



Westgate, Heckmondwike

Addendum to Transport Assessment

December 2018

Project
1426A

Paragon Highways

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Quality Management

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Prepared by	LJO			
Checked by	PAH			

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1 INTRODUCTION

- 1.1.1 Paragon Highways Consultants have been appointed to prepare this Addendum to the Transport Assessment that was prepared in June 2018 relating to the proposed commercial use development on land off Westgate, Heckmondwike.
- 1.1.2 The initial proposals were to provide a commercial development comprising of a mix of A1 and A3 uses. Following the initial submission it has been deemed necessary to reduce the development to just A1 retail use, comprising of a 2100sqm retail unit and a 700sqm garden centre.
- 1.1.3 B&M are the intended occupiers of the retail unit, which is proposed to be situated to the east of the site, with the garden centre located to the rear of the main retail building. As part of the development it is also proposed to provide a service area that can accommodate a 16.5m articulated HGV so that these vehicles can enter and exit the site in a forward gear. The Council's Highways Officer has commented on the parking provision for the site as part of their consultation response dated 5/09/2018, and in relation to the 151 spaces proposed for the retail element stated: - ***'given the sites location close to Heckmondwike Town Centre, it is considered that the proposed car parking generally accords with the recommended standards and the level of parking proposed is therefore considered appropriate for the size of development'***. The car parking for the proposed retail development will be at the level previously proposed as part of the initial scheme.
- 1.1.4 As part of the Council's consultation response, concerns have been raised in respect to the appropriateness of the TRICS data used for determining trip rates and traffic generations for the B&M store, and for the Garden Centre.
- 1.1.5 In addition to the above, the Council's Highways Officer also made comments with regard to the requirement for a quantitative assessment of the Local Highway Network and subsequent impact the development may have on the network.
- 1.1.6 This Addendum to the Transport Assessment addresses the response from Highways Officers and provides additional information to enable positive determination of the application on highway grounds.

2 TRAFFIC IMPACT

2.1 Traffic Survey

2.1.1 The national TRICS database provides trip rates and traffic generation for developments, and is based on existing sites surveyed. Unfortunately, the TRICS database does not provide specific survey information for a B&M store, therefore the original Transport Assessment based the trip rates and generations on a DIY store as this was assumed to be the nearest category of retail. This approach was deemed not likely to be representative of a B&M store, therefore following discussions with the Council's Highways Officer it was agreed to survey an existing B&M store.

2.1.2 The most appropriate B&M store to be surveyed is situated in Barnsley as this contained its own access point. The survey was carried out on Friday 30th November 2018 during the opening hours and within the potential network peak periods (between 8am and 6:30pm). The survey results are shown at Appendix A and demonstrate the trips during the network peak hours and the overall peak hour for the store (between 1pm and 2pm). The B&M store at Barnsley has a GFA of approximately 1650sqm, from the survey data the trip rates per 100sqm can be identified and are summarised in Table 1 below.

	B&M (Derived from Survey)		
	Arrive	Departure	Two Way
AM Peak	1.03	0.364	1.394
Store Peak (between 1pm and 2pm)	5.575	5.879	11.454
PM Peak	3.152	3.333	6.485

Table 1 – Trip Rates (Based on Barnsley B&M Survey)

2.1.3 As can be identified above the busiest period for the store is between 1pm and 2pm, and as the survey was carried out on a Friday, the survey results are considered to be typical of the busiest periods for the store. It can be noted from the trip rates that whilst the am peak period is not particularly busy, the pm peak hour shows a substantial increase and would be the most onerous time period considering the traffic demands on the adjacent network during the pm peak period.

2.1.4 Therefore, whilst a Saturday traffic survey at the B&M store may show a similar peak traffic demand between 1pm and 2pm to the Friday survey, the network peak period would be substantially less than that experienced during the Friday pm peak period. As a result the Friday pm scenario is considered to be the most onerous in terms of network peak impact.

2.1.5 A peak hour traffic survey has been carried out on Westgate on Friday 30th November 2018 between 0700 and 0930hrs and between 1600 and 1830hrs. From the survey the network peak periods have been revealed to be between 0745 and 0845hrs and between 1700 and 1800 hours, with 54% and 56% of vehicles travelling eastbound during the am and pm peak periods respectively. The survey data can be found at Appendix A.

2.2 Traffic Generation

2.2.1 From the trip rates identified above, the traffic generations for the proposed B&M store, garden centre, and combined total is shown in Table 2 below. The TRICS data for the garden centre has been updated and is included at Appendix B.

	MORNING PEAK			EVENING PEAK		
	ARRIVE	DEPART	TOTAL	ARRIVE	DEPART	TOTAL
B&M (2100sqm)	22	7	29	66	70	136
Garden Centre (700sqm)	1	1	2	1	2	3
TOTAL	23	8	31	67	72	139

Table 2: Proposed Traffic Generation

2.2.2 From the table above it can be identified that the proposed B&M store and garden centre would generate 31 trips during the morning peak, and 139 trips during the evening peak.

2.2.3 As can be seen above, the traffic generations for the B&M store exceed the initial values based on the TRICS database for DIY use that was used in the original Transport Assessment.

2.3 Proposed Site Access

2.3.1 Discussions have taken place with Kirklees Council's Highways Officer on which junctions require formal capacity assessments to measure junction performance. It has been agreed with the Council that the site access with Westgate be formally assessed as this would provide a suitable quantitative assessment.

2.3.2 A capacity assessment of the site access has therefore been carried out using the Junctions 9 PICADY computer program and identifies junction performance for the 2018 and future year 2028 scenario. The traffic growth has been calculated using the TEMPRO computer program and provided a growth factor of 1.1281 for the am period, and 1.1287 for the pm period for the sites location. The traffic distribution has been determined based on the existing am and pm peak hour flows. Traffic flows are shown at Appendix C.

2.3.3 The Junctions 9 PICADY capacity assessment output is shown at Appendix D, and is summarised in the table below: -

	AM Peak		PM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
2018 Scenario				
Site Access - Left	0.01	0.0	0.06	0.1
Site Access - Right	0.01	0.0	0.12	0.2
Westgate - Right	0.04	0.1	0.11	0.3
2028 Scenario				
Site Access - Left	0.01	0.0	0.06	0.1
Site Access - Right	0.02	0.0	0.13	0.2
Westgate - Right	0.05	0.1	0.12	0.3

Table 3: Junctions 9 PICADY Results – Site Access/ Westgate

2.3.4 The table above identifies that the proposed site access would operate within its theoretical capacity for all movements for both the AM and PM peak periods, with a queue length of less than 1 PCU (normal requirements based on a Ratio of Flow to Capacity <0.85).

- 2.3.5 It should be noted that the site is located in a sustainable location with a number of alternatives, other than the private car, for travel to the site for staff and visitors. The site is located within Heckmondwike close to the town centre and surrounding residential areas.
- 2.3.6 It is considered that the anticipated increase in the level of traffic generated by the proposed development would not be material nor discernible from the daily fluctuations in flows that could be expected on the strategic highway network for the 2028 future year scenario. The minor increase in traffic generated by the proposals can be accommodated and will have no material impact on the safe operation of the local highway and will not significantly add to any congestion at the peak times on the local network.
- 2.3.7 Therefore, no further capacity assessments at any other nearby junctions is considered to be necessary.

3 CONCLUSIONS

3.1.1 This report presents the traffic impact of the proposals to provide a B&M retail store and garden centre, and addresses the response from Highways Officers of the Council and details the following: -

- Revised trip rates for the retail store (based on a survey of an existing B&M store) and traffic generations.
- Provides a quantitative assessment of the local highway network and proposed junction performance of the proposed site access.

3.1.2 The report concludes that the anticipated increase in the level of traffic generated by the proposed development would not be material nor discernible from the daily fluctuations in flows that could be expected on the strategic highway network for the 2028 future year scenario. The minor increase in traffic generated by the proposals can be accommodated and will have no material impact on the safe operation of the local highway and will not significantly add to any congestion at the peak times on the local network.

3.1.3 It is therefore concluded that the development is considered acceptable, and that there are no highway safety or efficiency reasons why planning consent for the proposed development should not be granted.

