately designed so as not to cause an unacceptable visual intrusion. An appropriate density of a minimum of 30 dwellings per hectare should be achieved in order to effectively use land and a suitable mix of units should also be put forward.

Design/Layout

Urban Design Comments

No evidence or information has been provided regarding the features of the site and its context and the ideas/thinking behind the design. As such it is difficult to comment fully at this stage.

Initial observations are that the scheme is unlikely to achieve good quality design. It doesn't appear to work with the existing features of the site – a large part of the row of cottages is demolished to make way for a new access and the layout doesn't seem to respond to the sloping landform.

It is not clear what the relationship of the development will be to Redwood Close, it appears to turn its back on it and it is not clear whether access will be taken from it which would seem logical. The road layout looks standard in terms of its geometry and the parking arrangements are likely to dominate the fronts of properties and the street scene.

The scheme includes a small strip of land identified as a recreation area which is positioned on one side of a cul-de-sac and lined by rear garden boundaries. This looks like an awkward arrangement and is unlikely to create a quality space.

As stated above these are initial observations based on the level of information submitted and as such they may not be comprehensive. In taking things forward it is suggested that the applicant rethinks the design and uses the Building for Life 12 tool to inform their design process.

Architectural Design Comments

There are insufficient details at this stage to comment in depth on the proposals; however initial observations are as follows.

- A relatively poor layout, dominated by what appears to be a disproportionate amount of highway.

- The development of this site sees the demolition of a traditional natural stone barn and associated dwellings, given that the dwellings to the left hand side of the entrance have been retained (possibly historically associated with the barn) can the barn and associated dwellings be renovated. By renovating the barn and associated dwellings this will maintain an element of historic character within the new development as well as create an area of interest. Additionally it is considered that the view from Redwood Close of the barn and its backdrop is a major part of the character of Long Lee and as such should be retained.
- Proposed Unit 45 is positioned forward of the predominant existing building line which we believe will have an adverse effect on the street elevation. This will be further compounded due to the raised levels of the site.
- Existing features such as dry stone walls and trees are distinctive characteristic of Long Lee and as such should be retained/ enhance wherever possible.
- Units 1 & 3-8 turn their back on Redwood Close, creating an inward looking development, consideration should be taken to re-orientate the dwellings to help integrate the development and to create additional street activity. Additionally their current orientation doesn't lend itself to maximising solar gain, by rotating the dwellings 180 deg this will allow sun to penetrate the garden and the rear of the house throughout the day.
- The location, shape and form of the designated recreational area is currently unsuccessful and appears as though it is an after thought.
- Given the aforementioned points consideration should be taken to rework the current proposals in order to create a more harmonious solution.

Landscape Comments

The site lies within the Airedale Landscape Character Area settlement (as described in the CBMDC LDF Landscape Character Area SPD, Vol 1: Airedale).

The overall layout plan is not very detailed at this stage. Some of the housing appears to be very close to the existing housing which surrounds the site, with only quite small rear/side gardens to separate them. A new layout will need to consider some readjustment in order to create more space between the existing and proposed housing, in order to provide green buffer space and tree planting to rear gardens for screening and softening. The proposed open space "*area for community recreation equipment*" appears to be more of an afterthought, rather than an integral part of the overall design. Further information (as mentioned above) and also a landscaping layout will need to be submitted with any formal submission.

Highway Details

There is no objection in principle to the proposed development and any formal application submission should be accompanied by a transport statement and a travel plan. Specific issues to considered are:

The site is proposed to be accessed from Long Lee Lane with the entrance being directly opposite another one you propose at Bradleigh Close (reference 13/03215/PMJ) thereby creating a cross roads effect. This is likely to lead to highway safety issues with conflicting

manoeuvres and this situation could be exacerbated as traffic travels fast down the road from the Long Lee Lane/Harden Road junction. It is recommended that this particular site (identified as Category A) is accessed from Redwood Close to reduce conflicts at Long Lee Lane. As discussed with my highway engineer, John Rowley, if this site becomes a cul-de-sac then a full size turning head for refuse vehicles would also need to be provided. My officers have also noted that there appears to be gradient issue on this site and cross sections of access roads should be submitted with any planning application; maximum acceptable gradient is 1 in 10.

The access roads have been designed as traditional estate roads but don't meet current design standards. The footways should be a minimum 1.8m wide and the carriageway 5.5m wide. Alternatively shared surface access roads would be acceptable if designed in Accordance with advice in Leeds Street Design Guide..

The existing double yellow lines on Long Lee Lane will need to be extended across the frontage of both sites. There should also be no drives or parking bays within 20m of site entrance and the 'x' distance to calculate visibility splays should be 2.4m and not 2.0m as shown on plan.

Within the site itself, driveways should be 5.0m x 3.0m if accommodating one car parking space or 11.0m x 3.0m if accommodating two spaces.

Overall, in terms of highway issues, as already stated there is no objection in principle to the development. It should be noted that there have been considerable concerns with regard to highway issues on development proposals in this locality in the recent past because Coney Lane Bridge has been considered as a traffic barrier to providing access to and from Keighley Town. However, Coney Lane bridge highway improvement line was abandoned in late 1990's due to cost implications. A replacement traffic management scheme is still protected for development management purposes for this locality which involves signalling junctions of Coney Lane / East Parade and Longcroft / Worth Way, but it is unlikely that this will get implemented as bus company is objecting to signalling junctions and it also requires purchase of some land on corner of Longcroft.

As such, as your proposals are only for relatively small housing developments it is considered they are unlikely to have a major impact at Coney Lane.

Biodiversity Impacts

There are no objections in principle to housing development on the site, subject to findings of habitat and bat surveys and provision of appropriate natural buffers, green space and lighting mitigation plan if surveys show that bats are an issue. Specific comments to raise are as follows:-

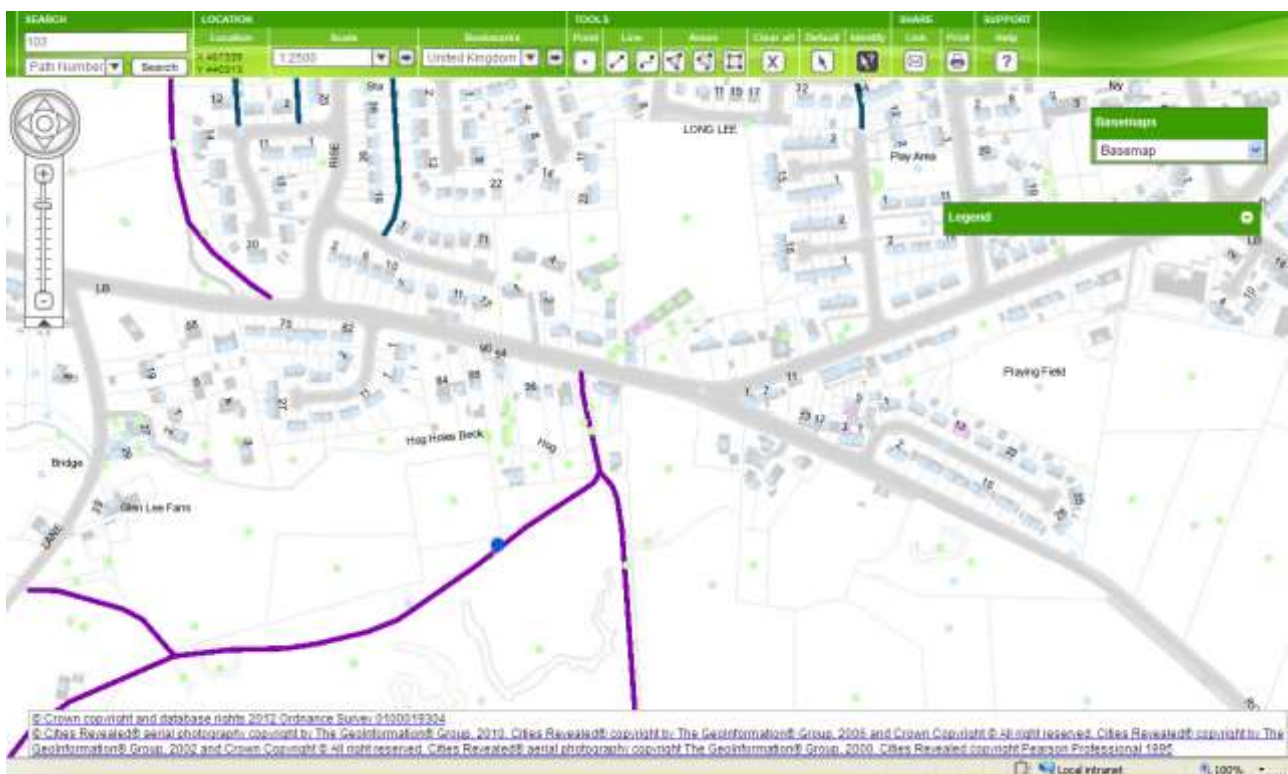
- An Extended Phase 1 Habitat Survey is required to be undertaken at an optimal time of year and submitted with application. There is the possible loss of lowland species rich/acid grassland which are UK BAP habitats

