

TECHNICAL NOTE

Project Title: Land at Model Farm, Rhoose
Report Reference: JNY9624-03a Second (Final) Stage Scoping
Date: 05 April 2019

1 Introduction

- 1.1 RPS is working on behalf of Legal and General (Strategic Land) Ltd. in order to address the transportation issues associated with a mixed employment development at Model Farm, Rhoose. The site forms part of the wider Cardiff Airport - St. Athan Enterprise Zone, which is allocated within the Vale of Glamorgan Local Development Plan 2011 – 2026 (adopted June 2017).
- 1.2 A Transport Assessment Scoping Note (Ref: JNY9624-02), submitted on 06 November 2018 to The Vale of Glamorgan Council (TVoGC) set out the preferred approach for the preparation of an appropriate Transportation Assessment, Transport Implementation Strategy and Travel Plan.
- 1.3 Since production of the original Scoping Note, the land use profile has been adjusted to reflect TVoGC's wider pre-application advice and now comprises a ratio of 40:20:40, B1:B2:B8. The original Scoping Note was submitted as part of a wider pre-application enquiry.
- 1.4 The assumed development floor area is now 189,725m² Gross Floor Area (GFA). However, the floorspace may be subject to alteration as the scheme progresses.
- 1.5 This Technical Note sets out additional information associated with the scheme for agreement prior to confirmation of trip assignment and impact by traffic modelling using the Transport for Wales' (TfW's) SEWTM model (Modelling Methodology attached at **Appendix A**). This TN therefore represents the final stage scoping in advance of the general production of the Transportation Assessment work.

2 Background

- 2.1 The highway authority at TVoGC responded, as part of a wider pre-application response, on 31 January 2019 (Ref: P/DC/2018/00134/PRE). The response stated that the Scoping Note is acceptable in broad terms and the following observations were made (along with the RPS response in **bold**);
- i. Transport Assessment required and to include the analysis of the effect of the development on existing movement patterns and proposals for how these are to be managed and highway works, or public transport improvements required to accommodate the development. **Agreed.**
 - ii. Travel Plan required and to set out how sustainable means of transport are to be promoted and form part of the evidence base for any modal shift upon which the highway assessment is based. **Agreed.**
 - iii. Area-wide modelling to be undertaken – the highway elements of the SEWTM model is considered acceptable – using SEWTM to identify percentage impacts at key nodes (junctions) on route to M4 is an acceptable approach to help determine the scope and requirement for detailed link and junction assessment. **Agreed and to be provided by Norman Rourke Pryme (NRP) modelling specialists.**
 - iv. Trip rates should be obtained from TRICS or derived from first principles – key assumptions and calculations will need to be provided – the trip generation provided in the submitted Scoping Note requires refinement. **Agreed and provided here.**
 - v. Modal shift towards non-car modes will need to be justified and evidence based, relating to the Travel Plan and Public Transport proposal. **Agreed and to be developed in TA work.**
 - vi. A revised Transport Scoping Note to be prepared and a final scoping report needs to include a chapter setting out the modelling methodology in detail. **Agreed and to be supplied by NRP.**
 - vii. Subject to SEWTM outputs it is expected that detailed modelling will need to extend from the immediate highway network to the Weycock Cross junction and may also need to include Five Mile Lane, Sycamore Cross and Port Road (to the Barry Dock Link). **To be confirmed in due course.**
 - viii. Continued liaison with Welsh Government and Transport for Wales in relation to the scope and impacts on the motorway/trunk road network. **Agreed and on-going.**
 - ix. Consideration of the Sustainable Transport Hierarchy to encourage modal shift. **Agreed.**
 - a. Walking and cycling: ensure the site is well-connected to Barry and public transport services (Active Travel Act, links to local authority Existing Route Maps and Integrated Network Mapping);
 - b. Bus: improving access to bus services; improving the frequency of bus services; improving bus infrastructure;
 - c. Rail: Improving access to Cardiff International Railway Station;
 - x. The development is not to restrict future sustainable transport options for travel to and from Cardiff Airport (new rail spur/ improvement of existing bus services together with enhanced

walking and cycling infrastructure). **The scheme will be designed not to prejudice other proposals coming forward as appropriate.**

- xi. Reference to the forthcoming SPG relating to the Airport and Gateway Development Zone which is anticipated to guide the wider public transport strategy for the area. **Agreed, subject to the draft SPG being published suitably in advance of the planning application submission.**

- 2.2 A previous version of this Technical Note was sent to TVoGC and TfW on 5th March 2019. A response received on 7th March requested confirmation of future modal share. Subsequent discussions with TVoGC's advisor have led to the modal shares set out in Chapter 5.
- 2.3 Further to discussion with TVoGC's advisor and email correspondence from TfW it is understood that 2026 and 2036 are agreed as the years for assessing the impact of the development with no earlier year requirement.
- 2.4 A meeting was held with Kyle Phillips (TVoGC's Group Manager Transport Services) on 12th March 2019 to discuss future public transport provision in the local area which has led to the approach on future modal share.

3 Vehicle Trip Rate and Vehicle Trips Methodology

- 3.1 The TRICS database has been interrogated further to negotiations to date in order to provide a forecast for the development's trip attraction on weekday morning and evening peak hours.
- 3.2 The TRICS database provides trip rate information based on surveys of existing trips observed at similar use class sites throughout the United Kingdom.
- 3.3 The following criteria have been used during the TRICS site selection process to estimate trip data that is representative of the proposed development:
 - i. Employment Business Park; Employment Industrial Estate and Employment Warehousing (Commercial);
 - ii. Vehicle surveys (inclusive of those containing multi-modal surveys);
 - iii. Sites in England, Scotland and Wales excluding Greater London;
 - iv. Survey dates: 01/01/2008 onwards;
 - v. GFA of 5,000m² and above;
 - vi. Town Centre, Edge of Town Centre and Suburban sites excluded;
 - vii. GFA not in use excluded from trip rate calculations;
 - viii. Sites with Travel Plans excluded; and
 - ix. Site with a Public Transport frequency of 10 or above services per hour were excluded.
- 3.4 Journey to Work data from the 2011 Census for Middle Super Output Area (MSOA) 'Vale of Glamorgan 014' has been utilised to produce a proposed modal share profile.
- 3.5 The Census modal share has been calculated using the following methodology:
 - i. People not in employment not included;
 - ii. People working mainly from home not included; and
 - iii. Public transport modes combined (train, bus, taxi).
- 3.6 This existing modal share profile has been adjusted to reflect the fact that a robust Travel Plan will be provided to support the proposed development. However, the percentage of pedestrians has been reduced to reflect that areas of the proposed development are above 2km from areas of Rhoose (although 2km is not considered to be an upper limit as RPS considers that 3.2km is realistic for a number of walking journeys (Ref: Para 2.3, Design Manual for Roads and Bridges TD91/05, 2005)).
- 3.7 Pedestrian and cycling isochrones have been produced for 3.2km and 8km respectively to inform the modal split. The isochrones are attached at **Appendix B**.
- 3.8 Finally, the adjusted modal share has been used to produce the forecast vehicle trip rates and vehicle trips to be utilised for the traffic modelling going forward.

4 Initial Vehicle Trip Rates and Vehicle Trips

- 4.1 Using the criteria above, the estimated initial vehicle trip rates and numbers, produced from the TRICS database for the B1, B2 and B8 Use Classes, are shown in **Table 4.1**.
- 4.2 The TRICS output reports are provided in **Appendices C, D and E** for the B1 Use, B2 Use and B8 Use respectively.

Table 4.1: Initial Vehicle Trip Rates and Vehicle Trips

Time	Arrivals		Departures		Two-way	
B1 Office (75,890m²)						
	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
AM Peak (08:00-09:00)	1.313	996	0.217	165	1.53	1161
PM Peak (17:00-18:00)	0.156	118	0.995	755	1.151	873
12 Hour (07:00 – 19:00)	4.697	3,565	4.698	3,565	9.395	7,130
B2 General Industrial (37,945m²)						
	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
AM Peak (08:00-09:00)	0.276	105	0.118	45	0.394	150
PM Peak (17:00-18:00)	0.053	20	0.325	123	0.378	143
12 Hour (07:00 – 19:00)	1.695	643	1.801	683	3.496	1,327
B8 Storage & Distribution (75,890m²)						
	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
AM Peak (08:00-09:00)	0.091	69	0.048	36	0.139	105
PM Peak (17:00-18:00)	0.024	18	0.086	65	0.110	83
12 Hour (07:00 – 19:00)	0.906	688	1.006	763	1.912	1,451
TOTAL						
	Trips		Trips		Trips	
AM Peak (08:00-09:00)	1,170		246		1,416	
PM Peak (17:00-18:00)	156		943		1,099	
12 Hour (07:00 – 19:00)	4,896		5,011		9,908	

5 Modal Share

- 5.1 The modal share, taken from the 2011 Census 'Journey to Work by Method of Travel' for the MSOA 'Glamorgan 014' and the forecast modal share (that reflects a 18.9% reduction in Single Occupancy Vehicle use through the implementation of a robust Travel Plan) is shown in **Table 5.1**. The Census output data is attached at **Appendix F**.
- 5.2 The Travel Plan measures are to be confirmed but at this stage are likely to include the following:
- Steering Group;
 - Travel Plan Co-ordinator(s);
 - New / enhanced bus service frequencies and associated public transport infrastructure;
 - Pedestrian infrastructure linking to existing routes;
 - Cycle parking;
 - Cycle infrastructure linking to existing routes;
 - Motorcycle parking;
 - Showers, changing facilities and lockers;
 - Parking strategy together with parking restrictions on internal roads;
 - Car sharing priority parking spaces;
 - Promotion of travel by walking, cycling, public transport and car sharing including PTP; and
 - Trip banking from PTP at local residential areas (tbc).
- 5.3 A meeting with TVoGC's Group Manager Transport Services on 12th March confirmed the following in respect of future transport provision:
- Rail services at Rhoose will increase from 1 train per hour to two trains per hour in 2022/23 and bus links increased to match;
 - The T9 bus service could form a basis of good bus connection (additional bus stops with possibly the requirement for additional bus(es));
 - Penetration within the site by the 303 bus service is a realistic opportunity; and
 - Active travel route along Port Road and A4226 to Weycock Cross roundabout (the development could deliver a route along the spine road as an alternative to Port Road).

Table 5.1 Initial and Proposed Modal Share

Method of Travel to Work	2011 Census Data	Travel Plan Adjusted
On Foot	14.4%	5.0%
Bicycle	3.9%	10.0%
Rail (with bus connection)	1.4%	2.5%
Bus	1.9%	12.5%
Motorcycle	1.2%	2.5%
Passenger in a car or van	5.0%	10.0%
Driving a car or van	70.9	57.5%
Other	1.4%	0%
Total	100.0%	100.0%

6 Proposed Vehicle Trip Rates and Vehicle Trips

6.1 The forecast adjusted vehicle trip rates and vehicle trips which will be delivered through the proposed infrastructure and implementation of the Travel Plan are shown in **Table 6.1**.

Table 6.1: Proposed Vehicle Trip Rates and Vehicle Trips

Time	Arrivals		Departures		Two-way	
B1 Office (75,890m²)						
	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
AM Peak (08:00-09:00)	1.065	808	0.176	134	1.241	942
PM Peak (17:00-18:00)	0.127	96	0.807	612	0.933	708
12 Hour (07:00 – 19:00)	3.809	2,891	3.810	2,891	7.619	5,782
B2 General Industrial (37,945m²)						
	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
AM Peak (08:00-09:00)	0.224	85	0.096	36	0.320	121
PM Peak (17:00-18:00)	0.043	16	0.264	100	0.307	116
12 Hour (07:00 – 19:00)	1.375	522	1.461	554	2.835	1,076
B8 Storage & Distribution (75,890m²)						
	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
AM Peak (08:00-09:00)	0.074	56	0.039	30	0.110	86
PM Peak (17:00-18:00)	0.019	15	0.070	53	0.090	68
12 Hour (07:00 – 19:00)	0.735	558	0.816	619	1.550	1,177
TOTAL						
	Trip Rate	Trips	Trip Rate	Trips	Trip Rate	Trips
AM Peak (08:00-09:00)		949		199		1,148
PM Peak (17:00-18:00)		127		765		892
12 Hour (07:00 – 19:00)		3,970		4,065		8,035

6.2 A 12-hour profile of vehicle trip rates and vehicle trips for each Use Class and vehicle trips for the total development for both the initial TRICS analysis and the proposed trip rates is shown in tables attached at **Appendix G**.

7 Way Forward

- 7.1 Confirmation that the issues addressed in this technical note are agreed is now sought from VoG highway authority, TfW and Welsh Government.

Appendices

Appendix A – Modelling Methodology Report



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traffic and transportation

Model Farm, Cardiff

Strategic Transport Modelling
Methodology

Produced for RPS

11th March 2019



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Report

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1 INTRODUCTION

- 1.1.1 This report presents a methodology summary of the assessment of the impact the Model Farm Local Plan development is likely to have on the local highway network. The assessment will be undertaken using a computerised transport model that predicts future year conditions based upon a validated and calibrated existing condition model.
- 1.1.2 The site is located immediately east of Cardiff Airport, as shown in Figure 1.1. The development will consist of a mix of employment land uses (B1, B2 and B8).

Figure 1.1: Development site location



1.2 EVIDENCE BASE

- 1.2.1 The South East Wales Transport Model (SEWTM) - Strategic Highway Model will be used as the basis for the scheme assessment. The base year of the SEWTM is 2015 and the model was developed to represent average weekday AM peak period (07:00 - 09:30) and PM peak period (15:30 - 18:00).
- 1.2.2 The model development was guided by the following units of the DfT's WebTAG guidance:
- Unit M1 "Principles of Modelling and Forecasting" (January 2014)
 - Unit M1.2 "Data Sources and Surveys" (January 2014)
 - Unit M3.1 "Highway Assignment Modelling" (January 2014).
- 1.2.3 The SEWTM was developed using PTV VISUM, a software program for strategic traffic and transport analyses and forecasts.
- 1.2.4 The simulation area of the SEWTM is shown in Figure 1.2.

Figure 1.2: Simulation area of SEWTM



- 1.2.5 The performance of the base year highway model was examined through comparison of modelled and observed total counts on links, screenlines and cordons, junction turning counts as well as journey times along selected routes and routing comparison.

1.3 STRUCTURE OF THE DOCUMENT

- 1.3.1 This report is intended to form part of transport assessment methodology technical notes in order to support the assessment of the development site in the emerging West Cardiff area. The modelled forecast scenarios will enable the detailed assessment of the impact of this potential commercial development on those parts of the highway most likely to be affected, based upon the spatial layout of the site allocation. The strategic modelling will be focusing on where detrimental traffic conditions might exacerbate junction delays and queues and where mitigation may be required in the form of infrastructure improvements, demand management or softer policy measures.
- 1.3.2 The main body of the report covers the following chapters:
- Chapter 2. Forecasting Methodology
 - Chapter 3. Evaluation and Presenting Results

2 FORECASTING METHODOLOGY

2.1 FORECAST SCENARIOS

- 2.1.1 The strategic transport modelling work element of the project will consist of the following modelled scenarios and all the associated model runs and model output analysis according to the requirements set by Transport for Wales (TfW), The Vale of Glamorgan Council (TVOGC) and Welsh Government:
- ▶ Base Year (2015);
 - ▶ Future Year (2026)
 - ▶ Future Year (2036);
 - ▶ Future Year (2026) + Model Farm; and
 - ▶ Future Year (2036) + Model Farm.
- 2.1.2 Three forecast scenarios will be produced and run through the SEWTM to enable the analysis of impact of this development in the forecast years of 2026 and 2036.
- ▶ **Scenario A:** will include planned developments outside the local area and committed developments in the local area but does not include the Model Farm development.
 - ▶ **Scenario B:** based on Scenario A but also includes this Local Plan development in the local area
 - ▶ **Scenario C:** based on Scenario B but also includes mitigation measures on the highway infrastructure.
- 2.1.3 **Scenario A** will be prepared representing the future years of 2026 and 2036 AM peak and PM peak highway conditions. Scenario A will provide a future case with baseline conditions representing the minimum projected development in the intervening years. In this case it represents a scenario devoid of any Local Plan sites and only includes:
- ▶ planned development outside the local area;
 - ▶ committed dwellings within the local area as provided in the housing trajectory; and
 - ▶ committed jobs within the local as provided in the job trajectory.
- 2.1.4 Planned development outside the SEWTM was accounted for in the model using national projections. Car growth was obtained from TEMPRO version 7.1, a software tool that provides projections of growth over time for use in transport models based on outputs from the National Trip End Model (NTEM). NTEM version 7.1 datasets were used for forecasting future growth. NTEM trip growth projections refer to future trip demand due to changes in demography, land use and changes in car ownership and trip rates. It assumes trip costs at base year levels, and it does not allow for changes in travel times, perceived value of time, cost of fuel, and other car operating costs.
- 2.1.5 **Scenario B** will apply the same TEMPRO v7.1 growth factors (cars) and regional growth traffic (LGV and HGV) forecasts outside the local area and committed development in the local area as Scenario A but also includes the development site as defined in the project specification in accordance with the size and parameters of the Model Farm.
- 2.1.6 In addition, all the committed highway infrastructure schemes in Scenario A will be also considered in Scenario B. Scenario B will also include any development site related highway infrastructure developments.
- 2.1.7 **Scenario C** will also include the site infrastructure mitigation of the scheme on top of all highway infrastructure development coded into Scenario A and B.

2.2 MODEL REFINEMENT

- 2.2.1 The refinement of the current territory model (demand zone system) in SEWTM may be required in order to ensure that the model can properly accommodate the development site and it is suitable and accurate enough to calculate wider traffic impact.
- 2.2.2 Traffic zones in the proximity (simulation area) of the development site may be disaggregated using, but not limited to, potential data sources such as land use data and Census data.
- 2.2.3 Disaggregation of traffic zones by using external data sources for weighting the origin, destination and corresponding production and attraction factors respectively will also involve the disaggregation of origin-destination (OD) matrices. Re-distribution of existing internal trips may be considered if the information is stored in the current 2026 forecast year matrices and this will then be replicated for forecast year 2036.
- 2.2.4 In addition, the highway network can also be extended by using OpenStreetMap data to make sure that the network model can accommodate the local / internal traffic of the refined West of Cardiff area.

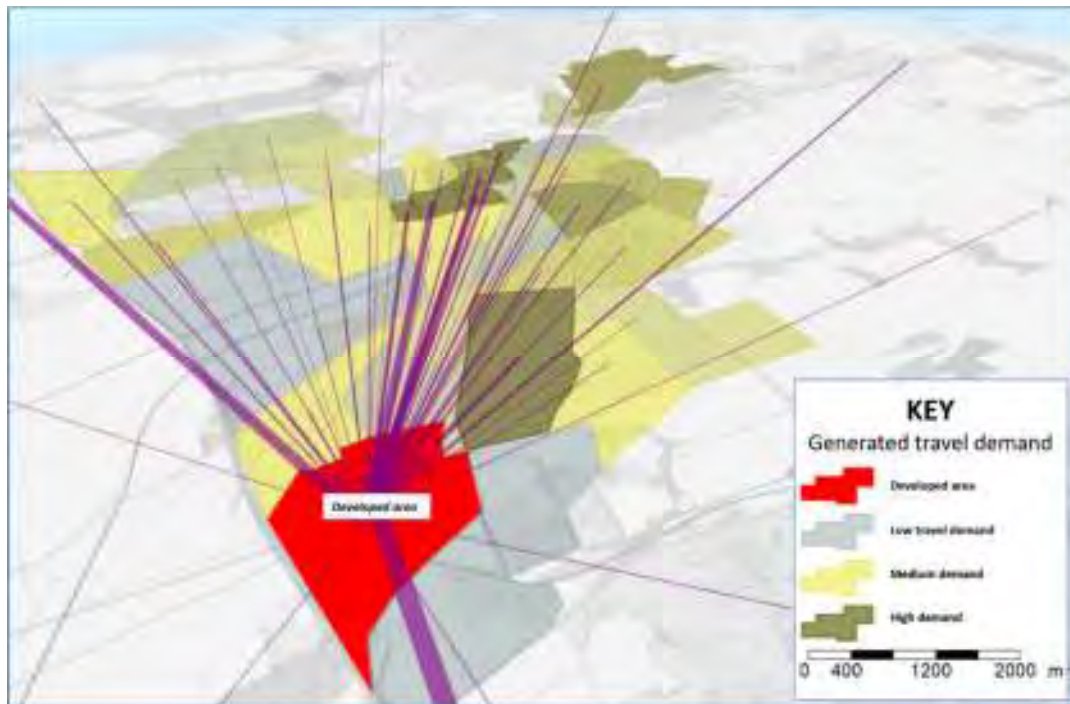
2.3 TRIP GENERATION

- 2.3.1 In order to produce trips from the anticipated developments in the SEWTM included within Scenario A and Scenario B a trip rate must be applied to the development quantum. This trip rate is produced in TRICS®, which is the UK and Ireland's national system of trip generation analysis, containing over 7,150 directional transport surveys at over 110 types of development.
- 2.3.2 The trip rates will be applied to the site based on the land use and split into all assignment model user classes using the proportions from the base year trip matrix totals.
- 2.3.3 RPS will provide trip rates and trip generation as agreed with TfW, TVOGC and Welsh Government.
- 2.3.4 It should also be acknowledged that the modelled time period may be different from the absolute peak hour of the day.

2.4 TRIP DISTRIBUTION

- 2.4.1 The new development site distribution will be based on the 2015 base and both 2026 and 2036 future year modelled existing zone distribution with the similar land use and averaged before being applied to the committed and local plan sites. An example of this type of output is provided in Figure 2.1 below.

Figure 2.1: Output of a trip distribution (example)



- 2.4.2 By undertaking the trip distribution exercise, we will directly get the origin-destination trips associated with the development sites for all transport systems and demand segments of the highway assignment model. The same exercise will be executed for all forecast years and assignment time intervals to ensure the consistency across of all time period of the highway assignment model. Thus, the generated trips can be directly used in the updated matrices which then need to be revised to meet with all corresponding criteria, see the more detailed discussion in Chapter 2.5.

2.5 REVISED FORECAST YEAR MATRICES

- 2.5.1 In the updated 2026 and 2036 matrices, including the trips associated with the Model Farm development, the total number of trips will be maintained in accordance with WebTAG Unit 4 – Forecasting and Uncertainty (January 2014). This means a constant value across trip ends in the matrices on the level of the National Transport Model zoning system represented by TEMPRO software. This will also ensure that no double counting of the trips associated with the Model Farm development will take place. Updating the matrices with the Model Farm trips will be consist of three key steps:

- ▶ Calculating and adding trips of the development site;
- ▶ checking TEMPRO constraint trip end numbers in forecast matrices; and
- ▶ scaling back existing trips in order to meet TEMPRO growth rates and corresponding WebTAG criteria.

- 2.5.2 The revised forecast year matrices will be validated and tested against the current 2026 forecast year matrices in terms of the following key validation criteria:

- ▶ Matrix and trip end totals;
- ▶ trip length distribution;
- ▶ trip distribution on sector level; and
- ▶ journey time information on key routes.

3 EVALUATION AND PRESENTING RESULTS

- 3.1.1 To determine the impact of the development on the highway network the analysis will be undertaken for both the 2026 and 2036 AM peak and PM peak hours and will consider:
- ▶ Junction Level of Service (LoS);
 - ▶ journey times on selected routes, which demonstrate the impact on travel conditions within the modelled area; and
 - ▶ link flow analysis and creating various traffic flow difference plots.
- 3.1.2 To understand the incremental changes associated with development growth outside and inside the simulation area Scenario A will be compared against base and Scenario B will be compared against Scenario A. The same comparisons will also be undertaken for Scenario C.

3.2 JUNCTION LEVEL OF SERVICE

- 3.2.1 To undertake the assessment of the impact of the development of the sites included, the junctions throughout simulation area will be assessed and monitored in each scenario.
- 3.2.2 Full analysis of Level of Service (LoS) at junctions and turns within junctions will be undertaken to form a complete picture of how development in the area would impact on junctions and the traffic network within SEWTM. An explanation of Levels of Service is given in Table 3.1.

