Taff Housing Association Ltd

De Braose Close, Danescourt

Transport Statement

October 2019

Ground Floor, Helmont House, Churchill Way, Cardiff CF10 2HE www.vectos.co.uk
Registered address: Vectos (South) Limited, Network Building, 97 Tottenham Court Road, London W1T 4TP. Company no. 7591661

Contents

Figures

Appendices

1 INTRODUCTION

1.1 Vectos is retained by Taff Housing Association Ltd to provide traffic and transportation advice in relation to a proposed residential development comprising 45 new homes at De Braose Close, Danescourt.

1.2 This Transport Statement (TS) examines the opportunities for sustainable accessibility by all modes of travel, and emphasises the excellent pedestrian and cycling links within the vicinity of the site. It also considers the traffic effect arising from the development.

1.3 The report has been produced in accordance with, and in recognition of contemporary local and national government guidance including Welsh Government's Technical Advice Note, and the Active Travel Wales (Act) 2013.

1.4 The remainder of the Transport Statement is as follows;

- **Section 2** – provides an overall summary of the existing conditions of the site;
- **Section 3** – covers relevant local, regional and national policy;
- **Section 4** – describes the proposed development and access arrangements;
- **Section 5** – evaluates the likely traffic effect of the proposals; and
- **Section 6** – summarises and concludes

2 THE EXISTING SITUATION

2.1 This section of the report provides the context of the site in relation to its general surroundings and movement characteristics of the surrounding area.

Site Location

2.2 The site is located within Danescourt, an outer suburb of western Cardiff. It is some 2.4km to the south of Radyr and some 2.8km to the north of Fairwater. The site is also located approximately. 5.3 km north of the centre of Cardiff.

2.3 The site is bound to the west by residential properties at Danescourt, to the north and east by the River Taff, Taff Trail, railway line and green land and to the south by further residential properties and open green land.

2.4 **Figure 2.1** indicates the site location in a local context.

Figure 2.1 – Site Location

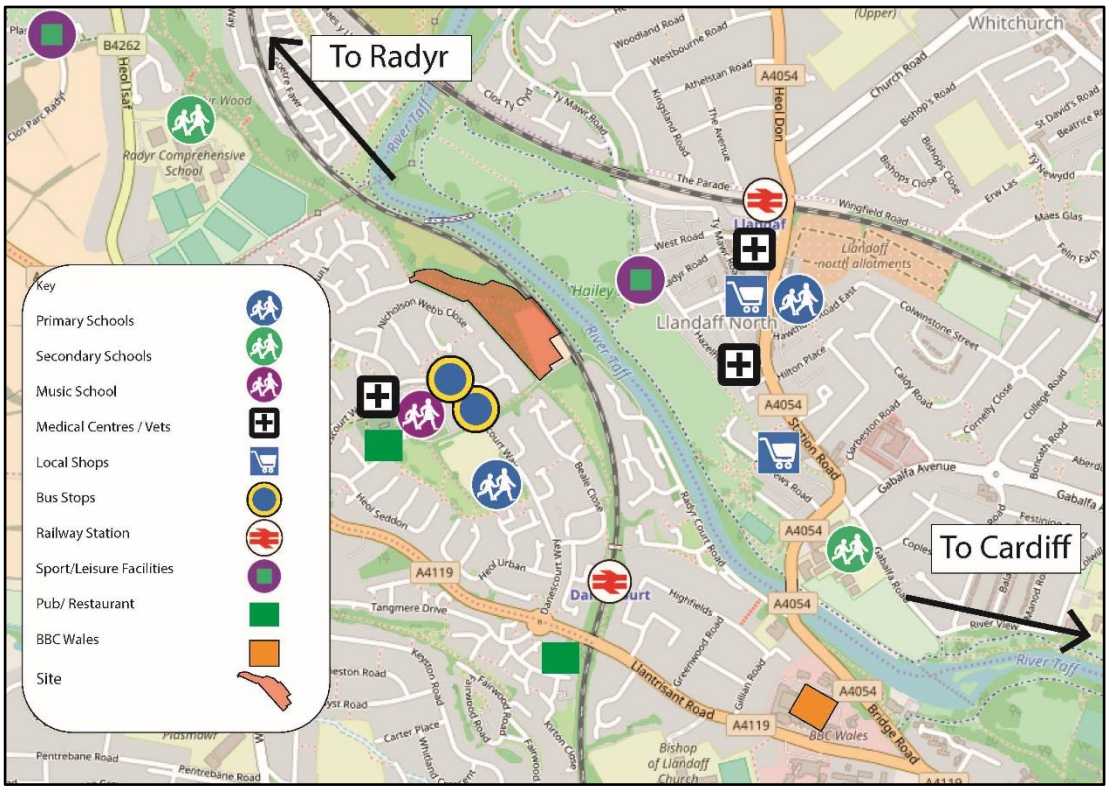
Local Facilities

2.1 The site is well placed in terms of access to nearby local facilities and services such as schools, medical services, restaurants and public transport provision. A summary of the local facilities within the vicinity of the site is set out in **Table 2.1** and the local facilities are illustrated in **Figure 2.2**.

Table 2.1 – Local Facilities

Local Facility	Distance from centre of the site (metres)	Cycling Time (mins)	Walking Time (mins)
Public Transport			
Bus Stops on Danescourt Way	480	2	6
Danescourt Railway Station	1125	4.5	14
Llandaff Railway Station	1610	6.5	20
	Schools		
Danescourt Primary School	490	2	6
Hawthorn Primary School	1530	6.4	19
Radyr Comprehensive School	1290	5.5	16
Ysgol Gyfun Gymraeg Glantaf	1450	6	18
Forte School of Music (Cardiff)	480	2	6
Leisure / Sports Facilities			
Radyr Lawn Tennis Club	1290	5.5	16
Llandaff North Rugby Football Club	805	3.5	10
Pub / Restaurants / Food			
The Radyr Court (Pub)	650	3	8
The Posh Fish and Chips Company	965	4	12
Domino's Pizza Cardiff – Llandaff	965	4	12
Local Shops			
Co-op Food Llandaff – Radyr Court	650	3	8
Lidl	1500	6	18.5
Medical Centres			
Danescourt Pharmacy	655	3	8
Medivet The Vets Llandaff North	1610	6.5	20
Llandaff North Medical Centre	1285	5.5	16
Local Areas			
Radyr	2400	10	30
Llandaff North	2010	8.5	25
Fariwater	2800	11.5	35
Cardiff	5300	22	66

Figure 2.2- Local Facilities



Pedestrian and Cycle Provision

2.2 The local area offers an excellent framework for non-motorised modes of travel and is served by good quality pedestrian routes within attractive environments.

2.3 Within the vicinity of the site, there are shared footways/ cycleways, local streets conducive to cycling and various Public Rights of Way (PRoW) including the Taff Trail.

Walking

2.4 Pedestrian footways are present along Danescourt Way which lies within the vicinity of the site and is equipped with local facilities and public transport links. These footways are considered to be of a good state of repair, with street lighting and dropped kerbs where required. There are also pedestrian crossing points available in the form of zebra crossings and uncontrolled.

2.5 Pedestrian footways are also present on De Braose Close, which is accessible via the northern point of the site. These footways are continuous on De Braose Close and run throughout the Danescourt Estate. Street lighting and dropped kerbs are present.

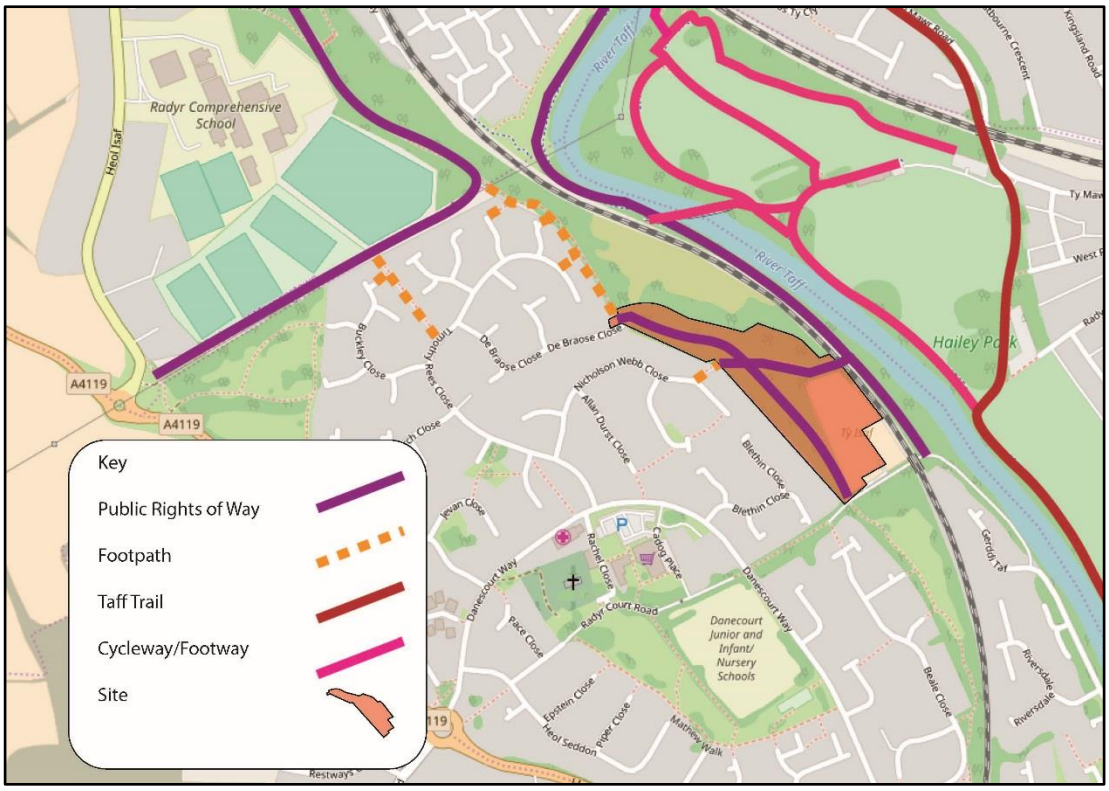
2.6 De Braose Close also includes pedestrian steps and footway which heads to the north of Danescourt. This footpath runs along residential properties at Timothy Rees Close and is accessible from this road as well as from Goodwin Close. It adjoins onto a Public Rights of Way which connects with Heol Isaf to the north west of Danescourt and residential properties at Radyr to the north as well as a footpath which connects to Radyr Comprehensive School. This footpath is illustrated in **Figure 2.3.**

2.7 **Photograph 2.1** shows the footway on De Braose Close as well as the pedestrian steps to the PRoW connecting Danescourt and Radyr.

Photograph 2.1 – Pedestrian facilities at De Braose Close

2.8 There are a number of Public Rights of Way (PRoW) in the vicinity of the area and these along with other walking and cycling routes in the vicinity of the site, are illustrated in **Figure 2.3.**

Figure 2.3 – Walking and Cycling Routes



2.9 The Public Rights of Way (PRoW) are accessible via De Braose Close to the north of the site, Radyr Court Lane to the south of the site and from the Taff Trail to the immediate east of the site. The PRoW to the immediate east of the site is labelled as Radyr No.56. and it is shown in its current condition in **Photograph 2.2**.

Photograph 2.2 – Public Rights of Way No.56

2.10 Further east to of the site and adjacent to the River Taff is PRoW route number 52 **(as shown on Figure 2.3).** This connects with Radyr Court Road to the south and runs along the River Taff to the north. It also connects the site with the Taff Trail. The route varies between a rough and smooth terrain. This is connected to the PRoW within the immediate vicinity of the site via a tunnel which runs underneath the railway line. This connectivity is shown in **Photograph 2.3.**

Photograph 2.3- Access to PRoW

2.11 A shared footway/ cycleway is also provided to the east of site in the form of the Taff Trail. As mentioned, this can be accessed directly through the PRoW and tunnel and it can also be accessed via Radyr Court Road, which leads to PRoW no 52 that runs parallel to the river.

2.12 The Taff Trail is considered to be an excellent transport link for pedestrian and cyclists heading south in to Cardiff city centre or northwards to Tongwynlais and further local communities. The Taff Trail and its connectivity with other walking and cycling routes is shown in **Figure 2.3**.

2.13 The site is therefore is considered to be well-located in terms of proximity and access by foot to local transport links and local amenities.

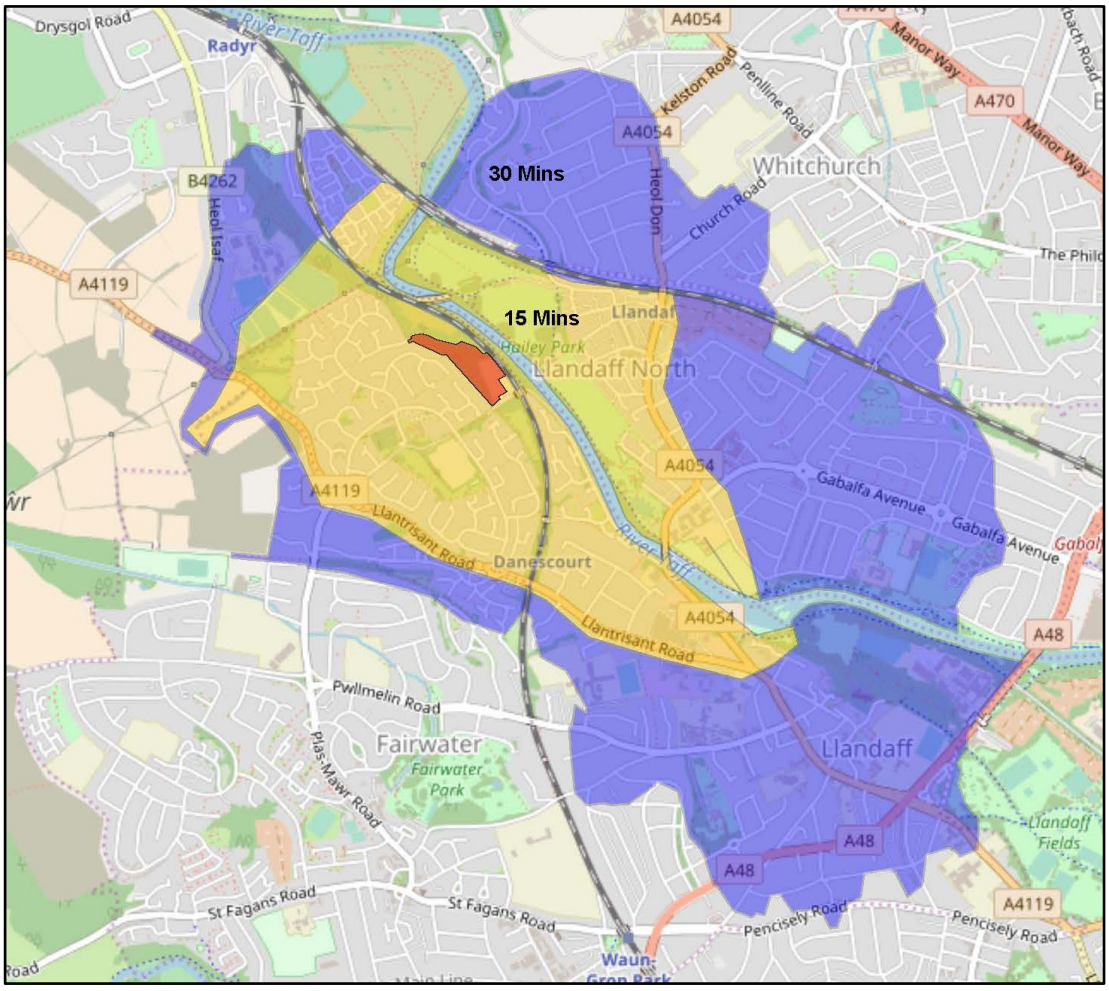
2.14 The propensity for people to walk or cycle depends on individual preferences and circumstances. These circumstances might include, for instance, the purpose of the journey, the attractiveness of, and activity along, the route, the weather, and the cost of alternatives.

2.15 The thrust of land use and transport policy is to promote and encourage the choice of walking and cycling above all else where travel needs to occur. Therefore, it is both reasonable to assume that waling is a viable and growing means of travel, and that new development, such as this one, should be designed to promote and encourage it.

2.16 In practice, the distance that any individual is likely to choose to walk, depends on that individual and their circumstances, but it fair to assume that over time, given current policies to promote community, health, wellbeing and active travel, the propensity for individuals to walk, and to walk further, will increase.

2.17 **Figure 2.4** indicates the indicative walking isochrones of 15 and 30 minutes walking time to/from the site assuming a comfortable average walking speed of 3mph.

Figure 2.4 – 15 & 30 Minute Walking Isochrones



Cycling

2.18 Cycling infrastructure within the vicinity of the site includes advisory local routes, National Cycle Network Route 8 and local roads conducive to cycling.