- A bat roost potential (BRP) survey should be undertaken of the buildings which would be demolished. If the BRP recommends that further activity surveys are required, these should be undertaken at optimal time (April – August) and in accordance with the West Yorkshire Minimum Standards for Bat Surveys and the planning application should not be validated without these. Any trees which may be affected should be assessed and included in any surveys. Please note that there is a record of Whiskered bat (relatively rare) within 200m of the site
- If BAP habitat is likely to be lost, some appropriate compensation should be provided
- Features of sustainable development such as bio swales and solar/Photo Voltaics would be appropriate

If you wish to discuss ecology matters further please contact my Senior Countryside officer, Anne Heeley on 01274 432425 or at anne.heeley@bradford.gov.uk.

Rights of Way

Keighley Public Footpath 103 as marked purple on the plan below abuts the site but should be unaffected by the proposals.



Environmental Protection (contamination/air quality issues)

Land quality comments:

- Houses appear on the northern site from 1851-1854 and other buildings including a chapel were built subsequently. However, most of the northern area appears to have consistently been fields.
- The site is in an intermediate radon affected area where 3-5% of properties may be above the action level and basic radon protection will be required under Building Regulations.
- The proposed end use as housing with gardens is a sensitive use therefore a Phase 1 desk study is required and dependent on the conclusions within that document, a Phase 2 site investigation may be necessary.
- If remediation is required then the principles of sustainable remediation should be followed.

Air quality comments:

- If significant traffic will be generated then an air quality assessment may be required. Contact Sally Jones sally.jones@bradford.gov.uk, tel: 01274 437004.
- As the development will include garages and dedicated parking the following information about electric vehicle charging points should be considered to make the development sustainable and to take account of Paragraph 35 (page 10) of the NPPF in terms of exploring opportunities for sustainable transport.
- The [incorporation of electric vehicle \(EV\) charging points](#) should be considered [on developments with garages and dedicated parking](#). EV charging points must be clearly and permanently labelled as such and information included in the 'hand-over' packs for each property. Further information on electric vehicle charging points may be obtained from Sally Jones sally.jones@bradford.gov.uk, Tel 01274 437004.
- The arguments for [Electric vehicle charging points](#) includes the following:
 - [It is relatively inexpensive when incorporated into the build \(~£100/unit \(based on 3 quotes from local electricians\)\)](#)
 - [It can be used for other purposes even if there is currently no electric vehicle \(e.g. lawn mower\)](#)
 - [It can be installed as part of the normal house wiring procedure](#)
 - [It is on separate circuit so can be isolated without effecting other sockets on the ring main, this is a safety load requirement and provides security](#)
 - [Creates a system that can be easily upgraded to the more expensive, intelligent, rapid-charge systems if the resident requires](#)
 - [Negates the need for retrofit of the charging system which is expensive and disruptive \(plaster removal, digging up of gardens and possible upgrading of fuse board\)](#)
 - [It therefore helps to future-proof the property which can be a useful marketing point](#)

Nuisance Comments

- *Construction site nuisance:* The site is located in an area where the noise, vibration, dust, odours, fumes and/or lighting generated from construction works

may to result in complaints to this department. Therefore the applicant must follow the guidance in BS 5228 to mitigate noise and dust impacts and submit evidence to demonstrate how they will control other potential environmental nuisance issues. Environmental Health may recommend appropriate planning conditions when consulted on the application.

- *Other environmental nuisance:* Lighting must be designed to ensure that it does not impact on neighbouring properties.
- *Pest management: advisory for applicant.* The applicant should be aware of the potential for mobilisation of pest infestations such as rats during site preparation works. Prior to commencement of works we advise that an assessment of potential pest infestation is carried out and if necessary controls are put around the perimeter and services such as sewers blocked to reduce migration routes. This is recommended in the light of experiences where site development resulted in mobilisation of large numbers of rats into adjacent residential areas where they were previously not a problem. When this occurs there are cost implications for existing householders for control of the displaced rats.
- *Waste storage arrangements: advisory for applicant.* At design stage, sufficient space should be allocated for storage of waste from the development. The Environmental Health Enforcement Team deals with ongoing problems where the bin-storage is not adequate. This can result in waste being distributed around the bin areas, cause littering, lead to neighbourhood visual degradation and can also result in pest infestations. In commercial developments we recommend that facilities management procedures are put in place to ensure that the waste storage/bin areas are maintained and that bins are put in the appropriate place for collection on the appropriate days.

Drainage Issues

Whilst there are no objections in principle to residential development on the site any scheme should fully investigate the use of sustainable urban drainage for the site.

Please note that as the site is over 1 hectare in extent a flood risk assessment will be required to be submitted as part of any application. Any required flood risk assessment must be proportional to the risk and appropriate to the scale, nature and location of the development and it should identify and assess the risk of all forms of flooding to and from the development and demonstrate how these flood risks will be managed.

Minerals and Waste

A landfill site is situated approximately 250m from the proposal. This landfill site comprises an area of agricultural land located to the south west of Harden Road, Long Lee, Keighley, which was used for the disposal of inert excavation spoil and rock during the 1970s.

Planning permission (ref. 76/01/03790) granted in 1976 permitted the infilling of a number of hollows with subsoils and topsoil in order to improve the quality of the land. The work was carried out to the satisfaction of the Local Planning Authority and based on the distance from the proposal and the material deposited there are no concerns raised.

The proposal is in a Minerals Safeguarding Area for coal (to the north of the site) and sandstone (to the south of the site) that is the area has been identified as containing a potential mineral resource that should be considered for extraction prior to development in order to prevent the sterilisation of the mineral. In accordance with policy NR1 of the Replacement Unitary Development Plan and paragraph 144 of the NPPF, it is important to give due consideration to extraction prior to development. If it is considered appropriate to extract minerals, a Minerals Resource Assessment will be required to demonstrate the viability of extraction.

S106 Details

The usual development contributions for a development of this size, namely affordable housing, recreation and education contributions along with the provision of transport infrastructure (and potentially metro cards or electric charging points) will be required as part of the development scheme in accordance with the councils Replacement Unitary Development Plan policies and SPD on planning obligations.

On any formal application submission the attached proforma to pay legal fees for any S106 legal agreement must be completed prior to validation. In addition, the Heads of Terms to be submitted as part of your development proposals (currently based on provision of up to 45 units but it is appreciated that this will change as the initial design evolves) should include the following:

Affordable Housing - the quota for this locality is 15% and the identified social housing need is for 2 and 3 bedroomed family houses. It is therefore requested that 15% of the total number of units be passed to a registered provider nominated by the Local Authority at a discount of 35% on open market value. The affordable houses should be constructed to Code for Sustainable Homes Level 3, or equivalent. 60% of the affordable houses should be 2 bedroomed with a floor space of 75/80sqm and 40% of the affordable houses should be 3 bedroomed with a floor space of 85-90 sqm.

Recreation – A contribution will be required for increasing or enhancing the existing recreation provision in the locality. In order to give clarity as the type of contribution amounts I can confirm that currently if 40 houses were to be built there will be a need for a contribution of £24,518 but if 49 houses were to be built there will be a need for a contribution of £26,124.

Education – Any contribution is again based on whether there is a need for primary school and/or secondary school contributions in the locality. At the moment I can inform you that there is a need for only primary contributions required from new housing developments in this locality.

Essentially I am advised the provision of 45 (2-4 bed roomed) units on the site will require a contribution of £78,567 towards primary facilities and none towards secondary facilities – i.e. a total contribution towards educational facilities of £78,567.

Transport/sustainable measures – details to be considered as part of any submission but as discussed in your meeting with Fiona in terms of sustainable measures there are several potential options. In this location it is considered however that the provision of electric vehicle charging points on housing units with garages and dedicated parking as discussed above in the air quality comments would be the most appropriate measure to undertake (and this is in conformity with the NPPF). Linkages through the site to existing bus stops and upgrades to those bus stops (i.e. raised kerbs if required) may be requested from any consultation with Metro.