Table 3.1: Assessment year scenarios

LoS	Interpretation	RFC value
A	Uncongested operations; all queues clear in a single cycle (if junction is signalised).	< 0.60
B	Very light congestion; an occasional approach phase is fully utilised	0.60 – 0.69
C	Light congestion; occasional backups on critical approaches	0.70 – 0.79
D	Significant congestion on critical approaches, but junction is functional. Cars required to wait through more than one cycle during short peaks. No long-standing queues formed.	0.80 – 0.89
E	Severe congestion with some long-standing queues on critical approaches. Blockage of intersection may occur if traffic signal does not provide for protected turning movements (yellow box). Traffic may block back to upstream junctions.	0.90 – 0.99
F	Total breakdown. Stop and go operation.	>=1.00

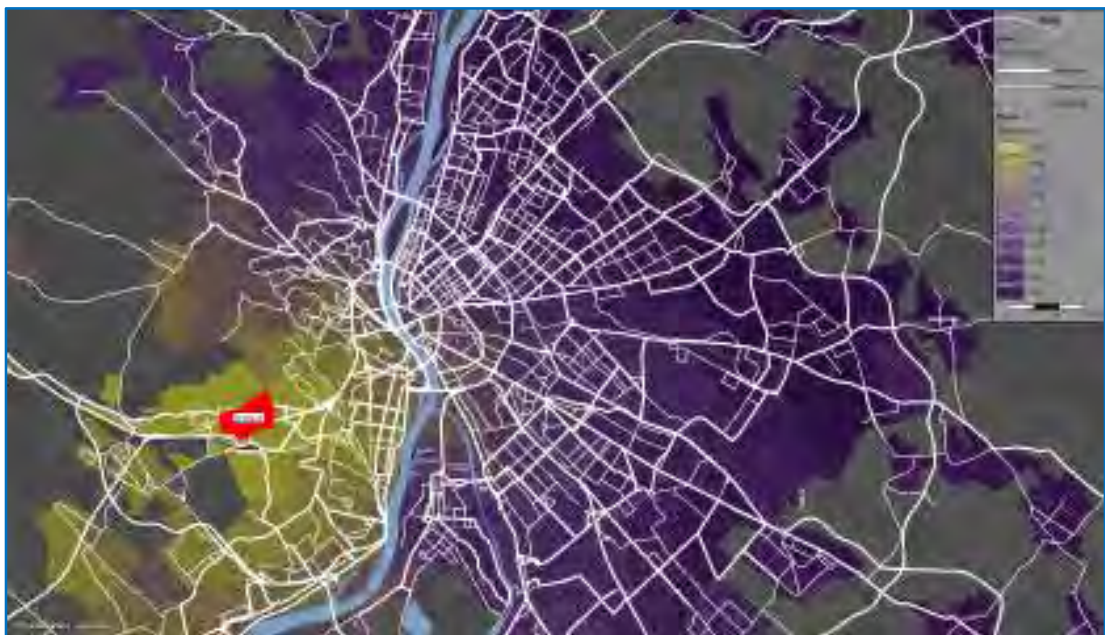
- 3.2.3 A direct comparison of junctions with LoS D, E or F for the base year, Scenario A, Scenario B and Scenario C will be carried out to fully understand the step change and impact of the development on the surrounding network. Junctions will be highlighted and reported where the node as a whole is performing at a LoS D, LoS E or LoS F. At these junctions, an average LoS will be calculated as weighted averages across all turning movements, which may hide some of the congestion issues.

- 3.2.4 In addition, therefore, all individual turning movements with LoS E or LoS F will be also extracted. This ensures that all the junctions where significant congestion and queuing behaviour will be observed within the model are captured.

3.3 JOURNEY TIMES

- 3.3.1 Travel times provide a representation of network performance that is easier for a wide audience of readers to understand. A series of routes will be identified to assess network performance, including a wide range of routes that provide representative journey times across the network.
- 3.3.2 The results of the journey time routes for both time periods in each of the scenarios as well as comparisons between the different scenarios will be presented in graphs and tables. The tables shall demonstrate the absolute difference (in seconds) and percentage difference between the various scenarios being assessed.

Figure 3.1: Extended journey time analysis (example)



- 3.3.3 Graphs comparing the base year, Scenario A, Scenario B and Scenario C for each of the time periods will also be produced. A detailed list of all the timing points used for the assessment will also be presented in the final report. The journey time routes will be plotted by distance in the graphs, in order to show where delay can occur and highlight junctions that potentially require mitigation. An example output is provided at Figure 3.1.

3.4 COMPARISON AND ANALYSIS OF TRAFFIC FLOWS

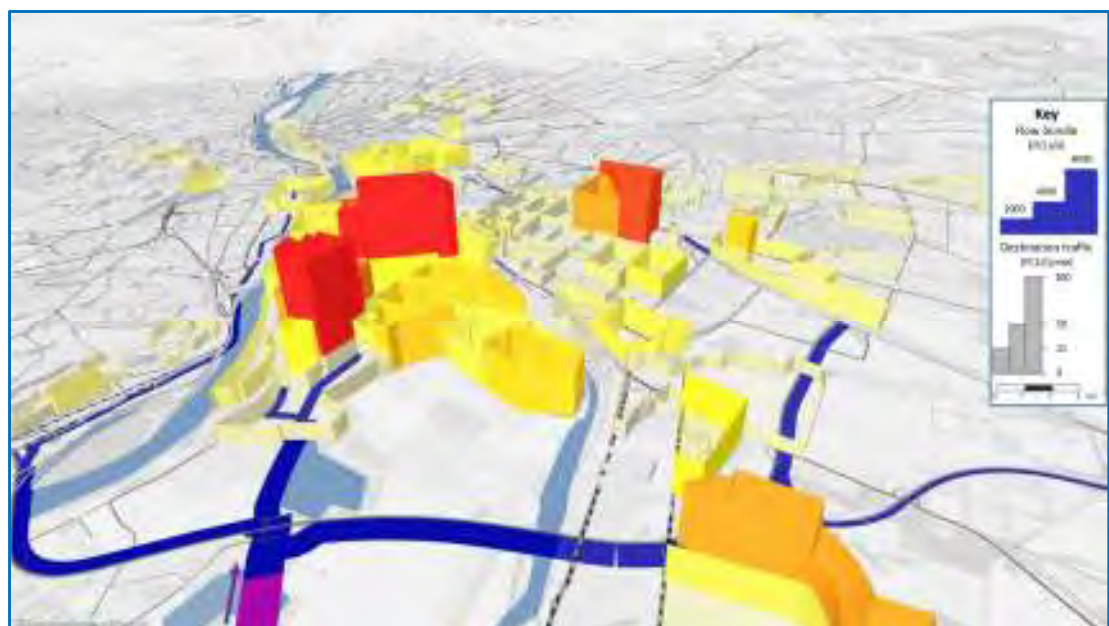
- 3.4.1 Traffic flow analysis will be carried out on various levels and comparison plots will be produced in order to be able to examine the relative impact of the development against the future year base network. Data and graphical outputs, shown as examples in Figures 3.2, 3.3 and 3.4, will be extracted for the following network objects:

Figure 3.2: Relative traffic flow difference on the entire network (example)

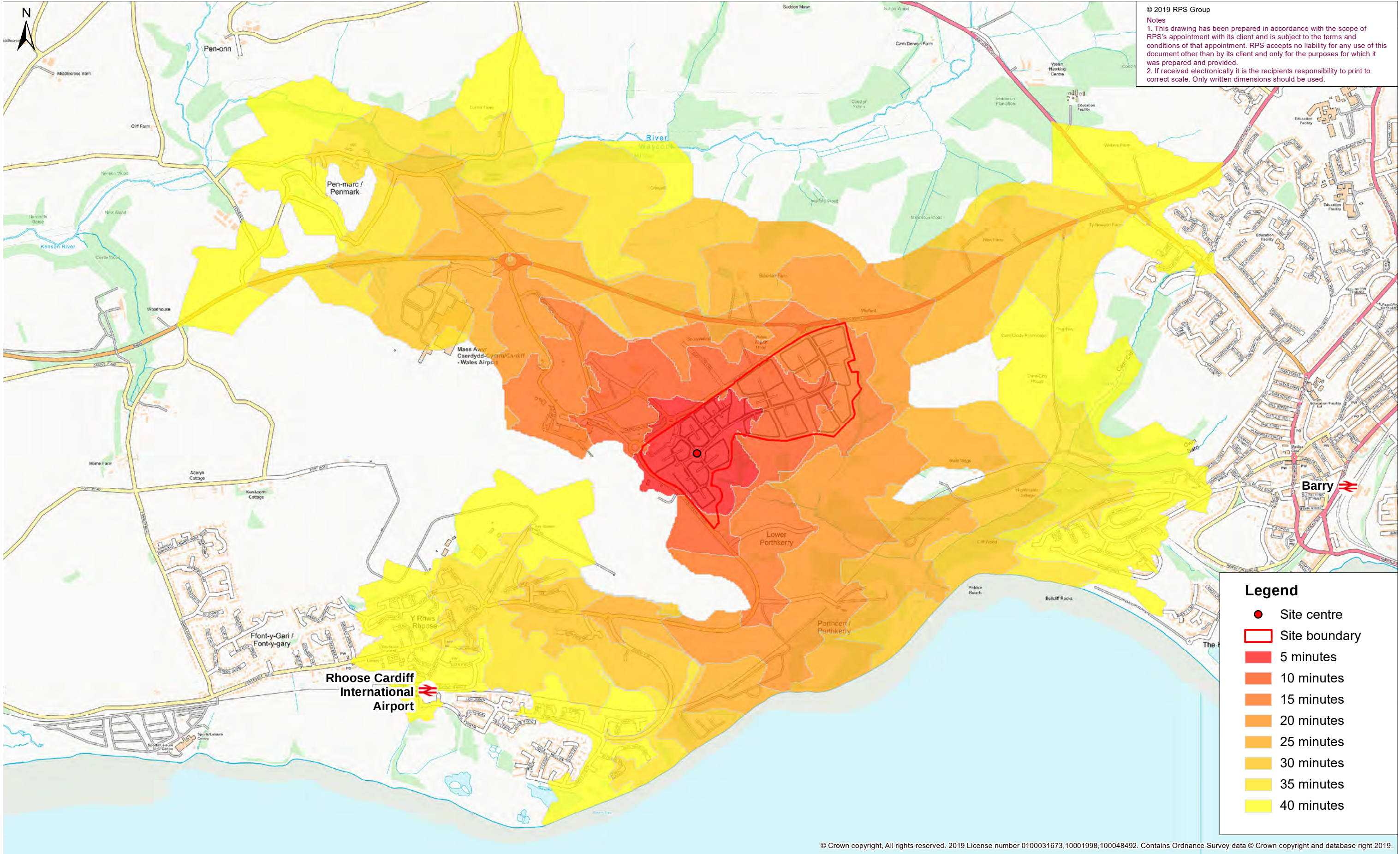


- ▶ Link traffic flows – to display and analyse relative and absolute change in number of vehicles on the local and wider highway network;
- ▶ Turning movements – to provide input data for further micro-level traffic assessments;
- ▶ Traffic flows of screen lines – to ensure that the magnitude of the traffic is maintained in the West Cardiff area;
- ▶ Link flow bundle analysis – to analyse the origin-destination movements of the key sections on the network; and
- ▶ Accessibility analysis of key objects in the simulation area.

Figure 3.3: Detailed flow bundle analysis of the selected link (example)

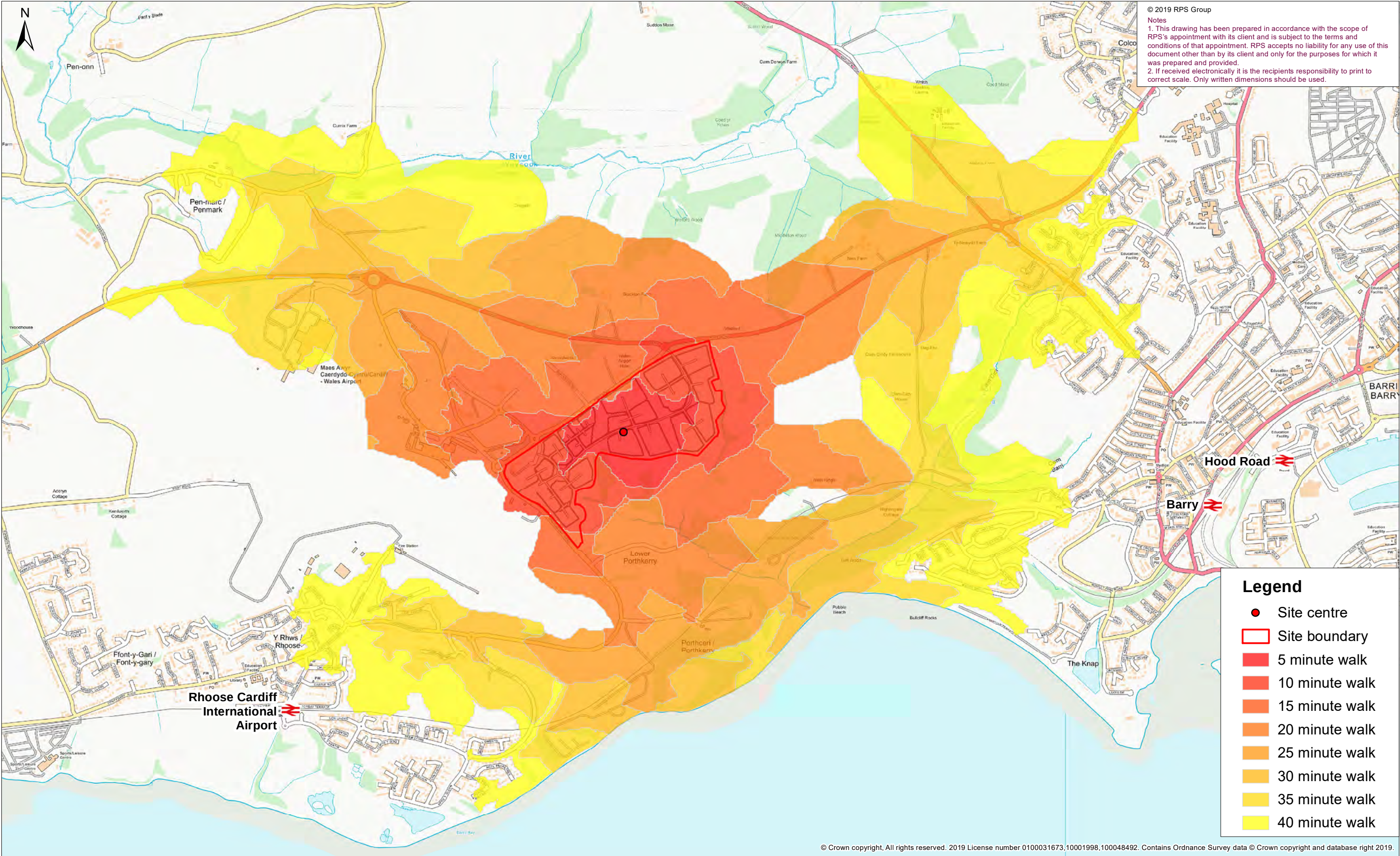


Appendix B – Pedestrian and Cycling Isochrones



					ClientLegal and General Capital ProjectModel Farm TitleWestern Walk Isochrone	0250500 m	StatusDRAFT Project NumberJNY9624	Drawn ByBG Scale @ A31:17,000	PM/Checked ByCM Date CreatedMAR 2019	20 Western Avenue, Milton Park, Abingdon, Oxfordshire, OX14 4SH T: +44(0)1235 821 888 E: rpsox@rpsgroup.com  MAKING COMPLEX EASY
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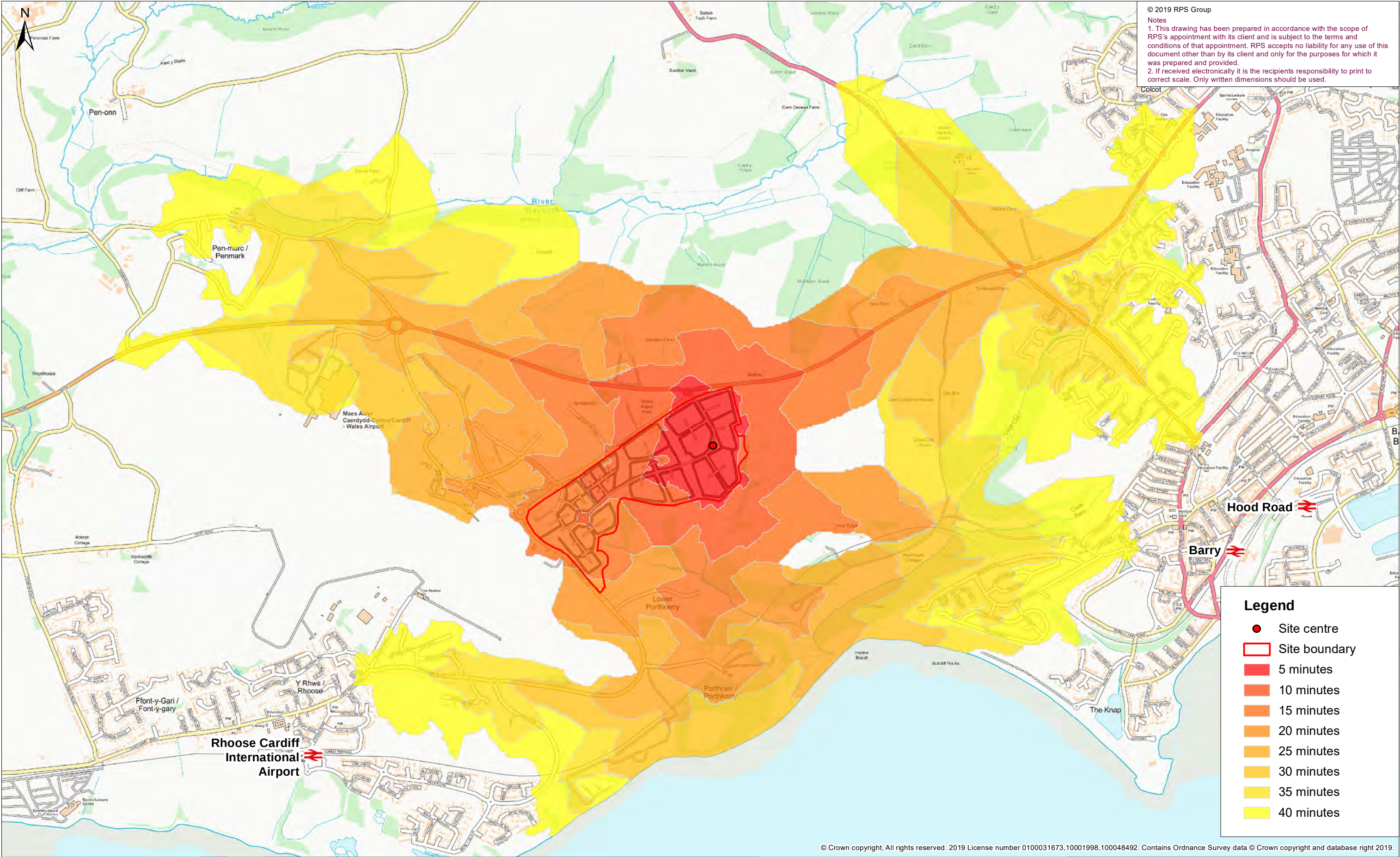
Client	Legal and General Capital
Project	Model Farm
Title	Central Walk Isochrone

Status	Drawn By	PM/Checked By
DRAFT	CR	CM
Project Number	Scale @ A3	Date Created
JNY9624	1:17,000	MAR 2019

20 Western Avenue, Milton Park,
Abingdon, Oxfordshire, OX14 4SH
T: +44(0)1235 821 888
E: rps@rpsgroup.com

rps MAKING COMPLEX EASY

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Notes

1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.

2. If received electronically it is the recipients responsibility to print to correct scale. Only written dimensions should be used.

Legend

- Site centre
- Site boundary
- 5 minutes
- 10 minutes
- 15 minutes
- 20 minutes
- 25 minutes
- 30 minutes
- 35 minutes
- 40 minutes

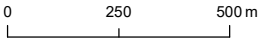
© Crown copyright, All rights reserved. 2019 License number 0100031673,10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019.

Rev	Description	By	CB	Date
Figure Number				Rev
4				-
rpsgroup.com				

Client Legal and General Capital

Project Model Farm

Title Eastern Walk Isochrone



Status
DRAFT

Project Number
JNY9624

Drawn By
BG

Scale @ A3
1:17,000

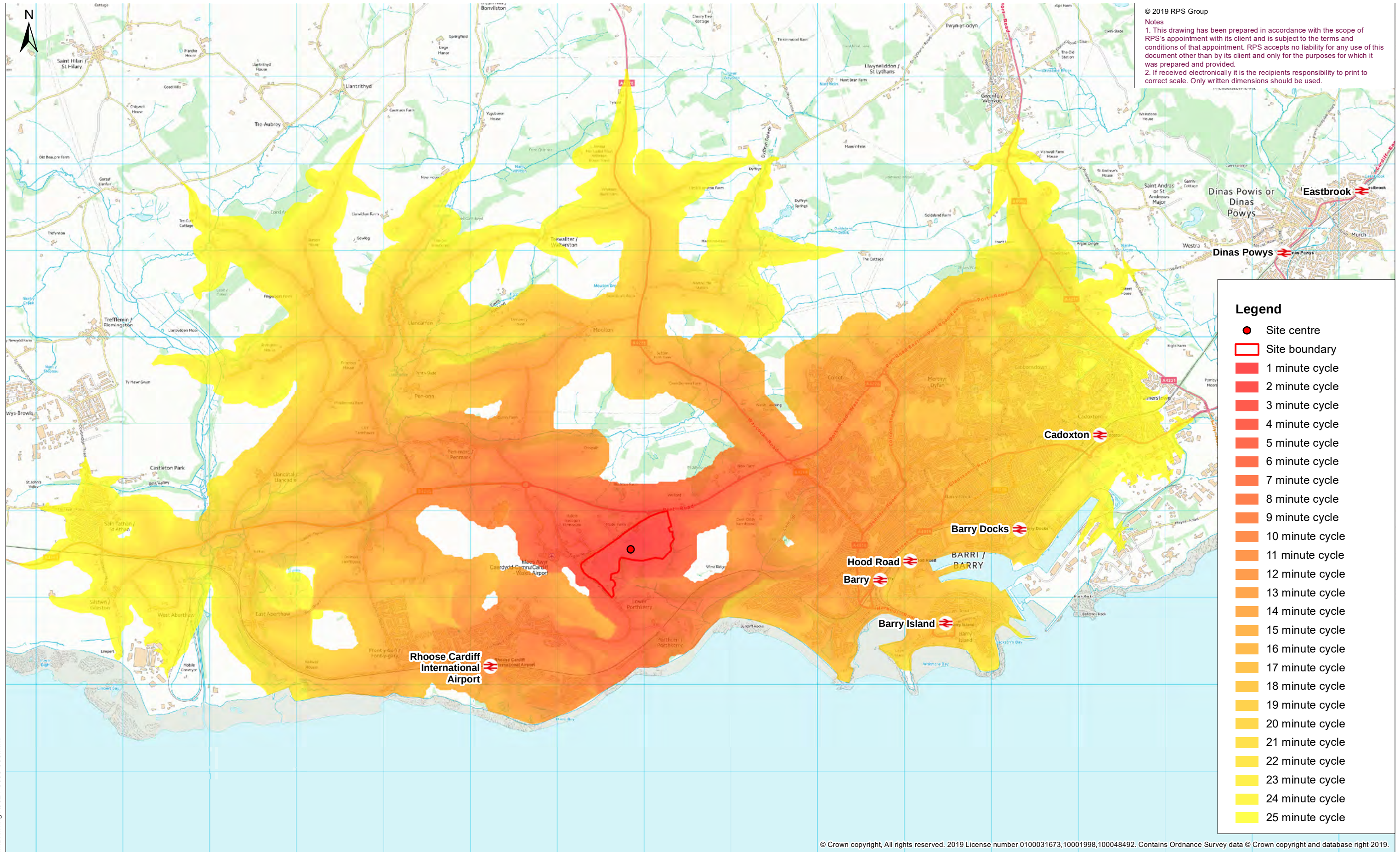
PM/Checked By
CM

Date Created
MAR 2019

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E: rpsox@rpsgroup.com



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					Client Legal and General Capital	05001,000m	Status DRAFT	Drawn By CR	PM/Checked By CM	20 Western Avenue, Milton Park, Abingdon, Oxfordshire, OX14 4SH T: +44(0)1235 821 888 E: rpsbox@rpsgroup.com	 MAKING COMPLEX EASY				
Rev	Description	By	CB	Date								Project Model Farm	Project Number JNY9624	Scale @ A3 1:40,000	Date Created MAR 2019
Figure Number 2															
rpsgroup.com					Title Cycle Isochrone										

