Licence No: 860401



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Calculation Reference: AUDIT-860401-190205-0201

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TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT Category : C - INDUSTRIAL UNIT VEHICLES

<u>Selected regions and areas:</u> 01 GREATER LONDON HD HILLINGDON

2 days

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

Secondary Filtering selection:

Parameter:

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.

Actual Range: Range Selected by User:	1080 to 3912 (units: sqm) 620 to 6100 (units: sqm)
Parking Spaces Range:	Selected: 3 to 156 Actual: 3 to 156
Public Transport Provision: Selection by:	Include all surveys
Date Range: 01/01	/10 to 10/09/14
This data displays the rang included in the trip rate ca	re of survey dates selected. Only surveys that were conducted within this date range are vlculation.
<u>Selected survey days:</u> Wednesday Friday	1 days 1 days
This data displays the num	nber of selected surveys by day of the week.
<u>Selected survey types:</u> Manual count Directional ATC Count	2 days 0 days
This data displays the nun up to the overall number o are undertaking using mad	nber of manual classified surveys and the number of unclassified ATC surveys, the total adding of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys chines.
<u>Selected Locations:</u> Suburban Area (PPS6 Out	of Centre) 2

Gross floor area

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.

<u>Selected Location Sub Categories:</u> Industrial 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.

Secondary Filtering selection:

<u>Use Class:</u> B1

2 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®.

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		Page 2
s Associates Ltd York Road	London	Licence No: 860401
Secondary Filtering selecti	ion (Cont.):	
eccentral y i nter nig selecti		
Population within 1 mile:		
10,001 to 15,000	1 days	
15,001 to 20,000	1 days	
This data displays the number	er of selected surveys within stated 1-mile radii of population.	
Population within 5 miles:		
125,001 to 250,000	2 days	
This data displays the number	r of selected surveys within stated 5-mile radii of population.	
1.1 to 1.5	- 2 days	
This data displays the number	er of selected surveys within stated ranges of average cars owned	d ner residential dwelling
within a radius of 5-miles of s	selected survey sites.	a per residentiar awening,
within a radius of 5-miles of s	selected survey sites.	

PTAL Rating:No PTAL Present1 days1b Very poor1 days

N

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

LIST OF SITES relevant to selection parameters

1	HD-02-C-01 PUMP LANE HAYES	TARMAC PRODUCTI	N	HILLINGDON
2	Suburban Area (PPS Industrial Zone Total Gross floor are <i>Survey date:</i> HD-02-C-02 BETAM ROAD HAYES	6 Out of Centre) a: <i>FRIDAY</i> WINDOW PRODUCTI	3912 sqm <i>11/05/12</i> ON	<i>Survey Type: MANUAL</i> HILLINGDON
	Suburban Area (PPS Industrial Zone Total Gross floor are <i>Survey date:</i>	6 Out of Centre) ea: • WEDNESDAY	1080 sqm <i>05/12/12</i>	Survey Type: MANUAL

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

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TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT VEHICLES Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

		ARRIVALS		[DEPARTURES			TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	2	2496	0.661	2	2496	0.561	2	2496	1.222
08:00 - 09:00	2	2496	0.441	2	2496	0.300	2	2496	0.741
09:00 - 10:00	2	2496	0.461	2	2496	0.441	2	2496	0.902
10:00 - 11:00	2	2496	0.541	2	2496	0.481	2	2496	1.022
11:00 - 12:00	2	2496	0.561	2	2496	0.581	2	2496	1.142
12:00 - 13:00	2	2496	0.481	2	2496	0.721	2	2496	1.202
13:00 - 14:00	2	2496	0.300	2	2496	0.421	2	2496	0.721
14:00 - 15:00	2	2496	0.461	2	2496	0.501	2	2496	0.962
15:00 - 16:00	2	2496	0.401	2	2496	0.461	2	2496	0.862
16:00 - 17:00	2	2496	0.321	2	2496	0.401	2	2496	0.722
17:00 - 18:00	2	2496	0.240	2	2496	0.401	2	2496	0.641
18:00 - 19:00	2	2496	0.120	2	2496	0.260	2	2496	0.380
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.989			5.530			10.519

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:1080 - 3912 (units: sqm)Survey date date range:01/01/10 - 10/09/14Number of weekdays (Monday-Friday):2Number of Saturdays:0Number of Sundays:0Surveys automatically removed from selection:0Surveys 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.