2.19 Radyr Court Road, which runs within close proximity of the site is labelled as an Advisory Cycle Route. It is lit for the most part, considered to be of a good width and of a good state of repair and links with Danescourt Way. Cycling infrastructure on this road also includes a U-Chicane which is used for ease of movement and speed calming for cyclists, as well as a gateway which is used as traffic calming for vehicles. Cardiff Council advises that the most northern section of this road, at its junction with Danescourt Way, is a "Walk your bike" area, due to its naturally steep gradient.

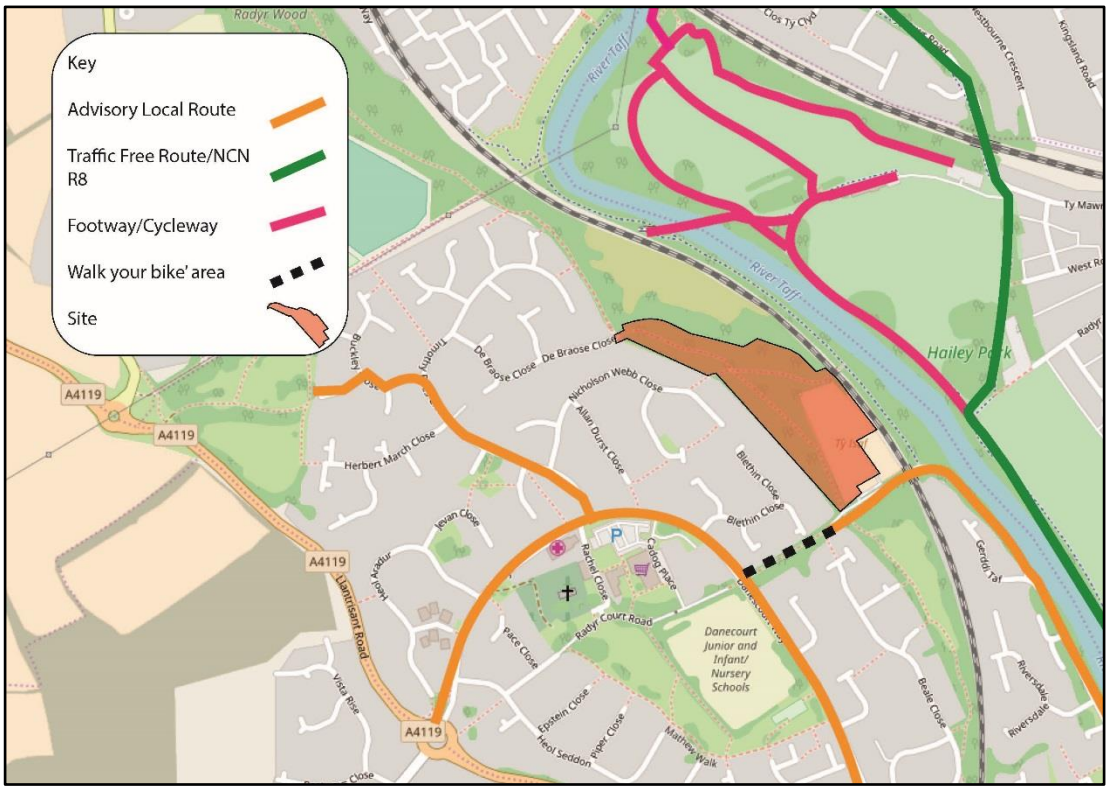
2.20 The 'U-Chicane', as well the additional gateway, on Radyr Court Road is shown in **Photograph 2.4.**

Photograph 2.4 – Cycling Infrastructure on Radyr Court Road

2.21 The Taff Trail also runs within the vicinity of the site on the eastern side of the River Taff. It is an off road shared footway/ cycleway that is also part of National Cycle Network Route 8.

2.22 These excellent cycling routes within the vicinity of the site are illustrated in **Figure 2.5.**

Figure 2.5 – Cycle Routes

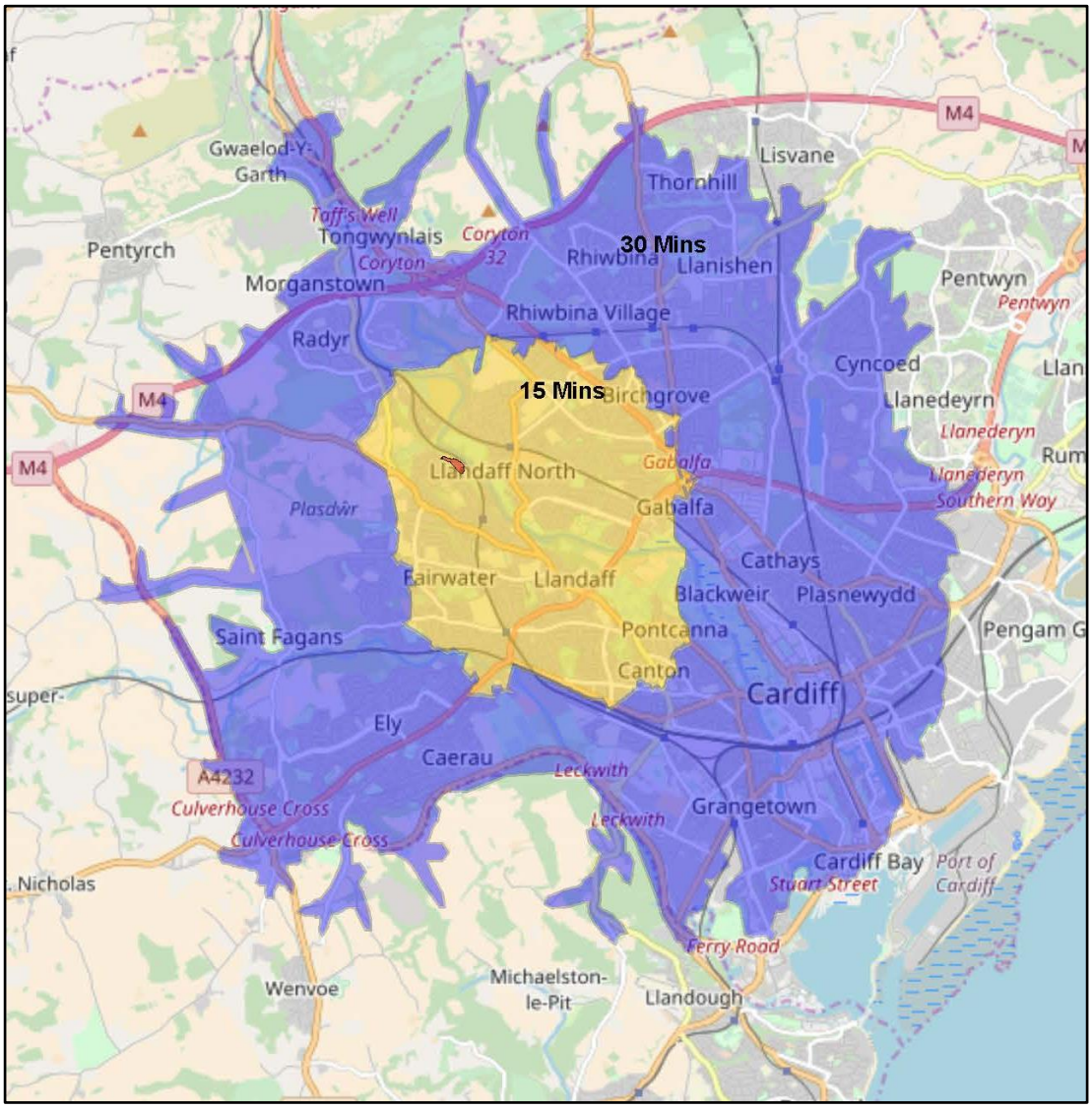


2.23 In practice, the distance that any individual is likely to choose to cycle, depends on that individual and their circumstances, but it is fair to assume that over time, given current policies to encourage community, wellbeing, health and active travel, the propensity for individuals to cycle, and to cycle further will increase. This is also very much in line with Cardiff Council's Transport Strategy which seeks to encourage all journeys by sustainable modes of transport.

2.24 **Figure 2.6**, indicates the 15 & 30 minute cycling isochrones to/from the site, assuming a comfortable average cycle speed of 9 mph. Sustrans has suggested that up to 5 miles in an appropriate distance for cycle commuting. At 9mph, this equates to 33 minutes covering a wide area from the site.

2.25 This demonstrates that areas such as Canton, Llandaff North and Fairwater are all within a 15 minutes commute from the site with other areas such as Llanishen and Cardiff city centre within a 30 minute cycle from the site.

Figure 2.6– 15 & 30 Minute Indicative Cycling Isochrones



Public Transport

Bus Services

2.26 The nearest bus stops to the site are located along Danescourt Way approximately. 480 metres from the centre of site via Radyr Court Road. All bus stops along this road are equipped with concise timetable information, with a number of stops also including shelters and benches.

2.27 The location of these bus stops in relation to the site is illustrated in **Figure 2.7** and a summary of the local bus services is set out in **Table 2.2.**

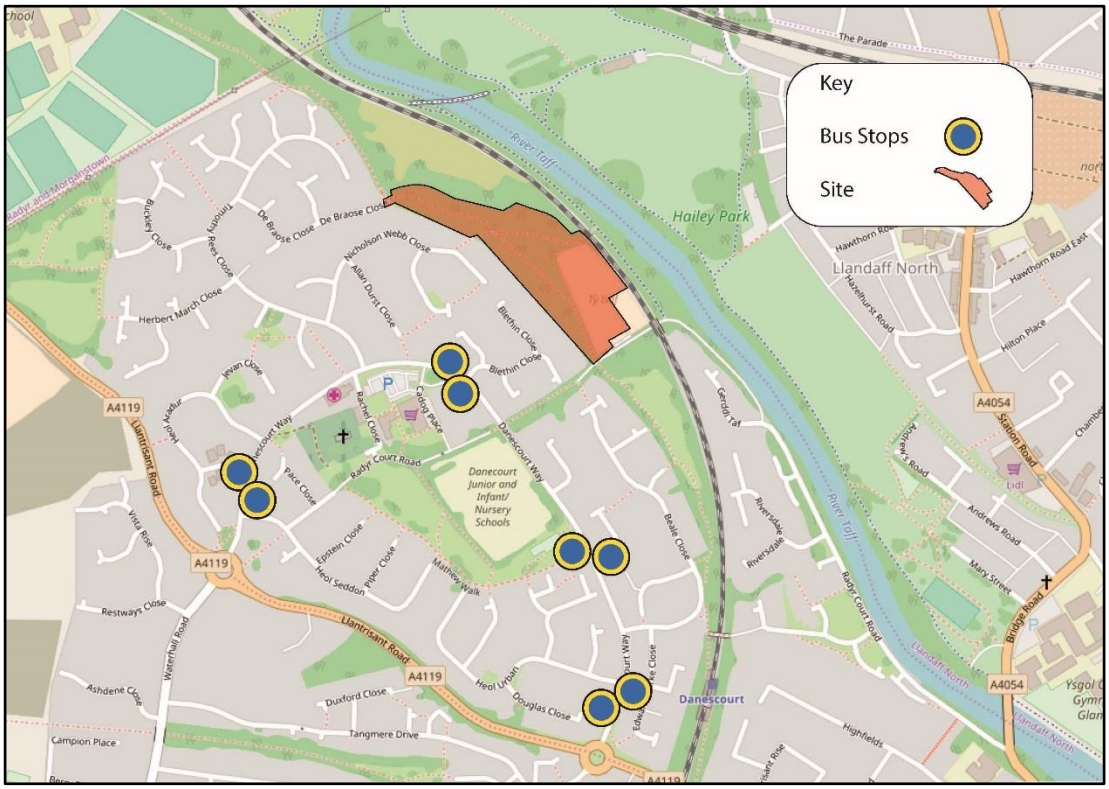
Table 2.2 – Bus Services

Number	Route	First Bus	Last Bus	Frequency (mins)			Provider
				M-F	S	S	
63	Cardiff – Radyr and Morganstown	07:40	23:27	20	20	60	Cardiff Bus
	Radyr and Morganstown – Cardiff	07:12	22:45				
63A	Cardiff – Danescourt	09:04	n/a	n/a	n/a	60	Cardiff Bus
	Danescourt – Cardiff	06:15	09:11				
64	Cardiff City Centre – Heath Hospital via Whitchurch	07:56	18:26	120	60	120	Capital Links/Cardiff Bus
	Heath Hospital – Cardiff City Centre via Whitchurch	06:20	20:40				
65	Cardiff City Centre – Heath Hospital via Whitchurch	06:57	19:20	120	n/a	n/a	Capital Links/Cardiff Bus
	Heath Hospital – Cardiff City Centre via Whitchurch	09:24	19:40				
122	Tonypandy - Cardiff	06:51	22:59	15	15	30	Stage coach South Wales
	Cardiff – Tonypandy	07:29	23:28				

2.28 The quality, frequency and affordability of bus services are important factors which people evaluate as part of their selection process for mode of travel for day to day activities for example, commuting and social purposes.

2.29 The site is well served by at least 7 buses an hour (both directions), to Cardiff City centre and other sources of employment and hence can be considered to be highly accessible by bus.

Figure 2.7 – Bus Stops in the immediate vicinity of the site



Rail Services

2.30 Danescourt Railway Station and Llandaff Railway Station are both within close proximity of the site **(as shown in Figure 2.2).** Danescourt Station is located approximately 480 metres to the south of the site and accessible via Beale Close whilst Llandaff Station is located approximately 1.4 km to the east of the site and accessible via the Taff Trail. Llandaff is served by the Valleys line whilst Danescourt is served by the City Line.

2.31 The stations provide frequent services to Cardiff Central, Coryton, Barry Island, Merthyr Tydfil, Aberdare, Bridgend and Treherbert as demonstrated in **Table 2.3**.

Table 2.3 –Rail Services

	Danescourt Station			**Llandaff**		
Destination	Journey Time (mins)	Frequency (mins)	Direct Service? Y/N	Journey Time (mins)	Frequency (mins)	Direct Service? Y/N
Barry Island	60	20	N	44	15	Y
Merthyr Tydfil	12	30	N	55	30	Y
Aberdare	90	30	N	54	30	Y

Cardiff Central	12	30	Y	13	8	Y
Coryton	35	30	Y	32	30	N
Bridgend	38	30	N	50	15	Y
Treherbert	90	39	N	56	39	Y

2.32 **Table 2.3** demonstrates that a number of destinations can be reached from Danescourt Railway station and Llandaff Railway Station and therefore the site benefits from good rail connections.

Local Highway Network

2.33 The location of the site in the context of the local highway network is shown in **Figure 2.8.**

Figure 2.8 – Local Highway Network

Radyr Court Road

2.34 Radyr Court Road runs to the south of the site and is accessed via Llandaff Bridge/ A4054. It is a no through road which terminates close to Danescourt Way. At its southern end, the road is a two lane carriageway with street lighting and footways. Closer to the vicinity of the site, the road is narrower and effectively a shared surface for vehicles, pedestrians and

cyclists, includes hedges on either side of the road and is unlit. However, at this point of the road there are also occasional road widenings for passing points.

2.35 Radyr Court Road terminates as a vehicular route close to the site and becomes a pedestrian and cycle route heading west toward Danescourt Way. At present there are rocks preventing vehicles from entering the vicinity of the site.

Danescourt Way

2.36 Danescourt Way is the main road within Danescourt. It connects a number of residential properties with nearby local facilities and public transport provision. It is subject to a 30 mph speed limit with a reduction to 20 mph at some points due to its proximity to local schools. The road is considered to be of a good state of repair and has streetlighting and footways on either side of the road.

De Braose Close

2.37 De Braose Close connects the northern section of the site and provides access to a number of residential properties with street lighting and footways present. The road is a no through road with a turning head at its eastern end at the northern end of the site and a priority junction with Timothy Rees Close at its northern end.

3 POLICY REVIEW

National Legislation

3.1 **The Planning (Wales) Act 2015** - seeks to deliver a planning system which is fair, resilient, enables development and helps create sustainable places.

3.2 **Well-Being of Future Generations (Wales) Act 2015** - seeks to improve the social, economic, environmental and cultural well-being of Wales. It contains seven well-being goals which local authorities as well as other public bodies must seek to achieve in order to improve well-being both now and in the future several of which support this SPG's promotion of sustainable travel.

3.3 **Active Travel (Wales) Act 2013 -** seeks to make it easier for people to walk and cycle in Wales. The Act makes it a legal requirement for local authorities in Wales to map and plan for suitable routes for active travel, and to build and improve their infrastructure for walking and cycling every year. It creates new duties for highways authorities to consider the needs of walkers and cyclists and make better provision for them. It also requires both the Welsh Government and local authorities to promote walking and cycling as a mode of transport.

3.4 By connecting key sites such as workplaces, hospitals, schools and shopping areas with active travel routes, the Act will encourage people to rely less on their cars when making short journeys and make implementing successful Travel Plans easier.

3.5 **Design Guidance, Active Travel (Wales) Act 2013 (published December 2014)** This document is statutory guidance published by the Welsh Government under powers granted to Welsh Ministers under the Active Travel (Wales) Act 2013. The Guidance provides advice on the planning, design, construction and maintenance of active travel networks and infrastructure, and is to be used at all stages of the process.