Appendix C – B1 Use TRICS Output Report

Calculation Reference: AUDIT-515501-190208-0224

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : B - BUSINESS PARK
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HF HERTFORDSHIRE	1 days
04	EAST ANGLIA	
	CA CAMBRIDGESHIRE	1 days
05	EAST MIDLANDS	
	LN LINCOLNSHIRE	1 days
06	WEST MIDLANDS	
	HE HEREFORDSHIRE	1 days
	WM WEST MIDLANDS	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	WY WEST YORKSHIRE	1 days
09	NORTH	
	TW TYNE & WEAR	1 days
10	WALES	
	CF CARDIFF	1 days
	CP CAERPHILLY	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: 5000 to 34616 (units: sqm)
 Range Selected by User: 5000 to 132084 (units: sqm)

Parking Spaces Range: Selected: 7 to 4167 Actual: 7 to 4167

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 13/03/18

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:

Monday	1 days
Tuesday	3 days
Wednesday	2 days
Thursday	2 days
Friday	1 days

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

Selected survey types:

Manual count	9 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	8
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:

Industrial Zone	2
Commercial Zone	4
Development 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:

B1 8 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	2 days
10,001 to 15,000	3 days
15,001 to 20,000	2 days

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

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
125,001 to 250,000	3 days
250,001 to 500,000	3 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	4 days
1.1 to 1.5	5 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No 9 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 9 days

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

LIST OF SITES relevant to selection parameters

1	CA-02-B-02 LYNCH WOOD PETERBOROUGH	BUSINESS PARK	CAMBRIDGESHIRE
	Edge of Town Commercial Zone Total Gross floor area:	12800 sqm	
	Survey date: WEDNESDAY	19/10/16	Survey Type: MANUAL
2	CF-02-B-07 MALTHOUSE AVENUE CARDIFF PONTPRENNAU	BUSINESS PARK	CARDIFF
	Edge of Town Commercial Zone Total Gross floor area:	15930 sqm	
	Survey date: TUESDAY	13/03/18	Survey Type: MANUAL
3	CP-02-B-01 VAN ROAD CAERPHILLY	BUSINESS PARK	CAERPHILLY
	Edge of Town Commercial Zone Total Gross floor area:	14450 sqm	
	Survey date: TUESDAY	17/07/12	Survey Type: MANUAL
4	HE-02-B-01 A4103 NEAR HEREFORD WHITESTONE Neighbourhood Centre (PPS6 Local Centre) Village	BUSINESS PARK	HEREFORDSHIRE
	Total Gross floor area:	18808 sqm	
	Survey date: TUESDAY	13/09/11	Survey Type: MANUAL
5	HF-02-B-01 ST ALBANS ROAD WEST HATFIELD	BUSINESS PARK	HERTFORDSHIRE
	Edge of Town Commercial Zone Total Gross floor area:	26000 sqm	
	Survey date: MONDAY	07/07/08	Survey Type: MANUAL
6	LN-02-B-02 CARDINAL CLOSE LINCOLN	BUSINESS PARK	LINCOLNSHIRE
	Edge of Town Industrial Zone Total Gross floor area:	5000 sqm	
	Survey date: THURSDAY	25/06/15	Survey Type: MANUAL
7	TW-02-B-04 KINGFISHER BOULEVARD NEWCASTLE UPON TYNE LEMINGTON	BUSINESS PARK	TYNE & WEAR
	Edge of Town Industrial Zone Total Gross floor area:	38853 sqm	
	Survey date: THURSDAY	11/12/08	Survey Type: MANUAL
8	WM-02-B-02 PARADISE WAY COVENTRY	BUSINESS PARK	WEST MIDLANDS
	Edge of Town Development Zone Total Gross floor area:	12800 sqm	
	Survey date: FRIDAY	11/11/16	Survey Type: MANUAL
9	WY-02-B-02 ARMITAGE BRIDGE HUDDERSFIELD	BUSINESS PARK	WEST YORKSHIRE
	Edge of Town No Sub Category Total Gross floor area:	9200 sqm	
	Survey date: WEDNESDAY	23/04/14	Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CA-02-B-03	HIGH PT
CA-02-B-03	HIGH PT
CF-02-B-04	HIGH PT
FA-02-B-02	HIGH PT
FI-02-B-01	HIGH PT

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK
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	9	15652	0.595	9	15652	0.089	9	15652	0.684
08:00 - 09:00	9	15652	1.313	9	15652	0.217	9	15652	1.530
09:00 - 10:00	9	15652	0.718	9	15652	0.258	9	15652	0.976
10:00 - 11:00	9	15652	0.276	9	15652	0.208	9	15652	0.484
11:00 - 12:00	9	15652	0.221	9	15652	0.236	9	15652	0.457
12:00 - 13:00	9	15652	0.327	9	15652	0.429	9	15652	0.756
13:00 - 14:00	9	15652	0.400	9	15652	0.354	9	15652	0.754
14:00 - 15:00	9	15652	0.248	9	15652	0.288	9	15652	0.536
15:00 - 16:00	9	15652	0.195	9	15652	0.405	9	15652	0.600
16:00 - 17:00	9	15652	0.175	9	15652	0.861	9	15652	1.036
17:00 - 18:00	9	15652	0.156	9	15652	0.995	9	15652	1.151
18:00 - 19:00	8	16659	0.073	8	16659	0.358	8	16659	0.431
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.697			4.698			9.395

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.

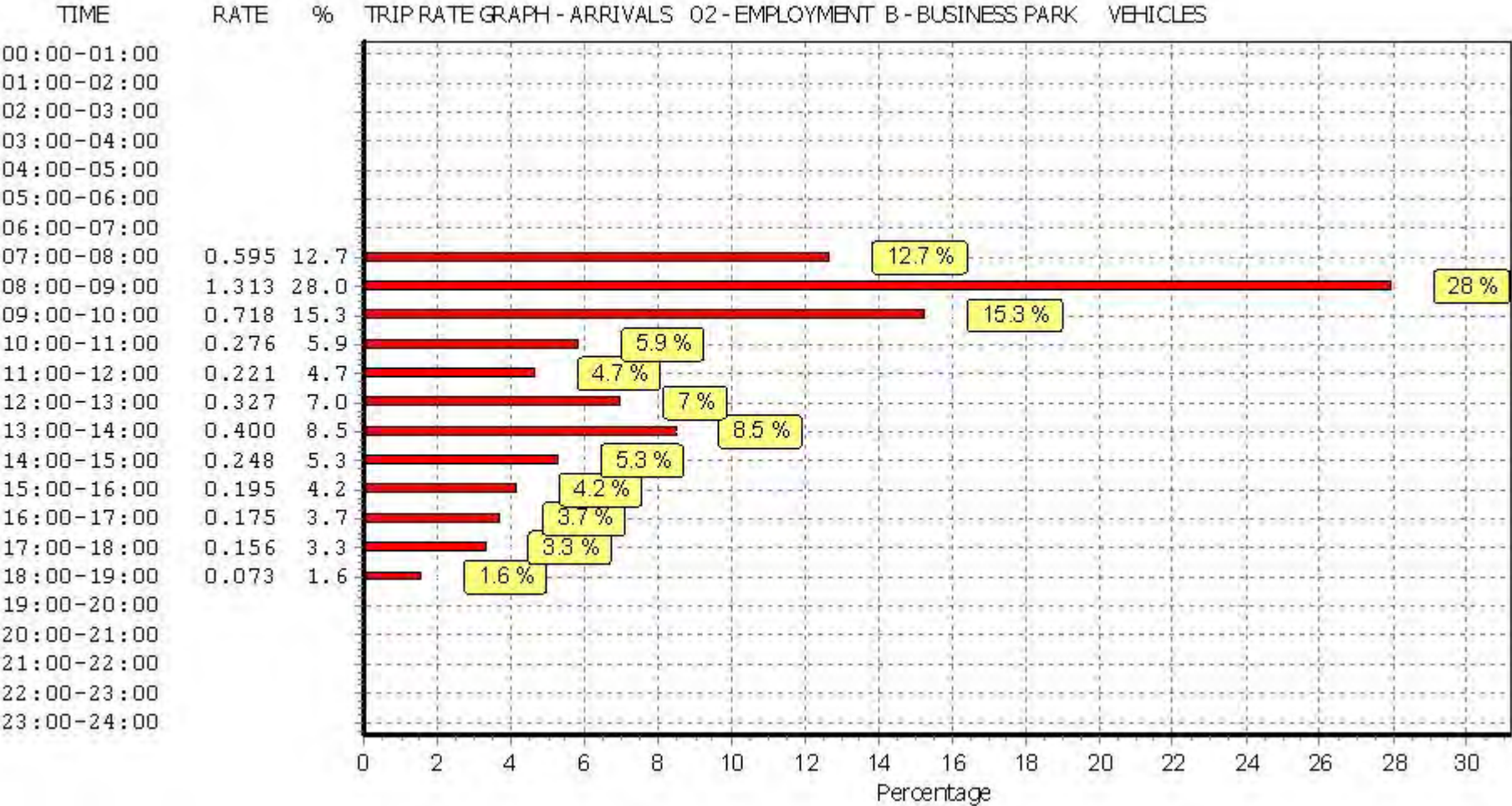
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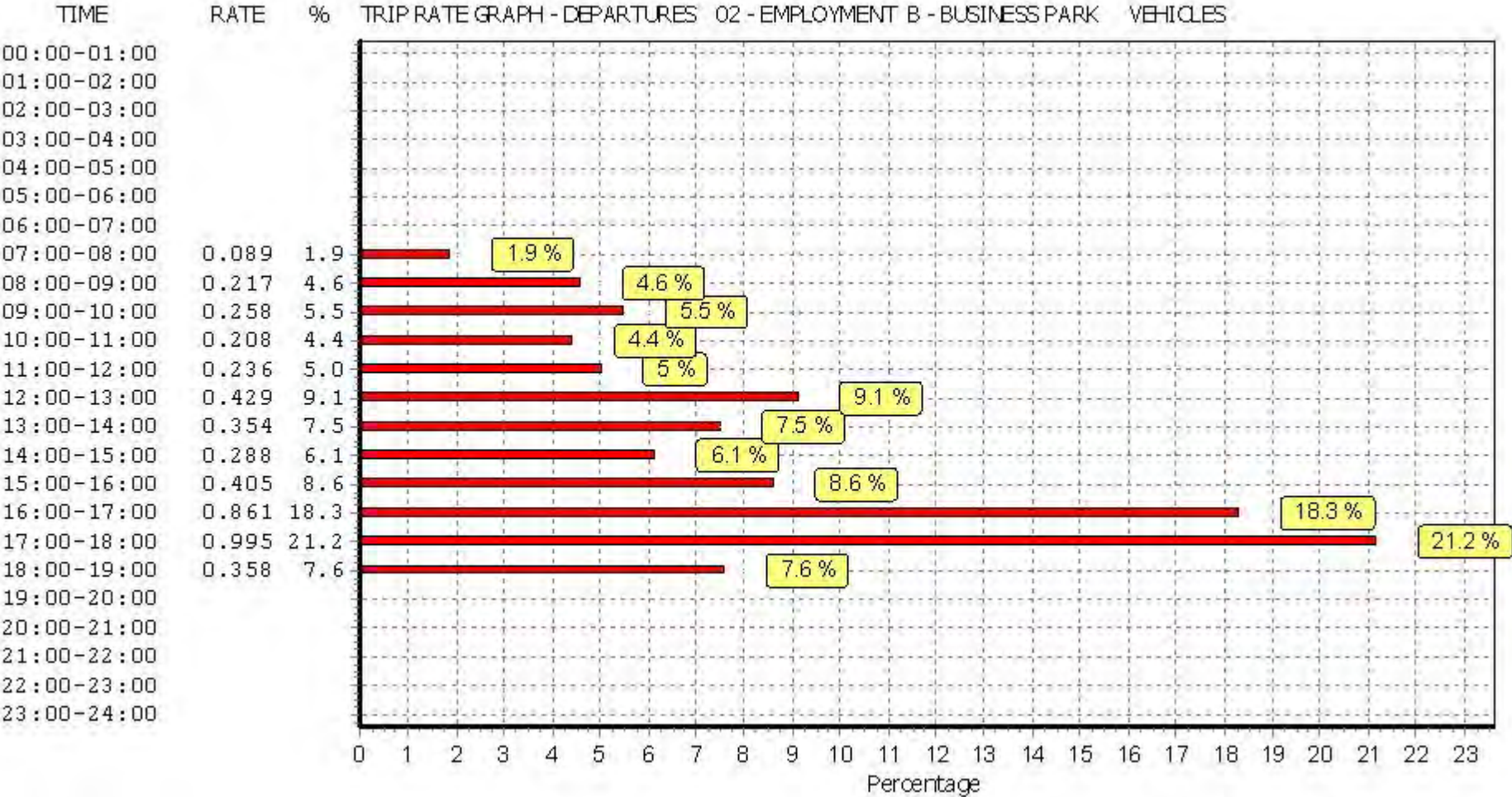
Parameter summary

Trip rate parameter range selected:	5000 - 34616 (units: sqm)
Survey date date range:	01/01/08 - 13/03/18
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	-1
Surveys manually removed from selection:	5

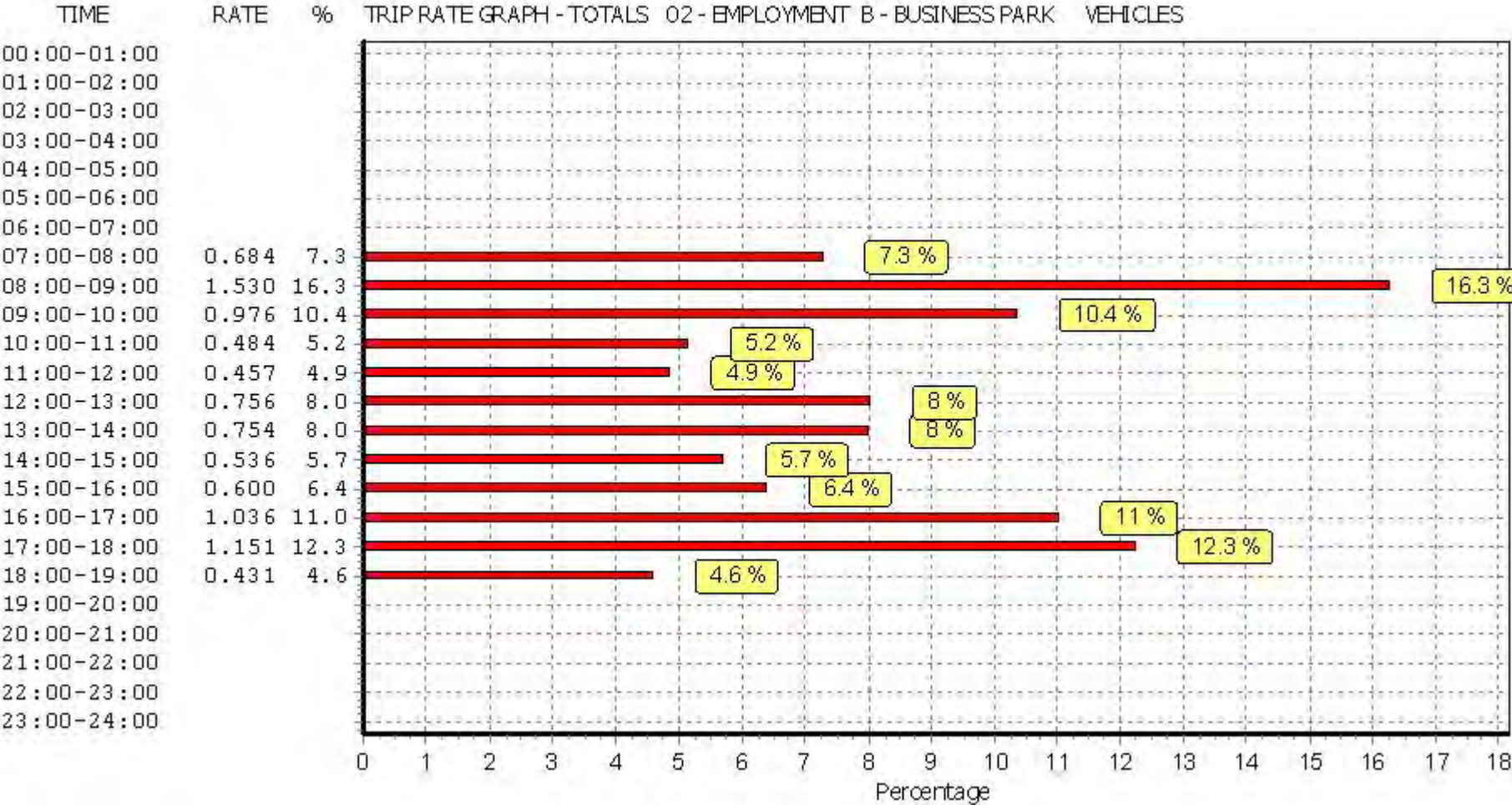
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 02 - EMPLOYMENT/B - BUSINESS PARK

TAXIS

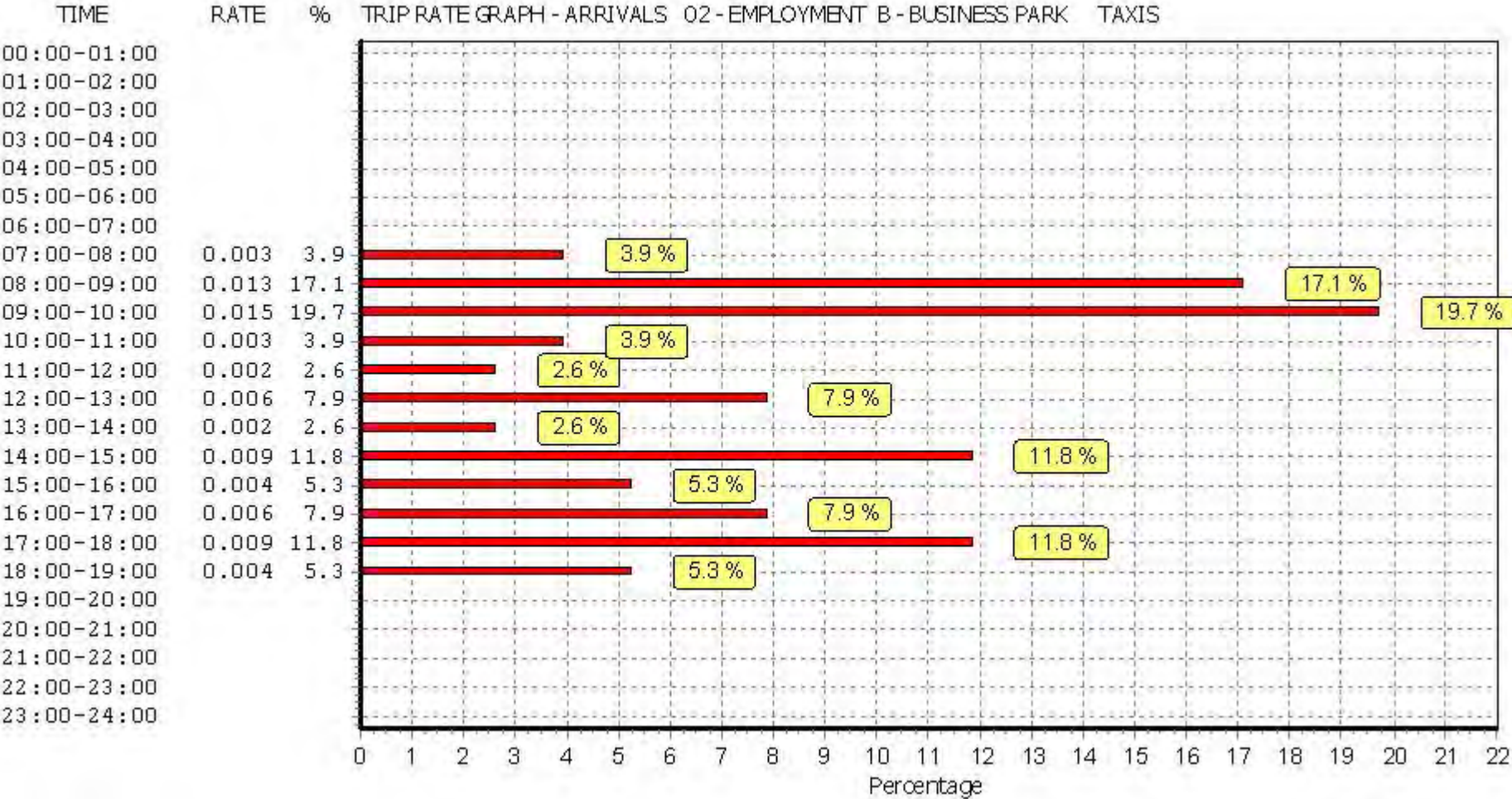
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

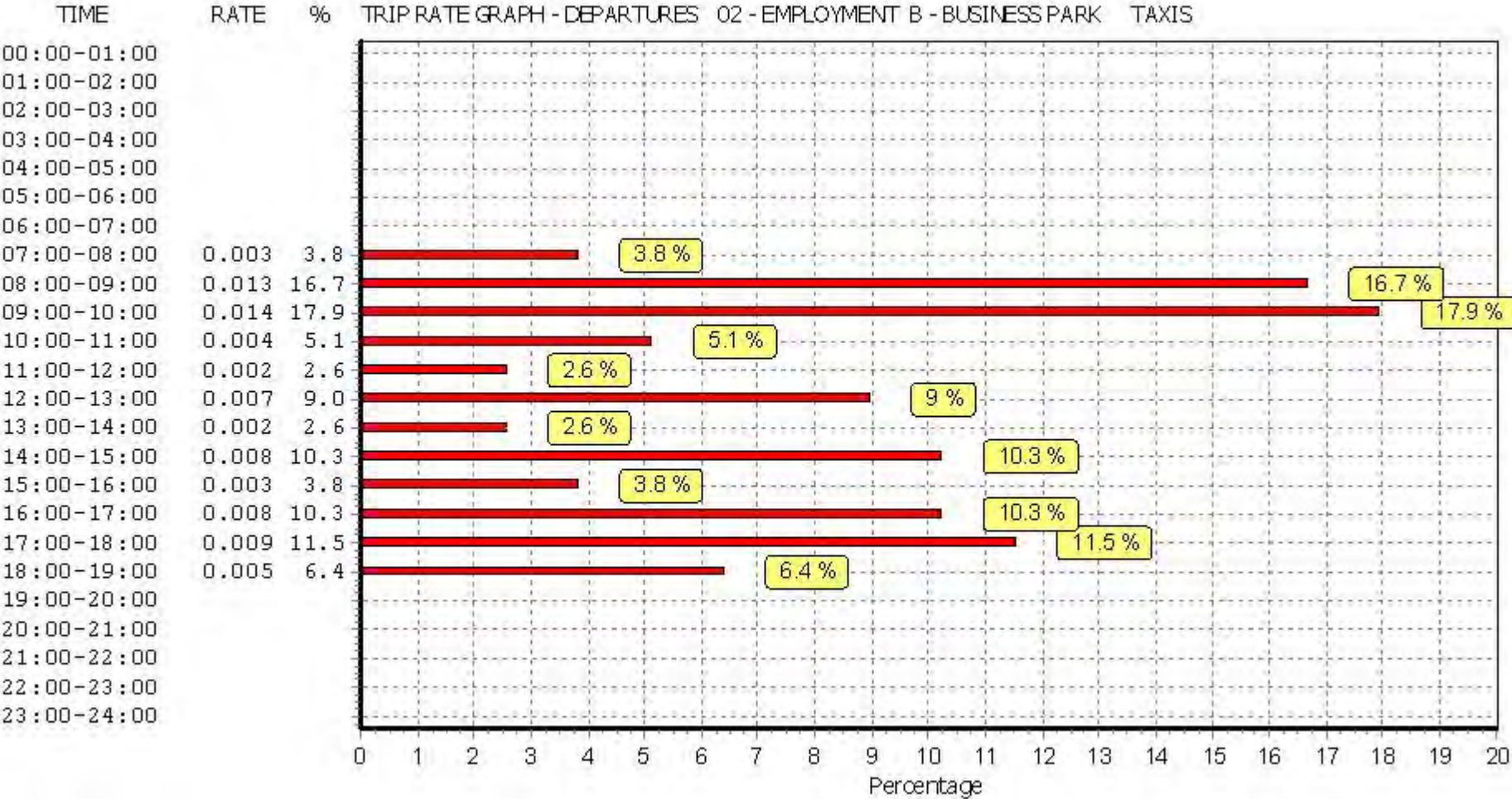
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	8	16984	0.003	8	16984	0.003	8	16984	0.006
08:00 - 09:00	9	15652	0.013	9	15652	0.013	9	15652	0.026
09:00 - 10:00	9	15652	0.015	9	15652	0.014	9	15652	0.029
10:00 - 11:00	9	15652	0.003	9	15652	0.004	9	15652	0.007
11:00 - 12:00	9	15652	0.002	9	15652	0.002	9	15652	0.004
12:00 - 13:00	9	15652	0.006	9	15652	0.007	9	15652	0.013
13:00 - 14:00	9	15652	0.002	9	15652	0.002	9	15652	0.004
14:00 - 15:00	9	15652	0.009	9	15652	0.008	9	15652	0.017
15:00 - 16:00	9	15652	0.004	9	15652	0.003	9	15652	0.007
16:00 - 17:00	9	15652	0.006	9	15652	0.008	9	15652	0.014
17:00 - 18:00	9	15652	0.009	9	15652	0.009	9	15652	0.018
18:00 - 19:00	8	16659	0.004	8	16659	0.005	8	16659	0.009
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.076			0.078			0.154

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.

