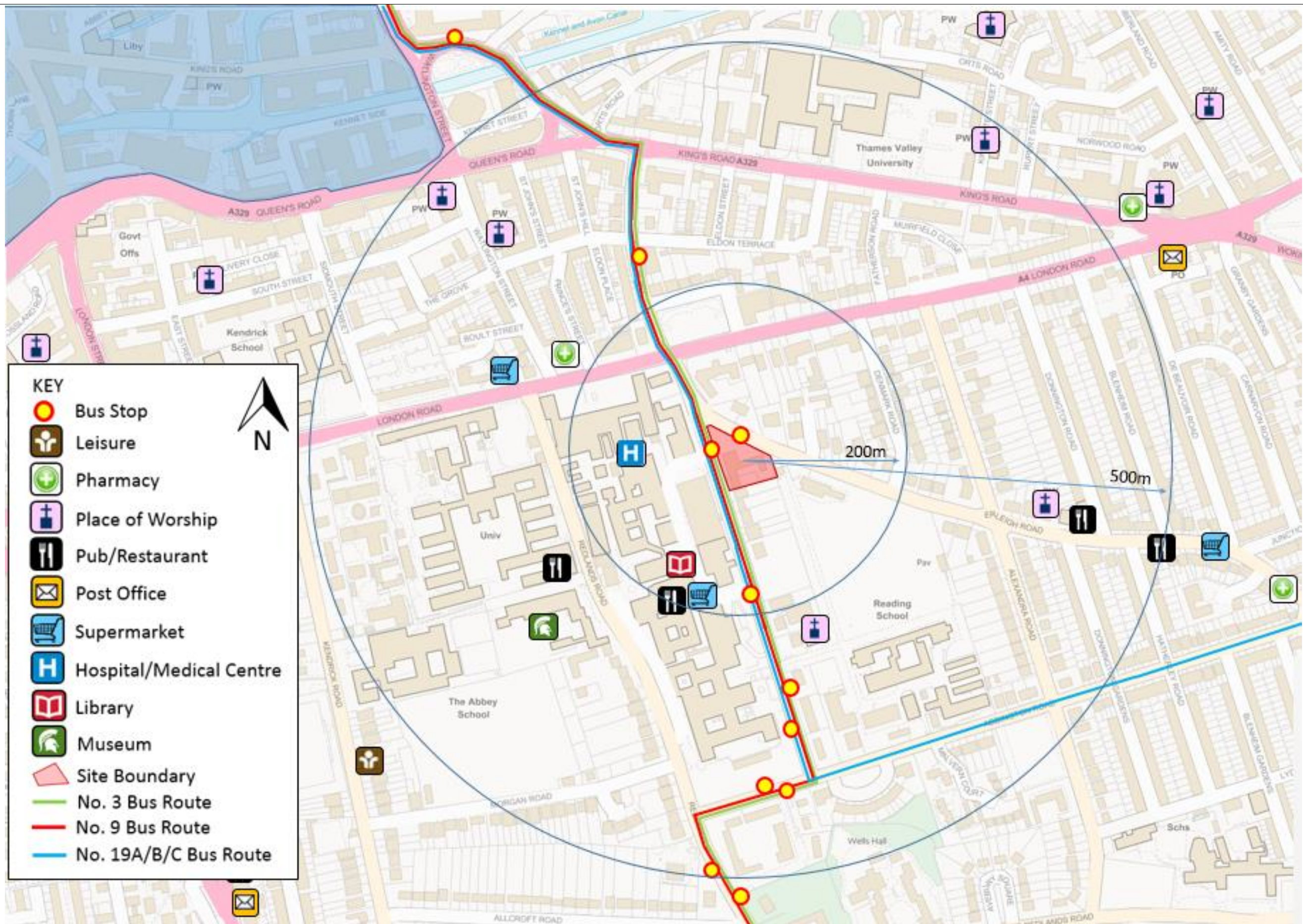


Appendix B



Project Number:
047.0050

Project Name:
CRAVEN ROAD,
READING

Title:

ACCESSIBILITY MAP

PS paulbasham
ASSOCIATES

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Checked By:

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Drawn By:

BW

Checked Date:

15.01.16

Drawn Date:

15.01.16

Scale:

N/A

Appendix C

Calculation Reference: AUDIT-247601-171026-1055

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
 Category : E - CLINICS
 VEHICLES

Selected regions and areas:

05 EAST MIDLANDS
 LN LINCOLNSHIRE 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: Gross floor area
 Actual Range: 1400 to 1400 (units: sqm)
 Range Selected by User: 17 to 1790 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/09 to 10/06/13

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:

Wednesday 1 days

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

Selected survey types:

Manual count 1 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:

Edge of Town 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:

Built-Up Zone 1

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 1 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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000 1 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

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

Car ownership within 5 miles:

1.1 to 1.5 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:

No 1 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 1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1 LN-05-E-01 CLINIC LINCOLNSHIRE
AVENUE ROAD

GRANTHAM
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 1400 sqm
Survey date: WEDNESDAY 10/11/10 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
LN-05-E-02	GFA not comparable
TW-05-E-01	GFA not comparable

TRIP RATE for Land Use 05 - HEALTH/E - CLINICS
VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	1	1400	0.000	1	1400	0.000	1	1400	0.000
07:00 - 08:00	1	1400	0.143	1	1400	0.000	1	1400	0.143
08:00 - 09:00	1	1400	1.714	1	1400	0.214	1	1400	1.928
09:00 - 10:00	1	1400	1.786	1	1400	1.071	1	1400	2.857
10:00 - 11:00	1	1400	0.643	1	1400	1.857	1	1400	2.500
11:00 - 12:00	1	1400	0.786	1	1400	0.500	1	1400	1.286
12:00 - 13:00	1	1400	0.571	1	1400	0.786	1	1400	1.357
13:00 - 14:00	1	1400	1.000	1	1400	0.857	1	1400	1.857
14:00 - 15:00	1	1400	0.786	1	1400	0.643	1	1400	1.429
15:00 - 16:00	1	1400	0.500	1	1400	0.857	1	1400	1.357
16:00 - 17:00	1	1400	0.571	1	1400	0.857	1	1400	1.428
17:00 - 18:00	1	1400	0.071	1	1400	0.643	1	1400	0.714
18:00 - 19:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
19:00 - 20:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			8.571			8.285			16.856

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: 1400 - 1400 (units: sqm)
 Survey date range: 01/01/09 - 10/06/13
 Number of weekdays (Monday-Friday): 1
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 2