Planning for Inclusion

The Council will need to assess all planning applications submitted to ensure that they are inclusive. There are existing Development Plan policies that apply in relation to this material consideration and all schemes will need to comply with nationally adopted planning policy and other legal provisions including the Equality Act 2010. When most major planning applications are submitted representations will be sought from the Council's Planning and Highways Access Forum, a consultative group set up to comment on proposed development schemes. You can seek further advice on this by contacting Steve Grisag (Development Officer Inclusion and Mobility) on Bradford (01274) 436794. Applicants are encouraged to consult with the Forum as part of their Community Involvement Exercise prior to submitting a planning application as this will help to ensure that inclusion is considered early on in the development process and thus avoid expensive amendments at a later stage.

List of Required documents

In addition to the national requirements listed on the Council's Website, Bradford Local requirements require the following supporting documents for the submission of a major application on this site:-

- Affordable housing statement (incorporated within the planning statement)
- Air Quality mitigation (statement on EVC charging points)
- Biodiversity survey and report including bat survey
- Flood risk assessment/ Sustainable drainage statement
- Land contamination assessment (desktop phase 1 definitely required and dependent on findings, an proportional phase 2 report may be required)
- Landscaping details
- Planning obligations – Draft Heads of Terms (as discussed above)
- Planning Statement
- Statement of Community Involvement
- Transport Statement including parking provision

Summary

I trust this clarifies the present position with your pre-application proposals based on the information available. It should not be interpreted as formal confirmation of the acceptability or otherwise of the proposal at this time and cannot be held to prejudice the formal determination of any planning application.

Your discussions with Fiona touched upon the fact that you were going to reassess the layout of the scheme by providing a spine road through the site and as such potentially reorient the position of some of the houses to take into consideration how the most suitable layout could be achieved. As discussed, I am happy for my officers to give feedback on any revised layout prior to the formal submission of the scheme.

My officers look forward to working with you to progress a suitable scheme for appropriate sustainable residential development of the site.

Yours sincerely,

A handwritten signature in cursive script, appearing to read 'Julian Jackson', written in a light grey or blue ink.

Julian Jackson
Assistant Director (Planning, Transportation and Highways)
Department of Regeneration and Culture

