



GKN Driveline

Residential Development
Higher Woodcroft, Leek

Transport Audit

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1.0 INTRODUCTION

1.1 Background

- 1.1.1** PTB Transport Planning Ltd has been commissioned by Cushman & Wakefield on behalf of GKN Driveline to provide transport advice related to a planning application (SMD/2018/0046) for 24 dwellings on land off Higher Woodcroft, Leek. The application follows a previously withdrawn application (SMD/2016/0753) for the same number of dwellings on this land.
- 1.1.2** The proposal land lies adjacent to the GKN Driveline operation and it is proposed that access to the dwellings would be shared with the access to the existing GKN Driveline industrial operation.
- 1.1.3** The location of the proposed housing and the existing GKN operation are indicated on Figure 1.1.

1.2 Structure and Purpose of the Report

- 1.2.1** This report is intended to provide a transport audit of the proposals for the 24 dwellings and, in particular, to provide consideration of how these proposals may impact upon the GKN Driveline operation and access.
- 1.2.2** Following this introduction, the report is set out as follows:
 - Chapter 2 – Highway Network and Traffic Conditions;
 - Chapter 3 – Development Proposals;
 - Chapter 4 – Transport Issues;
 - Chapter 5 – Summary and Conclusion.

1.3 Limitations of this Report

- 1.3.1** This report has been undertaken at the request of Cushman & Wakefield and GKN Driveline, thus should not be entrusted to any third party without written permission from PTB Transport Planning Ltd. However, should any information contained within this report be used by any unauthorised third party, it is done so entirely at their own risk and shall not be the responsibility of PTB Transport Planning Ltd.
- 1.3.2** This report has been compiled using data from a number of external sources (such as TRICS); these sources are considered to be trustworthy and therefore the data provided is considered to be accurate and relevant at the time of preparing this report.



2.0 HIGHWAY NETWORK AND TRAFFIC CONDITIONS

2.1 Highway Network

- 2.1.1** Woodcroft Road leads to Higher Woodcroft; the roads form a cul-de-sac serving industrial units and residential properties, including GKN Driveline. The road meets the wider highway network at the A53 Newcastle Road in the form of a give-way/priority junction.
- 2.1.2** Woodcroft Road is lit and subject to a 30mph speed limit. The road is 7.3m wide with footways of about 1.8m either side of the carriageway. Passing the GKN Driveline access the road bends at almost right angles and becomes Higher Woodcroft. At this point the road narrows to about 4.0m with 1.5m footways either side of the carriageway.

2.2 GKN Driveline Access

- 2.2.1** Access to the GKN operation is provided at the western end of Woodcroft Road.
- 2.2.2** The width of the site access to GKN is about 6.0m between brick pillars with no separate footways provided into the existing site. The access is angled such that the approach to the access makes two-way movement between the pillars very unlikely.
- 2.2.3** The GKN driveline access serves that operation for; deliveries, employees, visitors, and those using the trade counter at the facility.

2.3 Traffic Conditions

- 2.3.1** The site has been visited during peak and off-peak hours on the highway network; 11 vehicles were observed parking on the northern side of Woodcroft Road and four on the opposite side of the road during and following the morning peak hour.
- 2.3.2** As only the rear gardens and garages of dwellings are served on this stretch of road (the frontage of these dwellings being accessed off Woodcroft Avenue) it is apparent that vehicles associated with one or more of the industrial uses served from Woodcroft Road park on-street.
- 2.3.3** The parking is such that two-way traffic movement is possible only with some vehicles pulling into gaps in parking to allow others to pass.
- 2.3.4** The A53 is a relatively busy road carrying Annual Average Daily Traffic of about 13,800 vehicles in 2015.
- 2.3.5** The GKN Driveline development operates from 8am to 5pm Monday-Friday and 8am to midday on Saturdays. The site employs 40 staff many of whom arrive in their own cars. In addition, up to 20 vehicles per day (40 two-way



traffic movements) collect from or deliver to the site; these vehicles ranging from small vans to large articulated HGVs.



