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PROPOSED RESIDENTIAL DEVELOPMENT, WELLTHORNE LANE, INGBIRCHWORTH

Transport Statement

12/02/2014

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PROPOSED RESIDENTIAL DEVELOPMENT, Wellthorne Lane, Ingbirchworth

Transport Statement

12/02/2014

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1 Introduction

1.1 Overview

- 1.1.1 WSP has been commissioned by Conroy Brook Developments to produce this Transport Statement (TS) in connection with the submission of a full planning application for a proposed residential development site in Ingbirchworth, Barnsley.
- 1.1.2 The purpose of this report is to review the local highway network and the sustainable accessibility of the proposed development site and to assess the development in a local transport context.

1.2 Report Structure

- 1.2.1 The structure of the report is set out as follows;
 - Section 2 - describes in detail the site location and the local highway network in the vicinity of the proposed development site;
 - Section 3 – sets out the development proposals including the proposed access / egress arrangements and car parking;
 - Section 4 – summarises national, regional and local transport policies relevant to the site and describes how the proposed development accords with these;
 - Section 5 – describes existing and proposed sustainable transport infrastructure in and around the proposed development site;
 - Section 6 – sets out the estimated traffic generation of the future development, including an assessment of the estimated impact of the development on the local highway network;
 - Section 7- outlines road safety in the vicinity of the site following a review of Personal Injury Accident (PIA) data between 2008 and 2012.
 - Section 8 – provides a summary of this Transport Statement derived from the review and analysis set out in the above Sections.

2 Existing Conditions

2.1 Site Location

- 2.1.1 Ingbirchworth is a largely residential village located approximately 3.5km northwest of Penistone, 13km west of Barnsley and 13km south east of Huddersfield.
- 2.1.2 The proposed development site is located in the north west of Ingbirchworth, in a predominantly rural area with existing residential developments located immediately east and north of the site. The northern boundary of the site is bounded by Wellthorne Lane with the western boundary of the site bounded by Annat Royd Lane. Open land is immediately west and south of the site with Ingbirchworth Reservoir located to the south west.
- 2.1.3 The location of the site and the immediate roads surrounding it can be seen in **Figure 2.1** while the location of site in the context of surrounding towns and the wider highway network is shown in **Figure 2.2**. A3 versions of both **Figure 2.1** and **Figure 2.2** can also be found in **Appendix A**.

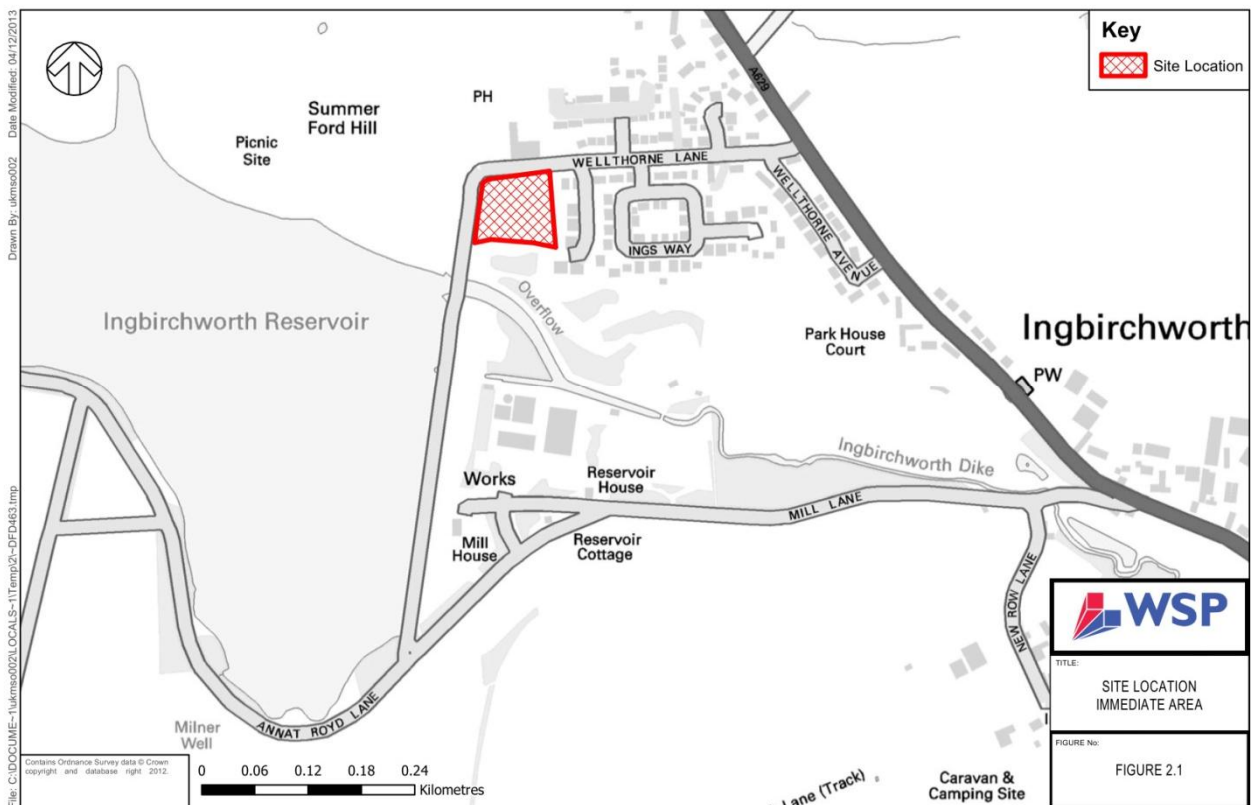


Figure 2.1 – Site Location Immediate Area

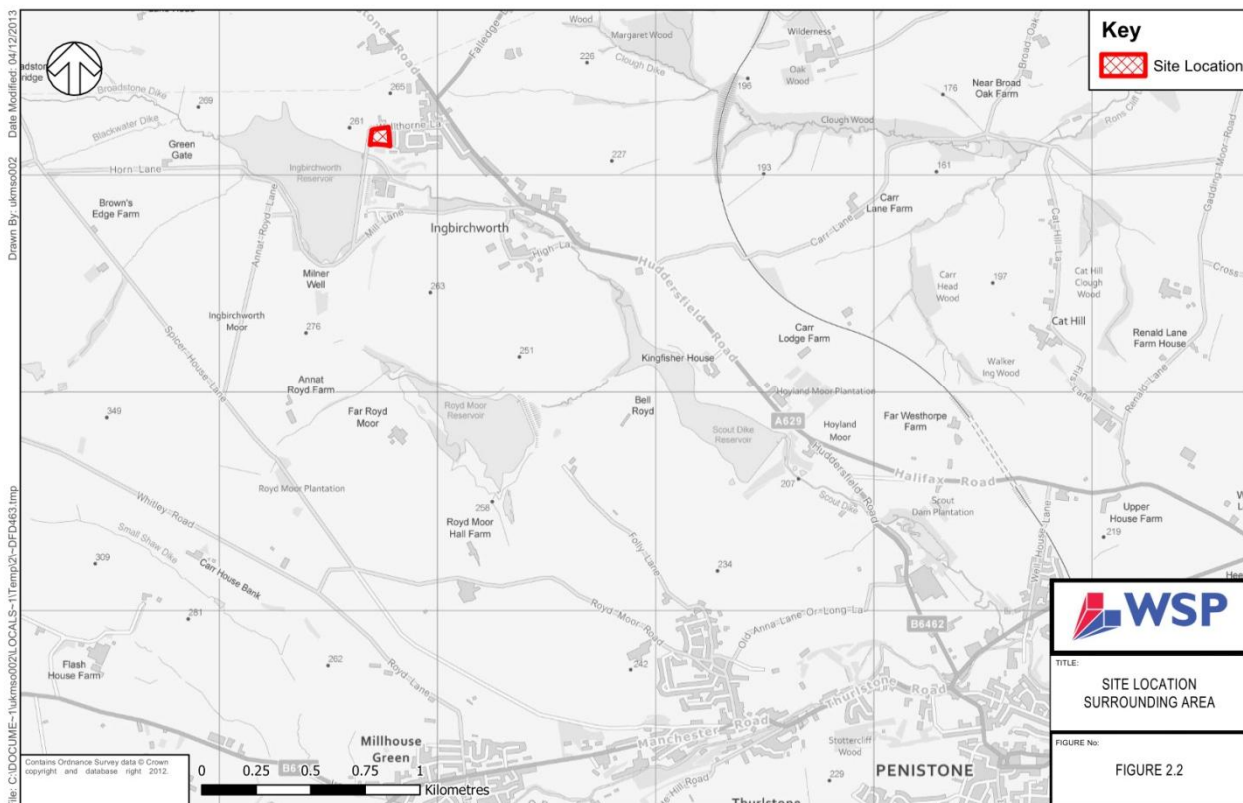


Figure 2.2 – Site Location Surrounding Area

2.1.4 The site was previously used as a site compound during works on the adjacent dam, however the land is no longer required for this function and has since been farmed by a tenant as it is surplus to requirements.

