

**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.

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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

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**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.*

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## 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 recorded 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

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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.

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## 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.

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### **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.

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## 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.



4.2.6 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:

<b>Destination</b>	<b>Distance</b>	<b>Duration</b>
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

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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:

	<b>Bradford 008 (MSOA)</b>	<b>Bradford</b>	<b>England</b>
<b>Method of Travel to Work</b>	<b>% working</b>	<b>% working</b>	<b>% working</b>
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

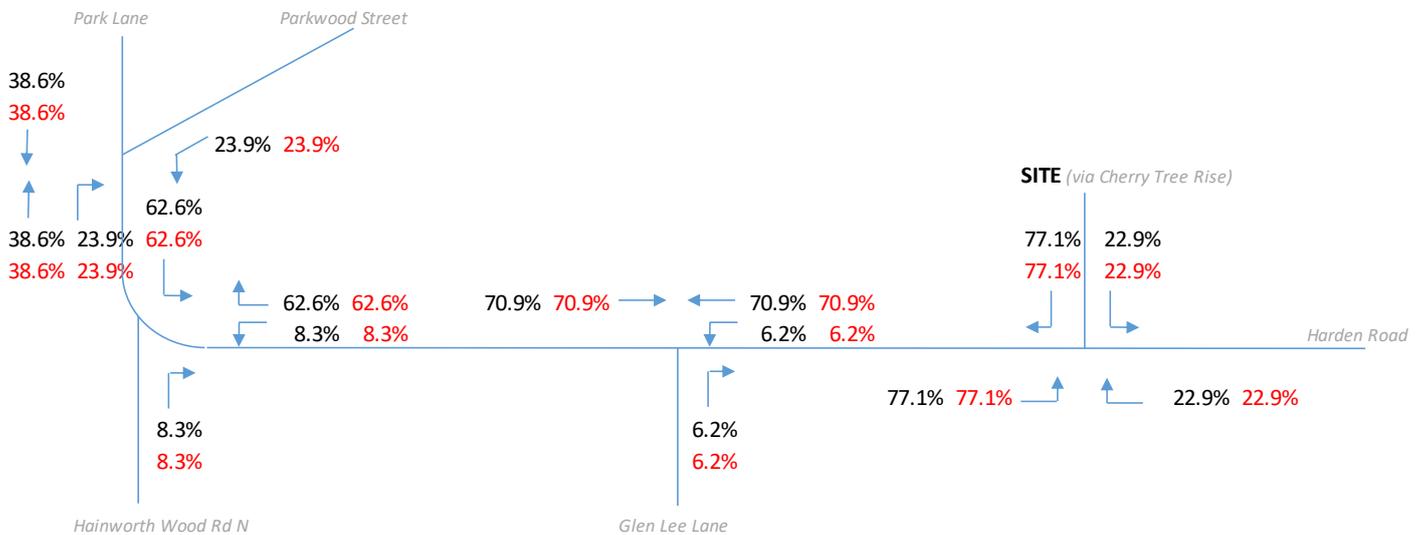
**Table 6.1 – Vehicle trip generations (45 dwellings)**

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;