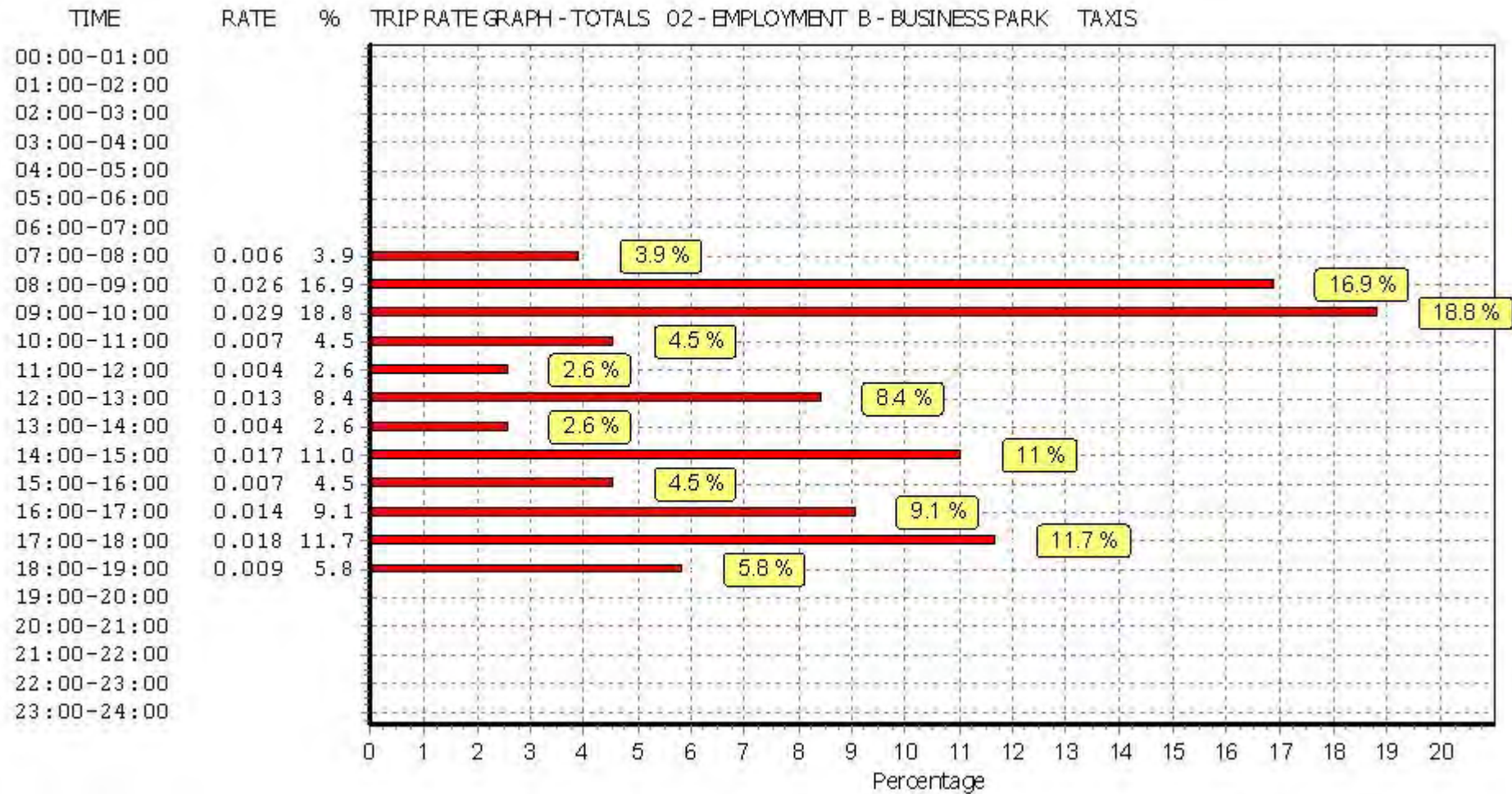
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

OGVS

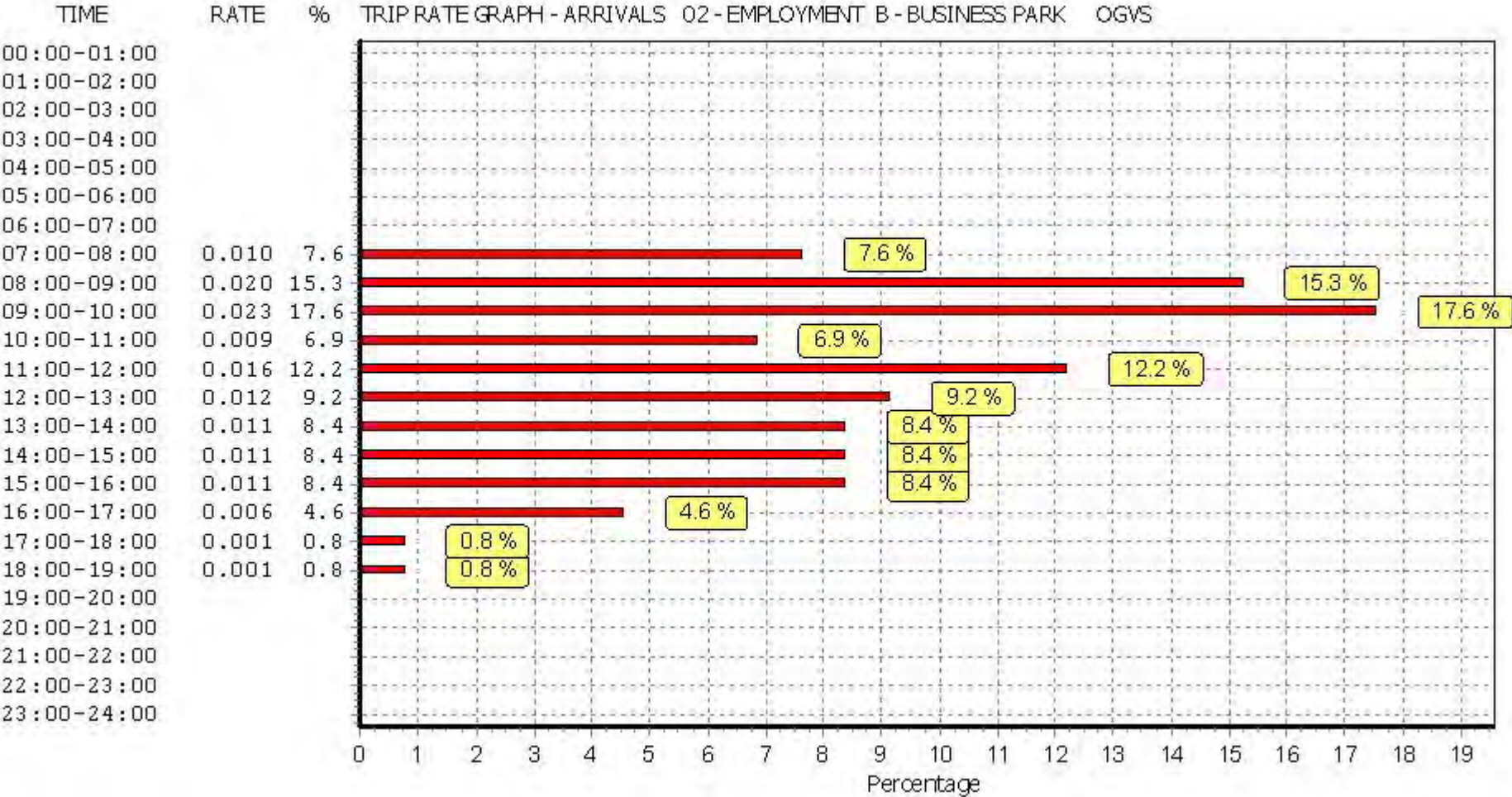
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

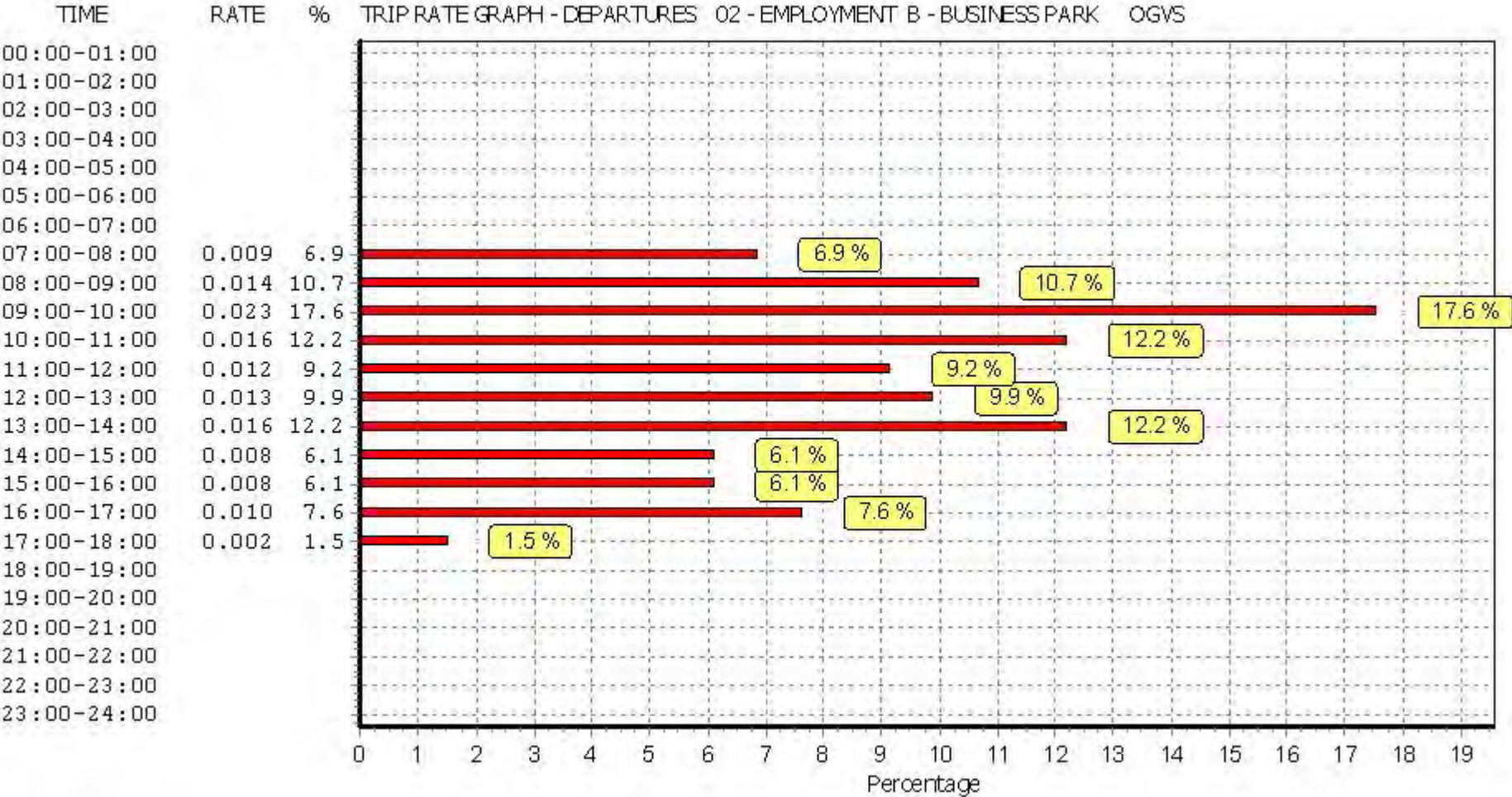
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	15652	0.010	9	15652	0.009	9	15652	0.019
08:00 - 09:00	9	15652	0.020	9	15652	0.014	9	15652	0.034
09:00 - 10:00	9	15652	0.023	9	15652	0.023	9	15652	0.046
10:00 - 11:00	9	15652	0.009	9	15652	0.016	9	15652	0.025
11:00 - 12:00	9	15652	0.016	9	15652	0.012	9	15652	0.028
12:00 - 13:00	9	15652	0.012	9	15652	0.013	9	15652	0.025
13:00 - 14:00	9	15652	0.011	9	15652	0.016	9	15652	0.027
14:00 - 15:00	9	15652	0.011	9	15652	0.008	9	15652	0.019
15:00 - 16:00	9	15652	0.011	9	15652	0.008	9	15652	0.019
16:00 - 17:00	9	15652	0.006	9	15652	0.010	9	15652	0.016
17:00 - 18:00	9	15652	0.001	9	15652	0.002	9	15652	0.003
18:00 - 19:00	7	17456	0.001	7	17456	0.000	7	17456	0.001
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	0.131			0.131			0.262		

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.

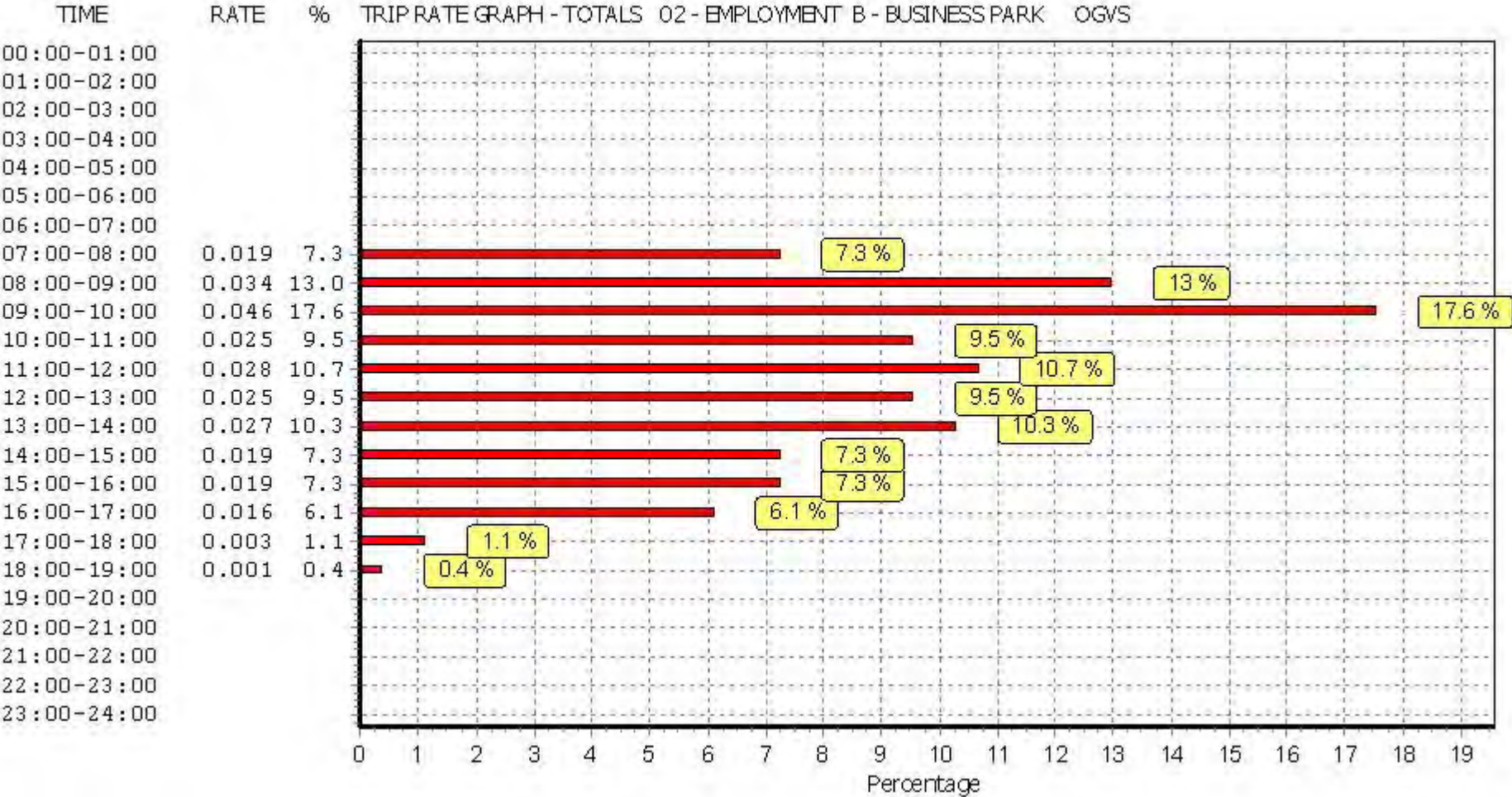
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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 02 - EMPLOYMENT/B - BUSINESS PARK

PSVS

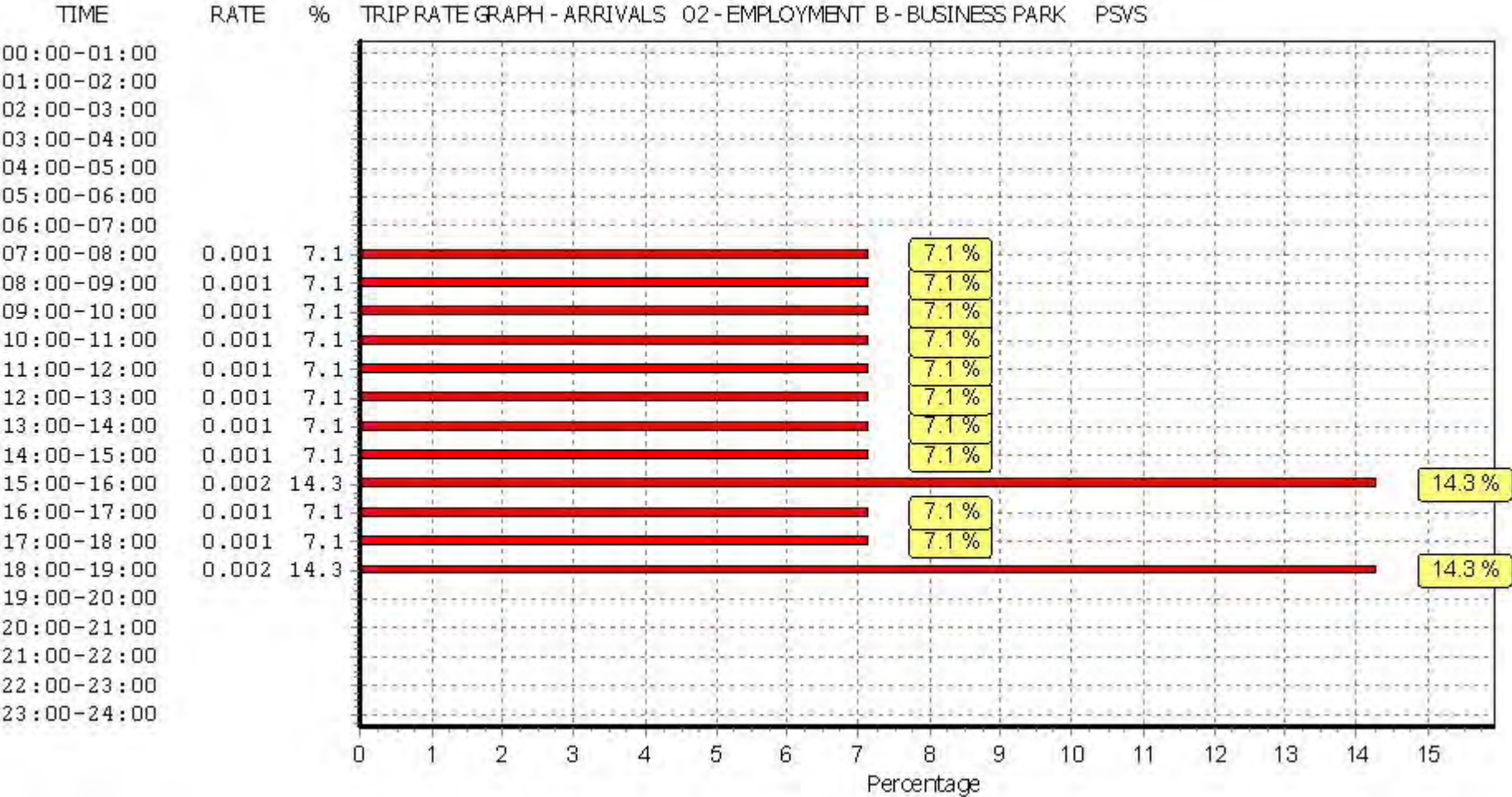
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

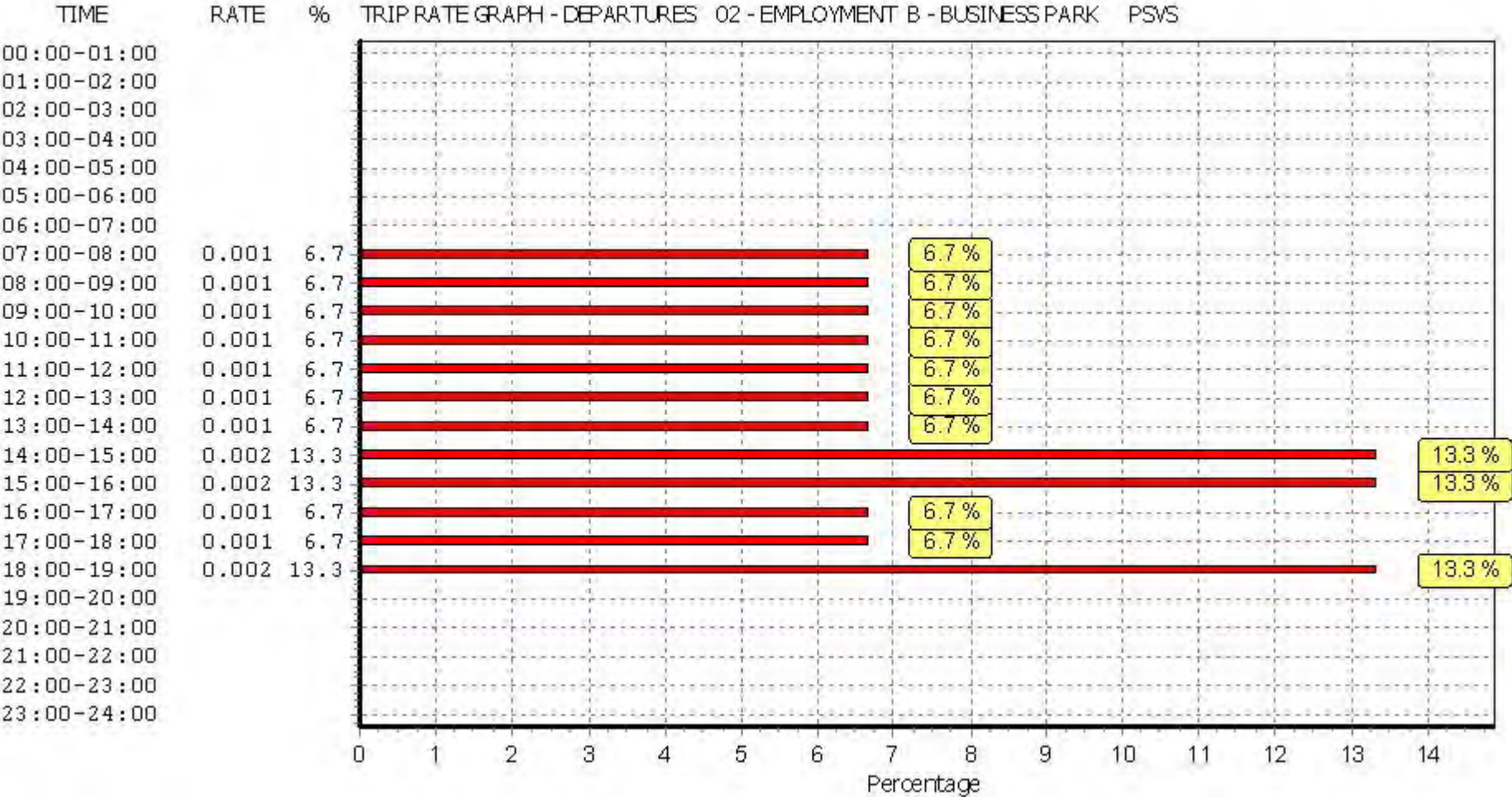
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
08:00 - 09:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
09:00 - 10:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
10:00 - 11:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
11:00 - 12:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
12:00 - 13:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
13:00 - 14:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
14:00 - 15:00	9	15652	0.001	9	15652	0.002	9	15652	0.003
15:00 - 16:00	9	15652	0.002	9	15652	0.002	9	15652	0.004
16:00 - 17:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
17:00 - 18:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
18:00 - 19:00	8	16659	0.002	8	16659	0.002	8	16659	0.004
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	0.014			0.015			0.029		

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.