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TRIP RATE for Land Use 02 - EMPLOYMENT/C - INDUSTRIAL UNIT OGVS

Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

	ARRIVALS		DEPARTURES			TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	2	2496	0.220	2	2496	0.541	2	2496	0.761
08:00 - 09:00	2	2496	0.120	2	2496	0.240	2	2496	0.360
09:00 - 10:00	2	2496	0.300	2	2496	0.341	2	2496	0.641
10:00 - 11:00	2	2496	0.361	2	2496	0.341	2	2496	0.702
11:00 - 12:00	2	2496	0.361	2	2496	0.341	2	2496	0.702
12:00 - 13:00	2	2496	0.341	2	2496	0.401	2	2496	0.742
13:00 - 14:00	2	2496	0.180	2	2496	0.220	2	2496	0.400
14:00 - 15:00	2	2496	0.401	2	2496	0.341	2	2496	0.742
15:00 - 16:00	2	2496	0.300	2	2496	0.120	2	2496	0.420
16:00 - 17:00	2	2496	0.240	2	2496	0.080	2	2496	0.320
17:00 - 18:00	2	2496	0.080	2	2496	0.020	2	2496	0.100
18:00 - 19:00	2	2496	0.020	2	2496	0.060	2	2496	0.080
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.924			3.046			5.970

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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Calculation Reference: AUDIT-860401-190715-0725

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT Category : A - OFFICE VEHICLES

Selected regions and areas:01GREATER LONDONBTBRENT

1 days

Include all surveys

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:	920 to 920 (units: sqm)
Range Selected by User:	408 to 120000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision: Selection by:

Date Range: 01/01/11 to 26/06/18

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.

<u>Selected survey types:</u>	
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 undertaking using machines.

1

1

<u>Selected Locations:</u> Suburban Area (PPS6 Out of Centre)

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.

<u>Selected Location Sub Categories:</u> Development Zone

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: B1

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®.

Population within 1 mile: 50,001 to 100,000

1 days

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

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		Page 2
arkides Associates Ltd York Road	London	Licence No: 860401
Secondary Filtering selecti	on (Cont.):	
Population within 5 miles:		
500,001 or More	1 days	
This data displays the number	r of selected surveys within stated 5-mile radii of population.	
Car awaarabia within E milaa		
Car Ownership within 5 miles.	1 days	
0.6 10 1.0	Tudys	
This data displays the number	r of selected surveys within stated ranges of average cars owned ne	or residential dwelling
within a radius of 5-miles of s	alartad survay sitas	r residentiar awening,
Travel Plan:		
Yes	1 days	
	5	
This data displays the number	r of surveys within the selected set that were undertaken at sites w	ith Travel Plans in place,
and the number of surveys th	at were undertaken at sites without Travel Plans.	,
-		

<u>PTAL Rating:</u> 6a Excellent

Ν

1 days

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

LIST OF SITES relevant to selection parameters

1	BT-02-A-03 EMPIRE WAY WEMBLEY	OFFICES		BRENT
	Suburban Area (PPS Development Zone Total Gross floor are <i>Survey date</i> .	66 Out of Centre) ea: • WEDNESDAY	920 sqm <i>03/06/15</i>	Survey Type: MANUAL

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

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MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
BT-02-A-04	NA
HD-02-A-09	NA
HO-02-A-01	NA
WH-02-A-03	NA

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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE VEHICLES Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

		ARRIVALS			DEPARTURES	5		TOTALS	
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	920	0.000	1	920	0.000	1	920	0.000
08:00 - 09:00	1	920	0.326	1	920	0.000	1	920	0.326
09:00 - 10:00	1	920	0.435	1	920	0.000	1	920	0.435
10:00 - 11:00	1	920	0.000	1	920	0.000	1	920	0.000
11:00 - 12:00	1	920	0.000	1	920	0.000	1	920	0.000
12:00 - 13:00	1	920	0.217	1	920	0.217	1	920	0.434
13:00 - 14:00	1	920	0.217	1	920	0.217	1	920	0.434
14:00 - 15:00	1	920	0.109	1	920	0.326	1	920	0.435
15:00 - 16:00	1	920	0.109	1	920	0.109	1	920	0.218
16:00 - 17:00	1	920	0.109	1	920	0.000	1	920	0.109
17:00 - 18:00	1	920	0.109	1	920	0.435	1	920	0.544
18:00 - 19:00	1	920	0.000	1	920	0.109	1	920	0.109
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.631			1.413			3.044