National Policy

Planning Policy Wales (Edition 10, December 2018)

3.6 Planning Policy Wales sets out the current land use planning policies of the Welsh Government. This is supplemented by a series of Technical Advice Notes.

3.7 Section 4 of PPW concerns Active and Social places. It asserts that Active and Social Places are those which provide well-connected cohesive communities. It further states that a 'Resilient Wales' is supported by promoting well-connected infrastructure.

3.8 Within Section 4 it stresses that:

- A Healthier Wales can be achieved through the reduction in emissions and air pollution by minimising the need to travel and maximising provision of sustainable forms of transport.
- To foster Cohesive Communities development will need to be well connected.
- Globally Responsible Wales is promoted by locating and designing developments which reduce trip lengths for everyday journeys and supports sustainable modes of travel.

3.9 Section 4 acknowledges the importance of:

- improving sustainable access to services.
- reducing reliance on travel by private car.
- ensuring our transportation infrastructure is adaptable.

3.10 Policies within the Active and Social Places theme will:

- enable sustainable access to housing, employment, shopping, education, health, community, leisure and sports facilities and green infrastructure.
- develop sustainable transportation infrastructure.
- require developments to encourage modal shift and be easily accessible by walking, cycling and public transport.

3.11 Moving within and between places is a key theme within PPW. In regard to sustainable transport, it advises facilitating developments which:

- are sited where they can be easily accessed by sustainable modes of travel and without the need for a car;
- are designed to integrate with existing land uses and neighbourhoods; and
- make it possible for all short journeys within and beyond the development to be easily made by walking and cycling.

3.12 Regarding Active Travel, PPW10 states that:

- Planning authorities must support active travel by ensuring new development is fully accessible by walking and cycling.
- Planning authorities must ensure new housing, jobs, shopping, leisure and services are highly accessible by walking and cycling.

3.13 Regarding Public Transport, PPW10 states that:

- Planning authorities should consider whether public transport services are of a scale which makes public transport an attractive and practical travel option for occupiers and users travelling to and from development sites.

3.14 It is Welsh Government policy to require the use of a sustainable transport hierarchy in relation to new development, which prioritises walking, cycling and public transport.

3.15 Transport Assessments provide the basis for negotiation on scheme details, including the level of parking, and measures to improve walking, cycling, and public transport access, as well as measures to limit or reduce levels of air and noise pollution.

3.16 In this respect the development fully complies with PPW.

Technical Advice Note 18 (Transport)

3.17 The Advice Note (TAN 18) elaborates on the relationship between land use planning and transport infrastructure by outlining a range of key accessibility principles that should inform future patterns of development.

3.18 In the case of new residential development, sites that are accessible to jobs, shops and services by modes other than the car and are afforded sufficient capacity on public transport services are favoured.

3.19 TAN 18 advises that development plans should afford priority to the following:

- promote housing development at locations with good access by walking and cycling to primary and secondary schools and public transport stops, and by all modes to employment, further and higher education, services, shopping and leisure, or where such access will be provided as part of the scheme or is a firm proposal in the Regional Travel Plan;

- ensure that significant new housing schemes contain ancillary uses including local shops, and services and, where appropriate, local employment;
- include policies and standards on densities, and parking to achieve higher residential densities in places with good public transport accessibility and capacity;
- encourage residential layouts that incorporate traffic management proposals such as home zones, calming measures and 20 mph zones and where appropriate, layouts that allow public transport to pass through easily; and
- Require layouts and densities, which maximise the opportunity for residents to walk and cycle to local facilities and public transport stops.

3.20 The development is well located and highly accessible to a wide range of local amenities and public transport options, and given the scale of what is being proposed will have a minimal traffic effect on the local highway network. As such, it fully complies with the principles as set out in TAN 18.

Local Policy

Cardiff Local Development Plan 2006 – 2026

3.21 Policy T1 of the LDP deals with Transport and specifically Walking and Cycling. The policy states that in order to enable people to access services, employment and community facilities by walking and cycling, the council would support developments which incorporates;

- High quality, sustainable design which makes a positive contribution to the distinctiveness of communities and places;
- Permeable and legible networks of safe, convenient and attractive walking and cycling routes;
- Connections and extensions to the Cardiff Strategic Cycle Network and routes forming part of the Cardiff Walkable Neighbourhoods Plan;
- Measures to minimise vehicle speed and give priority to pedestrians and cyclists;
- Safe, convenient and attractive walking and cycling connections to existing developments, neighbourhoods, jobs and services;
- Infrastructure designed in accordance with standards of good practice including the Council's Cycling Design Guide;

- Supporting facilities including, signing, secure cycle parking and, where necessary shower and changing faculties; and
- The provision of Car-Free Zones.

3.22 Key to the Local Development Plan is the Transport Strategy which is seeking to achieve a modal split of 50:50 in 2026 for all trips on the network. The proposed development is in line with this policy by offering real travel choice for a range of activities/ requirements.

Summary

3.23 The proposed development at De Braose Close, complies with relevant National legislation and National / Local policies, given its sustainable location. In the context of mobility and all-inclusive communities and health and wellbeing, it is a good place to put residential development as an extension to the existing urban grain of Danescourt. The site;

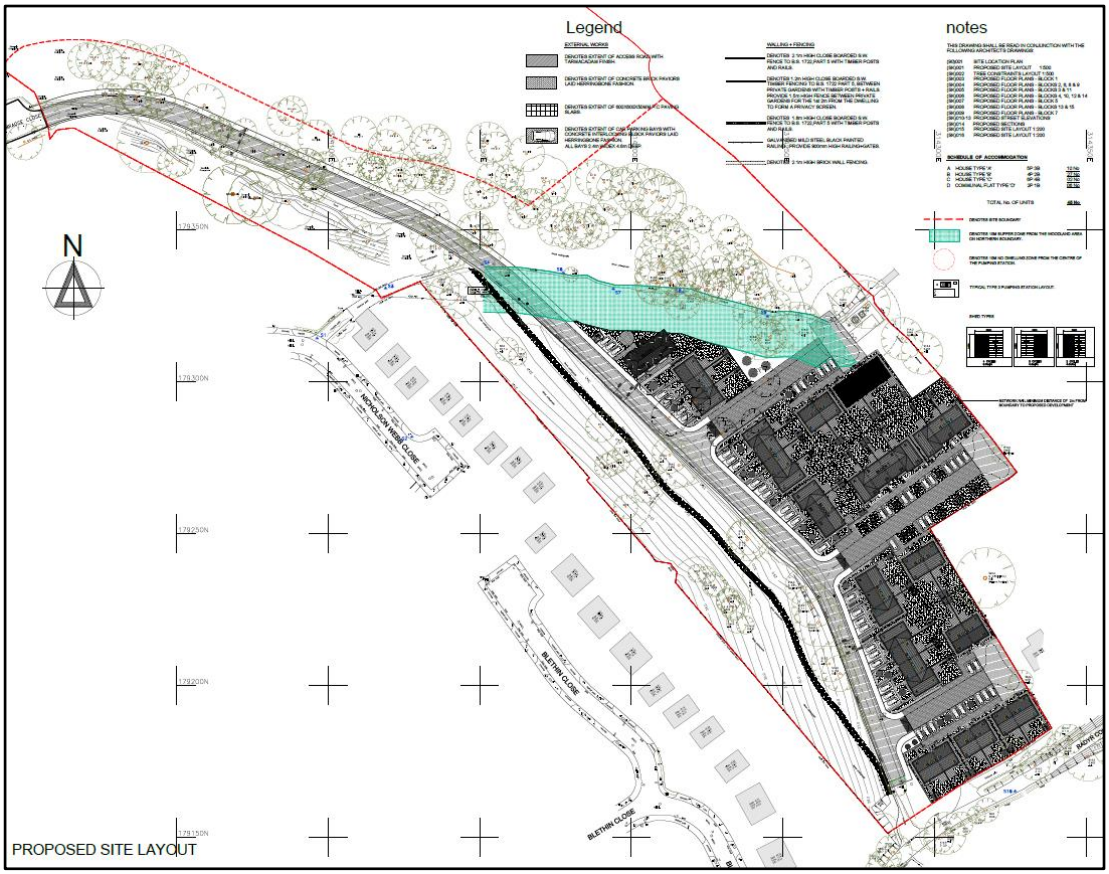
- Promotes the use of more sustainable travel;
- Promotes walking and cycling for shorter trips through active travel; and
- Reduces, when practical, the need to travel by car.

4 DEVELOPMENT PROPOSALS

4.1 The proposed development comprises 45 residential dwellings with vehicular access from De Braose Close.

4.2 An indicative masterplan for the outline permission is shown in **Figure 4.1**.

Figure 4.1 – Indicative Masterplan

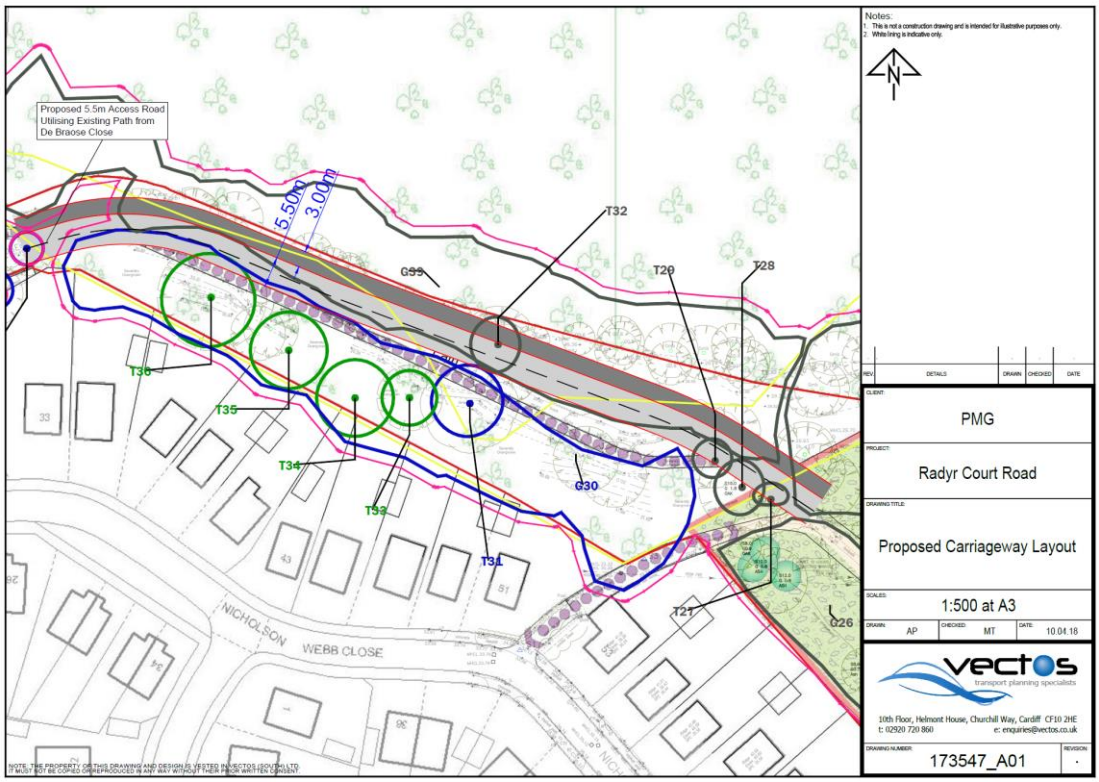


Vehicular Access

4.3 Vehicular access to the site will be via De Braose Close via the turning head at the end of the existing road. It is proposed to provide a continuation of De Braose Close with a 5.5m carriageway and a 3m footway/cycleway on the northern side of the road.

4.4 An indicative vehicular access arrangement which will be subject to a Road Safety Audit and detailed design is shown in **Figure 4.2** and in **Appendix A**.

Figure 4.2 – Indicative Vehicular Access Arrangement



4.5 There will be no vehicular access from Radyr Court Road although the linkages to the site from Radyr Court Road via the PRoW will be maintained and enhanced as a strong pedestrian / cycle link.

5 HIGHWAY NETWORK ASSESSMENT

5.1 The development proposed 45 new residential units and hence the traffic effect from the site is anticipated to be low.

5.2 In addition and in the context of Cardiff Council's transport strategy the focus should not be on traffic impact rather than accommodating people movement and providing safe and efficient Active Travel routes to key local amenities.

5.3 Whilst the site benefits from excellent accessibility to amenities an overview of the likely traffic effect if provided in the following.

Trip Generation

5.4 The likely vehicular generation from the site has been derived from the TRICS database.

5.5 TRICS is a database of trip generation from a wide variety of land uses (retail, employment, leisure etc.) across the UK. Traffic surveys are carried out to measure how many people travel to a site, by what mode and what time of day. The purpose of the database is to provide an estimate of likely trip generation to/from a land use, by comparing it with trip generation from existing comparative sites of the same land use.

5.6 The following parameters were followed when selecting the most appropriate vehicle trip rates for the proposed residential development;

- Land Use – Residential;
- Sub Land Use Category – Houses Privately Owned;
- Trip Rate Parameter – Number of dwelling;
- Location – UK (excluding Northern Ireland and London); and
- Location type – Edge of Town / Suburban Area

5.7 The forecast unfettered vehicle trip rates are shown in **Table 5.1** and the forecast traffic generation is given in Ta**ble 5.2. The full TRIICS datasets are including in Appendix B.**

Table 5.1 – Forecast Unfettered vehicle Trip Rates

Time	Arrivals	Departures	Two Way
07:00	0.095	0.304	0.399
08:00	0.179	0.464	0.643
09:00	0.181	0.223	0.404
10:00	0.157	0.2	0.357
11:00	0.184	0.173	0.357
12:00	0.201	0.194	0.395
13:00	0.201	0.179	0.38
14:00	0.182	0.188	0.37
15:00	0.311	0.212	0.523
16:00	0.347	0.205	0.552
17:00	0.419	0.25	0.669
18:00	0.266	0.218	0.484

Table 5.2 – Forecast vehicle Trip Generation 45 dwellings

Time	Arrivals	Departures	Two Way
07:00	4	14	18
08:00	8	21	29
09:00	8	10	18
10:00	7	9	16
11:00	8	8	16
12:00	9	9	18
13:00	9	8	17
14:00	8	8	17
15:00	14	10	24
16:00	16	9	25
17:00	19	11	30
18:00	12	10	22

5.8 These trip rates have been previously accepted by Cardiff Council for the North West Cardiff Strategic sites and are considered to be robust for a site in this location.

5.9 In order to gain an appreciation of the likely effect of this new traffic on the adjacent highway network, traffic surveys were undertaken by Paul Castle on 19th April 2018. Manual classified queue and junction surveys were undertaken at the following junctions and are shown in **Appendix C**:

- Timothy Rees Close / De Braose Close
- Timothy Rees Close / Danescourt Way

Traffic effect

5.10 New and unfettered traffic from the proposed development of 45 homes was distributed at these junctions based on existing turning proportions.

5.11 The Opening year is assumed to be 2021 and hence TEMPRO growth of 3.65% and 3.71% in the AM/PM peak respectively was applied to 2018 observed flows.

5.12 Whilst we have applied TEMPRO growth to the network, there is a plethora of evidence to suggest that traffic in Cardiff and many other towns and cities in the UK is not growing as per National forecasts, however in this case, and for a robust assessment, traffic growth has been applied.

5.13 The effect of this traffic in 2021 is forecast to be 29 and 30 trips at both junctions during the AM/PM peak respectively.

5.14 This level of traffic demand translates into the following percentage increases at each junction;

- Timothy Rees Close / De Braose Close – 26% AM, 24% PM
- Timothy Rees Close / Danescourt Way – 5% AM, 6% PM.

5.15 This level of effect in actual vehicle numbers and percentage (albeit higher effect on De Braose Close as low existing volumes) effect is considered to be low and imperceptible during peak periods and across the day.

6 SUMMARY AND CONCLUSION

Summary

6.1 Taff Housing Association Ltd propose to develop 45 new homes on land at De Braose Close, Danescourt.

6.2 Vehicular access to the site will be via De Braose Close and it is proposed to provide a continuation of De Braose Close with a 5.5m carriageway and a 3m footway/cycleway on the northern side of the road.

6.3 The site is well connected and well located to a plethora of day to day activities including education and public transport.

6.4 The traffic effect from 45 homes is forecast to be 29/30 two way trips during an AM/PM peak respectively which is not considered to be material or detrimental to highway capacity or highway safety.