3.0 DEVELOPMENT PROPOSALS

3.1 Planning Application

3.1.1 The planning application is for 24 dwellings (application number SMD/2018/0046) and access is not a reserved matter; in fact, the application is in full with no reserved matters. The applicant is Hostday Ltd and their agent is DBD Architectural Consultancy Ltd.

3.2 Application Documents

3.2.1 The application is accompanied by a Design and Access Statement and the site layout and access is indicated on the drawings PL 02M and PL 03J produced by DBD Architectural Consultancy Limited.

3.2.2 The drawings submitted for the previous application for the proposed access layout were not particularly clear and neither was that application accompanied by any Transport Statement.

3.2.3 The site access drawings that accompany this application are confusing, at best, and are not accompanied by a Transport Statement; the apparent lack of input from a traffic engineer may explain the confusing layouts proposed.

3.2.4 It is noted that the red line for the planning application does not cover all of the highway works/details indicated on the planning application drawings. Furthermore, we would also have expected more detail regarding the construction process and its impact on the GKN Driveline access and operation and which of the proposed works are proposed within the adopted highway

3.3 Posted Transport Responses to the Application

3.3.1 No comment has currently been posted on the planning application website from Staffordshire County Council (SCC) as highway authority. However, although not available at the time of completion of our report upon the previous application (SMD/2016/0753), SCC as highway authority did recommend refusal of that planning application for the following reasons;

- The access road at the build out appears to direct vehicles into the boundary
- Insufficient information
- Gradients of the transverse road and access are excessively steep and likely to cause issue for access

3.3.2 Public comments on this application and the very similar previous application include;

- Parking on Woodcroft Road causing access issues
- Further impact on the capacity of Woodcroft Road



- Inappropriate residential access due to existing industrial usage (HGV and forklifts)
- Safety concerns for shared use with pedestrians/HGVs/Forklifts
- Operational impacts on GKN Driveline
- Lack of proper consideration of issues i.e. no transport statement/assessment
- A53 junction capacity issue



4.0 TRANSPORT ISSUES

4.1 The Red Line

- 4.1.1** The red line for the application does not include all of the area proposed for vehicle/pedestrian access to the proposed housing and it is unclear whether proposed works in areas outside of the red line are within adopted highway.

4.2 Access Design

- 4.2.1** The drawings submitted with the application are unclear. However, the means of access that the applicant's access drawings appear to describe is a one-way shuttle arrangement to the housing development crossing the GKN Driveline service yard.
- 4.2.2** The drawings actually show vehicles at a give-way line, which is then followed by the give-way triangular sign (clearly this should be in advance of any give-way), and then halting at a 'stopline'; this makes no sense. Following the 'stopline' vehicles would cross a hatched area within the GKN Driveline service yard to approach a give-way line which is then followed by a 'stopline' with Woodcroft Road/Higher Woodcroft; this makes no sense.
- 4.2.3** If we interpret the proposed layout as a one-way shuttle arrangement, it appears to indicate that vehicles leaving the proposed housing development will give way to any vehicles in the yard associated with GKN Driveline and also to arrivals to the housing development. There is a distance of about 50m from the one-way shuttle arrangement to the shared access/egress to Woodcroft Road/Higher Woodcroft.
- 4.2.4** The distance between the shuttle arrangement and the access/egress to Woodcroft Road coupled with the alignment of the access means that it will be difficult for vehicles leaving the housing site to see vehicles approaching the shared site access from Woodcroft Road. This could lead to confusion at the site access and departing vehicles straying further into the operational area of GKN Driveline.
- 4.2.5** Furthermore, we consider that the vehicles leaving the housing site will, at least over time, disregard the proposed give-way/stopline markings before entering the hatched area of the GKN service yard. Despite indications in the applicant's Design and Access statement to;
- "...using a traffic calming island to channel traffic across the yard..."*
- we see no evidence of such provision. In any case, any such provision would inevitably interfere with the operation of the access and operation of GKN Driveline.
- 4.2.6** The alignment along which the vehicles leaving the housing would approach the egress to Woodcroft/Higher Woodcroft would not allow for two-way vehicle movement at the access potentially leading to increased delay at this point.



Furthermore, should vehicles meet at the access, particularly if a HGV is involved, this could result in a standoff situation causing delay to GKN traffic eventually leading to one of the vehicles having to reverse, probably within the site, undertaking a potentially unsafe manoeuvre.

