

## 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 189,725m<sup>2</sup> 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 5,000m<sup>2</sup> 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 12<sup>th</sup> 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%                   |
| <b>Total</b>               | <b>100.0%</b>    | <b>100.0%</b>        |

## 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



**norman rourke pryme**  
traffic and transportation

# Model Farm, Cardiff

Strategic Transport Modelling  
Methodology

Produced for RPS

11<sup>th</sup> March 2019



57 Webber Street  
London  
SE1 0RF  
Tel +44 (0)207 654 7280

13-14 Orchard Street  
Bristol  
BS1 5EH  
Tel: +44 (0)117 387 8910

[www.nrpcc.com](http://www.nrpcc.com)

Report

---

QA RECORD

---

|                     |   |      |            |
|---------------------|---|------|------------|
| Document Ref        | 7112TR01  | Rev  | 3.0        |
| Drafted by          | Hadley Dickinson-Lovett   | Date | 11/03/2019 |
| Checked by          | Chris Attwood   | Date | 11/03/2019 |
| Approved by         | Chris Attwood   | Date | 11/03/2019 |
| Electronic location | B:\Projects\7112 Model Farm, Cardiff\Deliverables\Reports\Modelling Methodology |      |            |

This document has been produced by Norman Rourke Pryme for RPS for the provision of the Model Farm, Cardiff. This document is for the purpose of the intended recipient only. No liability will be accepted for unauthorised distribution to any third party without written agreement in advance.

|          |  |          |
|----------|--|----------|
| <b>1</b> | <b>Introduction.....</b>                       | <b>1</b> |
| 1.2      | Evidence base .....                            | 1        |
| 1.3      | Structure of the document .....                | 2        |
| <b>2</b> | <b>Forecasting methodology .....</b>           | <b>3</b> |
| 2.1      | Forecast scenarios.....                        | 3        |
| 2.2      | Model refinement.....                          | 4        |
| 2.3      | Trip generation.....                           | 4        |
| 2.4      | Trip distribution .....                        | 4        |
| 2.5      | Revised forecast year matrices .....           | 5        |
| <b>3</b> | <b>Evaluation and Presenting results .....</b> | <b>6</b> |
| 3.2      | Junction Level of Service .....                | 6        |
| 3.3      | Journey times .....                            | 7        |
| 3.4      | Comparison and analysis of traffic flows ..... | 7        |

### 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.

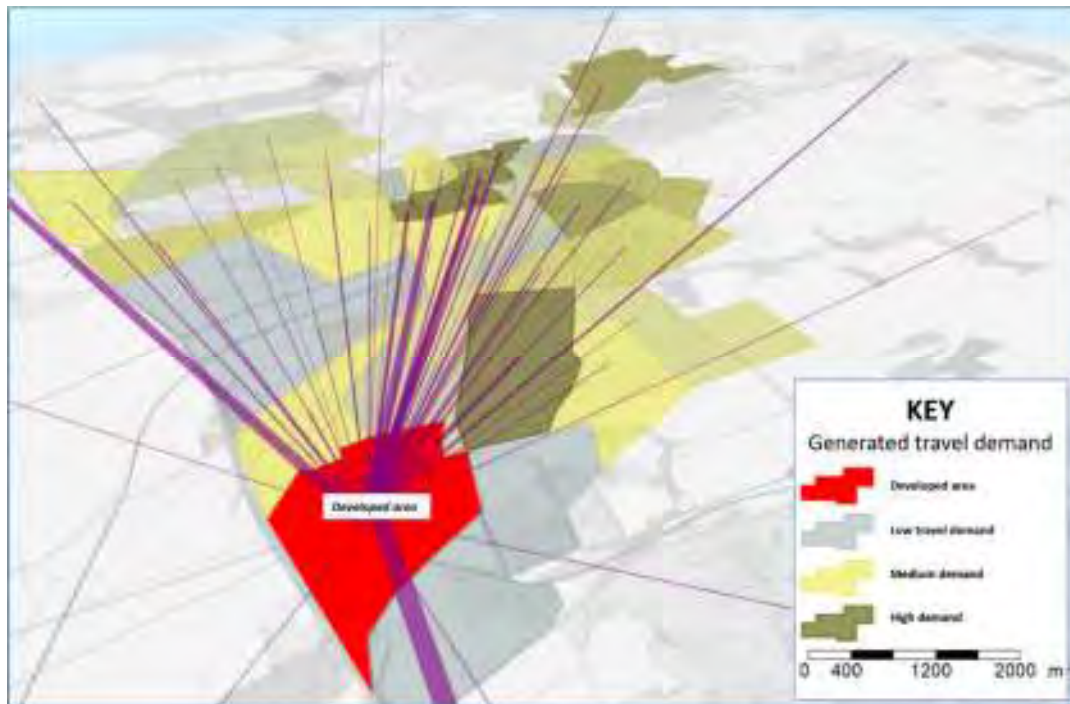
### 2.3 TRIP GENERATION

- 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      |

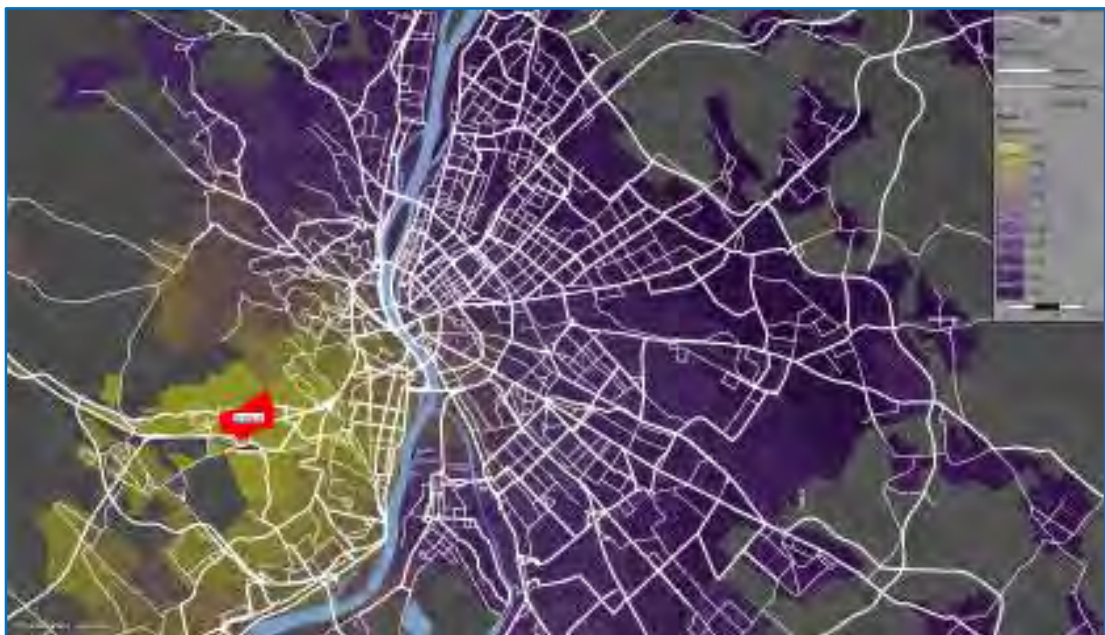
- 3.2.3 A direct comparison of junctions with LoS D, E or F for the base year, Scenario A, Scenario B and Scenario C will be carried out to fully understand the step change and impact of the development on the surrounding network. Junctions will be highlighted and reported where the node as a whole is 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:

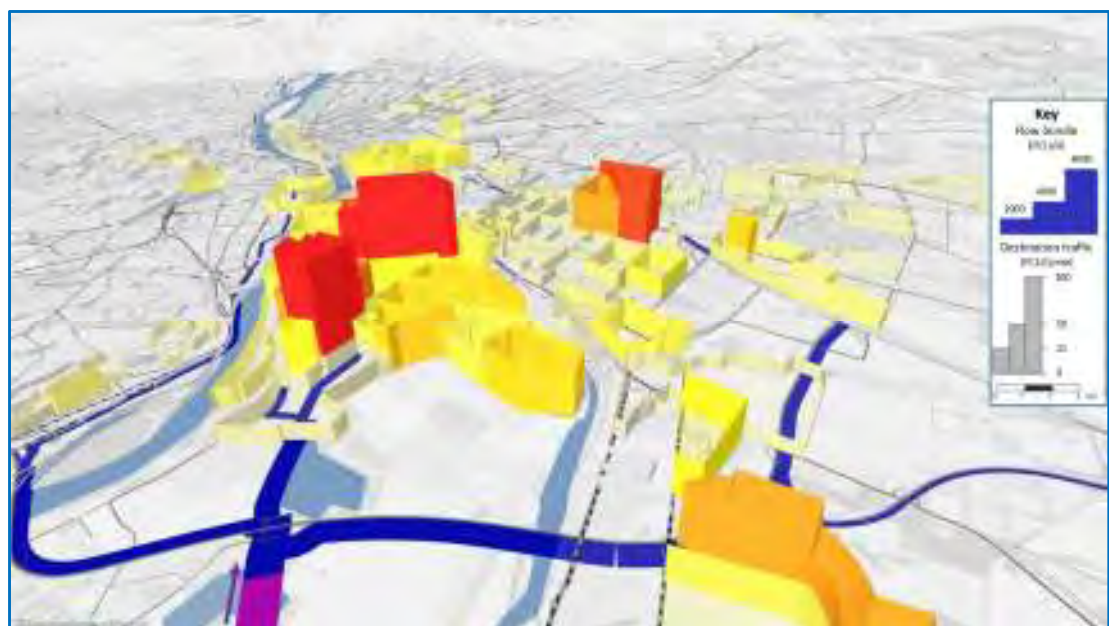


Figure 3.2: Relative traffic flow difference on the entire network (example)



- ▶ 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.

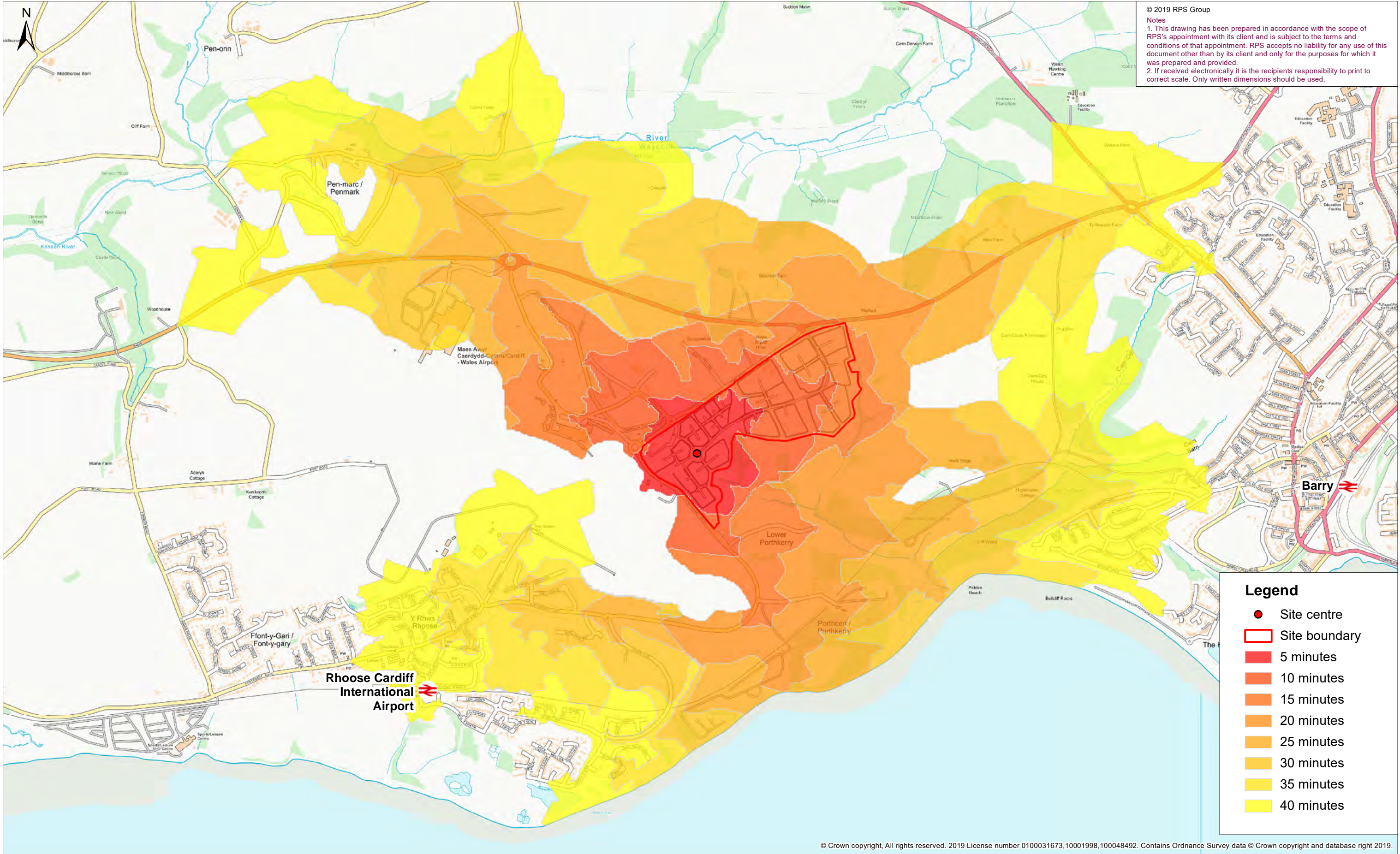
Figure 3.3: Detailed flow bundle analysis of the selected link (example)





## Appendix B – Pedestrian and Cycling Isochrones





© 2019 RPS Group

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.

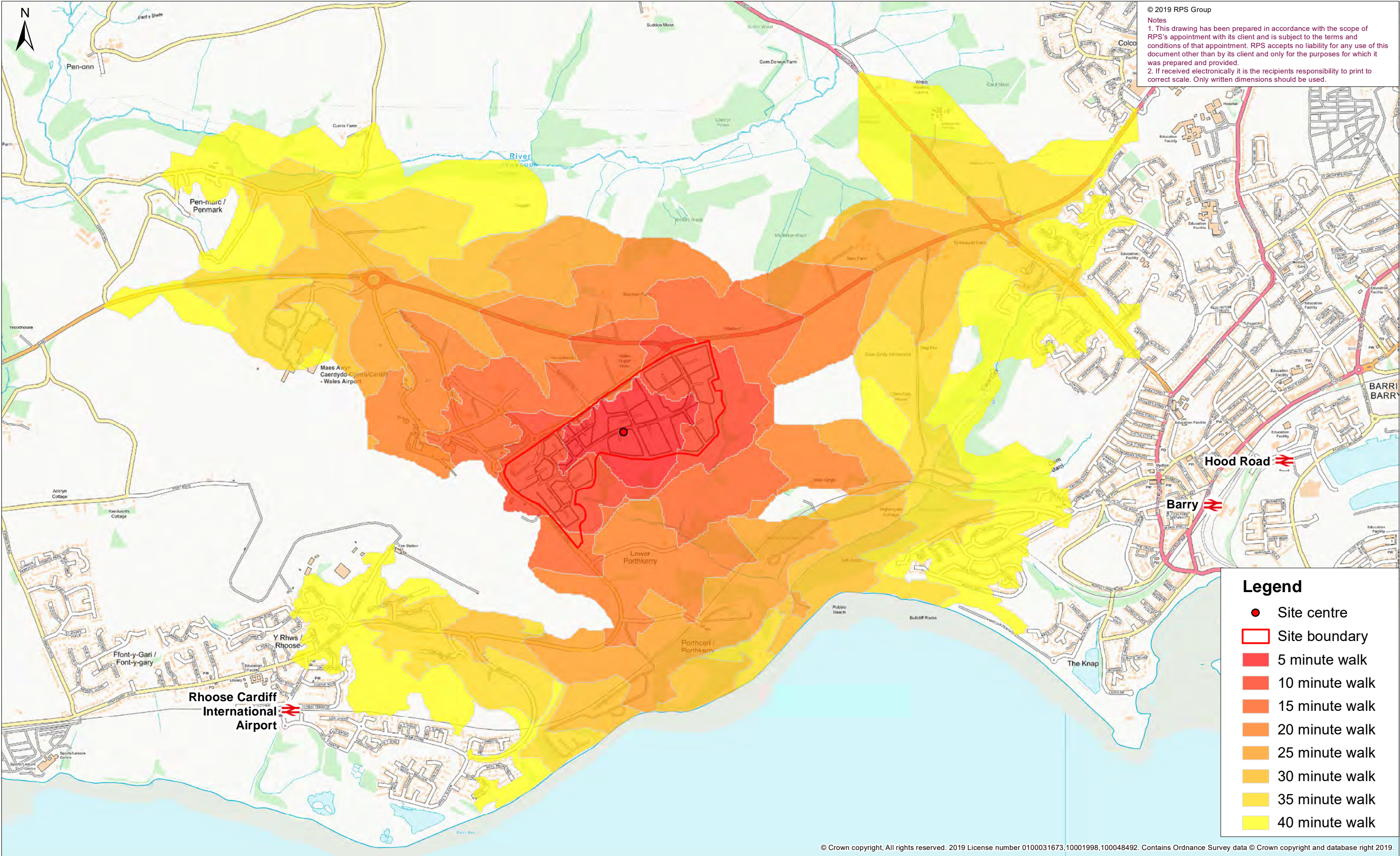
- Legend**
- Site centre
  - Site boundary
  - 5 minutes
  - 10 minutes
  - 15 minutes
  - 20 minutes
  - 25 minutes
  - 30 minutes
  - 35 minutes
  - 40 minutes

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

|                            |             |    |    |      |   |                      |   |   |  |  |                  |
|----------------------------|-------------|----|----|------|---|----------------------|---|---|--|--|------------------|
|                            |             |    |    |      | <div>Client<div>Legal and General Capital</div></div> <div>Project<div>Model Farm</div></div> <div>Title<div>Western Walk Isochrone</div></div> | <div>0250500 m</div> | <div>Status<div>DRAFT</div></div> <div>Project Number<div>JNY9624</div></div> | <div>Drawn By<div>BG</div></div> <div>Scale @ A3<div>1:17,000</div></div> | <div>PM/Checked By<div>CM</div></div> <div>Date Created<div>MAR 2019</div></div> | <div>20 Western Avenue, Milton Park,<br/>Abingdon, Oxfordshire, OX14 4SH<br/>T: +44(0)1235 821 888<br/>E: rps@rpsgroup.com</div> <div><div><div></div><div>MAKING<br/>COMPLEX<br/>EASY</div></div></div> |                  |
| Rev                        | Description | By | CB | Date |   |                      |   |   |  |  |                  |
| Figure Number <div>3</div> |             |    |    |      |   |                      |   |   |  |  | Rev <div>-</div> |
| rpsgroup.com               |             |    |    |      |   |                      |   |   |  |  |                  |

O:\\_TRANSPORT\JNY9624\TechDrawings\9624-0006-004.mxd





© 2019 RPS Group

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 minute walk
  - 10 minute walk
  - 15 minute walk
  - 20 minute walk
  - 25 minute walk
  - 30 minute walk
  - 35 minute walk
  - 40 minute walk

© 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  |
| 1             |             |    |    | -    |
| rpsgroup.com  |             |    |    |      |

Client Legal and General Capital

Project Model Farm

Title Central Walk Isochrone

0 265 530m

Status  
DRAFT

Drawn By  
CR

PM/Checked By  
CM

Project Number  
JNY9624

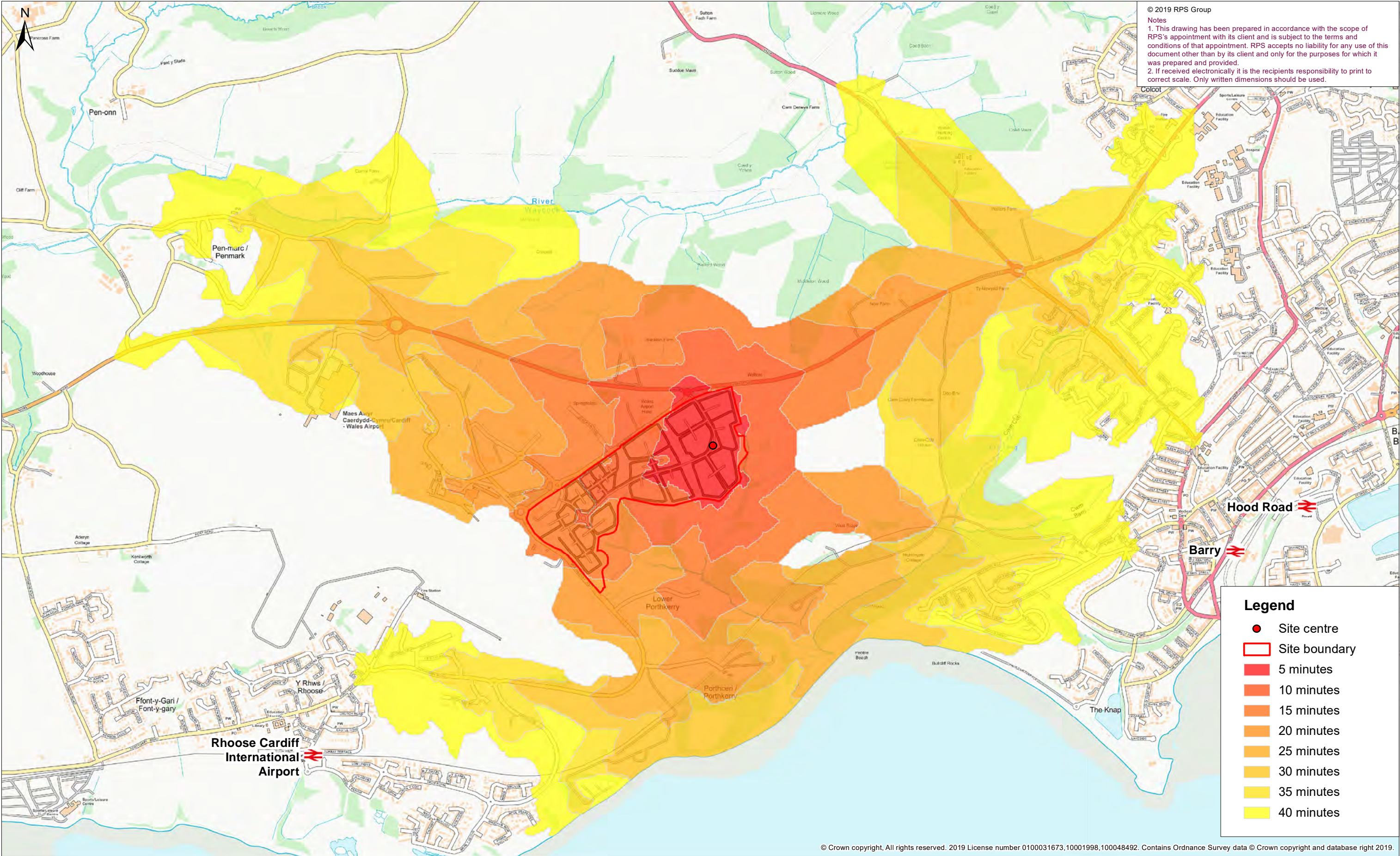
Scale @ A3  
1:17,000

Date Created  
MAR 2019

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







© 2019 RPS Group

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

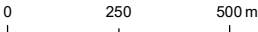
© Crown copyright, All rights reserved. 2019 License number 0100031673,10001998,100048492. Contains Ordnance Survey data © Crown copyright and database right 2019.

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

Client    Legal and General Capital

Project    Model Farm

Title    Eastern Walk Isochrone



|                |            |               |
|----------------|------------|---------------|
| Status         | Drawn By   | PM/Checked By |
| DRAFT          | BG         | 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: rpsox@rpsgroup.com



O:\\_TRANSPORT\JNY9624\TechDrawings\9624-0007-004.mxd







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

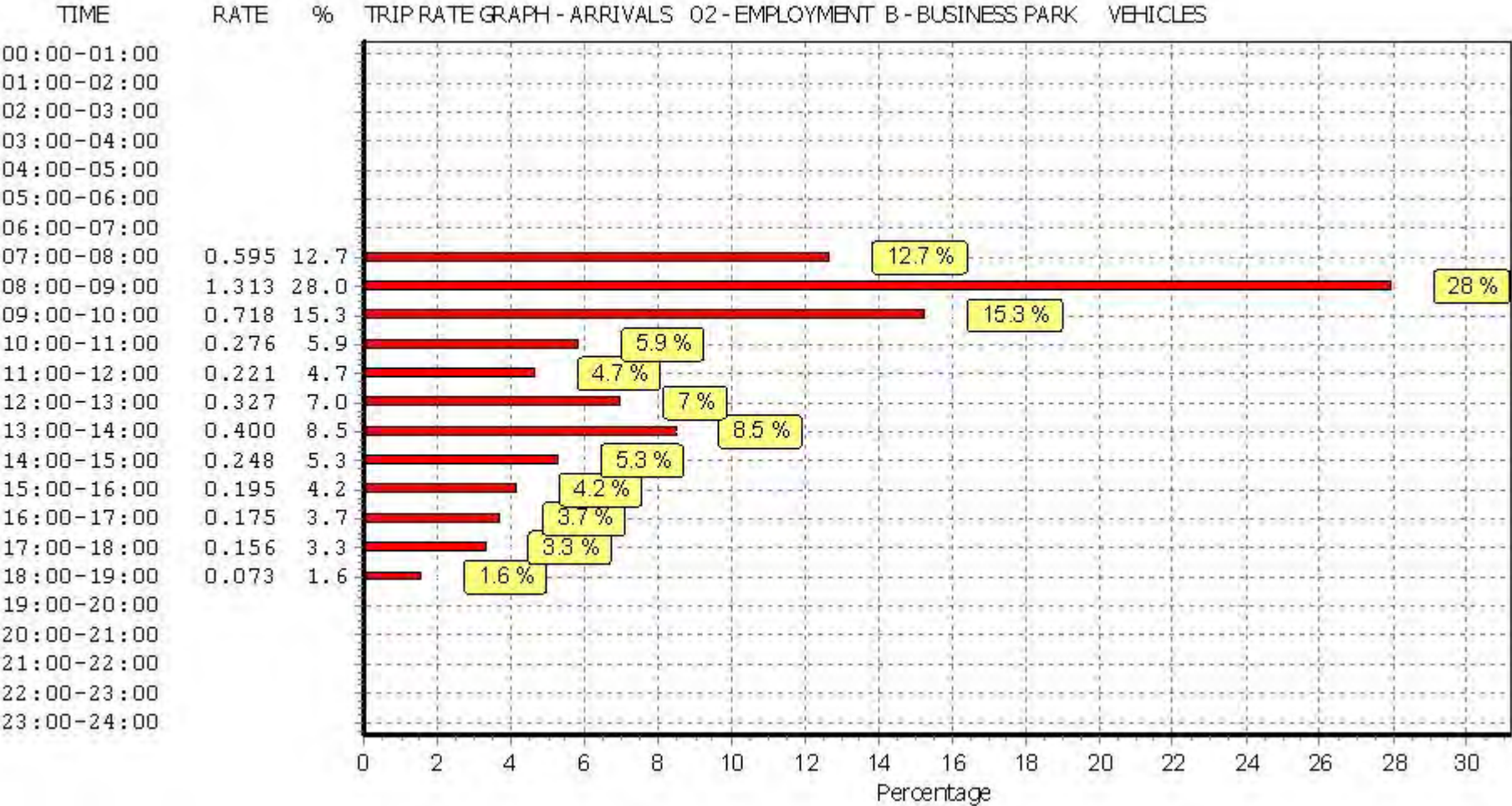
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

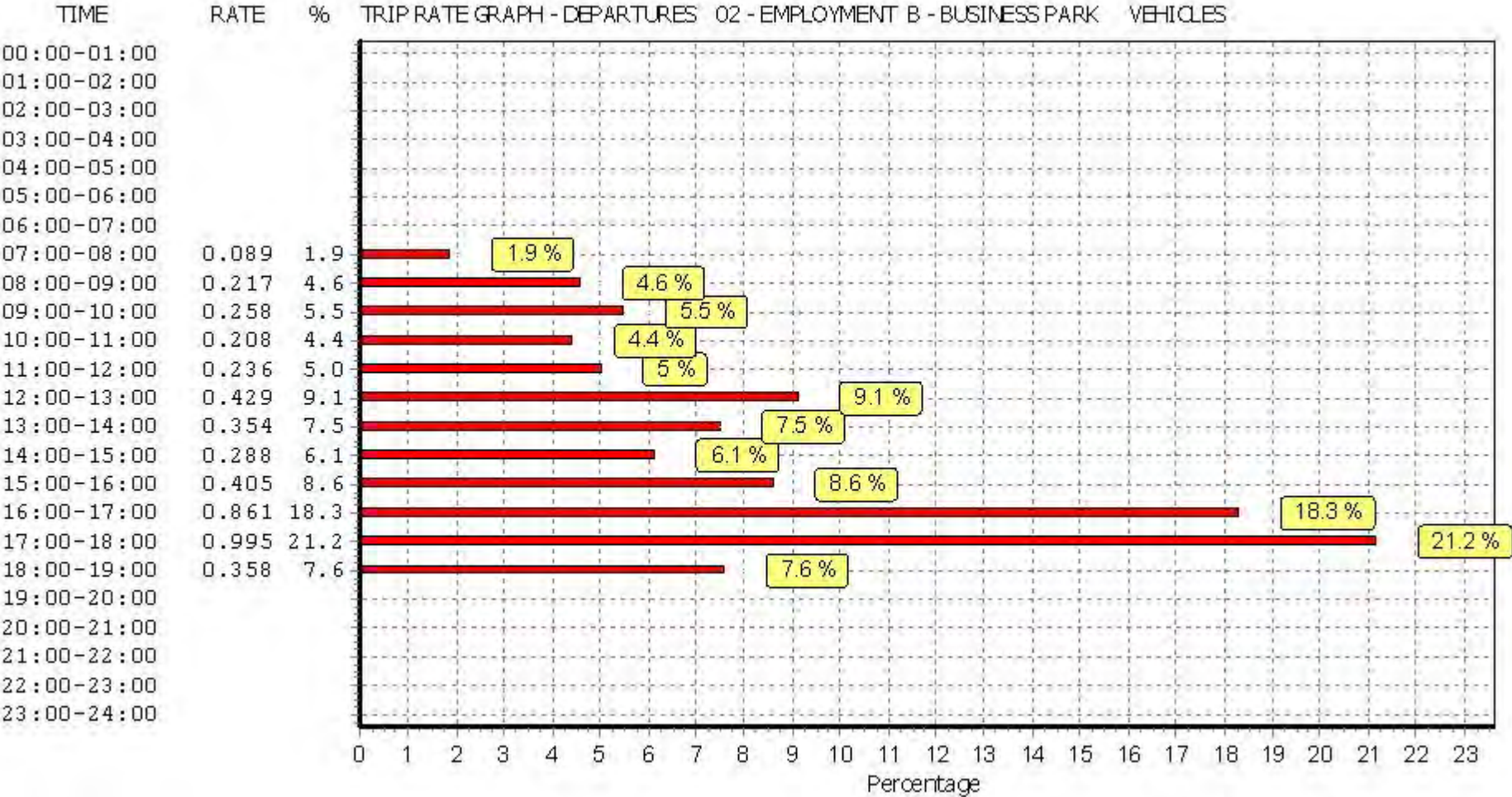
#### Parameter summary

|   |                           |
|---|---------------------------|
| 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.*

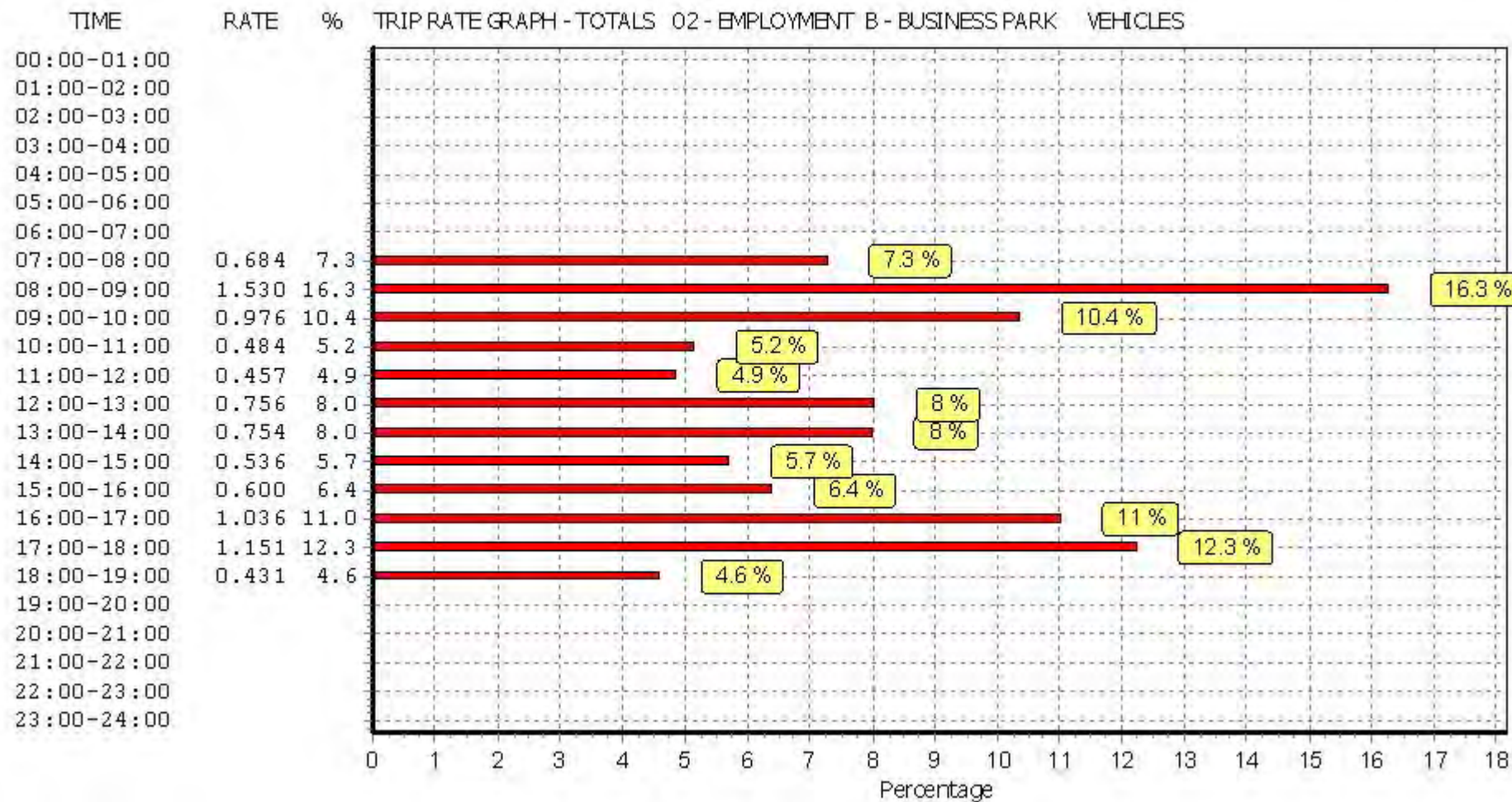


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified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



*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

TAXI S

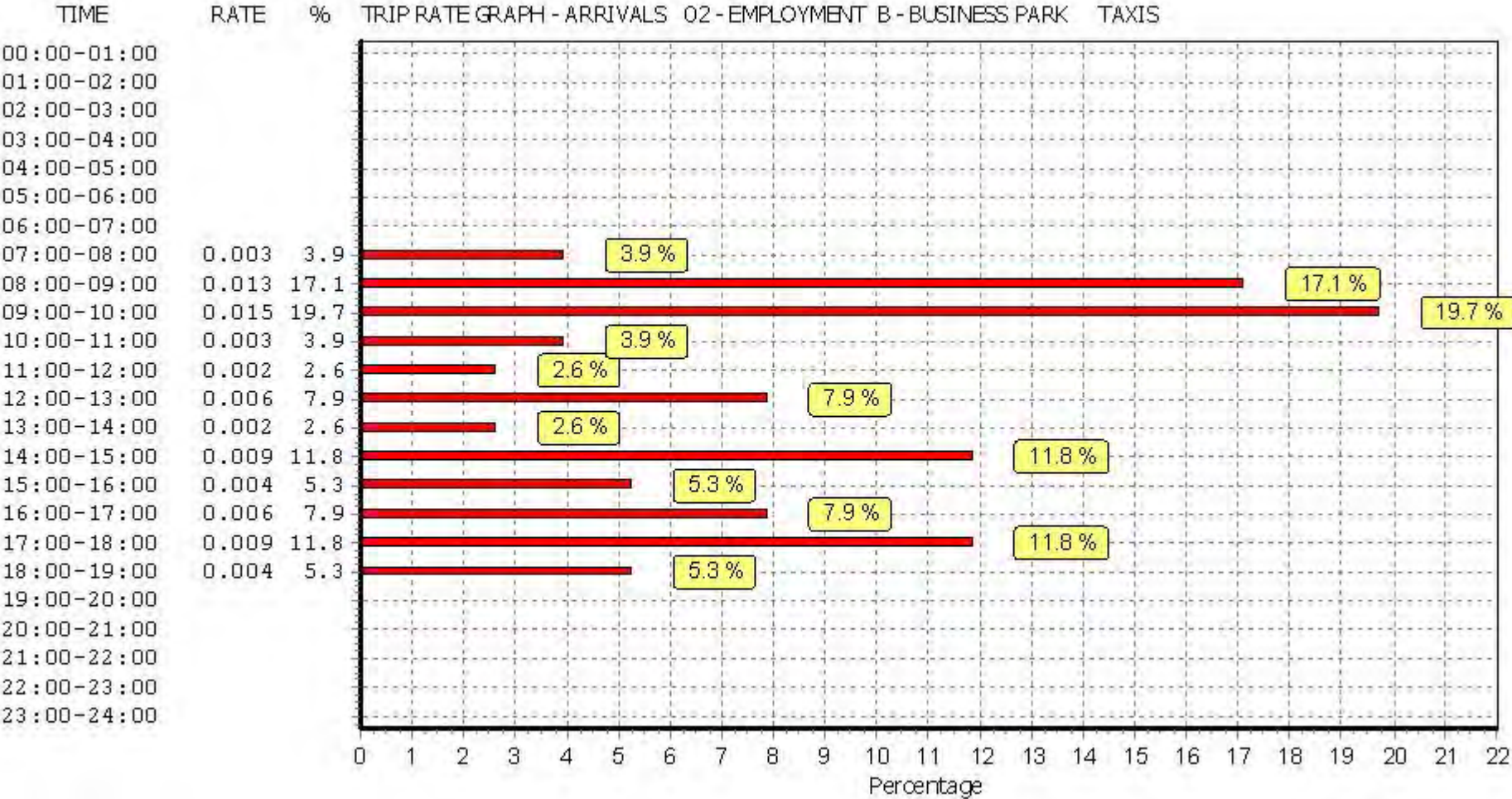
Calculation factor: 100 sqm

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     |

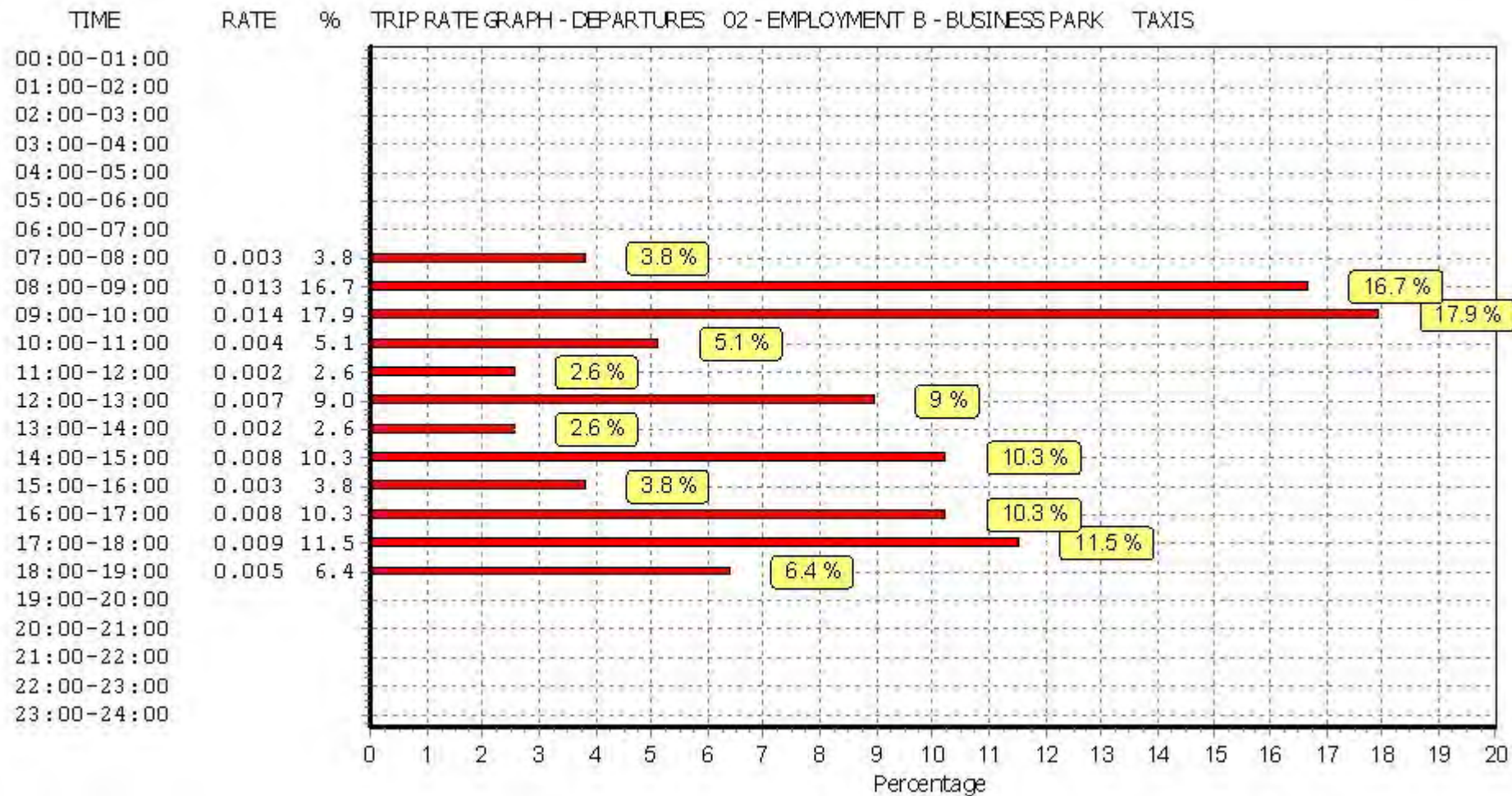
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.

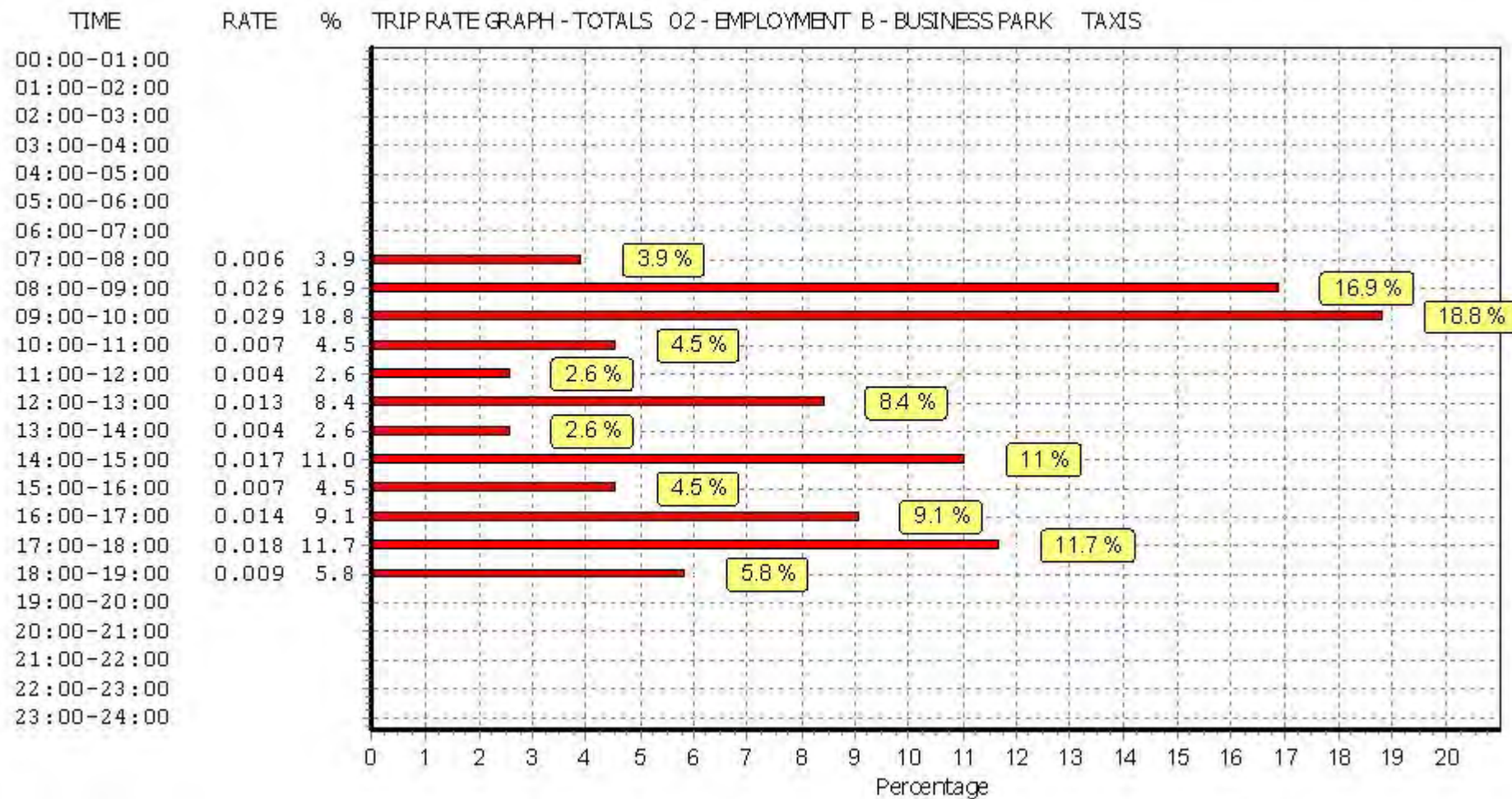


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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

OGVS

Calculation factor: 100 sqm

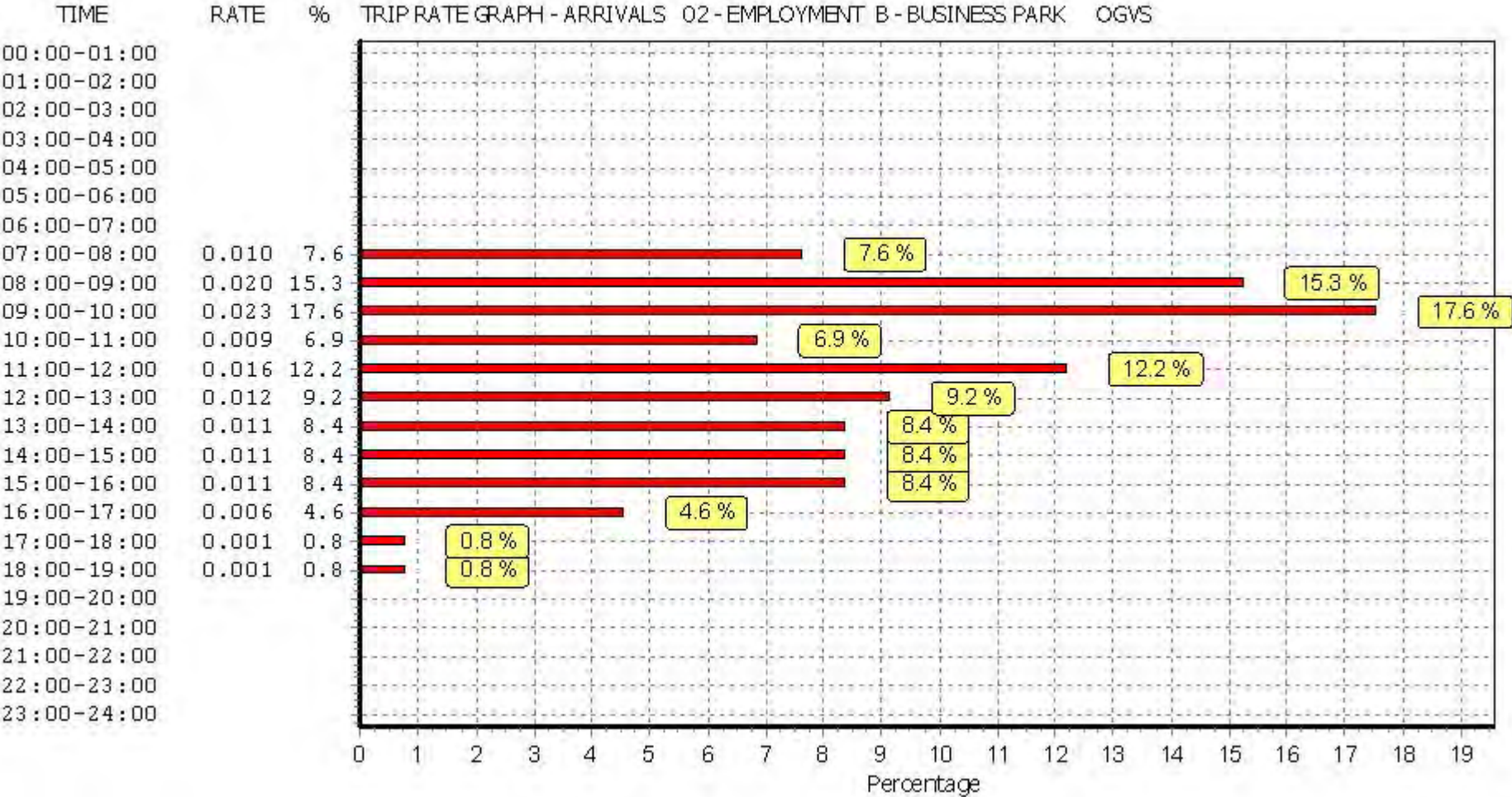
BOLD print indicates peak (busiest) period

| 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    |          |           |

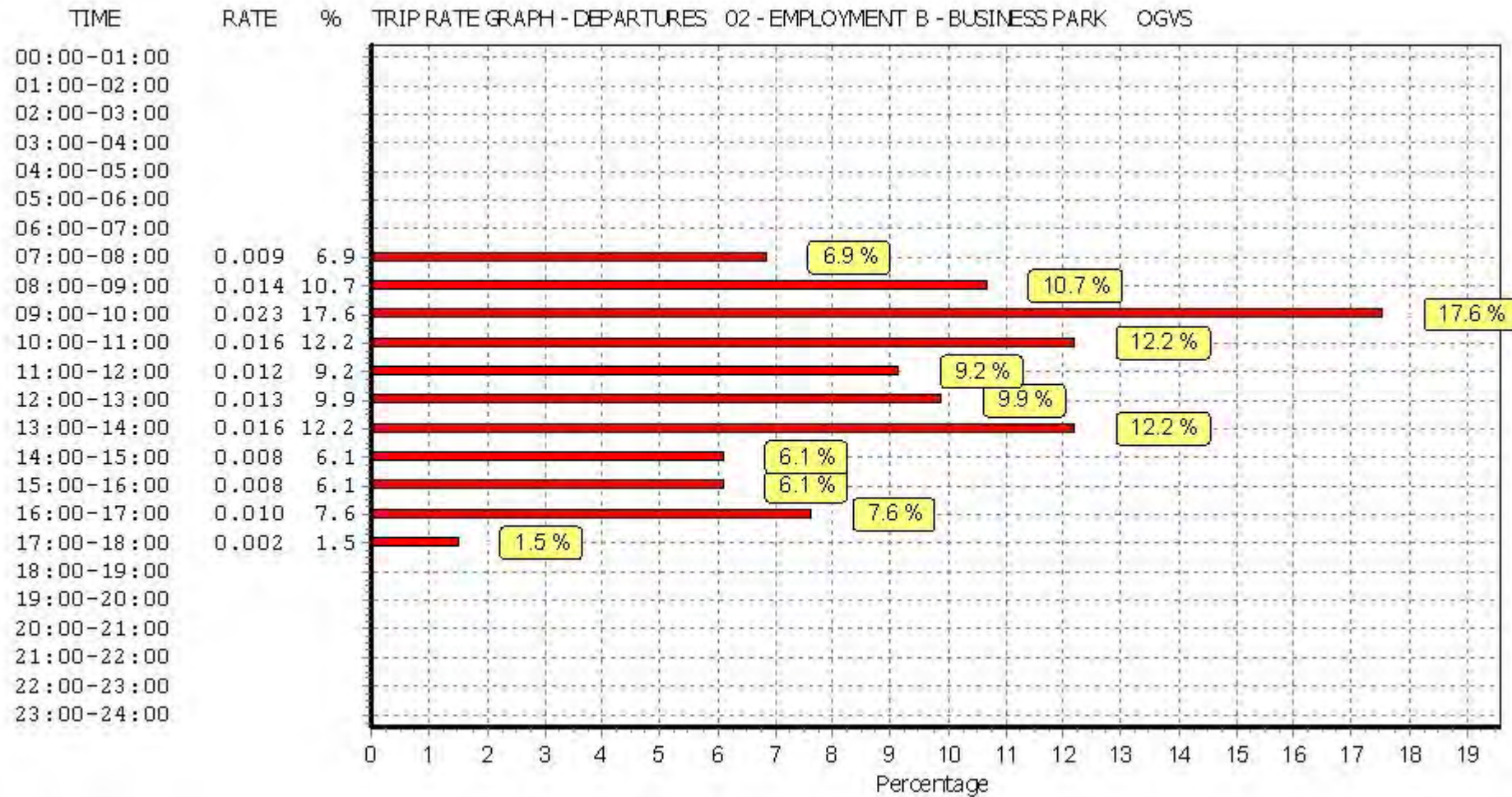
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.



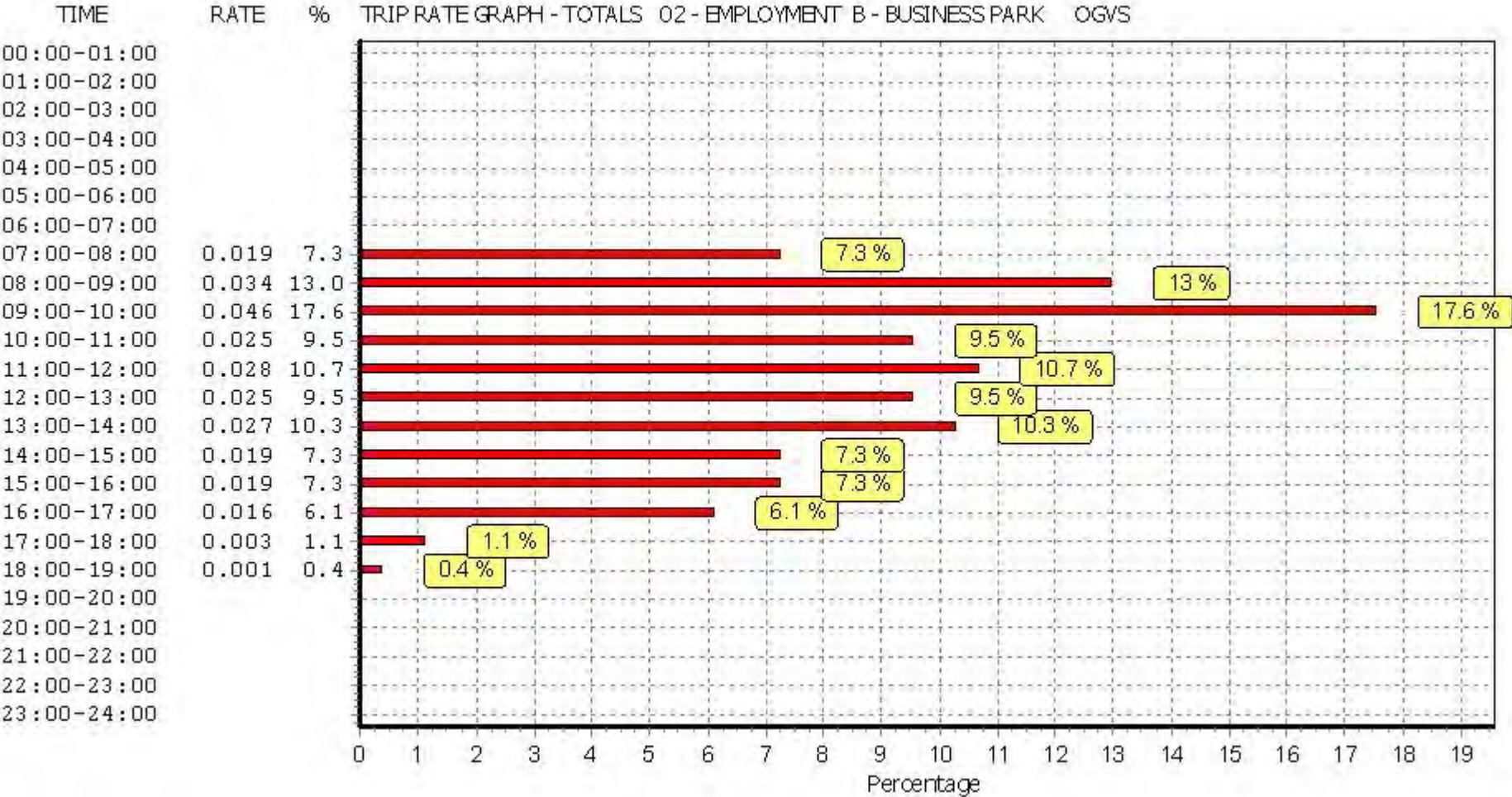


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified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



*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

PSVS

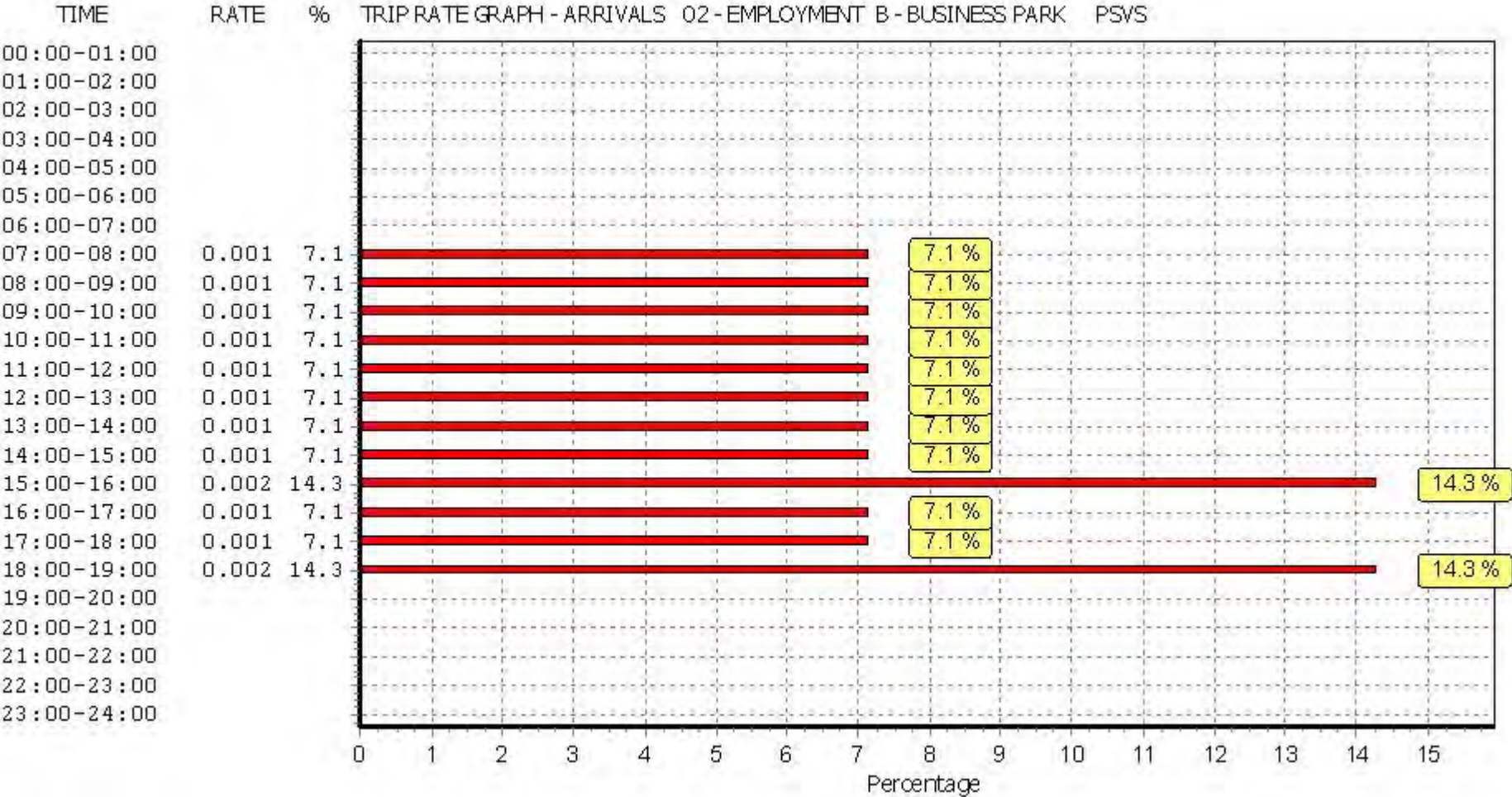
Calculation factor: 100 sqm

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    |          |           |

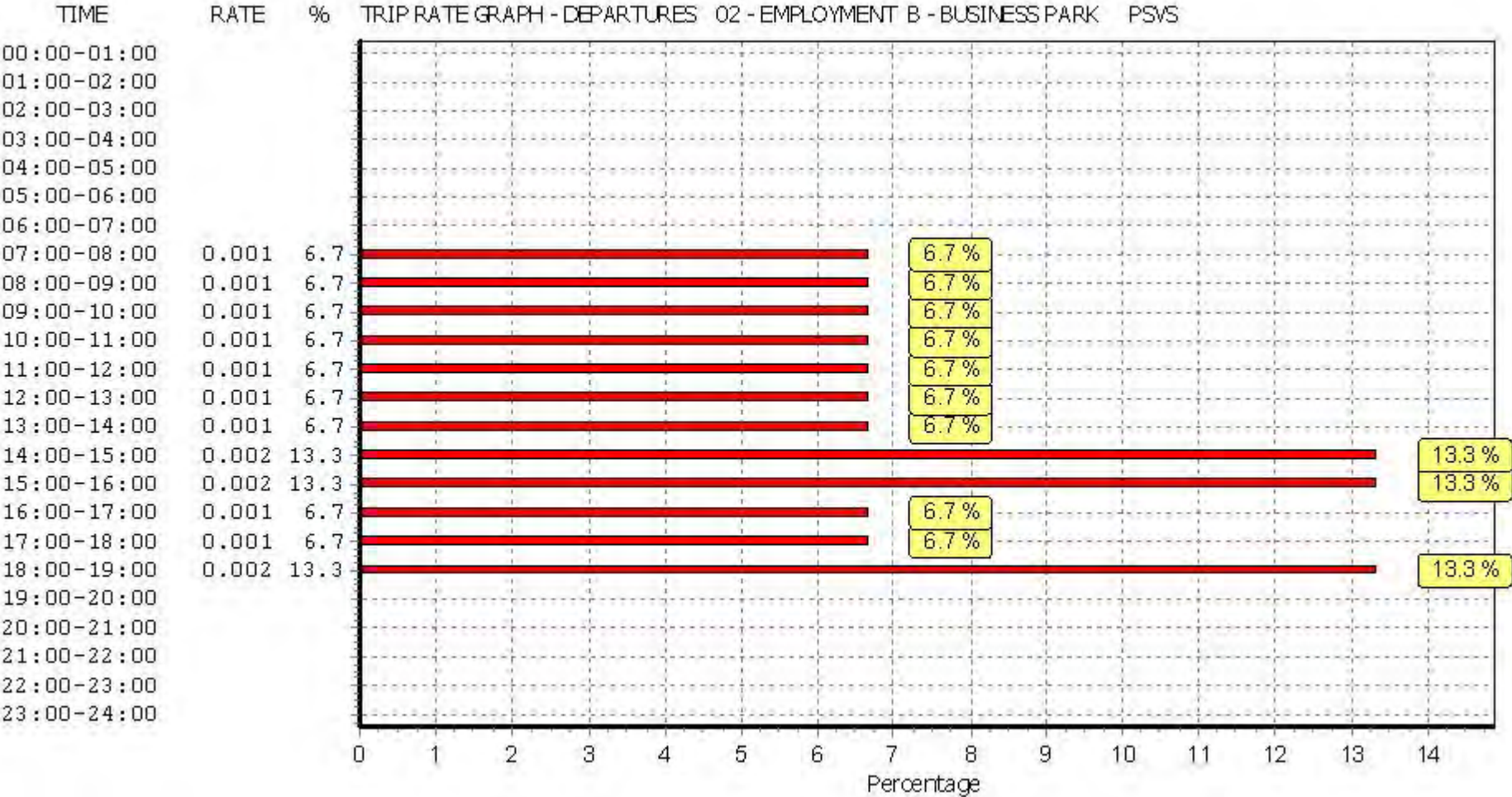
*This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.*

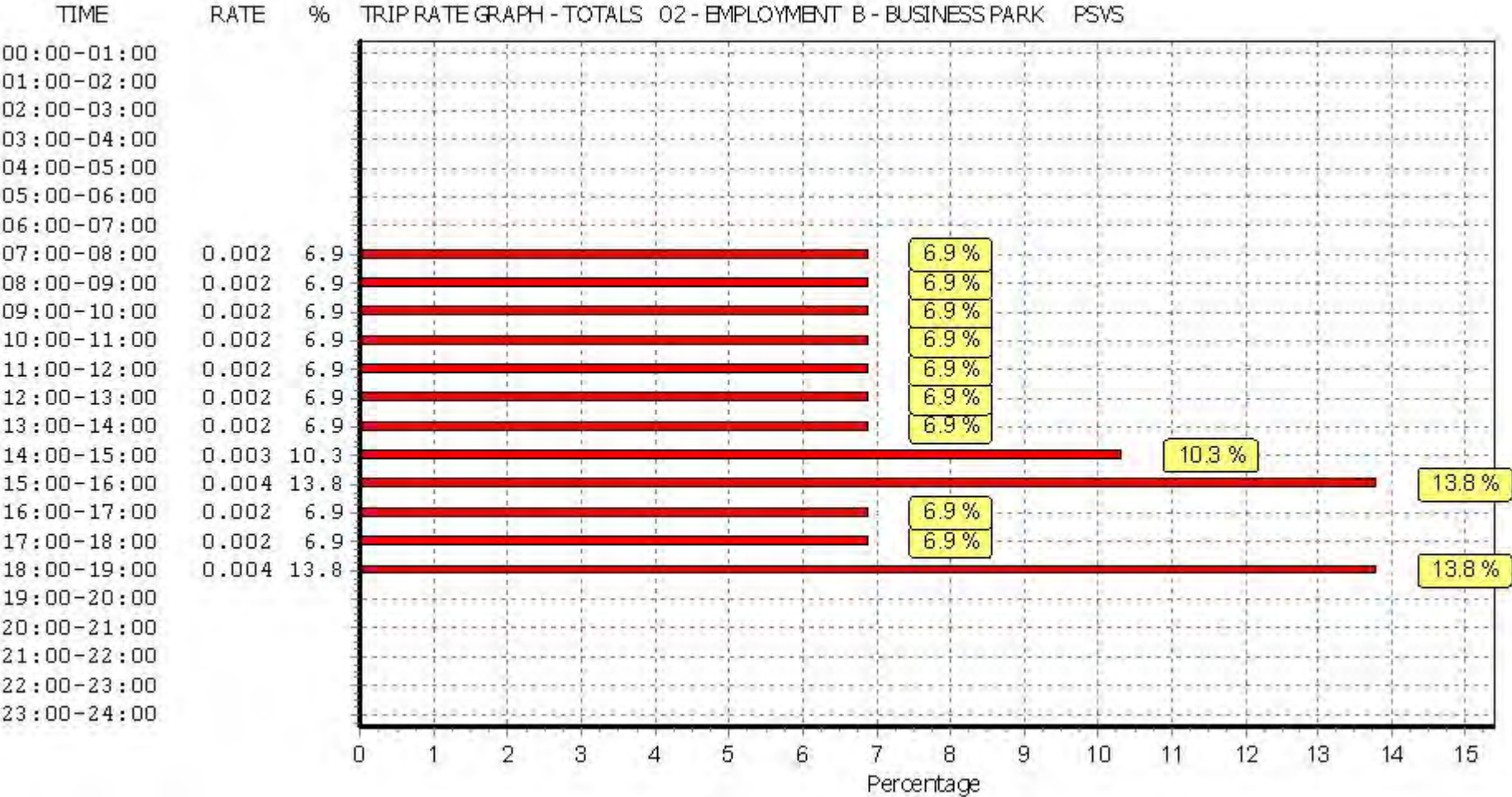


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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    |          |           |

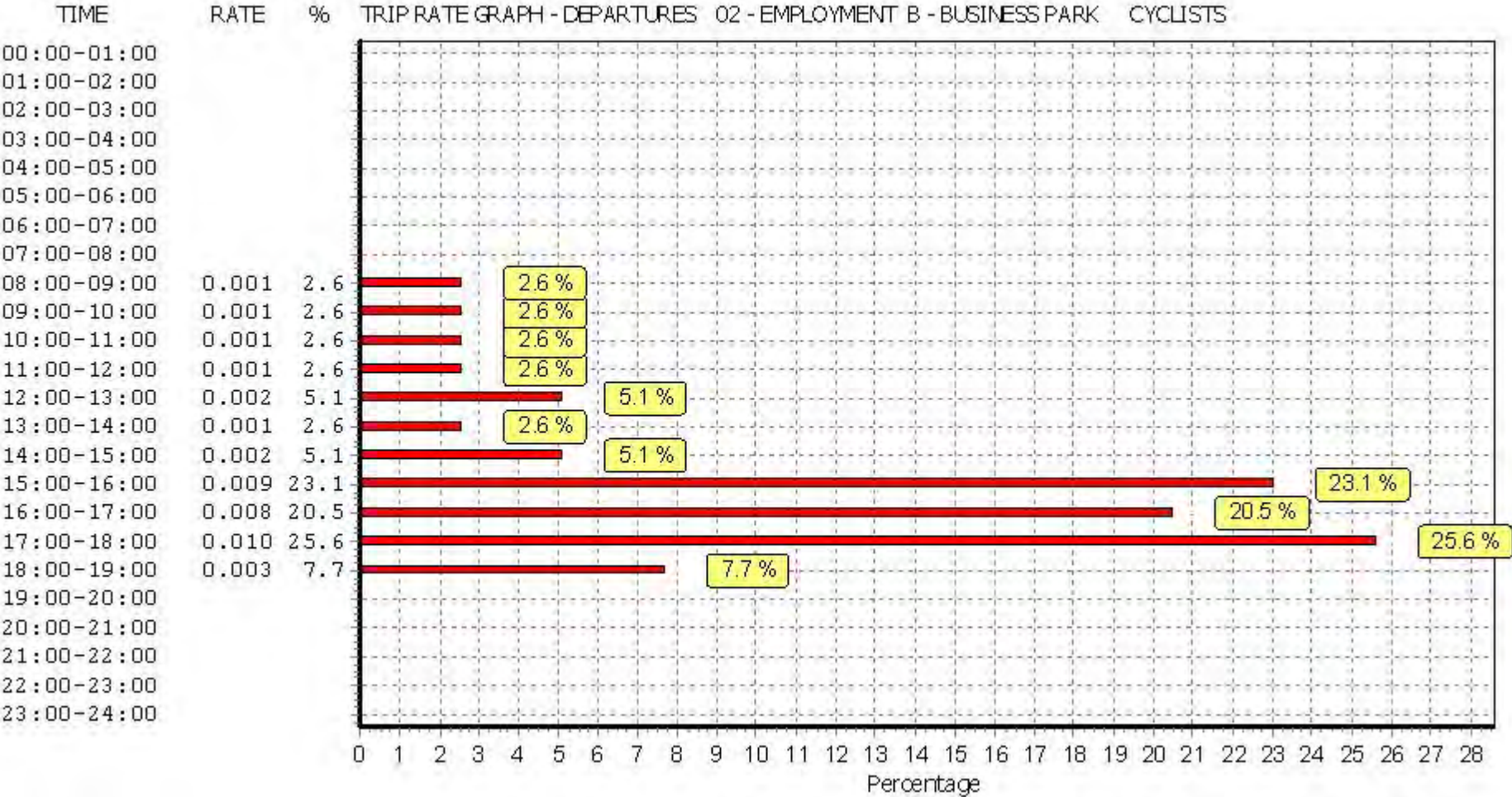
*This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.*



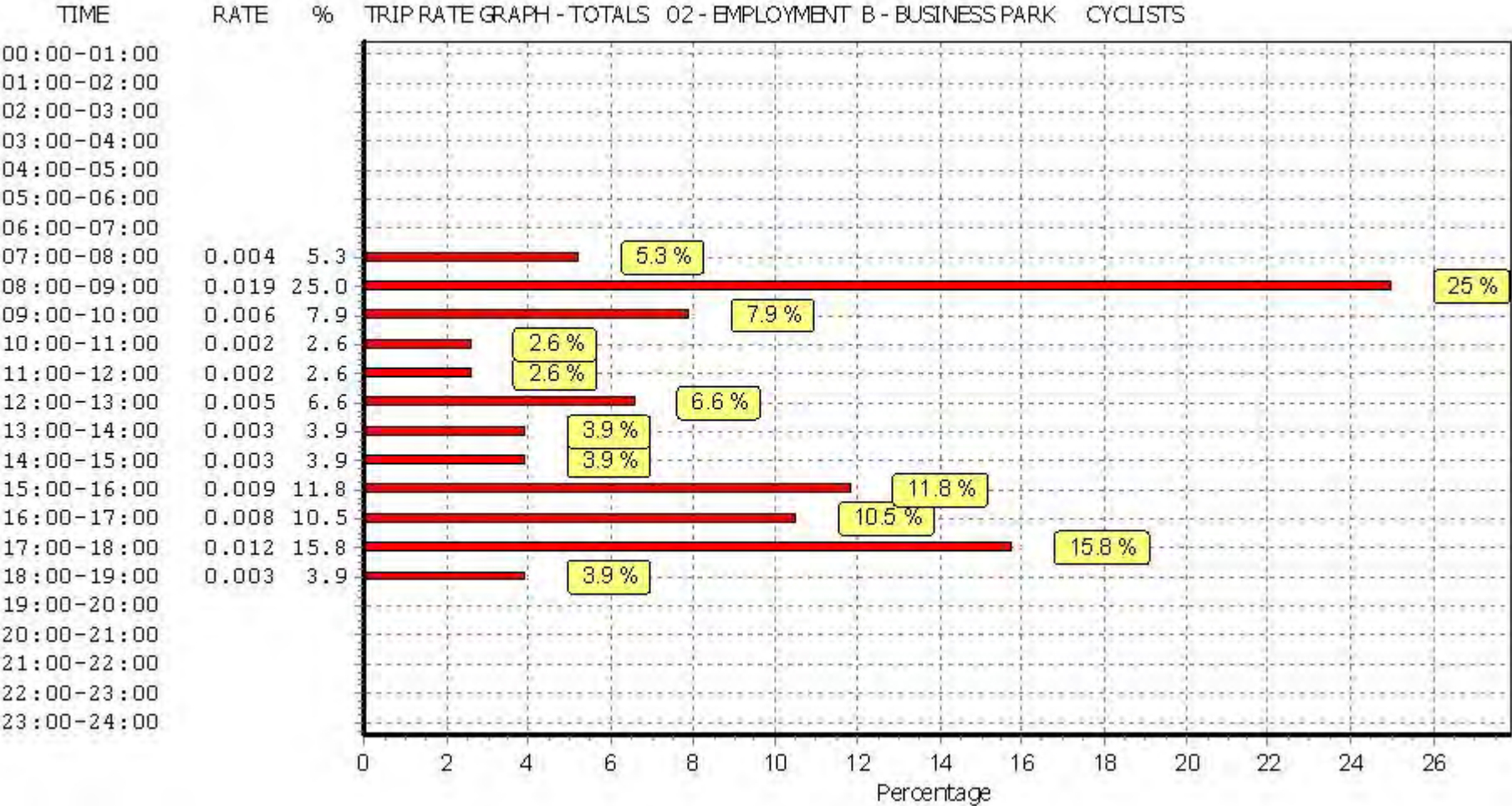


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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 |
|------------|--------|

*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.

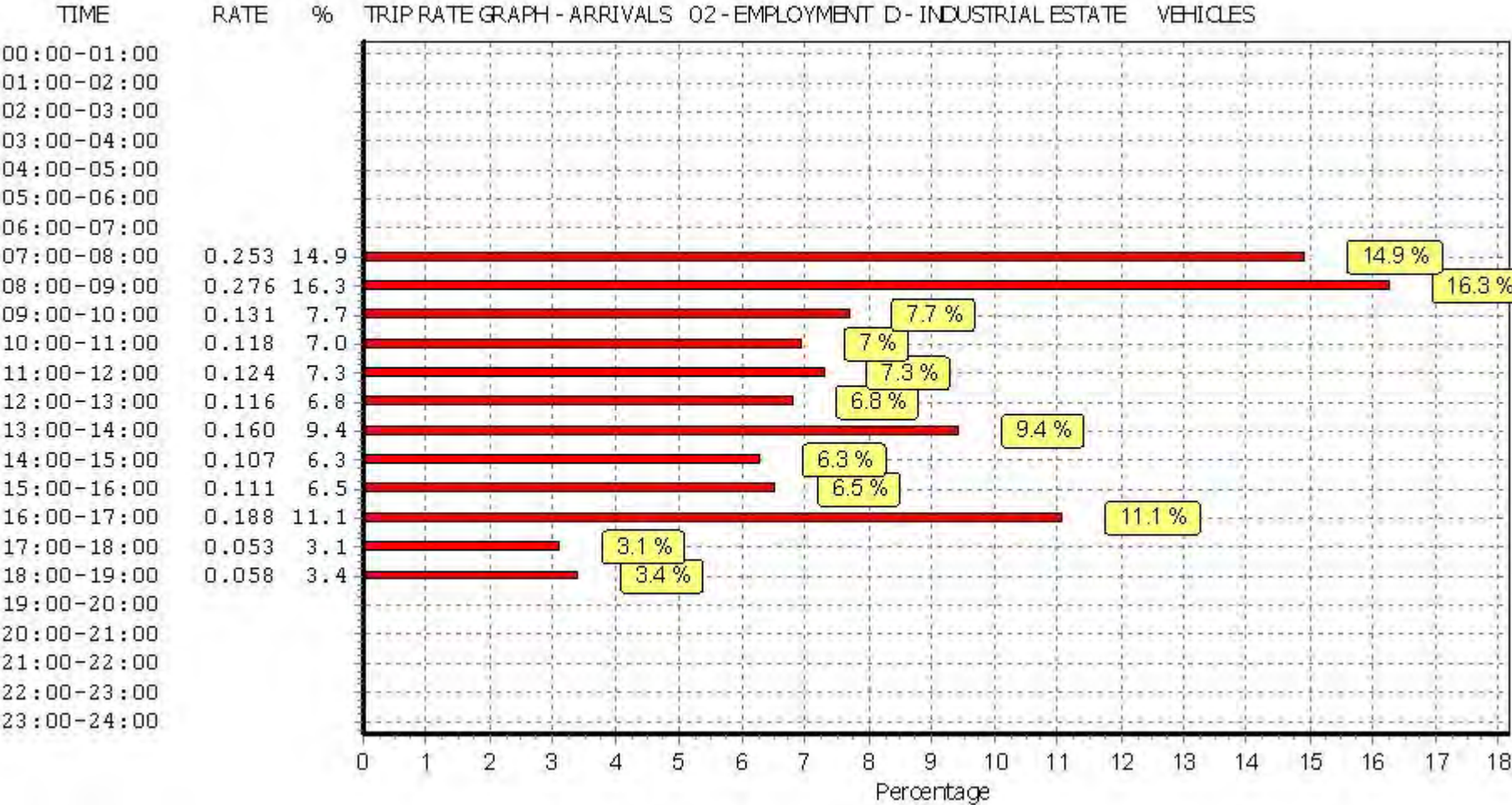
The survey data, graphs and all associated supporting information, contained within the TRICS Database are published by TRICS Consortium Limited ("the Company") and the Company claims copyright and database rights in this published work. The Company authorises those who possess a current TRICS licence to access the TRICS Database and copy the data contained within the TRICS Database for the licence holders' use only. Any resulting copy must retain all copyrights and other proprietary notices, and any disclaimer contained thereon.

The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

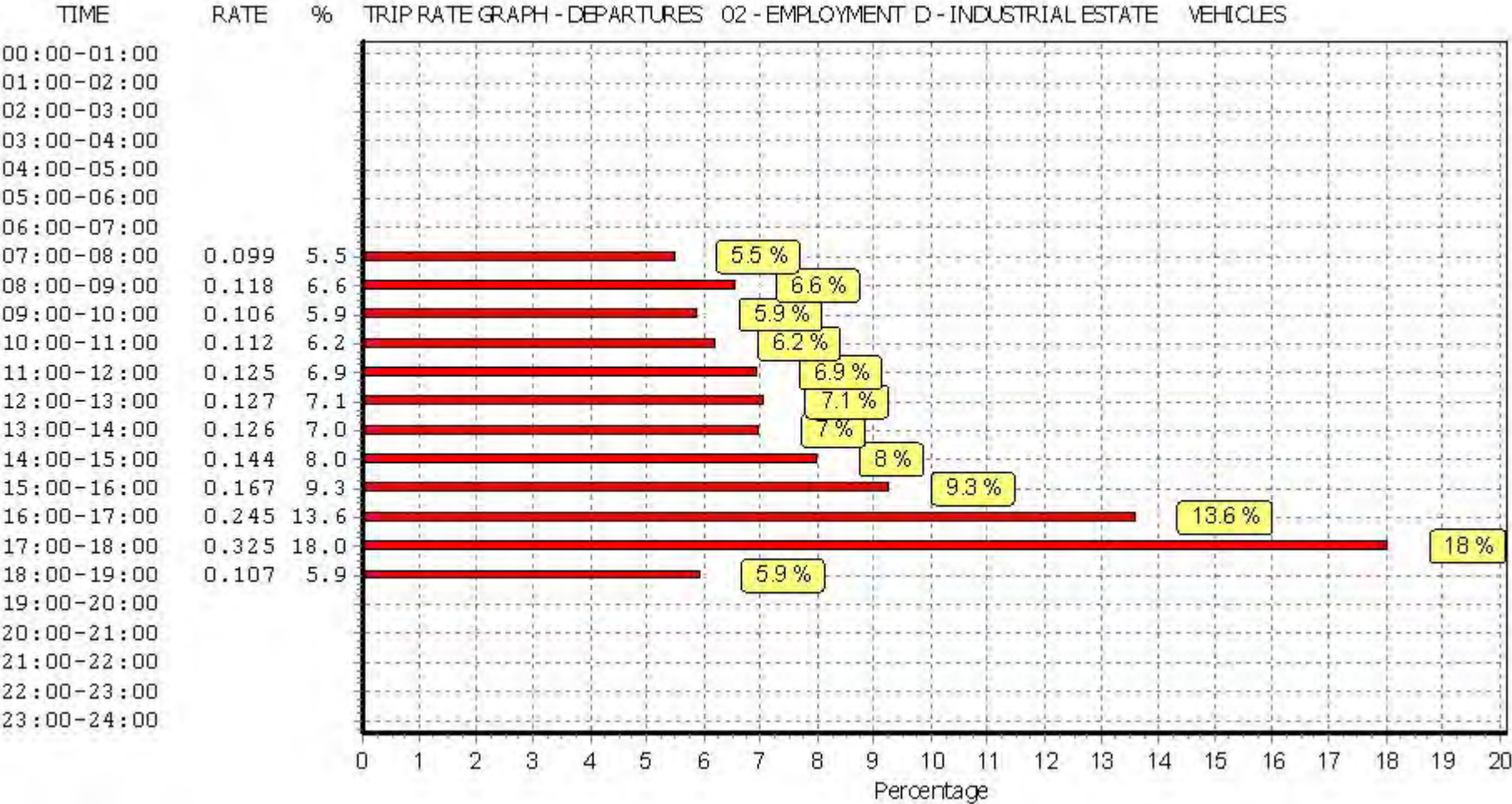
#### Parameter summary

|   |                           |
|---|---------------------------|
| 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.*

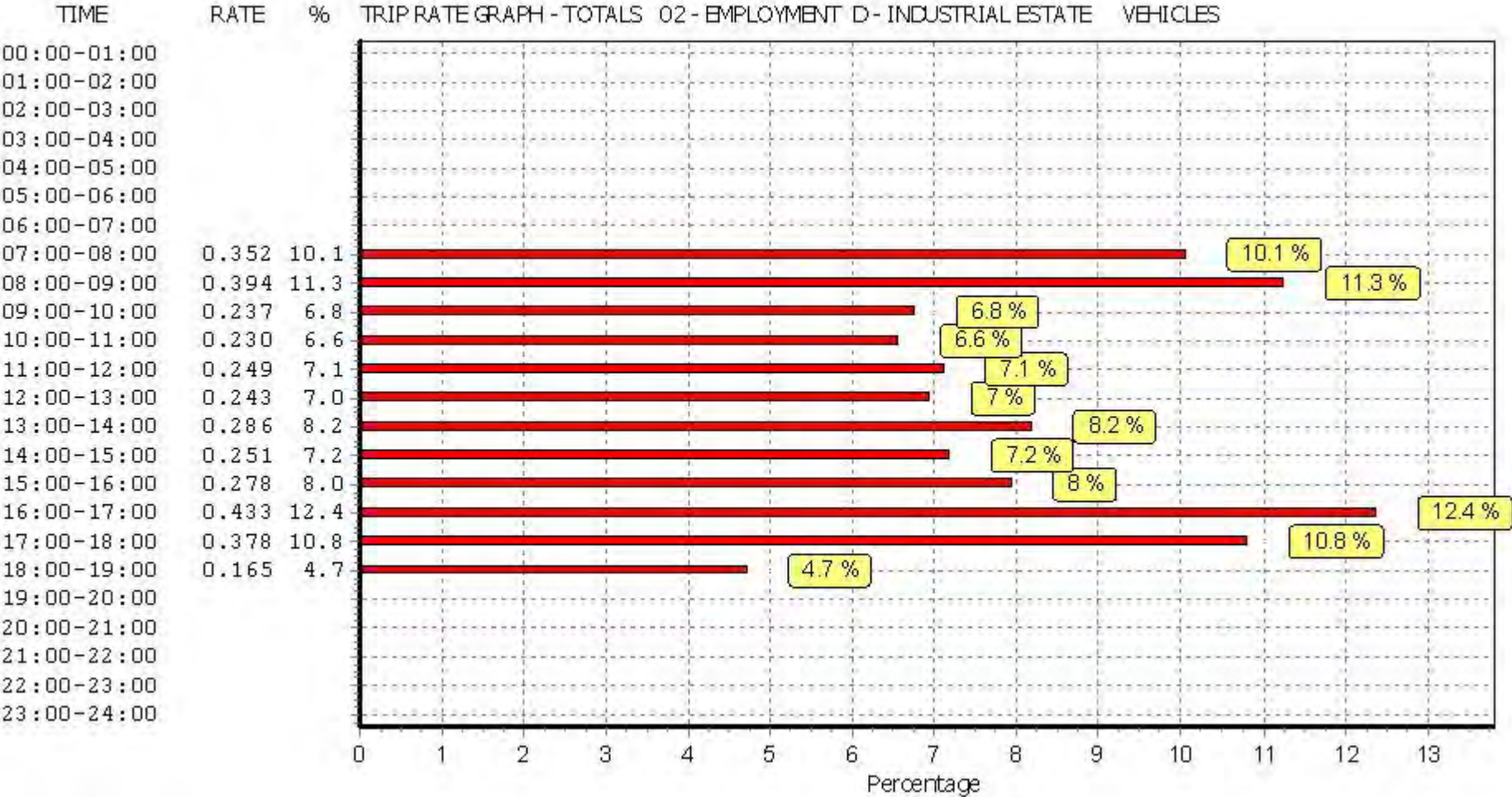


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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.*





*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

TAXIS

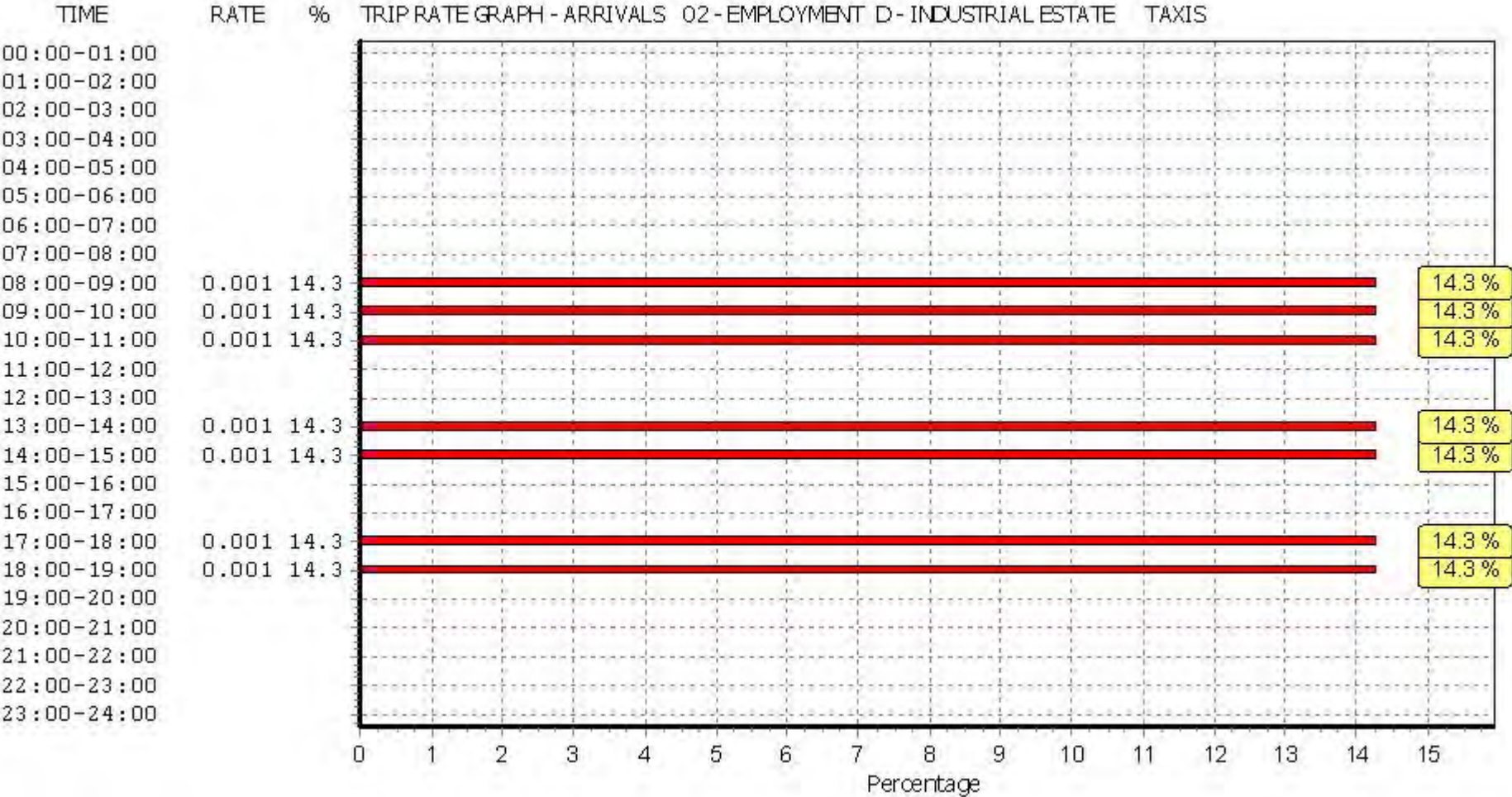
Calculation factor: 100 sqm

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     |

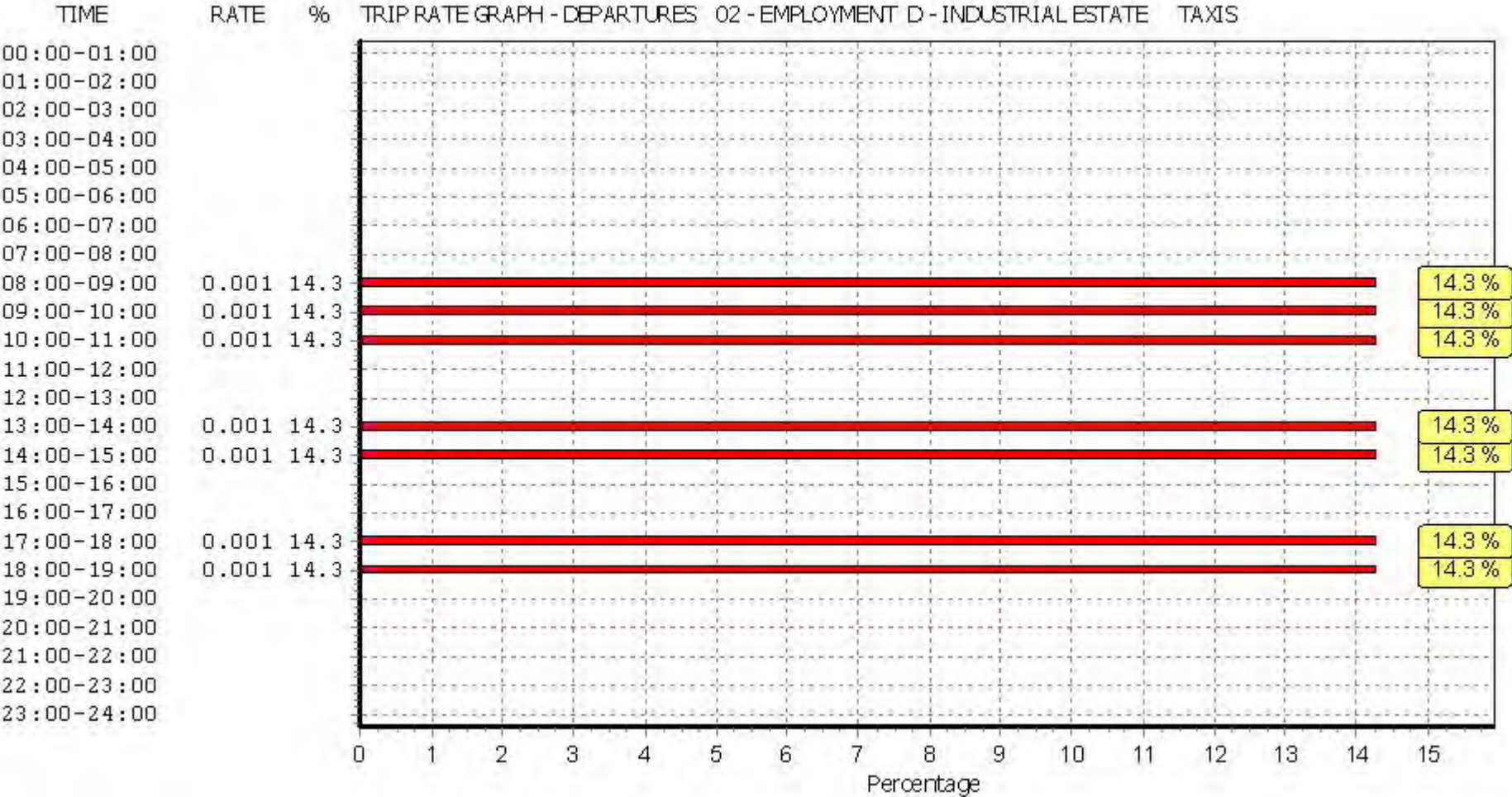
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.

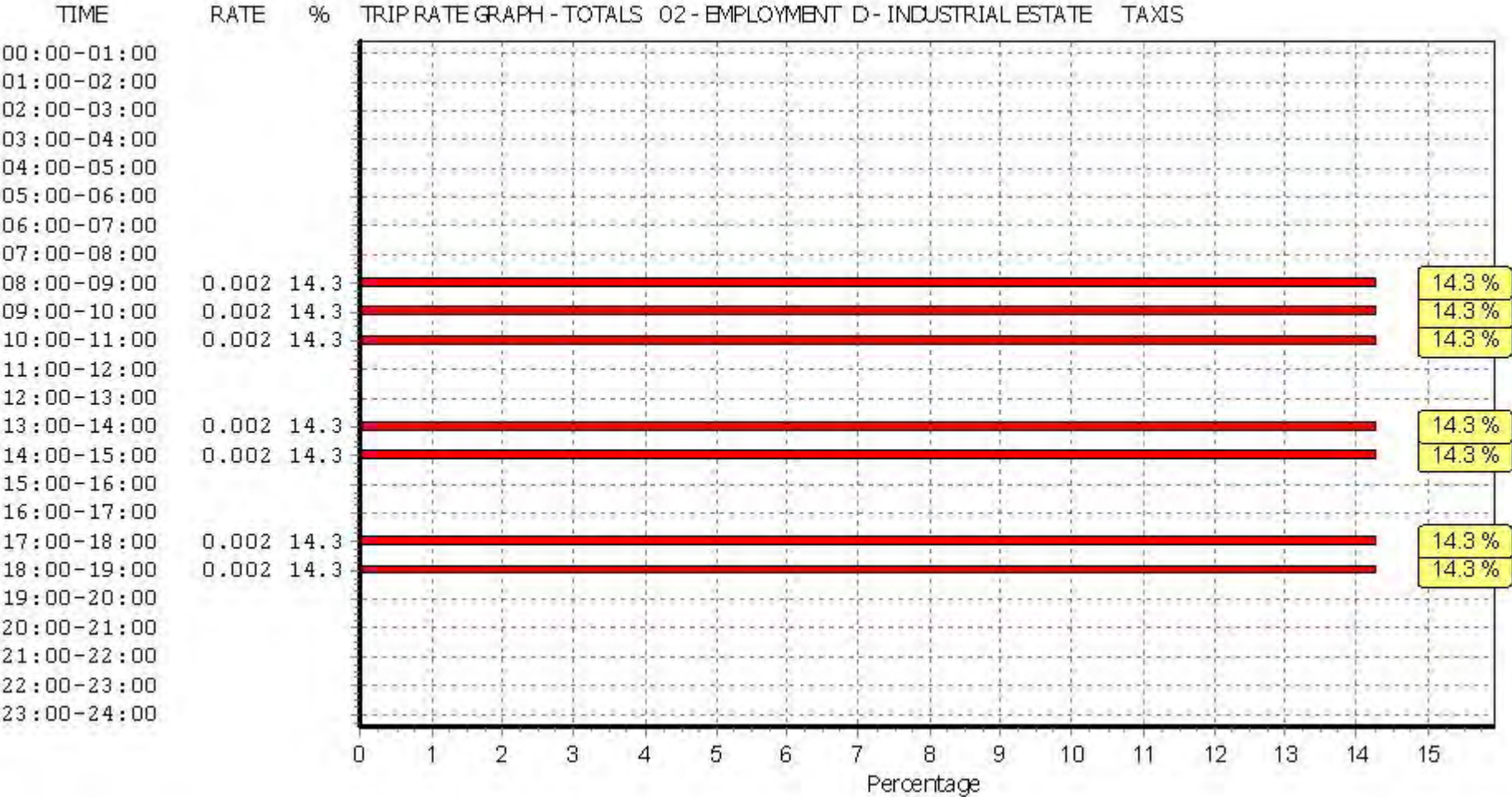


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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

OGVS

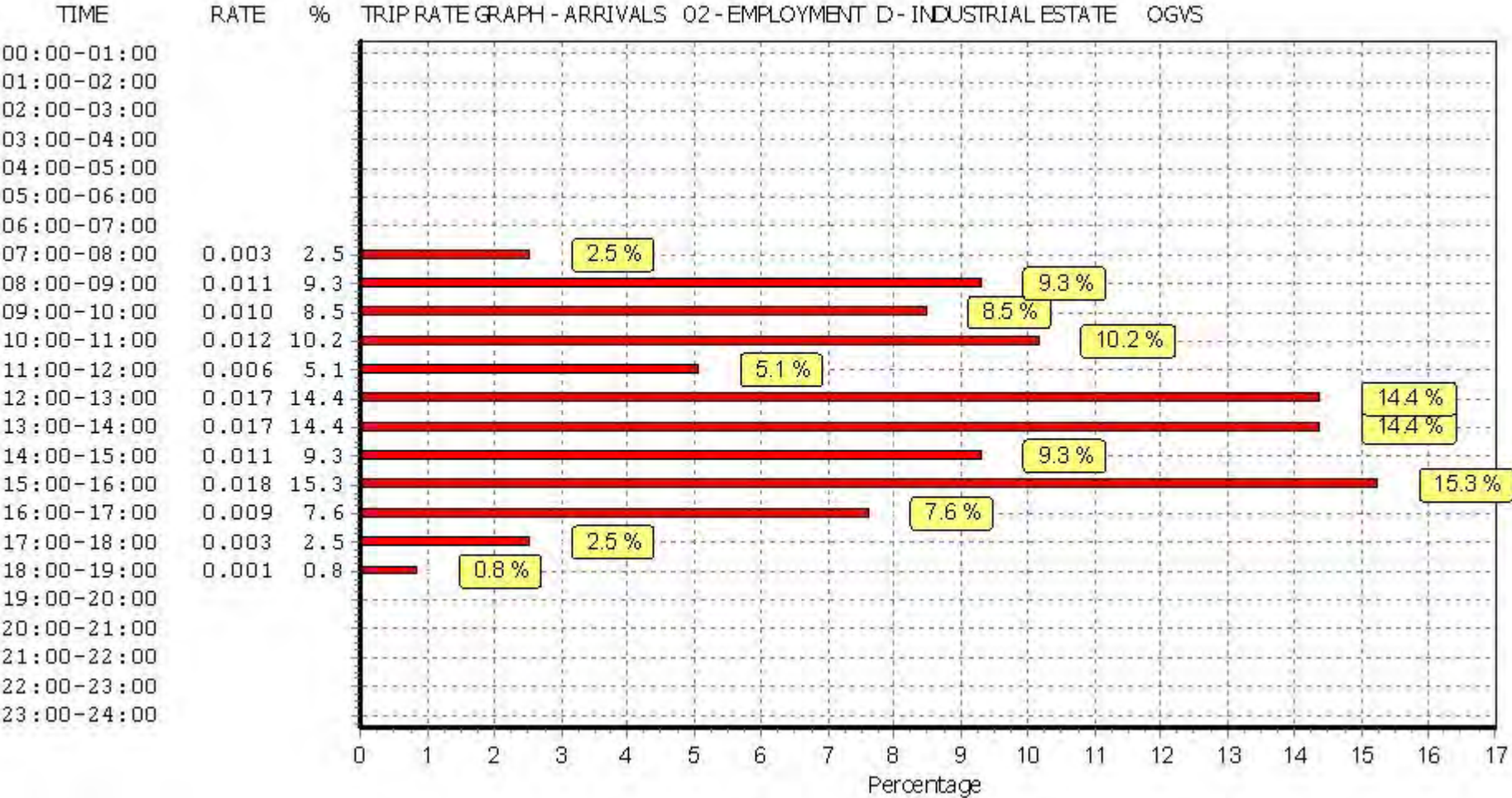
Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

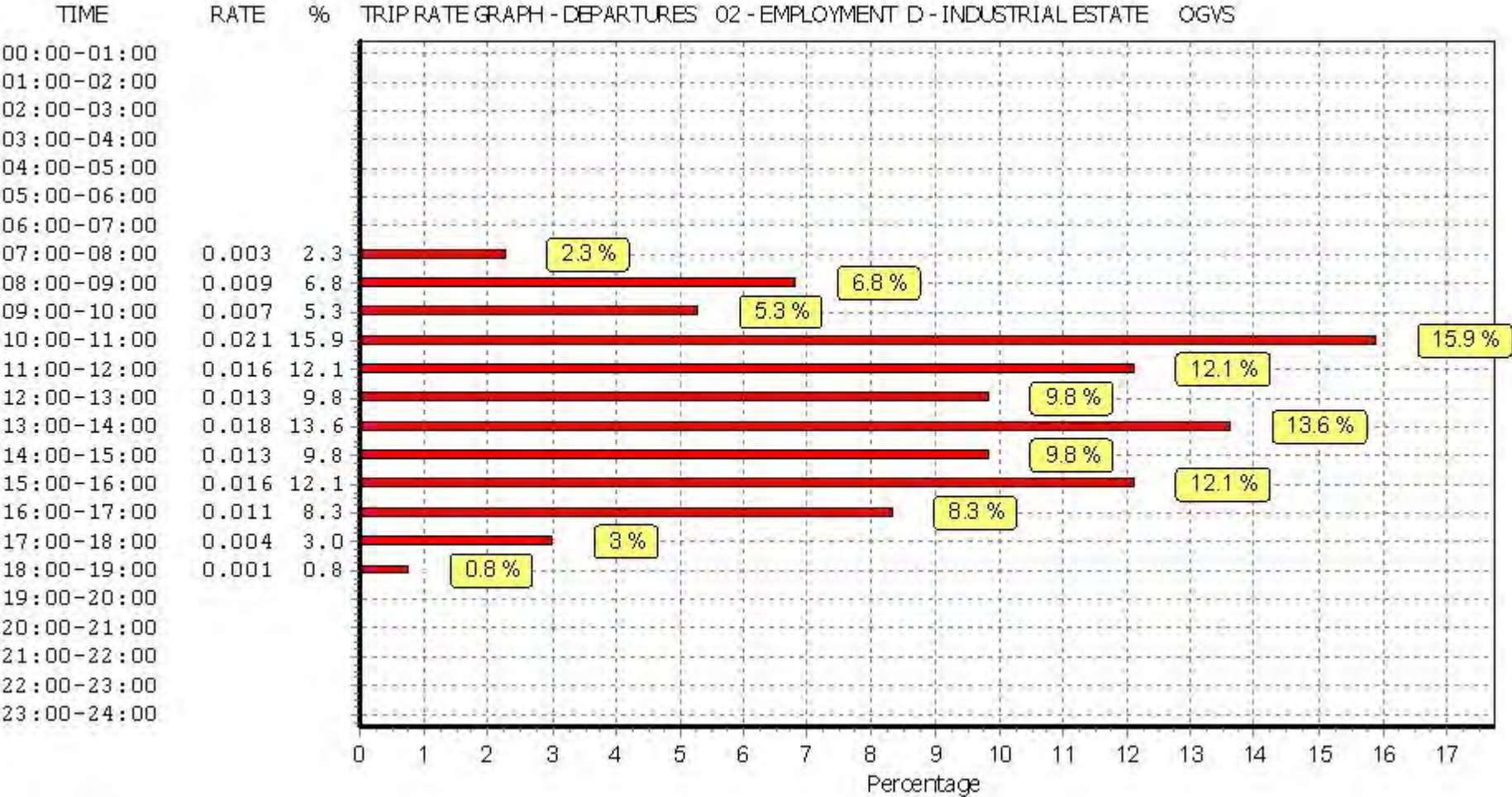
| Time Range    | ARRIVALS |          |           | DEPARTURES |          |           | TOTALS   |          |           |
|---------------|----------|----------|-----------|------------|----------|-----------|----------|----------|-----------|
|               | No. Days | Ave. GFA | Trip Rate | No. Days   | 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.

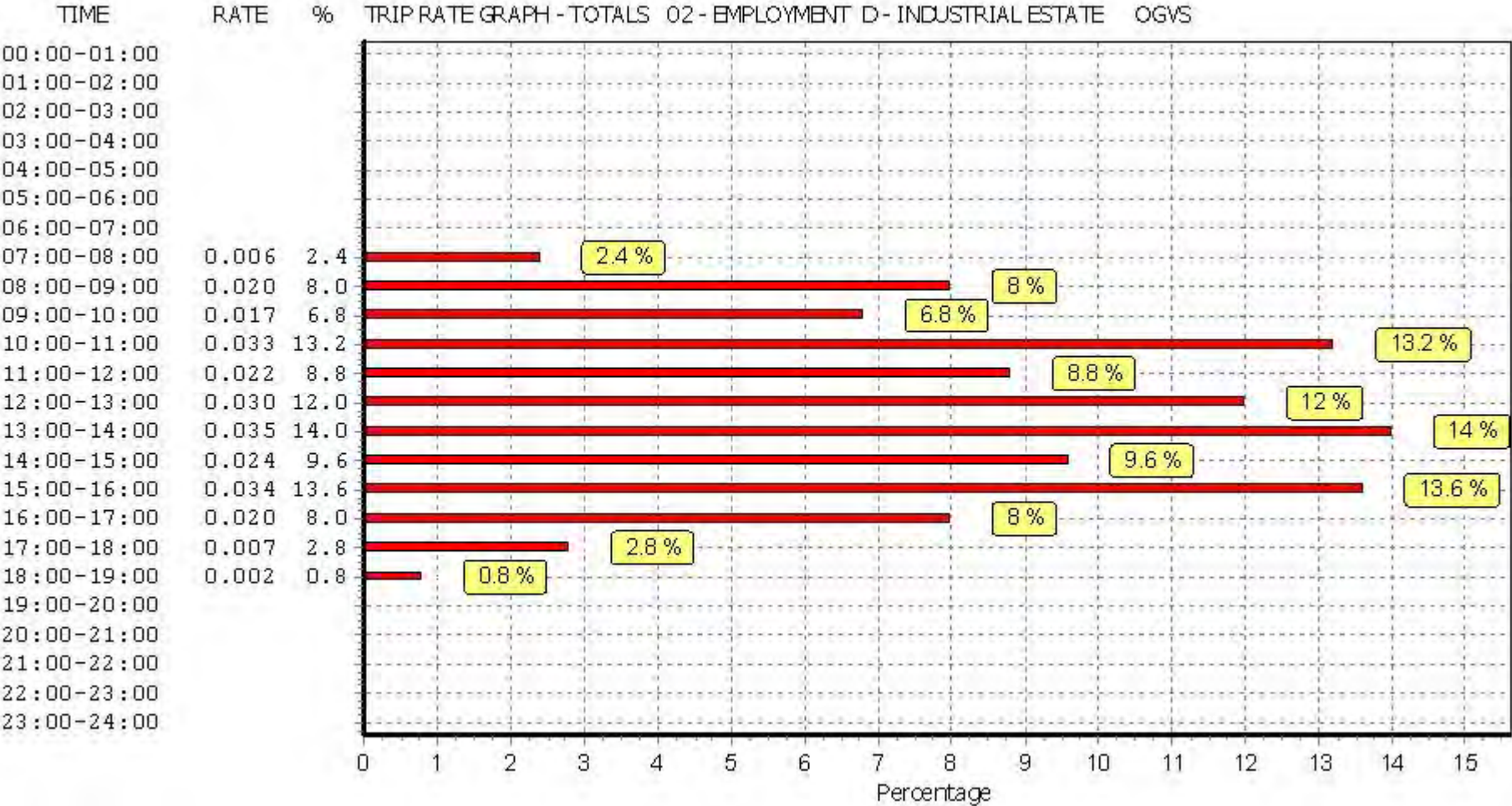


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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

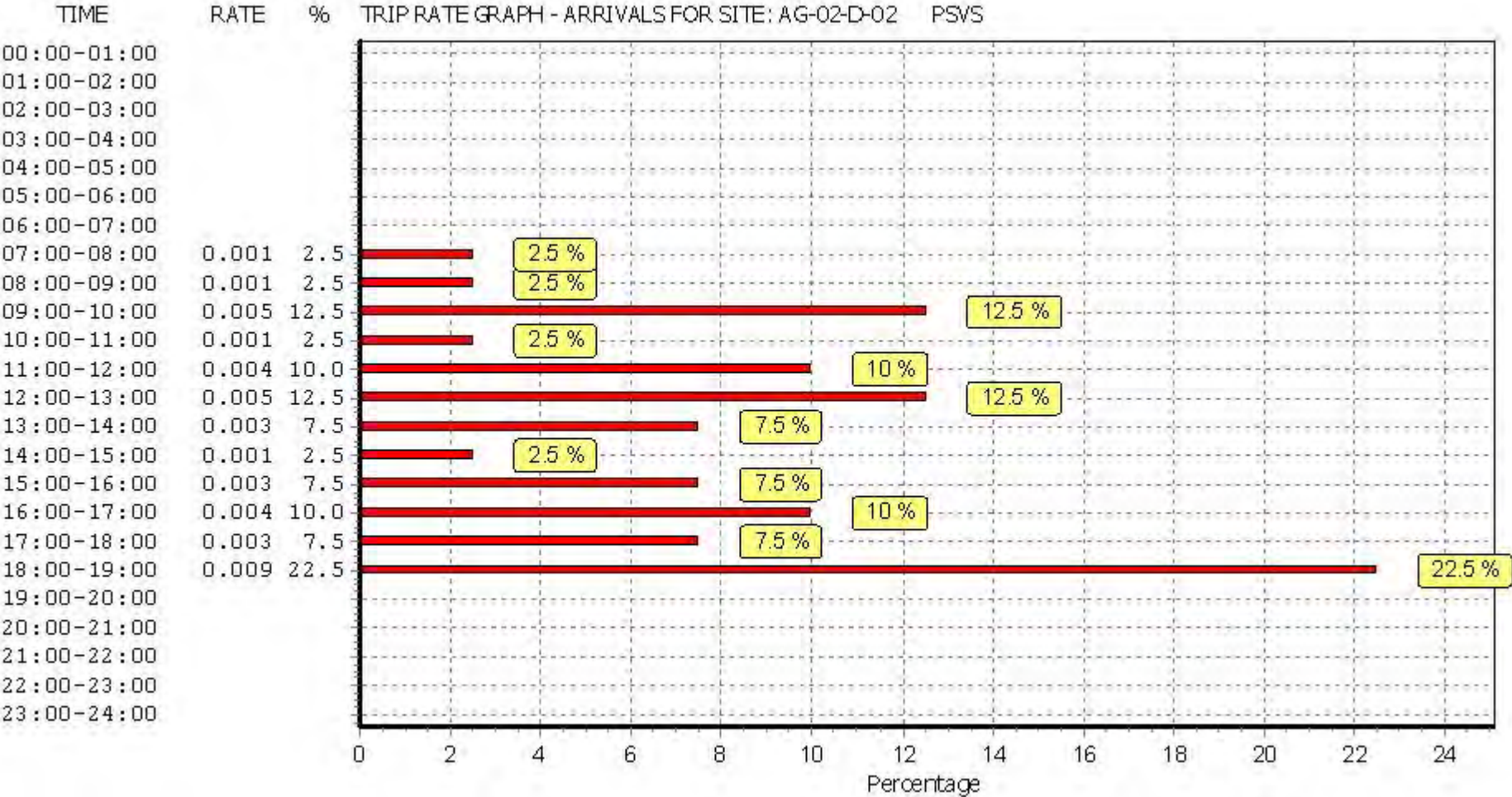
BOLD print indicates peak (busiest) period

| 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    |          |           |

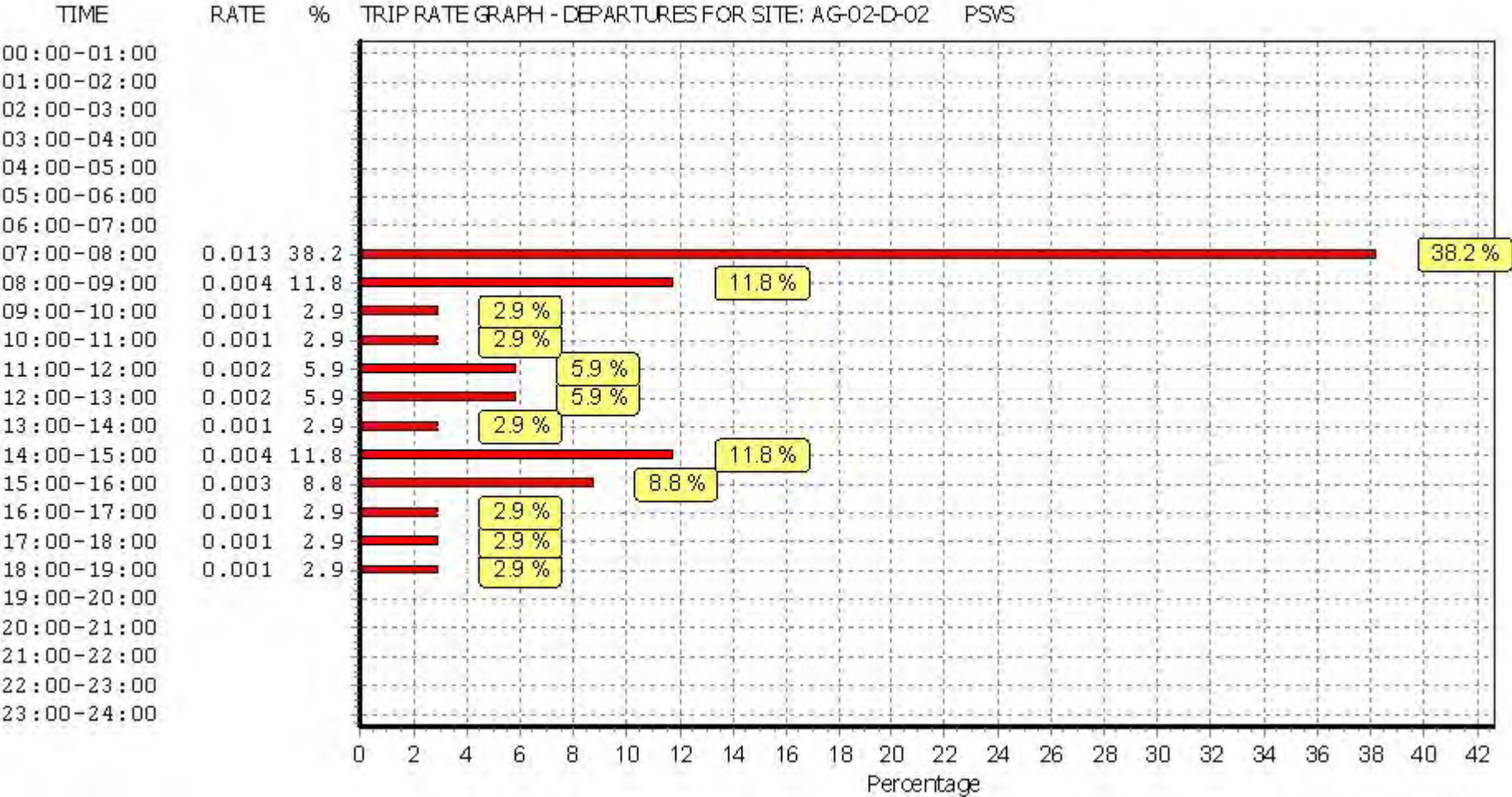
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.



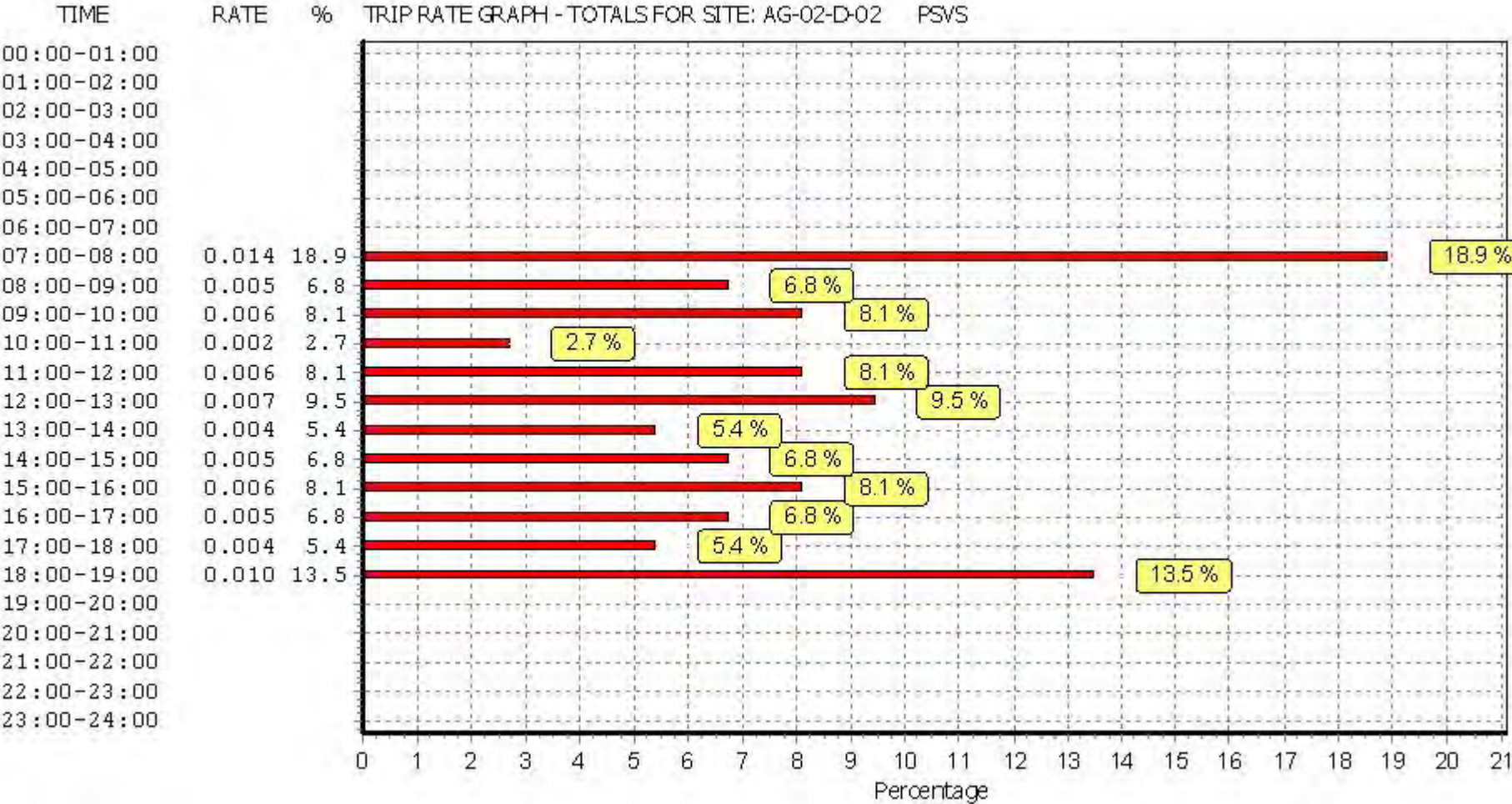


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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

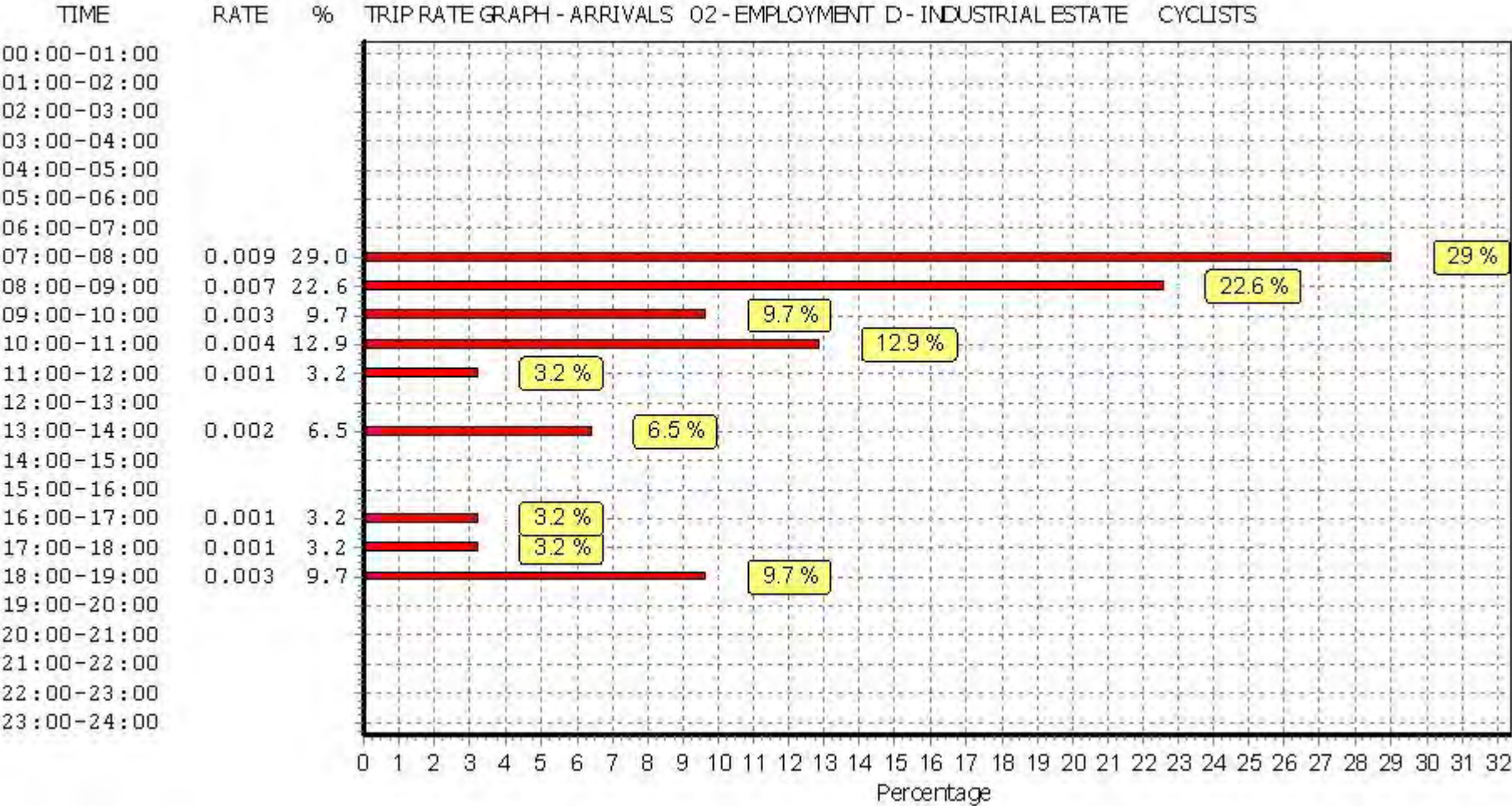
Calculation factor: 100 sqm

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     |

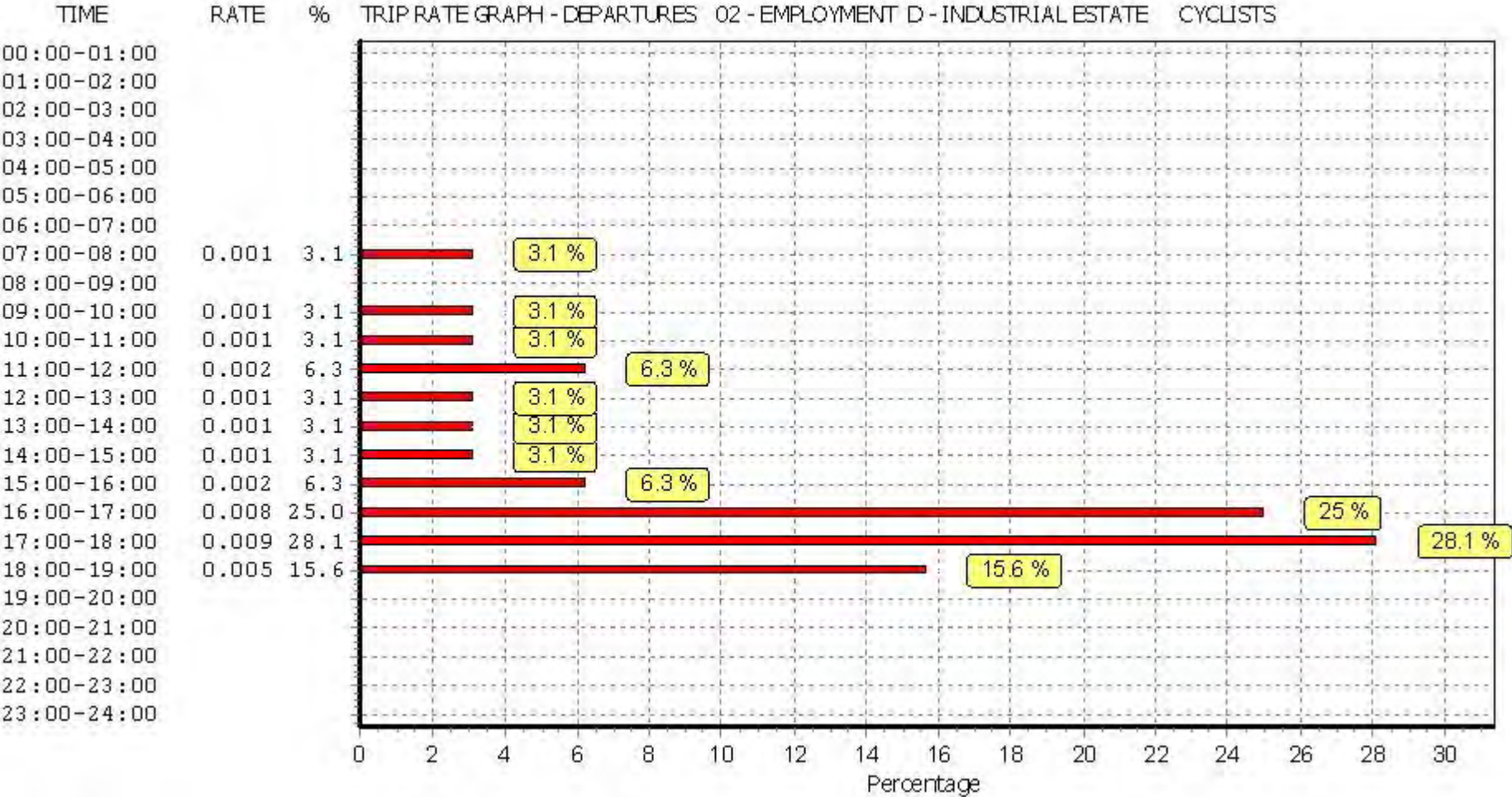
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.

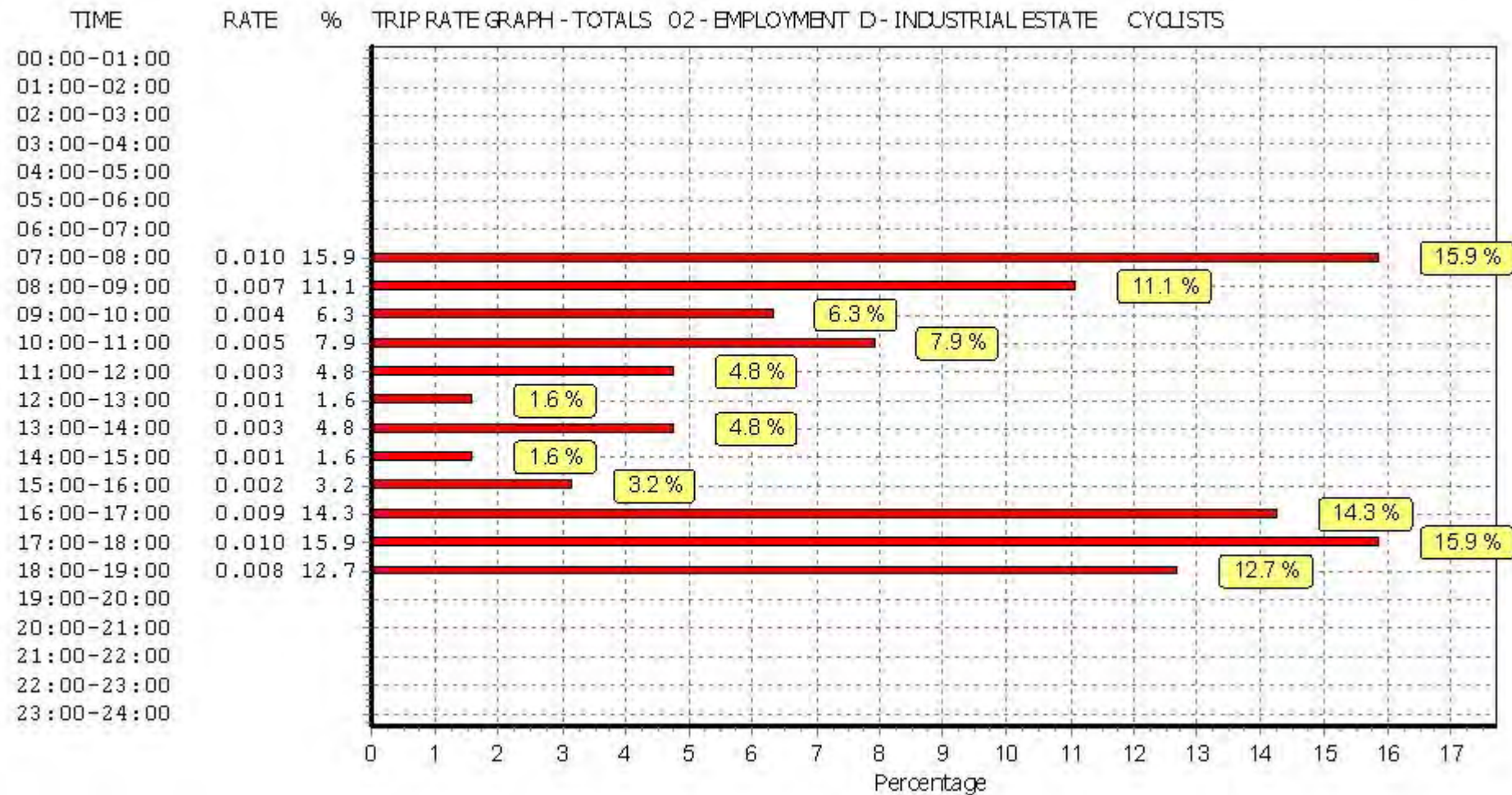


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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

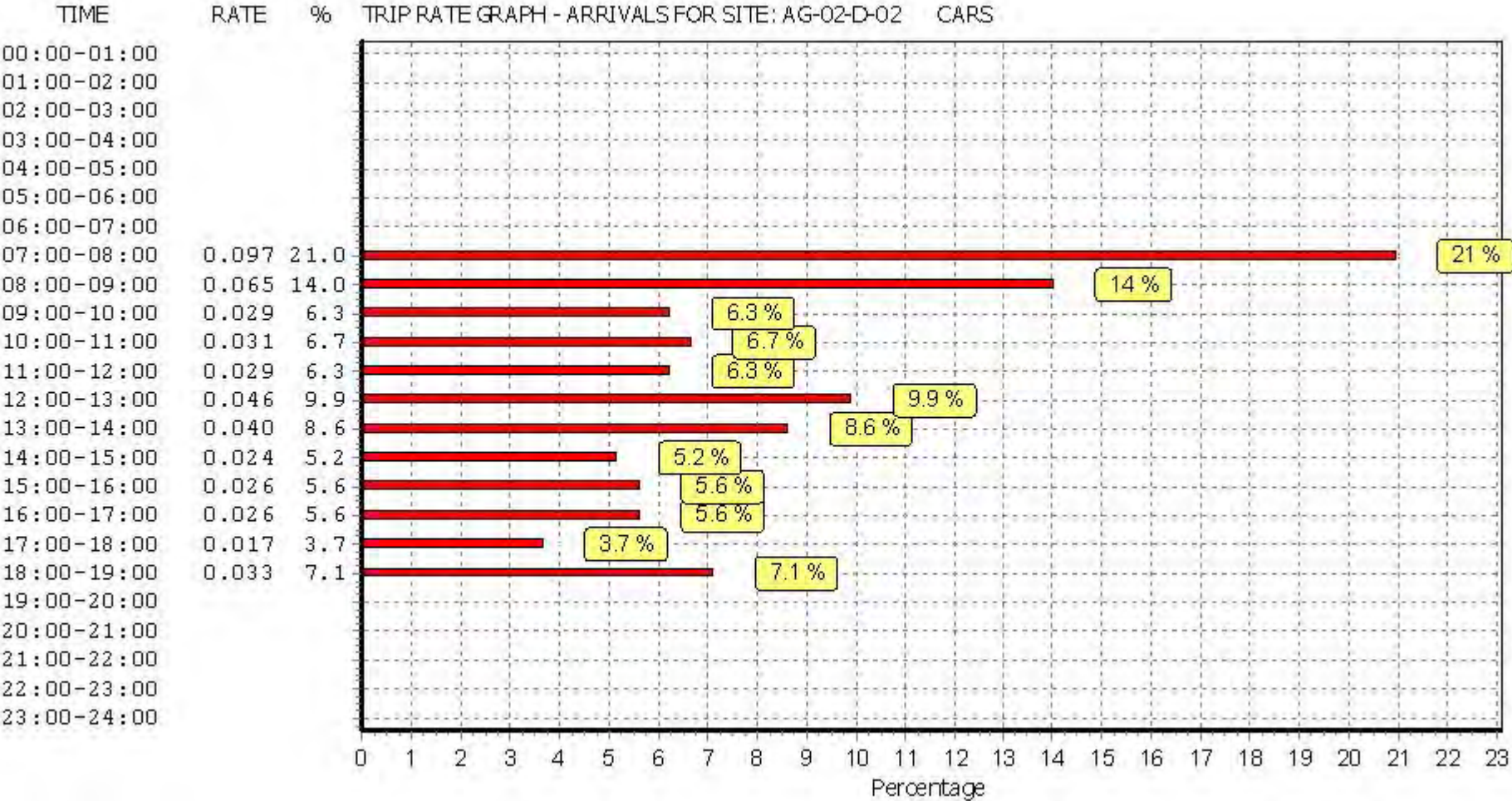
BOLD print indicates peak (busiest) period

| 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.

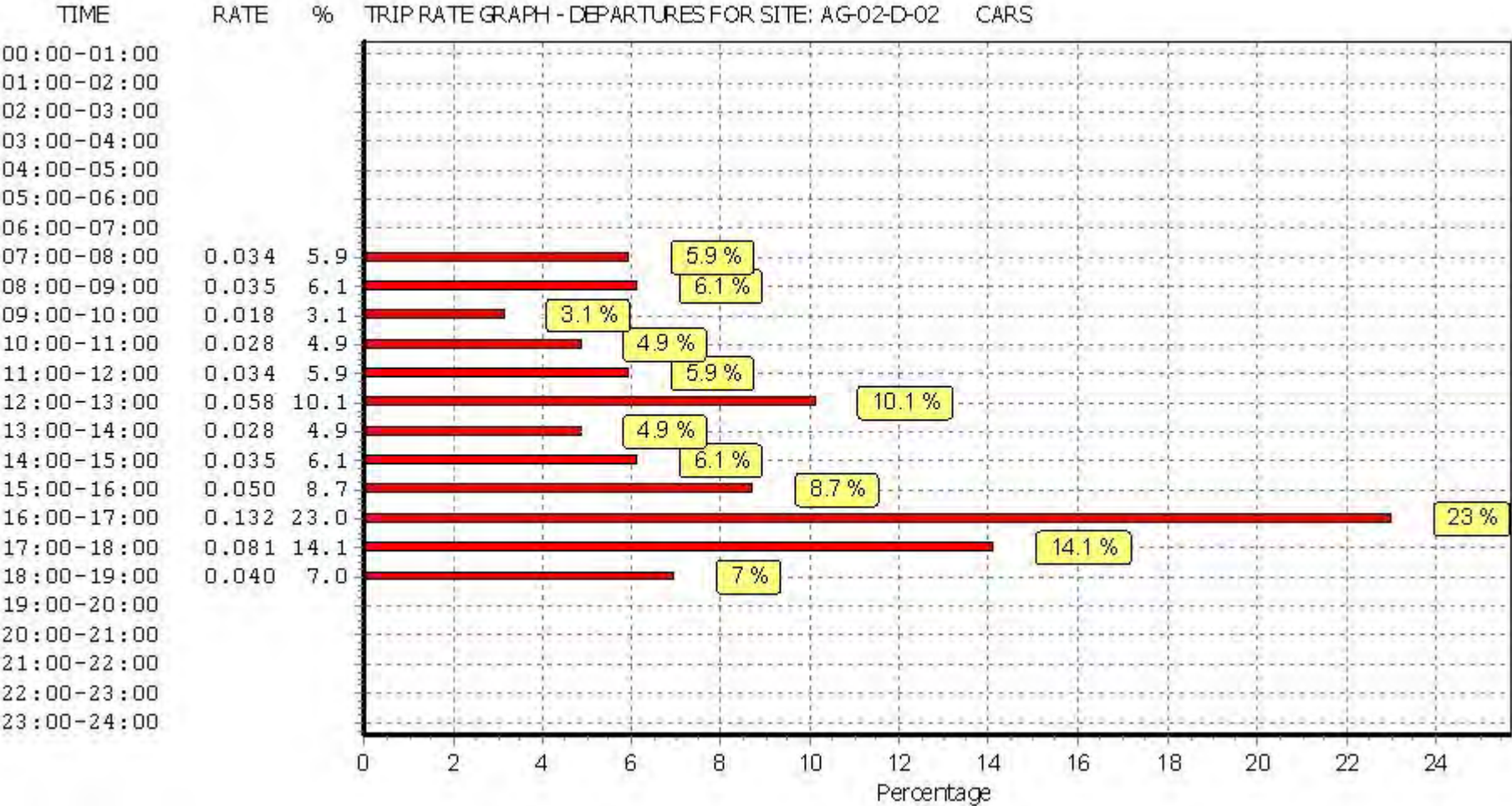
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected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



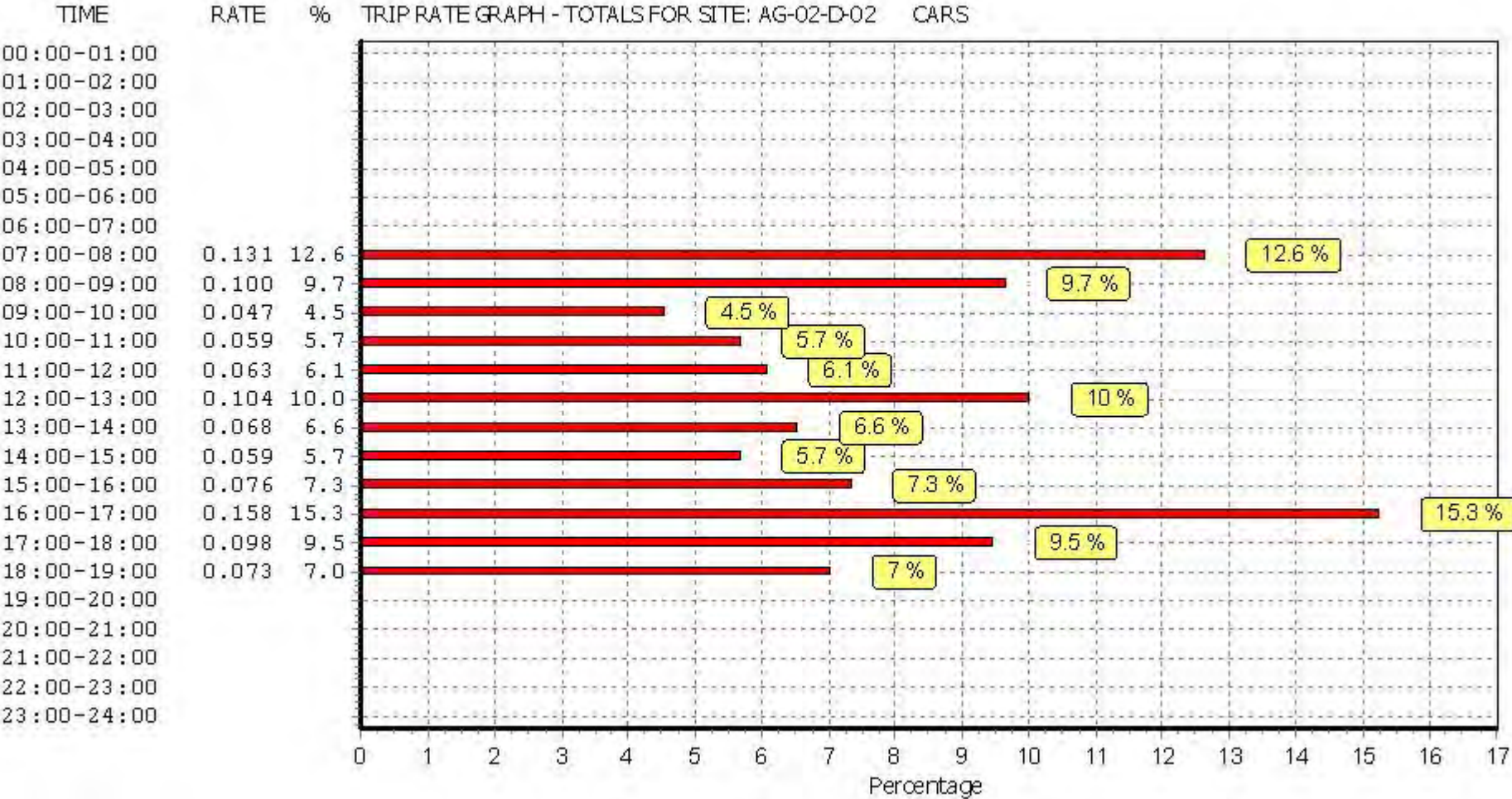


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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

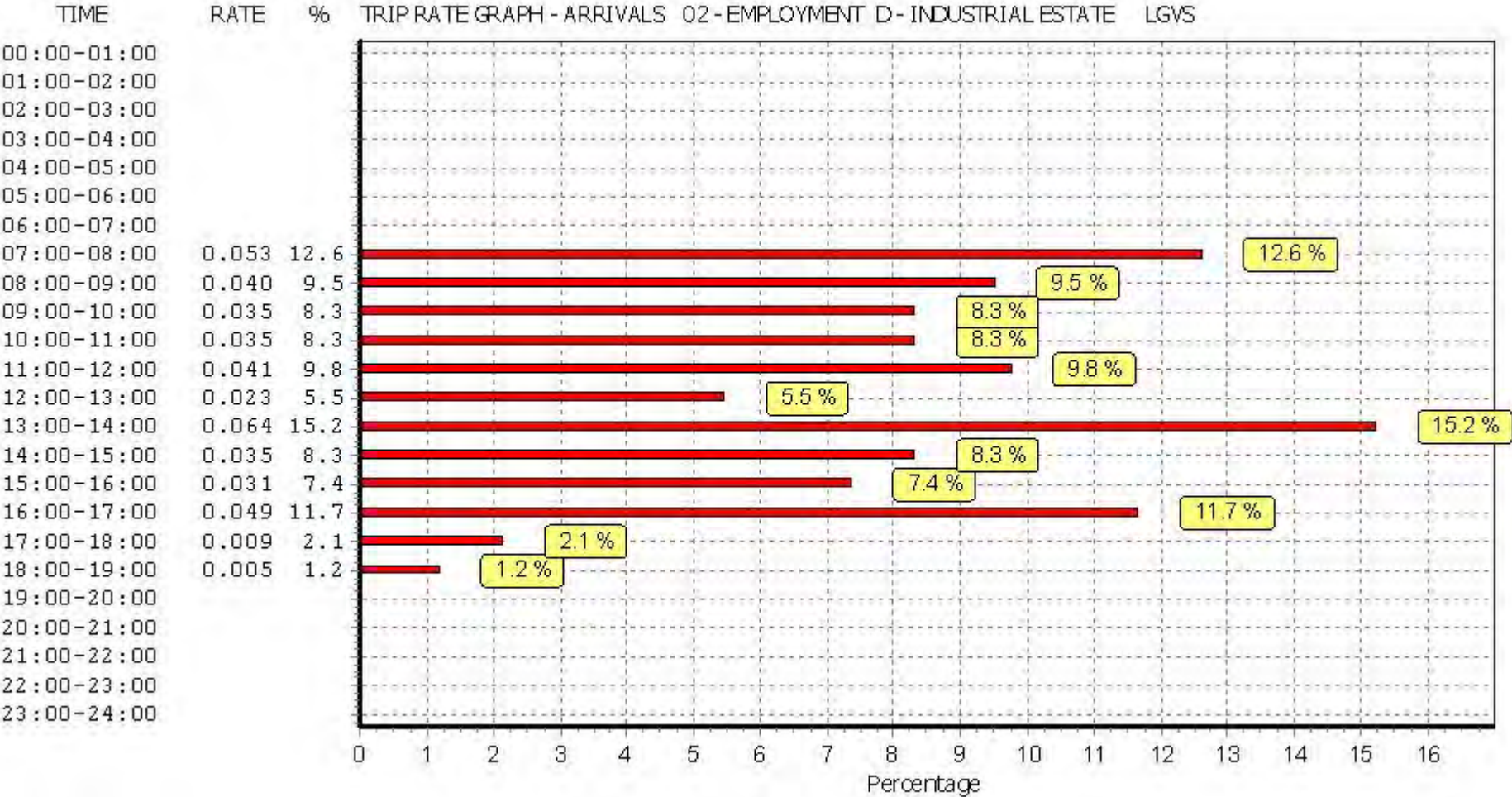
BOLD print indicates peak (busiest) period

| 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    |          |           |

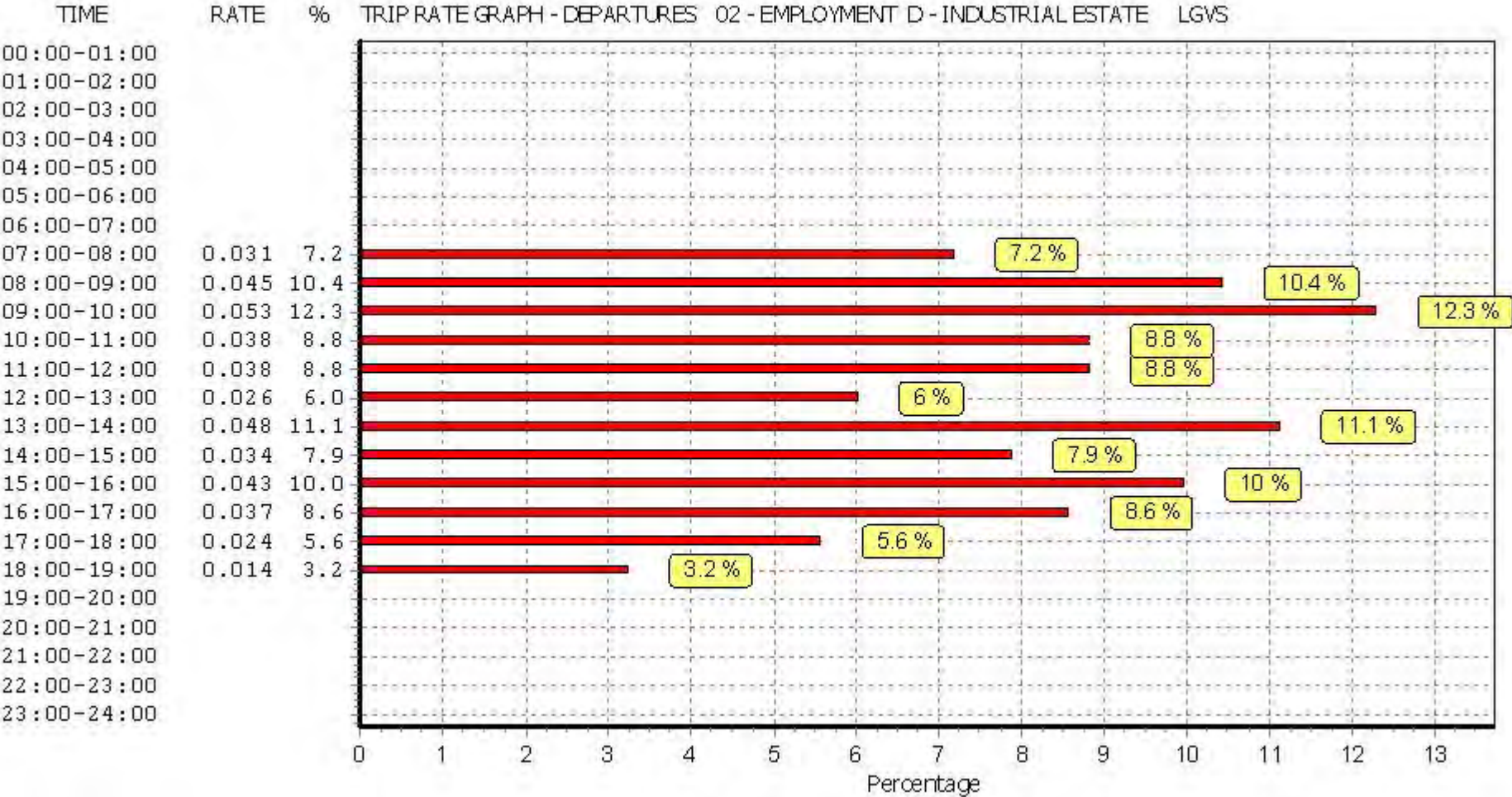
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are 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.



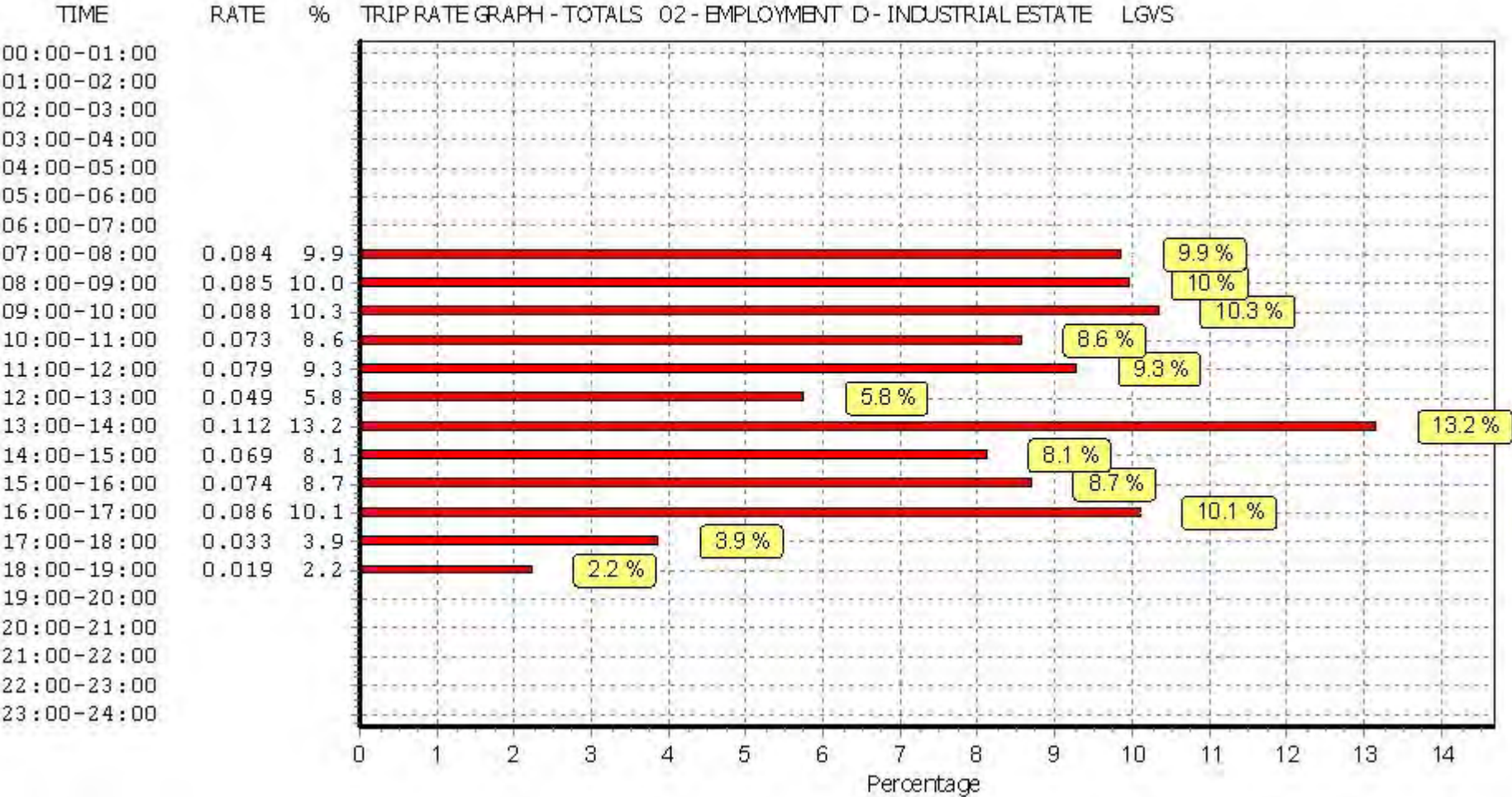


*This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified 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.