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 05 - HEALTH/E - CLINICS

TAXIS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	1	1400	0.000	1	1400	0.000	1	1400	0.000
07:00 - 08:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
08:00 - 09:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
09:00 - 10:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
10:00 - 11:00	1	1400	0.071	1	1400	0.071	1	1400	0.142
11:00 - 12:00	1	1400	0.143	1	1400	0.000	1	1400	0.143
12:00 - 13:00	1	1400	0.000	1	1400	0.143	1	1400	0.143
13:00 - 14:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
14:00 - 15:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
15:00 - 16:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
16:00 - 17:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
17:00 - 18:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
18:00 - 19:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
19:00 - 20:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.214			0.214			0.428

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:	1400 - 1400 (units: sqm)
Survey date range:	01/01/09 - 10/06/13
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	2

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 05 - HEALTH/E - CLINICS

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	1	1400	0.000	1	1400	0.000	1	1400	0.000
07:00 - 08:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
08:00 - 09:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
09:00 - 10:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
10:00 - 11:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
11:00 - 12:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
12:00 - 13:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
13:00 - 14:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
14:00 - 15:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
15:00 - 16:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
16:00 - 17:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
17:00 - 18:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
18:00 - 19:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
19:00 - 20:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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:	1400 - 1400 (units: sqm)
Survey date range:	01/01/09 - 10/06/13
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	2

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 05 - HEALTH/E - CLINICS

PSVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	1	1400	0.000	1	1400	0.000	1	1400	0.000
07:00 - 08:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
08:00 - 09:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
09:00 - 10:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
10:00 - 11:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
11:00 - 12:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
12:00 - 13:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
13:00 - 14:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
14:00 - 15:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
15:00 - 16:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
16:00 - 17:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
17:00 - 18:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
18:00 - 19:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
19:00 - 20:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.000			0.000

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:	1400 - 1400 (units: sqm)
Survey date range:	01/01/09 - 10/06/13
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	2

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 05 - HEALTH/E - CLINICS
 CYCLISTS
 Calculation factor: 100 sqm
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	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	1	1400	0.000	1	1400	0.000	1	1400	0.000
07:00 - 08:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
08:00 - 09:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
09:00 - 10:00	1	1400	0.071	1	1400	0.071	1	1400	0.142
10:00 - 11:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
11:00 - 12:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
12:00 - 13:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
13:00 - 14:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
14:00 - 15:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
15:00 - 16:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
16:00 - 17:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
17:00 - 18:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
18:00 - 19:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
19:00 - 20:00	1	1400	0.000	1	1400	0.000	1	1400	0.000
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.071			0.071			0.142

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: 1400 - 1400 (units: sqm)
 Survey date range: 01/01/09 - 10/06/13
 Number of weekdays (Monday-Friday): 1
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 2

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Appendix D

Calculation Reference: AUDIT-247601-171026-1014

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : N - RETIREMENT FLATS
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	KC KENT	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
09	NORTH	
	TW TYNE & WEAR	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:	30 to 70 (units:)
Range Selected by User:	28 to 76 (units:)

Public Transport Provision:

Selection by:	Include all surveys
---------------	---------------------

Date Range:	01/01/09 to 17/10/16
-------------	----------------------

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	2 days
Thursday	1 days

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

Selected survey types:

Manual count	3 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:

Edge of Town Centre	1
Edge of Town	2

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	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	3 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	1 days
15,001 to 20,000	1 days
25,001 to 50,000	1 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
100,001 to 125,000	1 days
250,001 to 500,000	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	2 days
1.1 to 1.5	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	1 days
No	2 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	3 days
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This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	KC-03-N-05	RETIREMENT FLATS		KENT
	HARDRES STREET			
	RAMSGATE			
	Edge of Town Centre			
	No Sub Category			
	Total Number of dwellings:	41		
	Survey date: MONDAY	07/12/09		Survey Type: MANUAL
2	NY-03-N-01	RETIREMENT FLATS		NORTH YORKSHIRE
	EASTGATE			
	PICKERING			
	Edge of Town			
	Residential Zone			
	Total Number of dwellings:	30		
	Survey date: MONDAY	26/09/16		Survey Type: MANUAL
3	TW-03-N-02	RETIREMENT FLATS		TYNE & WEAR
	BRABOURNE GARDENS			
	NORTH SHIELDS			
	Edge of Town			
	No Sub Category			
	Total Number of dwellings:	36		
	Survey date: THURSDAY	17/12/09		Survey Type: MANUAL

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

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS
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	3	36	0.047	3	36	0.084	3	36	0.131
08:00 - 09:00	3	36	0.065	3	36	0.037	3	36	0.102
09:00 - 10:00	3	36	0.056	3	36	0.065	3	36	0.121
10:00 - 11:00	3	36	0.047	3	36	0.037	3	36	0.084
11:00 - 12:00	3	36	0.075	3	36	0.112	3	36	0.187
12:00 - 13:00	3	36	0.075	3	36	0.121	3	36	0.196
13:00 - 14:00	3	36	0.065	3	36	0.047	3	36	0.112
14:00 - 15:00	3	36	0.056	3	36	0.019	3	36	0.075
15:00 - 16:00	3	36	0.047	3	36	0.047	3	36	0.094
16:00 - 17:00	3	36	0.065	3	36	0.047	3	36	0.112
17:00 - 18:00	3	36	0.056	3	36	0.037	3	36	0.093
18:00 - 19:00	3	36	0.037	3	36	0.019	3	36	0.056
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.691			0.672			1.363

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: 30 - 70 (units:)
 Survey date range: 01/01/09 - 17/10/16
 Number of weekdays (Monday-Friday): 6
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 3
 Surveys manually removed from selection: 0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS

TAXIS

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	3	36	0.009	3	36	0.009	3	36	0.018
08:00 - 09:00	3	36	0.009	3	36	0.009	3	36	0.018
09:00 - 10:00	3	36	0.009	3	36	0.009	3	36	0.018
10:00 - 11:00	3	36	0.000	3	36	0.000	3	36	0.000
11:00 - 12:00	3	36	0.009	3	36	0.009	3	36	0.018
12:00 - 13:00	3	36	0.000	3	36	0.000	3	36	0.000
13:00 - 14:00	3	36	0.009	3	36	0.009	3	36	0.018
14:00 - 15:00	3	36	0.000	3	36	0.000	3	36	0.000
15:00 - 16:00	3	36	0.009	3	36	0.009	3	36	0.018
16:00 - 17:00	3	36	0.000	3	36	0.000	3	36	0.000
17:00 - 18:00	3	36	0.000	3	36	0.000	3	36	0.000
18:00 - 19:00	3	36	0.000	3	36	0.000	3	36	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.054			0.054			0.108