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:920 - 920 (units: sqm)Survey date date range:01/01/11 - 26/06/18Number of weekdays (Monday-Friday):1Number of Saturdays:0Number of Sundays:0Surveys automatically removed from selection:3Surveys manually removed from selection:4

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.

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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE CYCLISTS Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

		ARRIVALS		[DEPARTURES	5	TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip	
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	920	0.000	1	920	0.000	1	920	0.000	
08:00 - 09:00	1	920	0.000	1	920	0.000	1	920	0.000	
09:00 - 10:00	1	920	0.109	1	920	0.000	1	920	0.109	
10:00 - 11:00	1	920	0.000	1	920	0.000	1	920	0.000	
11:00 - 12:00	1	920	0.000	1	920	0.000	1	920	0.000	
12:00 - 13:00	1	920	0.000	1	920	0.000	1	920	0.000	
13:00 - 14:00	1	920	0.000	1	920	0.000	1	920	0.000	
14:00 - 15:00	1	920	0.000	1	920	0.000	1	920	0.000	
15:00 - 16:00	1	920	0.000	1	920	0.000	1	920	0.000	
16:00 - 17:00	1	920	0.000	1	920	0.000	1	920	0.000	
17:00 - 18:00	1	920	0.000	1	920	0.109	1	920	0.109	
18:00 - 19:00	1	920	0.000	1	920	0.000	1	920	0.000	
19:00 - 20:00										
20:00 - 21:00										
21:00 - 22:00										
22:00 - 23:00										
23:00 - 24:00										
Total Rates:			0.109			0.109			0.218	

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. 96

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TIME

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RATE % TRIP RATE GRAPH - TOTALS FOR SITE: BT-02-A-03 CYCLISTS



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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE CARS Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

		ARRIVALS			DEPARTURES	5	TOTALS			
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip	
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	920	0.000	1	920	0.000	1	920	0.000	
08:00 - 09:00	1	920	0.326	1	920	0.000	1	920	0.326	
09:00 - 10:00	1	920	0.435	1	920	0.000	1	920	0.435	
10:00 - 11:00	1	920	0.000	1	920	0.000	1	920	0.000	
11:00 - 12:00	1	920	0.000	1	920	0.000	1	920	0.000	
12:00 - 13:00	1	920	0.217	1	920	0.217	1	920	0.434	
13:00 - 14:00	1	920	0.109	1	920	0.109	1	920	0.218	
14:00 - 15:00	1	920	0.000	1	920	0.217	1	920	0.217	
15:00 - 16:00	1	920	0.000	1	920	0.000	1	920	0.000	
16:00 - 17:00	1	920	0.000	1	920	0.000	1	920	0.000	
17:00 - 18:00	1	920	0.109	1	920	0.326	1	920	0.435	
18:00 - 19:00	1	920	0.000	1	920	0.109	1	920	0.109	
19:00 - 20:00										
20:00 - 21:00										
21:00 - 22:00										
22:00 - 23:00										
23:00 - 24:00										
Total Rates:			1.196			0.978			2.174	

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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TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE LGVS Calculation factor: 100 sqm BOLD print indicates peak (busiest) period