Appendix A

Traffic Survey Data

SURVEY CONTROL:

Client: Paragon Highways LTD

Client Contact: Leigh Ogden

Survey Location: A638, Heckmondwike

Date(s) of Survey: Friday 30 November 2018
07:00 - 09:30
16:00 - 18:30

Notes:

On Site Supervisor: Wayne Tomlinson

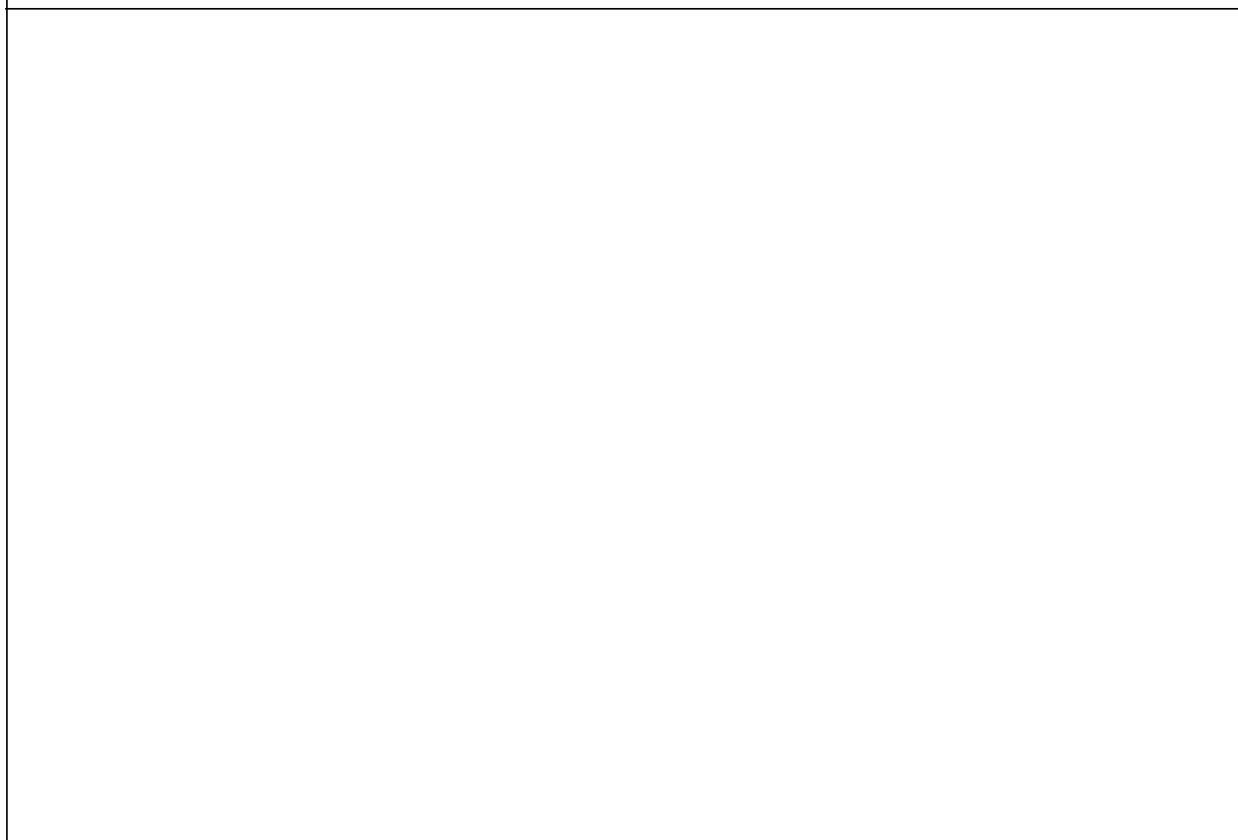
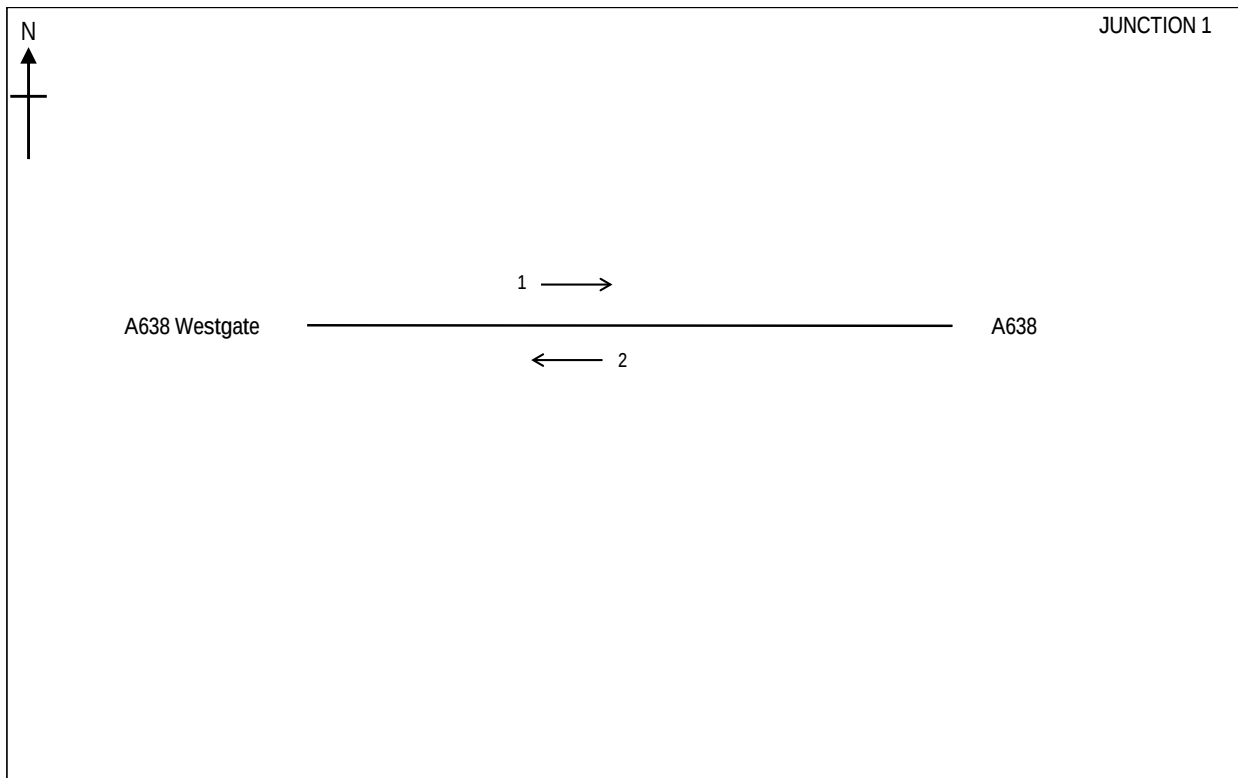
Data Checking: Pedro Dixon

Survey Reference: 2018.961

Status: Final

Date of Issue: Monday 3 December 2018





DRAWING TITLE			
TRAFFIC MOVEMENT REFERENCE			
JOB TITLE			
A638 HECKMONDWIKE			
DRAWN BY	DATE	SCALE	REF
RKN	29/11/2018	NTS	FIGURE 1



pds

TRAFFIC & TRANSPORT DATA COLLECTION

e: info@pdsurveys.co.uk
t: 44(0) 7880 360 238
a: 53 Ellerker Rise, Willerby, HU10 6EU

Time Beginning	Link Count, A638 - Friday 30 November 2018			
	1		2	
	LV	HV	LV	HV
0700	112	4	118	6
0715	110	3	121	7
0730	109	4	134	6
0745	158	4	144	7
0800	192	8	155	6
0815	161	3	142	8
0830	142	8	109	5
0845	135	3	92	6
0900	101	4	92	5
0915	99	4	98	5
Time Beginning	Link Count, A638 - Friday 30 November 2018			
	1		2	
	LV	HV	LV	HV
1600	118	4	89	3
1615	121	4	94	2
1630	115	3	101	4
1645	125	5	84	2
1700	124	6	104	3
1715	137	4	108	2
1730	142	6	102	2
1745	114	6	104	2
1800	106	2	89	3
1815	101	3	91	2

Location	B & M Barnsley
Date	30/11/2018

Time Start	IN		Out		Totals	Hourly Total
	Car	HGV	Car	HGV		
08:00	3		1		4	
08:15	3		0		3	
08:30	6		2		8	
08:45	5		3		8	23
09:00	7		7		14	
09:15	17		8		25	
09:30	9		11		20	
09:45	7		9		16	75
10:00	9		8		17	
10:15	8		8		16	
10:30	19		11		30	
10:45	18		22		40	103
11:00	10		20		30	
11:15	20		22		42	
11:30	17		15		32	
11:45	18		15		33	137
12:00	15		13		28	
12:15	18		15		33	
12:30	20		21		41	
12:45	16		15		31	133
13:00	26		22		48	

13:15	30		21		51	
13:30	18		28		46	
13:45	18		26		44	189
14:00	26		17		43	
14:15	17		15		32	
14:30	18		24		42	
14:45	22		19		41	158
15:00	10		7		17	
15:15	15		11		26	
15:30	10		10		20	
15:45	10		15		25	88
16:00	8		11		19	
16:15	8		8		16	
16:30	8		9		17	
16:45	9		10		19	71
17:00	12		13		25	
17:15	15		16		31	
17:30	15		14		29	
17:45	10		12		22	107
18:00	14		15		29	
18:15	8		10		18	
18:30	7		9		16	
Total	579	0	568	0	1147	

Barnsley B&M 1650sqm (GFA)

Trip Rates for Store

	ARR	DEP	TOTAL
AM	17	6	23
PM	52	55	107

Trip Rates per 100sqm GFA

	ARR	DEP	TOTAL
AM	1.03	0.364	1.394
PM	3.152	3.333	6.485
PEAK	5.575	5.879	11.454

Appendix B

TRICS Data

Calculation Reference: AUDIT-742101-181210-1259

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 01 - RETAIL
 Category : H - GARDEN CENTRE
 VEHICLES

Selected regions and areas:

08	NORTH WEST	
	GM GREATER MANCHESTER	1 days
12	CONNAUGHT	
	LT LEITRIM	1 days
13	MUNSTER	
	LI LIMERICK	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: 198 to 1600 (units: sqm)
 Range Selected by User: 70 to 5000 (units: sqm)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/10 to 21/05/17

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	1 days
Saturday	1 days
Sunday	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:

Town Centre	1
Edge of Town	1
Neighbourhood Centre (PPS6 Local Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Built-Up Zone	1
Village	1
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.

Secondary Filtering selection:

Use Class:

A1	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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,000 or Less	1 days
5,001 to 10,000	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:

5,000 or Less	1 days
75,001 to 100,000	1 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	1 days
1.1 to 1.5	2 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.