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:	30 - 70 (units:)
Survey date range:	01/01/09 - 17/10/16
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS

OGVS

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	3	36	0.000	3	36	0.000	3	36	0.000
08:00 - 09:00	3	36	0.000	3	36	0.000	3	36	0.000
09:00 - 10:00	3	36	0.009	3	36	0.009	3	36	0.018
10:00 - 11:00	3	36	0.000	3	36	0.000	3	36	0.000
11:00 - 12:00	3	36	0.019	3	36	0.019	3	36	0.038
12:00 - 13:00	3	36	0.000	3	36	0.000	3	36	0.000
13:00 - 14:00	3	36	0.000	3	36	0.000	3	36	0.000
14:00 - 15:00	3	36	0.009	3	36	0.000	3	36	0.009
15:00 - 16:00	3	36	0.000	3	36	0.000	3	36	0.000
16:00 - 17:00	3	36	0.000	3	36	0.000	3	36	0.000
17:00 - 18:00	3	36	0.000	3	36	0.000	3	36	0.000
18:00 - 19:00	3	36	0.000	3	36	0.000	3	36	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.037			0.028			0.065

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:	30 - 70 (units:)
Survey date date range:	01/01/09 - 17/10/16
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS

PSVS

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	3	36	0.000	3	36	0.000	3	36	0.000
08:00 - 09:00	3	36	0.000	3	36	0.000	3	36	0.000
09:00 - 10:00	3	36	0.000	3	36	0.000	3	36	0.000
10:00 - 11:00	3	36	0.000	3	36	0.000	3	36	0.000
11:00 - 12:00	3	36	0.000	3	36	0.000	3	36	0.000
12:00 - 13:00	3	36	0.019	3	36	0.019	3	36	0.038
13:00 - 14:00	3	36	0.000	3	36	0.000	3	36	0.000
14:00 - 15:00	3	36	0.000	3	36	0.000	3	36	0.000
15:00 - 16:00	3	36	0.000	3	36	0.000	3	36	0.000
16:00 - 17:00	3	36	0.019	3	36	0.019	3	36	0.038
17:00 - 18:00	3	36	0.000	3	36	0.000	3	36	0.000
18:00 - 19:00	3	36	0.000	3	36	0.000	3	36	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.038			0.038			0.076

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:	30 - 70 (units:)
Survey date date range:	01/01/09 - 17/10/16
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/N - RETIREMENT FLATS

CYCLISTS

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	36	0.009	3	36	0.009	3	36	0.018
08:00 - 09:00	3	36	0.000	3	36	0.000	3	36	0.000
09:00 - 10:00	3	36	0.000	3	36	0.000	3	36	0.000
10:00 - 11:00	3	36	0.000	3	36	0.000	3	36	0.000
11:00 - 12:00	3	36	0.009	3	36	0.009	3	36	0.018
12:00 - 13:00	3	36	0.000	3	36	0.000	3	36	0.000
13:00 - 14:00	3	36	0.009	3	36	0.000	3	36	0.009
14:00 - 15:00	3	36	0.000	3	36	0.009	3	36	0.009
15:00 - 16:00	3	36	0.000	3	36	0.000	3	36	0.000
16:00 - 17:00	3	36	0.000	3	36	0.000	3	36	0.000
17:00 - 18:00	3	36	0.000	3	36	0.000	3	36	0.000
18:00 - 19:00	3	36	0.000	3	36	0.000	3	36	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.027			0.027			0.054

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:	30 - 70 (units:)
Survey date date range:	01/01/09 - 17/10/16
Number of weekdays (Monday-Friday):	6
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	3
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Appendix E

Fact File 7. – Weekday Traffic Generation

The 12 hour traffic generation data for the 6 surveyed developments is given in Table FF7a, below. This is the data obtained from the weekday surveys only.

Table FF7a Traffic Generation (Vehicle Movements per 12 hour day – 0700-1900)

Development	Date of Survey	No of Apartments	Vehicle Movements (12 Hr)	Generation per apartment
Haven Court, Hythe	Tuesday 28 April 2015	36	68	1.89
Hanna Court, Wilmslow	Monday 1 August 2016	40	63	1.58
Eadhelm Court, Edenbridge	Wednesday 29 April 2015	34	56	1.65
Pagham Court, Bognor	Wednesday 8 July 2015	36	107	2.92
Lauder Court, Hamilton	Friday 29 July 2016	64	55	0.86
Middleton Court, Porthcawl	Tuesday 26 July 2016	60	69	1.15
Totals		270	418	1.55

There were no recorded visits by heavy goods vehicles. However, the occasional visit, such as that by the refuse collection vehicle must be expected.

The hourly vehicle movements are derived in the following table FF7b.

For the purposes of this table the developments are labelled as follows:

A – Haven Court, Hythe	B – Hanna Court, Wilmslow
C - Eadhelm Court, Edenbridge	D – Pagham Court, Bognor
E – Lauder Court, Hamilton	F – Middleton Court, Porthcawl

Table FF7b – Hourly movements

Time Period	A		B		C		D		E		F		Totals	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
0700 -0800	0	0	1	1	2	1	0	0	0	1	1	2	4	5
0800-0900	0	1	3	1	1	1	1	3	2	1	1	1	8	8
0900-1000	3	2	3	5	2	4	8	9	2	1	3	6	21	27
1000-1100	4	5	4	4	4	4	10	5	3	4	3	2	28	24
1100-1200	6	4	1	1	6	4	10	9	2	3	5	5	30	26
1200-1300	7	4	4	5	5	6	8	8	5	5	6	8	35	36
1300-1400	5	6	4	4	0	1	3	3	3	2	1	2	16	18
1400-1500	1	2	4	3	1	1	1	2	2	1	2	1	11	10
1500-1600	1	2	3	5	1	2	4	4	2	3	4	7	15	23
1600-1700	3	5	0	0	4	2	3	2	5	4	5	1	20	14
1700-1800	2	2	2	2	1	0	4	4	0	2	2	0	11	10
1800-1900	2	1	1	2	2	1	1	3	1	1	0	1	7	9
Totals	34	34	30	33	29	27	53	52	27	28	33	36	206	210

Based on the final two columns of Table FF7b, the following data can be obtained, as shown in Table FF7c, below. This shows the percentage of the arrivals taking place in each hour along with the percentage of departures.