4.2.7 Submissions from the applicant seem to suggest that the access width to GKN Driveline would not be reduced. However, the drawings submitted indicate the extension of the footway and it appears that the existing access carriageway width is restricted to about 5.2m. The applicant has not provided HGV tracking at the access point or within the GKN Driveline site and the proposed access arrangement is considered wholly unacceptable because of the impact of the reduced width and additional traffic upon GKN Driveline traffic arriving at the site access and manoeuvring to load/unload within the site.

4.2.8 No Road Safety Audit (RSA) has been presented for the proposed access design to the housing. Given the safety issues that we point out in the following sections, for pedestrians and drivers, we consider this to be a serious omission and suggest that an RSA ought to have been an essential element of this planning application; access is not a reserved matter and safety is a paramount concern.

4.3 Traffic Generation

4.3.1 The TRICS Database 7.3.4 has been interrogated to examine the likely level of traffic generated by a development of 24 dwellings.

4.3.2 Within the TRICS assessment work, the following parameters have been used:

- Sites from Greater London and all Republic of Ireland and Northern Ireland sites removed.
- Proposed Private Housing use:
 - Range – 10 to 50 dwellings;
 - 34 surveys available in database;
 - Edge of Town Centre sites removed leaving 29 surveys;
 - Five surveys removed for various reasons such as they include flats and/or bungalows (lower trip rates);
 - 24 surveys used for calculation of trip rates.

Table 1 - TRICS Assessment - Residential, 24 Dwellings

Peak Period	Trip Rate (per dwelling)		Trips		Total
	In	Out	In	Out	
AM	0.160	0.445	4	11	15
PM	0.389	0.169	9	4	13

NB: AM peak is 08:00-09:00 and PM peak is 17:00-18:00; trips have been rounded.

4.3.3 The TRICS output for residential dwellings is provided in Appendix A.

4.3.4 The outputs predict up to 15 additional traffic movements through the GKN Driveline yard in a peak hour of operation. TRICS provides weekday residential trip rate forecasts over a 12-hour period 7am to 7pm only and based on those forecasts one might expect an additional 115 two-way traffic movements over such a weekday period. Over a 24-hour period one might expect about 140 two-way traffic movements associated with the housing.

4.3.5 For the period of operation of GKN Driveline, 8am to 5pm, the TRICS output indicates a two-way residential trip rate of 3.524 trips per dwelling; 85 two-way residential trips in total during the operational period of GKN Driveline (and more, of course, if we add in the periods of arrival and departure from the facility).

4.3.6 Such an increase in traffic movements in any area where HGVs and forklift trucks will be manoeuvring for operational purposes gives rise to safety concerns; particularly as the HGVs and forklift trucks will be performing reversing manoeuvres.

4.3.7 In addition, the peak arrival and departure times of residential traffic will directly conflict with the peak departure and arrival times of the GKN facility; i.e. the peak departure time for residential traffic in the morning will conflict with the peak arrival time for GKN in the morning and vice versa in the PM peak, introducing additional delay to GKN traffic.

4.4 Pedestrian Movement

4.4.1 Access for pedestrians to the site is proposed via a new kerbed footway within the GKN Driveline service yard and onwards to the housing development.

4.4.2 It is noted that the land on which part of this footway is constructed lies outside of the application red line and seemingly outside of the adopted highway. It has already been noted that the footway provision will unduly restrict access for heavy vehicles to/from Woodcroft Road. No swept path analysis for HGVs has been submitted by the applicant at the site access or within the site; this is a serious omission given that the footway has been extended to reduce the access width and access radii have been reduced.

4.4.3 The works and signing/lining proposed in the GKN yard will clearly give rise to operational issues for GKN during the construction period and these



concerns will continue when the housing is occupied. Indeed, although a footway is indicated on the current plan the direction of approach for pedestrians associated with the housing means they will inevitably walk across and through the vehicle access to GKN as the footway is not located on the correct side of the road to match their approach to the dwellings.

- 4.4.4** This is a serious issue given that pedestrians, including children and the elderly, will share access with vehicles associated with the GKN Driveline operation, including HGVs and forklift trucks, and also with vehicles associated with the proposed residential development.

4.5 Construction and Construction Traffic

- 4.5.1** There would be a considerable level of disruption to the GKN Driveline operation and access in order to construct the access road/footway to the proposed housing site.
- 4.5.2** In addition, there will be a considerable level of construction traffic related to; cut/fill & import/export of material on a challenging site in terms of levels, construction delivery vehicles, and construction workers arriving/departing site, all of which will conflict with GKN Driveline operations.
- 4.5.3** The application is silent on these matters and provides no indication of how the proposed development will mitigate such issues.

4.6 Residential Site Layout

- 4.6.1** The gradient into the site is referred to in the Design and Access statement as being 1 in 8. The drawings submitted seem to indicate a slope of about 1:10 over the initial roadway/footway into the site. In the previous application there were two roads running north south within the proposed development that were indicated as being planned on gradients of about 1 in 5 to 1 in 6.
- 4.6.2** Only one of these roads is now planned in the same location as indicated in the previous application. However, it is now suggested that the slope will be about 1 in 10.6 rather than the previous 1 in 5. As the road follows the same contours as the previous application, was the previous application drawing in error or is this drawing in error? Alternatively, is some form of regrading planned for this section?
- 4.6.3** As previously indicated it is far from clear in the drawings submitted how the access road to the housing will tie back into the GKN Driveline servicing yard.
- 4.6.4** The gradients that are indicated for the site access road and footway fall well short of desirable standards indicated in Manual for Streets 2 which indicate a desirable level of no more than 5% (1:20) to a maximum of 8% (1:12.5) for pedestrians. It also makes reference to TD 9/93 which indicates maximum carriageway gradients of 6% (about 1:16.5).



4.6.5 The MfS2 guidelines also mirror the former Staffordshire County Council (SCC) residential design guidelines (SCC now rely upon advice in MfS and MfS2).

4.6.6 The gradient of the footways within the proposed development will make access for pedestrians difficult, particularly those with mobility issues. The gradients may also cause issues for vehicles travelling along the access road and parking on access drives in freezing conditions.

4.7 Parking and Traffic Movement

4.7.1 The level of parking experienced on Woodcroft Road is such that the addition of further housing traffic will lead to some increased delay for existing users of Woodcroft Road/Higher Woodcroft.

4.7.2 During the construction period larger construction vehicles arriving/departing the site will also cause disruption to two-way movement along Woodcroft Road/Higher Woodcroft.

4.8 Standard of Proposed Access Road

4.8.1 It is not clear whether the construction of the access road will be at adoptable standard for the majority of the road construction.

4.8.2 What is clear, however, is that the proposed access arrangements from Woodcroft Road are non-standard for a residential development of this scale; let alone an access to be shared with industrial premises.

4.8.3 The access route to the proposed housing will bend sharply immediately after entry to the GKN Driveline yard and will also start to rise sharply through the proposed one-way shuttle arrangement for vehicles.

4.8.4 It is clear then, although we have not heard from the highway authority on this application, that the standard of the road is not that of an adoptable road. It is also clear that the highway authority had sufficient concerns with the previous layout that they recommended refusal of that application.

4.8.5 Whether or not the road remains private (and it seems it would) one would expect an access road to this level of additional development to be built to adoptable standards and the proposed access arrangement falls well below such standards.