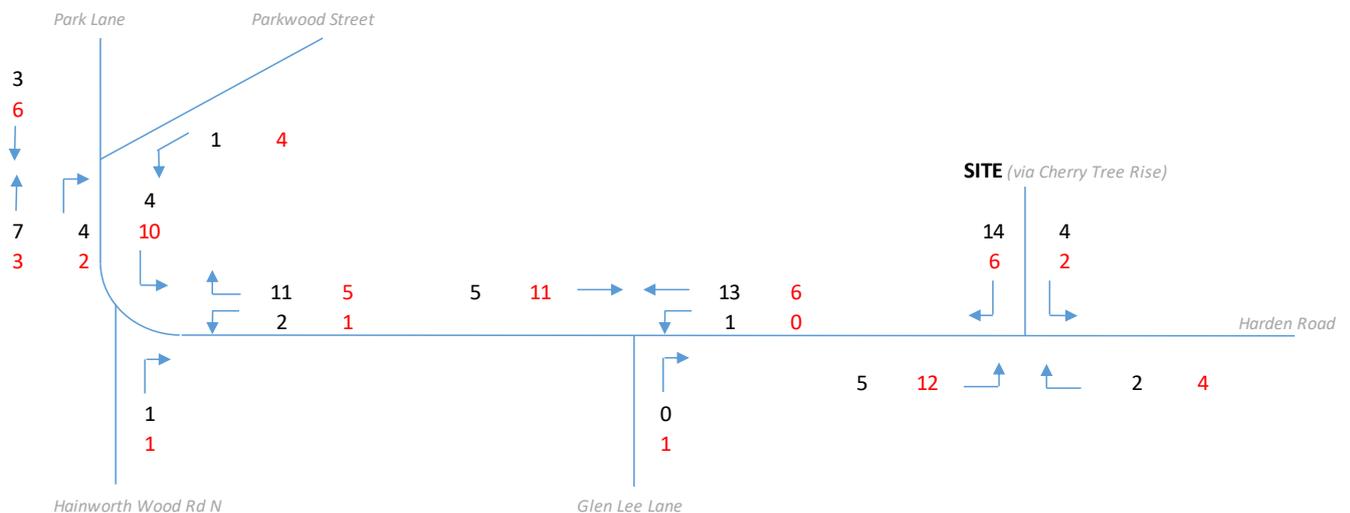
Route via:	% based on 2011 Census: Origin / Destination Statistics
Harden Road	22.9%
Park Lane	38.6%
Glen Lee Lane	6.2%
Hainworth Wood Road (N)	8.3%
Parkwood Street	23.9%
Total	100.0%

**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.

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## 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.

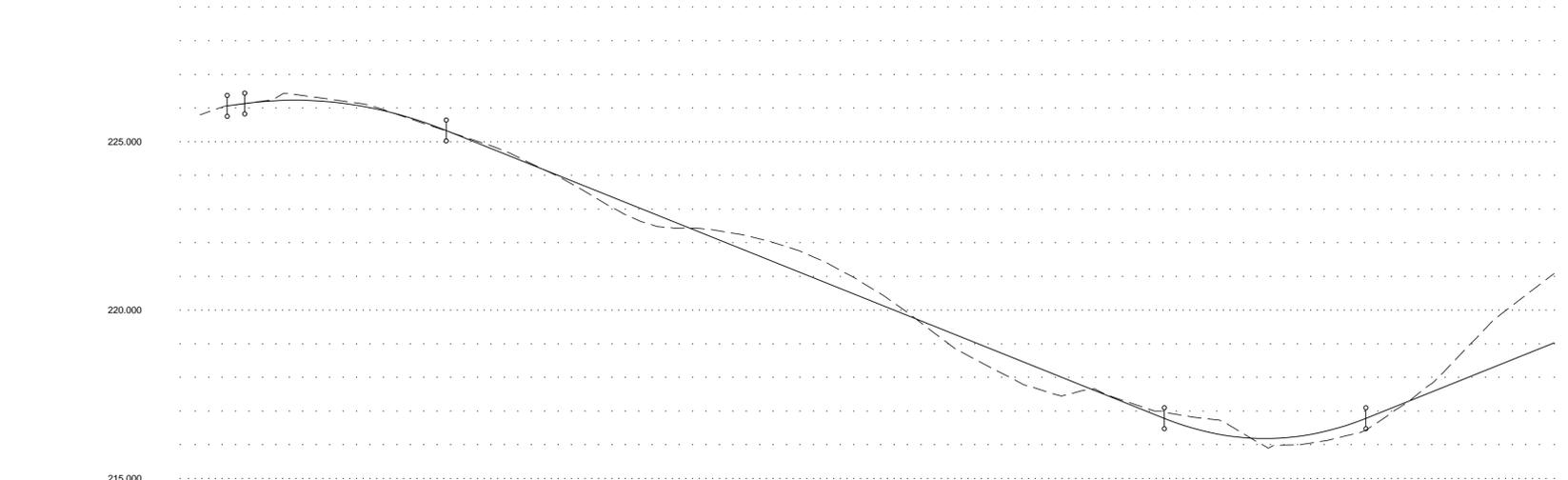
**APPENDIX A**  
*Illustrative Masterplan*  
*Drawing 9683-001 – Proposed Long Section*