Table FF7c - Percentage hourly splits

Time period	Arrivals	Departures	% Arrivals	% Departures
0700-0800	4	5	1.94	2.38
0800-0900	8	8	3.88	3.81
0900-1000	21	27	10.19	12.86
1000-1100	28	24	13.59	11.43
1100-1200	30	26	14.56	12.38
1200-1300	35	36	16.99	17.14
1300-1400	16	18	7.77	8.57
1400-1500	11	10	5.34	4.76
1500-1600	15	23	7.28	10.95
1600-1700	20	14	9.71	6.67
1700-1800	11	10	5.34	4.76
1800-1900	7	9	3.40	4.28
Totals	206	210	99.99	99.99

Traffic Generation – 1900 - 0700

The current surveys did not include observing the traffic generation between 7 p.m. and 7 a.m. The best available information is based on a survey at a single development at Swanland, near Hull, undertaken some years ago. This suggested that the 24 hour generation could be obtained by multiplying the 12 hour generation, between 7 a.m. and 7 p.m. by 1.098, i.e. increasing the daytime generation by about 10%. The survey also indicated that there were no vehicle movements between the hours of 10 p.m. and 7 a.m.

Residents and Visitor Traffic Generation

On the basic assumption that all vehicles parked within the site at 7 a.m. are likely to be owned by residents, unless there is a clear indication to the contrary, it is possible to differentiate between vehicle movements made by residents' cars and those of others, which can be described as visitors. This description is used to include staff, servicing vehicles, deliveries, taxis, ambulances, etc. and visits by relatives and friends.

Table FF7d below shows the split between resident and visitor traffic movements. It can be seen that residents undertake significantly fewer vehicle movements than visitors.

Table FF7d Visitor Movements in Relation to Resident Movements

Development	Day of Week	Resident Generation Rate – (Movements/ Apartment)	Visitor + Staff Generation Rate – (Movements/ Apartment)	Ratio – Visitor/Staff movements to Residents' Movements
Haven Court, Hythe	Tuesday	0.58	1.31	2.26
	Saturday	0.5	1.53	3.06
	Sunday	0.56	1.25	2.23
Hanna Court, Wilmslow	Monday	0.5	1.075	2.15
Eadhelm Court, Edenbridge	Wednesday	0.529	1.147	2.16
Paghan Court, Bognor	Wednesday	0.92	2.0	2.17
Lauder Court, Hamilton	Friday	0.28	0.58	2.07
Middleton Court, Porthcawl	Tuesday	0.68	0.47	0.69

It can be seen that for the majority of the developments, visitors undertake some 2 to 3 times as many vehicle movements as residents. The major exception to this is Middleton Court, Porthcawl. The reason for this difference is unclear. However, there are two possible, or likely, options.

Option 1. Some residents wish to live in a seaside resort, close to the sea. This may mean that they are moving away from their established links with friends and family, rather than moving closer to them, which is a common reason for moving to a specific development. This may result in residents receiving fewer visits from relatives and long-term friends.

Option 2. Although there is on-street parking outside Middleton Court, it is possible that the availability of spaces for use by visitors is very limited, due to the pressure on parking usage on roads just a short distance away from the sea front. If this is the case, a higher level of pedestrian movements would be expected generated by visitors who have had to park some distance away from the development.

The survey does show a higher than average generation of pedestrian movements, which would tend to support this second possible explanation. If this is the reason, the real vehicle generation would be likely to be somewhat higher than the observed level, due to some of the vehicles generated parking away from the site and therefore away from the view of the survey staff. However, it is also possible that a higher than average pedestrian generation could be due to more residents undertaking recreational walks, due to the attractiveness of the waterside.

Motor Cycle Movements

The surveys do not record a single trip by motorcycle to or from the developments.

It is also of note that no resident indicated that they owned any motorcycle.

Fact File 8. – Weekend Traffic Generation

In order to ascertain if the weekend traffic generation is significantly higher than that during weekdays, the development in Hythe near Southampton (Haven Court) was surveyed over the 12 hour period starting at 7 a.m. on both a Saturday and a Sunday.

The following table, FF8a, gives the comparable trip generation rates for the three survey days.

Table FF8a Comparable trip rates – weekday and weekend (Haven Court, Hythe)

Day	Resident Generation Rate	Visitor Generation Rate	Overall Generation Rate
Tuesday 28 April 2015	0.58	1.31	1.89
Saturday 2 May 2015	0.5	1.52	2.02
Sunday 17 May 2015	0.56	1.25	1.81

The full data is reproduced in Appendix II to this report.

This suggests that a Saturday may well have a similar, albeit slightly increased generation, when compared to the weekday generation but that the Sunday is a little quieter.

However, the variations are not significant, with both weekend days having a total generation with 10% of the Tuesday generation. This difference may well be within the daily differences and could be influenced by such factors as the weather.

Appendix F

Fact File 5. – Car Ownership of Residents and Car Parking Provision

The results given below are based on the responses from 238 apartments where the residents gave their car ownership. The data is spread across 9 developments throughout the UK. These developments are listed in the Introduction to this report.

Current Cars Per Apartment (i.e. at time of survey)

The number of cars owned by the residents of one and two bedroom apartments are given in Table FF5a below:-

Table FF5a Cars per Apartment

	One Bedroom Apartments	Two Bedroom Apartments	Combined
Cars per Apartment	0.490	0.783	0.592

Please read the remainder of this fact file before using this data!

Car Ownership by Age Group

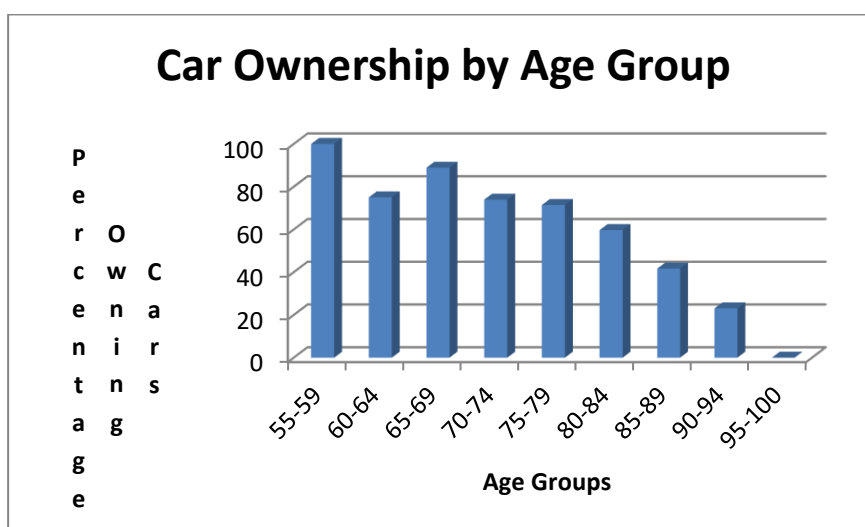
The results given below are based on the responses from 195 apartments, where the residents gave both their age and their car ownership. The data is spread across 9 developments throughout the UK. These developments are listed in the Introduction to this report.