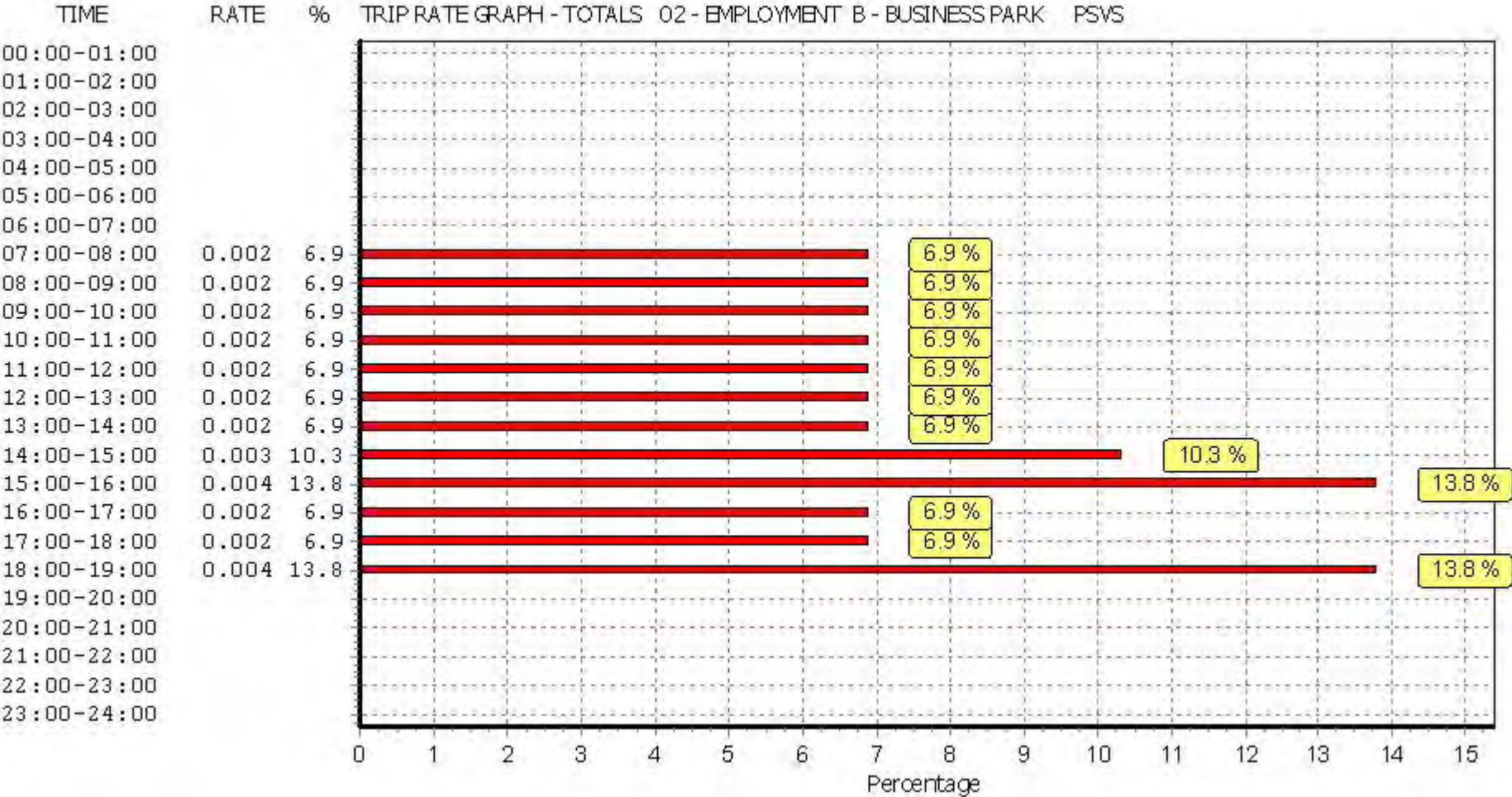
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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



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.



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 02 - EMPLOYMENT/B - BUSINESS PARK
 CYCLISTS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

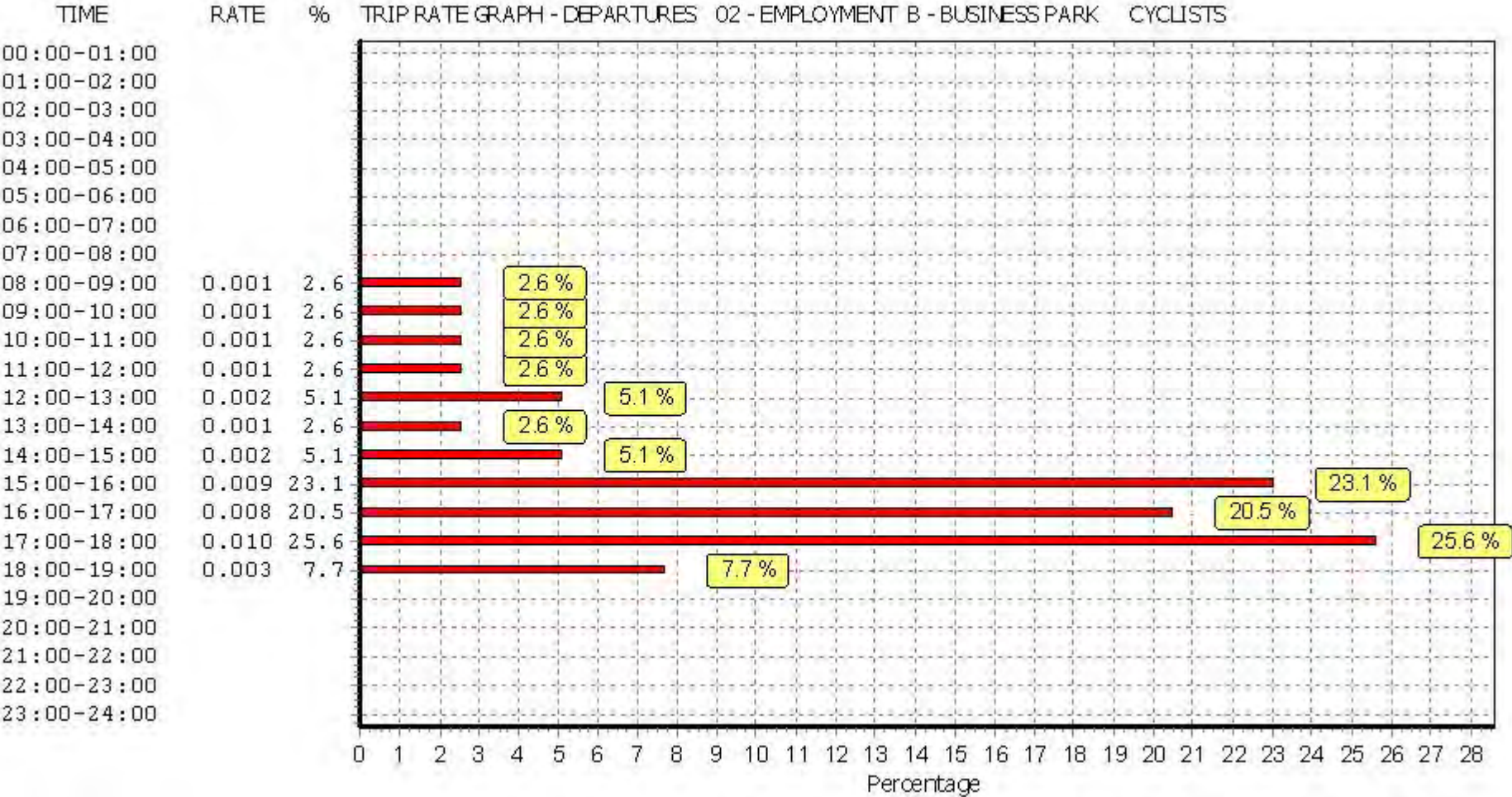
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	15652	0.004	9	15652	0.000	9	15652	0.004
08:00 - 09:00	9	15652	0.018	9	15652	0.001	9	15652	0.019
09:00 - 10:00	9	15652	0.005	9	15652	0.001	9	15652	0.006
10:00 - 11:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
11:00 - 12:00	9	15652	0.001	9	15652	0.001	9	15652	0.002
12:00 - 13:00	9	15652	0.003	9	15652	0.002	9	15652	0.005
13:00 - 14:00	9	15652	0.002	9	15652	0.001	9	15652	0.003
14:00 - 15:00	9	15652	0.001	9	15652	0.002	9	15652	0.003
15:00 - 16:00	9	15652	0.000	9	15652	0.009	9	15652	0.009
16:00 - 17:00	9	15652	0.000	9	15652	0.008	9	15652	0.008
17:00 - 18:00	9	15652	0.002	9	15652	0.010	9	15652	0.012
18:00 - 19:00	8	16659	0.000	8	16659	0.003	8	16659	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.037			0.039			0.076

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

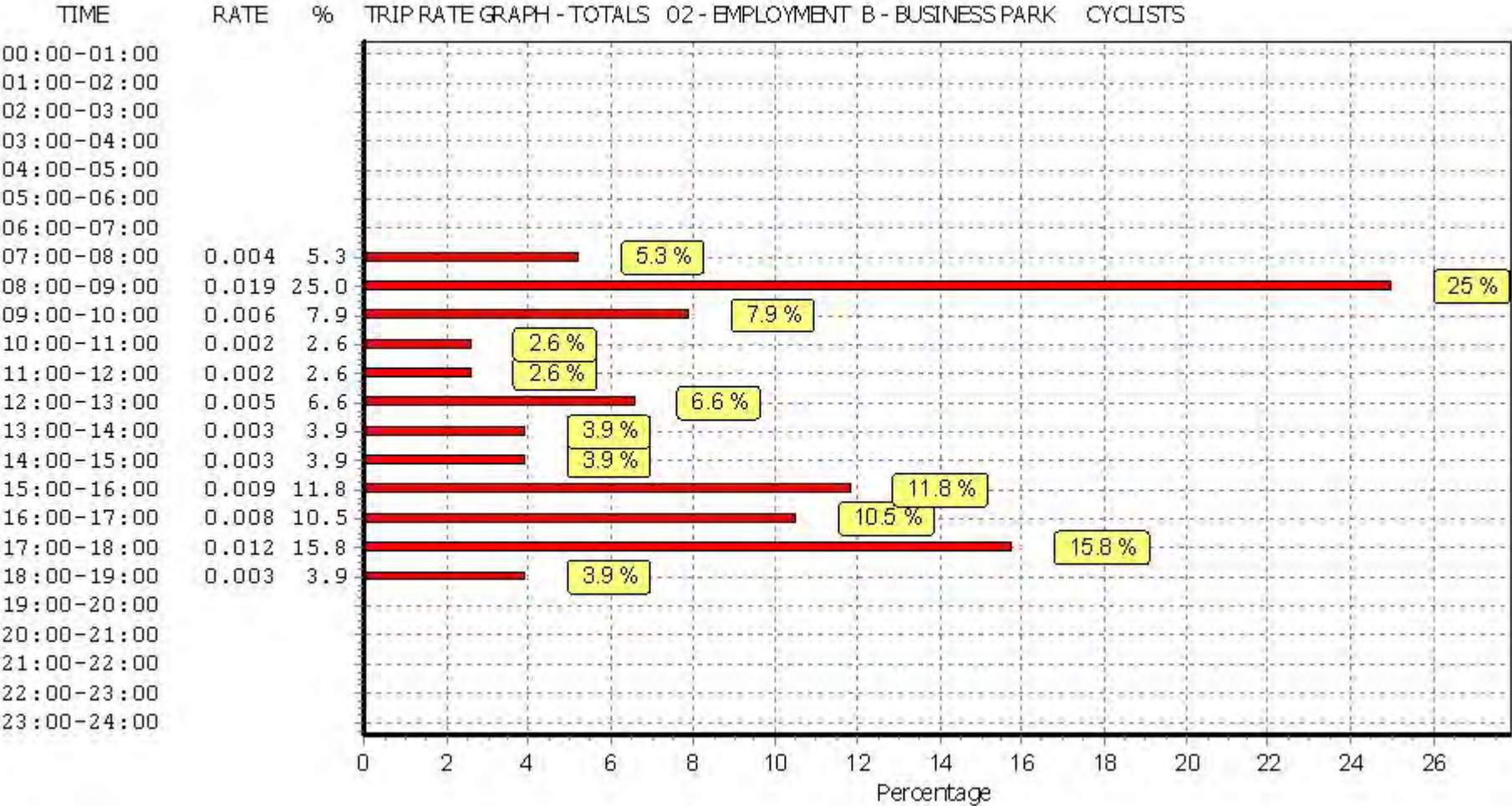
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.



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.



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.



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 D – B2 Use TRICS Output Report

Calculation Reference: AUDIT-515501-190213-0243

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : D - INDUSTRIAL ESTATE
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	KC KENT	1 days
03	SOUTH WEST	
	DC DORSET	1 days
11	SCOTLAND	
	AG ANGUS	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: 7715 to 66725 (units: sqm)
 Range Selected by User: 552 to 234115 (units: sqm)

Parking Spaces Range: Selected: 18 to 1800 Actual: 18 to 1800

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/08 to 28/11/17

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
Tuesday	1 days
Wednesday	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	2
Free Standing (PPS6 Out of Town)	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:

Residential Zone	1
Out of Town	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:

Not Known	1 days
B2	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®.

Secondary Filtering selection (Cont.):

Population within 1 mile:

5,001 to 10,000	2 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:

25,001 to 50,000	2 days
50,001 to 75,000	1 days

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

Car ownership within 5 miles:

1.1 to 1.5	3 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	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	AG-02-D-02	INDUSTRIAL ESTATE	ANGUS
	A933 WESTWAY		
	ARBROATH		
	HOSPITALFIELD		
	Edge of Town		
	No Sub Category		
	Total Gross floor area:	78500	sqm
	Survey date: TUESDAY	25/04/17	Survey Type: MANUAL
2	DC-02-D-20	INDUSTRIAL ESTATE	DORSET
	OLD BARN FARM ROAD		
	NEAR BOURNEMOUTH		
	THREE LEGGED CROSS		
	Free Standing (PPS6 Out of Town)		
	Out of Town		
	Total Gross floor area:	70000	sqm
	Survey date: MONDAY	24/03/14	Survey Type: MANUAL
3	KC-02-D-02	INDUSTRIAL ESTATE	KENT
	SOUTHWELL ROAD		
	DEAL		
	Edge of Town		
	Residential Zone		
	Total Gross floor area:	10715	sqm
	Survey date: WEDNESDAY	28/11/12	Survey Type: MANUAL

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

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CA-02-D-02	Below 5000sqm
CB-02-D-04	High Public Transport
CM-02-D-03	Below 5000sqm
CW-02-D-03	High Public Transport
DV-02-D-06	Below 5000sqm
DV-02-D-07	Below 5000sqm
EA-02-D-02	Below 5000sqm
ES-02-D-06	High Public Transport
EX-02-D-02	High Public Transport
FA-02-D-03	Below 5000sqm
FI-02-D-01	High Public Transport
HI-02-D-03	High Public Transport
LC-02-D-05	High Public Transport
LC-02-D-07	Below 5000sqm
LN-02-D-02	Below 5000sqm
MS-02-D-06	Below 5000sqm
NB-02-D-02	High Public Transport
NF-02-D-03	High Public Transport
NR-02-D-01	High Public Transport
TW-02-D-07	High Public Transport
VG-02-D-01	High Public Transport
WM-02-D-02	High Public Transport
WO-02-D-01	Below 5000sqm
WO-02-D-02	High Public Transport
WY-02-D-04	High Public Transport
WY-02-D-05	Below 5000sqm
WY-02-D-06	Below 5000sqm
WY-02-D-07	Below 5000sqm

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

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	3	46980	0.253	3	46980	0.099	3	46980	0.352
08:00 - 09:00	3	46980	0.276	3	46980	0.118	3	46980	0.394
09:00 - 10:00	3	46980	0.131	3	46980	0.106	3	46980	0.237
10:00 - 11:00	3	46980	0.118	3	46980	0.112	3	46980	0.230
11:00 - 12:00	3	46980	0.124	3	46980	0.125	3	46980	0.249
12:00 - 13:00	3	46980	0.116	3	46980	0.127	3	46980	0.243
13:00 - 14:00	3	46980	0.160	3	46980	0.126	3	46980	0.286
14:00 - 15:00	3	46980	0.107	3	46980	0.144	3	46980	0.251
15:00 - 16:00	3	46980	0.111	3	46980	0.167	3	46980	0.278
16:00 - 17:00	3	46980	0.188	3	46980	0.245	3	46980	0.433
17:00 - 18:00	3	46980	0.053	3	46980	0.325	3	46980	0.378
18:00 - 19:00	3	46980	0.058	3	46980	0.107	3	46980	0.165
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:		1.695			1.801			3.496	

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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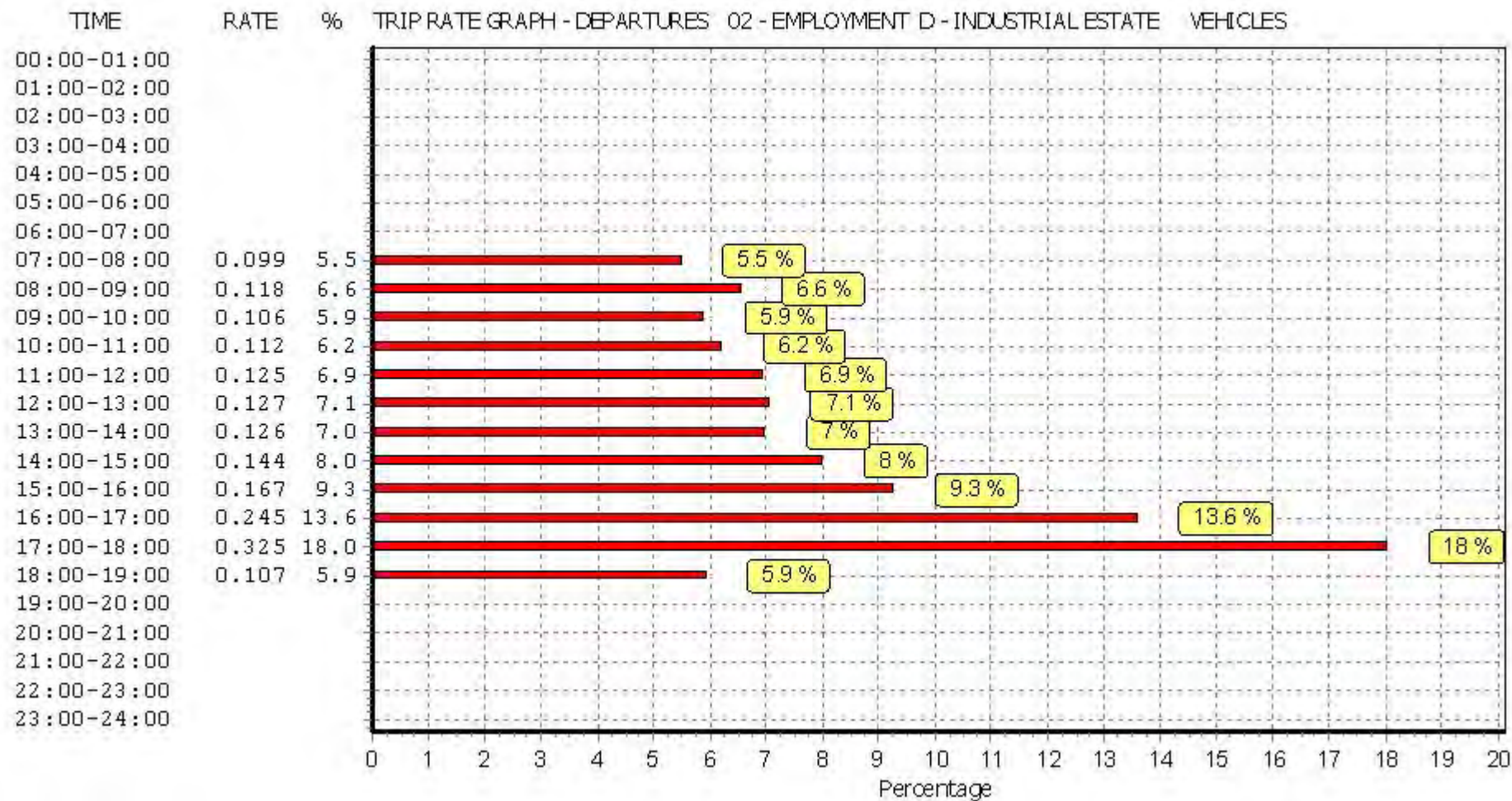
Parameter summary

Trip rate parameter range selected:	7715 - 66725 (units: sqm)
Survey date date range:	01/01/08 - 28/11/17
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	2
Surveys manually removed from selection:	28

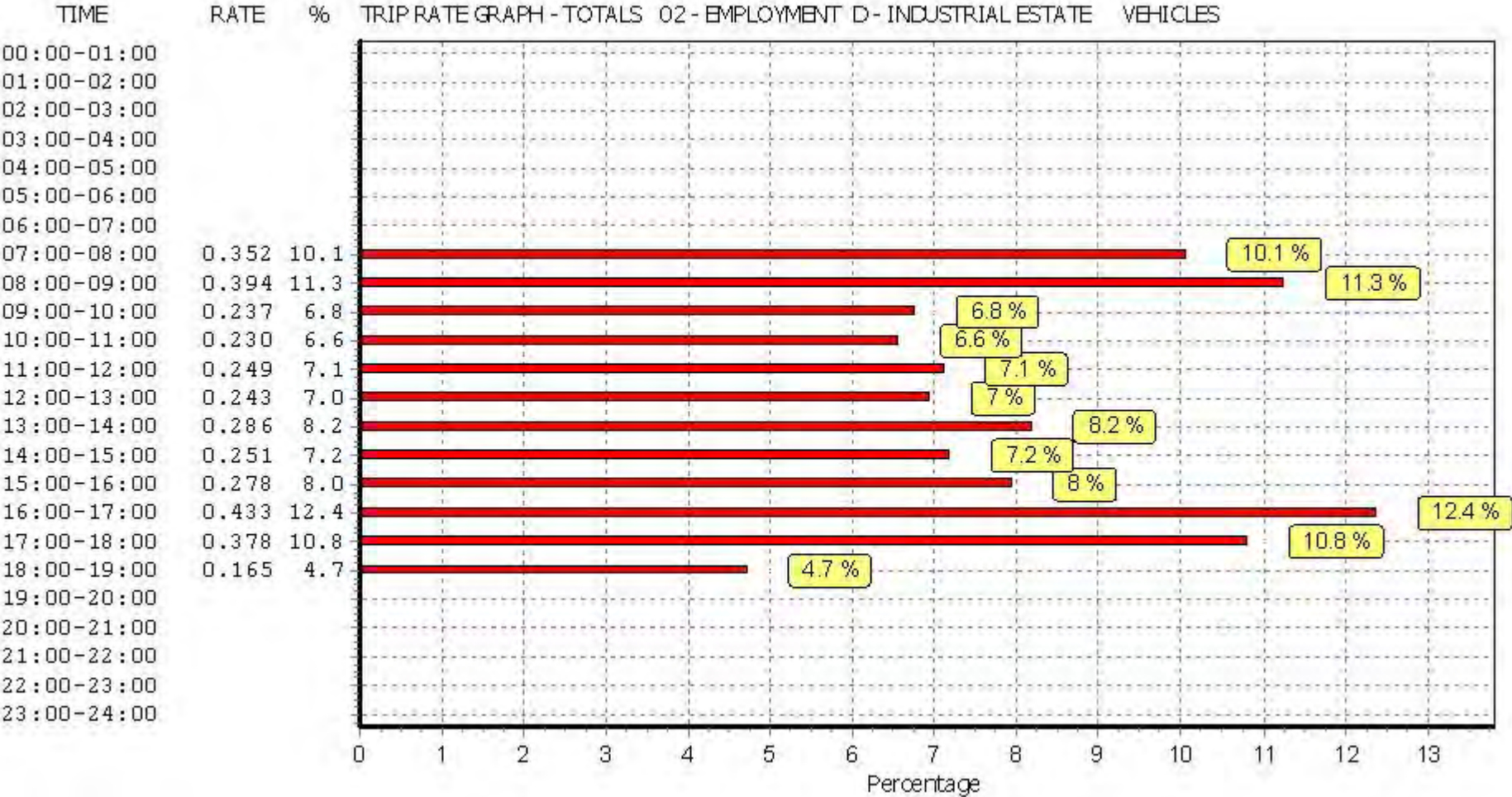
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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.