**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
<b>TOTAL</b>		<b>38no</b>

\* Suggested AH units (6No = 15%)



CL03

CHAINAGE	0+000	0+028	0+616	10+000	13+236	20+000	25+000	30+000	35+000	36+616	40+000	50+000	53+841	58+143	60+000	70+000	72+291	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+372	165+000	170+000	173+481	180+000	190+000	192+897	200+000	207+483		
EXISTING GROUND LEVEL	225.798		226.222		226.242		225.767		225.456	225.391	225.095	224.276	223.92		222.508		222.259		221.885		221.695	220.643	219.207	218.652	217.545	217.135	216.762		216.536	216.226	217.311	216.104	215.857	220.857	227.084										
ALIGNMENT LEVEL	225.063	225.132	225.202	225.236	225.170	225.021	224.789	224.456	224.331	224.081	224.261	223.461	222.661	221.861	221.061	220.261	219.461	218.661	217.861	217.061	216.261	215.461	214.661	213.861	213.061	212.261	211.461	210.661	209.861	209.061	208.261	207.461	206.661	205.861	205.061	204.261	203.461	202.661	201.861	201.061	200.261	199.461	198.661	197.861	197.061
VERTICAL ALIGNMENT	G = 2.484% L = 30.000 KF = -2.81320											G = -8.000% L = 30.000 KF = 1.8750											G = 8.000% L = 30.000																						
HORIZONTAL ALIGNMENT	R = 90.000											R = 10.000											R = 20.000																						

SCALE V 1:100  
H 1:500

<p><b>sanderson</b> associates (consulting engineers) Ltd Highways   Traffic   Transportation   Water T 01924 844080 mail@sandersonassociates.co.uk F 01924 844081 www.sandersonassociates.co.uk</p>	Client	Project Title	Drawing Title	Scale	Drawn By
	MR. BROOK	REDWOOD CLOSE	PROPOSED LONG SECTION	as shown	MA
				A1	Checked By
				28.01.16	DC
				Approved By	Rev
				DC	-
				Drawing Number	
				9683-001	
				Rev	
				Amendment	
				Drawn	
				Date	
				Checked	
				QIM ISO 9001 REGISTERED FIRM	

***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**

2<sup>nd</sup> 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**

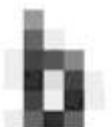
I refer to your recent pre-application enquiry submission which was discussed at the major team meeting on 07 August 2013 and your subsequent meeting and discussions with my Development Team Leader, Fiona Tiplady and Principal Highway Engineer, John Rowley on 18<sup>th</sup> September 2013.