2.1.5 The site can be accessed from the east via the A629 Huddersfield Road and Wellthorne Lane and from the west via Spicer House Lane.

2.2 Local Highway Network

2.2.1 There is an existing informal access point for farm vehicles into the site from Annat Royd Lane to the south western corner of the site which will be retained as a service access to the proposed pumping station compound under the development proposals.

2.2.2 Wellthorne Lane is a single lane carriageway two way road which is subject to a 30mph speed limit for the majority of its length. The speed limit on Wellthorne Lane increases from 30mph to the national speed limit just before a 90 degree bend heading from east to south onto Annat Royd Lane.

2.2.3 The northern boundary of the site on Wellthorne Lane currently provides informal on-street parking in a lay-by which is understood to be largely used by walkers due to the area being a popular access point to the surrounding countryside. There are currently no footways present on Wellthorne Lane adjacent to the site's northern boundary and there is street lighting present. Footways of adequate width together with street lighting are present along both sides of Wellthorne Lane to the east of the site from the Fountain Inn. A footway is also in place on Annat Royd Lane adjacent to the dam wall.

-
- 2.2.4 Site visits suggest that Wellthorne Lane is a lightly trafficked rural road which is used as a through road to the surrounding residential properties and to nearby leisure pursuits such as fishing at the Ingbirchworth Reservoir and walking in the surrounding area.
- 2.2.5 The A629 Huddersfield Road is a single lane carriageway two way road which is subject to a 30mph speed limit. Footways of adequate width and street lighting are present along on both sides of the carriageway.
- 2.2.6 Ingbirchworth is strategically located near to a number of A-Roads and motorways, including the A629, A628 and the M1. The site is located approximately 330m west of the A629 Huddersfield Road which provides a direct route to Huddersfield 13km to the northwest and to Sheffield, via the A61, 23km south of the site. The A629 also connects with the A628 Manchester Road 4km south of the site.
- 2.2.7 The A628 provides a direct route to Barnsley 13km to the east and Manchester approximately 40km to the west. The A628 also provides a connection to the M1 approximately 10km east of the site. The M1 provides links to Wakefield and Leeds in the north and Nottingham, Leicester, Northampton, Luton and London in the south, among others.

3 Proposed Development

3.1 Overview

- 3.1.1 The proposed development comprises 13 detached dwellings with associated parking, the layout is included in **Appendix B**.
- 3.1.2 The internal layout of the site has been designed in accordance with South Yorkshire Residential Design Guide standards and is capable of accommodating emergency and refuse vehicles.

3.2 Access Arrangements

- 3.2.1 There is an existing informal access point into the site from Annat Royd Lane that will be retained to provide a service access to a proposed pumping station.
- 3.2.2 Vehicular access to the site is proposed by simple priority junction onto Wellthorne Lane in order to serve the proposed residential development.
- 3.2.3 The new access will be located directly opposite The Fountain Inn public house. In line with current standards, a visibility splay of 2.4 x 43m will be provided at the junction for exiting vehicles.
- 3.2.4 In line with the council's requirements identified at scoping stage, the existing car parking laybys along Wellthorne Lane will be amended so that vehicles will not be able to park within 15m of the proposed site access junction to protect visibility splays.
- 3.2.5 The site works propose the provision of a 2m wide footway on Wellthorne Lane along the frontage of the site and the application of a Traffic Regulation Order (TRO) to extend the 30mph speed limit along the entirety of the site frontage of the proposed development site along Wellthorne Lane and Annat Royd Lane in order to secure the highest level of road safety in the vicinity of the site for pedestrians, this is shown on the development layout in **Appendix B**.

3.3 Parking

- 3.3.1 As detailed on the development layout the parking proposals are in line with BMBC parking policy standards providing at least two parking spaces per dwelling, plus a garage
- 3.3.2 Cycle parking standards will be discussed with BMBC and provision provided accordingly.
- 3.3.3 As a result of the proposed works along the sites northern boundary, shown on the site layout attached at Appendix A, some five parking spaces will be introduced within marked bays.

4 Transport Policy

4.1 Introduction

- 4.1.1 The purpose of this section is to review the development in line with national and local transportation policy.

4.2 National Policy

- 4.2.1 The National Planning Policy Framework (NPPF) set out the Government's planning policies for England and how these are expected to be applied. The document provides a framework within which local people and their accountable councils can produce their own distinctive local and neighbourhood plans, which reflect the needs and priorities of their communities.
- 4.2.2 At the heart of the NPPF is a presumption in favour of sustainable development which the Framework states *'should be seen as a golden thread running through both plan-making and decision-taking'*.
- 4.2.3 The NPPF sets out 12 'core' land use planning principles that should *"underpin both plan-making and decision-taking"*. One of the principles which relates to transport states that planning should:
- 'actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable'.*
- 4.2.4 Moreover, paragraph 32 of the NPPF 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'.*
- 4.2.5 The NPPF is a national guidance document that is designed to provide a guide to developers. The document details the need to ensure sustainability runs through the core of all development. The proposed site is located to promote sustainable transport as an attractive method of transport as it is located within walking distance of bus routes, cycling distance of train stations and in the vicinity of local and national cycle routes. The accessibility and sustainability of the site is set out in detail in the following Section 5. Furthermore, as set out in Section 6, it is not considered that the proposed development will generate significant amounts of movement. Nevertheless, a TS has been provided to set out the accessibility and sustainability of the development and its impact on the local highway network.

4.3 Regional Policy

- 4.3.1 The Yorkshire and Humber Plan Regional Spatial Strategy (RSS) to 2026 sets out the regional policy context for Local Authorities, including Sheffield and Leeds with policies at the local level which must be conformed to. Barnsley is situated within both the Sheffield City Region and the Leeds City Region and as such both City Regions are applicable. Policy in the RSS that is relevant to this development application is referenced below:

"makes the best use of existing transport infrastructure and capacity" (policy YH7-B item 1).

- 4.3.2 The aims of the RSS include “*reduce travel demand, traffic growth and congestion, shift to modes with lower environmental impact and improve journey time reliability.*”
- 4.3.3 As stated within section 4.2.5, the proposed site is located to promote sustainable transport as an attractive method of transport as it is located within walking distance of bus stops, within cycling distance of two local rail stations, and is located in the vicinity of a local and national cycling route.
- 4.3.4 The Local Transport Plan for South Yorkshire (LTP3) covers the period 2011 to 2026 and is the statutory plan for transport in South Yorkshire. The plan builds on the previous South Yorkshire Local Transport Plan (LTP2) and reflects national policy and is given direction and focus by the Sheffield City Region Transport Strategy (2011-2026).
- 4.3.5 As part of the strategy the role of transport for Barnsley in the Sheffield City Region Transport Strategy is outlined as:
- “Improved passenger and freight links to neighbouring City Regions will strengthen our economy and create new business opportunities. Barnsley will enjoy its dual role in both SCR and the Leeds City Region. Joint efforts by both City Regions will focus on investment in the Accessibility Improvement Zone, for example by developing housing around railway stations.”*
- 4.3.6 The four functions for transport to be undertaken in South Yorkshire are stated as the following:
- Support economic growth
 - Enhance social inclusion and health
 - Reduce vehicle emissions
 - Make transport increasingly safe and secure
- 4.3.7 As noted above, Barnsley is situated within the Sheffield City Region and the Leeds City Region. As such the Local Transport Plan for West Yorkshire (LTP3) covers the period 2011 to 2026 and is the statutory plan for transport in West Yorkshire. The plan builds on the previous West Yorkshire Local Transport Plan (LTP2) and reflects national policy and the Leeds City Region Transport Strategy.
- 4.3.8 The vision for transport in West Yorkshire is stated as:
- “Working together to ensure that West Yorkshire’s transport system connects people and places in ways that support the economy, the environment and quality of life.”*
- 4.3.9 The objectives of the plan are stated as follows:
- Economy: To improve connectivity to support economic activity and growth in West Yorkshire and the Leeds City Region.”
 - Low Carbon: To make substantial progress towards a low carbon, sustainable transport system for West Yorkshire, while recognising transport’s contribution to national carbon reduction plans.”
 - Quality of Life: To enhance the quality of life of people living in, working and visiting West Yorkshire.”
- 4.3.10 The proposed development complements the goals and objectives of both the South Yorkshire LTP3 and the West Yorkshire LTP3 because of the site’s proximity to sustainable modes of transport (see section 5), low level of trip generation resulting in a low level of impact on the road network (see section 6) and the low level of road safety implications (see section 7). The development thereby generates negligible *vehicle emissions* and has a low *carbon impact* thereby ensuring a good *quality of life* and methods of transport that are *safe and secure*.