LIST OF SITES relevant to selection parameters

1	GM-01-H-06	GARDEN CENTRE	GREATER MANCHESTER
	CHURCH STREET		
	BOLTON		
	WESTHOUGHTON		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	1600 sqm	
	Survey date: SATURDAY	08/06/13	Survey Type: MANUAL
2	LI-01-H-01	GARDEN CENTRE	LIMERICK
	ELLEN ROAD		
	LIMERICK		
	KILALEE		
	Town Centre		
	Built-Up Zone		
	Total Gross floor area:	198 sqm	
	Survey date: MONDAY	04/10/10	Survey Type: MANUAL
3	LT-01-H-01	GARDEN CENTRE	LEITRIM
	MAIN STREET LOWER		
	MOHILL		
	Neighbourhood Centre (PPS6 Local Centre)		
	Village		
	Total Gross floor area:	700 sqm	
	Survey date: SUNDAY	21/05/17	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 01 - RETAIL/H - GARDEN CENTRE
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									
07:00 - 08:00	2	449	0.000	2	449	0.000	2	449	0.000
08:00 - 09:00	3	833	0.160	3	833	0.120	3	833	0.280
09:00 - 10:00	3	833	0.200	3	833	0.240	3	833	0.440
10:00 - 11:00	3	833	0.721	3	833	0.721	3	833	1.442
11:00 - 12:00	3	833	0.961	3	833	0.761	3	833	1.722
12:00 - 13:00	3	833	0.921	3	833	0.881	3	833	1.802
13:00 - 14:00	3	833	1.121	3	833	0.881	3	833	2.002
14:00 - 15:00	3	833	1.201	3	833	1.481	3	833	2.682
15:00 - 16:00	3	833	1.121	3	833	1.081	3	833	2.202
16:00 - 17:00	3	833	0.721	3	833	0.841	3	833	1.562
17:00 - 18:00	3	833	0.120	3	833	0.240	3	833	0.360
18:00 - 19:00	2	449	0.000	2	449	0.000	2	449	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			7.247			7.247			14.494

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.

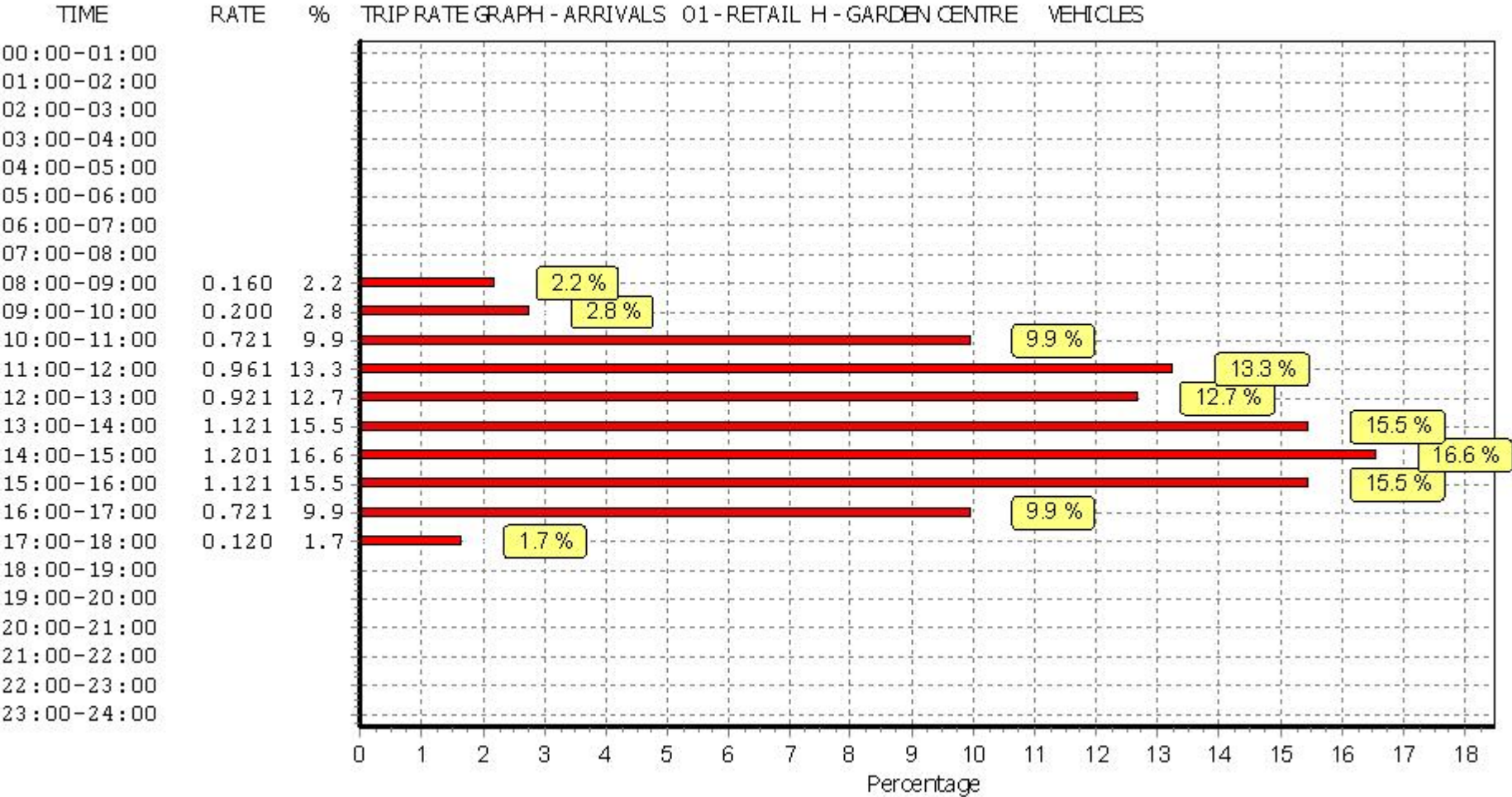
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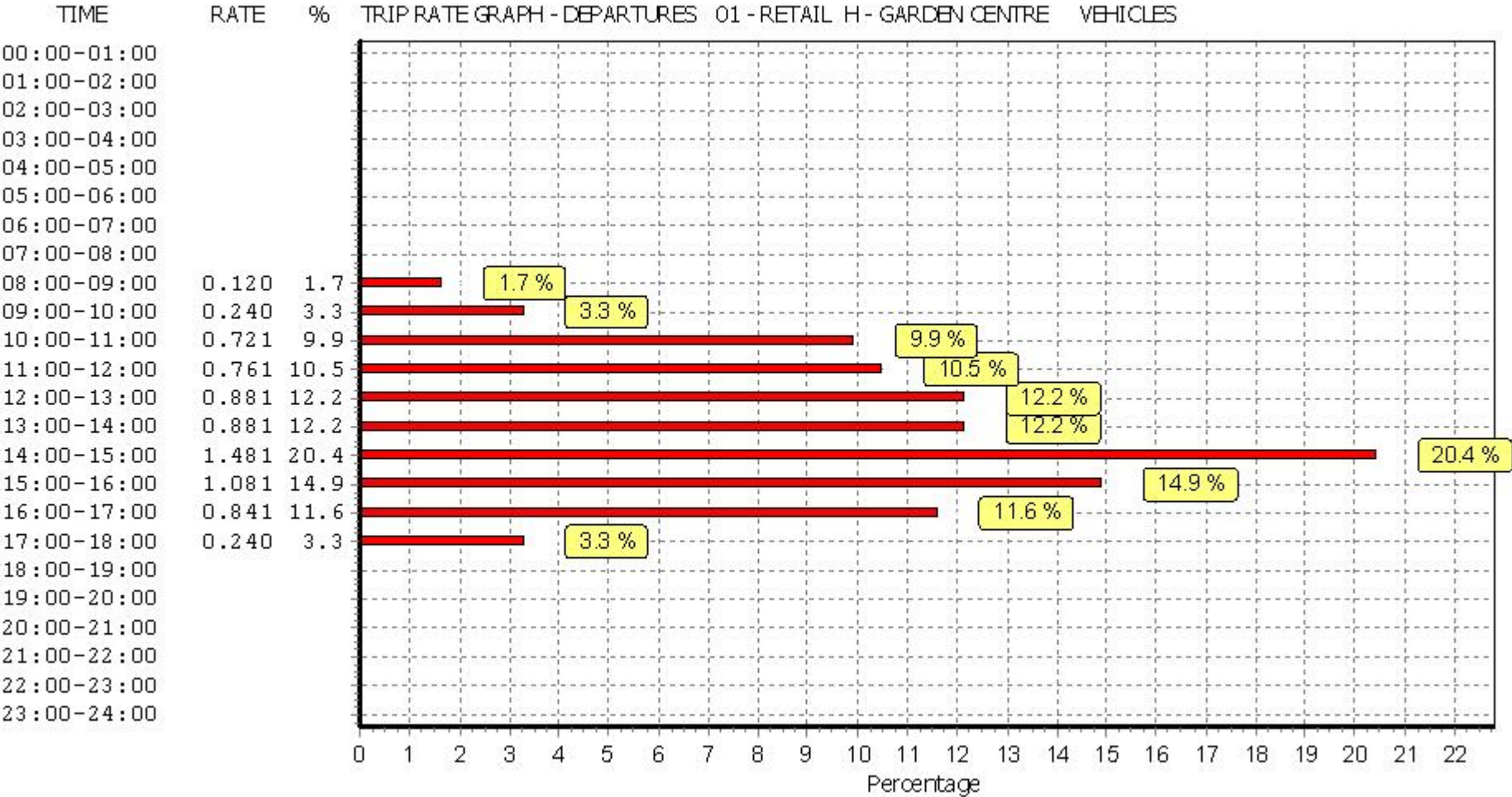
Parameter summary