Conclusion

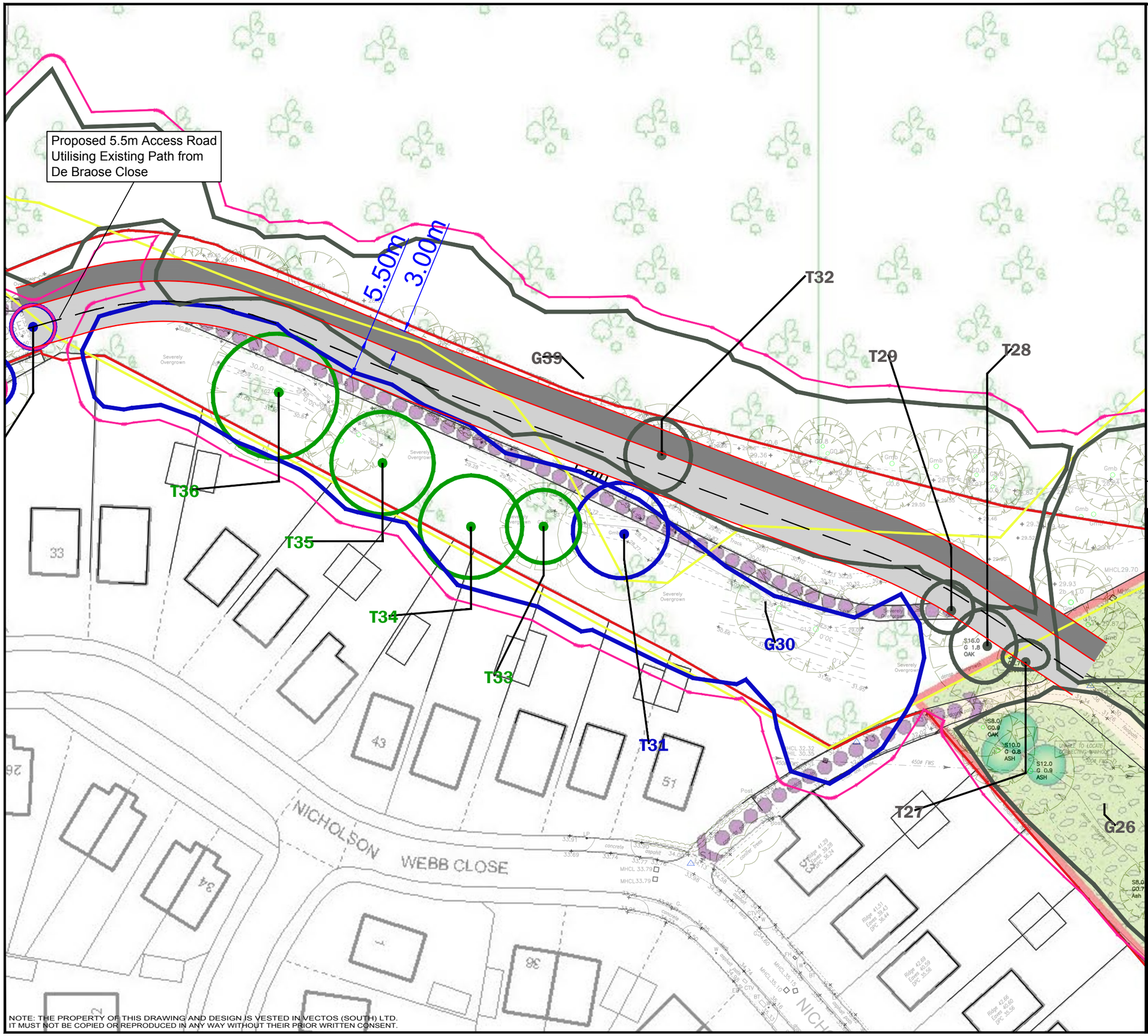
6.5 This is a well located, sustainable site which, in transport terms, is policy compliant.

6.6 The development provides an opportunity to enhance and improve the current network of footpaths and cycleways in the vicinity of the site and create better integration of sustainable modes of travel.

6.7 Development in this location offers travel choice and inclusive mobility for all modes of travel and as such should be supported by the Council, particaurly in view of the Active Travel (Wales) Act 2013 and its Transport Strategy which seeks to achieve a 50:50 modal split for all journeys across the City.

6.8 Moreover, it provides a positive contribution in line with the Well- being of Future Generations (Wales) Act 2015 and the Active Travel (Wales) Act 2013.

APPENDIX A



Notes:

1. This is not a construction drawing and is intended for illustrative purposes only.
2. White lining is indicative only.

REV.	DETAILS	DRAWN	CHECKED	DATE
.	.	.	.	.

CLIENT:

PMG

PROJECT:

Radyr Court Road

DRAWING TITLE:

Proposed Carriageway Layout

SCALES:

1:500 at A3

DRAWN:	CHECKED:	DATE:
AP	MT	10.04.18

vectos
transport planning specialists

10th Floor, Helmont House, Churchill Way, Cardiff CF10 2HE
t: 02920 720 860 e: enquiries@vectos.co.uk

DRAWING NUMBER:	REVISION:
173547_A01	.

APPENDIX B

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
04	EAST ANGLIA		
	SF	SUFFOLK	1 days
05	EAST MIDLANDS		
	LN	LINCOLNSHIRE	2 days
06	WEST MIDLANDS		
	SH	SHROPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE		
	NY	NORTH YORKSHIRE	1 days
08	NORTH WEST		
	CH	CHESHIRE	1 days
10	WALES		
	CF	CARDIFF	1 days
11	SCOTLAND		
	FI	FIFE	1 days
	SR	STIRLING	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: 108 to 237 (units:)
Range Selected by User: 100 to 491 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/07 to 22/09/12

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	3 days
Tuesday	3 days
Thursday	2 days
Friday	2 days

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

Selected survey types:

Manual count	10 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)	5
Edge of Town	5

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

Selected Location Sub Categories:

Residential Zone	8
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Filtering Stage 3 selection:

Use Class:

C3	10 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	1 days
10,001 to 15,000	1 days
15,001 to 20,000	6 days
20,001 to 25,000	2 days

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

Population within 5 miles:

5,001 to 25,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	2 days
100,001 to 125,000	3 days
125,001 to 250,000	3 days

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

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	8 days

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

Travel Plan:

No	10 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 CF-03-A-02 MIXED HOUSES, CARDIFF CARDIFF
DROPE ROAD

CARDIFF
Edge of Town
Residential Zone
Total Number of dwellings: 196
Survey date: FRIDAY 05/10/07 Survey Type: MANUAL

2 CH-03-A-06 SEMI-DET./BUNGALOWS,CREWE 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 EX-03-A-01 SEMI-DET., STANFORD-LE-HOPE 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

4 FI-03-A-03 MIXED HOUSES, DUNFERMLINE FIFE
WOODMILL ROAD

DUNFERMLINE
Edge of Town
Residential Zone
Total Number of dwellings: 155
Survey date: MONDAY 30/04/07 Survey Type: MANUAL

5 LN-03-A-01 MIXED HOUSES, LINCOLN LINCOLNSHIRE
BRANT ROAD
BRACEBRIDGE
LINCOLN
Edge of Town
Residential Zone
Total Number of dwellings: 150
Survey date: TUESDAY 15/05/07 Survey Type: MANUAL

6 LN-03-A-02 MIXED HOUSES, LINCOLN LINCOLNSHIRE
HYKEHAM ROAD

LINCOLN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 186
Survey date: MONDAY 14/05/07 Survey Type: MANUAL

7 NY-03-A-06 BUNGALOWS/SEMI DET., BBDGE 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

LIST OF SITES relevant to selection parameters (Cont.)

8 SF-03-A-02 SEMI DET./TERRACED, IPSWICH SUFFOLK
STOKE PARK DRIVE
MAIDENHALL
IPSWICH
Edge of Town
Residential Zone
Total Number of dwellings: 230
Survey date: THURSDAY 24/05/07 Survey Type: MANUAL

9 SH-03-A-04 TERRACED, SHREWSBURY 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

10 SR-03-A-01 DETACHED, STIRLING STIRLING
BENVIEW

STIRLING
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 115
Survey date: MONDAY 23/04/07 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	10	162	0.095	10	162	0.304	10	162	0.399
08:00 - 09:00	10	162	0.179	10	162	0.464	10	162	0.643
09:00 - 10:00	10	162	0.181	10	162	0.223	10	162	0.404
10:00 - 11:00	10	162	0.157	10	162	0.200	10	162	0.357
11:00 - 12:00	10	162	0.184	10	162	0.173	10	162	0.357
12:00 - 13:00	10	162	0.201	10	162	0.194	10	162	0.395
13:00 - 14:00	10	162	0.201	10	162	0.179	10	162	0.380
14:00 - 15:00	10	162	0.182	10	162	0.188	10	162	0.370
15:00 - 16:00	10	162	0.311	10	162	0.212	10	162	0.523
16:00 - 17:00	10	162	0.347	10	162	0.205	10	162	0.552
17:00 - 18:00	10	162	0.419	10	162	0.250	10	162	0.669
18:00 - 19:00	10	162	0.266	10	162	0.218	10	162	0.484
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.723			2.810			5.533

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.

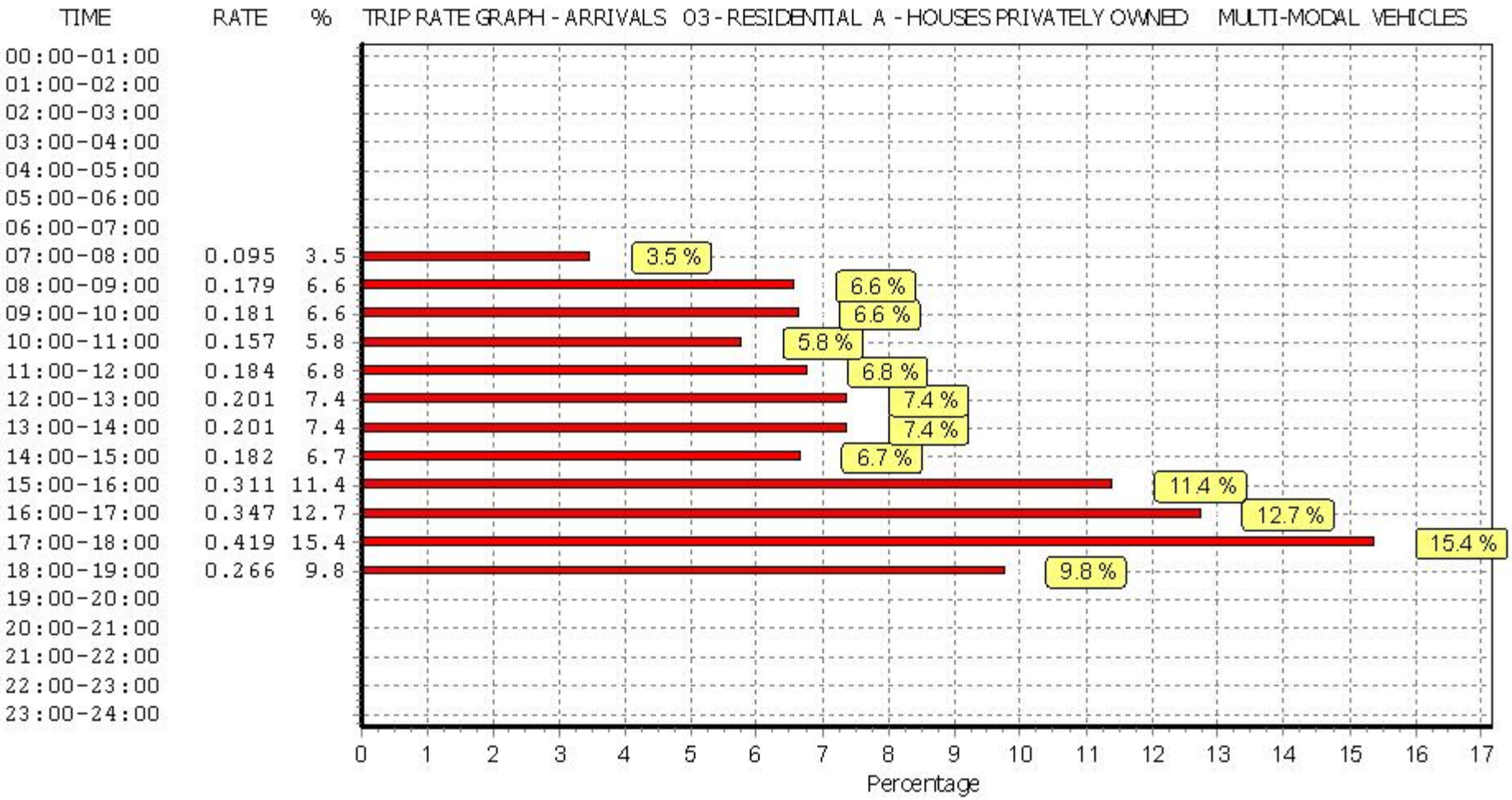
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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:	108 - 237 (units:)
Survey date date range:	01/01/07 - 22/09/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

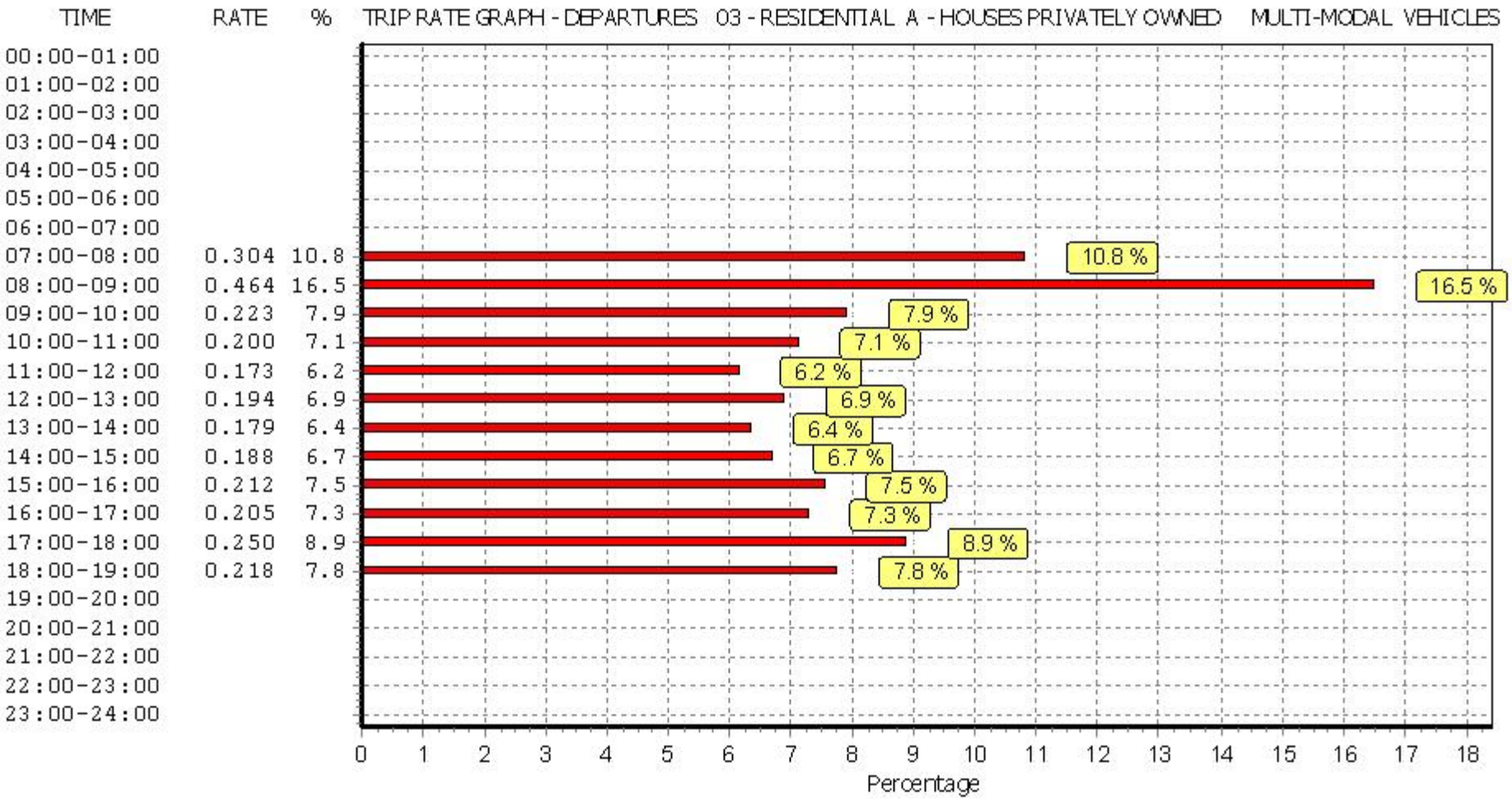
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Vectos Churchill Way Cardiff Licence No: 152302