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:-

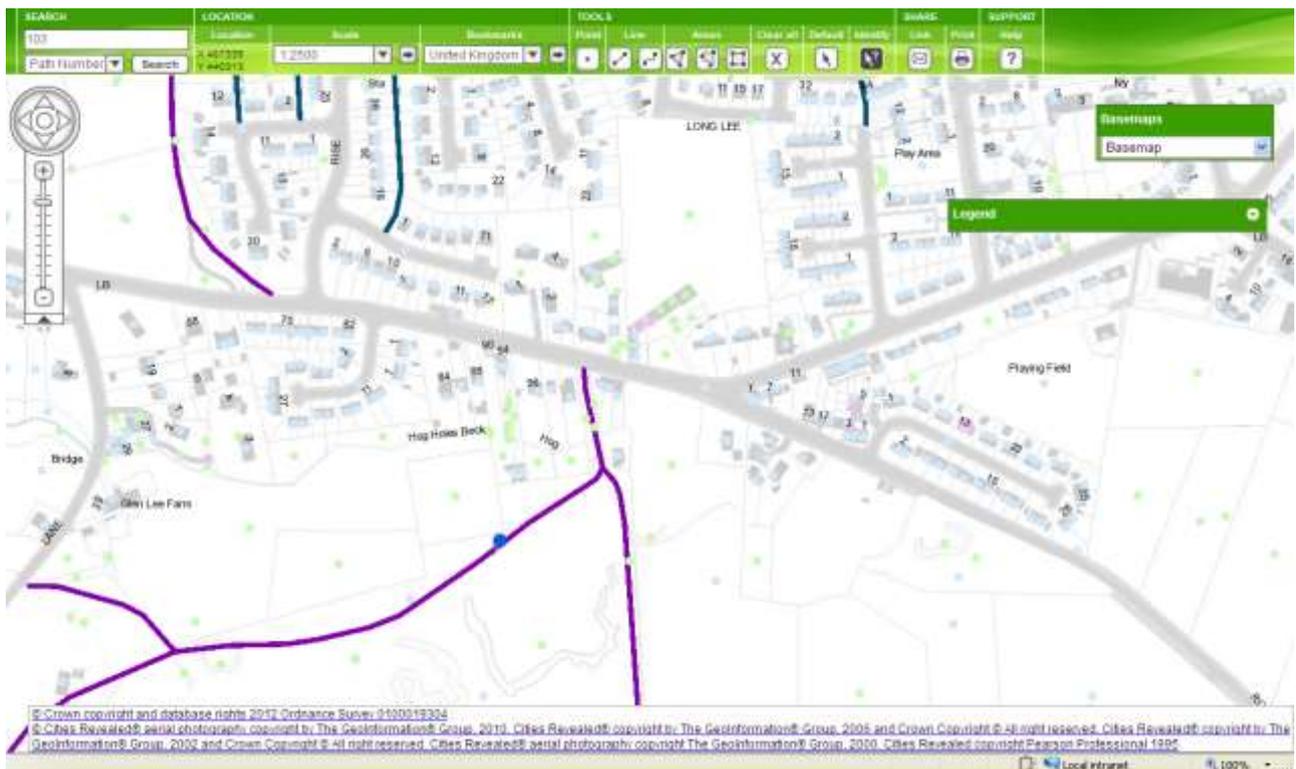
- An Extended Phase 1 Habitat Survey is required to be undertaken at an optimal time of year and submitted with application. There is the possible loss of lowland species rich/acid grassland which are UK BAP habitats

- 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](mailto: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](mailto: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](mailto: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 Councils 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 that reads "Julian Jackson". The signature is written in a light grey or blue ink and is positioned to the left of the printed name.

