

CALA HOMES (SOUTH) LIMITED

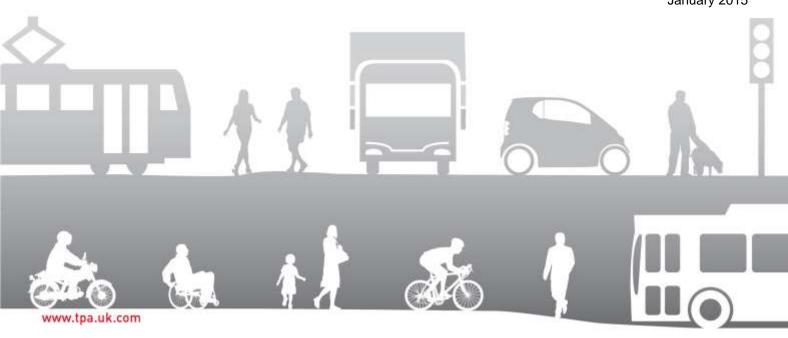
In respect of

LA5, Land West Of Tring

Scoping Report

Revision D

January 2015



DOCUMENT SIGNATURE AND REVIEW SHEET

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1 INTRODUCTION

- 1.1 Transport Planning Associates (TPA) is instructed by Cala Homes (South) Limited to consider the transportation issues associated with the potential residential development of land south of Icknield Way, Tring.
- 1.2 The site is known as a local allocation and referenced as Proposal LA5 West Tring, as set out in Section 20 of the Dacorum Borough Council (DBC) Core Strategy, for around 150 homes, playing fields and open space, an extension to the adjacent industrial estate and possible extension to the cemetery.
- 1.3 It is proposed that the site will be developed for up to around 150 dwellings.
- 1.4 This Scoping Report describes the methodology proposed for assessing the effect the development will have on the surrounding transportation infrastructure. Whilst the site is fully located within the Dacorum planning authority boundary and as such Hertfordshire is the local highway authority, it is located in close proximity to Buckinghamshire and as such it has been prepared further to discussions with highway officers at Hertfordshire County Council (HCC) but has been prepared for agreement with officers at both Hertfordshire and Buckinghamshire County Council (BCC). It is written in accordance with the DfT's "Guidance on Transport Assessment" (March 2007), as considered appropriate.
- 1.5 Notes of a meeting attended by HCC and DBC in August 2013 to discuss the transport issues for Local Allocation sites, including LA5, have also been used to inform this report.

Deliverables

- 1.6 Once the Scoping Report is agreed, TPA intends to prepare a Transport Assessment (TA) and Residential Travel Plan to support the planning application. The TA will be prepared with reference to local and national planning guidance set out in the following documents as appropriate:
 - (i) National Planning Policy Framework;
 - (ii) Dacorum Borough Council Adopted Core Strategy;
 - (iii) Hertfordshire County Council Local Transport Plan;
 - (iv) Tring, Northchurch and Berkhamsted Urban Transport Plan;
 - (v) Hertfordshire Speed Management Strategy;
 - (vi) Roads in Hertfordshire Highway Design Guide; and
 - (vii) Planning Obligations Guidance Toolkit for Hertfordshire document.

- 1.7 The TA will include Chapters or information on the following:
 - (i) Baseline Traffic Flows;
 - (ii) Accessibility and Access Strategy;
 - (iii) Trip Generation and Attraction;
 - (iv) Trip Assignment;
 - (v) Public Transport; and
 - (vi) Operational Assessments.
- 1.8 This scoping report is presented using these chapters as headings.

2 BASELINE TRAFFIC FLOWS

- 2.1 If suitable survey data is not held by the local highway authorities, an independent surveying company will be commissioned to carry out Automatic Traffic Counts (ATC) on Icknield Way and Aylesbury Road in the vicinity of the site to record existing vehicle speeds and traffic movements.
- 2.2 The surveys will also provide relevant data with which to forecast the distribution of development traffic onto the network.
- 2.3 Extended AM and PM peak hour (i.e. 0730-0930 and 1630-1900) manual turning count and queue length surveys will also be undertaken by independent surveyors at the A41, B4009 and B4635 junctions to the west of the site.

3 ACCESSIBILITY & ACCESS STRATEGY

- 3.1 The accessibility of the site will be assessed against national and local transport planning policy documents, including NPPF, the Dacorum Borough Council Adopted Core Strategy, and Hertfordshire County Council's Local Transport Plan policies.
- 3.2 This section will include plans showing existing walking and cycling routes / distances to local facilities and services (including isochronal mapping, as appropriate), and the availability of and connectivity to bus and rail facilities.