4.4 Local Policy

4.4.1 The Barnsley Local Development Framework Core Strategy sets out the key elements of the planning framework for Barnsley, and the approach to its long term physical development to achieve the Council's vision of what sort of place Barnsley wants to become. Some of these key elements, regarding development and transport include the following:

- *Ensuring that all development reduces the need to travel and improves the general level of accessibility helping to reduce disadvantages and inequalities in access to services and minimising the impact on the countryside. (Local Growth);*
- *Reducing transport related greenhouse gas emissions (Transport Strategy);*
- *Supporting sustainable development and the locations for growth set out in the Core Strategy (Transport Strategy);*
- *Influencing travel behaviour, in particular encouraging greater take up of walking, cycling and public transport whilst recognising the constraints of existing transport infrastructure, such as narrow roads which can make the provision of dedicated cycle routes difficult encouraging a healthier lifestyle to help reduce the high levels of obesity and heart disease (Transport Strategy);*
- *Ensuring that sustainable and inclusive travel is embedded within new development. (Transport Strategy);*
- *Reducing the number of people, particularly children, that are killed or seriously injured on our roads (Transport Strategy); and*
- *Reducing the impact of necessary road travel on the environment, the health and safety of the community and the local economy (Transport Strategy).*

4.4.2 As with the regional policy, the site conforms with local policy in the Barnsley Local Development Framework because of the site's proximity to sustainable modes of transport (see section 5), low levels of trip generation (see section 6), and therefore negligible impact on road safety.

5 Sustainable Accessibility

5.1 Introduction

- 5.1.1 This section examines the accessibility of the site by sustainable modes of transport and reviews how the design of the proposed development will promote sustainable modes of travel and ultimately reduce the attractiveness of and reliance upon the private car.

5.2 Pedestrians

- 5.2.1 'Providing for Journeys on Foot' a CIHT guidance document identifies acceptable walking distances for pedestrians without mobility impairment. The document states that for commuting and school travel, up to 500 metres is a desirable walking distance with up to 1,000 metres being an acceptable walking distance, while 2,000 metres is a preferred maximum distance.
- 5.2.2 The pedestrian accessibility of the development has been modelled using Geographical Information System (GIS) software to produce isochrone mapping. The purpose of the isochrones is to demonstrate and identify facilities that are available within an acceptable walking distance from the proposed development.
- 5.2.3 A study area of 2km from the centre of development has been modelled using GIS and is shown in **Figure 5.1**. An A3 version of **Figure 5.1** can also be found in **Appendix C** of this report.

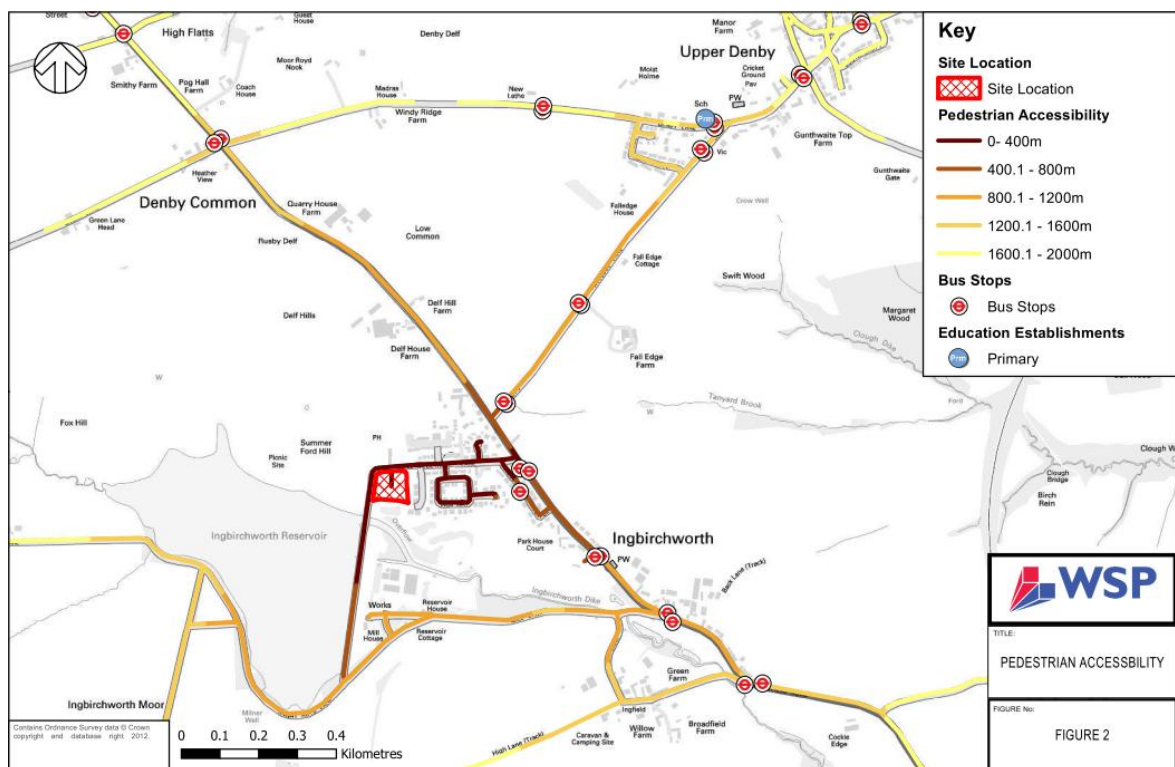


Figure 5.1 – Pedestrian Accessibility

- 5.2.4 **Figure 5.1** shows that surrounding areas such as Denby Common and Upper Denby are 1500m and 1750m walking distance respectively from the site. The Fountain Inn public house is located directly opposite the site and Denby Church of England First School is approximately 1500m walking distance from the site.

- 5.2.5 Pedestrian connectivity from the site to the surrounding areas is good with footways of adequate width with street lighting present on local roads including Wellthorne Lane and Huddersfield Road.
- 5.2.6 To further increase pedestrian accessibility and safety, the site works will include for the provision of a 2m wide footway on Wellthorne Lane along the frontage of the site.
- 5.2.7 As part of the development proposals a speed restriction change, implemented by a revised TRO, is proposed to extend the 30mph speed limit along the entirety of the site frontage with Wellthorne Lane and Annat Royd Lane. This will improve the safety of the proposed site access and the routes from the site to local bus stops and facilities, particularly for vulnerable road users such as pedestrian and cyclists.

5.3 Cyclists

- 5.3.1 Cycling is considered to be an attractive mode of transport to and from the development. An acceptable cycling distance is considered to be up to 5km, with the superseded PPG13 stating that: 'Cycling also has potential to substitute for short car trips, particularly those less than 5km and to form part of a longer journey by public transport'.
- 5.3.2 GIS software has been used to illustrate the area within 5km of the site which is shown in **Figure 5.2**. This shows that there are a number of destinations that are accessible from the development by cycle which include retail, employment, education, health and leisure facilities within Denby Dale, Penistone and parts of Upper Cumberworth. Denby Dale rail station and Penistone rail station are also accessible within a 5km cycling distance from the site.

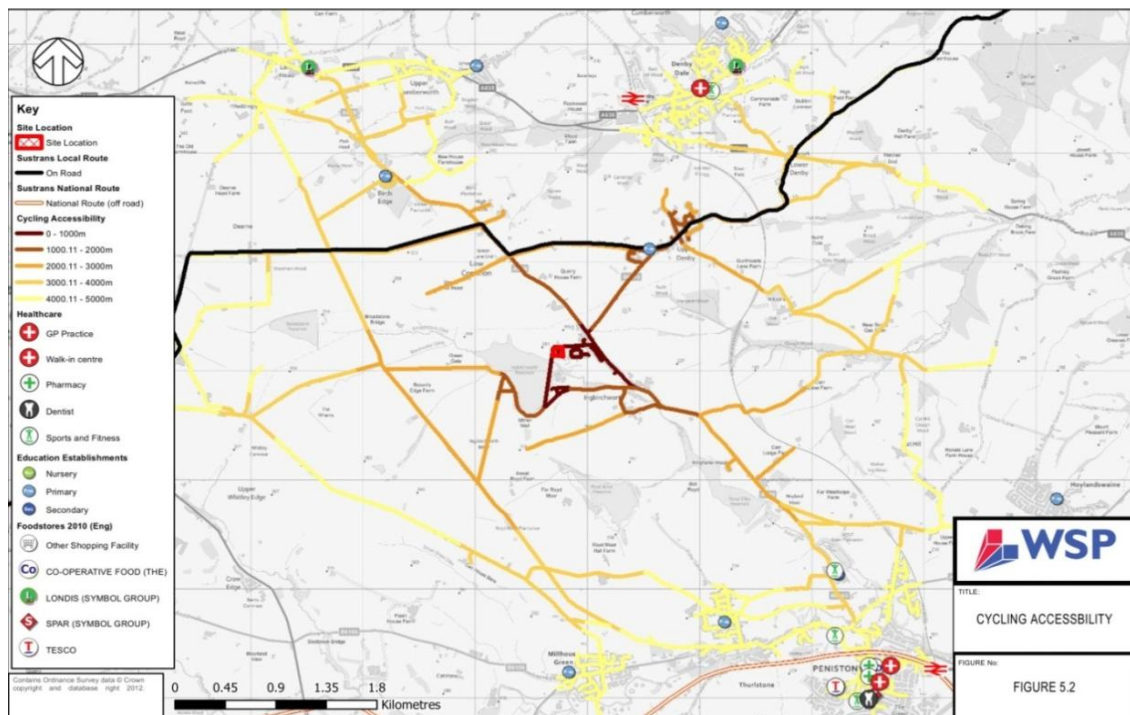


Figure 5.2 – Cycling Accessibility

- 5.3.3 Furthermore as can be seen in **Figure 5.2**, the site is situated in the vicinity of the West Yorkshire Local Cycle Route to the north of the site which provides connection to Upper Denby via the A629 Penistone Road and National Cycle Route 62, which provides connection to Penistone Rail station via the B6462 Huddersfield Road. An A3 version of **Figure 5.2** can also be found in **Appendix D** of this report.