Trip rate parameter range selected:	198 - 1600 (units: sqm)
Survey date date range:	01/01/10 - 21/05/17
Number of weekdays (Monday-Friday):	1
Number of Saturdays:	1
Number of Sundays:	1
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.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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TRIP RATE for Land Use 01 - RETAIL/H - GARDEN CENTRE

TAXIS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

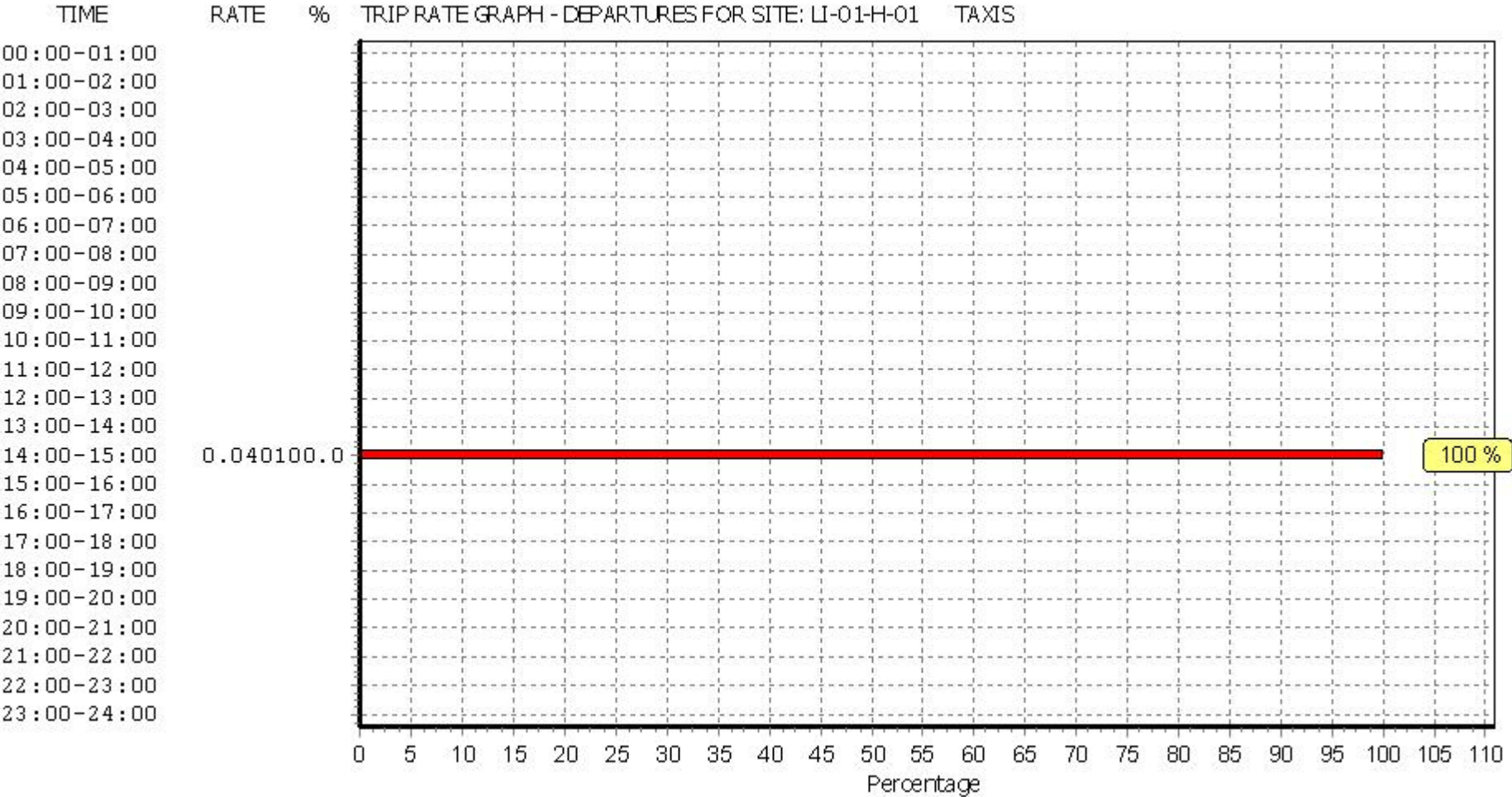
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	449	0.000	2	449	0.000	2	449	0.000
08:00 - 09:00	3	833	0.000	3	833	0.000	3	833	0.000
09:00 - 10:00	3	833	0.000	3	833	0.000	3	833	0.000
10:00 - 11:00	3	833	0.000	3	833	0.000	3	833	0.000
11:00 - 12:00	3	833	0.000	3	833	0.000	3	833	0.000
12:00 - 13:00	3	833	0.000	3	833	0.000	3	833	0.000
13:00 - 14:00	3	833	0.000	3	833	0.000	3	833	0.000
14:00 - 15:00	3	833	0.040	3	833	0.040	3	833	0.080
15:00 - 16:00	3	833	0.000	3	833	0.000	3	833	0.000
16:00 - 17:00	3	833	0.000	3	833	0.000	3	833	0.000
17:00 - 18:00	3	833	0.000	3	833	0.000	3	833	0.000
18:00 - 19:00	2	449	0.000	2	449	0.000	2	449	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.040			0.040			0.080

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.

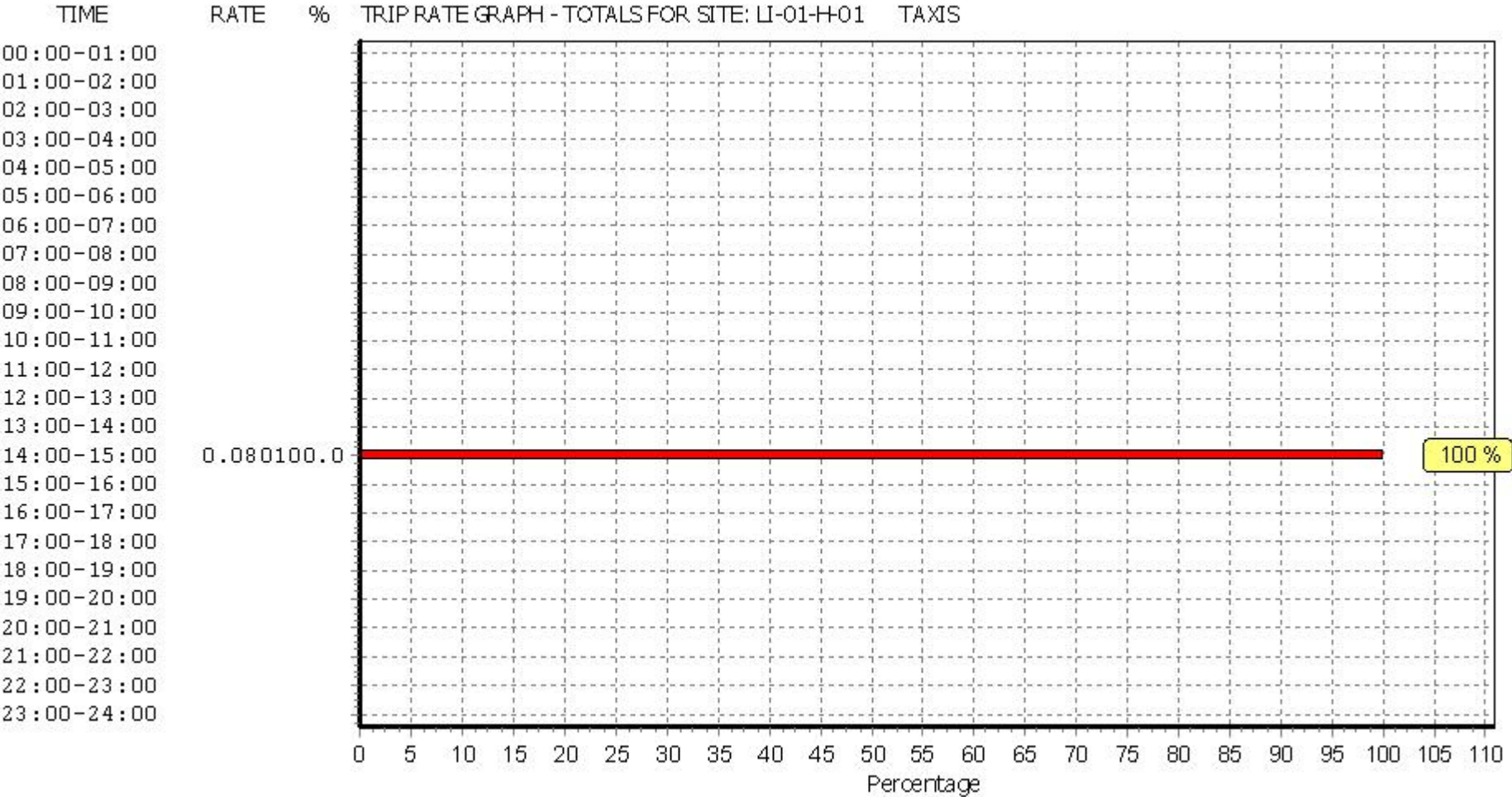
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