Access Strategy

- 3.3 Vehicular access is proposed from a new junction(s) on Icknield Way to the north of the site and/or Aylesbury Road to the south. It is agreed with highway officers that priority junctions in both locations would be appropriate with either road, subject to capacity testing.
- 3.4 The option of providing a link road through the development site will be considered; particularly with reference to providing a route for bus services between Icknield Way and Aylesbury Road. The potential for rat-running will also be considered in this context, although it is understood from highway officers that this is not likely to be a concern in this location.
- 3.5 At this stage however, it is envisaged that if vehicular accesses are to be provided both from Icknield Way and Aylesbury Road that only a pedestrian and cycle connection will be provided to link the two. This could be used as an emergency access, but would also be designed so as not to compromise the potential for a bus route to be provided between Ickneild Way and Aylesbury Road in the future. Similarly, it is envisaged that the access road within the new scheme will have a minimum carriageway width of 6.5m on this basis.
- 3.6 As part of the Transportation Assessment, the proposed access junctions and internal junctions serving the development will be considered alongside local and national highway design guidance in terms of geometry, design speed, internal road hierarchy and pedestrian and cycle routes with reference to HCC's highway design guidance *Roads in Hertfordshire*.
- 3.7 The TA will also consider whether internal roads are likely to be offered for adoption.
- 3.8 It is proposed to relocate the existing 40mph speed limit on Icknield Way to the east of the A41 roundabout, and also to relocate the existing 30mph speed limit on Aylesbury Road further west towards the A41 roundabout. The relevant traffic regulation orders will be required, as appropriate.
- 3.9 The potential access strategy is illustrated on **Figure 3.1.**

Cycling and Walking

- 3.10 The TA will consider the walking and cycling trips generated by the development. It will identify where improvements might be considered necessary to encourage travel by foot and cycle. This will be agreed with HCC's Rights of Way team as appropriate, including discussions with the relevant officers at BCC.
- 3.11 There are existing public right of ways (PRoW) crossing the site. These are illustrated in Appendix A.
- 3.12 PROW No.71 runs north to south between Icknield Way and Aylesbury Road. It will remain on its current alignment and it is envisaged will form the western boundary of the proposed built development with the land to the west being provided as public open space. The surface and width of the PROW will be improved as appropriate.
- 3.13 PROW No.48A crosses the site diagonally providing a link between Icknield Way and Okeley Lane. The proposed masterplan will consider the alignment of the PROW and seek to accommodate it on its existing alignment if practicable or ultimately divert it. The surface and width of the PROW will be improved as appropriate to enhance links between the development and the established residential area to the east.
- 3.14 Pedestrian and cycle access will be considered and the likely desire lines to adjacent residential areas, Icknield Way Industrial Estate, local schools and the town centre will be identified. New pedestrian and cycle links will be provided to connect the established residential area to the east to the development and the new public open space to be provided to the west of PROW No.71.
- 3.15 Figure 3.2 illustrates potential pedestrian and cycle improvements which could be provided by the applicant either within land under the control of the applicant or within the adopted highway.

Highway Safety Assessment

- 3.16 Analysis will be undertaken of the latest five years accident data available from the Highway Authority to reflect the most recent situation in the area and will consider the impact of the development scheme upon the safety of pedestrians, cyclists and motorists in the vicinity.
- 3.17 Where necessary, the TA will suggest improvements to maintain highway safety. Such improvements will be established through further discussions with highway officers throughout the process.

4 TRIP GENERATION

Trip Forecasts

- 4.1 In order to forecast the impact of new trips associated with the proposed development, trip rates for all modes of travel have been derived from the TRICS 7 database. The TRICS database provides trip rate information based on existing development traffic generation observed at similar sites throughout the United Kingdom. Sites within Greater London have been excluded as a result of the greater public transport opportunities available in that area.
- 4.2 Trip rates extrapolated for the residential units are based on the following parameters;
 - (i) sites with up to 300 dwellings
 - (ii) sites within England, excluding Greater London;
 - (iii) weekday surveys only;
 - (iv) edge of town and suburban locations; and
 - (v) multi-modal surveys.
- 4.3 Sites within the 'mixed private / non private housing' category has been considered as it is anticipated that around 40 percent of the proposed dwellings will be affordable homes. This is therefore considered to provide a realistic assessment of the development proposals.
- 4.4 The derived average residential trip rates are summarised in **Table 4.1** and included at **Appendix B** for agreement.

<u>Table 4.1 –Residential Trip Rates per dwelling (two-way) – Mixed Private / Non Private Housing</u>

RESIDENTIAL	Vehicles	Car Passenger	Pedestrians	Cyclists	PTUs	OGVs	PSVs
	Trip Rate	Trip Rate	Trip Rate	Trip Rate	Trip Rate	Trip Rate	Trip Rate
AM Peak 0800- 0900	0.430	0.230	0.202	0.032	0.043	0.005	0.002
PM Peak 1700- 1800	0.477	0.179	0.134	0.034	0.034	0.001	0.000
Daily	4.381	1.634	1.570	0.235	0.324	0.057	0.012
Modal Share (Daily)	53.3%	19.9%	19.1%	2.9%	3.9%	0.7%	0.1%

5 TRIP ASSIGNMENT

- 5.1 At this stage TPA envisage that development traffic will be distributed on to the local highway network at the access junctions pro-rata in line with existing movements recorded on Icknield Way and Aylesbury Road.
- 5.2 Should the site provide a link between Icknield Way and Aylesbury Road, development traffic will be assigned to each of the site access junctions based on the proposed internal site layout, as appropriate.
- 5.3 Traffic will be distributed at the A41 roundabout junction in accordance with existing turning movements.