		ARRIVALS			DEPARTURES	5	TOTALS		
	No.	Ave.	Trip	No.	Ave.	Trip	No.	Ave.	Trip
Time Range	Days	GFA	Rate	Days	GFA	Rate	Days	GFA	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	1	920	0.000	1	920	0.000	1	920	0.000
08:00 - 09:00	1	920	0.000	1	920	0.000	1	920	0.000
09:00 - 10:00	1	920	0.000	1	920	0.000	1	920	0.000
10:00 - 11:00	1	920	0.000	1	920	0.000	1	920	0.000
11:00 - 12:00	1	920	0.000	1	920	0.000	1	920	0.000
12:00 - 13:00	1	920	0.000	1	920	0.000	1	920	0.000
13:00 - 14:00	1	920	0.109	1	920	0.109	1	920	0.218
14:00 - 15:00	1	920	0.109	1	920	0.109	1	920	0.218
15:00 - 16:00	1	920	0.109	1	920	0.109	1	920	0.218
16:00 - 17:00	1	920	0.109	1	920	0.000	1	920	0.109
17:00 - 18:00	1	920	0.000	1	920	0.109	1	920	0.109
18:00 - 19:00	1	920	0.000	1	920	0.000	1	920	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.436			0.436			0.872

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.

TIME

Licence No: 860401

RATE % TRIP RATE GRAPH - ARRIVALS FOR SITE: BT-02-A-03 LGVS



TIME

Licence No: 860401

RATE % TRIP RATE GRAPH - DEPARTURES FOR SITE; BT-02-A-03 LGVS



Licence No: 860401





APPENDIX I – AUTOMATIC TRAFFIC COUNT SURVEYS



Hampton ATC 02, Upper Sunbury Road (West)

Produced by Streetwise Services Ltd.

Eastbound			
		Vehicle Class	Week 1
Car / LGV /	OGV1 / Bus	OGV2	TOTAL
Caravan - 1	- 2,3,5,6,7,12	- 4,8,9,10,11,13	- 1-13
2247	147	8	2402
3246	245	11	3502
3578	271	13	3862
3809	328	15	4152
2288	181	8	2477
3275	281	11	3567
3626	310	11	3947
3899	364	14	4277
5316	487	20	5823
6427	549	23	6999
6897	566	23	7486
7183	614	26	7823
5557	377	21	5955
7065	476	24	7565
7357	508	24	7889
7739	538	27	8304
5704	891	51	6646
7064	1000	55	8119
7343	1025	57	8425
7566	1080	59	8705
4982	790	52	5824
6520	958	55	7533
6837	979	57	7873
7091	1027	60	8178
5750	935	45	6730
7192	1102	56	8350
7548	1132	59	8739
7805	1186	63	9054
4549	544	29	5122
5827	659	34	6519
6169	684	35	6889
6442	734	38	7213
	2247 3246 3678 3809 2288 3275 3829 3899 5316 6427 7055 7357 7789 7789 7739 7739 5704 7065 4882 6520 4982 6520 6537 7091 5750 5750 7192 7548 57500 5750 57500 57500 57500 57500 57500 57500 57500 5750	2247 147 3246 245 3578 271 3809 328 2288 181 3275 281 3275 281 3275 281 3275 281 3275 281 3275 281 3275 281 3289 364 6427 549 6607 566 7183 614 905 476 7739 538 5704 891 7064 1060 7343 1022 756 1080 4982 790 6520 958 6337 979 7091 1027 5750 935 7192 1102 7543 1132 7805 1186 45827 644 6442 734	2247 147 8 3246 245 11 3575 221 13 3609 328 15 2288 181 8 3275 281 11 3899 364 14 5316 487 20 6427 549 23 6427 549 23 6427 549 23 6427 549 23 7055 377 21 7055 377 24 7055 476 24 739 538 27 757 508 24 7055 476 24 7739 538 27 766 1060 59 4982 790 52 6520 958 55 7091 1027 60 7192 1132 59 7192 1132 59 <

Total Vehicle Class Distribution 89%



Hampton ATC 02, Upper Sunbury Road (West)

Produced by Streetwise Services Ltd.