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 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

TAXIS

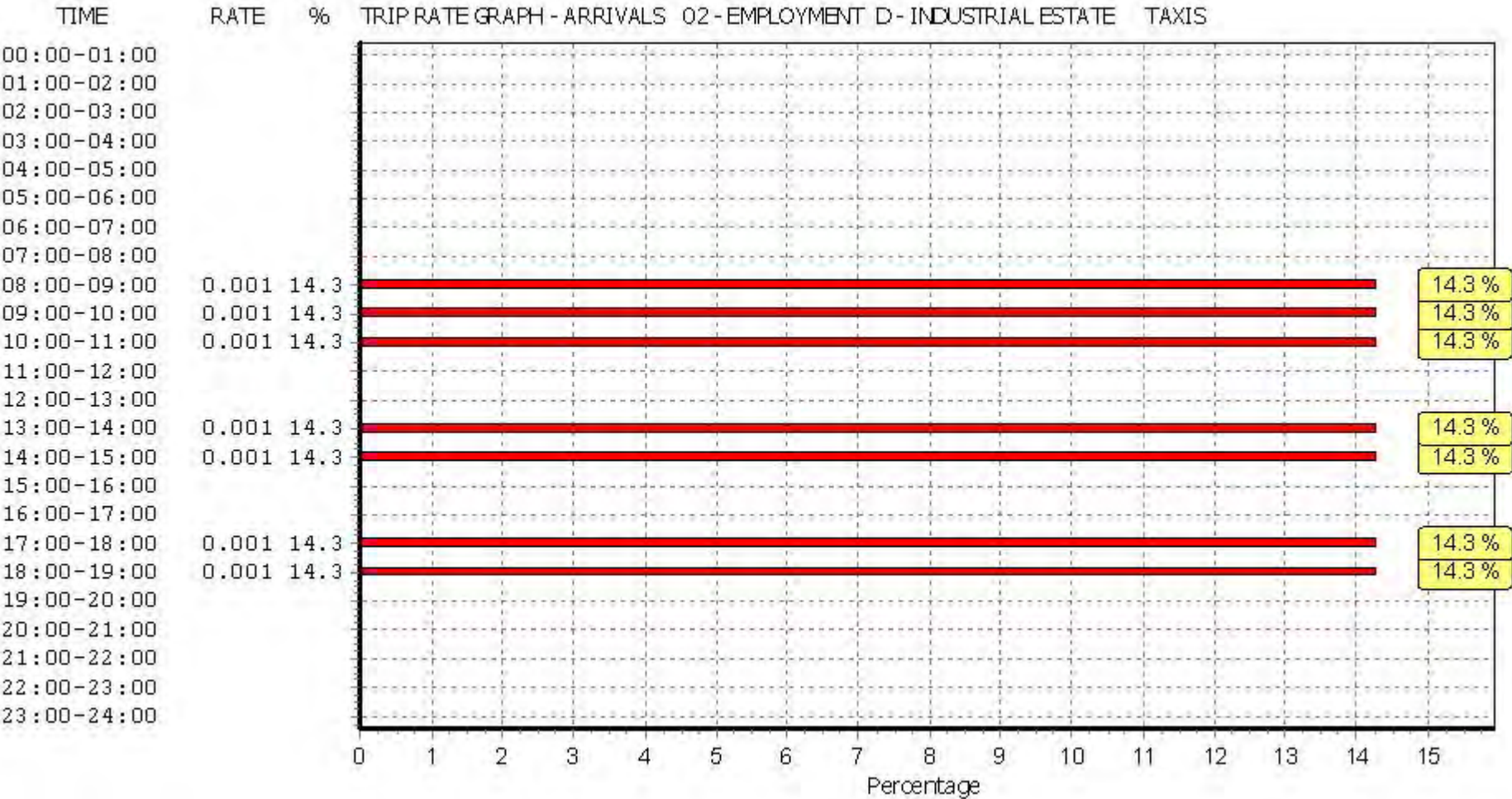
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

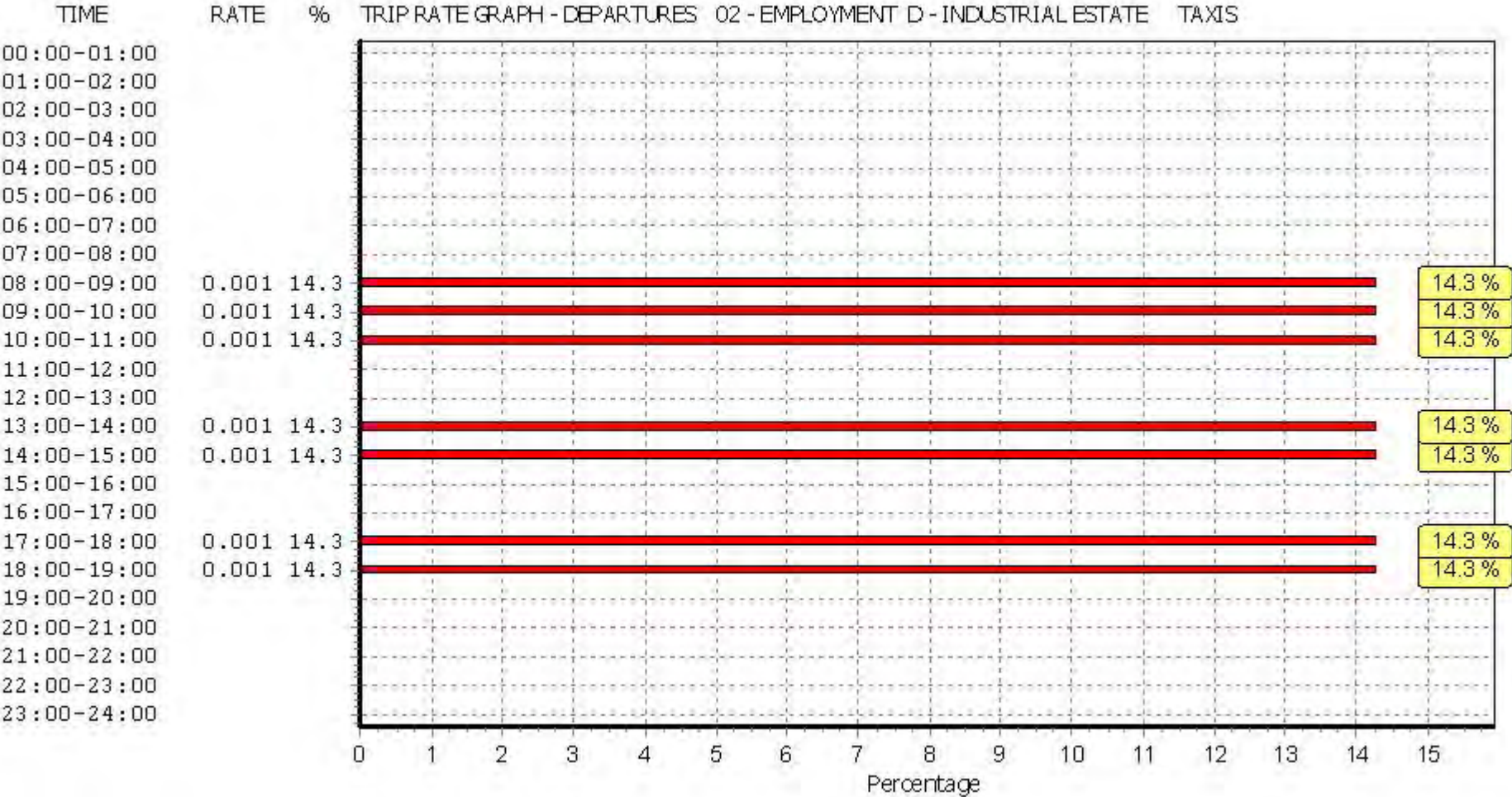
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	46980	0.000	3	46980	0.000	3	46980	0.000
08:00 - 09:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
09:00 - 10:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
10:00 - 11:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
11:00 - 12:00	3	46980	0.000	3	46980	0.000	3	46980	0.000
12:00 - 13:00	3	46980	0.000	3	46980	0.000	3	46980	0.000
13:00 - 14:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
14:00 - 15:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
15:00 - 16:00	3	46980	0.000	3	46980	0.000	3	46980	0.000
16:00 - 17:00	3	46980	0.000	3	46980	0.000	3	46980	0.000
17:00 - 18:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
18:00 - 19:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.007			0.007			0.014

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.

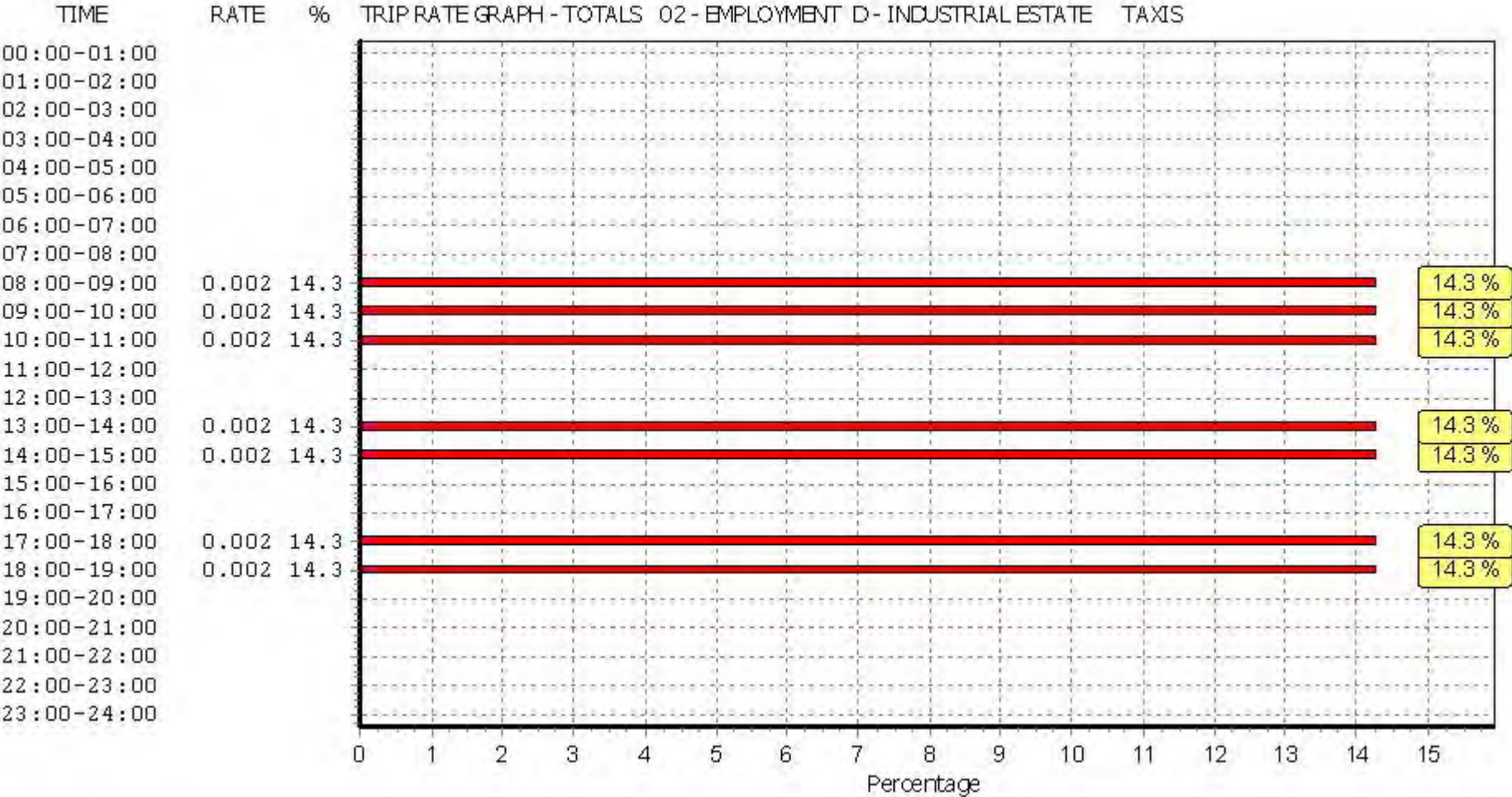
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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

OGVS

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

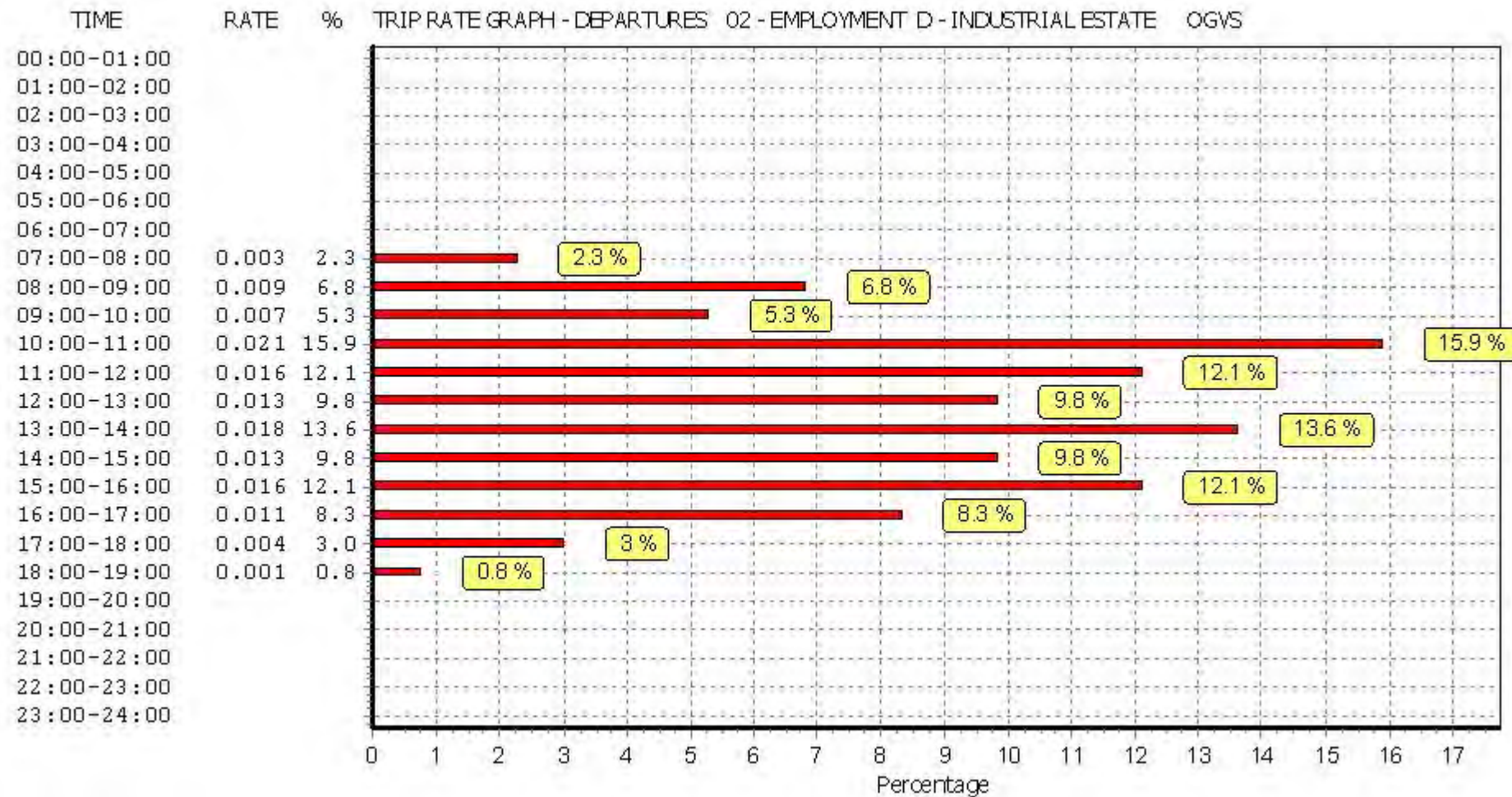
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	46980	0.003	3	46980	0.003	3	46980	0.006
08:00 - 09:00	3	46980	0.011	3	46980	0.009	3	46980	0.020
09:00 - 10:00	3	46980	0.010	3	46980	0.007	3	46980	0.017
10:00 - 11:00	3	46980	0.012	3	46980	0.021	3	46980	0.033
11:00 - 12:00	3	46980	0.006	3	46980	0.016	3	46980	0.022
12:00 - 13:00	3	46980	0.017	3	46980	0.013	3	46980	0.030
13:00 - 14:00	3	46980	0.017	3	46980	0.018	3	46980	0.035
14:00 - 15:00	3	46980	0.011	3	46980	0.013	3	46980	0.024
15:00 - 16:00	3	46980	0.018	3	46980	0.016	3	46980	0.034
16:00 - 17:00	3	46980	0.009	3	46980	0.011	3	46980	0.020
17:00 - 18:00	3	46980	0.003	3	46980	0.004	3	46980	0.007
18:00 - 19:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	0.118			0.132			0.250		

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.

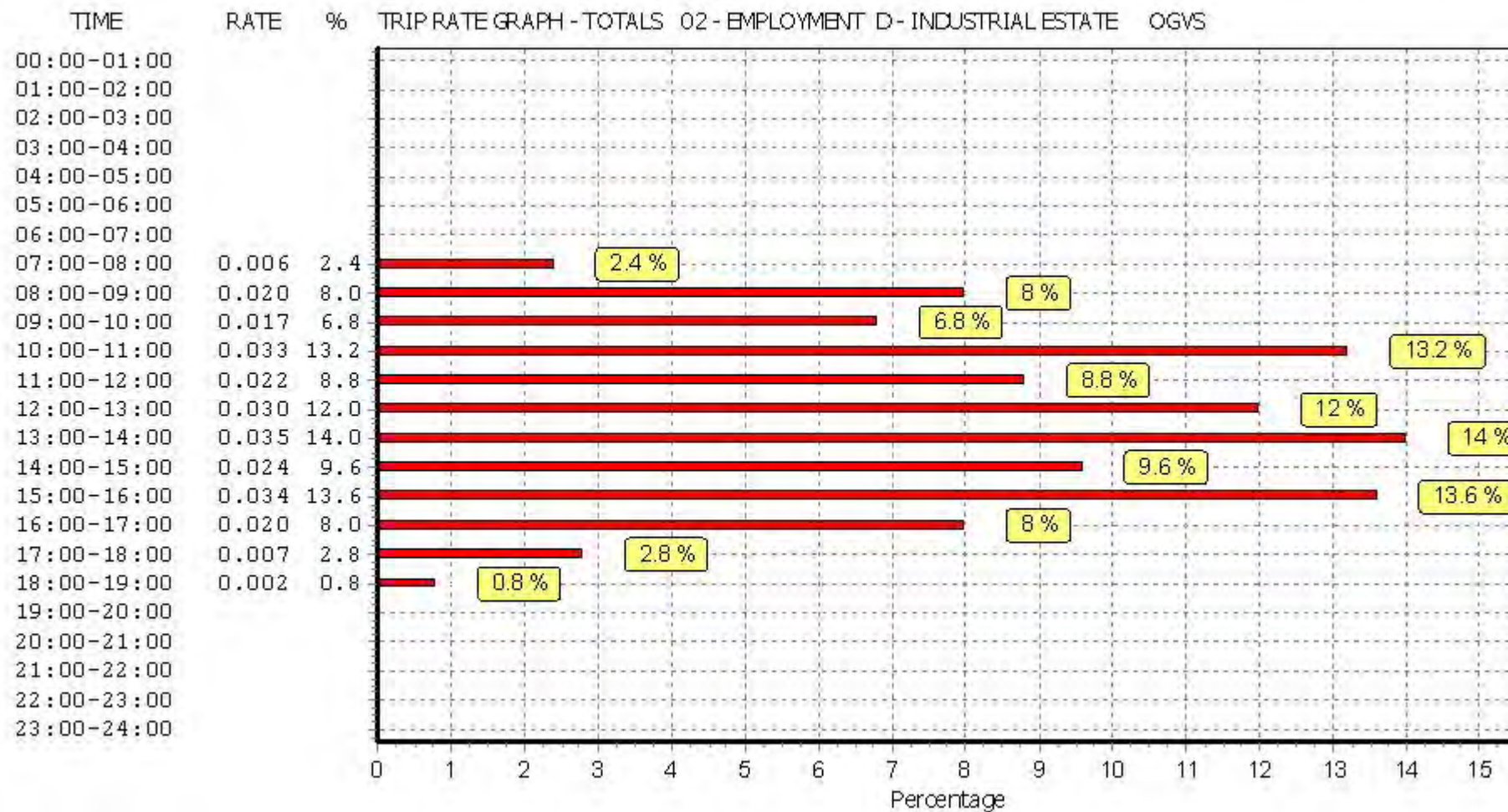
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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



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.