TRIP RATE for Land Use 01 - RETAIL/H - GARDEN CENTRE

PSVS

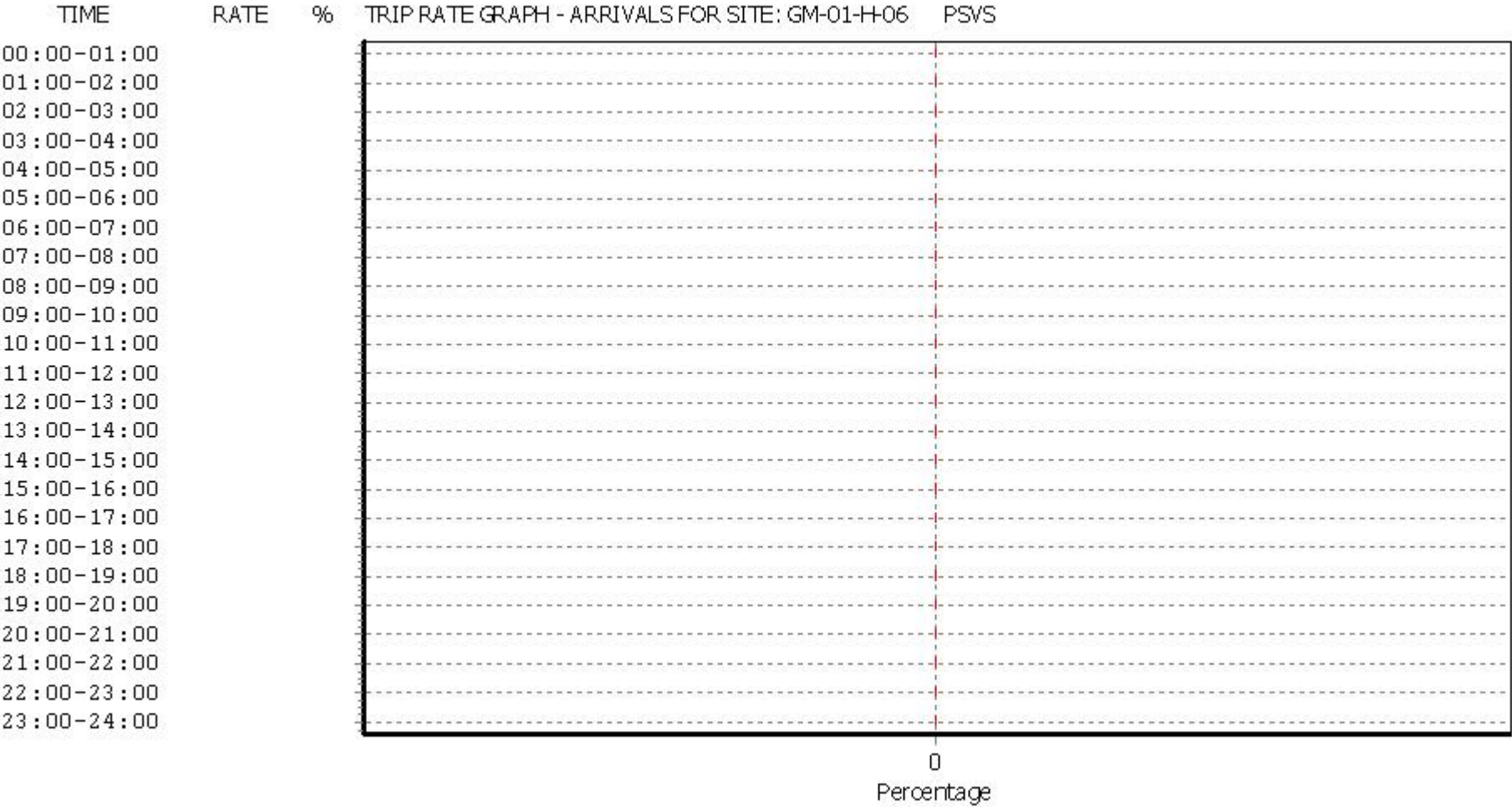
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

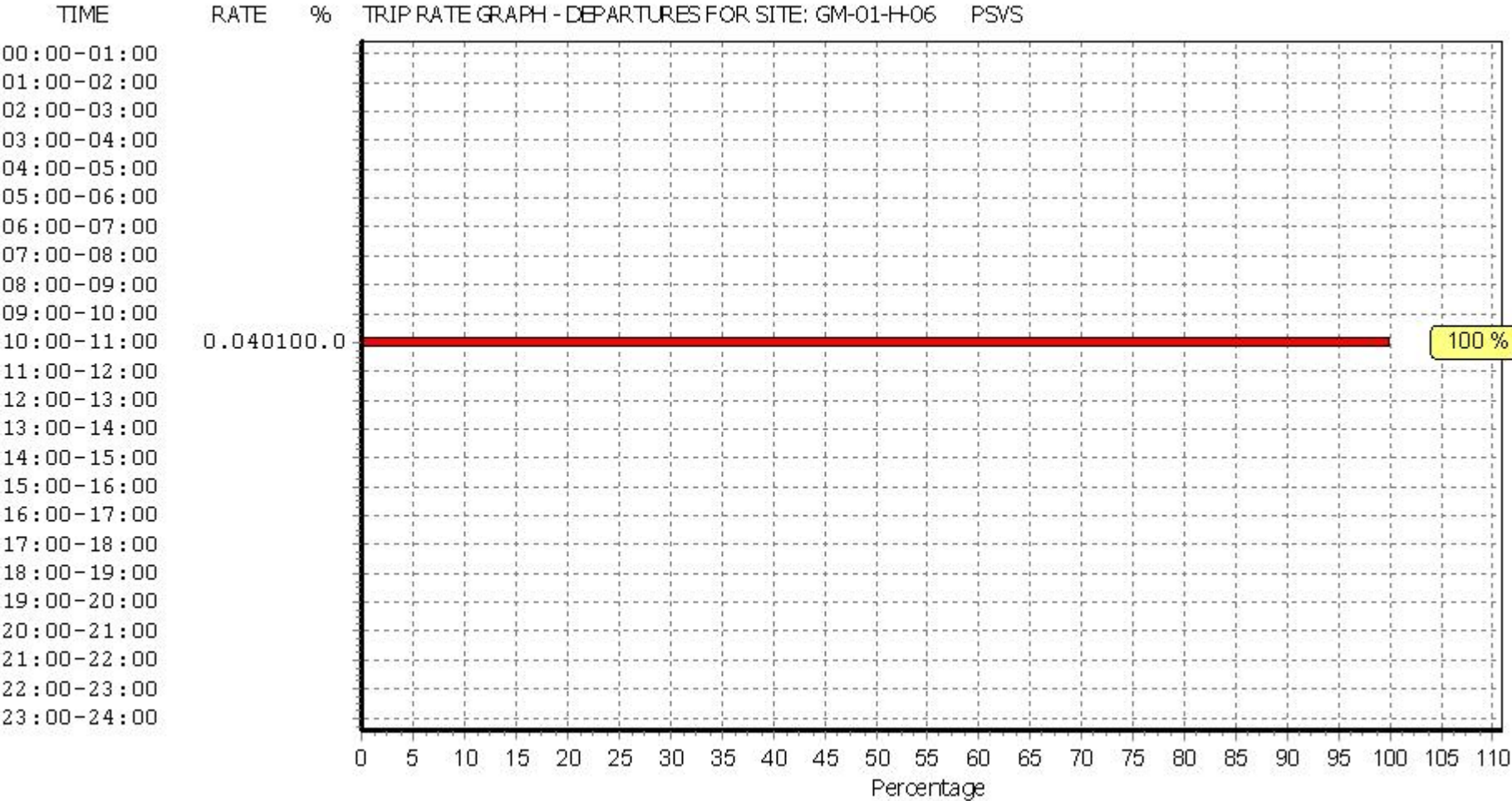
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	449	0.000	2	449	0.000	2	449	0.000
08:00 - 09:00	3	833	0.000	3	833	0.000	3	833	0.000
09:00 - 10:00	3	833	0.000	3	833	0.000	3	833	0.000
10:00 - 11:00	3	833	0.000	3	833	0.040	3	833	0.040
11:00 - 12:00	3	833	0.000	3	833	0.000	3	833	0.000
12:00 - 13:00	3	833	0.000	3	833	0.000	3	833	0.000
13:00 - 14:00	3	833	0.000	3	833	0.000	3	833	0.000
14:00 - 15:00	3	833	0.000	3	833	0.000	3	833	0.000
15:00 - 16:00	3	833	0.000	3	833	0.000	3	833	0.000
16:00 - 17:00	3	833	0.000	3	833	0.000	3	833	0.000
17:00 - 18:00	3	833	0.000	3	833	0.000	3	833	0.000
18:00 - 19:00	2	449	0.000	2	449	0.000	2	449	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.000			0.040			0.040

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.