ced by Str	eetwise Services Ltd		SS S	treetwise
Channel 2 -	Westbound		Vehicle Class	Week 1
Classes	Car / LGV /	OGV1 / Bus	OGV2	TOTAL
me	Caravan - 1	- 2,3,5,6,7,12	- 4,8,9,10,11,13	- 1-13
07/2019				
7-19	4744	493	24	5261
6-22	6107	594	27	6728
6-24	6403	614	28	7045
0-24	6697	654	30	7381
07/2019				
7-19	4853	518	19	5390
6-22	6083	581	21	6685
6-24	6439	592	21	7052
0-24	6750	640	23	7413
07/2019				
7-19	5798	374	22	6194
6-22	6815	439	24	7278
6-24	7207	448	26	7681
0-24	7586	485	26	8097
07/2019				
7-19	4741	259	13	5013
6-22	5625	323	14	5962
6-24	5859	336	14	6209
0-24	6323	365	15	6703
07/2019				
7-19	6111	810	51	6972
6-22	7370	907	54	8331
6-24	7608	926	54	8588
0-24	7925	961	55	8941
07/2019				
7-19	4845	589	31	5465
6-22	6203	705	38	6946
6-24	6491	724	39	7254
0-24	6804	771	41	7616
07/2019				
7-19	5886	781	34	6701
6-22	7278	888	38	8204
6-24	7708	910	40	8658
0-24	8008	955	44	9007
/erage				
7-19	5283	546	28	5857
6-22	6497	634	31	7162
6-24	6816	650	32	7498
0-24	7156	690	33	7880



Hampton ATC 02, Upper Sunbury Road (West)

Produced by Streetwise Services Ltd.



Channel 1 - Eastbound

	18/07/2019	19/07/2019	20/07/2019	21/07/2019	22/07/2019	23/07/2019	24/07/2019	5-DAY	7-DAY
	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	MEAN	MEAN
0000-2400 Vehicle Flow	4152	4277	7823	8304	8705	8178	9054	6873	7213
Mean Speed	16.7	18.6	27.8	28.0	27.7	26.3	27.1	23.3	24.6
85%ile Speed	33.6	33.9	33.6	33.2	33.1	33.3	33.0	33.4	33.4
No. Vehicles > 30 MPH Limit	761	883	2390	2456	2287	2067	2525	1705	1910
% Vehicles > 30 MPH Limit	18.3	20.6	30.6	29.6	26.3	25.3	27.9	23.7	25.5
No. Vehicles > 45 MPH	28	27	30	28	32	16	29	26	27
% Vehicles > 45 MPH	0.7	0.6	0.4	0.3	0.4	0.2	0.3	0.4	0.4

Channel 2 - Westbound

	18/07/2019 Thursday	19/07/2019 Friday	20/07/2019 Saturday	21/07/2019 Sunday	22/07/2019 Monday	23/07/2019 Tuesday	24/07/2019 Wednesday	5-DAY MEAN	7-DAY MEAN
0000-2400 Vehicle Flow	7381	7413	8097	6703	8941	7616	9007	8072	7880
Mean Speed	25.8	26.6	28.8	29.1	28.3	27.5	28.5	27.3	27.8
85%ile Speed	33.4	33.0	33.1	33.5	33.3	33.7	33.1	33.3	33.3
No. Vehicles > 30 MPH Limit	1211	1380	2446	2204	2436	2294	2734	2011	2101
% Vehicles > 30 MPH Limit	16.4	18.6	30.2	32.9	27.2	30.1	30.4	24.5	26.5
No. Vehicles > 45 MPH	27	31	41	47	44	42	34	36	38
% Vehicles > 45 MPH	0.4	0.4	0.5	0.7	0.5	0.6	0.4	0.4	0.5

Channels 1+2 - Eastbound & Westbound

	18/07/2019	19/07/2019	20/07/2019	21/07/2019	22/07/2019	23/07/2019	24/07/2019	5-DAY	7-DAY
	Thursday	Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	MEAN	MEAN
0000-2400 Vehicle Flow	11533	11690	15920	15007	17646	15794	18061	14945	15093
Mean Speed	21.3	22.6	28.3	28.6	28.0	26.9	27.8	25.3	26.2
85%ile Speed	33.5	33.5	33.3	33.4	33.2	33.5	33.0	33.3	33.3
No. Vehicles > 30 MPH Limit	1972	2263	4836	4660	4723	4361	5259	3716	4011
% Vehicles > 30 MPH Limit	17.1	19.4	30.4	31.1	26.8	27.6	29.1	24.0	25.9
No. Vehicles > 45 MPH	55	58	71	75	76	58	63	62	65
% Vehicles > 45 MPH	0.5	0.5	0.4	0.5	0.4	0.4	0.3	0.4	0.4