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 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

PSVS

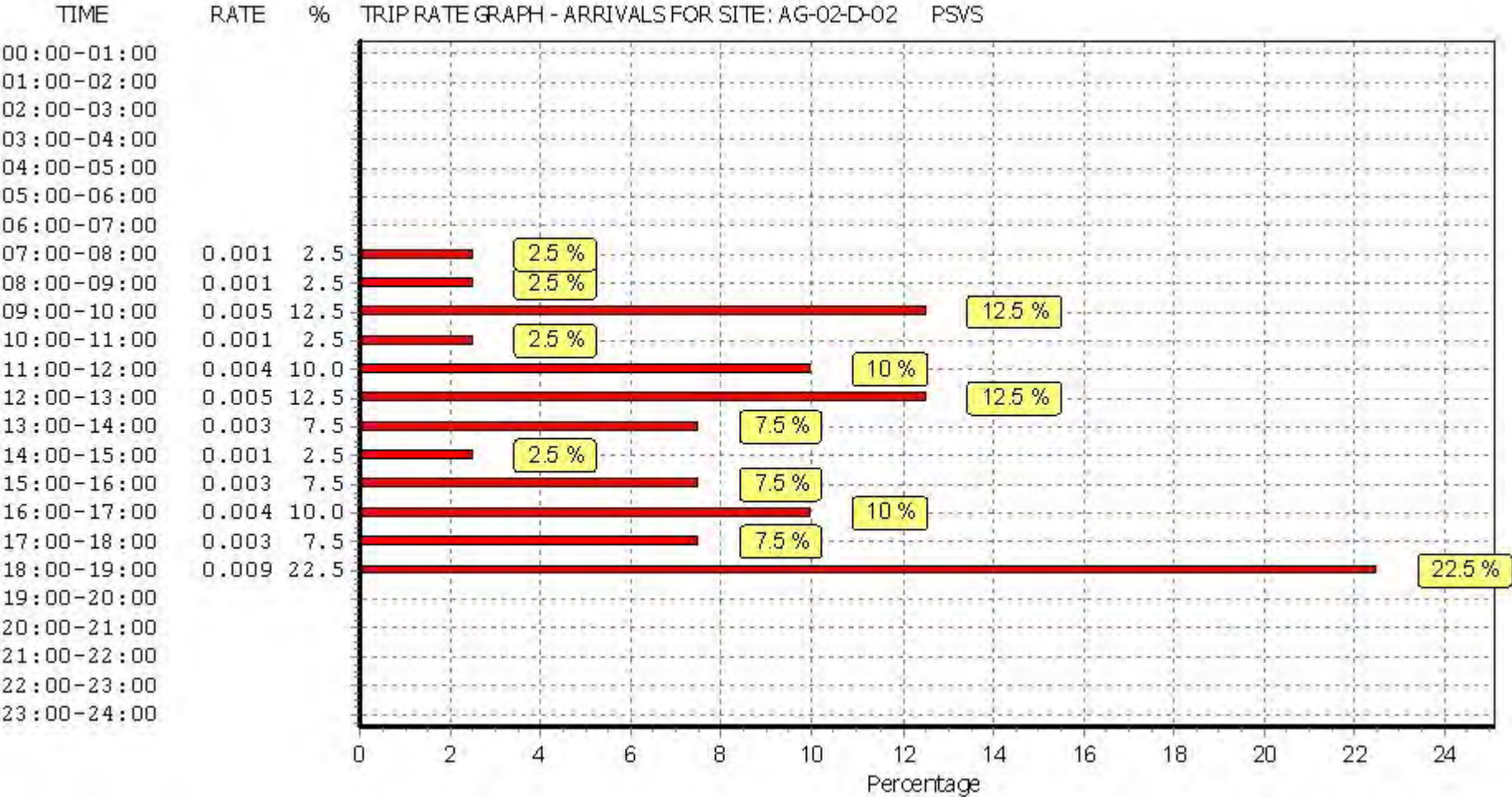
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

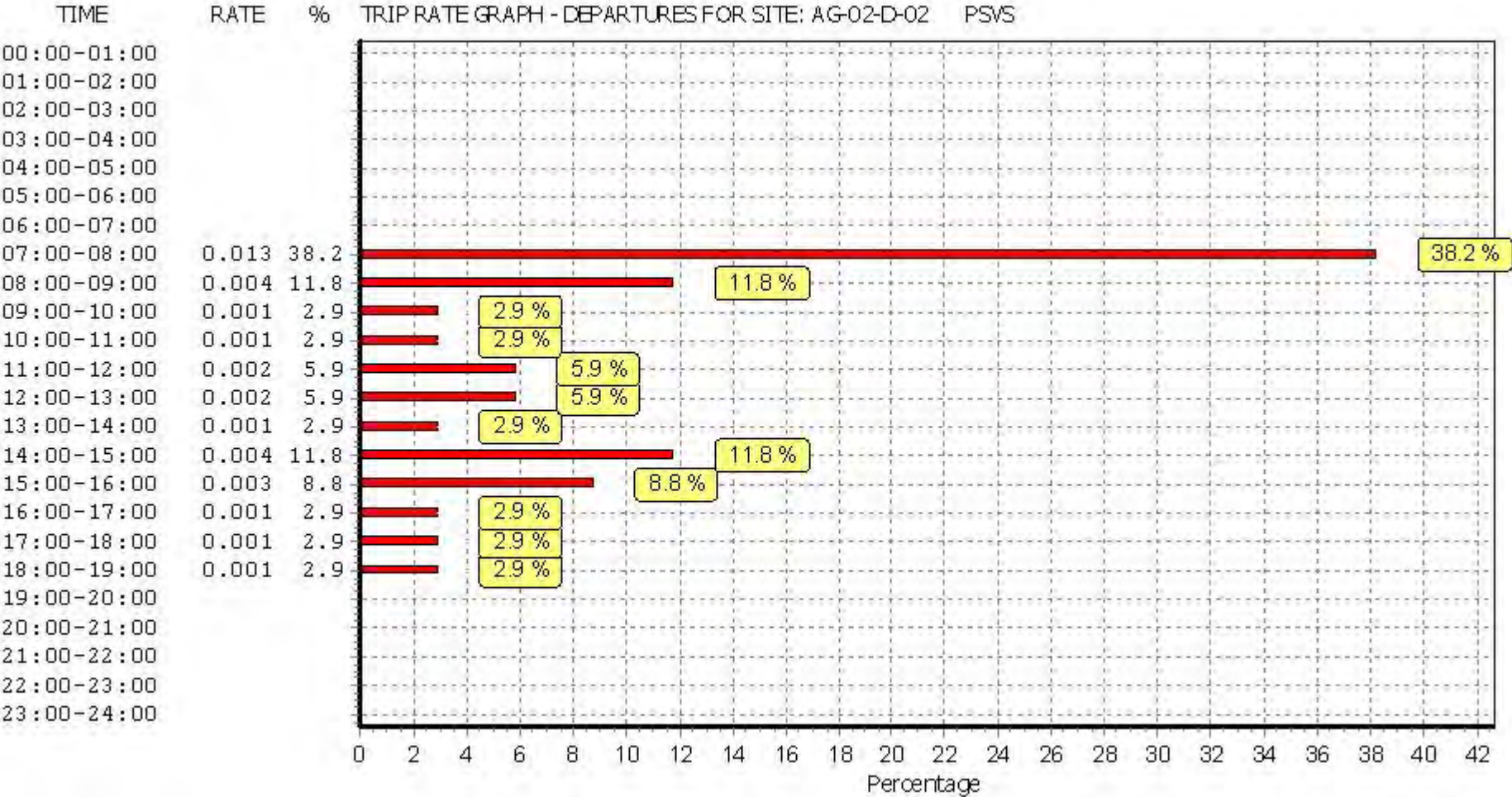
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	46980	0.001	3	46980	0.013	3	46980	0.014
08:00 - 09:00	3	46980	0.001	3	46980	0.004	3	46980	0.005
09:00 - 10:00	3	46980	0.005	3	46980	0.001	3	46980	0.006
10:00 - 11:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
11:00 - 12:00	3	46980	0.004	3	46980	0.002	3	46980	0.006
12:00 - 13:00	3	46980	0.005	3	46980	0.002	3	46980	0.007
13:00 - 14:00	3	46980	0.003	3	46980	0.001	3	46980	0.004
14:00 - 15:00	3	46980	0.001	3	46980	0.004	3	46980	0.005
15:00 - 16:00	3	46980	0.003	3	46980	0.003	3	46980	0.006
16:00 - 17:00	3	46980	0.004	3	46980	0.001	3	46980	0.005
17:00 - 18:00	3	46980	0.003	3	46980	0.001	3	46980	0.004
18:00 - 19:00	3	46980	0.009	3	46980	0.001	3	46980	0.010
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:	0.040			0.034			0.074		

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.

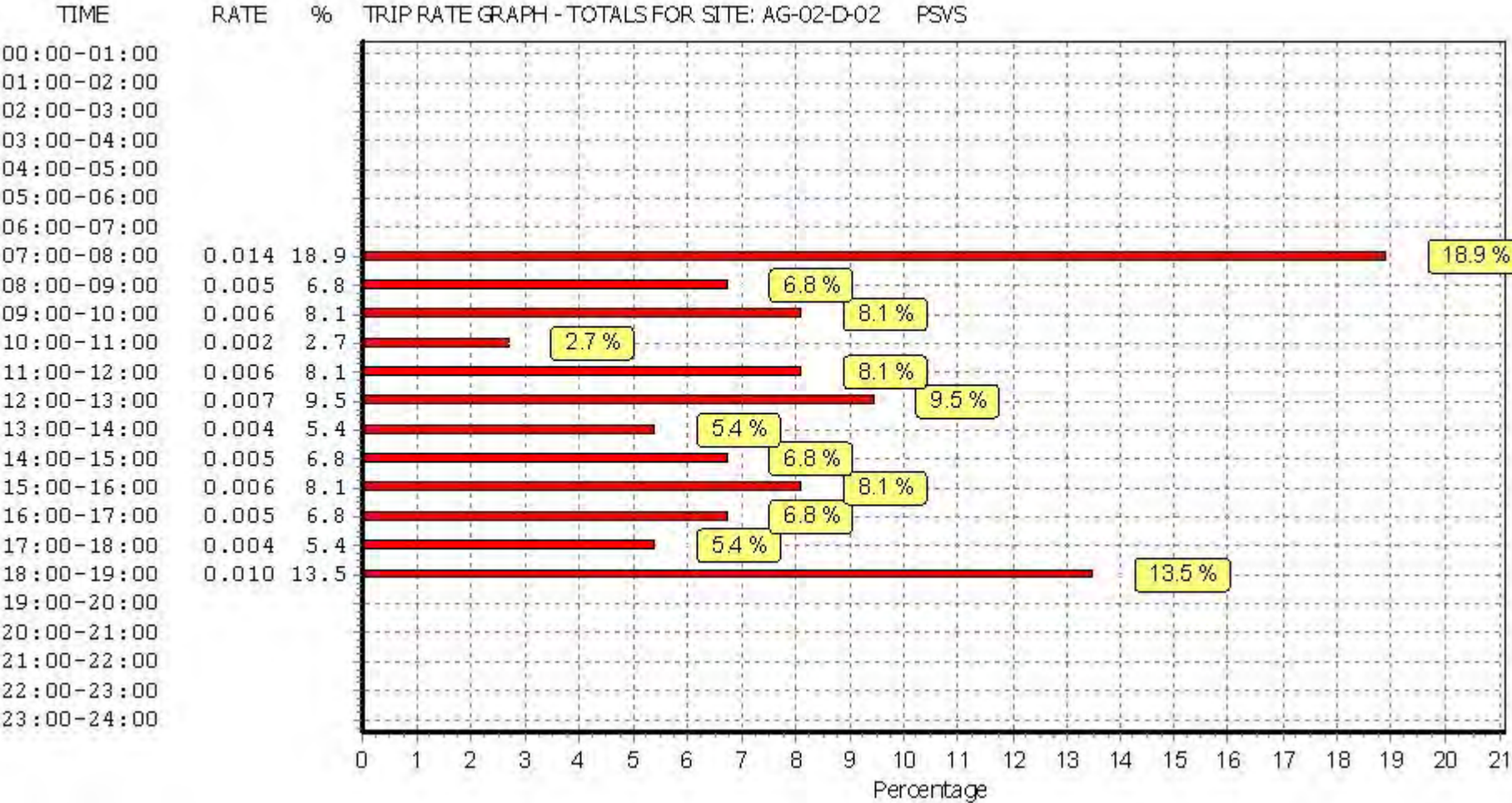
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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



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.



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 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

CYCLISTS

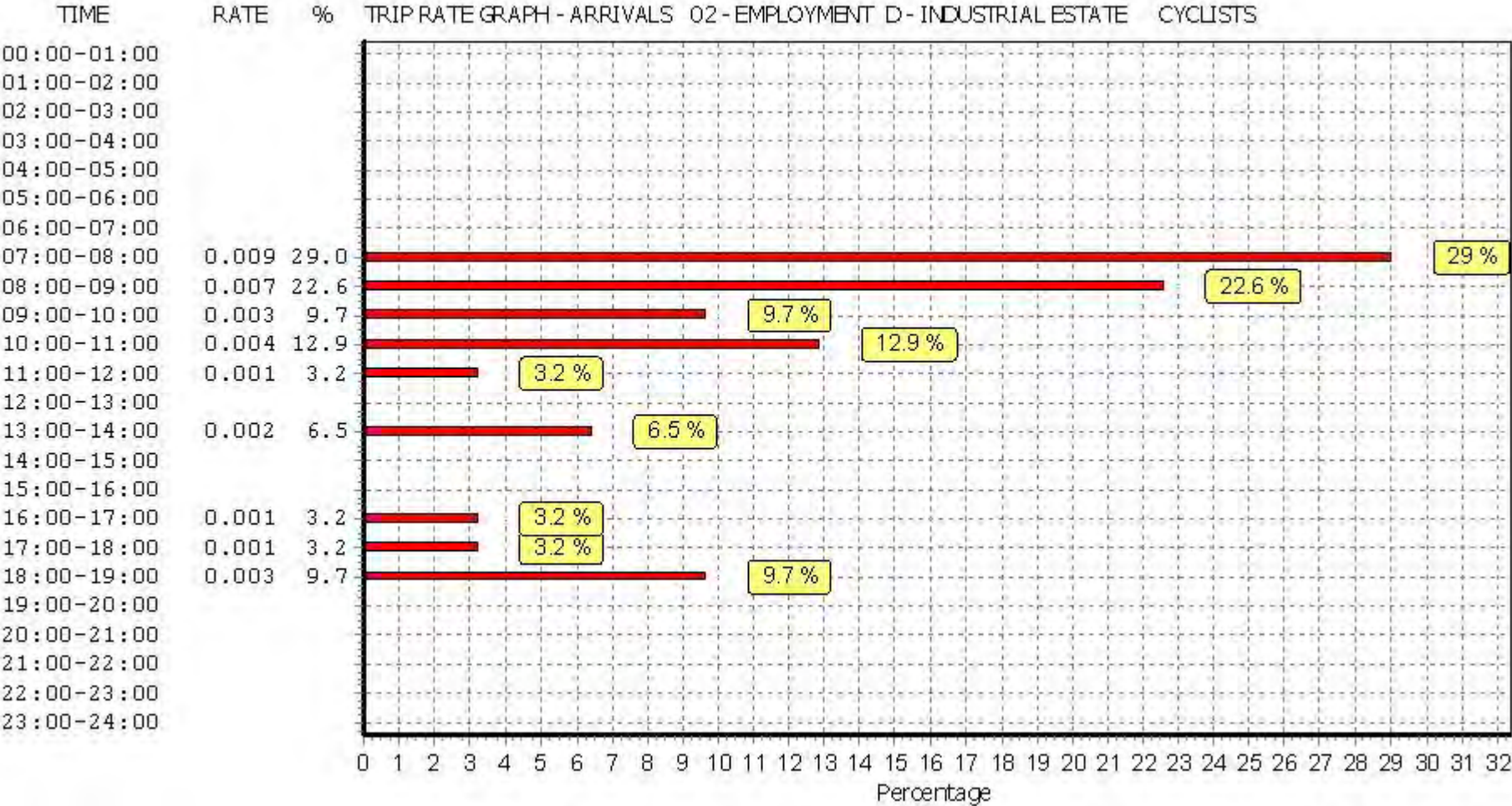
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

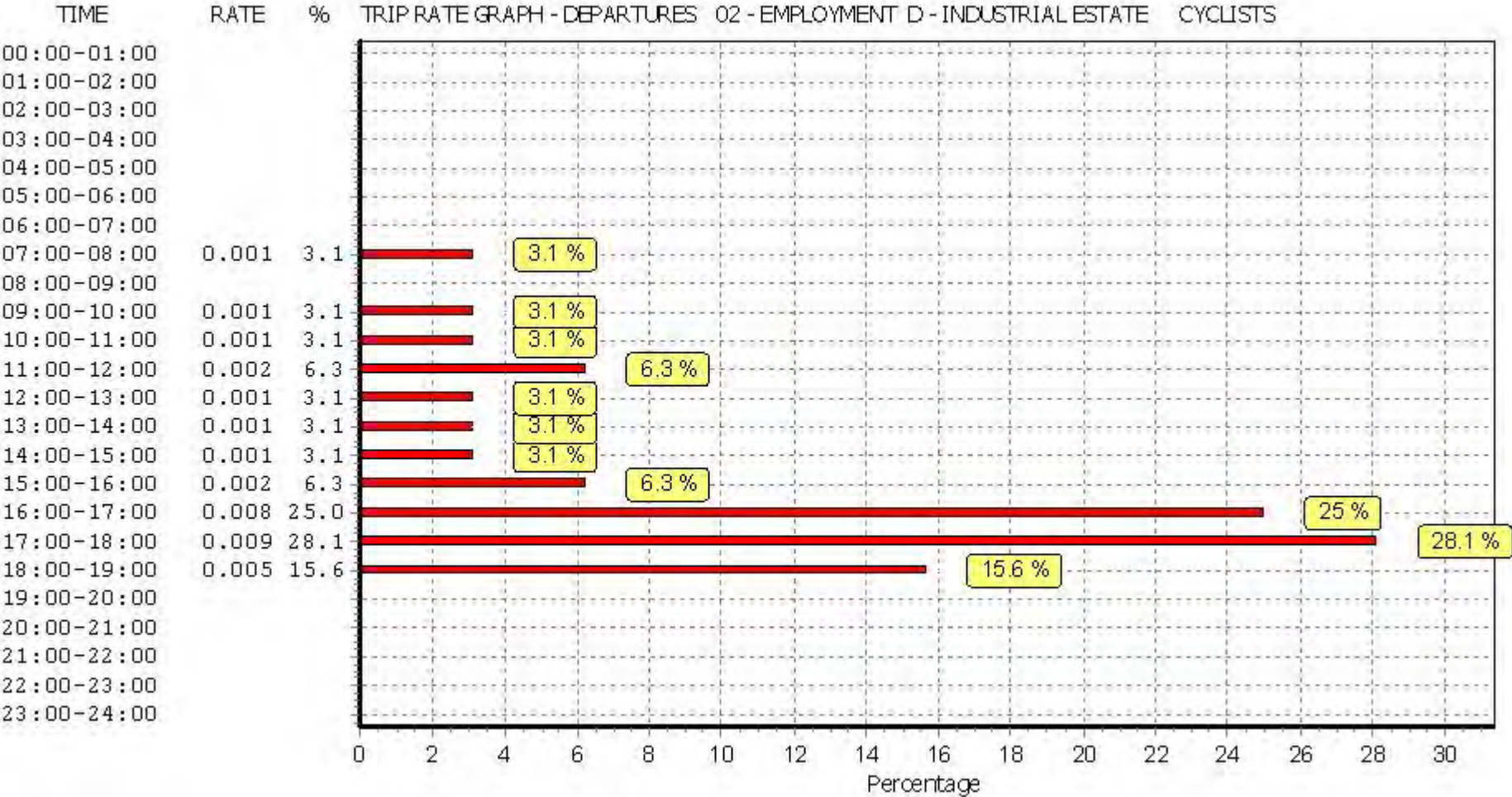
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	46980	0.009	3	46980	0.001	3	46980	0.010
08:00 - 09:00	3	46980	0.007	3	46980	0.000	3	46980	0.007
09:00 - 10:00	3	46980	0.003	3	46980	0.001	3	46980	0.004
10:00 - 11:00	3	46980	0.004	3	46980	0.001	3	46980	0.005
11:00 - 12:00	3	46980	0.001	3	46980	0.002	3	46980	0.003
12:00 - 13:00	3	46980	0.000	3	46980	0.001	3	46980	0.001
13:00 - 14:00	3	46980	0.002	3	46980	0.001	3	46980	0.003
14:00 - 15:00	3	46980	0.000	3	46980	0.001	3	46980	0.001
15:00 - 16:00	3	46980	0.000	3	46980	0.002	3	46980	0.002
16:00 - 17:00	3	46980	0.001	3	46980	0.008	3	46980	0.009
17:00 - 18:00	3	46980	0.001	3	46980	0.009	3	46980	0.010
18:00 - 19:00	3	46980	0.003	3	46980	0.005	3	46980	0.008
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.031			0.032			0.063

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.

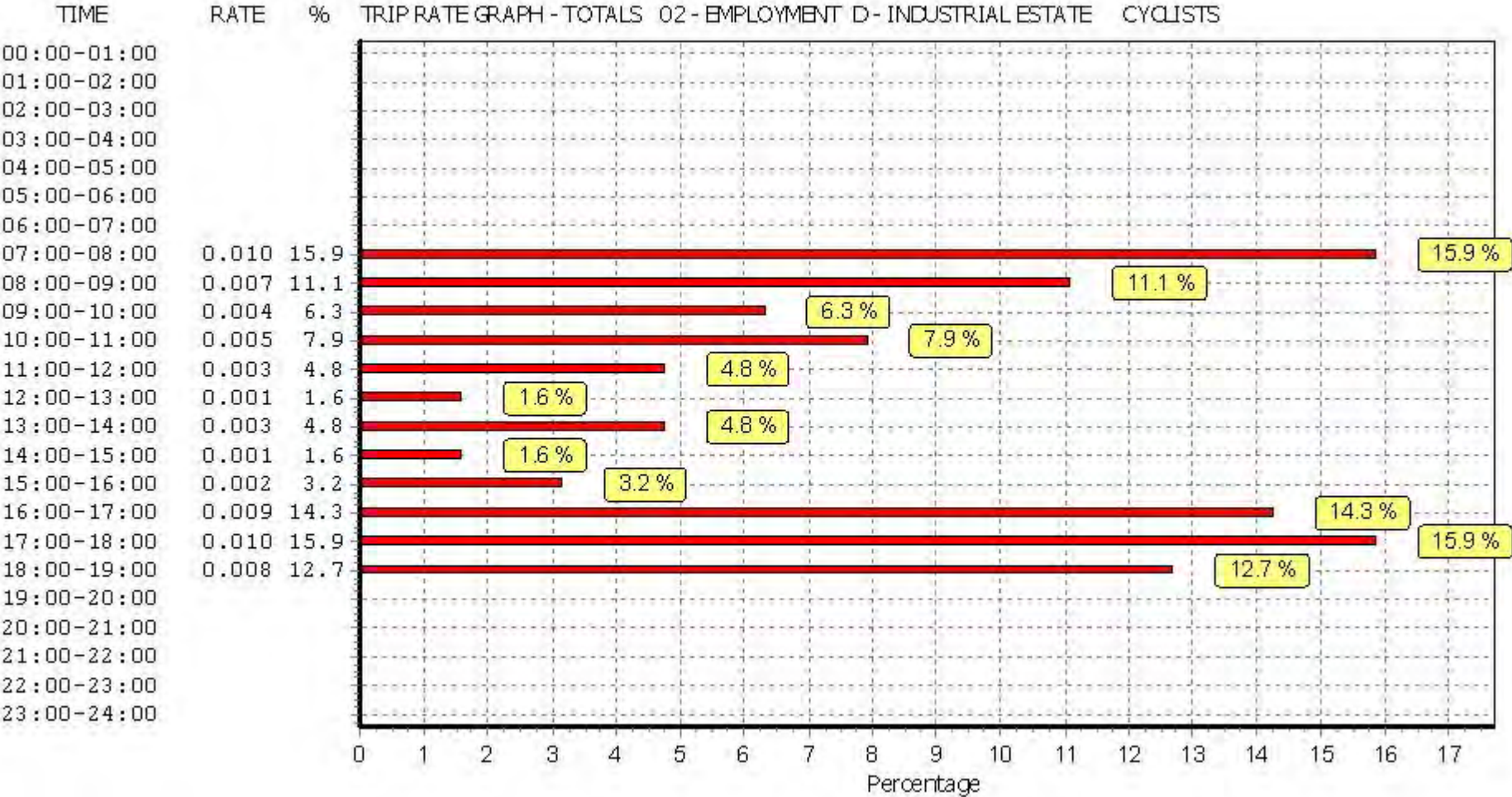
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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



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.