Chart FF5 below shows the percentage of residents who own cars in each of the age groups from 55 to 100, shown in 5 year bands. Where the car is owned by a couple, the age of the younger of the two has been used.

It can be seen that in the age group 55 to 59 all residents owned a car i.e. 100%, declining to 0% owning a car for those over 95 years of age.

As indicated in Fact File 4, the peak age of entering Category II type developments is between 75 and 79 years of age. For this age group, just less than 71% of residents would be expected to be car owners.

Chart FF5a – Car Ownership related to Age of Residents



The car ownership levels shown in Chart FF5a are as follows:-

100% of residents in the 55-59 age group own a car
75% of residents in the 60 - 64 age group own a car
88.89% of residents in the 65 - 69 age group own a car
73.91% of residents in the 70 - 74 age group own a car
71.42% of residents in the 75 - 79 age group own a car
59.70% of residents in the 80 - 84 age group own a car
41.67% of residents in the 85 - 89 age group own a car
23.08% of residents in the 90 - 94 age group own a car
0% of residents in the 95 - 100 age group own a car.

Note :- It should be noted that there were only a small number of persons in the age groups at each end of the scale i.e. 1 in the 55-59 age group, 3 in the 60-64 age group, 3 in the 90-94 age group and 0 in the oldest age group.

Driving Licences

One of the reasons that car ownership declines with the age of residents is that some have given up their licences, either voluntarily or as a result of action by the DVLA. From the age of 70, all licence owners have to declare, every three years, that they are able to drive safely

It has often been suggested that, in the past, there was a significant difference between the sexes in terms of who might drive, with men being more likely to do so than women, although it is also sometimes suggested that the differences are reducing significantly. The current situation in recent Retirement Living developments has been ascertained by the questionnaire survey and is shown in Table FF5b, below.

Table FF5b – Holding of Driving Licences

	Male Residents	Female Residents
Once held a driving licence	88.8%	74.4%
Currently hold driving licence	69.6%	46.8%
Never held a driving licence	11.2%	25.6%

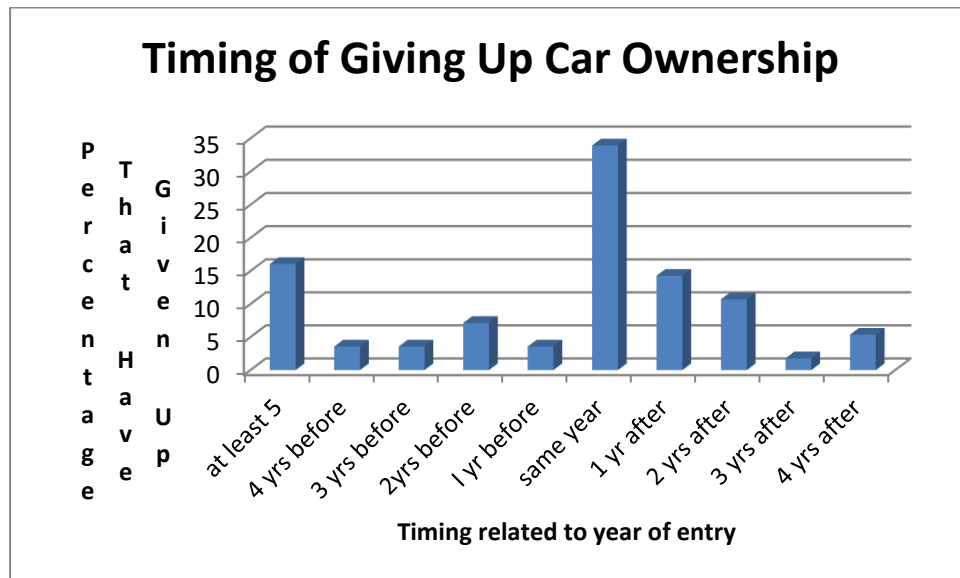
This shows that nearly 90% of the men responding to the survey questionnaire once held a driving licence, whereas only some 74% of the women responding did so. It also shows that some 22% of the men have given up their licences, whereas 37% of the women have done so. Given that there are significantly more women than men resident in these developments, the likelihood of a resident giving up driving is significant.

Giving Up Car Ownership

Studies in the past have shown that there is a clear link between entering sheltered housing and giving up car ownership. This survey confirms this to be the case. Chart FF5b, below, shows the timing of residents giving up their cars, in relation to the timing of entry to their apartments.

As the developments surveyed were recent ones, there is no data for the period 4 or more years after entry. However, from previous evidence, it is likely that there will be a steady number of residents deciding that car ownership is no longer appropriate.

Chart FF5b Timing of giving up Car Ownership
– expressed as percentage of total that have given up ownership.



This shows that some 16% of residents had given up their cars 5 or more years before entry to this form of housing.

In the period closer to entrance the percentage giving up 4 years before entry was 3.6%, 3 years before entry was some 3.6%, 2 years before entry was 7.1%, and 1 year before entry was 3.6%.

In the year of entry, this rises to 33.9%.

A significant number of residents (14.3%) decided to give up car ownership in the year after entry and a further 10.7% in the second year after entry.

It should be noted that the survey concentrated on recent developments, where car parking provision is normally higher than developments undertaken in previous years and where residents have to purchase parking permits, if they wish to park within the development. Therefore, the number of residents who had lived in the development for 2, 3 or more years is very limited. Indeed there were none who had lived in the development for 4 or more years. It would be expected that some residents would give up their cars over the remaining of the time living in the developments.