6 PUBLIC TRANSPORT

- 6.1 The Transport Assessment will consider the scheme in terms of the potential for penetration of the site by public transport, based upon the potential diversion of existing bus services and/or the provision of new services. It will also consider the predicted passenger usage of such services within an economic/viability assessment.
- 6.2 Initial discussion will be held with public transport operators in the area to determine their requirements for access to and within the site; with focus on whether a link road between Icknield Way and Aylesbury Road is considered necessary.
- 6.3 Discussions will also be carried out with HCC's Passenger Transport team to seek to agree the public transport strategy as appropriate.

7 OPERATIONAL ASSESSMENTS

Assessment Periods

- 7.1 The TA will consider in detail the traffic forecast to be associated with the development proposal and its potential impact on the highway network for the AM and PM weekday peak hours only.
- 7.2 The highway network will be assessed for the year of application as the Baseline and five years after the date of the application as the future assessment year, in accordance with Guidance on Transport Assessment assuming early delivery of the LA5 allocation. The highway network will also be assessed for the assumed year of completion in 2024, in accordance with policy CS3 of the Core Strategy.

Traffic Growth

- 7.3 This baseline data would be increased to represent traffic growth and committed developments from the year of survey using nationally produced local traffic growth predictions ("TEMPRO NTM" factors).
- 7.4 TEMPRO will be used to growth traffic flows to five years after the date of the planning application as agreed with highways officers and also to the assumed assumed year of completion in 2024 in accordance with policy CS3 of the Core Strategy.
- 7.5 The TEMPRO calculations are included in **Appendix C** and summarised below. This assumes that the year of application will be 2015 and therefore five years after the date of the application will be 2020, although growth rates would be revised if this changes, as necessary:

TEMPRO V6.2 Growth Rates 2015-2020

- AM Peak 1.0713;
- PM Peak 1.0707.

TEMPRO V6.2 Growth Rates 2015-2024

- AM Peak 1.1237;
- PM Peak 1.1236.
- 7.6 It is not considered that any committed development sites need to be considered and that the above growth rates are sufficient to provide suitable background traffic on the local highway network.