**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*

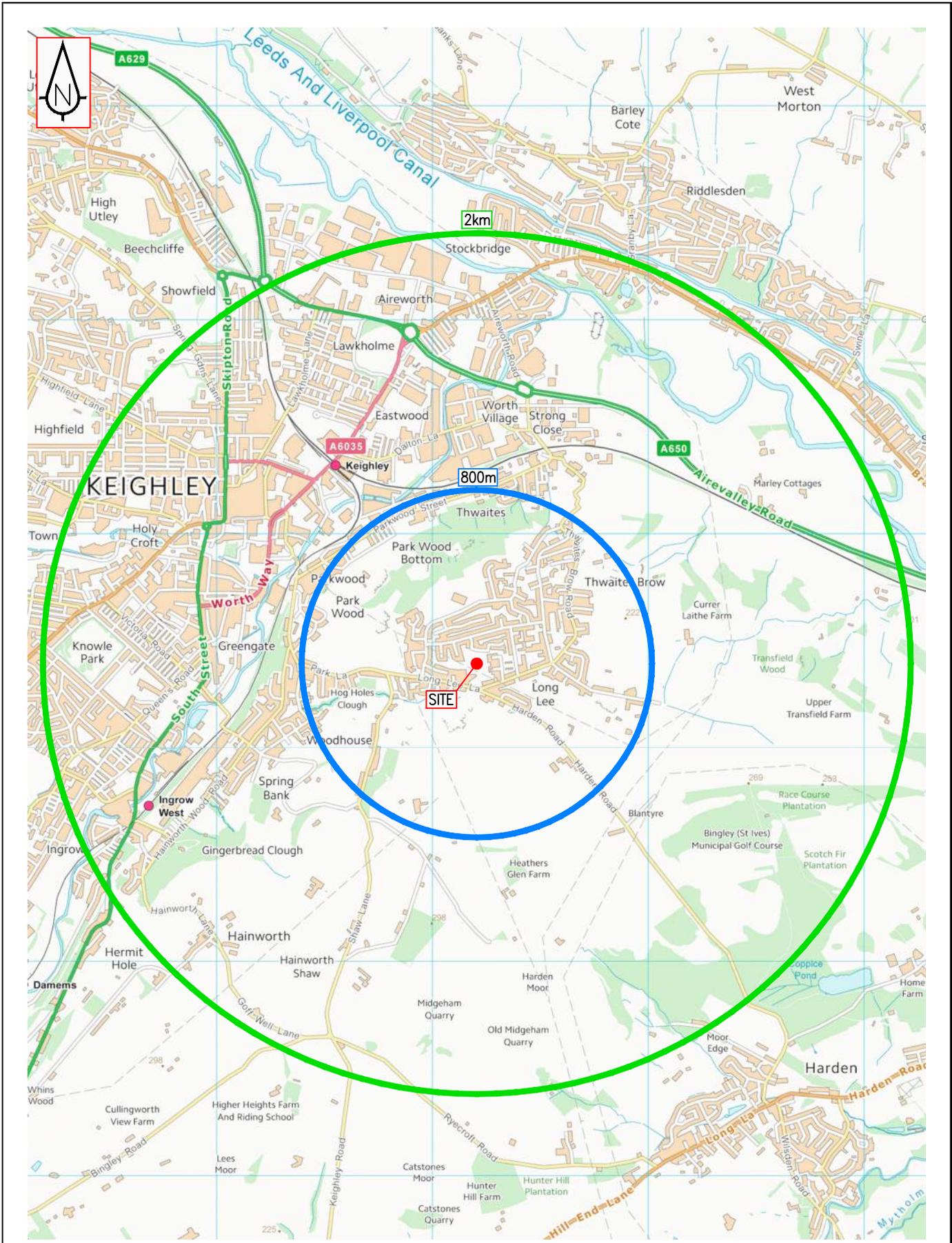
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### Site Location Plan

## Proposed Residential Development