Class No	Vehicle Description	Class No	Vehicle Description
1	Car, Light Van Taxi	5	Rigid 2 Axle HGV + 2 Axle (Close coupled) Trailer
1	Light Goods Vehicle	6	Rigid 3 Axle HGV + 2 Axle Drawbar Trailer
1	Car or Light Goods Vehicle + 1 Axle Caravan or Trailer	6	Rigid 3 Axle HGV + 3 Axle Drawbar Trailer
1 .	Car or Light Goods Vehicle + 2 Axle Caravan or Trailer	7	Artic, 2 Axle Tractor + 1 Axle Semi-Trailer
2	Rigid 2 Axle Heavy Goods Vehicle	8	Artic, 2 Axle Tractor + 2 Axle Serri-Trailer
3	Rigid 3 Axle Heavy Goods Vehicle	9	Artic, 2 Axle Tractor + 3 Axle Senti-Trailer
3	Rigid 3 Axle Heavy Goods Vehicle	10	Artic, 3 Axle Tractor + 1 Axle Semi-Trailer
4	Rigid 4 Axle Heavy Goods Vehicle	10	Artic, 3 Axle Tractor + 2 Axle Serri-Trailer
4	Rigid 4 Axle Heavy Goods Vehicle	11	Artic, 3 Axle Tractor + 3 Axle Semi-Trailer
5	Rigid 2 Axle HGV + 2 Axle Drawbar Trailer	12	Bus or Coach, 2 Axle
5	Rigid 2 Axle HGV + 3 Axle Drawbar Trailer	12	Bus or Coach, 3 Axle
5	Rigid 2 Axle HGV + 1 Axle Caravan or Trailer	13	Vehicle with 7 or more Axles



APPENDIX J – PROPOSED ZEBRA CROSSING DESIGN AND ROAD SAFETY AUDIT



/ APPROXIMATE LOCATION OF EXISTING GULLY K POSTION OF LIGHTING COLUMN WITH A CANTILEVER FOR THE BEACON TH _____

ⓒ Markides Associates 2022. All rights reserved

Scale 1:100 @ A1 - 1:200 2m 0 2r

	DO NOT SCALE OFF THIS DRAWING
	KEY PROPOSED ZEBRA CROSSING LOCATION PROPOSED ROAD MARKINGS PROPOSED TACTILE PAVING PROPOSED YELLOW GLOBE PROPOSED COLOUMN K2 PROPOSED TRANSITION KERB FULL HEIGHT KERB 2.4m x 43m VISIBILITY SPLAY FROM SITE EGRESS
	Revision History Image: Second
	P02FOR INFORMATIONNBPFPF06.02.24P01FOR INFORMATIONRLMPFPF03.10.22RevCommentByChkdApprDateCurrent RevisionP02FOR INFORMATIONNBPFPF06.02.04RevCommentByChkdApprDateS2 - FOR INFORMATIONS2 - FOR INFORMATION
	WATERFALL HAMPTON INVESTMENT LTD
	MARKIDES Elephone: 0207 442 2225 TRANSPORT PLANNING AND ENGINEERING E: enquiries@markidesassociates.co.uk Project HAMPTON WATER TREATMENT Drawing Title PROPOSED ZEBRA CROSSING
	Markides Associates reference: 17200 1.100 @ A1
0 @ A3 2m 4m 6m 8m 10m	17200-MA-XX-DR-C-0110 - P02



RKS Associates Limited 11 Falconer Road Bushey Village Bushey Herts WD23 3AQ

Our Ref: VRP1463-01-L1

E-mail: vpatel@rks.org.uk

6th February 2024

Panos Floros

Markides Associates Ltd. 2nd Floor, The Bridge, 81 Southwark Bridge Road, London, SE1 0NQ

Dear Panos,

<u>Stage 1 RSA Designer's Response: Upper Sunbury Road, Hampton, London Borough of Richmond</u> <u>upon Thames</u>

Thank you for sending us a copy of your Designer's Response to the Stage 1 Road Safety Audit for the Proposed Pedestrian Crossing on Upper Sunbury Road, Hampton, London Borough of Richmond upon Thames.