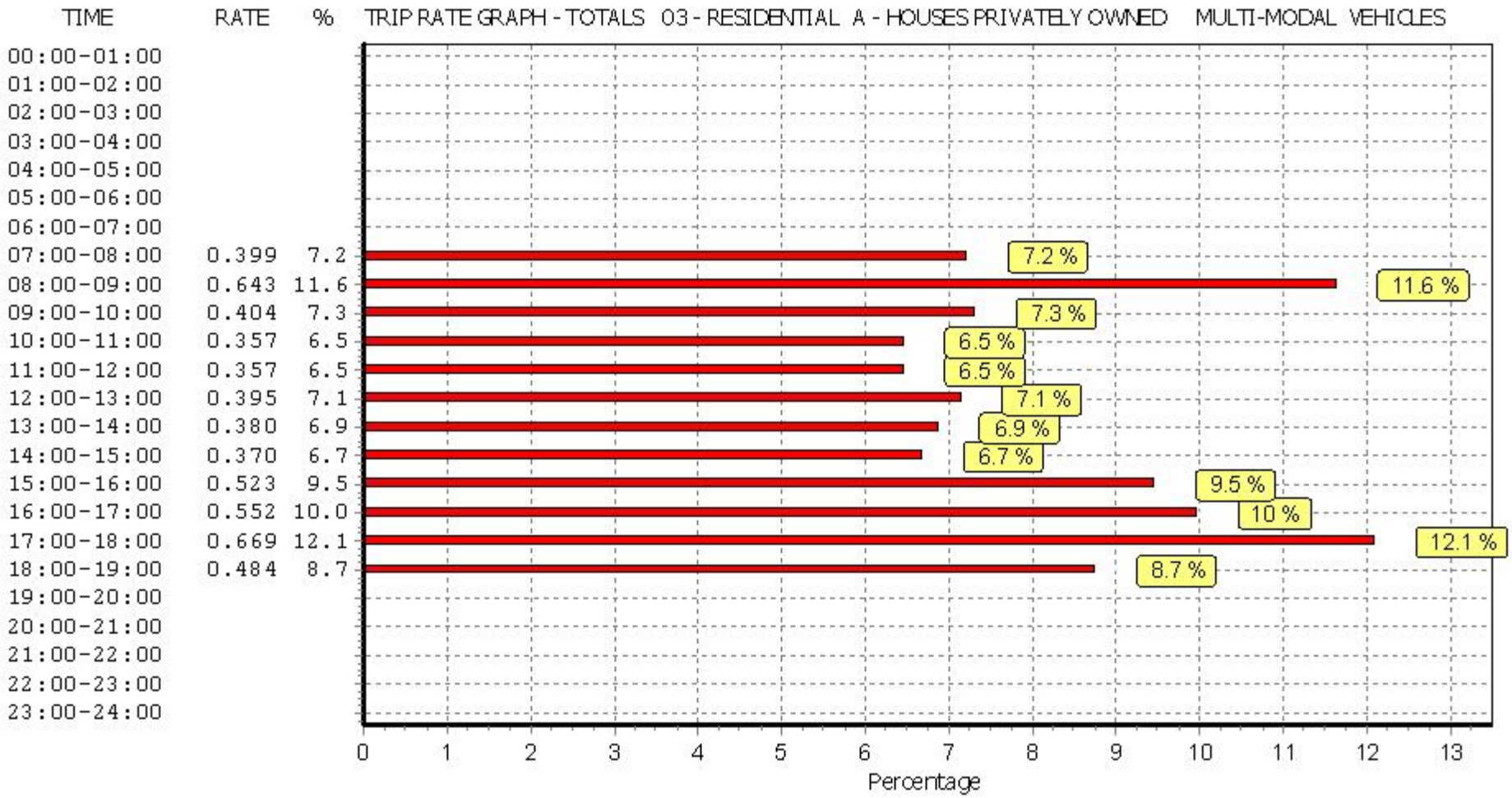
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

Vectos Churchill Way Cardiff Licence No: 152302



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.

Vectos Churchill Way Cardiff Licence No: 152302



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	10	162	0.006	10	162	0.007	10	162	0.013
08:00 - 09:00	10	162	0.007	10	162	0.019	10	162	0.026
09:00 - 10:00	10	162	0.006	10	162	0.005	10	162	0.011
10:00 - 11:00	10	162	0.001	10	162	0.006	10	162	0.007
11:00 - 12:00	10	162	0.005	10	162	0.003	10	162	0.008
12:00 - 13:00	10	162	0.006	10	162	0.006	10	162	0.012
13:00 - 14:00	10	162	0.004	10	162	0.004	10	162	0.008
14:00 - 15:00	10	162	0.003	10	162	0.003	10	162	0.006
15:00 - 16:00	10	162	0.024	10	162	0.015	10	162	0.039
16:00 - 17:00	10	162	0.014	10	162	0.006	10	162	0.020
17:00 - 18:00	10	162	0.014	10	162	0.015	10	162	0.029
18:00 - 19:00	10	162	0.014	10	162	0.008	10	162	0.022
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.104			0.097			0.201

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.

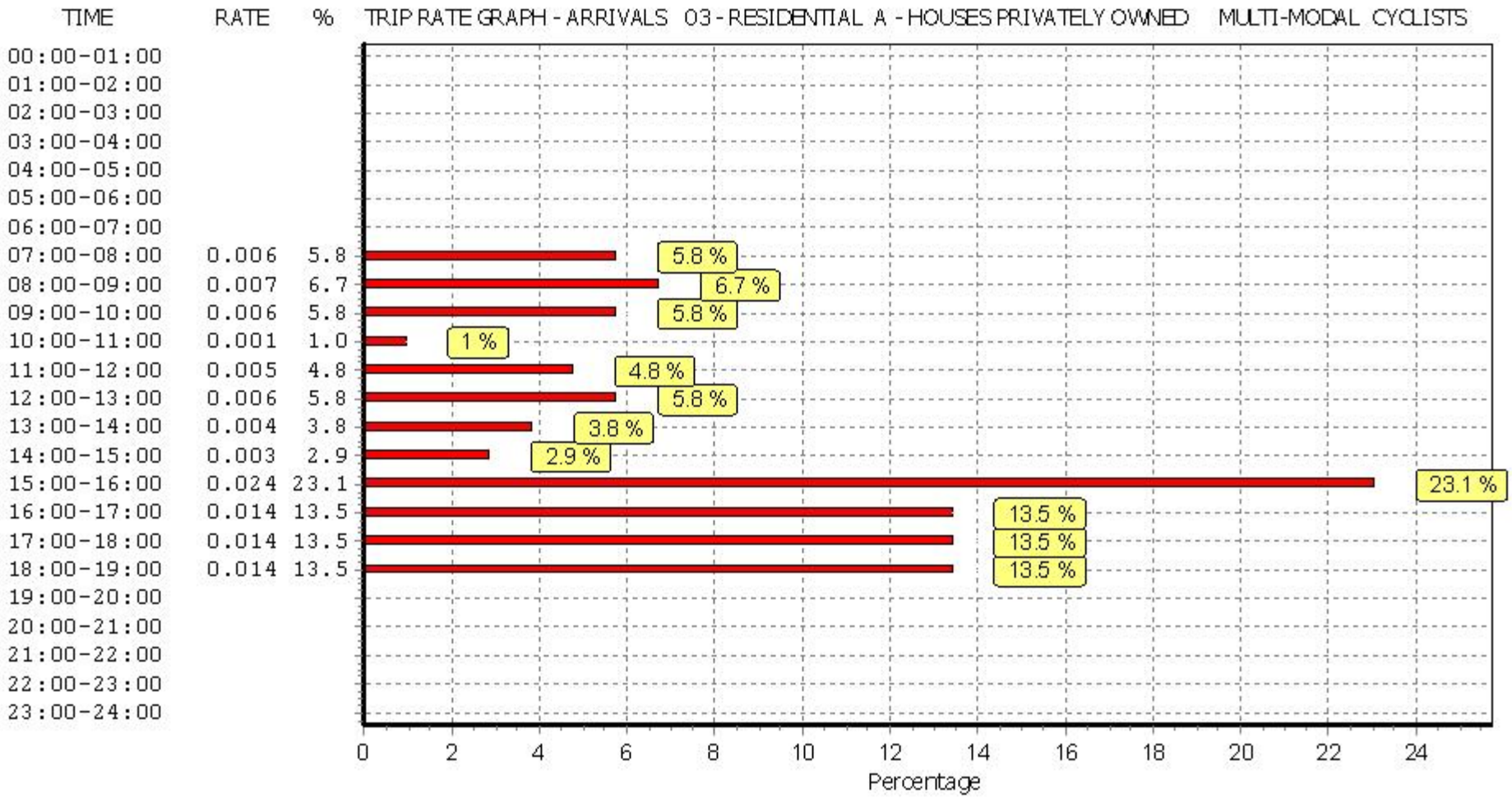
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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:	108 - 237 (units:)
Survey date date range:	01/01/07 - 22/09/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

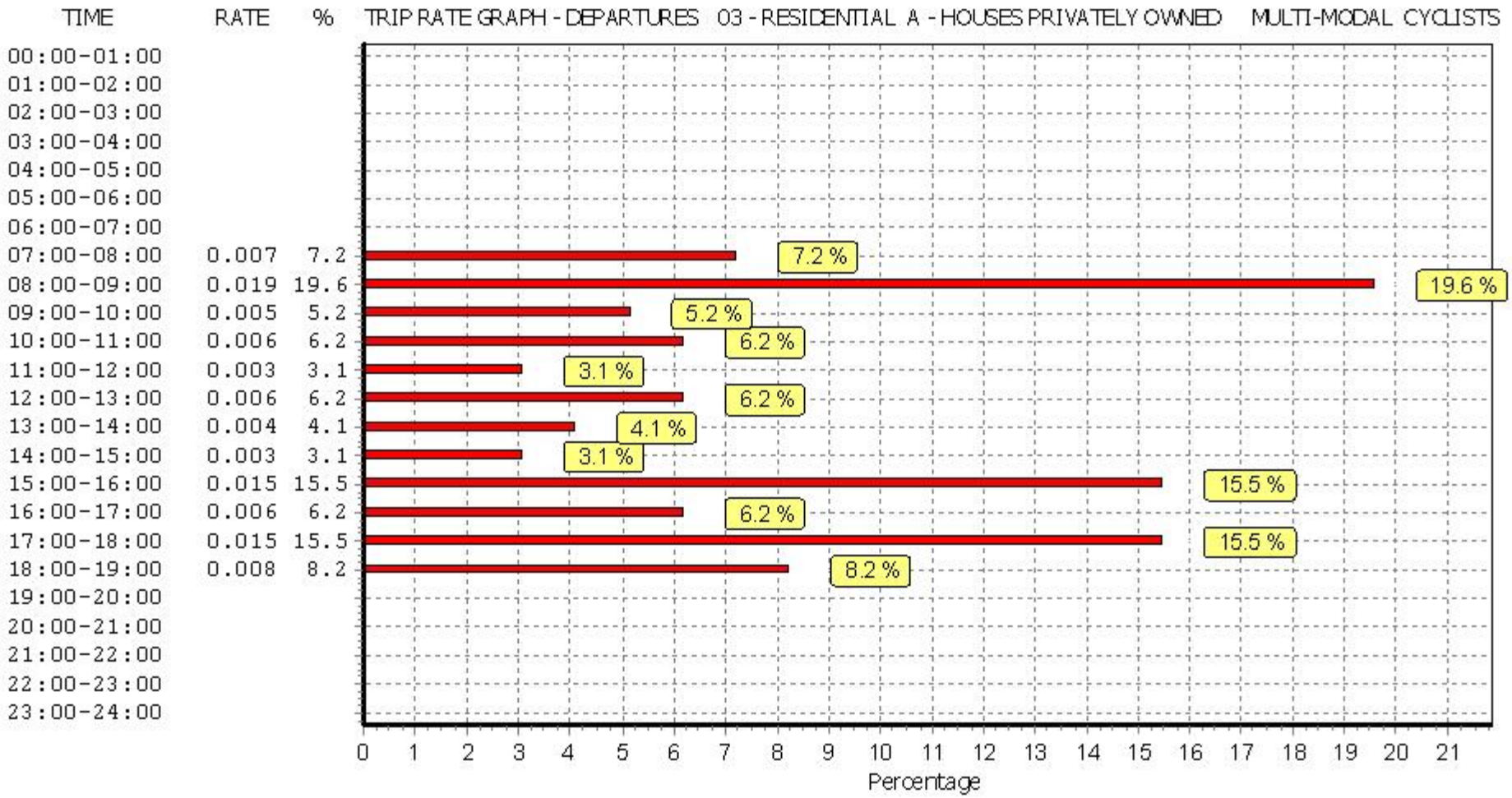
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Vectos Churchill Way Cardiff Licence No: 152302

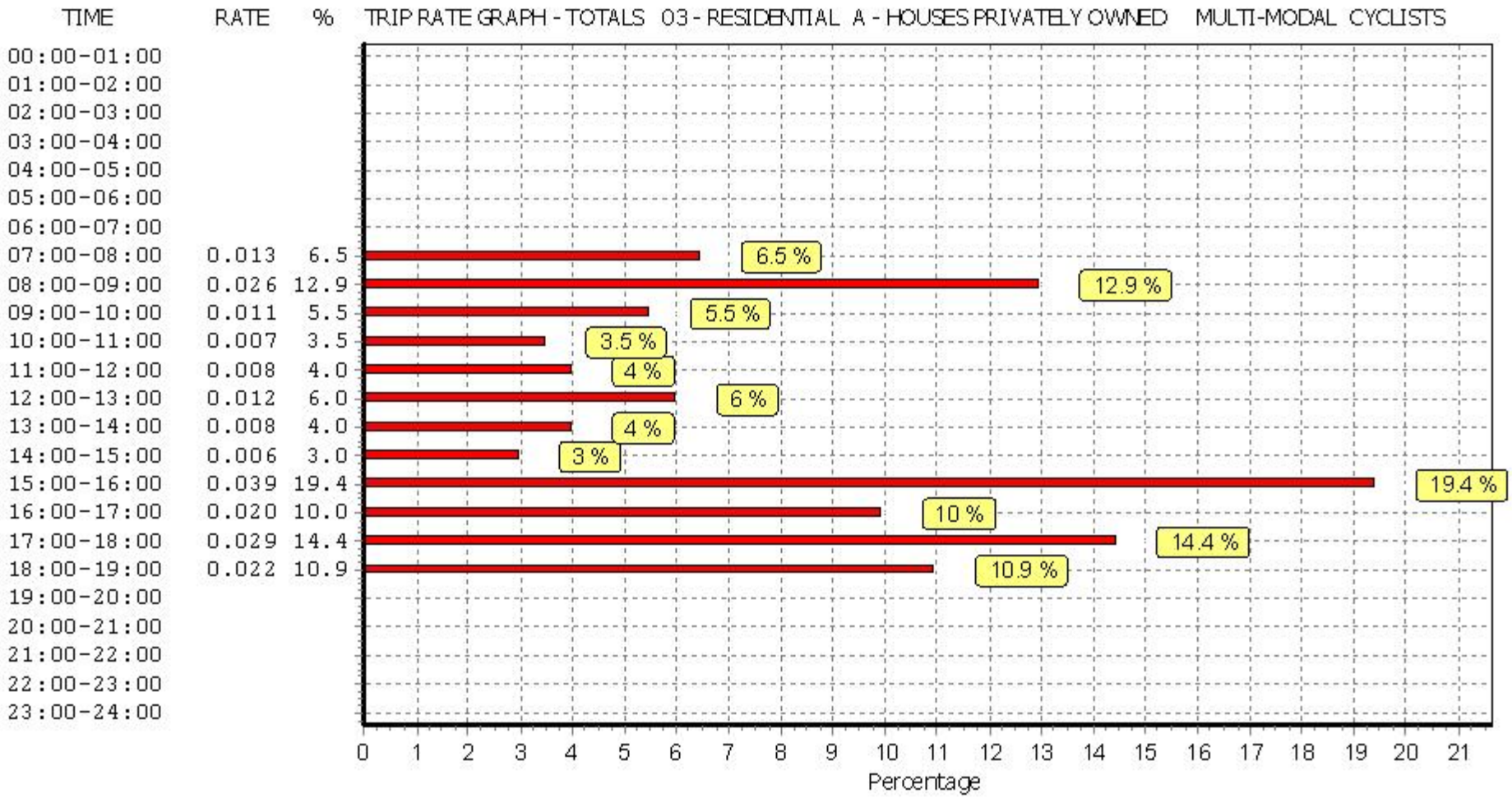


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

Vectos Churchill Way Cardiff Licence No: 152302



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	10	162	0.039	10	162	0.065	10	162	0.104
08:00 - 09:00	10	162	0.048	10	162	0.167	10	162	0.215
09:00 - 10:00	10	162	0.054	10	162	0.066	10	162	0.120
10:00 - 11:00	10	162	0.044	10	162	0.046	10	162	0.090
11:00 - 12:00	10	162	0.037	10	162	0.044	10	162	0.081
12:00 - 13:00	10	162	0.033	10	162	0.035	10	162	0.068
13:00 - 14:00	10	162	0.032	10	162	0.038	10	162	0.070
14:00 - 15:00	10	162	0.044	10	162	0.041	10	162	0.085
15:00 - 16:00	10	162	0.204	10	162	0.081	10	162	0.285
16:00 - 17:00	10	162	0.087	10	162	0.059	10	162	0.146
17:00 - 18:00	10	162	0.061	10	162	0.058	10	162	0.119
18:00 - 19:00	10	162	0.071	10	162	0.067	10	162	0.138
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.754			0.767			1.521

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.