Redwood Close, Keighley

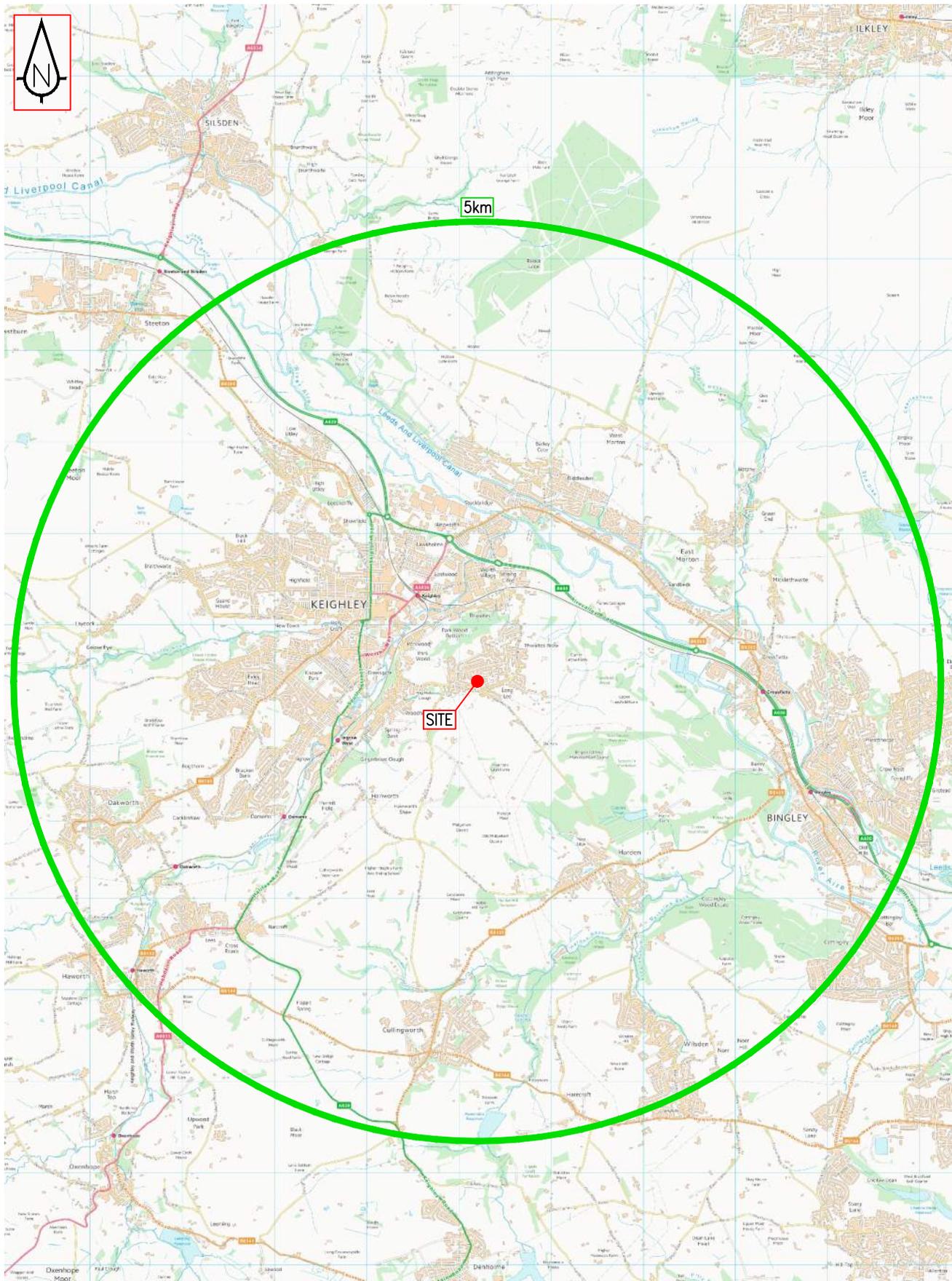
Drawn BL	Scale NTS	 <small>ISO 9001 REGISTERED FIRM</small>
Checked DJC	Date November 2016	
Approved DJC	Drawing Number Figure 1	Size A4




