
HALLWAY PROPERTIES LIMITED

PROPOSED RETAIL DEVELOPMENT, WATERSMEAD BUSINESS PARK, LITTLEHAMPTON (LU/93/25/PL)

TECHNICAL NOTE 6.0 – HGV FLOW COMPARISON

10.09.2025

1.0 Introduction

- 1.1 Connect Consultants Limited (Connect) is a firm of transport planning and highway design engineers that have been instructed by Hallway Properties Limited in relation to their retail development on land at Watersmead Business Park, Littlehampton, West Sussex. The planning application reference of the retail development is LU/93/25/PL
- 1.2 This Technical Note 6.0 (TN6) seeks to compare the level of Heavy Goods Vehicle (HGV) movements between the extant and proposed uses, by using the national TRICS database.
- 1.3 This TN6 consider weekday HGV trips only.

2.0 Background to TRICS And Its Use

- 2.1 TRICS, (Trip Rate Information Computer System) is a nationally recognised tool used for assessing the level of trips that could be attracted to or generated by various land uses. Trips are generally quantified by floor area , and are expressed per 100sq.m.
- 2.2 The use of TRICS within planning application LU/93/25/PL has already been accepted by West Sussex County Council (WSSC) and this TN6.0 provides HGV trip levels based around the principles already agreed and approved by WSSC.
- 2.3 It is noted that within the Transport Assessment (TA) produced to support LU/93/25/PL, the main use of TRICS was to assess overall traffic levels (TRICS refers to this as a 'vehicle trip-rate').
- 2.4 This TN6.0 specifically assesses HGV trips as opposed overall vehicle trips. Assessing HGV trips requires the use of a slightly different category within TRICS, referred to as the multi-modal category.
- 2.5 The two categories are not carbon copies of one another, and not all of the underlying survey sites in the 'vehicle trip-rate' category necessarily exist in the 'multi-modal category'. Hence, it is noted there can be differences between the underlying datasets used to create the TRICS output. This does not however alter the validity or suitability of the assessment.
- 2.6 It is noted that, within the multi modal category, there are three sub-categories where HGV trips can potentially be categorised. These are 'Servicing Vehicles', 'LGVs' and 'OGVs'.
- 2.7 Servicing Vehicles is a term used by TRICS to define any size vehicle that performs a servicing function (e.g. delivery vehicles, plumbers, electricians, fast food deliveries, waste disposal and recycling).

- 2.8 LGV is a term used by TRICS to cover Transit-van sized vehicles. OGV is the term used by TRICS to cover vehicles larger than Transit-vans. The OGV category is considered to be the most suitable sub-category against which to assess HGV's.
- 2.9 The TRICS 7.11.4 database has been used for assessment purposes. The assessment provides typical levels of HGV activity for the land uses.

3.0 Existing Warehouse Use – HGV Trips

- 3.1 The approved, existing uses on site comprise two warehouse buildings totalling 12,410sq.m. and offices. For assessment purposes, it is assumed that only the warehouse buildings have the potential to generate HGV trips.
- 3.2 Table 3.1 summarises the TRICS filtering parameters used to assess the level of HGV trips to the existing warehouse buildings. The filtering parameters are identical to those used in the TA produced to support LU/93/25/PL, other than selecting OGV trips.

Table 3.1 – TRICS Filtering Parameters.

Land use and trip rate selection	
Select Land Use By:	Full list Of Active Main/Sub Land Uses
Main Land Use:	Employment
Sub Land Use:	Warehousing (Commercial)
Calculation Options:	Multi-modal -> OGV
Regions:	England excluding Greater London
Primary filtering	
Trip Rate Parameters:	Gross Floor Area
Floor Area Range:	1,000 – 10,000
Selected Dates:	01/01/16 – 04/10/23
Week days to include:	Weekday only
Location Types to include:	Edge of Town

- 3.3 The full TRICS output is given at Appendix 1. Appendix 2 summarises the trip-rates to this and to all other land uses referenced in this report. Table 3.2 summarises the typical level of HGV trips to the 12,410sq.m. warehouse.
- 3.4 The hours of 05:00 – 22:00 have been assessed as these are the operators preferred core servicing hours. Where there is no data for a particular time period, this is indicated by use of a hyphen (-) in a table.