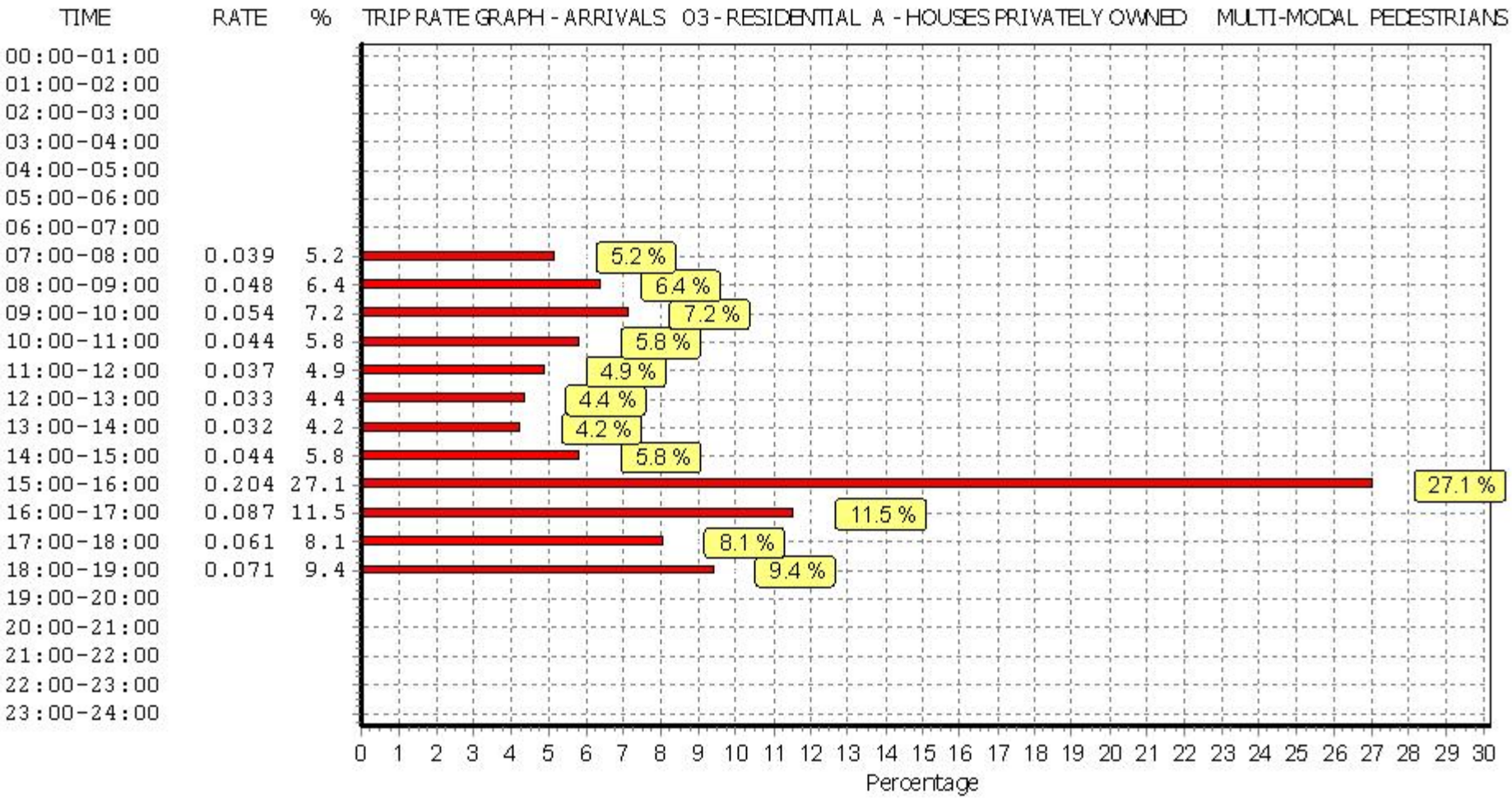
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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:	108 - 237 (units:)
Survey date date range:	01/01/07 - 22/09/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

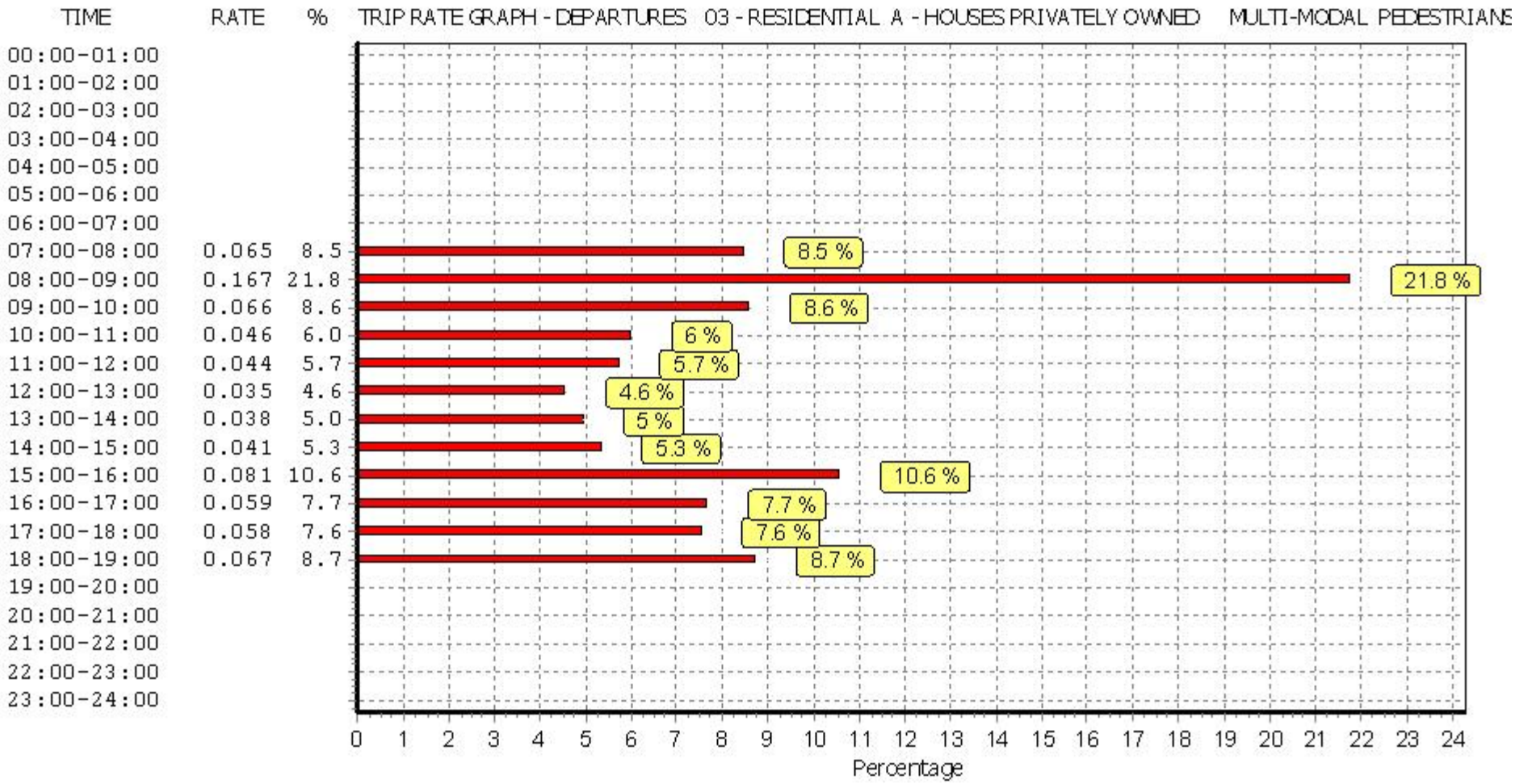
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Vectos Churchill Way Cardiff Licence No: 152302



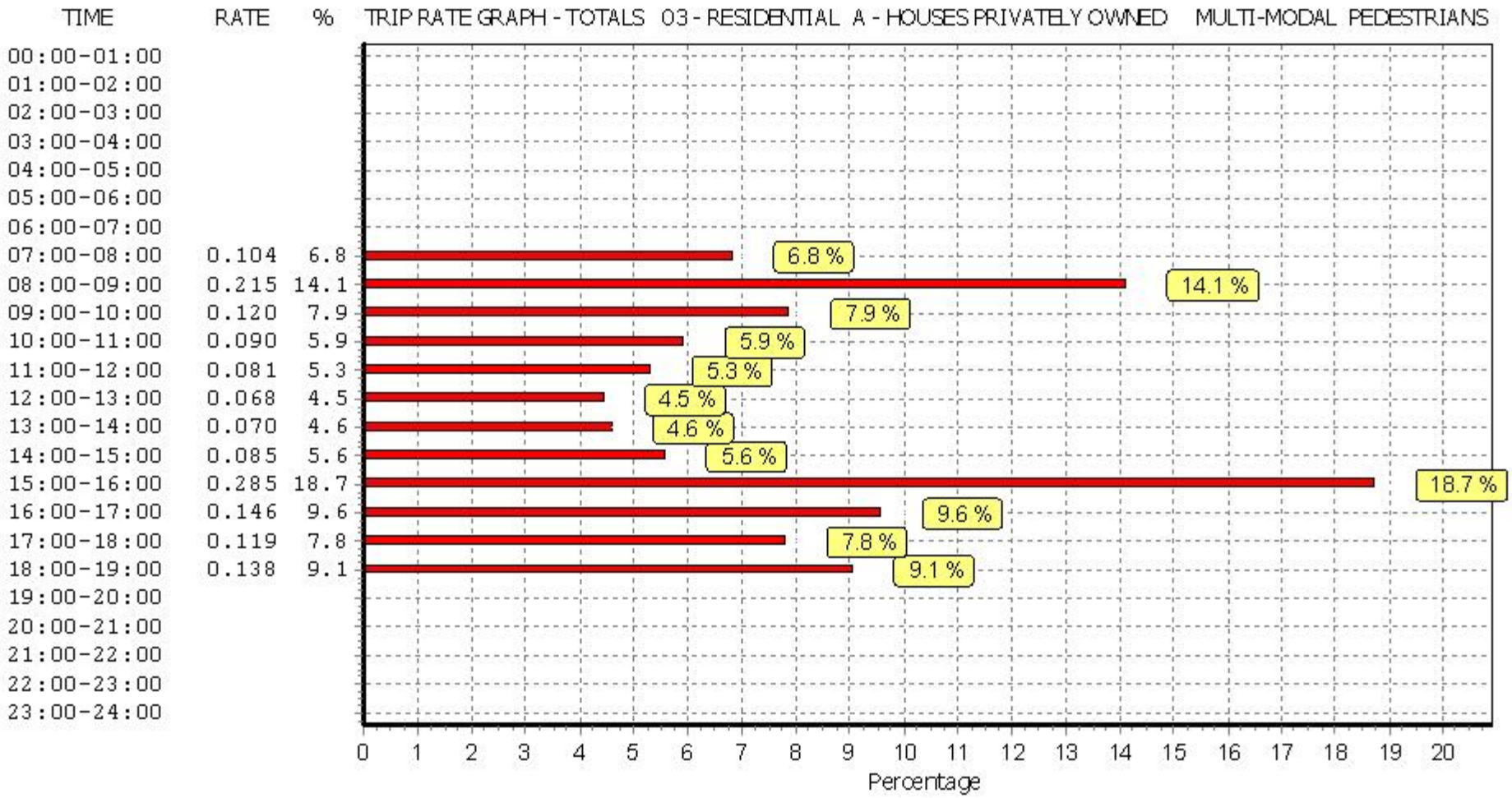
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

Vectos Churchill Way Cardiff Licence No: 152302



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.

Vectos Churchill Way Cardiff Licence No: 152302



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	10	162	0.000	10	162	0.012	10	162	0.012
08:00 - 09:00	10	162	0.004	10	162	0.022	10	162	0.026
09:00 - 10:00	10	162	0.003	10	162	0.012	10	162	0.015
10:00 - 11:00	10	162	0.004	10	162	0.008	10	162	0.012
11:00 - 12:00	10	162	0.005	10	162	0.010	10	162	0.015
12:00 - 13:00	10	162	0.008	10	162	0.007	10	162	0.015
13:00 - 14:00	10	162	0.010	10	162	0.004	10	162	0.014
14:00 - 15:00	10	162	0.006	10	162	0.002	10	162	0.008
15:00 - 16:00	10	162	0.009	10	162	0.008	10	162	0.017
16:00 - 17:00	10	162	0.014	10	162	0.002	10	162	0.016
17:00 - 18:00	10	162	0.020	10	162	0.007	10	162	0.027
18:00 - 19:00	10	162	0.012	10	162	0.001	10	162	0.013
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			0.095			0.095			0.190

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.

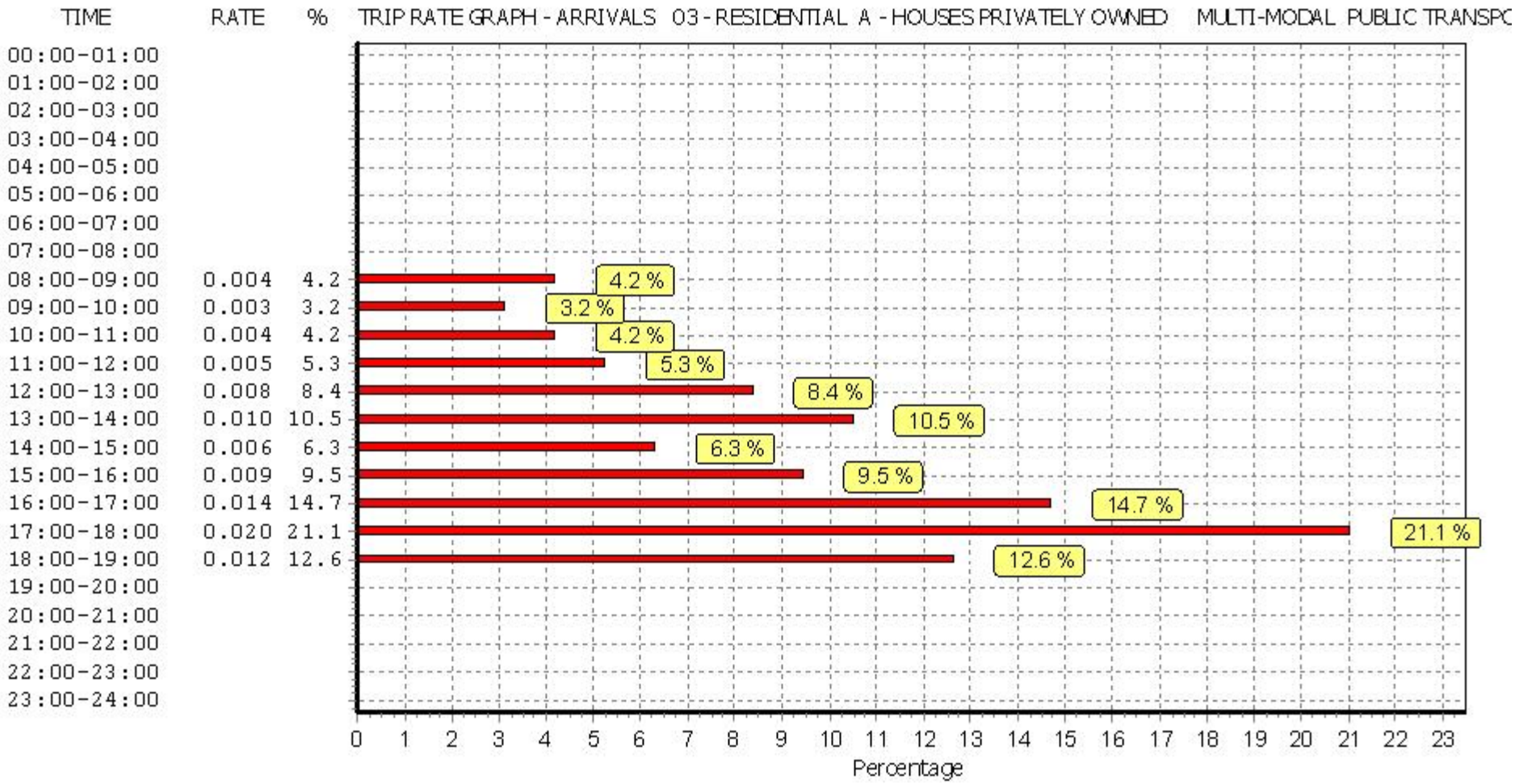
To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected 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:	108 - 237 (units:)
Survey date date range:	01/01/07 - 22/09/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