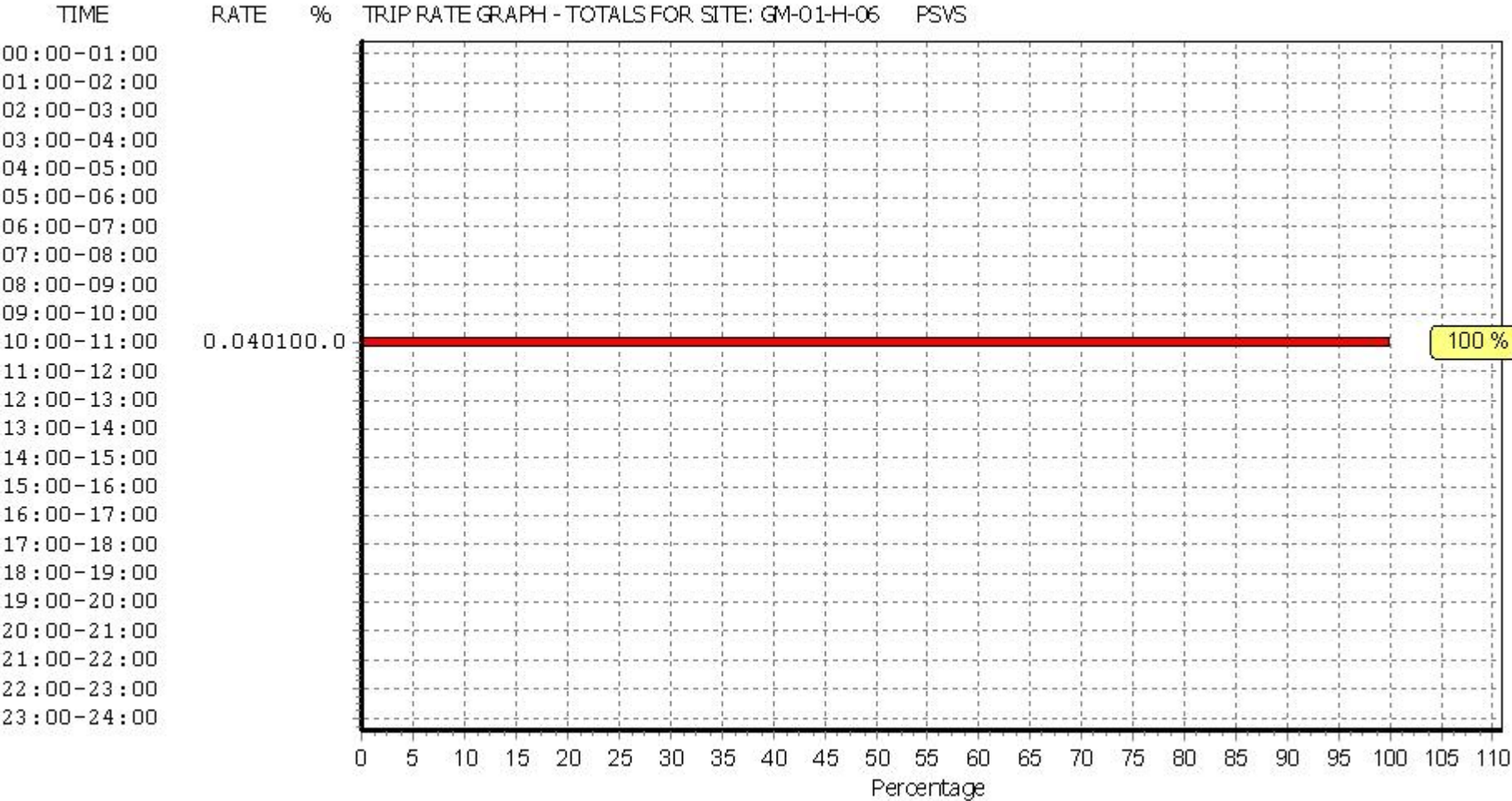
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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.



This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.



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TRIP RATE for Land Use 01 - RETAIL/H - GARDEN CENTRE

CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

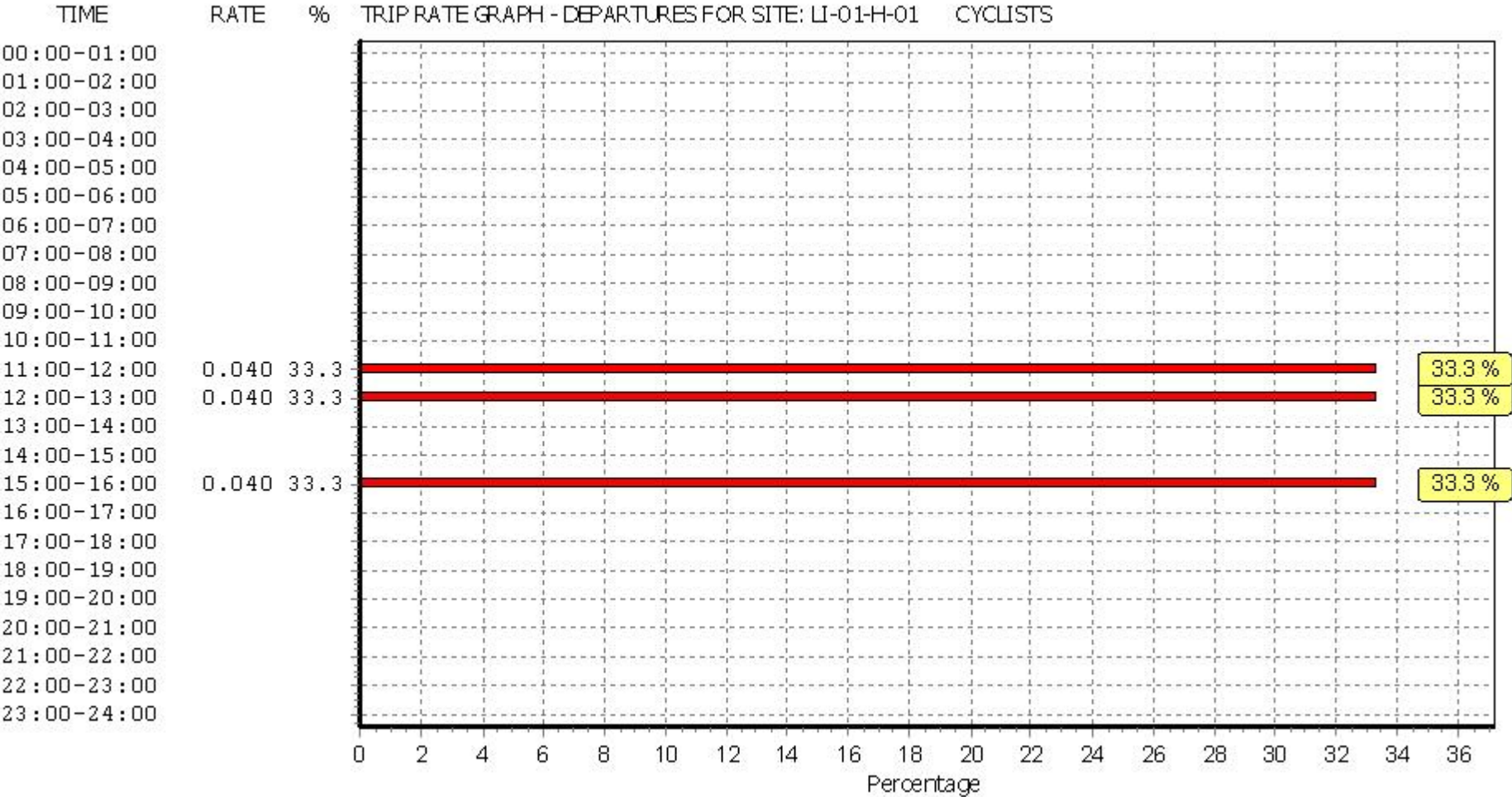
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	2	449	0.000	2	449	0.000	2	449	0.000
08:00 - 09:00	3	833	0.000	3	833	0.000	3	833	0.000
09:00 - 10:00	3	833	0.000	3	833	0.000	3	833	0.000
10:00 - 11:00	3	833	0.040	3	833	0.000	3	833	0.040
11:00 - 12:00	3	833	0.040	3	833	0.040	3	833	0.080
12:00 - 13:00	3	833	0.000	3	833	0.040	3	833	0.040
13:00 - 14:00	3	833	0.000	3	833	0.000	3	833	0.000
14:00 - 15:00	3	833	0.040	3	833	0.000	3	833	0.040
15:00 - 16:00	3	833	0.000	3	833	0.040	3	833	0.040
16:00 - 17:00	3	833	0.000	3	833	0.000	3	833	0.000
17:00 - 18:00	3	833	0.000	3	833	0.000	3	833	0.000
18:00 - 19:00	2	449	0.000	2	449	0.000	2	449	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.120			0.120			0.240

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.