5.4 Public Transport

Bus Services

- 5.4.1 Guidance published by the CIHT 'Planning for Public Transport in Developments' (1999), recommends that the maximum walking distance to a bus stop should be 400 metres, equating to an approximate five minute walk.
- 5.4.2 Whilst there is no infrastructure present the Penstone Grammar School Bus (401) picks up pupils in a morning and drops off children in the afternoon on Wellthorne Lane on the site frontage, a summary of this school service is shown in **Table 1**.

Table 1

Bus Service	Route	Frequency
401	Bridge End, Penistone Grammar School	School Bus Service

- 5.4.3 Bus stops are also located within 400m of the site close to the junction of Wellthorne Lane and the A629 Huddersfield Road, as can be seen in **Figure 5.1**. The services that operate from these stops are summarised in **Table 2**.

Table 2

Bus Service	Route	Frequency
24	Denby Dale, Denby Dale Rail Station, Barnsley	Monday to Saturday Every two hours between 6am – 5pm
29	Upper Denby, Sheffield	Monday to Saturday Every two hours between 7pm - 11pm

- 5.4.4 Further bus connections can be made from bus stops approximately 550m walking distance from the site on Falledge Lane as can be seen in **Figure 5.1**. The service that operates from these stops is summarised in **Table 3**.

Table 3

Bus Service	Route	Frequency
83	Huddersfield, Denby Dale Rail Station	Monday to Friday Approximately every two hours 6am – 11pm

Rail Services

- 5.4.5 Denby Dale and Penistone rail stations are around 5km from the site as shown in **Figure 5.2**. Both stations provide hourly services to Huddersfield and Sheffield. Although located 5km from the site, rail travel is considered to be a feasible mode of transport to the wider region and other key settlements for residents of the proposed development, particularly as part of a linked trip by sustainable transport modes such as cycling or bus as the 24 service (as shown in Table 2) operates to Denby Dale rail station as part of its route.
- 5.4.6 Cycle provision at Denby Dale rail station includes eight cycle stands with dedicated CCTV coverage. The station also has ramps available for disabled access onto trains.
- 5.4.7 Cycle provision at Penistone rail station includes 16 cycle stands with dedicated CCTV coverage. Cycle hire is also available from the station as part of the Cycle Penistone initiative. The station has ramps available for disabled access onto trains.

6 Trip Generation, Distribution and Highway Impact

6.1 Trip Generation

- 6.1.1 This section sets out the methodology used to estimate the number of trips that are expected to be generated by the proposed development site and the impact of the proposed development on the local highway network based on 13 residential dwellings.
- 6.1.2 The development traffic generation has been calculated using the industry standard Trip Rate Information Computer System (TRICS) database. TRICS provides a database of similar developments in a variety of locations in order to provide the best possible proxy for the development site.
- 6.1.3 To simulate the proposed development, the figures derived from TRICS have been based on residential sites that are closely related to the development site and as such criteria was set for residential land use for privately owned houses across England, Scotland and Wales (excluding Greater London). The actual range selected for the number of housing units was between 6 and 29 and the selected locations were set as “Suburban Area (PPS6 Out of Centre)” and “Edge of Town”.
- 6.1.4 Using the results of the TRICS exercise, a development of this scale is expected to generate the trip rates and resultant number of vehicular trips during the AM and PM peak periods and daily trips as presented in **Table 4** and **Table 5** respectively. The TRICS output data can be found in **Appendix E**.

Table 4 – Vehicle Trip Rates

	Arrivals	Departures	Two-Way
AM Peak	0.169	0.451	0.62
PM Peak	0.406	0.267	0.673
Daily Total	2.650	2.800	5.450

Table 5 – Vehicular Trip Generation for 13 residential dwellings

	Arrivals	Departures	Two-Way
AM Peak	2	6	8
PM Peak	5	3	8
Daily Average	34	36	70

6.2 Trip Distribution

- 6.2.1 It is anticipated that the significant majority of vehicular trips will wish to travel to and from the A629, Huddersfield Road in order to access Huddersfield, Sheffield and the M1 and will therefore travel east from the development along Wellthorne Lane. Therefore the predominant vehicular movements at the site access junction are anticipated to be left in and right out onto Wellthorne Lane.

6.3 Highway Impact

- 6.3.1 Based on the information provided by TRICS and summarised in **Table 5**, the potential two-way vehicular impact of the development during the AM and PM peak periods is not anticipated to exceed eight two-way vehicular trips in any given peak hour. This corresponds to on average one vehicle every eight minutes.
- 6.3.2 Daily Average Vehicular Trips as shown in **Table 5** have been calculated based on the total number of trips between 07:00 and 19:00. Using this data, it is not anticipated that the daily average two-way vehicular trips will exceed 70 vehicles. This corresponds to on average, one vehicle every 10 minutes.
- 6.3.3 Based on the negligible traffic expected to be generated by the proposed development as detailed above, the proposed development will not have an adverse impact on the operation of the local highway network.

7 Road Safety

- 7.1.1 Personal Injury Accident (PIA) data for the period of 2008 to 2012 has been reviewed within the immediate vicinity of the site. The data shows that only two accidents, both slight in severity, have been recorded in the vicinity of the site during the four year period. These occurred at the locations shown in **Figure 7**. An A3 version of **Figure 7** can also be found in **Appendix F** of this report.



Figure 4 – Personal Injury Accident data (PIA)

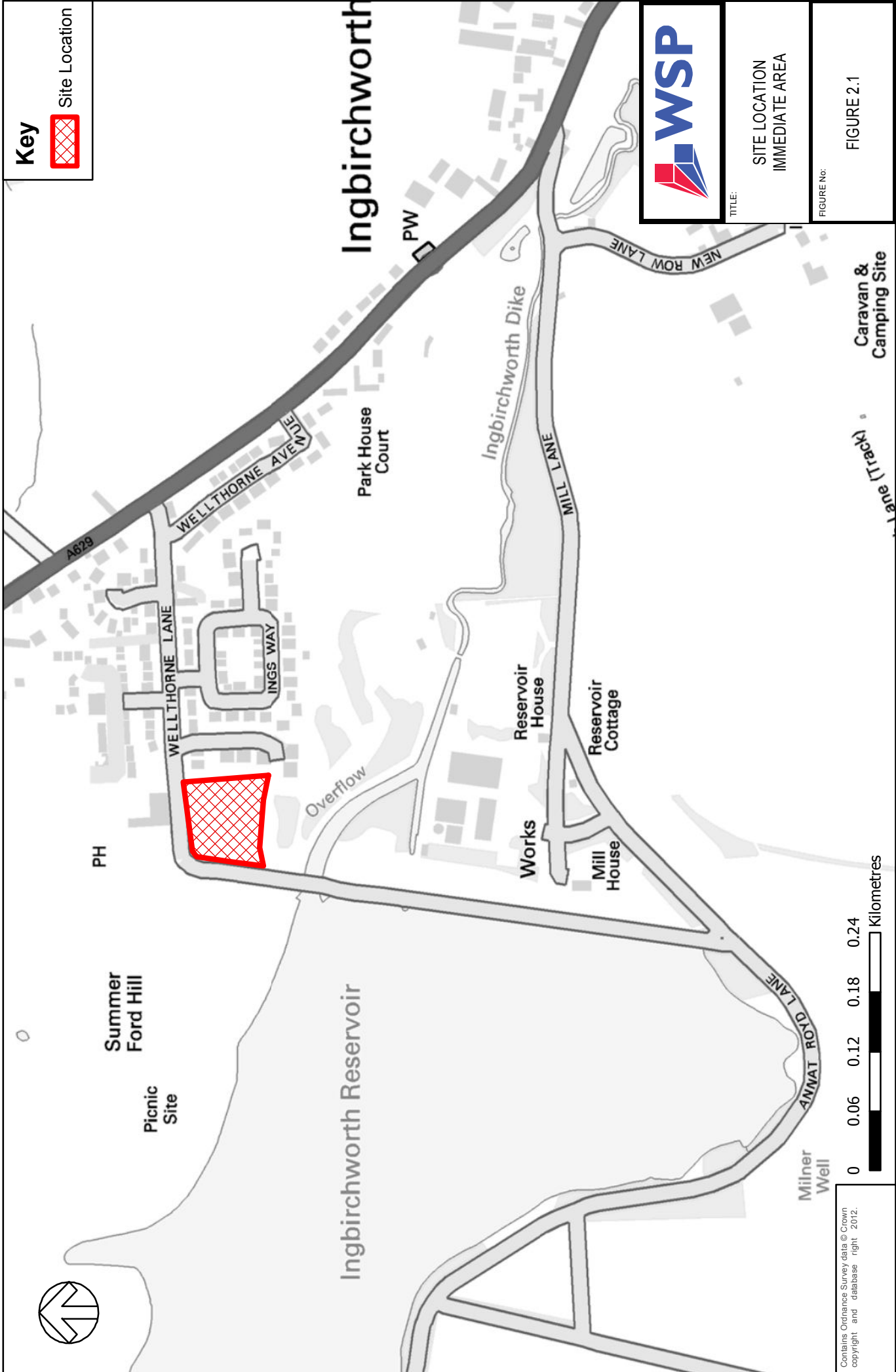
- 7.1.2 Two accidents over a four year period are not considered to be an unusual / high frequency on roads of these types. Given that there have been no accidents recorded on the residential roads within the immediate vicinity of the site or along Wellthorne Lane, it is considered that road safety does not represent a material concern in the context of the proposed development.
- 7.1.3 Whilst there are no existing accident problems in the vicinity of the site, as part of the development proposals a speed restriction change, implemented by a revised TRO, is proposed to extend the 30mph speed limit along the entirety of the site frontage with Wellthorne Lane and Annat Royd Lane. This will improve the safety of the proposed site access and the routes from the site to local bus stops and facilities for all road users. Speed is a major factor in road accidents.