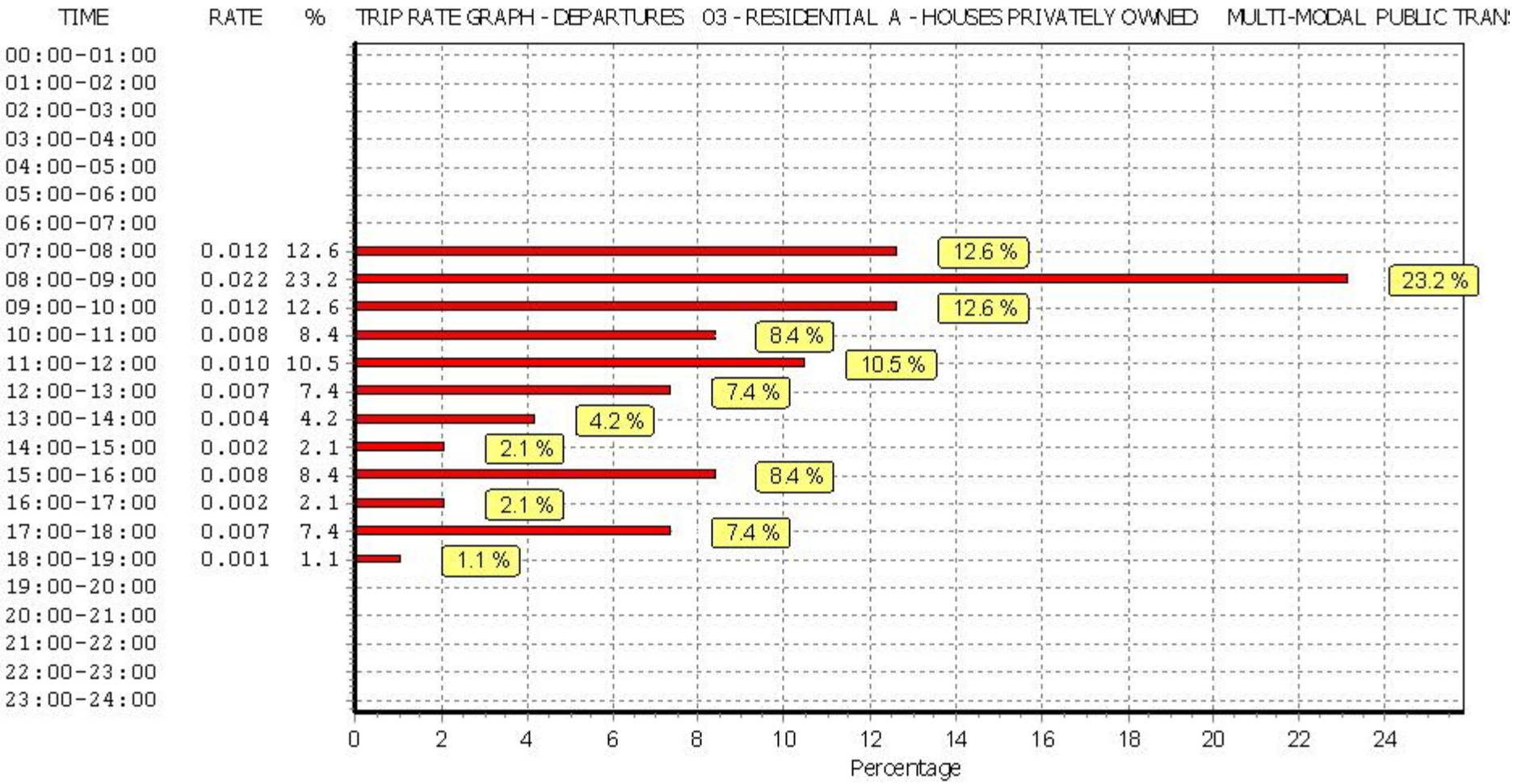
This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Vectos Churchill Way Cardiff Licence No: 152302



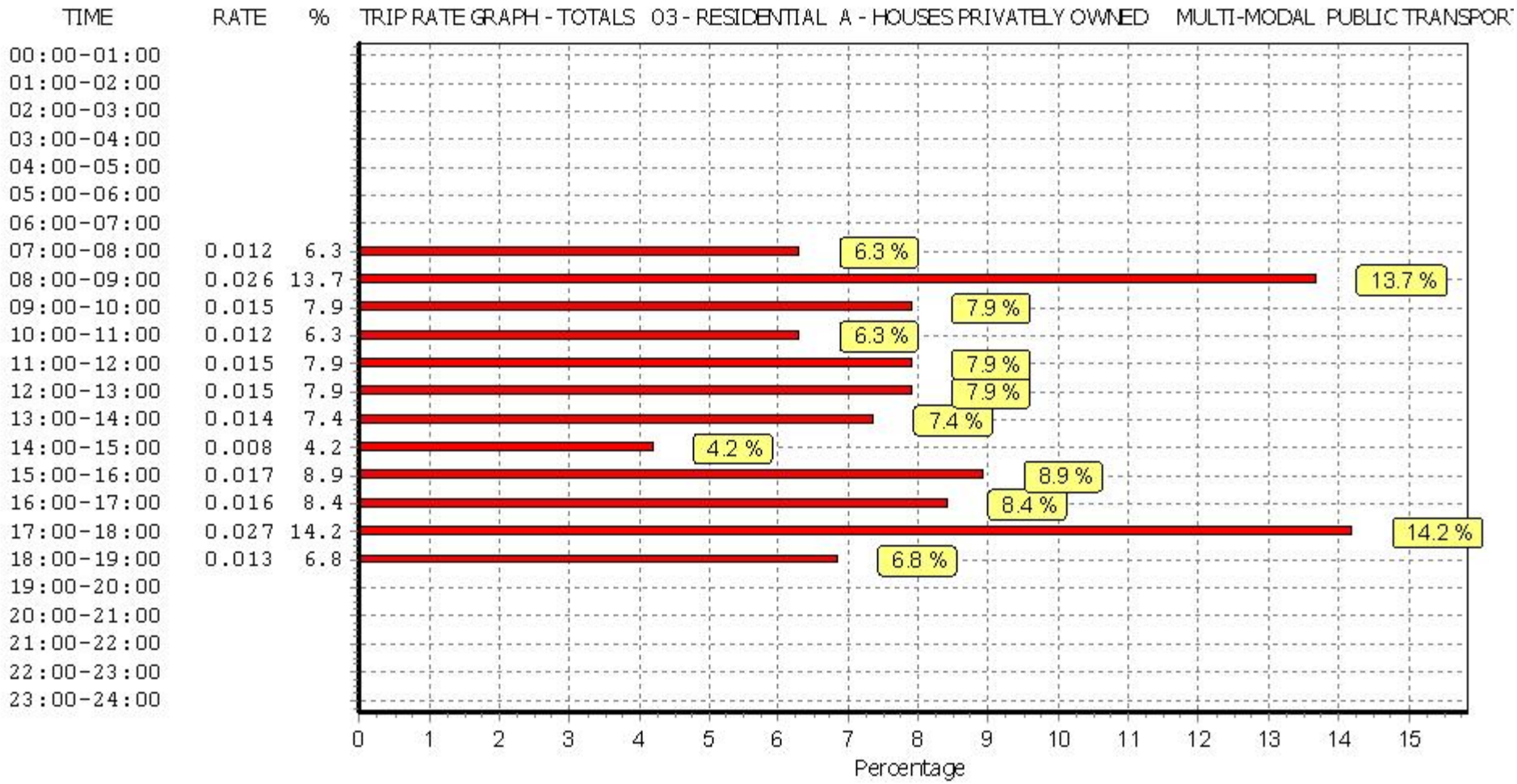
This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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

Vectos Churchill Way Cardiff Licence No: 152302



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.

Vectos Churchill Way Cardiff Licence No: 152302



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	10	162	0.154	10	162	0.443	10	162	0.597
08:00 - 09:00	10	162	0.286	10	162	0.914	10	162	1.200
09:00 - 10:00	10	162	0.275	10	162	0.370	10	162	0.645
10:00 - 11:00	10	162	0.243	10	162	0.321	10	162	0.564
11:00 - 12:00	10	162	0.270	10	162	0.275	10	162	0.545
12:00 - 13:00	10	162	0.301	10	162	0.296	10	162	0.597
13:00 - 14:00	10	162	0.299	10	162	0.276	10	162	0.575
14:00 - 15:00	10	162	0.280	10	162	0.289	10	162	0.569
15:00 - 16:00	10	162	0.729	10	162	0.405	10	162	1.134
16:00 - 17:00	10	162	0.590	10	162	0.365	10	162	0.955
17:00 - 18:00	10	162	0.642	10	162	0.419	10	162	1.061
18:00 - 19:00	10	162	0.456	10	162	0.399	10	162	0.855
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			4.525			4.772			9.297

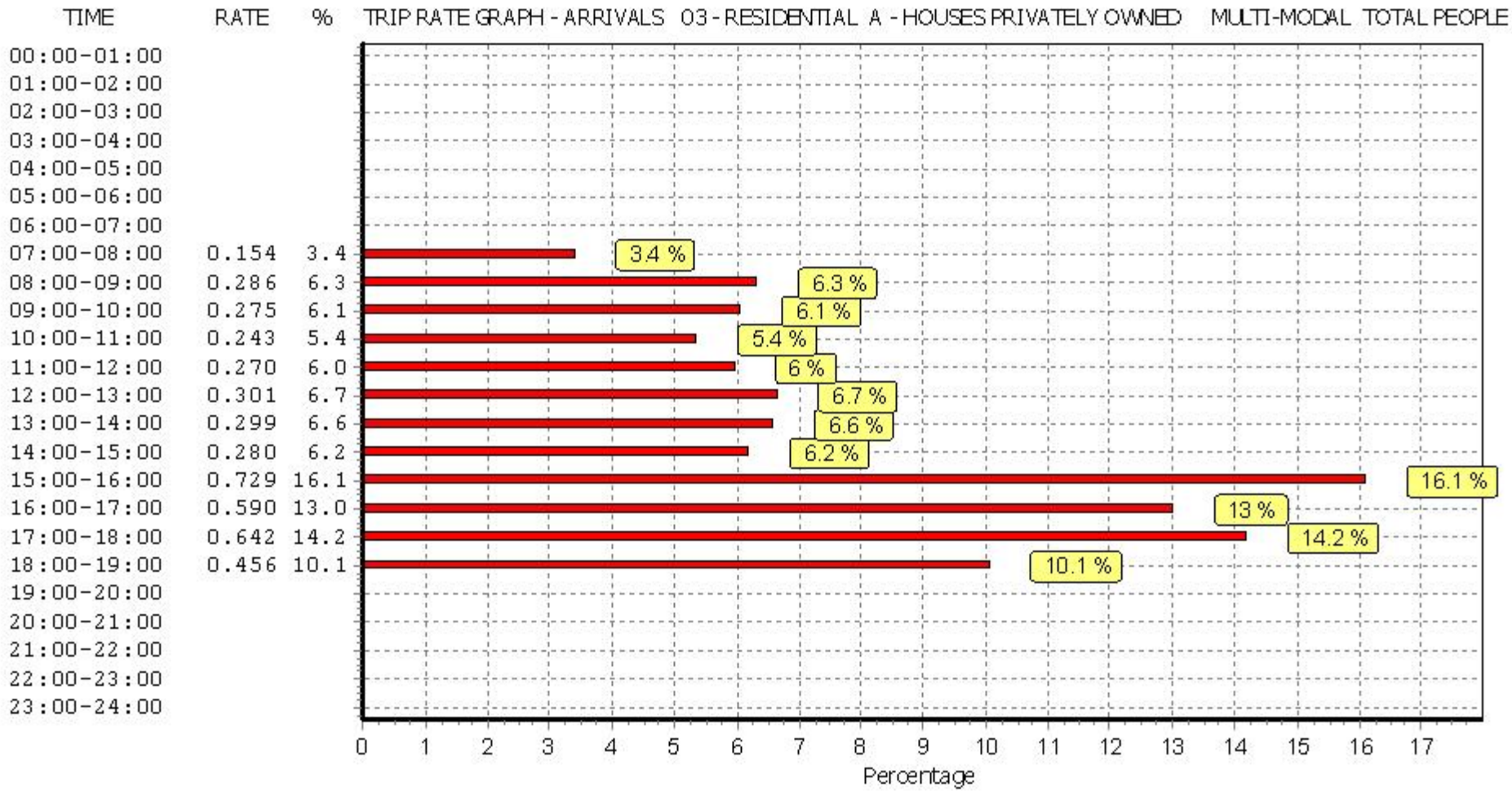
This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are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

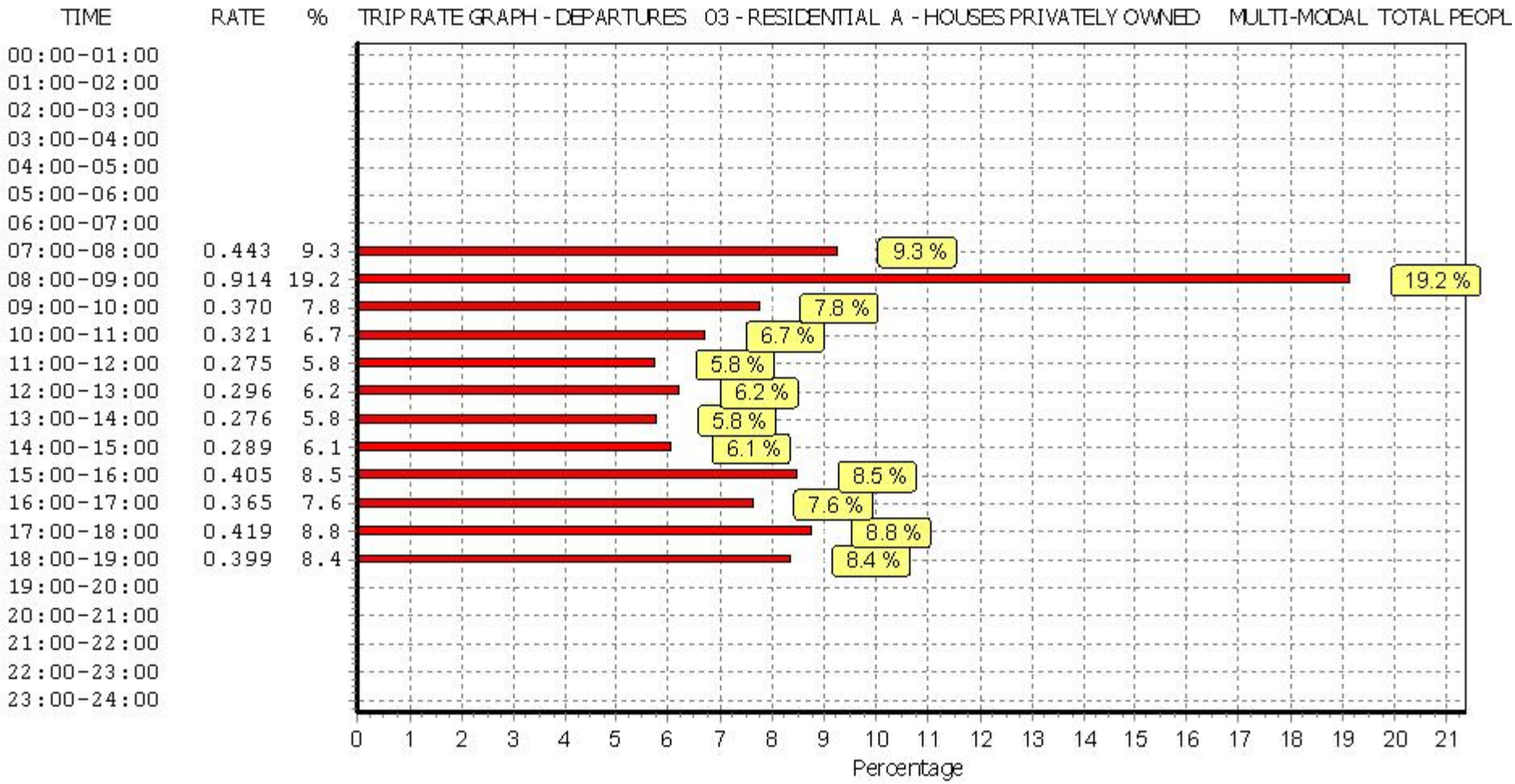
Parameter summary

Trip rate parameter range selected:	108 - 237 (units:)
Survey date date range:	01/01/07 - 22/09/12
Number of weekdays (Monday-Friday):	10
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