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 (consulting engineers) Ltd  
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 F 01924 844081 www.sandersonassociates.co.uk

800m and 2km  
 Indicative Walking 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 2	Size A4




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5km Indicative Cycling Distance

Proposed Residential Development  
Redwood Close, Keighley

Drawn

BL

Scale

NTS



Checked

DJC

Date

November 2016

Approved

DJC

Drawing Number

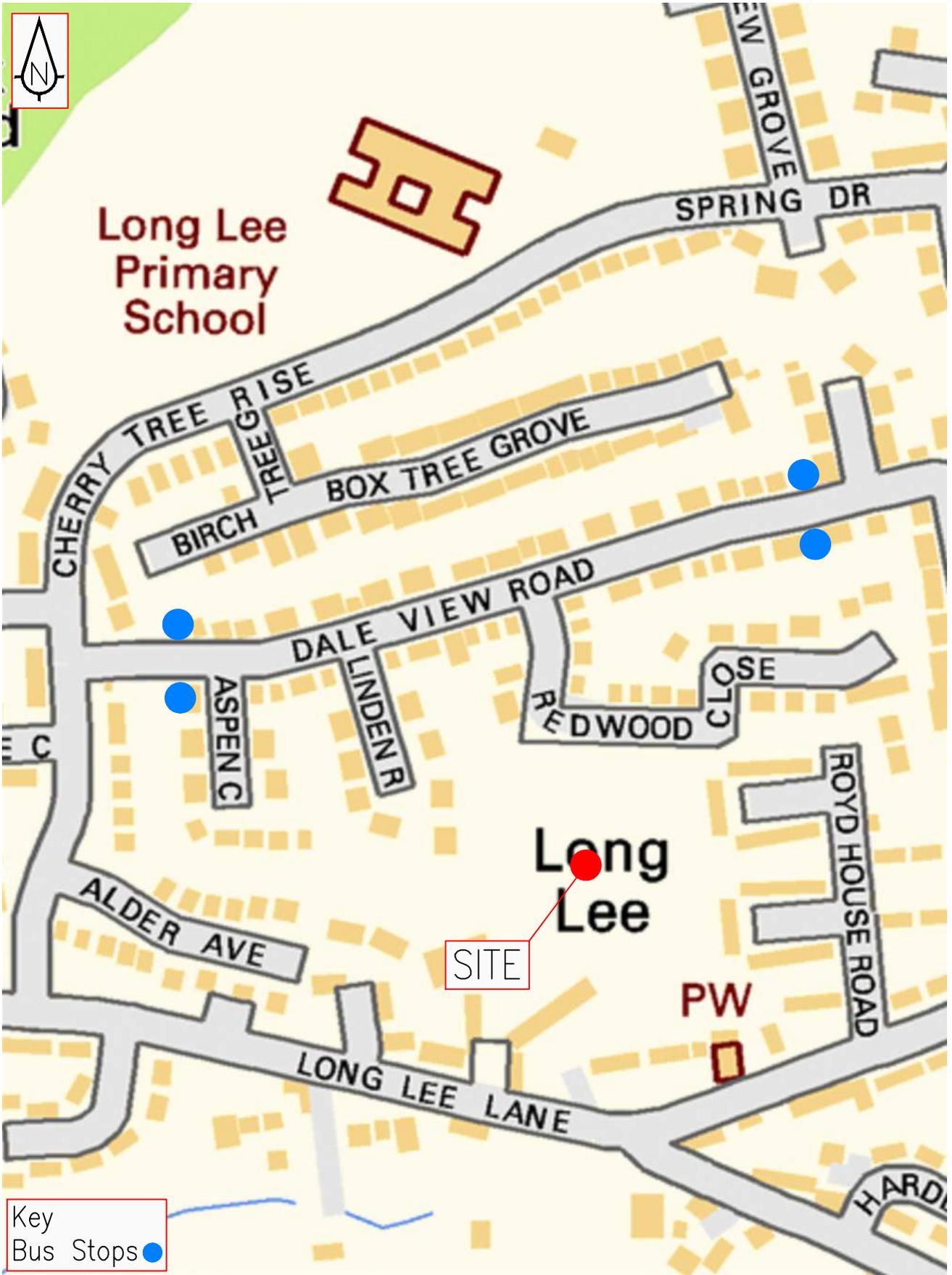
Figure 3

Size

A4



Long Lee Primary School



Key  
Bus Stops ●

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Location of Public Transport

Proposed Residential Development  
Redwood Close, Basingstoke

Drawn BL	Scale NTS	 ISO 9001 REGISTERED FIRM
Checked DJC	Date November 2016	
Approved DJC	Drawing Number Figure 4	Size A4

***APPENDIX D***

***Accident Data***

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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 007:15 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			Male	65 Negative	1	Driver/Rider	SLIGHT	2	Male	16	
2	M/cycle <= 50cc			Male	16 Negative							

**Contributory Factors**

**1681144** SERIOUS 08/06/2014 006:28 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			Male	26 Negative	1	Driver/Rider	SERIOUS	2	Male	71	
2	M/cycle > 500cc			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
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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			
2	CA-03-A-04	DETACHED		Survey Type: MANUAL CAMBRIDGESHIRE
	THORPE PARK ROAD PETERBOROUGH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 9 Survey date: TUESDAY 18/10/11			
3	CH-03-A-05	DETACHED		Survey Type: MANUAL CHESHIRE
	SYDNEY ROAD SYDNEY CREWE Edge of Town Residential Zone Total Number of dwellings: 17 Survey date: TUESDAY 14/10/08			
4	CH-03-A-08	DETACHED		Survey Type: MANUAL CHESHIRE
	WHITCHURCH ROAD BOUGHTON HEATH CHESTER Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 11 Survey date: TUESDAY 22/05/12			
5	CH-03-A-09	TERRACED HOUSES		Survey Type: MANUAL CHESHIRE
	GREYSTOKE ROAD HURDSFIELD MACCLESFIELD Edge of Town Residential Zone Total Number of dwellings: 24 Survey date: MONDAY 24/11/14			
6	DC-03-A-08	BUNGALOWS		Survey Type: MANUAL DORSET
	HURSTDENE ROAD CASTLE LANE WEST BOURNEMOUTH Edge of Town Residential Zone Total Number of dwellings: 28 Survey date: MONDAY 24/03/14			
7	DV-03-A-01	TERRACED HOUSES		Survey Type: MANUAL DEVON
	BRONSHILL ROAD  TORQUAY Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 37 Survey date: WEDNESDAY 30/09/15			

LIST OF SITES relevant to selection parameters (Cont.)