Reasons for Giving Up Car Ownership

The questionnaire survey sought the reasons residents had for giving up car ownership. The following table outlines the reasons given:-

Table FF5c – Reasons for Giving Up Car Ownership

Reason	Number	Percentage
Age, including safety concerns, tired of driving, lack of confidence, DVLA requirement	19	35.8%
Health reasons, including poor eyesight and slow reactions	14	26.4%
No need, including use of good public transport	10	18.8%
Death of spouse	3	5.7%
Finacial reason	3	5.7%
(No reason given)	4	7.5%

Total	53	99.9%

Car Ownership on Entry to Category II Type Development

At the time of the survey the car ownership level is indicated in Table FF5a, above.

However, the survey shows that some of residents have given up car ownership since entering the development. Therefore these should be added to give a true picture of the level of car ownership upon entry. It is accepted that the number of car owners will gradually decline over the years following the opening of the development.

The following Table, FF5d, shows the actual car ownership of residents when entering this form of housing.

Table FF5d Car Ownership Levels for One and Two Bedroom Apartments

Apartment size	Current Ownership – at time of survey	Cars given up between entry and survey date	Total cars	Responses	Car Ownership rate – cars per apartment
One Bed	76	13	89	155	0.574
Two Bed	65	4	69	83	0.831
Totals	141	17	158	238	0.664

This table shows that residents of the larger apartments are significantly more likely to own a car. Indeed their car ownership rate at the time of entry to the development is some 1.45 times that of the smaller apartments.

Warnings

1) There is a very significant variation in the car ownership rates for 1 and 2 bed apartments in the 9 surveyed developments. For 1 bed units the car ownership rates vary from 0.286 to 0.667. For the larger apartments the range is 0.5 to 1.25. For one development, the car ownership rate for one bedroom apartments exceeded that for two bedroom units. This makes it difficult to derive a car ownership model for residents that would accurately predict the car ownership in any specific future development.

2) It is possible that car owners may be more active than other residents and so more likely to respond to the questionnaires, thereby given a higher car ownership rate for each category of apartment. It is also possible that there is a difference in the likelihood of male and female residents to complete the questionnaires. If men are more likely to do so and if men are more likely to be car owners, then this could also exaggerate the car ownership levels indicated by the survey.

For comparison purposes, the car ownership rates derived in the final column of Table FF5b above have been applied to the developments included in the survey to ascertain how the provision might have changed, if these rates had been applied. The results are shown in Table FF5e below.

Table FF5e – Comparison of Actual Provision and Provision Using Derived Ownership Rates

Development	1 bed Apart-ments	2 bed Apart-ments	Suggested Provision for 1 bed Units (0.574)	Suggested Provision for 2 bed units (0.831)	Suggested Total provision	Actual Provision for Residents	Difference (Suggested minus Actual)
Haven Court, Hythe	18	18	10.33	14.96	25.29	17	8.29
Salmon Court, Wellesbourne	13	8	7.11	6.65	13.76	17	-3.24
Jowlett Court, Bradford	41	16	23.53	13.30	36.83	29	7.83
Victory Court, Waterloooville	26	12	14.92	14.44	29.36	22	7.36
Hanna Court, Wilmslow	30	10	17.22	8.31	25.53	22	3.53
Lauder Court, Hamilton	43	21	24.68	17.45	42.13	36	6.13
Isabel Court, Exeter	34	16	19.52	13.30	32.82	19	13.82
Liberty Court, Chesham	35	11	20.09	9.14	29.23	12	17.23
Middleton Court, Porthcawl	35	25	20.09	20.78	40.87	33	7.87
Totals	275	137	157.49	118.33	275.82	207	68.82

This shows that in all but one of the developments, the provision would have been significantly higher if the suggested resident parking requirement, as derived in Table FF5d, were to be applied. Overall, the suggested provision would indicate a provision of some 33% more spaces than have been provided. Clearly, unless there is a very significant number of car owners parking outside the developments, this does indicate that the survey data obtained from the questionnaires may be biased. This is likely to result, at least in part, from a higher proportion of car owners responding than non car owners.

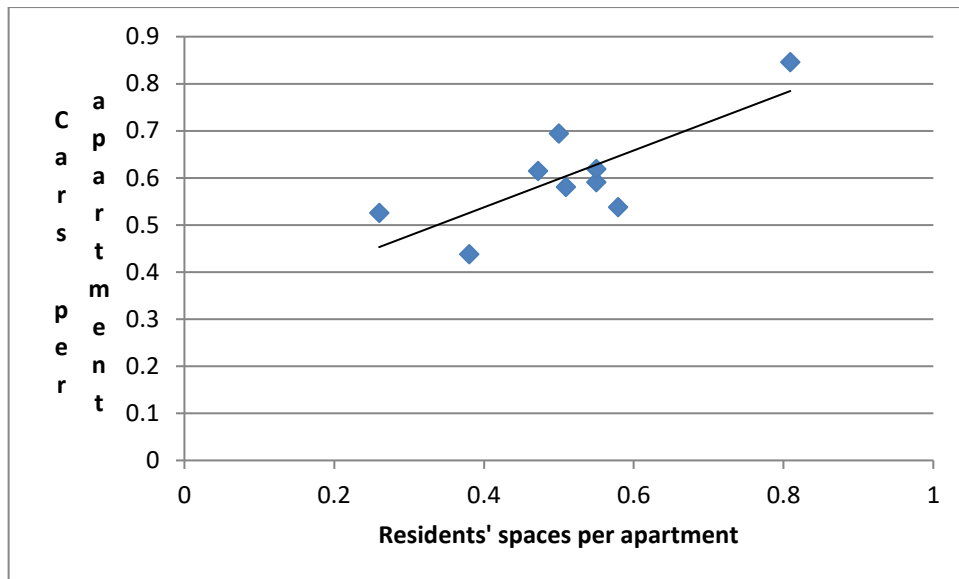
Parking Location

The questionnaire survey indicates that all but a very few residents park their cars within the development. The survey data indicates that 135 of the residents parked within the developments compared to just 4 who parked elsewhere. One of these parked in a public car park and the other three parked on the street. This shows that over 97% of residents parked within the developments.

The Influence of Parking Provision on Car Ownership

In order to assess the impact of the car parking provision on the car ownership level, an analysis has been undertaken. The following chart (FF5c) shows a plot of the cars per apartment against the car parking provision for residents.

Chart FF5c The Relationship between Car Ownership (per apartment) and the level of provision made.



Regression analysis of this data suggests that some 61.5% of the variation in the car ownership levels is explained by the number of parking spaces provided.

Variations in Car Ownership Rates

In “Warning 1”, above, it is noted that there is a very significant variation in the car ownership rates of the developments surveyed. Whilst this could be caused by a simple variation in human behaviour, it is important to investigate if there are any other causal factors that could usefully be taken into account when determining the car parking provision that needs to be made.