8 Summary

- 8.1.1 WSP have been commissioned by Conroy Brook Developments to produce this TS in connection with the submission of a full planning application for a proposed residential development site in Ingbirchworth, Barnsley. The proposed development includes 13 residential dwellings.
- 8.1.2 The site is located off Wellthorne Lane, approximately 3.5km northwest of Penistone, 13km west of Barnsley and 13km southeast of Huddersfield.
- 8.1.3 The development proposes to create a new access off Wellthorne Lane directly opposite The Fountain Inn public house. To conform with current standards a visibility splay of 2.4 x 43m will be provided at the junction for vehicles exiting the site. The site works will also include the provision of a 2m wide footway on Wellthorne Lane along the frontage of the site and the application of a Traffic Regulation Order to the LHA to extend the 30mph speed limit along the entirety of the site frontages on Wellthorne Lane and Annat Royd Lane in order to secure the highest level of road safety in the vicinity of the site.
- 8.1.4 The site is accessible by sustainable modes as there are good opportunities for people to walk and cycle between the site, Penistone, Denby Dale and surrounding local facilities.
- 8.1.5 From a policy context, the site benefits from being within walking distance of bus stops, cycling distance from two train stations and being in the vicinity of Local and National Cycle Routes.
- 8.1.6 Rail transport services are available within cycling distance of the site with connections to Huddersfield and Sheffield. Cycle parking is available at both Denby Dale and Penistone rail stations.
- 8.1.7 Using the TRICs database a forecast has been made of the trips likely to be generated by this quantum of development, which shows that the proposed development is likely to generated only eight two way trips in both the AM and PM peaks, and 70 total average daily trips between 07:00 and 19:00. Based on this level of trip generation, it is concluded that the proposed development will not have an adverse impact on the operation of the local highway network.
- 8.1.8 PIA analysis for the site and its surrounding areas indicate that that road safety does not represent a material concern in the context of the proposed development in relation to PIA's.
- 8.1.9 It is therefore considered that there are no overriding reasons preventing the local highway authority from recognising that the proposals are acceptable with regards to the traffic and transportation elements of the development.

Appendix A





Appendix B

NOTES:

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DWELLINGS TO BE GENERALLY FINISHED WITH COURSED, NATURAL STONE (type to be agreed with local authority) WITH ARTIFICIAL STONE HEADS, CILL AND OTHER FEATURE DETAILS.

ROOFS TO BE CLAD WITH RECONSTITUTED SLATE.

PLOT FOOTPATHS TO BE RIVEN TEXTURED CONCRETE PAVING IN BUFF.

MAIN CARRIAGEWAY TO BE SURFACE DRESSED WITH CONCRETE BLOCK PAVING INCL. KERBS AND HARD MARGINS. DRIVES TO BE MACADAM WITH CONCRETE BLOCK EDGINGS.

FRONT GARDENS TO BE GENERALLY TURFED. DETAILS OF FURTHER DETAILED LANDSCAPING TO BE AGREED AND APPROVED PRIOR TO COMMENCEMENT.

INDIVIDUAL CURTILAGES TO CONTAIN DEDICATED REFUSE BIN/S POSITION IN REAR GARDEN (NO BINS VISIBLE FROM KERBSIDE). BINS SHOULD BE CAPABLE OF BEING BROUGHT TO ROADSIDE COLLECTION POINT VIA REAR GARDEN ACCESS.

LEGEND:

- 1.8m HIGH SCREEN WALL
- 1.8m HIGH SCREEN FENCE
- 0.6m STONE WALL TO MATCH THAT EXISTING ON SITE BOUNDARY
- CONCRETE BLOCK PAVING
- WHEELIE BIN ARRAY
- TIMBER GATE
- INDICATIVE TREE PLANTING
- TURFED FRONT GARDENS

PLOT KEY

TYPE	LOCATION	FLOOR AREA-sqft/sqm
A	PLOTS 2 and 11	1275/118
B	PLOTS 1 and 12	1390/129
C	PLOT 3	1450/135
D	PLOTS 7 and 10	1600/149
E	PLOTS 9 and 12a	1875/174
F	PLOTS 4 and 8	2060/191
G	PLOT 5	2315/215
H	PLOT 6	2470/229

TOTAL 13no. 22,635sqft

SITE AREA (excl pump station) 2.13 a /0.86 h

15 UNITS/HECTARE 10,627sqft/acre

Client	Key Land KeyLand Developments Ltd
Job	proposed residential development Wellthorne Lane, INGBIRCHWORTH
Title	Site Layout Plan
Scale	1:500 Dwg No
Date	Jan 2014

MPJ DESIGN ASSOCIATES Ltd
4 CHURCH STREET
BARLBOROUGH
CHESTERFIELD. S43 4EP
tele: 01246 819259
mob: 07841 353141
marynjones@bifinternal.com

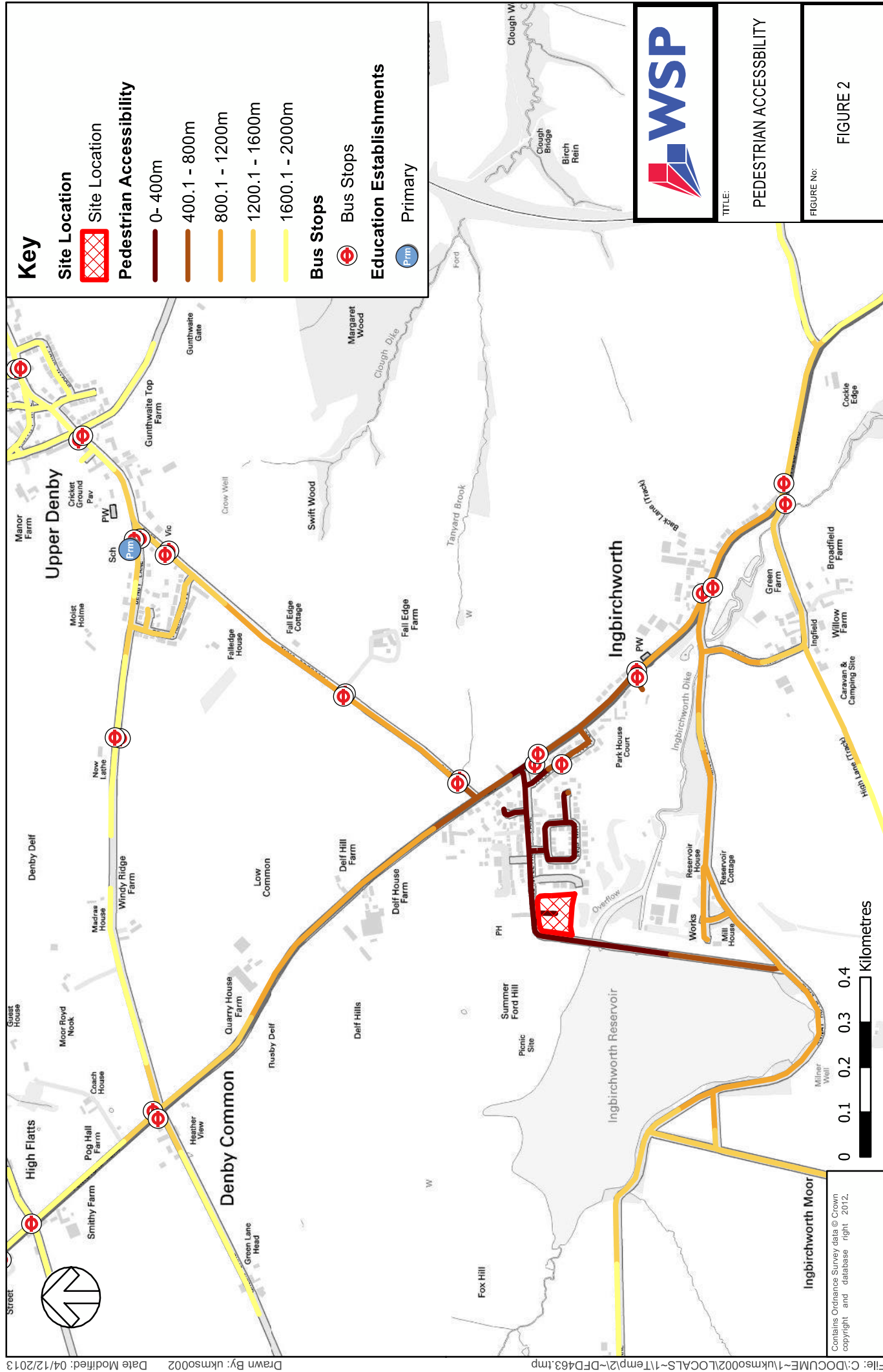
... in partnership with ...