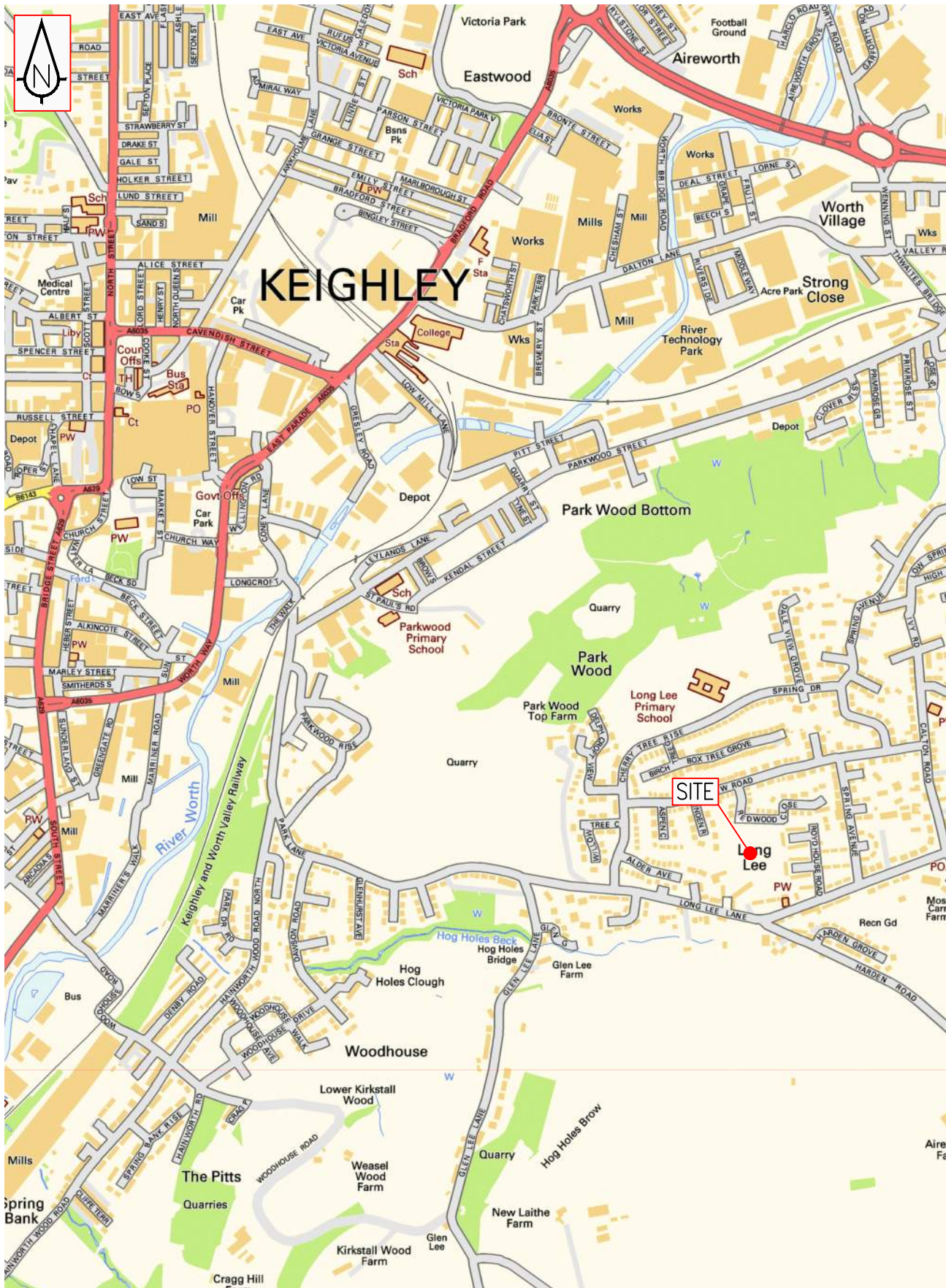
APPENDIX C

Figure 1 - Site Location Plan

Figure 2 – 800m & 2km Indicative Walking Plan


Figure 3 – 5km Indicative Cycle Plan

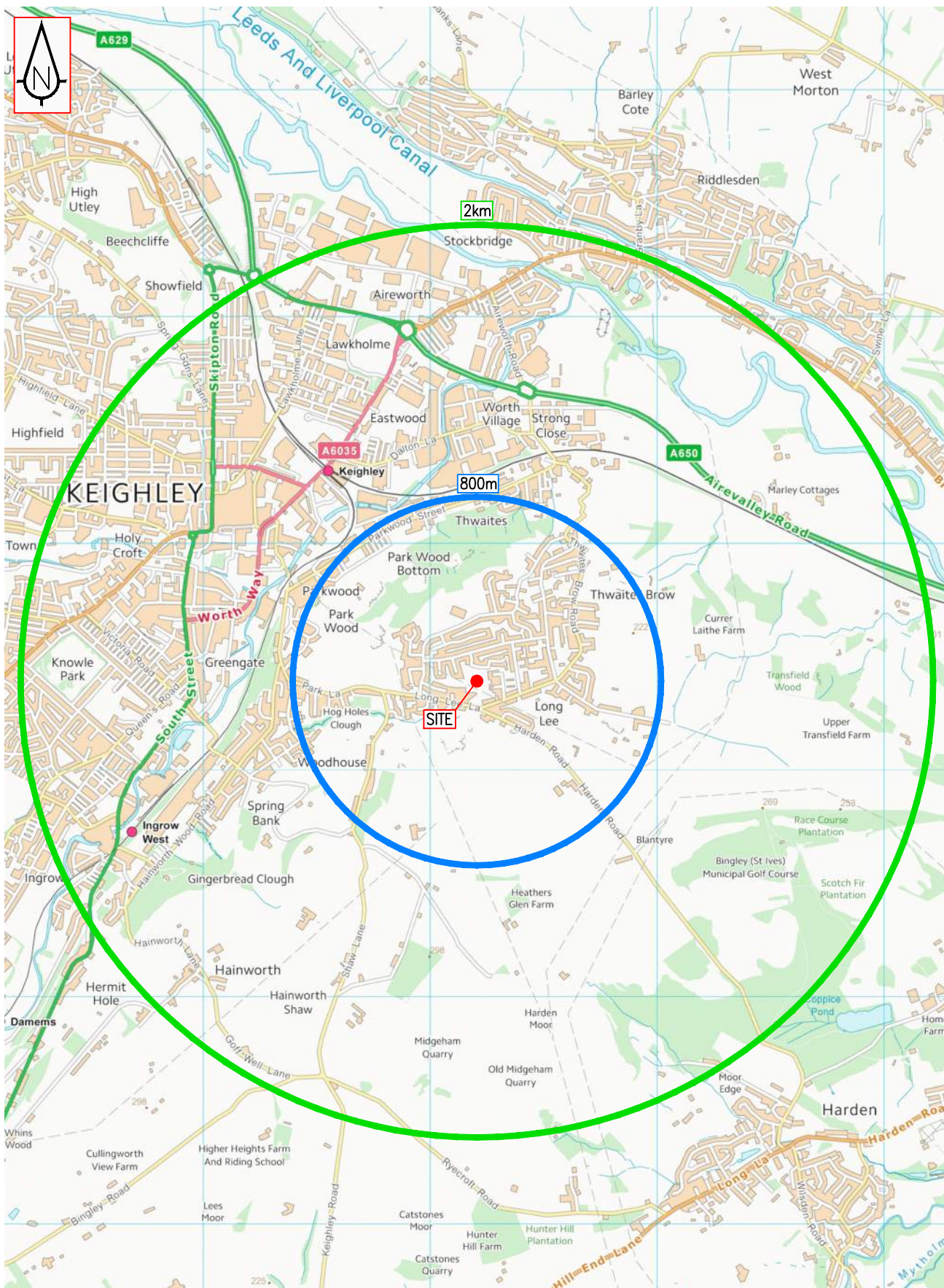
Figure 4 – Location of Public Transport

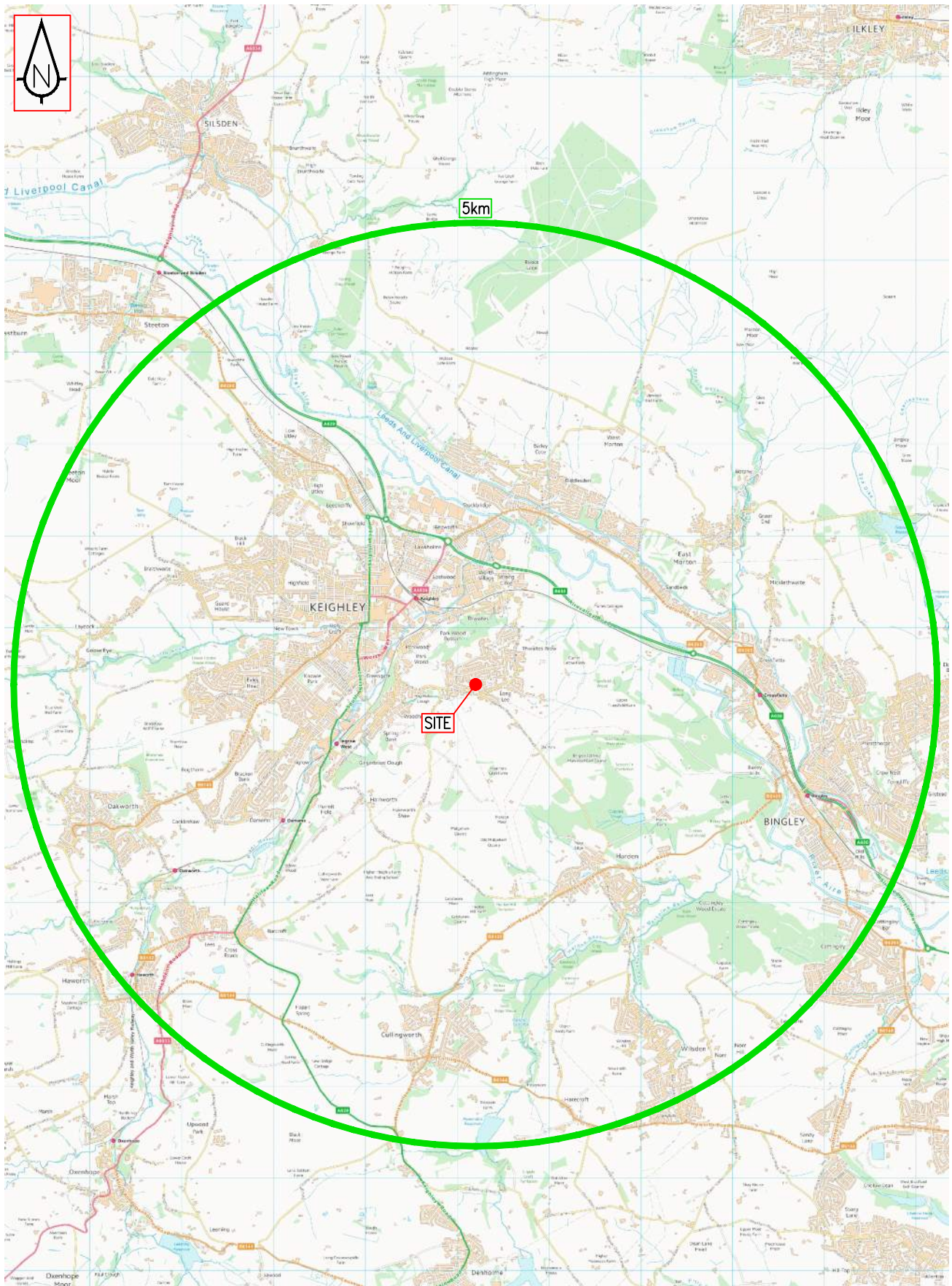


Site Location Plan



Proposed Residential Development
Redwood Close, Keighley

| | | |
|-----------------|----------------------------|--|
| Drawn BL | Scale NTS |  <small>ISO 9001 REGISTERED FIRM</small> |
| Checked DJC | Date November 2016 | |
| Approved DJC | Drawing Number Figure 1 | Size A4 |