The guidance in the National Planning Policy Framework indicates that, in preparing car parking standards, there are five factors that need to be considered. These are:-

the accessibility of the development

the type, mix and use of development

the availability of and opportunities for public transport

local car ownership levels, and

an overall need to reduce the use of high-emission vehicles”

1. Accessibility of Development

It is difficult to quantify accessibility. A study of a similar form of accommodation showed that it is not possible to find a significant relationship between car ownership and simple and easily determined measures of assessment.

2. The type, mix and Use of the development

This factor has already been considered by surveying the particular development type and taking into account the mix of different apartment types.

3. The availability of and opportunities for public transport

As with general accessibility, it is difficult to derive a measure of this accessibility that would allow the car ownership, and subsequent requirement for parking spaces, to be determined.

4. Local Car Ownership

It would normally be assumed that car ownership levels in Retirement Living developments would be higher in areas where car ownership amongst the elderly in the area is higher than the average.

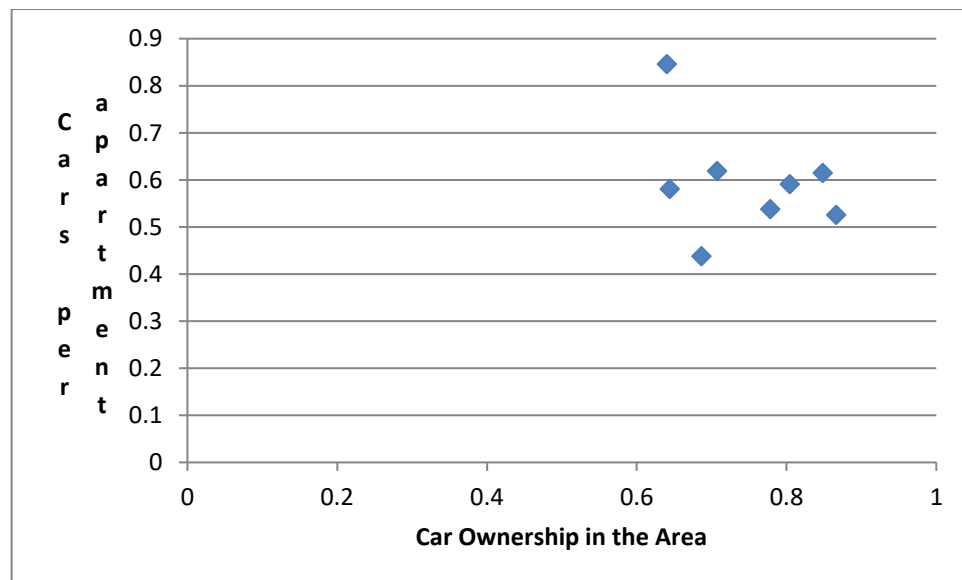
Given that the average entry age for Retirement Living developments is between 75 and 80 years of age, this analysis will use the car ownership levels from the National Census data for this age group. The data that is readily available only includes data for local authority areas in England and Wales and so this analysis will only consider the developments in these countries.

Table FF5i shows the data to be used in this analysis.

Table FF5i – Car Ownership in Retirement Living developments and Surrounding Areas

Development	Location	Overall Car Ownership Rate	ONS data- in age group 75-79 owning a vehicle
Haven Court,	Hythe, New Forest	0.615	0.848
Salmon Court	Wellesbourne	0.846	0.640
Jowett Court	Bradford	0.581	0.644
Victory Court	Waterlooville	0.538	0.778
Hanna Court	Wilmslow	0.591	0.804
Isabel Court	Exeter	0.438	0.686
Liberty Court	Chesham	0.526	0.866
Middleton Court	Porthcawl	0.619	0.707

Chart FF5f – Car Ownership in Developments Compared to Car ownership Amongst the Elderly of the Surrounding Area



When plotted, as shown in Chart FF5f, below, there does not appear to be any realistic causal relationship between car ownership levels in development and in the surrounding area.

A regression analysis of this data indicates a very low level of confidence that there is any such relationship.

Traffic Count Data

The traffic surveys undertaken allowed the accumulation of vehicles parked at the developments to be assessed. Details of the parking at individual developments can be seen in the Appendices to this report.

The following table indicates the peak parking demand for each of the surveyed developments, along with the peak number of vehicles parked per apartment and the number of parking spaces provided. Given that the surveys included any vehicles parked outside the site (within view of the survey staff), where one or more of the occupiers entered or left the development, it is possible that the peak parking could exceed the number of spaces provided.

Table FF5j Peak Parking Demand

Development	Apartments	Date of Survey	Peak Demand	Peak demand – Spaces per Apartment	Provision of spaces
Haven Court, Hythe	36	Tuesday, 28 April 2015	24	0.667	17
<i>Haven Court, Hythe</i>	36	<i>Saturday,</i>	<i>19</i>	<i>0.528</i>	<i>17</i>
<i>Haven Court, Hythe</i>	36	<i>Sunday,</i> <i>17 May 2015</i>	22	<i>0.611</i>	<i>17</i>
Hanna Court, Wilmslow	40	Monday, 1 August 2016	14	0.350	18
Eadhelm Court, Edenbridge	34	Wednesday, 29 April 2015	23	0.676	19
Pagham Court, Bognor	36	Wednesday, 8 July 2015	20	0.556	14
Lauder Court, Hamilton	64	Friday, 29 July 2016	21	0.328	45
Middleton Court, Porthcawl	60	Tuesday, 26 July 2016	26	0.433	32
Totals (excluding Saturday and Sunday data)	270		128	0.474	145

This data shows that in some instances the peak demand was accommodated within the development and in others the parking exceeded to provision. In this case the “overflow” parking is either accommodated within the site, but not in the designated spaces, or on the highway nearby, where this is permitted and available.

CONCLUSION

From the assessment above and in another study of car ownership/parking at Retirement Living developments, it has not been possible to find any significant relationship between car ownership and the factors included in the analysis, which are based on the guidance in the Planning Policy Framework.

However, the questionnaire survey data for the 9 developments surveyed shows that in 6 of these developments none of the car owners parked their vehicle off the site. (Given that not all residents responded to the survey, there could possibly be other instances where off-site parking occurred, but the number would appear to be very low).