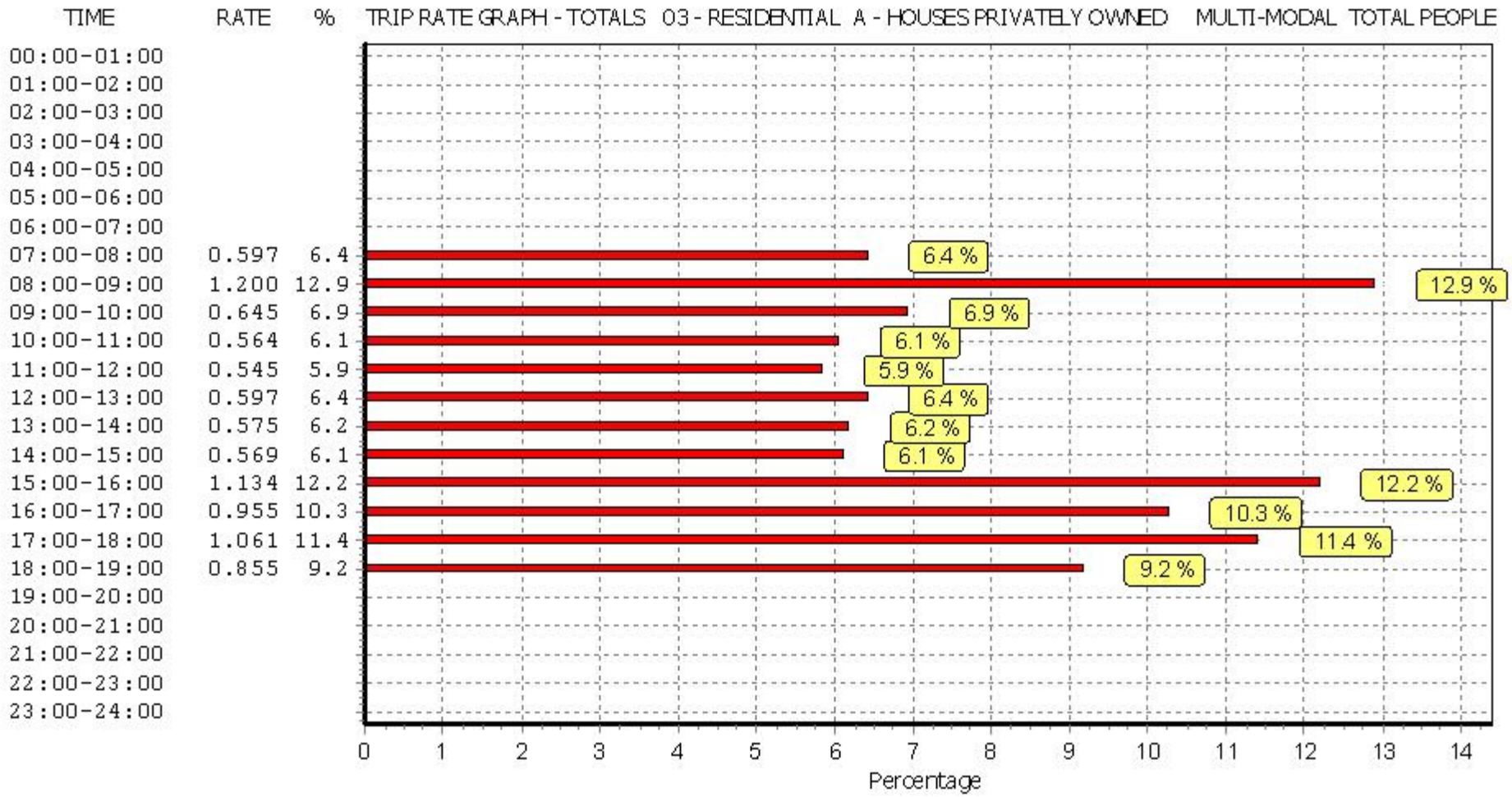


This graph is a visual representation of the trip rate calculation results screen. The same time periods and trip rates are displayed, but in addition there is an additional column showing the percentage of the total trip rate by individual time period, allowing peak periods to be easily identified through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



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.

Vectos Churchill Way Cardiff Licence No: 152302



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

APPENDIX C

Radyr - Thursday 19th April 2018

Junction: De Braose Close/Timothy Rees Close

Approach: De Braose Close

	Left Turn				Right Turn			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
0730 - 0745	4	0	0	**4**	0	0	0	**0**
0745 - 0800	9	0	0	**9**	0	0	0	**0**
Hourly Total	**13**	**0**	**0**	**13**	**0**	**0**	**0**	**0**
0800 - 0815	7	0	0	**7**	0	0	0	**0**
0815 - 0830	6	0	0	**6**	0	0	0	**0**
0830 - 0845	4	0	0	**4**	0	0	0	**0**
0845 - 0900	4	0	0	**4**	0	0	0	**0**
Hourly Total	**21**	**0**	**0**	**21**	**0**	**0**	**0**	**0**
0900 - 0915	3	0	0	**3**	0	0	0	**0**
0915 - 0930	4	0	0	**4**	0	0	0	**0**
Hourly Total	**7**	**0**	**0**	**7**	**0**	**0**	**0**	**0**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**41**	**0**	**0**	**41**	**0**	**0**	**0**	**0**

	Left Turn				Right Turn			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
1600 - 1615	2	0	0	**2**	0	0	0	**0**
1615 - 1630	3	0	0	**3**	1	0	0	**1**
1630 - 1645	4	0	0	**4**	0	0	0	**0**
1645 - 1700	2	0	0	**2**	0	0	0	**0**
Hourly Total	**11**	**0**	**0**	**11**	**1**	**0**	**0**	**1**
1700 - 1715	2	0	0	**2**	0	0	0	**0**
1715 - 1730	3	0	0	**3**	0	0	0	**0**
1730 - 1745	2	0	0	**2**	1	0	0	**1**
1745 - 1800	3	0	0	**3**	0	0	0	**0**
Hourly Total	**10**	**0**	**0**	**10**	**1**	**0**	**0**	**1**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**21**	**0**	**0**	**21**	**2**	**0**	**0**	**2**

Queues Measured as Stationary Vehicles (Maximum Observed in Period)

	Queue Lengths (Vehicles)
TIME	**Stationary**
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0

	Queue Lengths (Vehicles)
TIME	**Stationary**
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0

Radyr - Thursday 19th April 2018

Junction: Timothy Rees Close/Danescourt Way

Approach: Timothy Rees Close EB

	Eastbound				Right Turn			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
0730 - 0745	5	0	0	**5**	0	0	0	**0**
0745 - 0800	5	0	0	**5**	2	0	0	**2**
Hourly Total	**10**	**0**	**0**	**10**	**1**	**0**	**0**	**2**
0800 - 0815	7	0	0	**7**	3	0	0	**3**
0815 - 0830	6	0	0	**6**	0	0	0	**0**
0830 - 0845	7	0	0	**7**	2	0	0	**2**
0845 - 0900	7	0	0	**7**	2	0	0	**2**
Hourly Total	**27**	**0**	**0**	**27**	**7**	**0**	**0**	**7**
0900 - 0915	7	0	0	**7**	3	0	0	**3**
0915 - 0930	8	0	0	**8**	3	0	0	**3**
Hourly Total	**15**	**0**	**0**	**15**	**6**	**0**	**0**	**6**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**52**	**0**	**0**	**52**	**14**	**0**	**0**	**15**

	Eastbound				Right Turn			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
1600 - 1615	13	0	0	**13**	7	0	0	**7**
1615 - 1630	9	0	0	**9**	5	0	0	**5**
1630 - 1645	11	0	0	**11**	3	0	0	**3**
1645 - 1700	16	0	0	**16**	4	0	0	**4**
Hourly Total	**49**	**0**	**0**	**49**	**19**	**0**	**0**	**19**
1700 - 1715	13	0	0	**13**	6	0	0	**6**
1715 - 1730	15	0	0	**15**	7	0	0	**7**
1730 - 1745	16	0	0	**16**	8	0	0	**8**
1745 - 1800	9	0	0	**9**	5	0	0	**5**
Hourly Total	**53**	**0**	**0**	**53**	**26**	**0**	**0**	**26**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**102**	**0**	**0**	**102**	**45**	**0**	**0**	**45**

Queues Measured as Stationary Vehicles (Maximum Observed in Period)

	Queue Lengths (Vehicles)
TIME	**Stationary**
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0

	Queue Lengths (Vehicles)
TIME	**Stationary**
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0

Radyr - Thursday 19th April 2018

Junction: Timothy Rees Close/Danescourt Way

Approach: Timothy Rees Close WB

	Left Turn				Westbound			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
0730 - 0745	0	0	0	**0**	9	0	0	**9**
0745 - 0800	0	0	0	**0**	12	0	0	**12**
Hourly Total	**0**	**0**	**0**	**0**	**21**	**0**	**0**	**21**
0800 - 0815	0	0	0	**0**	15	0	0	**15**
0815 - 0830	0	0	0	**0**	9	0	0	**9**
0830 - 0845	0	0	0	**0**	12	0	0	**12**
0845 - 0900	0	0	0	**0**	16	0	0	**16**
Hourly Total	**0**	**0**	**0**	**0**	**52**	**0**	**0**	**52**
0900 - 0915	0	0	0	**0**	6	0	0	**6**
0915 - 0930	0	0	0	**0**	11	0	0	**11**
Hourly Total	**0**	**0**	**0**	**0**	**17**	**0**	**0**	**17**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**0**	**0**	**0**	**0**	**90**	**0**	**0**	**90**

	Left Turn				Westbound			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
1600 - 1615	0	0	0	**0**	9	0	0	**9**
1615 - 1630	1	0	0	**1**	11	0	0	**11**
1630 - 1645	0	0	0	**0**	7	0	0	**7**
1645 - 1700	0	0	0	**0**	9	0	0	**9**
Hourly Total	**1**	**0**	**0**	**1**	**36**	**0**	**0**	**36**
1700 - 1715	0	0	0	**0**	8	0	0	**8**
1715 - 1730	0	0	0	**0**	4	0	0	**4**
1730 - 1745	0	0	0	**0**	7	0	0	**7**
1745 - 1800	0	0	0	**0**	5	0	0	**5**
Hourly Total	**0**	**0**	**0**	**0**	**24**	**0**	**0**	**24**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**1**	**0**	**0**	**1**	**60**	**0**	**0**	**60**

Queues Measured as Stationary Vehicles (Maximum Observed in Period)

	Queue Lengths (Vehicles)
TIME	**Stationary**
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0

	Queue Lengths (Vehicles)
TIME	**Stationary**
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0

Radyr - Thursday 19th April 2018

Junction: Timothy Rees Close/Danescourt Way

Approach: Timothy Rees Close

	Left Turn				Right Turn			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
0730 - 0745	21	0	0	**21**	27	0	0	**27**
0745 - 0800	25	0	0	**25**	26	0	0	**26**
Hourly Total	**46**	**0**	**0**	**46**	**53**	**0**	**0**	**53**
0800 - 0815	24	0	0	**24**	33	0	0	**33**
0815 - 0830	27	0	0	**27**	37	0	0	**37**
0830 - 0845	25	0	0	**25**	30	0	0	**30**
0845 - 0900	23	0	0	**23**	22	0	0	**22**
Hourly Total	**99**	**0**	**0**	**99**	**122**	**0**	**0**	**122**
0900 - 0915	19	0	0	**19**	17	0	0	**17**
0915 - 0930	13	0	0	**13**	17	0	0	**17**
Hourly Total	**32**	**0**	**0**	**32**	**34**	**0**	**0**	**34**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**177**	**0**	**0**	**177**	**209**	**0**	**0**	**209**

	Left Turn				Right Turn			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
1600 - 1615	12	0	0	**12**	11	0	0	**11**
1615 - 1630	8	0	0	**8**	14	0	0	**14**
1630 - 1645	11	0	0	**11**	13	0	0	**13**
1645 - 1700	5	0	0	**5**	12	0	0	**12**
Hourly Total	**36**	**0**	**0**	**36**	**50**	**0**	**0**	**50**
1700 - 1715	11	0	0	**11**	14	0	0	**14**
1715 - 1730	16	0	0	**16**	15	0	0	**15**
1730 - 1745	9	0	0	**9**	9	0	0	**9**
1745 - 1800	13	0	0	**13**	16	0	0	**16**
Hourly Total	**49**	**0**	**0**	**49**	**54**	**0**	**0**	**54**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**85**	**0**	**0**	**85**	**104**	**0**	**0**	**104**

Queues Measured as Stationary Vehicles (Maximum Observed in Period)

	Queue Lengths (Vehicles)
TIME	**Stationary**
730	2
735	2
740	3
745	2
750	4
755	4
800	4
805	3
810	3
815	2
820	3
825	3
830	4
835	4
840	4
845	3
850	3
855	2
900	3
905	2
910	3
915	0
920	3
925	2
930	0

	Queue Lengths (Vehicles)
TIME	**Stationary**
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0

Radyr - Thursday 19th April 2018

Junction: Timothy Rees Close/Danescourt Way

Approach: Danescourt Way EB

	Left Turn				Eastbound			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
0730 - 0745	10	0	0	**10**	33	0	0	**33**
0745 - 0800	7	0	0	**7**	39	0	0	**39**
Hourly Total	**17**	**0**	**0**	**17**	**72**	**0**	**0**	**72**
0800 - 0815	17	0	0	**17**	31	0	0	**31**
0815 - 0830	24	0	0	**24**	35	0	0	**35**
0830 - 0845	17	0	0	**17**	34	0	0	**34**
0845 - 0900	11	0	0	**11**	44	0	0	**44**
Hourly Total	**69**	**0**	**0**	**69**	**144**	**0**	**0**	**144**
0900 - 0915	6	0	0	**6**	31	0	0	**31**
0915 - 0930	7	0	0	**7**	22	0	0	**22**
Hourly Total	**13**	**0**	**0**	**13**	**53**	**0**	**0**	**53**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**99**	**0**	**0**	**99**	**269**	**0**	**0**	**269**

	Left Turn				Eastbound			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
1600 - 1615	18	0	0	**18**	22	0	1	**23**
1615 - 1630	23	0	0	**23**	22	0	2	**24**
1630 - 1645	19	0	0	**19**	21	0	1	**22**
1645 - 1700	27	0	0	**27**	28	0	2	**30**
Hourly Total	**87**	**0**	**0**	**87**	**93**	**0**	**6**	**99**
1700 - 1715	26	0	0	**26**	29	0	2	**31**
1715 - 1730	29	0	0	**29**	23	0	2	**25**
1730 - 1745	17	0	0	**17**	21	0	1	**22**
1745 - 1800	23	0	0	**23**	19	0	1	**20**
Hourly Total	**95**	**0**	**0**	**95**	**92**	**0**	**6**	**98**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**182**	**0**	**0**	**182**	**185**	**0**	**12**	**197**

Queues Measured as Stationary Vehicles (Maximum Observed in Period)

	Queue Lengths (Vehicles)
TIME	**Stationary**
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0

	Queue Lengths (Vehicles)
TIME	**Stationary**
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0

Radyr - Thursday 19th April 2018

Junction: Timothy Rees Close/Danescourt Way

Approach: Danescourt Way WB

	Westbound				Right Turn			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
0730 - 0745	17	0	2	**19**	7	0	0	**7**
0745 - 0800	21	0	2	**23**	5	0	0	**5**
Hourly Total	**38**	**0**	**4**	**42**	**12**	**0**	**0**	**12**
0800 - 0815	27	0	2	**29**	12	0	0	**12**
0815 - 0830	25	0	2	**27**	13	0	0	**13**
0830 - 0845	24	0	2	**26**	10	0	0	**10**
0845 - 0900	20	0	3	**23**	8	0	0	**8**
Hourly Total	**96**	**0**	**9**	**105**	**43**	**0**	**0**	**43**
0900 - 0915	19	0	2	**21**	6	0	0	**6**
0915 - 0930	16	0	1	**17**	7	0	0	**7**
Hourly Total	**35**	**0**	**3**	**38**	**13**	**0**	**0**	**13**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**169**	**0**	**16**	**185**	**68**	**0**	**0**	**68**

	Westbound				Right Turn			
TIME	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
1600 - 1615	24	0	1	**25**	18	0	0	**18**
1615 - 1630	30	0	2	**32**	26	0	0	**26**
1630 - 1645	26	0	2	**28**	19	0	0	**19**
1645 - 1700	32	0	1	**33**	20	0	0	**20**
Hourly Total	**112**	**0**	**6**	**118**	**83**	**0**	**0**	**83**
1700 - 1715	27	0	1	**28**	17	0	0	**17**
1715 - 1730	35	0	2	**37**	14	0	0	**14**
1730 - 1745	29	0	2	**31**	19	0	0	**19**
1745 - 1800	33	0	1	**34**	13	0	0	**13**
Hourly Total	**124**	**0**	**6**	**130**	**63**	**0**	**0**	**63**
	Lights	HGV	Bus/Coach	**TOTAL**	Lights	HGV	Bus/Coach	**TOTAL**
TOTAL	**236**	**0**	**12**	**248**	**146**	**0**	**0**	**146**

Queues Measured as Stationary Vehicles (Maximum Observed in Period)

	Queue Lengths (Vehicles)
TIME	**Stationary**
730	0
735	0
740	0
745	0
750	0
755	0
800	0
805	0
810	0
815	0
820	0
825	0
830	0
835	0
840	0
845	0
850	0
855	0
900	0
905	0
910	0
915	0
920	0
925	0
930	0

	Queue Lengths (Vehicles)
TIME	**Stationary**
1600	0
1605	0
1610	0
1615	0
1620	0
1625	0
1630	0
1635	0
1640	0
1645	0
1650	0
1655	0
1700	0
1705	0
1710	0
1715	0
1720	0
1725	0
1730	0
1735	0
1740	0
1745	0
1750	0
1755	0
1800	0