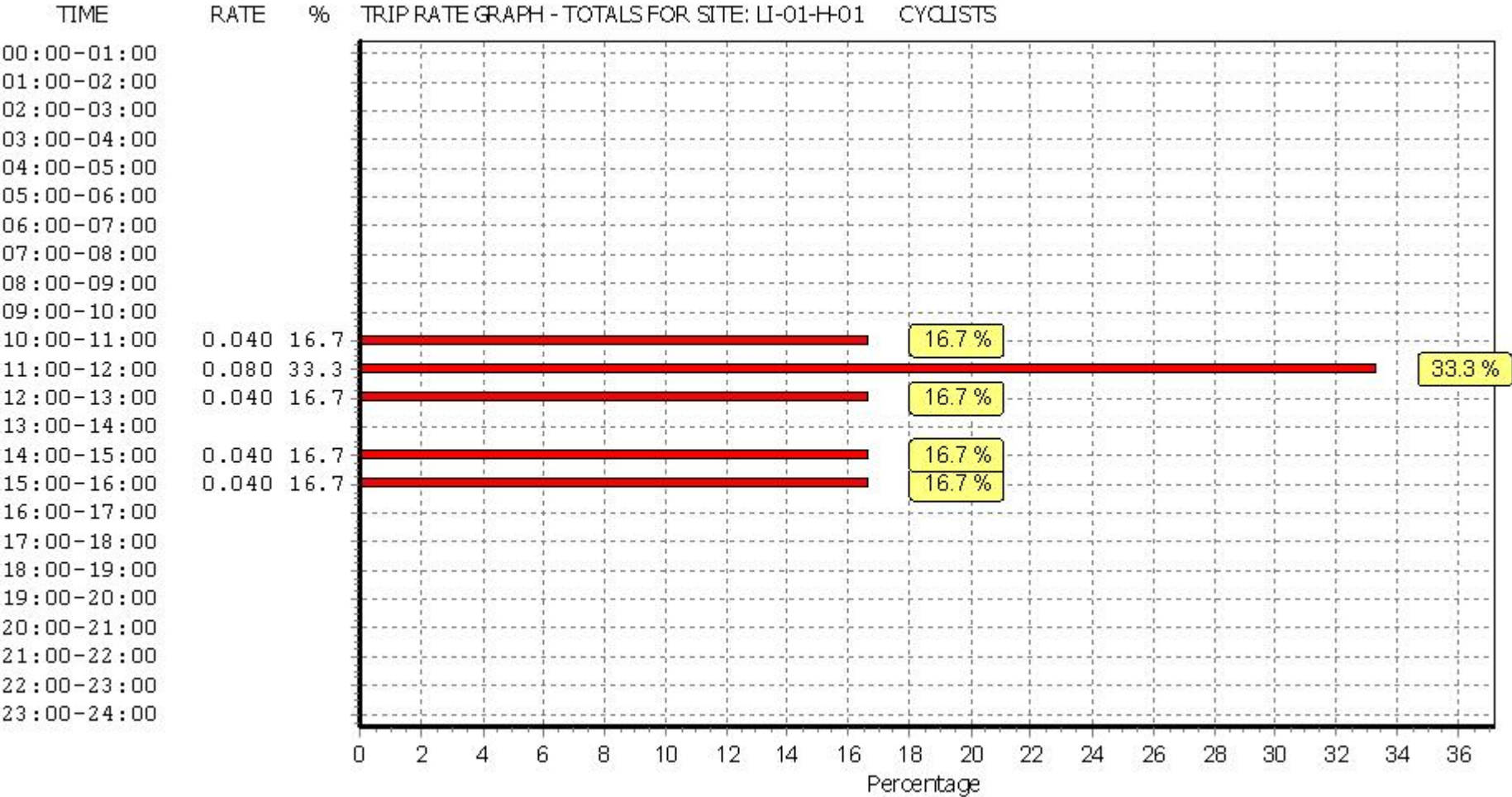
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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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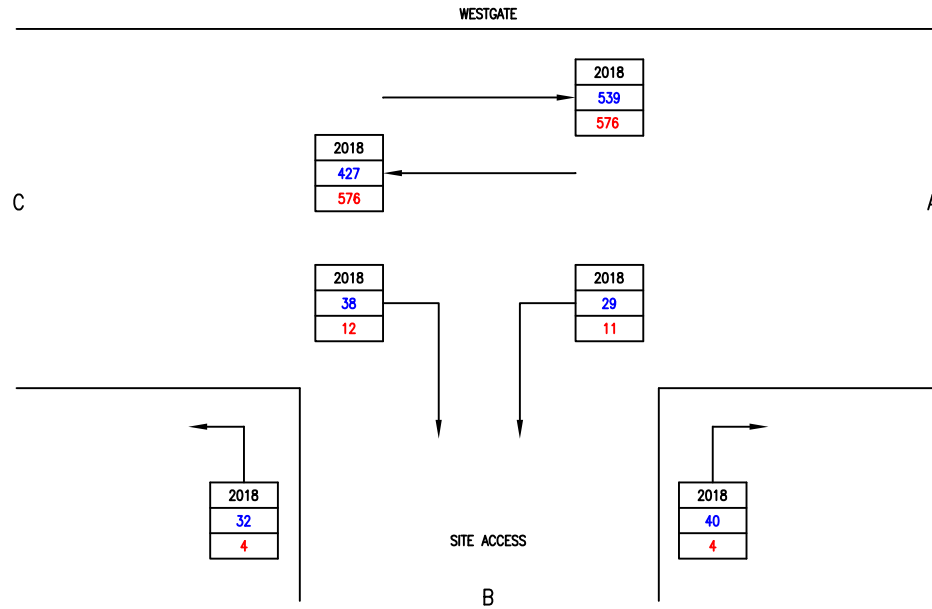


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through observation. Note that the type of count and the selected direction is shown at the top of the graph.

Appendix C

Traffic Flows

WESTGATE – 2018 SCENARIO

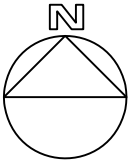


AM

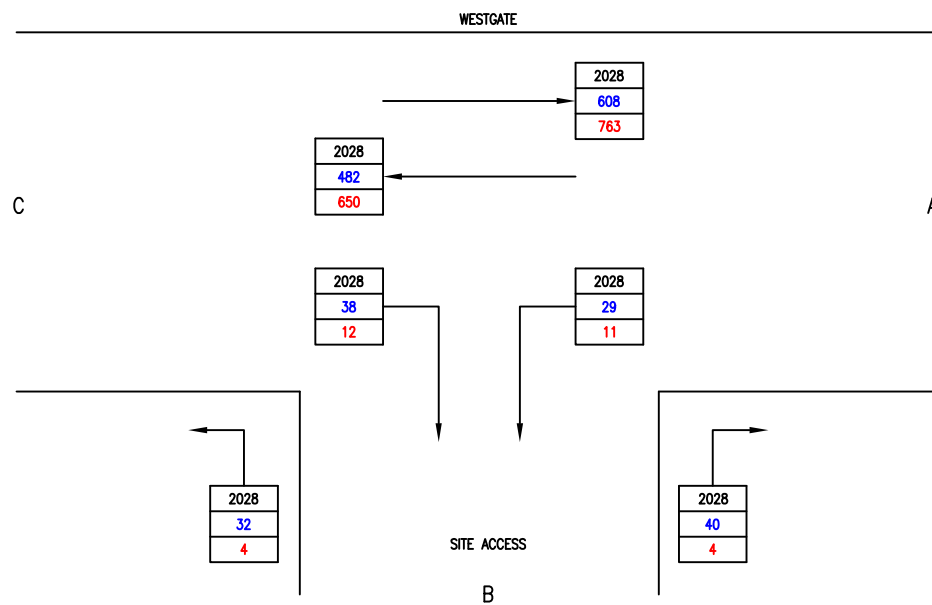
	A	B	C
A	–	11	576
B	8	–	4
C	676	12	–

PM

	A	B	C
A	–	29	427
B	40	–	32
C	539	38	–



WESTGATE – 2028 SCENARIO



AM

	A	B	C
A	–	11	650
B	4	–	4
C	763	12	–

PM

	A	B	C
A	–	29	482
B	40	–	32
C	608	38	–

GENERAL NOTES:

- THIS DRAWING SHOWS THE PROVISIONAL DESIGN ONLY AND IS SUBJECT TO LOCAL AUTHORITY APPROVAL. THIS DRAWING SHOULD NOT BE SCALED FOR SETTING OUT PURPOSES.
- THIS DRAWING IS BASED ON A TOPOGRAPHICAL/ORDNANCE SURVEY PROVIDED BY OTHERS.



PARAGON HIGHWAYS
UNIT 2, THE OFFICE CAMPUS,
PARAGON BUSINESS PARK, RED HALL COURT,
WAKEFIELD WF1 2UY
01924 291536 / MAIL@PARAGONHIGHWAYS.COM

JOB	DWG	REV
1426	01	
SCALE: 1:100		
DATE: DEC 2018		

WESTGATE, HECKMONDWIKE
2018 & 2028 SCENARIOS

Appendix D

PICADY Output

Junctions 9				
PICADY 9 - Priority Intersection Module				
Version: 9.0.2.5947				
© Copyright TRL Limited, 2017				
For sales and distribution information, program advice and maintenance, contact TRL:				
+44 (0)1344 770558 software@trl.co.uk www.trlsoftware.co.uk				
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution				

Filename: 2018 Site Access.j9

Path: \\pah-server\Paragon\Projects\Westgate, Heckmondwike - 1426\PICADY

Report generation date: 10/12/2018 15:50:27

»2018, AM

»2018, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2018								
Stream B-C	0.0	7.21	0.01	A	0.1	7.53	0.06	A
Stream B-A	0.0	13.21	0.01	B	0.2	12.58	0.12	B
Stream C-AB	0.1	4.42	0.04	A	0.3	4.90	0.11	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Westgate B&M Site Access 2018
Location	Westgate
Site number	1426
Date	10/12/2018
Version	
Status	(new file)
Identifier	
Client	MWA RH
Jobnumber	1426
Enumerator	LJO
Description	Proposed Site Access

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2018	AM	Site Access	ONE HOUR	08:00	09:30	15
D2	2018	PM	Site Access	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2018, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.18	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Westgate (East of Access)		Major
B	Site Access		Minor
C	Westgate (West of Site Access)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.94			160.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	9.08	5.46	3.99	3.94	✓	2.00	34	24