Recommendation

In the developments surveyed by questionnaire, the overall car ownership rate at the time of entry to the developments was found to be 0.664 cars per apartment. However, the possible bias in the survey data, with a higher proportion of car owners responding than non-car owners, this car ownership level has to be adjusted to reflect this. The assessment above suggests that the realistic level is some 33% below this. This would indicate an average car parking provision of 0.45 spaces per apartment for residents.

The average proportion of 2 bedroom apartments was approximately 33%. Given the apparent higher car ownership in two bedroom apartments, consideration should be given to increasing the car parking provision where the proportion of two bedroom units is significantly above the 33% level. A slightly reduced provision could be made where there is a significantly lower percentage of two bedroom units.

One of the objectives of introducing car parking permits for residents was to control the number of cars owned at a level that could be accommodated within the development. It appears that this is generally successful.

Blue Badges

The questionnaire survey indicates that 68 residents in the 242 apartments were in possession of a “blue badge” allowing these residents to use disabled parking spaces and to park on yellow lines in certain instances. Not all of these residents owned cars, but are able to use their badges when being driven by others.

Fact File 6. – Visitor Parking

Irrespective of any other consideration, it is clear that residents believe that there is a need to provide car parking for visitors. The questionnaire survey indicates that some 90% (207 out of 231) of residents considered visitor parking to be necessary. A minority qualified their answers that this should not be at the expense of the residents' provision. This fear may have been in the mind of those giving the 24 negative responses.

This would suggest that making some provision for the parking of visitors in developments would be likely to be a welcome selling point for the majority of residents, whether they be car owners or not.

A second reason for considering the provision of visitor parking spaces is the need to ensure that residents do not become isolated. Where there are significant problems in finding off-site parking spaces, some visitors may be deterred from undertaking visits. This may be more of an issue in instances where the residents have not moved into developments close to their relatives and friends, such as in coastal developments where the seaside location is a major consideration in the move.

Furthermore, it will be seen for the survey data in Fact File 7, below, that significantly greater numbers of trips to and from the developments are undertaken by visitors than by residents. These results are summarised in Table FF6a, below.

Table FF6a Visitor Movements in Relation to Resident Movements

Development	Day of Week	Resident Generation Rate – (Movements/ Apartment)	Visitor+ Staff Generation Rate – (Movements/ Apartment)	Ratio – Visitor/Staff movements to Residents' Movements
Haven Court, Hythe	Tuesday	0.58	1.31	2.26
	Saturday	0.5	1.53	3.06
	Sunday	0.56	1.25	2.23
Hanna Court, Wilmslow	Monday	0.5	1.075	2.15
Eadhelm Court, Edenbridge	Wednesday	0.529	1.147	2.16
Paghan Court, Bognor	Wednesday	0.92	2.0	2.17
Lauder Court, Hamilton	Friday	0.28	0.58	2.07
Middleton Court, Porthcawl	Tuesday	0.68	0.47	0.69

Note – The only development where the visitor movements recorded were less than those of residents is at Middleton Court, Porthcawl. There is no clear reason why this is the case. One possibility is that, as this development is located on the sea front, the residents could have moved here to be beside the sea and so moved away from many of their friends and relatives, who would, therefore, not be able to visit on a frequent basis.

A further possibility is that some visitors had to park away from the development, due to difficulties of parking at the development in this seaside location. If this is the case, a high level of pedestrian movement would be expected. This will be assessed in Fact File no.9.

Whilst the number of visitor movements is significantly greater than those of residents, it should be noted that one visitor space can normally be used by several visitors during the day, whereas residents can occupy their spaces for the whole of the day. The survey data for all of the above developments shows that a number of residents do not undertake any trips by car on the survey day.

The number of visitor cars parked during the survey days can be obtained from the traffic count data. This assessment is on the basis that, unless there is any indication to the contrary, the vehicles parked in the car park at 7 a.m. are residents' cars.

The following table, Table FF6b, shows the peak demand for visitor parking at each of the surveyed developments (by means of traffic counts).

Table FF6b Visitor Parking Demand

Development	Day of Week	Peak Visitor Parking Number	Peak Visitor Parking Rate – Vehicles per apartment	Percentage of 12 hour day for this demand
Haven Court, Hythe (36 aps)	Tuesday	6	0.167	1.11% (8 mins)
	Saturday	6	0.167	1.25% (9 mins)
	Sunday	5	0.139	2.5% (18 mins)
Hanna Court, Wilmslow (40 aps)	Monday	4	0.100	0.83% (6 mins)
Eadhelm Court, Edenbridge (34 aps)	Wednesday	5	0.147	1.11% (8 mins)
Pagham Court, Bognor (36 aps)	Wednesday	10	0.333	0.56% (4 mins)
Lauder Court, Hamilton (64 aps)	Friday	5	0.078	1.11% (8 mins)
Middleton Court, Porthcawl (60 aps)	Tuesday	3	0.050	0.138% (1 min)
Totals (270 aps)		33	0.122	

The total of the peak parking numbers in the above table (taking only the maximum number at Haven Court, where the surveys were undertaken on a number of days) is 33 from 270 apartments. This would indicate an average rate of 0.122 parked visitor vehicles per apartment or 1 space for every 8.18 apartments.

Detailed observation of the survey data shows that in a number of instances the peak demand coincides with visits by taxis or delivery vehicles. In many instances these vehicles would not need or use a visitor parking space, but for taxis would simply stop outside the entrance to pick up or drop off a resident and for delivery vehicles, such as parcel post etc., would stop by the entrance to drop off the parcel.

In considering the appropriate provision, it is necessary to take into account the following guidance in the National Planning Policy Framework, if one interprets the vehicles referred to as including normal petrol or diesel powered cars:-

“an overall need to reduce the use of high-emission vehicles”

On this basis, it could be argued that the provision should not guarantee a visitor a parking space at peak times so as to encourage those who have the viable option, to use public transport. It can also be argued that no on-site provision should be made for staff. However, if provision has to be made for staff, only one space would be required.

Experience indicates that there are many cases where the company would not wish to provide any visitor parking. This allows all the parking spaces to be allocated to residents. However, there are instances where the lack of suitable off-site parking would indicate a need for some on-site provision and also some planning/highway authorities wish to impose a planning condition that would result in the allocation of some spaces for visitors, possibly including staff.

Recommendation

The provision of visitor parking should be considered on a case by case basis. On-site provision should normally be made for visitor parking at the rate of 0.1 spaces per apartment UNLESS it can be demonstrated that there is sufficient off-site provision on nearby roads or in nearby public car parks. A minimum of 1 disabled visitor parking space should be provided within the development.