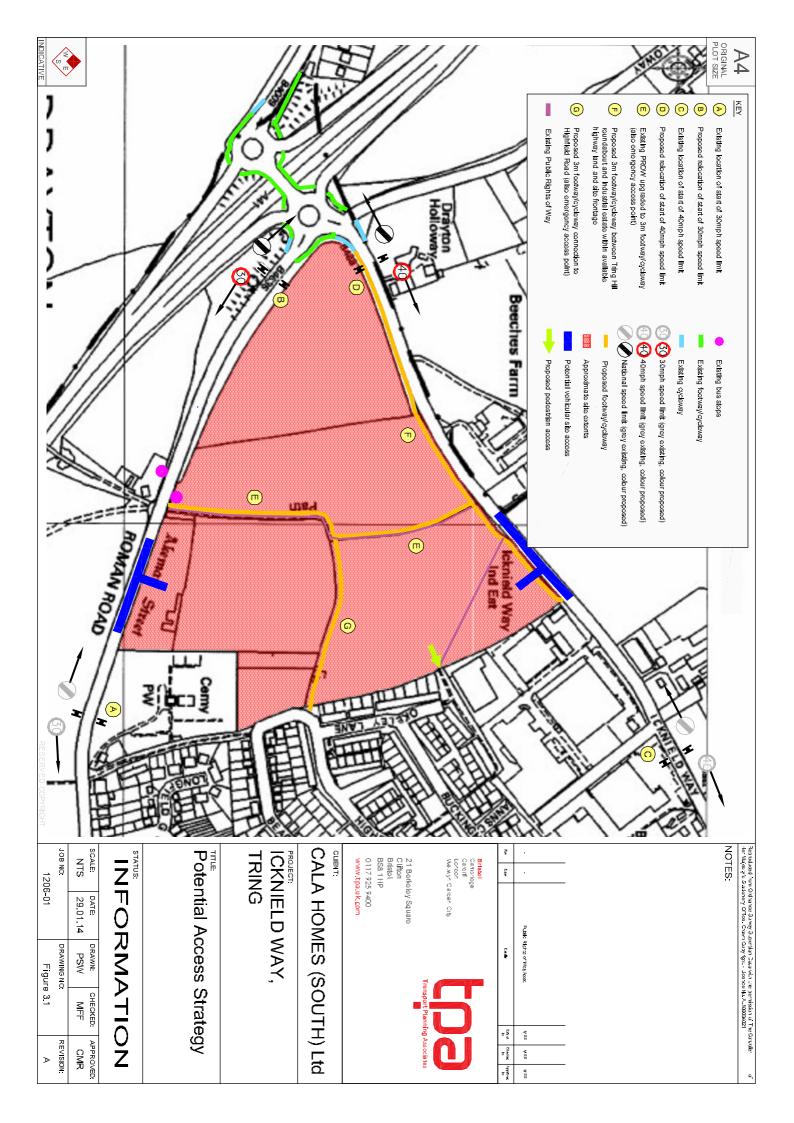
Capacity Assessments

- 7.7 Junction capacity assessments will be undertaken of the proposed site access junction(s) using PICADY to assess the suitability of the design to accommodate the development traffic.
- 7.8 Detailed operational assessments of the A41/B488/B4635 roundabout to the west of the site will be undertaken using ARCADY and the B4009 London Road/Upper Icknield Way junction to the west of the site will be assessed using PICADY to assess the impact of the development proposals in terms of queuing and delay at these locations. It is not considered necessary to carry out operational assessments elsewhere on the local or strategic highway network.
- 7.9 Mitigation measures will focus on reducing the need to travel at source through comprehensive Travel Planning measures to minimise solo-car trips.
- 7.10 Capacity enhancement measures such as adjustments to carriageway alignment, entry lanes, signal timings or existing phasing will be considered secondary to Travel Planning measures. Such improvements and measures will be established through negotiations with highway officers, as necessary.

8 DRAFT FRAMEWORK TRAVEL PLAN

- 8.1 A Framework Travel Plan will be prepared in association with the Transport Assessment, which will set out a package of measures associated with the development and will aim to reduce the level of single occupancy car use associated with the scheme. Targets will be set and monitored in conjunction with highway officers.
- The Framework Travel Plan will be prepared with reference to Hertfordshire's Travel Plan Guidance for Business and Residential Development, as appropriate.
- 8.3 A key emphasis of the Framework Travel Plan will be linking the development with other residential and employment areas to minimise the need to travel by car.
- 8.4 The list of initiatives and measures contained within the Framework Travel Plan will be suggested to maximise the opportunity to influence future travel patterns. A Travel Plan budget will be derived and agreed.
- 8.5 A significant part of the responsibility of delivering the Travel Plan involves the establishment of a Travel Plan coordinator who will be responsible for the management of the plan to ensure its success through regular dialogue with the local highway authority, promotion of the travel plan through appropriate marketing and the suggestion and implementation of enhancements to the Travel Plan as and when necessary.

FIGURES



APPENDIX A

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Ordnance Survey 100019606.
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Scale before copying 1:2500