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 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

CARS

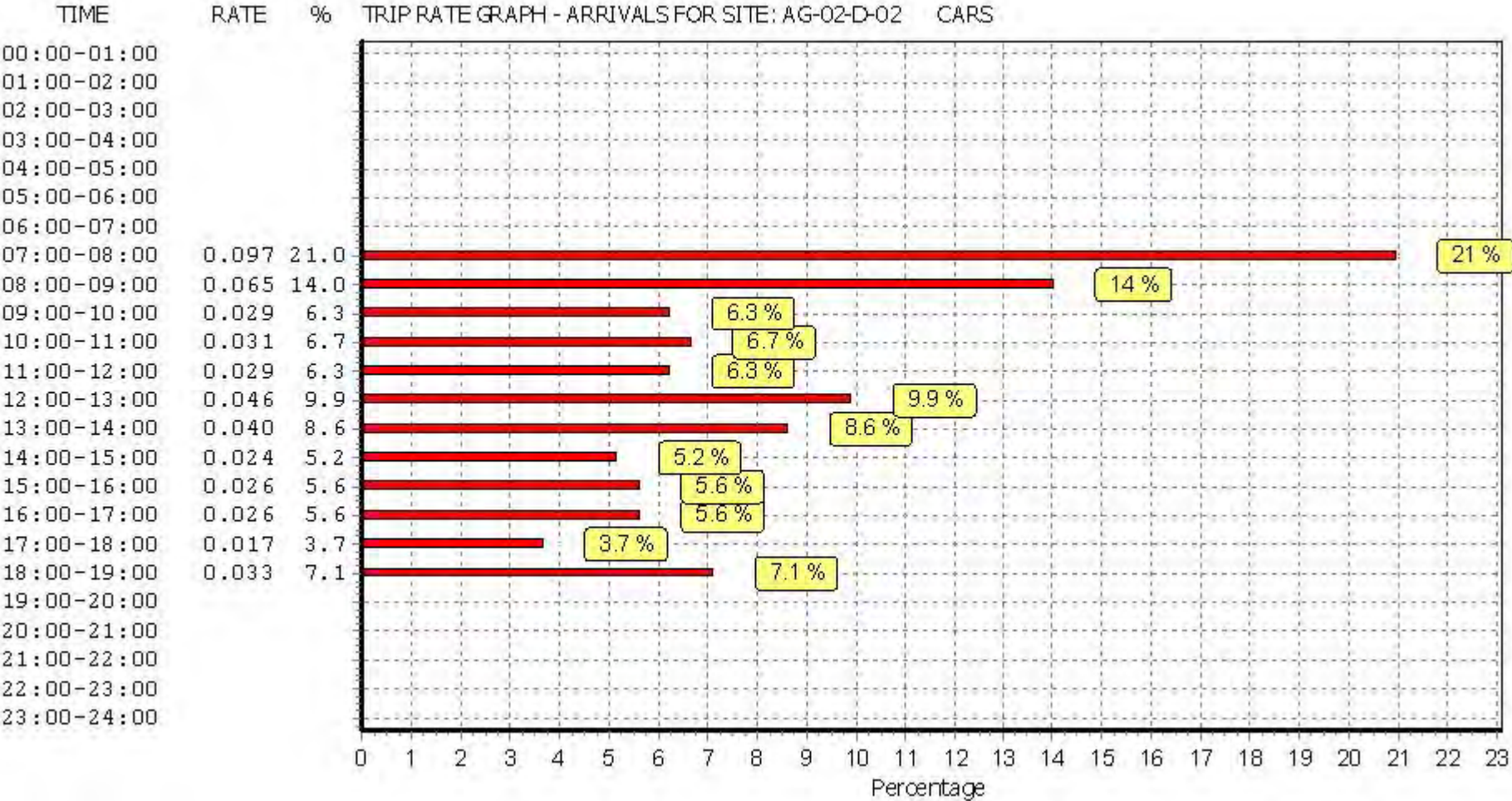
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

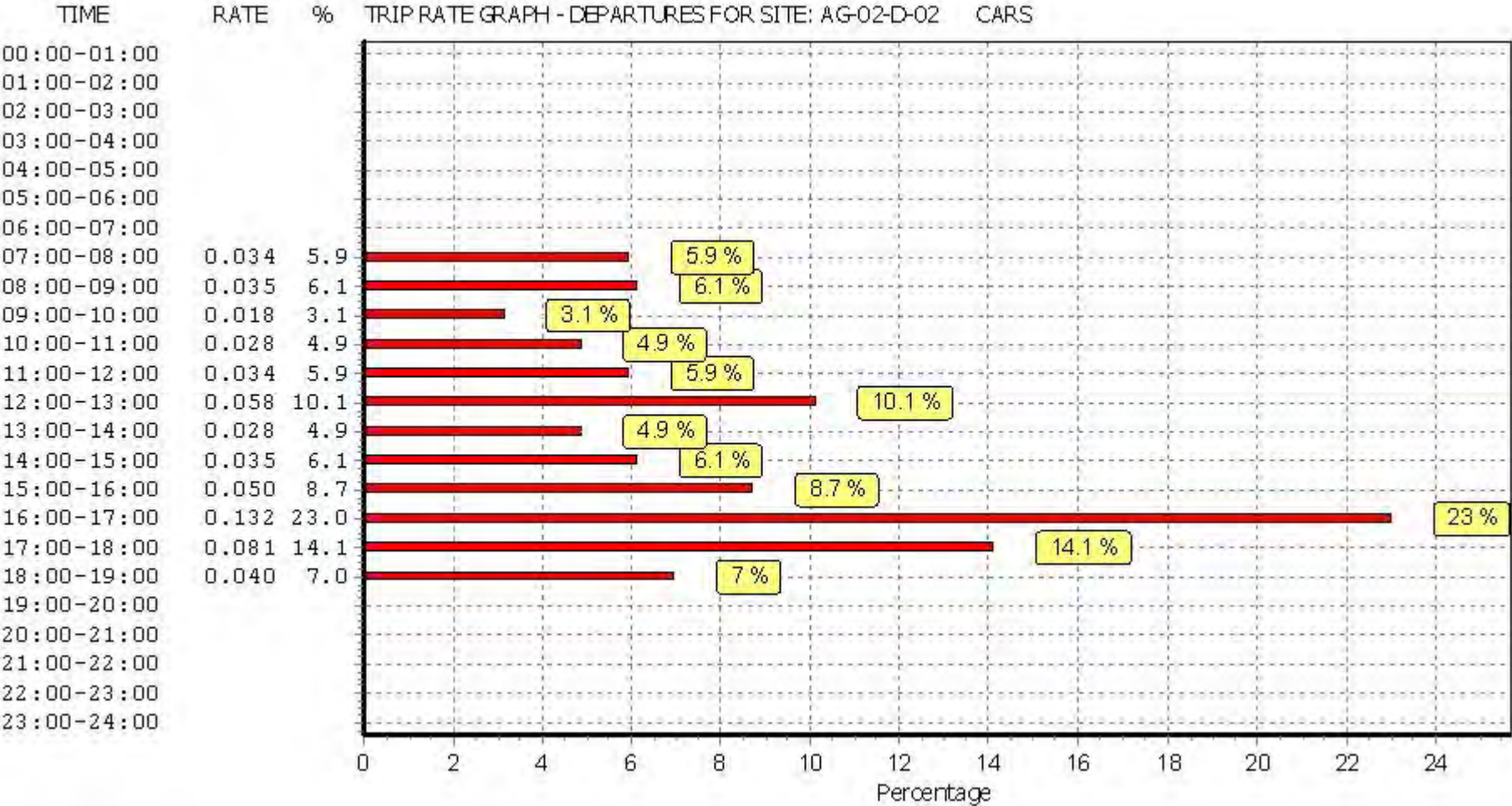
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	46980	0.097	3	46980	0.034	3	46980	0.131
08:00 - 09:00	3	46980	0.065	3	46980	0.035	3	46980	0.100
09:00 - 10:00	3	46980	0.029	3	46980	0.018	3	46980	0.047
10:00 - 11:00	3	46980	0.031	3	46980	0.028	3	46980	0.059
11:00 - 12:00	3	46980	0.029	3	46980	0.034	3	46980	0.063
12:00 - 13:00	3	46980	0.046	3	46980	0.058	3	46980	0.104
13:00 - 14:00	3	46980	0.040	3	46980	0.028	3	46980	0.068
14:00 - 15:00	3	46980	0.024	3	46980	0.035	3	46980	0.059
15:00 - 16:00	3	46980	0.026	3	46980	0.050	3	46980	0.076
16:00 - 17:00	3	46980	0.026	3	46980	0.132	3	46980	0.158
17:00 - 18:00	3	46980	0.017	3	46980	0.081	3	46980	0.098
18:00 - 19:00	3	46980	0.033	3	46980	0.040	3	46980	0.073
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.463			0.573			1.036

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.

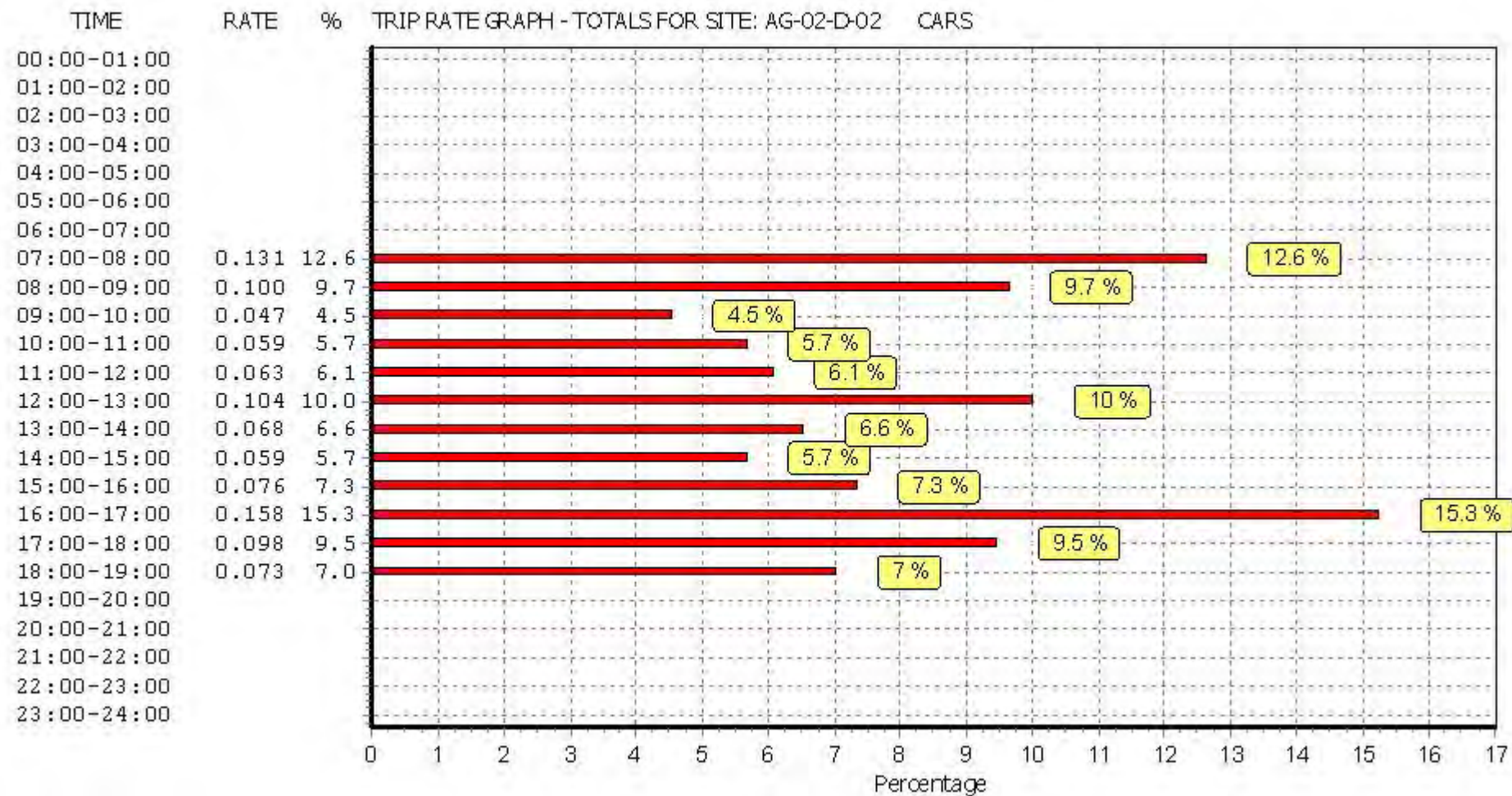
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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



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.



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 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

LGVS

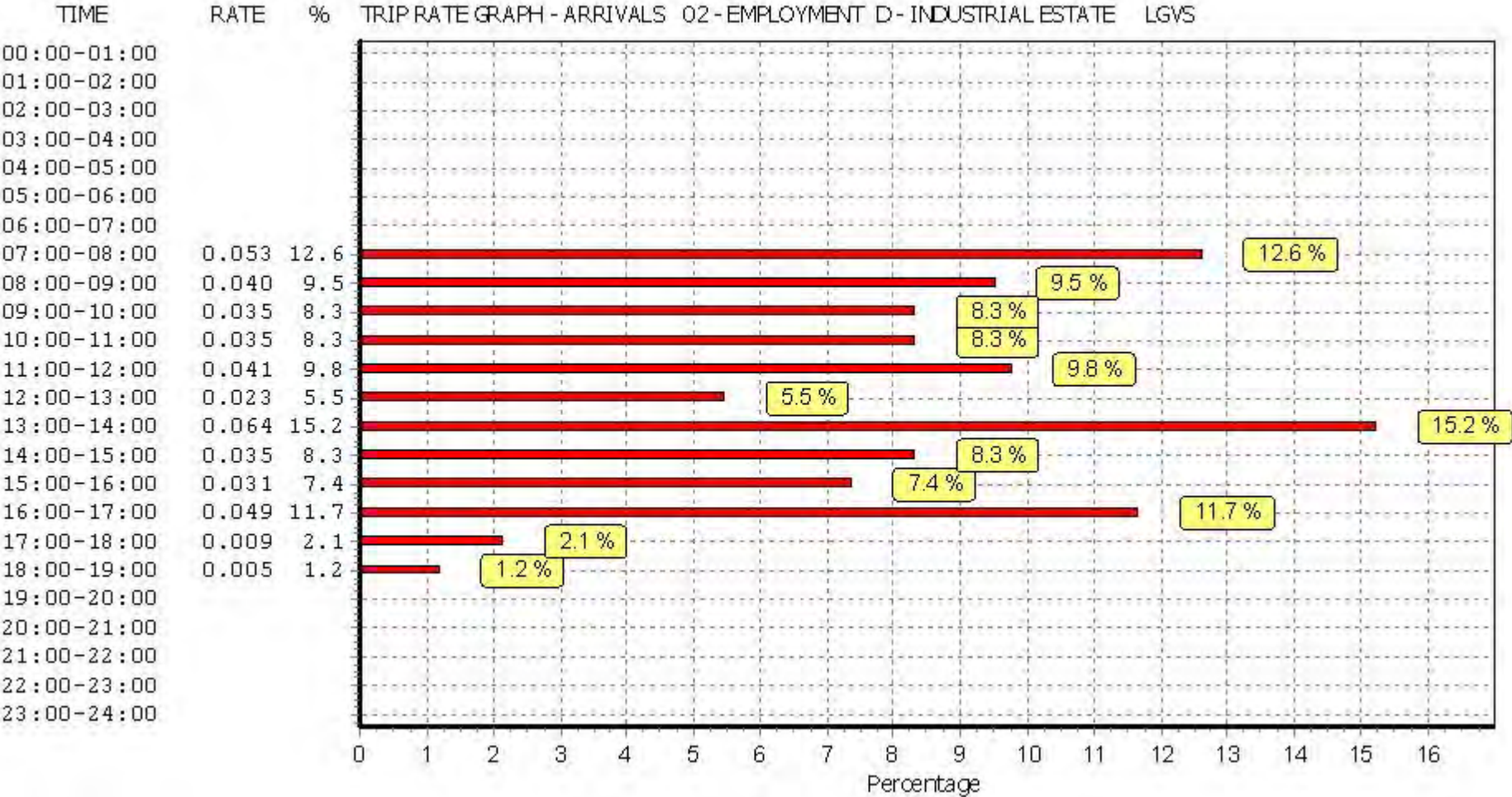
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

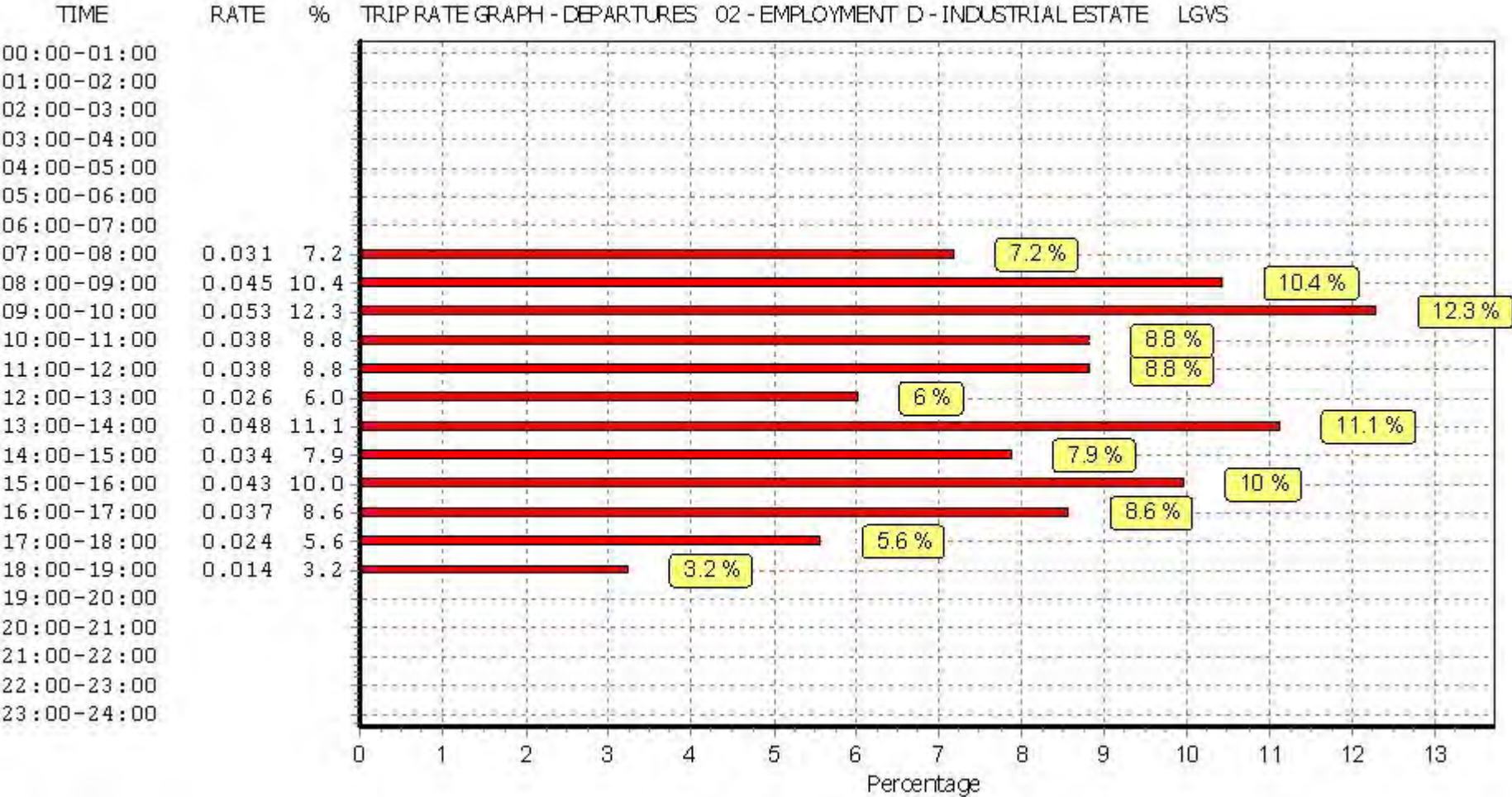
Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	3	46980	0.053	3	46980	0.031	3	46980	0.084
08:00 - 09:00	3	46980	0.040	3	46980	0.045	3	46980	0.085
09:00 - 10:00	3	46980	0.035	3	46980	0.053	3	46980	0.088
10:00 - 11:00	3	46980	0.035	3	46980	0.038	3	46980	0.073
11:00 - 12:00	3	46980	0.041	3	46980	0.038	3	46980	0.079
12:00 - 13:00	3	46980	0.023	3	46980	0.026	3	46980	0.049
13:00 - 14:00	3	46980	0.064	3	46980	0.048	3	46980	0.112
14:00 - 15:00	3	46980	0.035	3	46980	0.034	3	46980	0.069
15:00 - 16:00	3	46980	0.031	3	46980	0.043	3	46980	0.074
16:00 - 17:00	3	46980	0.049	3	46980	0.037	3	46980	0.086
17:00 - 18:00	3	46980	0.009	3	46980	0.024	3	46980	0.033
18:00 - 19:00	3	46980	0.005	3	46980	0.014	3	46980	0.019
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.420			0.431			0.851

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.

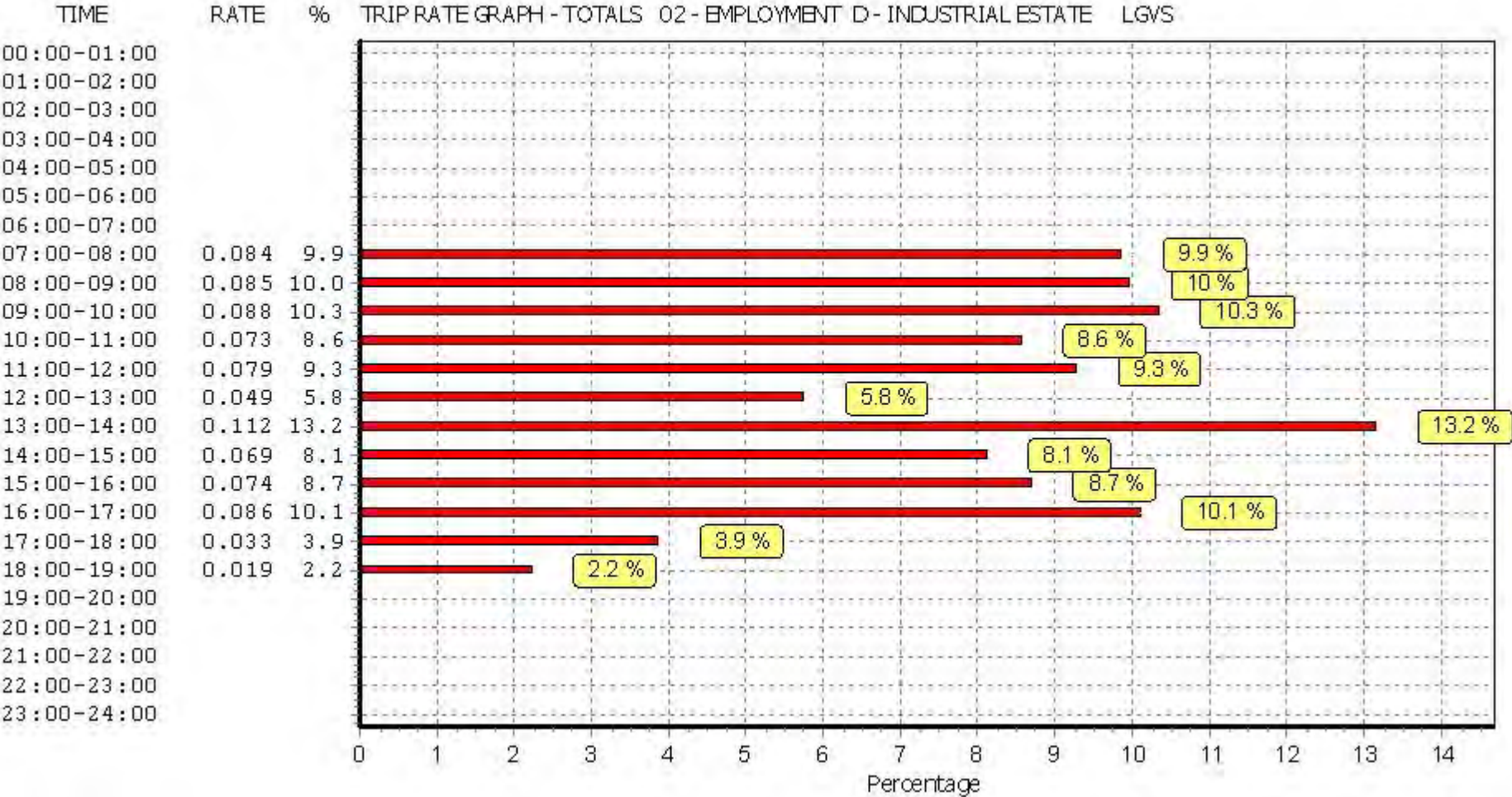
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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



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.



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 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

MOTOR CYCLES

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	3	46980	0.002	3	46980	0.000	3	46980	0.002
08:00 - 09:00	3	46980	0.004	3	46980	0.000	3	46980	0.004
09:00 - 10:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
10:00 - 11:00	3	46980	0.003	3	46980	0.000	3	46980	0.003
11:00 - 12:00	3	46980	0.002	3	46980	0.001	3	46980	0.003
12:00 - 13:00	3	46980	0.000	3	46980	0.000	3	46980	0.000
13:00 - 14:00	3	46980	0.001	3	46980	0.001	3	46980	0.002
14:00 - 15:00	3	46980	0.001	3	46980	0.000	3	46980	0.001
15:00 - 16:00	3	46980	0.003	3	46980	0.003	3	46980	0.006
16:00 - 17:00	3	46980	0.006	3	46980	0.004	3	46980	0.010
17:00 - 18:00	3	46980	0.001	3	46980	0.004	3	46980	0.005
18:00 - 19:00	3	46980	0.000	3	46980	0.001	3	46980	0.001
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.024			0.015			0.039

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.