8	DV-03-A-03 TERRACED & SEMI DETACHED LOWER BRAND LANE		DEVON
	HONITON Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 70 Survey date: MONDAY 28/09/15		Survey Type: MANUAL
9	EA-03-A-01 DETACHED TALISKER AVENUE		EAST AYRSHIRE
	KILMARNOCK Edge of Town Residential Zone Total Number of dwellings: 39 Survey date: THURSDAY 05/06/08		Survey Type: MANUAL
10	ES-03-A-02 PRIVATE HOUSING SOUTH COAST ROAD		EAST SUSSEX
	PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings: 37 Survey date: FRIDAY 18/11/11		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
12	HC-03-A-17 HOUSES & FLATS CANADA WAY		HAMPSHIRE
	LIPHOOK Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 36 Survey date: THURSDAY 12/11/15		Survey Type: MANUAL
13	HI-03-A-13 HOUSING KINGSMILLS ROAD		HIGHLAND
	INVERNESS Edge of Town Residential Zone Total Number of dwellings: 9 Survey date: THURSDAY 21/05/09		Survey Type: MANUAL
14	NF-03-A-02 HOUSES & FLATS DEREHAM ROAD		NORFOLK
	NORWICH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 98 Survey date: MONDAY 22/10/12		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	SEMI -DETACHED/TERRACED		SHROPSHIRE
	Total Number of dwellings:		54	
	Survey date:	THURSDAY	24/10/13	Survey Type: MANUAL
23	SH-03-A-06 ELLESMERE ROAD	BUNGALOWS		SHROPSHIRE
	SHREWSBURY Edge of Town Residential Zone			
	Total Number of dwellings:		16	
	Survey date:	THURSDAY	22/05/14	Survey Type: MANUAL
24	SM-03-A-01 WEMBDON ROAD NORTHFIELD BRIDGWATER Edge of Town Residential Zone	DETACHED & SEMI		SOMERSET
	Total Number of dwellings:		33	
	Survey date:	THURSDAY	24/09/15	Survey Type: MANUAL
25	ST-03-A-05 WATERMEET GROVE ETRURIA STOKE-ON-TRENT Suburban Area (PPS6 Out of Centre) Residential Zone	TERRACED & DETACHED		STAFFORDSHIRE
	Total Number of dwellings:		14	
	Survey date:	WEDNESDAY	26/11/08	Survey Type: MANUAL
26	SY-03-A-01 A19 BENTLEY ROAD BENTLEY RISE DONCASTER Suburban Area (PPS6 Out of Centre) Residential Zone	SEMI DETACHED HOUSES		SOUTH YORKSHIRE
	Total Number of dwellings:		54	
	Survey date:	WEDNESDAY	18/09/13	Survey Type: MANUAL
27	WS-03-A-05 UPPER SHOREHAM ROAD	TERRACED & FLATS		WEST SUSSEX
	SHOREHAM BY SEA Suburban Area (PPS6 Out of Centre) Residential Zone			
	Total Number of dwellings:		48	
	Survey date:	WEDNESDAY	18/04/12	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									
<b>Total Rates:</b>			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 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									
<b>Total Rates:</b>			<b>0.118</b>			<b>0.111</b>			<b>0.229</b>

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 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									
<b>Total Rates:</b>			<b>2.939</b>			<b>3.002</b>			<b>5.941</b>

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 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									
<b>Total Rates:</b>			<b>0.783</b>			<b>0.814</b>			<b>1.597</b>

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 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									
<b>Total Rates:</b>			<b>0.097</b>			<b>0.095</b>			<b>0.192</b>

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 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									
<b>Total Rates:</b>			<b>3.939</b>			<b>4.023</b>			<b>7.962</b>

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 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***

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## 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%