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	555	0.088	0.223	0.140	0.318
1	B-C	709	0.095	0.240	-	-
1	C-B	667	0.225	0.225	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2018	AM	Site Access	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	587	100.000
B		✓	8	100.000
C		✓	688	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	11	576
	B	4	0	4
	C	676	12	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	10	10	10
	B	10	10	10
	C	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.01	7.21	0.0	A
B-A	0.01	13.21	0.0	B
C-AB	0.04	4.42	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	603	0.005	3	0.0	6.600	A
B-A	3	383	0.008	3	0.0	10.407	B
C-AB	20	916	0.022	20	0.0	4.422	A
C-A	498			498			
A-B	8			8			
A-C	434			434			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4	582	0.006	4	0.0	6.844	A
B-A	4	350	0.010	4	0.0	11.422	B
C-AB	29	971	0.030	29	0.0	4.205	A
C-A	590			590			
A-B	10			10			
A-C	518			518			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4	553	0.008	4	0.0	7.211	A
B-A	4	304	0.014	4	0.0	13.208	B
C-AB	46	1050	0.043	45	0.1	3.942	A
C-A	712			712			
A-B	12			12			
A-C	634			634			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4	553	0.008	4	0.0	7.213	A
B-A	4	304	0.014	4	0.0	13.205	B
C-AB	46	1050	0.043	46	0.1	3.944	A
C-A	712			712			
A-B	12			12			
A-C	634			634			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4	582	0.006	4	0.0	6.848	A
B-A	4	350	0.010	4	0.0	11.418	B
C-AB	29	971	0.030	29	0.0	4.207	A
C-A	590			590			
A-B	10			10			
A-C	518			518			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	603	0.005	3	0.0	6.607	A
B-A	3	384	0.008	3	0.0	10.402	B
C-AB	20	916	0.022	20	0.0	4.423	A
C-A	498			498			
A-B	8			8			
A-C	434			434			

2018, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.06	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2018	PM	Site Access	ONE HOUR	17:00	18:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	456	100.000
B		✓	72	100.000
C		✓	577	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	29	427
	B	40	0	32
	C	539	38	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.06	7.53	0.1	A
B-A	0.12	12.58	0.2	B
C-AB	0.11	4.90	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	24	604	0.040	24	0.0	6.821	A
B-A	30	425	0.071	30	0.1	10.010	B
C-AB	54	862	0.063	54	0.1	4.897	A
C-A	380			380			
A-B	22			22			
A-C	321			321			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	29	586	0.049	29	0.1	7.100	A
B-A	36	397	0.091	36	0.1	10.954	B
C-AB	74	904	0.082	74	0.2	4.770	A
C-A	445			445			
A-B	26			26			
A-C	384			384			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	35	561	0.063	35	0.1	7.526	A
B-A	44	359	0.123	44	0.2	12.563	B
C-AB	109	965	0.113	109	0.3	4.629	A
C-A	526			526			
A-B	32			32			
A-C	470			470			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	35	561	0.063	35	0.1	7.527	A
B-A	44	359	0.123	44	0.2	12.578	B
C-AB	109	965	0.113	109	0.3	4.634	A
C-A	526			526			
A-B	32			32			
A-C	470			470			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	29	586	0.049	29	0.1	7.107	A
B-A	36	397	0.091	36	0.1	10.971	B
C-AB	74	905	0.082	75	0.2	4.777	A
C-A	445			445			
A-B	26			26			
A-C	384			384			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	24	604	0.040	24	0.0	6.831	A
B-A	30	425	0.071	30	0.1	10.035	B
C-AB	54	862	0.063	55	0.1	4.904	A
C-A	380			380			
A-B	22			22			
A-C	321			321			

Junctions 9				
PICADY 9 - Priority Intersection Module				
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Filename: 2028 Site Access.j9

Path: \\pah-server\Paragon\Projects\Westgate, Heckmondwike - 1426\PICADY

Report generation date: 10/12/2018 15:43:51

»2028, AM

»2028, PM

Summary of junction performance

	AM				PM			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
2028								
Stream B-C	0.0	7.48	0.01	A	0.1	7.75	0.06	A
Stream B-A	0.0	14.76	0.02	B	0.2	13.65	0.13	B
Stream C-AB	0.1	4.26	0.05	A	0.3	4.77	0.12	A

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	Westgate B&M Site Access 2028
Location	Westgate
Site number	1426
Date	10/12/2018
Version	
Status	(new file)
Identifier	
Client	MWA RH
Jobnumber	1426
Enumerator	LJO
Description	Proposed Site Access Future Year

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028	AM	Site Access	ONE HOUR	08:00	09:30	15
D2	2028	PM	Site Access	ONE HOUR	17:00	18:30	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2028, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.18	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	Westgate (East of Access)		Major
B	Site Access		Minor
C	Westgate (West of Site Access)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	8.94			160.0	✓	0.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

Minor Arm Geometry

Arm	Minor arm type	Width at give-way (m)	Width at 5m (m)	Width at 10m (m)	Width at 15m (m)	Width at 20m (m)	Estimate flare length	Flare length (PCU)	Visibility to left (m)	Visibility to right (m)
B	One lane plus flare	10.00	9.08	5.46	3.99	3.94	✓	2.00	34	24

Slope / Intercept / Capacity

Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (PCU/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	555	0.088	0.223	0.140	0.318
1	B-C	709	0.095	0.240	-	-
1	C-B	667	0.225	0.225	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D1	2028	AM	Site Access	ONE HOUR	08:00	09:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	661	100.000
B		✓	8	100.000
C		✓	775	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
		A	B	C
	A	0	11	650
	B	4	0	4
	C	763	12	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A	B	C
	A	10	10	10
	B	10	10	10
	C	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.01	7.48	0.0	A
B-A	0.02	14.76	0.0	B
C-AB	0.05	4.26	0.1	A
C-A				
A-B				
A-C				

Main Results for each time segment

08:00 - 08:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	590	0.005	3	0.0	6.750	A
B-A	3	362	0.008	3	0.0	11.032	B
C-AB	23	952	0.024	23	0.0	4.261	A
C-A	561			561			
A-B	8			8			
A-C	489			489			

08:15 - 08:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4	566	0.006	4	0.0	7.039	A
B-A	4	324	0.011	4	0.0	12.340	B
C-AB	33	1016	0.033	33	0.0	4.030	A
C-A	663			663			
A-B	10			10			
A-C	584			584			

08:30 - 08:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4	534	0.008	4	0.0	7.480	A
B-A	4	273	0.016	4	0.0	14.764	B
C-AB	55	1108	0.049	55	0.1	3.758	A
C-A	798			798			
A-B	12			12			
A-C	716			716			

08:45 - 09:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4	534	0.008	4	0.0	7.482	A
B-A	4	273	0.016	4	0.0	14.760	B
C-AB	55	1108	0.050	55	0.1	3.758	A
C-A	798			798			
A-B	12			12			
A-C	716			716			

09:00 - 09:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	4	566	0.006	4	0.0	7.047	A
B-A	4	325	0.011	4	0.0	12.335	B
C-AB	33	1016	0.033	34	0.0	4.033	A
C-A	663			663			
A-B	10			10			
A-C	584			584			

09:15 - 09:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	3	589	0.005	3	0.0	6.758	A
B-A	3	362	0.008	3	0.0	11.027	B
C-AB	23	952	0.024	23	0.0	4.262	A
C-A	561			561			
A-B	8			8			
A-C	489			489			

2028, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	1.02	A

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Description	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)
D2	2028	PM	Site Access	ONE HOUR	17:00	18:30	15

Default vehicle mix	Vehicle mix source	PCU Factor for a HV (PCU)
✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
A		✓	511	100.000
B		✓	72	100.000
C		✓	646	100.000

Origin-Destination Data

Demand (PCU/hr)

	To			
	A	B	C	
From	A	0	29	482
	B	40	0	32
	C	608	38	0

Vehicle Mix

Heavy Vehicle Percentages

	To			
	A	B	C	
From	A	10	10	10
	B	10	10	10
	C	10	10	10

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Queue (PCU)	Max LOS
B-C	0.06	7.75	0.1	A
B-A	0.13	13.65	0.2	B
C-AB	0.12	4.77	0.3	A
C-A				
A-B				
A-C				

Main Results for each time segment

17:00 - 17:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	24	594	0.041	24	0.0	6.940	A
B-A	30	408	0.074	30	0.1	10.455	B
C-AB	59	890	0.066	58	0.1	4.761	A
C-A	427			427			
A-B	22			22			
A-C	363			363			

17:15 - 17:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	29	574	0.050	29	0.1	7.257	A
B-A	36	377	0.095	36	0.1	11.600	B
C-AB	82	939	0.087	82	0.2	4.624	A
C-A	499			499			
A-B	26			26			
A-C	433			433			

17:30 - 17:45

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	35	546	0.065	35	0.1	7.747	A
B-A	44	334	0.132	44	0.2	13.629	B
C-AB	125	1009	0.124	125	0.3	4.481	A
C-A	586			586			
A-B	32			32			
A-C	531			531			

17:45 - 18:00

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	35	546	0.065	35	0.1	7.751	A
B-A	44	334	0.132	44	0.2	13.650	B
C-AB	125	1009	0.124	125	0.3	4.489	A
C-A	586			586			
A-B	32			32			
A-C	531			531			

18:00 - 18:15

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	29	574	0.050	29	0.1	7.262	A
B-A	36	377	0.095	36	0.1	11.623	B
C-AB	82	939	0.088	83	0.2	4.630	A
C-A	498			498			
A-B	26			26			
A-C	433			433			

18:15 - 18:30

Stream	Total Demand (PCU/hr)	Capacity (PCU/hr)	RFC	Throughput (PCU/hr)	End queue (PCU)	Delay (s)	LOS
B-C	24	594	0.041	24	0.0	6.948	A
B-A	30	408	0.074	30	0.1	10.484	B
C-AB	59	891	0.067	59	0.1	4.768	A
C-A	427			427			
A-B	22			22			
A-C	363			363			