The Audit Team can confirm the acceptance of the Designers Response to the Stage 1 Road Safety Audit, together with the drawings referred to therein.

In any event we recommend that the Designers Response together with the respective drawings are forwarded to the Local Highway Authority for their approval and sign off in accordance with highway standards.

Please contact me if you require any further assistance.

Yours sincerely

Vimal Patel, BEng (Hons), GMICE, FIHE, HE Cert Comp, Reg RSA (IHE)

Enc.

Designers Response to Stage 1 RSA - Proposed Pedestrian Crossing on Upper Sunbury Road, Hampton Markides Drawing Number: 17200-MA-XX-DR-C-0110 Revision P02 – Proposed Zebra Crossing



Upper Sunbury Road, Hampton, London Borough of Richmond upon Thames

Proposed Pedestrian Crossing

STAGE 1

Road Safety Audit Report

REQUESTED BY:

Markides Associates

October 2022



Project: Upper Sunbury Road, Hampton, London Borough of Richmond upon Thames Proposed Pedestrian Crossing

Client: Markides Associates

Document: Stage 1 Road Safety Audit

RKS Associates Ref: VRP1463 - RSA 1

Issue date: 4th October 2022

Status: Final

Authorised by: VP/WP

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RKS Associates

11 Falconer Road Bushey Hertfordshire WD23 3AQ



CONTENTS

1	Introduction	1
2	Issues Identified During Stage 1 RSA	3
3	Audit Team Statement	4

Appendices

- Appendix A: Location of Problems Identified During Stage 1 Road Safety Audit
- Appendix B: Designers Response



1 INTRODUCTION

- 1.1 This report results from a Stage 1 Road Safety Audit carried out on a proposed zebra crossing on the A308 Upper Sunbury Road, Hampton in the London Borough of Richmond upon Thames. The highway works are associated with the conversion of two buildings at Hampton Waterworks to provide a 36 residential units and 306m² of commercial use B1(a) offices, B1(b) research and development, B1(c) light industrial use and 39 car parking spaces.
- **1.2** The highway works subject to this Stage 1 Road Safety Audit are limited to the proposed zebra crossing on the A308 Upper Sunbury Road. The proposed zebra crossing is located between Beard's Hill and Lower Sunbury Road junctions.
- **1.3** The A308 Upper Sunbury Road is a single two-way carriageway aligned in an east to west direction, the carriageway is lit and is locally subject to a 30mph speed limit. It benefits from a wide continuous footway along the northern side and a continuous narrow footway along the southern side of the carriageway.
- 1.4 Markides Associates has supplied the following information upon which this Stage 1 RSA is based:
 - Markides Associates Drawing Number: 17200-MA-XX-DR-C-0110 Revision P01

 Proposed Zebra Crossing; and
 - Collision data for the local highway network for the 3-year period up to June 2021.
- **1.5** The main parties to this Road Safety Audit include the following:

Road Safety Audit Team Leader	Vimal Patel
Road Salety Adult Tealli Leadel	BEng (Hons), GMICE, FIHE, HE Cert Comp, Reg RSA (IHE)
Read Safety Audit Team Member	Wendy Palmer
Road Safety Addit Tealli Melliber	MCIHT, MSoRSA, FIHE, HE Cert Comp
Local Highway Authority	London Borough of Richmond upon Thames
Design Organisation	Markides Associates

1.6 The Audit was undertaken following an examination of the submitted documents, including a site visit undertaken on Monday 3rd October 2022 between the hours of 2pm and 3pm. The weather was overcast with sunny intervals, and the road surface was dry. Observations during the site inspection noted moderate traffic flows and a low number of pedestrian and cycle flows along the section of the A308 Upper Sunbury Road in the vicinity of the proposed zebra crossing.