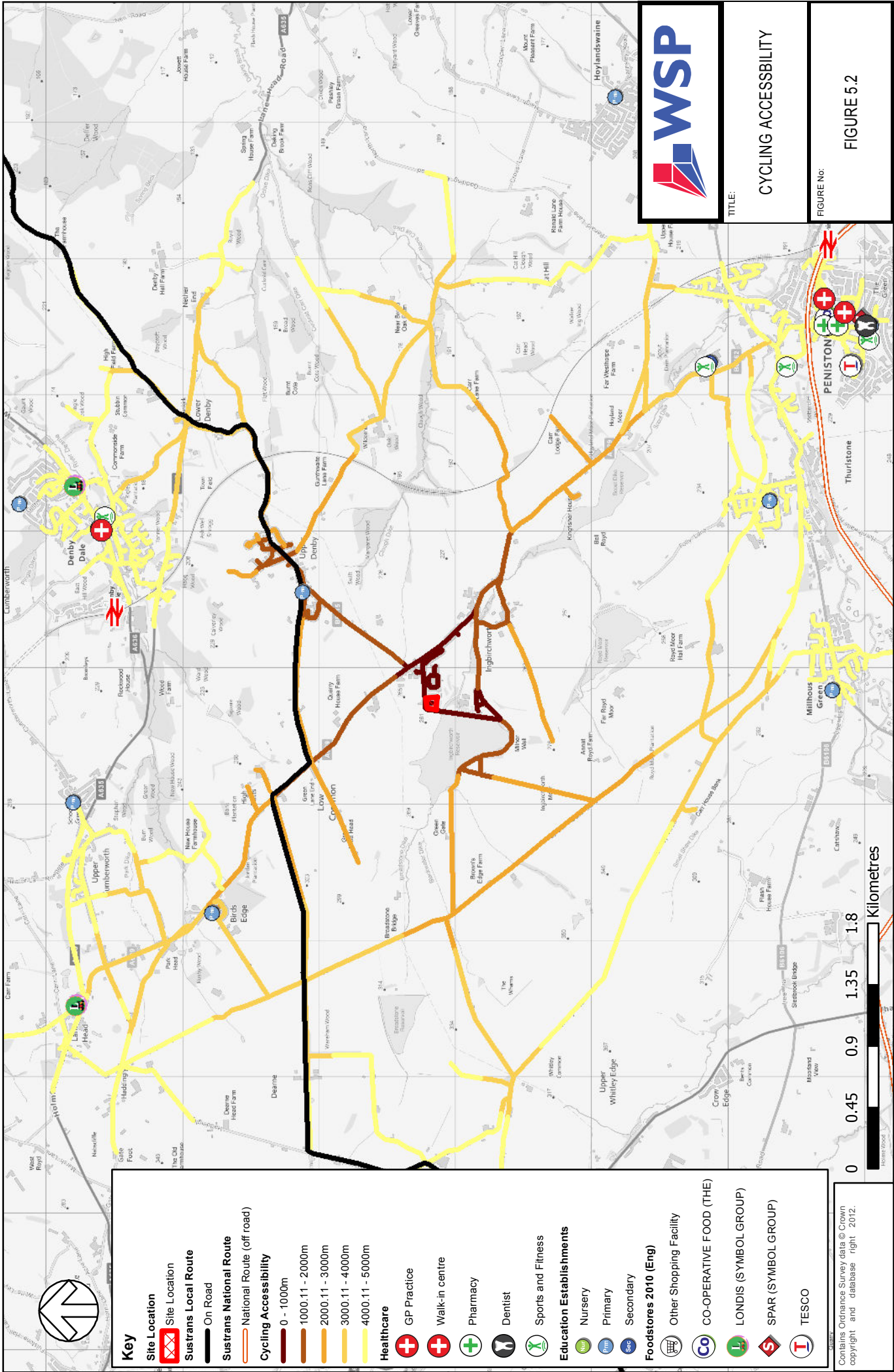
1:500 on A2



Appendix C



Appendix D



Appendix E

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

03	SOUTH WEST	
	CW CORNWALL	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
	NF NORFOLK	1 days
	SF SUFFOLK	1 days
05	EAST MIDLANDS	
	LE LEICESTERSHIRE	1 days
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	ST STAFFORDSHIRE	1 days
	WK WARWICKSHIRE	1 days
	WM WEST MIDLANDS	1 days
	WO WORCESTERSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
08	NORTH WEST	
	CH CHESHIRE	2 days
	GM GREATER MANCHESTER	1 days
10	WALES	
	CF CARDIFF	1 days
11	SCOTLAND	
	AG ANGUS	1 days
	HI HIGHLAND	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: 6 to 29 (units:)
 Range Selected by User: 5 to 40 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 30/05/13

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	1 days
Tuesday	9 days
Wednesday	3 days
Thursday	3 days
Friday	2 days

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

Selected survey types:

Manual count	18 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)	12
Edge of Town	6

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	16
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:

C3	17 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	2 days
5,001 to 10,000	3 days
10,001 to 15,000	3 days
15,001 to 20,000	5 days
20,001 to 25,000	2 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	1 days
25,001 to 50,000	3 days
50,001 to 75,000	1 days
75,001 to 100,000	5 days
100,001 to 125,000	2 days
125,001 to 250,000	2 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:

0.6 to 1.0	8 days
1.1 to 1.5	10 days

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

Travel Plan:

No	18 days
----	---------

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

LIST OF SITES relevant to selection parameters

1	AG-03-A-01 KEPTIE ROAD	BUNGALOWS/DET.		ANGUS
	ARBROATH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings:		7	
	Survey date: TUESDAY		22/05/12	Survey Type: MANUAL
2	CA-03-A-04 DETACHED			CAMBRIDGESHIRE
	THORPE PARK ROAD PETERBOROUGH Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings:		9	
	Survey date: TUESDAY		18/10/11	Survey Type: MANUAL
3	CF-03-A-03 LLANTRISANT ROAD	DETACHED		CARDIFF
	CARDIFF Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings:		29	
	Survey date: MONDAY		08/10/07	Survey Type: MANUAL
4	CH-03-A-05 SYDNEY ROAD SYDNEY CREWE Edge of Town Residential Zone Total Number of dwellings:	DETACHED	17	
	Survey date: TUESDAY		14/10/08	Survey Type: MANUAL
5	CH-03-A-08 WHITCHURCH ROAD BOUGHTON HEATH CHESTER Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings:	DETACHED	11	
	Survey date: TUESDAY		22/05/12	Survey Type: MANUAL
6	CW-03-A-01 ALVERTON ROAD	TERRACED		CORNWALL
	PENZANCE Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings:		13	
	Survey date: THURSDAY		30/06/05	Survey Type: MANUAL
7	GM-03-A-10 BUTT HILL DRIVE PRESTWICH MANCHESTER Edge of Town Residential Zone Total Number of dwellings:	DETACHED/SEMI	29	
	Survey date: WEDNESDAY		12/10/11	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	HI-03-A-13	HOUSING		HIGHLAND
	KINGSMILLS ROAD			
	INVERNESS			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	9		
	Survey date: THURSDAY	21/05/09		Survey Type: MANUAL
9	LE-03-A-01	DETACHED		LEICESTERSHIRE
	REDWOOD AVENUE			
	MELTON MOWBRAY			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	11		
	Survey date: TUESDAY	03/05/05		Survey Type: MANUAL
10	LN-03-A-03	SEMI DETACHED		LINCOLNSHIRE
	ROOKERY LANE			
	BOULTHAM			
	LINCOLN			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	22		
	Survey date: TUESDAY	18/09/12		Survey Type: MANUAL
11	NF-03-A-01	SEMI DET. & BUNGALOWS		NORFOLK
	YARMOUTH ROAD			
	CAISTER-ON-SEA			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	27		
	Survey date: TUESDAY	16/10/12		Survey Type: MANUAL
12	NY-03-A-07	DETACHED & SEMI DET.		NORTH YORKSHIRE
	CRAVEN WAY			
	BOROUGHBRIDGE			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	23		
	Survey date: TUESDAY	18/10/11		Survey Type: MANUAL
13	SF-03-A-04	DETACHED & BUNGALOWS		SUFFOLK
	NORMANSTON DRIVE			
	LOWESTOFT			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	7		
	Survey date: TUESDAY	23/10/12		Survey Type: MANUAL
14	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.)