5.0 SUMMARY AND CONCLUSIONS

5.1 Summary

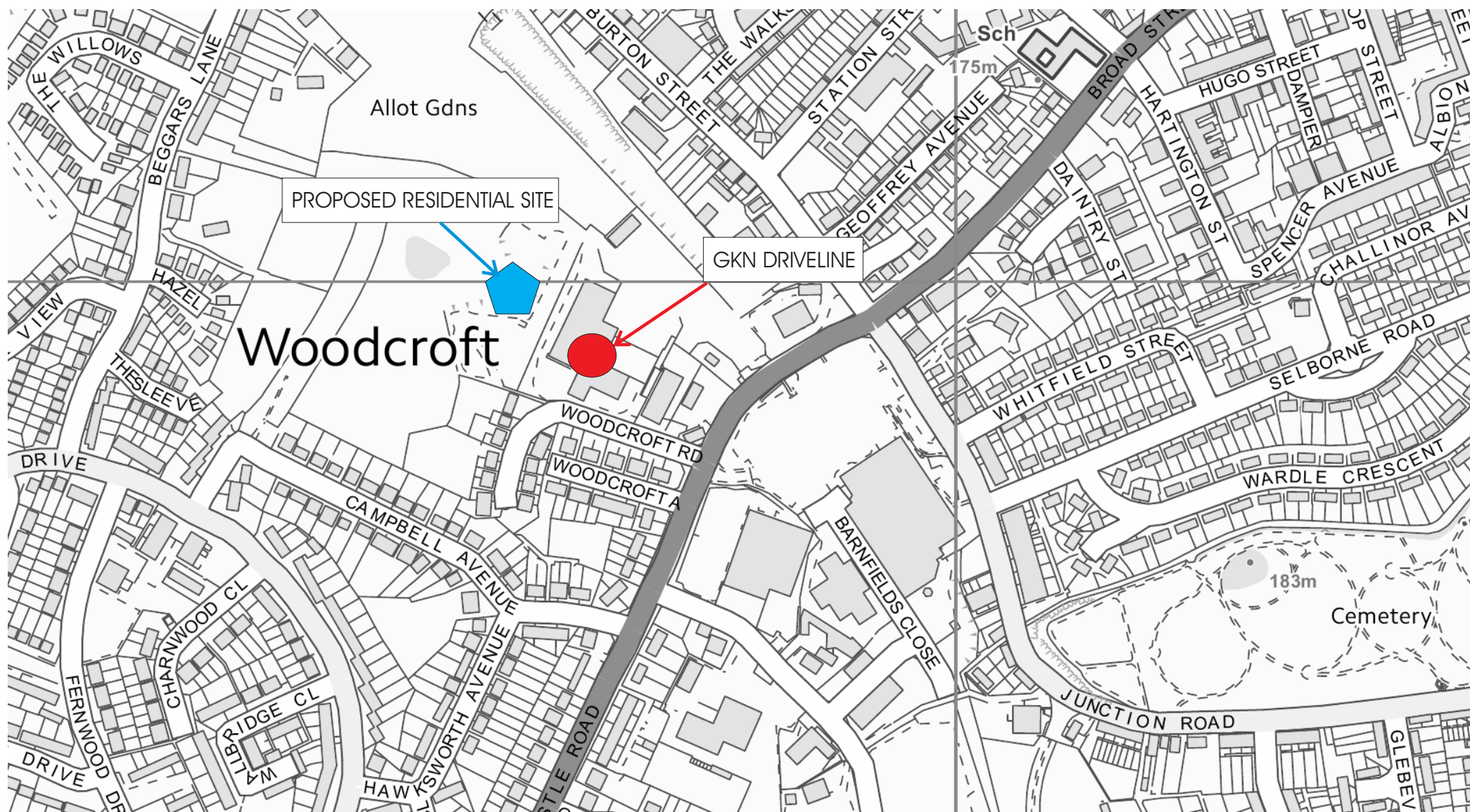
- 5.1.1** Although the access drawings submitted with the application are far from clear, it is clear that the proposed arrangements are sub-standard in many ways and are potentially unsafe.
- 5.1.2** The proposed access arrangements do not meet the adoptable standards that would be expected for a development of this scale. The applicant has also failed to demonstrate that HGVs can safely enter/leave the site and manoeuvre around the site with the revised access arrangements in place.
- 5.1.3** Shared access between residential traffic and industrial traffic (including HGVs and forklifts) is not appropriate or safe. The likely use of the access by pedestrians associated with the housing, including the very young and old, is particularly concerning in respect of road safety. The lack of a Road Safety Audit of the proposed access arrangements is a serious omission from this planning application.
- 5.1.4** Setting aside safety concerns, the additional use of the GKN Driveline access and yard by those accessing the residential development has the potential to cause disruption and delay to the GKN Driveline operation during both the construction and occupation phases of the housing development proposals.
- 5.1.5** The proposed road layout itself falls well short of relevant guidelines for residential use, particularly in terms of steep gradients and the difficulty those gradients will cause for pedestrians, and also potentially for vehicles in freezing conditions.
- 5.1.6** The additional traffic associated with the residential development will cause further issues with already restricted two-way traffic movement on Woodcroft Road during the construction and occupation phases of development; leading to further delay for GKN Driveline, other industrial properties, and residential properties on Higher Woodcroft.


5.2 Conclusion

- 5.2.1** The application proposals fail to provide safe and suitable access to the proposed housing development and, therefore, in line with advice in the NPPF the application should be refused on these grounds.



FIGURES



Project	GKN Driveline, Leek	Key	 <p>Reproduced by permission of Ordnance Survey on behalf of HMSO. © Crown copyright and database right 2017. All rights reserved. Ordnance Survey Licence number 100046404.</p>
Project No	T18530		
Figure	1.1		
Title	Site Location Plan		
Date	April 2018		



APPENDIX A - TRICS DATA – PRIVATE HOUSING

Calculation Reference: AUDIT-141301-170317-0354

TRIP RATE CALCULATION SELECTION PARAMETERS:

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

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
03	SOUTH WEST	
	DV DEVON	1 days
	SM SOMERSET	1 days
04	EAST ANGLIA	
	NF NORFOLK	1 days
	SF SUFFOLK	1 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	ST STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	3 days
08	NORTH WEST	
	CH CHESHIRE	3 days
	GM GREATER MANCHESTER	1 days
	MS MERSEYSIDE	1 days
09	NORTH	
	CB CUMBRIA	1 days
	TW TYNE & WEAR	2 days
10	WALES	
	PS POWYS	1 days
11	SCOTLAND	
	EA EAST AYRSHIRE	1 days
	FA FALKIRK	1 days

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

Secondary Filtering selection:

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

Parameter: Number of dwellings
 Actual Range: 10 to 40 (units:)
 Range Selected by User: 10 to 50 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 13/11/15

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	4 days
Tuesday	4 days
Wednesday	6 days
Thursday	4 days
Friday	4 days

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

Selected survey types:

Manual count	22 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)	9
Edge of Town	12
Neighbourhood Centre (PPS6 Local Centre)	1

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	19
Village	1
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.

Secondary Filtering selection:

Use Class:

C3	22 days
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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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	3 days
5,001 to 10,000	5 days
10,001 to 15,000	6 days
15,001 to 20,000	4 days
20,001 to 25,000	2 days
25,001 to 50,000	2 days

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

Population within 5 miles:

5,001 to 25,000	3 days
25,001 to 50,000	1 days
50,001 to 75,000	2 days
75,001 to 100,000	7 days
100,001 to 125,000	2 days
125,001 to 250,000	2 days
250,001 to 500,000	4 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	9 days
1.1 to 1.5	13 days

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

Travel Plan:

Yes	1 days
No	21 days

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

PTAL Rating:

No PTAL Present	22 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CB-03-A-03 SEMI DETACHED HAWKSHEAD AVENUE WORKINGTON Edge of Town Residential Zone Total Number of dwellings: 40 Survey date: THURSDAY 20/11/08	CUMBRIA	Survey Type: MANUAL
2	CH-03-A-05 DETACHED SYDNEY ROAD SYDNEY CREWE Edge of Town Residential Zone Total Number of dwellings: 17 Survey date: TUESDAY 14/10/08	CHESHIRE	Survey Type: MANUAL
3	CH-03-A-08 DETACHED WHITCHURCH ROAD BOUGHTON HEATH CHESTER Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 11 Survey date: TUESDAY 22/05/12	CHESHIRE	Survey Type: MANUAL
4	CH-03-A-09 TERRACED HOUSES GREYSTOKE ROAD HURDSFIELD MACCLESFIELD Edge of Town Residential Zone Total Number of dwellings: 24 Survey date: MONDAY 24/11/14	CHESHIRE	Survey Type: MANUAL
5	DV-03-A-01 TERRACED HOUSES BRONSHILL ROAD TORQUAY Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of dwellings: 37 Survey date: WEDNESDAY 30/09/15	DEVON	Survey Type: MANUAL
6	EA-03-A-01 DETACHED TALISKER AVENUE KILMARNOCK Edge of Town Residential Zone Total Number of dwellings: 39 Survey date: THURSDAY 05/06/08	EAST AYRSHIRE	Survey Type: MANUAL
7	ES-03-A-02 PRIVATE HOUSING SOUTH COAST ROAD PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings: 37 Survey date: FRIDAY 18/11/11	EAST SUSSEX	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8	FA-03-A-01	SEMI-DETACHED/TERRACED	FALKIRK
	MANDELA AVENUE		
	FALKIRK		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	37	
	Survey date: THURSDAY	30/05/13	Survey Type: MANUAL
9	GM-03-A-10	DETACHED/SEMI	GREATER MANCHESTER
	BUTT HILL DRIVE		
	PRESTWICH		
	MANCHESTER		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	29	
	Survey date: WEDNESDAY	12/10/11	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	MS-03-A-03	DETACHED	MERSEYSIDE
	BEMPTON ROAD		
	OTTERSPOOL		
	LIVERPOOL		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	15	
	Survey date: FRIDAY	21/06/13	Survey Type: MANUAL
12	NF-03-A-03	DETACHED HOUSES	NORFOLK
	HALING WAY		
	THETFORD		
	Edge of Town		
	Residential Zone		
	Total Number of dwellings:	10	
	Survey date: WEDNESDAY	16/09/15	Survey Type: MANUAL
13	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
14	NY-03-A-08	TERRACED HOUSES	NORTH YORKSHIRE
	NICHOLAS STREET		
	YORK		
	Suburban Area (PPS6 Out of Centre)		
	Residential Zone		
	Total Number of dwellings:	21	
	Survey date: MONDAY	16/09/13	Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15	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
16	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
17	SF-03-A-05	DETACHED HOUSES		SUFFOLK
	VALE LANE			
	BURY ST EDMUNDS			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	18		
	Survey date: WEDNESDAY	09/09/15		Survey Type: MANUAL
18	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
19	SM-03-A-01	DETACHED & SEMI		SOMERSET
	WEMBDON ROAD			
	NORTHFIELD			
	BRIDGWATER			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	33		
	Survey date: THURSDAY	24/09/15		Survey Type: MANUAL
20	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
21	TW-03-A-02	SEMI -DETACHED		TYNE & WEAR
	WEST PARK ROAD			
	GATESHEAD			
	Suburban Area (PPS6 Out of Centre)			
	Residential Zone			
	Total Number of dwellings:	16		
	Survey date: MONDAY	07/10/13		Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

22 TW-03-A-03 MIXED HOUSES TYNE & WEAR
STATION ROAD
BACKWORTH
NEAR NEWCASTLE
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Number of dwellings: 33
Survey date: FRIDAY 13/11/15 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
DC-03-A-08	Bungalows
HC-03-A-17	Flats
NF-03-A-01	Bungalows
PK-03-A-01	Bungalows
SH-03-A-06	Bungalows
WK-03-A-02	Bungalows
WS-03-A-05	Flats

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	22	24	0.078	22	24	0.285	22	24	0.363
08:00 - 09:00	22	24	0.160	22	24	0.445	22	24	0.605
09:00 - 10:00	22	24	0.153	22	24	0.190	22	24	0.343
10:00 - 11:00	22	24	0.156	22	24	0.142	22	24	0.298
11:00 - 12:00	22	24	0.158	22	24	0.186	22	24	0.344
12:00 - 13:00	22	24	0.173	22	24	0.162	22	24	0.335
13:00 - 14:00	22	24	0.156	22	24	0.158	22	24	0.314
14:00 - 15:00	22	24	0.153	22	24	0.175	22	24	0.328
15:00 - 16:00	22	24	0.263	22	24	0.205	22	24	0.468
16:00 - 17:00	22	24	0.331	22	24	0.158	22	24	0.489
17:00 - 18:00	22	24	0.389	22	24	0.169	22	24	0.558
18:00 - 19:00	22	24	0.218	22	24	0.130	22	24	0.348
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:		2.388			2.405			4.793	

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:	10 - 40 (units:)
Survey date range:	01/01/08 - 13/11/15
Number of weekdays (Monday-Friday):	22
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	7

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.