Icknield Way Aylesbury Road Tring



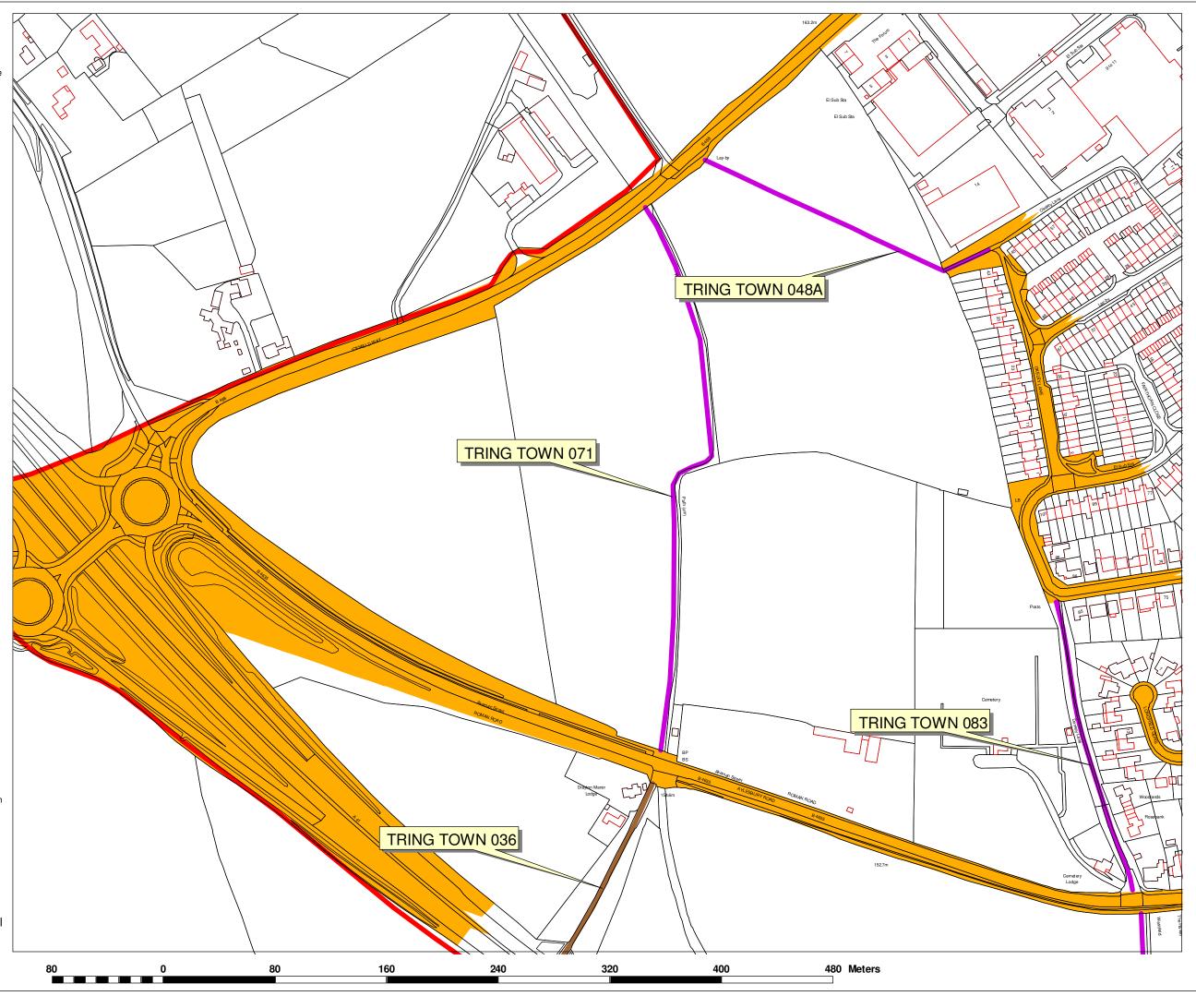
Public Rights of Way

The Rights of way information on this plan is based on information from the Definitive Map of Public Rights of Way in Hertfordshire ("the Definitive Map").

The accuracy of this plan cannot be guaranteed. If in doubt the Definitive Map should be consulted.

Produced using ArcView by HB & LC Hertfordshire County Council

22 June 2012



APPENDIX B

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TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL

Category : M - MIXED PRIVATE/NON-PRIVATE HOUSING

MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOU	TH EAST	
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	1 days
	KC	KENT	1 days
	RE	READING	1 days
	SC	SURREY	2 days
	WS	WEST SUSSEX	1 days
03	SOU	TH WEST	
	BR	BRISTOL CITY	1 days
	DV	DEVON	1 days
05	EAS	T MIDLANDS	
	LE	LEICESTERSHIRE	1 days
06	WES	ST MIDLANDS	
	HE	HEREFORDSHIRE	1 days
07	YOR	KSHIRE & NORTH LINCOLNSHIRE	
	NY	NORTH YORKSHIRE	1 days
80	NOR	RTH WEST	
	MS	MERSEYSIDE	3 days
09	NOR	RTH .	
	CB	CUMBRIA	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: 14 to 282 (units:) Range Selected by User: 14 to 300 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/05 to 02/10/13

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 4 days
Tuesday 2 days
Wednesday 3 days
Thursday 4 days
Friday 3 days

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

Selected survey types:

Manual count 16 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 undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre) 9
Edge of Town 7

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

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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 16 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®.

Population within 1 mile:

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

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

Population within 5 miles:

3 days
1 days
1 days
1 days
2 days
5 days
3 days

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

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	5 days
1.1 to 1.5	9 days
1.6 to 2.0	1 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	4 days
No	12 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.

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LIST OF SITES relevant to selection parameters

BR-03-M-02 **BLOCKS OF FLATS BRISTOL CITY**

CLARENCE ROAD

BRISTOL

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings:

Survey date: MONDAY 12/10/09 Survey Type: MANUAL

CB-03-M-03 **SEMI-DETACHED CUMBRIA**

MOORCLOSE ROAD SALTERBECK WORKINGTON Edge of Town

No Sub Category

Total Number of dwellings: 82

> Survey date: MONDAY 20/06/05 Survey Type: MANUAL

DV-03-M-01 **HOUSES & FLATS DEVON**

TOPSHAM ROAD

EXETER

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 61

Survey date: THURSDAY 06/10/11 Survey Type: MANUAL

ES-03-M-03 **EAST SUSSEX** MIXED HOUSES

FIELD END

MARESFIELD Edge of Town Residential Zone

Total Number of dwellings: 68

Survey date: WEDNESDAY 02/10/13 Survey Type: MANUAL

HC-03-M-04 **HOUSES & FLATS HAMPSHIRE**

HUNTS POND ROAD TITCHFIELD NEAR FAREHAM Edge of Town Residential Zone Total Number of dwellings:

282

Survey date: TUESDAY 11/12/12 Survey Type: MANUAL **HEREFORDSHIRE** HE-03-M-01 SEMI D./TERRACED

WHITECROSS ROAD WIDEMARSH **HEREFORD**

Suburban Area (PPS6 Out of Centre)

Industrial Zone

Total Number of dwellings: 57

Survey date: WEDNESDAY 01/03/06 Survey Type: MANUAL

7 KC-03-M-01 **BLOCKS OF FLATS KENT**

HIGH STREET

RAMSGATE

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 103

Survey date: TUESDAY 08/12/09 Survey Type: MANUAL **Transport Planning Associates** Berkeley Sq Bristol Licence No: 219601

LEICESTERSHIRE

LIST OF SITES relevant to selection parameters (Cont.)

RYDER ROAD

LE-03-M-01

BRAUNSTONE FRITH

LEICESTER Edge of Town Residential Zone

Total Number of dwellings: 16

SEMI DETACHED

Survey date: THURSDAY 27/09/12 Survey Type: MANUAL

MS-03-M-01 HOUSING **MERSEYSIDE**

OFF KINGSWAY PRECOT

LIVERPOOL Suburban Area (PPS6 Out of Centre)

Residential Zone

40 Total Number of dwellings:

Survey date: MONDAY 25/06/07 Survey Type: MANUAL

10 MS-03-M-02 **TERRACED MERSEYSIDE**

LOVEL ROAD **SPEKE** LIVERPOOL Edge of Town

Residential Zone Total Number of dwellings: 27

21/06/13 Survey date: FRIDAY Survey Type: MANUAL

SEMI DETACHED/TERRACED MS-03-M-03 **MERSEYSIDE** 11

LOVEL ROAD **SPEKE** LIVERPOOL Edge of Town Residential Zone

Total Number of dwellings: 24

Survey date: FRIDAY 21/06/13 Survey Type: MANUAL SEMI D./TERRACED 12 NY-03-M-03 NORTH YORKSHIRE

CAWTHORN AVENUE

HARROGATE

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 14

Survey date: THURSDAY 11/09/08 Survey Type: MANUAL

READING 13 RE-03-M-01 **BLOCKS OF FLATS**

OXFORD ROAD

READING Edge of Town Built-Up Zone

Total Number of dwellings: 79

Survey date: FRIDAY 03/11/06 Survey Type: MANUAL

SC-03-M-04 14 HOUSES/FLATS SURREY

EPSOM ROAD

GUILDFORD

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 130

Survey date: THURSDAY 13/10/11 Survey Type: MANUAL TRICS 7.1.1 070114 B16.23 (C) 2013 JMP Consultants Ltd on behalf of the TRICS Consortium Tuesday 28/01/14 Mixed Private/Non Private Housing Page 5

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LIST OF SITES relevant to selection parameters (Cont.)

15 SC-03-M-05 HOUSES & FLATS SURREY

HOLYWELL WAY STANWELL STAINES

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 52

Survey date: MONDAY 19/11/12 Survey Type: MANUAL

16 WS-03-M-03 TERRACED & FLATS WEST SUSSEX

UPPER SHOREHAM ROAD

SHOREHAM BY SEA

Suburban Area (PPS6 Out of Centre)

Residential Zone

Total Number of dwellings: 48

Survey date: WEDNESDAY 18/04/12 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.

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TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/NON-PRIVATE HOUSING

MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS		[DEPARTURES	ò	TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	16	70	0.097	16	70	0.235	16	70	0.332
08:00 - 09:00	16	70	0.133	16	70	0.297	16	70	0.430
09:00 - 10:00	16	70	0.138	16	70	0.174	16	70	0.312
10:00 - 11:00	16	70	0.155	16	70	0.153	16	70	0.308
11:00 - 12:00	16	70	0.172	16	70	0.142	16	70	0.314
12:00 - 13:00	16	70	0.155	16	70	0.162	16	70	0.317
13:00 - 14:00	16	70	0.150	16	70	0.161	16	70	0.311
14:00 - 15:00	16	70	0.148	16	70	0.147	16	70	0.295
15:00 - 16:00	16	70	0.204	16	70	0.164	16	70	0.368
16:00 - 17:00	16	70	0.265	16	70	0.212	16	70	0.477
17:00 - 18:00	16	70	0.292	16	70	0.185	16	70	0.477
18:00 - 19:00	16	70	0.261	16	70	0.179	16	70	0.440
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.170			2.211			4.381

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: 14 - 282 (units:)
Survey date date range: 01/01/05 - 02/10/13

Number of weekdays (Monday-Friday): 16
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 2

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TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/NON-PRIVATE HOUSING

MULTI-MODAL OGVS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS		[DEPARTURES	ò	TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	16	70	0.002	16	70	0.000	16	70	0.002
08:00 - 09:00	16	70	0.003	16	70	0.002	16	70	0.005
09:00 - 10:00	16	70	0.000	16	70	0.002	16	70	0.002
10:00 - 11:00	16	70	0.003	16	70	0.001	16	70	0.004
11:00 - 12:00	16	70	0.009	16	70	0.006	16	70	0.015
12:00 - 13:00	16	70	0.003	16	70	0.001	16	70	0.004
13:00 - 14:00	16	70	0.004	16	70	0.002	16	70	0.006
14:00 - 15:00	16	70	0.003	16	70	0.004	16	70	0.007
15:00 - 16:00	16	70	0.002	16	70	0.005	16	70	0.007
16:00 - 17:00	16	70	0.001	16	70	0.002	16	70	0.003
17:00 - 18:00	16	70	0.000	16	70	0.001	16	70	0.001
18:00 - 19:00	16	70	0.000	16	70	0.001	16	70	0.001
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00				·					
Total Rates:			0.030			0.027			0.057

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: 14 - 282 (units:)
Survey date date range: 01/01/05 - 02/10/13

Number of weekdays (Monday-Friday): 16
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 2

Transport Planning Associates Berkeley Sq Bristol

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/NON-PRIVATE HOUSING

MULTI-MODAL PSVS

Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

	ARRIVALS			[DEPARTURES			TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip		
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	16	70	0.000	16	70	0.000	16	70	0.000		
08:00 - 09:00	16	70	0.001	16	70	0.001	16	70	0.002		
09:00 - 10:00	16	70	0.001	16	70	0.001	16	70	0.002		
10:00 - 11:00	16	70	0.001	16	70	0.001	16	70	0.002		
11:00 - 12:00	16	70	0.000	16	70	0.000	16	70	0.000		
12:00 - 13:00	16	70	0.000	16	70	0.000	16	70	0.000		
13:00 - 14:00	16	70	0.000	16	70	0.000	16	70	0.000		
14:00 - 15:00	16	70	0.001	16	70	0.001	16	70	0.002		
15:00 - 16:00	16	70	0.002	16	70	0.002	16	70	0.004		
16:00 - 17:00	16	70	0.000	16	70	0.000	16	70	0.000		
17:00 - 18:00	16	70	0.000	16	70	0.000	16	70	0.000		
18:00 - 19:00	16	70	0.000	16	70	0.000	16	70	0.000		
19:00 - 20:00											
20:00 - 21:00											
21:00 - 22:00											
22:00 - 23:00											
23:00 - 24:00				·							
Total Rates:			0.006			0.006			0.012		

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: 14 - 282 (units:)
Survey date date range: 01/01/05 - 02/10/13

Number of weekdays (Monday-Friday): 16
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 2

Transport Planning Associates Berkeley Sq Bristol

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/NON-PRIVATE HOUSING

MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			[DEPARTURES		TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip	
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	16	70	0.008	16	70	0.012	16	70	0.020	
08:00 - 09:00	16	70	0.008	16	70	0.024	16	70	0.032	
09:00 - 10:00	16	70	0.004	16	70	0.005	16	70	0.009	
10:00 - 11:00	16	70	0.004	16	70	0.009	16	70	0.013	
11:00 - 12:00	16	70	0.006	16	70	0.008	16	70	0.014	
12:00 - 13:00	16	70	0.006	16	70	0.005	16	70	0.011	
13:00 - 14:00	16	70	0.008	16	70	0.003	16	70	0.011	
14:00 - 15:00	16	70	0.010	16	70	0.009	16	70	0.019	
15:00 - 16:00	16	70	0.012	16	70	0.007	16	70	0.019	
16:00 - 17:00	16	70	0.012	16	70	0.012	16	70	0.024	
17:00 - 18:00	16	70	0.022	16	70	0.012	16	70	0.034	
18:00 - 19:00	16	70	0.017	16	70	0.012	16	70	0.029	
19:00 - 20:00										
20:00 - 21:00										
21:00 - 22:00										
22:00 - 23:00										
23:00 - 24:00										
Total Rates:			0.117			0.118			0.235	

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: 14 - 282 (units:)
Survey date date range: 01/01/05 - 02/10/13

Number of weekdays (Monday-Friday):16Number of Saturdays:0Number of Sundays:0Surveys manually removed from selection:2

Transport Planning Associates Berkeley Sq Bristol

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/NON-PRIVATE HOUSING

MULTI-MODAL VEHICLE OCCUPANTS

Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

	ARRIVALS			[DEPARTURES	ò	TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip	
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	16	70	0.108	16	70	0.299	16	70	0.407	
08:00 - 09:00	16	70	0.190	16	70	0.470	16	70	0.660	
09:00 - 10:00	16	70	0.164	16	70	0.231	16	70	0.395	
10:00 - 11:00	16	70	0.200	16	70	0.196	16	70	0.396	
11:00 - 12:00	16	70	0.214	16	70	0.189	16	70	0.403	
12:00 - 13:00	16	70	0.203	16	70	0.222	16	70	0.425	
13:00 - 14:00	16	70	0.196	16	70	0.228	16	70	0.424	
14:00 - 15:00	16	70	0.222	16	70	0.204	16	70	0.426	
15:00 - 16:00	16	70	0.335	16	70	0.241	16	70	0.576	
16:00 - 17:00	16	70	0.353	16	70	0.291	16	70	0.644	
17:00 - 18:00	16	70	0.392	16	70	0.264	16	70	0.656	
18:00 - 19:00	16	70	0.354	16	70	0.249	16	70	0.603	
19:00 - 20:00										
20:00 - 21:00										
21:00 - 22:00										
22:00 - 23:00										
23:00 - 24:00										
Total Rates:			2.931			3.084			6.015	

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: 14 - 282 (units:)
Survey date date range: 01/01/05 - 02/10/13

Number of weekdays (Monday-Friday): 16
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 2