15	ST-03-A-05	TERRACED & DETACHED	STAFFORDSHIRE
	WATERMEET GROVE		
	ETRURIA		
	STOKE-ON-TRENT		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	14	
	Survey date: WEDNESDAY	26/11/08	Survey Type: MANUAL
16	WK-03-A-01	TERRACED / SEMI / DET.	WARWICKSHIRE
	ARLINGTON AVENUE		
	LEAMINGTON SPA		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	6	
	Survey date: FRIDAY	21/10/11	Survey Type: MANUAL
17	WM-03-A-02	DETACHED & SEMI DET.	WEST MIDLANDS
	HEATH STREET		
	STOURBRIDGE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	12	
	Survey date: WEDNESDAY	26/04/06	Survey Type: MANUAL
18	WO-03-A-01	DETACHED	WORCESTERSHIRE
	MARLBOROUGH AVENUE		
	ASTON FIELDS		
	BROMSGROVE		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	10	
	Survey date: THURSDAY	23/06/05	Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CB-03-A-03	too large
EA-03-A-01	too large
ES-03-A-02	too large
FA-03-A-01	too large
PK-03-A-01	too large

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 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	18	15	0.064	18	15	0.229	18	15	0.293
08:00 - 09:00	18	15	0.169	18	15	0.451	18	15	0.620
09:00 - 10:00	18	15	0.135	18	15	0.233	18	15	0.368
10:00 - 11:00	18	15	0.184	18	15	0.165	18	15	0.349
11:00 - 12:00	18	15	0.184	18	15	0.188	18	15	0.372
12:00 - 13:00	18	15	0.203	18	15	0.184	18	15	0.387
13:00 - 14:00	18	15	0.169	18	15	0.184	18	15	0.353
14:00 - 15:00	18	15	0.229	18	15	0.252	18	15	0.481
15:00 - 16:00	18	15	0.271	18	15	0.226	18	15	0.497
16:00 - 17:00	18	15	0.406	18	15	0.267	18	15	0.673
17:00 - 18:00	18	15	0.395	18	15	0.241	18	15	0.636
18:00 - 19:00	18	15	0.241	18	15	0.180	18	15	0.421
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.650			2.800			5.450

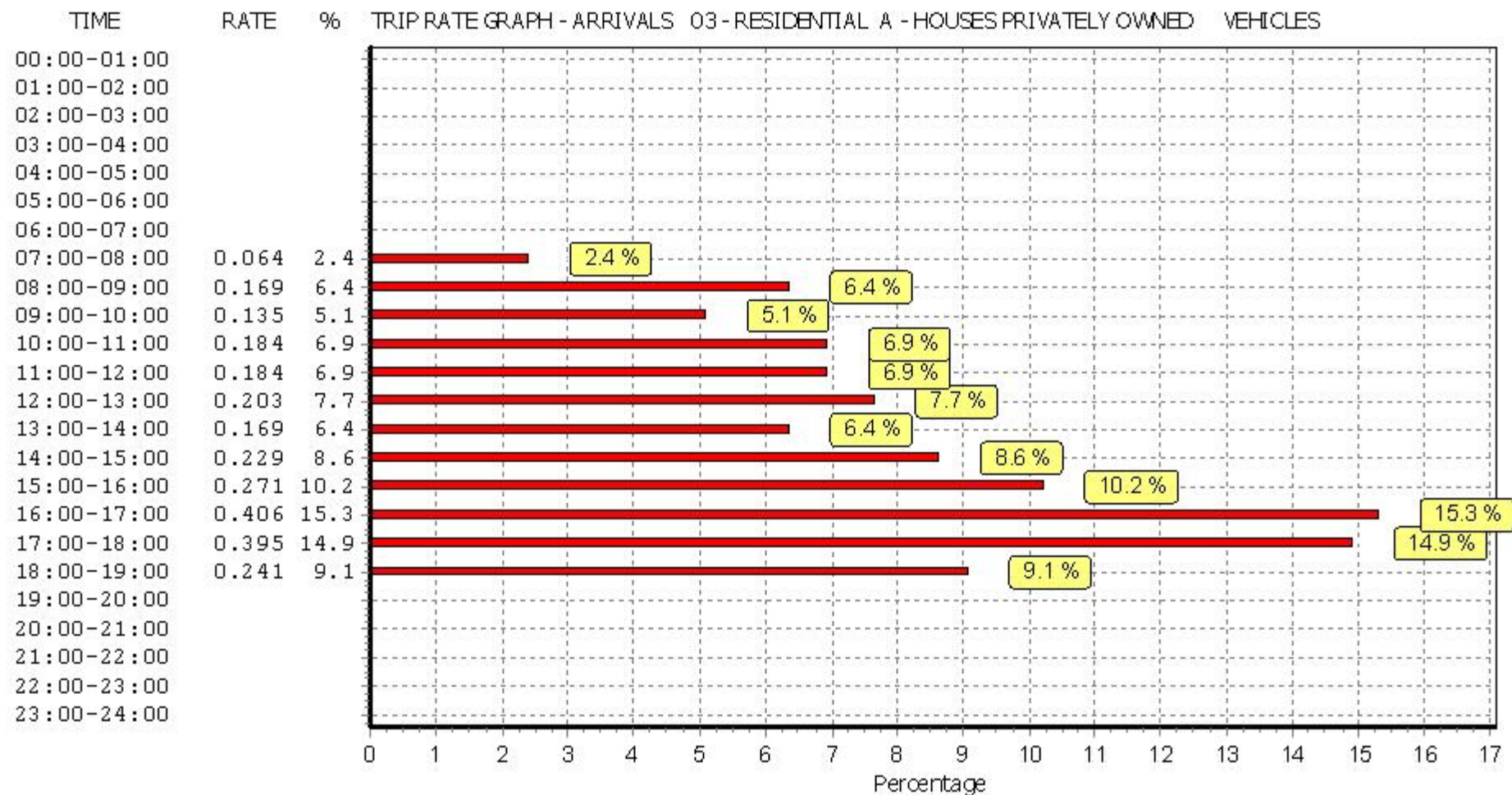
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.

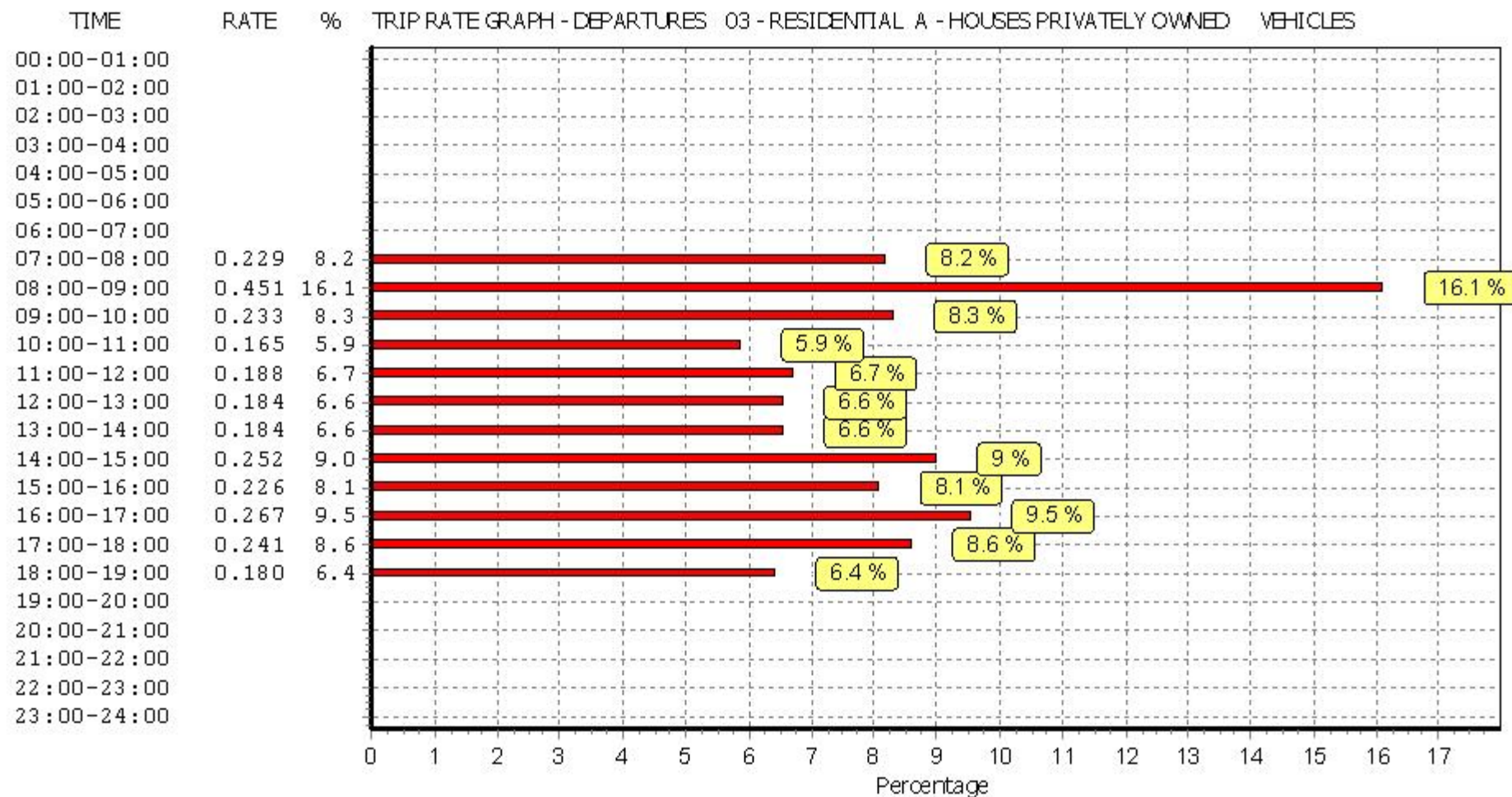
Parameter summary

Trip rate parameter range selected: 6 - 29 (units:)
 Survey date range: 01/01/05 - 30/05/13
 Number of weekdays (Monday-Friday): 18
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys manually removed from selection: 6