Table 3.2 – Typical HGV Trips – Warehouse – 12,410sq.m.

Hr Start	Arrivals	Departures	Total
05:00	4	5	9
06:00	4	12	16
07:00	1	7	8
08:00	6	4	10
09:00	7	5	12
10:00	7	6	13
11:00	6	7	12
12:00	7	6	12
13:00	4	4	8
14:00	8	4	12
15:00	8	6	14
16:00	5	7	11
17:00	3	3	6
18:00	3	1	3
19:00	2	0	2
20:00	0	0	0
21:00	0	0	0
05:00 – 22:00	74	76	150

4.0 Proposed Development – HGV Trips

- 4.1 As outlined in the TA, the proposed development comprises two main land uses; a Non-Food Retail element, (considered within TRICS as a Retail Park Excluding Food), totalling 7,874sq.m and a Food Retail element (considered within TRICS as a Food Superstore) comprising 5,600sq.m. Both of these land uses have the potential to attract HGV trips.
- 4.2 To reflect the different characteristics of the two uses, separate assessments will be undertaken and then combined to give the total level of HGV trips to the proposed development. This approach is consistent with that adopted in the TA.

Non-Food Retail HGV Trips

- 4.3 Table 4.1 summarises the TRICS filtering parameters used to assess the level of HGV trips to the proposed non-food retail element. The filtering parameters are identical to those used in the TA produced to support LU/93/25/PL, other than selecting OGV trips.

Table Error! No text of specified style in document..1 – TRICS Filtering Parameters - Non-Food Retail

Land use and trip rate selection	
Select Land Use By:	Full list Of Active Main/Sub Land Uses
Main Land Use:	Retail
Sub Land Use:	Retail Park Excluding Food
Calculation Options:	Multi-modal -> OGV
Regions:	England excluding Greater London
Primary filtering	
Trip Rate Parameters:	Gross Floor Area
Floor Area Range:	Default
Selected Dates:	1/1/15 - 14/11/23
Week days to include:	Weekday only
Location Types to include:	all

- 4.4 The full TRICS output for the above is given at Appendix 3. Appendix 2 summarises the trip-rates to this and to all other land uses referenced in this report. Table 4.2 below summarises the typical level of HGV trips to the 7,874sq.m. non-food retail element.

Table 4.2 – Typical HGV Trips – Non-Food Retail – 7,874sq.m.

Hr Start	Arrivals	Departures	Total
05:00	-	-	-
06:00	-	-	-
07:00	0	1	1
08:00	1	1	2
09:00	2	1	3
10:00	1	1	3
11:00	1	1	2
12:00	2	2	3
13:00	1	1	2
14:00	1	1	1
15:00	0	0	0
16:00	1	1	2
17:00	0	0	0
18:00	0	0	0
19:00	0	0	1
20:00	0	0	1
21:00	1	1	2
07:00 – 22:00	11	11	23

Food Retail HGV Trips

- 4.5 Table 4.3 summarises the TRICS filtering parameters used to assess the level of HGV trips to the proposed food retail element. The filtering parameters are identical to those used in the Transport Assessment produced to support LU/93/25/PL, other than selecting OGV trips.

Table Error! No text of specified style in document..3 – TRICS Filtering Parameters - Food Retail

Land use and trip rate selection	
Select Land Use By:	Full list Of Active Main/Sub Land Uses
Main Land Use:	Retail
Sub Land Use:	Food Superstore
Calculation Options:	Multi-modal -> OGV
Regions:	England excluding Greater London
Primary filtering	
Trip Rate Parameters:	Gross Floor Area
Floor Area Range:	800 – 3500
Selected Dates:	01/01/00 – 17/05/23
Week days to include:	Weekday only
Location Types to include:	Suburban Area, Edge of Town

- 4.6 The full TRICS output is given at Appendix 4. Appendix 2 summarises the trip-rates to this and to all other land uses referenced in this report. Table 4.4 summarise the typical level of HGV trips to the 5,600sq.m. food retail element.

Table 4.4 – Typical HGV Trips – Food Retail Element – 5,600sq.m.