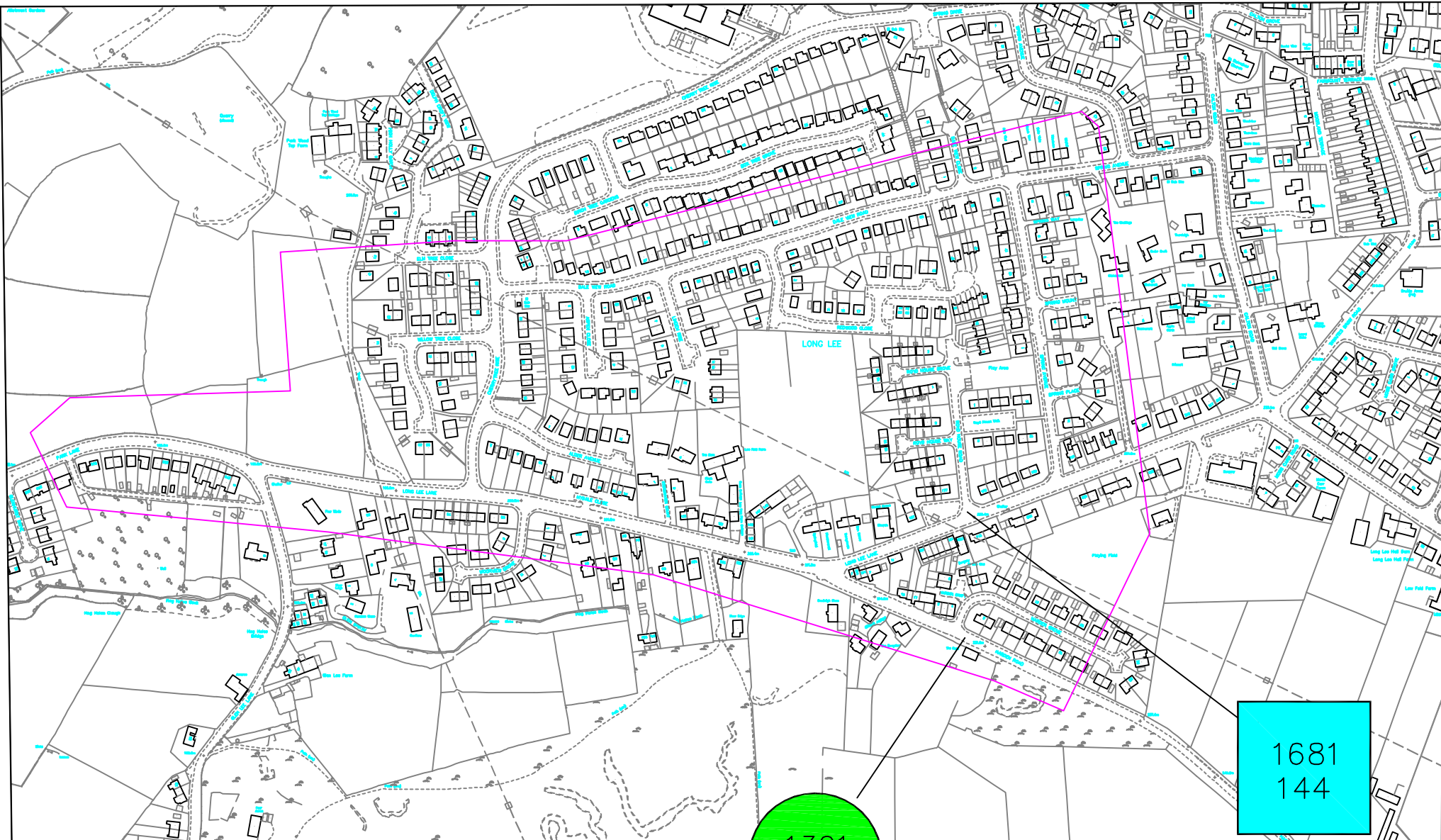




| | | | | | |
|---|--|--|-----------------|----------------------------|--|
|  sanderson associates (consulting engineers) Ltd <small>Highways Traffic Transportation Water</small> <small>T 01924 844080 mail@sandersonassociates.co.uk</small> <small>F 01924 844081 www.sandersonassociates.co.uk</small> | Location of Public Transport | | Drawn BL | Scale NTS |  <small>ISO 9001 REGISTERED FIRM</small> |
| | Proposed Residential Development Redwood Close, Basingstoke | | Checked DJC | Date November 2016 | |
| | | | Approved DJC | Drawing Number Figure 4 | Size A4 |

APPENDIX D

Accident Data



Vicinity of Long Lee, Keighley, Bradford District.
RTC five years prior to date.
Run 25.11.2016 N.T.S.



Key

▲ Fatal ■ Serious ● Slight P indicates pedestrian

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Vicinity of Long Lee, Keighley, Bradford, RTC five years prior to the most recent RTC record (21.11.16)

130113221 SLIGHT 15/03/2013 00:17:15 407325 /440220 Harden Road at House Name O/S the Barn, Keighley

Veh1 Hgv Travelling Along Harden Road Away from Keighley. Veh2 Motorcycle Travelling Along Harden Road in Opposite Direction Towards Keighley. Veh1 Turns right into Home Driveway into Path of Veh2 and Collision Occurs.

| Vehicles | From | To | Driver | Breath Test | Casualties | Veh | Sex | Age | Ped direction to |
|--------------------|------|----|--------|-------------|----------------|-----|------|-----|------------------|
| 1 Goods 3.5 - 7.5t | NW | SW | Male | 65 Negative | 1 Driver/Rider | 2 | Male | 16 | |
| 2 M/cycle <= 50cc | SE | NW | Male | 16 Negative | | | | | |

Contributory Factors

1681144 SERIOUS 08/06/2014 00:16:28 407327 /440315 Junction of Long Lee Lane and Royd House Road

V1 travelling along Royd House Road and stops at the junction with Long Lee Lane with a view to turning right out of the junction. V2 is travelling along Long Lee Lane with the junction to Royd House Road on his O/S. As V2 approached the junction with Royd House Road, V1 pulls out of the junction to turn right, striking V2 with the F/N/S/W. V2 is a motorcycle and the collision causes the rider to be knocked off the bike sustaining substantial injuries.

| Vehicles | From | To | Driver | Breath Test | Casualties | Veh | Sex | Age | Ped direction to |
|-------------------|------|----|--------|-----------------|----------------|-----|------|-----|------------------|
| 1 Car | NW | SW | Male | 26 Negative | 1 Driver/Rider | 2 | Male | 71 | |
| 2 M/cycle > 500cc | NE | SW | Male | 71 Not provided | | | | | |

Contributory Factors

Poor turn or manoeuvre V001 V.likely Failed to look properly V001 V.likely

APPENDIX E
TRICS Output Data

Calculation Reference: AUDIT-109307-161118-1134

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

| | | |
|----|--------------------------------|--------|
| 02 | SOUTH EAST | |
| | ES EAST SUSSEX | 1 days |
| | HC HAMPSHIRE | 1 days |
| | SC SURREY | 1 days |
| | WS WEST SUSSEX | 1 days |
| 03 | SOUTH WEST | |
| | DC DORSET | 1 days |
| | DV DEVON | 2 days |
| | SM SOMERSET | 1 days |
| 04 | EAST ANGLIA | |
| | CA CAMBRIDGESHIRE | 1 days |
| | NF NORFOLK | 1 days |
| 06 | WEST MIDLANDS | |
| | SH SHROPSHIRE | 3 days |
| | ST STAFFORDSHIRE | 1 days |
| 07 | YORKSHIRE & NORTH LINCOLNSHIRE | |
| | NY NORTH YORKSHIRE | 3 days |
| | SY SOUTH YORKSHIRE | 1 days |
| 08 | NORTH WEST | |
| | CH CHESHIRE | 3 days |
| | GM GREATER MANCHESTER | 1 days |
| 10 | WALES | |
| | PS POWYS | 1 days |
| 11 | SCOTLAND | |
| | AG ANGUS | 1 days |
| | EA EAST AYRSHIRE | 1 days |
| | HI HIGHLAND | 1 days |
| | PK PERTH & KINROSS | 1 days |

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

Filtering Stage 2 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: Number of dwellings
 Actual Range: 7 to 98 (units:)
 Range Selected by User: 6 to 100 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 12/11/15

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 | 6 days |
| Tuesday | 5 days |
| Wednesday | 7 days |
| Thursday | 7 days |
| Friday | 2 days |

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

Selected survey types:

| | |
|-----------------------|---------|
| Manual count | 27 days |
| Directional ATC Count | 0 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 undertaken using machines.

Selected Locations:

| | |
|------------------------------------|----|
| Suburban Area (PPS6 Out of Centre) | 13 |
| Edge of Town | 14 |

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 | 25 |
| No Sub Category | 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.

Filtering Stage 3 selection:

Use Class:

| | |
|----|---------|
| C1 | 1 days |
| C3 | 25 days |

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Filtering Stage 3 selection (Cont.):

Population within 1 mile:

| | |
|------------------|--------|
| 1,001 to 5,000 | 4 days |
| 5,001 to 10,000 | 7 days |
| 10,001 to 15,000 | 5 days |
| 15,001 to 20,000 | 5 days |
| 20,001 to 25,000 | 3 days |
| 25,001 to 50,000 | 3 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 | 3 days |
| 25,001 to 50,000 | 4 days |
| 50,001 to 75,000 | 1 days |
| 75,001 to 100,000 | 8 days |
| 100,001 to 125,000 | 3 days |
| 125,001 to 250,000 | 4 days |
| 250,001 to 500,000 | 3 days |
| 500,001 or More | 1 days |

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

Car ownership within 5 miles:

| | |
|------------|---------|
| 1.1 to 1.5 | 27 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 | 2 days |
| No | 25 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.

LIST OF SITES relevant to selection parameters

| | | | | |
|---|--|-----------------|----------|---------------------|
| 1 | AG-03-A-01 KEPTIE ROAD | BUNGALOWS/DET. | | ANGUS |
| | ARBROATH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: | | 7 | |
| | Survey date: TUESDAY | | 22/05/12 | Survey Type: MANUAL |
| 2 | CA-03-A-04 DETACHED | | | CAMBRIDGESHIRE |
| | THORPE PARK ROAD PETERBOROUGH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: | | 9 | |
| | Survey date: TUESDAY | | 18/10/11 | Survey Type: MANUAL |
| 3 | CH-03-A-05 SYDNEY ROAD SYDNEY CREWE Edge of Town Residential Zone Total Number of dwellings: | DETACHED | | CHESHIRE |
| | Survey date: TUESDAY | | 14/10/08 | Survey Type: MANUAL |
| 4 | CH-03-A-08 WHITCHURCH ROAD BOUGHTON HEATH CHESTER Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: | DETACHED | | CHESHIRE |
| | Survey date: TUESDAY | | 22/05/12 | Survey Type: MANUAL |
| 5 | CH-03-A-09 GREYSTOKE ROAD HURDSFIELD MACCLESFIELD Edge of Town Residential Zone Total Number of dwellings: | TERRACED HOUSES | | CHESHIRE |
| | Survey date: MONDAY | | 24/11/14 | Survey Type: MANUAL |
| 6 | DC-03-A-08 HURSTDENE ROAD CASTLE LANE WEST BOURNEMOUTH Edge of Town Residential Zone Total Number of dwellings: | BUNGALOWS | | DORSET |
| | Survey date: MONDAY | | 24/03/14 | Survey Type: MANUAL |
| 7 | DV-03-A-01 BRONSHILL ROAD | TERRACED HOUSES | | DEVON |
| | TORQUAY Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: | | 37 | |
| | Survey date: WEDNESDAY | | 30/09/15 | Survey Type: MANUAL |