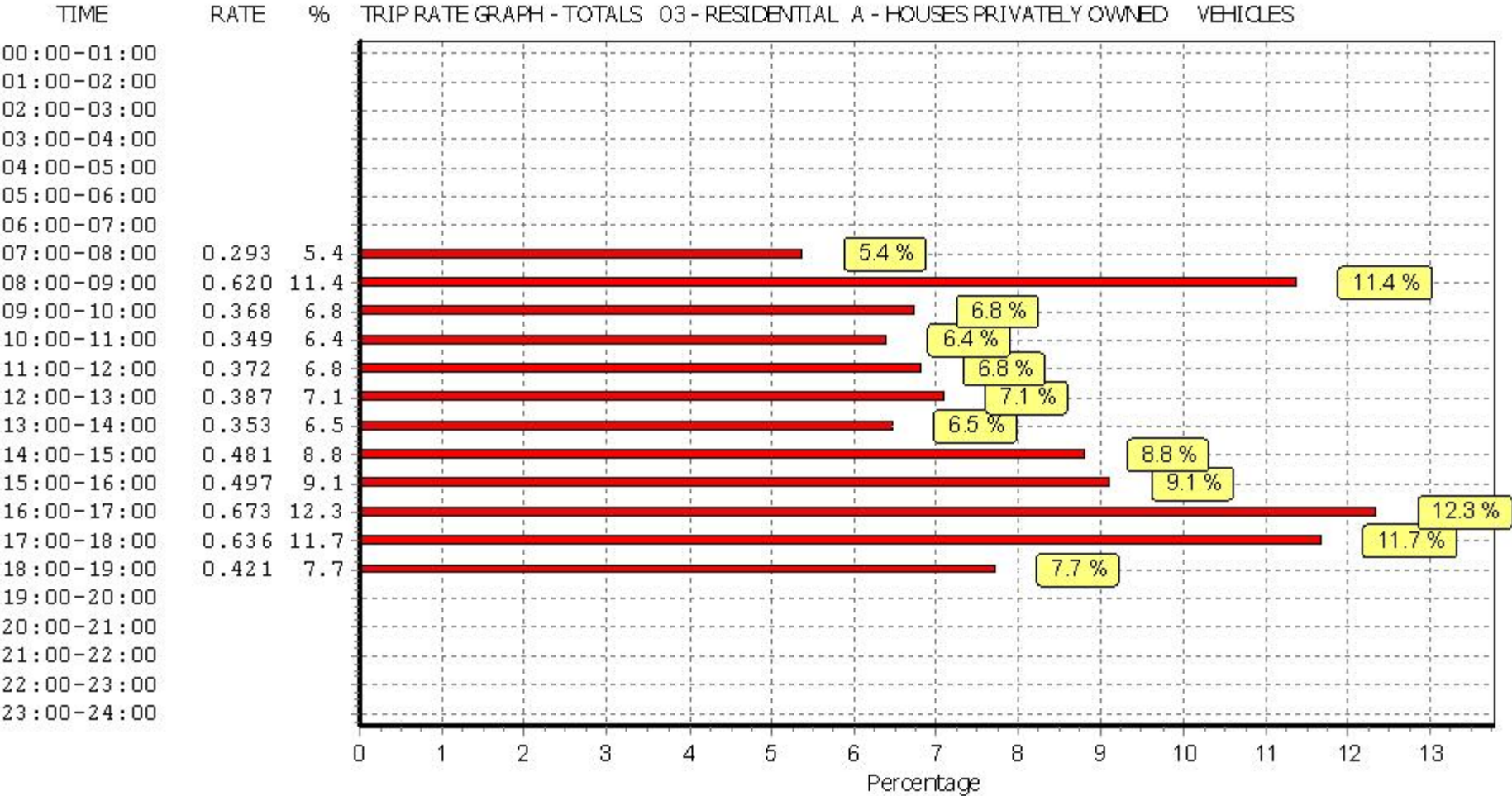
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

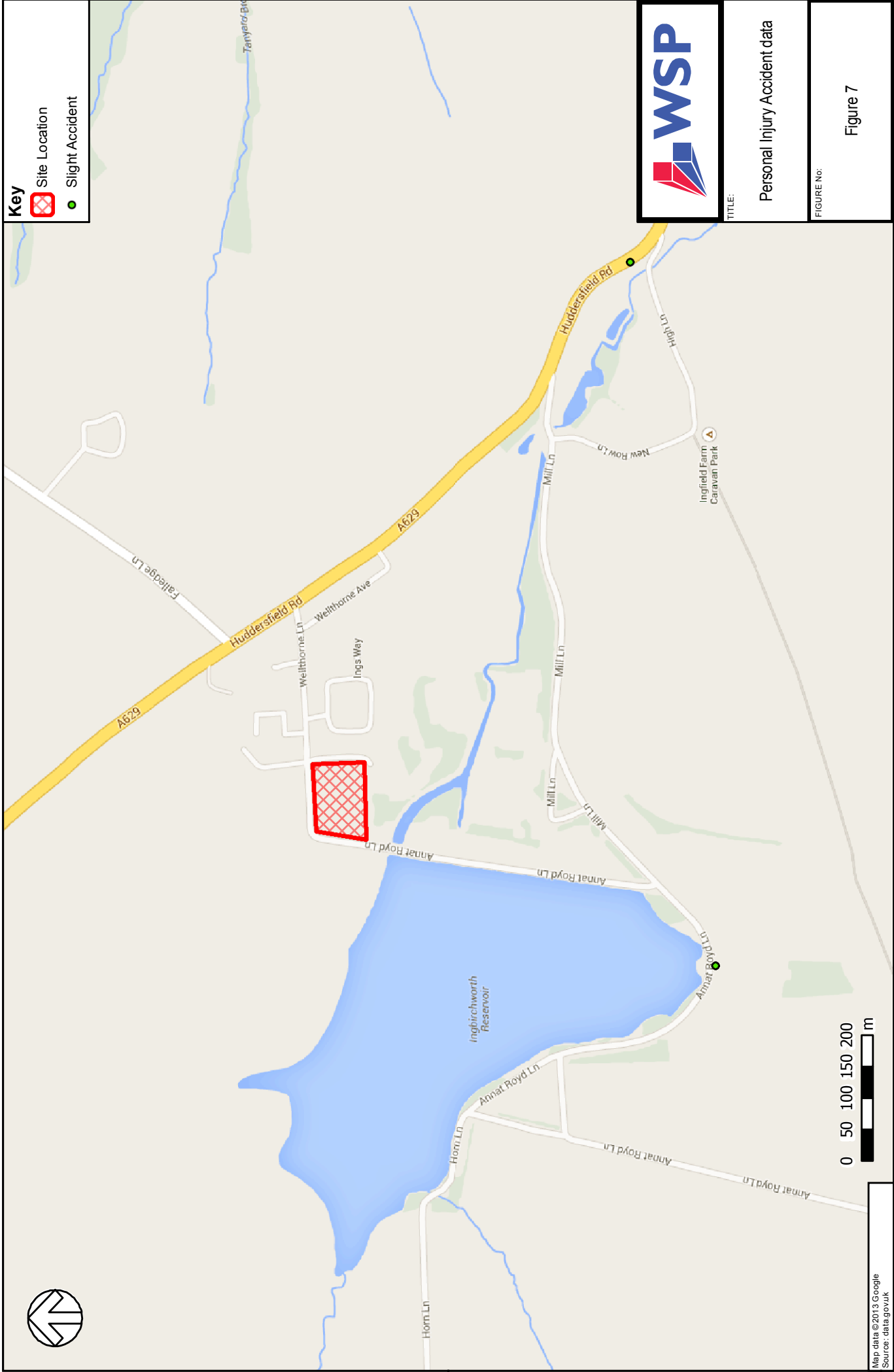


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Appendix F



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