Hr Start	Arrivals	Departures	Total
05:00	-	-	-
06:00	-	-	-
07:00	1	1	2
08:00	1	1	1
09:00	3	0	3
10:00	1	4	6
11:00	0	1	1
12:00	0	0	0
13:00	0	0	0
14:00	0	0	0
15:00	2	1	3
16:00	0	1	1
17:00	0	0	0
18:00	0	0	0
19:00	0	0	0
20:00	0	0	0
21:00	0	0	0
07:00 – 22:00	8	9	17

Total Development HGV Trips

- 4.7 The total typical level of HGV trips to the proposed development can be seen at Table 4.5.

Table 4.5 – Typical HGV Trips – Total Proposed Development

Hr Start	Arrivals	Departures	Total
05:00	-	-	-
06:00	-	-	-
07:00	1	2	3
08:00	2	2	3
09:00	5	1	6
10:00	3	6	9
11:00	1	2	3
12:00	2	2	3
13:00	1	1	2
14:00	1	1	1
15:00	3	1	3
16:00	1	3	3
17:00	0	0	0
18:00	0	0	0
19:00	0	0	1
20:00	0	0	0
21:00	1	1	2
07:00 – 22:00	21	22	39

5.0 Trip Comparison – Summary and Conclusion

5.1 By comparing Table 4.5 to Table 3.2 it is possible to quantify the overall change in HGV trips that would typically materialise due to the proposed development. This can be seen in Table 5.1 below.

Table 5.1 – Typical HGV Trips – Net Difference with Development in Place

Hr Start	Arrivals	Departures	Total
05:00	-	-	-
06:00	-	-	-
07:00	0	-5	-5
08:00	-4	-2	-7
09:00	-3	-4	-7
10:00	-4	0	-4
11:00	-5	-5	-9
12:00	-5	-4	-9
13:00	-3	-3	-6
14:00	-7	-4	-11
15:00	-5	-5	-11
16:00	-4	-4	-8
17:00	-3	-3	-6
18:00	-3	0	-3
19:00	-1	0	-1
20:00	0	0	0
21:00	1	1	2
07:00 – 22:00	-46	-38	-85

- 5.2 Table 5.1 shows that the proposed development will generate fewer HGV trips than extant use for all time periods considered, with the exception of the hour starting 21:00 when the existing will generate 2 HGV trips in the hour and the proposed zero.
- 5.3 The net reduction, post development in HGV trips over the 07:00-22:00 period is 85 HGV trips.
- 5.4 With regards the 05:00 to 07:00 period, it is not possible to assess the change in HGV trips due to the proposed land uses not have TRICS surveys over the 05:00-07:00 period.
- 5.5 Based on Table 3.2, the extant land use gives rise to 25, 2-way HGV trips over the two-hour period. This is a high number of HGV trips. Conversely, Table 5.1 shows a considerable reduction in trips over the day due to the proposed development. Therefore, the balance of probability is that the proposed development would result in considerably fewer trips in the 05:00-07:00 period than the extant use.

Enclosures

Appendix 1 – TRICS Output - Warehouse

Appendix 2 – TRICS & Trip Summary – All land uses

Appendix 3 – TRICS Output – Non Food Retail

Appendix 4 – TRICS Output – Food Retail

Appendix 1

Calculation Reference: AUDIT-142301-250905-0946

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : F - WAREHOUSING (COMMERCIAL)
OGVS

Selected regions and areas:

02	SOUTH EAST	
	BO BEDFORD	1 days
	EX ESSEX	1 days
	HC HAMPSHIRE	1 days
05	EAST MIDLANDS	
	DS DERBYSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
09	NORTH	
	CU CUMBERLAND	1 days

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

Primary 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: 1750 to 7000 (units: sqm)
Range Selected by User: 1000 to 10000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 19/06/24

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
Wednesday	2 days
Thursday	1 days
Friday	1 days

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

Selected survey types:

Manual count	6 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	6
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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:

Industrial Zone	6
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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.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included	2 days - Selected
Servicing vehicles Excluded	4 days - Selected

Secondary Filtering selection:

Use Class:

n/a	1 days
B8	5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	3 days

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

Population within 5 miles:

5,001 to 25,000	2 days
75,001 to 100,000	1 days
125,001 to 250,000	3 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	6 days
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This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	6 days
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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	6 days
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This data displays the number of selected surveys with PTAL Ratings.

Covid-19 Restrictions	Yes	At least one survey within the selected data set was undertaken at a time of Covid-19 restrictions
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TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

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	3	4836	0.034	3	4836	0.041	3	4836	0.075
06:00 - 07:00	3	4836	0.034	3	4836	0.097	3	4836	0.131
07:00 - 08:00	6	4414	0.011	6	4414	0.057	6	4414	0.068
08:00 - 09:00	6	4414	0.045	6	4414	0.034	6	4414	0.079
09:00 - 10:00	6	4414	0.060	6	4414	0.038	6	4414	0.098
10:00 - 11:00	6	4414	0.057	6	4414	0.049	6	4414	0.106
11:00 - 12:00	6	4414	0.045	6	4414	0.053	6	4414	0.098
12:00 - 13:00	6	4414	0.053	6	4414	0.045	6	4414	0.098
13:00 - 14:00	6	4414	0.034	6	4414	0.034	6	4414	0.068
14:00 - 15:00	6	4414	0.064	6	4414	0.034	6	4414	0.098
15:00 - 16:00	6	4414	0.064	6	4414	0.049	6	4414	0.113
16:00 - 17:00	6	4414	0.038	6	4414	0.053	6	4414	0.091
17:00 - 18:00	6	4414	0.023	6	4414	0.026	6	4414	0.049
18:00 - 19:00	5	3896	0.021	5	3896	0.005	5	3896	0.026
19:00 - 20:00	2	3754	0.013	2	3754	0.000	2	3754	0.013
20:00 - 21:00	2	3754	0.000	2	3754	0.000	2	3754	0.000
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.596			0.615			1.211

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.*

Appendix 2

Warehouse							
12410							
Hr Period	Trip Rate			Hr Period	Trips		
	Arrive	Depart	Total		Arrive	Depart	Total
00:00-01:00	0	0	0	00:00-01:00	0	0	0
01:00-02:00	0	0	0	01:00-02:00	0	0	0
02:00-03:00	0	0	0	02:00-03:00	0	0	0
03:00-04:00	0	0	0	03:00-04:00	0	0	0
04:00-05:00	0	0	0	04:00-05:00	0	0	0
05:00-06:00	0.034	0.041	0.075	05:00-06:00	4	5	9
06:00-07:00	0.034	0.097	0.131	06:00-07:00	4	12	16
07:00-08:00	0.011	0.057	0.068	07:00-08:00	1	7	8
08:00-09:00	0.045	0.034	0.079	08:00-09:00	6	4	10
09:00-10:00	0.06	0.038	0.098	09:00-10:00	7	5	12
10:00-11:00	0.057	0.049	0.106	10:00-11:00	7	6	13
11:00-12:00	0.045	0.053	0.098	11:00-12:00	6	7	12
12:00-13:00	0.053	0.045	0.098	12:00-13:00	7	6	12
13:00-14:00	0.034	0.034	0.068	13:00-14:00	4	4	8
14:00-15:00	0.064	0.034	0.098	14:00-15:00	8	4	12
15:00-16:00	0.064	0.049	0.113	15:00-16:00	8	6	14
16:00-17:00	0.038	0.053	0.091	16:00-17:00	5	7	11
17:00-18:00	0.023	0.026	0.049	17:00-18:00	3	3	6
18:00-19:00	0.021	0.005	0.026	18:00-19:00	3	1	3
19:00-20:00	0.013	0	0.013	19:00-20:00	2	0	2
20:00-21:00	0	0	0	20:00-21:00	0	0	0
21:00-22:00	0	0	0	21:00-22:00	0	0	0
22:00-23:00	0	0	0	22:00-23:00	0	0	0
				05:00 – 19:00	74	76	150

Non-Food Retail							
7874							
Hr Period	Trip Rate			Hr Period	Trips		
	Arrive	Depart	Total		Arrive	Depart	Total
00:00-01:00	0	0	0	00:00-01:00	0	0	0
01:00-02:00	0	0	0	01:00-02:00	0	0	0
02:00-03:00	0	0	0	02:00-03:00	0	0	0
03:00-04:00	0	0	0	03:00-04:00	0	0	0
04:00-05:00	0	0	0	04:00-05:00	0	0	0
05:00-06:00	0	0	0	05:00-06:00	0	0	0
06:00-07:00	0	0	0	06:00-07:00	0	0	0
07:00-08:00	0.005	0.008	0.013	07:00-08:00	0	1	1
08:00-09:00	0.01	0.013	0.023	08:00-09:00	1	1	2
09:00-10:00	0.021	0.013	0.034	09:00-10:00	2	1	3
10:00-11:00	0.018	0.018	0.036	10:00-11:00	1	1	3
11:00-12:00	0.013	0.013	0.026	11:00-12:00	1	1	2
12:00-13:00	0.021	0.021	0.042	12:00-13:00	2	2	3
13:00-14:00	0.013	0.016	0.029	13:00-14:00	1	1	2
14:00-15:00	0.008	0.008	0.016	14:00-15:00	1	1	1
15:00-16:00	0.005	0	0.005	15:00-16:00	0	0	0
16:00-17:00	0.008	0.016	0.024	16:00-17:00	1	1	2
17:00-18:00	0.003	0.003	0.006	17:00-18:00	0	0	0
18:00-19:00	0	0.003	0.003	18:00-19:00	0	0	0
19:00-20:00	0.003	0.005	0.008	19:00-20:00	0	0	1
20:00-21:00	0	0	0	20:00-21:00	0	0	0
21:00-22:00	0.015	0.015	0.03	21:00-22:00	1	1	2
22:00-23:00	0	0	0	22:00-23:00	0	0	0
				05:00 – 19:00	10	11	21

Food Retail							
5600							
Hr Period	Trip Rate			Hr Period	Trips		
	Arrive	Depart	Total		Arrive	Depart	Total
00:00-01:00	0	0	0	00:00-01:00	0	0	0
01:00-02:00	0	0	0	01:00-02:00	0	0	0
02:00-03:00	0	0	0	02:00-03:00	0	0	0
03:00-04:00	0	0	0	03:00-04:00	0	0	0
04:00-05:00	0	0	0	04:00-05:00	0	0	0
05:00-06:00	0	0	0	05:00-06:00	0	0	0
06:00-07:00	0	0	0	06:00-07:00	0	0	0
07:00-08:00	0.013	0.026	0.039	07:00-08:00	1	1	2
08:00-09:00	0.013	0.013	0.026	08:00-09:00	1	1	1
09:00-10:00	0.052	0	0.052	09:00-10:00	3	0	3
10:00-11:00	0.026	0.078	0.104	10:00-11:00	1	4	6
11:00-12:00	0	0.013	0.013	11:00-12:00	0	1	1
12:00-13:00	0	0	0	12:00-13:00	0	0	0
13:00-14:00	0	0	0	13:00-14:00	0	0	0
14:00-15:00	0	0	0	14:00-15:00	0	0	0
15:00-16:00	0.039	0.013	0.052	15:00-16:00	2	1	3
16:00-17:00	0	0.026	0.026	16:00-17:00	0	1	1
17:00-18:00	0	0	0	17:00-18:00	0	0	0
18:00-19:00	0	0	0	18:00-19:00	0	0	0
19:00-20:00	0	0	0	19:00-20:00	0	0	0
20:00-21:00	0	0	0	20:00-21:00	0	0	0
21:00-22:00	0	0	0	21:00-22:00	0	0	0
22:00-23:00	0	0	0	22:00-23:00	0	0	0
				05:00 – 19:00	8	9	17

Total Proposed Developemnt							
13474							
Hr Period	Trip Rate			Hr Period	Trips		
	Arrive	Depart	Total		Arrive	Depart	Total
00:00-01:00				00:00-01:00	0	0	0
01:00-02:00				01:00-02:00	0	0	0
02:00-03:00				02:00-03:00	0	0	0
03:00-04:00				03:00-04:00	0	0	0
04:00-05:00				04:00-05:00	0	0	0
05:00-06:00				05:00-06:00	0	0	0
06:00-07:00				06:00-07:00	0	0	0
07:00-08:00				07:00-08:00	1	2	3
08:00-09:00				08:00-09:00	2	2	3
09:00-10:00				09:00-10:00	5	1	6
10:00-11:00				10:00-11:00	3	6	9
11:00-12:00				11:00-12:00	1	2	3
12:00-13:00				12:00-13:00	2	2	3
13:00-14:00				13:00-14:00	1	1	2
14:00-15:00				14:00-15:00	1	1	1
15:00-16:00				15:00-16:00	3	1	3
16:00-17:00				16:00-17:00	1	3	3
17:00-18:00				17:00-18:00	0	0	0
18:00-19:00				18:00-19:00	0	0	0
19:00-20:00				19:00-20:00	0	0	1
20:00-21:00				20:00-21:00	0	0	0
21:00-22:00				21:00-22:00	1	1	2
22:00-23:00				22:00-23:00	0	0	0
				05:00 – 19:00	18	20	38

Net Difference (Proposed minus Existing)							
Hr Period	Trip Rate			Hr Period	Trips		
	Arrive	Depart	Total		Arrive	Depart	Total
00:00-01:00				00:00-01:00	0	0	0
01:00-02:00				01:00-02:00	0	0	0
02:00-03:00				02:00-03:00	0	0	0
03:00-04:00				03:00-04:00	0	0	0
04:00-05:00				04:00-05:00	0	0	0
05:00-06:00				05:00-06:00	-4	-5	-9
06:00-07:00				06:00-07:00	-4	-12	-16
07:00-08:00				07:00-08:00	0	-5	-5
08:00-09:00				08:00-09:00	-4	-2	-7
09:00-10:00				09:00-10:00	-3	-4	-7
10:00-11:00				10:00-11:00	-4	0	-4
11:00-12:00				11:00-12:00	-5	-5	-9
12:00-13:00				12:00-13:00	-5	-4	-9
13:00-14:00				13:00-14:00	-3	-3	-6
14:00-15:00				14:00-15:00	-7	-4	-11
15:00-16:00				15:00-16:00	-5	-5	-11
16:00-17:00				16:00-17:00	-4	-4	-8
17:00-18:00				17:00-18:00	-3	-3	-6
18:00-19:00				18:00-19:00	-3	0	-3
19:00-20:00				19:00-20:00	-1	0	-1
20:00-21:00				20:00-21:00	0	0	0
21:00-22:00				21:00-22:00	1	1	2
22:00-23:00				22:00-23:00	0	0	0
				05:00 – 19:00	-56	-56	-112

Appendix 3

Calculation Reference: AUDIT-142301-250905-0917

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : K - RETAIL PARK - EXCLUDING FOOD
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HF HERTFORDSHIRE	1 days
03	SOUTH WEST	
	GS GLOUCESTERSHIRE	1 days
08	NORTH WEST	
	GM GREATER MANCHESTER	1 days

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

Primary 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: 6790 to 22300 (units: sqm)
Range Selected by User: 2575 to 22300 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/16 to 14/11/23

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:

Tuesday 1 days
Wednesday 1 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 3

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
Retail Zone 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.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 2 days - Selected
Servicing vehicles Excluded 1 days - Selected

Secondary Filtering selection:

Use Class:

E(a) 3 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

10,001 to 15,000 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.

Secondary Filtering selection (Cont.):

Population within 5 miles:

125,001 to 250,000	2 days
500,001 or More	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	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.

Petrol filling station:

Included in the survey count	0 days
Excluded from count or no filling station	3 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

No	3 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
-----------------	--------

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

TRIP RATE for Land Use 01 - RETAIL/K - RETAIL PARK - EXCLUDING FOOD
MULTI-MODAL TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 1.38

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	2	8070	0.143	2	8070	0.050	2	8070	0.193
07:00 - 08:00	3	12813	0.515	3	12813	0.406	3	12813	0.921
08:00 - 09:00	3	12813	0.957	3	12813	0.671	3	12813	1.628
09:00 - 10:00	3	12813	1.948	3	12813	1.488	3	12813	3.436
10:00 - 11:00	3	12813	2.112	3	12813	1.907	3	12813	4.019
11:00 - 12:00	3	12813	2.513	3	12813	2.297	3	12813	4.810
12:00 - 13:00	3	12813	2.776	3	12813	2.625	3	12813	5.401
13:00 - 14:00	3	12813	2.810	3	12813	2.885	3	12813	5.695
14:00 - 15:00	3	12813	2.297	3	12813	2.503	3	12813	4.800
15:00 - 16:00	3	12813	2.055	3	12813	2.115	3	12813	4.170
16:00 - 17:00	3	12813	2.029	3	12813	2.170	3	12813	4.199
17:00 - 18:00	3	12813	2.167	3	12813	2.040	3	12813	4.207
18:00 - 19:00	3	12813	1.969	3	12813	2.024	3	12813	3.993
19:00 - 20:00	3	12813	1.397	3	12813	1.662	3	12813	3.059
20:00 - 21:00	3	12813	0.580	3	12813	0.921	3	12813	1.501
21:00 - 22:00	1	6790	0.457	1	6790	0.515	1	6790	0.972
22:00 - 23:00	1	6790	0.118	1	6790	0.206	1	6790	0.324
23:00 - 24:00	1	6790	0.118	1	6790	0.147	1	6790	0.265
Total Rates:			26.961			26.632			53.593

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.*

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Parameter summary

Trip rate parameter range selected: 6790 - 22300 (units: sqm)
 Survey date date range: 01/01/16 - 14/11/23
 Number of weekdays (Monday-Friday): 3
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 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 show. 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 01 - RETAIL/K - RETAIL PARK - EXCLUDING FOOD

MULTI-MODAL 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	2	8070	0.000	2	8070	0.000	2	8070	0.000
07:00 - 08:00	3	12813	0.005	3	12813	0.008	3	12813	0.013
08:00 - 09:00	3	12813	0.010	3	12813	0.013	3	12813	0.023
09:00 - 10:00	3	12813	0.021	3	12813	0.013	3	12813	0.034
10:00 - 11:00	3	12813	0.018	3	12813	0.018	3	12813	0.036
11:00 - 12:00	3	12813	0.013	3	12813	0.013	3	12813	0.026
12:00 - 13:00	3	12813	0.021	3	12813	0.021	3	12813	0.042
13:00 - 14:00	3	12813	0.013	3	12813	0.016	3	12813	0.029
14:00 - 15:00	3	12813	0.008	3	12813	0.008	3	12813	0.016
15:00 - 16:00	3	12813	0.005	3	12813	0.000	3	12813	0.005
16:00 - 17:00	3	12813	0.008	3	12813	0.016	3	12813	0.024
17:00 - 18:00	3	12813	0.003	3	12813	0.003	3	12813	0.006
18:00 - 19:00	3	12813	0.000	3	12813	0.003	3	12813	0.003
19:00 - 20:00	3	12813	0.003	3	12813	0.005	3	12813	0.008
20:00 - 21:00	3	12813	0.000	3	12813	0.000	3	12813	0.000
21:00 - 22:00	1	6790	0.015	1	6790	0.015	1	6790	0.030
22:00 - 23:00	1	6790	0.000	1	6790	0.000	1	6790	0.000
23:00 - 24:00	1	6790	0.000	1	6790	0.000	1	6790	0.000
Total Rates:			0.143			0.152			0.295

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.

Appendix 4

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
Category : A - FOOD SUPERSTORE
MULTI-MODAL TOTAL VEHICLES

Selected regions and areas:

03	SOUTH WEST	
	DC DORSET	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
09	NORTH	
	CU CUMBERLAND	1 days
	TW TYNE & WEAR	1 days

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

Primary 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: 1260 to 3231 (units: sqm)
Range Selected by User: 800 to 3500 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 17/05/23

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
Friday 3 days

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

Selected survey types:

Manual count 4 days
Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre) 2
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:

Development Zone 1
Residential Zone 2
No Sub Category 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.

Inclusion of Servicing Vehicles Counts:

Servicing vehicles Included 2 days - Selected
Servicing vehicles Excluded 2 days - Selected

Secondary Filtering selection:

Use Class:

E(a) 4 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order (England) 2020 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000 1 days
5,001 to 10,000 1 days
10,001 to 15,000 1 days
50,001 to 100,000 1 days

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

Secondary Filtering selection (Cont.):

Population within 5 miles:

5,001 to 25,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	2 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	2 days
2.1 to 2.5	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.