LIST OF SITES relevant to selection parameters (Cont.)

| | | | |
|----|--|--------------------|---------------------|
| 8 | DV-03-A-03 TERRACED & SEMI DETACHED LOWER BRAND LANE HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 70 Survey date: MONDAY 28/09/15 | DEVON | Survey Type: MANUAL |
| 9 | EA-03-A-01 DETACHED TALISKER AVENUE KILMARNOCK Edge of Town Residential Zone Total Number of dwellings: 39 Survey date: THURSDAY 05/06/08 | EAST AYRSHIRE | Survey Type: MANUAL |
| 10 | ES-03-A-02 PRIVATE HOUSING SOUTH COAST ROAD PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings: 37 Survey date: FRIDAY 18/11/11 | EAST SUSSEX | Survey Type: MANUAL |
| 11 | GM-03-A-10 DETACHED/SEMI BUTT HILL DRIVE PRESTWICH MANCHESTER Edge of Town Residential Zone Total Number of dwellings: 29 Survey date: WEDNESDAY 12/10/11 | GREATER MANCHESTER | Survey Type: MANUAL |
| 12 | HC-03-A-17 HOUSES & FLATS CANADA WAY LIPHOOK Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 36 Survey date: THURSDAY 12/11/15 | HAMPSHIRE | Survey Type: MANUAL |
| 13 | HI-03-A-13 HOUSING KINGSMILLS ROAD INVERNESS Edge of Town Residential Zone Total Number of dwellings: 9 Survey date: THURSDAY 21/05/09 | HIGHLAND | Survey Type: MANUAL |
| 14 | NF-03-A-02 HOUSES & FLATS DEREHAM ROAD NORWICH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 98 Survey date: MONDAY 22/10/12 | NORFOLK | Survey Type: MANUAL |

LIST OF SITES relevant to selection parameters (Cont.)

| | | | | | |
|----|------------|------------------------------------|----------|--|---------------------|
| 15 | NY-03-A-09 | MIXED HOUSING | | | NORTH YORKSHIRE |
| | | GRAMMAR SCHOOL LANE | | | |
| | | NORTHALLERTON | | | |
| | | Suburban Area (PPS6 Out of Centre) | | | |
| | | Residential Zone | | | |
| | | Total Number of dwellings: | 52 | | |
| | | Survey date: MONDAY | 16/09/13 | | Survey Type: MANUAL |
| 16 | NY-03-A-10 | HOUSES AND FLATS | | | NORTH YORKSHIRE |
| | | BOROUGHBRIDGE ROAD | | | |
| | | RIPON | | | |
| | | Edge of Town | | | |
| | | No Sub Category | | | |
| | | Total Number of dwellings: | 71 | | |
| | | Survey date: TUESDAY | 17/09/13 | | Survey Type: MANUAL |
| 17 | NY-03-A-11 | PRIVATE HOUSING | | | NORTH YORKSHIRE |
| | | HORSEFAIR | | | |
| | | BOROUGHBRIDGE | | | |
| | | Edge of Town | | | |
| | | Residential Zone | | | |
| | | Total Number of dwellings: | 23 | | |
| | | Survey date: WEDNESDAY | 18/09/13 | | Survey Type: MANUAL |
| 18 | PK-03-A-01 | DETAC. & BUNGALOWS | | | PERTH & KINROSS |
| | | TULLYLUMB TERRACE | | | |
| | | GORNHILL | | | |
| | | PERTH | | | |
| | | Suburban Area (PPS6 Out of Centre) | | | |
| | | Residential Zone | | | |
| | | Total Number of dwellings: | 36 | | |
| | | Survey date: WEDNESDAY | 11/05/11 | | Survey Type: MANUAL |
| 19 | PS-03-A-02 | DETACHED/SEMI -DETACHED | | | POWYS |
| | | GUNROG ROAD | | | |
| | | WELSHPOOL | | | |
| | | Suburban Area (PPS6 Out of Centre) | | | |
| | | Residential Zone | | | |
| | | Total Number of dwellings: | 28 | | |
| | | Survey date: MONDAY | 11/05/15 | | Survey Type: MANUAL |
| 20 | SC-03-A-04 | DETACHED & TERRACED | | | SURREY |
| | | HIGH ROAD | | | |
| | | BYFLEET | | | |
| | | Edge of Town | | | |
| | | Residential Zone | | | |
| | | Total Number of dwellings: | 71 | | |
| | | Survey date: THURSDAY | 23/01/14 | | Survey Type: MANUAL |
| 21 | SH-03-A-03 | DETACHED | | | SHROPSHIRE |
| | | SOMERBY DRIVE | | | |
| | | BICTON HEATH | | | |
| | | SHREWSBURY | | | |
| | | Edge of Town | | | |
| | | No Sub Category | | | |
| | | Total Number of dwellings: | 10 | | |
| | | Survey date: FRIDAY | 26/06/09 | | Survey Type: MANUAL |

LIST OF SITES relevant to selection parameters (Cont.)

| | | | | |
|----|---|-------------------------|-----------------|---------------------|
| 22 | SH-03-A-05 SANDCROFT SUTTON HILL TELFORD Edge of Town Residential Zone Total Number of dwellings: 54 Survey date: THURSDAY 24/10/13 | SEMI -DETACHED/TERRACED | SHROPSHIRE | Survey Type: MANUAL |
| 23 | SH-03-A-06 ELLESMERE ROAD SHREWSBURY Edge of Town Residential Zone Total Number of dwellings: 16 Survey date: THURSDAY 22/05/14 | BUNGALOWS | SHROPSHIRE | Survey Type: MANUAL |
| 24 | SM-03-A-01 WEMBDON ROAD NORTHFIELD BRIDGWATER Edge of Town Residential Zone Total Number of dwellings: 33 Survey date: THURSDAY 24/09/15 | DETACHED & SEMI | SOMERSET | Survey Type: MANUAL |
| 25 | ST-03-A-05 WATERMEET GROVE ETRURIA STOKE-ON-TRENT Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 14 Survey date: WEDNESDAY 26/11/08 | TERRACED & DETACHED | STAFFORDSHIRE | Survey Type: MANUAL |
| 26 | SY-03-A-01 A19 BENTLEY ROAD BENTLEY RISE DONCASTER Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 54 Survey date: WEDNESDAY 18/09/13 | SEMI DETACHED HOUSES | SOUTH YORKSHIRE | Survey Type: MANUAL |
| 27 | WS-03-A-05 UPPER SHOREHAM ROAD SHOREHAM BY SEA Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 48 Survey date: WEDNESDAY 18/04/12 | TERRACED & FLATS | WEST SUSSEX | 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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
| | 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 | 27 | 36 | 0.095 | 27 | 36 | 0.301 | 27 | 36 | 0.396 |
| 08:00 - 09:00 | 27 | 36 | 0.163 | 27 | 36 | 0.403 | 27 | 36 | 0.566 |
| 09:00 - 10:00 | 27 | 36 | 0.140 | 27 | 36 | 0.180 | 27 | 36 | 0.320 |
| 10:00 - 11:00 | 27 | 36 | 0.122 | 27 | 36 | 0.131 | 27 | 36 | 0.253 |
| 11:00 - 12:00 | 27 | 36 | 0.149 | 27 | 36 | 0.148 | 27 | 36 | 0.297 |
| 12:00 - 13:00 | 27 | 36 | 0.150 | 27 | 36 | 0.142 | 27 | 36 | 0.292 |
| 13:00 - 14:00 | 27 | 36 | 0.160 | 27 | 36 | 0.174 | 27 | 36 | 0.334 |
| 14:00 - 15:00 | 27 | 36 | 0.154 | 27 | 36 | 0.183 | 27 | 36 | 0.337 |
| 15:00 - 16:00 | 27 | 36 | 0.232 | 27 | 36 | 0.156 | 27 | 36 | 0.388 |
| 16:00 - 17:00 | 27 | 36 | 0.302 | 27 | 36 | 0.175 | 27 | 36 | 0.477 |
| 17:00 - 18:00 | 27 | 36 | 0.362 | 27 | 36 | 0.173 | 27 | 36 | 0.535 |
| 18:00 - 19:00 | 27 | 36 | 0.217 | 27 | 36 | 0.137 | 27 | 36 | 0.354 |
| 19:00 - 20:00 | | | | | | | | | |
| 20:00 - 21:00 | | | | | | | | | |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | 2.246 | | | 2.303 | | | 4.549 | |

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: | 7 - 98 (units:) |
| Survey date range: | 01/01/08 - 12/11/15 |
| Number of weekdays (Monday-Friday): | 27 |
| Number of Saturdays: | 0 |
| Number of Sundays: | 0 |
| Surveys automatically removed from selection: | 1 |
| 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
| | 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 | 27 | 36 | 0.004 | 27 | 36 | 0.027 | 27 | 36 | 0.031 |
| 08:00 - 09:00 | 27 | 36 | 0.003 | 27 | 36 | 0.029 | 27 | 36 | 0.032 |
| 09:00 - 10:00 | 27 | 36 | 0.001 | 27 | 36 | 0.009 | 27 | 36 | 0.010 |
| 10:00 - 11:00 | 27 | 36 | 0.004 | 27 | 36 | 0.008 | 27 | 36 | 0.012 |
| 11:00 - 12:00 | 27 | 36 | 0.003 | 27 | 36 | 0.004 | 27 | 36 | 0.007 |
| 12:00 - 13:00 | 27 | 36 | 0.006 | 27 | 36 | 0.007 | 27 | 36 | 0.013 |
| 13:00 - 14:00 | 27 | 36 | 0.010 | 27 | 36 | 0.003 | 27 | 36 | 0.013 |
| 14:00 - 15:00 | 27 | 36 | 0.005 | 27 | 36 | 0.006 | 27 | 36 | 0.011 |
| 15:00 - 16:00 | 27 | 36 | 0.023 | 27 | 36 | 0.004 | 27 | 36 | 0.027 |
| 16:00 - 17:00 | 27 | 36 | 0.021 | 27 | 36 | 0.003 | 27 | 36 | 0.024 |
| 17:00 - 18:00 | 27 | 36 | 0.030 | 27 | 36 | 0.005 | 27 | 36 | 0.035 |
| 18:00 - 19:00 | 27 | 36 | 0.008 | 27 | 36 | 0.006 | 27 | 36 | 0.014 |
| 19:00 - 20:00 | 1 | 7 | 0.000 | 1 | 7 | 0.000 | 1 | 7 | 0.000 |
| 20:00 - 21:00 | 1 | 7 | 0.000 | 1 | 7 | 0.000 | 1 | 7 | 0.000 |
| 21:00 - 22:00 | 1 | 7 | 0.000 | 1 | 7 | 0.000 | 1 | 7 | 0.000 |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 0.118 | | | 0.111 | | | 0.229 |

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: | 7 - 98 (units:) |
| Survey date range: | 01/01/08 - 12/11/15 |
| Number of weekdays (Monday-Friday): | 27 |
| Number of Saturdays: | 0 |
| Number of Sundays: | 0 |
| Surveys automatically removed from selection: | 1 |
| 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

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

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
| | 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 | 27 | 36 | 0.106 | 27 | 36 | 0.380 | 27 | 36 | 0.486 |
| 08:00 - 09:00 | 27 | 36 | 0.198 | 27 | 36 | 0.583 | 27 | 36 | 0.781 |
| 09:00 - 10:00 | 27 | 36 | 0.164 | 27 | 36 | 0.224 | 27 | 36 | 0.388 |
| 10:00 - 11:00 | 27 | 36 | 0.150 | 27 | 36 | 0.169 | 27 | 36 | 0.319 |
| 11:00 - 12:00 | 27 | 36 | 0.194 | 27 | 36 | 0.178 | 27 | 36 | 0.372 |
| 12:00 - 13:00 | 27 | 36 | 0.195 | 27 | 36 | 0.178 | 27 | 36 | 0.373 |
| 13:00 - 14:00 | 27 | 36 | 0.196 | 27 | 36 | 0.231 | 27 | 36 | 0.427 |
| 14:00 - 15:00 | 27 | 36 | 0.197 | 27 | 36 | 0.223 | 27 | 36 | 0.420 |
| 15:00 - 16:00 | 27 | 36 | 0.369 | 27 | 36 | 0.204 | 27 | 36 | 0.573 |
| 16:00 - 17:00 | 27 | 36 | 0.419 | 27 | 36 | 0.231 | 27 | 36 | 0.650 |
| 17:00 - 18:00 | 27 | 36 | 0.473 | 27 | 36 | 0.212 | 27 | 36 | 0.685 |
| 18:00 - 19:00 | 27 | 36 | 0.278 | 27 | 36 | 0.189 | 27 | 36 | 0.467 |
| 19:00 - 20:00 | | | | | | | | | |
| 20:00 - 21:00 | | | | | | | | | |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 2.939 | | | 3.002 | | | 5.941 |

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: | 7 - 98 (units:) |
| Survey date range: | 01/01/08 - 12/11/15 |
| Number of weekdays (Monday-Friday): | 27 |
| Number of Saturdays: | 0 |
| Number of Sundays: | 0 |
| Surveys automatically removed from selection: | 1 |
| 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL PEDESTRIANS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
| | 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 | 27 | 36 | 0.018 | 27 | 36 | 0.066 | 27 | 36 | 0.084 |
| 08:00 - 09:00 | 27 | 36 | 0.048 | 27 | 36 | 0.207 | 27 | 36 | 0.255 |
| 09:00 - 10:00 | 27 | 36 | 0.054 | 27 | 36 | 0.066 | 27 | 36 | 0.120 |
| 10:00 - 11:00 | 27 | 36 | 0.042 | 27 | 36 | 0.054 | 27 | 36 | 0.096 |
| 11:00 - 12:00 | 27 | 36 | 0.049 | 27 | 36 | 0.040 | 27 | 36 | 0.089 |
| 12:00 - 13:00 | 27 | 36 | 0.047 | 27 | 36 | 0.035 | 27 | 36 | 0.082 |
| 13:00 - 14:00 | 27 | 36 | 0.054 | 27 | 36 | 0.053 | 27 | 36 | 0.107 |
| 14:00 - 15:00 | 27 | 36 | 0.046 | 27 | 36 | 0.055 | 27 | 36 | 0.101 |
| 15:00 - 16:00 | 27 | 36 | 0.144 | 27 | 36 | 0.089 | 27 | 36 | 0.233 |
| 16:00 - 17:00 | 27 | 36 | 0.111 | 27 | 36 | 0.067 | 27 | 36 | 0.178 |
| 17:00 - 18:00 | 27 | 36 | 0.113 | 27 | 36 | 0.047 | 27 | 36 | 0.160 |
| 18:00 - 19:00 | 27 | 36 | 0.057 | 27 | 36 | 0.035 | 27 | 36 | 0.092 |
| 19:00 - 20:00 | | | | | | | | | |
| 20:00 - 21:00 | | | | | | | | | |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 0.783 | | | 0.814 | | | 1.597 |

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: | 7 - 98 (units:) |
| Survey date range: | 01/01/08 - 12/11/15 |
| Number of weekdays (Monday-Friday): | 27 |
| Number of Saturdays: | 0 |
| Number of Sundays: | 0 |
| Surveys automatically removed from selection: | 1 |
| 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
| | 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 | 27 | 36 | 0.001 | 27 | 36 | 0.025 | 27 | 36 | 0.026 |
| 08:00 - 09:00 | 27 | 36 | 0.000 | 27 | 36 | 0.014 | 27 | 36 | 0.014 |
| 09:00 - 10:00 | 27 | 36 | 0.002 | 27 | 36 | 0.007 | 27 | 36 | 0.009 |
| 10:00 - 11:00 | 27 | 36 | 0.003 | 27 | 36 | 0.007 | 27 | 36 | 0.010 |
| 11:00 - 12:00 | 27 | 36 | 0.005 | 27 | 36 | 0.005 | 27 | 36 | 0.010 |
| 12:00 - 13:00 | 27 | 36 | 0.007 | 27 | 36 | 0.011 | 27 | 36 | 0.018 |
| 13:00 - 14:00 | 27 | 36 | 0.005 | 27 | 36 | 0.002 | 27 | 36 | 0.007 |
| 14:00 - 15:00 | 27 | 36 | 0.010 | 27 | 36 | 0.008 | 27 | 36 | 0.018 |
| 15:00 - 16:00 | 27 | 36 | 0.010 | 27 | 36 | 0.005 | 27 | 36 | 0.015 |
| 16:00 - 17:00 | 27 | 36 | 0.018 | 27 | 36 | 0.007 | 27 | 36 | 0.025 |
| 17:00 - 18:00 | 27 | 36 | 0.018 | 27 | 36 | 0.004 | 27 | 36 | 0.022 |
| 18:00 - 19:00 | 27 | 36 | 0.018 | 27 | 36 | 0.000 | 27 | 36 | 0.018 |
| 19:00 - 20:00 | | | | | | | | | |
| 20:00 - 21:00 | | | | | | | | | |
| 21:00 - 22:00 | | | | | | | | | |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | | 0.097 | | | 0.095 | | | 0.192 |

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: 7 - 98 (units:)
 Survey date range: 01/01/08 - 12/11/15
 Number of weekdays (Monday-Friday): 27
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

| Time Range | ARRIVALS | | | DEPARTURES | | | TOTALS | | |
|---------------|----------|-------------|-----------|------------|-------------|-----------|----------|-------------|-----------|
| | 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 | 27 | 36 | 0.129 | 27 | 36 | 0.497 | 27 | 36 | 0.626 |
| 08:00 - 09:00 | 27 | 36 | 0.249 | 27 | 36 | 0.832 | 27 | 36 | 1.081 |
| 09:00 - 10:00 | 27 | 36 | 0.222 | 27 | 36 | 0.306 | 27 | 36 | 0.528 |
| 10:00 - 11:00 | 27 | 36 | 0.199 | 27 | 36 | 0.238 | 27 | 36 | 0.437 |
| 11:00 - 12:00 | 27 | 36 | 0.251 | 27 | 36 | 0.227 | 27 | 36 | 0.478 |
| 12:00 - 13:00 | 27 | 36 | 0.255 | 27 | 36 | 0.232 | 27 | 36 | 0.487 |
| 13:00 - 14:00 | 27 | 36 | 0.265 | 27 | 36 | 0.289 | 27 | 36 | 0.554 |
| 14:00 - 15:00 | 27 | 36 | 0.258 | 27 | 36 | 0.292 | 27 | 36 | 0.550 |
| 15:00 - 16:00 | 27 | 36 | 0.546 | 27 | 36 | 0.303 | 27 | 36 | 0.849 |
| 16:00 - 17:00 | 27 | 36 | 0.569 | 27 | 36 | 0.308 | 27 | 36 | 0.877 |
| 17:00 - 18:00 | 27 | 36 | 0.635 | 27 | 36 | 0.268 | 27 | 36 | 0.903 |
| 18:00 - 19:00 | 27 | 36 | 0.361 | 27 | 36 | 0.231 | 27 | 36 | 0.592 |
| 19:00 - 20:00 | 1 | 7 | 0.000 | 1 | 7 | 0.000 | 1 | 7 | 0.000 |
| 20:00 - 21:00 | 1 | 7 | 0.000 | 1 | 7 | 0.000 | 1 | 7 | 0.000 |
| 21:00 - 22:00 | 1 | 7 | 0.000 | 1 | 7 | 0.000 | 1 | 7 | 0.000 |
| 22:00 - 23:00 | | | | | | | | | |
| 23:00 - 24:00 | | | | | | | | | |
| Total Rates: | | 3.939 | | | 4.023 | | | 7.962 | |

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: | 7 - 98 (units:) |
| Survey date range: | 01/01/08 - 12/11/15 |
| Number of weekdays (Monday-Friday): | 27 |
| Number of Saturdays: | 0 |
| Number of Sundays: | 0 |
| Surveys automatically removed from selection: | 1 |
| 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 shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

APPENDIX F
Traffic Distribution Data

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

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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

| place of work : 2011 super output area - middle layer | usual residence E02002190 : Bradford 008 | % | Harden Lane | Park Lane | Parkwood Street | Glen Lee Lane | Hainworth Wood Road (N) |
|--|---|--------|-------------|-----------|--------------------|---------------|----------------------------|
| E02002190 : Bradford 008 | 391 | 24.7% | | 12.3% | 12.3% | | |
| E02002186 : Bradford 004 | 146 | 9.2% | | 9.2% | | | |
| E02002221 : Bradford 039 | 76 | 4.8% | 4.8% | | | | |
| E02002193 : Bradford 011 | 71 | 4.5% | | | | | 4.5% |
| E02005749 : Craven 008 | 64 | 4.0% | | 4.0% | | | |
| E02002188 : Bradford 006 | 64 | 4.0% | | | 4.0% | | |
| E02002191 : Bradford 009 | 60 | 3.8% | | 1.9% | | | 1.9% |
| E02002197 : Bradford 015 | 52 | 3.3% | 3.3% | | | | |
| E02005747 : Craven 006 | 51 | 3.2% | | 3.2% | | | |
| E02002202 : Bradford 020 | 41 | 2.6% | 1.3% | | 1.3% | | |
| E02002205 : Bradford 023 | 40 | 2.5% | | | | 2.5% | |
| E02002227 : Bradford 045 | 34 | 2.1% | 2.1% | | | | |
| E02002184 : Bradford 002 | 33 | 2.1% | | 2.1% | | | |
| E02002189 : Bradford 007 | 33 | 2.1% | | 2.1% | | | |
| E02002219 : Bradford 037 | 26 | 1.6% | 1.6% | | | | |
| E02002192 : Bradford 010 | 25 | 1.6% | 1.6% | | | | |
| E02002226 : Bradford 044 | 25 | 1.6% | 1.6% | | | | |
| E02002204 : Bradford 022 | 24 | 1.5% | 0.8% | 0.8% | | | |
| E02002251 : Calderdale 008 | 23 | 1.5% | | | | 1.5% | |
| E02005746 : Craven 005 | 22 | 1.4% | | 1.4% | | | |
| E02002213 : Bradford 031 | 22 | 1.4% | | | | 1.4% | |
| E02002216 : Bradford 034 | 21 | 1.3% | 0.7% | | 0.7% | | |
| E02002194 : Bradford 012 | 20 | 1.3% | | | | | 1.3% |
| E02002239 : Bradford 057 | 15 | 0.9% | 0.5% | | 0.5% | | |
| E02002336 : Leeds 007 | 15 | 0.9% | | | 0.9% | | |
| E02002228 : Bradford 046 | 13 | 0.8% | | | 0.8% | | |
| E02002223 : Bradford 041 | 12 | 0.8% | 0.8% | | | | |
| E02002230 : Bradford 048 | 12 | 0.8% | 0.8% | | | | |
| E02005743 : Craven 002 | 11 | 0.7% | | 0.7% | | | |
| E02002196 : Bradford 014 | 11 | 0.7% | | | | | 0.7% |
| E02002212 : Bradford 030 | 11 | 0.7% | 0.7% | | | | |
| E02006875 : Leeds 111 | 11 | 0.7% | 0.7% | | | | |
| E02002198 : Bradford 016 | 10 | 0.6% | | | 0.6% | | |
| E02005748 : Craven 007 | 9 | 0.6% | | 0.6% | | | |
| E02002200 : Bradford 018 | 8 | 0.5% | | | 0.5% | | |
| E02002222 : Bradford 040 | 8 | 0.5% | 0.5% | | | | |
| E02002235 : Bradford 053 | 8 | 0.5% | 0.5% | | | | |
| E02002338 : Leeds 009 | 8 | 0.5% | | | 0.5% | | |
| E02006884 : Rossendale 010 | 7 | 0.4% | | | | 0.4% | |
| E02002220 : Bradford 038 | 7 | 0.4% | | | 0.4% | | |
| E02002242 : Bradford 060 | 7 | 0.4% | 0.4% | | | | |
| E02002356 : Leeds 027 | 7 | 0.4% | | | 0.4% | | |
| E02002395 : Leeds 066 | 7 | 0.4% | | | 0.4% | | |
| E02002183 : Bradford 001 | 6 | 0.4% | | 0.4% | | | |
| E02002187 : Bradford 005 | 6 | 0.4% | | | 0.4% | | |
| E02002215 : Bradford 033 | 6 | 0.4% | 0.4% | | | | |
| E02002268 : Calderdale 025 | 6 | 0.4% | | | | 0.4% | |
| | 1,585 | 100.0% | 22.9% | 38.6% | 23.9% | 6.2% | 8.3% |