Terms of Reference

- **1.7** The Audit Team is independent of the project design team and has no other involvement with the project. This Stage 1 RSA has been undertaken in accordance with the relevant sections of GG-119, part of the Design Manual for Roads and Bridges (DMRB).
- 1.8 The Safety Audit Team has examined only matters relating to road safety implications of the scheme and has not verified compliance of the design to any other criteria. The Audit Team has not been made aware of any Departures from Standard. All of the problems identified in this report are considered by the Audit Team to require action in order to improve the safety of the scheme and to minimise accident occurrence for all users. The location of the problems identified in this reports relate to the problems identified in this report.
- **1.9** The recommendations in this report are aimed at addressing the identified road safety problems; however, there may be other alternative acceptable ways to overcome a specific problem, when other practical issues are considered. The recommendations contained herein do not absolve the Designer of his/her responsibilities. The Auditors would be pleased to discuss the acceptability of alternative solutions to problems identified during the Audit and would encourage the Designer to consult them on this matter.
- **1.10** The LHA response to the RSA should be formally recorded and reported to the Designer and the RSA Team so that a record of the Audit process is contained in the As Built design pack to be provided and retained by the Local Highway Authority on completion.

Collision Data

1.11 The design engineers have provided a copy of the publicly available Personal Injury Collision (PIC) information which has been obtained from the *Crashmap* UK website (*www.crashmap.co.uk*) for the three-year period up to June 2021. This collision data indicates that no collisions have occurred along the A308 Upper Sunbury Road in the immediate vicinity of the proposed zebra crossing during the three-year period up to June 2021.



2 ISSUES IDENTIFIED DURING STAGE 1 RSA

2.1 Problem:

Summary: Potential risk of pedestrians/cyclists struck by passing traffic Location: Pedestrian footway along the southern side of A308 Upper Sunbury Road

Observations during the site inspection noted the narrow footway along the southern side of A308 Upper Sunbury Road in the vicinity of the proposed zebra crossing. The introduction of the zebra crossing beacon will further reduce the available width for pedestrians using the footway. Consequently, there is concern that insufficient footway width may not safely accommodate pedestrians with prams, wheelchair users or cyclists and may result in these users entering the carriageway where the risk of being struck by passing traffic will be greater.

Recommendation:

Review the location of the proposed yellow globe lighting column on the southern footway, it may be more appropriate to put the column to the back of footway with a cantilever for the beacon.

2.2 Problem:

Summary: Potential risk of pedestrians/cyclists struck by traffic *Location: Tree along the southern side of A308 Upper Sunbury Road*

Observations during the site inspection noted a large tree set back behind the footway along the southern side of A308 Upper Sunbury Road in the vicinity of the proposed zebra crossing. There is concern that the branches overhanging the carriageway may obstruct visibility to the proposed zebra crossing belisha beacon and may make the zebra crossing less conspicuous. This may result in motorist failing to observe the presence of the zebra crossing and may increase the risk of pedestrians using the zebra crossing being stuck by passing traffic.

Recommendation:

Ensure that overhanging branches of the tree are cut back and regularly pruned.



3 AUDIT TEAM STATEMENT

3.1 We certify that this audit has been carried out in accordance with GG-119 of Design Manual for Roads & Bridges Volume 5 Section 2 - Road Safety Audits. Its sole purpose being to identify features of the scheme that could be removed or modified to improve safety. No member of the Audit Team has been involved in the scheme design.

Audit Team Leader

Vimal Patel BEng (Hons), GMICE, FIHE, RegRSA (IHE), HE Cert Comp

Signed:



Date: 4th October 2022

Audit Team Member

Wendy Palmer MCIHT, MSoRSA, FIHE, HE Cert Comp

Signed: <

Date: 4th October 2022



Appendix A





Ref: VRP1463-01 October 2022



Appendix B



ltem No.	Audit Team Recommendation(s)	Designer's Response
2.1	Review the location of the proposed yellow globe lighting column on the southern footway, it may be more appropriate to put the column to the back of footway with a cantilever for the beacon.	Accepted. The column has been moved to the back of the footway with a cantilever for the beacon.
2.2	Ensure that overhanging branches of the tree are cut back and regularly pruned.	Accepted. The designer of the next stage will make reasonable efforts to coordinate with the owner of the adjacent property to trim the overhanging branches of the tree.

Designer's Statement:

I certify that I have considered the items that have arisen in the Stage 1 Road Safety Audit Report and my response to its recommendations are set out above.

	A	
	(9)	 Date:
Deciment		

Designer

Project Sponsor/ Client Organisation Statement:

I accept/do not accept the Designer's Response (please delete as appropriate)

..... Date: