GRANGE FARM, WEST CAMBRIDGE

ACCESS AND TRANSPORT APPRAISAL

On behalf of St John's College

PUBLIC

JUNE 2017

GRANGE FARM, WEST CAMBRIDGE

ACCESS AND TRANSPORT APPRAISAL

On behalf of St John's College

Type of document (version)

Project no: 70024510
Date: June 2017

WSP | Parsons Brinckerhoff
62-64 Hills Road
Cambridge
CB2 1LA

Tel: +0 (0) 1223 558 050
Fax: +0 (0) 1223 558 051
www.wsp-pb.com

QUALITY MANAGEMENT

ISSUE/REVISION	FIRST ISSUE	REVISION 1	REVISION 2	REVISION 3
Remarks	Draft	Final		
Date	25.01.17	02.06.17		
Prepared by	L Kirby	L Kirby		
Signature		Approved by LK 02.06.17		
Checked by	N Eggar	N Eggar		
Signature		Approved by NE 02.06.17		
Authorised by	N Eggar	N Eggar		
Signature		Approved by NE 02.06.17		
Project number	70024510	70024510		
Report number	1	2		
File reference	\\uk.wspgroup.com\Central Data\Projects\700245xx\70024510 - Grange Road and Madingley Road\C Documents\Reports\Reports	\\uk.wspgroup.com\Central Data\Projects\700245xx\70024510 - Grange Road and Madingley Road\C Documents\Reports\Reports		

PRODUCTION TEAM

CLIENT

St John's College	Ms S Wood

WSP

Project Manager	Mr L Kirby
Project Director	Mr N Eggar

TABLE OF CONTENTS

FIGURES

APPENDICES

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 This Access and Transport Appraisal has been prepared by WSP | Parsons Brinckerhoff for St John's College, and considers access and transport matters associated with a proposed residential development of up to 500 dwellings on land at Grange Farm, Madingley Road, Cambridge.

1.1.2 The report accompanies representations for the site at Grange Farm to be allocated within the Cambridge City Council's emerging Local Plan 2011 – 2031, which identifies an overall housing need of around 14,000 new dwellings for the District in the Local Plan period.

1.1.3 A proposed submission Local Plan was published in July 2014, which sets out the policies and proposals for future development and spatial planning requirements up to 2031, and recognises that the need for new housing in Cambridge is high. There are a number of large scale housing developments underway in Cambridge e.g. Trumpington Meadows and Clay Farm that are expected to provide up to 7,000 new homes, but these sites will not meet all of the future housing need of the District.

1.1.4 Based on the above information as the proposed development will comprise up to 500 dwellings it can be said that that the site will make a positive contribution to the future housing needs of the District. The exact amount of development will be determined through the preparation a Transport Assessment (TA) as part of a planning application that will come forward in due course.

1.1.5 The site is referred to in this report as the Grange Farm site, and a redline boundary plan of the site is attached in Appendix A.

1.1.6 The report has been prepared to assist with identifying key transport issues in relation to the Grange Farm site, and assesses whether these issues could preclude or delay the allocation of the sites in the emerging Local Plan. The report comprises an update of the Grange Farm Access Strategy dated September 2013.

1.1.7 The report makes a preliminary assessment of vehicular access arrangements, taking into account the development trip distribution and assignment, along with potential constraints and transport improvements that are likely to be required to deliver, the residential development, and which minimise the transport impacts.

1.2 SCOPING AND REPORT STRUCTURE

1.2.1 Initial discussions have been held with Cambridgeshire County Council (CCC), the local highway authority for roads near the Grange Farm site, focusing on the proposed vehicular access arrangements. The remainder of this appraisal is set out as follows:

- → Section 2 – provides a description of the existing conditions and transport networks;
- → Section 3 – provides detailed information on the trip generation and traffic impact of the site;
- → Section 4 – provides a proposed transport strategy for the site, focussing on the main modes of travel; and
- → Section 5 – provides a summary and conclusions.

2 TRANSPORT POLICY REVIEW

2.1 INTRODUCTION

2.1.1 This section of the report sets out the relevant transport policies relating to the proposed development. It provides an overview of the key national, regional and local policies, with the following policy documents being reviewed as part of the preparation of this report:

- National Planning Policy Framework (March 2012);
- Travel Plans, Transport Assessments and Statements in Decision-Making (2014);
- Cambridgeshire County Council Local Transport Plan (2011 – 2031);
- Cambridge City Council – Adopted Local Plan (2006);
- Cambridge City Council – Proposed Submission Local Plan (2014);
- Transport Strategy for Cambridge and South Cambridgeshire (2014); and
- Greater Cambridge City Deal

2.2 NATIONAL PLANNING POLICY FRAMEWORK

2.2.1 The NPPF sets out the Government's planning policies for England and how these are expected to be applied. The NPPF constitutes guidance for local planning authorities and decision takers both in drawing up plans and as a material consideration in determining applications.

2.2.2 The NPPF supports sustainable development, which should be seen as a golden thread running through both plan making and decision taking. Paragraph 15 states that: "Policies in Local Plans should follow the approach of the presumption in favour of sustainable development so that it is clear that development which is sustainable can be approved without delay. All plans should be based upon and reflect the presumption in favour of sustainable development, with clear policies that will guide how the presumptions should be applied locally".

2.2.3 Section 4 of the NPPF deals with 'Promoting sustainable transport' and Paragraph 29 states that: "Transport Policies have an important role to play in facilitating sustainable transport but also contributing to wider sustainability and health objectives. The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel".

2.2.4 The NPPF provides guidance on the key transport issues which should be considered through the planning process. Paragraph 32 states that: "All developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment. Plans and decisions should take account of whether:

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure;
- Safe and suitable access to the site can be achieved for all people; and
- Improvements can be undertaken within the transport network that cost effectively limits the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of the development are severe."

2.2.5 Minimising journey lengths is a policy aim set out in the NPPF, and it notes that, for large scale residential developments, a mix of uses should be promoted so that there are opportunities to undertake day-to-day activities, including work, within the site. This includes locating facilities such as primary schools and local shops within walking distance of most properties. Therefore, the Grange Farm site is in accordance with the NPPF policy objectives.

2.3 TRAVEL PLANS, TRANSPORT ASSESSMENTS AND STATEMENTS IN DECISION-TAKING

2.3.1 The DCLG guidance published in 2014 states that: "Travel Plans, Transport Assessments and Statements are all ways of assessing and mitigating the negative transport impacts of development in order to promote sustainable development. They are required for all developments which generate significant amounts of movements".

The guidance advises that Travel Plans, Transport Assessments and Statements can positively contribute to:

- encouraging sustainable travel;
- lessening traffic generation and its detrimental impacts;
- reducing carbon emissions and climate impacts;
- creating accessible, connected, inclusive communities;
- improving health outcomes and quality of life;
- improving road safety; and
- reducing the need for new development to increase existing road capacity or provide new roads.

2.3.2 They support national planning policy which sets out that planning should actively manage patterns of growth in order to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable.

2.4 CAMBRIDGESHIRE COUNTY COUNCIL THIRD LOCAL TRANSPORT PLAN

2.4.1 The Local Transport Plan sets out the transport challenges the Council faces and their strategy to address them over the next 15 years. It demonstrates how the policies and plans for transport will contribute towards the County Council's vision: "*Creating communities where people want to live and work: now and in the future.*"

2.4.2 Transport has a key role to play in bringing about the Council's vision for Cambridgeshire by contributing towards the delivery of its priorities which include:

- helping people to live independent and healthy lives in their communities;
- developing the local economy for the benefit of all; and
- accessing the county, the Council will ensure that people can travel safely and are able to access economic opportunities.

2.4.3 In addition, five specific objectives have been set, providing a focus for the strategy and programme. These have been based on the views of people across Cambridgeshire and will ensure that the work meets the needs of the communities. The Objectives are as follows:

- **Objective 1 –** Enabling people to thrive, achieve their potential and improve their quality of life;

- **Objective 2 –** Supporting and protecting vulnerable people;
- **Objective 3 –** Managing and delivering the growth and development of sustainable communities;
- **Objective 4 –** Promoting improved skill levels and economic prosperity across the county, helping people into jobs and encouraging enterprise; and
- **Objective 5 –** Meeting the challenges of climate change and enhancing the natural environment.

2.4.4 Overall there are a number of challenges in Cambridge relating to the objectives of the County Council. These are:

- **Challenge 1 –** Improving the reliability of journey times by managing demand for road space, where appropriate and maximising the capacity and efficiency of the existing network;
- **Challenge 2 –** Reducing the length of commute and the need to travel by private car;
- **Challenge 3 –** Making sustainable modes of transport a viable and attractive alternative to the private car;
- **Challenge 4 –** Future-proofing the maintenance strategy and new transport infrastructure to cope with the effects of climate change;
- **Challenge 5 –** Ensure people – especially those at particular risk of social exclusion – can access the services they need within reasonable time, cost and effort wherever they live in the county;
- **Challenge 6 –** Addressing the main causes of road accidents in Cambridgeshire;
- **Challenge 7 –** Protecting and enhancing the natural environment by minimising the environmental impact on transport; and
- **Challenge 8 –** Influencing national and local decisions on land-use and transport planning that impact on routes through Cambridgeshire.

2.5 CAMBRIDGE CITY COUNCIL – ADOPTED LOCAL PLAN 2006

2.5.1 The Cambridge Local Plan (2006) sets out the council's vision for Cambridge and sets out policies and proposals for future development and land use in the city up to the year 2016 and beyond. The plan identifies the popularity of walking and cycling already within the city and sets out a series of transport policies for new developments to encourage the uptake and use of non-car modes of transport further.

2.5.2 The adopted plan states that Cambridge is an accessible city, where walking and cycling are key modes of transport, and where car use is lower than in many cities. However, a significant commuting issue exists, the problems caused by which are clear; pollution, increased journey times and hence costs to business, and deteriorating conditions for public transport, pedestrians and cyclists.

2.5.3 Out-of-centre non-residential development will be acceptable where it is demonstrated that the location is suitable, and will not encourage additional car use compared with a more central location. This approach seeks to avoid or reduce traffic impact where this may affect bus service reliability. Good accessibility by public transport will still need to be provided.

2.5.4 Key policies reflecting these aims are:

- **Policy 8/1 –** Developments should demonstrate that the development location is suitable for access via public transport, cycling and walking with preference given to more central locations;

- **Policy 8/2 –** Developments will only be permitted where they do not have an unacceptable transport impact;
- **Policy 8/3 –** Where increased transport demand is generated by a development mitigation measures and financial contributions may be required;
- **Policy 8/6 and 8/10 –** Cycle and Car parking should be provided in accordance with CCC parking standards;
- **Policy 8 /11 –** Any proposed road must:
  - be designed to give high priority to the needs of pedestrians and cyclists, including safety;
  - restrict through-access for general motor traffic where possible;
  - minimise additional car traffic in the surrounding area;
  - be acceptable to the Highway Authority in all other respects; and
  - make suitable provision for the needs of non-car modes, which will include measures to discourage speeding, so that pedestrians and cyclists can travel in safety and without intimidation.

2.6 CAMBRIDGE CITY COUNCIL – PROPOSED SUBMISSION LOCAL PLAN 2014

2.6.1 The Cambridge Local Plan 2014 proposed submission was submitted for Examination in March 2014 and the Examination is now underway. The proposed submission Local Plan sets out the vision for the city up to 2031. The Plan provides the objectives and strategy for the future development of the city and identifies the major areas where growth and change will take place. This Plan consequently carries some, though not significant, weight until the Plan has sufficiently progressed through the Examination. At this stage, the proposal is consequently assessed primarily against the adopted Development Plan.

2.6.2 Policy 80 of the proposed submission Local Plan relates to sustainable access to development and states that Development will be supported where it demonstrates that prioritisation of access is by walking, cycling and public transport, and is accessible for all. This will be achieved by:

- Giving priority to these modes where there is conflict with cars;
- Conveniently linking the development with the surrounding walking, cycling and public transport networks;
- Prioritising networks of public transport, pedestrian and cycle movement so these are the best and safest means of moving around Cambridge. Areas where public transport, pedestrian and cycle movement is difficult or dangerous will be improved and, where possible, have further capacity for these sustainable modes provided;
- Ensuring accessibility for those with impaired mobility;
- Safeguarding existing and proposed routes for walking, cycling, and public transport, including the Chisholm Trail, from development that would prejudice their continued use and/or development. In addition, funding for high quality physical provision of these routes will be required, both within and adjacent to the developments;
- Ensuring that any development is designed to give high priority to the needs of pedestrians and cyclists, including their safety;
- Ensuring that any development restricts through access for general motor traffic where appropriate;
- Ensuring that any development discourages speeding;

- Ensuring that any development discourages inappropriate car-based links within the network, but encourages non-car based links;
- Ensuring that any development minimises additional car traffic in the surrounding area; and
- Ensuring that any development provides safe and appropriate access to the adjoining road, pedestrian and cycle networks

2.7 TRANSPORT STRATEGY FOR CAMBRIDGE AND SOUTH CAMBRIDGESHIRE

2.7.1 The Transport Strategy for Cambridge and South Cambridgeshire was adopted by CCC in March 2014. The strategy is for the planned population growth in the emerging Cambridge City and South Cambridgeshire Local Plans and resultant increase in travel demand, by encouraging a mode shift of people from cars to other means of travel including cycling, walking and public transport.

2.7.2 The Transport Strategy has two main roles:

- It provides a detailed policy framework and programme of schemes for the area, addressing current problems, and is consistent with the CCC's Third Local Transport Plan, which manages and develops the local transport network of the County as a whole; and
- It supports the emerging Cambridge and South Cambridgeshire Local Plans, and takes account of future levels of growth in the area. It details the transport infrastructure and services necessary to deliver this growth.

2.7.3 The Transport Strategy contains details of the schemes proposed in the short, medium and longer term, and a summary of the schemes that are relevant to the proposed development are summarised below:

- **Madingley Road Bus Priority –** High quality on-line bus priority measures between the M11 and Queen's Road, Cambridge, to ensure that a bus journey between the M11 and Queen's Road, is direct and unaffected by congestion caused by general traffic on the corridor. This is a medium to long term intervention; and
- **M11 Parallel Bus Priority –** Dedicated bus facility to run parallel to the M11 between junction 11 and junction 13, to provide a segregated means of buses travelling between the developments in the north west of the city and the biomedical campus to the south, without being help up in congestion caused by general traffic. This is a medium to long term intervention.

2.7.4 The delivery of the Transport Strategy is aimed at supporting the future growth levels for Cambridge and the surrounding area as set out in the emerging Local Plans, and so is not necessary for or directly related to the proposed development. However, it will contribute to improving the accessibility of future residents of the proposed development by sustainable modes of travel and encourage a mode shift from private car to rail, bus, walking and cycling. The site already benefits from a good level of accessibility from public transport, walking and cycling links, as described in Section of this report.

2.8 GREATER CAMBRIDGE CITY DEAL

2.8.1 In order to secure future economic growth and quality of life Cambridge has to grow physically, while still allowing the ease of movement between major employment and residential areas. The Greater Cambridge City Deal will invest in enhancing the transport infrastructure which will make it easier for people to travel in, out and around the city using sustainable modes of transport, reduce congestion and support the connectivity of the city with regional and national transport networks.

2.8.2 With this in mind the transport vision of the Greater Cambridge City Deal is to make it easier for people to travel in, out and around Cambridge and South Cambridgeshire by public transport, cycle or on foot, and reduce and maintain lower traffic levels to ease congestion.

2.8.3 The Greater Cambridge City Deal is split into three tranches, based on Government funding available over a 15-year period. The initial £100 million investment agreed up to 2019 will allow the delivery of a number of transport projects designed to

- Bring vital improvements to key routes into the city.
- Connect existing and new residential and employment areas with high quality public transport networks, including new orbital bus routes around Cambridge.
- Provide more sustainable ways for people to travel between their homes and places of work, through a comprehensive network of pedestrian and cycle routes.

2.8.4 The first tranche schemes of the Greater Cambridge City Deal support the Transport Strategy for Cambridge and South Cambridgeshire, which in turn supports planned housing and employment growth outlined in the Local Plans. They also complement other schemes underway to improve major road and rail links across the wider Cambridgeshire region. The first tranche schemes that are relevant to the proposed development are summarised as follows:

Cambourne to Cambridge – Bus Priority Scheme

2.8.5 The A428 and the A1303 are key routes into the city from the west and is often congested between Cambourne and Cambridge. The Greater Cambridge City Deal would provide better bus journeys by improving the existing, or creating new bus infrastructure, and where possible cycling links as well. This may be as a new off-road route, on-road or a combination of the two.

2.8.6 The proposals are split into Area 1 (Madingley Mulch roundabout to Cambourne) and Area 2 Cambourne to Madingley Mulch roundabout), with each area having three different options proposed. The options relevant to the proposed development are in Area 1 which will be funded as part of Tranche 1 of the Greater Cambridge City Deal, and these are summarised as follows

- **Area 1 North Option –** Bus-only route north of the American Cementry and re-joining Madingley Road just before the M11, and a bus lane into Cambridge from the existing Park and Ride;
- **Area 1 Central Option –** Bus Lane into Cambridge from the Madingley Mulch roundabout along Madingley Rise and Madingely Road; and
- **Area 1 South Option –** Bus-only route north of Coton to Grange Road connecting to the West Cambridge University Site, with buses continuing via West Road and Silver Street, a new bridge over the M11, and no impact to traffic on Madingley Road

2.8.7 In relation to the above, the site lies in a strategically important location with regard to a number of projects within the Great Cambridge City Deal proposals, described by the City Deal themselves as “a unique opportunity to secure the future of Greater Cambridge as a leading UK and global hub for research and technology, supporting economic growth and improve quality of life for residents of Cambridge and South Cambridgeshire“. This element is explored further in Section 5.3.

Cambridge Access Strategy

2.8.8 The Cambridge Access Study considers the conditions and challenges on the transport network in and around Cambridge. The aim of the study was to recommend improvements and interventions to considerably improve access, capacity, and movement in, out and around the city. It also aims to reduce congestion and delay, and general traffic levels in the city to below current levels, and is funded as part of the first tranche of the Greater Cambridge City Deal.

2.8.9 A Cambridge Access Study report was produced by Mott McDonald in July 2015, which outlined the transport challenges for Cambridge including current travel patterns, journey time information, traffic flow data, congestion and delay data, and looks at how the transport network performs. An Options Report was subsequently published by Mott McDonald in June 2016 setting out a range of recommendations and interventions needed over time to manage and accommodate travel demand sustainably and unlock homes and jobs growth.

2.8.10 In June 2016, the Greater Cambridge City Deal Executive Board agreed to pursue an eight-point plan to tackle congestion and improve bus, cycle and walking journeys in the city as summarised as follows:

- **Better public transport –** Investment by bus companies in new routes and services, made possible by new peak-time congestion control points that will remove traffic from key bus routes and immediately improve bus reliability and reduce bus journey times in the city;
- **Better cycling and walking –** Opportunities created by the package of measures will be used to continue to enhance cycling and pedestrian infrastructure and work with existing plans and proposals to create a 'greenways' cycle network in, out and around Cambridge;
- **Peak-time congestion control points –** Virtual closures for general traffic at key points on the city's road network would create a low-traffic zone during rush hour through which only buses, cyclists, local taxis and emergency vehicles could travel, and following a recent consultation, these measures are being reviewed;
- **Workplace Parking Levy (WPL) –** Employers with lots of parking space for employees would be charged an annual fee for each commuter parking space;
- **On-street parking controls –** Residents Parking Zones in areas near large workplaces would further discourage commuter car journeys and work with WPL ensuring parking is not displaced to nearby streets, ensuring limited on-street parking is prioritised for residents;
- **Smart transport technology –** Use of technology and data to help people make smart travel choices including 'digital way finding', real-time traffic alerts and intelligent traffic signals at main junctions prioritising bus and cycle trips;
- **Travel planning –** Expansion of the existing advice service to help businesses, schools and individuals adapt to changes and make optimum travel choices; and
- **Public space and air quality –** Using opportunities to make improvements to public space to keep Cambridge a pleasant and attractive place to live, travel and do business. The reduction in congestion and, in particular, traffic stuck in long queues will also improve air quality.

2.8.11 The Greater Cambridge City Deal has recently commenced a period of engagement on the proposed package of measures outlined above, seeking views and feedback from the public that will shape the final recommendations as the scheme proposals evolve.

3 EXISTING TRANSPORT CONDITIONS

3.1 INTRODUCTION

3.1.1 This section of the report summarises the location of the site at a strategic and local level and describes the existing transport networks and conditions for all modes of transport relevant to the site. The purpose of this section is to demonstrate the existing site accessibility by all modes of travel and identify any existing constraints on the local transport network.

3.2 SITE LOCATION

3.2.1 The site is located approximately 1.6km west of Cambridge City Centre, and is currently agricultural land. It is approximately 19.2 hectares in area, and is bounded by the Cavendish Laboratory and the Hauser Forum to the north, the University Sports Ground to the east and agricultural land to the south and west. A detailed location plan is shown in Figure 1, and a wider site location plan is shown in Figure 2.

3.3 EXISTING TRAVEL PATTERNS OF NEWNHAM WARD RESIDENTS

3.3.1 The site lies within the Newnham Ward which covers the area to the north of the A603 Barton Road, to the east of the M11 motorway, to the south of the Madingley Road, and to the west of the A1134 Queens Road, and it is considered that this Ward is representative of the likely travel characteristics of the site. With this in mind the latest available 2011 Travel to Work Census Data for residents living in the Newnham Ward along with the same data for Cambridge District as a whole are shown in Table 3.1 below.

Table 3.1 Travel to Work Census Data – Newnham Ward and Cambridge District

	Mode Share			
	Newnham Ward		Cambridge District	
Mode	**Number**	**Percentage**	**Number**	**Percentage**
Driving a Car or Van	404	24%	17879	34%
Passenger in a Car or Van	22	1%	1628	3%
Bus, Minibus, Coach	60	3%	3800	7%
Taxi or Minicab	5	0%	188	0%
Train	142	8%	2760	5%
On Foot	338	20%	8653	16%
Bicycle	716	42%	17257	33%
Motorcycle, Scooter or Moped	8	0%	490	1%
Underground, Metro or Light Rail	10	1%	130	0%
Other Method of Travel to Work	14	1%	235	0%
Total	**1719**	**100%**	**53020**	**100%**

Source: 2011 Travel to Work Census Data (January 2017)

3.3.2 As can be seen from Table 3.1 the use of sustainable modes of travel to work for those residents of the Newnham Ward is higher than for those of the Cambridge District as a whole. For example, the Newnham Ward has a combined mode share of 73% for walking, cycling and public transport, whereas the Cambridge District as a whole has a combined mode share of 61% for walking, cycling and public transport.

3.3.3 Accordingly, residents of the Newnham Ward use the car less than those of the Cambridge District to travel to work. It is important to note that the Newnham Ward has a mode share of 24% for driving to work, whereas the Cambridge Ward as a whole has a mode share of 34% for driving to work.

3.4 WALKING AND CYCLING ACCESSIBILITY

3.4.1 Walking is the main mode of travel at the local level and can replace car trips for journeys less than 2km in length, which is equivalent to a 25 minute walk at typical walking speeds. A walking accessibility plot, identifying walking times at 5 minute intervals up to 25 minutes from the site are shown in Figure 3, and shows that a large area surrounding the site includes a number of local facilities which are within this walking distance.

3.4.2 Cycling has the potential to replace short car journeys, particularly those under 5km in length, equivalent to a 25 minute cycle journey at typical cycling speeds. Cycling can form part of a longer journey by public transport. A significant distance can be covered by cycling, with the entire urban area of Cambridge and a number of the surrounding villages being within a 25 minute cycle ride of the site. A cycling accessibility plot identifying cycling times at 5 minute intervals up to 25 minutes from the site are shown on Figure 4.

3.4.3 There is an existing footway along the east side of Clerk Maxwell Road from the junction of Madingley Road, providing a high standard link to the site. For the first 100m length the footpath runs through a wooded area separate from the carriageway; thereafter the footway runs adjacent the carriageway. The footway is paved and lit, varies between 2.0m and 2.5m width.

3.4.4 Footways are also provided adjacent both sides of Wilberforce Road for its entire length, where it is paved and lit, varying in width between approximately 2.2m and 2.6m, and along both sides of Adams Road for its entire length, where it is paved and lit, varying in width between approximately 2.0m and 2.6m.

3.4.5 In addition, there are existing footways along the south side of Clarkson Road for its entire length, and along the north side of the road from approximately 170m east of Wilberforce Road, where it is paved and lit, varying in width between approximately 2.2m and 2.7m. The local footway infrastructure links in to the broader Cambridge street network.

3.4.6 In terms of shared footways / cycleways, the site lies immediately adjacent to the Coton footway / cycleway, and forms part of a comprehensive network of cycle routes across the city. A map showing the cycling network in the relation to the site is enclosed at Figure 5.

3.4.7 The Coton Cycle Path is a segregated footway / cycleway that runs in an east to west direction along the northern boundary of the site, and it is paved and lit, varying in width between approximately 7.5m and 7.8m. The cycle route provides access to Cambridge City Centre to the east and the West Cambridge Research site and the village of Coton to the west.

3.4.8 A number of additional cycleways exist in the vicinity of the site including a facility adjacent J.J. Thomson Avenue to the north west of the site which is paved and lit, varying in width between 3.2m and 3.5m, and a facility on both sides of Charles Babbage Road for its entire length, which again is paved and lit, varying in width between approximately 4.6m and 6.4m.

3.4.9 In addition, a shared footway / cycleway runs along both sides of Madingley Road within the vicinity of Clerk Maxwell Road, where it is paved and lit, varying in width between approximately 3.2m and 3.6m.

3.4.10 Finally, a segregated walking / cycling route is provided along the east side of Clerk Maxwell Road approximately 380m south of the junction with Madingley Road, between Perry Court and the Coton Cycle Path, where it is paved and lit, varying in width between approximately 3.2m and 3.4m, and connects the Coton Cycle Path to Clerk Maxwell Road.

3.4.11 The cycleways outlined above connect to a number of local cycle routes, and provide an excellent level of connectivity to the surrounding area, with the local topography being conducive for cycling.

3.4.12 The location and accessibility of the site indicates that there is potential for the site to achieve a high mode share for walking and cycling similar to that of the resident population (as outlined in Section 3.3 above).

3.4.13 This would be assisted by the transport strategy for the site described as described in Section 5.

3.5 ACCESS TO LOCAL FACILITIES

3.5.1 An assessment has been undertaken in relation to the location of local services and facilities to the site including employment, retail, education, healthcare and leisure and community facilities. The location of the local services and facilities are shown in Figure 6, and the results of the assessment are presented as follows:

Employment Opportunities

3.5.2 The site is located approximately 200m south of the West Cambridge Research site, where a number of departments of the University of Cambridge are located. The site is a high quality research environment where academic and commercial research takes place, and provides a wide range of employment opportunities. The proximity of the site to Cambridge City Centre, and the fact that the entirety of the city lies within accessible cycling distance of Grange Farm presents positive employment opportunities for future residents.

Retail Facilities

3.5.3 There are a wide variety of retail outlets in Cambridge City Centre which is located approximately 1.5km to the east of the site. The city centre is accessible by walking, cycling and bus services that operate from the local area, providing access to a wide range of supermarkets, department stores, clothes stores, hardware stores, banks, convenience stores, coffee shops, restaurants, pharmacies, post offices, barbers, discount stores, and a large number of independent retail stores.

3.5.4 **Education Facilities**

3.5.5 There are a number of education establishments within the vicinity of the site which are accessible by walking, cycling and bus services that operate from the local area, and include the following:

- **St John's College School –** located on Grange Road in Cambridge, approximately 1.1km to the east of the site;
- **King's College School –** located on West Road in Cambridge, approximately 1.2km to the east of the site;
- **Cambridge Primary School –** located on Eddington Avenue in Cambridge, approximately 2.1km north of the site;
- **Coton Church of England Primary School –** located on Whitwell Way in Coton, approximately 2.4km to the west of the site;

- **Park Side Community College –** located on Parkside in Cambridge, approximately 3.2km to the south east of the site; and
- **Chesterton Community College –** located on Gilbert Street in Cambridge, approximately 3.3km to the north east of the site

3.5.6 In addition, there are a number of colleges of the University of Cambridge including Churchill College and St Edmund's College, which are accessible by walking, cycling and bus services that operate from the local area.

Healthcare Facilities

3.5.7 There are a number of healthcare facilities located in the vicinity of the site, including doctor's surgeries and dentists, which are accessible by walking, cycling and bus services that operate from the local area, and include the following:

- **Granta Dental Surgery –** located on Newnham Road in Cambridge, approximately 2.0km to the south east of the site;
- **Huntingdon Road Surgery –** located on Huntingdon Road in Cambridge, approximately 2.1km north east of the site;
- **Newnham Walk Surgery –** located on Newnham Walk in Cambridge, approximately 2.3km to the south east of the site; and
- **Bridge Street Medical Centre –** located on All Saints Passage in Cambridge, approximately 2.4km to the east of the site

3.5.8 In addition, Addenbrookes is located in Cambridge, approximately 6.2km from the site, which is accessible by cycling and via Bus Service UNI4 that operates within the vicinity of the site between Addenbrookes, Cambridge City Centre and West Cambridge.

Leisure and Community Facilities

3.5.9 There are a number of leisure and community facilities that are located within the vicinity of the site which are accessible by walking, cycling and bus services that operate within the local area, and include the following:

- **University Sports Ground –** located on Wilberforce Road, approximately 50m to the east of the site;
- **University of Cambridge Sports Centre –** located on Philippa Fawcett Drive in Cambridge, approximately 150m north west to the east of the site;
- **Cambridge Lawn Tennis Club –** located on Wilberforce Road in Cambridge, approximately 520m to the east of the site;
- **Trinity College Old Field Sports Ground –** located on Adams Road in Cambridge, approximately 780m to the east of the site;
- **Chesterton Sports Centre –** located on Gilbert Road in Cambridge, approximately 3.4km to the east of the site; and
- **Kelsey Kerridge Sports Centre –** located on Queen Anne Terrace in Cambridge, approximately 3.4km to the south east of the site

3.5.10 In addition, there are a number of leisure facilities provided by a number of colleges of the University of Cambridge, including Trinity College Old Field Sports Ground and Trinity College Squash Courts, which are accessible by walking, cycling and bus services that operate within the local area.

3.6 PUBLIC TRANSPORT – BUS SERVICES

3.6.1 The area surrounding the site is well served by bus services, with a number of bus services operating to bus stops on J.J. Thomson Avenue, Charles Babbage Road and Madingley Road. The locations of the bus stops within the vicinity of the site are shown in Figure 7.

3.6.2 There are a number of bus stops located on J.J. Thomson Road, adjacent to the Cavendish Laboratory, with the nearest located on the east and west sides of the road approximately 41m north of the junction of Charles Babbage Road. The bus stop on the west side of the road is provided with a pole, timetables and a shelter, and the bus stop on the east side of the road is provided with a flag pole only.

3.6.3 In addition, there are a number of bus stops located on Charles Babbage Road, adjacent to the Veterinary School, with the nearest located on the north and south sides of the road, approximately 263m west of the junction of J.J Thomson Road. Both of these bus stops are provided with flag poles only.

3.6.4 There are also a number of bus stops located on Madingley Road, with the nearest located on the north and south sides of the road, approximately 100m west of the junction of J.J. Thomson Road. Both of these bus stops are provided with flag poles only.

3.6.5 Walking is the main mode of access to the majority of local public transport services. It is generally recognised that the maximum walking distance to bus stops from new developments in order to access bus services in an urban area is approximately 400m.

3.6.6 Based on the walking accessibility analysis outlined in Section 3.4, and using the walking accessibility plot produced, it was possible to determine that the northern part of the site is within an acceptable walking distance to the nearest bus stops on J.J. Thomson Road and Charles Babbage Road as they are within a 0-400m (0-5 minute) walk of the site.

3.6.7 These bus stops provide access to a range of bus services linking the site to and from various areas of Cambridge, and also to and from Cambridge to a variety of other locations including Cambourne, Huntingdon, St Ives, Hardwick, Papworth and Bedford.

3.6.8 The main bus services within the vicinity of the site are operated by Stagecoach in Cambridge, Whippet Coaches and Stagecoach in Bedford, and Table 3.2 below provides a summary of the frequency of bus services which are currently available within the vicinity of the site, along with the location of the bus stops to access these bus services.

Table 3.2 Bus Services within close proximity to the site

			Weekday Frequency of Services		
Service	**Route**	**Bus Stop**	**Operator**	**Daytime Frequency**	**Service Details**
3 / X3	Cambridge – Papworth Everard – Huntingdon	Veterinary School / Cavendish Laboratory	Whippet Coaches	12 services	First service 09:13 and last service 18:28
	Huntingdon – Papworth Everard - Cambridge			11 services	First service 07:52 and last service 18:05
Citi 4	Cambridge – Hardwick – Cambourne	Veterinary School	Stagecoach in Cambridge	53 services	First service 07:06 and last service 22:56
	Cambourne – Hardwick – Cambridge			66 services	First service 06:47 and last service 23:46
UNI4	Adddenbrookes – Cambridge City Centre – West Cambridge	Veterinary School / Cavendish Laboratory	Stagecoach in Cambridge	38 services	First service 07:47 and last service 20:02
	West Cambridge – Cambridge City Centre – Addenbrookes			24 services	First service 07:05 and last service 19:92
X5	Cambridge – Bedford – Milton Keynes – Oxford	Bulstrode Gardens	Stagecoach in Bedford	33 services	First service 06:28 and last service 23:38
	Oxford – Milton Keynes – Bedford – Cambridge			34 services	First service 05:50 and last service 22:53

Source: Traveline (January 2017)

3.6.9 Based on this information bus services along JJ. Thomson Road, Charles Babbage Road, and Madingley Road provide a good basis for the site to improve the bus journey mode share, compared to existing residents as indicated in the 2011 Travel to Work Census Data discussed in Section 3.3.

3.7 PUBLIC TRANSPORT – RAIL SERVICES

3.7.1 The nearest railway station to the site is Cambridge Railway Station which lies approximately 4.4km to the south east on Station Road, and is within a 3200 – 4800m (10-15 minute) cycle ride of the site. The station can also be reached via Bus Service 3 which can be accessed via stops located on J.J. Thomson Road, adjacent to the Cavendish Laboratory, and on Charles Babbage Road, adjacent to the Veterinary School, with these services taking approximately 37m to travel to station.

3.7.2 In terms of the services operating from Cambridge Railway Station, Great Northern provide services between Cambridge and London King's Cross and Kings Lynn, with services calling at Royston, Stevenage and Ely, amongst other stations. In addition, Greater Anglia provides services between Cambridge and London Liverpool Street, as well as between Cambridge, Norwich and Ipswich, and Cross Country trains provide services from Cambridge to Stansted Airport, Peterborough and Birmingham New Street.

3.7.3 Table 3.3 below summarises the services from Cambridge Railway Station, with the number of trains operating in the AM and PM peak periods during the weekday.

Table 3.3 Rail Services from Cambridge Railway Station

	Weekday Frequency of Services			
Service	**AM Peak (07:00 – 10:00)**	**Journey Time**	**PM Peak (16:00 – 19:00)**	**Journey Time**
Cambridge to London King's Cross	12	60 minutes	13	60 minutes
London King's Cross to Cambridge	12	60 minutes	13	60 minutes
Cambridge to London Liverpool Street	8	75 minutes	7	75 minutes
London Liverpool Street to Cambridge	8	75 minutes	10	75 minutes
Cambridge to Norwich	3	80 minutes	3	80 minutes
Norwich to Cambridge	3	80 minutes	3	80 minutes
Cambridge to Ipswich	3	75 minutes	3	75 minutes
Ipswich to Cambridge	2	75 minutes	3	75 minutes
Cambridge to Birmingham New Street	2	150 minutes	3	150 minutes
Birmingham New Street to Cambridge	3	150 minutes	3	150 minutes

Source: National Rail Enquiries (January 2017)

3.7.4 Table 3.3 shows that Cambridge Railway Station is well served by national rail services enabling future residents to use public transport when accessing broader destinations such as Norwich, Ipswich, Birmingham New Street and London.

3.7.5 Trains take approximately 60 minutes to travel between Cambridge and London King's Cross, and approximately 75 minutes to travel between Cambridge and London Liverpool Street. In addition, trains take approximately 80 minutes to travel between Cambridge and Norwich, and approximately 75 minutes to travel between Cambridge and Ipswich.

3.8 LOCAL HIGHWAY NETWORK

3.8.1 There are a number of existing roads that comprise the local highway network within the vicinity of the site including, Clerk Maxwell Road, Wilberforce Road, Adams Road, Clarkson Road, J.J. Thomson Road, Charles Babbage Road and High Cross, which are described in detail as follows:

Clerk Maxwell Road

3.8.2 Clerk Maxwell Road runs in a north to south direction to the north of the site and connects to Madingley Road via a priority junction. The priority junction with Madingley Road incorporates a dedicated right hand turn lane into Clerk Maxwell Road as well as two pedestrian refuge crossing points either side of Clerk Maxwell Road. The road is approximately 7.4m wide and is subject to a 20mph speed limit. On street parking occurs both sides of the carriageway, with lengths of strategically placed parking restrictions to enable through traffic to pass.

3.8.3 Clerk Maxwell Road provides access to the University of Cambridge Park and Cycle facility, two small residential developments (Perry Court and The Lawns), and the Cocks and Hens Lawn Tennis Club. The southern end of the road, beyond Perry Court, has restricted vehicle access through the use of bollards, which limits this section of the road to walking and cycling, with a segregated walking / cycling route provided along the east side of the road at this location, as outlined in Section 3.4.

Wilberforce Road

3.8.4 Wilberforce Road runs in a north to south direction to the north east of the site and connects to Madingley Road to the north, Adams Road to the south, and Clarkson Road to the east. Vehicle access is restricted along its length through the use of bollards north of the Clarkson Road junction.

3.8.5 Wilberforce Road is approximately 7m wide and is subject to a 20mph speed limit. It currently accommodates on-street parking on both sides of the road south of Clarkson Road. There is also parking availability along the east side of the road from Madingley Road to a point approximately 20m north of the bollards at Clarkson Road, and along the west side from Madingley Road to a point approximately 80m north of the bollards at Clarkson Road.

3.8.6 The road principally provides a residential access function serving properties along both sides of the carriageway, as well as to the Centre for Mathematical Studies, the Cambridge Lawn Tennis Club, and the University Sports Ground.

Adams Road

3.8.7 Adams Road runs in an east to west direction to the east of the site and connects to Grange Road to the east and to Wilberforce Road to the west. The road is approximately 7m wide and is subject to a 20mph speed limit. It currently accommodates parking on both sides of the road, which restricts the two-way movement of vehicles along the road.

3.8.8 The road principally provides a residential access function serving properties along both sides of the carriageway, as well as access to the University Sports Ground.

Clarkson Road

3.8.9 Clarkson Road runs in an east to west direction to the east of the site and connects to Grange Road to the east and to Wilberforce Road to the west. It is approximately 4.7m wide and is subject to a 20mph speed limit.

3.8.10 There are currently on-street parking restrictions in the form of double yellow lines along both sides of the road for its entire length, with demarcated parking bays (1 hour stay permitted 08:30 – 17:00 Monday – Saturday no return within 1 hour). The road principally provides a residential access function serving properties along both sides of the carriageway, as well as to the Isaac Newton Institute of Mathematical Sciences.

J.J. Thomson Road, Charles Babbage Road and High Cross

3.8.11 J.J. Thomson Road and Charles Babbage Road are located to the north west of the Grange Farm site and connects to the Madingley Road. The roads are approximately 7.3m wide and are subject to a 25mph speed limit. There are currently on-street parking restrictions in the form of no waiting at any time along both sides of the roads for their entire length. The road provides access to the West Cambridge Research site, where a number of departments of the University of Cambridge are located.

University Sports Ground Access Road

3.8.12 To the south east of the site a private access road connects at the junction of Wilberforce Road and Adams Road, and provides access to the University Sports Ground and associated car park. It is approximately 4.8m wide with a footway provided along the north side of the road for its entire length. The road is paved, lit and varying in width between approximately 2.0 and 2.2m.

3.9 ACCIDENT DATA

3.9.1 Accident record data for the five year period of January 2011 to December 2016 inclusive has been obtained from CCC which covers the local highway network in the vicinity of the site. The locations of the accidents by severity surrounding the site are shown in Figure 8, and a copy of the accident data along with an accident plot are enclosed in Appendix B.

3.9.2 The study area covers the local highway network in the vicinity of the site, including the junction of the Madingley Road and Clerk Maxwell Road.

3.9.3 Over the five year period a total of 37 accidents were recorded within the study area, of which there were 0 fatal, 6 serious and 31 slight injuries. Table 3.4 below summarises the accident data by year and severity.

Table 3.4 Accident Data by Year and Severity

	Accident Severity			
Year	**Slight**	**Serious**	**Fatal**	**Total**
2012	6	0	0	6
2013	7	1	0	8
2014	7	2	0	9
2015	4	1	0	5
2016	7	2	0	9
Total	**31**	**6**	**0**	**37**

Source: Cambridgeshire County Council (January 2017)

3.9.4 A total of 31 slight accidents recorded on the local highway, with 23 recorded on the Madingley Road, 1 on J.J. Thomson Avenue, 2 on Clerk Maxwell Road, and 5 on Grange Road.

3.9.5 In addition, 6 serious accidents were recorded, including one at the junction to Madingley Road Park and Ride, one east of the junction of the Madingley Road and Lansdowne Road, one at the junction of the Madingley Road and Clerk Maxwell Road, and one at the junction of the Madingley Road and Storey's Way.

3.9.6 From analysis it is apparent that the recorded personal injury accidents occurred at a variety of times, in differing weather conditions, involving differing manoeuvres and vehicles types, and were dispersed across a broad network area. It has been possible to determine that both the slight and serious accidents were not due to specific deficiencies in the road layout, but were related to human error.

3.9.7 There is no evidence to suggest that development at the Grange Farm site will adversely impact on the number of accidents occurring on the local highway network.

3.10 SUMMARY

3.10.1 The review of the local transport conditions demonstrates that the site at Grange Farm enjoys excellent accessibility by non-car modes to a broad range of services, employment opportunities, health and leisure facilities located within walking and cycling accessibility distances.

3.10.2 Further, a number of bus services operate in close proximity to the site along J.J. Thomson Avenue, Charles Babbage Road and Madingley Road within walking distance of the core site area; fast and frequent rail services to a number of destinations from Cambridge Railway Station within cycling distance of the site.

4 TRIP GENERATION AND DISTRIBUTION

4.1 INTRODUCTION

4.1.1 This section of the report sets out the methodology used to assess the potential level of trips that will be generated by the site, and to determine the distribution of these trips on the local highway network within the vicinity of the site.

4.2 TRIP GENERATION METHODOLOGY

4.2.1 As previously stated, the proposed residential development will comprise up to 500 dwellings and it is likely, that due to the nature of the proposed use of the site for residential purposes, the greatest impact on transport is likely to be during the traditional AM (08:00 – 09:00) and PM (17:00 – 18:00) peak hours.

4.2.2 In order to determine the trip generation for site the industry standard Trip Rate Information (TRICS) 2016 v7.3.1 database was used. The TRICS database has been interrogated for residential developments against the following criteria:

- → Residential houses / privately owned;
- → Sites greater than 100 units;
- → Edge of town locations, and;
- → England only excluding Greater London

4.2.3 It is considered that such an approach represents a robust methodology for determining the trip rates for the proposed development.

4.3 PERSON TRIP GENERATION

4.3.1 Based upon the above selection criteria, the TRICS database was used to obtain the person trip rates for the AM and PM peak hours for the weekday for arrivals and departures. The full TRICS database outputs are included in Appendix C.

4.3.2 The resultant person trip rates for the AM and PM peak hours for the weekday arrivals and departures are shown in Table 4.1 below:

Table 4.1 Residential Person Trip Rates Per Dwelling (AM and PM Peak Hours)

	Weekday	
Trip Direction	**AM Peak Hour 08:00 – 09:00**	**PM Peak Hour 17:00 – 18:00**
Arrivals	0.203	0.501
Departures	0.690	0.272
Two-Way	0.893	0.773

Source: TRICS v7.3.1 Database (January 2017)

The person trip rates were then applied to the 500 dwellings associated with the proposed development in order to determine the total person trips generated during the AM and PM peak hours. These are summarised in Table 4.2 below:

Table 4.2 Predicted Residential Person Trips (500 Dwellings)

	Weekday	
Trip Direction	**AM Peak Hour 08:00 – 09:00**	**PM Peak Hour 17:00 – 18:00**
Arrivals	102	251
Departures	345	136
Two-Way	447	387

Source: TRICS v7.3.1 Database (January 2017)

4.3.3 In order to establish a likely mode share for the proposed development, the Travel to Work mode split for the MSOA for Cambridge 007, obtained from the Census 2011 Travel to Work statistics was subsequently applied to the total person trips. A summary of the existing Travel to Work mode split for the MSOA for Cambridge 007 is shown in Table 4.3 below:

Table 4.3 Existing Travel to Work Modal Split – MSOA for Cambridge 007

Mode	Percentage Modal Split
Driving a Car or Van	22%
Passenger in a Car or Van	1%
Bus, Minibus, Coach	5%
Taxi or Minicab	0%
Train	8%
On Foot	25%
Bicycle	37%
Motorcycle, Scooter or Moped	0%
Underground, Metro, Light Rail or Tram	1%
Other Method of Travel to Work	1%
Total	**100%**

Source: 2011 Census Data (January 2017)

4.3.4 The results of the application of the existing Travel to Work mode split to the 500 dwellings is shown in Table 4.4 below:

Table 4.4 Total Person Trips by Mode of Travel (500 Dwellings)

	Weekday					
	AM Peak Hour 08:00 – 09:00			PM Peak Hour 17:00 – 18:00		
Mode	**In**	**Out**	**Two-Way**	**In**	**Out**	**Two-Way**
Car Driver	22	76	98	55	30	85
Car Passenger	1	5	6	3	2	5
Bus	5	17	22	12	7	19
Taxi or Minicab	0	1	1	1	0	1
Train	8	27	35	20	11	31
On Foot	26	87	113	63	34	98
Bicycle	37	126	164	92	50	142
Motorcycle	0	1	2	1	1	2
Underground	1	2	3	2	1	2
Other Method	1	2	3	2	1	2
Total	**102**	**345**	**447**	**251**	**136**	**387**

4.3.5 In terms of vehicle movements, Table 4.4 above shows that in the AM peak hour for the weekday the site is likely to generate 22 arrivals and 76 departures, or a total two-way flow of 98 vehicles, which equates to 1.6 vehicles per minute. It is also apparent that in the PM peak hour for the weekday the site is likely to result in 55 arrivals and 30 departures, or a total two-way flow of 85 vehicles, which equates to 1.4 vehicles per minute.

4.4 TRIP DISTRIBUTION

4.4.1 In order to determine the distribution of the development trips Origin and Destination Travel to Work Statistics for residents living in MSOA Cambridge 007 were obtained from the Census 2011 Travel to Work statistics. The analysis of this data suggested the distribution of proposed development trips for the site as shown in Table 4.5 below

Table 4.5 Proposed Development Trip Distributions – MSOA Cambridge 007 Residents

	Mode	
	Car Driver	
Destinations	**Number**	**Percentage**
Cambridge	246	41%
South Cambridgeshire	180	30%
Huntingdonshire	52	9%
Forest Heath	24	4%
Uttlesford	17	3%
East Cambridgeshire	16	3%
North Cambridgeshire	10	2%
St Edmundsbury	9	2%
Welwyn and Hatfield	9	2%
Central Bedfordshire	8	1%
Peterborough	7	1%
Bedford	5	1%
Breckland	5	1%
Other Destinations	5	1%
Total	**593**	**100%**

Source: 2011 Census Data (January 2017)

4.4.2 As can be seen in Table 4.5 that a large proportion of residents who live in MSOA Cambridge 007 travel to areas in the vicinity of the site including Cambridge, South Cambridgeshire and Huntingdonshire.

4.4.3 In contrast, it can be seen in Table 4.5 that a small number of residents who live in MSOA Cambridge 007 travel to broader areas such as Peterborough, Bedford and Breckland, with 1% travelling to all of these areas, or a total of 3% of all residents.

4.5 TRIP ASSIGNMENT

4.5.1 Vehicular trips were then assigned onto the local highway network based on an ‘all-or-nothing’ assignment method where all traffic is assigned to the shortest and therefore the most likely route. The assignment routes along with the key junctions, proportion of vehicular trips, and the destinations of these trips are shown in Table 4.6 below.

Table 4.6 Proposed Trip Assignment of Journey to Work – MSOA Cambridge 007 Residents

Route	Key Junctions	Proportion	Destinations
West Cambridge site via Madingley Road	Clerk Maxwell Road / Madingley Road West	2.3%	West Cambridge Site
M11 South	Clerk Maxwell Road / Madingley Road West, Madingley Road West / M11 South	25.2%	Cambridge, South Cambridgeshire, Uttlesford, North Hertfordshire
A1303 West	Clerk Maxwell Road / Madingley Road West, Madingley Road West / St Neots Road	16.2%	South Cambridgeshire, Huntingdonshire
A1303 East	Clerk Maxwell Road / Madingley Road West, Madingley Road West / St Neots Road	43.5%	Cambridge, South Cambridgeshire, Forest Heath, East Cambridgeshire
Grange Road South	Clerk Maxwell Road / Madingley Road East	6.3%	Cambridge, South Cambridgeshire
Storeys Way	Clerk Maxwell Road / Madingley Road East, Madingley Road East / Storey's Way	6.5%	Cambridge, South Cambridgeshire, Huntingdonshire
Total		**100.0%**	

5 PROPOSED TRANSPORT STRATEGY

5.1 INTRODUCTION

5.1.1 The NPPF highlights the need for developments to be located in areas where the requirement for travel is minimised and residents can easily access local facilities by sustainable modes of transport, including walking, cycling and public transport.

5.1.2 With this in mind, sustainability forms a key principle in the design of the site, and as such the focus of the transport strategy is to reduce the need to travel in the first instance and, secondly, to promote and encourage sustainable transport.

5.1.3 This section of the report outline the transport strategy for the site which focuses on a hierarchy of transport modes that promote sustainable travel including the following:

- Walking;
- Cycling; and
- Public Transport.

5.1.4 This section also outlines the proposals for travel by car, as it is recognised that residents will use the car to reach the surrounding area that cannot be reached by walking, cycling or by using public transport. It will include the vehicle access strategy and the principles of the street network within the development. In addition, it sets out the local highway measures to improve safety and encourage walking and cycling, within and between the site and the surrounding area.

5.2 WALKING AND CYCLING STRATEGY

5.2.1 A walking and cycling strategy has been identified which will deliver:

- A coherent network linking trip origins and key destinations, at a scale appropriate to the users;
- A consistent, well connected network with linkages to key destinations, existing and proposed routes in the area;
- An attractive walking and cycling environment;
- Infrastructure that is not only safe, both in terms of traffic safety and crime, but also perceived to be so, thus encouraging travel by sustainable modes;
- Creation of attractive and interesting environments which are integrated with surrounding areas; and
- High quality and conveniently located cycle parking within the site which exceeds the requirements of locally adopted standards.

5.2.2 Within the site, the emphasis is focused upon creating attractive and direct routes for walking and cycling, with key principles of the proposed strategy being to focus on providing linkages with public transport services, areas of employment, education and leisure facilities within the vicinity of the site.

5.2.3 There will be a network of open public space within the site which will also provide corridors for walking and cycling, which will be segregated from other modes of transport, and will form safe walking and cycling route within the site.

5.2.4 Creating linkages with key employment and education destinations in Cambridge are also key principles of the proposed strategy, with improvements to the penetration of routes into the West Cambridge University site and Cambridge City Centre.

5.2.5 As part of the site, pedestrian and cycle routes to surrounding facilities will need to be provided to the north, east and west of the site to ensure that the site has high levels of accessibility and permeability for walking and cycling, the following key connections as follows:

- Access to the existing Coton Cycle Path, providing connections to the city centre to the east, via Adams Road, Burrell's Walk and Garrett Hostel Lane, and Coton to the west, via the Coton Cycle Path;
- Access via the University Sports Ground access road providing connections to the city centre to the east, via Adams Road, Burrell's Walk and Garrett Hostel Lane, and Coton to the west, via the pedestrian and cycle routes within the site, and the Coton Cycle Path; and
- Access onto Clerk Maxwell Road, providing connections to Madingley Road to the north, the city centre to the east and the West Cambridge University site to the west.

5.2.6 The description of existing conditions outlined in Section 3 notes that the site has good walking and cycling accessibility with surrounding areas, so the implementation of the above measures will assist with the integration of the site with existing walking and cycling infrastructure in the vicinity of the site, creating an environment which encourages the uptake of walking and cycling amongst future residents.

5.3 PUBLIC TRANSPORT STRATEGY

5.3.1 As demonstrated in Table 3.2 there are currently a number of bus services in the vicinity of the site that provide access to key destinations in Cambridge, as well as to a number of other destinations surrounding Cambridge including Cambourne, Huntingdon, St Ives, Hardwick, Papworth and Bedford.

5.3.2 Although the northern and central part of the site is within desirable walking distance to the nearest bus stops on J.J. Thomson Avenue and Charles Babbage Road, being within a 0-400m (0-5 minute) walk, the southern part of the site is outside an acceptable walking distance to the nearest bus stops, being within a 400-800m (5-10 minutes) walk. However, they are located only marginally outside an acceptable walking distance, and with direct and clearly marked pedestrian links proposed to be provided to the site, it is not anticipated that this would be a significant barrier to movement by public transport.

5.3.3 However, in order to ensure that the entire site is within a 0-400m (0-5 minute) walk of the nearest bus stops another possibility is to divert the Bus Services Citi 4 and UNI 4 from Madingley Road down Clerk Maxwell Road, to do a loop around the site, and then back up Clerk Maxwell Road to Madingley Road.

5.3.4 The public transport options outlined above will need to be discussed with CCC and Stagecoach in Cambridge in order to agree the preferred option or options will be for the site.

5.4 CAMBRIDGE CITY DEAL

5.4.1 It is notable that the site lies in a strategically important location with regard to a number of projects within the Great Cambridge City Deal proposals, described by the City Deal themselves as "a unique opportunity to secure the future of Greater Cambridge as a leading UK and global hub for research and technology, supporting economic growth and improve quality of life for residents of Cambridge and South Cambridgeshire".

5.4.2 In such a context Grange Farm presents a unique opportunity to contribute to two major elements of the programme which are of direct relevance to Grange Farm and which have been the subject of recent consultation. One of these is “Cambourne to Cambridge – better bus journeys” which is considered to be a high priority scheme for the City Deal programme. Of particular reference to the Site is Area 1 between Madingley Mulch and Cambridge.

5.4.3 Representations on behalf of the College are enclosed at Appendix 3 of the accompanying planning statement; St.John’s College support a new on line bus route (with pedestrian and cycle route) along Madingley Road, then turning southwards through the West Cambridge site, entering St John’s College land and turning eastwards to connect into Grange Road. The proposals remain subject to further consultation but need to be borne in mind when considering West Cambridge strategically.

5.4.4 The other elements of the City Deal programme that impact upon West Cambridge and thus the Site, are the Western Orbital route proposals. These proposals seek to intercept car tips from the south/west of Cambridge into key City destinations. They include consideration of potential linkages with orbital capacity including public transport priority between Cambridge North-West (Madingley Road) and the Biomedical Campus (Hauxton Road / Trumpington Park and Ride).

5.4.5 Such proposals are intended to be compatible with the schemes emerging from the A428 Cambourne to Cambridge transport proposals. The College has submitted representations to the Western Orbital consultation exercise which are enclosed at Appendix 4 of the accompanying planning statement. The College supports a dedicated bus route on the eastern side of the M11 connection, North-West Cambridge to Darwin Green.

5.4.6 Both these consultation schemes affect West Cambridge. The College’s proposals are uniquely placed to accommodate both schemes given the College’s land ownership in the area and the ability to serve the proposed new residential development at Grange Farm

5.5 INTERNAL STREET NETWORK STRATEGY

5.5.1 Historically road layouts for developments have been designed primarily to meet the needs of motorised traffic, which has resulted in the use of a hierarchy of standard road types which were produced based on the size of the development and the predicted traffic flows associated with it. This approach resulted in unattractive developments that were often unsafe and unwelcoming for pedestrians and cyclists.

5.5.2 Most recently a new approach has been promoted within Manual for Streets 1 (MfS1) 2007, and more recently Manual for Streets 2 (2010). This recognises the importance of the community function for streets and calls for the promotion of designs that create a network of streets that provide permeability and connectivity. As a result a flexible approach to street layout will be adopted to enable the development of street character types that reflect and support the needs of pedestrians and cyclists.

5.6 VEHICULAR ACCESS STRATEGY

5.6.1 A vehicle access strategy has been identified based on primary and secondary vehicular access points, with the primary vehicular access being taken from Clerk Maxwell Road, and a secondary vehicular access via the University Sports Ground access road, which are outlined as follows:

Primary Vehicular Access

5.6.2 The primary vehicular access to the site is proposed to be achieved from the southern end of Clerk Maxwell Road. In order to achieve this it is proposed to remove the existing bollards and reallocate the existing road space to achieve:

- A dedicated 3.7m wide footway / cycleway extending from the junction of Perry Court to the Coton cyclepath; and
- A 5.5m carriageway.

5.6.3 The crossing of the proposed access road with the Coton cyclepath will be key to the delivery of a safe access. The proposed crossing point would accord with details contained within the Sustrans Design Manual for 'mid link crossings' on lightly trafficked low speed roads, and will maintain cycle and pedestrian priority across the access. Such an access arrangement is considered appropriate for roads with less than 4,000 vehicles per day, and with a design speed of less than 30mph.

5.6.4 The crossing would be achieved by raising the junction with ramps on the site access approach to reduce vehicle speeds. Vehicles accessing Grange Farm will be expected to give way to cyclists and pedestrians at the crossing point, again maintaining cycle and pedestrian priority.

5.6.5 A preliminary design of the primary vehicular access is shown in Drawing 4510-SK-001 A which is enclosed at Appendix E.Reference has been made in Section 3 in relation to the on-street parking conditions on Clerk Maxwell Road. Discussions with traffic engineers at CCC have been undertaken in this respect, and it has been concluded that, in relation to the scale of the development and the limited vehicular trips that will be generated, the existing access arrangements will be acceptable to serve the development (i.e. no further parking restrictions will be required).

5.6.6 Notwithstanding the above, final access arrangements will be agreed with CCC during the planning application process.

Secondary Vehicular Access

5.6.7 It is recognised that a secondary vehicular access would also need to be provided to the site, for the use of emergency vehicles only, along with pedestrian and cyclists. It is proposed that it would be provided via shared access to the University Sports Ground onto Adams Road, but upgraded to adoptable standards. It is recognised that discussions would need to be undertaken with CCC to discuss this secondary access in more detail.

Wider Development Impact

5.6.8 The proposed development along with wider developments on Madingley Road may potentially have impacts on the wider road network, particularly towards the city centre to the east, and the M11 towards the west. Therefore, in order to reduce the combined impact of these proposed developments co-ordination with developments in terms of sustainable transport strategy and highway mitigation will be necessary, which will ensure that all developments can be delivered in a joined-up manner, and could include the following:

- Local 'internalisation' of trips within the western part of Cambridge reducing the wider impact across the city;
- Ensuring sustainable modes can offer an attractive to the car;
- Coordinated bus services and cycle routes;
- Joined-up Travel Planning and area based Personalised Travel Planning rather than just with the proposed development;
- Bus infrastructure improvements and priority, where deliverable within the available land;
- Highway mitigation along the Madingley Road and at junctions, where achievable within land constraints; and
- Measures to reduce traffic impact on the wider road network

5.6.9 It should be noted that the existing priority junction of Madingley Road / Clerk Maxwell Road will remain unchanged as part of the proposed development. In order to determine the impact of the proposed development and other future development on this junction, a preliminary analysis has been undertaken using traffic flow data obtained from the Transport Assessment submitted as part of the planning application for North West Cambridge.

5.6.10 The outputs obtained from this analysis indicate that the existing junction would operate in a satisfactory manner with the proposed development, although more detailed analysis would need to be undertaken along with discussions with CCC in the fullness of time.

6 SUMMARY AND CONCLUSIONS

6.1 OVERVIEW

6.1.1 This Access and Transport Appraisal has provided advice on access and transport matters associated with a proposed residential development of up to 500 dwellings on land at Grange Farm, Madingley Road, Cambridge.

6.1.2 The analysis that has been undertaken has identified viable options for vehicular, pedestrian and cycle access to the site based upon the scale and nature of the proposed development, and that such arrangements are deliverable in the context of the land ownership of St John's College.

6.1.3 In taking the proposed development forward the following key access, transport and masterplan development themes are recommended for consideration:

- A cohesive transport strategy linked to local requirements in order to promote the site to the planning authority and the local community;
- Co-ordination with other nearby developments accessing onto the Madingley Road to ensure a cohesive and holistic approach to a transport strategy for this part of Cambridge;
- Sustainable bus, cycle and walk access close to and towards the city centre with the main vehicular access onto the Madingley Road via Clerk Maxwell Road, which is not as direct and thus would further encourage sustainable travel. This would be a key design principle of the entire site to promote sustainable travel;
- The site builds on the existing focus of the western side of Cambridge, in terms of providing essential new homes;
- A walking and cycling strategy will be key and will provide a high quality walking / cycling links particularly towards the city centre, which will allow the site to build upon current mode shares for the adjoining Newnham Ward;
- Provide connections to the surrounding countryside and Public Rights of Way (PRoW); and
- The focus will be on walking and cycling accessibility with the potential to divert the Citi 4 and UNI 4 bus services from Madingley Road down Clerk Maxwell Road, to do a loop around the site, and then back up Clerk Maxwell Road to Madingley Road.
- The site provides a unique opportunity to contribute towards the broader public transport aspirations for the Madingley Road corridor as proposed in the City Deal package, which will further serve to enhance the site public transport accessibility credentials.

6.1.4 When considering wider developments along Madingley Road with the 500 dwellings on the site at Grange Farm, this does not lead to a significant increase in traffic on the Madingley Road, and the existing junction of Madingley Road / Clerk Maxwell Road would operate in a satisfactory manner, although detailed analysis would need to be undertaken along with discussions with CCC in the fullness of time.

6.2 DISCUSSIONS WITH CAMBRIDGESHIRE COUNTY COUNCIL

6.2.1 The access and transport proposals identified within this report have been discussed with CCC, and a summary of these discussions are outlined as follows:

- CCC is in agreement that the proposed development at this stage, and has not raised any significant issues with proposed access and transportation relating to the site. Specifically

CCC is in principle agreement with the primary access being achieved via Clerk Maxwell Road and the secondary access (emergency vehicles only, along with pedestrians and cyclists) via shared access to University Sports Ground onto Adams Road;

- There is agreement that the proposed development has significant sustainable transport potential, given its proximity to city centre (being located approximately 1.6km west of Cambridge City Centre), and nearby employment (West Cambridge University site). However, to ensure the full sustainable potential of the site is realised the proposed development will need to provide significant mitigation measures through a Residential Travel Plan, which seek to reduce car use and encourage sustainable modes for shorter journeys;
- CCC are content that in principle with the proposed access arrangements to the proposed development, although more detailed analysis would need to be undertaken along with discussions with CCC;
- Wider junction capacity testing would need to be undertaken, but it is acknowledged by CCC that Madingley Road has remained fairly stable in terms of traffic flows and that congestion is not necessarily a concern as it encourages sustainable modes, although individual junctions may need some degree of mitigation as and where appropriate; and
- Any testing would need to use the Cambridge Sub-Regional Model (CSRM) to determine the impact of the proposed development on the local highway network.

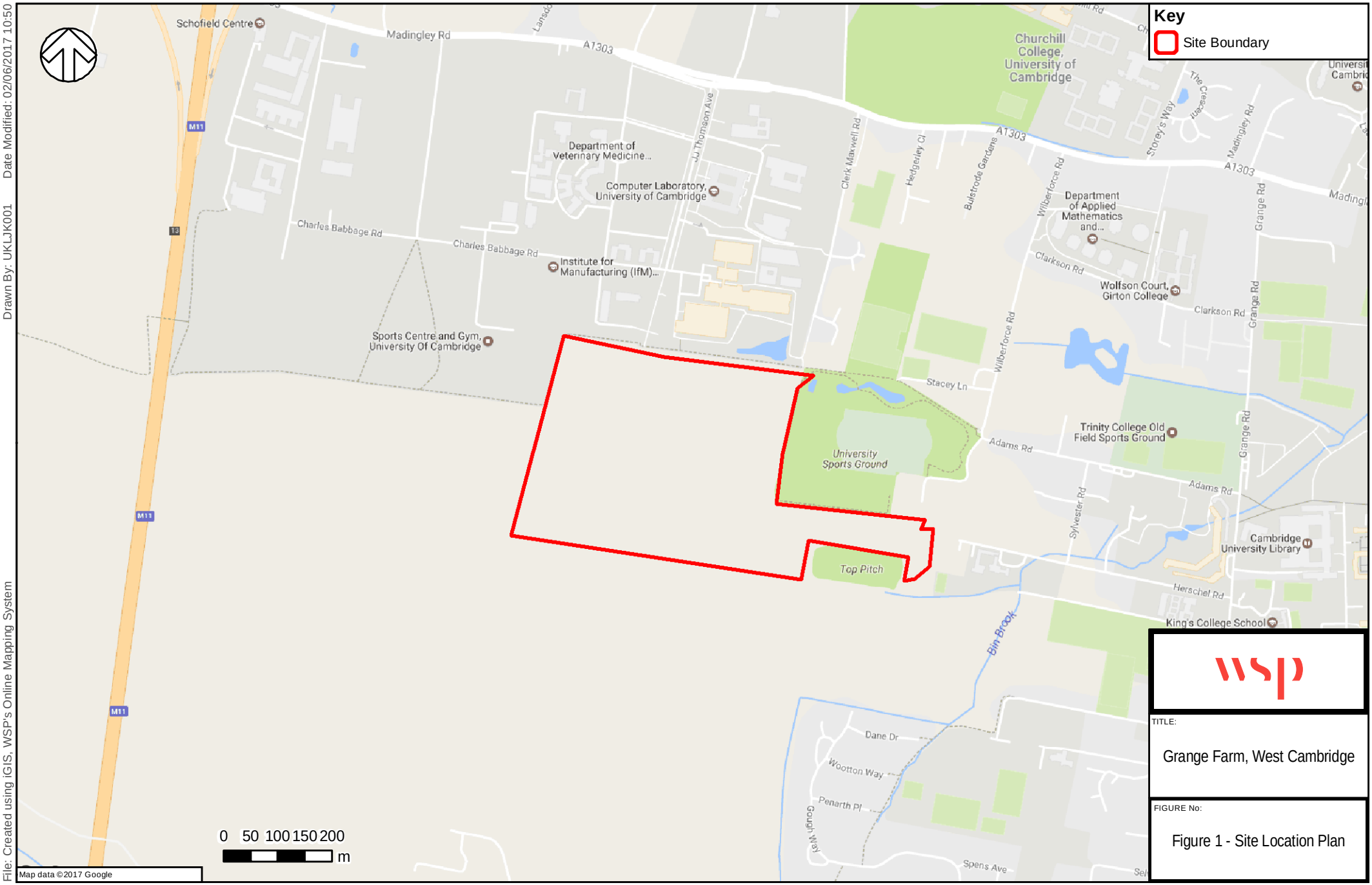
6.3 OTHER OUTLINE TECHNICAL ELEMENTS

6.3.1 In addition to the key development themes and in line with CCC's comments, as outlined above, additional technical elements to consider going forward including the following:

- The layout of the site would need to encourage sustainable journeys by maximising walking, cycling and public transport accessibility, and through appropriate design reducing the attractiveness of car journeys;
- There would be a need to demonstrate that the proposed development would not have an adverse impact on the M11, although the traffic generated by the proposed development will be dispersed across the local highway network and are unlikely to have a significant impact of on the M11;
- There would be a need to demonstrate that traffic generated by the proposed development would not impact on sensitive areas of Cambridge, and a strategy would be put in place to reduce any traffic impact of the proposed development;
- There would be a need to undertake CSRM testing to determine the impact of the proposed development on the local highway network; and
- The site would need a Residential Travel Plan which would support significant mitigation measures aimed at tackling congestion and reducing car use, such that the impact on the local and strategic road network is successfully managed. A key element will be Personalised Travel Planning, with monitoring and targets linked to sustainable measures.

Figures

Figure 1 – Site Location Plan



File: Created using iGIS, WSP's Online Mapping System Drawn By: UKLJK001 Date Modified: 02/06/2017 10:50

wsp

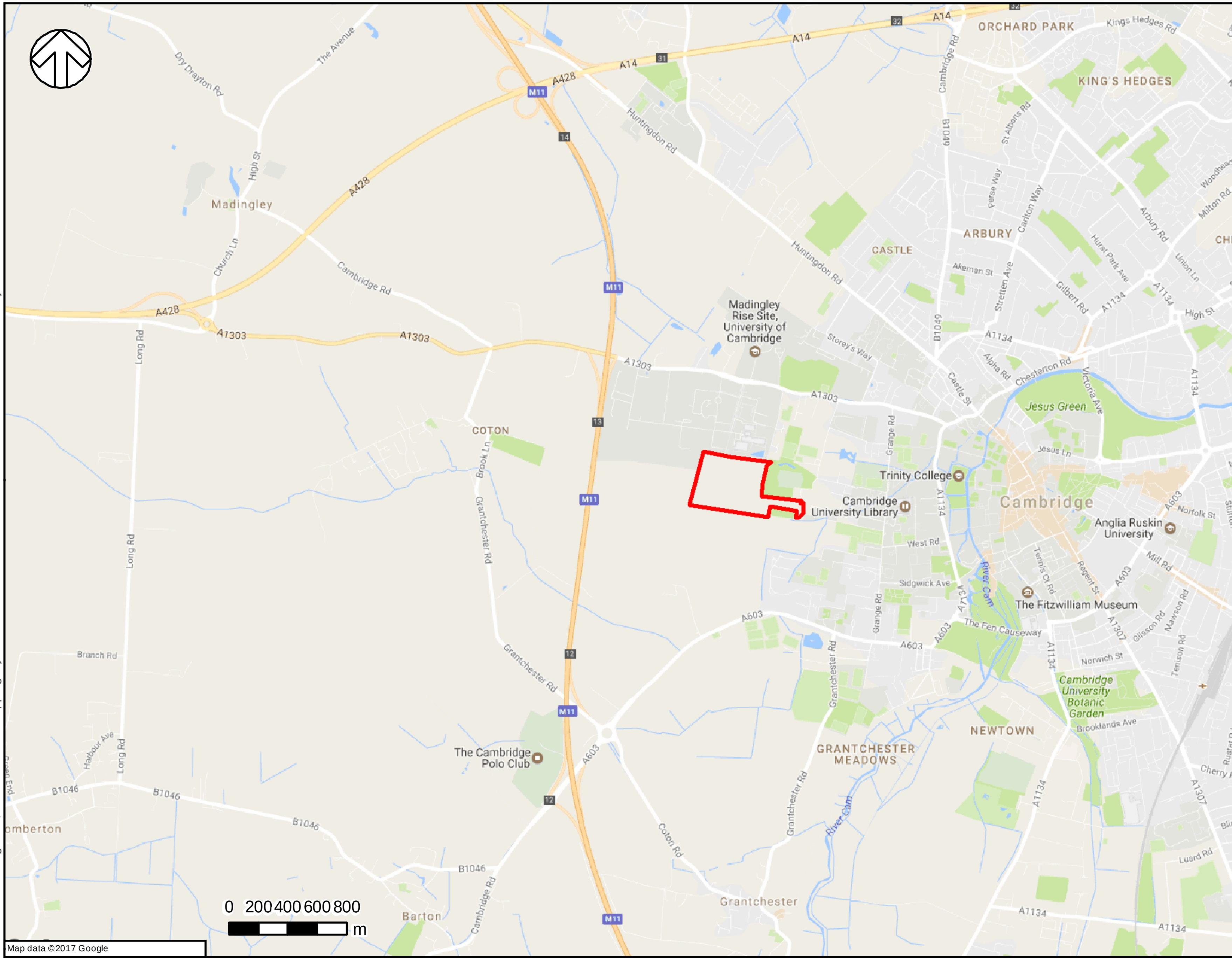
TITLE:

Grange Farm, West Cambridge

FIGURE No:

Figure 1 - Site Location Plan

Figure 2 – Wider Site Location Plan



Madingley Rise Site, University of Cambridge
Trinity College
Cambridge University Library
Cambridge
Anglia Ruskin University
The Fitzwilliam Museum
Cambridge University Botanic Garden
The Cambridge Polo Club
Madingley
COTON
CASTLE
ARBURY
KING'S HEDGES
ORCHARD PARK
CHESTERTON
NEWTOWN
GRANTCHESTER MEADOWS
Grantchester
Barton
Jesus Green
Stourbridge Common
Ditton Meadows
River Cam
M11
A14
A428
A1303
A603
A1134
B1046
B1049
0 200 400 600 800 m
Map data ©2017 Google

Key

Site Boundary

wsp

TITLE:

Grange Farm, West Cambridge

FIGURE No:

Figure 2 - Wider Site Location Plan

File: Created using iGIS, WSP's Online Mapping System

Drawn By: UKLJK001

Date Modified: 02/06/2017 10:52

Figure 3 – Walking Accessibility Plot

Date Modified: 02/06/2017

Drawn By: UKJXC082

File: Q:\WSP_UK\WSP_D\Cambridge\DP\JGC\700224510 - Grange Farm and Madingley Road\Mapfiles\Figure 3 - Walking Accessibility Plot.mxd

Key

★ Site Location

Walking Accessibility

- 0 - 400m (0 - 5 Mins)
- 400 - 800m (5 - 10 Mins)
- 800 - 1200m (10 - 15 Mins)
- 1200 - 1600m (15 - 20 Mins)
- 1600 - 2000m (20 - 25 Mins)

0 200 400 600 800 1,000 Meters

wsp

TITLE:

Walking Accessibility Plot,
Grange Farm,
West Cambridge

FIGURE No:

Figure 3

Figure 4 – Cycling Accessibility Plot

Date Modified: 02/06/2017

Drawn By: UKJXC082

File: Q:\WSP_UK\WSP_D\Cambridge\DP\JGC\70024510 - Grange Farm and Madingley Road\Mapfiles\Figure 4 - Cycling Accessibility Plot.mxd

Key

Site Location

Cycling Accessibility

- 0 - 1600m (0 - 5 Mins)
- 1600 - 3200m (5 - 10 Mins)
- 3200 - 4800m (10 - 15 Mins)
- 4800 - 6400m (15 - 20 Mins)
- 6400 - 8000m (20 - 25 Mins)

A10
A14
A428
A1303
M11
CAMBRIDGE

0 1 2 3 4 5 Kilometers

wsp

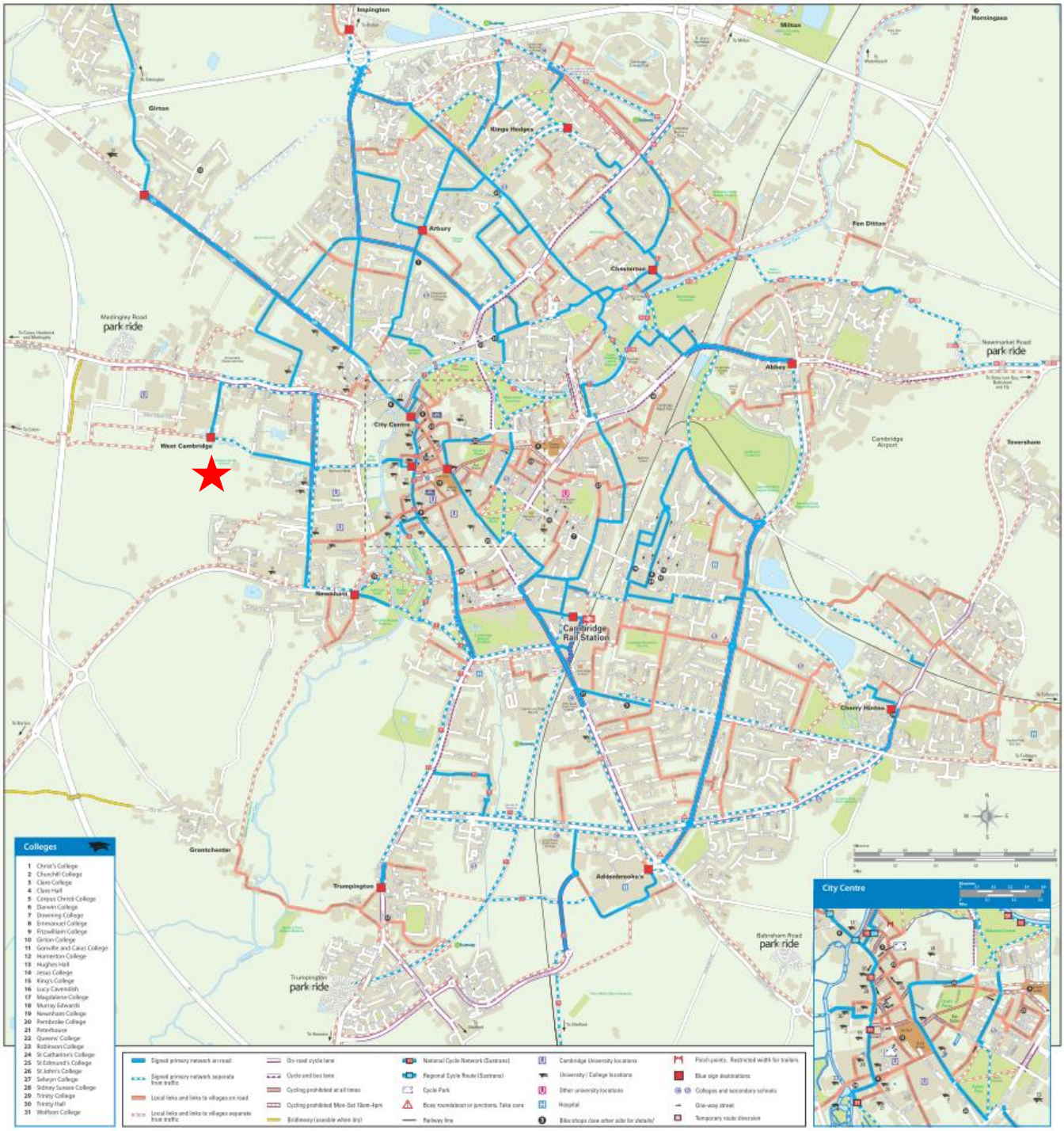
TITLE:

Cycling Accessibility Plot,
Grange Farm,
West Cambridge

FIGURE No:

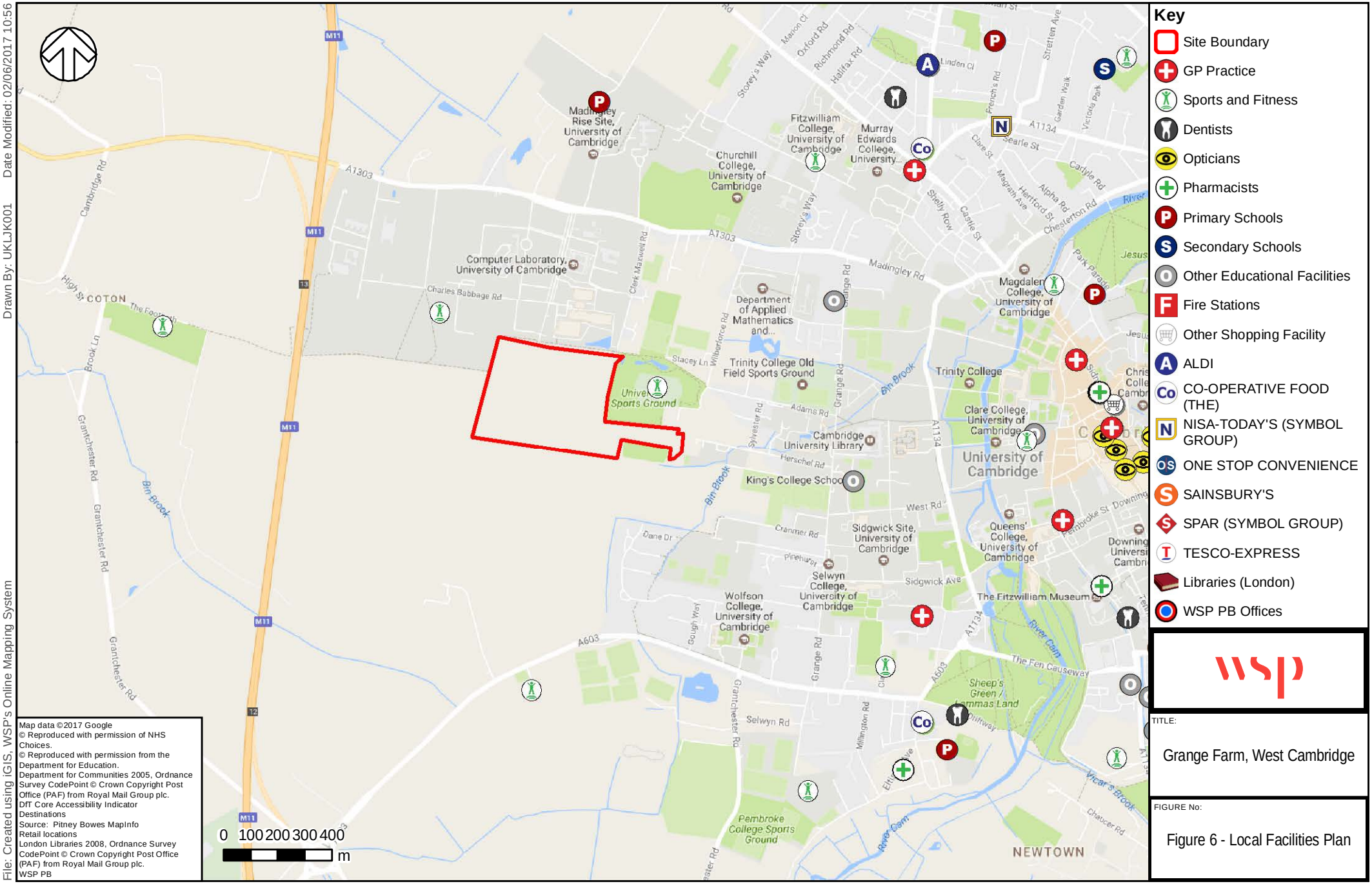
Figure 4

Figure 5 – City Cycling Map



Grange Farm Site

Figure 6 - Local Facilities Plan



File: Created using iGIS, WSP's Online Mapping System Drawn By: UKLJK001 Date Modified: 02/06/2017 10:56

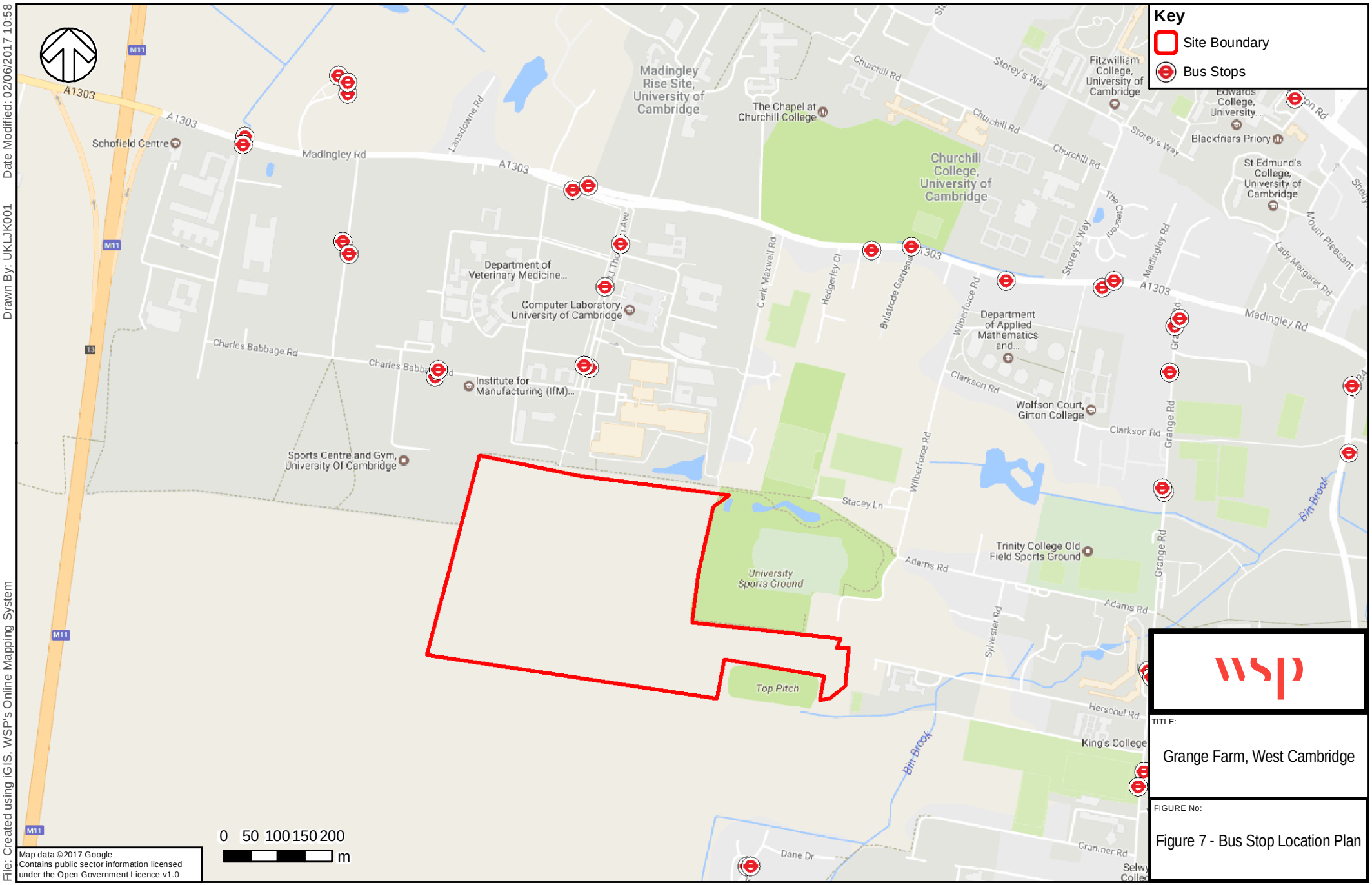
TITLE:

Grange Farm, West Cambridge

FIGURE No:

Figure 6 - Local Facilities Plan

Figure 7 – Bus Stop Location Plan



wsp

TITLE:

Grange Farm, West Cambridge

FIGURE No:

Figure 7 - Bus Stop Location Plan

Drawn By: UKLJK001

Date Modified: 02/06/2017 10:58

File: Created using iGIS, WSP's Online Mapping System

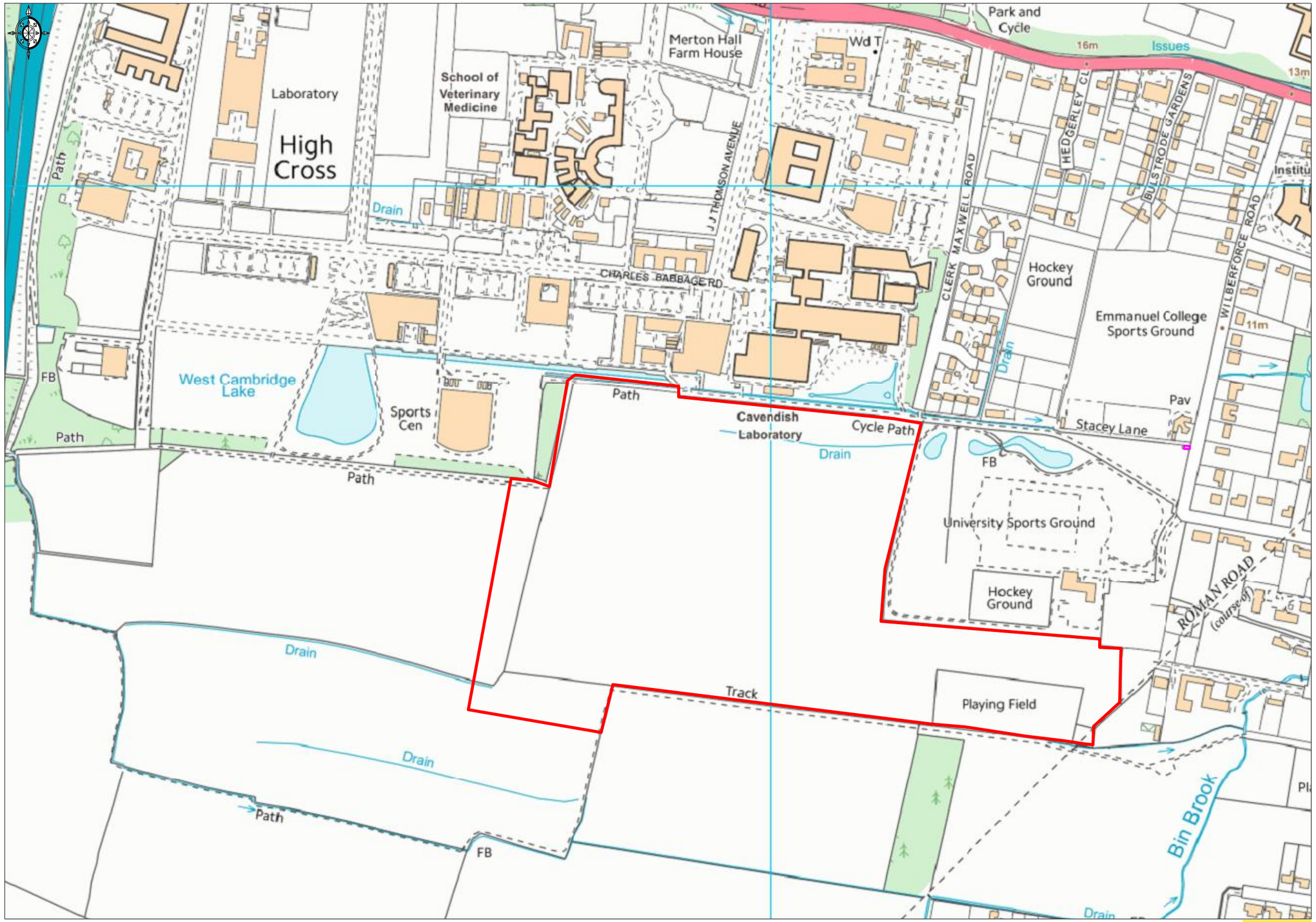
Figure 8 – Accident Data Plot

File: Q:\WSP_UK\WSP_D\Cambridge\DP\JGC\70024510 - Grange Farm and Madingley Road\Mapfiles\Figure 8 - Accident Plot.mxd
Drawn By: UKJXC082
Date Modified: 02/06/2017

Appendices

Appendix A – Redline Boundary Plan

Grange Farm Site Location Plan



Promap®

CAPL239328/001/RM/BW/02.06.2017

savills

Appendix B – Accident Data

Accident_Index	Date	Longitude	Latitude	Police_Force	Accident_Severity	Number_of_Vehicles	Number_of_Casualties	Day_of_Week	Time	Local_Authority_(District)	Local_Authority_(Highway)	1st_Road_Class	1st_Road_Number	Road_Type	Speed_limit	Junction_Detail	Junction_Control	2nd_Road_Class	2nd_Road_Number	Expr1020	Pedestrian_Crossing-Human_Control	Pedestrian_Crossing-Physical_Facilities	Light_Conditions	Weather_Conditions	Road_Surface_Conditions	Special_Conditions_at_Site	Carriageway_Hazards	Urban_or_Rural_Area	Did_Police_Officer_Attend_Scene_of_Accident	LSOA_of_Accident_Location
2.01135E+12	40673	0.083008	52.21339	Cambridgeshire	Slight	2	1	Tuesday	0.340278	390	E10000003	A	1303	Single carriageway	40	T or staggered junction	Auto traffic signal	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Rural	Yes	E01017984
2011350581011	40674	0.101072	52.21154	Cambridgeshire	Slight	3	1	Wednesday	0.479167	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017958
2011350722111	40727	0.105013	52.21129	Cambridgeshire	Slight	1	1	Sunday	0.117361	390	E10000003	A	1303	Single carriageway	30	Not at junction or within 20 metres	Data missing or out of range		0	0	None within 50 metres	No physical crossing facilities within 50 metres	7	Unknown	1	None	None	Urban	No	E01017984
2011350752611	40743	0.091102	52.21118	Cambridgeshire	Slight	2	1	Tuesday	0.752083	390	E10000003	Unclassified	0	Unknown	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Raining + high winds	2	None	None	Urban	Yes	E01017984
2011350903611	40834	0.101214	52.21145	Cambridgeshire	Slight	1	1	Tuesday	0.334028	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	2	None	None	Urban	Yes	E01017984
2011350972711	40875	0.103546	52.21123	Cambridgeshire	Slight	2	1	Monday	0.673611	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	Pelican, puffin, toucan or similar non-junction pedestrian light crossing	1	Fine no high winds	1	None	None	Urban	Yes	E01017984
2012350004512	40912	0.084178	52.21337	Cambridgeshire	Slight	3	1	Wednesday	0.739583	390	E10000003	A	1303	Single carriageway	40	Private drive or entrance	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	4	Raining + high winds	2	None	None	Rural	Yes	E01017984
2012350051112	40941	0.103408	52.21141	Cambridgeshire	Slight	1	1	Thursday	0.66875	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	Pelican, puffin, toucan or similar non-junction pedestrian light crossing	1	Fine no high winds	1	None	None	Urban	No	E01017958
2012350100212	40970	0.105705	52.20426	Cambridgeshire	Serious	1	1	Friday	0.420139	390	E10000003	Unclassified	0	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017986
2012350170212	41016	0.106197	52.20848	Cambridgeshire	Slight	2	1	Tuesday	0.475694	390	E10000003	Unclassified	0	Single carriageway	30	Not at junction or within 20 metres	Data missing or out of range		0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017986
2012350214512	41031	0.105718	52.20453	Cambridgeshire	Slight	2	1	Wednesday	0.354167	390	E10000003	Unclassified	0	Single carriageway	20	Private drive or entrance	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	No	E01017986
2012350255612	41068	0.100634	52.21155	Cambridgeshire	Slight	1	1	Friday	0.711806	390	E10000003	A	1303	Single carriageway	30	Not at junction or within 20 metres	Data missing or out of range		0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017984
2012350326112	41108	0.091754	52.2126	Cambridgeshire	Slight	2	1	Wednesday	0.736111	390	E10000003	A	1303	Single carriageway	40	Private drive or entrance	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017984

Casualty Information														Vehicle Information																	
Accident_Index	Casualties0514_T_Vehicle_Reference	Casualty_Reference	Casualty_Class	Sex_of_Casualty	Age_of_Casualty	Age_Band_of_Casualty	Casualty_Severity	Pedestrian_Location	Pedestrian_Movement	Car_Passenger	Bus_or_Coach_Passenger	Pedestrian_Road_Maintenance_Worker	Casualty_Type	Casualty_Home_Area_Type	Vehicles0514_T_Vehicle_Reference	Vehicle_Type	Towing_and_Articulation	Vehicle_Manoeuvre	Vehicle_Location-Restricted_Lane	Junction_Location	Skidding_and_Overturning	Hit_Object_in_Carriageway	Vehicle_Leaving_Carriageway	Hit_Object_off_Carriageway	1st_Point_of_Impact	Was_Vehicle_Left_Hand_Drive?	Journey_Purpose_of_Driver	Sex_of_Driver	Age_of_Driver	Age_Band_of_Driver	Engine_Capacity_(CC)	Propulsion_Code
2011350577111	1	1	Driver or rider	Female	18	4	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Motorcycle 50cc and under rider or passenger	1	1	Motorcycle 50cc and under	No tow/articulation	Slowing or stopping	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Front	1	Journey as part of work	Female	18	16 - 20	49	1
															2	Car	No tow/articulation	Waiting to go - held up	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Back	1	Journey as part of work	Female	50	46 - 55	1995	2
2011350581011	2	1	Driver or rider	Male	55	8	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Car occupant	1	1	Car	No tow/articulation	Slowing or stopping	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Front	2	Commuting to/from work	Male	35	26 - 35	-1	-1
															2	Car	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Front	1	Not known	Male	55	46 - 55	-1	-1
															3	Car	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Cleared junction or waiting/parked at junction exit	None	None	Did not leave carriageway	None	Front	1	Not known	Male	40	36 - 45	1997	2
2011350722111	1	1	Driver or rider	Male	49	8	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Taxi/Private hire car occupant	1	1	Taxi/Private hire car	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Offside	Entered ditch	Front	1	Journey as part of work	Male	49	46 - 55	2499	2
2011350752611	1	1	Driver or rider	Female	27	6	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Pedal cycle	No tow/articulation	Turning right	Footway (pavement)	Leaving main road	None	None	Did not leave carriageway	None	Front	1	Commuting to/from work	Female	27	26 - 35	-1	-1
															2	Pedal cycle	No tow/articulation	Turning right	Footway (pavement)	Leaving main road	None	None	Did not leave carriageway	None	Back	1	Commuting to/from work	Male	27	26 - 35	-1	-1
2011350903611	1	1	Driver or rider	Female	18	4	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Motorcycle 50cc and under rider or passenger	2	1	Motorcycle 50cc and under	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	Skidded and overturned	None	Did not leave carriageway	None	Did not impact	1	Journey as part of work	Female	18	16 - 20	-1	-1
2011350972711	2	1	Driver or rider	Male	18	4	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Car	No tow/articulation	Turning right	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Nearside	1	Not known	Male	75	66 - 75	1997	1
															2	Pedal cycle	No tow/articulation	Turning right	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Offside	1	Not known	Male	18	16 - 20	-1	-1
2012350004512	2	1	Driver or rider	Male	26	6	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Motorcycle 125cc and under rider or passenger	2	1	Car	No tow/articulation	Turning right	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Front	1	Commuting to/from work	Female	32	26 - 35	1570	1
															2	Motorcycle 125cc and under	No tow/articulation	Overtaking static vehicle - offside	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Nearside	1	Commuting to/from work	Male	26	26 - 35	125	1
															3	Car	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Front	1	Not known	Male	53	46 - 55	-1	-1
2012350051112	1	1	Driver or rider	Male	40	7	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Motorcycle 125cc and under rider or passenger	1	1	Motorcycle 125cc and under	No tow/articulation	Slowing or stopping	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Did not impact	1	Not known	Male	40	36 - 45	-1	-1
2012350100212	1	1	Driver or rider	Male	19	4	Serious	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Pedal cycle	No tow/articulation	Going ahead other	Cycle lane (on main carriageway)	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Did not impact	1	Commuting to/from work	Male	19	16 - 20	-1	-1
2012350170212	2	1	Driver or rider	Male	25	5	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Goods over 3.5t. and under 7.5t	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Nearside	1	Journey as part of work	Male	66	66 - 75	4461	2
															2	Pedal cycle	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Offside	1	Not known	Male	25	21 - 25	-1	-1
2012350214512	1	1	Driver or rider	Female	48	8	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Pedal cycle	No tow/articulation	Overtaking - nearside	Cycle lane (on main carriageway)	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Offside	1	Journey as part of work	Female	48	46 - 55	-1	-1
															2	Car	No tow/articulation	Turning right	On main c'way - not in restricted lane	Leaving main road	None	None	Did not leave carriageway	None	Front	1	Not known	Male	40	36 - 45	-1	-1
2012350255612	1	1	Pedestrian	Female	22	5	Slight	In carriageway, crossing elsewhere	Crossing from driver's nearside	Not car passenger	Not a bus or coach passenger	No / Not applicable	Pedestrian	1	1	Car	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Front	1	Not known	Female	50	46 - 55	1998	1
2012350326112	2	1	Driver or rider	Female	47	8	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Car occupant	3	1	Car	No tow/articulation	Turning right	On main c'way - not in restricted lane	Entering main road	None	None	Did not leave carriageway	None	Offside	1	Commuting to/from work	Female	60	56 - 65	1998	1
															2	Car	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Nearside	1	Commuting to/from work	Female	47	46 - 55	1910	2

2012350492912	41206	0.095356	52.21137	Cambridgeshire	Slight	2	1	Wednesday	0.368056	390	E10000003	Unclassified	0	Single carriageway	30	Not at junction or within 20 metres	Data missing or out of range		0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Raining no high winds	2	None	None	Urban	Yes	E01017984
2013350087513	41338	0.102381	52.21134	Cambridgeshire	Slight	3	1	Tuesday	0.381944	390	E10000003	A	1303	Single carriageway	30	Not at junction or within 20 metres	Data missing or out of range		0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017984
2013350151913	41387	0.095365	52.21155	Cambridgeshire	Slight	2	1	Tuesday	0.385417	390	E10000003	Unclassified	0	Single carriageway	30	Private drive or entrance	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017984
2013353007813	41443	0.106211	52.20875	Cambridgeshire	Slight	2	1	Tuesday	0.767361	390	E10000003	Unclassified	0	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017986
2013353016413	41457	0.106609	52.21099	Cambridgeshire	Slight	2	1	Tuesday	0.722222	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Auto traffic signal	Unclassified	0	0	None within 50 metres	Pedestrian phase at traffic signal junction	1	Fine no high winds	2	None	None	Urban	Yes	E01017986
2013353024413	41489	0.087543	52.21331	Cambridgeshire	Slight	2	1	Saturday	0.288194	390	E10000003	A	1303	Single carriageway	40	Not at junction or within 20 metres	Data missing or out of range		0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017984
2013353071113	41547	0.103551	52.21132	Cambridgeshire	Serious	2	1	Monday	0.59375	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	Pelican, puffin, toucan or similar non-junction pedestrian light crossing	1	Fine no high winds	1	None	None	Urban	Yes	E01017958
2013353089713	41568	0.08272	52.21348	Cambridgeshire	Serious	1	2	Monday	0.767361	390	E10000003	A	1303	Single carriageway	40	T or staggered junction	Auto traffic signal	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	4	Fine no high winds	2	None	None	Rural	Yes	E01017956
2013353111913	41591	0.103409	52.21141	Cambridgeshire	Slight	2	1	Wednesday	0.385417	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	Pelican, puffin, toucan or similar non-junction pedestrian light crossing	1	Fine no high winds	1	None	None	Urban	No	E01017958
2013353117813	41600	0.082716	52.21339	Cambridgeshire	Slight	1	1	Friday	0.605556	390	E10000003	A	1303	Single carriageway	40	T or staggered junction	Auto traffic signal	Unclassified	0	0	None within 50 metres	Pedestrian phase at traffic signal junction	1	Fine no high winds	2	None	None	Rural	Yes	E01017984
2014350075114	41774	0.103697	52.21131	Cambridgeshire	Slight	2	1	Thursday	0.709028	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	Pelican, puffin, toucan or similar non-junction pedestrian light crossing	1	Fine no high winds	1	None	None	Urban	Yes	E01017958
2014350085814	41747	0.105962	52.2066	Cambridgeshire	Slight	2	1	Friday	0.527778	390	E10000003	Unclassified	0	Single carriageway	30	Private drive or entrance	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017986
2014350089214	41794	0.101796	52.21135	Cambridgeshire	Slight	2	1	Wednesday	0.530556	390	E10000003	A	1303	Single carriageway	30	Not at junction or within 20 metres	Data missing or out of range		0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017984

2012350492912	2	Driver or 1 rider	Female	43	7 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	2	1 Car	No tow/articulation	Parked	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Did not impact	Commuting to/from 1 work	Female	45 36 - 45	2499	1
													2 Pedal cycle	No tow/articulation	Overtaking static vehicle - offside	On main c'way - not in restricted lane	Not at or within 20 metres of junction	Skidded	None	Did not leave carriageway	None	Did not impact	Commuting to/from 1 work	Female	43 36 - 45	-1	-1
2013350087513	2	Driver or 1 rider	Male	64	9 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Van / Goods vehicle (3.5 tonnes mgw or under) occupant	3	Van / Goods 3.5 tonnes mgw or 1 under	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Front	Journey as part of 1 work	Male	30 26 - 35	1870	2
													Van / Goods 3.5 tonnes mgw or 2 under	No tow/articulation	Slowing or stopping	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Back	Journey as part of 1 work	Male	64 56 - 65	-1	-1
													Van / Goods 3.5 tonnes mgw or 3 under	Single trailer	Slowing or stopping	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Back	Journey as part of 1 work	Male	23 21 - 25	-1	-1
2013350151913	2	Driver or 1 rider	Male	29	6 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	2	1 Pedal cycle	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Nearside	Not 1 known	Female	40 36 - 45	-1	-1
													2 Pedal cycle	No tow/articulation	Turning right	On main c'way - not in restricted lane	Entering main road	None	None	Did not leave carriageway	None	Front	Commuting to/from 1 work	Male	29 26 - 35	-1	-1
2013353007813	1	Driver or 1 rider	Male	27	6 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	-1	1 Pedal cycle	No tow/articulation	Turning right	On main c'way - not in restricted lane	Leaving main road	None	None	Did not leave carriageway	None	Front	Not 1 known	Male	27 26 - 35	-1	-1
													2 Car	No tow/articulation	Overtaking static vehicle - offside	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Front	Not 1 known	Male	51 46 - 55	1560	2
2013353016413	2	Driver or 1 rider	Male	24	5 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	-1	1 Car	No tow/articulation	Turning left	On main c'way - not in restricted lane	Leaving main road	None	None	Did not leave carriageway	None	Nearside	Not 1 known	Male	58 56 - 65	1240	1
													2 Pedal cycle	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Front	Not 1 known	Male	24 21 - 25	-1	-1
2013353024413	1	Driver or 1 rider	Male	35	6 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Car occupant	1	1 Car	No tow/articulation	Overtaking static vehicle - offside	On main c'way - not in restricted lane	Not at or within 20 metres of junction	Skidded	None	Nearside	Other permanent object	Front	Commuting to/from 1 work	Male	35 26 - 35	2793	1
													2 Car	No tow/articulation	Parked	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Nearside	None	Nearside	Journey as part of 1 work	Male	60 56 - 65	-1	-1
2013353071113	2	Driver or 1 rider	Male	23	5 Serious	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	Bus or coach (17 or more 1 pass seats)	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Cleared junction or waiting/parked at junction exit	None	None	Did not leave carriageway	None	Front	Journey as part of 1 work	Male	39 36 - 45	6700	2
													2 Pedal cycle	No tow/articulation	Going ahead other	Footway (pavement)	Cleared junction or waiting/parked at junction exit	None	None	Did not leave carriageway	None	Offside	Not 1 known	Male	23 21 - 25	-1	-1
2013353089713	1	Pedestrian	Male	37	7 Serious	In carriageway, crossing elsewhere	Crossing from driver's nearside	Not car passenger	Not a bus or coach passenger	No / Not applicable	Pedestrian	-1	Motorcycle 1 over 500cc	No tow/articulation	Moving off	On main c'way - not in restricted lane	Cleared junction or waiting/parked at junction exit	None	None	Did not leave carriageway	None	Front	Commuting to/from 1 work	Male	21 21 - 25	599	1
	1	Driver or 1 rider	Male	21	5 Serious	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Motorcycle over 500cc rider or passenger	2															
2013353111913	1	Driver or 1 rider	Female	-1	-1 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1 Pedal cycle	No tow/articulation	Moving off	On main c'way - not in restricted lane	Cleared junction or waiting/parked at junction exit	None	None	Did not leave carriageway	None	Front	Not 1 known	Female	-1	-1	-1
													Minibus (8 - 16 passenger 2 seats)	No tow/articulation	Turning left	On main c'way - not in restricted lane	Leaving main road	None	None	Did not leave carriageway	None	Nearside	Journey as part of 1 work	Female	44 36 - 45	-1	-1
2013353117813	1	Driver or 1 rider	Male	32	6 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Car occupant	1	1 Car	No tow/articulation	Turning right	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Nearside	Tree	Front	Not 1 known	Male	32 26 - 35	1910	2
2014350075114	2	Driver or 1 rider	Male	68	10 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Motorcycle over 500cc rider or passenger	2	1 Car	No tow/articulation	Turning left	On main c'way - not in restricted lane	Entering main road	None	None	Did not leave carriageway	None	Front	Journey as part of 1 work	Male	53 46 - 55	2401	2
													Motorcycle 2 over 500cc	No tow/articulation	Waiting to go - held up	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Nearside	Not 1 known	Male	68 66 - 75	599	1
2014350085814	2	Driver or 1 rider	Male	25	5 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1 Car	No tow/articulation	Turning left	On main c'way - not in restricted lane	Leaving main road	None	None	Did not leave carriageway	None	Front	Not 1 known	Female	22 21 - 25	1198	1
													2 Pedal cycle	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	Skidded	None	Did not leave carriageway	None	Front	Not 1 known	Male	25 21 - 25	-1	-1
2014350089214	2	Driver or 1 rider	Female	54	8 Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Car occupant	2	1 Car	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Front	Not 1 known	Male	25 21 - 25	1896	2

2014350186714	41935	0.106175	52.21109	Cambridgeshire	Slight	2	1	Thursday	0.459722	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Auto traffic signal	Unclassified	0	0	None within 50 metres	Pedestrian phase at traffic signal junction	1	Fine no high winds	1	None	None	Urban	Yes	E01017984
2014350207514	41964	0.087831	52.21321	Cambridgeshire	Serious	2	1	Friday	0.686111	390	E10000003	Unclassified	0	Single carriageway	30	Private drive or entrance	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	4	Raining no high winds	2	None	None	Urban	Yes	E01017984
2015350002915	42013	0.104503	52.20423	Cambridgeshire	Slight	2	1	Friday	0.51875	390	E10000003	Unclassified	0	Single carriageway	30	Private drive or entrance	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017986
2015350011815	42029	0.104815	52.21394	Cambridgeshire	Serious	2	1	Sunday	0.423611	390	E10000003	Unclassified	0	Single carriageway	30	Private drive or entrance	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	2	None	None	Urban	Yes	E01017956
2015350041715	42096	0.10643	52.21094	Cambridgeshire	Slight	2	1	Thursday	0.385417	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Auto traffic signal	Unclassified	0	0	None within 50 metres	Pedestrian phase at traffic signal junction	1	Fine no high winds	1	None	None	Urban	No	E01017984
2015350056115	42128	0.095508	52.21213	Cambridgeshire	Serious	2	1	Monday	0.779167	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017984
2015350115615	42222	0.10615	52.21122	Cambridgeshire	Slight	2	1	Thursday	0.8	390	E10000003	A	1303	Single carriageway	30	Private drive or entrance	Auto traffic signal	Unclassified	0	0	None within 50 metres	Pedestrian phase at traffic signal junction	1	Fine no high winds	1	None	None	Urban	No	E01017958
2015350139415	42250	0.103518	52.21127	Cambridgeshire	Slight	2	1	Thursday	0.690972	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	No	E01017984
2015350191515	42311	0.095654	52.21213	Cambridgeshire	Slight	2	1	Tuesday	0.551389	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	Yes	E01017984
2015350198415	42332	0.105711	52.20502	Cambridgeshire	Slight	2	1	Tuesday	0.375	390	E10000003	Unclassified	0	Single carriageway	20	Not at junction or within 20 metres	Data missing or out of range		0	0	None within 50 metres	No physical crossing facilities within 50 metres	1	Fine no high winds	1	None	None	Urban	No	E01017986
2015350209015	42348	0.103526	52.21145	Cambridgeshire	Slight	3	1	Thursday	0.774306	390	E10000003	A	1303	Single carriageway	30	T or staggered junction	Give way or uncontrolled	Unclassified	0	0	None within 50 metres	No physical crossing facilities within 50 metres	4	Fine no high winds	2	None	None	Urban	No	E01017958

												2	Car	No tow/articulation	Waiting to go - held up	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Back	Not known	1	Female	54	46 - 55	-1	-1
2014350186714	2	1	Passenger	Female	63	9	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Seated passenger	No / Not applicable	Bus or coach occupant (17 or more pass seats)	3	1	Pedal cycle	No tow/articulation	Changing lane to right	Footway (pavement)	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Did not impact	Not known	1	Not known			-1	-1
															Bus or coach (17 or more pass seats)	2	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Did not impact	Journey as part of work	1	Male	65	56 - 65	-1	-1
2014350207514	2	1	Driver or rider	Female	23	5	Serious	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	3	1	Car	No tow/articulation	Moving off	Footway (pavement)	Entering main road	None	None	Did not leave carriageway	None	Front	Not known	1	Male	54	46 - 55	1997	2
															2	Pedal cycle	No tow/articulation	Going ahead other	Footway (pavement)	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Offside	Not known	1	Female	23	21 - 25	-1	-1
2015350002915	1	1	Driver or rider	Female	50	8	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Car occupant	1	1	Car	No tow/articulation	Turning right	On main c'way - not in restricted lane	Cleared junction or waiting/parked at junction exit	None	None	Did not leave carriageway	None	Offside	Journey as part of work	1	Female	50	46 - 55	1598	1
															2	Car	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Approaching junction or waiting/parked at junction approach	None	None	Did not leave carriageway	None	Front	Journey as part of work	1	Male	47	46 - 55	-1	-1
2015350011815	2	1	Driver or rider	Male	20	4	Serious	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Car	No tow/articulation	Going ahead right-hand bend	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Front	Not known	1	Male	44	36 - 45	-1	-1
															2	Pedal cycle	No tow/articulation	Waiting to turn right	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Front	Not known	1	Male	20	16 - 20	-1	-1
2015350041715	2	1	Driver or rider	Male	40	7	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Taxi/Private hire car	No tow/articulation	Turning left	On main c'way - not in restricted lane	Leaving main road	None	None	Did not leave carriageway	None	Nearside	Not known	1	Not known			-1	-1
															2	Pedal cycle	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Offside	Not known	1	Male	40	36 - 45	-1	-1
2015350056115	2	1	Driver or rider	Male	62	9	Serious	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Motorcycle over 500cc rider or passenger	3	1	Car	No tow/articulation	Turning right	On main c'way - not in restricted lane	Entering main road	None	None	Did not leave carriageway	None	Front	Not known	1	Female	25	21 - 25	1598	1
															2	Motorcycle over 500cc	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Nearside	Not known	1	Male	62	56 - 65	1137	1
2015350115615	1	1	Driver or rider	Male	55	8	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Pedal cycle	No tow/articulation	Going ahead other	Cycleway or shared use footway (not part of main carriageway)	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Offside	Journey as part of work	1	Male	55	46 - 55	-1	-1
															2	Van / Goods 3.5 tonnes mgw or under	No tow/articulation	Moving off	Cycleway or shared use footway (not part of main carriageway)	Entering main road	None	None	Did not leave carriageway	None	Front	Not known	1	Male	40	36 - 45	2198	2
2015350139415	2	1	Driver or rider	Male	40	7	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Motorcycle over 500cc rider or passenger	1	1	Car	No tow/articulation	Turning right	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Front	Not known	1	Male	-1		1242	1
															2	Motorcycle over 500cc	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Front	Not known	1	Male	40	36 - 45	847	1
2015350191515	2	1	Driver or rider	Male	28	6	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Van / Goods 3.5 tonnes mgw or under	No tow/articulation	Moving off	On main c'way - not in restricted lane	Entering main road	None	None	Did not leave carriageway	None	Front	Journey as part of work	1	Male	40	36 - 45	1686	2
															2	Pedal cycle	No tow/articulation	Slowing or stopping	On main c'way - not in restricted lane	Entering main road	None	None	Did not leave carriageway	None	Back	Journey as part of work	1	Male	28	26 - 35	-1	-1
2015350198415	1	1	Driver or rider	Male	48	8	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Pedal cycle	No tow/articulation	Going ahead other	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Did not impact	Journey as part of work	1	Male	48	46 - 55	-1	-1
															2	Van / Goods 3.5 tonnes mgw or under	No tow/articulation	Changing lane to left	On main c'way - not in restricted lane	Not at or within 20 metres of junction	None	None	Did not leave carriageway	None	Did not impact	Not known	1	Male	35	26 - 35	2287	2
2015350209015	2	1	Driver or rider	Male	30	6	Slight	Not a Pedestrian	Not a Pedestrian	Not car passenger	Not a bus or coach passenger	No / Not applicable	Cyclist	1	1	Car	No tow/articulation	Moving off	On main c'way - not in restricted lane	Entering main road	None	None	Did not leave carriageway	None	Front	Not known	1	Male	25	21 - 25	-1	-1
															2	Pedal cycle	No tow/articulation	Slowing or stopping	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Back	Not known	1	Male	30	26 - 35	-1	-1
															3	Car	No tow/articulation	Slowing or stopping	On main c'way - not in restricted lane	Mid Junction - on roundabout or on main road	None	None	Did not leave carriageway	None	Front	Not known	1	Male	-1		-1	-1

Appendix C – TRICS® Outputs

Calculation Reference: AUDIT-100314-160526-0512

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES

Selected regions and areas:

02	SOUTH EAST		
	EX	ESSEX	1 days
	SC	SURREY	1 days
	WS	WEST SUSSEX	1 days
03	SOUTH WEST		
	DV	DEVON	2 days
04	EAST ANGLIA		
	NF	NORFOLK	1 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	2 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NE	NORTH EAST LINCOLNSHIRE	1 days
	NY	NORTH YORKSHIRE	3 days
	SY	SOUTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
09	NORTH		
	CB	CUMBRIA	1 days

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

Filtering Stage 2 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: Number of dwellings
Actual Range: 52 to 432 (units:)
Range Selected by User: 50 to 491 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/08 to 28/09/15

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	4 days
Tuesday	3 days
Wednesday	1 days
Thursday	4 days
Friday	3 days

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

Selected survey types:

Manual count	15 days
Directional ATC Count	0 days

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

Selected Locations:

Suburban Area (PPS6 Out of Centre)	8
Edge of Town	7

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.

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.

Filtering Stage 3 selection:

Use Class:

C3	15 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	4 days
10,001 to 15,000	5 days
15,001 to 20,000	3 days
20,001 to 25,000	1 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	3 days
25,001 to 50,000	2 days
50,001 to 75,000	1 days
75,001 to 100,000	4 days
100,001 to 125,000	2 days
125,001 to 250,000	2 days
250,001 to 500,000	1 days

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

Car ownership within 5 miles:

0.6 to 1.0	3 days
1.1 to 1.5	12 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:

Yes	1 days
No	14 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.

LIST OF SITES relevant to selection parameters

1 CB-03-A-04 SEMI DETACHED CUMBRIA
MOORCLOSE ROAD
SALTERBACK
WORKINGTON
Edge of Town
No Sub Category
Total Number of dwellings: 82
Survey date: FRIDAY 24/04/09 Survey Type: MANUAL

2 CH-03-A-06 SEMI-DET./BUNGALOWS CHESHIRE
CREWE ROAD

CREWE
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 129
Survey date: TUESDAY 14/10/08 Survey Type: MANUAL

3 DV-03-A-02 HOUSES & BUNGALOWS DEVON
MILLHEAD ROAD

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 116
Survey date: FRIDAY 25/09/15 Survey Type: MANUAL

4 DV-03-A-03 TERRACED & SEMI DETACHED DEVON
LOWER BRAND LANE

HONITON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 70
Survey date: MONDAY 28/09/15 Survey Type: MANUAL

5 EX-03-A-01 SEMI-DET. ESSEX
MILTON ROAD
CORRINGHAM
STANFORD-LE-HOPE
Edge of Town
Residential Zone
Total Number of dwellings: 237
Survey date: TUESDAY 13/05/08 Survey Type: MANUAL

6 NE-03-A-02 SEMI DETACHED & DETACHED NORTH EAST LINCOLNSHIRE
HANOVER WALK

SCUNTHORPE
Edge of Town
No Sub Category
Total Number of dwellings: 432
Survey date: MONDAY 12/05/14 Survey Type: MANUAL

7 NF-03-A-02 HOUSES & FLATS NORFOLK
DEREHAM ROAD

NORWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 98
Survey date: MONDAY 22/10/12 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

8 NY-03-A-06 BUNGALOWS & SEMI DET. NORTH YORKSHIRE
HORSEFAIR

BOROUGHBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115
Survey date: FRIDAY 14/10/11 Survey Type: MANUAL

9 NY-03-A-09 MIXED HOUSING NORTH YORKSHIRE
GRAMMAR SCHOOL LANE

NORTHALLERTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 52
Survey date: MONDAY 16/09/13 Survey Type: MANUAL

10 NY-03-A-10 HOUSES AND FLATS NORTH YORKSHIRE
BOROUGHBRIDGE ROAD

RIPON
Edge of Town
No Sub Category
Total Number of dwellings: 71
Survey date: TUESDAY 17/09/13 Survey Type: MANUAL

11 SC-03-A-04 DETACHED & TERRACED SURREY
HIGH ROAD

BYFLEET
Edge of Town
Residential Zone
Total Number of dwellings: 71
Survey date: THURSDAY 23/01/14 Survey Type: MANUAL

12 SH-03-A-04 TERRACED SHROPSHIRE
ST MICHAEL'S STREET

SHREWSBURY
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 108
Survey date: THURSDAY 11/06/09 Survey Type: MANUAL

13 SH-03-A-05 SEMI-DETACHED/TERRACED SHROPSHIRE
SANDCROFT
SUTTON HILL
TELFORD
Edge of Town
Residential Zone
Total Number of dwellings: 54
Survey date: THURSDAY 24/10/13 Survey Type: MANUAL

14 SY-03-A-01 SEMI DETACHED HOUSES SOUTH YORKSHIRE
A19 BENTLEY ROAD
BENTLEY RISE
DONCASTER
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 54
Survey date: WEDNESDAY 18/09/13 Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

15 WS-03-A-04 MIXED HOUSES WEST SUSSEX
HILLS FARM LANE
BROADBRIDGE HEATH
HORSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 151
Survey date: THURSDAY 11/12/14 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.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLES
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.069	15	123	0.257	15	123	0.326
08:00 - 09:00	15	123	0.132	15	123	0.374	15	123	0.506
09:00 - 10:00	15	123	0.146	15	123	0.162	15	123	0.308
10:00 - 11:00	15	123	0.130	15	123	0.170	15	123	0.300
11:00 - 12:00	15	123	0.143	15	123	0.141	15	123	0.284
12:00 - 13:00	15	123	0.164	15	123	0.153	15	123	0.317
13:00 - 14:00	15	123	0.157	15	123	0.148	15	123	0.305
14:00 - 15:00	15	123	0.157	15	123	0.167	15	123	0.324
15:00 - 16:00	15	123	0.276	15	123	0.199	15	123	0.475
16:00 - 17:00	15	123	0.277	15	123	0.172	15	123	0.449
17:00 - 18:00	15	123	0.315	15	123	0.175	15	123	0.490
18:00 - 19:00	15	123	0.226	15	123	0.165	15	123	0.391
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.192			2.283			4.475

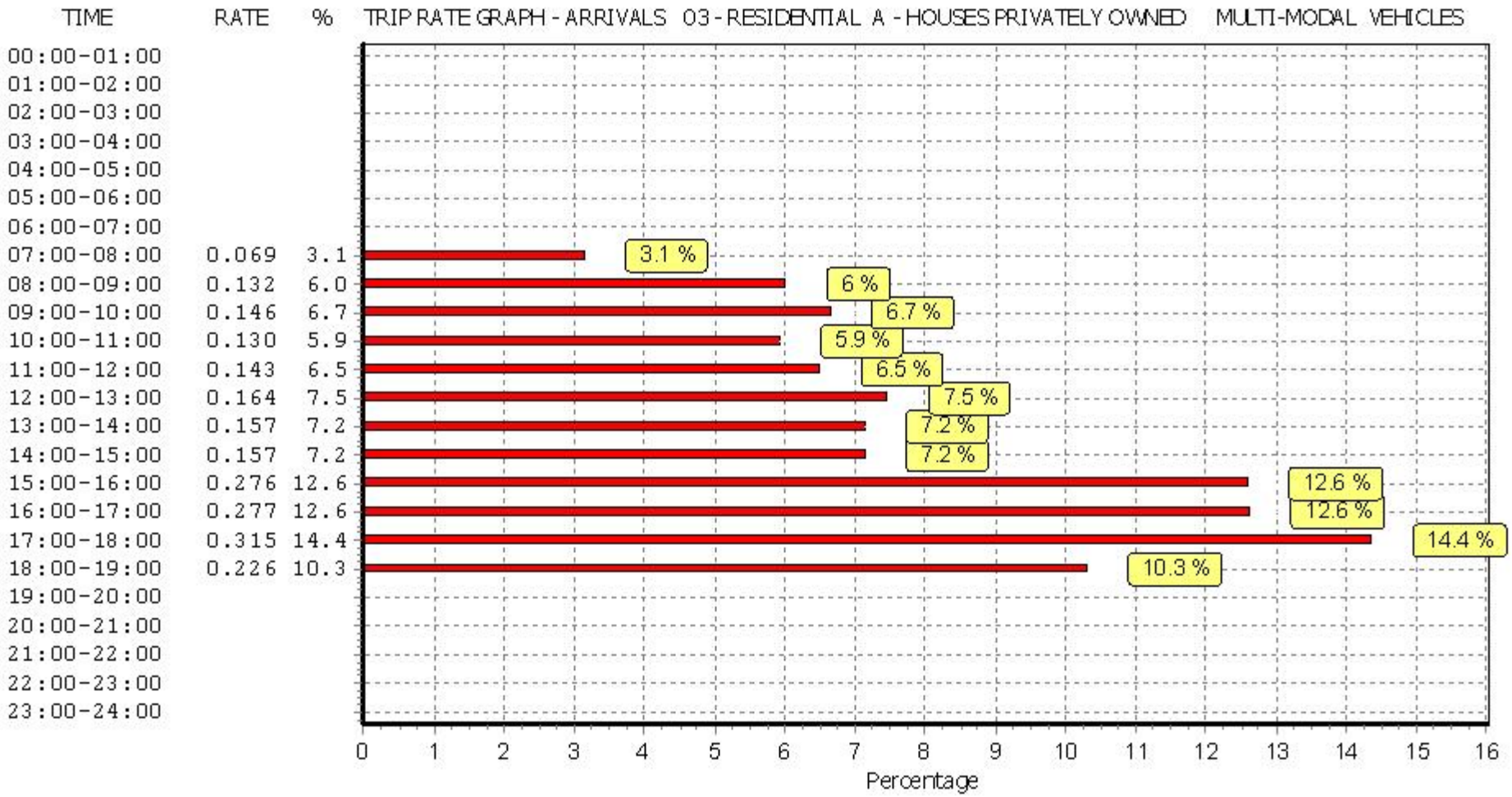
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

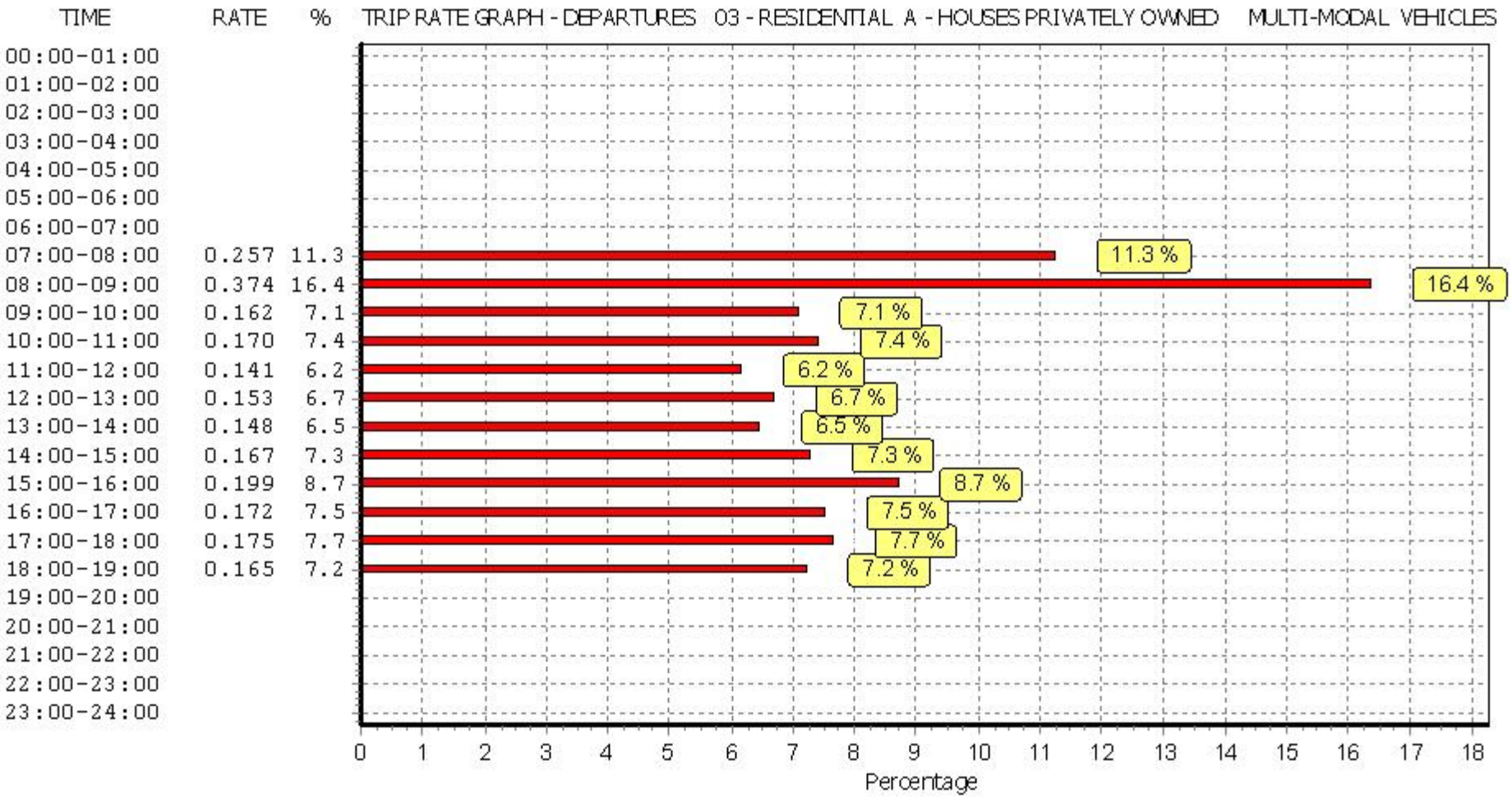
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

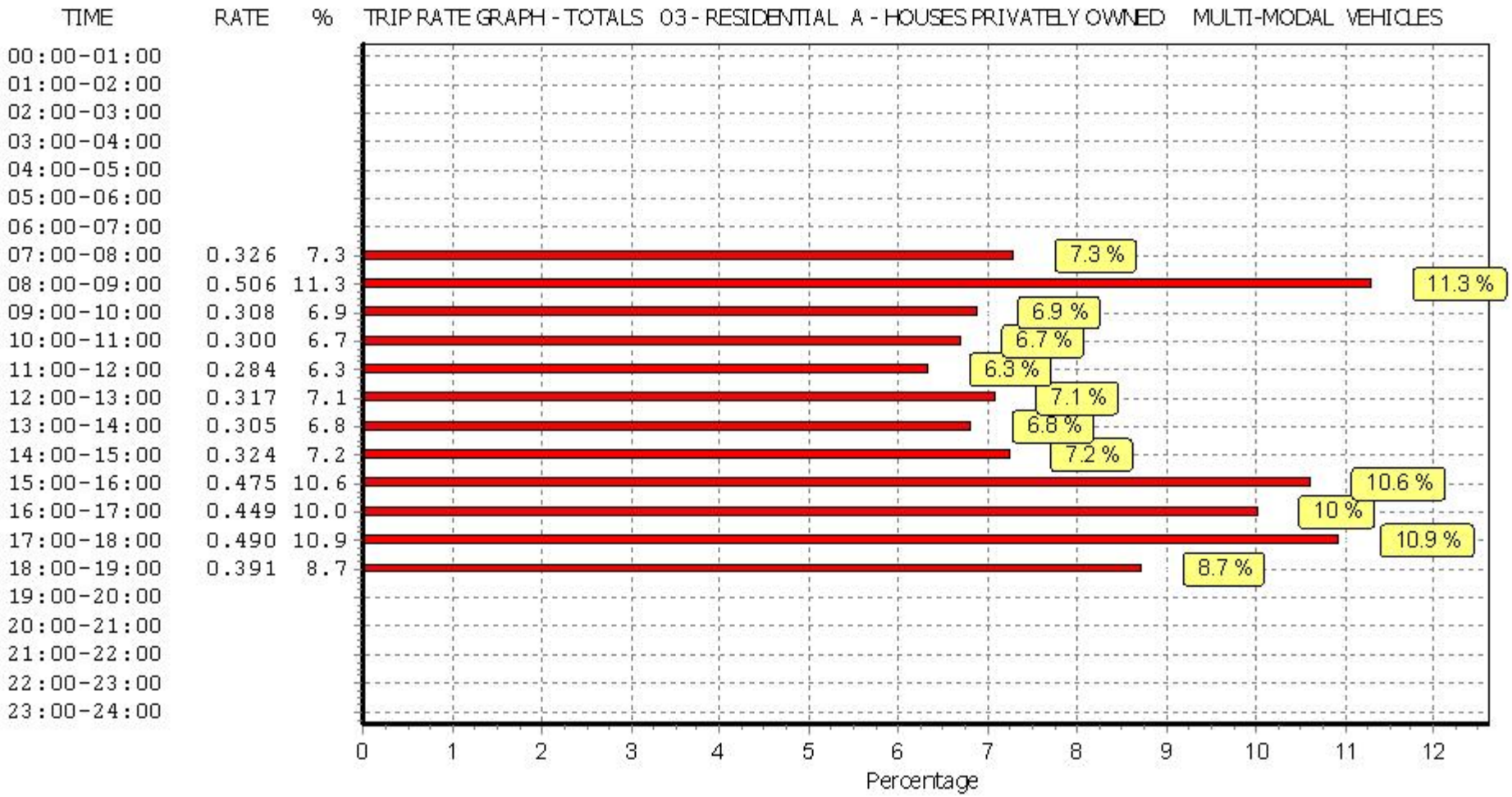
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TAXIS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.005	15	123	0.004	15	123	0.009
08:00 - 09:00	15	123	0.002	15	123	0.003	15	123	0.005
09:00 - 10:00	15	123	0.003	15	123	0.002	15	123	0.005
10:00 - 11:00	15	123	0.002	15	123	0.002	15	123	0.004
11:00 - 12:00	15	123	0.002	15	123	0.002	15	123	0.004
12:00 - 13:00	15	123	0.001	15	123	0.001	15	123	0.002
13:00 - 14:00	15	123	0.001	15	123	0.001	15	123	0.002
14:00 - 15:00	15	123	0.003	15	123	0.003	15	123	0.006
15:00 - 16:00	15	123	0.006	15	123	0.005	15	123	0.011
16:00 - 17:00	15	123	0.002	15	123	0.003	15	123	0.005
17:00 - 18:00	15	123	0.002	15	123	0.002	15	123	0.004
18:00 - 19:00	15	123	0.002	15	123	0.001	15	123	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.031			0.029			0.060

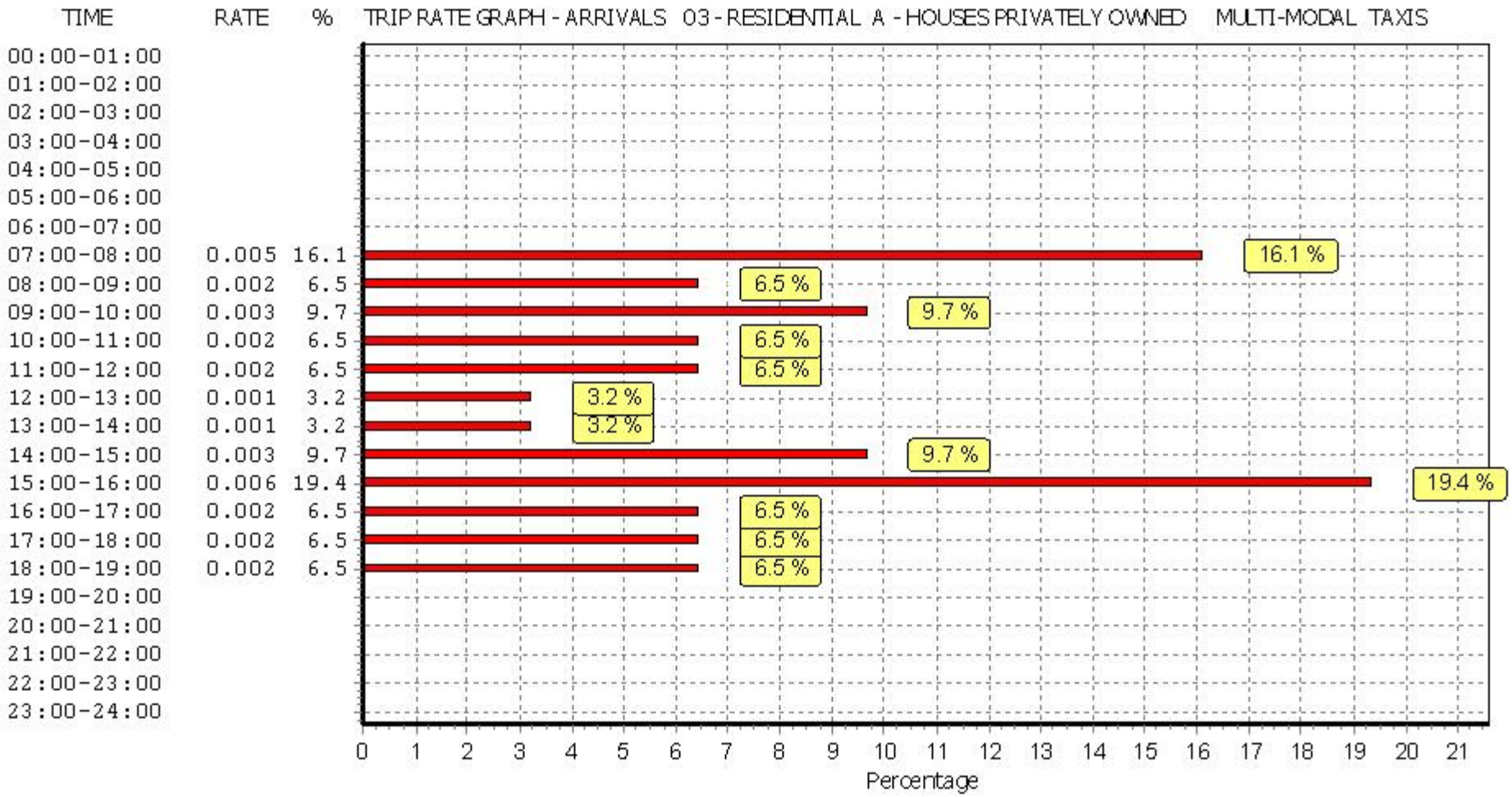
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

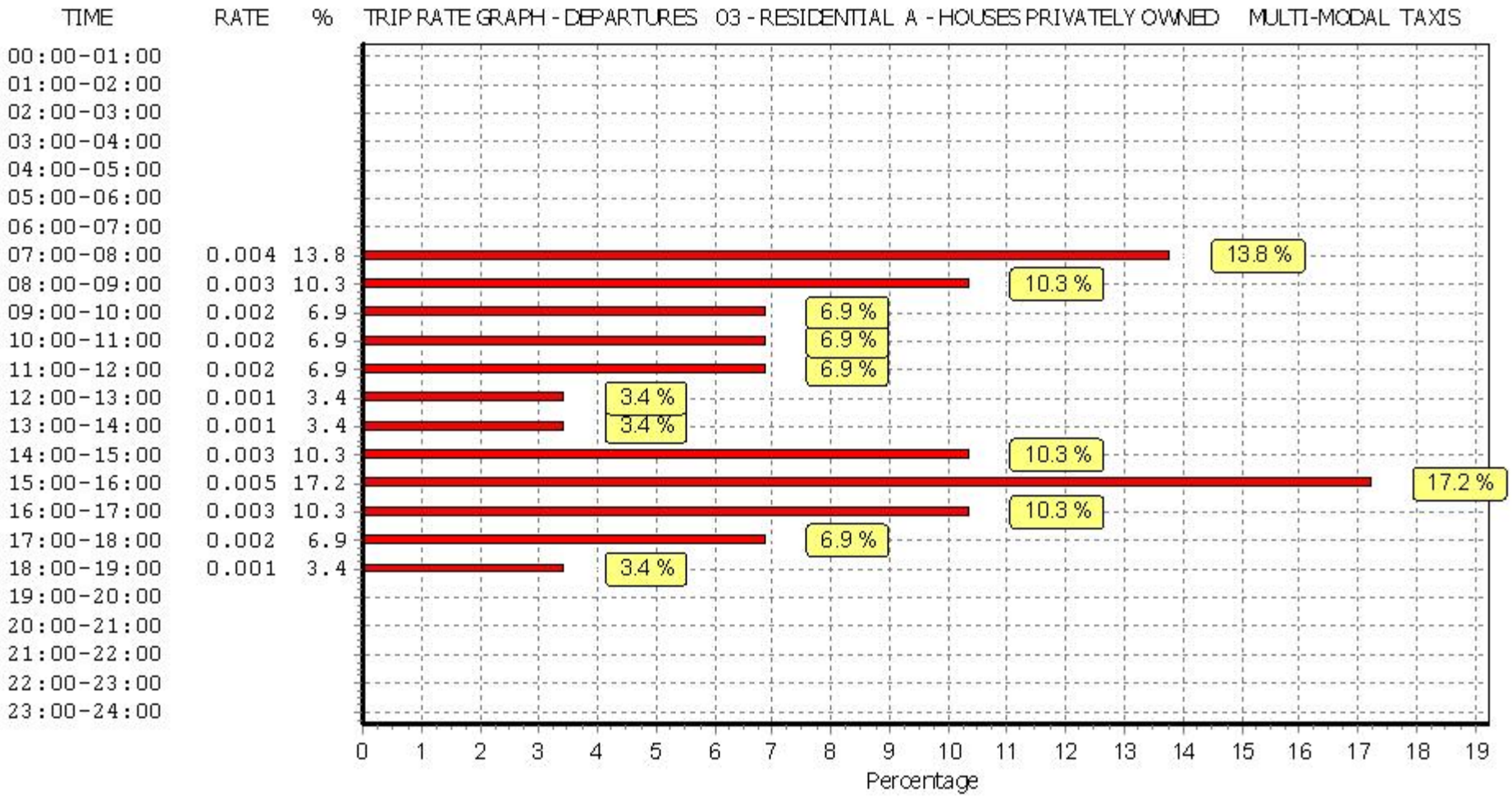
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

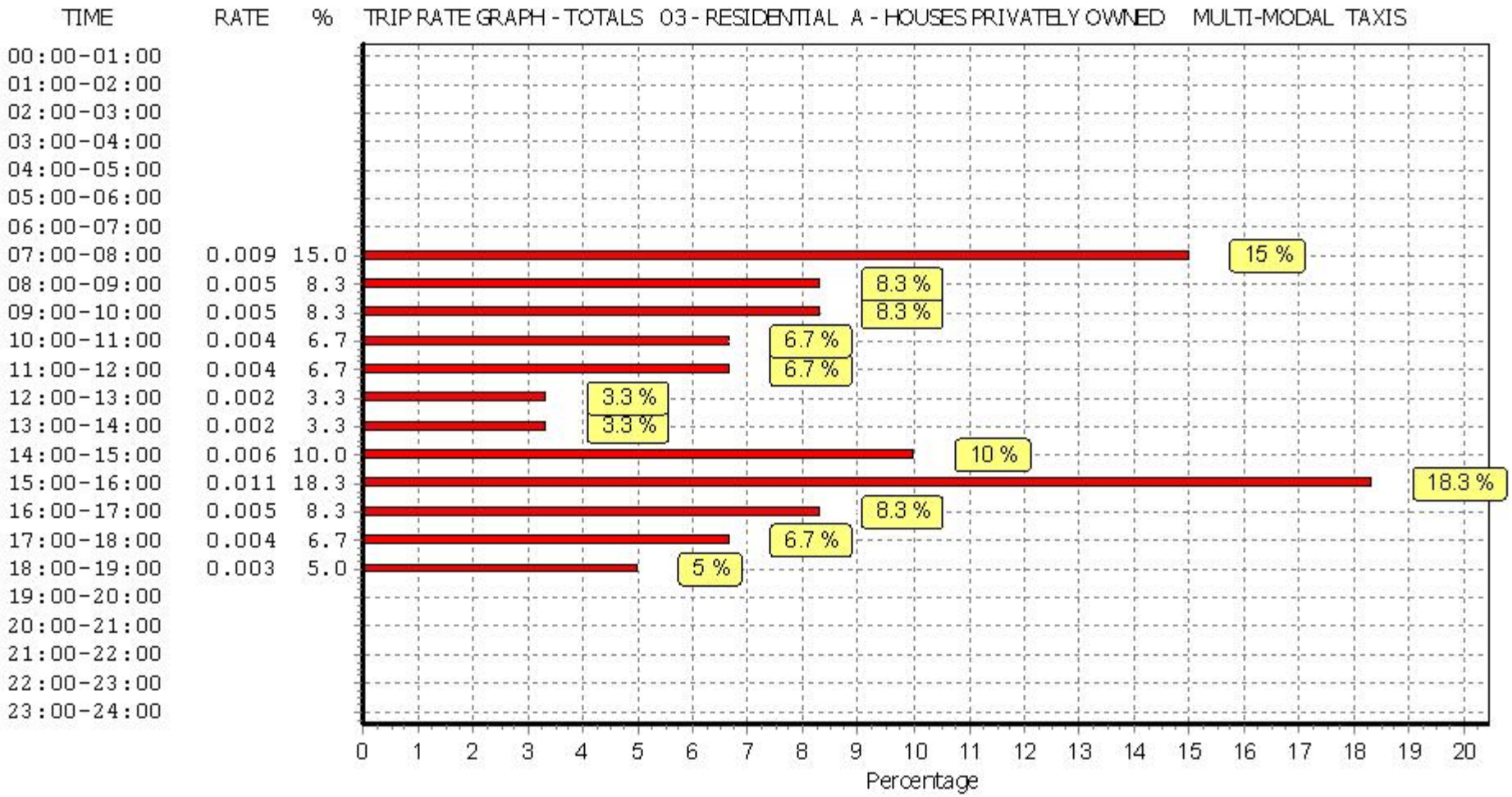
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL OGVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.001	15	123	0.001	15	123	0.002
08:00 - 09:00	15	123	0.001	15	123	0.001	15	123	0.002
09:00 - 10:00	15	123	0.002	15	123	0.001	15	123	0.003
10:00 - 11:00	15	123	0.002	15	123	0.003	15	123	0.005
11:00 - 12:00	15	123	0.003	15	123	0.002	15	123	0.005
12:00 - 13:00	15	123	0.003	15	123	0.004	15	123	0.007
13:00 - 14:00	15	123	0.003	15	123	0.004	15	123	0.007
14:00 - 15:00	15	123	0.001	15	123	0.003	15	123	0.004
15:00 - 16:00	15	123	0.001	15	123	0.001	15	123	0.002
16:00 - 17:00	15	123	0.001	15	123	0.001	15	123	0.002
17:00 - 18:00	15	123	0.001	15	123	0.001	15	123	0.002
18:00 - 19:00	15	123	0.000	15	123	0.000	15	123	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.019			0.022			0.041

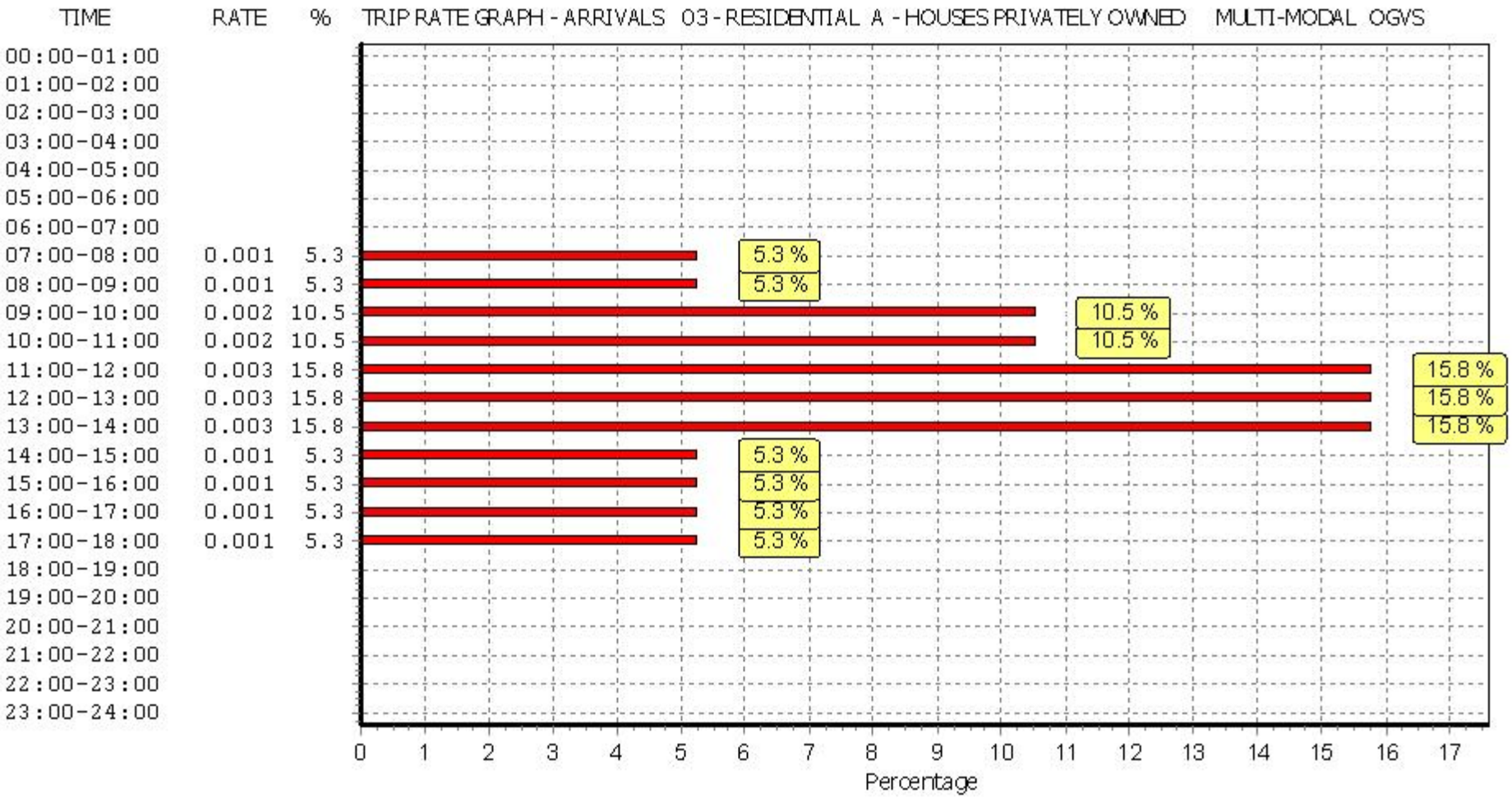
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

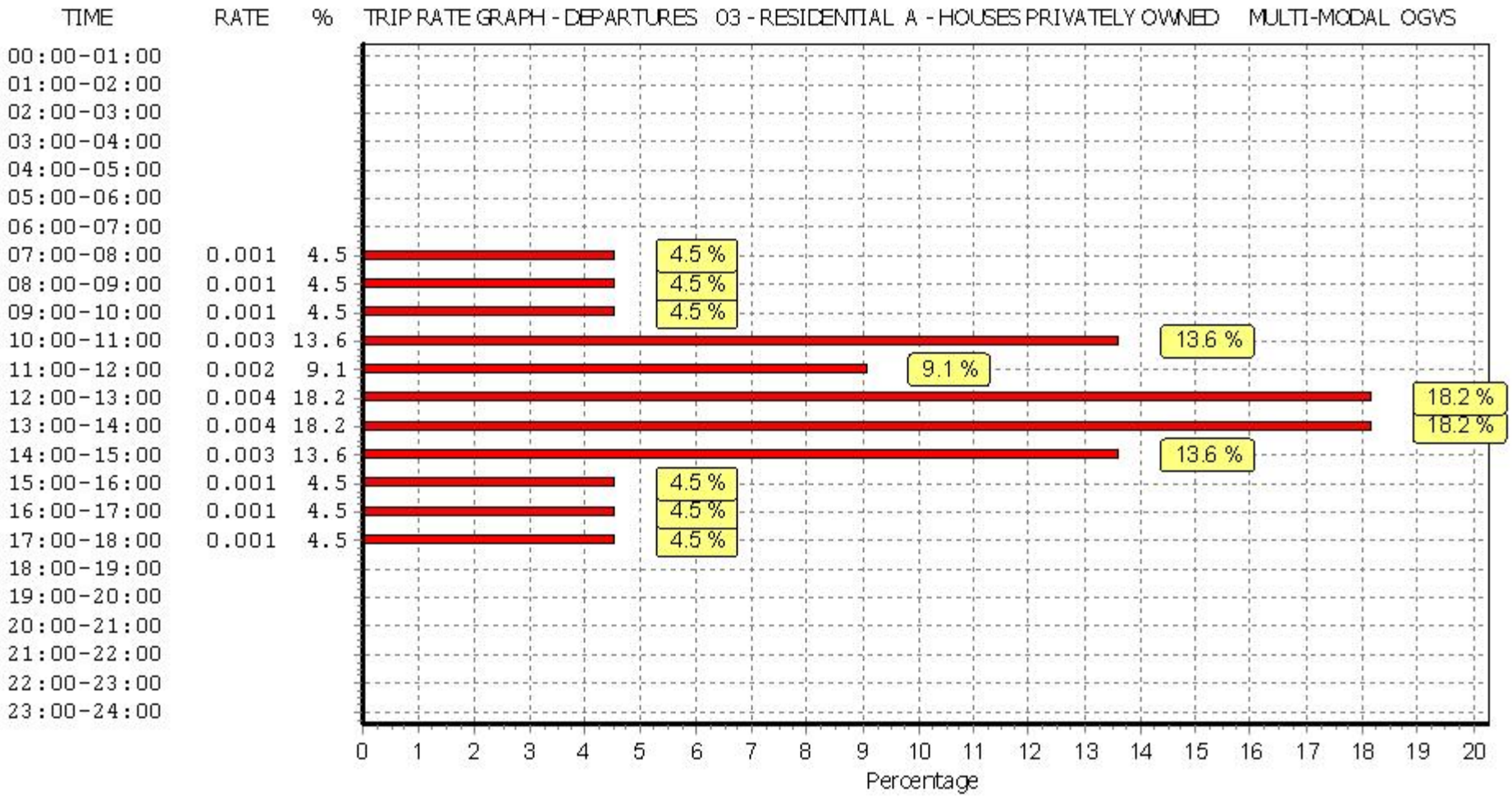
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

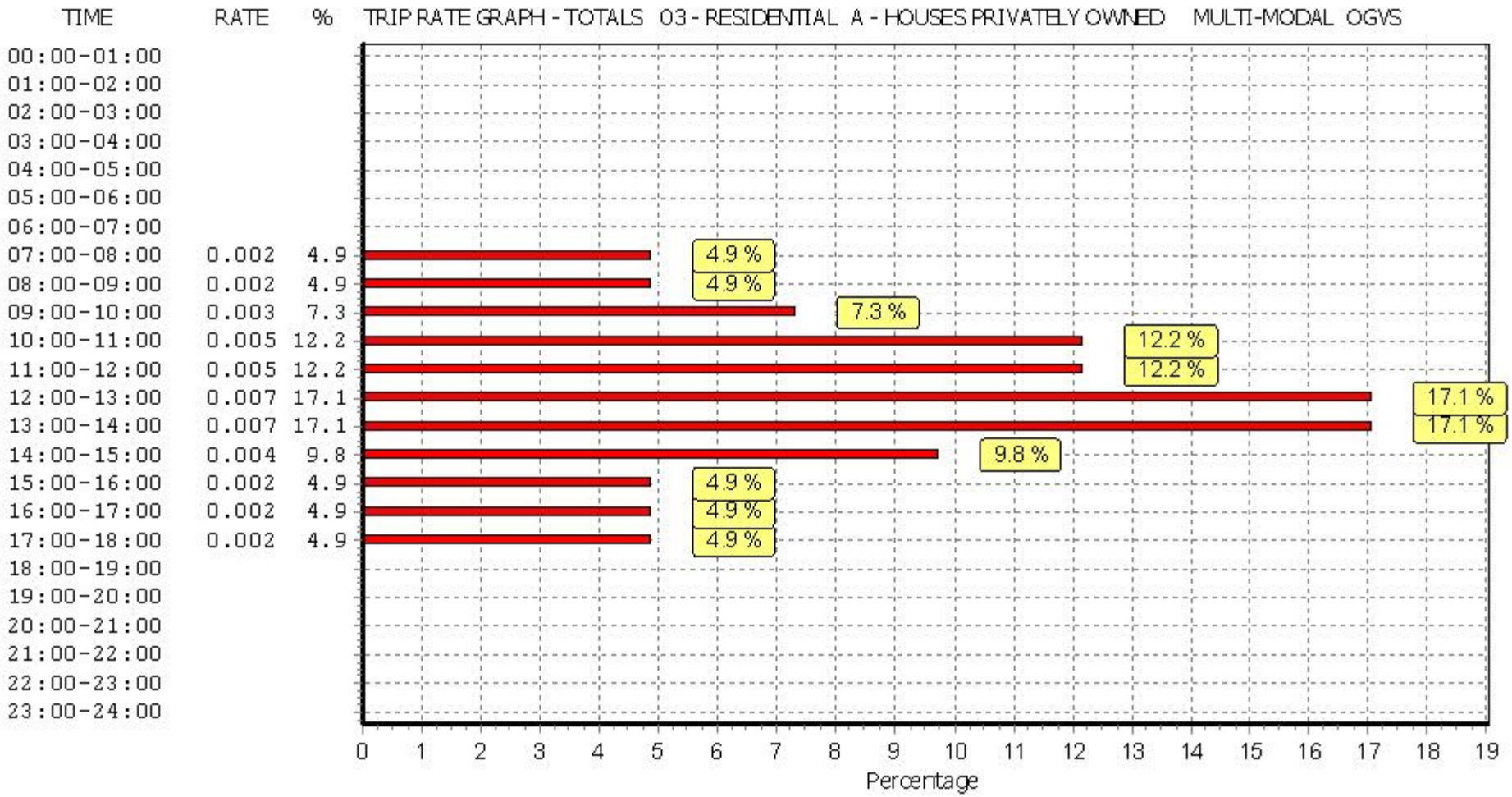
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PSVS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.000	15	123	0.000	15	123	0.000
08:00 - 09:00	15	123	0.001	15	123	0.001	15	123	0.002
09:00 - 10:00	15	123	0.000	15	123	0.000	15	123	0.000
10:00 - 11:00	15	123	0.000	15	123	0.000	15	123	0.000
11:00 - 12:00	15	123	0.002	15	123	0.002	15	123	0.004
12:00 - 13:00	15	123	0.000	15	123	0.000	15	123	0.000
13:00 - 14:00	15	123	0.000	15	123	0.000	15	123	0.000
14:00 - 15:00	15	123	0.000	15	123	0.000	15	123	0.000
15:00 - 16:00	15	123	0.000	15	123	0.000	15	123	0.000
16:00 - 17:00	15	123	0.000	15	123	0.000	15	123	0.000
17:00 - 18:00	15	123	0.000	15	123	0.000	15	123	0.000
18:00 - 19:00	15	123	0.000	15	123	0.000	15	123	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.003			0.006

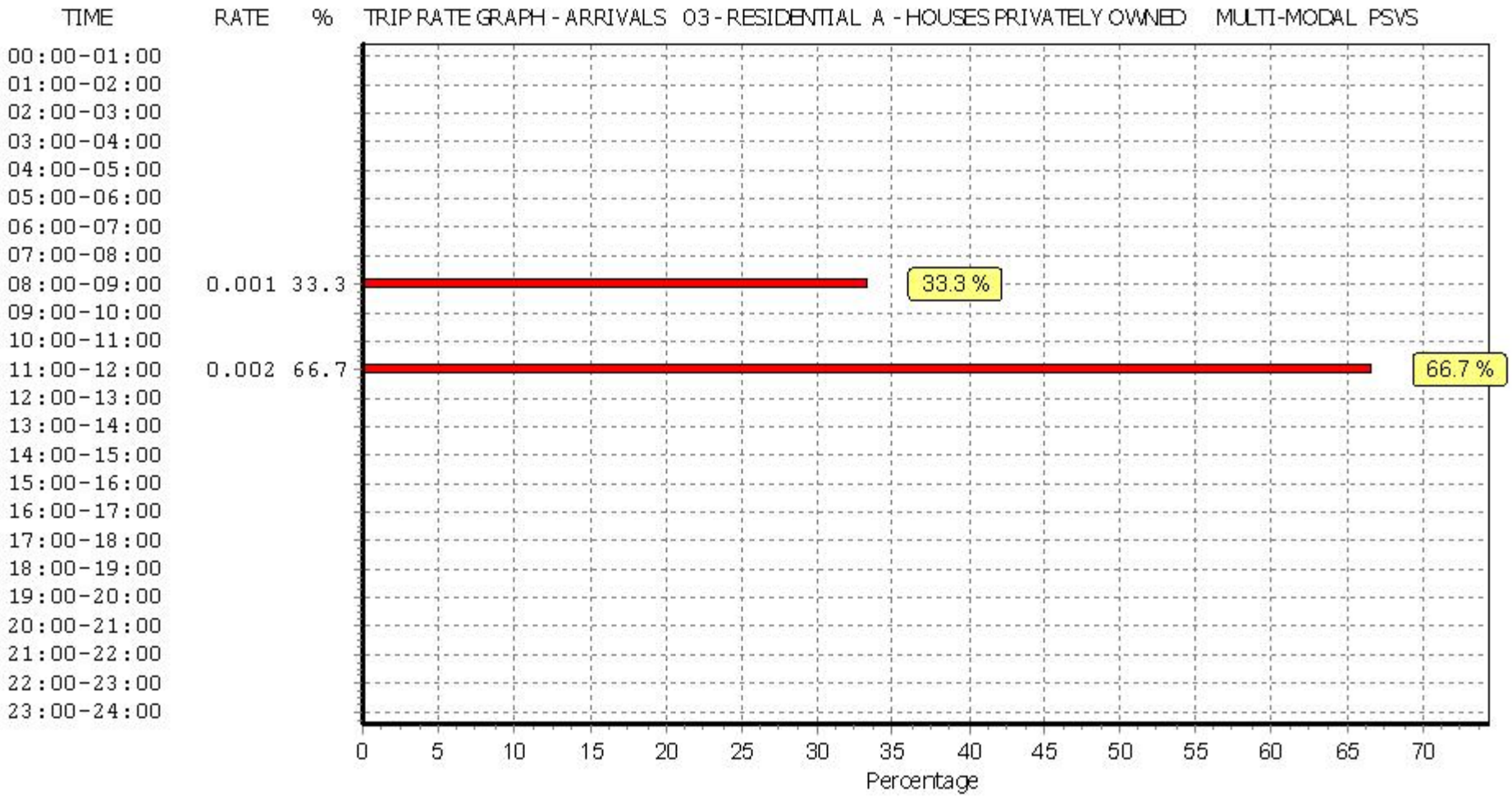
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

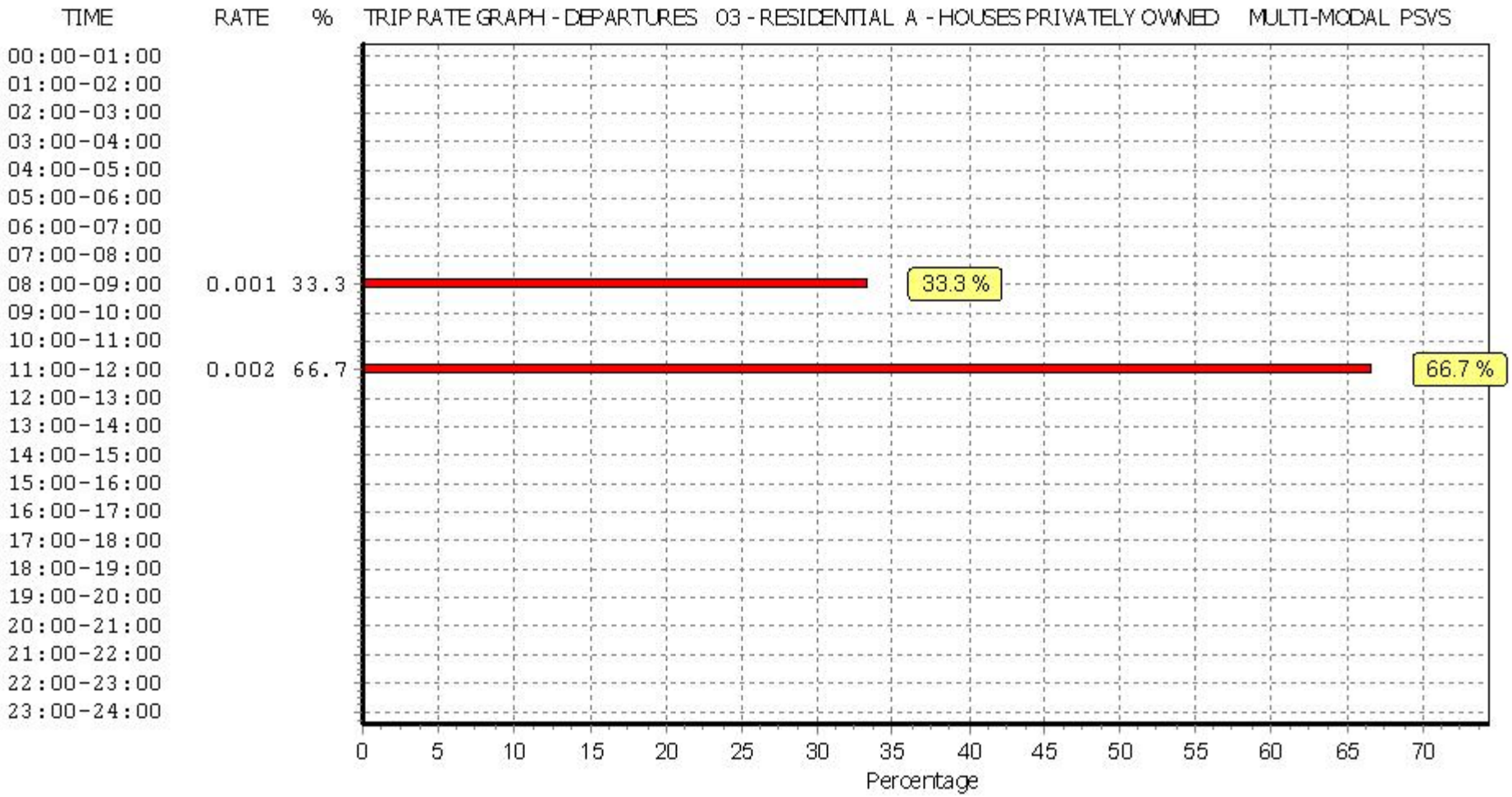
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

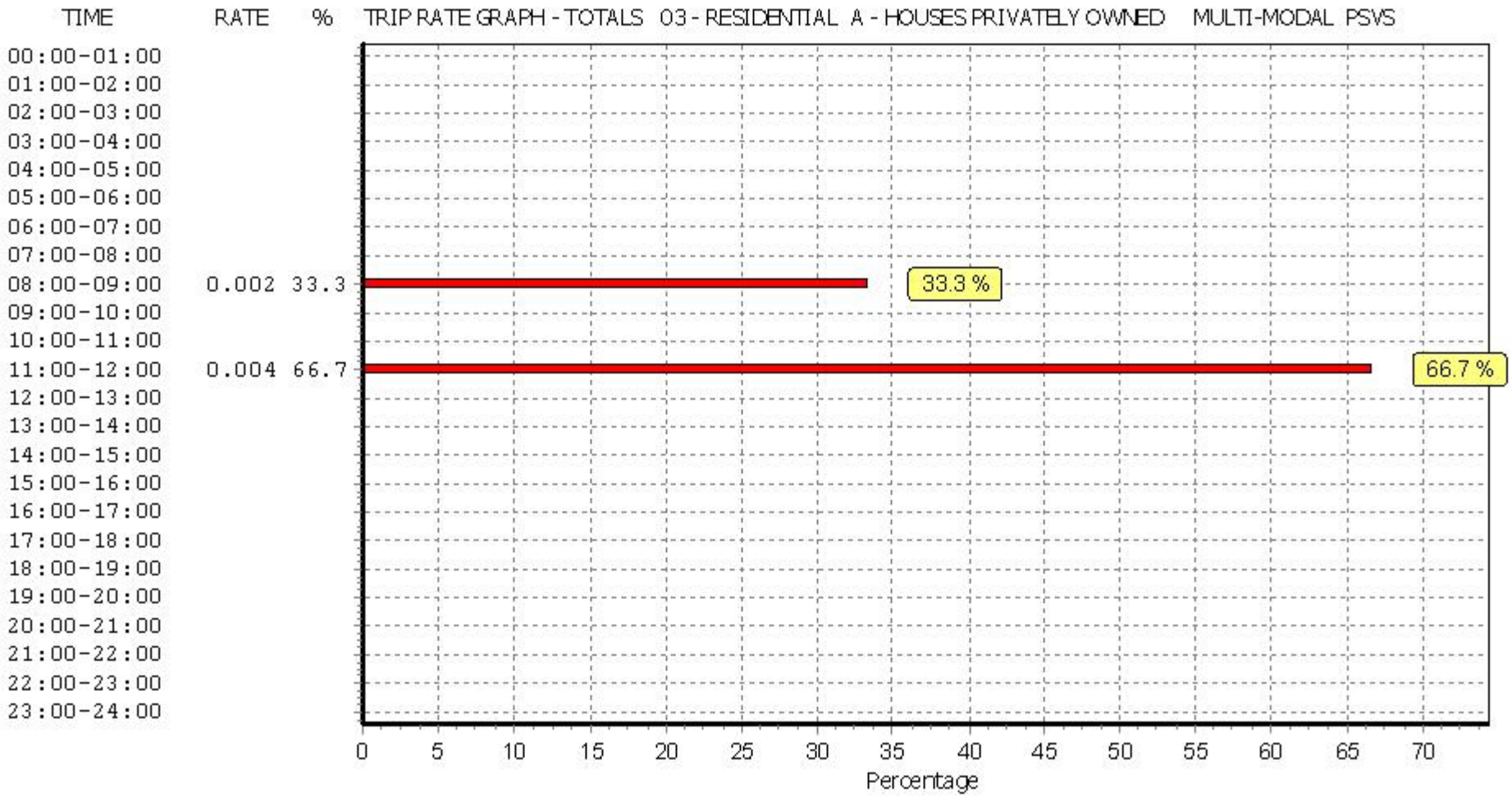
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL CYCLISTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.005	15	123	0.013	15	123	0.018
08:00 - 09:00	15	123	0.002	15	123	0.015	15	123	0.017
09:00 - 10:00	15	123	0.002	15	123	0.005	15	123	0.007
10:00 - 11:00	15	123	0.003	15	123	0.007	15	123	0.010
11:00 - 12:00	15	123	0.003	15	123	0.002	15	123	0.005
12:00 - 13:00	15	123	0.005	15	123	0.003	15	123	0.008
13:00 - 14:00	15	123	0.004	15	123	0.003	15	123	0.007
14:00 - 15:00	15	123	0.004	15	123	0.004	15	123	0.008
15:00 - 16:00	15	123	0.012	15	123	0.007	15	123	0.019
16:00 - 17:00	15	123	0.013	15	123	0.004	15	123	0.017
17:00 - 18:00	15	123	0.016	15	123	0.010	15	123	0.026
18:00 - 19:00	15	123	0.009	15	123	0.005	15	123	0.014
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.078			0.078			0.156

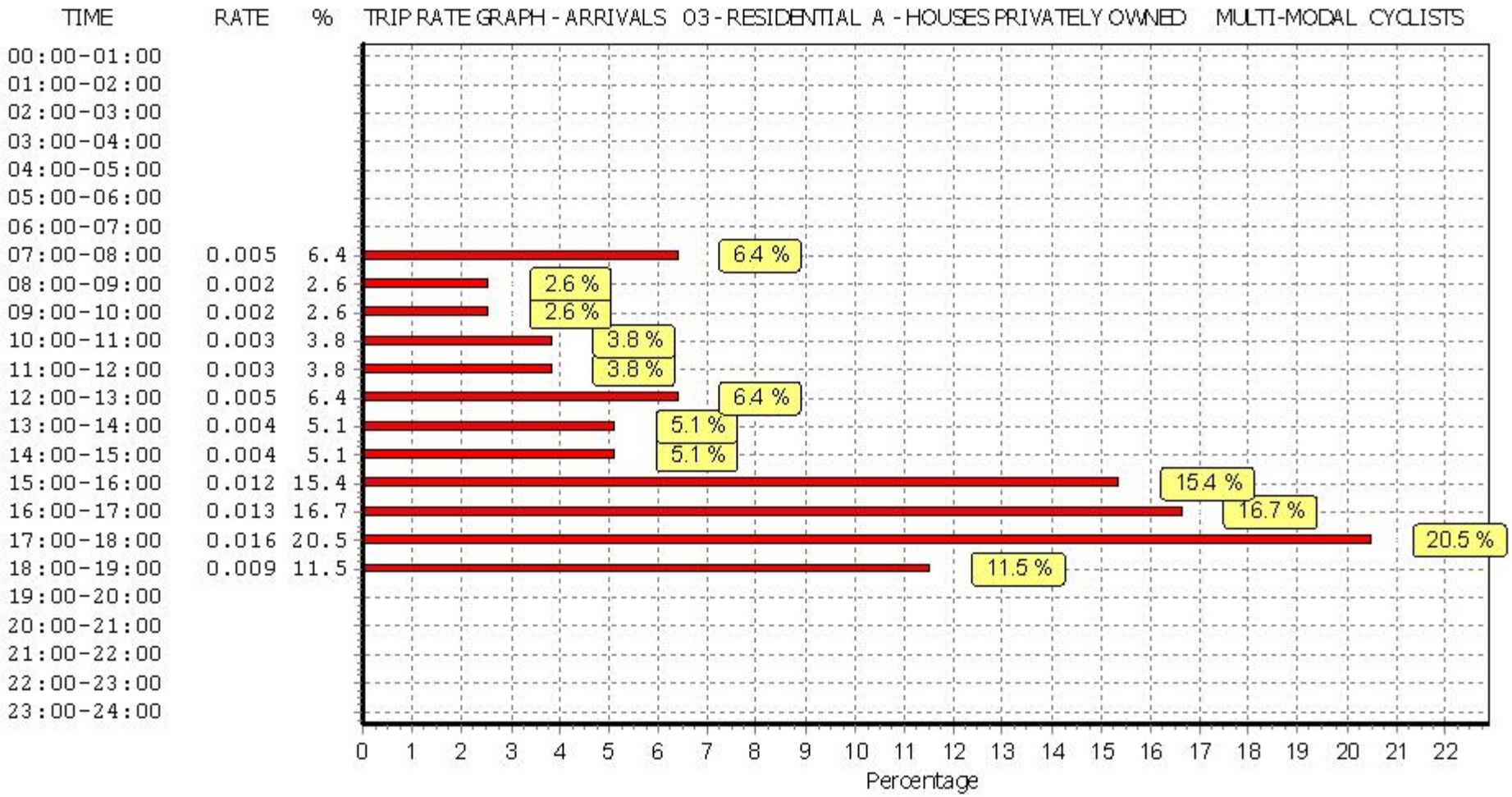
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

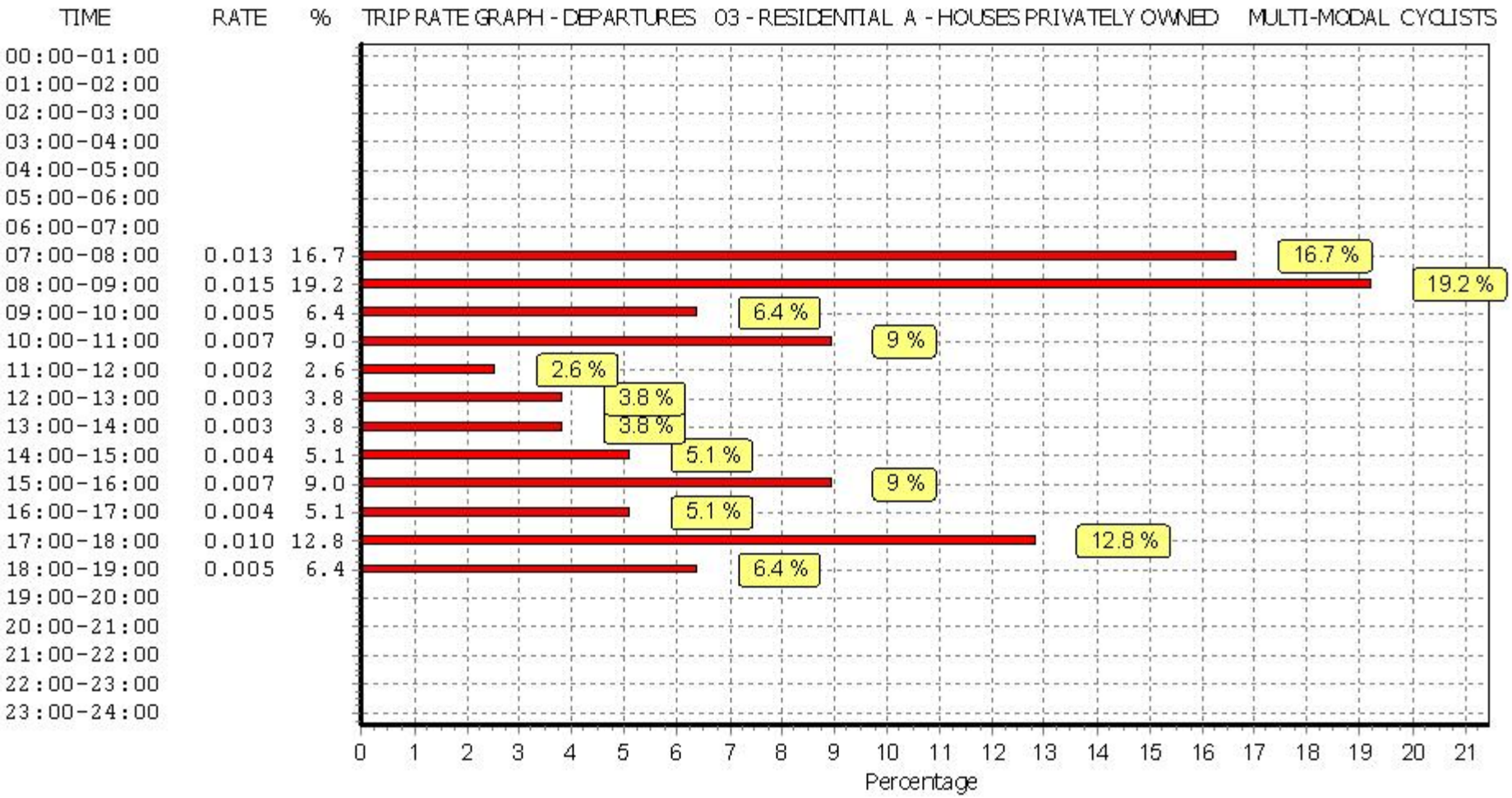
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

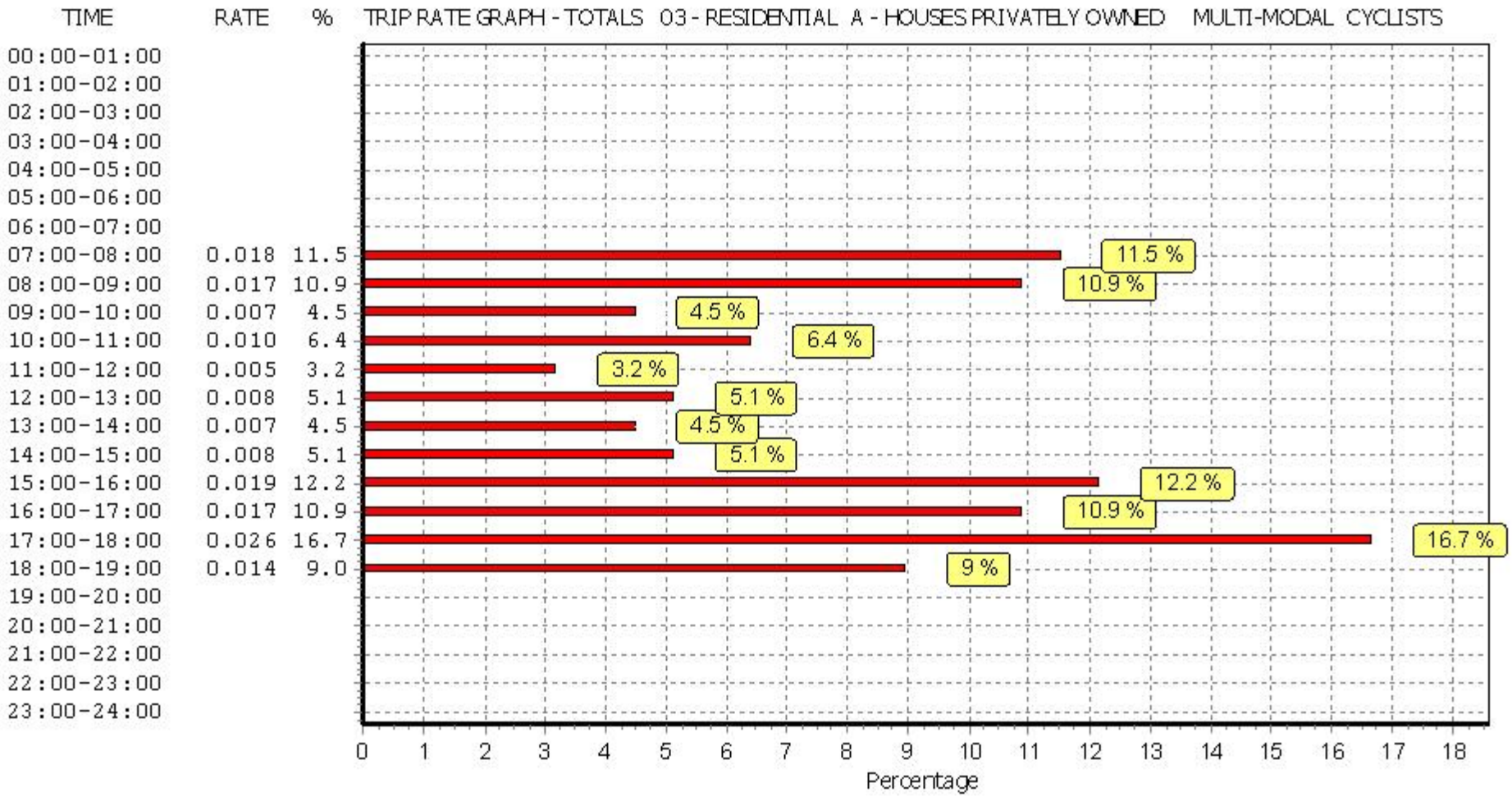
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL VEHICLE OCCUPANTS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.078	15	123	0.311	15	123	0.389
08:00 - 09:00	15	123	0.165	15	123	0.537	15	123	0.702
09:00 - 10:00	15	123	0.174	15	123	0.218	15	123	0.392
10:00 - 11:00	15	123	0.160	15	123	0.217	15	123	0.377
11:00 - 12:00	15	123	0.179	15	123	0.186	15	123	0.365
12:00 - 13:00	15	123	0.206	15	123	0.188	15	123	0.394
13:00 - 14:00	15	123	0.201	15	123	0.192	15	123	0.393
14:00 - 15:00	15	123	0.197	15	123	0.214	15	123	0.411
15:00 - 16:00	15	123	0.420	15	123	0.263	15	123	0.683
16:00 - 17:00	15	123	0.389	15	123	0.235	15	123	0.624
17:00 - 18:00	15	123	0.403	15	123	0.223	15	123	0.626
18:00 - 19:00	15	123	0.287	15	123	0.232	15	123	0.519
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.859			3.016			5.875

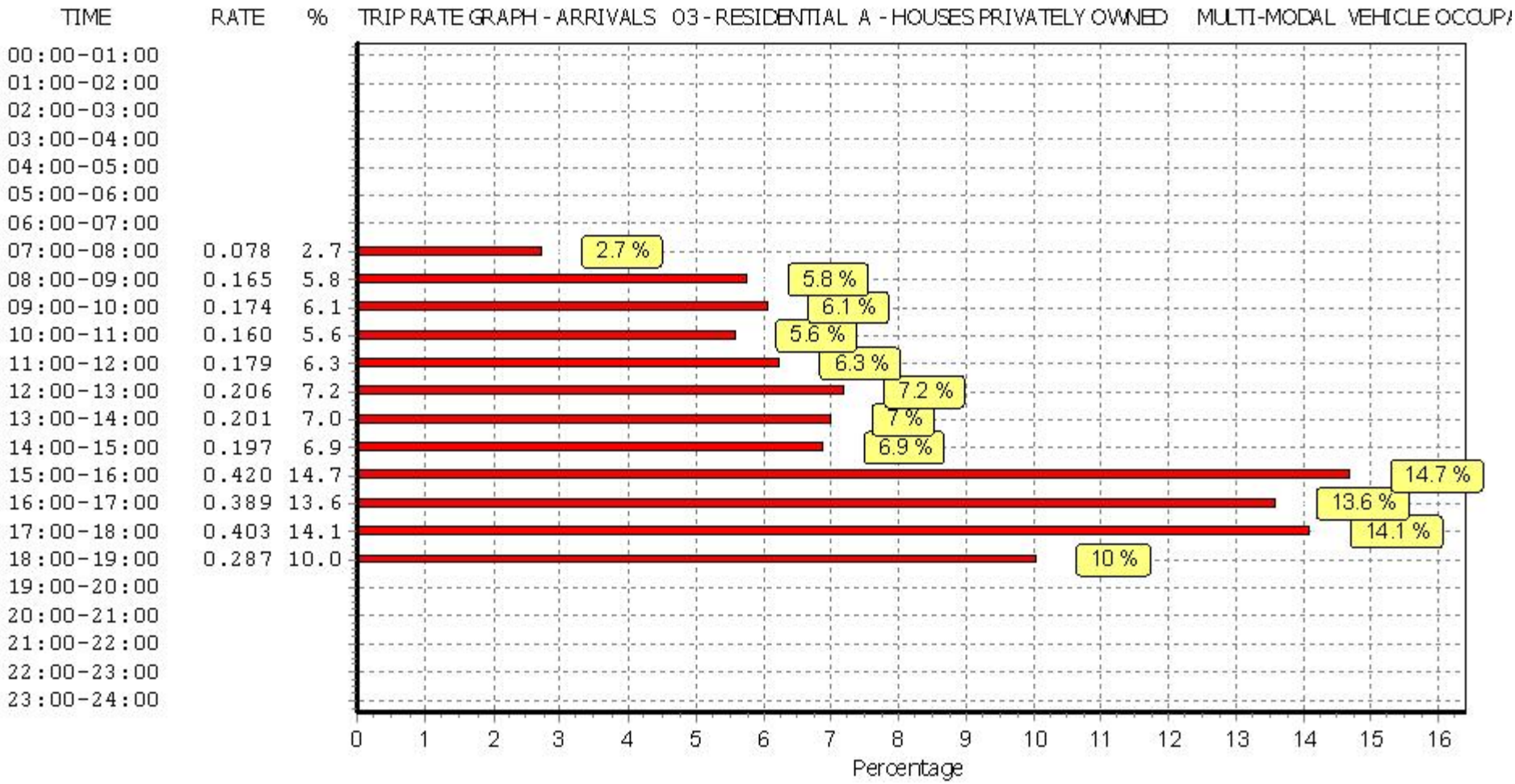
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

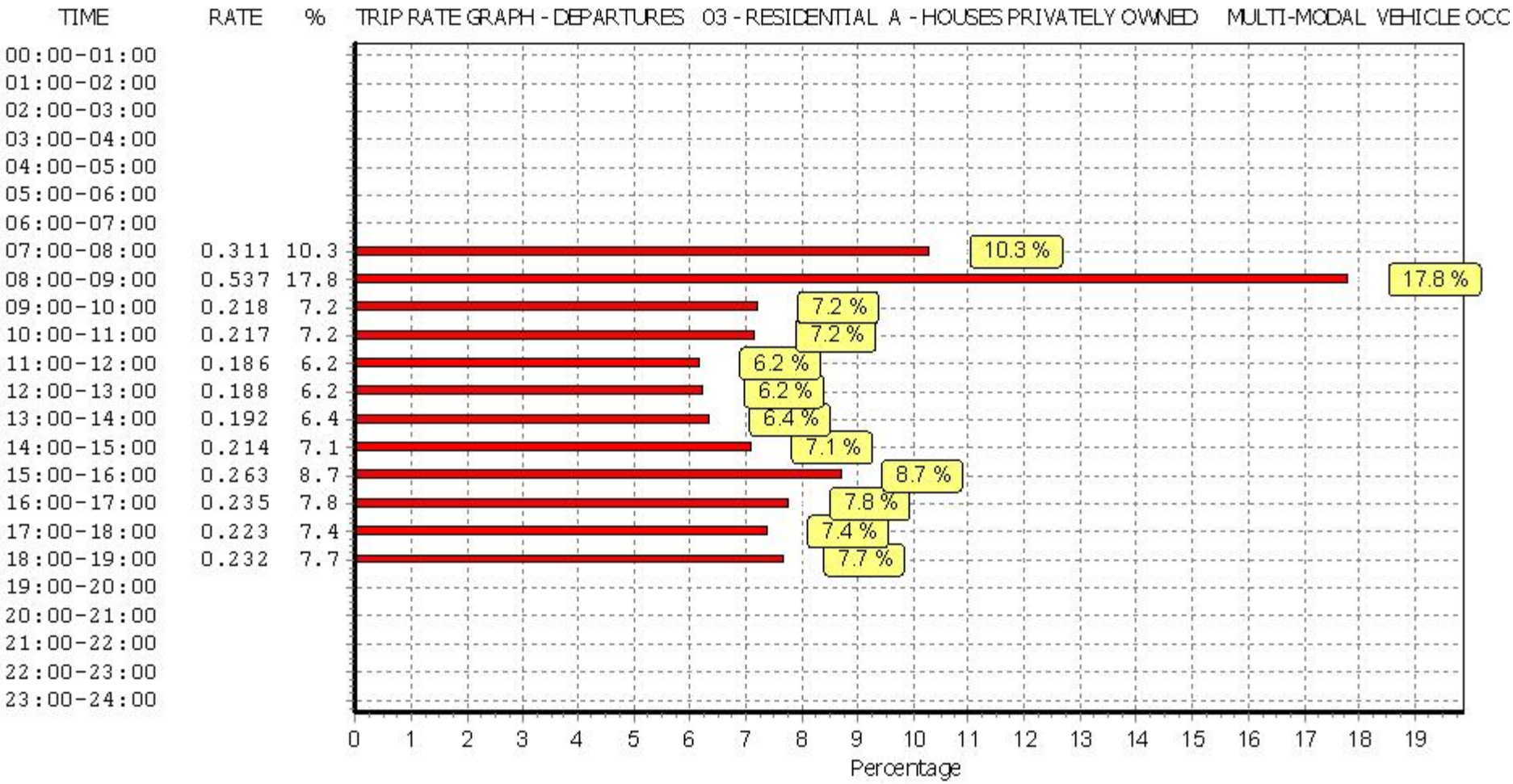
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

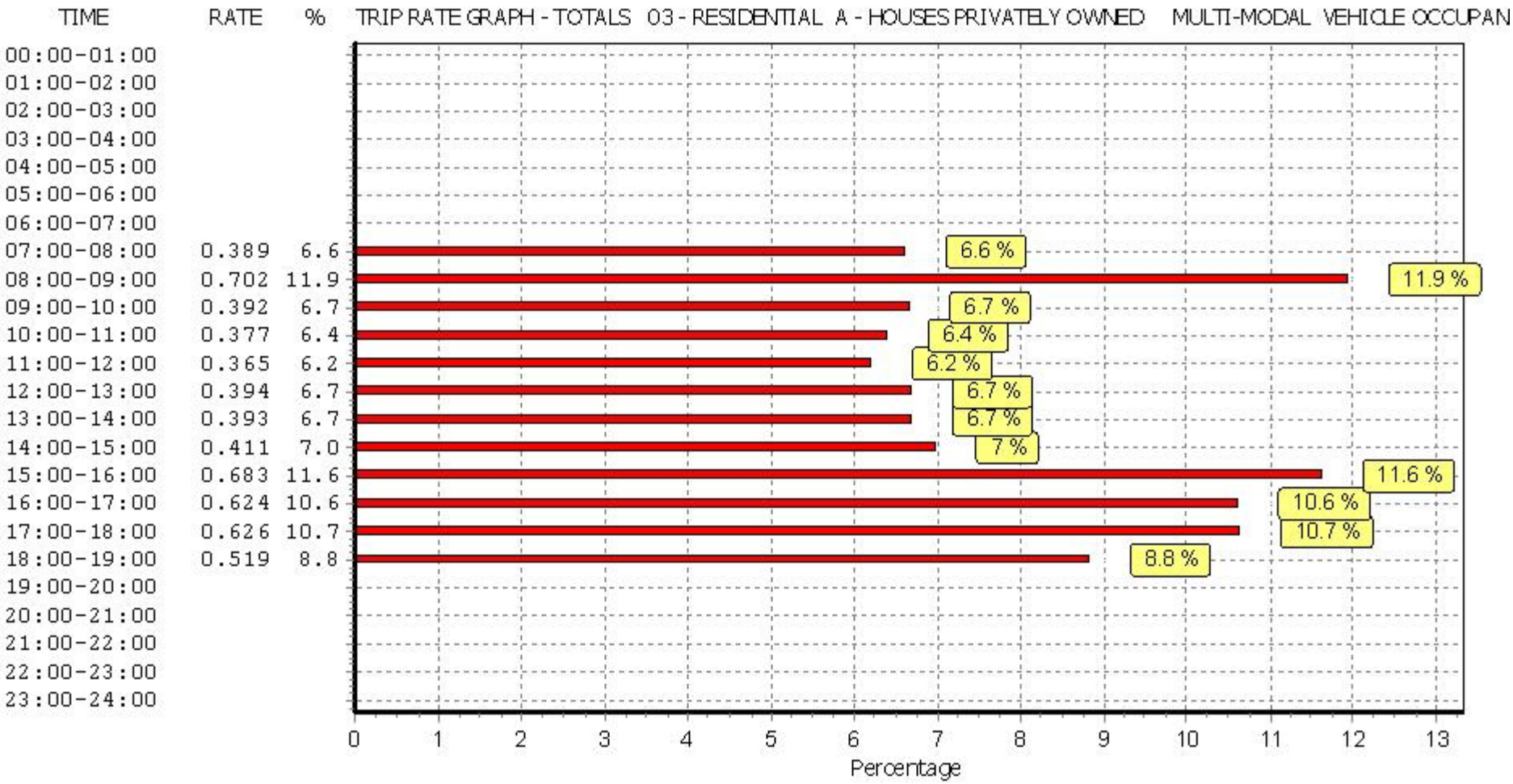
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PEDESTRIANS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.023	15	123	0.066	15	123	0.089
08:00 - 09:00	15	123	0.034	15	123	0.127	15	123	0.161
09:00 - 10:00	15	123	0.045	15	123	0.057	15	123	0.102
10:00 - 11:00	15	123	0.043	15	123	0.045	15	123	0.088
11:00 - 12:00	15	123	0.029	15	123	0.023	15	123	0.052
12:00 - 13:00	15	123	0.033	15	123	0.024	15	123	0.057
13:00 - 14:00	15	123	0.027	15	123	0.040	15	123	0.067
14:00 - 15:00	15	123	0.042	15	123	0.048	15	123	0.090
15:00 - 16:00	15	123	0.128	15	123	0.061	15	123	0.189
16:00 - 17:00	15	123	0.086	15	123	0.040	15	123	0.126
17:00 - 18:00	15	123	0.071	15	123	0.036	15	123	0.107
18:00 - 19:00	15	123	0.051	15	123	0.040	15	123	0.091
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.612			0.607			1.219

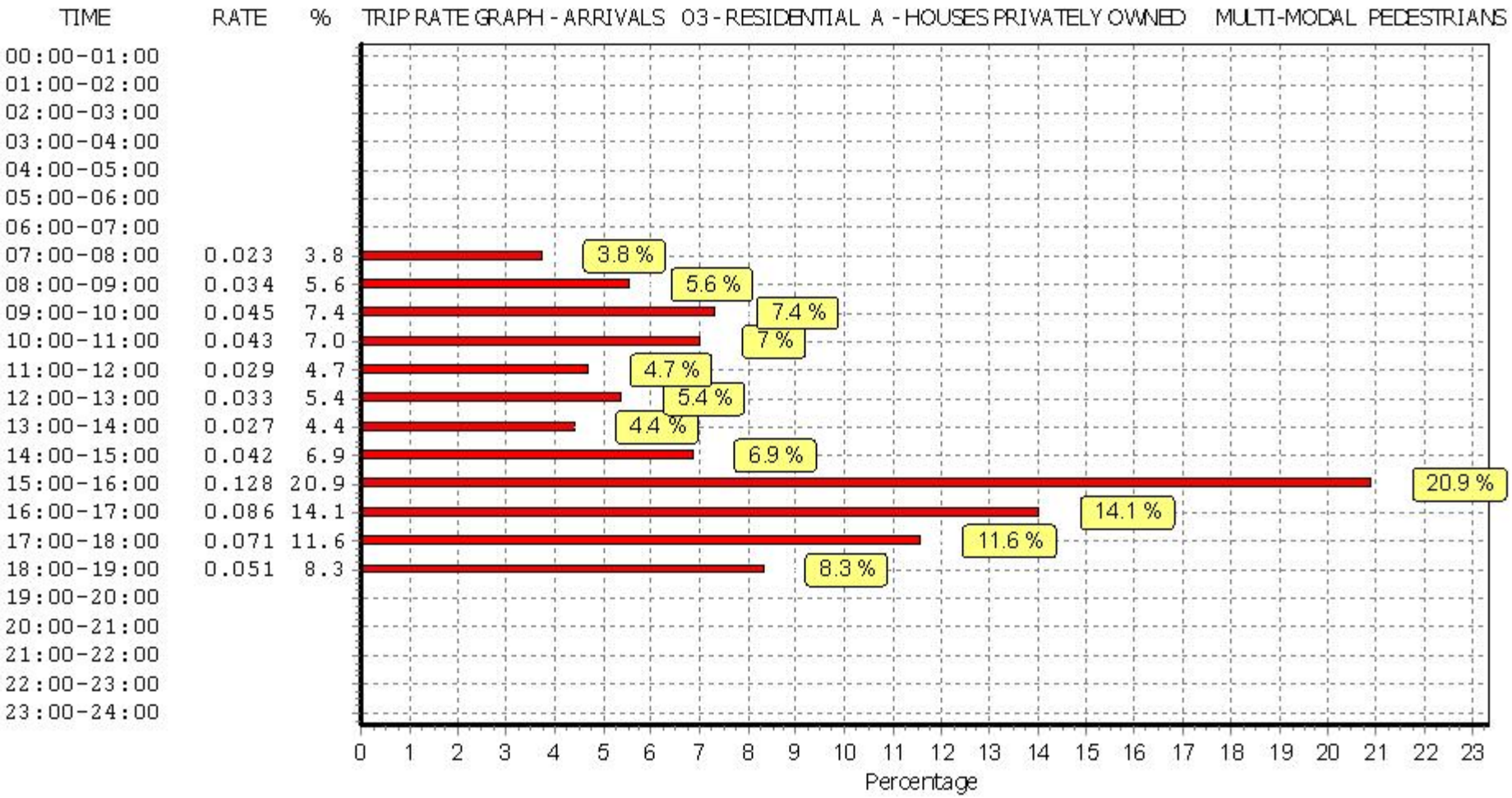
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

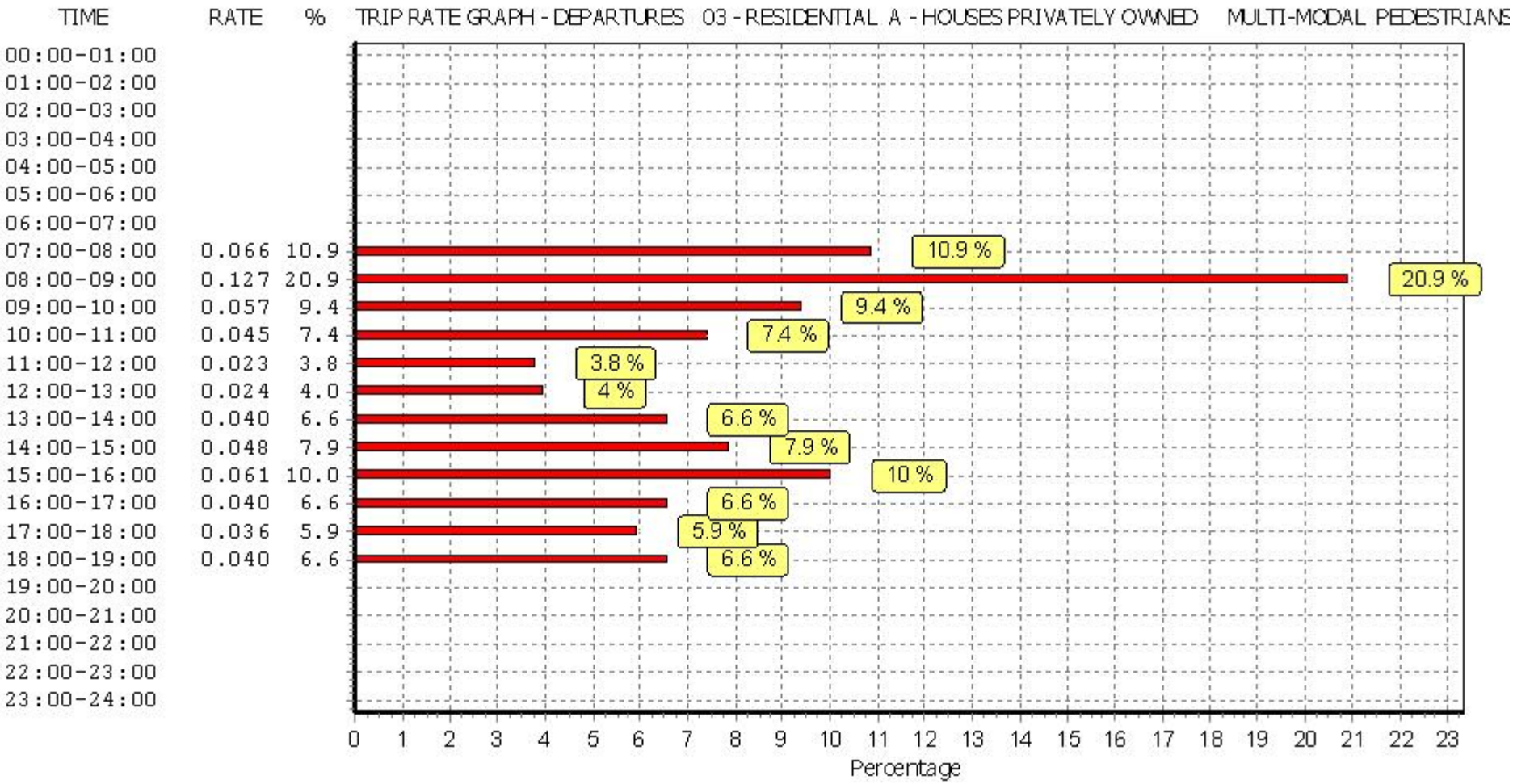
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

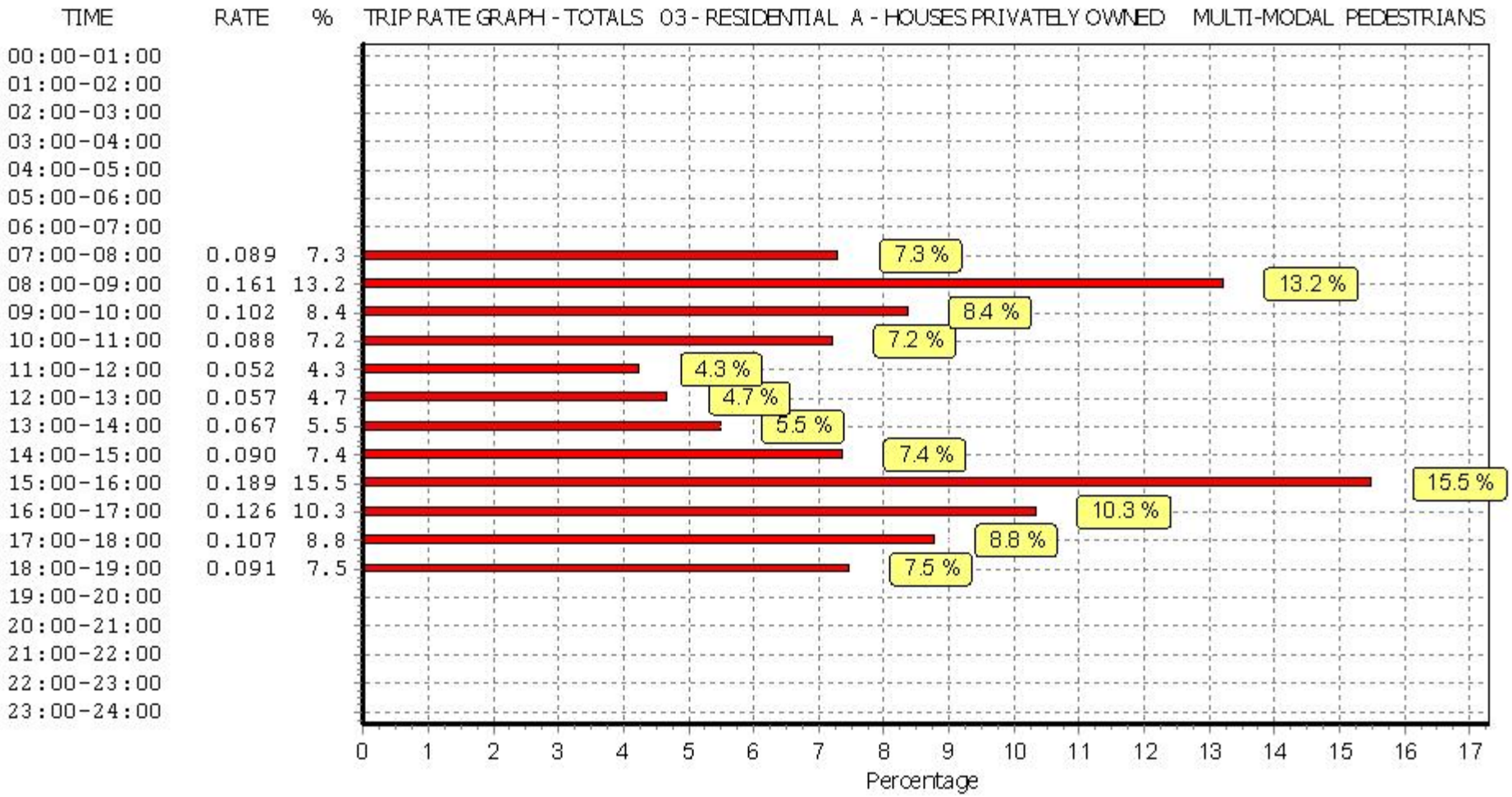
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL BUS/TRAM PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.001	15	123	0.005	15	123	0.006
08:00 - 09:00	15	123	0.002	15	123	0.006	15	123	0.008
09:00 - 10:00	15	123	0.001	15	123	0.005	15	123	0.006
10:00 - 11:00	15	123	0.003	15	123	0.005	15	123	0.008
11:00 - 12:00	15	123	0.003	15	123	0.005	15	123	0.008
12:00 - 13:00	15	123	0.006	15	123	0.004	15	123	0.010
13:00 - 14:00	15	123	0.005	15	123	0.001	15	123	0.006
14:00 - 15:00	15	123	0.002	15	123	0.004	15	123	0.006
15:00 - 16:00	15	123	0.002	15	123	0.002	15	123	0.004
16:00 - 17:00	15	123	0.005	15	123	0.003	15	123	0.008
17:00 - 18:00	15	123	0.009	15	123	0.002	15	123	0.011
18:00 - 19:00	15	123	0.007	15	123	0.000	15	123	0.007
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.046			0.042			0.088

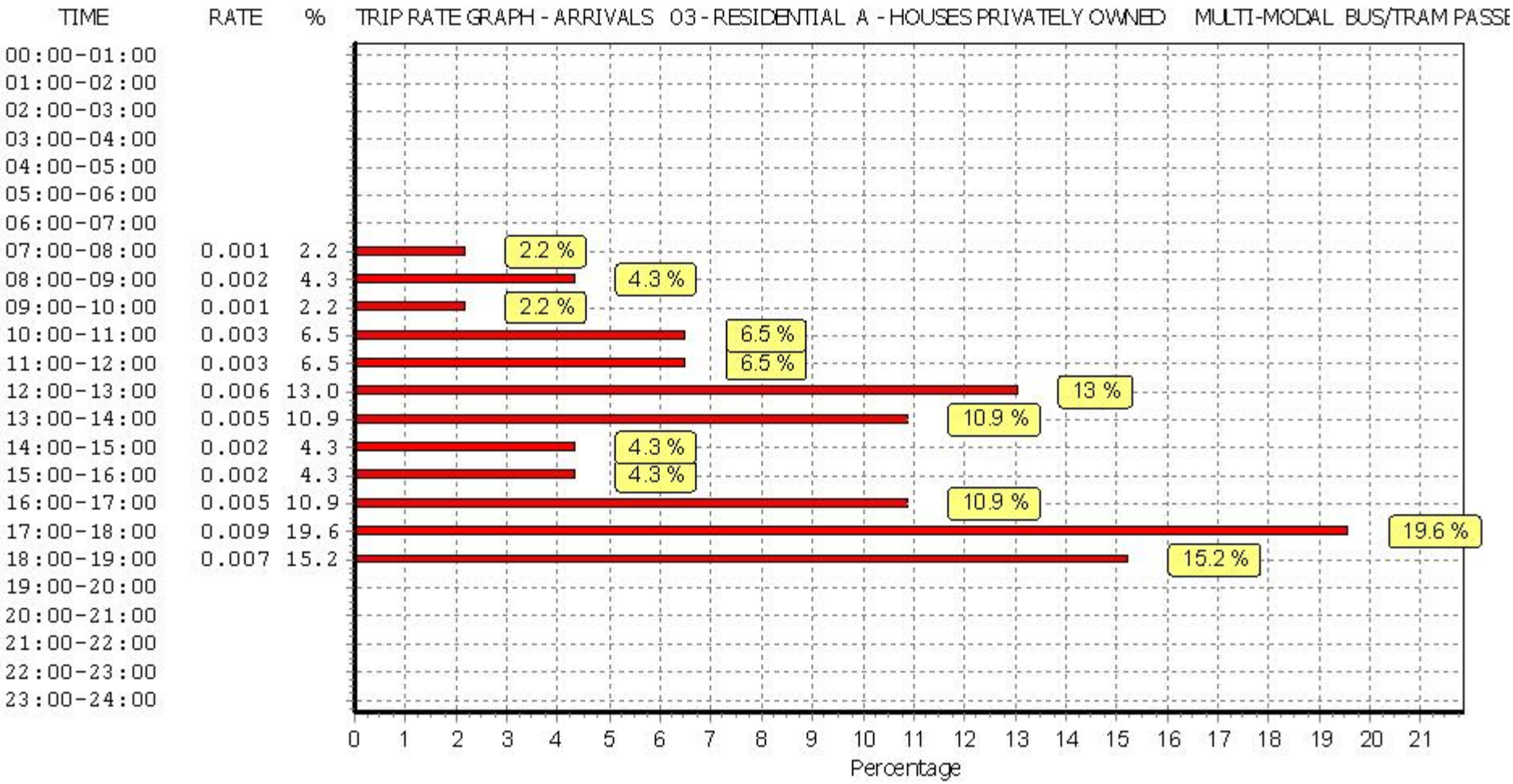
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

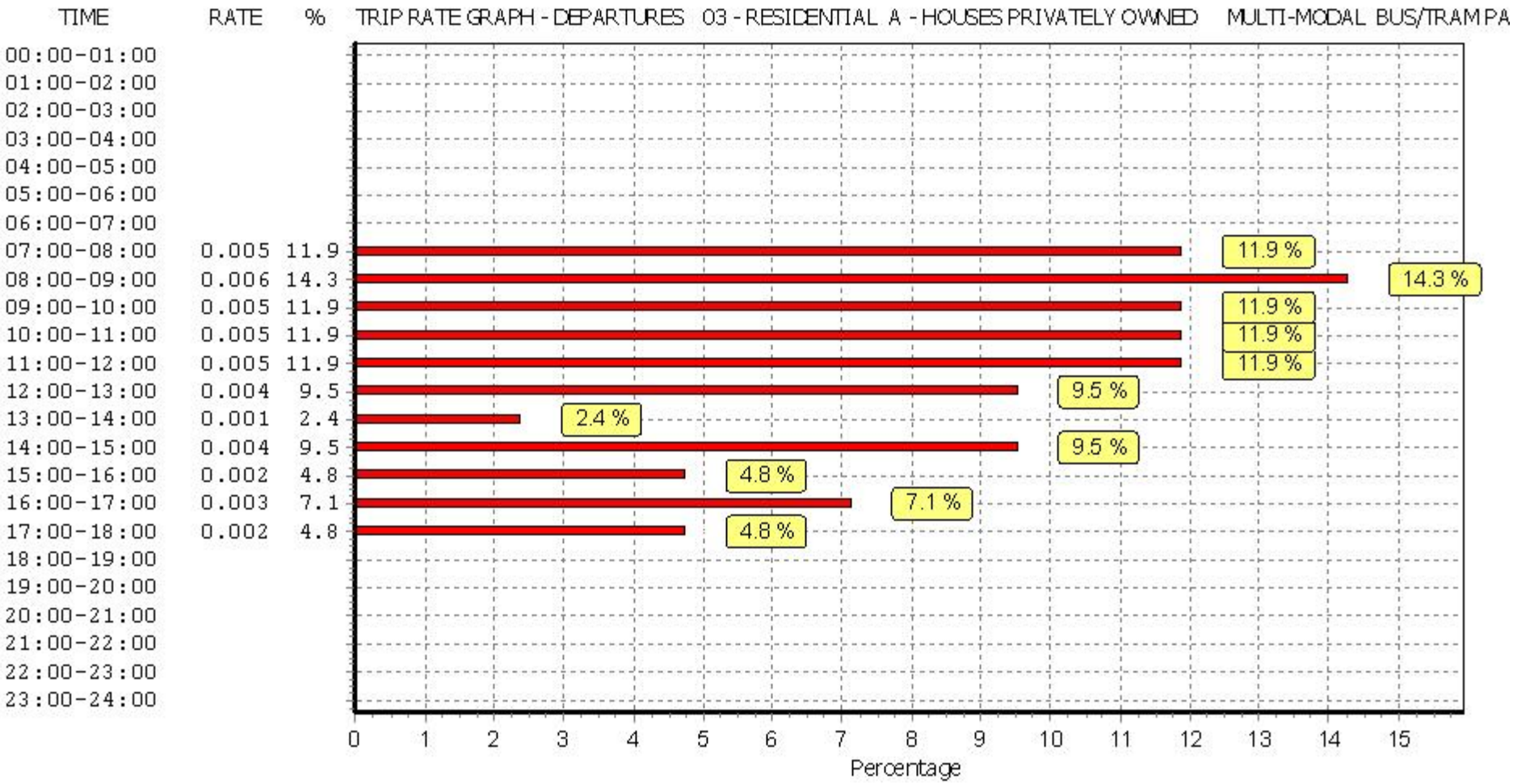
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

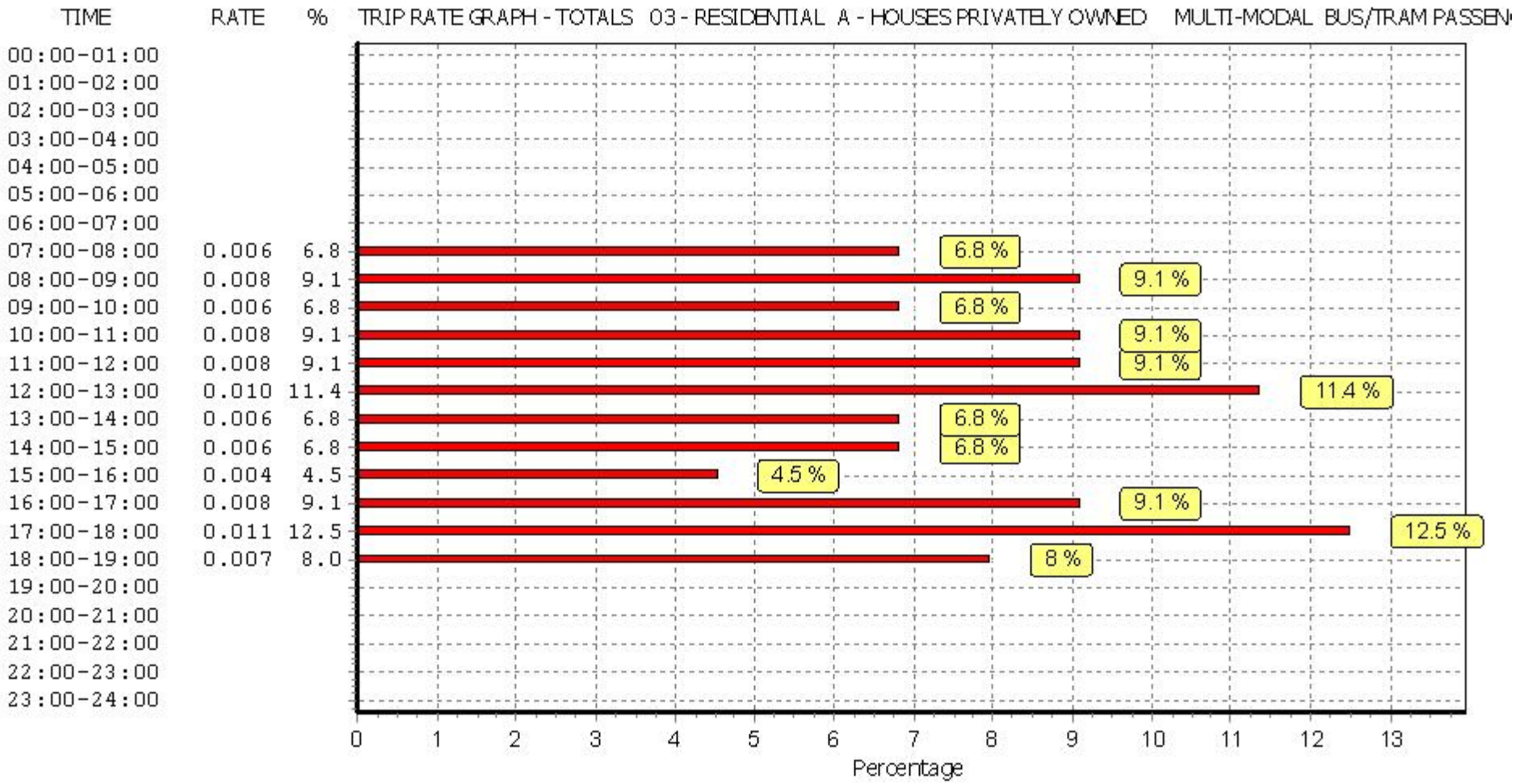
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL RAIL PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.000	15	123	0.005	15	123	0.005
08:00 - 09:00	15	123	0.000	15	123	0.002	15	123	0.002
09:00 - 10:00	15	123	0.000	15	123	0.002	15	123	0.002
10:00 - 11:00	15	123	0.000	15	123	0.001	15	123	0.001
11:00 - 12:00	15	123	0.000	15	123	0.001	15	123	0.001
12:00 - 13:00	15	123	0.000	15	123	0.001	15	123	0.001
13:00 - 14:00	15	123	0.000	15	123	0.000	15	123	0.000
14:00 - 15:00	15	123	0.001	15	123	0.001	15	123	0.002
15:00 - 16:00	15	123	0.001	15	123	0.002	15	123	0.003
16:00 - 17:00	15	123	0.000	15	123	0.000	15	123	0.000
17:00 - 18:00	15	123	0.003	15	123	0.000	15	123	0.003
18:00 - 19:00	15	123	0.003	15	123	0.000	15	123	0.003
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.008			0.015			0.023

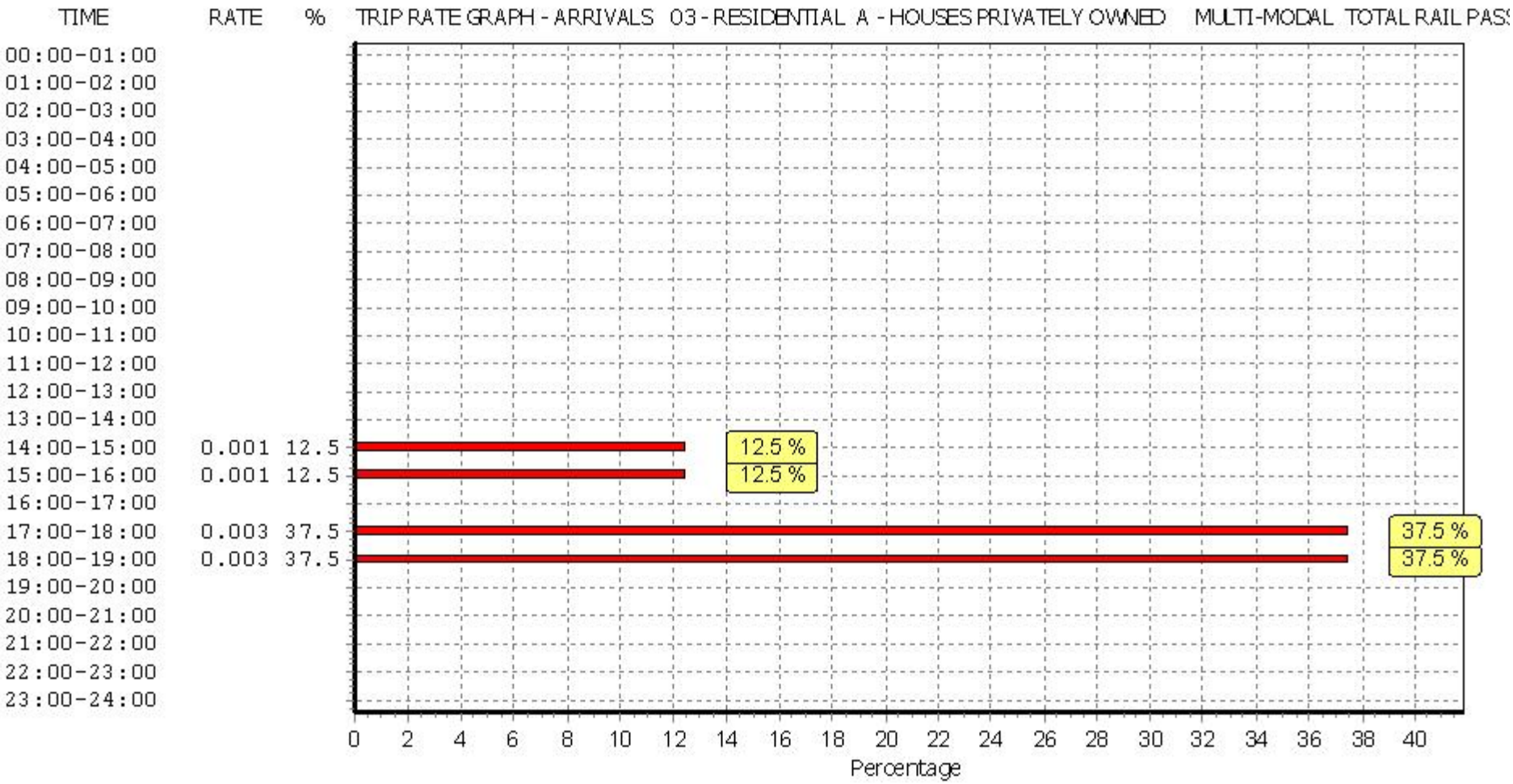
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

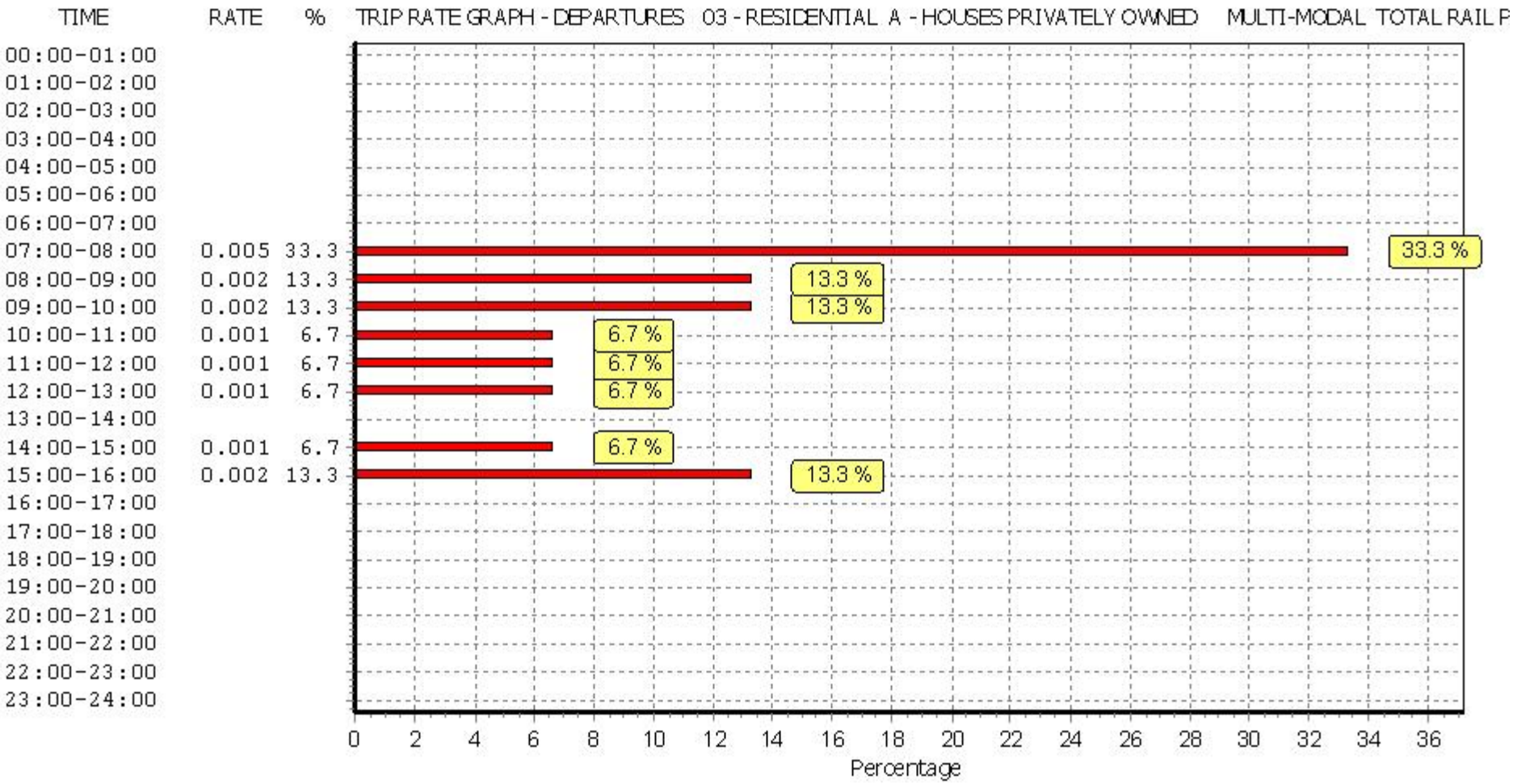
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

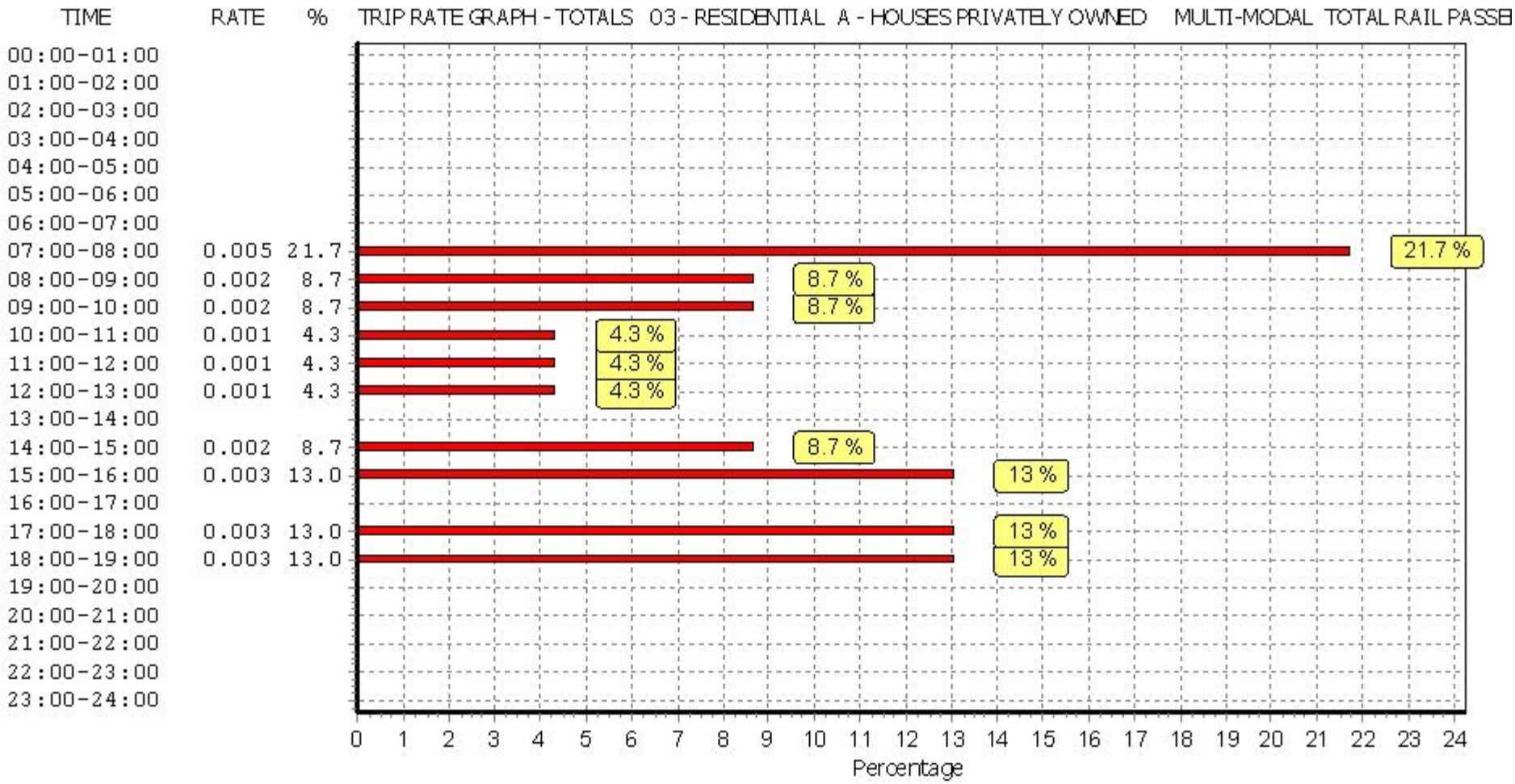
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL COACH PASSENGERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.000	15	123	0.000	15	123	0.000
08:00 - 09:00	15	123	0.001	15	123	0.002	15	123	0.003
09:00 - 10:00	15	123	0.000	15	123	0.000	15	123	0.000
10:00 - 11:00	15	123	0.000	15	123	0.000	15	123	0.000
11:00 - 12:00	15	123	0.002	15	123	0.001	15	123	0.003
12:00 - 13:00	15	123	0.000	15	123	0.000	15	123	0.000
13:00 - 14:00	15	123	0.000	15	123	0.000	15	123	0.000
14:00 - 15:00	15	123	0.000	15	123	0.000	15	123	0.000
15:00 - 16:00	15	123	0.000	15	123	0.000	15	123	0.000
16:00 - 17:00	15	123	0.000	15	123	0.000	15	123	0.000
17:00 - 18:00	15	123	0.000	15	123	0.000	15	123	0.000
18:00 - 19:00	15	123	0.000	15	123	0.000	15	123	0.000
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.003			0.003			0.006

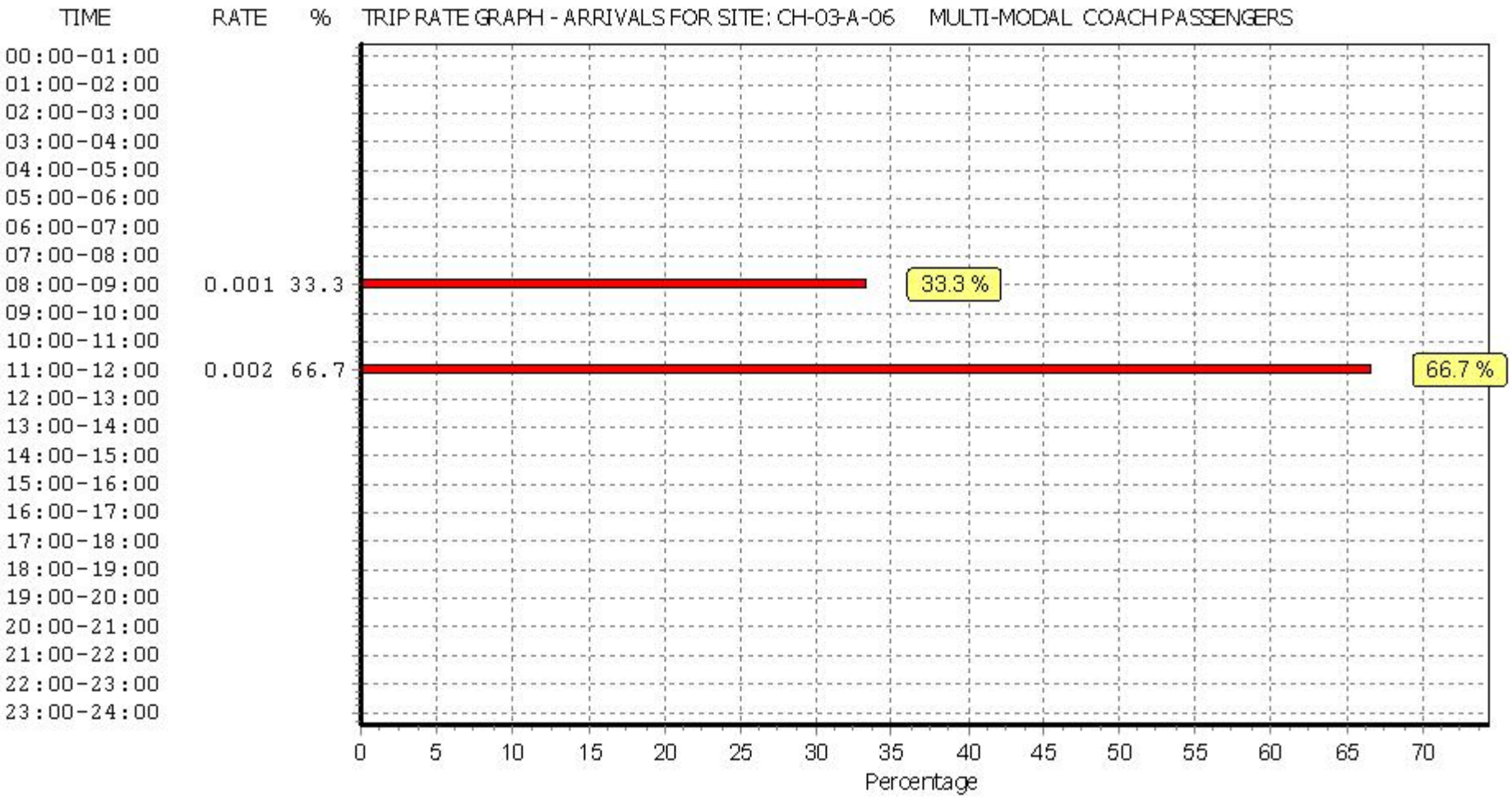
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

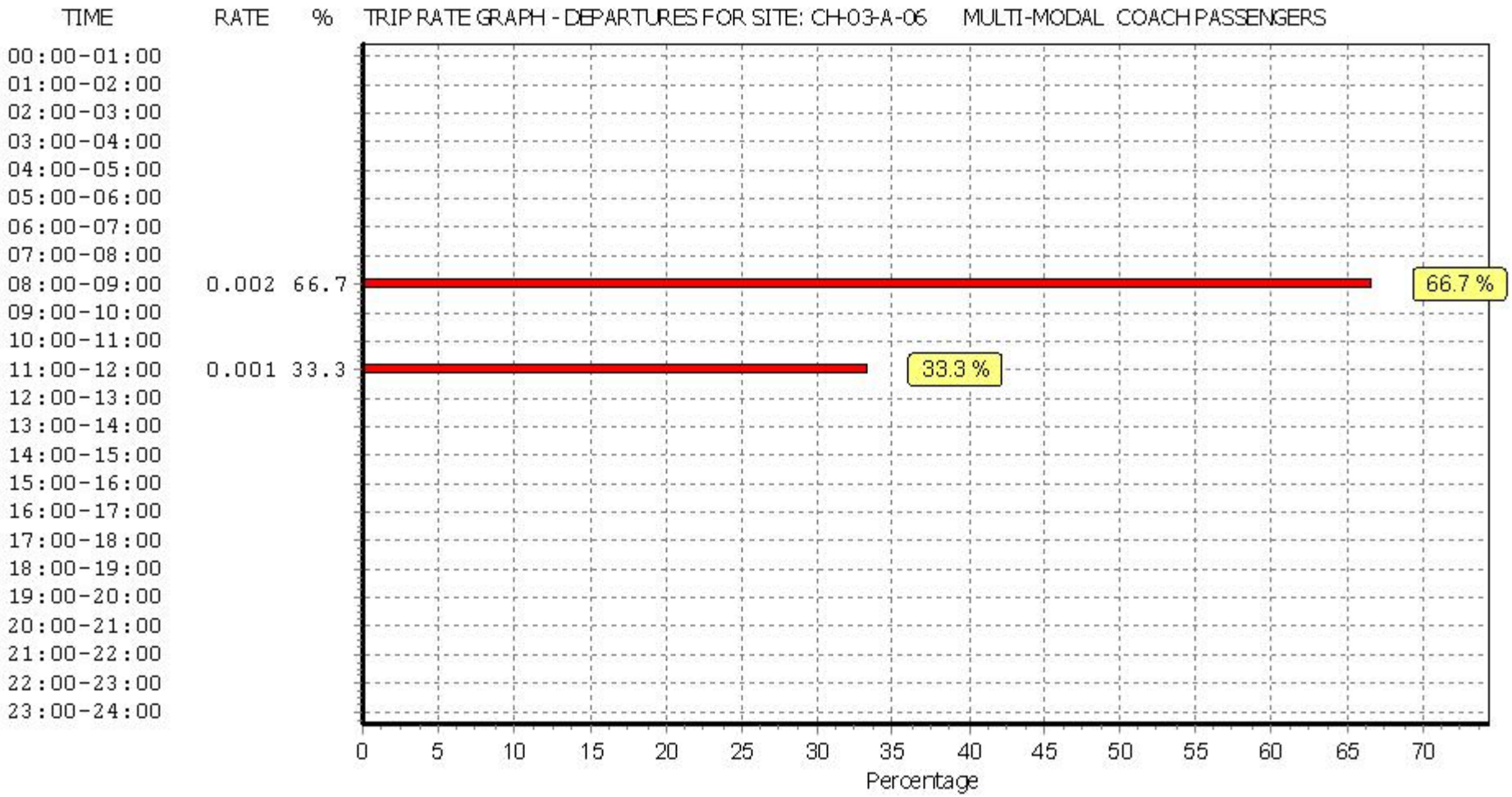
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

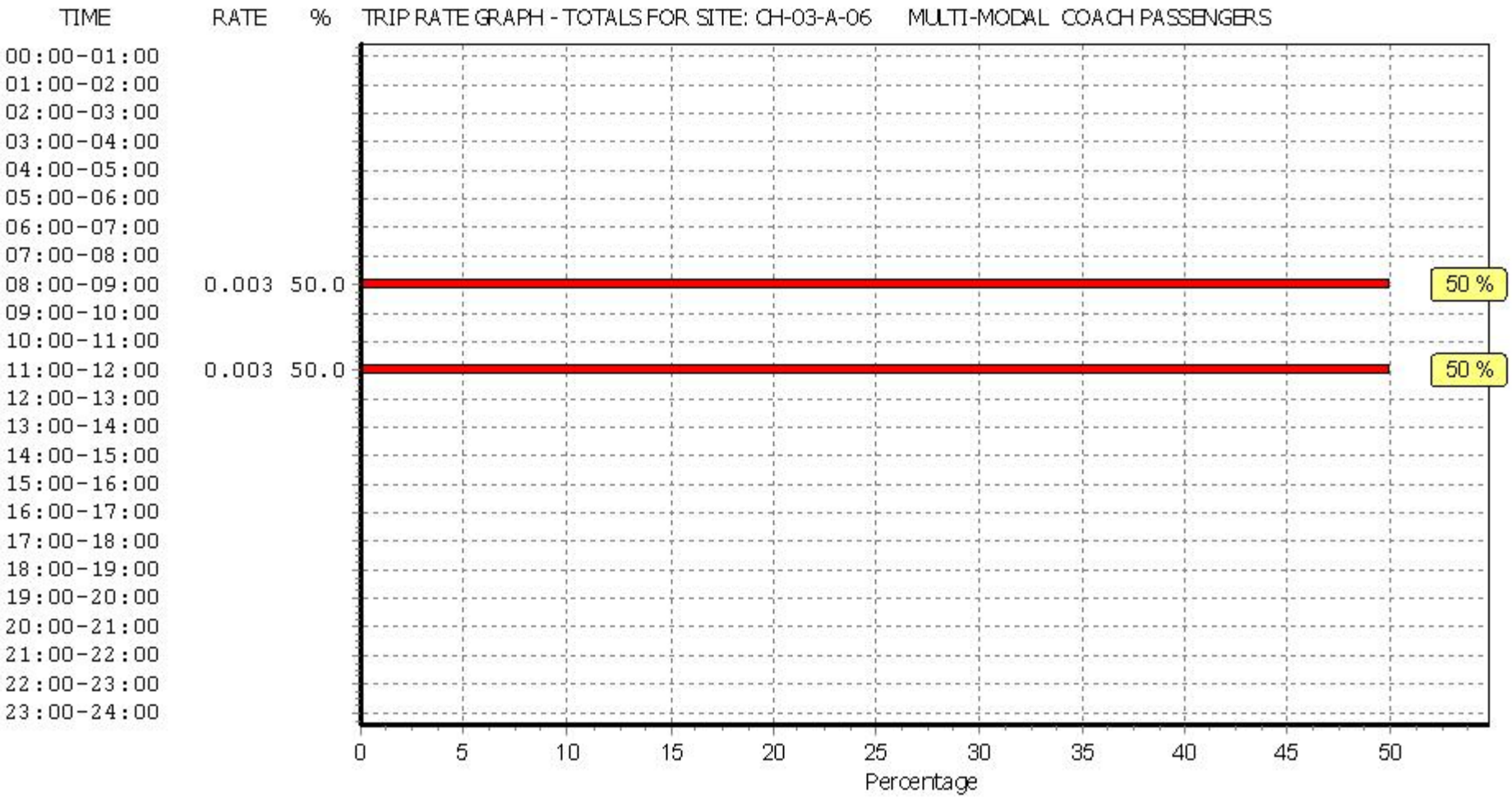
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL PUBLIC TRANSPORT USERS
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.001	15	123	0.010	15	123	0.011
08:00 - 09:00	15	123	0.003	15	123	0.010	15	123	0.013
09:00 - 10:00	15	123	0.001	15	123	0.007	15	123	0.008
10:00 - 11:00	15	123	0.003	15	123	0.005	15	123	0.008
11:00 - 12:00	15	123	0.005	15	123	0.006	15	123	0.011
12:00 - 13:00	15	123	0.006	15	123	0.004	15	123	0.010
13:00 - 14:00	15	123	0.005	15	123	0.001	15	123	0.006
14:00 - 15:00	15	123	0.003	15	123	0.004	15	123	0.007
15:00 - 16:00	15	123	0.003	15	123	0.004	15	123	0.007
16:00 - 17:00	15	123	0.005	15	123	0.003	15	123	0.008
17:00 - 18:00	15	123	0.011	15	123	0.002	15	123	0.013
18:00 - 19:00	15	123	0.009	15	123	0.000	15	123	0.009
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.055			0.056			0.111

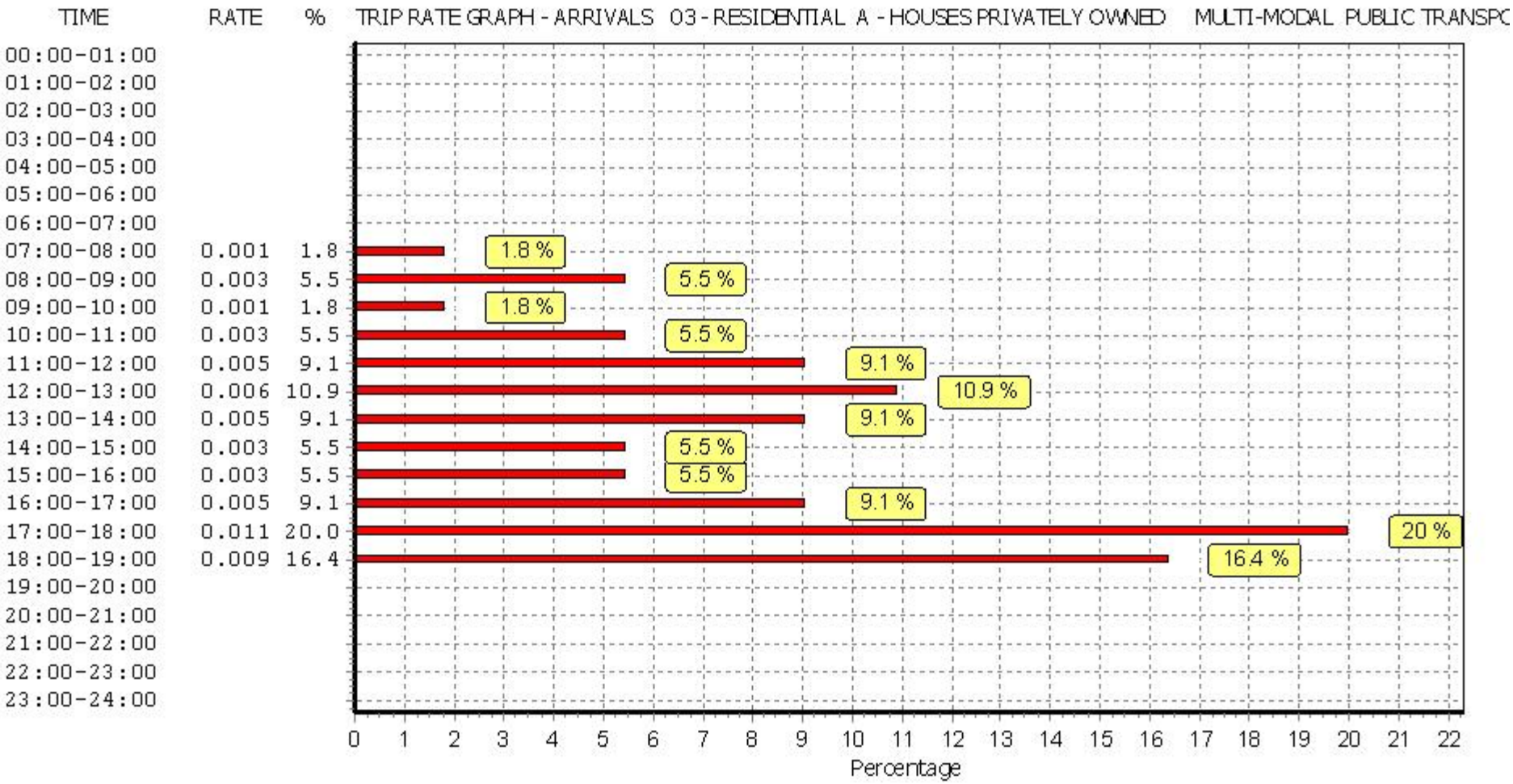
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

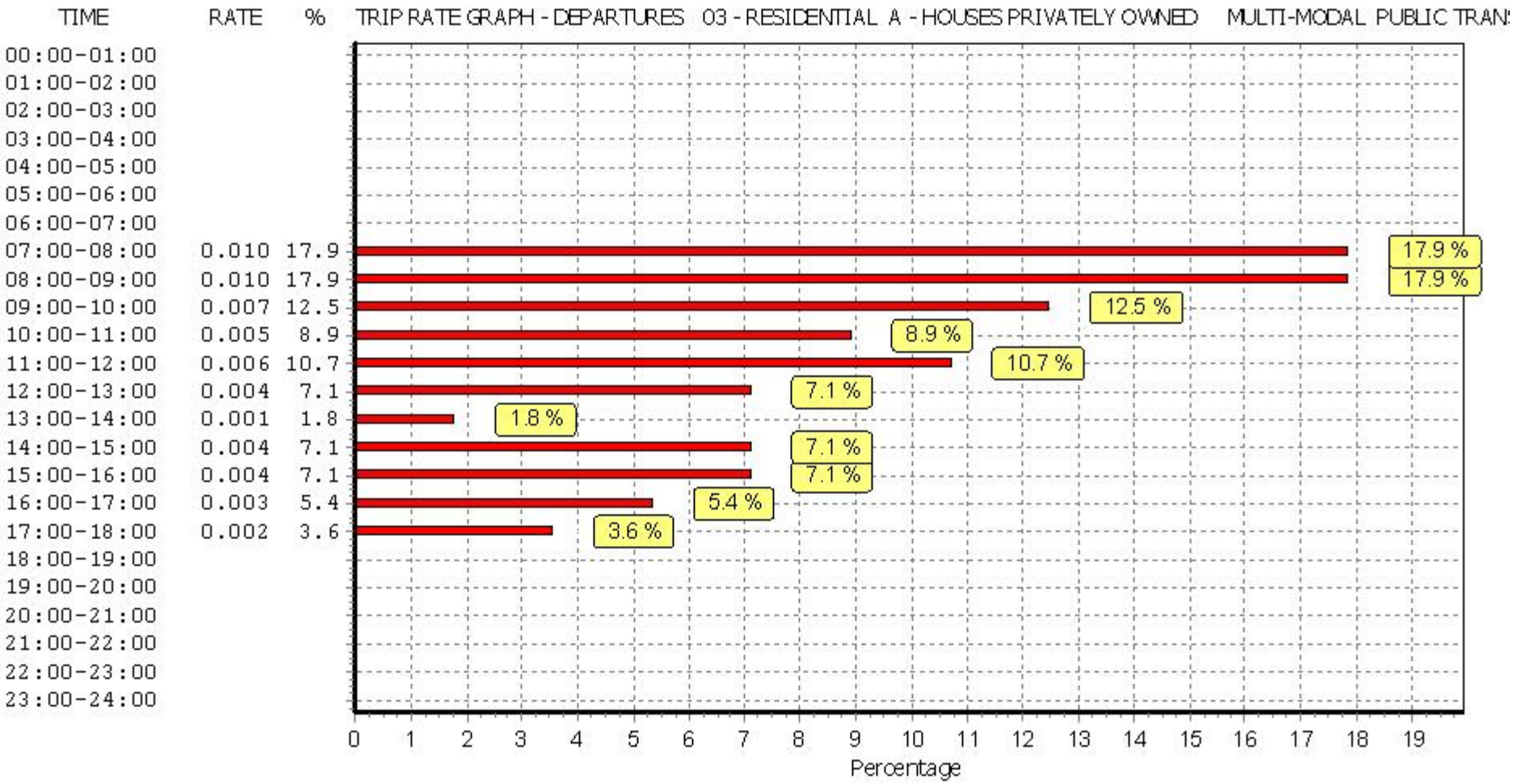
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

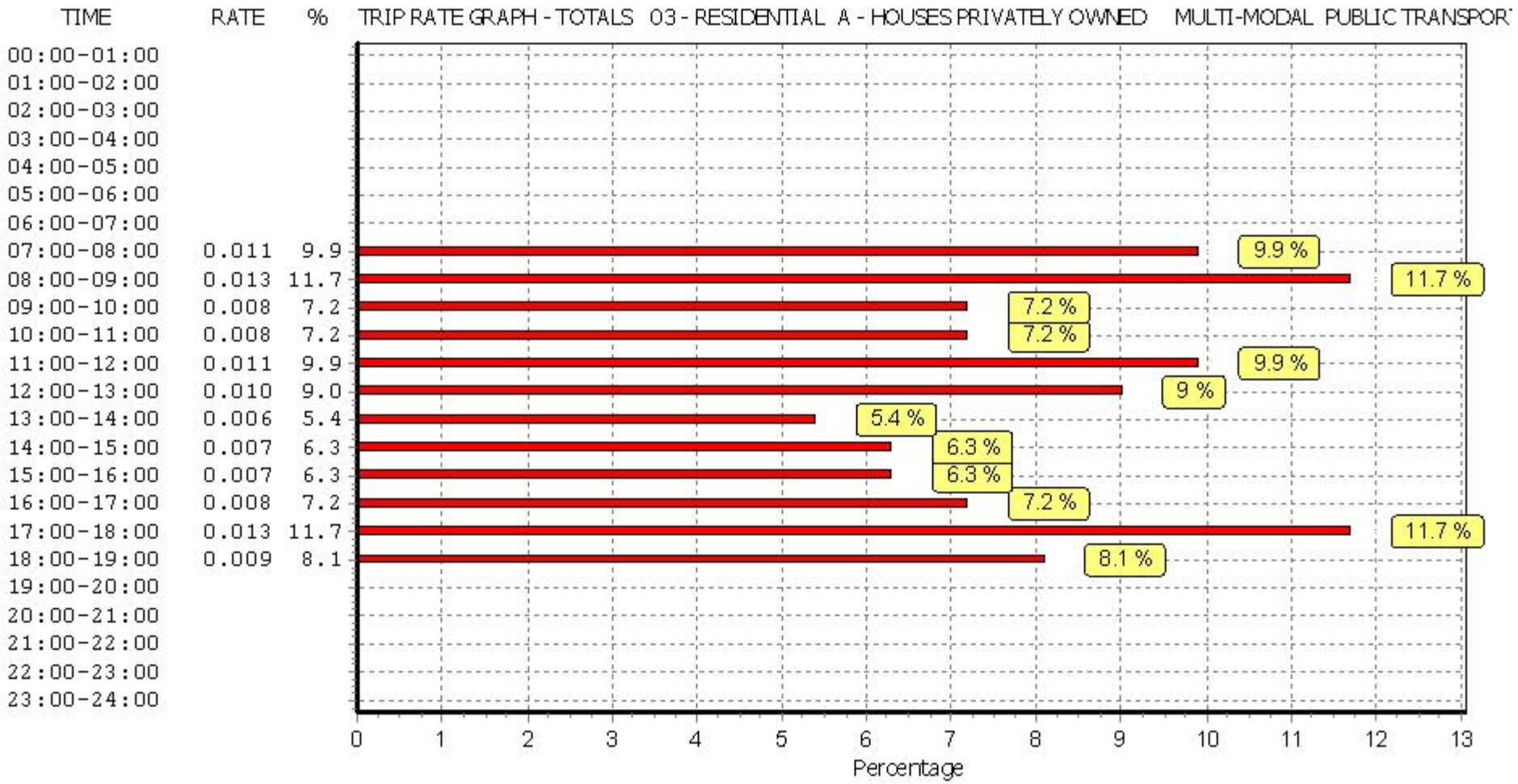
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected 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 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
MULTI-MODAL TOTAL PEOPLE
Calculation factor: 1 DWELLS
BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	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	15	123	0.107	15	123	0.401	15	123	0.508
08:00 - 09:00	15	123	0.203	15	123	0.690	15	123	0.893
09:00 - 10:00	15	123	0.221	15	123	0.286	15	123	0.507
10:00 - 11:00	15	123	0.209	15	123	0.273	15	123	0.482
11:00 - 12:00	15	123	0.216	15	123	0.217	15	123	0.433
12:00 - 13:00	15	123	0.250	15	123	0.220	15	123	0.470
13:00 - 14:00	15	123	0.237	15	123	0.236	15	123	0.473
14:00 - 15:00	15	123	0.247	15	123	0.271	15	123	0.518
15:00 - 16:00	15	123	0.562	15	123	0.335	15	123	0.897
16:00 - 17:00	15	123	0.493	15	123	0.282	15	123	0.775
17:00 - 18:00	15	123	0.501	15	123	0.272	15	123	0.773
18:00 - 19:00	15	123	0.357	15	123	0.277	15	123	0.634
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.603			3.760			7.363

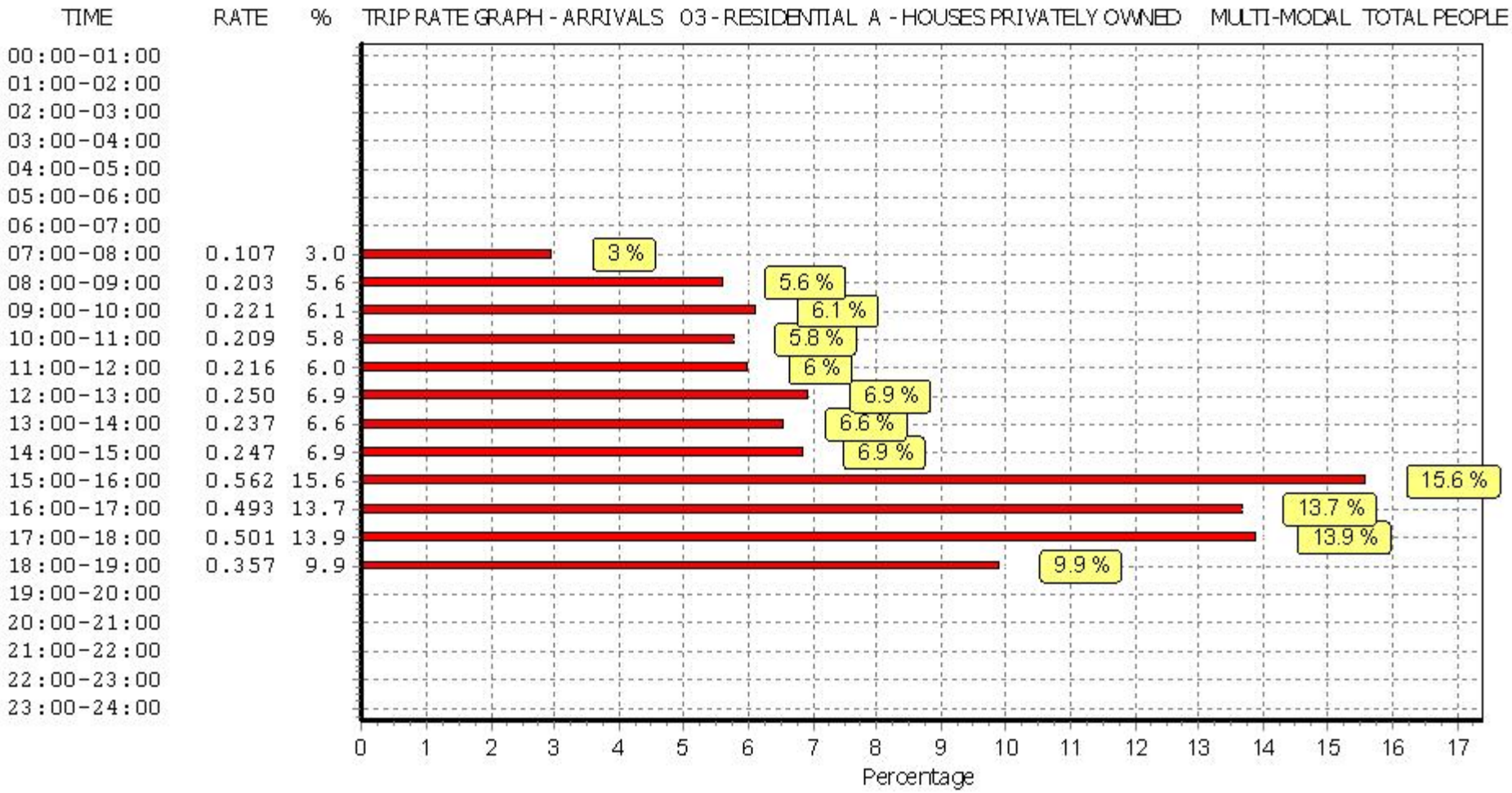
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

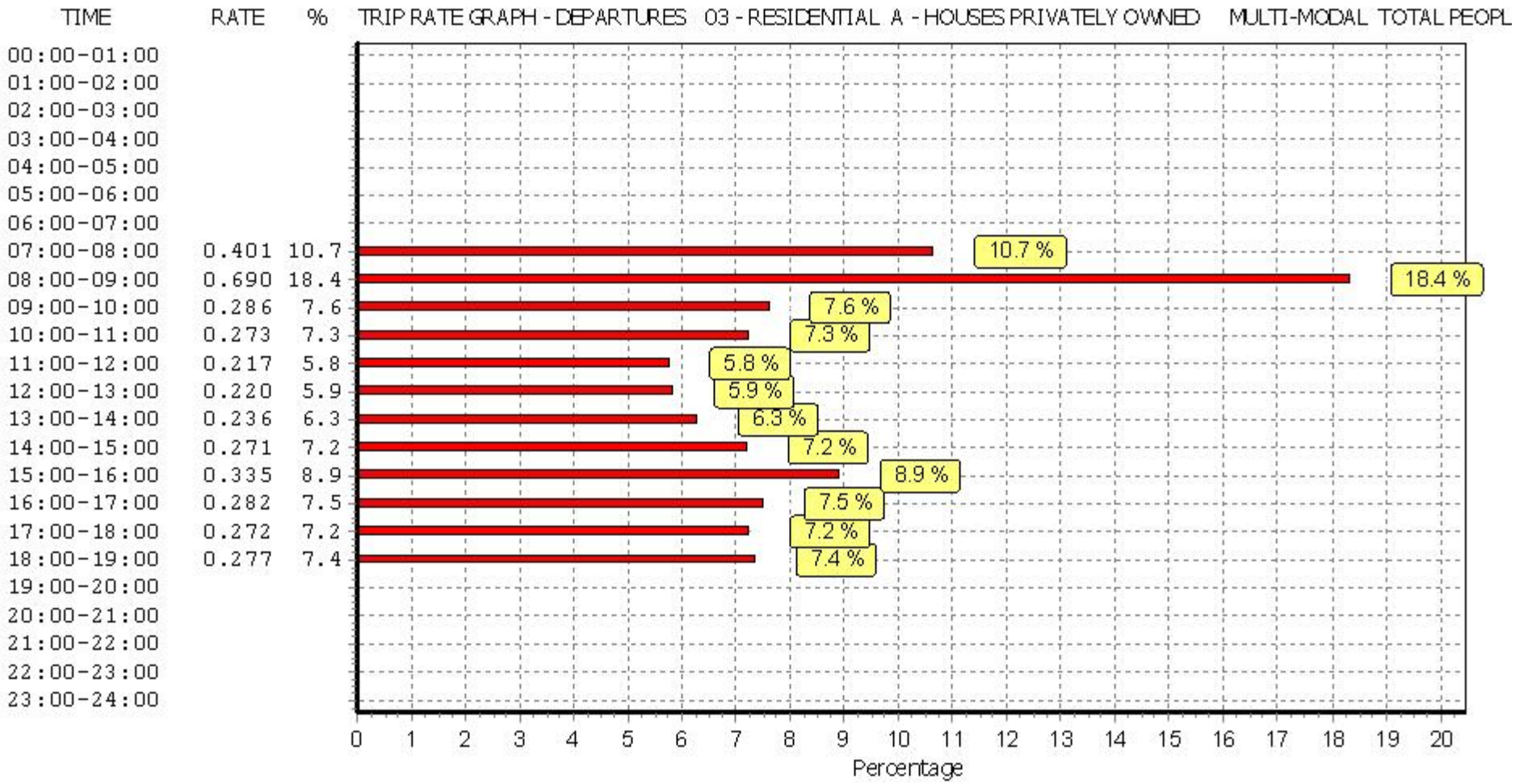
Parameter summary

Trip rate parameter range selected:	52 - 432 (units:)
Survey date date range:	01/01/08 - 28/09/15
Number of weekdays (Monday-Friday):	15
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

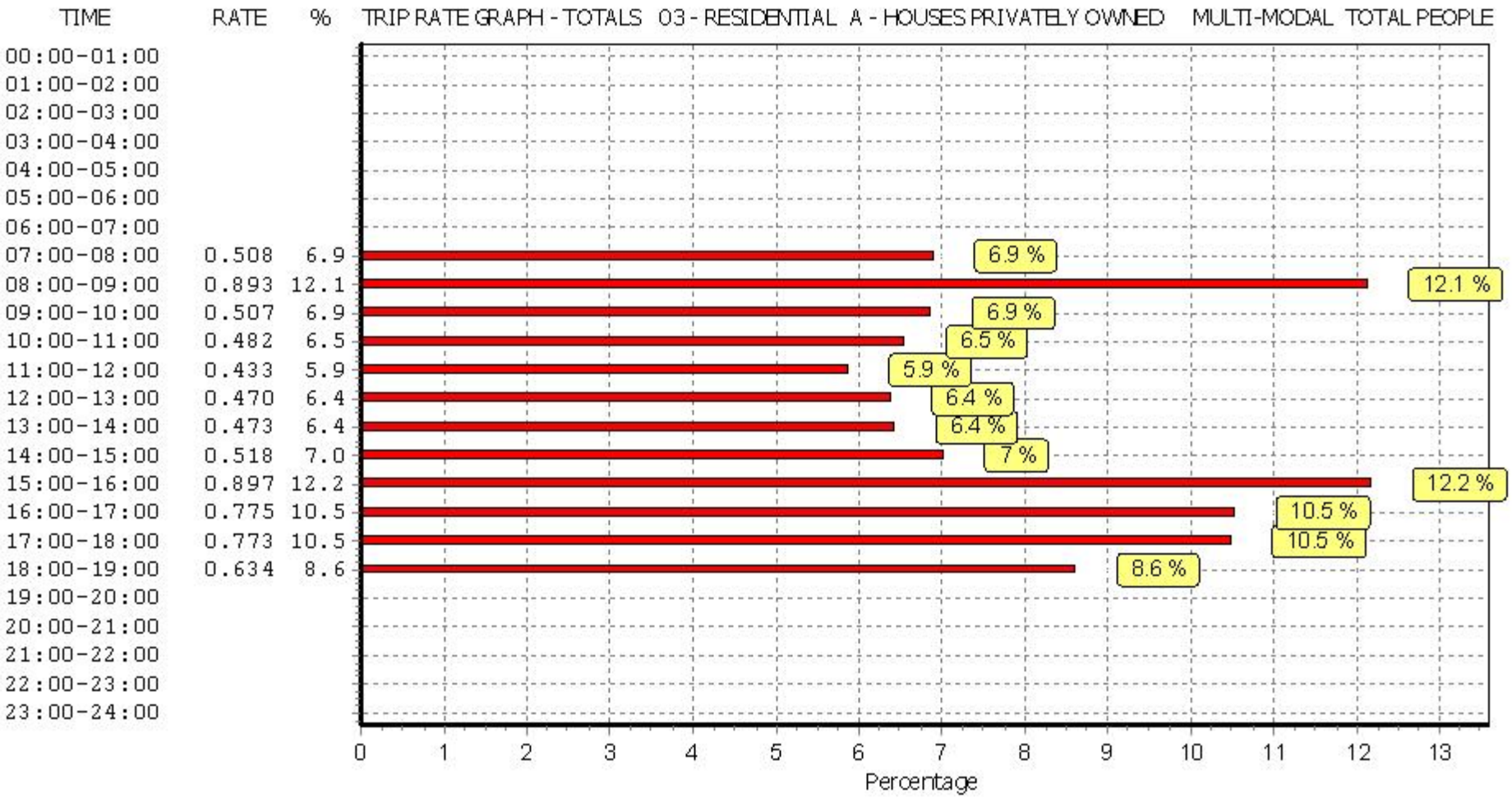
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected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



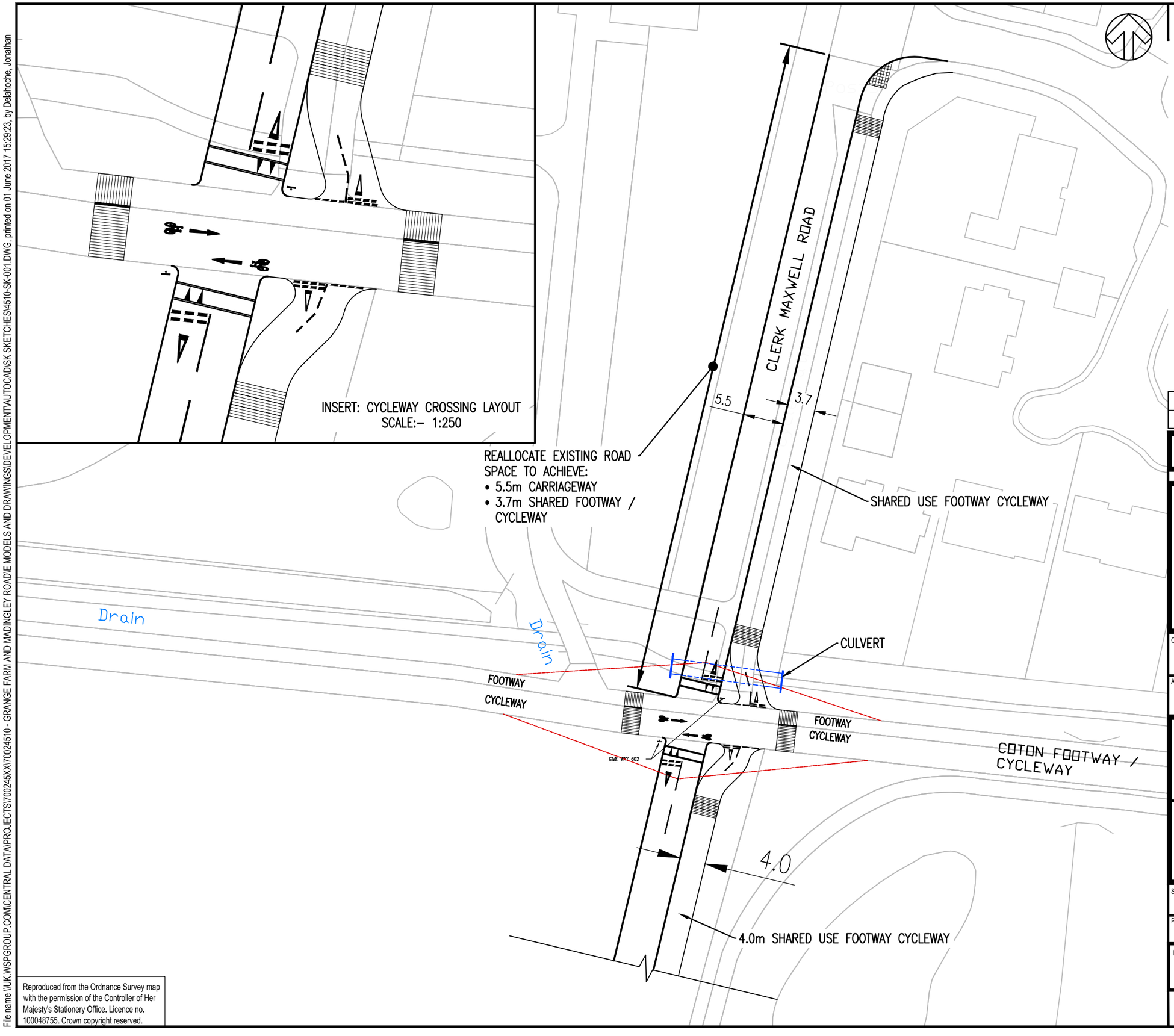
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

Appendix D – Highway Boundary Plan

Cambridgeshire County Council

Scale (at A3): 1:2000 Date: 11/05/2012 By: fn291

Appendix E – Preliminary Access Design



DO NOT SCALE

NOTE:
SUSTRANS DESIGN MANUAL FEB 2015
JUNCTIONS AND CROSSING CHAPTER 7.
FIG 7.1 (2) & PARAGRAPH 7.22
< 30MPH
< 4,000 VEHICLES PER DAY

MID LINK CYCLEWAY PRIORITY

REV	DATE	BY	DESCRIPTION	CHK	APP
A	21/02/2017	JFD	FIRST ISSUE	NJE	NJE

DRAWING STATUS: S2 - FOR INFORMATION

wsp
62-64 Hills Road, Cambridge, CB2 1LA, UK
T+ 44 (0) 1223 558 050, F+ 44 (0) 1223 558 051
wsp.com

CLIENT: ST JOHN'S COLLEGE

ARCHITECT:

PROJECT: GRANGE FARM, WEST CAMBRIDGE

TITLE: INDICATIVE LAYOUT FOR SITE ACCESS

SCALE @ A3:	CHECKED:	APPROVED:
1:500	NJE	NJE

PROJECT No:	DESIGNED:	DRAWN:	DATE:
70024510	JFD	JFD	June 17

DRAWING No: 4510-SK-001 REV: A