Transport Planning Associates Berkeley Sq Bristol

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/NON-PRIVATE HOUSING

MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			[DEPARTURES			TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip		
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	16	70	0.028	16	70	0.054	16	70	0.082		
08:00 - 09:00	16	70	0.057	16	70	0.145	16	70	0.202		
09:00 - 10:00	16	70	0.047	16	70	0.067	16	70	0.114		
10:00 - 11:00	16	70	0.043	16	70	0.054	16	70	0.097		
11:00 - 12:00	16	70	0.043	16	70	0.060	16	70	0.103		
12:00 - 13:00	16	70	0.060	16	70	0.050	16	70	0.110		
13:00 - 14:00	16	70	0.055	16	70	0.039	16	70	0.094		
14:00 - 15:00	16	70	0.062	16	70	0.066	16	70	0.128		
15:00 - 16:00	16	70	0.139	16	70	0.088	16	70	0.227		
16:00 - 17:00	16	70	0.096	16	70	0.049	16	70	0.145		
17:00 - 18:00	16	70	0.073	16	70	0.061	16	70	0.134		
18:00 - 19:00	16	70	0.072	16	70	0.062	16	70	0.134		
19:00 - 20:00											
20:00 - 21:00											
21:00 - 22:00											
22:00 - 23:00											
23:00 - 24:00											
Total Rates:			0.775			0.795			1.570		

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: 14 - 282 (units:)
Survey date date range: 01/01/05 - 02/10/13

Number of weekdays (Monday-Friday): 16
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 2

Transport Planning Associates Berkeley Sq Bristol

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/NON-PRIVATE HOUSING MULTI-MODAL PUBLIC TRANSPORT USERS

Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

	ARRIVALS			[DEPARTURES			TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip	
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	16	70	0.004	16	70	0.025	16	70	0.029	
08:00 - 09:00	16	70	0.000	16	70	0.043	16	70	0.043	
09:00 - 10:00	16	70	0.006	16	70	0.016	16	70	0.022	
10:00 - 11:00	16	70	0.008	16	70	0.011	16	70	0.019	
11:00 - 12:00	16	70	0.004	16	70	0.006	16	70	0.010	
12:00 - 13:00	16	70	0.010	16	70	0.019	16	70	0.029	
13:00 - 14:00	16	70	0.011	16	70	0.008	16	70	0.019	
14:00 - 15:00	16	70	0.005	16	70	0.012	16	70	0.017	
15:00 - 16:00	16	70	0.026	16	70	0.016	16	70	0.042	
16:00 - 17:00	16	70	0.021	16	70	0.008	16	70	0.029	
17:00 - 18:00	16	70	0.023	16	70	0.011	16	70	0.034	
18:00 - 19:00	16	70	0.027	16	70	0.004	16	70	0.031	
19:00 - 20:00										
20:00 - 21:00										
21:00 - 22:00										
22:00 - 23:00										
23:00 - 24:00										
Total Rates:			0.145			0.179			0.324	

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: 14 - 282 (units:)
Survey date date range: 01/01/05 - 02/10/13

Number of weekdays (Monday-Friday): 16
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 2

Transport Planning Associates Berkeley Sq Bristol

TRIP RATE for Land Use 03 - RESIDENTIAL/M - MIXED PRIVATE/NON-PRIVATE HOUSING

MULTI-MODAL TOTAL PEOPLE Calculation factor: 1 DWELLS BOLD print indicates peak (busiest) period

	ARRIVALS			[DEPARTURES		TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip	
Time Range	Days	DWELLS	Rate	Days	DWELLS	Rate	Days	DWELLS	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	16	70	0.148	16	70	0.390	16	70	0.538	
08:00 - 09:00	16	70	0.255	16	70	0.682	16	70	0.937	
09:00 - 10:00	16	70	0.220	16	70	0.319	16	70	0.539	
10:00 - 11:00	16	70	0.255	16	70	0.269	16	70	0.524	
11:00 - 12:00	16	70	0.267	16	70	0.264	16	70	0.531	
12:00 - 13:00	16	70	0.279	16	70	0.296	16	70	0.575	
13:00 - 14:00	16	70	0.269	16	70	0.277	16	70	0.546	
14:00 - 15:00	16	70	0.300	16	70	0.291	16	70	0.591	
15:00 - 16:00	16	70	0.511	16	70	0.352	16	70	0.863	
16:00 - 17:00	16	70	0.483	16	70	0.359	16	70	0.842	
17:00 - 18:00	16	70	0.510	16	70	0.348	16	70	0.858	
18:00 - 19:00	16	70	0.469	16	70	0.327	16	70	0.796	
19:00 - 20:00										
20:00 - 21:00										
21:00 - 22:00										
22:00 - 23:00										
23:00 - 24:00										
Total Rates:			3.966			4.174			8.140	

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: 14 - 282 (units:)
Survey date date range: 01/01/05 - 02/10/13

Number of weekdays (Monday-Friday): 16
Number of Saturdays: 0
Number of Sundays: 0
Surveys manually removed from selection: 2

APPENDIX C