Petrol filling station:

PFS is present at the site and is included in the count	0 days
PFS is present at the site but is excluded from the count	0 days
There is no PFS at the site	4 days

This data displays the number of surveys within the selected set that include petrol filling station activity, and the number of surveys that do not.

Travel Plan:

Not Known	1 days
No	3 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	4 days
-----------------	--------

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

TRIP RATE for Land Use 01 - RETAIL/A - FOOD SUPERSTORE
MULTI-MODAL TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Total People to Total Vehicles ratio (all time periods and directions): 2.38

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									
07:00 - 08:00	4	1920	0.625	4	1920	0.117	4	1920	0.742
08:00 - 09:00	4	1920	2.657	4	1920	2.097	4	1920	4.754
09:00 - 10:00	4	1920	2.826	4	1920	2.227	4	1920	5.053
10:00 - 11:00	4	1920	3.738	4	1920	2.996	4	1920	6.734
11:00 - 12:00	4	1920	3.777	4	1920	3.738	4	1920	7.515
12:00 - 13:00	4	1920	3.920	4	1920	4.090	4	1920	8.010
13:00 - 14:00	4	1920	3.530	4	1920	3.660	4	1920	7.190
14:00 - 15:00	4	1920	3.621	4	1920	3.894	4	1920	7.515
15:00 - 16:00	4	1920	4.441	4	1920	4.441	4	1920	8.882
16:00 - 17:00	4	1920	4.480	4	1920	4.259	4	1920	8.739
17:00 - 18:00	4	1920	5.275	4	1920	4.897	4	1920	10.172
18:00 - 19:00	4	1920	4.155	4	1920	4.702	4	1920	8.857
19:00 - 20:00	4	1920	3.074	4	1920	3.894	4	1920	6.968
20:00 - 21:00	4	1920	1.902	4	1920	2.149	4	1920	4.051
21:00 - 22:00	4	1920	1.081	4	1920	1.589	4	1920	2.670
22:00 - 23:00	3	1993	0.000	3	1993	0.385	3	1993	0.385
23:00 - 24:00									
Total Rates:			49.102			49.135			98.237

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.

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Parameter summary

Trip rate parameter range selected:	1260 - 3231 (units: sqm)
Survey date date range:	01/01/00 - 17/05/23
Number of weekdays (Monday-Friday):	4
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
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 01 - RETAIL/A - FOOD SUPERSTORE

MULTI-MODAL 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									
07:00 - 08:00	4	1920	0.013	4	1920	0.026	4	1920	0.039
08:00 - 09:00	4	1920	0.013	4	1920	0.013	4	1920	0.026
09:00 - 10:00	4	1920	0.052	4	1920	0.000	4	1920	0.052
10:00 - 11:00	4	1920	0.026	4	1920	0.078	4	1920	0.104
11:00 - 12:00	4	1920	0.000	4	1920	0.013	4	1920	0.013
12:00 - 13:00	4	1920	0.000	4	1920	0.000	4	1920	0.000
13:00 - 14:00	4	1920	0.000	4	1920	0.000	4	1920	0.000
14:00 - 15:00	4	1920	0.000	4	1920	0.000	4	1920	0.000
15:00 - 16:00	4	1920	0.039	4	1920	0.013	4	1920	0.052
16:00 - 17:00	4	1920	0.000	4	1920	0.026	4	1920	0.026
17:00 - 18:00	4	1920	0.000	4	1920	0.000	4	1920	0.000
18:00 - 19:00	4	1920	0.000	4	1920	0.000	4	1920	0.000
19:00 - 20:00	4	1920	0.000	4	1920	0.000	4	1920	0.000
20:00 - 21:00	4	1920	0.000	4	1920	0.000	4	1920	0.000
21:00 - 22:00	4	1920	0.000	4	1920	0.000	4	1920	0.000
22:00 - 23:00	3	1993	0.000	3	1993	0.000	3	1993	0.000
23:00 - 24:00									
Total Rates:			0.143			0.169			0.312

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.*